TRANSCRIPTOME ANALYSIS OF *MYCOBACTERIUM TUBERCULOSIS* IN PRIMATE LUNG GRANULOMAS

AN ABSTRACT

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ABSTRACT

Mycobacterium tuberculosis (*Mtb*) remains a pathogen of significant importance with respect to global health. Although approximately one third of the world is infected with TB, only 5-10% develop clinical manifestations of active TB within 2 years post exposure. Infection with *Mtb* can cause active tuberculosis (ATB), inactive latent infection (LTBI) and be reactivated. The immune response is contained within the formation of a collection of immune cells, a granuloma, in the infected individual's lungs, which is seen in all disease states. The granuloma functions both as an immune response to contain the bacterium from surrounding lung parenchyma as well as a site for the bacterium to remain in the individual; therefore, providing an environment in which the bacterium maintains the ability to reactivate. We currently lack a complete understanding of the physiology and the metabolic state of *Mtb* in this granulomatous environment during different states of infection. Leveraging a novel technique known as mesodisection, we microdissect TB granulomas from various infective stages as well as from different sections of the granuloma from non-human primate (NHP) derived formalin fixed paraffin embedded (FFPE) lung tissue. From these extracted tissue sections, RNA is extracted, amplified and subsequent microarray and nCounter analysis is performed; consequently, allowing us to uncover the *Mtb* specific transcriptomic profiles. First, our findings reveal statistically significant *Mtb* genes

induced in ATB and LTBI in various granuloma types. Of the genes induced, many belong to the following categories: PE/ PPE, sigma factors, toxin-antitoxin complexes and the DosR regulon. In addition, our findings reveal a core group of genes commonly identified in both ATB and LTBI induced in ATB and LTBI in various granuloma types. Of the genes induced, many belong to the following categories: PE/ PPE, sigma factors, toxin-antitoxin complexes and the DosR regulon. In addition, our findings reveal a core group of genes commonly identified in both ATB and LTBI in all lesion types. Further, we propose that these findings improve our understanding of the physiology of the pathogen as well as its virulence which in turn can be used for the development of improved therapeutics, diagnostics and vaccines.

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CHAPTER 1: INTRODUCTION- TUBERCULOSIS

1.1 *Mycobacterium tuberculosis*

1.1.1 Background

Mycobacterium tuberculosis (Mtb) remains a bacterium of significant importance with respect to global health. In 2013 alone, 9.0 million people became clinically ill with TB while an estimated 1.5 million died, of whom 360,000 were HIV positive[1]. Although approximately one third of the world is infected with TB, only 5-10% will develop clinical manifestations of active TB within 2 years post exposure[2]. The remaining infected individuals mount an immune response where the host essentially controls the infection without completely eradicating the bacilli. This immune response is contained within the formation of a granuloma in the infected individual's lungs. This latent (also referred to as persistent or dormant) state of infection provides the largest reservoir for potential infection. If the infection is reactivated in these latent individuals, they can spread the infection via aerosol. In a lifetime, the risk of a latent infection reactivation is 10%. If the individual's immunity is impaired, the risk increases to 10% per year[3].

Although TB incidence is slowly declining each year, the death toll remains unacceptably high. It is estimated that more than half of the TB cases occur in South-

East Asia and the Western Pacific[1]. Approximately twenty-five percent of the cases occur in Africa, while the remaining cases primarily occur in India and China. Additionally, it is estimated that 1.1 million cases were in HIV positive individuals[1]. The highest percentage of HIV co-infected cases as well as TB related deaths occur in Africa[1]. From a health disparities perspective, non-Hispanic Asians are twenty-five, African Americans are eight, and Hispanics are seven times more likely to be infected with the disease in their lifetime[1]. In addition, among individuals that are born in the United States, African Americans are the racial group with the highest percentages of TB cases (38.6%) and the largest disparity compared to U.S. born whites[1].

1.1.2 Pathology and the TB Granuloma

Understanding the pathogenesis of TB and associated lung lesions as well as the associated gene expression is critical to the overall understanding of TB. Once inhaled, the bacilli travel to the lungs and enter alveoli, which in turn are phagocytized by alveolar macrophages and resident dendritic cells. The corresponding dendritic cells are now activated and travel from resident airways to mediastinal lymph nodes. A T-cell response is initiated, thus macrophages and lymphocytes migrate to the primary site of infection and form a granuloma[4-6]. Granuloma formation results from the host's attempt to contain the pathogen within a constrained region of space[7]. On the other hand, it has been proposed that *Mtb* has evolved to allow its persistence in this intragranulomatous environment[7].

The hallmark of TB is the formation of this aggregate of immune cells known as a

granuloma. The term granuloma by definition refers to an accumulation of macrophages, which can be misleading because other cell types are involved. Granulomas are organized into morphologically distinct forms and begin as solid, non-necrotizing aggregates of macrophages and lymphocytes[4,5,7]. With time, granulomas become more organized and differentiated, thus they take on additional forms. Caseous granulomas consist of epitheloid macrophages, neutrophils, B cells and a cuff of lymphocytes around a caseous core[8-11]. These granulomas are also referred to as the classical granuloma, which in turn is what usually is being referred to as the disease hallmark. This granuloma type may or may not be surrounded by fibroblasts to form a fibrotic granuloma. With time, granulomas can become calcified and mineralized; consequently, forming a calcified/mineralized granuloma.

The variety of these histopathological lesions is an extremely important concept. Caseous, necrotic lesions provide a highly oxygen-depleted (hypoxic) environment. Compared to growth in normoxic environment, this shift likely has a profound impact on *Mtb* metabolism and physiology, which in turn, transcends into difference in infectivity, virulence, pathogenesis and transmissibility[12,13]. Human and NHP granulomas generate hypoxic stress on *Mtb*, unlike murine granulomas[14,15]. Thus, from a standpoint of research into *Mtb* -host interactions, different types of granulomas can serve as markers for bacterial physiology, metabolic state and thus potentially virulence. For example, it has been shown in rhesus macaques that early (active phase) lesions exhibit high levels of Th-1 type immune response expression while late (chronic phase) lesions exhibit only Th-2 type immune response[16,17]. Our NHP model thus provides a rich resource from

which the physiological state of *Mtb* can be assessed in different environments. For example, *Mtb* from the caseous center of necrotic granulomas can be expected to have turned on the hypoxia response network. But for how long? How long does the pathogen maintain this state and what bacterial factors assist in this process? Is there an additive effect of drug-treatment on the hypoxically dormant bacilli? What type of temporal and kinetic impact does AIDS-based co-infection have on the metabolism and physiology of the granuloma contained tubercle bacilli? Finally how do these measurements compare to those from the fibrous rim of the granuloma, where bacilli surely don't experience the same level of stress? These are all valid questions that our model has the potential to allow us to explore.

1.1.3 Clinical Spectrum of TB

Health outcomes of *Mtb* infection vary, thus disease progression can be split into three infective stages. Approximately ten percent of new infections result in active, contagious TB[1]. The remaining ninety percent of new infections result in latent TB[1]. Latent TB is defined as the immunological response to infection in the absence of clinical and microbiological evidence of disease[18]. Latent TB may or may not become active again; consequently, the third infective stage is this reactivation. The molecular and genetic factors that facilitate these different disease stages are not fully understood. Improving our knowledge of the similarities and differences between active, latent and

reactivated states is imperative for the development of new disease prevention and treatment strategies.

1.1.4 Animal Models

Humans are the only natural hosts of TB. Due to the fact that it would be unethical to intentionally expose humans to TB, various animal models have been implemented. A successful animal model is one that most closely mimics human disease progression, thus allowing for the most direct comparisons with human illness. The most commonly used animal models in TB research include guinea pig, mouse, rabbit and non-human primates. Recently zebrafish infected with *M. marinum* have been employed to this ever expanding field.

The first animal model used in TB research was the guinea pig. Robert Koch himself used human lung and brain samples to infect guinea pigs[19]. Pathology is one of the most important considerations when choosing an animal model of TB. In this regard, guinea pigs are an excellent model of TB because resulting lung pathology is very similar to that of humans. Both species lung lesions include caseous granulomas and symptomatically are quite similar. Conversely, guinea pigs are highly susceptible to illness[20]. Like guinea pigs, rabbits also employ the same pathophysiology as humans[21]. Although both of these models pathologically mimic human infection, there are limited molecular and immunological resources available, thus limiting their effectiveness.

The most commonly employed model of TB is the mouse[22,23]. This model has

been used to study immunologic properties, virulence factors, disease progression, etc. The mouse model is universally used in the research community; therefore, molecular and immunological resources are widely available. The largest detractor from the murine model is that it is not pathologically the same as human infection. In mice, lung granulomas contain T cells and macrophages as well as clusters of B cells[24]. Murine granulomas only become necrotic with high bacterial numbers, where as human are often necrotic. Human granulomas are more organized and evident in morphologically distinct forms[25]. Although the murine model has been invaluable to TB research, animal models that more closely mimic human infection are needed.

One such model that more closely mimics human infection is the non-human primate model (NHP). Interest in NHPs as models of TB began in the 1970s[26]. Due to a combination of politics and the AIDS epidemic, the model failed to become popular until recently. This model has gained popularity due to a variety of reasons. First, resulting lung pathology recapitulates human lung pathology with both species having organized granulomas with morphologically distinct forms. Human granulomas are organized into three morphologically distinct forms. The first form, or solid form, contains lymphocytes and macrophages without necrosis. The second form, caseous form, contains caseous necrosis in the center of the granuloma surrounded by macrophages and lymphocytes with or without fibrosis. The third form are calcified/ mineralized granulomas[25]. All of the aforementioned lesions and characteristics are found in NHPS thus NHPS are an ideal model for human TB studies because of lesion similarity. In NHPs classic human lesions with central caseous lesions and necrotic cores are common[25].

The same host can exhibit different forms concurrently in both species. An association between cavitary lesions and high bacterial numbers has been seen in both.

In addition, at low infection dose, rhesus macaques can present with either active or latent tuberculosis[5,27]. Also, NHPS are capable of being latently infected with TB and possess the same clinical correlates as humans[25]. In human TB cases, there is often a prolonged lag period between exposure and clinical illness. Molecularly, this phenomenon has been explained by evidence that in endemic areas, TB progression is due to re-infection[28]. Since latency provides a reservoir for reactivated infection, it is paramount to have a model of TB disease progression that successfully produces this infective state. In addition, latent NHP *Mtb* infection can be reactivated by co-infection with SIV[18,29]. It is because of this model's ability to produce all three distinct disease states, that it is being employed in transcriptomic analysis.

1.1.5 *Mtb* Genome and Functional Categories

The H37Rv *Mtb* genome was first identified by Cole and associates in 1998[30]. Following this study, a data base presenting genome-derived H37Rv known as Tuberculist was established. The overall circular genome of *Mtb* is 4,411,532 base pairs. In addition, the *Mtb* genome is guanine and cytosine rich with a mean guanine cytosine content of 65.6 percent. Originally 3974 genes encoding 3924 proteins and 50 stable RNAs were identified[30]. Genes have been identified using a variety of parameters including: sequence homology, electrophoresis, mass spectrometry, codons defining techniques and other bioinformatics techniques[31].

Now genomes sequences for five *Mtb* strains are known and Tuberculist has undergone revisions to represent these changes. The *Mtb* genome, now known to contain 4090 genes, is organized into eleven categories based upon the function of the genes in those categories[32]. These functional categories provide an overall sense of the processes necessary for the pathogen's survival, maintenance, persistence, pathogenicity and virulence. The table depicts the functional categories, gene number and percentage of genome that that specific category encompasses (Table 1.1).

Perhaps the most significant group with respect to this study is a class of genes solely found in mycobacteria known as the PE/PPE genes. These genes are named based upon the presence of a Pro-Glu (PE) or Pro-Pro-Glu (PPE) domain at their N-terminus. This family contains approximately 170 members that are unique to mycobacteria and have been implicated in pathogen antigenicity[12,33,34]. The PE family accounts for approximately 100 genes, while the PPE family accounts for approximately 70 genes. Additionally, the PE family contains a subfamily with polymorphic guanine cysteine rich repetitive sequences known as the PE_PGRS subfamily. Although much remains to be known about this functional category, they have been shown to be induced in a hypoxic environment. In turn, it is hypothesized that these genes are secreted by the ESX-1 and 5 systems and that sigma factors play a role in expression[33].

1.1.6 Transcriptional Regulation

To survive in a hostile environment within the host, *Mtb* has to sense and

respond to this ever changing environment. One mechanism by which the bacteria does so is by controlling the expression of transcription factors that combine and form networks that coordinate adaptation to these shifting stresses via the use of regulons. Regulons consist of a collection of genes or operons that are controlled by the same protein. This section explores some of the regulons that particularly important to *Mtb* survival within a granuloma, thus offering insight into gene expression profiles in this intra-granulomatous environment.

In total, there are six gene groupings, regulons, discussed in subsequent sections. These include sigma factors, toxin-antitoxins, DosR, ESX-1, enduring hypoxic response and persisters. These lists are well established and accepted in the TB field. The following two tables (Tables 1.2 and 1.3) serve to show the genes contained within each of these specific gene clusters. This section serves to give a general overview and background on each gene cluster. Details and observations about specific genes will be discussed in greater detail in later chapters as they pertain to genes identified with the highest fold changes in the experiments outlined in this dissertation.

Functional category	Name	Number of genes	Percentage of Genome
0	Virulence, detoxification, adaptation	228	5.6
1	Lipid metabolism	247	6
2	Information pathways	241	5.9
3	Cell wall and cell processes	773	18.9
4	Stable RNAs	71	1.7
5	Insertion sequences and phages	147	3.6
6	PE/PPE	168	4.1
7	Intermediary metabolism and respiration	923	22.6
8	Unknown	160	0.4
9	Regulatory proteins	195	4.8
10	Conserved hypothetical proteins	1081	26.4

Table 1.1: *Mtb* Functional Categories: The table shows the eleven functional categories in *Mtb* by number, the name of each category, the number of genes in each and the percentage of the genome it encompasses.

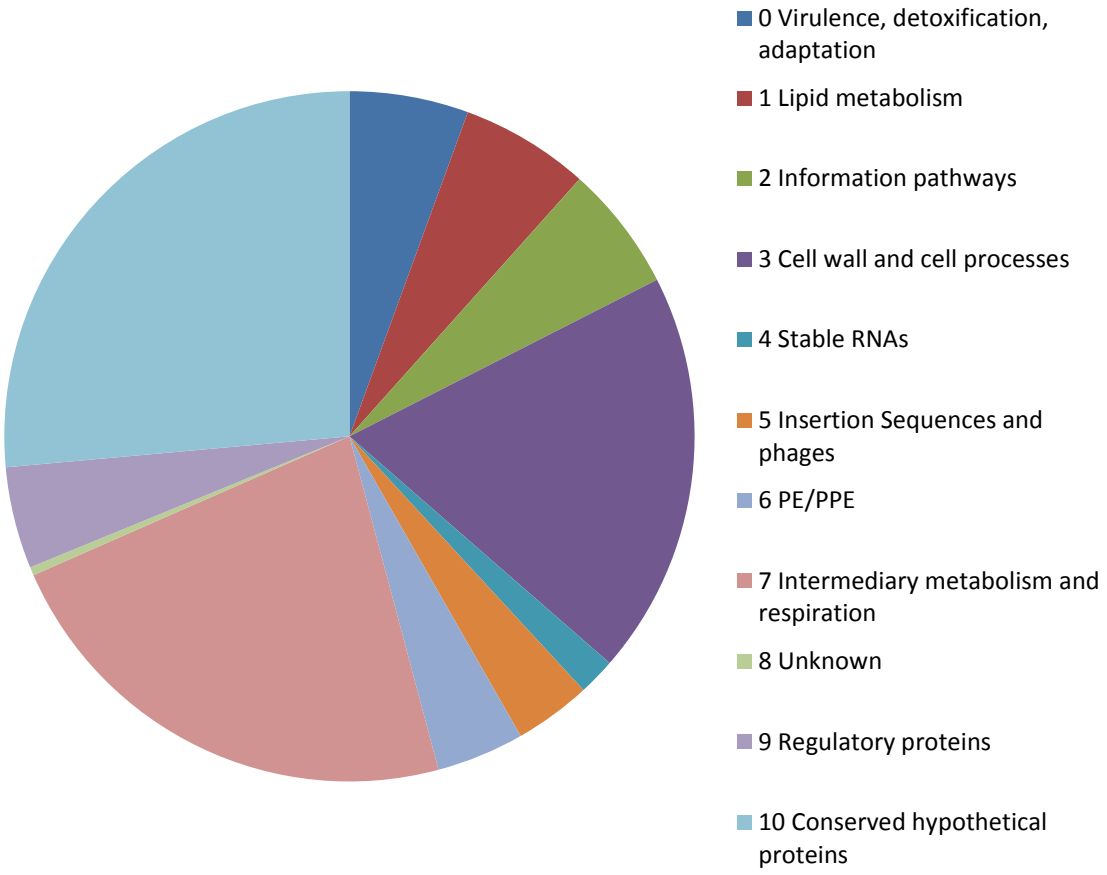


Figure 1.1: *Mtb* Functional Categories: The figure is a pie chart representation of each functional category as it relates to the entire *Mtb* genome. Please not that conserved hypothetical proteins in light blue encompasses the largest percentage of the genome followed by intermediary metabolism and respiration (pink) and cell wall and cell processes (purple). Stable RNAs (aqua) account for the smallest percentage of the genome.

Sigma Factors		Toxins- Antitoxins				Dos R		ESX-1
Rv0035	Rv2711	Rv0059	Rv1044	Rv2018	Rv3182	Rv2631	Rv3128c	Rv3875
Rv0043c	Rv2720	Rv0060	Rv1045	Rv2019	Rv3183	Rv2627c	Rv3129	Rv3876
Rv0129c	Rv2873	Rv0064	Rv1102c	Rv2021c	Rv3188	Rv2626c	Rv3130c	Rv3879c
Rv0169	Rv2874	Rv0065	Rv1103c	Rv2034	Rv3189	Rv0081	Rv3131	Rv3880c
Rv0182c	Rv2875	Rv0239	Rv1113	Rv2035	Rv3320c	Rv2032	Rv3132c	Rv3881c
Rv0244c	Rv2878c	Rv0240	Rv1114	Rv2063	Rv3321c	Rv1737c	Rv3133c	Rv3882c
Rv0251c	Rv2931	Rv0277c	Rv1241	Rv2103c	Rv3357	Rv1738	Rv3134c	Rv3873
Rv0350	Rv3221a	Rv0298	Rv1242	Rv2104c	Rv3358	Rv1736c		Rv3614c
Rv0384c	Rv3223c	Rv0299	Rv1246c	Rv2142c	Rv3384c	Rv2028c		Rv3615c
Rv0402c	Rv3246c	Rv0301	Rv1397c	Rv2142c	Rv3385c	Rv1813c		Rv3616c
Rv0444c	Rv3260c	Rv0549c	Rv1398c	Rv2202c	Rv3405c	Rv2630		Rv3849
Rv0445c	Rv3286c	Rv0550c	Rv1494	Rv2274c	Rv3408	Rv2625c		Rv3864
Rv0467	Rv3287c	Rv0595c	Rv1495	Rv2493	Rv3705c	Rv0569		Rv3865
Rv0490	Rv3301c	Rv0596c	Rv1545	Rv2494	Rv3749c	Rv0080		Rv3866
Rv0685	Rv3328c	Rv0598c	Rv1546	Rv2526	Rv3750c	Rv2003c		Rv3869
Rv0735	Rv3357	Rv0599c	Rv1560	Rv2527	Rv2018	Rv1996		Rv3870
Rv0736	Rv3358	Rv0608	Rv1561	Rv2530c	Rv3181c	Rv0079		Rv3871
Rv0981	Rv3414c	Rv0609	Rv1720c	Rv2545		Rv2031c		Rv3872
Rv0982	Rv3444c	Rv0617	Rv1721c	Rv2546		Rv0574c		Rv3874
Rv1049	Rv3445c	Rv0623	Rv1740	Rv2547		Rv2030c		Rv3877
Rv1145	Rv3478	Rv0624	Rv1741	Rv2548		Rv1997		Rv3878
Rv1189	Rv3715c	Rv0626	Rv1838c	Rv2547		Rv2629		Rv3883c
Rv1221	Rv3904c	Rv0656c	Rv1839c	Rv2548		Rv0570		Rv3884c
Rv1222	Rv3905c	Rv0657c	Rv1942c	Rv2550c		Rv0571c		
Rv1246c	Rv3911	Rv0659c	Rv1943c	Rv2596		Rv0572c		
Rv1353c	Rv3913	Rv0660c	Rv1952	Rv2601		Rv0573c		
Rv1471	Rv3914	Rv0661c	Rv1953	Rv2602		Rv1733c		
Rv1660		Rv0662c	Rv1955	Rv2653c		Rv1735c		
Rv1661		Rv0664	Rv1956	Rv2654c		Rv1812c		
Rv1884c		Rv0665	Rv1957	Rv2757c		Rv1998c		
Rv1908c		Rv0748	Rv1959c	Rv2758c		Rv2004c		
Rv1909c		Rv0749	Rv1960c	Rv2759c		Rv2005c		
Rv2031c		Rv0836c	Rv1962c	Rv2760c		Rv2006		
Rv2069		Rv0837c	Rv1963c	Rv2801c		Rv2007c		
Rv2245		Rv0909	Rv1982c	Rv2826c		Rv2029c		
Rv2416c		Rv0910	Rv1989c	Rv2827c		Rv2623		
Rv2504c		Rv0918	Rv1990c	Rv2829c		Rv2624c		
Rv2583c		Rv0919	Rv1991c	Rv2863		Rv2628		
Rv2703		Rv0959	Rv2009	Rv2872		Rv3126c		
Rv2710		Rv0960	Rv2010	Rv3180c		Rv3127		
			Rv2018	Rv3181c				

Table 1.2: Gene Lists for Sigma Factors, Toxin-Antitoxin, DosR and ESX-1 Regulon. The table lists the genes by Rv number in each gene category. These tables are later used to make heat maps for each regulon.

Enduring Hypoxic Response					Persisters		
Rv0031	Rv0726c	Rv1669	Rv2123	Rv2731	Rv0094c	Rv1707	Rv3183
Rv0048c	Rv0753c	Rv1733c	Rv2137c	Rv2744c	Rv0100	Rv1733c	Rv3188
Rv0084	Rv0754	Rv1744c	Rv2185c	Rv2745c	Rv0116c	Rv1802	Rv3189
Rv0089	Rv0757	Rv1755c	Rv2217	Rv2764c	Rv0140	Rv1955	Rv3206c
Rv0116c	Rv0763c	Rv1760	Rv2243	Rv2913c	Rv0142	Rv1956	Rv3222c
Rv0140	Rv0766c	Rv1766	Rv2299c	Rv2964	Rv0188	Rv1989c	Rv3223c
Rv0171	Rv0767c	Rv1806	Rv2324	Rv3007c	Rv0251c	Rv1990c	Rv3286c
Rv0186	Rv0791c	Rv1874	Rv2359	Rv3016	Rv0384c	Rv2011c	Rv3287c
Rv0188	Rv0826	Rv1875	Rv2374c	Rv3031	Rv0474	Rv2013	Rv3287c
Rv0196	Rv0827c	Rv1888c	Rv2389c	Rv3066	Rv0549c	Rv2021c	Rv3289c
Rv0209	Rv0834c	Rv1891	Rv2390c	Rv3071	Rv0550c	Rv2022c	Rv3290c
Rv0232	Rv0846c	Rv1893	Rv2412	Rv3161c	Rv0563	Rv2034	Rv3334
Rv0233	Rv0847	Rv1895	Rv2465c	Rv3174	Rv0607	Rv2035	Rv3370c
Rv0244c	Rv0872c	Rv1909c	Rv2497c	Rv3175	Rv0612	Rv2050	Rv3445c
Rv0250c	Rv0940c	Rv1926c	Rv2498c	Rv3176c	Rv0670	Rv2353c	Rv3515c
Rv0251c	Rv0967	Rv1928c	Rv2499c	Rv3180c	Rv0735	Rv2497c	Rv3546
Rv0268c	Rv0976c	Rv1951c	Rv2500c	Rv3182	Rv0736	Rv2517c	Rv3640c
Rv0324	Rv0986	Rv1955	Rv2504c	Rv3188	Rv0745	Rv2615c	Rv3659c
Rv0325	Rv0989c	Rv1956	Rv2517c	Rv3206c	Rv0748	Rv2617c	Rv3862c
Rv0327c	Rv0990c	Rv1957	Rv2526	Rv3223c	Rv0749	Rv2623	Rv3905c
Rv0328	Rv0991c	Rv1959c	Rv2527	Rv3269	Rv0753c	Rv2625c	
Rv0347	Rv1048c	Rv1960c	Rv2557	Rv3290c	Rv0791c	Rv2627c	
Rv0349	Rv1082	Rv1963c	Rv2558	Rv3334	Rv0826	Rv2641	
Rv0350	Rv1088	Rv1974	Rv2583c	Rv3343c	Rv0834c	Rv2643	
Rv0352	Rv1152	Rv1985c	Rv2617c	Rv3406	Rv0837c	Rv2650c	
Rv0384c	Rv1169c	Rv1989c	Rv2626c	Rv3418c	Rv0840c	Rv2651c	
Rv0388c	Rv1221	Rv1990c	Rv2627c	Rv1578c	Rv0846c	Rv2660c	
Rv0388c	Rv1243c	Rv1994c	Rv2628	Rv3480c	Rv0847	Rv2666	
Rv0474	Rv1255c	Rv2011c	Rv2643	Rv3503c	Rv0849	Rv2667	
Rv0494	Rv1256c	Rv2012	Rv2653c	Rv3508	Rv0918	Rv2694c	
Rv0520	Rv1284	Rv2020c	Rv2657c	Rv3515c	Rv0919	Rv2713	
Rv0551c	Rv1375	Rv2021c	Rv2658c	Rv3527	Rv0974c	Rv2745c	
Rv0563	Rv1403c	Rv2022c	Rv2660c	Rv3530c	Rv0975c	Rv2780	
Rv0575c	Rv1405c	Rv2025c	Rv2664	Rv3531c	Rv0989c	Rv3017c	
Rv0614	Rv1470	Rv2034	Rv2687c	Rv3533c	Rv1152	Rv3062	
Rv0653c	Rv1471	Rv2035	Rv2688c	Rv3534c	Rv1221	Rv3098c	
Rv0654	Rv1472	Rv2036	Rv2693c	Rv3536c	Rv1378c	Rv3108	
Rv0670	Rv1623c	Rv2050	Rv2694c	Rv3537	Rv1452c	Rv3176c	
Rv0687	Rv1628c	Rv2099c	Rv2699c	Rv3545c	Rv1706c	Rv3180c	
Rv3848	Rv1652	Rv2122c	Rv2700	Rv3571		Rv3181c	
Rv3864	Rv3823c	Rv3681c	Rv3597c	Rv3572			
Rv3913	Rv3837c	Rv3819	Rv3628	Rv3574			
Rv3862c							

Table 1.3: Gene lists for Enduring Hypoxic Response and Persisters. The table lists the genes by Rv number in each gene category. These tables are later used to make heat maps for each regulon.

1.1.6.1 Sigma factors

The success of a pathogen, especially *Mtb*, is dependent upon its ability to survive and persistent in a hostile host environment. One such way *Mtb* survives and persists is through the modulation of gene expression. In bacteria, gene expression is regulated primarily at the level of transcription initiation mediated by RNA polymerase (RNAP) holoenzyme. RNAP is comprised of a five-subunit core RNAP unit and a dissociable subunit, sigma (σ). The dissociation of specific sigma factors causes specific cellular responses through the redirection of transcription at specific regulons[35-37]. In total *Mtb* codes 13 σ factors, with σ^A as the main factor.

The principal σ factor, σ^A, is needed for growth of both *Mtb* and *M.smegmatis*[38-40]. This factor is maintained at a constant level and regulates housekeeping genes. Its expression may be induced in response to stress, but there is increasing evidence that it also regulates expression of virulence genes [13,40-42]. Due to the aforementioned reasons, σ^A is used as a housekeeping gene in the study outlined here. Expected transcript copies are known within different *Mtb* strains and conditions; therefore, it can also be used as a baseline to calculate gene expression copy baseline numbers. This technique will be outlined in the NanoString section of this dissertation.

The next known factor is σ^B, which is very similar to σ^A. Unlike σ^A, σ^B is not required for growth in neither *Mtb* nor *M. smegmatis*[35]. The regulons of σ^A and σ^B do not overlap except for a few genes [42,43]. Interestingly, some of these genes can are members of the PE_PGRS family. Some of the genes in this study that have proven the most interesting in this study are in that subfamily, thus it is an important aside.

Another way σ^B is different than its counterpart σ^A is that its expression does not remain as constant. Expression levels of σ^B have been shown to increase in the following conditions: treatment with hydrogen peroxide, heat shock and low aeration[38,41]. If you inactivate this gene, *Mtb* survival is not affected in human, mouse, or guinea pig macrophages[35]. Conversely, upon deletion, there is higher sensitivity to the following: heat shock, exposure to vancomycin, oxidative stress and hypoxic conditions[43,44].

The next factor, σ^C, is interesting because it is absent in nonpathogenic, but present in all pathogenic mycobacterial species[45,46]. It is the most abundant σ transcript, but is associated with σ^A and σ^B. Additionally, it has been shown that it is an important regulator of virulence. For example, σ^C modulates the expression of *hspX* and *mtrAr*[47]. Another lesser known factor is σ^D. This factor has been shown to be expressed in both the stationary and exponential phase of *Mtb* growth, but declines in a hypoxic environment[48,49]. In addition, σ^D, regulates specific genes such as Rv1815. It is known that this factor plays a role in virulence, but more research needs to be conducted to completely elucidate the associated mechanisms.

One of the important stress response regulators is σ^E[39,50,51]. This factor is up-regulated in macrophages and it is directly regulated by the two-component system MprAB. It should be noted that MprAB also regulates σ^B. If σ^E is disrupted, then there is delayed lethality. This factor regulates numerous genes, most of which are involved in cell wall integrity and lipid metabolism[50]. When mice are infected with a mutant in σE, there granuloma structure is altered; consequently, it can be postulated that other genes regulated by σE could be involved in the pro-inflammatory response[50] .

Another lesser known σ factor is σ^G, which is known to be up-regulated in human macrophages[52,53]. If this gene is deleted, there is impaired survival in macrophage [52]. More studies need to be conducted to elucidate the role of σ^G in *Mtb* pathogenesis.

A key sigma factor, and also the central theme of Dr. Deepak Kaushal's research, is the factor σ^H. This factor is a key regulator of responses to a variety of stresses such as oxidative, cell wall damage and heat stress[39,54-56] . When this gene is deleted, the mouse mutant fails to develop granulomatous pathology[56]. In NHP models, it has also been shown that σ^H is crucial for modulating immune response[54,56,57] . Also, when deleted in NHPs, acute tuberculosis is not induced in an acute TB model. Recently, aerosol infection of NHPs with a σ^H deficient mutant, resulted in more inducible bronchus-associated lymphoid tissue, which is associated with increased protection against *Mtb*[8-10]. Animals were vaccinated with this mutant to test the efficacy of this theory as a vaccine candidate. This data is not yet published, but it suggests that vaccination with *Mtb*:Δ-*sig*H induces a strong T cell response including both central and effector memory responses. The T cells migrating to the lung expressed T-helper 1 polarity as shown through the increased expression of CCR5 and CXCR3 and decreased expression of CXCR4. Additionally, the vaccinated animals were more clinically normal and immunologically protected against *Mtb*.

Other sigma factors include σ^I, σ^J, σ^K, σ^L and σ^M. It has been found that σ^I expression is regulated by σ^J[58]. Both are expressed in the stationary phase of growth in culture and transcription continues post rifampin[41]. Sigma L has been found to be involved in lipid pathways including metabolism, transport and biosynthesis[45,59]. Lastly,

σ^M has been linked to the ESX family of proteins (discussed in ESX section) and may play a role in the long term adaptation to host specific environment[44]. Overall, σ factors are integral to the pathogenesis of *Mtb*.

1.1.6.2 Toxins- Antitoxins

Toxins- antitoxin (TA) complexes are specialized operons present in bacteria. These systems usually contain a protein toxin and a protein or non-coding RNA antitoxin[60]. When cellular conditions lead to a decrease in the amount of antitoxin, freed toxin is able to act on its intracellular target and have a variety of functions depending on the specific toxin. The cellular conditions that can lead to the dissociation of the complex can range from environmental stress or plasmid loss to bacteriophage infection. Additionally, the processes the antitoxin can target is quite diverse, ranging from DNA replication, cell wall synthesis, translation, cell division to growth inhibition and cell death. Growth inhibition is usually reversible, but is not always.

When compared to other bacteria, *Mtb* genome comprises an uncharacteristically high number of TA complexes when compared to other mycobacteria. It is proposed that these complexes are particularly important with regards to *Mtb* 's persistence; consequently, contributing to overall disease pathogenesis[61-63]. Additionally, antibiotic induced persisters have been associated with these complexes[64].

In *Mtb*, there are a total of 79 TA systems belonging to a variety of TA complex families. In total, fifty systems are attributed to the virulence associated protein BC

(VapBC) family, ten to the MazEF family, one to the YefM/YoeB family, two to the RElBE family, two to the HigBA family, two to the ParDE family, one to the tripartite type II Toxin-Antitoxin-Chaperone system, three to type IV systems and eight to uncharacterized TA systems[62,63].

The VapBC family accounts for most of the TA complexes in the *Mtb* genome. Like most of the TA complexes, it was first discovered in *Salmonella dublin*[65] . They are defined by a toxin VapC within a PIN domain[66]. Most of these exhibit ribonuclease, catalyze the degradation of RNA into smaller components, activity *in vitro*[67-70]. Conversely, some TA complexes are induced by stable RNA binding and not degradation such as VapC4[71]. Overall, VapC toxins target RNA by distinct mechanisms depending on the TA complex. Additionally, different TA complexes in this category are induced in different conditions. For example, VapBC15 is induced in hypoxic conditions. Also, VapBC3 has been shown to be up-regulated in drug-tolerant bacteria, thus this system may play a role in persistence[64] .

The second most prevalent family of TA systems present in *Mtb* is the MazEF family. This family has most extensively been studied in *E.coli*[72-74] . The mechanism of action of these toxins is largely to cleave mRNA at specific sites. In *Mtb*, MazF9 has been found to cleave at UAC sequences, MazF3 at U rich regions, MazF4 at UCGCU sequences and MazF6 at UUCCU sequences[75-78] . Because the toxins are responsible for the cleavage of mRNA, these toxins could trigger a much larger set of responses ranging from global translation inhibition to specific regulations. In addition to targeting mRNA, MazF toxins have been shown to also target rRNA. In *Mtb*, MazF6 acts on rRNA by

cleaving 23S rRNA; consequently, this toxin causes global inhibition of protein synthesis[79]. Toxins can be neutralized by non-cognate antitoxins. MazF9, for example, has been shown to be neutralized by non-cognate antitoxins MazE6, VapB27, VapB40[75]. Not only do TA systems work within families as complexes, they also are neutralized by members of other families. In *E.coli*, MazF expression leads to a suspended condition where cell growth is arrested but cells retain the capacity for full metabolic activity, a quasi-dormant state[72,74] .

TA complexes belonging to the RelBE, YefM/YoeB, HigBA, tripartite TAC and ParDA families are also found with the *Mtb* genome. These TA systems have been shown to be functional systems in *Mtb* [80]. It has been found that RelBE2 is among one of the ten most induced TA systems in *Mtb* drug-tolerant persisters[64]. Many of these toxins have been shown to be up-regulated in response to antibiotic treatment such as *relE1*, *relE2* and *yoeB*[81]. This is yet another example in how TA complexes are perhaps very important in *Mtb* persistence. Overall, TA systems are intricate, multi-functional systems that are important in *Mtb* pathogenesis.

1.1.6.3 DosR

When initially exposed to *Mtb*, most individuals who are infected present with latent TB disease. In this latent state, the bacilli enter a state of quasi-dormancy characterized by bacterial persistence. The TB granuloma itself is hypoxic, especially in the caseous center. In order to enter a semi-dormant state, survive and persistent *Mtb* possesses regulons that respond to different environmental conditions. One such way that *Mtb* responds to hypoxia is via the DosR regulon which is activated by sensor

kinases DosS and DosT[82].

Originally, this regulon was noted the DevR/S/T regulon. Later, the regulon adapted the name DosR named as the "dormancy survival regulator." Currently, this is the more accepted name. It has been observed that DosR is responsible for the dormancy stage in *Mtb* [83-86]. In addition, mice are exposed to a mutant lacking this regulon to low oxygen tension, the expression of more than 100 genes are induced[87]. Of these more than 100 genes that are induced, 48 of them are under control of the DosR regulon[86,88,89]. A list of these genes can be seen in Table 1.2. DosS and DosT autophosphorylate and transfer the associated phosphate group to DosR and are needed for the induction of this regulon. DosS is only expressed during hypoxia, but DosT is expressed throughout. DosT only becomes active when it is no longer bound to oxygen, thus it becomes active during hypoxia. Interestingly, the Beijing strain of *Mtb* normally overexpresses this regulon[90]. A precise explanation of this overexpression has yet to be identified.

Although it is well established that this regulon plays a role in oxygen tension and redox state, its involvement in *Mtb* virulence is still unclear. This can be explained by the models that have been used to study *Mtb* pathogenesis and granuloma formation. A common model in *Mtb* research is the mouse model. The problem with studying this regulon in the mouse model is that mice lesions lack hypoxia. This could explain why DosR knockout mutants in C57BL/6 mice did not show a change in DosR induction[91]. This mutant did have less pathology, but DosR induction remained unchanged[91]. Conversely, in guinea pig related studies with a devR mutant, there was a

significant decrease in gross lesions in the lung, liver and spleen and a three log lower bacterial burden[92] (378). Unlike C57BL/6 mice, guinea pig lesions do generate hypoxic lesions[92]. This is more similar to a human lesion due to the fact that human lesions are also hypoxic. The only mouse that can generate hypoxic lesions are Kramnik mice[13,93-96].

A recent publication by Mehra et al assessed the role of DosR in a primate model. This study is of particular importance because NHP granulomas are the most similar to human granulomas for the previously mentioned reasons (see animal model section). Overall the study had six significant findings. First, TB lung lesions in wild type infected NHPs were PIMO positive; therefore, this study proved that NHP lesions are hypoxic. In contrast, any of the mutants lacking DosR had no evidence of hypoxia. Secondly, via both micro-dissection (the mesodissection technique developed by the author) as well as *in-situ* hybridization techniques, DosR was detected in NHP lesions. This meant that the bacilli in these hypoxic lesions do express DosR. Next BAL was compared in infected NHPs. It was found that mutants in DosR, DosS and DosT are not compromised for initial infection in this model. They also found that these mutants are required for the long-term persistence. The study also examined T cell responses and found that the regulon may regulate the expression of bacterial antigens.

The previously mentioned study examining DosR in NHP is interesting in a variety of ways. It shows that the NHP model is hypoxic and that the DosR regulon is expressed, thus the NHP model is ideal for the objectives of this dissertation. Conversely, the aforementioned DosR NHP study does not show exactly where in the granuloma this expression occurs. Although data generated in initial experiments in the study outlined

in this dissertation was used in the aforementioned paper, it only uses overall granuloma data. It does not assess the different parts of the granuloma. Understanding what is occurring in individual granuloma sections is critical to the overall understanding of *Mtb*, even/especially when assessing regulons.

1.1.6.4 Enduring Hypoxic Response

It has been accepted in TB literature that there is a possible link between hypoxic microenvironments and latent TB. Most of the work associated with this link pertains to the DosR regulon. In 2008, David Sherman and colleges published work pertaining to an enduring hypoxic response (EHR) after further studying the effects of hypoxia on CR57BL/6, DBA/23 and C3He/FeJ mice[97].

In the aforementioned experiments, the Wayne model of hypoxia was used to generate microarray data from oxygen starved cultures. What they found was that DosR induction was transient, with nearly fifty percent of the induced genes, i.e. roughly 25 genes, returning to baseline after 24 hours. They believe that DosR is only an initial response and is less important than initially thought. They believe that DosR induction helps prime *Mtb* for long term bacteriostasis and once complete, no longer requires regulon expression[97]. This theory could also suggest that DosR is an initial response regulon that potentially sets the stage for other regulon induction.

To expand upon this belief that the DosR regulon response is transient, they did microarray analysis of *Mtb* RNA extracted from culture at 24 hours, four and seven days

post hypoxia induction to look for other genes and mechanisms that are used by *Mtb* to enter and maintain homeostasis in a hypoxic environment. They found a core of 230 genes, EHR, that are induced throughout there experiment. This gene list can be found in Table 1.3. These genes are also induced in both wild type mice as well as DosR mutants, thus they are independent of the DosR regulon. This gene list largely overlaps with both the Wayne model of hypoxia as well as nutrient deprivation models. In addition, the genes induced in the EHR are transcriptional regulator heavy with 30 transcriptional regulators being expressed and therefore could include the genes that control bacteriostasis programing. It is the belief of these scientists that this is a better representation of the regulatory factors and machinery *Mtb* exploits in a hypoxic environment for long term bacteriostasis[97].

Although the well conducted study mentioned above raises some interesting questions, it presents many more. The study was conducted utilizing mouse models, which are less similar to human disease than other models. It would be interesting if a NHP model was utilized in this study. This dissertation discusses using a novel technique known as mesodissection to micro-dissect granulomas from both active and latent TB disease states as well as from various parts of the granuloma. In turn, the data generated can be used to assess various regulons. I will later discuss which regulons are induced in what state and within different granuloma sections. Due to the fact that our latent NHP samples are at a later time point, they would not represent initial time points. Since we already know that the DosR regulon is indeed induced in our latent samples, it is possible that this regulon is important in the hypoxic response for long

term bacteriostasis. These results will be discussed in greater depth in subsequent sections. In addition, we will assess the EHR core genes in our samples and draw comparisons. This should give us better clues as to what genes are really required for bacteriostasis.

1.1.6.5 Persisters

A critical issue in TB control is the requirement of prolonged therapeutic regimes that are months in duration. This makes patient compliance both a problem and a challenge. When patient compliance is poor, drug resistance becomes an issue which in turn has led to increased cases of both multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB. This prolonged therapeutic regime is primarily due to these persisters, bacteria that survive the cidal action of antibiotics, i.e. killing the bacteria as opposed to preventing growth. To effectively treat TB, it is imperative to prevent persistence. Due to the increased incidence of MDR and XDR, the concept of identifying and understanding persisters is becoming increasingly important.

The concept of bacterial persisters is not new. The first evidence of these "persisters" occurred in 1942 when it was discovered that penicillin only killed 99 percent of a streptococcal culture[98]. This remaining one percent of the bacterial population was first given the nomenclature "persisters" in 1944[98]. The formation of persisters can be seen as a way bacteria adapt to adverse stress conditions[99]. As previously described, during infection, tubercle bacilli reside in different

microenvironments which constitute the basis of producing heterogeneous bacterial populations. This includes bacteria that are nonreplicating persisters as well as active bacteria[100]. Some have gone as far as to suggest this concept on the granuloma level with "hot" versus "cold" granulomas[101]. It can be postulated that "hot" granulomas, contain more actively replicating bacteria and therefore less persister development. These "cold" granulomas could be the site of more persisters as they contain the less active bacteria.

The formation of persisters has been studied extensively in various *Mtb* stress models[102-107]. Persister formation is assessed through antibiotic tolerance assays. Pathaway analysis to explain the mechanisms of persister development is underway. Table 1.3 contains a gene list of persisters as defined by Zhang et al[98]. Further exploration of bacterial persister development is necessary to develop strategies that eradicate them, for improved TB treatment.

1.1.6.7 ESX-1 Secretion System

Functionally, bacteria have developed mechanisms to secrete proteins that have evolved for specific functions. One such system with the *Mtb* genome is the ESX-1 secretion system. This system is named after its 6-kda early secreted antigenic target (ESAT-6) and is a type VII secretion system[82]. ESAT-6 is an early secretory antigenic target and is essential for full virulence of *Mtb* [108]. Also encoded in this region is CFP10, a 10-kDa culture filtrate protein. A list of genes in this region is seen in Table 1.2.

ESAT-6 and CF10 genes share many common characteristics. Both are located in

a segment of the *Mtb* genome known as the Region of Difference (RD1)[109]. They are both small proteins, appear as heterodimers in culture supernatants, have high self-affinity, are characterized by central WXG signatures and have both been described as dominant antigens recognized by T-cells in infection[109,110]. Part of this system includes the RD1 region, a region that is absent in the BCG vaccine[111].

Mtb uses this secretion system to deliver virulence proteins during the infection of host cells[112]. It is believed that EccB, EccCa and EccDd are the actual secretion apparatus. EspB is another protein that is secreted through the system and it is believed that cleavage of this protein could have a regulatory function In the system[113]. Other components of this system include EspA, B, C and R and all substrates of this system are mutually dependent[114,115]. The mode of action of this system in eukaryotic cells is not well understood, but observations support that the proteins are associated with cell and membrane lysis[116]. If ESAT-6 is deleted in a mutant, *Mtb* is capable of multiplying within THP-1 macrophage cell lines but cannot spread to uninfected macrophages[111]. This means this region is essential for virulence. ESAT6 has also been shown to destabilize and even lyse liposomes. CFP10 is different in that it has not been found to have the aforementioned effects of liposomes. Many studies have suggested that ESAT-6 is the secreted effector molecule. It has also been reported that ESAT6 and CFP10 facilitate the translocation of *Mtb* into the host cell cytoplasm from the phagosome at later stages of infection[117]. This is not seen in BCG vaccine or ESX-1 mutant; therefore, this secretion system might allow *Mtb* to escape the phagosomal compartment or release ESAT6 proteins into the cytoplasm[117].

Upon deletion of this region, or specifically the RD1 region, *Mtb* almost completely loses its virulence. It is present in nonpathogenic mycobacteria. Interestingly, it has been shown to play a role in PE and PPE proteins, whose functions are still predominately unknown.

1.2 Microdissection Approaches in Tuberculosis Research

1.2.1 Abstract

Mycobacterium tuberculosis continues to be a globally significant pathogen and results in a spectrum of disease states including active, latent and reactivated infection. Pathologically, granuloma formation is the characteristic lesion and can offer insight into host-pathogen interactions in these distinct infective states. Traditionally, microdissection has provided a way to isolate and consequently investigate specific tissue sections. This article serves to review various microdissection techniques available including: manual microdissection, laser capture microdissection and mesodissection. It also highlights corresponding advancements within the TB field and proposes future applications.

1.2.2 Introduction

Tuberculosis (TB) remains one of the most important infectious diseases of humanity, resulting in around 1.5 million deaths every year on a global basis [(118)]. The severity of the situation can be understood from the fact that the number of TB disease

cases reported last year was the highest ever. TB is caused by productive pulmonary infection with the gram-positive *Mycobacterium tuberculosis* (*Mtb*). TB infection is clearly transmitted via the aerosol route [(118)]. Surprisingly, a majority of individuals infected with *Mtb* control the infection in an asymptomatic condition known as latent TB infection (LTBI). TB disease can result from either an acute early failure to control *Mtb* in the LTBI state, or due to the immune failure following long-term LTBI. The precise mechanism(s) by which the immune control of LTBI is lost, leading to TB, are not well understood, although the understanding of these issues is rapidly growing.

A better insight into this process requires the study of *Mtb* biology in highly reproducible and faithful models of human TB infection. Nonhuman primates, such as rhesus and cynomolgus macaques, are generally considered excellent models of human TB due to their ability to display the entire breadth of human pulmonary pathology and clinical infection [(25)]. Furthermore, human LTBI reactivation is largely driven by the depletion of $CD4^+$ T cell function, such as HIV co-infection, and this can be easily recapitulated in primates with *Mtb* /Simian Immunodeficiency Virus (SIV) co-infection. However, the NHP resource is expensive and its application has generally been restricted to studies involving vaccine and drug evaluations. There is however, a great potential to study the fundamental bacterial as well as host drivers of latency and reactivation in this model. This is particularly true from the perspective of the granuloma.

The granuloma is a hallmark of TB, representing the pathological site where the fate of an initial infection is determined [(4)]. Thus, it has been proposed that “protective

granulomas" help contain bacterial replication effectively. Humans exhibit a breadth of lung lesion pathologies, and such a range is recapitulated in nonhuman primates [25]. As a result, NHPs can be leveraged to study the fundamental physiology of *Mtb* during the different infective stages. One such approach involves studying the global transcriptome of *Mtb* within the various compartments of these nonhuman primate granulomas using DNA microarray or RNAseq methods. One challenge to this approach however is the fact that the pathogen is often present in extremely low numbers, and further, most bacilli are expected to be in the non-replicative mode. Additionally, the granuloma is compartmental, and it has been postulated that the tubercle bacilli present in different regions of the granuloma may belong to different metabolic phases. Thus, while bacilli in the central, acellular core of the granuloma are likely to be in the NRP phase, those in the peripheral phagocytes may exhibit either a high rate of replication or the signatures associated with the acid phase. De-convoluting such a challenge requires unconventional solutions. For example, laser capture microdissection (LCM) has been extensively used in cancer and infectious disease research, to isolate subsections of tissues of downstream molecular analyses. This manuscript serves to review the application of the various microdissection techniques to further our understanding of both the host and the pathogen biology in the context of TB research. Finally, we will focus on mesodissection, a novel dissection approach and its possible implications in this ever-expanding field.

1.2.3 The global impact of tuberculosis

Mycobacterium tuberculosis remains a bacterium of significant importance with

respect to global health. In 2010 alone, 8.8 million people became clinically ill with TB while an estimated 1.4 million succumbed to active TB [118]. Although approximately one third of the world is infected with TB, only 5-10% will develop clinical manifestations of active TB within 2 years post exposure [5]. The remaining infected individuals mount an immune response where the host essentially controls the infection without completely eradicating the bacilli. This immune response is contained within the formation of a granuloma in the infected individual's lungs [4]. This latent (also referred to as persistent or dormant) state of infection potentially provides the largest reservoir for furthering *Mtb* infection to other individuals. Either spontaneous or immunodeficiency mediated reactivation can result in a resurgence in the infection in these latent individuals, they can spread the infection via aerosol. In a lifetime, the risk of a latent infection reactivation is 10% [5].

Once inhaled, the bacilli travel to the lungs and enter alveoli, which in turn are phagocytized by alveolar macrophages and resident dendritic cells. The corresponding dendritic cells are now activated and travel from resident airways to mediastinal lymph nodes. A T cell response is initiated, thus macrophages and lymphocytes migrate to the primary site of infection and form a granuloma [4]. Granuloma formation results from the host's attempt to contain the pathogen within a contained region of space, but it has also been proposed that *Mtb* has evolved to allow its persistence in granulomatous lesions [7]. Understanding the pathogenesis of TB associated lung lesions as well as the associated gene expression is critical to the overall understanding of TB.

Grossly, granuloma structure in humans and nonhuman primates do not

resemble the traditionally studied murine granuloma structure. In mice, lung granulomas contain T cells and macrophages as well as clusters of B cells [7,10]. Murine granulomas only become necrotic with high bacterial numbers, where as human and nonhuman primate granulomas are often necrotic. Human and nonhuman primate granulomas are more organized and evident in morphologically distinct forms. The first form, or solid form, contains lymphocytes and macrophages without necrosis. The second, caseous form, contains caseous necrosis in the center of the granuloma surrounded by macrophages and lymphocytes with or without fibrosis. The third are calcified/mineralized granulomas. Cavitary lesions are associated with high bacterial numbers, but are not seen in murine models. The same host can exhibit different forms of the granulomas concurrently. Nonhuman primates are ideal models for human TB studies because of the similarity in lesion pathology. In addition, at a low infection dose, macaques can present with either active or latent tuberculosis ([8,10,16,17,24,57,119-121]).

There is clear evidence that the different clinical phases of the infection i.e. active TB or latency, are driven by the evolution of the granuloma [122]. Further, evidence also suggests that the physiology of the pathogen undergoes distinct phases during different stages of infection. Thus, molecular cues may predict the different clinical phases of infection. For example, *Mtb* is predicted to undergo rapid replication, moderate replication during acid phase within macrophages and become non-replicatively persistent during long-term granulomatous residence [123].

The variety of these histopathological lesions is an extremely important concept. Caseous, necrotic lesions provide a highly oxygen-depleted (hypoxic) environment.

Compared to growth in normoxic environment, this shift likely has a profound impact on *Mtb* metabolism and physiology [124], which in turn, likely transcends into differences in infectivity, virulence, pathogenesis and transmissibility. Human and NHP granulomas are likely to generate hypoxic stress on *Mtb*, unlike murine granulomas. Thus, from the standpoint of research into *Mtb* -host interactions, different types of granulomas can serve as markers for bacterial physiology, metabolic state and thus potentially virulence. For example, it has been shown in rhesus macaques that early (acute phase) lesions exhibit high levels of Th-1 type immune response expression while late (chronic phase) lesions exhibit only Th-2 type immune response, in a phenomenon termed by us as transcriptional reprogramming [16]. Our NHP model thus provides a rich resource from which the physiological state of *Mtb* can be assessed in different environments. For example, *Mtb* from the caseous center of necrotic granulomas can be expected to have turned on the hypoxia response network. However, the specifics or the dynamics of this response are not understood. The duration for which this response can be maintained and what bacterial factors assist in this process, is largely unknown. Also the effects of both the immune response as well as antibiotic-treatment on nonreplicative persistent bacilli within the hypoxia-zone of the classical granulomas are not completely understood. Finally, the temporal as well as the kinetic impact of HIV co -infection on the metabolism and physiology of the granuloma-contained tubercle bacilli is also not well understood? Moreover, are the bacilli in the caseum physiologically different from those in the fibrous rims, where bacilli surely don't experience the same level of hypoxia, but may in turn experience greater acid and oxidative stress? These are all valid

questions that this model has the potential to allow further exploration.

Granuloma formation is a hallmark of TB infection as well as a key principle in the understanding of TB pathogenesis as a whole. Evaluation of mycobacterial transcriptomics in granulomatous tissue is likely to further the understanding of the mechanisms involved in their formation and maintenance as well as those genes that are expressed in each state of the infection [11]. Accurate dissection of granulomas is essential to this evaluation. Traditionally, microdissection techniques have been employed to precisely isolate tissue from areas of interest. From this dissected sample, DNA, RNA, and protein can be extracted and evaluated. Microdissection can present a variety of challenges. This article serves to provide a review of microdissection techniques including the various strengths and weaknesses presented in each technique. In addition, it serves to highlight the use of a new microdissection approach known as mesodissection in successful RNA isolation from lung granulomas in *Mtb* infected rhesus macaques.

1.2.4 Microdissection- a historical perspective

With the current advancements in molecular biology, there is a growing need for efficient and cost effective ways to procure specific cell populations. Traditionally, DNA, RNA, and protein have been extracted from tissue in a process known as microdissection. Currently, the two most common techniques employed are manual microdissection and laser capture microdissection (LCM). As the field continues to progress, there is an increasing demand for new techniques that overcome the pitfalls

of the aforementioned methods. Another technique known as mesodissection offers a new approach to this rapidly expanding field.

1.2.5 Manual Microdissection

The simplest and least expensive form of microdissection is known as manual microdissection. There are various ways to perform this technique from gross dissection block trimming of histological sections to targeted scrapping of a desired area of interest [(125)]. A small gauged needle, pointed surgical blade, or specialized oscillating needle can be used to dissect the area of interest [(126)]. The technique requires the investigator to often simultaneously use a microscope, thus the microdissecting instrument that is being used (i.e. scapel blade, etc), needs to be easily held. It has been reported that tissue compartments as small as 1 mm^2 can be dissected [(127)]. This technique is best suited for areas where there is a distinct separation between the tissue section of interest and the surrounding tissue sections [(128)] as well as areas of interest that are large in size and account for a large anatomic region. Overall this technique is inexpensive and simple, but is not well suited for the isolation of specific cells types or small sections of tissue.

1.2.6 Laser Capture Microscopy

LCM is the most common microdissection technique used today. This technique was developed to overcome some of the limitations of manual microdissection. Since

first described in 1996, the technique allows for the isolation of pure cell populations from heterogeneous tissue [129,130]. The six basic components of the system are as follows: infrared laser, laser control unit, inverted microscope, microscope stage control, digital camera, and a monitor [126]. Different laser capture systems use different methods to separate the area of interest from the overall tissue section. For example, in the Artcurus system, a dehydrated tissue section is overlaid with a thermoplastic membrane that is then focally melted by a laser [128, 126]. In other systems, tissue enters the tube via gravity post microdissection. There are also catapulting systems where the laser energy catapults the cells out of the section of tissue [131]. These various other approaches have been called laser microbeam microdissection and laser-pressure catapulting [131], but will be collectively discussed as LCM for the purpose of this article.

In the TB field, LCM has been instrumental in furthering the understanding of TB pathogenesis and immunological interactions. Examples of studies where LCM was used within TB research are listed in the table below (Table 1.4). These advances have been primarily limited to host responses, likely due to the greater abundance of host RNA within granulomas than that of the infectious agent. These findings have improved the understanding of cytokine responses, macrophage cellular responses, and diagnostic approaches. Although these advances have improved the understanding of host responses, more pathogen-targeted information is needed to further investigate and explain host-pathogen interactions and therefore disease pathogenesis.

LCM can effectively isolate specific cell populations from various cell types. LCM has been effectively used for RNA, DNA, and protein isolation, but is not without

limitations. Regardless of the system that is used, LCM is a more expensive process than manual dissection. Secondly, the process can be time consuming and labor intensive. Thirdly, RNA by nature is unstable; therefore, the procurement of high quality RNA obtained from LCM samples can prove quite difficult [128]. Since LCM still has limitations, new microdissection approaches are still needed to expand this rapidly growing field.

1.2.7 Mesodissection

In 2011, a new microdissection approach was introduced to overcome the disadvantages of previous microdissection techniques [132]. Deemed mesodissection, this technique employs a consumable mill bit to dispense a buffer recovery solution, cut tissue, and aspirate the cut tissue fragments [132]. The machine contains a digital microscope with the ability to direct the dissection as well as software for the documentation of each step. Initially, a representative hematoxylin and eosin (H & E) stained slide is loaded onto the instrument and used to create a reference image. An unstained slide of the same section is then aligned with the reference image, annotated, and dissected. A report is generated that depicts the original H&E image, unstained slide image before dissection, and unstained slide image post dissection. The sample generated can then be aspirated into a collection tube and used for desired downstream applications.

Year	Approach	Advancement/Significance	Reference
2003	Analyzed inflammatory response genes in mice. Discovered the downregulation of specific immunological gene expression at the end of bacterial exponential growth.	Developed a system using LCM and molecular beacon based real-time PCR to assess host gene expression in FFPE mice granulomas.	[133]
2004	Used LCM to microdissect granulomas from suspected TB patients.	The PCR method as a rapid, sensitive, and specific method for TB diagnosis, but culture is still the gold standard.	[134]
2007, 2008	Used LCM to microdissect granulomas from guinea pigs to assess cytokine milieu and cytokine profiles.	Found varying cytokine profiles depending on vaccination status.	[135,136]
2010	Used LCM to microdissect granulomas from mice to assess the role of Secondary Lymphoid Organs (SLO) in T-cell development in TB immune response.	In the absence of SLO, protective immune responses can be generated. T-cells also function locally in the lungs to defend the host.	[137]

Table 1.4: Microdissection in TB Research. The table above illustrates key studies where microdissection was used in the TB field.

There are a few striking advantages to this new system. Unlike manual microdissection, this technique allows for easy documentation of each step in the dissection process. The software provided generates a report that clearly depicts the actual region dissected with respect to an H&E reference slide. The reference slide does not need to be H&E stain based, but could theoretically use any desired stain that best appropriates the goals of the particular experiment. The technique also allows the investigator the freedom to choose the best tissue collection buffer for each specific experiment. Additionally, it is the authors' experience that the system can be used on slides generated from formalin fixed paraffin embedded tissue blocks (Hudock). The archives of these blocks exist at most institutions and hospitals, thus the technique opens up untapped tissue sources for further investigation without the need of additional expensive experiments. When compared to LCM, this approach is more time efficient, user friendly, and cost efficient. Although operator training is necessary, the authors believe that the most challenging part in the dissection process is aligning the reference image with the unstained dissection slide. Once mastered, the dissection process is very user friendly. Although there are many advantages to this system, there are also two primary limitations. The system is very effective in extracting multicellular areas of interest, but not as effective at extracting single cellular areas. Secondly, the digital image generated by the microscope included is not as clear as other digital microscope images.

1.2.8 Current Applications/ Future Directions

The innovative and novel mesodissection approach described by us will be particularly useful to the study of granulomatous diseases such as TB. Here, *Mtb* infection results in a pathological lesion – the granuloma - shapes the interactions between the host and the pathogen, ultimately determines whether the infection is contained or progresses. Thus, it is potentially conceivable that the outcome of the infection is different within granulomas in the lungs of hosts with different immune susceptibilities. Furthermore, it can be argued that granulomas within the lungs of the very same host may develop different outcomes based on the local microenvironment [(138)]. Furthermore, immune capabilities in the different parts of the lung differ and it has recently been argued that these parts may contain different levels of permissive vs. active macrophages[(139)]. Recent results argue that, within the granuloma itself, the presence of a B cell follicular microarchitecture might result in differential outcomes to infection [(8, 140)]. The structure of the granuloma itself is variable. In nonhuman primates experimentally infected with different strains of *Mtb*, while one can easily observe the classical centrally caseous lesions, but cellular, noncaseous lesions are also present [(25)]. In several models of infection as well as in naturally infected humans, cavitary lesions are considered to be the hallmark of extensive tuberculous pathology and primarily responsible for high levels of transmission [(4)]. Immune suppression is generally associated with granulomatous (granuloma-like) pathology rather than highly distinct granulomas. Hence, a considerable variety exists in the architecture of TB granuloma lesions.

Thus, the granuloma holds the keys to the progression of the infection, as well as its ultimate control. Due to their anatomy, granulomatous lesions, which are masses of highly activated, recruited cells, behave like small tumors, which can be readily separated from the adjoining normal tissue. Hence, microdissection is a particularly applicable approach to the study of the TB granuloma. Due to the considerable variety in their ultrastructure, immune potential and cellular composition, microdissection techniques developed by us, as well as others will allow in-depth study of the host-pathogen interaction in this novel niche. For example, we are interested in identifying the gene-expression signature of *Mtb* within primate lesions, as a window to understanding the biology of this remarkable pathogen in its true in-vivo setting. However, these studies are complicated by the potential presence of different bacterial populations, those primarily experiencing acid/redox-stress, residing in the peripheral macrophages, relative to those primarily experiencing hypoxia in the acellular caseum. Using our microdissection methods, it will be possible to separate these distinct, small populations of bacilli. Similarly, host contribution to protection can be assessed potentially by microdissecting B-cell follicle-enriched areas.

1.3 Specific Aims

1.3.1 Overview

We currently lack an understanding of the physiology and the metabolic state of *Mtb* in this granulomatous environment during different states of infection.

Understanding the physiology and metabolism of the intra-granulomatous environment is critical because effective vaccines and drugs must target this state to eradicate the bacteria and subsequently control the infection. We therefore propose to study and compare the intra-granulomatous gene expression of *Mtb* during ATB, LTBI and reactivation.

We hypothesize that the *Mtb* transcriptional profiles, with respect to metabolism and physiology, exhibit changes over time and upon interaction with both a variety of environmental cues and host immune responses. Consequently, we hypothesize that different infective stages as well as amongst different areas of the granuloma would lead to differential bacillary expression profiles. Further, and more importantly, we propose that these changes can be used to understand the physiology of the pathogen as well as its virulence.

The purpose of evaluating the entire granulomatous pathology, i.e. the combination of all lesion and granuloma types on the formalin fixed paraffin embedded (FFPE) lung slides, is to generate a bacterial transcriptomic profile that is representative of the entire infective state. Additionally, the purpose of specifically evaluating the classical, caseating, type granuloma is to evaluate the bacterial transcripts specific to this lesion type. Overall, evaluation of mycobacterial transcriptomics in granulomatous tissue is likely to further our understanding of the mechanisms involved in their formation and maintenance as well as those genes that are expressed in each state of the infection[7].

1.3.2 Specific Aim 1

The first specific aim of this study is to compare bacterial transcriptional profiles of granulomatous pathology in active and latent infection in the NHP model. This aim includes the following sub-aims: assessment of bacterial transcriptional profiles in granulomatous pathology from actively infected NHPs, assessment of bacterial transcriptional profiles in granulomatous pathology from latently infected NHPs, assessment of bacterial transcriptional profiles in granulomatous pathology from reactivated NHPs and comparison of profiles amongst disease states.

The assessment of bacterial transcriptional profiles from NHPs in these two stages of TB infection is important for a variety of reasons. While the host response to *Mtb* infection has been extensively studied *in-vivo*, the same cannot be said for bacterial measures within the granuloma. For example, previous studies have assessed mycobacterial genes expressed in response to host interaction in cell lines, macrophages and mice[51,59]. These well implemented studies have helped gain insight into host response and gene expression, but no such study has assessed an *Mtb* response within the disease's characteristic lesion in a species that mimics the human disease spectrum. We propose to bridge this gap using our innovative mesodissection technology. The experiment will begin by looking at active infection due to the fact that the bacterial burden is so high during this phase. Due to the heavy bacterial burden as well as higher frequency of granuloma formation in this cohort of animals, more RNA will be available for extraction. By assessing the bacterial transcriptional profile during an active infection, we will be able to obtain a better understanding of what genes (and

by analogy, which operons and pathways) are being expressed at this stage of infection. Additionally, we will also compare transcriptional profiles of active and latent infective states. This will likely extend our current understanding of the overall pathogenesis of *Mtb*. This information in turn can be used in the future to assess additional drugs that can be potentially used to treat the disease as well as offer further information for the development of additional attenuated strains that can be used in potential TB vaccines.

1.3.3 Specific Aim 2

The second specific aim of this study is to compare *Mtb* transcriptional profiles of the entire classical caseous granuloma to the caseous section of the corresponding granuloma in the NHP model. The following sub-aims are included: assessment of bacterial transcriptional profiles in both caseous section of caseous granuloma as well as entire classical caseous granuloma from latently infected NHPs, assessment of bacterial transcriptional profiles in both caseous section of caseous granuloma as well as entire classical caseous granuloma from actively infected and reactivated NHPs, comparison of caseous section of classical caseous granuloma to entire granuloma in latently infected NHPs, comparison of caseous section to entire granuloma in active and reactivated NHPs and comparison of results amongst infective stages.

Active infection results in the formation of the caseous or “classical” TB granuloma. This is the most prevalent type of lesion observed in the latent NHP model[25]. Caseating granulomas can also be seen during reactivation. Some of the

characteristics that *Mtb* has been shown to exhibit during latency are as follows: loss of acid-fastness, accumulation of lipid bodies and development of rifampicin-tolerance[141,142]. The granuloma may be thought of as promoting *Mtb* pathogenesis; therefore, the goal of this aim is to better characterize the mechanisms driving this function modulation at both the whole granuloma level and the caseous section level.

1.3.4 Specific Aim 3

The third specific aim of this study is to confirm transcriptional profiles. This will be performed via the following two sub-aims: assessment of transcriptional profiles in granulomas in aforementioned samples using nCounter® Analysis System and assessment of transcriptional profiles in human lung granulomas from actively infected individuals.

The purpose of performing nCounter® analysis is to confirm microarray results via a different gene expression modality. In this system, transcript specific molecular probe pairs are used to capture and count individual transcripts with high sensitivity, high reproducibility and large dynamic range[143-145]. Previously, this system has been used in variety of ways including but not limited to the assessment of an ultra-high risk neuroblastoma molecular classifier and to assess transcripts from archived FFPE hepatocellular carcinoma and liver cirrhosis samples[105,146]. Due to the aforementioned reasons as well as the fact that the system does not require amplification, this approach is ideal for confirmation of our microarray derived gene expression profiles.

The purpose of obtaining and transcription profiling human lung granulomas is to confirm that the results are similar to those found in rhesus macaque granulomas. We will be obtaining samples from humans who have active disease pre-treatment, were treated with isoniazid (INH) and are co-infected with HIV. The pre-treatment samples will serve as ATB comparisons. We expect the INH treated patient samples to mimic LTBI due to the fact that the addition of a chemotherapeutic agent likely drives the bacilli into a dormant state as seen in LTBI. The HIV co-infected samples serve as a comparison for reactivation.

1.3.5 Innovation

Previous studies have identified host transcriptional responses to *Mtb* infection. It has been reported that the transcriptional characteristic of TB granulomas undergo changes during *Mtb* infection, a phenomenon termed as transcriptional reprogramming[16,120]. Although studies have examined host transcriptional profiles, no study to date has examined *Mtb* specific transcriptional profiles, and subsequent transcriptional reprogramming, at the level of the granuloma. Although the necessity for this study type has been acknowledged in the TB field for years, various modality issues have made its implementation difficult. Laser capture microscopy (LCM) and manual microdissection proved disappointing for the extraction of RNA from FFPE slides of lung granulomas. Due to the disadvantages of the traditional microdissection approaches, this study uses a novel microdissection approach known as mesodissection[147]. In this technique, a representative hematoxylin and eosin (H&E) stained slide is used to make a reference image. Next, an unstained FFPE tissue slide of

the same tissue section is loaded onto the machine, aligned with the H&E reference slide, and the desired dissection area is annotated. A consumable mill bit is used to dispense a buffer recovery solution, cut tissue and aspirate the recovered tissue fragment[148,149]. The captured tissue sample in recovery buffer can then be used for downstream applications. Additionally, the machine contains a digital microscope that is responsible for directing the dissection process. The system also contains specialized software that documents each step in the dissection process and generates a post-dissection report. This technique is also advantageous because it is more user-friendly, time efficient and cost effective than LCM[147]. Leveraging this novel technique, the goal of this study is to microdissect TB granulomas from various infective stages as well as from different sections of the granuloma[147]. From these extracted tissue sections, RNA will be extracted, amplified and microarray analysis will be performed; consequently, allowing us to uncover the *Mtb* specific transcriptomic profiles that have been previously so difficult.

In addition to the technical innovation associated with the use of a novel microdissection technique, the study is also technically innovative in the proposed method of sample validation. This study proposes to use a high-throughput gene expression detecting modality known as nCounter® which employs transcript specific molecular probe pairs that are designed for specific genes of interest[143,144]. The advantage to this system is that it has high sensitivity and reproducibility[105,143,144]. Additionally, samples require limited to no pre-amplification. By using this system we will be able to both validate our data as well as ascertain copy numbers of each

individual transcript.

Lastly, this study is innovative conceptually in that it extends knowledge in the TB field. The concept of microenvironments has been growing increasingly popular with a new push to revisit the role of the actual granuloma. Previously, most granuloma associated literature has focused on the host response[4,5,8,120,150-152]. Within the past five to ten years there has been a shift in the field to also recognize the need for studies that examine the role of the bacterium within this environment. Effective therapeutic regimes are those that would elicit an appropriate immune response, while also combating bacterial spread and proliferation. To make such a therapy and/or vaccine, it is imperative to understand the balance between functional and pathological consequences of the granuloma at the level of both the host and the bacterium. This study serves to provide *Mtb* specific transcriptomic information to aid in understanding the complex relationship between host and pathogen.

CHAPTER 2: METHODOLOGY

2.1 Formalin Fixed Paraffin Embedded Samples

2.1.1 Introduction and Process

Formalin fixed paraffin embedded (FFPE) samples are made and used routinely in hospitals worldwide to aid in histopathologic diagnosis of a variety of diseases. They are considered the standard method for pathologic examination of tissue in a cost effective manner that preserves cell morphology. Post sample acquisition, these samples are made through a simple process. First, samples are fixed by placing them into a formalin solution. Then they are embedded in paraffin. They are dehydrated by which water is replaced by alcohol (ethanol). Next, they are cleared by a process where alcohol is replaced by xylene or a xylene substitute. Lastly, they are surrounded by paraffin in a process known as embedding. There are many versions of this protocol, but the main principle remains the same. The archives already exist; therefore, they serve as a valuable untapped source of information.

2.1.2 FFPE Considerations

Traditionally FFPE samples have been avoided for use in molecular biology due to a combination of parameters. There is high institutional variability in fixation methods, fixation times, material age and storage conditions. In addition, FFPE samples have considerations on a molecular level. The first main molecular consideration it that the nucleic acids within this sample type tend to be fragmented. This can be the result of the time period between sample acquisition and effective fixation. These cellular processes and tissue autolysis can result in the degradation of nucleic acids. Incubation at elevated temperature during the embedding process as well as a prolonged incubation period can result in nucleic acid fragmentation. Exposed surfaces can oxidize nucleic acids, resulting in nucleic acid fragmentation. Lastly, staining procedures can also fragment nucleic acids. The second main molecular consideration of FFPE samples pertains to nucleic acid modification. Formaldehyde induces chemical modifications of RNA characterized by the formation of methylene crosslinks between nucleic acids and proteins. Due to the plethora of these samples types, discovering a way to utilize this sample type has the potential to revolutionize pathologic studies.

2.1.3 Possible Solutions

Although FFPE samples are challenging to use for subsequent molecular analysis, there are possible solutions to the aforementioned considerations and limitations. One such possible solution is to first deparafinize the samples; therefore, removing the

causative agent and decreasing additional damage. This can be performed using xylene, heptane or heating protocols. Another possible solution is the addition of purification steps in extraction protocols. To obtain higher quality nucleic acid yields, one needs to break the crosslinks and release said nucleic acid in a way that avoids further fragmentation. This can be done with the addition of a proteinase k step in the nucleic acid extraction protocol. Proteinase K is an enzyme that digests cross-linked proteins and therefore releases nucleic acids. Another purification technique is to incubate the sample at higher temperature during the nucleic acid extraction process; consequently, breaking methylene bridges between amino groups. If the nucleic acid yield is still poor post extraction from a FFPE tissue sample, amplification is another procedure that can be used to increase yield. Various amplification protocols exist for a variety of sample types. Another, more untraditional, approach to successfully use FFPE tissue samples molecularly is to choose untraditional gene expression modalities that are better suited for this sample type in subsequent analysis.

2.2 Experimental Protocol

2.2.1 NHP Samples and Study Design

Rhesus macaques of Indian origin were previously infected with CDC1551 *Mtb* via aerosol. Animals had an exposed dose of 250-500 or 1000 CFU. Animals were defined as *Mtb* exposed based on positive TST post exposure. Disease states were defined based on clinical signs, radiographic evidence, serum reactive protein (CRP) and

lung pathology. Active NHPs exhibited clinical signs of illness, radiographic evidence, CRPs greater than 0.5 and diffuse granulomatous infiltration in lungs expressing various granuloma types concurrently. Latent animals lacked clinical signs and had CRPs less than 0.5 at the time of necropsy. In addition, pathologic examination of the lungs yielded minimal granulomas, solely of classical granuloma type, as compared to active animals. Due to the aforementioned parameters the following active animals were selected: DF30, DI92, EB23, CR57, EA97, GK87 and HC20. In addition, the following latent animals were selected: FE10, HB12, FJ05, II21, II07, HC90 and HB74. For each NHP, 21 slides were cut from FFPE lung blocks sequentially on a microtome. Twenty slides remained unstained for subsequent mesodissection, while one slide was H&E stained to be used as a reference slide. An overall study design can be seen in Figure 2.1.

Next, mesodissection was performed on FFPE tissue slides. A detailed description of mesodissection can be found in the next section. In active NHP samples, unstained FFPE slide distribution was divided as follows: 5 slides for combined pathology, 6 slides for classical granuloma, 6 slides for caseum of the classical granuloma and 2 slides saved for subsequent staining if needed. Note: NHP GP88 was only used for combined pathology microarray analysis. Using an xScisor® consumable mill bit with a blade width of 400µm, mesodissection was performed using the MillMan™ Instrument as previously described[147]. A new consumable mill bit was used for each sample. Samples were extracted using PKD buffer as the aspiration fluid and dispensed into sterile 0.5 ml microfuge tubes. Approximately five 0.5 ml microfuge tubes were used per sample category filled to approximately 0.3 ml for a total of 1.5 ml

PKD buffer/tissue sample combination for each sample type (i.e. active NHP DF30 caseum of the classic granuloma, etc). For latent NHP samples, unstained FFPE slide distribution was divided as follows: 9 slides for classical granuloma, 9 slides for caseum of the classical granuloma and 2 slides saved for subsequent staining if needed. Subsequent steps were followed as previously described for active NHP samples.

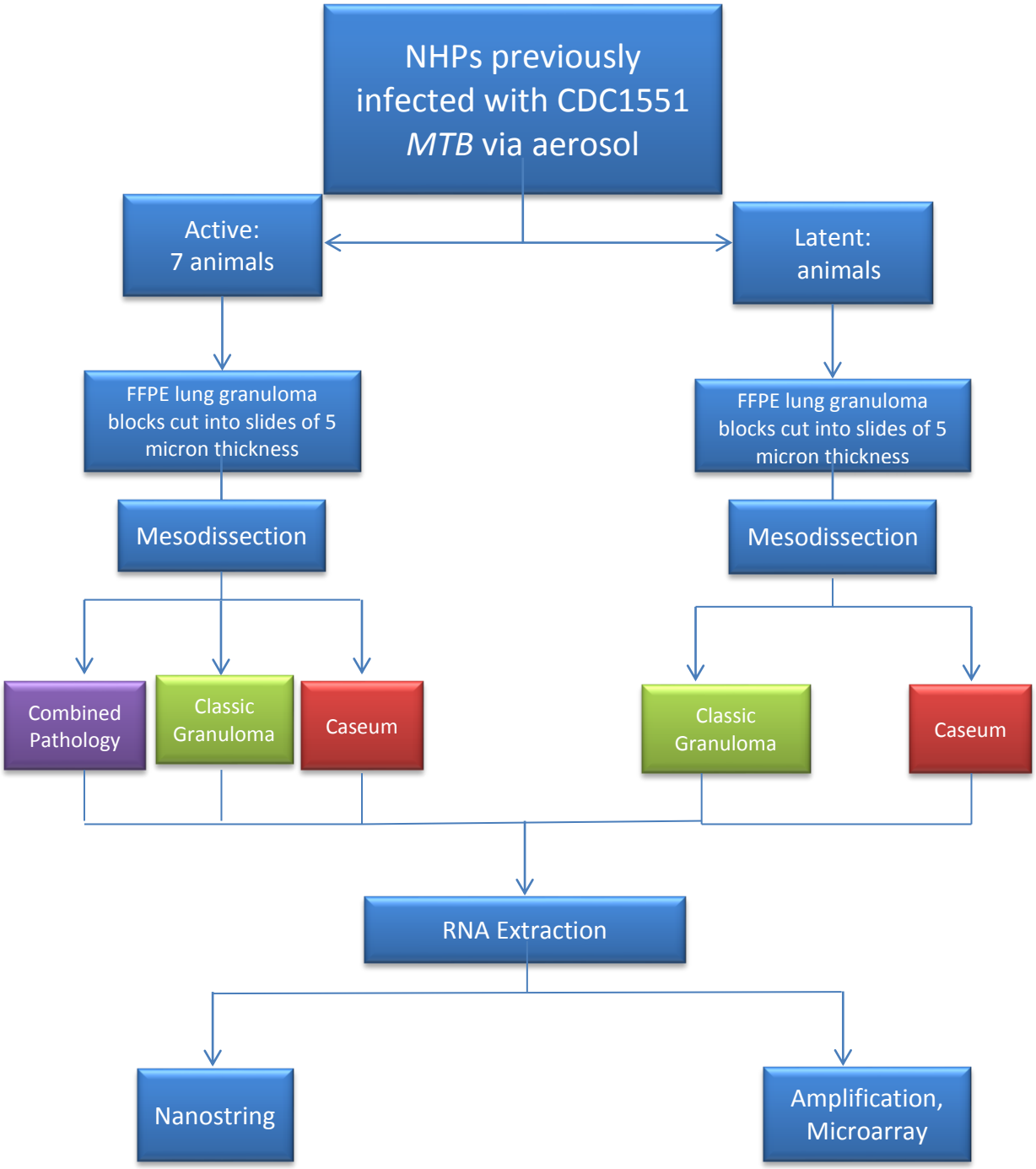


Figure 2.1: Study Design. The above image is a schematic of the study design used to examine the specific aims specified in this study.

RNA was extracted for all samples. PKD/tissue sample combinations were lysed with proteinase K digestion followed by heat treatment[147]. First, 70µl TE buffer pH 8.5 containing 5µg of proteinase K were added to each 0.5 ml microfuge tube as previously described[147]. Next, samples were placed on the THOR™ System programmable heater-shaker. Tissue digestion was completed as follows: 60 ˚C for 30 minutes at 1,500 rpm, 82 ˚C for 15 min at 1,500 rpm; and 25˚C for 1 min at 450 rpm. Next, 15µl DNAse booster buffer and 10µl DNAse were added to each 0.5ml microfuge tube and samples were DNAsed for a total of 15 minutes. The five 0.5ml tubes were then combined into one 2ml microfuge tube. RNA extraction was performed using the RNeasy FFPE extraction kit and RNA concentrations were determined using a NanoDrop2000.

Samples to undergo microarray analysis were first amplified using the Ovation® FFPE WTA System with a starting concentration of 200ng per sample. SPIA cDNA product was purified using the QIAGEN QIAquick PCR Purification Kit as described in the appendix of the Ovation® FFPE WTA System user guide. Final cDNA concentrations were measured using the NanoDrop 2000.

2.2.2 A Novel Microdissection Approach to Recovering Mycobacterium Tuberculosis Specific Transcripts from Formalin Fixed Paraffin Embedded Lung Granulomas

2.2.2.1 Summary

Microdissection has been extensively employed for the examination of DNA, RNA, and protein within tissue. Laser capture microscopy (LCM) is the most commonly used method, but a new milling technique, mesodissection, is recently available. We demonstrate RNA extraction from mesodissected formalin fixed paraffin embedded tissue slides of *Mycobacterium tuberculosis* granulomas.

2.2.2.2 Abstract

Microdissection has been used for the examination of tissues at DNA, RNA, and protein levels for over a decade. Laser capture microscopy (LCM) is the most common microdissection technique used today. In this technique, a laser is used to focally melt a thermoplastic membrane that overlies a dehydrated tissue section[128]. The tissue section composite is then lifted and separated from the membrane. Although this technique can be used successfully for tissue examination, it is time consuming and expensive. Furthermore, the successful completion of procedures using this technique requires the use of a laser, thus limiting its use. A new more affordable and practical microdissection approach called mesodissection is a possible solution to the pitfalls of LCM. This technique employs the MESO-1/MeSectr system to mill the desired tissue from a slide mounted tissue sample while concurrently dispensing and aspirating fluid to recover the

desired tissue sample into a consumable mill bit. Before the dissection process begins, the user aligns the formalin fixed paraffin embedded (FFPE) slide with a hematoxylin and eosin stained (H and E) reference slide. Thereafter, the operator annotates the desired dissection area and proceeds to dissect the appropriate segment. The program generates an archived image of the dissection. The main advantage of mesodissection is the short duration needed to dissect a slide, taking an average of ten minutes from set-up to sample generation in this experiment. Additionally, the system is significantly more cost effective and user friendly. A slight disadvantage is that it is not as precise as laser capture microscopy. In this article we demonstrate how mesodissection can be used to extract RNA from slides from FFPE granulomas caused by *Mycobacterium tuberculosis (Mtb)*.

2.2.2.3 Introduction

Samples have traditionally been manually microdissected from either whole tissue or slides using a needle and scalpel. This necessitates a clear separation between the tissue section of interest and surrounding tissues sections[153]. With the current advancements in molecular profiling technology, there has been an increasing need to assess tissue at the cellular level. Due to the limitations of manual microdissection, techniques including LCM were established to allow greater isolation precision. This technique allows the researcher to isolate specific cell populations from various cell and slide types, which can then be used for downstream assays such as gene expression

profiling. Although very effective for downstream assays, LCM is not without limitations. First, LCM is an expensive and time consuming process. Additionally, due to the unstable nature of RNA, it is often challenging to obtain high quality RNA from LCM samples[153]. Due to the disadvantages of LCM, new advances in microdissection technology are still needed to make it more accessible to a greater number of researchers in an affordable and time sensitive manner.

One such advancement in microdissection technology now available is a technique known as mesodissection. In this technique a machine is used to mill the annotated tissue section of interest and aspirates it into a consumable mill bit[148]. Next, this sample can be aspirated into a collection tube and used for downstream applications. The advantages of this system are that it is significantly less expensive and time sensitive. In our experience, the system allows the dissection of a lung granuloma tissue section in ten minutes. On the other hand, traditional LCM would likely require hours to complete the process. The system allows the operator to load a reference slide to use as a comparison as well as tool for annotation. Additionally a report is generated outlining the area of the slide that was dissected. There are two main disadvantages to mesodissection. Although effective at extracting multiple cells, it is challenging to isolate a single cell. In addition, the precision of the image generated is not as clear as if using other imaging microscopes.

Tuberculosis (TB) is a major infectious disease killer of humanity worldwide and results from infection with *Mtb*. In a majority of individuals exposed to aerosols of *Mtb*, the infection is latently limited. In at least 10 million people annually, it results in active

TB disease[12]. During latent infection, *Mtb* is contained within pathological lung lesions known as granulomas. Hence it has been argued that the outcome of *Mtb* infection is decided at the level of the granuloma[5].

Here we demonstrate how mesodissection can be used to microdissect granulomas caused by *Mtb*. The slides used are from FFPE lung tissue from infected rhesus macaques. For the purpose of this demonstration, we will dissect granulomas in their entirety. We also demonstrate that RNA can be extracted from the recovered tissue. This technique can be applied to tissue samples from various other specimens and then used for a variety of downstream assays.

2.2.2.4 Protocol

1. Calibrate mesodissection instrument with 2iD imaging software.

The 2iD imaging software will be referred to as either the software or the program for the remainder of this article. This step is needed to correctly track the image as well as align multiple slide frames.

1. Turn on instrument and computer.
2. Open software and select “calibrate instrument”.
3. Calibrate stage travel by using the joystick. Move stage to upper left position. Press “set” under step 1 in program.
4. Move stage to lower right position. Press “set” under step 2 in program.

5. Calibrate aspiration by first pressing “Z-button” to raise head assembly. Press “aspirate pulse” button and “dissection” button on the joystick until plunger control rod reaches top position. Press “set” under step 3 of program.
6. Press “aspirate reset” button. Once the plunger stops at the bottom position press “set” in step 4.
7. Click on the “scale tab”.
8. Place calibration ruler on blank side.
9. Focus microscope if needed.
10. Draw line between the two scale bars using mouse.
11. Enter distance in box labeled step 2. Press “compute” button.
12. Click on “crosshair” tab. Turn motor speed to 1.
13. Insert xScisor into head assembly. Lower head assembly into z-axis ready position by pressing “z-axis” button. NOTE: The head assembly is the large structure on the top the dissection instrument. The xScisor will be referred to as a consumable mill bit for the remainder of this article.
14. Click “dissection engage” button on joystick. NOTE: This button is located on the top of the joystick.
15. Define center of rotation visually. To do this, move center of crosshair over center of rotation using defined parameter in step 1 of program. Use the up and down arrows in the “x” and “y-axis” bars to adjust the pixels to align crosshair. Click the “done” tab.

16. Click on “home” icon. NOTE: This is represented by a house image located in the upper right hand corner.

2. Create reference image.

1. Place H&E slide on stage. Place opaque cover on top of slide. Drive the instrument by moving the joystick to the desired area of the H&E slide. Save the image generated. NOTE: Either the “capture reference” tab or “dissect” tab can be used to complete this step.

3. Align tissue to be dissected.

1. Click the “dissect tissue” option on the home screen.
2. Fill out the “operator,” “dissection accession number,” “reference accession number,” “xScisor barcode number,” “dissection fluid lot number,” “xScisor size” and “description” in the “setup” tab.
3. Click on the “find tissue” tab.
4. Import previously saved reference image.
5. Place an unstained FFPE slide of 5 micron thickness on the stage. Move stage to the same area as the one depicted in the reference image. Click on “insert image” tab.
6. Click on “align” tab. Use the mouse and associated arrows to align the reference image to the unstained image.

4. Annotate slide.

1. Click on the “annotate” tab.
2. Use the mouse to draw a circle around the desired area of the slide that will be microdissected.

5. Load consumable mill bit.

1. Fill consumable mill bit with desired buffer, here PKD buffer, by pulling the plunger up and down in a fluid motion several times. Make sure to exclude air bubbles.
2. Raise Z-axis by pressing “Z-axis button”.
3. Load consumable mill bit into machine. Do this by sliding the consumable mill bit into the top of the machine so that the white line on the instrument lines up with the black line on the consumable mill bit. Press “aspiration reset” button to allow plunger to be lowered into the correct position. NOTE: It should be easy to slide the consumable mill bit. If it is not, make sure the notches are correctly aligned.
4. Lower Z-axis by again pressing “Z-axis” button.

6. Dissect tissue.

1. Open “dissect” tab.
2. Turn motor and aspiration speeds to 1.
3. Check “show tracking” box. Note: This allows the user to visualize the dissected area during the dissection process.

4. Once ready to dissect, continue to hold “engage” button as well as “aspirate” button while moving joystick in a counterclockwise direction to dissect tissue.
5. Continue to dissect in a counterclockwise direction until the aspirate is “full” tab turns red.

7. Empty and remove consumable mill bit.

1. Place a 0.5 µl microfuge tube under the tip of the consumable mill bit.
2. Press “aspiration” control rod quickly to eject sample into microfuge tube.
3. Press with increased force to eject used consumable mill bit.
4. Rinse tissue fragment by pulling plunger back. Push plunger forward to express remaining sample into consumable mill bit. The tissue fragment will now be contained within the microfuge tube.

8. Lyse sample with proteinase K digestion followed by heat treatment.

1. Add 70 µl TE ph 8.5 containing 5 µg of proteinase K to recovered tissue sample.
2. Place sample into programmable heater-shaker.
3. Complete digestion using programmable heater-shaker at the following setting: 60 ˚C for 30 min at 1500 rpm; 82 ˚C for 15 min at 1500 rpm; and 25 ˚C for 1 min at 450 rpm. The sample is now ready for downstream applications.

2.2.2.5 Representative Results

The aforementioned protocol shows how to use a new mesodissection technique to extract RNA from FFPE tissue slides. This protocol's efficacy is shown through FFPE slides of lung granulomas from NHP infected with *Mtb* in various infective stages. Figures 1 through 3 are images of the instrument. Figure 4 depicts how the dissection process occurs and the resulting image generated by the software. Table 1 shows the results of RNA extraction with a granuloma from a NHP at each infective state. RNA was amplified and purified to allow for RT-PCR evidence of 16s (Tables 2.2-4). Table 4 confirms the presence of *Mtb* ribosomal subunit 16s, and thus *Mtb*, in the microdissected samples.

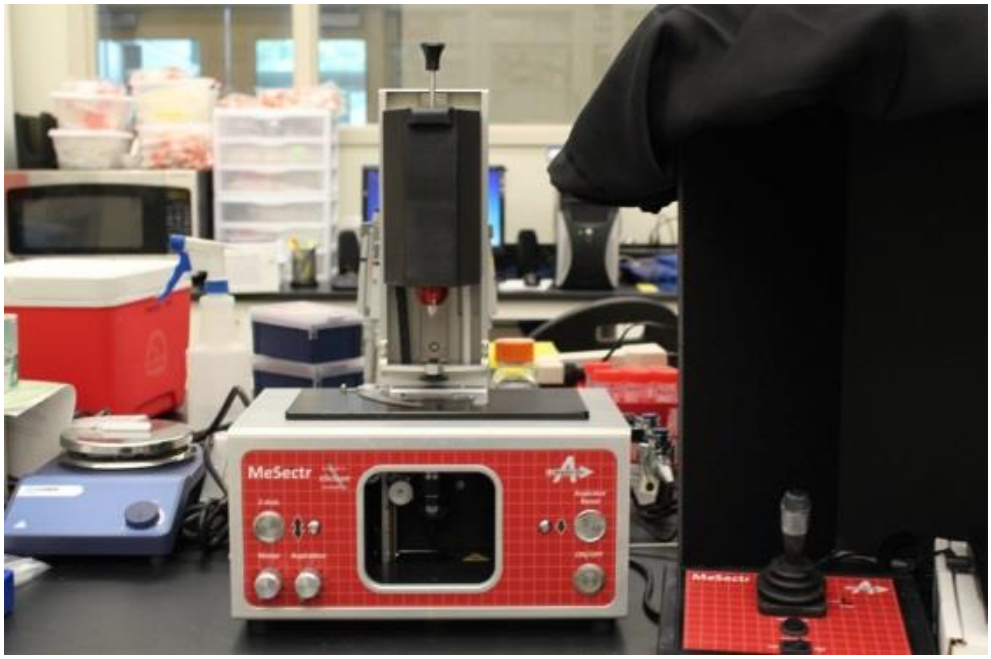


Figure 2.2: Image of Mesodissection Instrument Including Joystick.

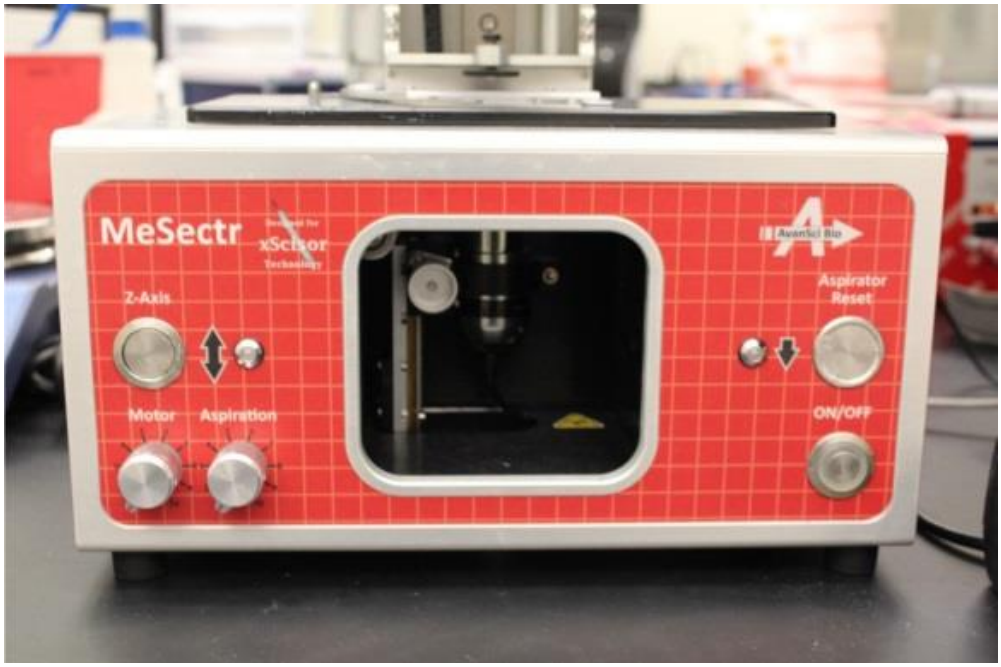


Figure 2.3: Closer View of Mesodissection Instrument. The “z-axis” button, “motor” speed and “aspiration” speed knobs are shown on the left side of the image. The “aspirator reset button” and “on/off” button are shown on the right side of the image. The slide stage is on the top of the instrument.

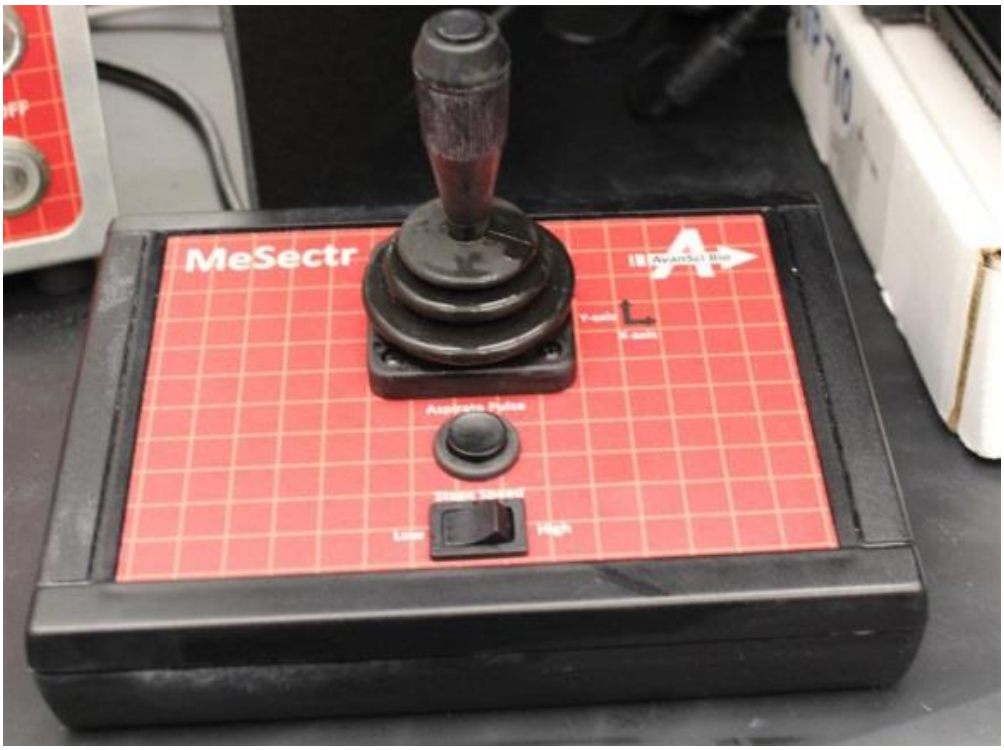


Figure 2.4: Closer View of Joystick. The joystick, “aspirate pulse” and “stage speed” buttons shown.

AvanSci Bio 2iD Report

Reference Image
Serial Number: 2K

Before Dissection Image
Serial Number: EB23

After Dissection Image

Operator: TH

Date/Time: Mon Aug 12 13:29:46 2013

Dissection Fluid Lot Number:

xScisor Barcode Number: xs4-2123

Annotated Area: 0 mm^2

Description: Whole granuloma

Notes:

Figure 2.5: Report of Whole Granuloma Mesodissected from NHP EB23. Animals used in this study were infected with CDC1551 *Mtb* via aerosol. The reference image on the left shows an H&E stained granuloma from an actively infected rhesus macaque. The desired area of interest to be dissected is outlined in green. The image in the middle shows the corresponding unstained FFPE slide of 5 micron thickness before dissection. The areas were aligned using the software and the correlating area of interest is outlined in green. The image on the right depicts the same unstained FFPE slide post dissection. The area dissected is represented in blue. A 400 mm^2 consumable mill bit was used for the dissection, which is designed for traverse dissection of medium to large dissection area. Large dissection area is described as less than 100 mm^2. Sizes designed for other areas/dissection types are available. Although the report describes the annotated area as 0 mm^2, this is inaccurate. When we remove the microdissected slide from the machine and physically look at the area of interest itself, we can see the corresponding area on the slide that no longer has tissue and therefore has been dissected. It should be noted that the authors are renting the instrument and this issue has been fixed on other instruments.

Primate	Infective State	RNA concentration in ng/µl	Total RNA in ng	260/280	260/230
EB23	Active	48.3	724.5	1.71	1.59
HB12	Latent	61.4	921	1.7	1.86
HP41	Reactivated via co-infection with SIV	22.3	334.5	1.9	2.18

Table 2.1: RNA Concentrations Post extraction. The sample was DNased and RNA extraction was performed using the Qiagen RNeasy FFPE kit. RNA concentration was obtained using a nanodrop. NHP infective stages are also depicted. RNA was eluted in 15 µl RNase free water.

Primate	Infective State	RNA concentration in ng/µl	Total RNA in ng	260/280	260/230
EB23	Active	31.7	951	2.08	2.37
HB12	Latent	156.5	4695	1.94	4.4
HP41	Reactivated via co-infection with SIV	41.7	1251	2.19	3.44

Table 2.2: cDNA Concentrations Post Amplification and Purification. NHP infective stages are also depicted. RNA was amplified using Ovation RNA-Seq FFPE System (Part no. 7150) and resulting amplified cDNA was purified using the QIAGEN QIAquick PCR Purification Kit as suggested by Nugen on page 26 of the amplification system's user guide. cDNA was eluted in 30 µl TE buffer.

Well	Reporter	Ct	Tm Value
16S 10-1	Standard	12.35138	79.4
16S 10-2	Standard	16.144611	79.4
16S 10-3	Standard	17.911345	79.4
16S 10-4	Standard	21.762596	79.4
16S 10-5	Standard	25.746624	79.4
16S 10-6	Standard	28.505266	79.1
HB12	Unknown	25.771492	77.8
HP41	Unknown	17.760149	78
EB23	Unknown	24.754618	18.2
Negative Control	NTC	33.544422	79.7

Table 2.3: RT-PCR Results with respect to 16s Ribosomal Subunit. Appropriate amplification observed thus proving the presence of *Mtb* within samples. Genomic DNA from CDC1551 strain *Mtb* was used as a standard.

2.2.2.6 Discussion

Mesodissection is a technique that can be applied to RNA extraction from pathologic lesion slides caused by a vast array of pathogens. It is a necessity that the user tracks the image and aligns the image correctly. To accomplish this, the instrument must be calibrated following the directions on the imaging software. When dissecting, if the slide and area of interest being dissected do not align, the user must recalibrate the instrument. Another critical step in the dissection process is to load the consumable mill bit in a manner such that it is devoid of bubbles prior to dissection (Step 5.1). We have found that the presence of bubbles decreases the dissection yield. To correct this problem, we recommend propelling and expressing the plunger multiple times. The user can practice this by adding food coloring to a practice buffer to visualize bubbles, as recommended by the manufacturer. Once effective, the user should then proceed with normal dissection. The last critical step is to dissect the sample in a counterclockwise direction. The machine mills in a counterclockwise direction; therefore, we have found that moving the joystick in a circular motion in a counterclockwise manner increases tissue yield as the leading edge cuts more cleanly than the trailing edge[132]. Another way to improve tissue yield is to decrease the speed of the dissection process. We have found that setting the aspiration rate and motor speed on the lowest speed while simultaneously setting the stage speed to “low” produce the highest tissue yield. There are two main limitations to this microdissection approach. The first limitation is that we have found point dissection very challenging due to the need to drive the joystick in

counterclockwise circles in the dissection process. The second limitation is that the camera on the instrument generates an image that lacks the cellular detail of an image generated from an advanced microscope.

Mesodissection has direct implications with respect to transcriptomic analysis of *Mtb.* Granuloma formation is a hallmark of TB infection and results from the host's attempt to contain the pathogen within a confined region of lung[5]. Conversely, it has been proposed that *Mtb* has evolved to allow its persistence in granulomatous lesions[7]. *Mtb* is subjected to different stresses depending on the stage of infection. Some of these stresses include but are not limited to redox stress, low pH, membrane damage, hypoxia, lack of nutrition, etc[7,18,35,56,97,120,154]. Throughout these various stages, *Mtb* can still survive in a latent form and even reactivate. This means that different genes are up-regulated and down-regulated at different infective stages. For example, *Mtb* encodes for over 200 transcription factors[12]. In addition, it has been shown that the expression balance between different chemokines, such as α and β-chemokines, within the granuloma may be important protection markers[18]. Evaluation of mycobacterial transcriptomics in granulomatous tissue is likely to further our understanding of the mechanisms involved in their formation and maintenance as well as those genes that are expressed in each state of the infection. This will allow us to evaluate mycobacterial transcriptomics in various TB infective stages including active, latent and reactivated disease as well as various regions within the granuloma itself. In addition to allowing us to further assess mycobacterial transcriptomics, the above procedure also allows for the assessment of host transcriptomics in the same infective states. Furthermore, this

approach then can be used to compare, contrast, and analyze the relationship between host and bacteria.

Although an important tool in TB research, the aforementioned protocol can be applied to other pathogens as well. The above protocol uses FFPE slides from infected lung samples, but can also be applied to lesions from other organs. We demonstrate how to use the system to extract RNA, but it can theoretically be used for DNA and protein extraction in an equally effective and time sensitive manner. FFPE blocks are available in most laboratory histology departments; therefore, the technique described here has the possibility of exponentially increasing the knowledge gained from these currently unused samples.

2.3 Downstream Applications

2.3.1 Microarray

For subsequent microarray analysis, CDC1551 *Mtb* genomic DNA was obtained from BEI Resources and used as the control. Samples and controls were labeled using the BioPrime® Total Genomic Labeling System. For samples, 3µg cDNA was labeled with Alexa Fluor® 5. For controls, 3µg CDC1551 gDNA was labeled with Alexa Fluor® 3. *Mtb* specific DNA microarrays (MYcroarrays, Biodiscovery llc) were used to compare samples to control as previously described[18,39,155]. Statistically significant genes were determined using linear models for microarray data (Limma) analysis based statistical analysis with a p-value of less than 0.05 (See Section 3.1)[156-158]

2.3.2 nCounter Analysis System

The purpose of performing nCounter® analysis is to confirm microarray results via a different gene expression modality. This system employs transcript specific molecular probe pairs that are designed for specific genes of interest[143,144]. Transcript specific molecular probe pairs are used to capture and count individual transcripts with high sensitivity, high reproducibility and large dynamic range[143-145]. A detailed schematic of the system is shown in Figure 2.6. Previously, this system has been used in variety of ways including but not limited to the assessment of an ultra-high risk neuroblastoma molecular classifier and to assess transcripts from archived FFPE hepatocellular carninoma and liver cirrhosis samples[105,146]. The advantage to this system is that it has high sensitivity and reproducibility[105,143,144]. The system can be used to both validate data as well as ascertain copy numbers of each individual transcript tested. Due to the aforementioned reasons as well as the fact that the system does not require amplification, this approach is ideal for confirmation of the microarray derived gene expression profiles. More information on the results as it relates to the study outlined here can be found in the validation chapter.

Samples were validated using the nCounter Analysis System. Human lung FFPE blocks were obtained from Dr. Robert Hunter and colleagues at the University of Texas Medical School at Houston. Samples procedure for human samples was followed using the same protocol as NHP samples. More information on procedure and results can be found in the validation section.

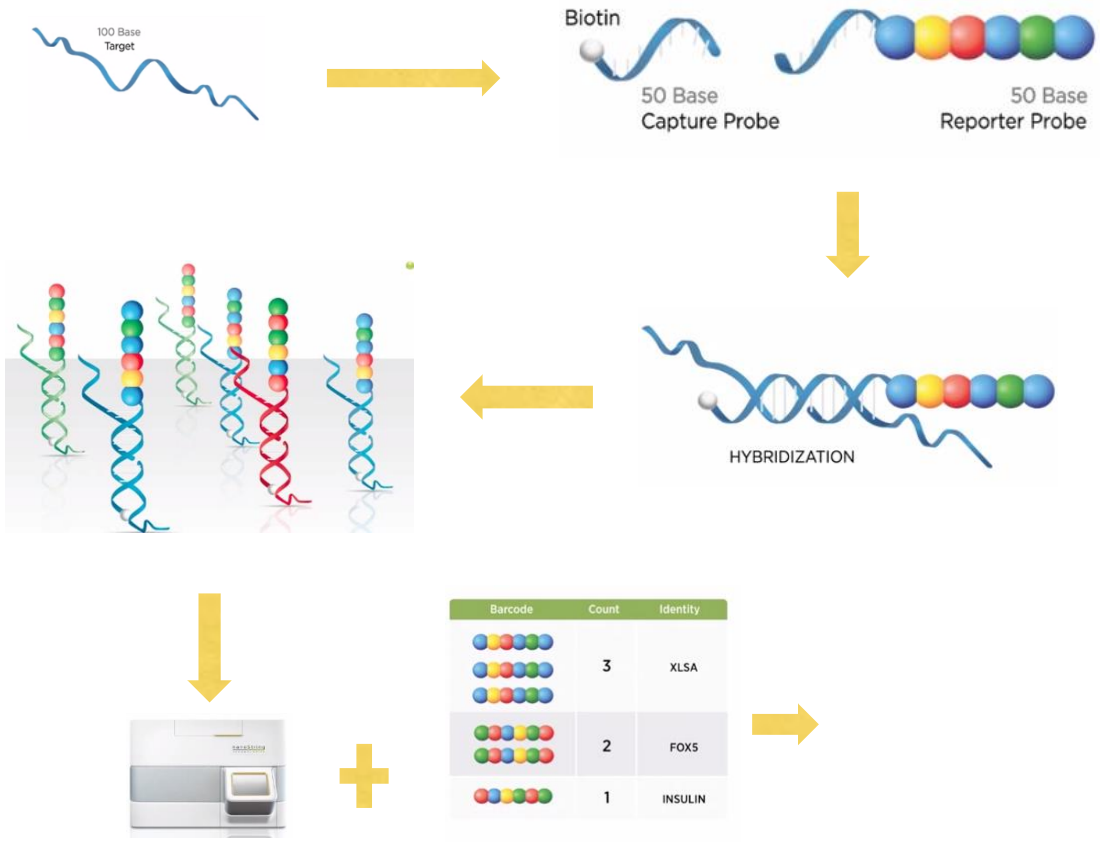


Figure 2.6: Schematic Representation of the nCounter Analysis System. The investigator selects genes of interest (target genes). Can select up to 800 (1). Next, the company designs two 50 base pair regions complementary to the 100 base target region. One target oligonucleotide is covalently linked to biotin and known as the capture probe. The other is covalently linked to a color coded molecular barcode to create the reporter probe (2). All probes are mixed together in a single solution based hybridization reaction and allowed to hybridize overnight (3). Purified via an automated liquid handling robot (prep station) and un-hybridized are removed. Remaining complexes are then bound to a streptavidin surface for imaging by being washed across a surface that contains this capture reagent. After captured, an electric field is applied which extends and orients the complex in solution. Complexes are immobilized in the complex state and imaged (4). Using a digital scanner, each target molecule of interest is identified by the color code generated by the ordered fluorescent segments present on the reporter probe. Expression level measured by counting the number of codes for each RNA (5). No amplification, a single molecule equals one counter barcode. Note barcodes are counted and it is not based on the fluorescent intensity. Low FDR of about 0.1% (6).

2.4 Anticipated Outcomes and Pitfalls

2.4.1 Specific Aim 1

We expect the bacterial transcriptional profile to be different in each infective state. In addition, we expect the NHP derived profiles to be different than the control. The major obstacle will be obtaining a large enough quantity of RNA to perform microarray analysis. To overcome this pitfall, a multi-step strategy has been devised that includes i) the extraction of RNA from complex tissue followed by ii) high-fidelity linear amplification of the RNA. We have already standardized many of these procedures, and shown that several *Mtb* genes can be detected by microarray formats. Thus, we expect to not face problems in this regard. The heterogeneous nature (i.e. contains both host and bacteria) of both the extracted RNA and resulting amplified cDNA may be another major potential pitfall. To overcome this pitfall, we will validate the results using nCounter® analysis.

2.4.2 Specific Aim 2

We expect that the bacterial transcriptional profile in the caseous center will be different than that of the entire granuloma. For example, we expect the caseous center to express a profile indicative of a greater hypoxic response. One such family of genes that have shown to be induced in a hypoxic environmental change is the PE/PPE family. This family contains approximately 170 members that are unique to mycobacteria and have been implicated in pathogen antigenicity[12,33,34]. In turn, it is hypothesized that

these genes are secreted by the ESX-1 and 5 systems and that sigma factors play a role in expression; therefore, we expect increased induction of genes in this and associated gene families in the caseous center as compared to the entire granuloma[33]. We also expect the increased induction of specific regulons, i.e DosR , in this hypoxic environment[159]. Pitfalls are similar to those described for the first specific aim.

2.4.3 Specific Aim 3

We expect the nCounter® system to confirm our microarray generated *Mtb* gene expression profiles. The system does not require amplification, but we expect the possibility of a small degree of amplification based on the heterogeneous nature of our samples with *Mtb* comprising less than one percent of the sample. If this occurs, this will be highlighted in subsequent analysis. With respect to the human samples, the pitfalls are associated with our lack of access to complete clinical history; therefore, we will note this in subsequent analysis.

CHAPTER 3: *MTB* TRANSCRIPTOME PRELIMINARY DATA

3.1 Statistically Significant Genes

Initially FFPE lung tissue slides were obtained from the following NHPs with active TB disease (ATB): EB23, DF30, GP88, DI92 and DT15. In addition, FFPE lung tissue slides were obtained from the following NHPs with latent TB disease (LTBI): FJO5, ID01, FE10, FH68 and HB12. Experimental protocol was followed as described in the methods section. Subsequent microarray data was sent to Dr. Joel Bader and Dr. Nirmalya Bandoyopadhyay at Johns Hopkins's school of Medicine for statistical analysis. Statistically significant genes were determined using the R based statistical analysis approach known as linear models for microarray data (Limma) analysis. The central idea of this statistical approach is to fit a model to the expression data, here in log ratios, of each gene from two channel microarrays. The value of using this approach instead of the traditional approach of averaging spot replicates is that it accesses the strength of correlation between data points using a linear model. Leveraging this approach, the researcher makes the assumption that the between-replicate correlation is common across genes because the correlation springs from the proximity of the replicate spots on the same array. This technique allows data points that are outliers, to be depicted as

bad point and therefore not statistically significant. Using a p value of less than 0.05, statistically significant genes were determined in all active and latent categories.

3.2 Initial Analysis

Initially, data was analyzed based on statistically significant genes**.** In ATB, disease categories were as follows: representative pathology, classic granuloma and caseum of the classic granuloma. Representative pathology is defined as such in that it includes dissection of all of the lesions on the slide; therefore, this dissection type includes granulomatous inflammation, non- necrotizing granulomas, classical granulomas, etc. The second dissection type, classic granuloma, is the hallmark of TB and consists of a central region of caseous necrosis with macrophages and lymphocytes in the periphery[5,160,161] . The third dissection type is the caseum of the classical granuloma. Figure 3.1 depicts an example report from a classical granuloma mesodissection of ATB NHP DF30. The image on the left side of this report is the representative H&E image of the lungs with the area to be dissected outlined in pink. The image in the center is the unstained FFPE slide to be dissected and the final image is the post dissection report with the area dissected in blue. The figure also depicts the lesion diversity seen in this disease state. In LTBI, disease categories were as follows: classic granuloma and caseum of the classic granuloma. Please note that only the classical granuloma and caseum of the classical granuloma are dissected, due to the fact that this is the predominate lesion type in this disease state in our model and therefore

the classical granuloma also serves as representative pathology. Figure 3.2 is a mesodissection report from latent animal FJ05. Please not the lack of pathologic diversity as compared to ATBI.

Post mesodissection, RNA was extracted, amplified, cDNA was labeled and *Mtb* custom microarray analysis was performed. To determine statistically significant genes, R based statistical analysis using linear models for microarray data (Limma) analysis was performed as described in section 3.1. Table 3.1 depicts the number of statistically significant genes in each category. Next, the number of statistically significant genes with a positive fold change in each category was assessed (Table 3.2). We are more confident in analyzing these values for reasons which pertain to the issues associated with the heterogeneity of our samples. To perform microarray analysis, three thousand nanograms of our heterogeneous sample is compared to three thousand nanograms of our control of CDC1551 genomic DNA. The heterogeneous sample post mesodissection, is only approximately one percent *Mtb*; therefore, this provides a challenge when picking a microarray control. That specific sample input was chosen, so that a standard nanogram amount was inputted in both control and sample. This means, that if one of the samples has a positive fold change induction for a particular gene, in actuality, the fold change is much larger than what is being reported. To deal with the issues in assessing true copy numbers of specific transcripts, the nCounter system was selected as a validation technique in the final data. This technique gives us the ability to compare copy numbers of particular genes to the copy number of that gene in the control.

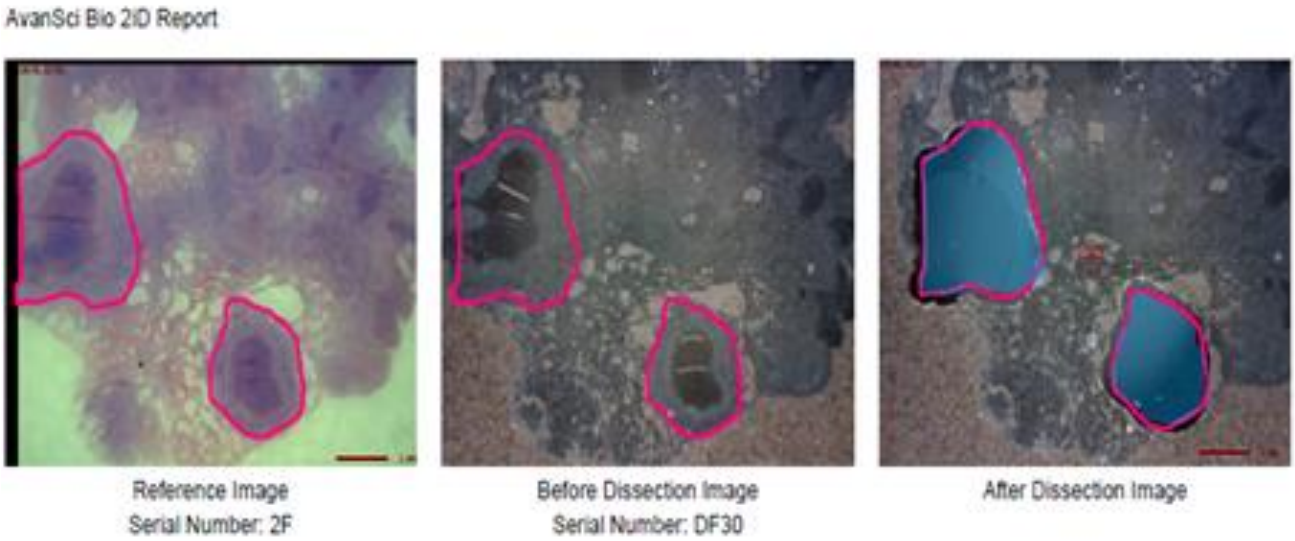


Figure 3.1: Mesodissection Preliminary Report for ATB NHP: The image on the left side of this report is the representative H&E image of the lungs with the area to be dissected outlined in pink. The image in the center is the unstained FFPE slide to be dissected and the final image is the post dissection report with the area dissected in blue. The figure also depicts the lesion diversity seen in this disease state.

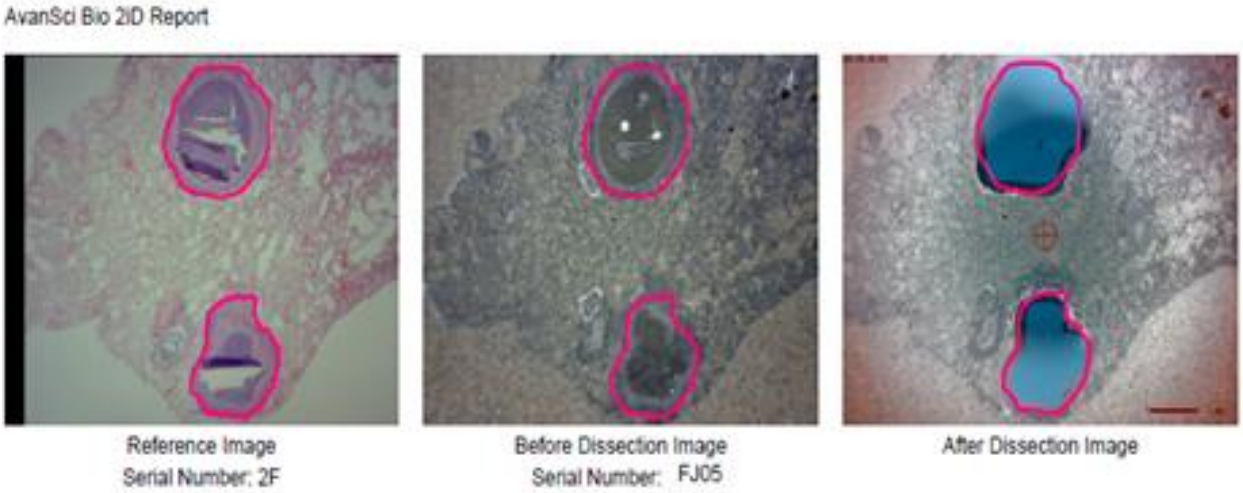


Figure 3.2: Mesodissection Preliminary Report for LTBI NHP. The above report is following the mesodissection of the classical granuloma of LTBI NHP FJ05. Please note the lack of pathologic diversity as compared to the ATBI NHP in Figure 3.1.

	Representative Pathology	Classic Granuloma	Caseum of Classic Granuloma
Active (ATB)	1216	712	2262
Latent (LTBI)		2074	468

Table 3.1a: Number of Statistically Significant Genes Detected in Preliminary Data. The table depicts statistically significant genes in the above pathologic categories as determined by Limma analysis.

	Representative Pathology	Classic Granuloma	Caseum of Classic Granuloma
Active (ATB)	621	274	738
Latent (LTBI)		719	218

Table 3.1b: Number of Statistically Significant Genes Detected with a Positive Fold Change in Preliminary Data. The table depicts statistically significant genes with a positive fold change in the above pathologic categories as determined by Limma analysis.

The preliminary data draws a few important conclusions. First, mesodissection is an effective technique for assessing *Mtb* transcriptomics from FFPE lung slides. The RNA is high quality and can be used for downstream applications. In addition, statistical analysis of *Mtb* microarray results depict that we are detecting different gene expression profiles for each lesion type as well as for each distinct TB disease state. Additional analysis will be conducted to see how much gene overlap between different pathology and TB disease states exists. The preliminary data was not validated with another gene expression modality such as the nCounter analysis system.

3.3 Outlier Identification

The next component of the preliminary process was to determine the presentence of individual animal outliers. To make this determination, it is necessary to find the nearness or farness of each overall experiment (in this is data set, animal) is from each other with respect to sensory and expression levels by using the generated microarray data. For microarray analysis, the software used by the lab is the Spotfire decision site software. First, two channel array analysis was performed. Then the data was normalized via Loess normalization. In this approach, the data is adjusted for technical variation using a locally weighted polynomial regression with calculated M and A values[157]. The M value is the regression magnitude which is a log based change in the gene expression calculated by log2R-log2G[157]. A is the average signal, the log based intensity and is calculated by (log2R+log2g)/2[157]. Then the nearness of the experiments/animals to each other based on signal sensory and expression levels were

calculated using Principal Component Analysis (PCA)[157] (Figures 3.3 and 3.4). By using this technique, outliers were identified in both ATB and LTBI (Table 3.2). To improve gene comparison, these animals were removed from subsequent data analysis and more samples from additional NHPs were cut of all samples types in all infective stages.

	Active (ATB)	Latent (LTBI)
Representative Pathology	DI92	
Classical Granuloma	DT15	FH68
Caseum	DT15	FH68

Table 3.2: NHP Outliers as Identified by Principal Component Analysis. The table depicts NHP animal outliers determined by PCA on Loess normalized microarray data using Spotfire Decision Site Software. Color coding follows the same scheme in Figures 3.1 and 3.2.

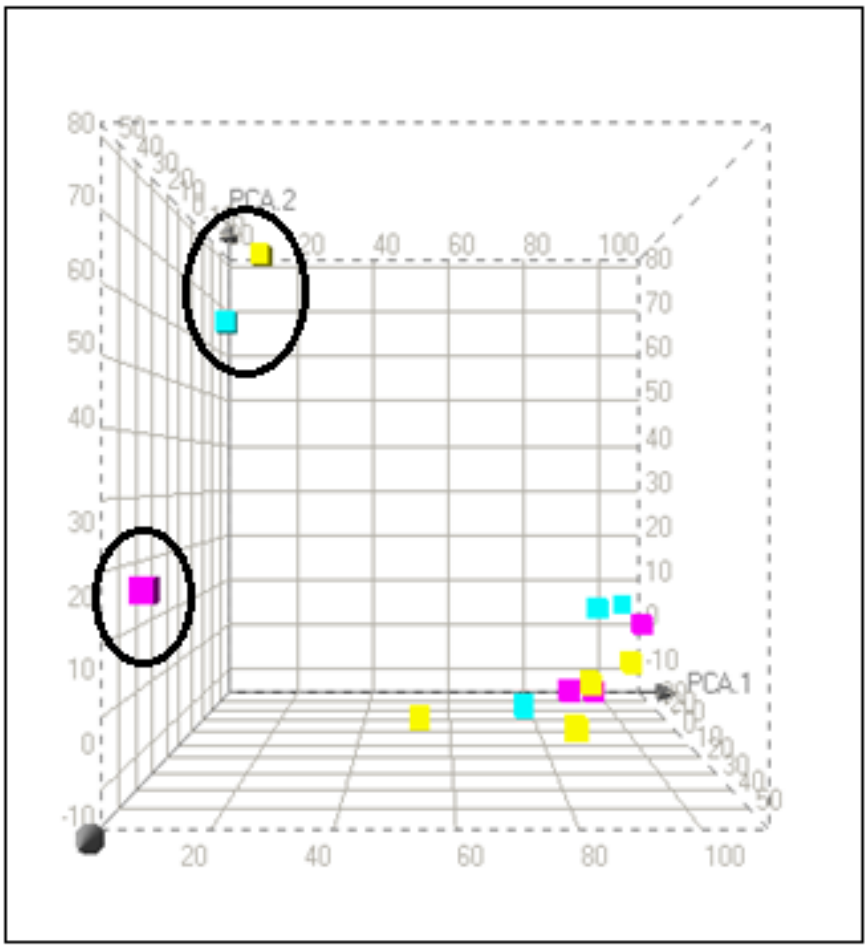


Figure 3.3: Plot of Principal Component Analysis of ATB NHPs. Representative samples are yellow, classical granuloma samples are colored blue and caseum of the classical granuloma is in pink. The three outliers are circled in black. The outliers deterined are as follows: DI92 representative pathology, DT15 classical granuloma and DT15 caseum of the classical granuloma.

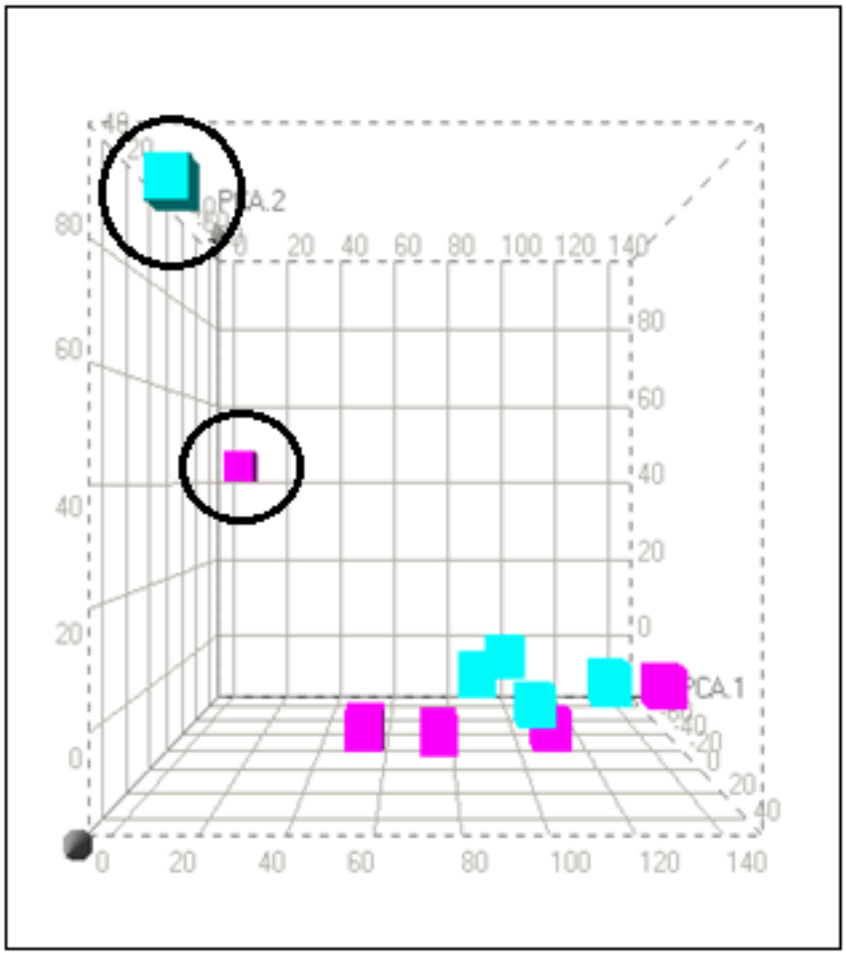


Figure 3.4: Plot of Principal Component Analysis of LTBI NHPs. Classical granuloma samples are colored blue and caseum of the classical granuloma is in pink. The two outliers are circled in black. The outliers determined are as follows: FH68 in both classical granuloma and caseum of the classical granuloma.

CHAPTER 4: *MTB* TRANSCRIPTOME IN ACTIVE AND LATENT DISEASE

4.1 Statistically Significant Genes in Active Disease

FFPE lung tissue slides were obtained from the following NHPs with active TB disease (ATB): EB23, DF30, HC20, CR57, GK87, DI92 and EA97. Samples were mesodissected into three pathological categories as described in Chapter 3 and experimental protocol was followed as described in Chapter 2. All ATB mesodissection images are shown in Table 4.1-4.3. Subsequent microarray data was sent to Dr. Joel Bader and Dr. Nirmalya Bandoyopadhyay at Johns Hopkins's School of Medicine for statistical analysis. Statistically significant genes were determined using Limma as described in Section 3.1.

Initially, gene data was analyzed based upon statistical significance (summary found in Table 4.4). Next, statistically significant genes with a positive fold change were analyzed for the reasons described in Section 3.2 (Table 4.4). Following the assessment of overall gene lists, genes lists were compared across granuloma types. Each granuloma type, i.e. representative pathology versus classical granuloma versus caseum of the classical granuloma, has different expression profiles. For example, there are 126 genes that are being detected with a positive fold change in only representative pathology as seen in red in Figure 4.1. Interestingly, there is a large overlap of genes

expressed in each category. In total, as represented by the grey section labeled “abc” in Figure 4.1, 1084 genes overlap between representative pathology, classical granuloma and caseum of the classical granuloma. This core could represent the core genes required for *Mtb* survival and persistence in this disease state.

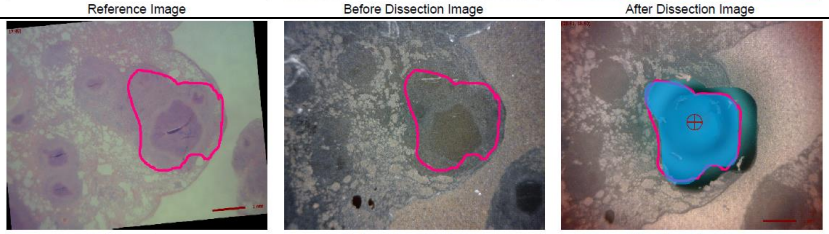
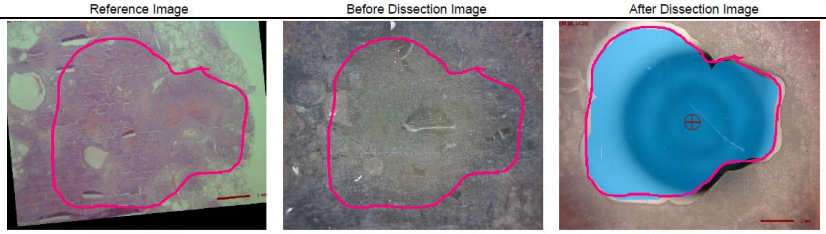
NHP	Report
EB23	Reference Image Before Dissection Image After Dissection Image
DI92	Reference Image Before Dissection Image After Dissection Image
DF30	Reference Image Before Dissection Image After Dissection Image
EA97	Reference Image Before Dissection Image After Dissection Image
HC20	Reference Image Before Dissection Image After Dissection Image
GK87	 Reference Image Before Dissection Image After Dissection Image
CR57	 Reference Image Before Dissection Image After Dissection Image

Table 4.1: ATB NHP Representative Pathology Mesodissection Reports

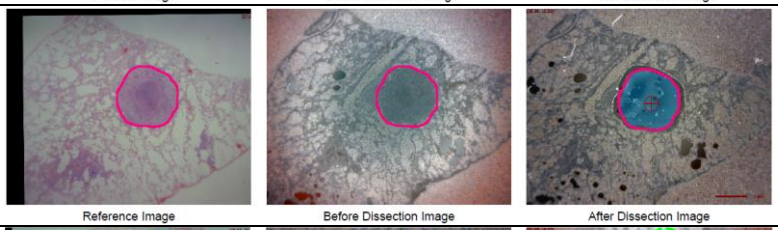
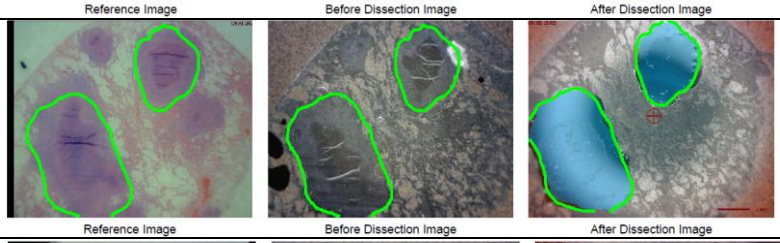
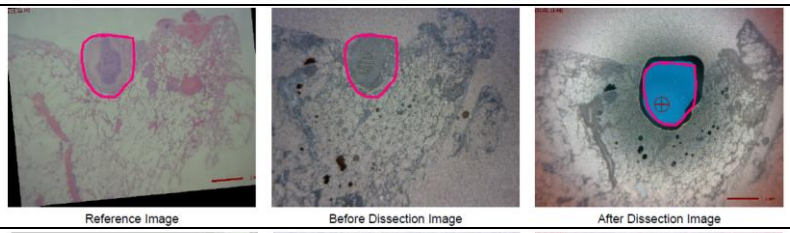
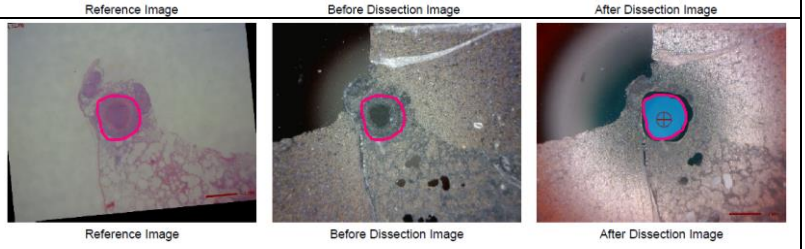
NHP	Report
EB23	
DI92	
DF30	
EA97	
HC20	
GK87	
CR57	

Table 4.2: ATB NHP Classical Granuloma Mesodissection Reports

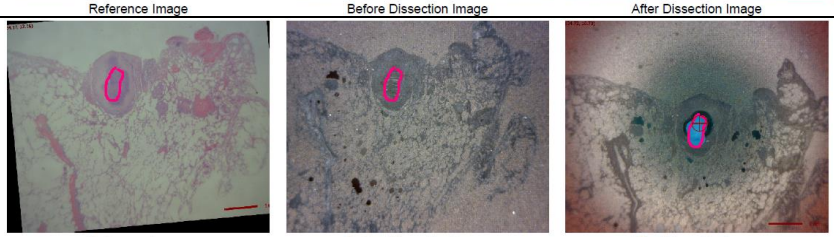
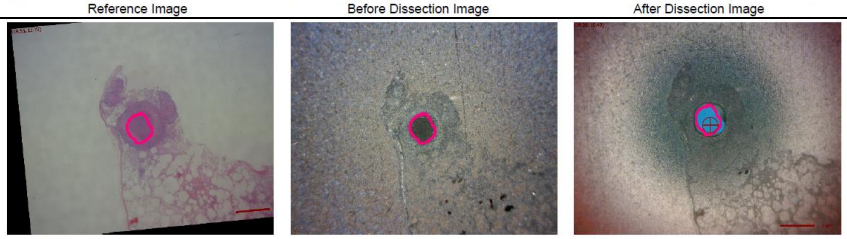
NHP	Report
EB23	Reference Image Before Dissection Image After Dissection Image
DI92	Reference Image Before Dissection Image After Dissection Image
DF30	Reference Image Before Dissection Image After Dissection Image
EA97	Reference Image Before Dissection Image After Dissection Image
HC20	 Reference Image Before Dissection Image After Dissection Image
GK87	Reference Image Before Dissection Image After Dissection Image
CR57	 Reference Image Before Dissection Image After Dissection Image

Table 4.3: ATB NHP Caseum of Classical Granuloma Mesodissection Reports

	Representative Pathology		Classical Granuloma		Caseum of Classical Granuloma	
	Statistically significant	Positive Fold Change Statistically Significant	Statistically significant	Positive Fold Change Statistically Significant	Statistically significant	Positive Fold Change Statistically Significant
Active (ATB)	2909	1344	2848	1328	2910	1343
Latent (LTBI)			1874	1082	1872	891

Table: 4.4: Statistically Significant Gene Summary in ATB and LTBI. The table shows both statistically significant gene number expressed as well as statistically significant genes with a positive fold change as compared to the control of CDC1551 *Mtb* gDNA. Each disease state, ATB or LTBI, as well as each lesion type is represented. Please note the larger number of statistically significant genes in ATB than LTBI. In addition, LTBI caseum of the classical granuloma has the lowest number of statistically significant genes.

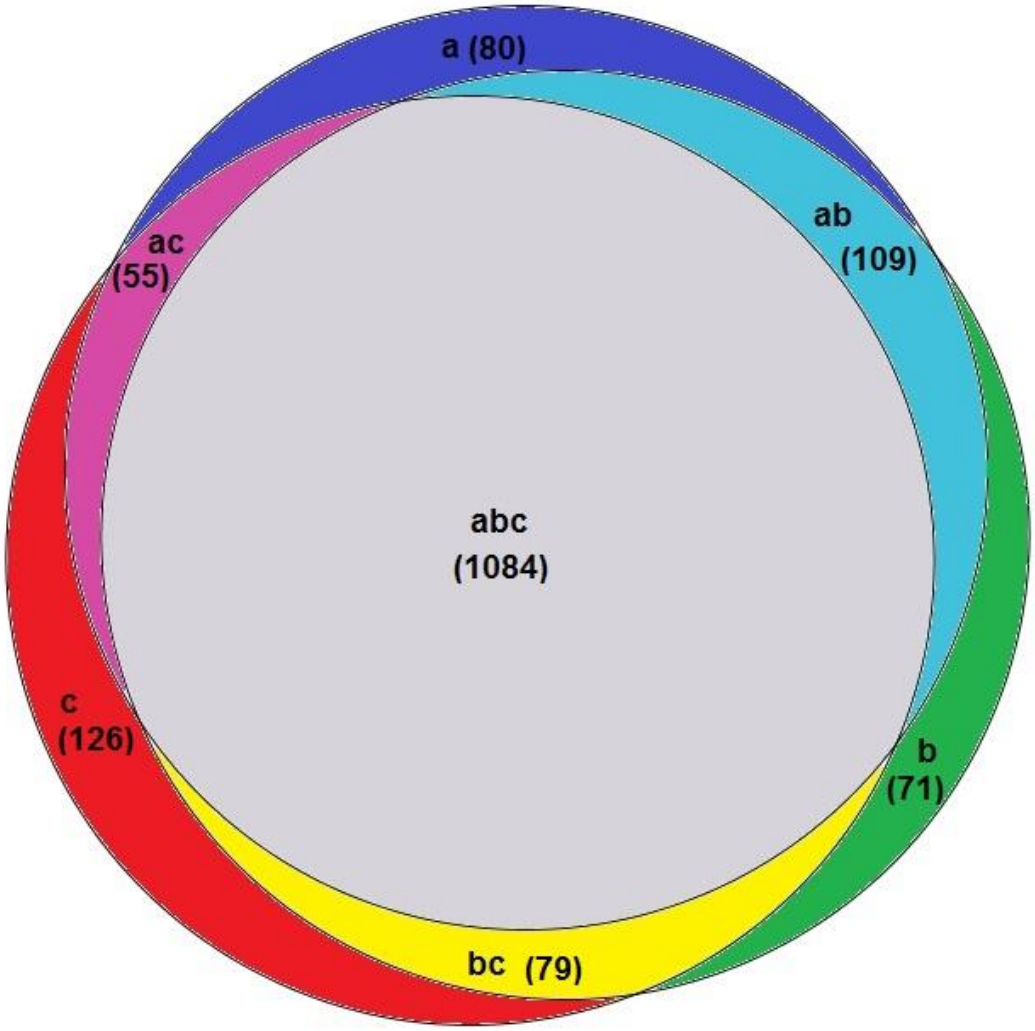


Figure 4.1: Statistically Significant Genes Expressed with a Positive Fold Change in ATB in Each Granuloma Category. Representative pathology is represented by any area in the Venn diagram with a "c." Classical granuloma is represented by an "a" and caseum of the classical granuloma is represented by a "b." The area in grey represented as "abc" represents the statistically significant genes that are common to each overlap, i.e. there are 1084 common genes in all categories.

4.2 Statistically Significant Genes in Latent Disease

FFPE lung tissue slides were obtained from the following NHPs with active TB disease (LTBI): FE10, FJ05, HB12, HB74, HC90 , II07 and II21. Samples were mesodissected into three pathological categories as described in Chapter 3 and experimental protocol was followed as described in Chapter 2. All ATB mesodissection images are shown in Tables 4.5-4.6. Subsequent microarray data was sent to Dr. Joel Bader and Dr. Nirmalya Bandoyopadhyay at Johns Hopkins's School of Medicine for statistical analysis. Statistically significant genes were determined using Limma as described in Section 3.1.

Initially, gene data was analyzed based upon statistical significance(summary found in Table 4.4). Next, statistically significant genes with a positive fold change were analyzed for the reasons described in Section 3.2 (Table 4.4). Following the assessment of overall gene lists, genes lists were compared across granuloma types. Each granuloma type, i.e. classical granuloma versus caseum of the classical granuloma, has different expression protocol. For example, there are 363 genes that are being detected with a positive fold change in only classical granuloma pathology as seen in blue in Figure 4.4. Again, there is a large overlap of genes expressed in each category. In total, as represented by the grey section labeled "ab" in Figure 4.4, 719 genes overlap between classical granuloma and caseum of the classical granuloma. This core could represent the core genes required for *Mtb* survival and persistence in this disease state.

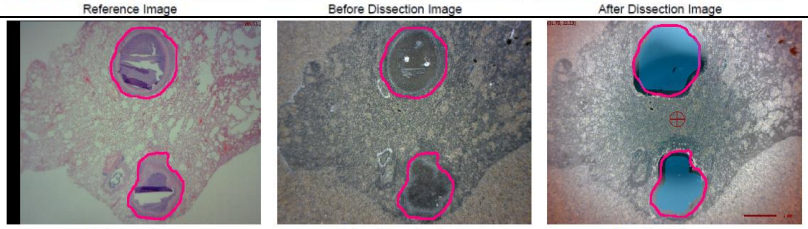
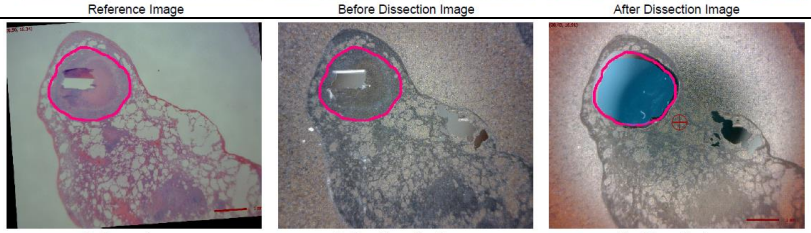
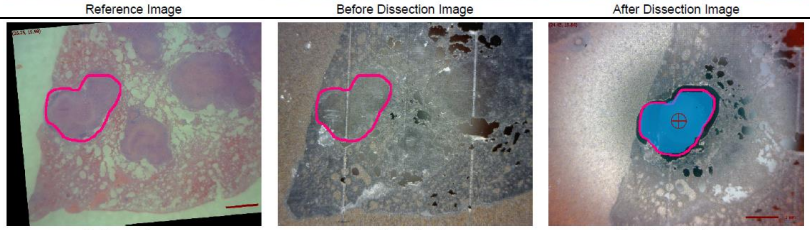
NHP	Report
FE10	Reference Image Before Dissection Image After Dissection Image
FJ05	 Reference Image Before Dissection Image After Dissection Image
HB12	 Reference Image Before Dissection Image After Dissection Image
HB74	Reference Image Before Dissection Image After Dissection Image
HC90	Reference Image Before Dissection Image After Dissection Image
II07	Reference Image Before Dissection Image After Dissection Image
II21	 Reference Image Before Dissection Image After Dissection Image

Table 4.5: LTBI NHP Classical Granuloma Mesodissection Reports

NHP	Report
FE10	
FJ05	
HB12	
HB74	
HC90	
II07	
II21	

Figure 4.6: LTBI NHP Caseum of the Classical Granuloma Mesodissection Reports

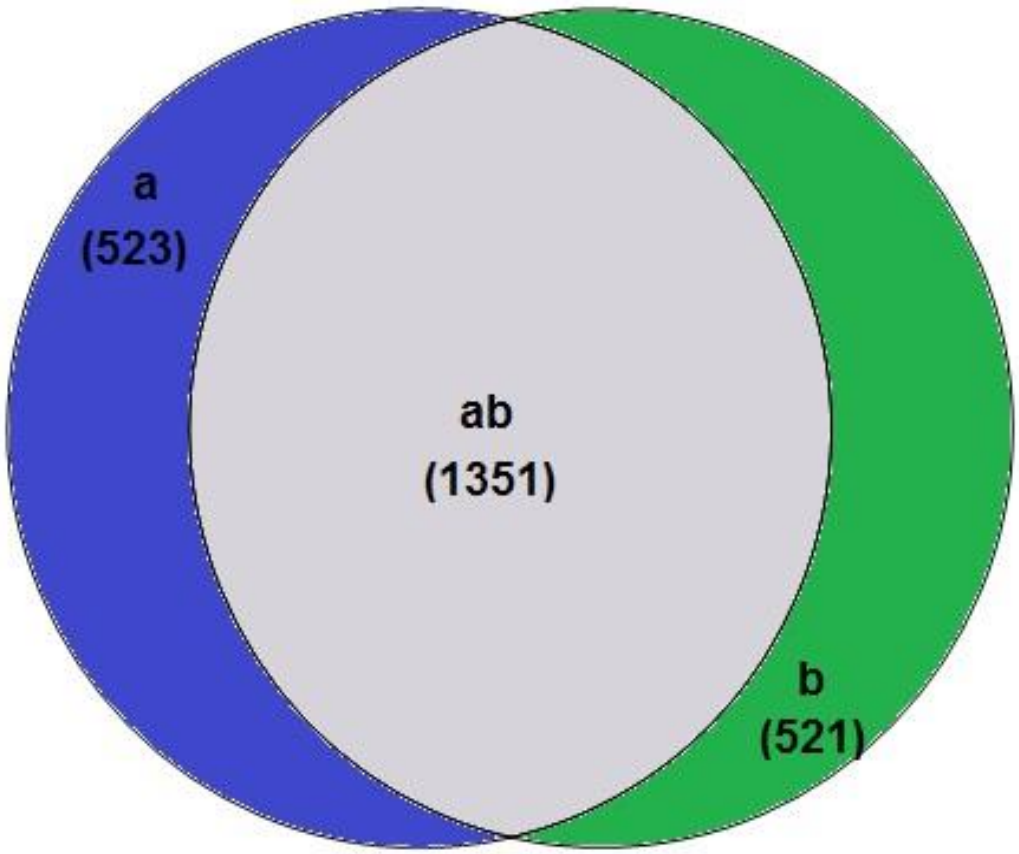


Figure 4.2: Statistically Significant Genes Expressed in LTBI in Each Granuloma Category. Classical granuloma is represented by an "a" and caseum of the classical granuloma is represented by a "b." The area in grey represented as "ab" represents the statistically significant genes that are common to each overlap, i.e. there are 1351 common genes in all categories.

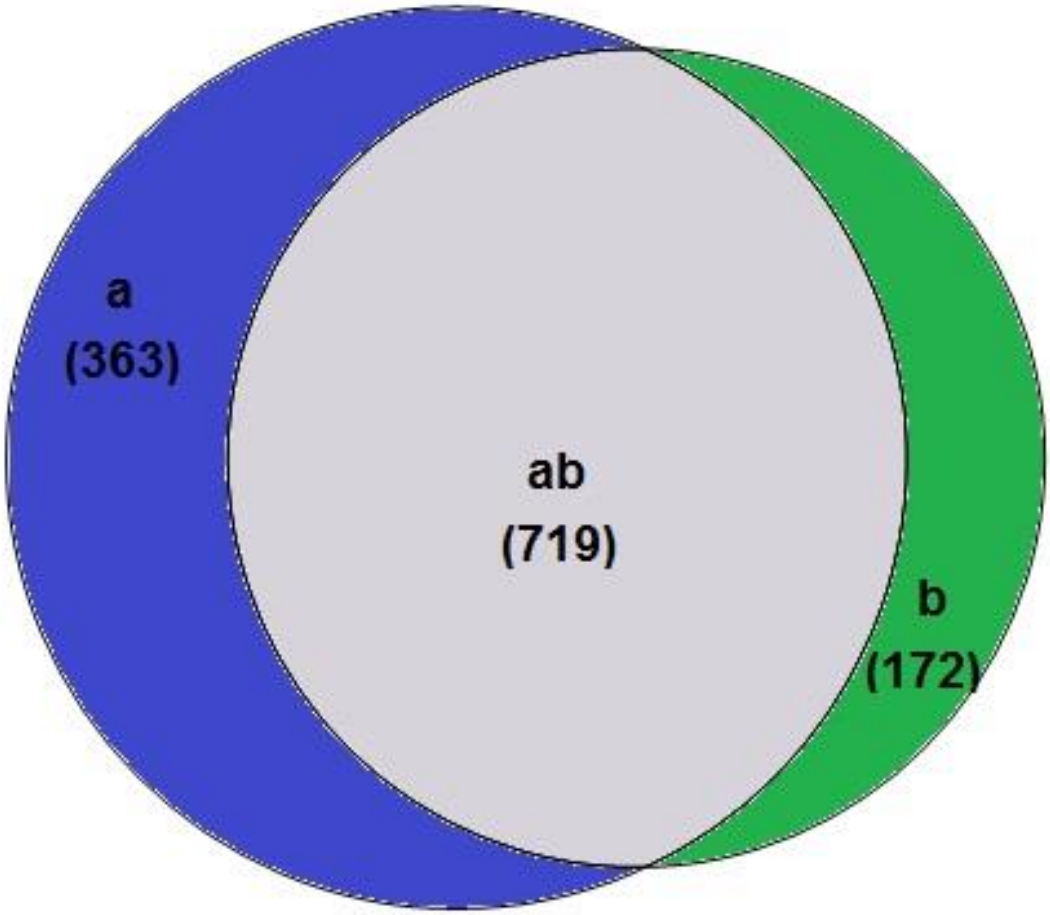


Figure 4.3: Statistically Significant Genes with a Positive Fold Change Expressed in LTBI in Each Granuloma Category. Classical granuloma is represented by an "a" and caseum of the classical granuloma is represented by a "b." The area in grey represented as "ab" represents the statistically significant genes that are common to each overlap, i.e. there are 719 common genes in all categories.

4.3 Functional Category Analysis

As described in Section 1.1.5, the *Mtb* genome is arranged in functional categories. Table 4.6 illustrates the percentage of statistically significant genes with a positive fold change in each functional category in each granuloma type. The table also depicts the core genes that overlap in ATB and LTBI.

One functional category that is elevated in all of the granuloma types is category 6, the PE/PPE category. This group of genes has only been identified in mycobacteria and is associated with pathogenicity for the non-pathogenic species *M. smegmatis* lacks these genes. Figures 4.4 and 4.5 are PE/PPE associated heat maps. Areas with the highest induction are represented in red, whereas the least induction is represented in blue. This corresponding value can be seen in the color key located at the top of the heat map. The most induction was seen in ATB (Figure 4.5, columns C-E) than LTBI (Figure 4.5, columns A-B). This increased induction could be due to the fact that there are increased active bacteria in this state. It is also not surprising that the least induction is seen in LTBI caseum of the classical granuloma s this area has the least active bacteria. This data will be described in greater detail in the core overlap between ATB and LTBI section.

Functional Category	Expected Percentage	ATB Representative Pathology	ATB Classical Granuloma	ATB Caseum of the Classical Granuloma	LTBI Classical Granuloma	LTBI Caseum of the Classical Granuloma	ATB and LTBI Overlap
0	5.6	3.3	3.9	4.2	4.3	3.5	3.5
1	6	5.0	5.0	5.4	5.7	5.3	5.4
2	5.9	5.7	5.8	6.6	6.2	7.1	7.0
3	18.9	17.6	17.2	17.4	17.8	18.1	19.0
4	1.7	0	0	0	0	0	0
5	3.6	1.7	1.7	1.8	1.8	1.8	1.9
6	4.1	6.5	6.3	6.3	5.6	6.5	6.5
7	22.6	24.3	23.7	23.8	23.4	23.0	23.9
8	0.4	0.1	0	0.1	0.1	0.1	0
9	4.8	5.1	5.3	4.8	4.5	4.7	4.4
10	26.4	30.8	31.0	29.8	30.6	30.0	28.6

Table 4.6: Functional Category Analysis. The table depicts the percentage of genes induced of statistically significant genes with a positive fold change in each granuloma category. The table also includes functional category analysis of genes that are present in all ATB and LTBI granuloma samples. These are the core genes present in all of the samples.

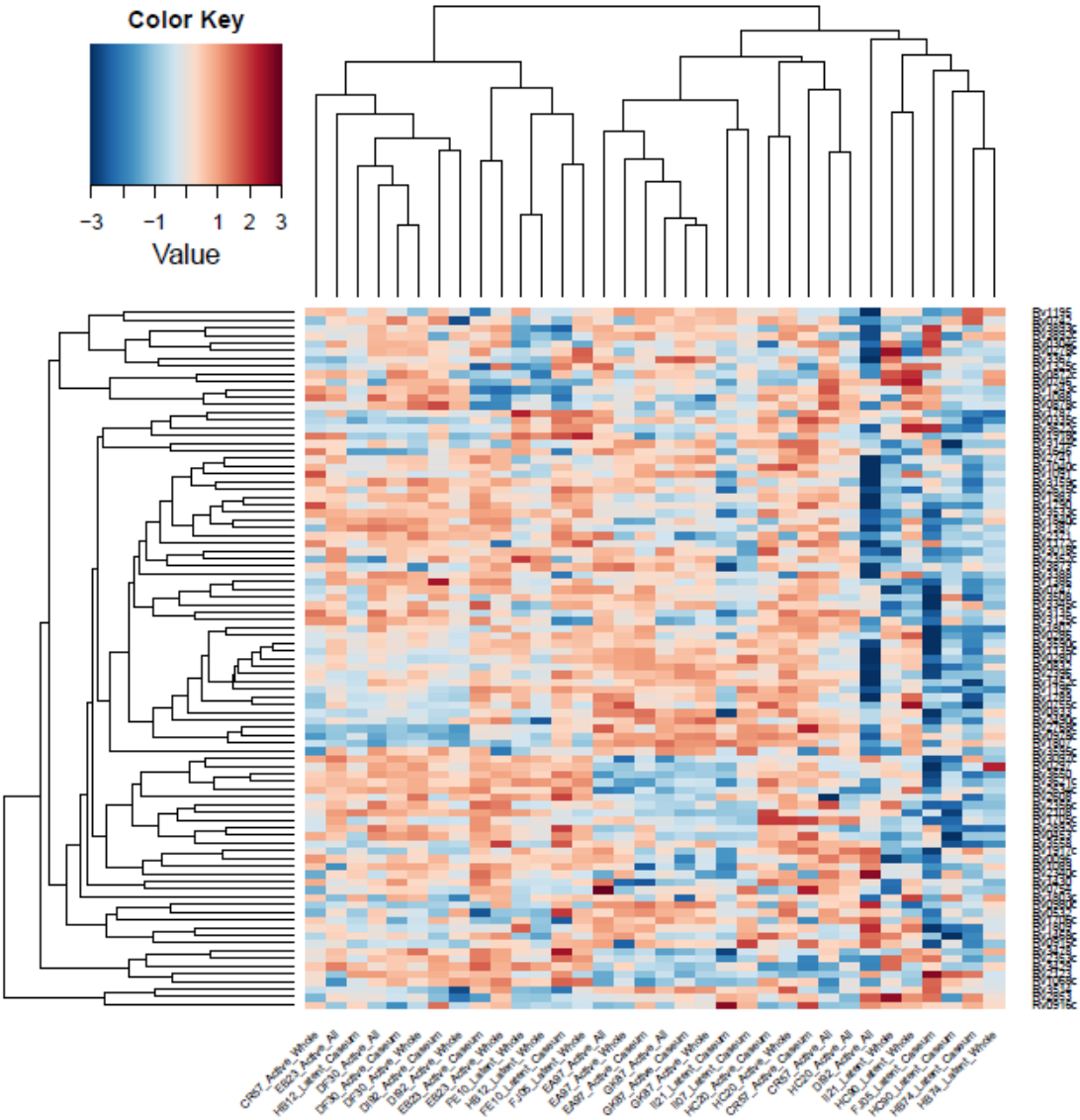


Figure 4.4: PE/PPE Hierarchical Gene Cluster Heat Map. The above image is a heat map of PE/PPE genes induced in statistically significant genes . Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

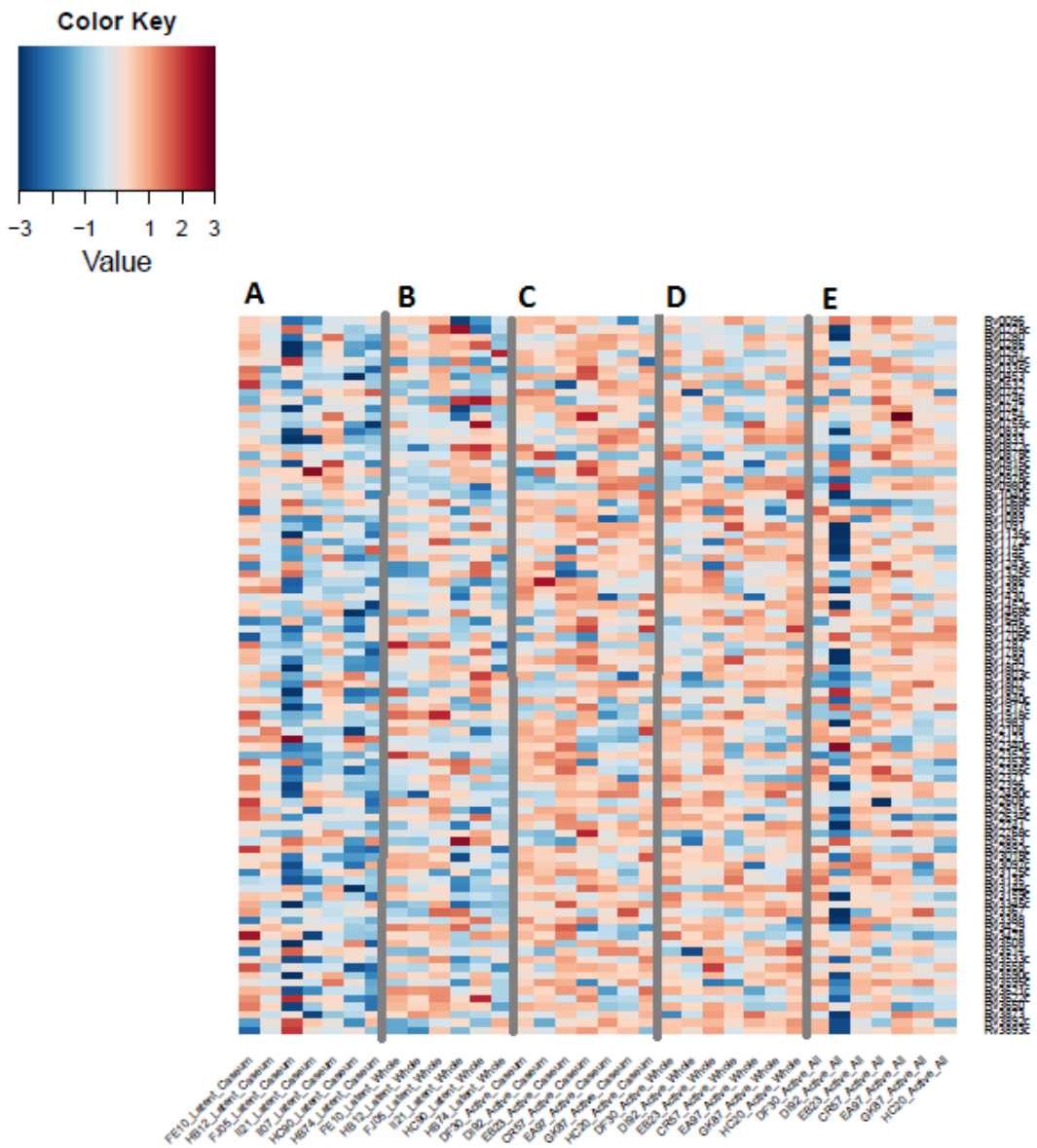


Figure 4.5: PE/PPE Heat Map by Granuloma Type. The heat map is for the same genes as Figure 4.4, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. Please note increased expression in ATB samples as indicated by the redder color spectrum. The color key depicts the colors as they depict associated fold change values.

CHAPTER 5: REGULON ANALYSIS OF *MTB*

5.1 Overview

To assess *Mtb* responses in various infective stages as well as granuloma types, regulon analysis was conducted in both ATB and LTBI samples. Table 5.1 summarizes the percentage of each regulon detected in each category. All subsequent regulon analysis is conducted upon statistically significant genes with a positive fold change. Heat map gene lists were generated using genes that were statistically significant with a positive fold change in at least one granuloma type category.

5.2 Sigma Factors

As previously described sigma(σ) factors are bacterial transcription factors that initiate specific binding of RNA polymerase to gene promoters. As seen in the two sigma factor heat maps, more σ factors are induced in ATB than LTBI in the NHP samples. This can be seen as the increased red in columns C, D, E of Figure 5.2 as compared to LTBI represented by columns A and B. In addition, the least were induced in column A, which represent the caseum of the classical granuloma in LTBI. There are a few explanations for this pattern. First, more bacteria is present in ATB than LTBI. In addition, this

Pathway	ATB Representative Pathology	ATB Classical Granuloma	ATB Caseum	LTBI Classical Granuloma	LTBI Caseum
Sigma factors	35.3	32.4	38.2	29.4	25.0
Toxin-Antitoxins	27.7	27.7	27.7	22.0	17.0
DosR	25.5	34.0	31.9	29.8	29.8
EHR	27.0	26.5	25.1	20.4	15.6
Persisters	26.7	25.7	28.7	21.8	19.8
ESX-1	25.0	25.0	25.0	29.2	25.0

Table 5.1: Percentage of Regulon Detected in NHP Samples. The table depicts the percentage of each genome detected in NHP samples in each granuloma category in ATB and LTBI. The percentages are based upon statistically significant genes expressed with a positive fold change.

bacteria are replicative; therefore, more transcription is occurring in these samples. Secondly, it can be expected that LTBI caseum would have the least expression because it is the least active for most of the bacteria is in a dormant state.

In addition, we detected 10 out of the 13 total sigma factors to be induced with a positive fold change and statistical significance in at least one of our samples. Of the 10 detected, 5 were detected in all granuloma types in all disease states. These factors included sigma factors B, D, I, J, and F. SigB is induced in hypoxic conditions and oxidative stress. It is the second primary sigma factor, so it is not surprising that it was found in all sample types. SigD is involved in stationary phase survival. In this phase the growth rate decreases, thus *Mtb* induces SigD as a way to continue to grow and survive. SigJ regulates I and J is induced in oxidative stress. Oxidative stress occurs in all stages of *Mtb* infection with the most occurring in the caseum. The caseum is present in all sample types and thus so are sigma factors that are known to be induced in this environment. Sigma F is induced in the stationary phase as well.

Sigma L was detected in LTBI caseum of the classical granuloma. M was detected in ATB caseum of the classical granuloma and LTBI classical granuloma. Both Sigma L and M have more specific functions, so they are induced in very specific lesion types. M is involved in long term *in vivo* adaptation, which is most likely to occur in caseum and LTBI. K was detected in ATB classical granuloma, ATB caseum of the classical granuloma and LTBI classical granuloma. Not much is known about this sigma factor. G was detected in ATB representative pathology, ATB caseum of the classical granuloma and LTBI classical granuloma. This factor is associated with DNA repair mechanisms. Lastly,

H was detected in ATB caseum of the classical granuloma. This factor has been associated with oxidative stress as well, with the caseum being the most oxidatively stressed part of the granuloma. The other genes in this list are also members of the sigma family, but it is very exciting that so many actual sigma factors were detected in the actual data sets.

5.3 Toxin-Antitoxins

Toxin- antitoxins (TA) are complexes of genes that contribute to a variety of functions. There are many different families and these systems have been classified into five different classes. Toxin-antitoxins start as bound complexes. When a specific condition associated with the complex occurs, the complex dissociates allowing the toxin to exhibit its particular affect. The toxin components of these systems function in a myriad of ways including targeting DNA replication, cell division, protein synthesis, RNA cleavage, etc. The most common way the complexes exert there affects are through RNA cleavage in either a ribosomal dependent or independent manner. *Mtb* encodes 79 of these complexes. A list of the genes can be found in Table 1.2.

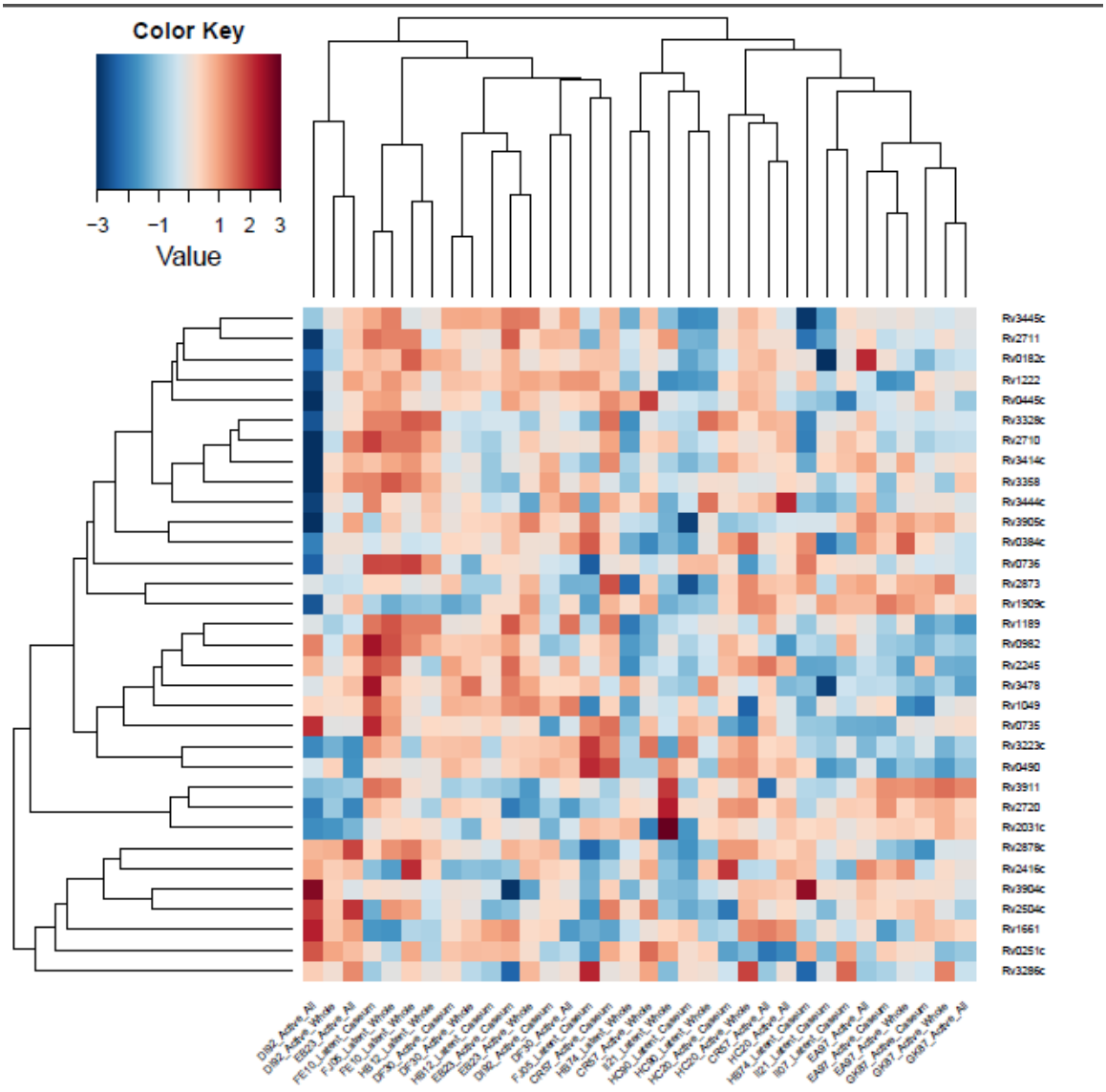


Figure 5.1: Sigma Factor Hierarchical Gene Cluster Heat Map. The above image is a heat map of sigma factor genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

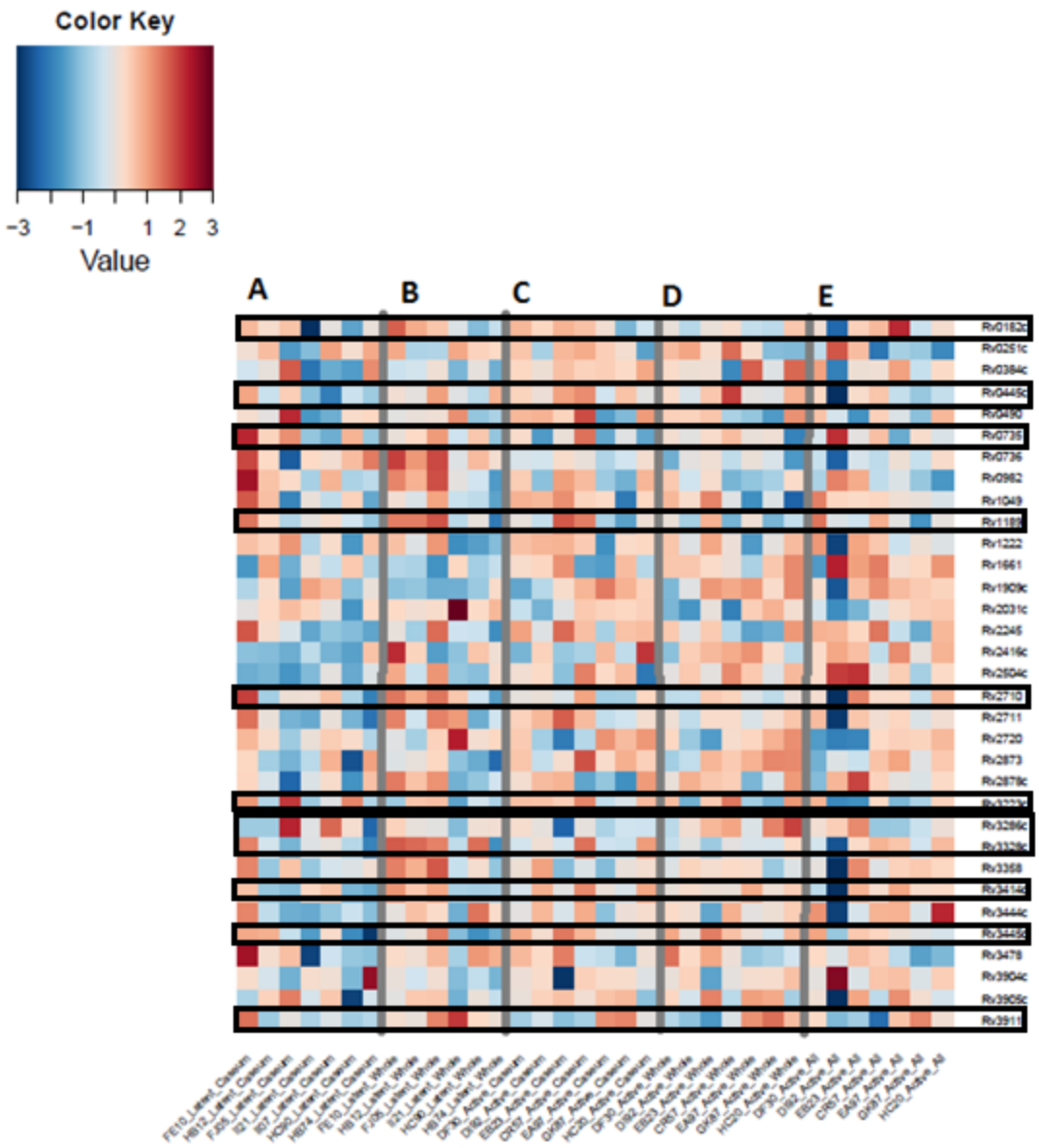


Figure 5.2: Sigma Factor Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.1, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. Please note increased expression in ATB samples as indicated by the redder color spectrum. The color key depicts the colors as they depict associated fold change values. All direct sigma factors (sig B, C, I, J, F, L, M, K, G, H) detected are boxed in black.

Interestingly, some of the most highly induced genes in our samples belong to this category. Heat maps of TA complexes depict more induction in ATB (columns C, D, E) than LTBI (column A,B) due to the increased red (Figure 5.3-5.4). The least induction is seen in caseum of LTBI (Section A). ATB has the most bacteria and therefore the most gene induction; consequently, it is not surprising to have increased induction of genes in this sample type. Also, TA complexes are associated with persister formation. It is possible that to survive and persist, *Mtb* induces these complexes early in infection to promote the generation of persisters if needed. In addition, more TA complexes are induced in the classical granuloma of LTBI than the associated caseum. This could be and additive affect because the caseum is contained in the classical affect. This could also be because the caseum of definition is necrotic and therefore has less active transcript activity. This would be more TA complexes are being induced in the cellular periphery of the granuloma.

One of the most highly induced genes in our sample is Rv2801c (MazF9). This is evident by average induction values. The average induction values for MazF9 are as follows: 3.99 in ATB representative pathology, 3.68 in ATB classical granuloma, 3.75 in ATB caseum of the classical granuloma, 3.0 in LTBI classical granuloma and 2.86 in LTBI caseum of the classical granuloma. This gene is induced in all sections of the granuloma, but has the greatest induction in ATB. This could be because of the increased bacterial numbers and activity in ATB. Interestingly, this gene is also very highly induced in LTBI. It is also very highly induced in the caseum. Such high induction suggests that MazF9 is very important in *Mtb* survival and persistence.

Recently, a paper was published by Singh and colleagues suggesting the role of MazF ribonucleases in *Mtb* drug tolerance and virulence in guinea pigs. One of the three genes that they found most important was MazF9. This gene was found to function to decrease *Mtb* growth in a bacteriostatic manner. It is induced under a variety of stressors such as oxidative and nitrous oxide stress. *Mtb* must adapt to nutrient and oxidative conditions to produce dormancy. The study found that MazF9 is induced in *Mtb* persisters and deletion of this gene results in reduced persister cell formation *in vitro*. Overall, this study shows that MazF9 allows *Mtb* to adapt to oxidative conditions, become drug-tolerant and persist in the host. This study was conducted in guinea pigs which are more pathologically similar to humans than mouse models. Conversely, guinea pigs are highly susceptible to *Mtb*, so this could be a false representation. NHP models are more similar to humans and the genes induced here are similar to those induced in this model. This further proves that TA complexes are an important part of *Mtb* pathogenesis[162] .

The key of the Singh study pertains to a theory proposed about the mechanism of bacterial pathogenesis via TA complexes. When *Mtb* is exposed to a stressor, a subset of toxins becomes cleaved from its associated antitoxin. The toxins degrade the transcript of interest and bacterial metabolism is reduced. Next, *Mtb* up-regulates specific genes induced under specific conditions as a response to this metabolic shutdown. These TA complexes, such as MazF9, induce a response to a stress regulon and therefore allow *Mtb* to remain dormant and persist in the host. In turn, these complexes could be used as targets to combat drug tolerant bacteria[162].

The majority of the TA complexes expressed in our intragranulomatous lesions belong to the VapBC family. This is the largest TA family in the *Mtb* genome. The toxin is expressed by the letter "C" and the antitoxin is expressed by the letter "B." Our data contains fifteen antitoxins in statistically significant genes with a positive fold change in any granuloma category as well as 14 antitoxins. Amongst these genes, four VapBC pairs are expressed. These pairs are as follow: VapBC19, VapBC21, VapBC33 and VapBC34. Overall, these genes follow the overall expression pattern in that they have higher induction in ATB than LTBI. These genes are boxed in Figure 5.4. It has been shown that VapC toxins appear to target RNA by distinct mechanisms. Unfortunately not much is known about these toxins, especially the specific pairs found in our data. It can be postulated that these TA complexes play a larger role in *Mtb* pathogenesis than previously thought.

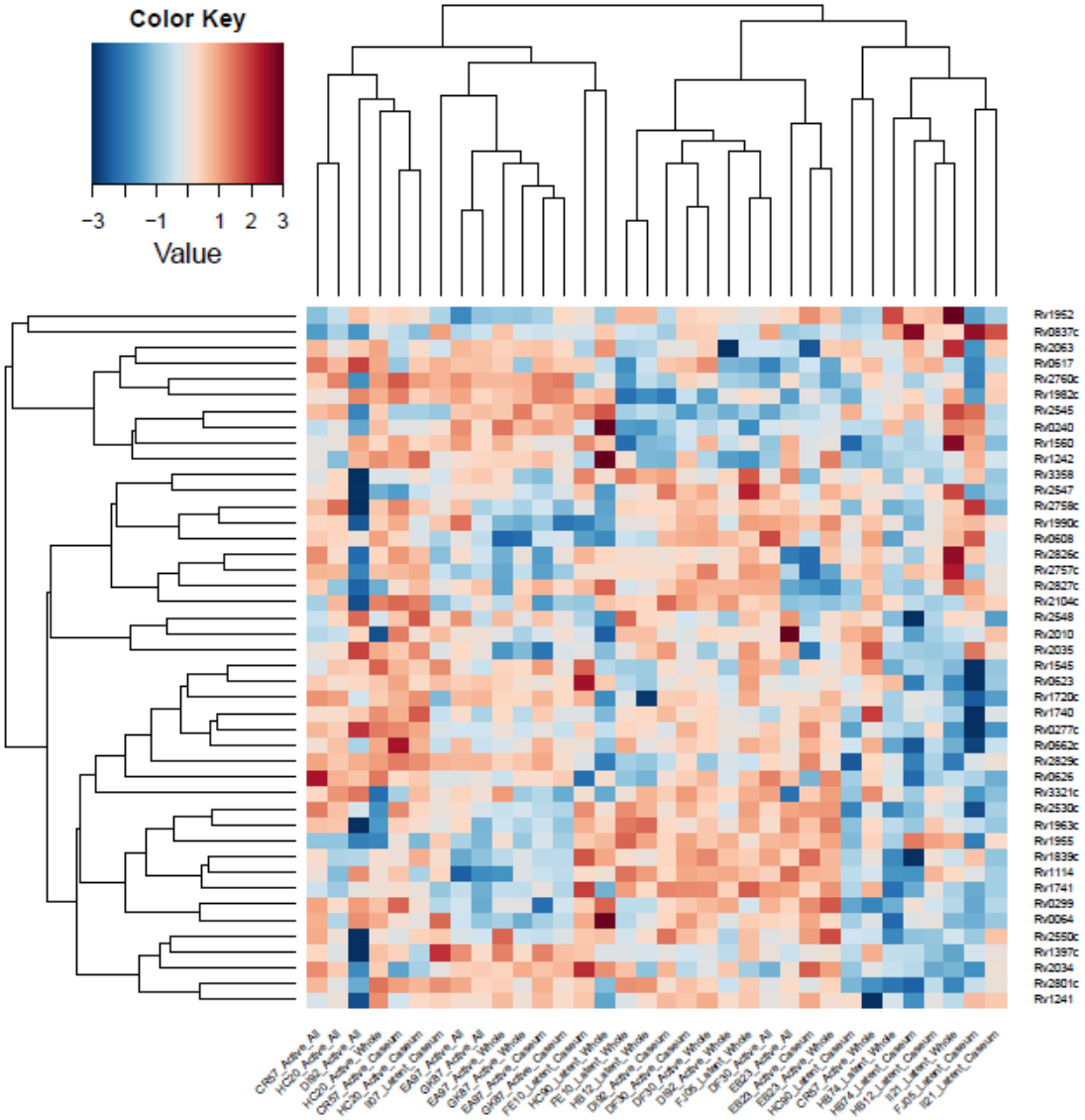


Figure 5.3: Toxin-Antitoxin Hierarchical Gene Cluster Heat Map. The above image is a heat map of TA genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

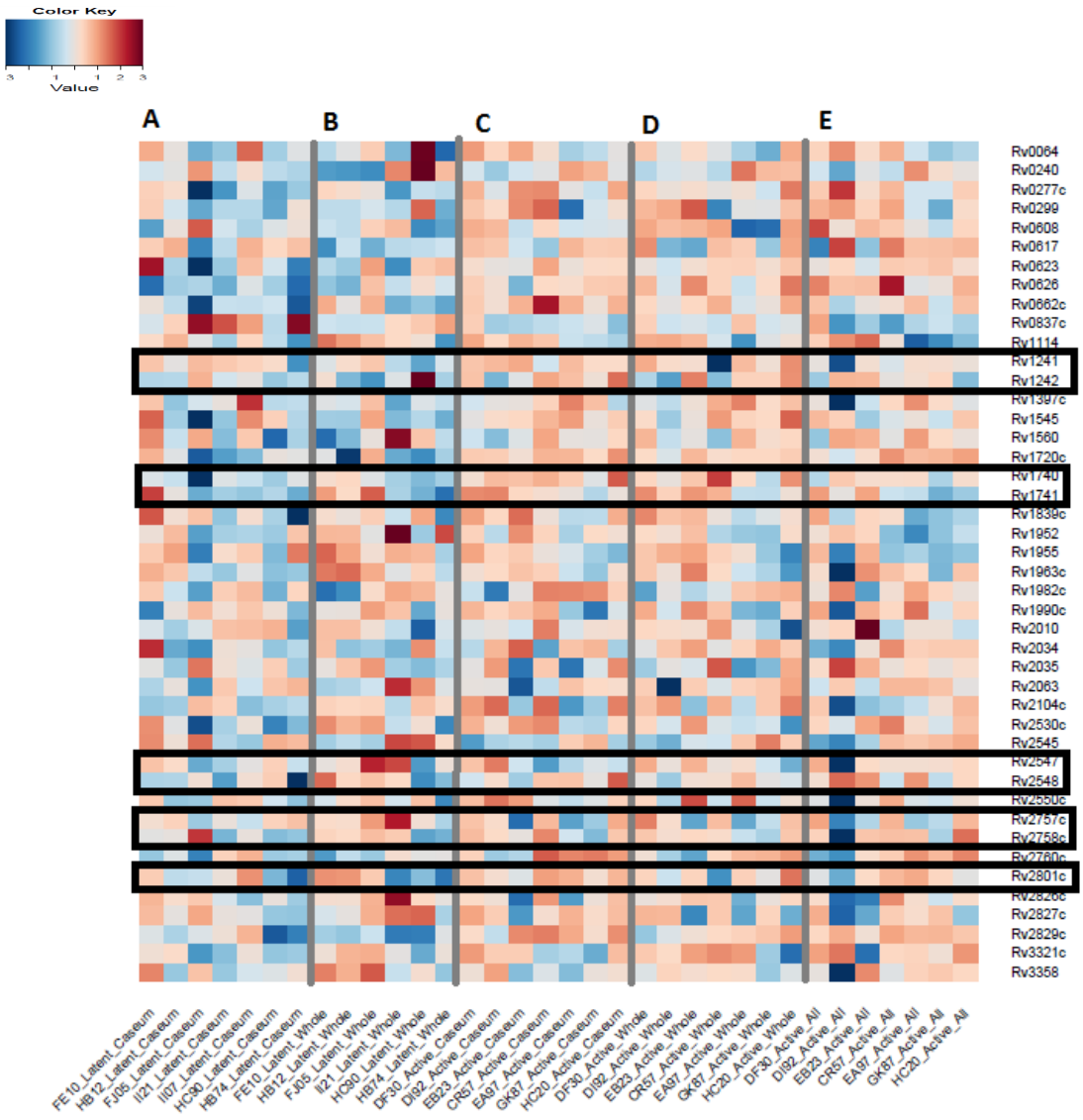


Figure 5.4: TA Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.3, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. The color key depicts the colors as they depict associated fold change values.

5.4 Dos R

The DosR regulon consists of 48 genes, see Table 1.2, that are up-regulated during hypoxia, low pH, nitrous oxide and carbon monoxide. Some of the genes in this regulon are considered essential for *Mtb* dormancy[83,87,89,159,163-165]. Due to the fact that this regulon is upregulated in hypoxic conditions, it can be deduced as to where in the granuloma, i.e. the samples defined here, one would expect to the see the most associated gene induction. We would expect the most DosR regulon associated genes to be expressed in the area of the granuloma with the most hypoxic conditions, the caseum of the classical granuloma in LTBI. In our NHP model, these animals have had LTBI for months; therefore, this section of the granuloma should be truly hypoxic in that they have had months to become as such. The next area we would expect to see the largest DosR regulon induction would be either the ATB caseum of the classical granuloma samples or the LTBI classical granulomas. The ATB caseum of the classical granuloma would be hypoxic for the same reasons as the LTBI caseum in that it is the caseum of the granuloma. This area is the most hypoxic region of the granuloma. The reason we would expect similar DosR induction profiles in the LTBI classical granuloma as the ATB caseum is that the LTBI classical granuloma contains the LTBI caseum. We expect this to be less than the LTBI caseum only because of the dilution effect of also including the cellular periphery present in this granuloma type. The next granulomatous category we expect to have the most induction in is the classical granuloma in ATB. The granuloma section we expect to have the least induction in is representative pathology of ATB. This reason is because it includes all of the pathology on the slide. This means

that although it does include caseous areas, there is a dilution effect in that it includes all other pathology as well. In addition, ATB is less hypoxic than ATB because the animals quickly succumb to the disease process.

Overall, the data generated follows the expected profiles. Heat maps below show DosR profiles for statistically significant genes with a positive fold change in any of the granuloma mesodissection categories. Figure 5.5 is a cluster generating heat map for all NHP samples mesodissected, whereas Figure 5.6 orders them by disease category. Figure 5.6 clearly shows that there is bluer in the samples on the right hand side of the heat map (see column E); consequently, these are genes belonging to the representative pathology section. The brightest red, highest fold change induction values, are seen in the latent caseum which is represented by column A.

In addition, genes of interest are particularly important with respect to both the DosR regulon and the data in this experiment. Three important genes in this regulon are boxed in Figure 5.6. Rv1996 and Rv2028c have been shown to induce greater T cell responses in LTBI than ATB in a cohort of Japanese patients[165]. This is seen in the data here for there is more red and therefore a higher fold change in the latent samples in columns A and B. In addition the points with the highest fold change are seen in the LTBI caseous samples. Rv2028c induction was statistically significant in all of the granuloma types except for ATB representative pathology. This could be because the dilution affect produced too small of a difference amongst the samples to call it statistically significant. With respect to RV1996, statistical significance was only seen in LTBI classical granulomas. Dilution effect can be used to explain the lack of significance

in this gene in ATB. The lack of significance in LTBI caseum of the classical granuloma is most likely the result of the one blue spot, lower induction, by one of the animals and therefore physiologic variation. A third important gene induced is Rv0080, which also had the highest induction with statistical significance throughout all granuloma types. This gene has been shown to be recognized by T-cells in TST-positive and /or ESAT-6/CFP-10-positive individuals in three high-burden African countries[165]. Lastly, Rv2031c has been shown to be induced in persistence and is most highly induced in LTBI caseum of the classical granuloma, LTBI classical granuloma (with statistical significance) and ATB caseum of the classical granuloma (with statistical significance. The lack of statistical significance in LTBI caseum of the classical granuloma is most likely due to physiologic variation as depicted by the one blue spot on the heat map in column A for that specific gene.

The above data has important implications especially with respect to vaccine development. The DosR regulon has been shown to promote dormancy; therefore, a vaccine that targets genes that promote dormancy inducing DosR response would decrease the likelihood of TB reactivation. For example, a person with LTBI could be given a vaccine that would promote this dormant state and not allow reactivation. Also, a person with ATB could be given this vaccine to promote the transition into a dormant, LTBI state. Since LTBI produces neither clinical illness in the infected individual, nor is it contagious, this would be a better alternative than ATB. Using this theory, the three genes mentioned above could be used as potential vaccine candidates.

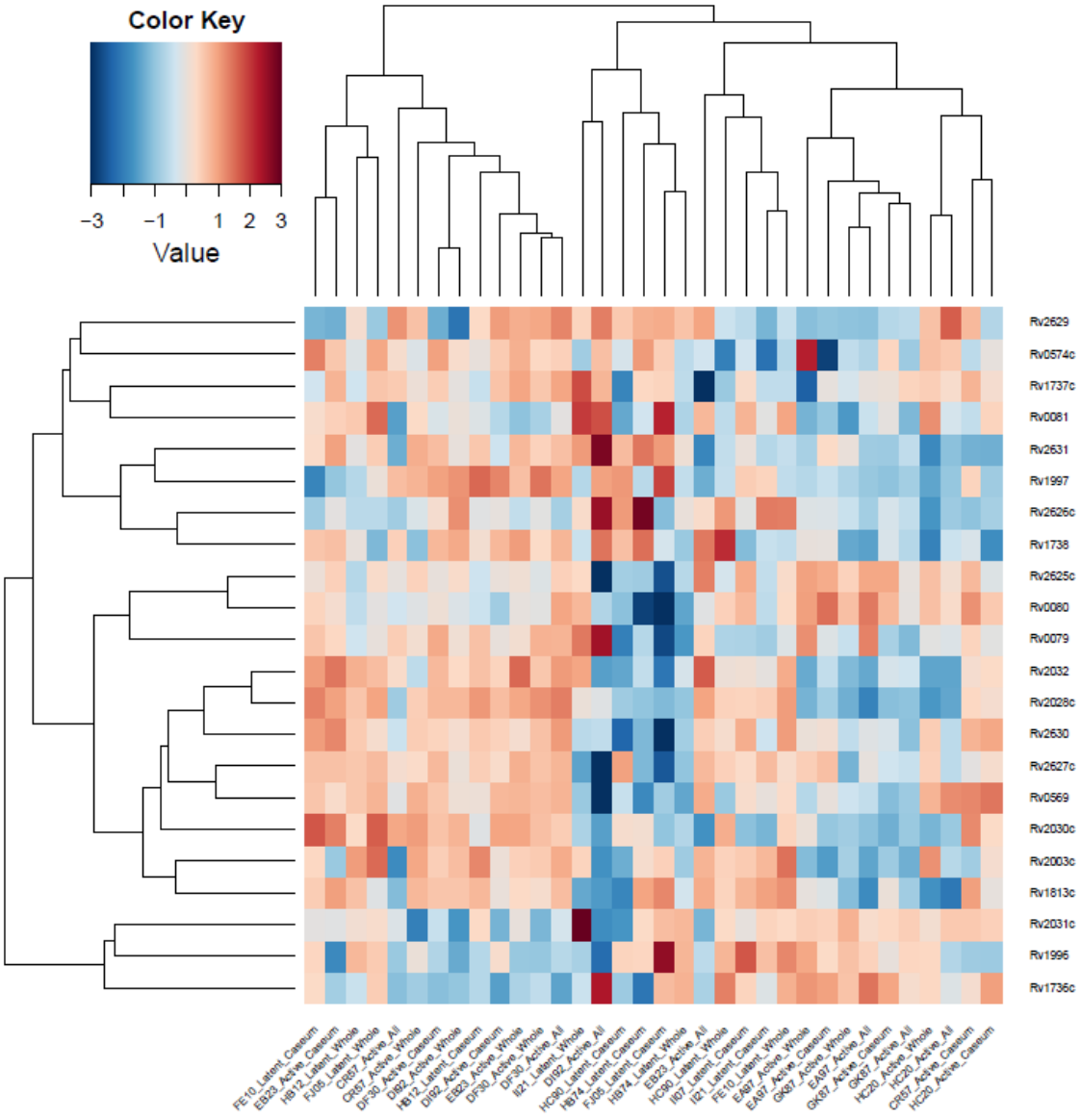


Figure 5.5: DosR Hierarchical Gene Cluster Heat Map: The above image is a heat map of DosR genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

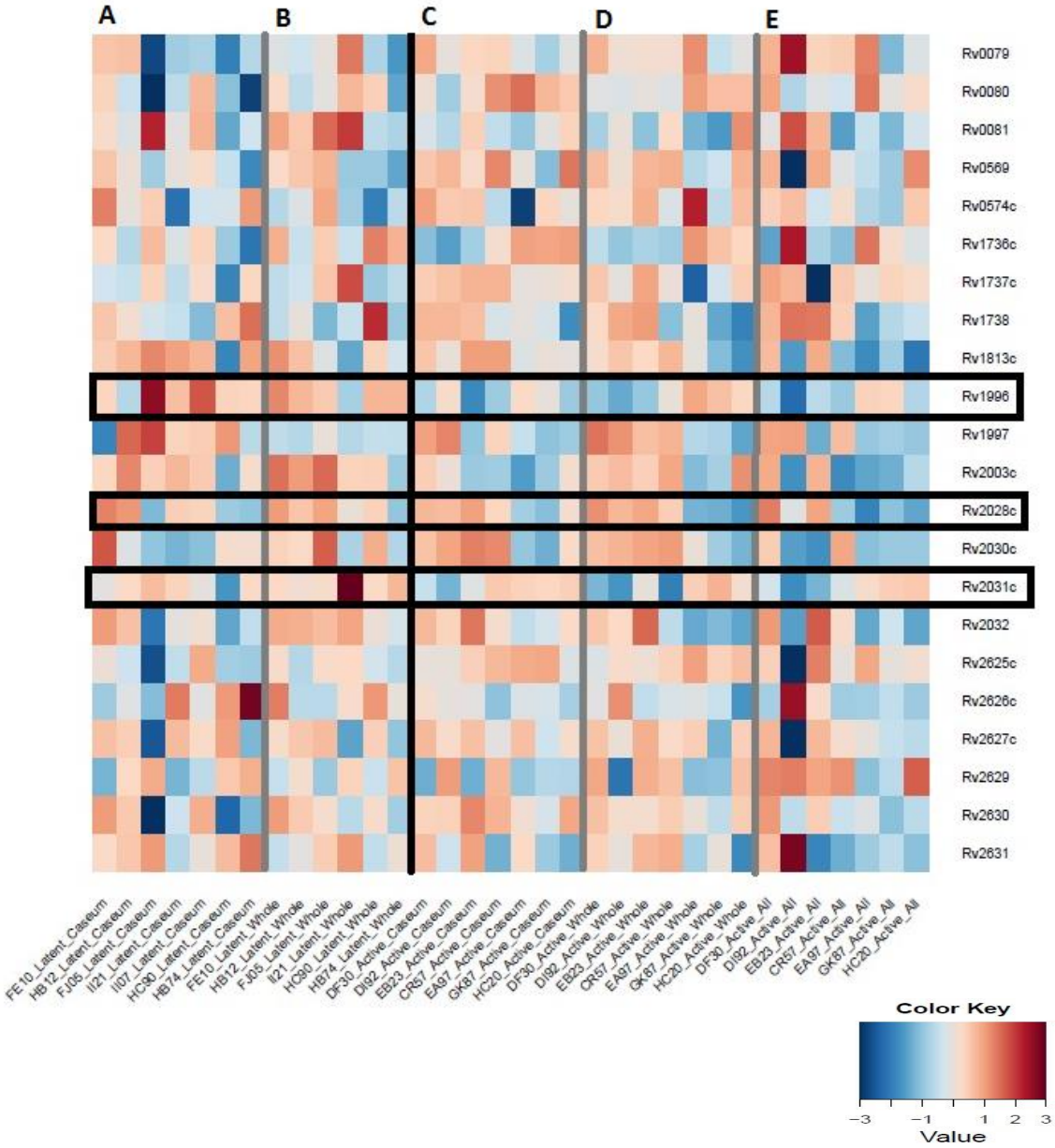


Figure 5.6: DosR Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.5, but depicts the heat map by granuloma type. The columns are as follows: “A” LTBI caseum of the classical granuloma, “B” LTBI classical granuloma, “C” ATB caseum of the classical granuloma, “D” classical granuloma and “E” ATB representative pathology. The color key depicts the colors as they depict associated fold change values.

5.5 Enduring Hypoxic Response

EHR refers to a group of 230 genes known to be induced after the DosR response in conditions of hypoxia[97]. We would expect the *Mtb* transcriptomic profiles to be similar to those found in DosR as they should reflect areas of hypoxia. This means that areas with the most hypoxia, like LTBI caseum of the classical granuloma, should have the most induction. Conversely the granulomatous area with the least hypoxia, ATB representative pathology, should have the least response.

Heat maps of EHR genes show a much more complicated and intricate gene induction spectrum (Figures 5.7- 5.8). These maps were generated based upon statistically significant genes with a positive fold change that were statistically significant in at least one of the granuloma categories. Interesting, the least induction (bluest) section is in LTBI caseum of the classical granuloma. This is interesting because this is where one would expect the most induction. This could be due to the fact that the caseous samples, especially in LTBI, are the most difficult sample type to dissect. This is demonstrated by the fact that they produce the smallest RNA yields as well as the poorest quality RNA of all of the sample types post mesodissection. For genes with really large inductions and therefore very high gene copies, this is less of an issue. It is possible, that the genes here have smaller transcript numbers and therefore are very challenging to detect. This would result in lower transcripts than that which are actually there. The highest response is in ATB, which can be seen by the increased red. This could be due to the fact that these are the easiest sample to mesodissect in that they have the most lesions per unit area, the highest bacterial numbers and produce the

highest RNA yields. In addition, EHR was discovered in mice. This work has yet to be conducted in a NHP model. It is possible that this response is either different in NHP or occurs at a different rate. It is reported in mice that EHR occurs after DosR regulon induction and is indicative more “long term” hypoxia, but for how long? It can be postulated that what is being detected as induction in ATB is this EHR, but in actuality it is less important in the long term. This would explain higher fold changes in ATB followed by a decrease in latency in our NHP model. More experiments, especially in NHP models, are needed to fully answer these questions.

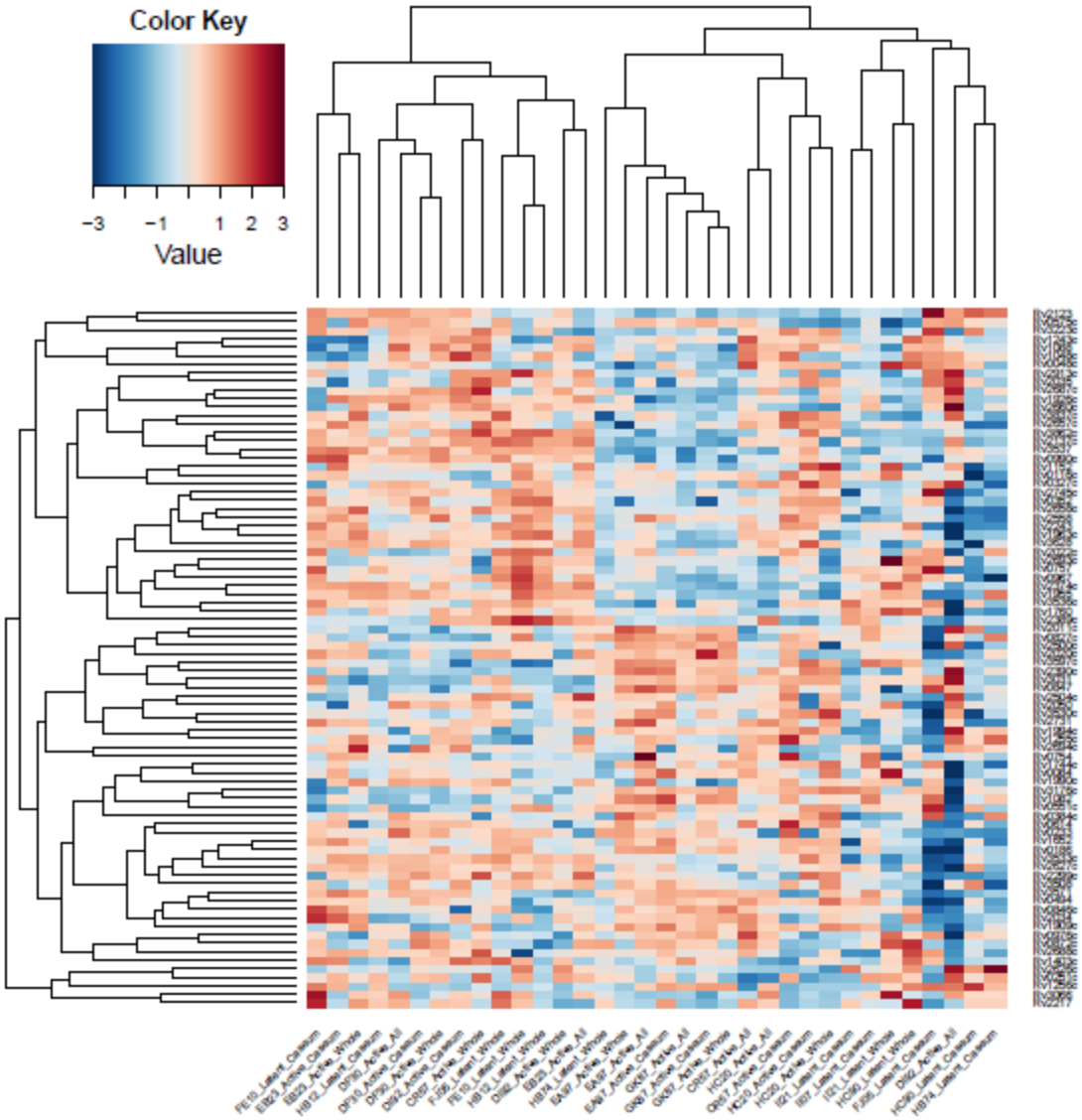


Figure 5.7: EHR Hierarchical Gene Cluster Heat Map. The above image is a heat map of EHR genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

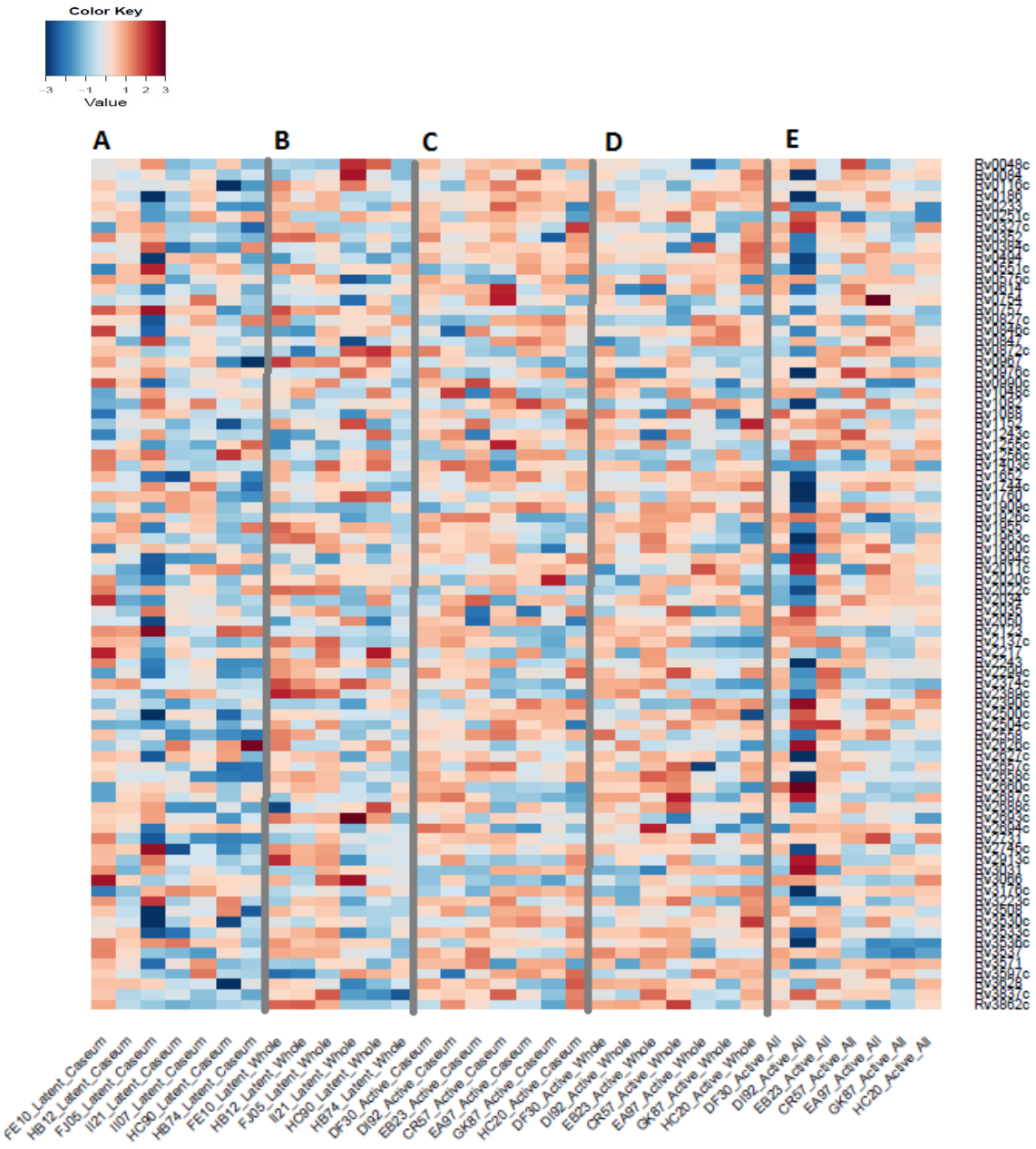


Figure 5.8: EHR Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.8, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. The color key depicts the colors as they depict associated fold change values.

5.6 Persisters

Persisters are bacteria that survive the 'cidal action of antibiotics. It is easiest to discuss these genes by first discussing them by granuloma type. In our samples, not much distinction can be made between ATB and LTBI for induction is seen throughout (Figure 5.10). This can be explained by *Mtb* survival patterns. To survive, *Mtb* needs to establish persistence, thus our data suggests that it does this throughout infective stages. Persistence is as important in ATB as it is in LTBI. In ATB, *Mtb* must develop persistence. In LTBI, persistence must be maintained. This phenomenon would necessitate induction of these genes in all of the infective states, even LTBI caseum of the classical granuloma. Persistence also allows the bacteria to reactivate when the host is immunocompromised, thus it is imperative that *Mtb* maintain persistence in LTBI.

Genes that have been associated with persistence present in all disease states are potential vital to *Mtb* persistence overall. The eleven genes that are expressed with a positive fold change and statistical significance in ATB and LTBI as well as all granuloma types are as follows: Rv0975c (fadE13), Rv1452c (PE_PGRS28), Rv2651c, Rv2667 (clcpC2), Rv1902 (PPE30), Rv3445c (esxU), Rv2625c, Rv0847 (lpqS), Rv3286c (SigF), Rv2615c (PE_PGRS45) and Rv3905c (esxF). For example, there is a theory that FadE13 is involved in the import of peptides to signal the need to remodel cell wall envelope components[82].

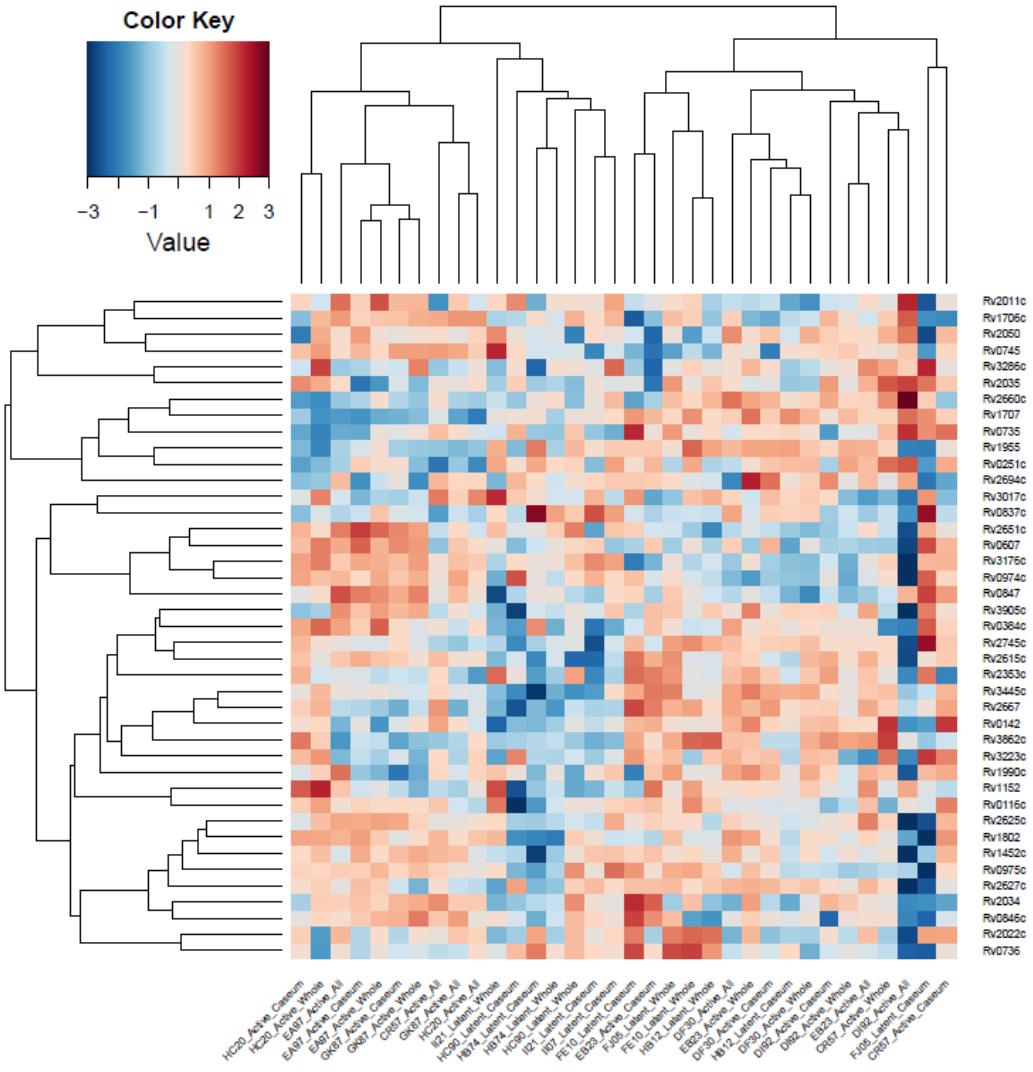


Figure 5.9: Persister Hierarchical Gene Cluster Heat Map. The above image is a heat map of EHR genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

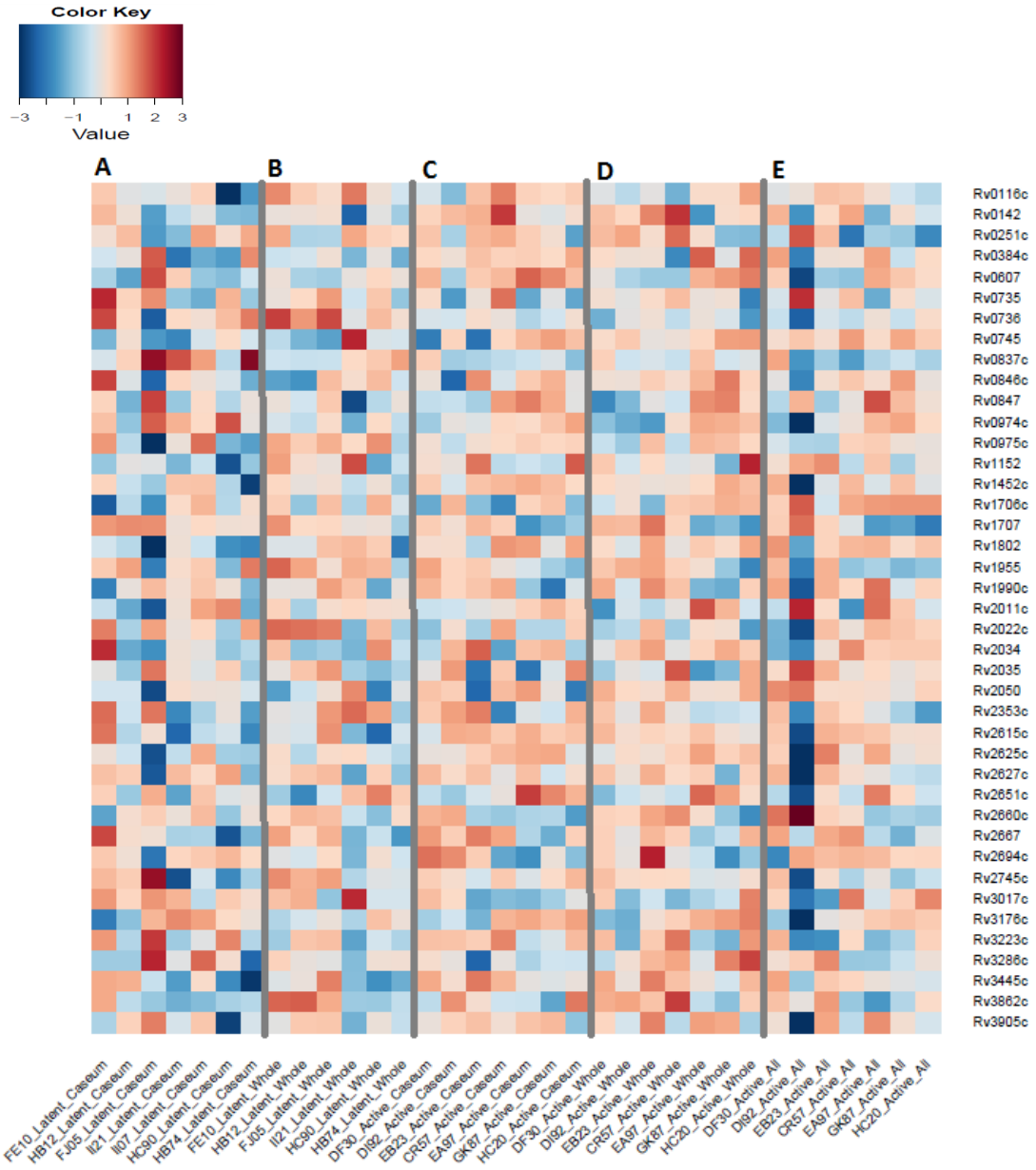


Figure 5.10: Persister Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.9, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. The color key depicts the colors as they depict associated fold change values.

5.7 ESX-1 Secretion System

ESX-1 is a secretion system that *Mtb* uses to deliver virulence proteins during the infection of host cells. This system, particularly ESAT-6, is required for full virulence[108,166]. Upon deletion of this system, *Mtb* almost completely loses virulence. In total, seven members of this family are statistically significant with a positive fold change in one or more of the granuloma types.

ESAT-6, Rv3875, is one of the key antigens in the *Mtb* genome. This gene is located on a segment of the genome known as the Region of Difference (RD1) (Described in Section 1.1.6.7) . This segment is absent in BCG. This secretory protein is a potent T cell antigen which has been shown to bind to TLR2 receptors. It has been shown to produce gamma interferon. This gene is expressed with a positive fold change and statistical significance in all but ATB classical granuloma samples. The expression profile of this gene varies sample by sample, but the highest induction is seen in ATB representative pathology as demonstrated by the brightest red and therefore highest induction in associated ESX-1 heat maps. This is a gene we would expect to find in our samples due to its documented importance.

Other ESX-1 proteins expressed in our samples as assessed by the aforementioned parameters are Rv3876 (espl), Rv3879c (espK), Rv3879c (espK), Rv3880c (espL), Rv3881c (espB), Rv3882c (eccE) and Rv3873 (mycp1). EspB is the secretion apparatus and is a member of the core genes of all sample types. Interestingly, this is expressed with statistical significance and a positive fold change in all of our sample types as determined by Limma analysis. In this system, secretion is mutually dependent.

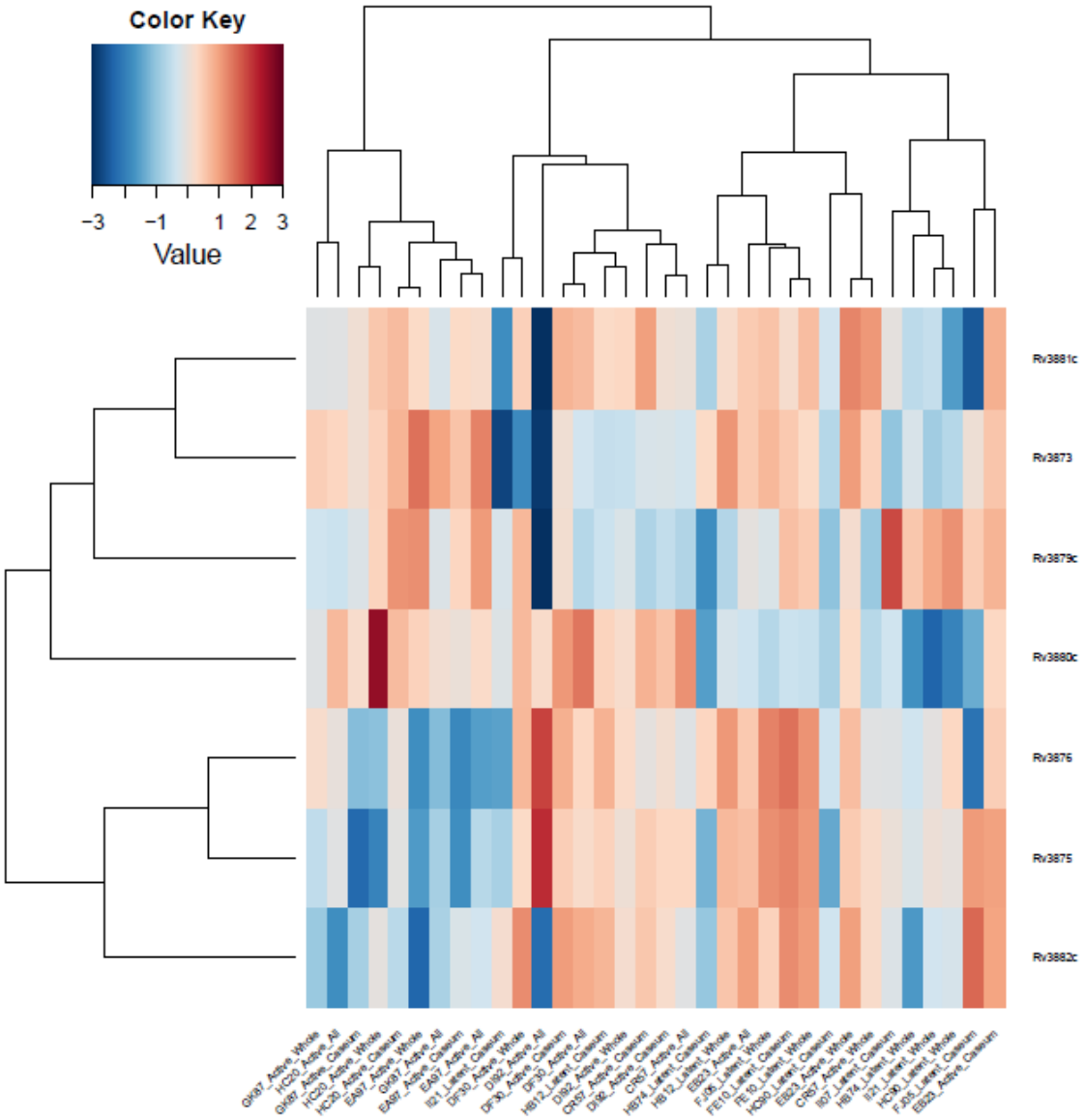


Figure 5.11: ESX-1 Hierarchical Gene Cluster Heat Map. The above image is a heat map of ESX-1 genes induced in statistically significant genes. Gene list was generated using statistically significant genes with a positive fold change in at least one granuloma category. The color key depicts the colors as they depict associated fold change values.

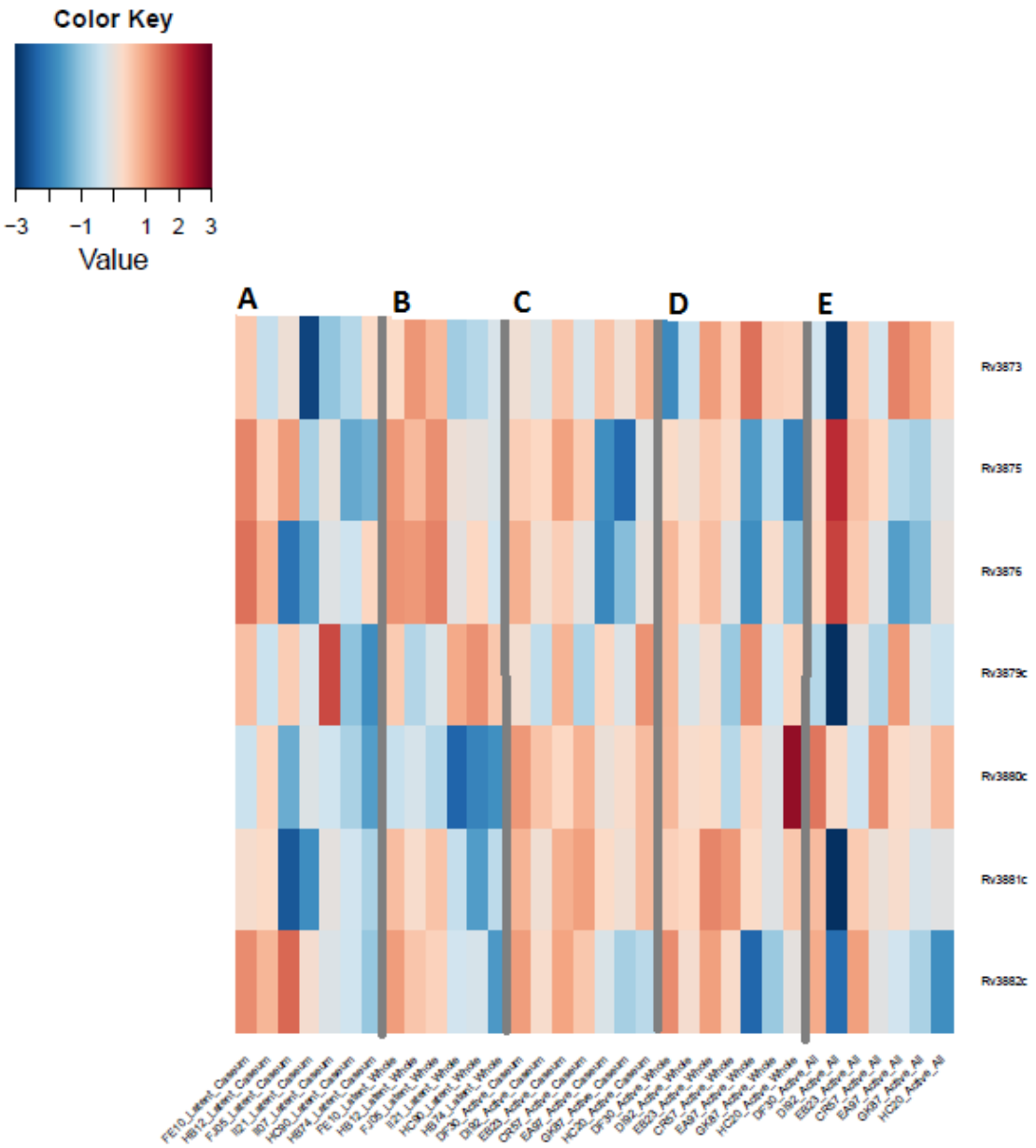


Figure 5.12: ESX-1 Heat Map by Granuloma Type. The heat map is for the same genes as Figure 5.11, but depicts the heat map by granuloma type. The columns are as follows: "A" LTBI caseum of the classical granuloma, "B" LTBI classical granuloma, "C" ATB caseum of the classical granuloma, "D" classical granuloma and "E" ATB representative pathology. The color key depicts the colors as they depict associated fold change values.

CHAPTER 6: VALIDATION

6.1 nCounter Analysis System

The purpose of performing nCounter® analysis is to confirm microarray results via a different gene expression modality. This system employs transcript specific molecular probe pairs that are designed for specific genes of interest[143,144]. Transcript specific molecular probe pairs are used to capture and count individual transcripts with high sensitivity, high reproducibility and large dynamic range[143-145]. More information on basic nCounter principles can be found in Section 2.3.2

This system requires the generation of reporter and capture probes specific to genes of interest. First, a list of 86 genes of interest was generated based upon the aforementioned microarray expression data. They include genes in all of the regions and functional categories previously discussed. They also include genes with high induction in each category. In addition, they include some genes that are studied in the Causal laboratory. Included in the genes of interest are 6 housekeeping genes (Table 6.1). These genes will be used to quantify transcripts for 48 NHP granuloma samples, including *Mtb* genomic DNA controls. This data will also be used to compare copy numbers of specific genes between control samples in all of the NHP samples. Probes will be designed by nCounter and samples will be run by the nCounter core at Baylor University.

nCounter Genes of Interest	Housekeeping Genes
Rv0081, Rv0280, Rv0286, Rv0287, Rv0297, Rv0313, Rv0468, Rv0532, Rv0542c, Rv0862c, Rv0872, Rv0975c, Rv0982, Rv1090, Rv1243c, Rv1325c, Rv1397c, Rv1452c, Rv1570, Rv1649, Rv1692, Rv1802, Rv1839c, Rv1840c, Rv1963c, Rv2032, Rv2051c, Rv2065, Rv2154c , Rv2548, Rv2626c , Rv2627c, Rv2631, Rv2634c , Rv2667, Rv2710, Rv2741, Rv2801c , Rv2893, Rv2917, Rv2924c, Rv3251c , Rv3255c , Rv3367, Rv3414c , Rv3445c , Rv1576c , Rv3478, Rv3590c , Rv3591c, Rv3595c, Rv3817, Rv3063, Rv0350, Rv0384c , Rv3221A , Rv3913, Rv1221, Rv1733c, Rv1736c , Rv1737c, Rv2623, Rv2624c , Rv2625c, Rv3133c, Rv3134c, Rv0438c , Rv0864, Rv0866, Rv3111, Rv3112, Rv0848, Rv1285, Rv1286, Rv2745c, Rv2460c, Rv2461c, Rv0490, Rv0491, Rv3297, Rv3674c	Rv2703 (sigma), errs, Rv0717(rpsN1), Rv0682 (repel), Rv0718(rush), Rv0721 (rapes)

Table 6.1: nCounter Gene List. The above table shows the gene list used to design reporter and capture probes for sample validation using the nCounter analysis system. Included in this list are the housekeeping genes in the right hand column.

6.2 Human samples

The second method of sample validation is through the use of human samples. A total of six human samples were obtained from Dr. Robert Hunter and colleagues at the University Of Texas Medical School at Houston. These samples were de-identified, but positive for *Mtb* infection. Complete medical history is unknown. Samples were analyzed as previously described. In total, 1617 statistically significant genes were identified in human samples. In total, 539 of these genes were identified as statistically significant with a positive fold change. Of these genes, 391 induced were also induced in all ATB and LTBI sample types (thus validating these genes). Associated mesodissection images are found in Table 6.2. In conclusion, mesodissection can be used to successfully isolate RNA from FFPE human slides. Also, the discovery of 391 statistically significant genes with a positive fold change that overlaps with all NHP granuloma types successfully validates these genes.

Due to the fact that the full medical history of each human remains unknown, these samples are simply used as validation. The pathology varies more amongst human samples than it does amongst ATB or LTBI in the NHP samples. This is because the human samples are far more complex for a variety of reasons. First, some could have confounding conditions. Treatment history is not fully known for all of the samples, thus some could have undergone either various TB treatment protocols. These confounding issues could result in transcriptional changes because the bacteria could be responding to different stressors. For these reasons, it is not surprising that there is less of a gene induction overlap than that which is seen between ATB and LTBI in NHPs. Conversely, these *Mtb* infected individuals, do express some of the same genes expressed in ATB and LTBI NHPs. This suggests further evidence that these genes, especially the 391 overlapping genes, are essential for *Mtb* survival and persistence.

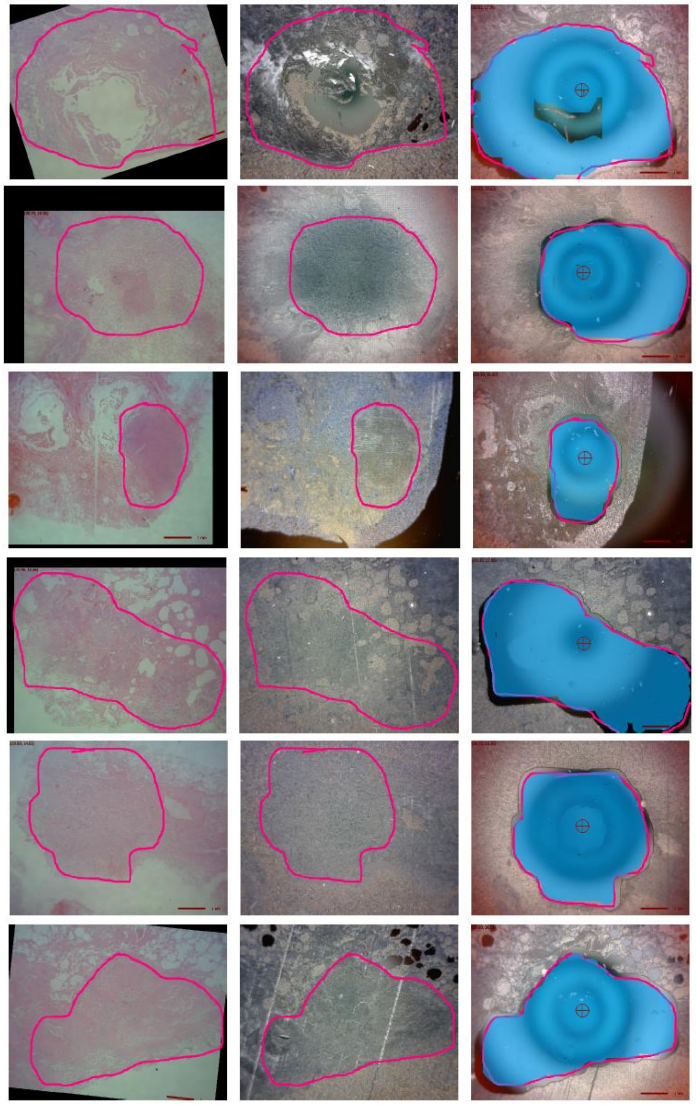


Figure 6.1: Mesodissection Report for Human Samples. The unstained H&E is located on the left with the area to be dissected in find. The unstained slide to be dissected is the middle image. The image on the right is the post dissection image.

CHAPTER 7: DISCUSSION OF *MTB* TRANSCRIPTOME

7.1 Comparison by Granuloma Type

In addition to regulon and functional analysis, it is important to also analyze the data by granuloma type. Figures 4.1 and 4.3 depict that there are *Mtb* genes whose induction is only expressed in specific granuloma types generated via microarrays. For example, in genes expressed with a positive fold change in ATB, 126 genes were only induced in representative pathology, 80 in the classical granuloma and 71 in the caseum of the classical granuloma. In LTBI, 363 statistically significant positive fold change genes were solely induced in the classical granuloma and 172 in the caseum. What is a bit confounding to this data is that representative pathology contains classical granuloma and classical granuloma contains caseum. For example, one might expect all of the genes in caseum to be expressed in the classical granuloma. It is possible that this suspected disconnect could be due to sample dilution as more area is mesodissected.

Additionally, there are a large number of genes that overlap in various granuloma types (Table 7.1). For example, of 1328 statistically significant genes with a positive fold change in ATB classical granulomas, 930 of these genes are the same as the 1082 in LTBI classical granuloma. This means that 398 are induced only in ATB classical granuloma and 152 in LTBI. The same holds true in the caseum of the classical granuloma in ATB versus LTBI.

	Classical Granuloma		Caseum of Classical Granuloma	
	Statistically significant (SS)	Positive SS	Statistically significant (SS)	Positive SS
Active only	1166	398	1225	556
Latent only	192	152	187	104
Overlap	1682	930	1685	787

Table 7.1: Granuloma Type Comparison. The figure compares gene induction in classical granulomas and the caseum of the classical granuloma in ATB and LTBI NHP sample.

7.2 Core of Genes Present in both ATB and LTBI

Perhaps one of the most significant findings of this study is the identification of a group of 633 genes that are positively induced in all sample types with statistical significance. These genes could represent the core *Mtb* genes necessary for survival and persistence. The functional category distribution of these genes can be seen in Table 4.6. Previous regulon analysis described was based upon the genes found in this category. Some of these common genes are members of all of the aforementioned regulons. Because these genes are found within various categories of the entire *Mtb* genome, one should refrain from grandiose inferences. Not too much can be inferred about the overexpression of a specific functional category more than to say some categories, such as PE/PPE genes, are expressed more than that which is expected in the overall *Mtb* genome. Regulon analysis is conducted in the corresponding regulon sections. Further experiments need to be conducted to truly assess the importance of this commonly induced group of genes.

7.3 Conclusions

The work highlighted here has some very important implications in the TB field. First, the study proves mesodissection as an effective technique for assessing *Mtb* transcriptomics from FFPE samples. The RNA extracted using this technique is high quality and can be used for downstream applications. The sample obtained is heterogeneous in nature, as in it contains both *Mtb* and host RNA, thus allowing the researcher to study both profiles. Although host response in this intra-granulomatous environment was not studied in this particular experiment, this novel technique could be used for that purpose. That would be especially pertinent in the field of TB/HIV co-infection where the host response is particularly important to disease pathogenesis.

In addition, *Mtb* transcriptomic profiles are different in different TB disease states, granuloma types and areas within the same granuloma. Many of the genes that are highly induced belong to the following categories: PE/PPE, Sigma factors, toxin-antitoxin complexes and the DosR regulon. The expression patterns reflect the various stressing *Mtb* is encountering in different granuloma types in different stages on infection. Although there are differences, there are a large group of genes that are common to all disease states and granuloma types. These genes could represent a core group of genes essential for *Mtb* survival and persistence in this intra-granulomatous environment. In turn, this information can be used to develop more effective vaccine and therapeutic regimes that target this core group of genes.

The novel technique developed here also is important for basic pathology research. FFPE blocks archives exist at most hospitals and universities. These archives cover a wide spectrum of disease processes from neoplastic to infectious disease and are a valuable tool of untapped information. This technique could easily be applied to other pathology in other organs. Although this technique was developed for RNA extraction, it could in theory be modified for other molecular research such as proteomic based studies.

APPENDIX

Statistically Significant Genes Detected in ATB Representative Pathology

Name	logFC	AveExpr	t	B	Adj.P.Val	Name	logFC	AveExpr	t	B	Adj.P.Val
MT0327	4.032366	9.59999	7.472942	11.62215	1.27E-07	MT1432	2.439462	9.404354	5.49499	5.011895	1.29E-05
MT2869	3.992853	9.455537	7.856432	12.8935	5.82E-08	MT3887	2.436389	8.774088	7.332666	11.15474	1.74E-07
MT0772.2	3.82688	8.586855	6.839201	9.503435	4.85E-07	MT0484	2.432355	10.19006	6.272473	7.601846	1.72E-06
MT0567	3.583248	9.465235	7.974477	13.28261	4.78E-08	MT3674	2.431483	10.41927	6.470439	8.265905	1.06E-06
MT2123	3.563929	8.713324	8.597219	15.3143	1.51E-08	MT0753	2.42826	9.670762	6.946283	9.862464	3.96E-07
MT1851	3.487724	8.723927	6.883755	9.65285	4.45E-07	MT3663	2.426327	8.634216	6.80516	9.389247	5.22E-07
MT3573.11	3.305208	9.26155	7.461847	11.58522	1.27E-07	MT0292	2.41848	9.558184	6.4251	8.11376	1.19E-06
MT3573.15	3.290371	9.623418	8.511271	15.0362	1.73E-08	MT2670	2.408102	9.630314	6.222477	7.434285	1.93E-06
MT3697	3.240823	9.56015	7.58982	12.0107	1.06E-07	MT0654	2.401299	8.413624	7.961218	13.23896	4.82E-08
MT2125	3.187337	8.505398	9.151607	17.08836	7.91E-09	MT2612	2.399024	8.884509	6.619163	8.76508	7.67E-07
MT1234	3.107132	8.945783	6.54247	8.507657	9.11E-07	MT3522	2.396521	9.10633	6.819545	9.437505	5.12E-07
MT3615.4	3.076787	9.475116	7.949508	13.2004	4.84E-08	MT1838	2.387876	9.929175	6.256158	7.547158	1.78E-06
MT2036	3.048939	8.627336	7.844631	12.85454	5.84E-08	MT2664	2.384508	8.805604	5.529564	5.126026	1.17E-05
MT0613	3.026022	9.285747	8.986785	16.56465	8.19E-09	MT2700	2.38419	9.813175	6.370515	7.930627	1.35E-06
MT0087	3.017734	9.507031	7.674953	12.29315	8.68E-08	MT2690	2.381799	8.379377	6.618452	8.762692	7.67E-07
MT2212	2.979905	8.780639	6.804862	9.38825	5.22E-07	MT2283	2.379748	9.895059	6.734002	9.1505	5.96E-07
MT1836	2.968465	9.648624	7.60158	12.04975	1.06E-07	MT3803	2.379659	8.739303	6.37193	7.935374	1.35E-06
MT3814	2.96692	9.156371	7.497654	11.70438	1.26E-07	MT2303	2.375169	9.406027	5.482718	4.971419	1.32E-05
MT0512	2.941193	8.745345	7.230234	10.81276	2.02E-07	MT0424	2.374528	9.830152	5.267229	4.263681	2.35E-05
MT2441	2.941046	9.388154	8.470322	14.90342	1.77E-08	MT0299	2.363289	9.547729	6.335195	7.812158	1.49E-06
MT0440	2.914018	9.018321	8.431979	14.77893	1.77E-08	MT2805	2.357541	9.345105	6.266233	7.580929	1.74E-06
MT2841	2.912651	9.820739	6.061668	6.89594	2.91E-06	MT2106	2.357501	9.699626	7.141488	10.51609	2.41E-07
MT0117	2.903282	8.858264	9.382352	17.81598	7.91E-09	MT3159	2.356734	8.904386	7.496228	11.69963	1.26E-07
MT0724.1	2.899592	9.17254	6.930738	9.810359	4.03E-07	MT1912	2.343316	9.220373	6.022421	6.76473	3.20E-06
MT1286	2.876289	9.632831	7.295989	11.03235	1.76E-07	MT3945	2.34112	8.986208	6.39769	8.021791	1.26E-06
MT2093	2.872376	9.291977	7.641846	12.18337	9.49E-08	MT0841	2.337202	9.407726	7.819573	12.77177	5.87E-08
MT2985	2.869871	9.805532	6.429852	8.129704	1.18E-06	MT1988	2.334445	9.141923	4.859383	2.943526	7.10E-05
MT2499	2.83786	8.828676	8.229737	14.11991	3.07E-08	MT3550	2.331211	8.823924	6.334339	7.809287	1.49E-06
MT2961	2.82907	9.13019	6.38467	7.97811	1.30E-06	MT2635	2.325199	9.618782	7.39604	11.36604	1.49E-07
MT1728	2.821061	9.206661	6.428959	8.126707	1.18E-06	MT2173	2.323086	8.91256	5.800809	6.025526	5.81E-06
MT1117	2.813993	9.184878	7.517547	11.77054	1.26E-07	MT0802	2.320996	9.70387	6.149745	7.19067	2.36E-06
MT3942	2.810861	9.023612	7.914778	13.08597	5.08E-08	MT2147	2.318158	9.268664	6.182778	7.301287	2.16E-06
MT2498	2.798993	9.43664	9.262143	17.43774	7.91E-09	MT0320	2.313281	8.6985	5.837442	6.147492	5.35E-06
MT3093	2.796496	9.080372	5.553084	5.203741	1.10E-05	MT3349	2.302689	9.233644	5.768924	5.919453	6.28E-06
MT0328.1	2.769467	8.906909	6.052188	6.864242	2.95E-06	MT3756.3	2.299403	8.230057	5.174679	3.961676	3.06E-05
MT2111	2.764281	9.11471	6.257889	7.552961	1.77E-06	MT1514.1	2.298386	10.25234	6.733148	9.147634	5.96E-07
MT3401	2.762543	9.438215	7.174011	10.62485	2.28E-07	MT1333	2.297099	9.195459	5.427019	4.787922	1.54E-05
MT0758	2.75047	9.050107	8.092623	13.67088	3.96E-08	MT1122	2.29091	9.771831	6.554441	8.547839	8.92E-07
MT2194	2.743746	8.960833	8.61173	15.36118	1.51E-08	MT0405	2.28806	9.151958	6.863652	9.585438	4.66E-07
MT0558	2.738518	9.248889	7.099851	10.37678	2.62E-07	MT2150	2.287776	9.581366	5.55381	5.20614	1.10E-05
MT3925.1	2.736315	9.152851	4.879303	3.007308	6.71E-05	MT2615	2.284532	8.287572	5.234783	4.157658	2.58E-05
MT1033	2.723593	8.298879	5.352692	4.543647	1.88E-05	MT2216	2.283317	8.337404	5.80807	6.049692	5.70E-06
MT1991	2.72152	9.302337	8.114796	13.74361	3.96E-08	MT3396	2.282818	9.033961	7.235102	10.82903	2.02E-07
MT3325	2.7149	8.104795	6.532047	8.472674	9.35E-07	MT3995	2.282439	8.655334	6.791196	9.342404	5.25E-07
MT0772.5	2.702107	8.885375	8.030238	13.46601	4.47E-08	MT1157.1	2.282363	10.09228	6.270727	7.595994	1.73E-06
MT1297.1	2.695044	9.111971	7.594082	12.02485	1.06E-07	MT2648	2.280987	9.592774	6.345481	7.846656	1.45E-06
MT2263	2.694433	8.944733	6.8404	9.507456	4.85E-07	MT3706	2.27206	8.783033	5.382396	4.641187	1.73E-05
MT2990	2.674672	9.928113	6.756314	9.225367	5.69E-07	MT0511	2.271338	9.289449	6.905607	9.726114	4.29E-07
MT2161	2.670579	8.778055	7.262897	10.92187	1.87E-07	MT3523	2.270449	9.756478	6.934043	9.82144	4.02E-07
MT2914	2.657325	8.846026	6.647314	8.859568	7.32E-07	MT3862	2.263501	9.717451	8.271057	14.25488	2.83E-08
MT3937	2.653841	9.057041	5.898536	6.35111	4.56E-06	MT3781	2.263457	9.523994	6.482393	8.306022	1.02E-06
MT2213	2.640216	9.045264	5.64428	5.505611	8.72E-06	MT2628	2.262529	9.753552	6.003479	6.701428	3.38E-06
MT2599	2.638895	9.470865	6.043008	6.833548	3.03E-06	MT3058	2.260541	8.898516	7.566921	11.93464	1.12E-07
MT3666	2.63683	8.417146	6.803343	9.383152	5.22E-07	MT2741	2.260154	8.78381	6.054395	6.87162	2.95E-06
MT4013	2.636815	9.365195	6.769098	9.268262	5.59E-07	MT3387	2.245862	9.273094	6.44443	8.178621	1.13E-06
MT0152	2.625035	8.676519	4.953071	3.244173	5.57E-05	MT0498	2.241954	8.482688	5.462915	4.906138	1.40E-05
MT3055	2.609667	8.9797	7.12459	10.45956	2.47E-07	MT3551	2.241897	8.603303	4.98605	3.350405	5.11E-05
MT3708	2.593611	9.115935	5.92074	6.425175	4.33E-06	MT1678	2.237437	9.737153	5.382031	4.639986	1.73E-05
MT0306	2.583628	8.738248	6.673576	8.947711	7.01E-07	MT3124	2.236901	9.414473	7.018428	10.10418	3.23E-07
MT1621	2.582789	9.115022	5.337665	4.494349	1.95E-05	MT2594	2.232944	9.893369	5.563933	5.239607	1.08E-05
MT3725	2.577626	9.076183	7.462547	11.58755	1.27E-07	MT0885	2.231638	9.084435	4.538051	1.926666	0.000168
MT1096	2.57153	8.700538	7.292147	11.01952	1.76E-07	MT2624	2.230797	9.628919	8.502398	15.00744	1.73E-08
MT0854.1	2.571123	9.413646	7.075855	10.29647	2.74E-07	MT1866	2.229846	9.287048	6.19547	7.343802	2.08E-06
MT3573.14	2.532127	8.331731	5.351773	4.540633	1.89E-05	MT0768.1	2.22624	8.772474	5.425061	4.781479	1.55E-05
MT0513	2.518349	9.24958	7.124358	10.45878	2.47E-07	MT1987	2.220192	8.91347	4.920525	3.13954	6.04E-05
MT1497.1	2.518345	9.024522	6.648596	8.863871	7.32E-07	MT2158	2.215439	8.876391	7.312251	11.08662	1.74E-07
MT3539	2.518005	8.920769	6.828922	9.468956	4.99E-07	MT1753.1	2.196516	8.290845	6.592258	8.674772	8.18E-07
MT0534	2.491091	9.539875	8.071714	13.60225	4.06E-08	MT1073	2.188741	9.234047	4.479154	1.742974	0.000198
MT2963	2.4759	9.29353	6.854854	9.555932	4.71E-07	MT1264	2.184857	9.208577	5.572758	5.268792	1.05E-05
MT3542	2.475066	8.437932	6.292091	7.667615	1.64E-06	MT1498	2.174158	8.682064	6.32193	7.767672	1.54E-06
MT1911	2.468902	9.71026	6.637517	8.826684	7.32E-07	MT3696	2.172765	9.273723	6.290529	7.662378	1.64E-06
MT0349	2.467499	9.418702	7.318595	11.10779	1.74E-07	MT0054	2.160497	8.269345	4.965302	3.283548	5.41E-05
MT2327	2.466042	8.672065	8.172007	13.93106	3.52E-08	MT3353	2.158362	8.725336	4.699607	2.434971	0.000108
MT2662	2.453212	8.21149	5.934621	6.471492	4.17E-06	MT1229	2.155546	8.528094	4.637324	2.238268	0.000128
MT0605	2.450219	10.06038	5.897983	6.349263	4.56E-06	MT2806	2.154504	8.522287	6.164802	7.241086	2.25E-06
MT3701	2.44753	8.098117	4.857217	2.936598	7.13E-05	MT0779	2.154314	10.05242	7.135441	10.49586	2.43E-07
MT0195	2.109737	9.468882	6.232692	7.468512	1.87E-06	MT3462	2.143188	8.796224	7.477614	11.6377	1.27E-07
MT1427	2.108996	9.025629	5.670905	5.593892	8.14E-06	MT3437.1	2.129325	8.926545	6.39043	7.997437	1.29E-06
MT0042	2.099327	9.858261	6.50284	8.374644	9.94E-07	MT3407	2.129067	9.313873	6.554801	8.549046	8.92E-07
MT0756	2.098147	9.78721	6.5171	8.422505	9.65E-07	MT3405	2.123404	9.278286	6.616511	8.756177	7.68E-07
MT2467.1	2.098138	8.436064	5.809718	6.055179	5.68E-06	MT1003	2.120269	9.109635	5.829204	6.120055	5.42E-06
MT0723	2.095229	8.650673	5.406547	4.720571	1.62E-05	MT2270	2.116305	8.825663	5.188608	4.007044	2.94E-05
MT1600	2.094544	9.258874	6.927471	9.799407	4.04E-07	MT2935	1.899914	10.30395	4.811153	2.789442	8.05E-05
MT2563	2.093724	9.700133	5.405265	4.716354	1.63E-05	MT1692	1.896131	8.599813	6.290685	7.662902	1.64E-06
MT0428	2.093625	9.160942	4.599641	2.119702	0.000142	MT2167	1.895944	10.00105	4.560121	1.99573	0.000158
MT3495	2.091502	8.238551	6.388874	7.992216	1.29E-06	MT0518	1.895354	8.563335	4.89446	3.05589	6.44E-05
MT2305	2.091314	8.618114	5.529638	5.126272	1.17E-05	MT0133	1.892511	8.929496	6.305233	7.711679	1.61E-06
MT0926	2.084504	8.955315	5.773035	5.933125	6.23E-06	MT0124	1.88789	9.83607	5.743488	5.834892	6.80E-06
MT2217	2.082666	8.644846	5.833878	6.13562	5.36E-06	MT1456	1.884422	9.216805	5.224944	4.125539	2.65E-05
MT0228	2.080522	9.420687	7.099048	10.3741	2.62E-07	MT0184	1.884304	9.553324	5.594322	5.340139	9.99E-06

MT2315	2.080492	9.193495	6.658708	8.897809	7.15E-07	MT2994	1.883445	9.112834	4.104526	0.597555	0.000526
MT0893	2.076158	9.294581	5.777747	5.948794	6.20E-06	MT2124	1.882752	8.292897	4.464182	1.696424	0.000206
MT1317	2.069637	9.419164	6.169735	7.257605	2.22E-06	MT0807	1.879327	9.259638	5.638992	5.488083	8.83E-06
MT3752	2.067311	8.544877	4.760833	2.629198	9.22E-05	MT0562	1.878463	9.967098	5.343655	4.513996	1.92E-05
MT3573.2	2.061256	9.035956	6.068119	6.917517	2.86E-06	MT4022	1.876009	9.386446	5.773124	5.933418	6.23E-06
MT2989	2.061006	8.868386	6.665014	8.918973	7.04E-07	MT2802	1.875417	8.616817	6.446923	8.186989	1.13E-06
MT1280.1	2.059883	8.105464	5.10937	3.749357	3.66E-05	MT3363	1.871127	9.742719	6.347987	7.855061	1.44E-06
MT0648	2.055618	8.50668	5.719096	5.753851	7.18E-06	MT3427.1	1.869281	9.821324	6.614012	8.747792	7.70E-07
MT2533	2.054324	9.213987	5.933137	6.46654	4.18E-06	MT0824	1.867927	10.40995	3.861542	-0.12103	0.000984
MT3756.1	2.047691	8.714187	5.321711	4.442043	2.03E-05	MT3051	1.867744	9.262082	4.449011	1.649313	0.000214
MT0235	2.044116	9.357989	6.715219	9.087468	6.18E-07	MT1787	1.863998	8.73425	5.006135	3.4152	4.84E-05
MT1513	2.043316	8.650395	6.558953	8.562983	8.88E-07	MT1321	1.862251	9.318785	5.409653	4.730786	1.61E-05
MT0587	2.042161	9.599818	6.119563	7.089634	2.55E-06	MT3947	1.861636	9.290751	4.459858	1.68299	0.000208
MT3105	2.039241	8.72085	6.429647	8.129017	1.18E-06	MT0996	1.86119	8.825701	5.450255	4.864428	1.44E-05
MT3449.1	2.035325	9.222847	4.63899	2.243515	0.000128	MT1466	1.860915	8.753055	5.22551	4.127386	2.65E-05
MT1441	2.01922	9.147696	6.800976	9.375214	5.22E-07	MT2330.1	1.857674	9.437944	6.89727	9.698162	4.34E-07
MT0564	2.016873	8.661908	5.143747	3.861031	3.34E-05	MT0300	1.855889	9.021048	4.364635	1.388463	0.000267
MT3621	2.016037	10.21096	6.104694	7.039875	2.62E-06	MT2906	1.855645	9.262911	6.773098	9.281685	5.55E-07
MT2605	2.014639	9.36703	6.110113	7.058007	2.60E-06	MT0543	1.855459	8.954397	4.818492	2.812856	7.92E-05
MT3052.1	2.012761	9.483295	5.999369	6.687695	3.41E-06	MT3665	1.853812	8.283809	5.034109	3.505564	4.49E-05
MT1829	2.010321	8.507221	5.086088	3.673839	3.90E-05	MT0214	1.846218	9.854943	5.141581	3.853989	3.35E-05
MT2049	2.000996	10.01331	5.312658	4.412375	2.08E-05	MT2903	1.841151	9.348338	5.663367	5.568893	8.28E-06
MT0691	1.997343	8.883195	7.275795	10.96493	1.84E-07	MT3546	1.840496	8.690442	7.092153	10.35102	2.63E-07
MT1198	1.9948	8.836756	5.129455	3.814581	3.47E-05	MT0316	1.837192	8.620668	5.53582	5.14669	1.16E-05
MT1481	1.99411	10.18054	5.646044	5.511456	8.69E-06	MT2310	1.836534	9.561751	4.503288	1.818134	0.000185
MT0830	1.993569	9.294761	5.704259	5.704582	7.44E-06	MT1986	1.833954	9.04868	4.668713	2.337286	0.000117
MT2422	1.992981	9.770906	6.548791	8.528873	9.00E-07	MT2743	1.831572	9.4636	4.444673	1.635857	0.000216
MT2564	1.992566	8.410713	4.870688	2.979715	6.87E-05	MT0635	1.829436	9.551061	5.790604	5.991566	5.96E-06
MT2211	1.984612	8.865421	4.468617	1.710205	0.000203	MT1440	1.828177	9.271248	4.820027	2.817754	7.90E-05
MT2437	1.983845	9.450717	4.561267	1.999319	0.000158	MT0056	1.824294	8.33387	5.406503	4.720426	1.62E-05
MT0657	1.982228	9.465002	5.449972	4.863493	1.44E-05	MT3171	1.823901	9.048424	5.344449	4.516602	1.91E-05
MT1031	1.980677	8.7173	5.700165	5.690989	7.53E-06	MT3112	1.823035	8.650053	5.192631	4.020152	2.91E-05
MT1032	1.977739	8.796932	5.712824	5.733021	7.30E-06	MT0981	1.823024	9.344489	5.773394	5.934317	6.23E-06
MT1096.2	1.977687	9.706331	5.775031	5.939764	6.23E-06	MT1757	1.822724	8.423541	4.524965	1.885774	0.000174
MT3762	1.974128	9.25059	6.310335	7.728788	1.59E-06	MT3060	1.822395	8.672405	5.542231	5.167874	1.14E-05
MT0555	1.972349	9.908035	6.086169	6.977895	2.74E-06	MT2952	1.821387	9.009831	5.267027	4.263018	2.35E-05
MT0046	1.962756	9.260644	4.667353	2.332993	0.000118	MT1615	1.821212	9.150183	6.248146	7.520303	1.82E-06
MT2781	1.959977	8.796592	5.640549	5.493242	8.80E-06	MT3580.1	1.81569	8.574636	4.676273	2.361172	0.000115
MT1635	1.95393	9.487174	5.410508	4.733599	1.61E-05	MT1226	1.813981	9.159838	5.576998	5.282816	1.05E-05
MT1585.1	1.952374	10.34485	5.558583	5.22192	1.10E-05	MT1197	1.811844	8.480167	4.819933	2.817454	7.90E-05
MT1373	1.951147	8.969491	6.136885	7.147616	2.43E-06	MT3543	1.806637	9.486302	4.811414	2.790273	8.05E-05
MT3439	1.950733	9.235395	7.074712	10.29264	2.74E-07	MT0939	1.803919	8.740124	6.036652	6.812298	3.08E-06
MT1200	1.948535	9.20021	5.523941	5.107454	1.18E-05	MT3704	1.802244	10.35952	4.805686	2.772004	8.15E-05
MT3220.2	1.94788	8.721331	6.293775	7.673262	1.64E-06	MT0948	1.800704	10.36079	5.523321	5.105408	1.18E-05
MT3549	1.944049	8.076723	4.905209	3.09037	6.24E-05	MT0755	1.797899	8.592286	5.694343	5.671664	7.64E-06
MT2871	1.943547	8.983987	4.431856	1.59612	0.000224	MT2828	1.795826	9.317476	5.774041	5.936471	6.23E-06
MT3291	1.942291	9.013979	4.971451	3.303353	5.32E-05	MT3395	1.794247	9.002756	5.812778	6.065363	5.63E-06
MT0373	1.935682	8.462175	3.936078	0.097145	0.000806	MT3330	1.791038	8.950973	5.1499	3.88104	3.28E-05
MT3475	1.93405	9.141123	5.490711	4.997782	1.30E-05	MT2657	1.785121	8.73796	5.968825	6.585676	3.76E-06
MT0149	1.932056	8.64721	5.30781	4.396494	2.10E-05	MT0754	1.783696	9.297952	5.153786	3.893678	3.26E-05
MT1718	1.928857	10.42602	6.056702	6.879335	2.95E-06	MT0329	1.783661	8.212085	5.030911	3.495229	4.52E-05
MT3531	1.928464	8.422698	5.271559	4.277841	2.34E-05	MT0659	1.776245	8.274002	5.379005	4.630044	1.75E-05
MT0763	1.924382	9.036696	5.83805	6.149517	5.35E-06	MT3989	1.774757	9.218211	4.572108	2.03329	0.000153
MT2769	1.923553	8.858401	4.043629	0.415512	0.000613	MT3612.1	1.774453	9.428122	4.892219	3.048703	6.48E-05
MT2020	1.922275	8.794999	4.855448	2.930936	7.17E-05	MT3804	1.77367	10.25657	4.275849	1.116167	0.000336
MT3308	1.922106	8.535682	4.046577	0.424296	0.000609	MT1003.1	1.773009	7.88668	5.575811	5.27889	1.05E-05
MT2784	1.91917	9.0023	5.489648	4.994274	1.30E-05	MT0614	1.772326	9.455077	5.497916	5.021549	1.27E-05
MT3169	1.918796	9.60564	3.782135	-0.35115	0.001203	MT2597	1.771213	9.645696	6.813863	9.418442	5.18E-07
MT1731	1.915972	8.93691	3.584328	-0.91335	0.001974	MT1887	1.769844	8.717936	5.161228	3.91789	3.18E-05
MT3695	1.912712	8.576546	5.053278	3.567567	4.26E-05	MT0093	1.767524	9.221245	4.806681	2.775176	8.14E-05
MT2913	1.910902	9.24685	4.871131	2.981132	6.87E-05	MT2477	1.767077	8.444585	4.014233	0.328091	0.000658
MT3062	1.909653	9.393364	6.244392	7.507724	1.83E-06	MT1705	1.762549	9.390196	6.202509	7.367382	2.04E-06
MT0091	1.908279	8.455199	4.202399	0.892692	0.000409	MT0778	1.761659	8.572752	6.053236	6.867745	2.95E-06
MT0921	1.908063	9.259171	5.711469	5.72852	7.30E-06	MT1548	1.760513	9.253878	3.87887	-0.0705	0.00094
MT3231	1.90745	9.226953	6.808221	9.399517	5.22E-07	MT3147	1.75916	8.729648	4.812775	2.794615	8.03E-05
MT2014	1.905769	9.449789	4.933451	3.181072	5.85E-05	MT3160	1.758084	9.027109	4.929625	3.168775	5.91E-05
MT1024	1.904405	9.375691	6.448225	8.191356	1.13E-06	MT0595	1.756831	9.092365	4.254815	1.052001	0.000356
MT1896	1.901492	10.09004	5.650312	5.525604	8.60E-06	MT2783	1.756504	9.302012	5.164113	3.92728	3.16E-05
MT2575	1.733048	9.337325	6.030768	6.79263	3.13E-06	MT0656	1.744443	8.602898	4.319084	1.248476	0.000298
MT2019	1.732425	9.310324	5.022643	3.468511	4.61E-05	MT2803	1.740001	8.53515	6.484299	8.312417	1.02E-06
MT2259	1.732316	9.570113	3.615664	-0.82539	0.001822	MT2705	1.739445	9.14579	5.385119	4.650131	1.72E-05
MT0026	1.731688	8.310679	4.401669	1.50271	0.000242	MT1753	1.739351	8.548105	4.560349	1.996444	0.000158
MT3993	1.731393	9.849414	4.826314	2.837825	7.78E-05	MT0940	1.737141	9.098535	5.608611	5.387442	9.61E-06
MT2406	1.730191	9.414798	5.210026	4.076867	2.77E-05	MT3445	1.736197	8.653314	3.927272	0.071261	0.000827
MT1783	1.729308	8.727725	4.018022	0.339341	0.000652	MT3431	1.585629	9.6748	4.398129	1.491774	0.000245
MT3146	1.728912	8.249059	3.861703	-0.12057	0.000984	MT3691	1.585151	10.12915	4.957967	3.259931	5.52E-05
MT0641	1.724294	9.337725	5.362938	4.577278	1.83E-05	MT0519	1.582309	9.670906	4.887203	3.032622	6.57E-05
MT1450	1.723272	8.495273	5.394857	4.682136	1.67E-05	MT1470	1.580316	8.719607	5.231161	4.145833	2.60E-05
MT0293	1.722191	8.479072	3.511073	-1.11732	0.002373	MT0677	1.58007	7.868916	4.630028	2.215284	0.000131
MT0311	1.722138	9.036096	4.725038	2.515542	0.000101	MT0776	1.577484	8.877683	4.651439	2.282765	0.000123
MT1240	1.721373	8.801986	5.827269	6.113611	5.44E-06	MT3056	1.577421	8.689282	4.56043	1.996697	0.000158
MT1758	1.721064	8.439804	4.172985	0.803671	0.00044	MT0547	1.576666	8.370866	3.963285	0.177293	0.000751
MT2728	1.721004	10.00468	4.423919	1.571536	0.000228	MT0018	1.575036	8.227373	4.137398	0.696333	0.000483
MT2916	1.720649	8.584201	4.661455	2.314372	0.00012	MT2912	1.574941	8.740285	5.045665	3.542935	4.35E-05
MT2488.1	1.718734	8.940421	4.973425	3.309714	5.30E-05	MT3449	1.573722	8.850505	5.243421	4.18587	2.52E-05
MT3751	1.716025	8.666328	4.881926	3.015711	6.68E-05	MT1908	1.573455	8.727304	4.105539	0.600593	0.000525
MT0651	1.708186	8.75287	5.078021	3.647691	3.98E-05	MT0840	1.573009	8.521513	5.027232	3.483335	4.55E-05
MT0383	1.70444	9.139555	5.215399	4.094393	2.73E-05	MT1262	1.568567	9.22107	5.583266	5.303552	1.03E-05
MT2896	1.702766	8.73942	6.085079	6.974248	2.74E-06	MT2753	1.568129	9.275406	4.917135	3.128653	6.09E-05
MT1690	1.696891	8.991421	5.222171	4.116488	2.67E-05	MT1697	1.561012	9.213868	4.059105	0.461655	0.000589
MT0762.1	1.696683	8.76329	4.189405	0.853333	0.000422	MT0448	1.560912	9.254344	3.55411	-0.99778	0.002132
MT1761	1.695771	8.774864	4.673543	2.352545	0.000116	MT0904	1.554902	9.079427	4.272397	1.10563	0.000339
MT0703	1.694419	8.608212	4.432877	1.599285	0.000224	MT1431	1.553621	8.646699	4.83753	2.87365	7.52E-05
MT3654	1.693458	8.667111	4.888031	3.035276	6.56E-05	MT2432	1.553215	8.92321	4.215139	0.931336	0.000396
MT2895	1.690128	8.706041	5.803467	6.034372	5.77E-06	MT3048	1.55243	9.014121	4.189809	0.854556	0.000422
MT0218	1.686229	9.374531	4.741858	2.568914	9.70E-05	MT2907	1.550993	8.639524	5.535005	5.143997	1.16E-05
MT0808	1.686198	9.57733	5.934708	6.471781	4.17E-06	MT0510	1.550606	9.135067	5.325382	4.454076	2.01E-05
MT2757	1.685742	9.353427	4.830601	2.851514	7.67E-05	MT0426	1.550345	9.345354	4.722439	2.507303	0.000101

MT1227	1.684935	8.875496	4.472413	1.722007	0.000201	MT1669	1.550016	10.55821	4.802759	2.762672	8.22E-05
MT0733	1.684721	8.951237	5.075602	3.639853	4.00E-05	MT1838.1	1.5493	9.034245	4.847624	2.905915	7.35E-05
MT1949	1.683843	9.452666	4.223687	0.957291	0.000388	MT0536	1.548873	9.497357	4.908792	3.10187	6.19E-05
MT0302	1.682469	9.897228	5.299682	4.369873	2.13E-05	MT0201	1.548297	8.794024	3.993635	0.267013	0.000695
MT1695	1.680938	8.512918	4.821313	2.82186	7.89E-05	MT0132	1.547786	10.35377	3.484144	-1.1917	0.002542
MT3354	1.67722	8.588536	4.520305	1.871224	0.000176	MT1839.1	1.547705	8.832751	3.997286	0.277828	0.000689
MT3921	1.675456	8.70234	4.416241	1.547772	0.000232	MT0762	1.545497	10.21009	5.835042	6.139497	5.36E-06
MT2734	1.674048	8.778286	5.79683	6.012284	5.86E-06	MT1246	1.545465	9.073674	5.540173	5.161072	1.14E-05
MT3996	1.670357	9.010538	5.191603	4.016805	2.92E-05	MT3758	1.544385	8.337688	4.714435	2.481931	0.000104
MT0141	1.669404	9.103591	5.112587	3.7598	3.62E-05	MT3122	1.54309	9.534221	4.718295	2.494166	0.000103
MT2542	1.667118	9.912597	6.489001	8.3282	1.02E-06	MT1900	1.542086	8.695517	3.958322	0.162652	0.000761
MT2272	1.665854	8.66989	4.133425	0.684377	0.000488	MT0140	1.541724	10.60797	3.962765	0.175758	0.000751
MT2951	1.664395	9.403951	4.386621	1.456243	0.000252	MT0116	1.539332	8.717656	5.146818	3.871017	3.31E-05
MT1327	1.663762	9.403327	4.415864	1.546604	0.000232	MT0407	1.538838	8.977989	4.916421	3.126362	6.09E-05
MT2362	1.662906	8.805454	4.706999	2.458374	0.000106	MT1485	1.53808	8.907862	5.060281	3.590233	4.17E-05
MT2736.1	1.662034	8.588684	4.571433	2.031176	0.000154	MT3664	1.537717	9.129295	4.954881	3.249999	5.56E-05
MT4034	1.661359	9.192994	4.506075	1.826825	0.000184	MT1634	1.537171	9.26488	4.690199	2.405202	0.000111
MT3095	1.652928	10.10682	4.118784	0.640356	0.000508	MT3707	1.536012	8.77692	3.853308	-0.14501	0.001005
MT2404	1.652318	8.424899	4.397677	1.490379	0.000245	MT3166	1.535276	9.738598	4.10446	0.597355	0.000526
MT1857	1.649178	9.766576	5.428353	4.792311	1.54E-05	MT1556.1	1.534541	10.09	4.656676	2.299287	0.000121
MT0813	1.648108	8.465046	4.731722	2.536746	9.94E-05	MT3815	1.533321	8.312451	4.082875	0.532689	0.000556
MT3165	1.6408	8.828887	4.652146	2.284996	0.000123	MT2866	1.531566	9.691585	4.306368	1.209506	0.000308
MT2654	1.640659	9.049123	4.16937	0.792747	0.000444	MT0869	1.520273	8.67982	3.902252	-0.00213	0.000882
MT0987	1.639775	8.721561	4.539037	1.929749	0.000168	MT1123	1.5185	8.901078	4.742077	2.56961	9.70E-05
MT0722	1.637816	8.661716	4.938887	3.19855	5.78E-05	MT1168	1.517807	9.716622	4.694373	2.418405	0.000109
MT1437	1.628478	9.840562	5.120226	3.784602	3.55E-05	MT2768	1.517383	8.553253	4.820406	2.818965	7.90E-05
MT1560	1.627092	9.916589	5.575621	5.27826	1.05E-05	MT1365	1.514798	9.476133	5.12019	3.784487	3.55E-05
MT1095	1.626244	8.709213	4.590173	2.089965	0.000146	MT2295	1.511146	8.221561	3.870455	-0.09505	0.000962
MT3896	1.624155	9.008452	4.840287	2.882461	7.46E-05	MT0718	1.511012	9.405892	4.246089	1.025422	0.000364
MT2471	1.622929	9.526694	4.537301	1.924323	0.000168	MT1433	1.51011	8.690489	4.962365	3.274092	5.45E-05
MT1585	1.621865	9.478907	4.370068	1.405198	0.000263	MT1657	1.508131	8.995077	3.839502	-0.18515	0.001038
MT0812	1.619234	9.956473	5.413479	4.74337	1.60E-05	MT2247	1.507559	8.834249	4.972214	3.305811	5.32E-05
MT1186	1.619074	9.610031	5.092601	3.694957	3.84E-05	MT2131	1.50471	9.007919	4.993735	3.375189	5.00E-05
MT2627	1.616934	8.770562	4.045773	0.4219	0.000609	MT1741	1.503208	8.934678	5.162534	3.922139	3.17E-05
MT3710	1.616914	9.048286	6.126896	7.114178	2.50E-06	MT1255	1.502139	8.694596	4.548699	1.959972	0.000163
MT2028	1.611522	10.25351	5.454735	4.879183	1.43E-05	MT1759	1.500271	9.353195	5.606532	5.380559	9.62E-06
MT2751	1.611069	8.791567	4.198944	0.882223	0.000413	MT0668	1.498978	9.494354	4.430723	1.592611	0.000224
MT4016	1.610635	9.009681	4.317842	1.244667	0.000298	MT1649	1.498521	9.878229	5.256365	4.228161	2.44E-05
MT2991	1.610439	8.905088	3.736855	-0.48127	0.001356	MT2665	1.498391	9.380539	4.680076	2.373189	0.000114
MT3684	1.610311	9.635948	5.150827	3.884052	3.28E-05	MT1511	1.4971	10.07881	5.616253	5.412749	9.43E-06
MT0318	1.609616	8.552194	4.566045	2.014287	0.000156	MT1231	1.495249	9.018908	5.502118	5.035416	1.26E-05
MT0679	1.607357	8.072225	3.361447	-1.52634	0.003446	MT3370	1.493432	8.619953	4.164757	0.778817	0.000448
MT0328	1.603669	8.289215	3.41334	-1.38567	0.003025	MT0995	1.492513	9.621525	5.121218	3.787823	3.55E-05
MT0775	1.600272	8.757557	4.532051	1.907913	0.00017	MT3580	1.492329	8.921254	4.807365	2.777358	8.13E-05
MT2523	1.599827	9.554469	5.342873	4.511433	1.92E-05	MT2870	1.490289	8.968457	4.94185	3.208076	5.74E-05
MT1611	1.599058	9.988051	4.550736	1.966345	0.000163	MT2958	1.488387	8.904862	4.769107	2.655509	9.01E-05
MT2425	1.598901	8.588735	4.367759	1.398085	0.000264	MT1931	1.487337	9.433383	5.401555	4.704155	1.64E-05
MT3518	1.595546	9.026712	5.554092	5.207074	1.10E-05	MT0541	1.486534	9.05691	4.48287	1.754537	0.000196
MT3110	1.59168	8.724039	4.517072	1.861133	0.000178	MT3461	1.486247	9.659258	5.313007	4.413519	2.08E-05
MT2940	1.591611	9.311614	5.09665	3.708088	3.79E-05	MT1425	1.48537	8.603252	4.191924	0.860958	0.00042
MT0870	1.590655	9.342775	4.863758	2.957528	7.02E-05	MT1981	1.483962	9.271546	4.862746	2.954288	7.03E-05
MT0067	1.588336	9.937173	4.914099	3.118904	6.12E-05	MT1820	1.483697	8.835853	5.412492	4.740123	1.61E-05
MT2678	1.476469	8.842912	4.429039	1.587393	0.000225	MT2435	1.483363	8.665999	5.532177	5.134655	1.16E-05
MT0889	1.475031	8.548824	3.618732	-0.81675	0.001808	MT0546	1.483016	8.528003	4.913859	3.118133	6.12E-05
MT3544	1.471948	8.297021	3.916918	0.040863	0.00085	MT2615.1	1.482702	8.141954	3.797279	-0.30746	0.001159
MT2852	1.469098	8.863548	3.719394	-0.53122	0.001412	MT3381	1.482521	9.068109	4.264778	1.082378	0.000346
MT1367	1.468411	8.057798	3.619249	-0.8153	0.001806	MT3909	1.482308	10.0914	5.12492	3.799847	3.52E-05
MT0304	1.466059	8.495599	3.555704	-0.99334	0.002125	MT2808.1	1.481643	8.319945	3.690735	-0.61294	0.00152
MT3361	1.465897	9.112358	4.847325	2.90496	7.35E-05	MT3534	1.377822	9.103519	3.836591	-0.19361	0.001047
MT3658	1.464529	8.980206	4.497334	1.799579	0.000189	MT2746	1.376904	8.634344	4.322818	1.259928	0.000295
MT2905	1.462537	8.172914	4.492716	1.78519	0.000191	MT2623	1.37667	8.823979	3.830708	-0.21068	0.001062
MT2694	1.462232	8.486916	3.682909	-0.6352	0.001548	MT1444	1.376631	8.787201	4.083831	0.535547	0.000555
MT0247	1.457091	8.381284	3.79826	-0.30462	0.001157	MT2601	1.375364	8.679948	4.813334	2.796398	8.02E-05
MT1888	1.456286	8.179301	4.175987	0.812744	0.000437	MT1390	1.371947	9.070872	4.622174	2.190558	0.000134
MT0608.1	1.455751	8.872868	3.804309	-0.28714	0.001141	MT2802.1	1.371314	9.164934	4.452611	1.660486	0.000212
MT0927	1.45548	8.641153	4.363742	1.385713	0.000267	MT1596.1	1.37026	8.867065	4.741934	2.569156	9.70E-05
MT2955	1.453632	9.251886	4.675231	2.357879	0.000115	MT1424	1.369691	7.988119	3.723813	-0.51859	0.001399
MT0291	1.450289	8.612588	3.982801	0.234948	0.000712	MT1429	1.368529	8.178419	3.485033	-1.18925	0.002537
MT1839	1.449064	8.730464	4.872887	2.986755	6.84E-05	MT0017	1.365847	9.087448	4.05912	0.461699	0.000589
MT2478	1.448917	8.491272	4.424837	1.574377	0.000227	MT3924	1.364988	8.422361	3.987192	0.247938	0.000703
MT3441	1.447286	8.822425	4.312885	1.229472	0.000302	MT4027	1.364797	9.614532	4.01183	0.320956	0.000662
MT0734	1.444907	8.77006	3.210385	-1.92835	0.005025	MT2814	1.362611	8.894213	4.699467	2.434528	0.000108
MT1025	1.443836	9.076375	5.201776	4.049963	2.84E-05	MT0630	1.362559	8.979519	3.909826	0.020065	0.000865
MT3328	1.442642	8.755034	5.354992	4.551198	1.87E-05	MT1107	1.359926	9.187624	4.288645	1.155269	0.000324
MT3059	1.441725	8.484447	4.927063	3.160543	5.93E-05	MT4008	1.35986	8.647385	3.943287	0.118354	0.000791
MT1296	1.441381	9.158695	5.531596	5.132739	1.16E-05	MT1118	1.358058	9.055505	4.350643	1.345398	0.000275
MT3472	1.439762	8.894398	4.19059	0.85692	0.000422	MT3532	1.355637	10.50733	3.596354	-0.87964	0.001915
MT0999.1	1.438852	8.948626	3.483583	-1.19325	0.002545	MT3356	1.354255	8.159933	4.059582	0.463079	0.000589
MT1984	1.438762	9.24703	4.750109	2.595117	9.50E-05	MT3334	1.354157	8.868858	4.076744	0.514349	0.000564
MT3091	1.438481	8.309734	3.506144	-1.13096	0.002402	MT0866	1.353517	9.43785	5.070629	3.623744	4.05E-05
MT0273	1.43551	8.544578	3.74119	-0.46885	0.001341	MT3284	1.349963	8.601718	2.917086	-2.67472	0.010169
MT1898	1.43519	9.281669	5.606391	5.380091	9.62E-06	MT3519	1.348829	8.825901	4.027417	0.367261	0.000639
MT0086	1.432466	8.92236	4.907221	3.096826	6.21E-05	MT2097	1.348217	9.535182	4.574899	2.042041	0.000152
MT1844	1.43211	9.391503	4.53342	1.912189	0.00017	MT0994	1.346764	8.481455	3.251684	-1.81958	0.004537
MT4005	1.430141	9.016342	5.306883	4.393456	2.10E-05	MT2268	1.34674	8.940383	5.08973	3.685646	3.87E-05
MT1820.1	1.427874	8.73695	3.994072	0.268306	0.000694	MT0535	1.341682	8.704434	3.599066	-0.87203	0.001903
MT1786	1.426309	8.825554	4.270725	1.100524	0.00034	MT0451	1.340919	8.229994	2.922413	-2.6616	0.010065
MT3432	1.42571	8.816594	3.824017	-0.23009	0.001079	MT2902	1.339738	9.408391	4.457147	1.67457	0.000209
MT2250	1.424225	9.149422	5.029821	3.491705	4.52E-05	MT0116.1	1.339628	8.460801	3.973806	0.208357	0.00073
MT0291.4	1.424148	8.875311	2.923517	-2.65887	0.010039	MT2467	1.339554	10.05724	3.291146	-1.71484	0.004096
MT1313	1.422408	8.261804	4.565093	2.011305	0.000156	MT2445	1.337442	8.668286	4.077412	0.516347	0.000563
MT0389	1.422308	8.942489	4.384556	1.449869	0.000253	MT3859	1.333523	9.580111	3.70679	-0.5672	0.001457
MT1778	1.420237	9.861855	5.243472	4.186036	2.52E-05	MT0177	1.332418	9.188192	3.428534	-1.34424	0.002911
MT3860	1.418709	9.694792	4.862647	2.953973	7.03E-05	MT0090	1.328431	9.570457	4.089685	0.553072	0.000548
MT1656	1.417984	8.187097	4.023497	0.355608	0.000646	MT0469	1.32579	8.79114	4.995312	3.380276	4.98E-05
MT3541	1.415789	9.813008	4.520202	1.870903	0.000176	MT3777	1.322594	9.078801	4.732055	2.537801	9.94E-05
MT1116	1.412624	8.537403	4.016714	0.335455	0.000654	MT0395	1.320478	8.330667	3.227276	-1.88397	0.004813
MT2512	1.411557	10.16663	4.392725	1.475084	0.000248	MT2666	1.319738	8.742816	3.72737	-0.50842	0.001386

MT0804	1.410635	8.584167	3.508191	-1.1253	0.00239	MT3944	1.31885	9.502187	3.87856	-0.0714	0.00094
MT0165	1.410019	9.477546	4.345198	1.328655	0.000278	MT1781	1.31833	8.707829	4.579652	2.056949	0.00015
MT3749	1.409342	9.165159	4.243695	1.018133	0.000366	MT0843	1.316384	9.193172	4.910713	3.108035	6.18E-05
MT2559	1.409304	9.146938	4.998223	3.389665	4.95E-05	MT1094	1.314833	9.572971	4.021467	0.349575	0.000649
MT1696	1.409219	8.634615	3.201505	-1.95162	0.005127	MT1446	1.314115	8.938858	3.483133	-1.19448	0.002546
MT0393	1.408836	8.684371	3.796627	-0.30934	0.001159	MT2040	1.312606	9.430835	4.043899	0.416315	0.000613
MT0105	1.407455	9.101318	4.582138	2.064746	0.000149	MT3502	1.310159	9.054214	4.55426	1.977376	0.000161
MT2984	1.407351	9.036345	4.723987	2.512211	0.000101	MT1952	1.308358	8.767357	3.958	0.161703	0.000761
MT3259	1.405811	9.450367	4.425743	1.577183	0.000227	MT2451	1.304341	8.673788	4.31775	1.244386	0.000298
MT1412	1.405535	9.153766	5.152662	3.890022	3.26E-05	MT1468	1.302712	9.171606	2.536086	-3.5693	0.023658
MT3098	1.403476	9.529182	3.672911	-0.6636	0.001588	MT3106.1	1.302485	9.028258	4.291259	1.163262	0.000322
MT1119	1.403313	8.666583	4.376325	1.424483	0.000259	MT1208	1.300598	9.519268	4.651649	2.283429	0.000123
MT1540	1.402636	8.995912	4.34729	1.335088	0.000277	MT3423	1.299966	8.987075	3.351694	-1.55264	0.003528
MT3671.1	1.40159	8.720508	4.369687	1.404024	0.000263	MT1393	1.299863	9.888413	4.409191	1.525964	0.000237
MT2630	1.401065	9.258506	3.723315	-0.52002	0.001399	MT2897	1.29732	8.142848	3.121653	-2.15906	0.006252
MT1752	1.400567	9.431088	4.611544	2.157117	0.000138	MT0181	1.296973	8.885814	4.078888	0.520759	0.000561
MT0291.3	1.399694	8.773164	3.828045	-0.21841	0.001067	MT1223	1.295035	9.175488	4.021076	0.348415	0.000649
MT2879	1.39838	9.132895	4.166314	0.783517	0.000447	MT0238	1.292751	9.004083	3.969046	0.194299	0.00074
MT3390	1.398113	9.12797	4.356204	1.362509	0.000272	MT3481	1.290635	8.544108	3.300148	-1.69084	0.004002
MT1751.1	1.39803	8.768066	4.938687	3.197907	5.78E-05	MT0704	1.290008	8.686796	4.079814	0.523529	0.00056
MT2971	1.396988	9.293769	4.890888	3.044436	6.50E-05	MT1430	1.289108	8.498201	3.102929	-2.20722	0.006541
MT1011	1.396326	9.043585	4.750557	2.596539	9.50E-05	MT3309	1.287913	9.696067	3.891794	-0.03273	0.000908
MT1682	1.394632	9.220278	5.187113	4.002173	2.95E-05	MT3066	1.287074	9.470884	3.652967	-0.72012	0.00167
MT1663	1.393142	9.315836	4.789919	2.721754	8.53E-05	MT0070	1.285668	8.842561	3.706822	-0.56711	0.001457
MT3340	1.392752	9.061885	4.387948	1.460337	0.000252	MT3805	1.28436	9.224322	3.041875	-2.36292	0.007566
MT0637	1.391191	8.671072	4.95175	3.239923	5.59E-05	MT1928	1.283334	9.482624	4.092945	0.562838	0.000544
MT0874	1.389886	9.309916	4.429624	1.589206	0.000225	MT0881	1.28185	8.481201	4.703489	2.44726	0.000107
MT1745	1.389643	9.086264	5.509309	5.059148	1.23E-05	MT3080.1	1.279426	9.069977	4.416866	1.549704	0.000232
MT0062	1.387768	9.133666	4.875146	2.993991	6.80E-05	MT3750	1.278698	8.60891	3.456818	-1.26684	0.002707
MT1907	1.385986	9.211846	4.631008	2.218371	0.00013	MT1744	1.278561	9.252252	4.12203	0.650109	0.000504
MT3536	1.38534	9.359765	4.17731	0.816742	0.000435	MT3247	1.27738	9.152965	4.657722	2.302588	0.000121
MT2297	1.382711	9.245842	4.372061	1.41134	0.000262	MT1502	1.276934	9.38805	3.322328	-1.63153	0.003791
MT2122	1.382522	8.503098	4.318984	1.24817	0.000298	MT3586	1.275935	9.341115	4.757657	2.619103	9.30E-05
MT3324	1.381394	8.68524	4.11171	0.619111	0.000517	MT2684	1.275721	8.419442	4.541893	1.938679	0.000167
MT0560	1.381277	9.533873	3.780405	-0.35614	0.001207	MT4025	1.274646	8.903495	3.381401	-1.4724	0.003281
MT1047	1.379471	10.28252	4.487626	1.769339	0.000193	MT1564	1.273432	8.581456	3.684125	-0.63174	0.001545
MT2696	1.268198	8.853067	4.25285	1.046016	0.000358	MT2682	1.272789	8.977207	4.210949	0.918621	0.000401
MT2812	1.266768	8.76544	3.988495	0.251794	0.000701	MT2292	1.271769	8.877705	4.168282	0.789461	0.000445
MT1476	1.265874	8.838203	4.412704	1.536827	0.000234	MT2322	1.26917	9.862825	2.653958	-3.30222	0.018375
MT0780	1.265595	9.722615	4.06104	0.467432	0.000588	MT0338	1.268797	8.540866	3.177693	-2.01383	0.005449
MT0839	1.265256	8.875181	3.374677	-1.4906	0.003334	MT2285	1.26841	9.97201	3.146583	-2.09466	0.005878
MT1798	1.264817	9.134848	4.477659	1.738322	0.000198	MT1209	1.268208	8.70881	4.134422	0.687375	0.000487
MT1438	1.263919	9.752178	3.75056	-0.44197	0.001311	MT0997	1.108631	8.483206	3.033731	-2.38353	0.007712
MT0357.1	1.263625	9.437825	4.131635	0.678991	0.00049	MT2401	1.106947	10.31842	3.034664	-2.38117	0.007703
MT2837	1.263455	9.603921	3.388576	-1.45296	0.003222	MT4014	1.106896	8.20469	3.415844	-1.37885	0.003013
MT2960	1.263247	10.0347	3.451158	-1.28236	0.002751	MT1622	1.105066	8.166507	3.32862	-1.61466	0.003736
MT1035	1.262561	9.483517	4.347144	1.334639	0.000277	MT0563	1.104684	8.360106	3.05571	-2.32781	0.007331
MT1263	1.256653	8.485451	3.914366	0.033378	0.000855	MT1426	1.102573	8.320394	3.217592	-1.90943	0.004933
MT0009	1.253647	9.139603	4.532942	1.910697	0.00017	MT0633	1.101661	9.350426	4.772361	2.665861	8.97E-05
MT2070	1.253034	9.810036	3.205754	-1.94049	0.005081	MT1617	1.100205	9.285149	3.74297	-0.46374	0.001337
MT2144	1.250288	8.97038	4.26763	1.091079	0.000343	MT2808	1.099644	9.227859	4.029693	0.374029	0.000635
MT1053	1.249402	8.891095	3.471683	-1.22601	0.002611	MT1303	1.099101	8.927743	4.0887	0.550125	0.000549
MT0278	1.247831	9.12597	4.766651	2.647697	9.07E-05	MT1940	1.099097	10.38567	3.688644	-0.61889	0.001527
MT3103	1.247558	9.571826	3.702645	-0.57902	0.001473	MT1465	1.097885	8.896894	2.934681	-2.63129	0.009771
MT1251	1.246575	9.630604	3.533214	-1.05592	0.002246	MT0649	1.095905	8.226024	2.556185	-3.5244	0.022691
MT1618	1.245758	9.695901	4.505998	1.826584	0.000184	MT1632	1.095486	8.641891	4.019418	0.343489	0.000651
MT2846	1.245267	9.491542	4.393509	1.477504	0.000248	MT3748	1.09432	9.335245	3.380967	-1.47358	0.003284
MT3302	1.243476	9.798787	4.035795	0.392184	0.000625	MT2254	1.093929	8.905806	3.605934	-0.85274	0.001871
MT3299	1.243191	8.648405	3.725093	-0.51493	0.001394	MT2614	1.093185	8.564832	2.782603	-3.00068	0.013734
MT0515	1.242424	8.69764	3.604454	-0.8569	0.001877	MT1026	1.092351	9.308971	3.574163	-0.9418	0.002022
MT3436	1.241206	8.06259	3.296142	-1.70152	0.004042	MT2426	1.090104	8.824044	2.50137	-3.64623	0.025516
MT1001	1.240485	8.108337	2.984565	-2.50721	0.008648	MT2704	1.089289	8.622068	3.516357	-1.10269	0.002342
MT2598	1.240381	9.875099	2.782175	-3.0017	0.013744	MT1779	1.089258	8.771018	3.31321	-1.65594	0.003878
MT2908	1.237965	8.705024	3.816226	-0.25266	0.001103	MT2044	1.088036	8.953954	3.693597	-0.6048	0.001509
MT3365	1.237857	8.900371	4.17576	0.812056	0.000437	MT1693	1.087855	8.567582	3.441924	-1.30765	0.002815
MT3637	1.237093	9.194167	4.844499	2.895925	7.40E-05	MT2431	1.086823	8.769217	4.484762	1.760426	0.000195
MT3004	1.236098	8.676493	3.671	-0.66902	0.001594	MT0773.1	1.085496	8.301022	3.158498	-2.06376	0.005713
MT3644	1.23595	9.181773	4.363191	1.384015	0.000267	MT2610	1.084034	8.332273	2.935925	-2.62822	0.009743
MT3633	1.235775	9.59865	4.769138	2.655607	9.01E-05	MT2992	1.083969	8.820763	2.836303	-2.87181	0.012157
MT0661	1.232572	10.0371	3.795355	-0.31301	0.001162	MT0425	1.083629	9.006405	4.288414	1.154564	0.000324
MT3176	1.232374	8.781355	3.762698	-0.40711	0.001266	MT2219	1.083333	8.12817	3.117669	-2.16932	0.006308
MT3483	1.231601	9.177008	4.290392	1.160612	0.000322	MT3974	1.082712	9.05503	3.474692	-1.21773	0.002595
MT1711	1.229801	8.810787	3.633434	-0.77531	0.001741	MT0384	1.082707	8.929631	2.857836	-2.81965	0.011574
MT3393	1.228456	8.602981	2.890904	-2.73902	0.010762	MT3824	1.082213	9.002921	2.81979	-2.91162	0.012609
MT3179	1.228146	9.159612	3.540864	-1.03466	0.002202	MT0408	1.082042	8.515453	3.855719	-0.13799	0.000998
MT3434	1.227609	8.278644	3.877183	-0.07542	0.000943	MT2549	1.079356	8.676773	3.39127	-1.44565	0.003202
MT0920	1.227502	9.409938	4.218932	0.942849	0.000393	MT0717.1	1.078577	9.149152	3.270233	-1.77044	0.004325
MT3101	1.226666	10.92998	3.594943	-0.8836	0.00192	MT3997	1.07697	8.995726	3.045207	-2.35447	0.007511
MT1154	1.226528	9.347622	3.778499	-0.36163	0.001214	MT3176.1	1.076672	8.53133	3.356404	-1.53994	0.003488
MT2979	1.225078	8.938111	4.437105	1.612389	0.000221	MT1216	1.075611	8.324136	3.055653	-2.32796	0.007331
MT2691.1	1.219926	8.778476	2.943296	-2.60997	0.009581	MT0375	1.075559	9.35519	3.544347	-1.02497	0.002184
MT2732	1.219189	8.986575	4.429218	1.587946	0.000225	MT1243	1.074337	8.708296	2.898832	-2.71959	0.010592
MT0533	1.21908	8.671144	3.131836	-2.13279	0.006091	MT2456	1.073597	9.354396	4.183373	0.835078	0.000429
MT0516	1.218505	9.004061	4.208719	0.911858	0.000403	MT1592	1.072652	9.35886	3.179944	-2.00796	0.005423
MT2261	1.217938	8.160768	3.491543	-1.1713	0.002498	MT2037	1.071875	9.266786	3.306158	-1.67479	0.003947
MT1040.1	1.217292	9.47111	3.514924	-1.10666	0.002351	MT2309	1.070231	9.208217	3.506202	-1.1308	0.002402
MT2927	1.214295	8.84095	4.062723	0.472453	0.000585	MT0772	1.069656	8.451006	3.955725	0.154996	0.000765
MT0514	1.213904	8.762937	4.380282	1.436686	0.000256	MT3115	1.068255	8.916734	3.326611	-1.62005	0.003753
MT3914	1.213459	9.958564	5.1303	3.817325	3.47E-05	MT1876	1.067473	9.110391	3.315017	-1.65111	0.003862
MT1392	1.212663	9.132876	3.988412	0.251548	0.000701	MT1238	1.066221	8.782119	3.482105	-1.19732	0.00255
MT2724	1.211617	8.901472	3.486544	-1.18508	0.002527	MT2218	1.064405	8.562447	3.481852	-1.19802	0.002551
MT0052	1.211271	8.625092	3.139539	-2.11289	0.005975	MT1677	1.06376	8.870979	3.525822	-1.07645	0.002286
MT1782	1.209603	9.139998	3.889537	-0.03933	0.000912	MT1694	1.063452	8.216869	3.447181	-1.29325	0.002778
MT3017	1.208789	9.025958	3.904568	0.004656	0.000877	MT1079	1.063355	8.626911	3.939945	0.108519	0.000798
MT0982	1.207535	10.38163	2.88586	-2.75136	0.010853	MT2776	1.061958	9.051504	3.306431	-1.67406	0.003946
MT4000	1.207475	9.138316	4.445127	1.637264	0.000216	MT1824	1.061945	9.437907	3.319706	-1.63855	0.003816
MT2629	1.206759	8.950966	3.349777	-1.5578	0.003542	MT0978	1.060446	8.913261	2.887239	-2.74799	0.010836
MT2244	1.206661	8.561007	3.304459	-1.67933	0.003962	MT3310	1.059565	8.695778	3.322094	-1.63216	0.003792

MT3517	1.205856	9.099467	3.531662	-1.06024	0.002251	MT0620	1.057952	8.871509	3.346909	-1.56552	0.003568
MT1811	1.205472	9.976139	3.700839	-0.58417	0.00148	MT2461	1.057852	9.198299	3.397047	-1.42998	0.003155
MT3181	1.205342	9.322705	3.989	0.25329	0.000701	MT2449	1.056563	8.499097	3.159656	-2.06076	0.005702
MT0883	1.205138	9.245025	3.707346	-0.56562	0.001457	MT1785	1.05598	9.293933	4.180034	0.82498	0.000433
MT0007	1.200332	8.644816	3.723542	-0.51937	0.001399	MT2775	1.055737	9.263333	3.082411	-2.25977	0.006875
MT2387	1.199844	9.289363	4.173559	0.805404	0.000439	MT0085.1	1.055041	9.189639	3.66835	-0.67654	0.001605
MT3678	1.199473	8.725042	3.444863	-1.2996	0.002793	MT2372	1.054637	9.842386	3.160206	-2.05933	0.005696
MT3723	1.198515	8.745468	2.647912	-3.31613	0.018594	MT1019	1.053893	8.793501	2.919864	-2.66788	0.010116
MT1701	1.198202	8.486736	2.551396	-3.53512	0.022884	MT3366	1.053771	10.47425	4.004863	0.300287	0.000675
MT3556	1.194539	9.13437	4.985299	3.347985	5.12E-05	MT0886	1.05313	8.753755	2.846129	-2.84804	0.0119
MT3435	1.193786	8.383637	2.516412	-3.61299	0.024704	MT2427	1.051772	8.828289	3.531834	-1.05976	0.002251
MT2260	1.193423	9.567424	3.967665	0.19022	0.000742	MT2856	1.050539	9.422164	3.796422	-0.30993	0.001159
MT1795	1.192609	8.582984	4.008742	0.311793	0.000667	MT3652	1.049331	9.638315	3.424014	-1.35658	0.002945
MT2982	1.192263	9.399523	3.729324	-0.50283	0.001381	MT2145	1.04914	8.571352	3.662647	-0.69271	0.001627
MT0144	1.191622	9.264529	4.526964	1.892019	0.000173	MT3623	1.04882	9.331246	3.842989	-0.17502	0.001032
MT2543	1.188921	9.553618	3.891892	-0.03244	0.000908	MT1463	1.04881	9.01988	3.521082	-1.0896	0.002315
MT3071	1.188911	9.553527	3.591465	-0.89335	0.001936	MT0764	1.04866	8.305119	2.7977	-2.96462	0.013277
MT2821	1.188725	8.750721	4.018562	0.340946	0.000652	MT3249	1.04645	8.756165	3.362162	-1.52441	0.003441
MT0030.1	1.188393	9.44165	4.705575	2.453867	0.000106	MT0924	1.04596	9.760151	3.584157	-0.91383	0.001974
MT3442	1.187614	9.639428	3.850865	-0.15212	0.00101	MT0738	1.045159	8.71581	3.314368	-1.65284	0.003867
MT1948	1.18601	9.163777	3.947407	0.130484	0.000783	MT2015	1.042093	10.0908	2.605624	-3.41282	0.020454
MT1120	1.185034	8.679071	3.675062	-0.65749	0.00158	MT2987	1.041351	9.55882	3.863249	-0.11606	0.00098
MT3770	1.184899	9.340819	3.777873	-0.36344	0.001215	MT3592	1.041295	8.064978	2.842143	-2.85769	0.012006
MT3237	1.18417	8.686684	4.158286	0.759284	0.000457	MT3052	1.040285	8.323658	2.814884	-2.92342	0.012752
MT1384	1.182833	10.2993	3.859462	-0.1271	0.000989	MT3090	1.04009	9.196605	3.868529	-0.10067	0.000966
MT0069	1.182602	9.381307	3.652213	-0.72225	0.001672	MT2109	1.039972	9.007728	3.251421	-1.82027	0.004539
MT3938	1.18189	8.660237	3.733687	-0.49034	0.001367	MT0896	1.037446	9.544315	2.640886	-3.33228	0.0189
MT1253	1.18169	8.983186	4.143477	0.71464	0.000475	MT1376	1.037236	9.552727	3.434777	-1.32719	0.002863
MT0342	1.177628	9.669984	3.433029	-1.33197	0.002876	MT0867	1.036822	8.956434	3.503102	-1.13937	0.002422
MT2583	1.177412	9.260486	3.483017	-1.19481	0.002546	MT3476	1.034826	8.593212	2.753796	-3.06909	0.01462
MT0553	1.177353	8.753234	4.072612	0.501996	0.00057	MT3127	1.033751	9.339257	4.254794	1.051938	0.000356
MT0289	1.176704	8.981331	4.143508	0.714734	0.000475	MT0998	1.032876	9.216346	3.742866	-0.46404	0.001337
MT0475	1.175352	9.996261	3.4898	-1.1761	0.002507	MT2770	1.032608	8.841869	2.911574	-2.68829	0.010299
MT0128	1.175047	9.186067	3.648022	-0.73411	0.001686	MT0854	1.03254	9.441883	3.217792	-1.9089	0.004932
MT3196	1.174208	9.606469	3.627138	-0.79307	0.001769	MT1254	1.03165	9.873965	4.021153	0.348643	0.000649
MT2068	1.173556	8.944406	2.843983	-2.85324	0.011958	MT0372	1.031104	7.683606	3.500265	-1.14721	0.002441
MT3987	1.172569	9.533437	3.982842	0.235069	0.000712	MT2120	1.028272	9.136729	2.980983	-2.51616	0.008717
MT1691	1.172017	8.813883	3.138902	-2.11454	0.00598	MT0891	1.028143	8.44537	2.852197	-2.83334	0.011729
MT3466	1.169569	9.665711	4.445354	1.637967	0.000216	MT1589	1.025942	9.089853	3.708556	-0.56217	0.001452
MT0337	1.16855	9.831156	3.794668	-0.315	0.001163	MT0752	1.025677	9.012861	3.696929	-0.59531	0.001495
MT3170	1.167852	8.891701	3.869612	-0.09751	0.000964	MT3530	1.024337	10.49343	3.371201	-1.5	0.003361
MT1645	1.16707	9.026694	3.892748	-0.02994	0.000907	MT1687	1.024079	8.553493	2.48166	-3.68954	0.026607
MT1066	1.16669	9.229354	3.264811	-1.78482	0.004384	MT1858	1.02382	9.667113	3.043208	-2.35954	0.007545
MT2018	1.165959	9.413465	4.142684	0.712252	0.000476	MT2917	1.022615	9.248624	2.322481	-4.02968	0.036806
MT3083	1.165309	9.51825	3.650088	-0.72826	0.00168	MT0472.1	1.021483	8.978968	3.436718	-1.32188	0.002851
MT2022	1.165115	8.690153	4.063554	0.474936	0.000584	MT0226	1.018576	9.240555	3.430094	-1.33998	0.002899
MT3648	1.164865	9.722243	4.04826	0.42931	0.000607	MT3573.12	1.017633	8.879679	3.640154	-0.75634	0.001716
MT3907	1.163544	8.865965	3.711116	-0.55486	0.001442	MT1464	1.015465	9.725057	3.461187	-1.25484	0.002681
MT1567	1.163279	10.1605	4.178379	0.819974	0.000434	MT2284	1.015058	8.676347	3.852872	-0.14628	0.001005
MT0084	1.161274	9.939443	3.925596	0.066338	0.00083	MT1743	1.014945	8.563172	3.371097	-1.50028	0.003361
MT1636	1.160824	9.609576	3.268391	-1.77533	0.004343	MT2091	1.014606	8.825058	2.713908	-3.16298	0.016028
MT2915	1.159532	8.560451	3.087575	-2.24656	0.00679	MT3730	1.014182	10.97256	2.445003	-3.76941	0.028765
MT1474	1.159053	8.469146	3.833175	-0.20352	0.001057	MT3075	1.013869	8.416959	3.15239	-2.07961	0.005803
MT3574	1.15827	9.182358	3.541504	-1.03288	0.0022	MT2868	1.012942	9.059775	2.942361	-2.61228	0.009601
MT1667	1.157534	9.078376	3.628725	-0.78859	0.001761	MT0582	1.011867	8.872849	2.983227	-2.51055	0.008672
MT2983	1.155965	9.044376	3.733153	-0.49187	0.001367	MT1733	1.011107	8.265694	2.794442	-2.97242	0.013369
MT2945	1.155319	10.06395	4.298504	1.185427	0.000315	MT0942	1.010671	8.540948	2.591587	-3.44466	0.021068
MT3994	1.153155	8.144199	2.98842	-2.49756	0.008565	MT3504	1.010547	8.927785	3.327375	-1.618	0.003748
MT2541	1.151937	9.049914	3.391382	-1.44535	0.003202	MT2904	1.010068	8.668471	3.249389	-1.82564	0.004558
MT2487	1.151839	9.639087	3.289443	-1.71937	0.004114	MT0502	1.009652	9.222614	3.566073	-0.9644	0.002067
MT3285	1.150352	10.64357	2.616968	-3.387	0.01996	MT1780	1.009373	8.042062	2.948062	-2.59815	0.009462
MT3582	1.149743	8.580767	2.658315	-3.29217	0.0182	MT2221	1.009163	8.334856	2.29178	-4.09325	0.039256
MT2585	1.14914	8.358109	3.925847	0.067076	0.00083	MT0929	1.009088	8.831353	2.436716	-3.78734	0.029254
MT0474	1.149073	9.616931	3.81723	-0.24975	0.001101	MT1142	1.008641	9.958241	3.142261	-2.10585	0.00594
MT0702	1.148793	8.897244	3.638379	-0.76135	0.001723	MT2824	1.007792	9.657118	2.434013	-3.79318	0.029359
MT0632	1.147469	8.135137	2.837455	-2.86902	0.012131	MT3614	1.007341	8.809175	2.926423	-2.6517	0.009974
MT1791	1.14699	10.04777	3.458288	-1.2628	0.002699	MT1452	1.007042	8.798865	3.469219	-1.23278	0.002625
MT2176	1.145312	9.638021	3.540856	-1.03468	0.002202	MT3459	1.004717	8.103165	3.332762	-1.60355	0.003703
MT0863	1.143549	10.56246	3.372032	-1.49775	0.003356	MT2318	1.004649	9.737508	3.244566	-1.83839	0.004603
MT2878	1.143385	9.056244	3.754559	-0.43049	0.001297	MT1215	1.004588	8.663782	4.215803	0.933351	0.000396
MT2396	1.142615	8.979181	3.316277	-1.64773	0.00385	MT1457	1.003604	8.892507	3.579819	-0.92598	0.001998
MT2130	1.139824	9.664051	3.697814	-0.59279	0.001492	MT3034	0.999852	10.15775	3.759229	-0.41708	0.001279
MT1277	1.138208	8.874345	4.49351	1.787664	0.00019	MT1104	0.997904	8.935929	3.69098	-0.61225	0.00152
MT2656	1.137798	9.052674	3.245559	-1.83576	0.004599	MT0676	0.997565	9.3037	3.608427	-0.84574	0.001859
MT1065	1.137767	7.854573	2.952407	-2.58736	0.009355	MT0604	0.997254	8.778015	3.532922	-1.05674	0.002246
MT1249	1.137627	9.948815	3.841282	-0.17998	0.001035	MT0772.1	0.996693	7.809754	3.021137	-2.41534	0.007943
MT0396	1.137387	9.142233	3.65211	-0.72254	0.001672	MT1334	0.996358	9.192129	3.621699	-0.8084	0.001796
MT1565	1.135207	8.733101	2.876681	-2.77378	0.011078	MT1217	0.996328	8.538412	2.834604	-2.87591	0.012202
MT0892.1	1.135069	8.952913	4.190399	0.856342	0.000422	MT3376	0.99475	8.944828	2.660291	-3.28761	0.018129
MT3116	1.134505	8.682855	3.099101	-2.21704	0.006607	MT1661	0.994737	8.618011	3.467002	-1.23887	0.00264
MT2838	1.133582	9.387953	2.59682	-3.43281	0.020854	MT2476	0.994315	8.783291	2.276531	-4.12457	0.040444
MT1734	1.130916	9.114702	4.042207	0.411275	0.000614	MT0162	0.99429	9.152787	3.641812	-0.75166	0.001709
MT0241	1.130559	9.293111	4.350655	1.345435	0.000275	MT0276	0.993923	8.594972	3.10291	-2.20727	0.006541
MT1132	1.128374	10.10371	4.334649	1.296244	0.000287	MT1041	0.991464	9.111463	2.785289	-2.99427	0.013643
MT1010	1.126279	9.108531	4.157117	0.75576	0.000458	MT0135	0.989718	9.015673	2.882509	-2.75955	0.010935
MT2459	1.125409	10.06847	3.224537	-1.89117	0.004843	MT0295	0.989006	8.523539	2.578079	-3.47518	0.021652
MT4023	1.123447	9.078008	4.296993	1.180804	0.000317	MT2162	0.98885	8.51485	3.203809	-1.94559	0.005101
MT3039	1.123014	9.246124	4.431832	1.596046	0.000224	MT0125	0.9887	9.568879	3.428224	-1.34509	0.002912
MT3724	1.122181	9.983047	4.149862	0.733881	0.000467	MT0770	0.98831	8.614146	2.990603	-2.49209	0.008526
MT1241	1.119182	8.994662	3.762724	-0.40703	0.001266	MT0530	0.988099	9.883474	3.140494	-2.11042	0.005965
MT0748	1.118548	9.107081	3.832956	-0.20416	0.001057	MT1375	0.98622	9.372294	2.793275	-2.9752	0.013399
MT2488	1.118128	8.8981	4.120459	0.645388	0.000506	MT0202	0.985932	8.70412	2.703153	-3.18812	0.016442
MT0910	1.116375	9.643342	3.329715	-1.61172	0.003728	MT1260	0.985926	8.756923	3.213436	-1.92034	0.004986
MT2157	1.115255	9.194136	4.346342	1.332175	0.000277	MT0324	0.985542	9.138392	2.981263	-2.51546	0.008715
MT0254	1.114434	10.47091	3.304636	-1.67886	0.003962	MT2419	0.984706	9.513232	2.93062	-2.64133	0.009866
MT2365.1	1.113177	10.07191	4.909161	3.103052	6.19E-05	MT3569	0.984145	9.594068	3.683572	-0.63332	0.001546
MT0346	1.112085	10.02688	3.288501	-1.72188	0.004123	MT3538	0.983173	8.335804	2.516237	-3.61338	0.024705
MT2772	1.111292	8.942453	4.244822	1.021567	0.000365	MT2925	0.980511	9.406849	2.887196	-2.74809	0.010836

MT1789	1.110085	8.5705	4.052015	0.440505	0.000601	MT3460	0.980367	9.427391	2.991662	-2.48944	0.00851
MT1278	1.109618	8.843675	3.035717	-2.37851	0.007685	MT0894	0.979592	8.254791	2.725536	-3.13571	0.015604
MT1956	1.109375	9.47975	3.546176	-1.01988	0.002175	MT0088	0.979209	9.515129	3.514454	-1.10796	0.002352
MT1258	1.109044	8.815855	3.699053	-0.58926	0.001487	MT1828	0.978676	9.118392	3.57051	-0.95201	0.002043
MT0731	0.970496	8.942402	2.83349	-2.8786	0.012231	MT0902	0.976879	8.838175	3.350876	-1.55484	0.003533
MT1388	0.970481	9.184637	3.069191	-2.29351	0.007109	MT0200	0.97593	8.699981	2.863611	-2.80561	0.011432
MT1968	0.97045	9.186457	3.831612	-0.20806	0.001061	MT3537	0.974359	8.720795	3.722084	-0.52354	0.001404
MT3300	0.967321	9.679795	3.480514	-1.2017	0.002558	MT2604	0.973429	9.30886	2.774199	-3.02069	0.014005
MT0631	0.965788	8.760995	2.919917	-2.66775	0.010116	MT1181	0.972628	9.721794	3.510873	-1.11788	0.002373
MT3162	0.965442	9.074146	3.681017	-0.64058	0.001553	MT2616	0.971014	8.666705	2.66289	-3.28162	0.018036
MT2423	0.96512	8.646742	2.50575	-3.63656	0.02527	MT1504	0.881994	9.156877	3.023255	-2.41	0.007901
MT1730	0.964905	8.201502	2.497721	-3.65427	0.025708	MT0588	0.881751	9.014505	3.033939	-2.38301	0.007711
MT3711	0.964852	8.98595	3.576722	-0.93464	0.002011	MT0106	0.881657	9.578891	3.145277	-2.09804	0.005897
MT2557	0.964256	9.376328	3.144643	-2.09968	0.005905	MT3290	0.881184	8.931528	2.629487	-3.3584	0.019388
MT0532	0.963884	8.593776	4.028905	0.371686	0.000636	MT0411	0.877868	10.00093	2.864535	-2.80337	0.011409
MT2679	0.962726	9.897535	3.338537	-1.58804	0.003644	MT2969	0.877819	9.363491	2.653153	-3.30407	0.018405
MT3157	0.962454	8.448379	2.777874	-3.01194	0.013882	MT1773	0.875719	9.373151	2.936295	-2.6273	0.009738
MT3865	0.959927	9.469049	3.545164	-1.0227	0.00218	MT2480	0.875092	8.102216	2.302347	-4.07144	0.038425
MT1646	0.959392	9.000365	2.587097	-3.45482	0.021258	MT0769	0.874746	9.213786	2.602578	-3.41974	0.020576
MT2142	0.95716	9.96884	3.53205	-1.05916	0.002251	MT0897	0.872154	8.739574	2.892463	-2.7352	0.010736
MT0220	0.955804	9.18525	3.646153	-0.73939	0.001691	MT0044	0.869693	9.272015	2.768005	-3.03541	0.014199
MT3763	0.955373	8.492621	3.038383	-2.37176	0.007632	MT2336	0.869115	10.251	3.578459	-0.92978	0.002004
MT0313	0.952412	8.340816	3.95687	0.15837	0.000763	MT0925	0.867044	8.866532	3.239715	-1.85119	0.004658
MT1069	0.94977	8.676006	3.281064	-1.74167	0.004203	MT2827	0.865057	8.916376	2.328325	-4.0175	0.036377
MT3902	0.947494	9.772379	2.759166	-3.05637	0.014471	MT1414.1	0.865016	9.991691	3.085424	-2.25206	0.006828
MT0437	0.945698	8.697724	2.802256	-2.95371	0.013141	MT3906	0.864889	9.044446	2.756077	-3.06369	0.014561
MT2510	0.945622	10.01432	3.663585	-0.69005	0.001624	MT3950	0.86463	9.69677	2.90047	-2.71557	0.010555
MT0761	0.944957	8.748597	3.339812	-1.58461	0.003634	MT2762	0.864398	8.425394	2.787596	-2.98877	0.013572
MT0127	0.940949	9.188376	2.757951	-3.05925	0.014505	MT1526	0.863791	9.134679	2.897296	-2.72336	0.010631
MT1901	0.940556	8.843739	2.76002	-3.05435	0.014444	MT0983	0.86365	9.137128	2.549145	-3.54015	0.022996
MT0355	0.939982	8.335756	2.293235	-4.09025	0.039155	MT2115	0.863213	9.203264	2.779033	-3.00918	0.013846
MT2799	0.936925	9.07943	2.727257	-3.13166	0.015558	MT3422	0.861872	9.220232	3.090199	-2.23985	0.006747
MT1707	0.935495	9.229431	3.012537	-2.43701	0.008115	MT1596	0.860998	9.208433	2.741216	-3.0988	0.015046
MT1491	0.933497	9.2533	3.460499	-1.25673	0.002685	MT2683	0.859733	9.264324	3.054655	-2.33049	0.007348
MT1078	0.932643	8.331124	2.461916	-3.73268	0.027742	MT1688	0.85962	8.976245	2.75354	-3.06969	0.014624
MT3314	0.928682	9.231872	2.455493	-3.74665	0.028119	MT1460	0.858487	9.338536	3.158749	-2.06311	0.005711
MT1916	0.928558	9.71573	2.757073	-3.06133	0.014532	MT1287	0.857757	8.760138	3.407967	-1.40029	0.003064
MT3767.1	0.92774	9.532966	2.381324	-3.90598	0.03264	MT2466	0.85707	8.711575	2.555812	-3.52523	0.022703
MT1008	0.926733	8.922845	2.602472	-3.41998	0.020576	MT3057	0.856781	10.41655	2.585921	-3.45748	0.02129
MT0409	0.924313	9.002494	3.339286	-1.58602	0.003638	MT2328	0.855828	9.161364	3.439448	-1.31442	0.002833
MT2434	0.924097	8.595221	2.214042	-4.2512	0.045808	MT0549	0.855756	10.27089	2.628522	-3.36061	0.019428
MT1130	0.92402	8.868728	3.560783	-0.97917	0.002098	MT0566	0.85314	8.379306	2.226415	-4.22635	0.044763
MT0272	0.923567	8.86884	2.406584	-3.85214	0.030979	MT1202	0.852335	9.381297	3.49863	-1.15173	0.002451
MT3547	0.923173	8.294373	2.433142	-3.79506	0.029411	MT3081	0.850554	9.190008	2.480207	-3.69273	0.026682
MT2078	0.921793	9.865214	3.018742	-2.42138	0.007988	MT0089	0.848664	9.480545	2.771343	-3.02748	0.014099
MT2714	0.921499	9.162025	2.989005	-2.49609	0.008556	MT0615	0.84717	9.178117	2.504704	-3.63887	0.025325
MT0388	0.921235	8.798174	2.630783	-3.35544	0.019352	MT1994	0.846609	9.486531	2.587083	-3.45485	0.021258
MT3737	0.921018	9.19379	3.635365	-0.76986	0.001734	MT2874	0.845904	9.024735	3.118212	-2.16793	0.006303
MT3951	0.920109	9.290098	3.148163	-2.09057	0.005858	MT0531	0.845831	8.887011	2.44929	-3.76012	0.028486
MT1662	0.918894	8.810711	2.83182	-2.88263	0.012255	MT3849	0.845415	9.208737	3.364166	-1.519	0.003423
MT0267	0.918524	8.710077	3.741476	-0.46803	0.001341	MT3161	0.845278	9.735542	3.651942	-0.72302	0.001672
MT2734.1	0.918195	9.140541	3.414097	-1.38361	0.003021	MT0403	0.844671	9.25499	3.157408	-2.06659	0.005724
MT2279	0.917824	7.974331	2.588188	-3.45235	0.021216	MT3501	0.844106	8.357988	2.701312	-3.19242	0.016499
MT3693	0.917665	9.139381	2.797337	-2.96549	0.013284	MT1083	0.843742	9.289019	2.746774	-3.08569	0.014854
MT2135	0.916994	9.822705	2.412178	-3.84016	0.030655	MT2563.1	0.843663	8.099823	2.398669	-3.86906	0.031462
MT2030	0.914225	9.686979	3.372027	-1.49777	0.003356	MT2134	0.843568	8.39263	2.515622	-3.61474	0.024724
MT0783	0.913997	8.54023	2.8138	-2.92602	0.012778	MT0167	0.843169	8.952939	2.886401	-2.75004	0.01085
MT3917	0.910342	8.997522	2.918775	-2.67056	0.010139	MT3837	0.842376	9.887958	2.790692	-2.98138	0.013473
MT0645	0.909232	9.812352	3.062034	-2.31173	0.007223	MT1859	0.842289	9.159976	2.82918	-2.889	0.012325
MT3041.1	0.909054	9.065284	2.439844	-3.78058	0.029066	MT2501	0.841881	8.870187	2.970405	-2.54257	0.008956
MT0792	0.90831	9.508003	3.365077	-1.51654	0.003415	MT2470	0.841348	10.44592	2.895945	-2.72667	0.010648
MT3078	0.90764	10.17506	2.683279	-3.2344	0.017194	MT3861	0.840883	9.484108	3.001433	-2.46493	0.008333
MT0381	0.905655	8.754593	2.323136	-4.02831	0.036762	MT2754	0.840873	9.158266	3.399857	-1.42234	0.003131
MT3248	0.905508	9.413044	3.184605	-1.9958	0.005357	MT1512	0.840421	8.482877	2.435163	-3.7907	0.029321
MT1122.1	0.905415	8.394406	2.520014	-3.60501	0.024531	MT3615.3	0.839521	8.57067	2.760559	-3.05307	0.014432
MT3297	0.904165	8.767503	2.90822	-2.69654	0.010378	MT3557	0.838872	9.024955	2.697038	-3.20239	0.016651
MT1382	0.901633	9.911114	2.837833	-2.86811	0.012124	MT2497	0.837867	9.268242	3.342537	-1.57728	0.003608
MT1171	0.901232	8.444407	3.073791	-2.28178	0.007028	MT2214	0.837604	8.326763	2.544065	-3.5515	0.023249
MT0901	0.898334	8.178347	2.552106	-3.53353	0.022852	MT3639	0.83751	9.087803	2.476722	-3.70036	0.026903
MT1864	0.897806	9.712488	2.995415	-2.48003	0.008434	MT4024	0.833962	9.234508	3.005834	-2.45387	0.008246
MT0878	0.895711	9.271872	2.258499	-4.1614	0.041937	MT1926	0.833917	10.04066	3.096096	-2.22474	0.00666
MT3404	0.894802	9.290046	2.354808	-3.96202	0.034433	MT0452	0.833824	8.90446	2.725831	-3.13501	0.015603
MT1736	0.894657	8.826724	2.657557	-3.29392	0.018228	MT3194.1	0.833611	9.462111	3.198805	-1.95869	0.005159
MT2697	0.894554	8.726878	3.390563	-1.44757	0.003205	MT2092	0.83297	9.212065	2.39967	-3.86692	0.031409
MT3705	0.891969	9.08036	2.435557	-3.78985	0.029315	MT2066	0.832778	9.83854	3.023809	-2.4086	0.007893
MT3355	0.891459	9.552908	2.491325	-3.66834	0.026059	MT0353	0.832537	9.067765	2.862977	-2.80716	0.011441
MT0191	0.890932	9.217651	2.78828	-2.98713	0.013553	MT2909	0.830006	8.778124	2.610737	-3.40119	0.020206
MT2946	0.889328	9.333141	2.925896	-2.653	0.009984	MT0099	0.829936	9.180159	3.412999	-1.3866	0.003025
MT2110	0.887822	8.973619	2.93771	-2.6238	0.009714	MT3790	0.82981	9.064956	3.00338	-2.46004	0.008294
MT4028	0.885974	9.113919	2.688632	-3.22196	0.016965	MT3831	0.828988	9.009836	2.422278	-3.81847	0.030021
MT2862	0.885574	9.198861	2.885037	-2.75337	0.01087	MT3084	0.827912	8.922692	3.445078	-1.29901	0.002792
MT2151	0.885395	9.185764	2.829382	-2.88851	0.012324	MT1739	0.82697	9.02502	3.354304	-1.5456	0.003505
MT0319	0.884844	8.919234	2.834821	-2.87539	0.0122	MT1349	0.826464	9.670233	3.061215	-2.31381	0.007236
MT1314	0.884676	9.190679	2.838189	-2.86725	0.012117	MT2959	0.824887	8.594503	2.803453	-2.95085	0.013105
MT2117	0.883199	9.755087	3.258965	-1.80031	0.004451	MT0230	0.821364	9.128723	2.765503	-3.04135	0.01428
MT2351	0.882778	9.631341	2.897139	-2.72374	0.010631	MT3599	0.820962	8.962796	2.768886	-3.03332	0.014178
MT0910.1	0.814341	9.15119	3.277139	-1.7521	0.004243	MT3257	0.820871	9.102509	2.517528	-3.61052	0.024653
MT0551	0.813891	8.147644	3.404547	-1.4096	0.003094	MT0580	0.820593	9.024473	2.317882	-4.03924	0.03717
MT1267	0.813759	8.958833	3.36099	-1.52758	0.003447	MT2294	0.817934	8.820019	2.780572	-3.00552	0.013796
MT3500	0.813359	8.521328	2.611027	-3.40053	0.020199	MT2579	0.817197	9.658759	3.068609	-2.29499	0.007114
MT0590	0.812806	8.901381	2.377515	-3.91406	0.032868	MT3673	0.815682	9.74521	2.816013	-2.9207	0.012726
MT0401.1	0.811847	8.968953	2.976953	-2.52623	0.008806	MT1423	0.814903	8.252946	2.452614	-3.75291	0.02828
MT1496	0.811314	9.39565	2.672649	-3.25905	0.017635	MT3712	0.729553	9.247389	2.348012	-3.97631	0.034934
MT1298	0.810822	9.336318	3.330128	-1.61061	0.003726	MT3425	0.728578	9.787848	3.139571	-2.11281	0.005975
MT3321	0.810165	9.003786	2.291832	-4.09314	0.039256	MT0465	0.728572	9.211354	2.548841	-3.54083	0.023004
MT1990	0.806081	8.499929	2.320336	-4.03414	0.036981	MT0644	0.725849	8.50923	2.380221	-3.90832	0.032701
MT2964	0.805226	8.973037	2.469078	-3.71706	0.02731	MT1653	0.725303	8.80978	2.196094	-4.28704	0.047512
MT0222	0.803991	9.247057	2.878114	-2.77028	0.01105	MT1808	0.724938	8.843608	2.758004	-3.05913	0.014505

MT1274	0.802523	9.788589	2.517403	-3.6108	0.024653	MT0771	0.724413	9.054507	2.391748	-3.88382	0.031958
MT3074	0.80217	9.046659	2.852892	-2.83165	0.011713	MT0259	0.722849	9.202555	2.368374	-3.93341	0.033489
MT0788	0.801829	9.672215	2.665953	-3.27454	0.017912	MT1124	0.722482	8.82274	2.193525	-4.29216	0.04776
MT1352	0.80088	9.822155	2.866875	-2.79767	0.011348	MT2919	0.721832	9.364305	2.541416	-3.55742	0.023372
MT3117	0.799324	9.442709	2.435959	-3.78898	0.029297	MT0757	0.719772	9.162186	2.910162	-2.69177	0.010333
MT3392	0.79892	8.984201	2.241042	-4.19683	0.04345	MT0831	0.7196	8.631922	2.612519	-3.39713	0.020142
MT2586.1	0.79864	9.586921	2.767042	-3.03769	0.014229	MT3793	0.718828	9.049424	2.617919	-3.38483	0.019936
MT0397	0.795966	8.898914	2.701546	-3.19187	0.016495	MT3352	0.717618	9.833346	3.024658	-2.40646	0.007878
MT2836	0.793458	8.864238	2.76362	-3.04582	0.014339	MT0905	0.71758	9.038176	2.464848	-3.72629	0.027575
MT1110	0.78515	8.465592	2.348533	-3.97521	0.034904	MT2188	0.715312	9.611996	2.572832	-3.487	0.021915
MT0501	0.784164	9.214533	2.279852	-4.11776	0.040187	MT0360	0.714303	9.652758	2.888831	-2.74409	0.010808
MT3686	0.783709	9.421485	3.080391	-2.26493	0.006907	MT2363	0.713266	8.720396	2.669888	-3.26544	0.017739
MT2766	0.781651	8.979501	2.815995	-2.92075	0.012726	MT3576	0.711077	9.418142	3.207215	-1.93666	0.005062
MT0700	0.780723	8.946246	2.500931	-3.64719	0.025534	MT0344	0.710619	9.089375	2.28525	-4.10668	0.039749
MT1655	0.778962	8.878909	2.256381	-4.16571	0.042101	MT1644	0.709559	8.795022	2.491504	-3.66794	0.026057
MT1294	0.778856	8.930552	2.518212	-3.60901	0.024632	MT3498	0.709398	8.487186	2.259108	-4.16016	0.041892
MT1525	0.778779	9.599589	2.649352	-3.31282	0.01854	MT0114	0.709385	9.488541	2.556173	-3.52442	0.022691
MT1505	0.778448	9.46817	2.581687	-3.46704	0.02149	MT0015	0.709089	10.43458	2.566568	-3.50109	0.022193
MT3891	0.777988	9.185404	3.007176	-2.4505	0.00822	MT2726	0.709075	9.376539	2.38631	-3.89539	0.032309
MT2034	0.777533	9.589768	2.506428	-3.63507	0.025237	MT2050	0.709016	9.012304	3.296401	-1.70083	0.004041
MT3338	0.775924	8.73625	2.219261	-4.24073	0.045353	MT0821	0.707681	9.023862	2.201102	-4.27706	0.047017
MT3209	0.775232	9.421646	2.872527	-2.78391	0.011197	MT1977	0.706795	9.065361	2.702955	-3.18858	0.016442
MT0768	0.774513	8.581525	2.992764	-2.48668	0.008492	MT2693	0.706608	8.449726	2.472409	-3.70979	0.027138
MT2253	0.77361	9.465936	2.58017	-3.47047	0.021556	MT0554	0.706066	8.447214	2.173582	-4.33167	0.049685
MT0399	0.77285	9.242887	3.549395	-1.01092	0.002158	MT1746	0.705622	8.971365	2.614431	-3.39278	0.020073
MT2546	0.772186	9.013904	2.264475	-4.14922	0.041428	MT3900	0.705329	9.638331	2.883395	-2.75738	0.010914
MT0835	0.772163	8.665879	2.430357	-3.80107	0.029562	MT2663	0.699884	8.439403	2.27006	-4.13782	0.040991
MT1979	0.769823	9.45164	3.139389	-2.11328	0.005975	MT2739	0.6998	8.802814	2.693497	-3.21064	0.016773
MT3881	0.769771	8.327386	2.330208	-4.01357	0.036227	MT1451	0.699352	8.198182	2.287228	-4.10262	0.039622
MT2364	0.768766	9.413506	2.543451	-3.55287	0.023271	MT1714	0.69725	9.538372	2.535535	-3.57053	0.023681
MT2736	0.768734	9.291846	2.366559	-3.93725	0.033611	MT0182	0.697122	9.150149	2.716091	-3.15786	0.015957
MT2440	0.765256	8.684473	2.95995	-2.56861	0.009186	MT0899	0.693365	9.082617	2.521861	-3.60092	0.024428
MT0150	0.763129	8.651526	2.369397	-3.93125	0.033419	MT3667	0.692339	9.047418	2.286023	-4.10509	0.039721
MT1335	0.762231	8.852493	2.53062	-3.58146	0.023965	MT2489	0.691778	9.940358	2.400274	-3.86563	0.031398
MT0099.1	0.762036	9.093241	2.90805	-2.69696	0.010378	MT2820	0.690212	8.321667	2.622823	-3.37364	0.019697
MT0645.1	0.761908	8.957413	3.049701	-2.34307	0.007428	MT3812	0.690211	8.943119	2.525548	-3.59273	0.024232
MT2695	0.760709	9.05516	2.561004	-3.51359	0.02247	MT2895.1	0.6902	8.853626	2.594937	-3.43708	0.020915
MT1270	0.758812	9.903111	2.407244	-3.85073	0.030941	MT2094	0.689578	8.493277	2.430271	-3.80126	0.029562
MT1809	0.758533	9.610608	2.22926	-4.22062	0.044516	MT2891	0.687537	8.831564	2.363717	-3.94325	0.033804
MT2988	0.758076	9.733898	2.825796	-2.89716	0.012426	MT3345	0.687205	9.668586	2.824137	-2.90115	0.01247
MT3641	0.757478	8.598	2.240454	-4.19802	0.043494	MT0579	0.686256	9.271588	2.558157	-3.51998	0.022614
MT3919	0.757295	8.420284	2.20978	-4.25973	0.046213	MT0490	0.685776	9.447955	2.499614	-3.6501	0.025598
MT2223	0.756463	9.064939	2.251875	-4.17487	0.042486	MT3801	0.684529	9.565703	2.693646	-3.21029	0.016773
MT1037	0.75597	9.307065	2.863187	-2.80664	0.01144	MT2611	0.684365	8.945028	2.708297	-3.1761	0.01625
MT2803.2	0.755078	9.173705	2.549803	-3.53868	0.022967	MT0367	0.683301	9.281301	2.408926	-3.84713	0.030849
MT0285	0.754337	9.623455	2.56824	-3.49734	0.022109	MT0357	0.683162	8.615261	2.589312	-3.44981	0.021172
MT1895	0.753185	8.915482	2.327226	-4.01979	0.036459	MT2928	0.682525	8.487633	2.192535	-4.29412	0.047852
MT2113	0.752841	8.812695	2.560019	-3.5158	0.022517	MT2860	0.680223	8.958481	2.333266	-4.00719	0.036029
MT0556	0.749855	8.017748	2.611395	-3.3997	0.020188	MT1172	0.67992	9.43764	2.537052	-3.56715	0.02361
MT3497	0.749047	9.240839	2.356471	-3.95852	0.034309	MT0529	0.679789	9.801253	2.407892	-3.84934	0.030915
MT3709	0.748997	8.903834	2.217071	-4.24513	0.045535	MT0650	0.678638	8.6542	2.255431	-4.16765	0.042179
MT0151	0.748956	9.288625	2.726916	-3.13247	0.015566	MT0992	0.677551	9.552549	2.238438	-4.2021	0.043637
MT0985	0.742932	8.961376	2.186891	-4.30533	0.048326	MT2807	0.675931	7.928964	2.186911	-4.30529	0.048326
MT2733	0.742365	8.724288	2.411419	-3.84178	0.030685	MT2229	0.675367	9.271641	2.399701	-3.86686	0.031409
MT2590	0.742281	9.796009	2.412219	-3.84007	0.030655	MT2413	0.674682	10.04193	2.435333	-3.79033	0.02932
MT0959	0.741841	8.998999	2.763283	-3.04661	0.014346	MT1538	0.672851	9.732359	2.20689	-4.26551	0.046489
MT3747	0.740113	9.255771	3.03043	-2.39188	0.007772	MT1706	0.670782	9.744522	2.72079	-3.14685	0.015783
MT3869	0.739276	9.844168	2.674864	-3.25392	0.017549	MT3813	0.668258	9.614466	2.439811	-3.78065	0.029066
MT2767	0.738562	9.719473	2.89632	-2.72575	0.010648	MT0528	0.667779	9.305207	2.589543	-3.44929	0.021168
MT3524	0.737322	9.267077	2.380091	-3.9086	0.032701	MT3496	0.665021	8.939514	2.517712	-3.61011	0.024653
MT3471	0.737303	8.479237	2.745905	-3.08774	0.014881	MT2343	0.663286	8.993198	2.411586	-3.84143	0.030684
MT3233	0.736549	8.457878	2.396227	-3.87427	0.031637	MT0825	0.662439	8.98986	2.239907	-4.19913	0.043519
MT2421	0.73521	10.44201	2.55669	-3.52326	0.022689	MT3511	0.662245	9.458241	2.29356	-4.08958	0.039147
MT1144	0.734184	9.351624	2.343299	-3.98619	0.035292	MT2649	0.661835	9.315521	2.424013	-3.81474	0.029927
MT2652	0.733961	9.093775	2.571702	-3.48955	0.02196	MT3728	0.660308	9.380324	2.227461	-4.22425	0.044686
MT0194	0.733628	8.863996	2.363316	-3.94409	0.033824	MT0646	0.659948	8.587766	2.378903	-3.91112	0.032771
MT0968.1	0.733189	9.460583	2.27822	-4.12111	0.040313	MT3385	0.659145	9.363847	2.342591	-3.98768	0.035339
MT2894	0.733066	8.685054	3.150257	-2.08514	0.005835	MT1310	0.655355	9.820152	2.238891	-4.20118	0.043607
MT0602	0.730517	8.838847	2.650416	-3.31037	0.018505	MT1233	0.65387	9.799035	2.441173	-3.77771	0.028992
MT2494	0.730321	9.109096	2.868029	-2.79486	0.011318	MT2355	0.653089	9.71977	2.352487	-3.9669	0.034613
MT2608	0.640357	9.1493	2.382695	-3.90307	0.032544	MT3235	0.650036	9.280265	2.285514	-4.10614	0.039744
MT3966	0.639655	8.892292	2.296075	-4.08439	0.038959	MT3337	0.649198	9.034169	2.22477	-4.22966	0.044878
MT1960	0.638085	9.077901	2.31916	-4.03659	0.037071	MT2208	0.648573	8.971615	2.341701	-3.98954	0.035388
MT0849	0.636355	9.805003	2.202075	-4.27512	0.046959	MT2792	0.648133	9.931307	2.246642	-4.18549	0.042947
MT2273	0.631221	8.759772	2.412652	-3.83914	0.030651	MT2138	0.644499	9.311877	2.444593	-3.7703	0.028783
MT3676	0.630529	8.743557	2.288725	-4.09954	0.039497	MT2970	0.641061	9.475181	2.586917	-3.45523	0.021259
MT2282	0.629743	9.695212	2.188177	-4.30278	0.048217	MT1269	-0.61101	9.672425	-2.43438	-3.79239	0.029355
MT3198	0.627408	9.073315	2.307295	-4.06121	0.038019	MT0494	-0.61604	9.109818	-2.22379	-4.23162	0.044957
MT0468	0.627142	8.978787	2.673788	-3.25641	0.017591	MT1537	-0.61987	9.647103	-2.21954	-4.24017	0.045339
MT2448	0.625969	9.001805	2.69729	-3.2018	0.016651	MT3634	-0.6212	9.183659	-2.4037	-3.8583	0.031173
MT2293	0.624656	8.308619	2.257231	-4.16398	0.042047	MT2965	-0.6247	9.11404	-2.78647	-2.99145	0.013606
MT1232	0.623075	9.137987	2.555436	-3.52607	0.022715	MT3778	-0.62604	8.993441	-2.44245	-3.77494	0.028912
MT0455	0.619967	9.470677	2.489785	-3.67172	0.026145	MT1845	-0.62725	9.254993	-2.20928	-4.26072	0.046249
MT2348	0.619628	9.682466	2.858135	-2.81892	0.011574	MT3717	-0.62875	9.018818	-2.63504	-3.34568	0.019169
MT0211	0.616308	9.257904	2.492107	-3.66662	0.026028	MT2458	-0.62928	9.588529	-2.4076	-3.84997	0.030925
MT1624	0.613984	9.350897	2.250732	-4.17719	0.042582	MT2826	-0.62956	9.03252	-2.4324	-3.79666	0.029453
MT0922	0.609972	8.903383	2.190584	-4.298	0.04805	MT0789	-0.62981	9.03599	-2.50063	-3.64787	0.025544
MT1341	0.60872	10.00576	2.49346	-3.66364	0.025961	MT1670	-0.63118	9.066251	-2.36767	-3.9349	0.033533
MT1319	0.605652	9.651233	2.22656	-4.22606	0.044763	MT1376.1	-0.63337	9.038586	-2.44666	-3.76583	0.028659
MT2600.1	0.605077	9.026002	2.214172	-4.25094	0.045808	MT1305	-0.63427	9.108706	-2.58915	-3.45017	0.021172
MT2358	0.604217	9.627814	2.28416	-4.10892	0.039824	MT3262	-0.63483	9.155351	-2.98653	-2.5023	0.008606
MT3143	0.602496	9.429968	2.526961	-3.5896	0.024156	MT1172.1	-0.63543	9.329691	-2.41738	-3.82899	0.030334
MT3755	0.600091	8.480806	2.370531	-3.92885	0.033352	MT3047	-0.63572	8.605482	-2.26481	-4.14853	0.04141
MT1909	0.597591	9.085647	2.333277	-4.00716	0.036029	MT1067	-0.63589	8.911992	-2.21762	-4.24402	0.045509
MT3220.1	0.596922	9.520088	2.50913	-3.6291	0.025087	MT0207	-0.63598	9.390661	-2.18907	-4.30101	0.048168
MT0239	0.594706	8.773246	2.372061	-3.92561	0.033257	MT0949	-0.6367	9.647294	-2.26646	-4.14517	0.041279
MT0767	0.593212	9.305419	2.296058	-4.08443	0.038959	MT2174	-0.63687	8.828071	-2.29317	-4.09038	0.039155
MT1369	0.590221	9.433103	2.193934	-4.29134	0.047732	MT1923	-0.637	9.263218	-2.37333	-3.92292	0.033177

MT1339	0.589189	9.325763	2.188574	-4.30199	0.048206	MT3408	-0.63769	9.146308	-2.4494	-3.75988	0.028486
MT2446	0.585767	8.909095	2.23514	-4.20876	0.043942	MT1914	-0.63891	8.791992	-2.84738	-2.84501	0.011866
MT0523	0.583706	9.164579	2.241772	-4.19536	0.043392	MT0136	-0.64018	9.939683	-2.63069	-3.35565	0.019352
MT0828	0.574043	9.209791	2.336754	-3.9999	0.035783	MT2352	-0.64129	9.161354	-2.26185	-4.15457	0.041668
MT1055	0.570503	8.958939	2.18841	-4.30232	0.048208	MT1196	-0.64178	8.772565	-2.28302	-4.11126	0.039917
MT2065	0.562734	9.540791	2.46229	-3.73186	0.027727	MT3339	-0.64203	9.123942	-2.43954	-3.78125	0.029075
MT0746	0.558358	9.841234	2.342097	-3.98871	0.035368	MT1312.1	-0.643	9.242316	-2.88579	-2.75154	0.010853
MT4007	0.547827	8.911472	2.30387	-4.06829	0.038301	MT1192	-0.64389	8.937117	-2.27892	-4.11968	0.040261
MT2465	0.544077	9.039642	2.348569	-3.97514	0.034904	MT3607	-0.64413	9.638655	-2.6498	-3.31179	0.018526
MT2095	0.528818	9.201572	2.265193	-4.14776	0.041387	MT3911	-0.64427	8.918865	-2.79627	-2.96804	0.01331
MT1138	-0.50316	9.574286	-2.30131	-4.07359	0.038506	MT2102	-0.64551	9.353523	-2.27201	-4.13382	0.040846
MT0365	-0.51987	9.440937	-2.46064	-3.73546	0.027808	MT2415	-0.64657	9.326262	-2.36977	-3.93046	0.033401
MT1025.1	-0.52817	9.482439	-2.42724	-3.80778	0.029737	MT0183	-0.64726	9.492412	-2.33043	-4.01311	0.036221
MT0707	-0.5327	9.184117	-2.17199	-4.33482	0.049849	MT2973	-0.64839	9.119305	-2.46417	-3.72776	0.02761
MT2016	-0.5402	9.615436	-2.63698	-3.34123	0.019082	MT2012	-0.64851	9.009631	-3.04493	-2.35518	0.007513
MT1268	-0.54072	8.740977	-2.22361	-4.23199	0.044961	MT0586	-0.64969	9.045664	-2.52898	-3.58511	0.024054
MT2593.1	-0.54534	9.126936	-2.27674	-4.12415	0.040439	MT3026	-0.65118	9.067374	-2.2247	-4.22979	0.044878
MT0786	-0.54645	9.321413	-2.67512	-3.25333	0.017545	MT1944	-0.65142	9.592237	-2.33193	-4.00997	0.036104
MT0421	-0.54994	9.188751	-2.18403	-4.31101	0.048628	MT2555	-0.65193	9.109763	-2.61763	-3.38549	0.019943
MT1834	-0.55256	8.900494	-2.51568	-3.61461	0.024724	MT0852	-0.65272	9.076184	-2.19922	-4.28082	0.047204
MT2939	-0.5573	8.812694	-2.1769	-4.32511	0.049342	MT1013	-0.65288	10.18914	-2.37526	-3.91885	0.033036
MT0061	-0.56239	8.61997	-2.29366	-4.08937	0.039147	MT0224	-0.65348	8.969238	-2.49527	-3.65967	0.025855
MT1965	-0.5667	9.609464	-2.55233	-3.53303	0.022848	MT2316	-0.65411	9.393413	-2.74857	-3.08145	0.014791
MT2469	-0.56686	9.430938	-2.25484	-4.16885	0.042223	MT3267	-0.65462	9.576084	-2.85625	-2.82351	0.011618
MT3672	-0.56819	9.577481	-2.17772	-4.32349	0.049267	MT0801	-0.65618	9.281317	-2.24003	-4.19889	0.043519
MT0572	-0.56993	9.486793	-2.38841	-3.89093	0.032169	MT1155	-0.65655	8.678744	-2.60347	-3.41773	0.020549
MT0315	-0.57052	9.135641	-2.47632	-3.70123	0.026919	MT2685	-0.65718	9.05669	-2.4718	-3.71112	0.027158
MT2171	-0.57356	9.252412	-2.48258	-3.68753	0.026567	MT2105	-0.65744	8.829369	-2.64853	-3.31472	0.018572
MT2453	-0.57442	8.295598	-2.25693	-4.16459	0.042061	MT1726	-0.65938	9.319977	-2.54593	-3.54733	0.023163
MT4026	-0.57457	8.687961	-2.64117	-3.33163	0.018894	MT1160	-0.65939	9.670553	-2.62677	-3.36462	0.019507
MT3953	-0.57561	9.125758	-2.63234	-3.35187	0.019286	MT2556	-0.66036	8.510559	-2.52782	-3.58768	0.024114
MT0472	-0.57594	9.061173	-2.24435	-4.19014	0.043147	MT1902	-0.66044	9.170534	-2.75471	-3.06692	0.014596
MT1220	-0.57685	8.934917	-2.2944	-4.08785	0.039098	MT0145	-0.6614	9.192847	-2.36112	-3.94872	0.033953
MT0618	-0.57748	10.1369	-2.2913	-4.09423	0.039286	MT2042	-0.66272	9.011699	-2.33285	-4.00806	0.036039
MT1058	-0.57825	9.016368	-2.28512	-4.10695	0.039749	MT1503	-0.66371	9.356729	-2.38501	-3.89815	0.032378
MT3251	-0.57863	9.151035	-2.23499	-4.20906	0.043942	MT2008	-0.66513	9.583885	-2.77709	-3.01381	0.013905
MT0386	-0.57947	8.758261	-2.22552	-4.22815	0.04484	MT1935	-0.66857	9.294184	-2.17625	-4.3264	0.0494
MT2165	-0.58227	9.213266	-2.33723	-3.9989	0.035755	MT3410	-0.66876	9.864232	-2.18083	-4.31734	0.048934
MT1873	-0.58373	9.245595	-2.69061	-3.21736	0.016885	MT1846	-0.66957	9.440118	-2.21714	-4.24499	0.045535
MT1445	-0.58445	8.039495	-2.18235	-4.31434	0.048799	MT2371	-0.67236	9.376801	-2.42166	-3.81981	0.030054
MT2637	-0.58615	9.059214	-2.50225	-3.64429	0.025471	MT1100	-0.67315	8.958526	-3.01122	-2.44032	0.008136
MT1976	-0.58924	9.43386	-2.57065	-3.49191	0.022009	MT2475	-0.67529	9.141308	-2.91351	-2.68353	0.010254
MT2127	-0.59129	9.190324	-2.32347	-4.02762	0.036746	MT1210	-0.67604	8.766702	-2.20109	-4.27709	0.047017
MT1475	-0.59302	9.127944	-2.48091	-3.69119	0.026646	MT0334	-0.67662	9.086168	-2.66031	-3.28758	0.018129
MT0820	-0.59534	9.731393	-2.22276	-4.23369	0.045033	MT1237	-0.67736	9.314752	-2.70981	-3.17256	0.016192
MT2672	-0.59647	9.106828	-2.55295	-3.53163	0.022831	MT1763	-0.67752	8.622916	-2.22535	-4.22849	0.044842
MT3029	-0.60254	9.608313	-2.41914	-3.82522	0.030227	MT0693	-0.6783	9.665063	-2.38867	-3.89037	0.032161
MT3720	-0.60391	8.95927	-2.49251	-3.66574	0.026013	MT1439	-0.67886	8.710892	-2.43452	-3.79208	0.029355
MT0237	-0.60393	8.920551	-2.30418	-4.06765	0.038286	MT1566	-0.67923	9.16186	-2.56887	-3.49591	0.022092
MT1383	-0.60403	9.458817	-2.43049	-3.80079	0.029562	MT2638	-0.67924	8.65765	-2.37949	-3.90988	0.032737
MT2507	-0.60475	9.237582	-2.88235	-2.75994	0.010935	MT1436	-0.67948	8.886784	-2.88652	-2.74975	0.01085
MT1672	-0.60587	9.277509	-2.59672	-3.43304	0.020854	MT3585	-0.68056	9.461672	-2.75565	-3.0647	0.014568
MT1927	-0.60881	9.508059	-2.31084	-4.05386	0.037742	MT3930	-0.68065	9.841355	-2.31602	-4.04311	0.037312
MT1018	-0.6108	8.911394	-2.60976	-3.40341	0.020248	MT3125	-0.68118	8.597425	-2.59444	-3.4382	0.020924
MT2923	-0.68891	9.984543	-2.71467	-3.16119	0.016003	MT0749	-0.68321	9.61281	-2.64173	-3.33033	0.018875
MT0215	-0.69004	9.503446	-3.30107	-1.68837	0.003997	MT0923	-0.68436	8.796012	-2.28048	-4.11648	0.040142
MT0066.2	-0.69076	8.758423	-2.3351	-4.00335	0.035898	MT2976	-0.68439	9.273631	-3.02521	-2.40507	0.007873
MT3979	-0.69084	10.02118	-2.29017	-4.09657	0.039377	MT1658	-0.68487	9.373371	-2.63049	-3.3561	0.019354
MT2760	-0.69152	9.395421	-3.20963	-1.93032	0.00503	MT3601	-0.68591	9.324288	-2.28547	-4.10622	0.039744
MT3895	-0.69156	8.821577	-2.89889	-2.71946	0.010592	MT0364	-0.68859	9.314901	-2.74962	-3.07895	0.014762
MT2203	-0.69173	9.173294	-2.91335	-2.68394	0.010254	MT1955	-0.73958	8.684783	-2.22119	-4.23685	0.045182
MT3174.2	-0.69493	9.002151	-2.42381	-3.81517	0.02993	MT1937	-0.74069	9.865265	-3.35104	-1.5544	0.003533
MT0002	-0.69588	10.69251	-2.42226	-3.81851	0.030021	MT2586	-0.74113	9.080299	-2.40206	-3.86181	0.031274
MT2619	-0.69659	8.202974	-2.1981	-4.28304	0.047309	MT1378	-0.74132	8.842099	-2.87177	-2.78576	0.011215
MT1159	-0.69672	8.850673	-2.24536	-4.18808	0.04306	MT2798	-0.74359	9.395496	-2.96125	-2.56537	0.009157
MT2790	-0.69697	9.022946	-2.86102	-2.81191	0.011491	MT2524	-0.7441	9.152431	-2.70535	-3.18298	0.016367
MT3164	-0.69756	8.607953	-2.26704	-4.14398	0.041238	MT3866	-0.74517	9.12743	-3.09334	-2.2318	0.0067
MT0221	-0.69826	9.870216	-3.12854	-2.1413	0.006145	MT1681	-0.74571	8.979431	-2.71646	-3.15701	0.015949
MT0449	-0.69834	9.44162	-3.08415	-2.25532	0.006845	MT0188	-0.74591	9.836632	-2.7546	-3.06719	0.014596
MT2383	-0.69854	9.961745	-2.25302	-4.17254	0.042387	MT0477	-0.7498	9.031786	-2.57856	-3.47409	0.021635
MT0705	-0.69914	8.859484	-2.3893	-3.88903	0.032124	MT0524	-0.75128	8.986811	-3.59908	-0.87199	0.001903
MT0210	-0.6999	10.35732	-2.31574	-4.04369	0.037319	MT3266	-0.7524	9.251691	-2.73239	-3.11961	0.015371
MT0148	-0.70303	9.316931	-2.27035	-4.13723	0.040991	MT3946	-0.75381	8.778536	-3.13312	-2.12947	0.006072
MT2503	-0.70368	9.3865	-2.41783	-3.82804	0.030313	MT0918	-0.75418	9.309244	-2.90608	-2.70179	0.01042
MT3311	-0.70491	9.005863	-2.69868	-3.19855	0.016598	MT1721	-0.75447	9.346497	-2.51209	-3.62255	0.024922
MT2000	-0.70573	9.739654	-3.20383	-1.94553	0.005101	MT1601	-0.75458	9.226746	-3.27711	-1.75218	0.004243
MT0744	-0.70585	9.141909	-2.83101	-2.88458	0.012276	MT3121	-0.75493	9.040963	-2.88594	-2.75116	0.010853
MT2335	-0.70621	9.141229	-2.73773	-3.10702	0.015171	MT1143	-0.75553	9.202118	-2.89172	-2.73702	0.010748
MT3807	-0.70624	8.98368	-2.47585	-3.70226	0.02694	MT0398	-0.7557	9.692581	-3.52156	-1.08828	0.002313
MT1340	-0.7064	9.934959	-2.59564	-3.43548	0.020903	MT0589	-0.75651	9.273205	-2.7152	-3.15996	0.015987
MT3640	-0.70709	9.260531	-2.35813	-3.95503	0.034185	MT3780	-0.75682	9.410385	-2.56885	-3.49597	0.022092
MT0898	-0.70741	8.814975	-2.5424	-3.55521	0.023323	MT2163	-0.75682	8.530996	-2.41465	-3.83486	0.030514
MT1071	-0.70802	8.640988	-2.41214	-3.84025	0.030655	MT2051	-0.75834	8.911375	-2.46065	-3.73544	0.027808
MT3018	-0.70812	9.895444	-2.26819	-4.14164	0.041156	MT3867	-0.75834	9.554133	-2.89588	-2.72683	0.010648
MT0740.1	-0.70853	9.168088	-2.81434	-2.92473	0.012765	MT1357	-0.75834	9.14557	-2.96363	-2.55945	0.009107
MT1000	-0.70921	8.667858	-2.42874	-3.80456	0.029662	MT0414	-0.75918	9.947977	-2.54577	-3.54769	0.023164
MT2056	-0.70949	10.04852	-2.31031	-4.05496	0.037776	MT3880	-0.75944	9.289824	-2.85798	-2.81931	0.011574
MT2232	-0.70979	8.793459	-3.16892	-2.03666	0.005572	MT0330	-0.76029	8.350956	-2.30733	-4.06114	0.038019
MT2570	-0.71076	9.217456	-2.36194	-3.947	0.033911	MT0204	-0.76101	8.660609	-2.79928	-2.96084	0.013233
MT2876	-0.71105	9.154195	-3.60708	-0.84953	0.001865	MT2548	-0.76297	8.561726	-2.69474	-3.20775	0.016733
MT3199	-0.71148	9.006183	-2.37202	-3.9257	0.033257	MT4031	-0.76411	8.927324	-2.42699	-3.80834	0.029744
MT0688	-0.71245	9.459862	-2.89097	-2.73885	0.010762	MT3443	-0.76496	9.126951	-3.20226	-1.94963	0.005119
MT0910.4	-0.71262	9.627087	-2.36149	-3.94795	0.033936	MT1057	-0.76603	9.312628	-2.99752	-2.47476	0.008401
MT2443	-0.71358	9.328383	-2.32356	-4.02744	0.036746	MT2756	-0.7663	9.1993	-3.09482	-2.228	0.006677
MT0209	-0.71407	8.583748	-2.18964	-4.29988	0.048122	MT0683	-0.76652	9.321307	-2.76395	-3.04504	0.014333
MT2017	-0.71463	9.046132	-2.90362	-2.70784	0.010479	MT2298	-0.76726	9.281771	-3.0125	-2.4371	0.008115
MT3884	-0.71469	8.767988	-2.32614	-4.02207	0.03654	MT0842	-0.76869	9.627729	-3.24984	-1.82446	0.004555
MT4039	-0.71495	9.128432	-2.56468	-3.50534	0.022281	MT2966	-0.76883	8.900687	-2.47339	-3.70765	0.027083

MT1941	-0.71514	9.383294	-2.86612	-2.7995	0.011365	MT3656	-0.77024	8.547378	-2.7294	-3.12663	0.015485
MT3186.1	-0.71525	8.972526	-2.88947	-2.74253	0.010794	MT3769	-0.77027	9.110992	-2.80161	-2.95525	0.013157
MT2207	-0.71543	8.987692	-2.81045	-2.93406	0.012881	MT1528	-0.77038	10.18323	-2.54399	-3.55168	0.023249
MT2418	-0.71626	9.623032	-2.79413	-2.97316	0.013374	MT1762	-0.77143	8.766984	-2.46608	-3.72361	0.027502
MT1892	-0.71703	8.951284	-2.20206	-4.27515	0.046959	MT2774	-0.77332	9.10621	-2.43718	-3.78635	0.029232
MT0667	-0.71771	10.20199	-2.36376	-3.94315	0.033804	MT1549	-0.77337	8.836601	-2.37166	-3.92646	0.033274
MT1083.1	-0.71796	8.657333	-2.91784	-2.67286	0.010158	MT1194	-0.77434	7.964213	-2.56568	-3.50309	0.022234
MT1521	-0.71817	8.817606	-3.00489	-2.45623	0.008264	MT0121	-0.77455	10.19037	-2.81541	-2.92216	0.01274
MT1776	-0.71871	8.896242	-2.73803	-3.10632	0.015165	MT1860	-0.77629	9.365387	-3.51477	-1.1071	0.002351
MT3963	-0.71879	9.640984	-2.4693	-3.71657	0.027305	MT2206	-0.77662	8.542477	-3.06732	-2.29828	0.007132
MT0742	-0.71885	9.20393	-3.04852	-2.34606	0.007449	MT3594	-0.77693	8.789163	-2.41126	-3.84213	0.030686
MT1363.1	-0.71947	9.731286	-3.0426	-2.36108	0.007554	MT3065	-0.77759	9.145413	-2.83199	-2.88222	0.012255
MT2568	-0.7205	8.817618	-2.56846	-3.49684	0.022105	MT3136	-0.77793	9.708013	-2.92222	-2.66207	0.010066
MT3605	-0.72066	9.661339	-2.96471	-2.55678	0.009088	MT1840	-0.77854	9.404847	-2.39089	-3.88564	0.032012
MT2373	-0.72074	8.807835	-2.42579	-3.81092	0.02982	MT3520	-0.78006	8.845573	-2.47224	-3.71017	0.02714
MT1354	-0.72171	9.046719	-2.60298	-3.41883	0.020566	MT1324	-0.78011	10.39303	-2.34376	-3.98523	0.035266
MT1945	-0.7219	9.324535	-2.69323	-3.21125	0.016778	MT0645.2	-0.78123	8.739904	-2.59515	-3.43659	0.020912
MT0837	-0.72206	8.956746	-2.48949	-3.67237	0.026147	MT0610	-0.78244	8.570844	-3.09308	-2.23246	0.0067
MT3810	-0.72225	8.81835	-2.65273	-3.30506	0.018418	MT1619	-0.78277	8.808154	-2.84067	-2.86126	0.012048
MT2777.1	-0.72243	8.792292	-2.26119	-4.15592	0.041718	MT3268	-0.78417	8.657023	-2.40469	-3.8562	0.03111
MT1323	-0.72393	9.082457	-2.72218	-3.14358	0.015732	MT4032	-0.78473	8.989695	-2.93736	-2.62468	0.009719
MT3969	-0.72433	9.521998	-3.05651	-2.32579	0.007324	MT0284	-0.78503	8.630784	-2.46026	-3.73629	0.027824
MT0578	-0.72441	9.142891	-2.66479	-3.27723	0.017959	MT3145.1	-0.78544	8.98196	-3.12505	-2.15031	0.006202
MT0583	-0.72496	9.500394	-2.42457	-3.81354	0.029897	MT1942	-0.78589	9.237402	-3.11907	-2.16573	0.006291
MT0692.1	-0.72559	9.422861	-2.79814	-2.96357	0.013267	MT1713	-0.786	7.953023	-2.18988	-4.2994	0.048112
MT3219	-0.72649	10.83354	-2.20193	-4.27542	0.046959	MT1342	-0.78686	9.411327	-3.10977	-2.18965	0.006438
MT0895	-0.72748	8.993878	-2.65191	-3.30693	0.018449	MT3153	-0.78714	9.87134	-2.45413	-3.74961	0.028203
MT0968	-0.72862	9.223254	-2.90704	-2.69943	0.010402	MT3482	-0.78799	8.062315	-2.83638	-2.87161	0.012157
MT1573	-0.73005	9.982523	-2.69514	-3.20681	0.016723	MT2009	-0.78817	8.796616	-2.61252	-3.39712	0.020142
MT2367.1	-0.73031	9.654991	-2.99555	-2.4797	0.008434	MT3615.2	-0.78826	8.251075	-2.18171	-4.31559	0.048853
MT1025.2	-0.73062	9.10237	-2.6167	-3.38761	0.019966	MT0016	-0.78895	8.702177	-3.1893	-1.98354	0.005294
MT0719.2	-0.73091	9.20547	-3.35875	-1.53363	0.003468	MT0444	-0.79041	8.843295	-2.44408	-3.77142	0.028808
MT3046	-0.732	9.592577	-2.4716	-3.71155	0.027161	MT1293	-0.79058	9.870832	-3.17039	-2.03284	0.005557
MT2027	-0.73262	8.939279	-2.69697	-3.20255	0.016651	MT0887	-0.79161	9.020484	-3.43782	-1.31888	0.002845
MT2707	-0.73308	9.009263	-2.34378	-3.98518	0.035266	MT2936	-0.79306	8.835818	-2.3329	-4.00795	0.036039
MT3785	-0.73586	9.54661	-3.06292	-2.30949	0.007213	MT1727.1	-0.79356	8.381604	-2.27009	-4.13776	0.040991
MT1012	-0.73669	9.499674	-2.97798	-2.52367	0.008785	MT1614	-0.79377	9.473035	-3.78394	-0.34594	0.001197
MT0601	-0.73693	8.617681	-2.59977	-3.42611	0.02071	MT1524	-0.79385	8.879646	-2.23528	-4.20847	0.043942
MT1830	-0.84989	8.450842	-3.05195	-2.33737	0.007386	MT2033	-0.79534	9.138449	-2.72867	-3.12835	0.015508
MT0860	-0.85067	8.577758	-2.42769	-3.80681	0.029715	MT1076	-0.79832	9.390159	-2.33576	-4.00197	0.035854
MT0171	-0.85102	8.172632	-2.63435	-3.34727	0.019196	MT0478	-0.79984	10.45437	-2.36226	-3.94631	0.033897
MT0005	-0.8513	9.445054	-3.72747	-0.50814	0.001386	MT0664	-0.79991	9.318808	-2.2134	-4.25249	0.04586
MT1620	-0.85147	8.159761	-2.25913	-4.16012	0.041892	MT0847	-0.80086	9.213595	-3.14994	-2.08596	0.005837
MT1434	-0.85357	8.451339	-3.10806	-2.19403	0.006463	MT0858	-0.80212	9.333344	-2.6297	-3.35792	0.019386
MT0074	-0.85366	9.192043	-2.80644	-2.94369	0.013007	MT2409	-0.80248	8.920063	-2.92527	-2.65454	0.009996
MT0797	-0.85373	8.707728	-3.72914	-0.50335	0.001381	MT1305.1	-0.80318	9.044757	-3.13832	-2.11603	0.005987
MT0836	-0.85416	9.135903	-3.18085	-2.0056	0.005411	MT2202	-0.80323	8.785407	-3.71305	-0.54933	0.001435
MT0785	-0.8542	9.43901	-3.08187	-2.26115	0.006882	MT3031	-0.80345	10.68885	-2.41678	-3.83029	0.030367
MT0989	-0.85488	8.792162	-3.45738	-1.26529	0.002705	MT3999	-0.8035	9.149908	-2.65903	-3.29052	0.018174
MT1163	-0.85685	9.683372	-3.25094	-1.82153	0.004542	MT3021	-0.80352	9.639807	-2.74167	-3.09774	0.015035
MT1180	-0.85765	9.780675	-3.32869	-1.61448	0.003736	MT1289	-0.80366	8.787906	-3.03243	-2.38683	0.007733
MT1652	-0.85767	9.58219	-3.29751	-1.69788	0.00403	MT0917	-0.80393	9.262498	-2.83337	-2.87888	0.012231
MT2169	-0.85774	11.0508	-2.40004	-3.86613	0.031404	MT1112	-0.80445	8.478782	-2.57214	-3.48857	0.021945
MT2361	-0.85779	8.658405	-2.38496	-3.89826	0.032378	MT0255	-0.80772	9.033285	-2.70495	-3.18392	0.016377
MT2581	-0.85913	8.788006	-3.57586	-0.93705	0.002015	MT0137	-0.80784	9.467627	-2.66015	-3.28793	0.018129
MT3386	-0.85918	9.387637	-3.64718	-0.73649	0.001686	MT3651	-0.80802	9.098473	-3.25682	-1.80599	0.004476
MT2843	-0.85981	8.78103	-2.47385	-3.70665	0.027063	MT2658	-0.80803	9.139968	-3.55956	-0.98258	0.002103
MT1919	-0.86013	9.250224	-3.74999	-0.44361	0.001312	MT3305	-0.80897	9.358139	-2.88806	-2.74599	0.010826
MT0340	-0.86024	9.381358	-2.59469	-3.43763	0.020919	MT1284	-0.80945	8.90958	-3.0683	-2.29578	0.007116
MT2810	-0.86035	8.268743	-2.93628	-2.62734	0.009738	MT0413	-0.80963	9.286578	-2.83293	-2.87996	0.012235
MT0004	-0.86054	8.949623	-2.58367	-3.46257	0.021391	MT3819	-0.80971	8.652299	-3.21261	-1.92252	0.004995
MT3527	-0.86062	8.342878	-2.83315	-2.87943	0.012233	MT3011	-0.81042	9.831408	-2.90241	-2.71082	0.010509
MT1442	-0.86206	8.608335	-2.51422	-3.61784	0.0248	MT3772	-0.81096	8.808905	-3.31163	-1.66017	0.003892
MT1689	-0.86278	8.237688	-2.67037	-3.26433	0.017725	MT2801.1	-0.81117	9.09268	-3.23963	-1.85142	0.004658
MT3049	-0.863	9.195453	-2.9308	-2.64089	0.009866	MT0796	-0.8114	9.052772	-3.00043	-2.46745	0.008338
MT1099	-0.86411	9.375576	-3.26742	-1.7779	0.004353	MT0233	-0.81144	9.06131	-3.19118	-1.97863	0.005269
MT2710	-0.86467	8.063803	-2.5068	-3.63424	0.025223	MT2439	-0.81178	9.121084	-2.45758	-3.74212	0.027987
MT3154	-0.86479	9.897797	-2.65559	-3.29845	0.018313	MT2401.1	-0.8135	9.577128	-3.22932	-1.8786	0.004788
MT2794	-0.86491	10.11007	-3.46347	-1.24857	0.002664	MT2636	-0.81452	8.85926	-2.72549	-3.13582	0.015604
MT3485	-0.86493	9.267554	-3.1612	-2.05674	0.005683	MT1865	-0.81475	8.326281	-3.24077	-1.84841	0.004648
MT2900	-0.86559	9.741532	-3.64243	-0.74992	0.001707	MT1295	-0.81543	8.523711	-2.6128	-3.39649	0.020142
MT1028	-0.86559	9.356618	-3.39349	-1.43964	0.003187	MT1686	-0.8173	9.464918	-2.58672	-3.45567	0.021261
MT2468	-0.86571	8.695563	-2.48967	-3.67196	0.026145	MT3008	-0.81733	9.138855	-3.28196	-1.7393	0.004195
MT2296	-0.86593	8.495282	-3.24505	-1.83711	0.004602	MT2529	-0.81894	9.107472	-2.71758	-3.15438	0.015909
MT2300	-0.86628	9.582997	-2.98916	-2.49571	0.008556	MT2444	-0.81949	9.46491	-3.04518	-2.35453	0.007511
MT0199	-0.86661	8.383997	-2.48906	-3.67331	0.026165	MT1344	-0.81981	9.359585	-2.48208	-3.68861	0.026589
MT0483	-0.86696	9.140084	-3.34543	-1.5695	0.003581	MT2490	-0.82039	8.832356	-2.2506	-4.17746	0.042582
MT1597	-0.86721	9.288548	-3.35433	-1.54553	0.003505	MT2038	-0.82149	8.610129	-2.75307	-3.0708	0.014636
MT0253	-0.86902	8.797689	-2.85043	-2.83762	0.011775	MT3175	-0.82185	9.716626	-2.76846	-3.03433	0.014188
MT1259	-0.86973	8.997458	-3.49858	-1.15187	0.002451	MT0931	-0.82341	9.353241	-3.32626	-1.62099	0.003754
MT2544	-0.86974	9.985456	-3.17813	-2.0127	0.005445	MT3140	-0.82343	8.835279	-2.83183	-2.8826	0.012255
MT3890	-0.87044	9.740619	-2.81197	-2.93042	0.012835	MT2197	-0.82412	9.360794	-2.64254	-3.32849	0.018844
MT2779	-0.87108	9.409623	-3.67727	-0.65121	0.00157	MT1812	-0.82431	9.073672	-2.43029	-3.80121	0.029562
MT3021.1	-0.87303	8.848376	-3.01145	-2.43975	0.008135	MT2773	-0.82469	9.17755	-3.23202	-1.87146	0.004753
MT2225	-0.87322	9.244176	-2.99586	-2.47892	0.008432	MT0236	-0.82477	8.653515	-2.21266	-4.25397	0.045922
MT2845	-0.87342	9.603254	-3.99664	0.275916	0.000689	MT1400	-0.82488	9.742171	-2.52263	-3.59921	0.02439
MT1492	-0.87379	9.154353	-3.24801	-1.82928	0.00457	MT3003	-0.82603	8.557541	-2.7705	-3.02947	0.014124
MT2240	-0.87391	9.316047	-2.66174	-3.28427	0.018078	MT1517	-0.82604	8.672962	-2.38648	-3.89502	0.032307
MT0028	-0.87408	8.697317	-3.41337	-1.3856	0.003025	MT0266	-0.82735	9.365309	-3.10546	-2.20071	0.006504
MT2074	-0.87432	8.999512	-2.9565	-2.57718	0.009264	MT3207	-0.82947	9.752483	-2.56354	-3.50791	0.022337
MT3211	-0.87442	9.332163	-2.93794	-2.62322	0.009712	MT3926	-0.83013	8.926741	-2.85297	-2.83146	0.011713
MT2688	-0.87464	9.109893	-3.5614	-0.97746	0.002095	MT1823	-0.83096	9.155946	-3.57761	-0.93215	0.002007
MT2401.2	-0.87577	8.85982	-3.09318	-2.23221	0.0067	MT3584	-0.83173	8.733031	-3.05918	-2.31899	0.007274
MT0203	-0.8761	9.199655	-3.47133	-1.22698	0.002612	MT3825	-0.83199	9.190281	-2.20437	-4.27053	0.046744
MT2862.1	-0.87789	8.726547	-2.95941	-2.56996	0.009195	MT2831	-0.83246	8.961771	-2.61245	-3.39729	0.020142
MT3437	-0.87795	8.12472	-2.38524	-3.89765	0.032378	MT2180	-0.83252	9.28552	-3.22554	-1.88852	0.004834
MT0029	-0.87939	9.067442	-3.53818	-1.04214	0.002218	MT1151	-0.83255	9.035361	-2.38041	-3.90791	0.0327
MT1356	-0.87966	8.99223	-2.79187	-2.97857	0.013437	MT0961	-0.83337	9.533014	-3.60886	-0.84451	0.001858

MT0382	-0.88113	8.857793	-3.07518	-2.27822	0.007005	MT1810	-0.83394	8.746228	-2.58111	-3.46835	0.021513
MT3746	-0.88203	9.237427	-3.08813	-2.24514	0.006783	MT3988	-0.83513	9.169196	-3.68185	-0.6382	0.001551
MT0928	-0.88341	8.629388	-3.00133	-2.46519	0.008333	MT3798	-0.83516	9.256939	-2.55302	-3.53148	0.022831
MT2234	-0.88503	9.493098	-3.43472	-1.32735	0.002863	MT0407.1	-0.83517	9.233861	-2.76206	-3.04951	0.014386
MT0489	-0.88561	9.600948	-3.30061	-1.68962	0.003998	MT1145	-0.83586	9.063446	-2.756	-3.06387	0.014561
MT1256	-0.88628	8.657302	-2.9641	-2.55829	0.009099	MT3850	-0.83602	8.955172	-2.69919	-3.19736	0.016583
MT3647	-0.88653	9.272906	-3.37669	-1.48516	0.003321	MT0368	-0.83812	9.433319	-3.44013	-1.31255	0.002829
MT2276	-0.8867	8.5904	-2.39196	-3.88336	0.031953	MT1141	-0.83898	9.591266	-3.6475	-0.73558	0.001686
MT1046	-0.88693	9.487787	-3.88587	-0.05004	0.000922	MT2617	-0.83956	8.552721	-3.35181	-1.55233	0.003528
MT2791	-0.88713	8.853619	-3.55949	-0.98278	0.002103	MT1593	-0.83977	9.170966	-3.32242	-1.63127	0.003791
MT0805	-0.88897	9.514348	-2.95488	-2.58122	0.009296	MT0380	-0.84057	9.243026	-2.26728	-4.1435	0.041229
MT1043	-0.8896	9.145731	-3.62149	-0.80897	0.001796	MT3559	-0.84085	9.063899	-2.67555	-3.25233	0.017533
MT3450	-0.88967	9.356634	-3.03943	-2.36911	0.007613	MT2898	-0.84176	9.097889	-3.05407	-2.33198	0.007356
MT3420	-0.88984	9.256925	-3.81183	-0.26539	0.001118	MT0216	-0.84194	9.045563	-3.5689	-0.9565	0.002051
MT2399	-0.89103	8.998564	-2.87012	-2.78977	0.011259	MT2539	-0.84239	9.277151	-2.61719	-3.3865	0.019957
MT0065	-0.89119	10.13756	-3.79677	-0.30893	0.001159	MT0219	-0.84283	8.359169	-2.84246	-2.85691	0.012001
MT0271	-0.89134	9.149158	-2.97598	-2.52865	0.008825	MT0288	-0.84293	8.758833	-2.42854	-3.80499	0.029665
MT0906	-0.89212	8.984498	-3.62926	-0.78709	0.00176	MT1374	-0.84454	9.156581	-3.18684	-1.98997	0.005329
MT2424	-0.89361	8.708206	-3.09036	-2.23945	0.006747	MT0066.1	-0.84505	9.583831	-3.10632	-2.19852	0.006491
MT3312	-0.89404	9.360367	-3.79823	-0.30471	0.001157	MT3260	-0.84506	9.636098	-3.10383	-2.2049	0.00653
MT1579	-0.89531	9.613398	-2.90975	-2.69278	0.01034	MT2266	-0.8453	8.808564	-3.5943	-0.88541	0.001922
MT1771	-0.89544	9.137941	-3.63574	-0.76881	0.001734	MT2306	-0.84547	8.661122	-2.55317	-3.53115	0.022831
MT3469	-0.89574	9.171577	-2.82533	-2.89827	0.012436	MT3774	-0.84617	9.197927	-3.38216	-1.47035	0.003276
MT0819	-0.89597	9.906619	-2.86231	-2.80879	0.011457	MT0737	-0.84652	8.87923	-2.24786	-4.18302	0.042841
MT3465	-0.897	8.222771	-3.17614	-2.01789	0.00547	MT1545	-0.84691	8.296812	-2.70313	-3.18818	0.016442
MT2196	-0.89816	9.527927	-3.66693	-0.68058	0.001611	MT1448	-0.8478	9.070766	-3.05319	-2.33421	0.007371
MT3513	-0.89903	8.830857	-3.6607	-0.69822	0.001636	MT2643	-0.84956	8.893361	-3.21709	-1.91075	0.004937
MT0310	-0.89927	8.516748	-2.43417	-3.79284	0.029359	MT3089	-0.84958	8.876999	-3.14775	-2.09164	0.005862
MT0077	-0.8996	9.336491	-3.07084	-2.2893	0.007083	MT0308	-0.94758	8.568369	-2.87795	-2.77067	0.01105
MT1508	-0.89986	8.533455	-3.05614	-2.32673	0.007328	MT2825	-0.94872	9.255668	-3.53447	-1.05244	0.00224
MT1591	-0.90025	8.815963	-2.74896	-3.08052	0.014782	MT4020	-0.94911	8.749095	-4.03373	0.386053	0.000629
MT1932	-0.90105	8.965593	-3.38503	-1.46257	0.00325	MT3853	-0.94942	9.282202	-3.80361	-0.28917	0.001143
MT2365	-0.90211	10.18558	-2.27549	-4.12671	0.040529	MT3255	-0.95127	8.583949	-3.36125	-1.52688	0.003446
MT2720	-0.90373	9.394125	-3.4148	-1.38169	0.003019	MT3679	-0.95162	9.139339	-3.01083	-2.44131	0.008141
MT0107	-0.90386	9.507653	-3.93156	0.083874	0.000816	MT0274	-0.95219	9.151547	-3.63729	-0.76444	0.001728
MT0565	-0.90566	8.272859	-2.55626	-3.52424	0.022691	MT0066	-0.95258	9.082388	-3.63611	-0.76777	0.001733
MT0954	-0.90575	9.617508	-3.49107	-1.1726	0.002499	MT2104	-0.95292	9.416773	-3.11758	-2.16956	0.006308
MT2930	-0.90654	8.852542	-3.54838	-1.01374	0.002162	MT0277	-0.95341	9.099751	-3.5506	-1.00756	0.002152
MT2183	-0.90682	8.829938	-3.24796	-1.82943	0.00457	MT1389	-0.95368	8.564322	-2.45255	-3.75305	0.02828
MT0366	-0.908	9.269274	-4.19267	0.863232	0.00042	MT3719	-0.95373	8.917315	-3.47807	-1.20842	0.002571
MT2889	-0.90881	8.798789	-2.89586	-2.72688	0.010648	MT3107	-0.95379	9.377986	-2.65511	-3.29957	0.018328
MT0682	-0.90915	9.043817	-3.16931	-2.03566	0.005571	MT2386	-0.95413	8.730561	-3.24426	-1.83919	0.004604
MT0944	-0.90922	8.869757	-3.82846	-0.2172	0.001067	MT1533.2	-0.95457	10.30625	-2.57352	-3.48545	0.021894
MT1625	-0.91006	9.065465	-3.32371	-1.62784	0.00378	MT0335	-0.95722	8.911747	-3.16278	-2.05263	0.005661
MT3603	-0.91058	9.258387	-2.7605	-3.0532	0.014432	MT3494	-0.95767	9.498663	-3.91337	0.030453	0.000857
MT2239	-0.91085	8.835794	-2.91735	-2.67407	0.010167	MT3503	-0.96169	8.832138	-3.48147	-1.19907	0.002552
MT2647	-0.91326	8.984136	-3.79268	-0.32072	0.00117	MT3742	-0.96225	9.803706	-4.1981	0.879662	0.000414
MT3033	-0.91327	9.788684	-2.34894	-3.97436	0.034895	MT0597	-0.96241	9.075379	-3.35768	-1.5365	0.003477
MT3329	-0.91382	8.425325	-3.28312	-1.7362	0.004183	MT3402	-0.96308	9.151065	-4.04942	0.43277	0.000606
MT3229	-0.91439	9.111916	-3.4129	-1.38687	0.003025	MT2926	-0.9637	8.449747	-2.89219	-2.73588	0.01074
MT3373	-0.9148	9.243266	-3.00101	-2.466	0.008333	MT3318	-0.96434	9.238822	-3.65003	-0.72843	0.00168
MT3148	-0.915	8.174556	-2.36618	-3.93804	0.033629	MT1676	-0.96488	9.11923	-3.59877	-0.87285	0.001903
MT3925	-0.91515	8.874774	-2.5374	-3.56637	0.023599	MT1822	-0.96521	9.064656	-3.38554	-1.4612	0.003247
MT1804	-0.91538	9.986885	-3.5697	-0.95426	0.002047	MT0047	-0.96581	8.496706	-3.46013	-1.25775	0.002686
MT3415	-0.91614	9.260268	-3.47373	-1.22036	0.002601	MT3388	-0.9663	10.18714	-3.37001	-1.50322	0.00337
MT3840	-0.91705	10.10751	-2.88785	-2.74649	0.010827	MT2621	-0.96768	8.165637	-2.39869	-3.86902	0.031462
MT2941	-0.91868	8.539646	-3.16419	-2.04899	0.005641	MT2482	-0.96774	8.657188	-2.73666	-3.10954	0.015207
MT0146	-0.91917	9.064701	-3.32651	-1.62032	0.003753	MT3827	-0.96963	9.365907	-4.21677	0.936301	0.000395
MT1161	-0.9203	9.417695	-4.09203	0.560093	0.000546	MT0322	-0.97222	8.828022	-3.03437	-2.38191	0.007706
MT3391	-0.92075	8.590148	-2.45935	-3.73827	0.027876	MT0022	-0.97311	8.452598	-3.64353	-0.7468	0.001702
MT2199	-0.92214	8.787487	-2.60413	-3.41622	0.020523	MT3753	-0.97313	8.877955	-3.84918	-0.15703	0.001014
MT3732	-0.92405	9.127725	-2.51039	-3.62632	0.025019	MT0629	-0.97329	9.018402	-4.37073	1.407248	0.000263
MT3244	-0.92461	8.865314	-3.14907	-2.08821	0.005846	MT1009	-0.97484	8.630565	-3.12059	-2.16181	0.006268
MT0706.1	-0.92511	9.615076	-3.23804	-1.85561	0.004677	MT2818	-0.97572	9.246149	-3.79588	-0.31151	0.001161
MT2121	-0.92667	8.261175	-2.85182	-2.83424	0.011736	MT2848	-0.97708	8.887529	-3.74772	-0.45013	0.00132
MT1626	-0.92685	10.30335	-2.45351	-3.75096	0.028235	MT0098	-0.97727	8.952335	-4.17873	0.821043	0.000434
MT1252	-0.92731	8.144538	-2.55253	-3.53257	0.022846	MT2882	-0.97958	9.912147	-3.57852	-0.92962	0.002004
MT2177	-0.92815	9.278563	-3.52849	-1.06905	0.002271	MT2492	-0.98056	9.589956	-4.35125	1.347263	0.000275
MT2339	-0.92817	9.255592	-2.90074	-2.71492	0.010552	MT1212	-0.9808	8.966582	-3.98002	0.22671	0.000717
MT0158	-0.92878	9.511693	-2.99083	-2.49152	0.008525	MT2785	-0.9816	9.426054	-3.40308	-1.41359	0.003104
MT3879	-0.93012	9.393129	-3.12307	-2.15542	0.006231	MT1300	-0.98194	9.117967	-3.85761	-0.13247	0.000993
MT1749	-0.93098	9.550055	-3.72939	-0.50264	0.001381	MT1017	-0.98207	10.36948	-3.24492	-1.83745	0.004602
MT3252	-0.93137	9.411393	-3.6356	-0.76919	0.001734	MT0611	-0.98362	8.873058	-2.9143	-2.68158	0.010237
MT1133	-0.93169	9.077898	-3.91251	0.027939	0.000858	MT2509	-0.98439	8.997808	-3.68933	-0.61695	0.001525
MT2550	-0.93179	9.271159	-2.79679	-2.9668	0.013298	MT0868	-0.98494	8.767506	-2.66281	-3.2818	0.018036
MT1792	-0.9319	9.2886	-3.16817	-2.03864	0.005581	MT2701	-0.98754	9.604671	-4.48178	1.751132	0.000196
MT0706	-0.93243	9.775885	-3.6349	-0.77117	0.001734	MT0539	-0.98808	9.50553	-3.38646	-1.45869	0.00324
MT3595	-0.93383	8.884976	-3.71595	-0.54105	0.001425	MT0827	-0.98813	9.059531	-3.05193	-2.3374	0.007386
MT2015.2	-0.93448	9.225073	-3.79697	-0.30835	0.001159	MT3379	-0.99028	8.847394	-3.76562	-0.3987	0.001257
MT1530	-0.93471	8.377809	-2.31597	-4.04321	0.037312	MT2996	-0.99221	9.414149	-3.20296	-1.94781	0.005111
MT3642	-0.93506	9.512665	-3.92063	0.05176	0.000841	MT3882	-0.9924	9.842211	-2.91448	-2.68114	0.010237
MT3377	-0.93575	8.869749	-3.06356	-2.30785	0.007203	MT1775	-0.99404	8.803831	-2.58382	-3.46222	0.021391
MT3152	-0.93606	9.026776	-3.47827	-1.20788	0.002571	MT1385	-0.99482	9.506445	-3.45067	-1.28369	0.002752
MT3933	-0.93618	9.953631	-3.06918	-2.29353	0.007109	MT1862	-0.99621	9.609917	-3.47159	-1.22626	0.002611
MT1479.1	-0.93642	8.983804	-3.16903	-2.03639	0.005572	MT2058	-0.99645	9.745252	-3.11589	-2.17391	0.006335
MT0559	-0.9366	9.031176	-3.88951	-0.03941	0.000912	MT2797	-0.99657	8.77229	-3.53682	-1.04589	0.002226
MT0487	-0.9367	9.186217	-4.02105	0.348332	0.000649	MT2721	-0.99699	9.328417	-3.97726	0.218556	0.000723
MT1131	-0.93749	9.035616	-2.90608	-2.7018	0.01042	MT2462	-0.99735	9.293655	-4.43047	1.591837	0.000224
MT0030	-0.94022	8.866462	-3.3183	-1.64233	0.003829	MT1380	-0.9978	9.101876	-3.75246	-0.43651	0.001304
MT0557	-0.9409	8.54052	-2.82825	-2.89125	0.012351	MT2061	-0.9981	9.633133	-4.16759	0.787367	0.000445
MT2226	-0.94208	8.727052	-3.06855	-2.29514	0.007114	MT2516	-0.99839	9.627233	-3.51735	-1.09994	0.002338
MT2508	-0.94208	9.036212	-3.24898	-1.82671	0.004561	MT1885	-0.99848	9.206568	-4.04612	0.422945	0.000609
MT2201	-0.94282	9.141648	-3.70596	-0.56956	0.00146	MT3514	-0.99921	9.147154	-3.73617	-0.48323	0.001357
MT3968	-0.94319	9.12214	-3.7328	-0.49287	0.001368	MT3602	-1.00076	9.432774	-4.05433	0.447399	0.000597
MT1520	-0.94327	8.892257	-2.87749	-2.7718	0.011059	MT0470	-1.00091	8.704445	-2.95559	-2.57945	0.009283
MT2474	-0.94336	9.232049	-4.13429	0.686989	0.000487	MT3275	-1.00126	9.501535	-3.77094	-0.38339	0.001238
MT3024	-0.94343	9.64444	-3.66674	-0.6811	0.001611	MT1358	-1.00204	8.901096	-3.52462	-1.07978	0.002293
MT2730	-0.94447	7.882835	-2.21571	-4.24785	0.045663	MT1276	-1.00218	9.250612	-3.72532	-0.51428	0.001394

MT1577	-0.94471	8.878867	-3.48863	-1.17933	0.002514	MT3767	-1.0027	9.412206	-3.60976	-0.84199	0.001854
MT0270.2	-0.94564	8.263903	-2.58587	-3.4576	0.02129	MT0361	-1.00287	9.65641	-4.371	1.408077	0.000263
MT1148	-0.94578	9.273667	-4.18042	0.826136	0.000433	MT0626	-1.00314	8.907786	-4.77575	2.676658	8.88E-05
MT0938	-0.94618	9.005939	-3.34905	-1.55975	0.003548	MT2428	-1.00362	9.085775	-3.84156	-0.17916	0.001035
MT0085	-0.94628	9.305216	-3.71451	-0.54517	0.00143	MT0038	-1.00365	9.237975	-3.42702	-1.34838	0.00292
MT1311	-0.94681	8.901938	-2.4826	-3.68749	0.026567	MT2639	-1.00421	9.529509	-4.08973	0.553218	0.000548
MT3858	-1.00566	8.689014	-3.66539	-0.68493	0.001616	MT0252	-1.0043	9.291045	-3.65943	-0.70183	0.001641
MT0773	-1.00604	8.68125	-4.0199	0.344929	0.00065	MT2641	-1.00438	9.24109	-3.68658	-0.62477	0.001535
MT0726.1	-1.00609	8.601189	-3.70361	-0.57627	0.00147	MT2007	-1.00504	8.671974	-3.59975	-0.87011	0.001902
MT3382	-1.00609	8.973298	-3.99509	0.271321	0.000692	MT3567	-1.00524	9.270895	-3.40969	-1.39562	0.003051
MT1610	-1.00678	9.227686	-3.46695	-1.23901	0.00264	MT1320	-1.00555	9.460445	-3.47873	-1.20662	0.00257
MT1128	-1.00769	9.879951	-4.18628	0.843865	0.000426	MT0401	-1.00564	8.9049	-3.64789	-0.73447	0.001686
MT3206	-1.00885	8.977806	-4.22801	0.970414	0.000383	MT0363	-1.09981	9.051372	-4.59438	2.103163	0.000145
MT1568	-1.00959	9.3059	-3.40425	-1.41039	0.003095	MT1398	-1.10011	9.240173	-4.31767	1.244148	0.000298
MT1962	-1.01028	9.317107	-2.52462	-3.59478	0.024279	MT3111	-1.10027	8.460965	-4.71113	2.471466	0.000105
MT0919	-1.01057	9.490339	-3.48214	-1.19724	0.00255	MT2230	-1.10051	9.276081	-4.35913	1.37151	0.000269
MT0225	-1.01079	9.126773	-3.54989	-1.00953	0.002156	MT3013	-1.10119	9.646512	-2.96277	-2.56159	0.009124
MT1973	-1.01103	9.418451	-4.7935	2.733162	8.44E-05	MT3949	-1.10151	9.390846	-2.80677	-2.9429	0.013002
MT2667	-1.01185	8.484191	-3.30714	-1.67216	0.00394	MT2574	-1.10174	9.184334	-3.94939	0.136326	0.000779
MT2625	-1.01208	8.601766	-2.84507	-2.8506	0.011928	MT1884	-1.10242	9.413763	-4.72335	2.510175	0.000101
MT2220	-1.0121	8.273334	-2.9212	-2.66459	0.010089	MT0910.2	-1.10243	8.778398	-3.95783	0.161196	0.000761
MT0652	-1.0124	8.135333	-3.57552	-0.93801	0.002015	MT1533.1	-1.10551	9.639893	-4.00262	0.293635	0.000679
MT0402	-1.01327	8.825884	-2.83941	-2.8643	0.012083	MT3221	-1.10565	9.076358	-4.14418	0.716768	0.000475
MT2457	-1.01373	9.601187	-3.55274	-1.0016	0.00214	MT2589.1	-1.10599	9.114116	-3.851	-0.15173	0.00101
MT1379	-1.01479	9.554331	-4.67451	2.355606	0.000116	MT2055	-1.10636	9.076928	-4.58992	2.089175	0.000146
MT0163	-1.01636	9.299548	-3.67271	-0.66418	0.001588	MT0666	-1.10655	9.495195	-3.37596	-1.48713	0.003327
MT3007	-1.01788	9.506129	-4.00172	0.29097	0.00068	MT3743	-1.10729	9.447343	-3.99309	0.265387	0.000695
MT1173	-1.01807	10.00668	-2.57333	-3.48589	0.021896	MT2875	-1.10988	9.052296	-4.7341	2.544275	9.90E-05
MT1454	-1.01923	9.274675	-4.17158	0.799438	0.000441	MT3042	-1.11024	9.444725	-4.11307	0.623204	0.000515
MT1029	-1.01931	8.286977	-2.99163	-2.48953	0.00851	MT2241	-1.11037	8.882416	-3.76976	-0.3868	0.001242
MT1494	-1.01989	8.258388	-3.74923	-0.44578	0.001315	MT3264	-1.11215	8.976092	-3.993	0.265127	0.000695
MT1533	-1.02019	9.162113	-3.64908	-0.73113	0.001683	MT2380	-1.11272	9.577022	-3.6325	-0.77795	0.001745
MT1105	-1.02038	8.643971	-3.01722	-2.4252	0.008018	MT1660	-1.11418	9.749383	-3.80162	-0.29492	0.001148
MT2360	-1.02158	9.081043	-3.54881	-1.01255	0.00216	MT3893	-1.1146	9.301335	-4.24322	1.016683	0.000367
MT3643	-1.02233	9.453914	-3.19928	-1.95745	0.005154	MT3139	-1.11523	9.207297	-3.66539	-0.68492	0.001616
MT2998.1	-1.02254	8.632644	-3.2637	-1.78778	0.004395	MT1587	-1.11574	9.421648	-4.09928	0.581824	0.000534
MT2235	-1.0226	9.04357	-3.3913	-1.44559	0.003202	MT3573.1	-1.11619	8.439625	-3.82869	-0.21654	0.001067
MT3761	-1.02355	8.693883	-3.33212	-1.60526	0.003708	MT3789	-1.11638	9.980929	-3.90052	-0.0072	0.000886
MT2850	-1.02397	9.234206	-4.70671	2.457449	0.000106	MT0336	-1.11695	9.049874	-4.19313	0.864624	0.000419
MT0685	-1.0249	9.164493	-3.39068	-1.44725	0.003205	MT2411	-1.1178	9.971487	-3.46545	-1.24315	0.00265
MT3998	-1.02507	8.711753	-3.61973	-0.81395	0.001804	MT0035	-1.11928	8.913199	-4.20951	0.91424	0.000402
MT2231	-1.02511	9.29426	-4.46666	1.704123	0.000204	MT1493	-1.12017	8.940837	-4.4704	1.715738	0.000202
MT2436	-1.0252	8.863787	-3.03264	-2.38628	0.007732	MT3743.1	-1.12334	9.329221	-5.43577	4.81673	1.50E-05
MT2595	-1.02541	10.01694	-3.08459	-2.2542	0.00684	MT2175	-1.12345	9.166484	-3.73315	-0.49187	0.001367
MT1316	-1.02656	7.976574	-2.40207	-3.8618	0.031274	MT3272	-1.12559	8.68725	-4.416	1.547018	0.000232
MT2408	-1.02722	9.026409	-2.79263	-2.97674	0.013416	MT1271	-1.12608	8.863882	-4.31492	1.235715	0.000301
MT2596	-1.02745	9.288249	-3.96765	0.190185	0.000742	MT3296	-1.12676	7.637612	-3.10935	-2.19073	0.006443
MT3817	-1.02746	8.681493	-3.14973	-2.08651	0.005838	MT2370.3	-1.12689	9.038693	-4.76629	2.646557	9.07E-05
MT1519	-1.02762	9.005539	-4.261	1.07085	0.00035	MT3626	-1.12693	9.125227	-4.73214	2.538064	9.94E-05
MT3718.2	-1.0316	9.071841	-3.63137	-0.78115	0.00175	MT2526	-1.12893	9.215287	-3.91539	0.036387	0.000853
MT3135	-1.03169	9.213059	-4.79792	2.747261	8.34E-05	MT0848	-1.12946	8.985525	-3.68213	-0.63741	0.001551
MT3295	-1.03387	8.196035	-3.3117	-1.65999	0.003892	MT3304	-1.12992	8.787778	-4.1657	0.781668	0.000447
MT1803	-1.03429	9.429275	-3.00109	-2.46579	0.008333	MT1675	-1.12998	9.307677	-4.36124	1.378007	0.000268
MT2479	-1.03462	8.809608	-3.44677	-1.29438	0.00278	MT1664	-1.13117	8.886494	-4.10913	0.611377	0.00052
MT2787	-1.03477	9.225233	-4.3209	1.25404	0.000297	MT0850	-1.13203	8.832705	-4.35533	1.359807	0.000272
MT1266	-1.03573	9.027472	-3.47218	-1.22464	0.00261	MT0286	-1.13349	9.373332	-4.03731	0.39668	0.000623
MT2813	-1.03601	8.533134	-3.222	-1.89785	0.004876	MT1027	-1.13387	9.536214	-4.68459	2.387469	0.000113
MT2554	-1.03667	9.689429	-4.08808	0.548272	0.000549	MT2881	-1.13475	9.510007	-3.47082	-1.22837	0.002614
MT0390	-1.03788	8.450073	-3.36694	-1.51153	0.003399	MT1638	-1.13477	8.74959	-3.7145	-0.54521	0.00143
MT0877	-1.03862	9.481688	-3.45706	-1.26617	0.002706	MT0537	-1.13497	9.002285	-3.12302	-2.15555	0.006231
MT3796	-1.03908	9.445049	-3.74625	-0.45433	0.001325	MT0947	-1.13551	9.060921	-4.19951	0.883945	0.000412
MT3041	-1.03982	9.319989	-4.36415	1.38697	0.000267	MT0129	-1.13624	8.703095	-5.08369	3.666059	3.92E-05
MT1582	-1.03991	9.19667	-4.22382	0.957691	0.000388	MT0023	-1.13666	8.80864	-4.73761	2.555429	9.79E-05
MT2840	-1.04075	9.710799	-3.89061	-0.03621	0.00091	MT1603	-1.13669	9.187684	-3.9906	0.258028	0.000699
MT3225	-1.04092	9.64335	-3.95557	0.15455	0.000765	MT0348	-1.13694	9.224241	-4.32286	1.260049	0.000295
MT1336	-1.04125	8.312088	-3.57747	-0.93255	0.002007	MT3515	-1.13748	9.090108	-4.11497	0.628904	0.000513
MT1974	-1.04199	9.173426	-2.77261	-3.02446	0.014058	MT3242	-1.13936	9.496049	-4.68267	2.381387	0.000113
MT3573.7	-1.04245	8.223877	-2.91871	-2.67073	0.010139	MT0359	-1.1402	9.260752	-4.45165	1.65751	0.000212
MT1720	-1.0427	9.333994	-3.45063	-1.28381	0.002752	MT3044	-1.1408	9.477392	-3.40979	-1.39534	0.003051
MT2565	-1.04392	8.349408	-2.90403	-2.70684	0.010473	MT2883	-1.14091	9.589716	-4.05973	0.463533	0.000589
MT0419	-1.04406	9.374739	-3.64748	-0.73565	0.001686	MT1827	-1.14119	9.340307	-3.67023	-0.6712	0.001597
MT3792	-1.04529	9.275873	-4.12023	0.644703	0.000506	MT0063	-1.1412	10.21031	-4.05881	0.460764	0.000589
MT3222	-1.04568	9.292753	-4.018	0.339275	0.000652	MT3870	-1.14245	8.892463	-4.61402	2.164892	0.000137
MT0138	-1.04604	8.717323	-4.2538	1.048916	0.000357	MT3155	-1.14264	8.696522	-3.96605	0.185455	0.000745
MT0612	-1.04628	10.66754	-3.67477	-0.65832	0.00158	MT2013	-1.14348	9.348536	-4.94915	3.231559	5.63E-05
MT1299	-1.04679	8.997914	-3.84028	-0.1829	0.001037	MT3975	-1.14416	8.741003	-4.51942	1.868449	0.000177
MT1449	-1.04691	8.401188	-2.74221	-3.09645	0.015019	MT0256	-1.14479	8.655034	-3.00073	-2.4667	0.008335
MT1534	-1.04809	8.794192	-3.25188	-1.81905	0.004537	MT1995	-1.14498	9.763971	-4.72692	2.5215	0.000101
MT2086	-1.04845	9.092788	-3.84006	-0.18352	0.001037	MT1162	-1.14507	9.830796	-4.33741	1.304723	0.000284
MT0050	-1.04919	9.046472	-3.55737	-0.9887	0.002115	MT0751	-1.14598	9.421824	-4.18281	0.833385	0.00043
MT1518	-1.04931	8.965388	-3.58583	-0.90916	0.001967	MT0542	-1.14631	8.610567	-2.88033	-2.76487	0.010989
MT2442	-1.04958	8.783384	-3.51717	-1.10044	0.002338	MT1291	-1.14646	9.567065	-3.49134	-1.17186	0.002498
MT3217	-1.04995	9.370722	-4.16076	0.766754	0.000453	MT1102	-1.14925	8.718916	-3.47307	-1.22219	0.002604
MT2390	-1.05017	9.191831	-3.48661	-1.1849	0.002527	MT1716	-1.14935	8.860714	-3.7121	-0.55204	0.001439
MT2795	-1.05145	9.751504	-3.9218	0.055189	0.000838	MT2999	-1.14968	9.066597	-3.77777	-0.36373	0.001215
MT4033	-1.05191	9.655424	-3.97048	0.198524	0.000737	MT3184	-1.15067	8.969282	-3.90255	-0.00124	0.000882
MT0463	-1.05215	9.052137	-3.68817	-0.62024	0.001529	MT3712.1	-1.15102	9.143471	-3.94655	0.127973	0.000785
MT3889	-1.05306	9.359251	-4.3878	1.459879	0.000252	MT0806	-1.15132	8.3383	-3.77544	-0.37045	0.001223
MT3323	-1.05328	9.07502	-4.25586	1.055201	0.000355	MT0965	-1.15344	8.542993	-3.49613	-1.15865	0.002467
MT2540	-1.05397	9.621364	-3.89864	-0.01269	0.000891	MT3379.1	-1.15352	9.876048	-2.88992	-2.74143	0.010786
MT2861	-1.05464	9.559183	-3.98103	0.22971	0.000715	MT2082	-1.15386	9.37158	-5.25425	4.221266	2.45E-05
MT2588	-1.0552	9.087341	-4.08418	0.536581	0.000555	MT0384.1	-1.15442	9.20028	-4.10589	0.601639	0.000525
MT3854	-1.05562	8.566833	-3.54231	-1.03064	0.002196	MT0728	-1.15457	9.102716	-5.07541	3.639237	4.00E-05
MT1954	-1.05583	9.868629	-3.63853	-0.76093	0.001723	MT0787	-1.15491	9.11351	-4.62082	2.186312	0.000134
MT1153	-1.05635	9.26291	-4.20799	0.909659	0.000403	MT3899	-1.15513	9.390555	-4.50262	1.816049	0.000185
MT2060	-1.05666	9.186879	-3.86565	-0.10907	0.000974	MT1710	-1.15671	8.75454	-3.41436	-1.3829	0.003021
MT2341	-1.05765	9.084424	-4.07312	0.503513	0.00057	MT1729	-1.15719	9.107289	-3.5545	-0.99668	0.002131
MT1906	-1.05775	9.01145	-4.08823	0.54873	0.000549	MT3281	-1.15841	8.979163	-3.84044	-0.18243	0.001037

MT2063	-1.05861	9.867178	-3.49513	-1.16141	0.002473	MT2534	-1.16218	9.798015	-4.31902	1.248295	0.000298
MT1972	-1.05984	8.962405	-3.99747	0.278374	0.000689	MT1647	-1.16386	9.233656	-4.9915	3.367966	5.03E-05
MT2015.1	-1.05988	8.882749	-4.27759	1.121499	0.000334	MT3741	-1.16403	8.690376	-5.07864	3.649708	3.98E-05
MT0479	-1.06073	9.805737	-3.61671	-0.82245	0.001817	MT0476	-1.16583	9.01418	-4.17806	0.819008	0.000434
MT0486	-1.06074	9.412642	-3.14219	-2.10604	0.00594	MT2251	-1.16659	9.119679	-3.74075	-0.47011	0.001342
MT0958	-1.06186	9.654475	-3.78999	-0.32851	0.001179	MT2205	-1.1666	9.809564	-4.84403	2.894416	7.40E-05
MT0727	-1.06192	8.828238	-3.59725	-0.87713	0.001911	MT3362	-1.16721	9.678785	-4.33203	1.288203	0.000289
MT3952	-1.06265	9.001078	-2.99629	-2.47783	0.008426	MT1590	-1.16747	9.342316	-3.11075	-2.18712	0.006424
MT0108	-1.06338	8.401664	-3.42206	-1.3619	0.00296	MT0798	-1.16872	8.883085	-4.60034	2.121902	0.000142
MT3202	-1.06393	8.570232	-4.021	0.348187	0.000649	MT1015	-1.16895	9.081841	-4.23629	0.995615	0.000374
MT3892	-1.06398	8.828662	-4.08853	0.549613	0.000549	MT3200	-1.16928	9.291555	-5.66953	5.58933	8.14E-06
MT3303	-1.06412	9.104369	-3.94185	0.114118	0.000794	MT3384	-1.17014	8.997415	-3.26281	-1.79011	0.004404
MT0710	-1.06427	9.001816	-4.15579	0.751749	0.00046	MT3104	-1.17028	8.86031	-3.18603	-1.99209	0.005338
MT3246	-1.06446	9.692444	-2.59532	-3.43622	0.020911	MT1292	-1.17051	9.190889	-4.24909	1.034573	0.000361
MT3939	-1.06474	9.552629	-4.2783	1.123668	0.000334	MT2024	-1.17129	9.018883	-4.52024	1.871012	0.000176
MT0160	-1.06553	8.815672	-3.85895	-0.12858	0.00099	MT0692	-1.17427	9.273575	-4.80059	2.755745	8.27E-05
MT3775	-1.06556	8.658687	-3.06246	-2.31065	0.007218	MT2796	-1.17516	8.88454	-4.06596	0.482127	0.000581
MT2655	-1.0665	9.168905	-4.29477	1.174012	0.000319	MT2042.1	-1.17585	8.592811	-4.06963	0.493081	0.000575
MT3192	-1.06826	10.06776	-3.29565	-1.70283	0.004045	MT1477	-1.17691	8.432628	-4.21504	0.931048	0.000396
MT1904	-1.06857	9.048351	-4.10946	0.612343	0.00052	MT1982	-1.17697	8.713064	-3.65331	-0.71916	0.00167
MT1149	-1.0686	9.113622	-3.73746	-0.47955	0.001354	MT3839	-1.17757	9.275361	-3.30075	-1.68923	0.003998
MT1402	-1.06924	8.918271	-3.84321	-0.17439	0.001032	MT3977	-1.17785	9.110415	-4.58988	2.08903	0.000146
MT3440	-1.07043	8.96278	-3.58252	-0.91842	0.001983	MT2514	-1.17835	8.451625	-4.09181	0.559433	0.000546
MT2518.1	-1.07094	8.978224	-4.0332	0.384453	0.000629	MT3600	-1.17913	9.480414	-3.80266	-0.2919	0.001146
MT0934.1	-1.07157	8.761591	-3.15771	-2.0658	0.005722	MT3014	-1.17916	9.097885	-4.75302	2.604368	9.43E-05
MT3734	-1.07193	9.403423	-4.42587	1.577579	0.000227	MT1953	-1.17923	9.777003	-3.2042	-1.94456	0.005101
MT0784	-1.07223	8.737755	-3.864	-0.11386	0.000978	MT2634	-1.17943	8.39657	-4.01332	0.32539	0.000659
MT2252	-1.07514	9.233264	-3.84138	-0.17968	0.001035	MT2321	-1.17957	8.771189	-3.90294	-0.00012	0.000881
MT2416	-1.0754	8.720597	-3.59312	-0.88872	0.001928	MT3245	-1.17959	9.480844	-4.57514	2.042782	0.000152
MT3253	-1.07547	9.267419	-4.20467	0.899564	0.000407	MT3714	-1.18042	8.978728	-4.32932	1.279878	0.000291
MT1998.1	-1.07601	9.469747	-3.82825	-0.2178	0.001067	MT2659	-1.18049	9.113873	-4.7458	2.581426	9.63E-05
MT0180	-1.07625	9.556098	-4.39374	1.478234	0.000248	MT0720	-1.18204	9.499713	-3.43685	-1.32152	0.002851
MT3566	-1.07629	9.323706	-4.19485	0.869824	0.000417	MT2340	-1.18257	9.091698	-3.59479	-0.88404	0.00192
MT0192	-1.07692	9.02863	-4.21223	0.922512	0.000399	MT2863	-1.18329	9.215075	-4.8161	2.805217	7.98E-05
MT2182	-1.0773	8.748157	-4.92443	3.152073	5.97E-05	MT0684	-1.18454	9.29625	-4.66339	2.320485	0.000119
MT3464	-1.07875	8.76599	-3.93633	0.097872	0.000806	MT0593	-1.1847	9.395022	-5.63244	5.466367	8.97E-06
MT1345	-1.07879	9.037919	-3.80043	-0.29835	0.00115	MT0076	-1.18539	10.11413	-3.27891	-1.7474	0.004225
MT0156	-1.07885	9.506769	-3.80851	-0.27498	0.001127	MT2353	-1.1857	9.124789	-3.64935	-0.73034	0.001682
MT0569	-1.07904	7.831056	-3.02899	-2.39553	0.007795	MT2997	-1.188	8.808942	-4.34851	1.338825	0.000276
MT3134	-1.08141	9.031149	-2.89531	-2.72822	0.010659	MT0916	-1.18942	10.12578	-2.93211	-2.63766	0.009835
MT1570	-1.08148	9.122828	-3.37556	-1.48821	0.003329	MT0662.1	-1.1905	8.851571	-4.20445	0.898913	0.000407
MT1602	-1.08169	9.267612	-3.88516	-0.05212	0.000923	MT2347	-1.19111	9.837928	-5.491	4.998742	1.30E-05
MT2980	-1.08236	8.770117	-3.62149	-0.80898	0.001796	MT1343	-1.19441	10.28693	-3.52684	-1.07363	0.002281
MT0113	-1.0826	9.127388	-4.5867	2.079052	0.000147	MT3782	-1.19552	9.341133	-4.97054	3.300422	5.32E-05
MT0817	-1.08283	9.007863	-3.85758	-0.13258	0.000993	MT3005	-1.19631	8.781447	-3.64566	-0.74077	0.001692
MT3823	-1.08444	10.05477	-2.96521	-2.55552	0.00908	MT2764	-1.19666	9.177619	-3.94517	0.123911	0.000788
MT1654	-1.0851	9.039639	-3.63506	-0.77073	0.001734	MT3188	-1.19723	9.073705	-4.91531	3.12278	6.11E-05
MT0001	-1.0852	9.060206	-3.78723	-0.33645	0.001186	MT0876	-1.19796	9.223619	-4.00469	0.299781	0.000675
MT2527.1	-1.08611	9.721652	-3.02498	-2.40563	0.007874	MT3499	-1.19803	9.053671	-4.63149	2.219877	0.00013
MT1204	-1.08665	9.346626	-3.86445	-0.11257	0.000977	MT3182	-1.19806	9.100223	-3.71676	-0.53876	0.001423
MT2673	-1.08673	9.518038	-3.82998	-0.2128	0.001064	MT0814	-1.19976	9.230516	-4.49074	1.779046	0.000192
MT2537	-1.08679	9.531347	-4.47811	1.739717	0.000198	MT3045	-1.20091	9.49573	-4.93504	3.186171	5.84E-05
MT3050	-1.08816	9.172294	-4.44069	1.623518	0.000219	MT3657	-1.20128	8.387912	-2.65127	-3.3084	0.018472
MT2956	-1.08821	8.892574	-3.22455	-1.89115	0.004843	MT2759	-1.20181	8.639673	-4.15529	0.750249	0.00046
MT3488	-1.08897	9.571039	-4.23346	0.98701	0.000377	MT2646	-1.20239	8.733861	-3.30289	-1.68352	0.003978
MT0332	-1.09006	8.900832	-4.77937	2.688161	8.79E-05	MT0822	-1.20348	9.409681	-4.79593	2.740902	8.38E-05
MT3573.5	-1.09105	9.258832	-3.74184	-0.46698	0.00134	MT3783	-1.20463	8.769097	-3.80141	-0.29551	0.001148
MT0915	-1.09117	9.496648	-5.03484	3.507922	4.48E-05	MT1957.1	-1.20465	8.998362	-3.6864	-0.62529	0.001535
MT2954	-1.09174	9.088345	-4.05879	0.460724	0.000589	MT3269	-1.20479	8.7498	-4.76811	2.652338	9.03E-05
MT3972	-1.09198	9.05261	-3.64759	-0.73534	0.001686	MT1799	-1.20571	9.471112	-3.99194	0.261986	0.000697
MT1178	-1.092	9.216918	-4.77806	2.684004	8.82E-05	MT2103	-1.20632	9.471114	-4.22108	0.949383	0.00039
MT2554.2	-1.09207	9.394288	-4.89801	3.067276	6.38E-05	MT3491.1	-1.20679	8.673817	-3.37853	-1.48017	0.003305
MT2572	-1.0925	9.061718	-3.24451	-1.83854	0.004603	MT0888	-1.20706	8.759035	-5.03611	3.512046	4.47E-05
MT3567.1	-1.09263	9.400288	-4.7242	2.512879	0.000101	MT3006	-1.20727	9.435348	-4.17219	0.801264	0.00044
MT2370.2	-1.09448	9.302092	-4.98053	3.332602	5.19E-05	MT4041.2	-1.2074	9.375926	-3.3312	-1.60773	0.003716
MT3936	-1.0955	9.984871	-3.43636	-1.32286	0.002852	MT2622	-1.20947	8.825605	-3.28049	-1.7432	0.004208
MT2333	-1.09597	9.150949	-4.61181	2.157946	0.000138	MT0378	-1.21095	9.628063	-4.47539	1.731253	0.0002
MT1947	-1.09609	8.855711	-4.35095	1.346357	0.000275	MT0963	-1.21191	9.656911	-3.802	-0.29382	0.001147
MT2184	-1.09723	8.298016	-2.67061	-3.26377	0.017721	MT0206	-1.21355	8.773126	-4.04837	0.429626	0.000607
MT3871	-1.09724	9.055742	-3.51342	-1.11082	0.002357	MT2138.1	-1.2151	9.064034	-5.2522	4.214549	2.46E-05
MT3677	-1.0976	9.551785	-4.03332	0.384826	0.000629	MT0412	-1.21554	9.790209	-4.01639	0.334497	0.000654
MT2922	-1.09893	8.699358	-3.78822	-0.33362	0.001183	MT3183	-1.21578	9.368329	-4.94602	3.221494	5.67E-05
MT2931	-1.27499	9.315022	-5.24999	4.207337	2.47E-05	MT2640	-1.21619	8.804589	-4.06492	0.479016	0.000583
MT3009	-1.27662	9.318067	-4.2739	1.110224	0.000337	MT1042	-1.21825	9.184528	-4.59663	2.110232	0.000144
MT2350	-1.27744	8.867095	-3.15919	-2.06196	0.005707	MT0972	-1.2187	9.089373	-4.47304	1.723944	0.000201
MT3932	-1.27753	9.201179	-4.57919	2.055487	0.000151	MT2885	-1.21962	9.163522	-4.99964	3.394232	4.93E-05
MT2929	-1.27843	8.694727	-4.81327	2.796206	8.02E-05	MT3922	-1.22059	8.141532	-3.2859	-1.7288	0.004152
MT2481	-1.27909	8.803904	-4.53449	1.915541	0.00017	MT0787.1	-1.22061	9.043926	-4.33159	1.286838	0.000289
MT0352	-1.27941	8.9131	-3.65371	-0.71802	0.001669	MT1936	-1.22064	9.574215	-4.4129	1.537425	0.000234
MT0078	-1.27974	9.342476	-4.51872	1.866272	0.000177	MT2317	-1.22083	8.819808	-4.25214	1.043853	0.000358
MT0950	-1.281	9.087086	-3.60481	-0.85589	0.001876	MT0101	-1.22306	9.543659	-3.78934	-0.33038	0.00118
MT0711	-1.28308	9.258513	-4.73006	2.531481	9.98E-05	MT1370	-1.22325	9.626245	-4.4187	1.555369	0.000231
MT3653	-1.28582	9.216497	-4.90666	3.095012	6.22E-05	MT0312	-1.22336	8.123596	-3.94337	0.118586	0.000791
MT1126	-1.286	8.713173	-5.06975	3.620889	4.05E-05	MT2618	-1.2238	8.39111	-4.65911	2.306981	0.000121
MT0736	-1.2866	8.586741	-4.45911	1.680656	0.000208	MT2892	-1.22581	8.724142	-4.74034	2.564098	9.73E-05
MT3036	-1.28715	8.684884	-3.90593	0.008654	0.000874	MT2083	-1.22587	8.613113	-3.71954	-0.53081	0.001412
MT0190	-1.28788	9.654385	-3.93431	0.091956	0.00081	MT1189	-1.22678	8.932561	-4.54951	1.962516	0.000163
MT0719	-1.28793	9.056525	-4.74172	2.568473	9.70E-05	MT3970	-1.22698	9.581879	-4.04249	0.412121	0.000614
MT2752	-1.28794	9.071656	-4.14996	0.734185	0.000467	MT0818	-1.22765	9.696616	-4.11222	0.620647	0.000516
MT3628	-1.29026	9.39079	-3.51728	-1.10014	0.002338	MT1410	-1.22766	9.182985	-4.0831	0.533365	0.000556
MT3579	-1.29143	9.096179	-5.03202	3.498825	4.51E-05	MT3745	-1.2279	9.204217	-5.35477	4.550457	1.87E-05
MT3597	-1.2916	8.520829	-3.05292	-2.3349	0.007373	MT3960	-1.22822	9.984166	-4.07684	0.514641	0.000564
MT1683	-1.29232	9.154545	-4.90773	3.098458	6.21E-05	MT1800	-1.22932	9.142262	-4.39777	1.49065	0.000245
MT0073	-1.29256	9.021326	-3.78512	-0.34256	0.001193	MT3943	-1.22957	8.069667	-3.20964	-1.93029	0.00503
MT0385	-1.29281	9.3213	-5.05166	3.562343	4.28E-05	MT3971	-1.23074	9.128161	-5.06768	3.614182	4.07E-05
MT2650	-1.29522	9.48948	-5.81308	6.066369	5.63E-06	MT2096	-1.2311	8.559608	-3.53377	-1.05438	0.002243
MT1709	-1.29722	8.952127	-4.60592	2.13943	0.00014	MT0844	-1.23356	8.850984	-3.47799	-1.20865	0.002571
MT2758	-1.29725	10.19925	-4.63765	2.239297	0.000128	MT2485	-1.23414	8.925235	-4.84289	2.890795	7.42E-05

MT2740	-1.29827	9.575227	-3.03023	-2.39239	0.007772	MT1075	-1.23518	9.287032	-4.30962	1.219468	0.000305
MT0735	-1.29879	8.536196	-4.04241	0.41189	0.000614	MT1411	-1.23624	9.448742	-4.42272	1.567826	0.000228
MT2578	-1.29889	9.569558	-4.25002	1.037398	0.00036	MT1750	-1.23841	9.131986	-5.55303	5.203572	1.10E-05
MT0625	-1.29921	8.906688	-4.72763	2.523776	0.000101	MT0745	-1.23894	9.455218	-4.67298	2.350756	0.000116
MT0458	-1.29972	8.981546	-4.22125	0.949903	0.00039	MT1837	-1.23976	8.61389	-4.12072	0.646181	0.000506
MT1086	-1.30077	9.016034	-4.47419	1.727543	0.0002	MT3876	-1.24023	10.28549	-5.04552	3.542481	4.35E-05
MT3829	-1.30411	8.749886	-3.69237	-0.60829	0.001514	MT2001	-1.24042	9.602086	-5.8802	6.289978	4.77E-06
MT1020	-1.30427	8.679598	-4.57362	2.038042	0.000153	MT3344	-1.2408	9.243223	-5.96887	6.585823	3.76E-06
MT3043	-1.30472	9.198899	-4.59382	2.101403	0.000145	MT2258	-1.24088	9.061622	-4.78937	2.719992	8.54E-05
MT1328	-1.30531	9.363796	-4.14672	0.724415	0.000472	MT1599	-1.24088	8.629344	-4.21706	0.937179	0.000395
MT0434	-1.30598	9.121106	-4.93345	3.181071	5.85E-05	MT2545	-1.24117	9.56851	-3.78132	-0.35351	0.001205
MT0576	-1.30656	8.804668	-4.62618	2.203176	0.000132	MT0672	-1.24209	8.978526	-3.17878	-2.01099	0.005438
MT3797	-1.30683	9.859211	-4.94678	3.223945	5.66E-05	MT0853	-1.24229	8.656839	-4.08775	0.547288	0.00055
MT2394	-1.30785	8.966355	-4.29369	1.170695	0.000319	MT3928	-1.24293	9.569137	-4.36192	1.380088	0.000267
MT3375	-1.30866	8.879464	-3.98923	0.253974	0.000701	MT0429	-1.24323	9.297038	-4.70332	2.446739	0.000107
MT3506	-1.31099	9.299758	-5.57068	5.261907	1.06E-05	MT3250	-1.2441	8.170197	-3.59498	-0.8835	0.00192
MT1891	-1.31234	8.615004	-4.35049	1.34494	0.000275	MT1616	-1.2447	9.610717	-4.36449	1.388022	0.000267
MT1056	-1.3135	9.140873	-4.89466	3.05654	6.44E-05	MT2064.1	-1.24633	8.719934	-4.28062	1.13074	0.000331
MT2379	-1.31357	9.159193	-5.19906	4.041116	2.86E-05	MT1462	-1.24653	10.68207	-4.23975	1.006114	0.000371
MT0423	-1.31363	8.506506	-3.23779	-1.85626	0.004678	MT2535	-1.24699	9.352164	-5.22173	4.115035	2.67E-05
MT1480	-1.31389	9.208199	-5.54028	5.161423	1.14E-05	MT3826	-1.24776	9.610607	-4.56844	2.021803	0.000155
MT0155	-1.31504	9.043335	-5.64393	5.504438	8.72E-06	MT2079	-1.24833	8.845008	-5.03059	3.4942	4.52E-05
MT0719.1	-1.31654	9.092184	-3.92469	0.063677	0.000832	MT0040	-1.24878	9.334845	-4.33987	1.31229	0.000282
MT3718.1	-1.3166	9.221468	-4.7798	2.689539	8.79E-05	MT3617	-1.24948	8.599602	-3.3441	-1.57308	0.003593
MT1022	-1.31686	8.098711	-3.20135	-1.95203	0.005127	MT2765	-1.24962	8.808943	-3.2689	-1.77397	0.004339
MT3138	-1.31687	9.028547	-5.08787	3.679606	3.88E-05	MT0715	-1.25018	8.757791	-3.99083	0.258716	0.000699
MT0915.1	-1.317	9.471376	-5.30099	4.374173	2.13E-05	MT0505	-1.2512	8.939902	-4.12013	0.644394	0.000506
MT2834	-1.31881	9.32564	-4.9843	3.34476	5.13E-05	MT3274	-1.25142	9.123434	-3.8313	-0.20895	0.001061
MT2835	-1.3192	9.311039	-4.07075	0.496431	0.000573	MT0112	-1.25192	9.938527	-4.35088	1.346136	0.000275
MT0460	-1.31952	9.549218	-5.11611	3.771254	3.59E-05	MT1572	-1.25224	9.525421	-5.2689	4.269147	2.35E-05
MT2215	-1.32062	8.290877	-3.92376	0.060941	0.000834	MT3981	-1.25232	9.140204	-4.80647	2.774491	8.14E-05
MT1922	-1.32093	8.721643	-4.27396	1.110392	0.000337	MT1598	-1.253	9.350315	-4.99714	3.386183	4.96E-05
MT0726	-1.32152	9.501855	-4.46036	1.684562	0.000208	MT0988	-1.25414	8.671845	-4.28337	1.139131	0.000329
MT0884	-1.32187	9.779121	-4.0813	0.527964	0.000558	MT1770	-1.25433	8.990928	-4.95536	3.251527	5.56E-05
MT0431	-1.32195	8.952282	-5.48502	4.97901	1.31E-05	MT1547	-1.25535	8.979738	-5.01069	3.429898	4.78E-05
MT3562	-1.32242	8.49961	-4.12256	0.651712	0.000504	MT1044	-1.25559	8.874652	-4.01799	0.339235	0.000652
MT3978	-1.32323	9.464067	-5.07188	3.627783	4.04E-05	MT3270.1	-1.25566	9.599286	-3.0951	-2.2273	0.006675
MT0600	-1.32454	9.185349	-5.33047	4.470765	1.98E-05	MT2098	-1.25616	9.4798	-4.92768	3.162532	5.93E-05
MT1308	-1.32465	8.856325	-4.46071	1.68564	0.000208	MT0669.1	-1.25639	8.671691	-3.96133	0.171531	0.000754
MT2430	-1.3256	9.02834	-4.14411	0.71656	0.000475	MT0495	-1.25655	9.241489	-3.37465	-1.49067	0.003334
MT2473	-1.3258	9.481273	-5.59046	5.327358	1.01E-05	MT3412	-1.25703	9.350678	-4.53752	1.92501	0.000168
MT0187	-1.32743	9.328527	-4.03811	0.399081	0.000622	MT1051	-1.25711	8.829963	-3.91438	0.03343	0.000855
MT1304	-1.32812	8.582385	-4.54434	1.946325	0.000166	MT1325	-1.25728	8.956217	-5.45368	4.875697	1.44E-05
MT2031	-1.32898	9.614407	-4.01753	0.337888	0.000652	MT4026.1	-1.26148	8.960923	-4.30913	1.217952	0.000305
MT0081	-1.32925	9.072277	-5.48796	4.988718	1.30E-05	MT3985	-1.26177	9.247897	-5.95054	6.524611	4.00E-06
MT2237	-1.32959	9.517409	-5.17759	3.971161	3.04E-05	MT3119	-1.26204	8.845734	-4.55282	1.972862	0.000162
MT0585	-1.33129	9.010491	-4.91894	3.134438	6.07E-05	MT3904	-1.26248	9.248203	-4.36273	1.382589	0.000267
MT2686	-1.33132	8.855611	-5.12878	3.812384	3.48E-05	MT1563	-1.26262	9.216087	-4.23677	0.997055	0.000374
MT3649	-1.33147	9.847917	-3.89099	-0.03509	0.00091	MT1418.1	-1.26272	9.368008	-3.96277	0.175785	0.000751
MT0826	-1.33228	9.395509	-4.3857	1.45339	0.000253	MT1366	-1.26293	8.652556	-3.41473	-1.38188	0.003019
MT3961	-1.33275	10.21144	-4.72216	2.506403	0.000101	MT0037	-1.26343	9.458443	-5.61483	5.408033	9.45E-06
MT3215	-1.33373	9.506329	-4.10113	0.58737	0.000531	MT0933	-1.26383	9.333331	-4.16186	0.770057	0.000452
MT2100	-1.33424	10.30626	-3.82217	-0.23545	0.001085	MT1679	-1.26473	9.205737	-4.95313	3.244356	5.57E-05
MT3856	-1.33811	9.293369	-5.34728	4.525884	1.91E-05	MT3736	-1.26651	10.21076	-2.98415	-2.50824	0.008654
MT1629	-1.33928	9.104754	-5.30464	4.386124	2.12E-05	MT1495	-1.26809	9.216156	-4.38276	1.444341	0.000255
MT0447	-1.34212	9.243763	-4.67906	2.369978	0.000114	MT0946	-1.2703	10.03071	-3.82762	-0.21965	0.001068
MT1659	-1.34271	8.959232	-5.18704	4.001931	2.95E-05	MT3964	-1.27077	9.614199	-4.45426	1.665607	0.000211
MT3982	-1.346	9.343559	-4.34969	1.342469	0.000275	MT3967	-1.27083	9.349709	-4.23139	0.980689	0.000379
MT2620	-1.34771	9.569325	-4.74535	2.579992	9.63E-05	MT0482	-1.27278	9.236822	-5.36904	4.597323	1.80E-05
MT3100	-1.34864	9.463898	-3.84846	-0.1591	0.001016	MT0262	-1.27279	9.019037	-4.83653	2.870459	7.53E-05
MT0964	-1.35144	9.096765	-3.88367	-0.05648	0.000927	MT3526	-1.27346	8.5296	-3.87042	-0.09515	0.000962
MT3986	-1.35164	9.41505	-4.18339	0.835131	0.000429	MT2455	-1.27362	9.131451	-5.31139	4.408234	2.08E-05
MT3023	-1.35218	9.052362	-5.71959	5.755495	7.18E-06	MT2547.1	-1.52773	9.115306	-5.83259	6.131322	5.37E-06
MT1361	-1.35238	9.510411	-4.71036	2.469019	0.000105	MT3920	-1.52928	8.233456	-3.02053	-2.41687	0.007953
MT3037	-1.35339	10.05369	-4.33192	1.287872	0.000289	MT1407	-1.53059	9.03453	-5.89219	6.329958	4.63E-06
MT1867	-1.3542	9.550939	-4.60535	2.137631	0.00014	MT3690	-1.53153	9.20555	-6.79151	9.343449	5.25E-07
MT3973	-1.355	9.087472	-5.71622	5.744316	7.24E-06	MT3590	-1.53216	9.896398	-4.70997	2.467784	0.000105
MT3820	-1.35587	9.271862	-5.49045	4.996935	1.30E-05	MT1925	-1.53216	9.271428	-5.34829	4.529195	1.90E-05
MT0445	-1.35602	8.949797	-4.54362	1.944082	0.000166	MT3131	-1.53242	9.097583	-5.72203	5.763598	7.18E-06
MT2673.1	-1.35668	9.207017	-5.32638	4.457346	2.00E-05	MT2582	-1.5325	9.683681	-5.04663	3.546063	4.35E-05
MT1558	-1.35956	9.111871	-4.41033	1.529471	0.000236	MT2530	-1.53312	9.396091	-5.66507	5.574539	8.25E-06
MT2804	-1.3597	9.378812	-4.68032	2.373953	0.000114	MT0975	-1.53946	9.110689	-7.31289	11.08875	1.74E-07
MT0010	-1.36188	8.966947	-4.7397	2.562047	9.74E-05	MT0669	-1.53985	9.12413	-4.62375	2.195503	0.000133
MT3733	-1.36191	9.235706	-3.68171	-0.63861	0.001551	MT1751	-1.54016	9.155668	-4.70131	2.440359	0.000107
MT1381	-1.36234	8.901058	-4.38719	1.458	0.000252	MT1668	-1.54078	9.26686	-4.72147	2.504218	0.000102
MT0019	-1.36285	8.675363	-5.0681	3.615544	4.07E-05	MT1930	-1.54116	9.673593	-5.94089	6.492411	4.12E-06
MT1359	-1.36365	9.497709	-5.32224	4.44378	2.03E-05	MT1134	-1.54174	9.280961	-5.33356	4.480896	1.97E-05
MT2506	-1.3639	9.249554	-4.6563	2.298087	0.000121	MT3358	-1.54246	9.157592	-4.94473	3.217347	5.69E-05
MT1725	-1.36459	9.319246	-4.13303	0.683177	0.000488	MT1236	-1.54363	9.488434	-4.592	2.095688	0.000145
MT0952	-1.36464	8.651927	-4.4746	1.728805	0.0002	MT3645	-1.54377	9.454371	-6.42635	8.117941	1.19E-06
MT0110	-1.3668	9.090644	-5.8173	6.080414	5.60E-06	MT1997	-1.5481	9.622921	-5.60742	5.383482	9.62E-06
MT0118	-1.36871	8.492473	-3.93914	0.10616	0.0008	MT2190	-1.54827	8.996907	-6.02248	6.764927	3.20E-06
MT1702	-1.36874	8.856345	-5.03307	3.502192	4.50E-05	MT4006	-1.54923	8.514922	-5.83887	6.152237	5.35E-06
MT2331	-1.36901	9.60632	-5.81525	6.073591	5.62E-06	MT1397	-1.54953	9.425488	-5.69066	5.65945	7.69E-06
MT3848	-1.37009	8.687368	-4.08724	0.545761	0.00055	MT1045	-1.5504	8.689639	-5.48709	4.985846	1.31E-05
MT3799	-1.37179	9.153528	-4.3259	1.269388	0.000293	MT0049	-1.5533	9.21917	-4.94894	3.230888	5.63E-05
MT2786	-1.37237	9.545184	-4.11527	0.629811	0.000513	MT3766	-1.55582	9.619755	-5.54596	5.18018	1.13E-05
MT3069	-1.37352	8.924531	-4.60173	2.126268	0.000142	MT2242	-1.55619	9.537445	-6.52308	8.44257	9.54E-07
MT2888	-1.37728	8.918526	-4.04783	0.428018	0.000607	MT1061	-1.55647	9.368891	-6.07902	6.953974	2.78E-06
MT1825	-1.37766	9.093881	-5.7296	5.788756	7.04E-06	MT0993	-1.55752	9.367788	-5.74091	5.82634	6.84E-06
MT0123	-1.37795	9.787494	-5.01487	3.443414	4.72E-05	MT2944	-1.55899	9.120991	-5.76783	5.915821	6.29E-06
MT2942	-1.37833	9.280611	-5.30198	4.377387	2.13E-05	MT0169	-1.5596	9.014496	-4.20588	0.903246	0.000406
MT1221	-1.38036	8.899274	-4.64517	2.263011	0.000125	MT0846	-1.55982	9.236293	-7.14582	10.53058	2.40E-07
MT1673	-1.38074	8.918762	-5.16396	3.926776	3.16E-05	MT2703	-1.56244	9.290558	-6.13799	7.151328	2.43E-06
MT1143.1	-1.38076	9.582864	-4.36805	1.398973	0.000264	MT0740	-1.56272	9.628905	-6.50812	8.392378	9.90E-07
MT0979	-1.38185	9.385179	-5.09847	3.713989	3.78E-05	MT2337	-1.56344	9.709126	-5.55483	5.209507	1.10E-05
MT2589	-1.3823	9.02956	-5.41931	4.762541	1.57E-05	MT1290	-1.564	9.054044	-6.34003	7.828381	1.47E-06
MT1560.1	-1.38605	9.164373	-5.85591	6.209009	5.14E-06	MT3467	-1.56629	8.699415	-3.58829	-0.90226	0.001954

MT1816	-1.38908	8.999838	-4.72521	2.516095	0.000101	MT2397	-1.56814	9.31357	-5.50376	5.040834	1.25E-05
MT3076	-1.39017	8.426375	-4.13318	0.683635	0.000488	MT2354	-1.57144	8.957027	-5.84061	6.158036	5.35E-06
MT0815	-1.39115	9.097641	-4.82572	2.835919	7.78E-05	MT1607	-1.57242	9.133724	-6.26524	7.577585	1.74E-06
MT2532	-1.39274	9.672401	-4.7691	2.655496	9.01E-05	MT3822	-1.5734	9.305582	-5.30756	4.395678	2.10E-05
MT3838	-1.39334	9.307202	-5.35011	4.535163	1.89E-05	MT3627	-1.57361	9.36239	-6.88285	9.649828	4.45E-07
MT2708	-1.39376	8.895641	-4.92475	3.153127	5.97E-05	MT3278	-1.57388	9.433517	-5.8812	6.293319	4.76E-06
MT3935	-1.39644	9.455503	-4.95952	3.264921	5.50E-05	MT1089	-1.57695	9.651656	-6.18183	7.298109	2.16E-06
MT1553	-1.39704	9.543189	-4.97161	3.303872	5.32E-05	MT0573	-1.58007	9.595516	-5.57298	5.269511	1.05E-05
MT2359	-1.39787	9.227434	-4.11374	0.625203	0.000515	MT2637.1	-1.58198	8.876109	-5.63587	5.477751	8.90E-06
MT2674.1	-1.39853	9.428278	-4.74119	2.566797	9.71E-05	MT2062	-1.58334	9.27712	-6.01569	6.742235	3.25E-06
MT1685	-1.40247	8.605807	-5.12362	3.795617	3.53E-05	MT1814	-1.58645	10.20337	-4.37342	1.415524	0.000261
MT2829	-1.40317	9.421258	-5.69375	5.669698	7.64E-06	MT3086	-1.58647	9.340812	-5.70411	5.704097	7.44E-06
MT2071	-1.40332	9.689223	-5.75299	5.866483	6.59E-06	MT3591	-1.58713	9.514055	-5.4851	4.979278	1.31E-05
MT1574	-1.40352	9.235233	-5.46526	4.913853	1.39E-05	MT3575	-1.58721	9.123391	-6.89909	9.704263	4.34E-07
MT2763	-1.40701	8.687326	-4.32583	1.269182	0.000293	MT1637	-1.5883	8.784272	-5.52349	5.10598	1.18E-05
MT0628	-1.40946	8.537147	-4.01084	0.318017	0.000663	MT1490	-1.58851	9.528706	-5.86375	6.23515	5.03E-06
MT0608	-1.41028	8.445661	-4.31455	1.234574	0.000301	MT1993	-1.59118	9.099822	-5.9171	6.413041	4.36E-06
MT3492	-1.41035	8.20219	-3.73864	-0.47614	0.00135	MT2735	-1.59323	9.452505	-6.42314	8.10717	1.19E-06
MT1395	-1.41155	9.878275	-4.62154	2.188565	0.000134	MT0508	-1.59387	9.583072	-5.33085	4.471992	1.98E-05
MT3455	-1.41213	9.45514	-5.8355	6.141014	5.36E-06	MT0339	-1.59425	9.083133	-6.91392	9.753969	4.20E-07
MT3137	-1.4132	9.300495	-5.19847	4.039199	2.86E-05	MT0213	-1.59841	9.128317	-6.28101	7.630471	1.68E-06
MT0599	-1.41335	9.119528	-4.88124	3.01351	6.68E-05	MT3141	-1.59962	9.080095	-4.48253	1.753494	0.000196
MT1576	-1.4135	9.352738	-5.17027	3.947311	3.10E-05	MT3908	-1.60379	9.33164	-6.2959	7.680378	1.64E-06
MT1368	-1.41365	9.242357	-5.18558	3.997185	2.96E-05	MT1364	-1.60468	9.482232	-5.925	6.439386	4.29E-06
MT1843	-1.41412	8.955064	-6.08551	6.975685	2.74E-06	MT2484	-1.60667	9.166182	-5.27311	4.282913	2.33E-05
MT1080	-1.41728	8.661328	-3.77286	-0.37788	0.001232	MT0064	-1.61248	9.712931	-4.92871	3.165841	5.92E-05
MT2815	-1.41743	9.162004	-5.69127	5.66146	7.69E-06	MT3897	-1.61354	9.857014	-4.95525	3.251188	5.56E-05
MT2332	-1.41791	9.164653	-3.90907	0.017835	0.000867	MT3413	-1.61387	9.13212	-5.25	4.207353	2.47E-05
MT3927	-1.41819	9.106322	-5.82116	6.093257	5.54E-06	MT3286	-1.61419	8.928852	-4.77161	2.663458	8.98E-05
MT1872	-1.41905	9.270294	-6.50096	8.368337	9.95E-07	MT2890	-1.61496	9.175921	-5.88308	6.299555	4.76E-06
MT3606	-1.41977	9.45995	-4.93368	3.181811	5.85E-05	MT1765	-1.61573	9.359632	-6.11226	7.065179	2.59E-06
MT3735	-1.4201	9.267541	-5.26779	4.265522	2.35E-05	MT3389	-1.61725	9.280434	-5.67826	5.618277	7.95E-06
MT3571	-1.42012	9.438402	-5.0719	3.62787	4.04E-05	MT0695	-1.62105	9.54669	-5.03717	3.515472	4.46E-05
MT0690	-1.42091	8.770514	-4.68996	2.404439	0.000111	MT2204	-1.62433	8.945072	-6.02029	6.757604	3.21E-06
MT0139	-1.42236	9.407821	-6.12144	7.09593	2.54E-06	MT1802	-1.62737	9.585535	-5.68079	5.626684	7.90E-06
MT1536	-1.4227	9.434366	-4.35085	1.346023	0.000275	MT0072	-1.62746	9.376709	-5.91415	6.403205	4.38E-06
MT1458	-1.42354	9.288106	-5.7191	5.753861	7.18E-06	MT1957	-1.63048	9.62515	-6.72065	9.105697	6.14E-07
MT0125.1	-1.43472	9.409047	-4.77019	2.658966	9.01E-05	MT0325	-1.63262	8.685857	-5.45111	4.867244	1.44E-05
MT2651	-1.43599	9.049955	-4.20369	0.896595	0.000408	MT0708	-1.63329	9.481451	-4.80927	2.783433	8.09E-05
MT2011	-1.43718	9.331092	-5.01779	3.452823	4.68E-05	MT3821	-1.63416	9.139456	-6.01054	6.725033	3.30E-06
MT3276	-1.4382	9.006317	-4.84132	2.88575	7.45E-05	MT0934	-1.63598	9.412379	-5.5319	5.133746	1.16E-05
MT1550	-1.44004	9.529527	-5.1124	3.759208	3.62E-05	MT2974	-1.63725	9.873931	-5.44165	4.836085	1.47E-05
MT2077	-1.44018	9.093228	-5.23856	4.170008	2.55E-05	MT1516	-1.63959	9.381638	-6.20696	7.382308	2.02E-06
MT3573.8	-1.44038	8.503023	-3.84988	-0.15499	0.001013	MT0281	-1.64081	8.669983	-4.97086	3.301458	5.32E-05
MT2536	-1.44187	9.281679	-4.30644	1.209724	0.000308	MT0036	-1.64139	9.478539	-5.14271	3.857664	3.35E-05
MT1091	-1.44206	9.858938	-5.72992	5.789812	7.04E-06	MT2381	-1.64169	9.301933	-6.05254	6.865411	2.95E-06
MT1137	-1.44305	9.096286	-5.80024	6.023639	5.81E-06	MT3374	-1.64203	9.333949	-6.64147	8.839949	7.32E-07
MT1722	-1.44354	9.187112	-5.72017	5.757418	7.18E-06	MT0245	-1.64325	9.330945	-5.55615	5.213861	1.10E-05
MT0080	-1.44377	9.731398	-4.04712	0.425923	0.000608	MT2780	-1.64513	8.690476	-6.08434	6.971768	2.74E-06
MT2136	-1.4448	9.247919	-5.77066	5.925231	6.26E-06	MT0936	-1.64906	9.30155	-6.56299	8.576528	8.85E-07
MT3191	-1.44494	9.745621	-3.59881	-0.87277	0.001903	MT3346	-1.64987	8.841955	-6.3754	7.947007	1.34E-06
MT2676	-1.44495	9.210586	-3.67164	-0.6672	0.001592	MT2286	-1.65093	8.918927	-6.30238	7.702105	1.62E-06
MT2977	-1.44557	9.259046	-5.37624	4.62096	1.76E-05	MT1467	-1.65135	8.524799	-4.06428	0.477115	0.000583
MT1877	-1.44617	9.347765	-3.98993	0.256031	0.0007	MT2554.1	-1.65307	10.01123	-4.75969	2.625577	9.25E-05
MT3521	-1.44635	9.261384	-5.33899	4.49868	1.94E-05	MT1541	-1.65591	8.774004	-5.51101	5.064749	1.23E-05
MT1060	-1.44728	9.050499	-4.63513	2.231358	0.000129	MT0721	-1.65645	9.040311	-5.14764	3.873677	3.31E-05
MT1201	-1.44758	9.511567	-4.91775	3.130628	6.08E-05	MT1801	-1.6581	9.687263	-5.11756	3.775955	3.58E-05
MT1920	-1.44811	9.145387	-6.07553	6.942301	2.80E-06	MT3364	-1.65941	8.982515	-5.7298	5.789391	7.04E-06
MT3132	-1.44854	9.291696	-5.51243	5.069436	1.22E-05	MT1881	-1.65994	9.432834	-6.76138	9.242378	5.69E-07
MT1135	-1.4486	9.46648	-4.54053	1.934409	0.000167	MT0488	-1.66271	9.993173	-4.36339	1.384634	0.000267
MT3400	-1.44895	9.095171	-6.31349	7.739367	1.58E-06	MT2609	-1.66382	8.928866	-5.00563	3.413573	4.84E-05
MT1929	-1.44969	9.406473	-4.03276	0.383142	0.000629	MT3411	-1.66451	9.091604	-5.44897	4.860207	1.45E-05
MT1106	-1.44971	9.128739	-4.08379	0.535425	0.000555	MT2187	-1.66749	9.093675	-6.09882	7.020203	2.64E-06
MT0430	-1.45053	9.244908	-4.44417	1.634304	0.000216	MT3163	-1.66789	9.04248	-6.11321	7.06838	2.59E-06
MT0951	-1.45084	9.416053	-6.18468	7.307648	2.16E-06	MT0208	-1.6696	9.724516	-5.14068	3.851074	3.36E-05
MT3561	-1.45542	9.590693	-4.18343	0.835236	0.000429	MT2080	-1.67026	9.237996	-5.9179	6.41571	4.36E-06
MT2149	-1.45658	8.914079	-5.02963	3.491074	4.52E-05	MT1088	-1.67036	8.970728	-5.92208	6.429654	4.32E-06
MT0459	-1.45886	9.56339	-4.84018	2.88213	7.46E-05	MT0741.1	-1.67148	9.460997	-5.44386	4.843349	1.47E-05
MT3070	-1.45962	9.089635	-5.2367	4.163903	2.56E-05	MT2278	-1.67197	9.335104	-6.49505	8.348502	1.01E-06
MT2857	-1.46078	9.32854	-6.0534	6.868288	2.95E-06	MT3955	-1.67433	9.416047	-7.33259	11.15449	1.74E-07
MT3965	-1.46082	9.403663	-5.08899	3.683238	3.87E-05	MT1886	-1.67819	8.906619	-5.30183	4.376922	2.13E-05
MT0420	-1.46125	9.186036	-5.37765	4.625579	1.75E-05	MT3077	-1.68008	8.655968	-5.07954	3.652608	3.97E-05
MT2699	-1.46138	9.300134	-5.68391	5.637028	7.84E-06	MT0945	-1.68301	8.571624	-5.65296	5.534372	8.54E-06
MT1039	-1.46279	8.837604	-5.44692	4.853431	1.45E-05	MT0082	-1.6851	9.169514	-5.84242	6.16406	5.34E-06
MT2521	-1.46348	8.834271	-5.32014	4.436908	2.03E-05	MT3193	-1.68587	9.389444	-4.9292	3.167412	5.91E-05
MT3570	-1.46395	8.817781	-5.30002	4.370991	2.13E-05	MT0446	-1.68751	9.570759	-6.10008	7.024437	2.64E-06
MT2986	-1.46421	8.708133	-4.78752	2.714107	8.58E-05	MT0079	-1.69022	9.439568	-5.55747	5.218225	1.10E-05
MT2553	-1.46548	8.739285	-4.98992	3.362884	5.05E-05	MT1882	-1.69035	9.258524	-6.36361	7.907481	1.38E-06
MT2859	-1.46602	9.003117	-5.71112	5.727353	7.30E-06	MT0242	-1.69071	8.982229	-6.4188	8.092631	1.20E-06
MT2998	-1.46685	9.489408	-6.51789	8.425172	9.65E-07	MT1879	-1.6921	9.311457	-7.11277	10.42001	2.55E-07
MT0481	-1.46766	9.26599	-6.02893	6.786487	3.15E-06	MT1842	-1.69227	9.459573	-5.89939	6.353946	4.56E-06
MT3874	-1.47235	9.571285	-6.20735	7.383591	2.02E-06	MT2393	-1.69409	9.750252	-5.29699	4.361051	2.15E-05
MT3948	-1.47268	8.75508	-4.81369	2.797537	8.02E-05	MT2041	-1.69697	9.635565	-6.29539	7.678667	1.64E-06
MT2026	-1.47414	8.952303	-5.9144	6.404018	4.38E-06	MT2527	-1.69824	9.372659	-6.33048	7.796356	1.50E-06
MT1826	-1.47593	9.717725	-4.88064	3.011588	6.69E-05	MT2006	-1.69913	9.209189	-5.76527	5.907305	6.33E-06
MT1406	-1.47776	9.871458	-4.32579	1.269063	0.000293	MT0879	-1.70421	9.688513	-5.85834	6.217095	5.11E-06
MT3326	-1.48028	9.055386	-5.90219	6.363289	4.53E-06	MT0260	-1.70806	9.229524	-6.84077	9.508694	4.85E-07
MT1546	-1.48048	9.362109	-4.49677	1.79781	0.000189	MT0176	-1.70986	9.321283	-7.38061	11.31462	1.54E-07
MT1418	-1.48064	9.349663	-5.42113	4.768551	1.57E-05	MT1075.1	-1.71051	10.51118	-3.8107	-0.26866	0.001121
MT0670	-1.48168	9.232554	-4.44933	1.650307	0.000214	MT2166	-1.7119	9.512843	-6.28425	7.641337	1.67E-06
MT3487	-1.48236	9.558185	-5.00765	3.420075	4.82E-05	MT2402	-1.7131	8.792435	-5.58281	5.302051	1.03E-05
MT3287	-1.48369	8.679957	-4.36952	1.403526	0.000263	MT2718	-1.71799	9.326538	-6.14892	7.187914	2.36E-06
MT3940	-1.48707	9.425806	-4.91032	3.106786	6.18E-05	MT0263	-1.71946	9.798419	-5.34457	4.517003	1.91E-05
MT1833	-1.48825	9.406231	-3.72016	-0.52902	0.001411	MT1924	-1.72299	9.134691	-6.35654	7.883764	1.40E-06
MT3624	-1.49036	9.009448	-5.37453	4.615353	1.77E-05	MT3218	-1.72387	9.103755	-5.83876	6.151881	5.35E-06
MT4040	-1.49054	10.26564	-4.37929	1.433638	0.000257	MT1551	-1.72389	9.417601	-6.2329	7.469201	1.87E-06
MT1139	-1.4909	9.374769	-5.2684	4.26752	2.35E-05	MT1918	-1.72534	9.20515	-5.39362	4.678085	1.68E-05
MT3142	-1.49173	9.547956	-6.0372	6.814122	3.08E-06	MT1523	-1.72669	9.241932	-5.39558	4.684515	1.67E-05

MT2168	-1.49355	9.397354	-5.10395	3.731754	3.71E-05	MT2580	-1.72753	9.34011	-6.74716	9.194653	5.75E-07
MT1399	-1.4936	9.123376	-5.60276	5.36807	9.72E-06	MT3383	-1.73024	8.822734	-5.52457	5.109548	1.18E-05
MT1177	-1.494	8.81245	-5.93654	6.47791	4.17E-06	MT0910.3	-1.73103	9.208945	-5.39619	4.686519	1.67E-05
MT1164	-1.49471	9.23102	-6.12843	7.119296	2.50E-06	MT0003	-1.73285	10.04218	-5.24902	4.204167	2.48E-05
MT3099	-1.49561	10.01833	-5.45229	4.871118	1.44E-05	MT1337	-1.7345	9.017415	-5.68531	5.641689	7.81E-06
MT2369	-1.49638	9.579815	-5.63011	5.458642	9.02E-06	MT2668.1	-1.73541	8.249503	-5.13298	3.826034	3.44E-05
MT0882	-1.49698	9.791201	-5.40474	4.714645	1.63E-05	MT3486	-1.74561	10.03075	-5.71135	5.728118	7.30E-06
MT3767.3	-1.49966	9.609612	-5.07856	3.649432	3.98E-05	MT0467	-1.74602	9.382901	-4.8591	2.942621	7.10E-05
MT3507	-1.5013	9.655102	-6.41921	8.09398	1.20E-06	MT1604	-1.74772	9.223914	-5.57945	5.290912	1.04E-05
MT1522	-1.50234	9.77564	-4.66784	2.334539	0.000118	MT3604	-1.74897	9.32213	-6.59164	8.672689	8.18E-07
MT3277	-1.5032	9.330631	-5.40711	4.722435	1.62E-05	MT3767.2	-1.75108	9.530484	-6.71558	9.088689	6.18E-07
MT0143	-1.50469	9.43657	-5.7943	6.00387	5.90E-06	MT2887	-1.75427	9.235375	-5.46846	4.924426	1.38E-05
MT1394	-1.50473	9.267666	-5.04111	3.528189	4.41E-05	MT3212	-1.75544	9.152279	-6.56968	8.598981	8.74E-07
MT1943	-1.50721	8.982221	-5.10592	3.738155	3.69E-05	MT0173	-1.75643	8.760685	-5.52915	5.124654	1.17E-05
MT0464	-1.50946	9.527564	-5.61237	5.399881	9.51E-06	MT0432	-1.76157	9.29751	-6.89482	9.689959	4.34E-07
MT1715	-1.51577	8.728496	-4.4358	1.608349	0.000222	MT1531	-1.76288	9.222482	-6.2222	7.433358	1.93E-06
MT1532	-1.51678	9.142025	-5.77944	5.954414	6.18E-06	MT3958	-1.76408	9.715324	-6.56159	8.571822	8.85E-07
MT0240	-1.51715	9.391597	-5.72145	5.761683	7.18E-06	MT3836	-1.76528	8.90279	-6.50415	8.37903	9.94E-07
MT0159	-1.5174	9.133102	-5.31838	4.431119	2.04E-05	MT1014	-1.76796	9.58461	-4.43733	1.613085	0.000221
MT3243	-1.5249	9.177402	-5.90618	6.37659	4.49E-06	MT1348	-1.76857	9.04033	-5.46616	4.916817	1.39E-05
MT1140	-1.52564	9.395871	-5.8486	6.184653	5.26E-06	MT2943	-1.76901	9.416399	-6.64214	8.842207	7.32E-07
MT2853	-1.52571	9.281666	-7.05681	10.23271	2.88E-07	MT0048	-1.77016	9.271725	-6.75381	9.216969	5.69E-07
MT1330.1	-1.52584	9.237275	-5.6699	5.590567	8.14E-06	MT3424	-1.77385	8.92987	-5.34483	4.517853	1.91E-05
MT0525	-1.52619	9.149197	-4.54846	1.959231	0.000163	MT3351	-1.77745	9.189106	-6.18002	7.292047	2.16E-06
MT1605	-2.03974	9.545465	-7.14702	10.5346	2.40E-07	MT1934	-1.77866	9.405179	-5.723	5.766803	7.18E-06
MT0264	-2.04275	9.430642	-5.90254	6.364448	4.53E-06	MT3934	-1.77908	9.205106	-5.81651	6.077786	5.61E-06
MT3421	-2.04457	9.211891	-7.55575	11.89754	1.14E-07	MT3715	-1.77968	9.25549	-5.09814	3.71291	3.78E-05
MT2334	-2.04506	9.320857	-5.84129	6.16031	5.35E-06	MT0696	-1.78069	9.377935	-6.72366	9.115809	6.12E-07
MT3572	-2.04657	9.597767	-6.47208	8.271405	1.05E-06	MT3025	-1.78239	9.696953	-5.24018	4.175274	2.54E-05
MT2101	-2.04663	9.155003	-8.0972	13.68591	3.96E-08	MT0816	-1.78493	9.563236	-6.10735	7.048765	2.61E-06
MT0714	-2.04769	9.974899	-6.10081	7.026863	2.64E-06	MT2587	-1.78526	9.146283	-4.65886	2.306185	0.000121
MT0379	-2.05901	9.64125	-6.93727	9.832253	4.02E-07	MT0223	-1.78644	9.128241	-6.63724	8.825742	7.32E-07
MT3454	-2.06675	9.661904	-7.15542	10.5627	2.37E-07	MT1070	-1.78648	9.151664	-6.66798	8.928945	7.01E-07
MT0415	-2.06914	9.579497	-7.29568	11.03133	1.76E-07	MT3315	-1.78819	9.092893	-6.24223	7.500491	1.84E-06
MT1183	-2.07248	9.716769	-5.5636	5.238508	1.08E-05	MT1346	-1.78839	10.12431	-4.84486	2.897071	7.40E-05
MT3275.1	-2.07637	9.713363	-7.20274	10.72087	2.16E-07	MT4040.1	-1.78968	9.649499	-5.6159	5.411586	9.43E-06
MT2789	-2.08265	9.582305	-6.14604	7.178255	2.37E-06	MT0793	-1.78991	9.516818	-5.88136	6.293843	4.76E-06
MT0122	-2.08958	9.319715	-7.7559	12.56125	6.92E-08	MT0701	-1.79208	9.143697	-6.75338	9.215538	5.69E-07
MT0109	-2.09221	9.55733	-6.48162	8.303444	1.02E-06	MT0977	-1.79359	9.36344	-6.58817	8.661038	8.24E-07
MT3208	-2.09426	9.234001	-6.29	7.660601	1.64E-06	MT2884	-1.79548	9.62192	-7.41356	11.4244	1.45E-07
MT0971	-2.09638	8.278602	-6.56119	8.570482	8.85E-07	MT0741	-1.79601	9.122072	-6.63663	8.823703	7.32E-07
MT3280	-2.11306	9.805526	-6.06756	6.915645	2.86E-06	MT1643	-1.80714	8.870738	-6.17145	7.263358	2.22E-06
MT2645	-2.13037	9.319561	-8.7564	15.82727	1.10E-08	MT0967	-1.80755	9.503477	-7.69874	12.37197	8.20E-08
MT0261	-2.14508	9.459942	-7.31177	11.08501	1.74E-07	MT1623	-1.80784	9.619064	-5.63387	5.471115	8.94E-06
MT0031	-2.14714	9.840762	-6.53681	8.488662	9.24E-07	MT2593.2	-1.81473	9.894557	-7.26244	10.92034	1.87E-07
MT0506	-2.14907	9.642873	-7.39589	11.36554	1.49E-07	MT1471	-1.81813	9.188692	-6.52457	8.447563	9.54E-07
MT0416	-2.16691	9.692088	-8.0157	13.41823	4.50E-08	MT3427	-1.81951	9.207014	-5.35553	4.552976	1.87E-05
MT0962	-2.1739	9.945139	-6.69461	9.01832	6.55E-07	MT1961	-1.82389	9.279855	-6.54302	8.509513	9.11E-07
MT1556	-2.17611	9.700317	-7.19496	10.69487	2.17E-07	MT1309	-1.82479	9.114505	-6.07942	6.955304	2.78E-06
MT1174	-2.19439	9.359856	-7.99908	13.36358	4.57E-08	MT1482	-1.83217	9.076516	-6.18144	7.296823	2.16E-06
MT1959	-2.20007	9.238997	-7.32491	11.12885	1.74E-07	MT2057	-1.83783	9.462725	-5.01752	3.451961	4.68E-05
MT1272	-2.20038	9.284623	-6.79634	9.359662	5.23E-07	MT0795	-1.84036	9.198656	-6.64531	8.852854	7.32E-07
MT1917	-2.24772	8.954287	-6.96947	9.940167	3.72E-07	MT1083.2	-1.84177	9.622093	-6.86155	9.57839	4.66E-07
MT3187	-2.26505	9.412515	-5.83478	6.138636	5.36E-06	MT1561	-1.84392	9.571069	-5.5928	5.335106	1.00E-05
MT3954.1	-2.26644	9.743378	-6.66799	8.928975	7.01E-07	MT1363	-1.84562	9.349224	-6.6005	8.702424	8.02E-07
MT3289	-2.26789	9.280413	-7.17646	10.63303	2.28E-07	MT2099	-1.8473	9.709992	-5.97733	6.614086	3.67E-06
MT1874	-2.2848	9.175658	-8.87718	16.2146	9.83E-09	MT0591	-1.84991	9.60528	-6.55016	8.533474	9.00E-07
MT2382	-2.29986	9.489419	-7.46227	11.58662	1.27E-07	MT3689	-1.8512	9.202846	-6.98979	10.00826	3.50E-07
MT3954	-2.35667	9.339712	-9.05786	16.79089	8.09E-09	MT3301	-1.85249	9.39229	-7.4664	11.60037	1.27E-07
MT3378	-2.36369	9.973773	-6.75857	9.232927	5.69E-07	MT2414	-1.85678	9.077297	-6.23395	7.472745	1.87E-06
MT3380	-2.42207	10.03848	-6.26419	7.57408	1.74E-06	MT3505	-1.85913	9.005163	-6.10913	7.054726	2.60E-06
MT3022	-2.43821	9.978803	-6.40632	8.050761	1.24E-06	MT3835	-1.85938	9.268255	-7.02079	10.11208	3.23E-07
MT2949	-2.47542	9.830365	-6.09997	7.024074	2.64E-06	MT0990	-1.85959	9.165786	-7.45762	11.57116	1.27E-07
MT1555	-2.50468	9.719702	-7.50228	11.71978	1.26E-07	MT3903	-1.86533	9.538777	-5.65428	5.538761	8.52E-06
MT3258	-2.53464	9.753391	-7.82946	12.80444	5.84E-08	MT3185	-1.8737	9.448269	-7.21678	10.76782	2.08E-07
MT3035	-2.53936	9.552538	-8.42911	14.76963	1.77E-08	MT0323	-1.87375	9.179795	-6.50643	8.386679	9.91E-07
MT3279	-2.54584	9.47761	-7.01202	10.08271	3.27E-07	MT0185	-1.8769	10.27234	-5.8428	6.165343	5.34E-06
MT2338	-2.84118	9.541813	-7.22877	10.80788	2.02E-07	MT1622.1	-1.88074	9.967141	-4.34029	1.313564	0.000282
MT1796	-3.58403	10.83965	-6.49883	8.361179	9.98E-07	MT0730	-1.881	8.820031	-6.75209	9.211199	5.69E-07
MT3220	-2.01098	9.391453	-5.46542	4.914377	1.39E-05	MT3972.1	-1.88206	9.539993	-6.48809	8.325144	1.02E-06
MT1085	-2.01518	9.246003	-6.23779	7.485603	1.86E-06	MT1351	-1.88707	9.248562	-5.88794	6.315785	4.69E-06
MT1931.1	-2.01928	9.101135	-6.16256	7.233562	2.26E-06	MT2948	-1.89273	9.458696	-6.26692	7.583228	1.74E-06
MT0713	-2.02728	9.474579	-6.112	7.064322	2.59E-06	MT3128	-1.89318	9.824787	-5.21005	4.076949	2.77E-05
MT2072	-2.02773	9.335883	-6.40058	8.031495	1.26E-06	MT1459	-1.89603	9.603763	-6.46354	8.242755	1.08E-06
MT0205	-2.02866	9.77179	-6.6689	8.932024	7.01E-07	MT2233	-1.90238	9.718747	-6.8622	9.580569	4.66E-07
MT2854	-2.03553	9.682303	-7.80367	12.71922	6.03E-08	MT0739	-1.90385	9.190225	-7.83691	12.82903	5.84E-08
MT0570	-2.03629	8.875937	-6.39733	8.020584	1.26E-06	MT0014	-1.90759	8.730816	-5.33509	4.485894	1.96E-05
MT0694	-2.03658	9.290264	-7.90513	13.05415	5.08E-08	MT3428	-1.91074	9.274571	-6.69744	9.027801	6.53E-07
MT3210	-1.97573	9.812398	-6.93497	9.824555	4.02E-07	MT1205	-1.91495	9.326862	-7.31277	11.08837	1.74E-07
MT3818	-1.97742	8.721711	-6.644	8.848428	7.32E-07	MT3028	-1.91638	9.236627	-7.50684	11.73493	1.26E-07
MT2374	-1.98332	10.07953	-7.93559	13.15454	4.90E-08	MT2249	-1.92359	9.155391	-6.41274	8.072284	1.22E-06
MT2005	-1.98474	9.484561	-6.48473	8.313864	1.02E-06	MT1557	-1.93367	9.321165	-7.29183	11.01846	1.76E-07
MT1273	-1.98614	9.42067	-6.9646	9.923837	3.75E-07	MT3957	-1.93402	9.581984	-7.15972	10.57706	2.37E-07
MT0880	-1.98953	8.775828	-7.09386	10.35673	2.63E-07	MT3868	-1.93663	8.97594	-5.64738	5.515893	8.67E-06
MT0369	-1.99226	9.677418	-6.29891	7.690491	1.63E-06	MT1999	-1.93955	9.175646	-6.79753	9.363666	5.23E-07
MT1760	-1.9966	9.023965	-6.85974	9.572331	4.66E-07	MT1360	-1.94373	9.870626	-4.49344	1.787447	0.00019
MT2370	-2.00096	8.989007	-6.2445	7.508095	1.83E-06	MT1966	-1.95191	9.871522	-5.6942	5.671187	7.64E-06
MT2855	-2.00184	9.372063	-4.93635	3.190406	5.82E-05	MT2085	-1.95832	8.955281	-7.19424	10.69248	2.17E-07
MT3722	-2.00406	9.639591	-6.63368	8.813807	7.35E-07	MT1396	-1.96121	9.532196	-6.04622	6.844294	3.01E-06
MT2577	-2.00946	8.688431	-5.2061	4.064063	2.80E-05	MT3027	-1.96763	9.263971	-8.82478	16.04677	1.00E-08
MT1404	-1.96857	9.206192	-5.73627	5.810916	6.93E-06						

Statistically Significant Genes Detected in ATB Classical Granuloma

Name	logFC	AveExpr	t	B	Adj.P.Val	Name	logFC	AveExpr	t	B	Adj.P.Val
MT3573.15	3.758683	9.623418	9.722665	18.91685	3.67E-09	MT3045	-1.50069	9.457954	-6.12784	7.096298	1.93E-06
MT0613	3.165133	9.285747	9.399922	17.90469	5.24E-09	MT2020	2.313387	8.816623	6.12771	7.095849	1.93E-06
MT3942	3.164821	9.072349	9.20766	17.29552	5.50E-09	MT2861	-1.64639	9.553315	-6.12719	7.094089	1.93E-06
MT2123	3.511995	8.710353	9.152246	17.11911	5.50E-09	MT0846	-1.33688	9.236293	-6.12447	7.084974	1.94E-06
MT1796	-5.00112	10.83965	-9.06839	16.85146	5.50E-09	MT3330	2.125703	8.950973	6.112188	7.043689	2.02E-06
MT0879	-2.61652	9.688513	-8.99446	16.6148	5.50E-09	MT3546	1.585161	8.690442	6.108248	7.03045	2.04E-06
MT1083.2	-2.40093	9.622093	-8.94473	16.45526	5.50E-09	MT2802	1.689586	8.7344	6.10421	7.016886	2.07E-06
MT3258	-2.78136	9.74602	-8.91597	16.36284	5.50E-09	MT0763	2.011559	9.036696	6.102524	7.011219	2.08E-06
MT0841	2.661702	9.407726	8.905252	16.32839	5.50E-09	MT0218	2.169445	9.374531	6.100713	7.005136	2.08E-06
MT0567	3.998278	9.465235	8.898123	16.30546	5.50E-09	MT3093	3.071584	9.080372	6.099334	7.000505	2.09E-06
MT3035	-2.66516	9.552538	-8.84668	16.13984	5.94E-09	MT2212	2.53187	8.790497	6.097845	6.995501	2.09E-06
MT0369	-2.11013	9.79634	-8.80786	16.01468	6.19E-09	MT2049	2.182029	10.1157	6.097807	6.995373	2.09E-06
MT0327	4.722277	9.59999	8.751514	15.83267	6.32E-09	MT3405	2.183551	9.330657	6.096973	6.992571	2.09E-06
MT3615.4	3.381027	9.475116	8.735574	15.78113	6.32E-09	MT2534	-1.50972	9.740894	-6.09656	6.991192	2.09E-06
MT0506	-3.14859	9.741092	-8.73534	15.78037	6.32E-09	MT2310	2.61149	9.495408	6.090037	6.969274	2.13E-06
MT2635	2.727598	9.618782	8.676002	15.58824	7.22E-09	MT0510	1.9956	9.160364	6.08533	6.953462	2.16E-06
MT0758	2.939018	9.050107	8.647382	15.49543	7.48E-09	MT3978	-1.58481	9.464067	-6.0745	6.917091	2.24E-06
MT1240	2.529415	8.801986	8.56269	15.22029	8.86E-09	MT0910.3	-1.94791	9.208945	-6.07228	6.909639	2.24E-06
MT3454	-2.47153	9.661904	-8.55681	15.20117	8.86E-09	MT0659	2.005165	8.274002	6.072246	6.909523	2.24E-06
MT3439	2.355804	9.178174	8.535569	15.13202	8.86E-09	MT3551	2.46134	8.536042	6.07095	6.905169	2.24E-06
MT2854	-2.22609	9.682303	-8.53422	15.12762	8.86E-09	MT0641	1.951826	9.337725	6.070613	6.90404	2.24E-06
MT3674	3.411817	10.41051	8.5021	15.02299	9.06E-09	MT3986	-1.68552	9.479476	-6.07037	6.903231	2.24E-06
MT3814	3.363855	9.156371	8.500741	15.01856	9.06E-09	MT2683	1.822467	9.218411	6.067652	6.894095	2.26E-06
MT0854.1	3.081381	9.413646	8.48011	14.95129	9.08E-09	MT3324	1.83412	8.745711	6.066778	6.89116	2.26E-06
MT3374	-2.09543	9.333949	-8.47534	14.93574	9.08E-09	MT4016	1.871426	9.086546	6.065202	6.88587	2.26E-06
MT1174	-2.13811	9.240309	-8.44985	14.85253	9.51E-09	MT3934	-2.12523	9.023711	-6.06375	6.880981	2.27E-06
MT3289	-2.66422	9.280413	-8.43058	14.7896	9.78E-09	MT0626	-1.27361	8.907786	-6.0634	6.879817	2.27E-06
MT2327	2.680058	8.898768	8.405138	14.70647	1.03E-08	MT2989	1.806303	8.839936	6.060267	6.869301	2.28E-06
MT1842	-2.40397	9.459573	-8.38041	14.62561	1.08E-08	MT3571	-1.6968	9.438402	-6.06005	6.868559	2.28E-06
MT4013	3.257361	9.365195	8.362134	14.56579	1.11E-08	MT0446	-1.67563	9.570759	-6.05711	6.858691	2.30E-06
MT2441	2.898205	9.388154	8.346938	14.51604	1.13E-08	MT1516	-1.59899	9.381638	-6.05327	6.845798	2.33E-06
MT1911	2.841287	9.798416	8.315153	14.41189	1.22E-08	MT3175	-1.79678	9.716626	-6.05257	6.843463	2.33E-06
MT3455	-2.01018	9.45514	-8.3069	14.38482	1.22E-08	MT2040	1.962545	9.430835	6.046243	6.822219	2.37E-06
MT2393	-2.65387	9.750252	-8.29799	14.35561	1.22E-08	MT0600	-1.5021	9.185349	-6.04503	6.818149	2.38E-06
MT0939	2.470689	8.740124	8.267937	14.25701	1.31E-08	MT2597	1.568952	9.645696	6.035764	6.787047	2.45E-06
MT1887	2.520841	8.50654	8.24977	14.19736	1.34E-08	MT0508	-1.88768	9.326588	-6.02975	6.766863	2.49E-06
MT3995	2.563128	8.846655	8.243519	14.17683	1.34E-08	MT3835	-1.59666	9.268255	-6.02877	6.763588	2.50E-06
MT2382	-2.52665	9.489419	-8.19812	14.02761	1.52E-08	MT2878	1.834069	9.056244	6.022576	6.74279	2.54E-06
MT1096	2.889043	8.700538	8.192526	14.00921	1.52E-08	MT3658	2.022663	8.89313	6.022378	6.742126	2.54E-06
MT0694	-2.10181	9.401183	-8.17933	13.9658	1.52E-08	MT2380	-1.843	9.577022	-6.01649	6.72237	2.59E-06
MT3378	-2.88863	9.99399	-8.1775	13.95976	1.52E-08	MT1264	2.21355	9.235986	6.01431	6.715057	2.60E-06
MT0190	-2.66749	9.654385	-8.14882	13.86536	1.63E-08	MT2369	-1.59684	9.579815	-6.00807	6.694119	2.65E-06
MT3396	2.564494	9.033961	8.127838	13.79622	1.70E-08	MT2028	1.774174	10.25351	6.005285	6.68478	2.67E-06
MT0205	-2.47004	9.77179	-8.11987	13.76996	1.70E-08	MT2554.1	-1.68257	10.26202	-6.00467	6.682704	2.67E-06
MT2125	2.769803	8.369382	8.116842	13.75998	1.70E-08	MT0591	-1.69466	9.60528	-6.00048	6.668669	2.70E-06
MT2338	-3.18679	9.541813	-8.1081	13.73117	1.71E-08	MT2011	-1.71779	9.331092	-5.99753	6.658783	2.72E-06
MT0124	2.184625	9.85001	8.082264	13.64595	1.80E-08	MT0635	1.995434	9.717369	5.991216	6.637592	2.78E-06
MT3954.1	-2.99766	9.674506	-8.08147	13.64334	1.80E-08	MT1089	-1.71087	9.535367	-5.98995	6.633355	2.78E-06
MT2498	2.427502	9.43664	8.032842	13.48278	2.08E-08	MT1987	2.702428	8.91347	5.989285	6.631113	2.78E-06
MT1234	3.574628	9.164303	7.979728	13.30719	2.44E-08	MT3993	2.018387	10.04109	5.985932	6.619871	2.81E-06
MT3437.1	2.646556	8.959982	7.963892	13.25479	2.49E-08	MT3361	1.805466	9.112358	5.970188	6.56708	2.96E-06
MT3781	2.779267	9.545275	7.963206	13.25252	2.49E-08	MT2812	1.978723	8.729479	5.968987	6.563056	2.96E-06
MT1556	-2.40239	9.700317	-7.94312	13.18604	2.59E-08	MT0048	-1.5644	9.271725	-5.96878	6.562358	2.96E-06
MT1497.1	3.007743	9.024522	7.94064	13.17782	2.59E-08	MT0915.1	-1.48215	9.471376	-5.96573	6.552153	2.98E-06
MT3550	2.965419	8.944673	7.931457	13.14741	2.59E-08	MT2173	2.296648	9.063262	5.958034	6.52634	3.06E-06
MT1514.1	2.603445	10.35523	7.927675	13.13488	2.59E-08	MT3353	2.73538	8.725336	5.956004	6.519536	3.07E-06
MT1321	2.725483	9.318785	7.917254	13.10036	2.59E-08	MT3642	-1.41988	9.512665	-5.95342	6.510883	3.09E-06
MT0513	2.798253	9.24958	7.916201	13.09687	2.59E-08	MT2599	2.522197	9.58701	5.950874	6.502344	3.11E-06
MT1031	2.750088	8.7173	7.914441	13.09104	2.59E-08	MT2863	-1.46171	9.215075	-5.94931	6.497089	3.12E-06
MT2467.1	2.853923	8.436064	7.902478	13.05139	2.65E-08	MT2331	-1.55314	9.532829	-5.94833	6.493824	3.13E-06
MT0511	2.580844	9.289449	7.846607	12.86609	3.16E-08	MT0064	-1.9452	9.712931	-5.94571	6.485049	3.15E-06
MT2563	3.033364	9.700133	7.831088	12.81458	3.28E-08	MT1363	-1.66168	9.199213	-5.94108	6.469511	3.19E-06
MT1201	-2.14967	9.31406	-7.81486	12.76069	3.41E-08	MT1585	1.855864	9.483511	5.939936	6.465692	3.20E-06
MT3954	-2.10238	9.20625	-7.80273	12.7204	3.45E-08	MT1364	-1.76054	9.483369	-5.93828	6.460128	3.21E-06
MT3363	2.299825	9.742719	7.802386	12.71926	3.45E-08	MT2099	-1.69755	9.602062	-5.93635	6.45367	3.22E-06
MT0484	3.02308	10.19006	7.795812	12.69741	3.47E-08	MT0573	-1.68246	9.595516	-5.93409	6.446088	3.24E-06
MT1205	-2.03952	9.326862	-7.78847	12.67301	3.51E-08	MT3982	-1.81321	9.206681	-5.93186	6.438643	3.26E-06
MT3573.11	3.447449	9.26155	7.782972	12.65474	3.52E-08	MT2829	-1.75281	9.302878	-5.92746	6.423892	3.30E-06
MT3058	2.318578	8.898516	7.761195	12.58235	3.64E-08	MT1872	-1.29339	9.270294	-5.92527	6.416551	3.32E-06
MT1003	2.822862	9.109635	7.760827	12.58112	3.64E-08	MT2690	2.131785	8.379377	5.923722	6.411373	3.33E-06
MT3996	2.496412	9.010538	7.75905	12.57522	3.64E-08	MT2665	1.675647	9.40101	5.920925	6.402002	3.35E-06
MT3955	-1.85154	9.418413	-7.75656	12.56692	3.64E-08	MT3427.1	1.672516	9.821324	5.917805	6.391552	3.38E-06
MT1286	3.05033	9.632831	7.73746	12.50341	3.84E-08	MT3066	2.084034	9.470884	5.914894	6.381804	3.41E-06
MT3062	2.356731	9.393364	7.706298	12.39969	4.21E-08	MT3389	-1.9583	9.20734	-5.91075	6.367921	3.45E-06
MT2093	2.893403	9.291977	7.697789	12.37136	4.22E-08	MT2735	-1.46519	9.452505	-5.90696	6.355245	3.49E-06
MT1432	3.437534	9.440271	7.69457	12.36065	4.22E-08	MT0448	2.480874	9.247418	5.906582	6.353971	3.49E-06
MT3573.2	2.613576	9.035956	7.694092	12.35906	4.22E-08	MT2564	2.516531	8.423042	5.904524	6.347078	3.50E-06
MT3722	-2.3223	9.639591	-7.6871	12.33577	4.27E-08	MT1208	1.650197	9.519268	5.902006	6.338648	3.53E-06
MT3275.1	-2.21376	9.713363	-7.67936	12.30997	4.29E-08	MT0263	-1.89714	9.798419	-5.89684	6.321363	3.58E-06
MT2949	-3.05025	9.799222	-7.67686	12.30166	4.29E-08	MT0079	-1.77376	9.43314	-5.89522	6.315922	3.60E-06
MT0756	2.470803	9.78721	7.674616	12.29419	4.29E-08	MT1924	-1.59567	9.134691	-5.88681	6.287779	3.69E-06
MT0967	-1.79822	9.503477	-7.659	12.24214	4.47E-08	MT1801	-1.574	9.528992	-5.88616	6.285597	3.69E-06
MT2645	-1.86202	9.319561	-7.65341	12.22352	4.50E-08	MT1296	1.49103	9.210002	5.885769	6.284293	3.69E-06
MT3958	-2.05143	9.715324	-7.63043	12.1469	4.82E-08	MT3758	1.949532	8.350729	5.881455	6.269856	3.74E-06
MT3725	2.634086	9.076183	7.626006	12.13217	4.83E-08	MT2734.1	1.581384	9.140541	5.880014	6.265033	3.75E-06
MT2161	2.800234	8.778055	7.615507	12.09715	4.92E-08	MT3647	-1.5432	9.272906	-5.87787	6.257849	3.76E-06
MT3887	2.340185	8.802146	7.611939	12.08525	4.92E-08	MT1582	-1.45955	9.220987	-5.87765	6.257123	3.76E-06
MT0292	2.864534	9.558184	7.610119	12.07918	4.92E-08	MT3334	1.952306	8.868858	5.877497	6.256608	3.76E-06
MT2337	-2.14121	9.709126	-7.60761	12.07081	4.92E-08	MT1615	1.651792	9.158332	5.875681	6.250533	3.77E-06
MT0714	-2.55198	9.974899	-7.60328	12.05636	4.94E-08	MT2523	1.758557	9.554469	5.872978	6.241488	3.80E-06
MT3762	2.441592	9.332233	7.589548	12.01055	5.12E-08	MT3427	-1.5356	9.155723	-5.87243	6.239646	3.80E-06
MT2036	2.945337	8.627336	7.578073	11.97225	5.27E-08	MT0648	2.230713	8.536088	5.868719	6.227236	3.84E-06
MT1117	2.833976	9.184878	7.570931	11.94841	5.34E-08	MT1901	1.999009	8.843739	5.866002	6.218146	3.87E-06
MT2963	2.730289	9.29353	7.559163	11.90912	5.47E-08	MT0555	1.900349	9.908035	5.863993	6.211426	3.89E-06
MT3401	2.909119	9.438215	7.554652	11.89406	5.47E-08	MT3351	-1.68625	9.189106	-5.86292	6.20785	3.89E-06
MT1605	-2.15604	9.545465	-7.55453	11.89364	5.47E-08	MT1697	2.252817	9.213868	5.858009	6.191407	3.94E-06
MT1231	2.050512	9.018908	7.545338	11.86296	5.59E-08	MT3521	-1.58684	9.261384	-5.85756	6.189905	3.94E-06

MT1851	3.416691	8.8008	7.535816	11.83115	5.72E-08	MT0844	-2.07751	8.850984	-5.8575	6.1897	3.94E-06
MT3421	-2.03621	9.211891	-7.52488	11.79461	5.88E-08	MT1095	2.07499	8.709213	5.856786	6.187318	3.94E-06
MT3475	2.697752	9.222809	7.518538	11.77343	5.92E-08	MT2705	1.891667	9.14579	5.856379	6.185954	3.94E-06
MT0117	2.325795	8.858264	7.516125	11.76536	5.92E-08	MT3569	1.564404	9.594068	5.855433	6.182792	3.95E-06
MT0195	2.543474	9.468882	7.51406	11.75846	5.92E-08	MT1140	-1.52719	9.395871	-5.85454	6.179802	3.95E-06
MT3349	2.997425	9.233644	7.509444	11.74304	5.96E-08	MT2414	-1.74352	9.077297	-5.85371	6.177028	3.95E-06
MT3280	-2.61194	9.805526	-7.50008	11.71174	6.07E-08	MT0128	1.885261	9.186067	5.852933	6.174428	3.96E-06
MT2650	-1.67082	9.48948	-7.49879	11.70741	6.07E-08	MT1522	-1.88358	9.77564	-5.85238	6.172594	3.96E-06
MT0087	2.754826	9.582017	7.485096	11.66165	6.30E-08	MT3381	1.901067	9.076173	5.849481	6.162884	3.99E-06
MT0979	-2.02179	9.385179	-7.45959	11.57635	6.79E-08	MT2874	1.586633	9.024735	5.848721	6.160342	3.99E-06
MT0779	2.2517	10.05242	7.457999	11.57103	6.79E-08	MT1300	-1.40859	9.135694	-5.84654	6.153043	4.01E-06
MT1459	-2.38984	9.485408	-7.44692	11.53397	6.99E-08	MT3200	-1.20551	9.291555	-5.84521	6.148616	4.02E-06
MT1560.1	-1.75963	9.164373	-7.43425	11.49158	7.24E-08	MT2612	2.228058	9.076051	5.843327	6.142304	4.04E-06
MT2283	2.621807	9.895059	7.41896	11.44039	7.56E-08	MT1427	2.172983	9.025629	5.84296	6.141075	4.04E-06
MT3039	1.874895	9.246124	7.39903	11.37367	8.03E-08	MT0460	-1.5061	9.549218	-5.83953	6.129611	4.08E-06
MT2670	2.765704	9.74417	7.393951	11.35666	8.10E-08	MT0042	1.884863	9.858261	5.838522	6.126234	4.08E-06
MT1471	-2.05848	9.188692	-7.38709	11.33368	8.22E-08	MT0300	2.482594	9.021048	5.838504	6.126174	4.08E-06
MT0415	-2.09095	9.579497	-7.37256	11.28504	8.56E-08	MT1781	1.679792	8.707829	5.835312	6.115502	4.11E-06
MT3185	-2.07638	9.290977	-7.3694	11.27445	8.58E-08	MT2297	2.205254	9.345792	5.832444	6.105916	4.14E-06
MT3964	-2.1005	9.614199	-7.36259	11.25161	8.69E-08	MT3494	-1.42721	9.498663	-5.83203	6.104537	4.14E-06
MT2664	2.934418	8.837624	7.358273	11.23716	8.69E-08	MT0432	-1.44871	9.255296	-5.83168	6.103351	4.14E-06
MT2041	-1.98151	9.635565	-7.35098	11.21273	8.69E-08	MT1450	1.862424	8.495273	5.830485	6.099365	4.15E-06
MT2233	-2.03771	9.718747	-7.35037	11.21069	8.69E-08	MT0291.3	2.032569	8.876682	5.826539	6.086176	4.20E-06
MT2315	2.295755	9.193495	7.347667	11.20162	8.69E-08	MT3275	-1.54604	9.501535	-5.82268	6.073278	4.25E-06
MT3407	2.386297	9.313873	7.34674	11.19851	8.69E-08	MT1649	1.89609	9.86932	5.820408	6.065683	4.27E-06
MT2194	2.339611	8.960833	7.34328	11.18692	8.69E-08	MT1164	-1.41921	9.23102	-5.81885	6.060472	4.29E-06
MT0416	-2.11018	9.700043	-7.34286	11.18552	8.69E-08	MT0807	1.839598	9.234788	5.815287	6.048566	4.33E-06
MT2111	3.243535	9.11471	7.342844	11.18546	8.69E-08	MT3449.1	2.548946	9.222847	5.809655	6.029745	4.41E-06
MT3899	-1.88332	9.390555	-7.34104	11.17942	8.69E-08	MT0787.1	-1.749	9.157804	-5.80804	6.024356	4.41E-06
MT0884	-2.52665	9.829219	-7.33965	11.17474	8.69E-08	MT1956	1.509154	9.380071	5.808003	6.024228	4.41E-06
MT3691	2.344785	10.12915	7.333918	11.15554	8.79E-08	MT1412	1.501947	9.298675	5.807225	6.021629	4.41E-06
MT2985	3.561178	9.978914	7.32847	11.13728	8.89E-08	MT1839	1.726798	8.730464	5.806845	6.020358	4.41E-06
MT2263	2.885786	8.944733	7.326193	11.12965	8.89E-08	MT1920	-1.38387	9.145387	-5.806	6.017545	4.42E-06
MT3159	2.300358	8.904386	7.31691	11.09853	9.11E-08	MT3051	2.20894	9.090237	5.805491	6.015832	4.42E-06
MT3696	2.610516	9.237557	7.306415	11.06334	9.38E-08	MT1348	-1.87465	9.04033	-5.79402	5.977506	4.58E-06
MT1456	2.295457	9.459188	7.292698	11.01734	9.76E-08	MT2270	2.455603	9.069433	5.793839	5.976908	4.58E-06
MT0440	2.815542	9.001875	7.288423	11.003	9.79E-08	MT2006	-2.09009	9.143122	-5.7884	5.958747	4.66E-06
MT3957	-1.96854	9.581984	-7.28749	10.99988	9.79E-08	MT3556	1.386001	9.13437	5.784346	5.945204	4.70E-06
MT1555	-2.47442	9.629929	-7.27006	10.94141	1.03E-07	MT0656	2.101042	8.811055	5.783587	5.94267	4.70E-06
MT1622.1	-3.14803	9.967141	-7.26488	10.92403	1.04E-07	MT2456	1.717443	9.23086	5.782845	5.94019	4.70E-06
MT0926	2.431088	8.963073	7.250094	10.87441	1.09E-07	MT1802	-1.65622	9.585535	-5.78151	5.935738	4.70E-06
MT1621	3.501595	9.115022	7.236493	10.82876	1.12E-07	MT0703	1.890397	8.679622	5.781462	5.935572	4.70E-06
MT2869	3.677577	9.455537	7.236087	10.8274	1.12E-07	MT2624	1.825854	9.682897	5.781408	5.935391	4.70E-06
MT4040.1	-2.61688	9.496923	-7.23323	10.81781	1.12E-07	MT3721	-1.71807	9.640346	-5.78109	5.934334	4.70E-06
MT0299	2.69813	9.547729	7.232793	10.81634	1.12E-07	MT1948	1.736763	9.163777	5.780484	5.932308	4.70E-06
MT0379	-2.14247	9.64125	-7.21845	10.76821	1.17E-07	MT3541	1.924419	9.757073	5.78039	5.931995	4.70E-06
MT1936	-1.98655	9.372378	-7.20675	10.72892	1.21E-07	MT1069	1.82568	8.763882	5.78017	5.931259	4.70E-06
MT0654	2.173438	8.413624	7.205771	10.72563	1.21E-07	MT2340	-1.9011	9.091698	-5.77901	5.927379	4.71E-06
MT1838	2.56311	10.06742	7.203322	10.71741	1.21E-07	MT3821	-1.69811	9.158617	-5.77693	5.920437	4.74E-06
MT2080	-2.02862	9.237996	-7.18759	10.66456	1.27E-07	MT1168	1.817111	9.795454	5.776252	5.918178	4.74E-06
MT2912	2.240568	8.740285	7.178144	10.63285	1.30E-07	MT1930	-1.49689	9.673593	-5.77021	5.898012	4.83E-06
MT2168	-2.10013	9.397354	-7.17682	10.62839	1.30E-07	MT3752	2.504663	8.544877	5.768016	5.890682	4.86E-06
MT0893	2.57572	9.294581	7.167979	10.5987	1.33E-07	MT0740	-1.38459	9.628905	-5.76627	5.884848	4.88E-06
MT1317	2.40406	9.419164	7.166674	10.59432	1.33E-07	MT1070	-1.54431	9.151664	-5.76409	5.877587	4.91E-06
MT1866	2.6817	9.383315	7.159853	10.5714	1.35E-07	MT3505	-1.75262	9.005163	-5.75914	5.861055	4.98E-06
MT0793	-2.17585	9.516818	-7.1495	10.53662	1.39E-07	MT2138.1	-1.69392	9.198974	-5.7586	5.859267	4.98E-06
MT0713	-2.36716	9.474579	-7.1367	10.49361	1.45E-07	MT0904	2.094416	9.079427	5.754817	5.846629	5.04E-06
MT1966	-2.12995	9.765657	-7.1272	10.46169	1.49E-07	MT1925	-2.02114	9.085183	-5.75237	5.838472	5.07E-06
MT1957	-1.72592	9.62515	-7.11403	10.41741	1.55E-07	MT0037	-1.29383	9.458443	-5.74996	5.830432	5.10E-06
MT1075.1	-3.18709	10.51118	-7.10025	10.3711	1.61E-07	MT2913	2.253625	9.24685	5.744775	5.813124	5.19E-06
MT0558	2.738152	9.248889	7.098903	10.36656	1.61E-07	MT3970	-1.89904	9.630347	-5.74284	5.80667	5.21E-06
MT3697	3.026099	9.56015	7.086949	10.32637	1.66E-07	MT3449	1.786877	8.703564	5.738333	5.791634	5.28E-06
MT1498	2.436787	8.682064	7.085593	10.32181	1.66E-07	MT3278	-1.53559	9.433517	-5.73811	5.790877	5.28E-06
MT1025	1.964508	9.076375	7.077626	10.29502	1.70E-07	MT2736.1	2.085536	8.588684	5.736275	5.784769	5.30E-06
MT3387	2.142983	9.485405	7.066811	10.25865	1.75E-07	MT3052.1	1.924183	9.483295	5.735346	5.781672	5.30E-06
MT2374	-1.89396	9.981951	-7.06542	10.25399	1.75E-07	MT1454	-1.40128	9.274675	-5.73525	5.781338	5.30E-06
MT3972.1	-2.04765	9.539993	-7.05892	10.23211	1.78E-07	MT3507	-1.34056	9.655102	-5.73195	5.770345	5.35E-06
MT1236	-2.37238	9.488434	-7.05735	10.22683	1.78E-07	MT3006	-1.67409	9.552429	-5.73091	5.766874	5.36E-06
MT3279	-2.56183	9.47761	-7.05605	10.22246	1.78E-07	MT1033	2.684717	8.24269	5.729562	5.762379	5.37E-06
MT1728	2.47393	9.165254	7.037241	10.15919	1.88E-07	MT0720	-1.56691	9.504953	-5.7293	5.761492	5.37E-06
MT0208	-2.56764	9.693589	-7.03233	10.14266	1.90E-07	MT3160	2.041789	9.027109	5.725125	5.747584	5.44E-06
MT0962	-2.28318	9.945139	-7.03115	10.13869	1.90E-07	MT3291	1.999958	8.947635	5.720815	5.733214	5.50E-06
MT2935	2.378888	10.25278	7.017487	10.09274	1.98E-07	MT2952	1.978278	9.009831	5.720719	5.732894	5.50E-06
MT3055	2.669187	9.01272	7.014856	10.08388	1.99E-07	MT1088	-1.61341	8.970728	-5.72016	5.73103	5.50E-06
MT2857	-1.66621	9.394488	-7.01002	10.06761	2.01E-07	MT3937	2.573451	9.057041	5.719859	5.730026	5.50E-06
MT3027	-1.56216	9.263971	-7.00626	10.05497	2.01E-07	MT3573.14	2.140906	8.405537	5.719573	5.729072	5.50E-06
MT2249	-2.10115	9.155391	-7.00468	10.04964	2.01E-07	MT2247	1.732519	8.834249	5.714174	5.711074	5.59E-06
MT0328.1	3.205135	8.906909	7.004266	10.04825	2.01E-07	MT3193	-1.97468	9.437983	-5.71376	5.709685	5.59E-06
MT2903	2.064862	9.28207	7.002671	10.04288	2.01E-07	MT3542	2.24674	8.437932	5.711641	5.702631	5.61E-06
MT2136	-1.66432	9.343413	-7.00192	10.04037	2.01E-07	MT1327	2.151771	9.403327	5.711109	5.700858	5.61E-06
MT4005	1.88586	9.016342	6.997936	10.02695	2.03E-07	MT1604	-1.80355	9.123485	-5.71096	5.700355	5.61E-06
MT3908	-1.78131	9.33164	-6.99278	10.00959	2.05E-07	MT2001	-1.20451	9.602086	-5.70998	5.697087	5.62E-06
MT2990	2.767512	9.928113	6.990833	10.00304	2.05E-07	MT2784	1.994086	9.0023	5.70394	5.676962	5.73E-06
MT0072	-1.91895	9.376709	-6.97344	9.944506	2.16E-07	MT3822	-1.54586	9.224056	-5.70215	5.670987	5.75E-06
MT2853	-1.50756	9.281666	-6.97288	9.942613	2.16E-07	MT2614	2.238217	8.564832	5.697175	5.654421	5.84E-06
MT2948	-2.06513	9.454138	-6.9615	9.904326	2.24E-07	MT3715	-1.98801	9.25549	-5.69493	5.646938	5.88E-06
MT1273	-1.98332	9.42067	-6.95471	9.881469	2.28E-07	MT1782	1.598417	9.161567	5.694487	5.645465	5.88E-06
MT1229	3.017626	8.68847	6.951942	9.872136	2.29E-07	MT1135	-1.76427	9.444983	-5.69244	5.638634	5.91E-06
MT3212	-1.85675	9.152279	-6.94881	9.861578	2.30E-07	MT0614	1.842442	9.693334	5.681815	5.603251	6.12E-06
MT2072	-1.88959	9.397433	-6.93928	9.829513	2.36E-07	MT2533	2.064246	9.300724	5.674781	5.579827	6.26E-06
MT1123	2.220506	8.901078	6.934351	9.812913	2.39E-07	MT2412	-1.78099	10.30479	-5.6663	5.551577	6.43E-06
MT0261	-2.04025	9.366157	-6.93107	9.801861	2.41E-07	MT0814	-1.51346	9.230516	-5.66495	5.547092	6.45E-06
MT1600	1.974376	9.309388	6.92659	9.786782	2.43E-07	MT1337	-1.7277	9.017415	-5.66305	5.540754	6.46E-06
MT3247	1.897362	9.152965	6.91837	9.759104	2.49E-07	MT3627	-1.29472	9.36239	-5.66303	5.540702	6.46E-06
MT0109	-2.48169	9.490837	-6.91362	9.743125	2.52E-07	MT2292	1.668955	8.734682	5.662507	5.538963	6.46E-06
MT0934	-1.85945	9.424127	-6.9083	9.725187	2.55E-07	MT3961	-1.5981	10.21144	-5.66233	5.538358	6.46E-06
MT0990	-1.72239	9.165786	-6.90737	9.722065	2.55E-07	MT0915	-1.22686	9.496648	-5.66097	5.53385	6.48E-06
MT2543	1.995314	9.653773	6.904314	9.71177	2.56E-07	MT3139	-1.66817	9.21477	-5.66017	5.531187	6.49E-06

MT2370	-2.21127	8.989007	-6.90084	9.700065	2.56E-07	MT2984	1.686113	9.036345	5.659691	5.52959	6.49E-06
MT3637	1.762055	9.194167	6.90027	9.698153	2.56E-07	MT2960	1.860769	10.05236	5.659226	5.528041	6.49E-06
MT2530	-1.57805	9.420529	-6.90023	9.698034	2.56E-07	MT1715	-1.5214	8.822779	-5.65787	5.523545	6.51E-06
MT2150	2.434683	9.559801	6.898872	9.693445	2.56E-07	MT1690	1.835296	8.991421	5.648108	5.491043	6.72E-06
MT0534	2.128041	9.539875	6.895347	9.681573	2.58E-07	MT0302	1.792899	9.897228	5.647528	5.489112	6.72E-06
MT1297.1	2.445518	9.111971	6.890971	9.666835	2.60E-07	MT2347	-1.31347	9.771799	-5.64522	5.481426	6.76E-06
MT3803	2.806375	8.714269	6.886315	9.651154	2.62E-07	MT1290	-1.39146	9.054044	-5.64057	5.465954	6.86E-06
MT0320	2.461047	8.694073	6.885925	9.649842	2.62E-07	MT2596	-1.45899	9.288249	-5.63412	5.444506	7.00E-06
MT3428	-2.12236	9.200818	-6.8806	9.631913	2.66E-07	MT3914	1.332391	9.958564	5.633121	5.441185	7.01E-06
MT2884	-1.66216	9.62192	-6.86308	9.572899	2.81E-07	MT0329	1.996468	8.212085	5.631147	5.43462	7.05E-06
MT1032	2.700817	8.953792	6.856904	9.55209	2.85E-07	MT2545	-1.84804	9.56851	-5.63021	5.431499	7.06E-06
MT1787	2.299915	8.808608	6.856743	9.551547	2.85E-07	MT2437	2.448127	9.450717	5.628745	5.426633	7.08E-06
MT2334	-2.38738	9.39646	-6.84043	9.496583	3.00E-07	MT3147	1.903874	8.664046	5.62685	5.420331	7.12E-06
MT2906	1.873682	9.262911	6.838933	9.49155	3.00E-07	MT2795	-1.50831	9.751504	-5.62584	5.416978	7.12E-06
MT3663	2.437442	8.634216	6.836334	9.482792	3.01E-07	MT1961	-1.436	9.199066	-5.62565	5.416349	7.12E-06
MT1531	-1.93554	9.222482	-6.83158	9.466775	3.05E-07	MT0514	1.557279	8.762937	5.619327	5.395317	7.27E-06
MT2580	-1.74774	9.34011	-6.82609	9.44827	3.09E-07	MT2753	1.791533	9.242249	5.616292	5.385226	7.33E-06
MT2943	-1.81655	9.416399	-6.82064	9.429929	3.14E-07	MT0202	1.659093	8.672354	5.611435	5.369083	7.44E-06
MT1765	-2.26047	9.286991	-6.81595	9.414118	3.16E-07	MT3056	2.141187	8.863375	5.61009	5.364611	7.46E-06
MT0816	-1.99184	9.563236	-6.8153	9.41193	3.16E-07	MT0337	1.509327	9.974054	5.602534	5.339501	7.65E-06
MT1404	-2.33727	9.206192	-6.81063	9.396197	3.20E-07	MT2013	-1.29312	9.348536	-5.59681	5.320496	7.79E-06
MT0753	2.380324	9.670762	6.809159	9.391238	3.20E-07	MT1993	-1.50347	9.099822	-5.59094	5.300973	7.93E-06
MT3522	2.391566	9.10633	6.805445	9.378721	3.23E-07	MT2362	2.120521	8.818469	5.588395	5.292531	7.99E-06
MT0512	2.754162	8.689631	6.799894	9.360019	3.26E-07	MT0741	-1.5121	9.122072	-5.58753	5.289651	7.99E-06
MT0695	-2.18829	9.54669	-6.79978	9.359638	3.26E-07	MT0306	2.199362	8.766973	5.587346	5.289046	7.99E-06
MT0469	1.80369	8.79114	6.795943	9.346704	3.29E-07	MT3326	-1.40103	9.055386	-5.5862	5.285247	8.01E-06
MT0143	-1.76436	9.43657	-6.79427	9.341052	3.29E-07	MT1836	2.21348	9.720636	5.583649	5.276766	8.07E-06
MT2942	-1.76608	9.280611	-6.79351	9.338521	3.29E-07	MT0316	1.596816	8.724054	5.576368	5.252592	8.26E-06
MT0031	-2.15593	9.735758	-6.78507	9.310073	3.37E-07	MT1725	-1.84042	9.319246	-5.57421	5.245423	8.31E-06
MT0260	-1.69141	9.229524	-6.77406	9.272949	3.49E-07	MT2484	-1.28629	9.20517	-5.57189	5.237717	8.36E-06
MT3395	2.085196	9.002756	6.755356	9.209932	3.71E-07	MT3624	-1.54482	9.009448	-5.57094	5.234569	8.37E-06
MT0235	2.128448	9.510963	6.750896	9.1949	3.75E-07	MT2870	1.879859	9.141987	5.570108	5.231809	8.38E-06
MT3301	-1.67245	9.39229	-6.74075	9.160702	3.87E-07	MT0122	-1.49997	9.319715	-5.56745	5.222969	8.44E-06
MT1091	-1.69574	9.858938	-6.73789	9.151084	3.89E-07	MT0696	-1.47393	9.377935	-5.56537	5.216089	8.49E-06
MT1623	-2.16706	9.634642	-6.72725	9.115198	4.02E-07	MT2097	1.612354	9.582244	5.562226	5.205646	8.57E-06
MT0739	-1.61845	9.085043	-6.71945	9.088912	4.11E-07	MT2977	-1.88496	9.224354	-5.55846	5.193155	8.65E-06
MT3309	2.221463	9.696067	6.712778	9.066428	4.19E-07	MT0762	1.634138	10.22976	5.55844	5.193085	8.65E-06
MT2994	2.703499	9.361821	6.711818	9.063195	4.19E-07	MT2656	1.947881	9.052674	5.556315	5.186033	8.70E-06
MT0772.2	3.652147	8.725905	6.703121	9.033878	4.30E-07	MT3413	-1.70709	9.13212	-5.55324	5.175833	8.78E-06
MT2789	-1.89869	9.415823	-6.69976	9.022542	4.33E-07	MT2527	-1.47221	9.489828	-5.55244	5.173185	8.79E-06
MT0691	1.838506	8.883195	6.697192	9.013896	4.35E-07	MT1458	-1.38193	9.288106	-5.55194	5.171528	8.79E-06
MT1678	2.622166	9.726445	6.683424	8.967487	4.54E-07	MT0429	-1.4674	9.297038	-5.55141	5.169775	8.79E-06
MT2147	2.787909	9.328981	6.678627	8.951318	4.59E-07	MT3210	-1.93271	9.775101	-5.55077	5.16763	8.80E-06
MT0977	-1.84461	9.401807	-6.67767	8.948094	4.59E-07	MT4022	1.802461	9.386446	5.546792	5.154439	8.91E-06
MT3243	-1.8228	9.175893	-6.67646	8.944023	4.59E-07	MT3710	1.433927	9.031334	5.543038	5.141989	9.01E-06
MT1396	-2.08481	9.520627	-6.66709	8.912415	4.73E-07	MT2213	2.592223	9.045264	5.541681	5.137489	9.03E-06
MT2106	2.318061	9.677835	6.657597	8.880431	4.86E-07	MT3242	-1.34764	9.496049	-5.53867	5.127507	9.11E-06
MT0264	-2.30353	9.430642	-6.65604	8.875168	4.86E-07	MT3328	1.968222	8.93708	5.535172	5.115904	9.21E-06
MT2397	-1.89624	9.31357	-6.65532	8.872747	4.86E-07	MT1122	2.226771	9.808124	5.533246	5.109518	9.26E-06
MT0882	-1.84126	9.791201	-6.64775	8.84723	4.95E-07	MT0724.1	2.314126	9.17254	5.531329	5.103162	9.30E-06
MT1783	2.319442	8.868811	6.647446	8.846213	4.95E-07	MT2448	1.283109	9.001805	5.528892	5.095084	9.36E-06
MT3543	2.494892	9.486302	6.644364	8.835822	4.95E-07	MT1949	2.092181	9.502725	5.528643	5.094256	9.36E-06
MT0818	-1.98349	9.696616	-6.64405	8.834764	4.95E-07	MT3127	1.498351	9.416015	5.525532	5.083945	9.44E-06
MT0701	-1.9542	9.17057	-6.64356	8.833106	4.95E-07	MT2682	1.669193	8.977207	5.522428	5.073658	9.53E-06
MT3028	-1.8706	9.167876	-6.64316	8.831755	4.95E-07	MT3179	1.651316	9.116207	5.518043	5.059124	9.66E-06
MT3086	-1.84704	9.340812	-6.641	8.824497	4.97E-07	MT3191	-1.82558	9.557816	-5.51747	5.057219	9.66E-06
MT3666	2.572242	8.417146	6.636697	8.809979	5.03E-07	MT1931.1	-1.86316	9.217448	-5.51559	5.050997	9.71E-06
MT1085	-2.20033	9.308509	-6.63098	8.790699	5.11E-07	MT2959	1.622419	8.594503	5.513939	5.045525	9.75E-06
MT3903	-2.4941	9.567095	-6.62599	8.773877	5.15E-07	MT0332	-1.59607	8.943343	-5.50864	5.027974	9.91E-06
MT0464	-1.78193	9.527564	-6.62547	8.772138	5.15E-07	MT0972	-1.49843	9.089373	-5.49975	4.99852	1.02E-05
MT1557	-1.7569	9.321165	-6.62524	8.771356	5.15E-07	MT3945	2.011673	8.986208	5.497395	4.990725	1.03E-05
MT1907	1.980425	9.211846	6.617211	8.744293	5.26E-07	MT1826	-1.64178	9.614986	-5.49443	4.980917	1.04E-05
MT0155	-1.54161	9.043335	-6.61631	8.741269	5.26E-07	MT0396	1.71001	9.142233	5.490784	4.968836	1.05E-05
MT3621	2.184823	10.21096	6.61579	8.739501	5.26E-07	MT1585.1	1.92839	10.34485	5.490298	4.967227	1.05E-05
MT0605	2.746155	10.06038	6.610338	8.721125	5.34E-07	MT3743	-1.52108	9.447343	-5.48526	4.950547	1.06E-05
MT1616	-1.88208	9.610717	-6.59945	8.684424	5.52E-07	MT0187	-1.80225	9.328527	-5.48255	4.941564	1.07E-05
MT2855	-2.6749	9.372063	-6.59604	8.672923	5.57E-07	MT2109	1.753002	9.007728	5.480675	4.935375	1.08E-05
MT2559	1.859446	9.146938	6.59469	8.668375	5.57E-07	MT3534	1.967635	9.103519	5.478944	4.929644	1.08E-05
MT3974	2.05414	9.05503	6.592247	8.660141	5.60E-07	MT0919	-1.58733	9.490339	-5.46951	4.898434	1.12E-05
MT1879	-1.56736	9.311457	-6.58842	8.647233	5.63E-07	MT3325	2.230627	8.297534	5.469236	4.897522	1.12E-05
MT0141	2.097383	9.05657	6.587845	8.645301	5.63E-07	MT1056	-1.55022	9.200527	-5.46366	4.879081	1.14E-05
MT2593.2	-1.6461	9.894557	-6.58759	8.644444	5.63E-07	MT1251	1.800434	9.843177	5.463042	4.877035	1.14E-05
MT3022	-2.50087	9.978803	-6.57097	8.58842	5.94E-07	MT2499	2.016418	8.939679	5.45981	4.866344	1.15E-05
MT3539	2.421129	8.920769	6.566191	8.572308	6.02E-07	MT2841	2.709285	9.80826	5.459195	4.864313	1.15E-05
MT3767.2	-2.17953	9.472928	-6.5646	8.566938	6.03E-07	MT0519	1.729696	9.726406	5.453848	4.846631	1.17E-05
MT3506	-1.54455	9.299758	-6.56312	8.56194	6.04E-07	MT0805	-1.64047	9.514348	-5.45279	4.843149	1.17E-05
MT2166	-1.78708	9.512843	-6.56024	8.552235	6.06E-07	MT3897	-1.76235	9.912383	-5.4513	4.838198	1.17E-05
MT2940	2.023489	9.256139	6.559854	8.550948	6.06E-07	MT2907	1.525552	8.639524	5.444215	4.814785	1.20E-05
MT0293	2.653028	8.448316	6.557877	8.544282	6.06E-07	MT0836	-1.46149	9.135903	-5.44249	4.809095	1.21E-05
MT0772.5	2.71005	8.789369	6.557857	8.544216	6.06E-07	MT1722	-1.3727	9.187112	-5.43944	4.798994	1.22E-05
MT1096.2	2.268897	9.824459	6.553832	8.530649	6.11E-07	MT2609	-1.3937	8.905361	-5.43169	4.773405	1.25E-05
MT3523	2.145763	9.756478	6.553247	8.528676	6.11E-07	MT2834	-1.43655	9.32564	-5.42926	4.765378	1.26E-05
MT1917	-2.11177	8.954287	-6.54792	8.510722	6.19E-07	MT0669	-1.9306	9.142473	-5.42698	4.757851	1.26E-05
MT0921	2.187336	9.259171	6.547425	8.509051	6.19E-07	MT2757	1.931446	9.379626	5.425119	4.751694	1.27E-05
MT3112	2.329277	8.59384	6.543485	8.49577	6.26E-07	MT2662	2.297215	8.203145	5.424828	4.750733	1.27E-05
MT3633	1.693707	9.59865	6.536405	8.471907	6.39E-07	MT1277	1.373132	8.874345	5.420961	4.737961	1.28E-05
MT2242	-1.69809	9.548767	-6.52768	8.442481	6.52E-07	MT2780	-1.21848	8.775598	-5.41983	4.734227	1.29E-05
MT0830	1.953899	9.340833	6.527347	8.441376	6.52E-07	MT2535	-1.29428	9.352164	-5.41972	4.733866	1.29E-05
MT3380	-2.5238	10.03848	-6.52731	8.441251	6.52E-07	MT0702	1.989582	8.868446	5.417531	4.726633	1.29E-05
MT1561	-2.15177	9.571069	-6.52653	8.438629	6.52E-07	MT0599	-1.56688	9.119528	-5.41149	4.706689	1.32E-05
MT1874	-1.67929	9.175658	-6.52459	8.432083	6.54E-07	MT1997	-1.69746	9.561208	-5.41132	4.706113	1.32E-05
MT2057	-2.04158	9.437021	-6.51701	8.406516	6.69E-07	MT1320	-1.38264	9.50843	-5.40837	4.696389	1.33E-05
MT2700	2.575703	9.848664	6.513842	8.395856	6.74E-07	MT1959	-1.62078	9.238997	-5.39624	4.656361	1.38E-05
MT1881	-1.59573	9.432834	-6.49983	8.348616	7.05E-07	MT1482	-1.59882	9.076516	-5.39416	4.649501	1.39E-05
MT0405	2.165298	9.151958	6.495395	8.33368	7.14E-07	MT3756.1	2.074057	8.714187	5.390235	4.636552	1.41E-05
MT3486	-1.98372	10.03075	-6.49041	8.316884	7.24E-07	MT2887	-1.72864	9.235375	-5.38857	4.631076	1.41E-05
MT2005	-1.98287	9.484561	-6.47861	8.277107	7.52E-07	MT1683	-1.41759	9.154545	-5.38344	4.614157	1.44E-05
MT2237	-1.66217	9.517409	-6.47268	8.257121	7.65E-07	MT2837	2.083974	9.732092	5.383348	4.613839	1.44E-05

MT3645	-1.65358	9.531931	-6.46588	8.234201	7.80E-07	MT1407	-1.73101	9.03604	-5.3807	4.605102	1.44E-05
MT2974	-1.94464	9.873931	-6.46331	8.225554	7.85E-07	MT1566	-1.42253	9.16186	-5.38001	4.602827	1.44E-05
MT1867	-1.79191	9.590973	-6.46033	8.215511	7.89E-07	MT0657	2.141873	9.578778	5.379563	4.601359	1.44E-05
MT3572	-2.04267	9.597767	-6.45974	8.213502	7.89E-07	MT2425	1.969281	8.588735	5.379537	4.601273	1.44E-05
MT1431	2.072622	8.646699	6.453549	8.192652	8.04E-07	MT0133	1.60948	8.989529	5.379429	4.600918	1.44E-05
MT1882	-1.61764	9.411739	-6.44959	8.179306	8.12E-07	MT3286	-1.81973	8.928852	-5.37921	4.600207	1.44E-05
MT1073	2.943117	9.396241	6.444248	8.161311	8.25E-07	MT1343	-1.61819	10.27848	-5.37811	4.596568	1.45E-05
MT0093	2.742298	9.271597	6.441438	8.151841	8.27E-07	MT0184	1.649182	9.671332	5.374887	4.585943	1.46E-05
MT1553	-1.9278	9.508365	-6.4414	8.151713	8.27E-07	MT0718	1.910953	9.405892	5.369963	4.569714	1.48E-05
MT2100	-2.0865	10.34238	-6.43949	8.145274	8.30E-07	MT1952	2.041696	8.849538	5.35919	4.534217	1.54E-05
MT1014	-2.31392	9.551717	-6.43641	8.134898	8.36E-07	MT1495	-1.32429	9.164318	-5.35513	4.52083	1.56E-05
MT1991	2.098562	9.244678	6.423503	8.091409	8.70E-07	MT3166	1.929788	9.677956	5.35249	4.512147	1.57E-05
MT2871	2.656264	9.315626	6.423186	8.090338	8.70E-07	MT1039	-1.43679	8.837604	-5.35011	4.504304	1.58E-05
MT2217	2.145679	8.513244	6.419661	8.078463	8.78E-07	MT0247	2.131963	8.447274	5.349376	4.501893	1.58E-05
MT0741.1	-2.13731	9.436241	-6.41838	8.074157	8.79E-07	MT1485	1.753662	8.976768	5.345774	4.490032	1.59E-05
MT3708	2.809227	9.115935	6.412952	8.055857	8.93E-07	MT2103	-1.52589	9.365603	-5.34526	4.488353	1.59E-05
MT0981	2.024034	9.344489	6.409977	8.045833	8.99E-07	MT0481	-1.3507	9.092403	-5.34526	4.488344	1.59E-05
MT1896	1.96616	10.07264	6.407458	8.037346	9.04E-07	MT0670	-1.7798	9.232554	-5.34458	4.486102	1.60E-05
MT3591	-1.85374	9.514055	-6.40648	8.034069	9.04E-07	MT2979	1.582715	9.021326	5.342788	4.480199	1.60E-05
MT3124	2.033864	9.414473	6.381385	7.949509	9.84E-07	MT1438	1.800197	9.752178	5.341915	4.477326	1.60E-05
MT0139	-1.58829	9.293135	-6.37677	7.933957	9.94E-07	MT1934	-1.66021	9.405179	-5.34189	4.477232	1.60E-05
MT1061	-1.63256	9.368891	-6.37619	7.931997	9.94E-07	MT3932	-1.57729	9.184328	-5.33819	4.46505	1.62E-05
MT0323	-1.8361	9.179795	-6.37569	7.930333	9.94E-07	MT2676	-1.332	9.26722	-5.33214	4.445144	1.65E-05
MT3860	1.858272	9.694792	6.369256	7.908653	1.01E-06	MT4040	-1.81454	10.26564	-5.33122	4.442116	1.66E-05
MT3025	-1.99311	9.817972	-6.36729	7.902044	1.02E-06	MT1886	-1.68713	8.906619	-5.33008	4.438364	1.66E-05
MT3231	2.012277	9.142072	6.363958	7.890806	1.03E-06	MT0751	-1.46001	9.421824	-5.32904	4.434957	1.66E-05
MT0040	-1.5016	9.313995	-6.36074	7.879958	1.03E-06	MT0082	-1.53617	9.169514	-5.32606	4.425157	1.68E-05
MT1511	1.693386	10.07881	6.352607	7.852574	1.06E-06	MT2881	-2.14197	9.361571	-5.32223	4.412534	1.70E-05
MT1988	3.015601	9.079643	6.343698	7.822569	1.09E-06	MT2657	1.589765	8.73796	5.315622	4.390814	1.73E-05
MT3362	-1.88346	9.55469	-6.34233	7.817971	1.09E-06	MT0213	-1.28527	9.170965	-5.31311	4.38254	1.75E-05
MT2594	2.54373	9.893369	6.338333	7.804501	1.10E-06	MT0755	1.675987	8.592286	5.30822	4.366478	1.77E-05
MT2196	-1.7617	9.436217	-6.33776	7.802581	1.10E-06	MT0822	-1.33176	9.409681	-5.30711	4.362831	1.78E-05
MT3043	-1.80963	9.20942	-6.33546	7.794809	1.11E-06	MT1760	-1.5438	9.023965	-5.30404	4.352725	1.79E-05
MT0776	2.03568	9.086138	6.334656	7.792117	1.11E-06	MT3460	1.737762	9.427391	5.30291	4.349022	1.80E-05
MT0498	2.909724	8.507177	6.33077	7.77903	1.12E-06	MT0482	-1.25597	9.236822	-5.29811	4.333257	1.83E-05
MT3487	-1.87197	9.558185	-6.32382	7.755637	1.14E-06	MT3137	-1.60159	9.316023	-5.29031	4.307634	1.87E-05
MT2542	1.536886	9.889274	6.314584	7.724526	1.17E-06	MT0817	-1.3014	9.065147	-5.28666	4.295623	1.89E-05
MT1440	2.394973	9.271248	6.314396	7.723894	1.17E-06	MT1474	1.596461	8.469146	5.279755	4.272959	1.94E-05
MT2961	3.039208	9.196602	6.312667	7.718073	1.18E-06	MT2805	1.986022	9.345105	5.278754	4.269672	1.94E-05
MT4033	-1.67139	9.655424	-6.30874	7.704858	1.19E-06	MT0112	-1.51807	9.938527	-5.27585	4.260152	1.96E-05
MT3171	2.151717	9.048424	6.305026	7.692343	1.20E-06	MT3614	1.859304	8.798553	5.274349	4.255211	1.96E-05
MT0802	2.275939	9.945589	6.304236	7.689686	1.20E-06	MT2741	1.968632	8.78381	5.273478	4.252349	1.97E-05
MT2582	-1.9142	9.683681	-6.30361	7.687579	1.20E-06	MT3390	1.691121	9.12797	5.269153	4.238155	1.99E-05
MT3925.1	3.532035	9.152851	6.298203	7.669372	1.22E-06	MT0587	1.804941	9.718723	5.268082	4.234639	2.00E-05
MT0003	-2.07844	10.04218	-6.29587	7.661517	1.23E-06	MT2620	-1.65666	9.425735	-5.26582	4.227218	2.01E-05
MT2914	2.515548	8.846026	6.292659	7.650707	1.24E-06	MT1118	1.636138	9.034446	5.263718	4.220322	2.02E-05
MT1551	-1.74026	9.417601	-6.2921	7.648826	1.24E-06	MT1397	-2.21844	9.431319	-5.26325	4.218786	2.02E-05
MT2587	-2.40768	9.146283	-6.28316	7.618746	1.27E-06	MT2718	-1.35559	9.375357	-5.2614	4.212728	2.03E-05
MT3187	-1.60139	9.327004	-6.27758	7.599947	1.29E-06	MT3315	-1.50694	9.092893	-5.26044	4.209581	2.04E-05
MT3142	-1.54949	9.547956	-6.27094	7.577604	1.32E-06	MT0018	2.00238	8.227373	5.25997	4.208023	2.04E-05
MT0036	-2.17927	9.606817	-6.26959	7.573037	1.32E-06	MT2537	-1.27591	9.531347	-5.25741	4.199625	2.05E-05
MT0176	-1.70635	9.427849	-6.26861	7.569751	1.32E-06	MT2019	1.812924	9.310324	5.256028	4.195092	2.06E-05
MT1607	-1.57296	9.133724	-6.26739	7.565635	1.32E-06	MT2201	-1.30462	9.23266	-5.25501	4.19176	2.06E-05
MT3862	1.95991	9.83799	6.260608	7.542821	1.35E-06	MT1532	-1.379	9.142025	-5.25443	4.189854	2.06E-05
MT3105	1.985022	8.72085	6.258697	7.536389	1.36E-06	MT0874	1.582715	9.450017	5.254145	4.188916	2.06E-05
MT0467	-2.24727	9.382901	-6.25405	7.520748	1.37E-06	MT1912	1.838981	9.399777	5.252326	4.182952	2.07E-05
MT2101	-1.58034	9.155003	-6.25238	7.515119	1.38E-06	MT1394	-1.56753	9.267666	-5.25152	4.180304	2.07E-05
MT1437	1.822782	9.968772	6.251381	7.511769	1.38E-06	MT3664	1.824897	9.197362	5.251349	4.179747	2.07E-05
MT0595	2.418617	8.983919	6.244368	7.488168	1.41E-06	MT0107	-1.41703	9.515298	-5.25124	4.179383	2.07E-05
MT3128	-1.8762	9.728538	-6.23873	7.469195	1.43E-06	MT3967	-1.5317	9.269739	-5.24651	4.163877	2.10E-05
MT3060	2.050466	8.672405	6.235835	7.459453	1.44E-06	MT1198	1.88065	8.820565	5.246037	4.16233	2.10E-05
MT2144	1.437936	9.107319	6.230412	7.441208	1.46E-06	MT0562	1.7205	10.01679	5.238994	4.139245	2.15E-05
MT1153	-1.66807	9.252178	-6.2299	7.439481	1.46E-06	MT3907	1.6425	8.865965	5.238744	4.138423	2.15E-05
MT3797	-1.98218	9.74791	-6.22609	7.426667	1.48E-06	MT3048	1.590498	8.982922	5.23596	4.129301	2.17E-05
MT2648	1.828383	9.768911	6.224122	7.420043	1.49E-06	MT0843	1.40332	9.193172	5.235025	4.126236	2.17E-05
MT3947	2.597458	9.290751	6.222642	7.415066	1.49E-06	MT0245	-1.81423	9.299891	-5.23468	4.125097	2.17E-05
MT1490	-1.62355	9.512133	-6.21288	7.382226	1.54E-06	MT0995	1.547613	9.64086	5.226816	4.099343	2.23E-05
MT0240	-1.81379	9.33885	-6.21037	7.373785	1.55E-06	MT3649	-1.58419	9.846567	-5.22571	4.095713	2.23E-05
MT2071	-1.51426	9.689223	-6.2078	7.365125	1.55E-06	MT2527.1	-1.26128	9.709726	-5.21406	4.057584	2.32E-05
MT3461	1.736149	9.659258	6.206354	7.360271	1.56E-06	MT2370.3	-1.24061	9.032003	-5.21135	4.048701	2.34E-05
MT1200	2.172864	9.327868	6.198655	7.334373	1.60E-06	MT0395	2.376977	8.483645	5.210809	4.046929	2.34E-05
MT0936	-1.5559	9.30155	-6.19221	7.312697	1.62E-06	MT3804	2.174976	10.21281	5.208988	4.04097	2.35E-05
MT0185	-1.98449	10.1918	-6.19212	7.312379	1.62E-06	MT2846	1.476196	9.491542	5.208264	4.038599	2.35E-05
MT2674.1	-2.0281	9.320586	-6.18917	7.302463	1.64E-06	MT0348	-1.3694	9.224241	-5.20671	4.033525	2.36E-05
MT3208	-2.05932	9.234001	-6.18505	7.288615	1.65E-06	MT1410	-1.16626	9.226189	-5.20483	4.027367	2.37E-05
MT1139	-1.75011	9.374769	-6.18436	7.286304	1.65E-06	MT0125.1	-1.76097	9.376571	-5.19973	4.010674	2.41E-05
MT2991	2.359502	8.699066	6.183416	7.283122	1.66E-06	MT2637.1	-1.45939	8.876109	-5.19915	4.008763	2.41E-05
MT2422	1.852975	9.818115	6.179484	7.2699	1.67E-06	MT2030	1.339793	9.737517	5.195899	3.998144	2.44E-05
MT2815	-1.53802	9.162004	-6.17548	7.25643	1.69E-06	MT3518	1.492149	9.026712	5.194168	3.992481	2.45E-05
MT1134	-1.78405	9.280961	-6.17179	7.244039	1.71E-06	MT2286	-1.36041	8.918927	-5.19335	3.989809	2.45E-05
MT3767.3	-1.81999	9.609612	-6.16335	7.215643	1.76E-06	MT0727	-1.55482	8.816001	-5.19225	3.986195	2.46E-05
MT1999	-1.8565	9.092767	-6.15578	7.19021	1.80E-06	MT3829	-1.32115	8.837178	-5.19164	3.984206	2.46E-05
MT2158	1.863851	8.876391	6.151802	7.176825	1.82E-06	MT2803	1.392805	8.53515	5.190437	3.980279	2.47E-05
MT1024	1.6255	9.411713	6.150257	7.171633	1.82E-06	MT2916	2.134368	8.660923	5.181901	3.952373	2.54E-05
MT1441	1.934741	8.986492	6.149472	7.168993	1.82E-06	MT0525	-1.73833	9.149197	-5.1807	3.948442	2.54E-05
MT2866	1.92937	9.690681	6.146854	7.160191	1.84E-06	MT1460	1.407955	9.338536	5.18048	3.947727	2.54E-05
MT1596.1	1.77343	8.867065	6.137147	7.127563	1.89E-06	MT3767.1	2.018065	9.532966	5.179974	3.946075	2.54E-05
MT0228	1.797984	9.420687	6.134986	7.120302	1.90E-06	MT2781	2.039899	9.004156	5.179913	3.945874	2.54E-05
MT0564	2.497485	8.478066	6.132796	7.112942	1.91E-06	MT3364	-1.49508	8.786861	-5.1774	3.937658	2.56E-05
MT1753	2.181316	8.691936	6.128493	7.098478	1.93E-06	MT1360	-2.23713	9.870626	-5.17172	3.9191	2.60E-05
MT3103	1.854657	9.507762	5.097076	3.675683	3.24E-05	MT3755	1.306352	8.480806	5.160468	3.882349	2.70E-05
MT2734	1.471267	8.778286	5.094647	3.667777	3.26E-05	MT3358	-1.60387	9.16086	-5.15711	3.871392	2.73E-05
MT1042	-1.62247	9.199015	-5.08365	3.632004	3.38E-05	MT0349	1.881289	9.45258	5.156815	3.870425	2.73E-05
MT3826	-1.45439	9.594639	-5.08294	3.62968	3.38E-05	MT0885	2.58168	9.088243	5.151726	3.85381	2.77E-05
MT2471	1.817787	9.526694	5.082076	3.626878	3.39E-05	MT0363	-1.23367	9.058378	-5.15125	3.852266	2.77E-05
MT3590	-1.50606	9.902977	-5.08098	3.623307	3.40E-05	MT3517	1.758773	9.099467	5.151022	3.851514	2.77E-05
MT0084	1.566171	9.998427	5.07864	3.615705	3.42E-05	MT1365	1.523371	9.476133	5.149168	3.845463	2.79E-05
MT2879	1.704045	9.132895	5.077008	3.610399	3.43E-05	MT1839.1	1.990482	8.832751	5.140853	3.818331	2.86E-05

MT0459	-1.52994	9.56339	-5.076	3.607135	3.44E-05	MT2964	1.676443	8.973037	5.140507	3.817203	2.86E-05
MT1106	-1.68348	9.092387	-5.07451	3.602271	3.45E-05	MT1157.1	1.870527	10.09228	5.139221	3.813007	2.87E-05
MT3874	-1.20363	9.571285	-5.07445	3.602073	3.45E-05	MT3009	-1.53423	9.318067	-5.13635	3.803656	2.89E-05
MT1548	2.303076	9.253878	5.074279	3.601526	3.45E-05	MT2951	1.818861	9.408992	5.135562	3.801073	2.90E-05
MT3442	1.628749	9.584389	5.073655	3.599499	3.45E-05	MT3799	-1.62836	9.153528	-5.13496	3.799116	2.90E-05
MT0030.1	1.434415	9.443685	5.072617	3.596122	3.45E-05	MT2615	2.240651	8.287572	5.134234	3.796743	2.90E-05
MT3707	1.764592	8.889037	5.072423	3.595493	3.45E-05	MT0311	1.802988	9.058019	5.134151	3.796474	2.90E-05
MT1183	-1.82386	9.640121	-5.07235	3.595239	3.45E-05	MT1272	-1.66197	9.284623	-5.13335	3.793847	2.91E-05
MT2014	1.959124	9.449789	5.07157	3.592721	3.46E-05	MT2740	-1.79288	9.55233	-5.13278	3.791993	2.91E-05
MT3651	-1.25774	9.098473	-5.06945	3.58582	3.48E-05	MT0428	2.333758	9.160942	5.127205	3.773827	2.96E-05
MT1660	-1.48428	9.749383	-5.06441	3.569437	3.53E-05	MT3220.2	1.584632	8.721331	5.120089	3.750631	3.03E-05
MT0959	1.35939	8.998999	5.063587	3.566775	3.54E-05	MT3450	-1.32552	9.463047	-5.11599	3.737261	3.07E-05
MT2828	1.619772	9.226607	5.062129	3.56204	3.55E-05	MT3865	1.520356	9.415171	5.112569	3.726132	3.10E-05
MT1844	1.598932	9.391503	5.061504	3.560007	3.56E-05	MT0389	1.657407	8.942489	5.109297	3.715473	3.13E-05
MT2190	-1.34922	9.007577	-5.05978	3.554396	3.57E-05	MT0173	-1.62278	8.760685	-5.10844	3.712674	3.13E-05
MT3580	1.599579	9.088512	5.056799	3.544726	3.60E-05	MT1556.1	1.549664	9.978553	5.106877	3.707592	3.15E-05
MT3766	-1.30616	9.663672	-5.05519	3.539509	3.62E-05	MT0620	1.614005	8.871509	5.106026	3.704821	3.15E-05
MT0570	-1.60897	8.875937	-5.05484	3.538351	3.62E-05	MT2728	1.985155	10.00468	5.102932	3.694747	3.18E-05
MT3612.1	1.833019	9.428122	5.053687	3.534618	3.63E-05	MT3689	-1.35098	9.202846	-5.10104	3.688594	3.20E-05
MT0038	-1.4504	9.159507	-5.05336	3.533562	3.63E-05	MT3686	1.103492	9.421485	4.337303	1.262666	0.000265
MT3605	-1.22801	9.661339	-5.05184	3.528627	3.64E-05	MT3042	-1.77554	9.404579	-4.33561	1.257464	0.000266
MT2958	1.560961	8.987993	5.043883	3.502789	3.74E-05	MT3536	1.258697	9.278482	4.33356	1.251134	0.000268
MT0896	1.977809	9.544315	5.034643	3.472805	3.85E-05	MT4024	1.201573	9.234508	4.330807	1.242654	0.00027
MT1558	-1.51779	9.224583	-5.02692	3.447766	3.94E-05	MT3895	-1.21225	8.963534	-4.32755	1.232615	0.000272
MT2390	-2.07504	9.043956	-5.02671	3.447082	3.94E-05	MT1940	1.288953	10.38567	4.325814	1.22728	0.000274
MT0378	-1.93309	9.698695	-5.02516	3.442067	3.96E-05	MT2381	-1.5371	9.202753	-4.32558	1.226558	0.000274
MT0585	-1.35937	9.010491	-5.0227	3.434064	3.99E-05	MT0392	-1.22252	9.004664	-4.32476	1.224047	0.000274
MT3639	1.679518	9.26724	5.021596	3.430498	4.00E-05	MT1590	-1.44741	9.234468	-4.31916	1.206806	0.000279
MT1463	1.494496	9.01988	5.017343	3.416712	4.05E-05	MT2062	-1.41234	9.219108	-4.31796	1.203122	0.00028
MT3329	-1.39572	8.425325	-5.01449	3.407462	4.09E-05	MT2808.1	1.685764	8.582509	4.317906	1.202948	0.00028
MT2890	-1.61515	9.237265	-5.01262	3.401419	4.10E-05	MT3654	1.495877	8.667111	4.317728	1.202402	0.00028
MT0223	-1.35224	9.207638	-5.01229	3.400324	4.10E-05	MT4034	1.350362	9.228426	4.317035	1.200269	0.00028
MT2699	-1.28867	9.300134	-5.01217	3.399953	4.10E-05	MT2882	-1.18119	9.912147	-4.31503	1.194106	0.000281
MT3743.1	-1.07261	9.165014	-5.01164	3.39823	4.10E-05	MT1204	-1.16232	9.319799	-4.3141	1.191245	0.000282
MT1998.1	-1.38055	9.492966	-5.01116	3.396668	4.10E-05	MT0277	-1.09497	9.200233	-4.31275	1.18709	0.000283
MT3400	-1.67436	8.890582	-5.01111	3.396511	4.10E-05	MT2082	-0.94673	9.37158	-4.31105	1.181861	0.000284
MT1637	-1.44058	8.784272	-5.00978	3.392216	4.12E-05	MT0946	-1.43062	10.03071	-4.3107	1.180787	0.000284
MT1786	1.766379	8.887999	5.006348	3.381089	4.16E-05	MT0101	-1.3913	9.543659	-4.31058	1.180422	0.000284
MT3014	-1.24175	9.097885	-5.00531	3.377719	4.17E-05	MT1359	-1.36134	9.473032	-4.30502	1.163344	0.000289
MT0090	1.625102	9.570457	5.00301	3.370277	4.20E-05	MT1266	-1.28343	9.027472	-4.30256	1.155771	0.000291
MT1457	1.379708	8.927974	4.998524	3.355753	4.26E-05	MT2411	-1.38764	9.971487	-4.30202	1.154115	0.000292
MT1635	1.979249	9.377812	4.996702	3.349853	4.28E-05	MT3796	-1.25311	9.316317	-4.30121	1.151628	0.000292
MT1668	-1.93539	9.237268	-4.99536	3.345515	4.29E-05	MT1218	-1.36807	9.287108	-4.29978	1.147232	0.000293
MT1858	1.243542	9.606304	4.990393	3.329432	4.36E-05	MT1255	1.238006	8.882355	4.2938	1.128888	0.000299
MT2802.1	1.67774	9.287343	4.986696	3.317471	4.41E-05	MT2211	1.945878	8.974773	4.293491	1.12794	0.000299
MT3220	-1.71909	9.444753	-4.98533	3.313063	4.42E-05	MT0286	-1.17655	9.354155	-4.28374	1.098019	0.000308
MT1465	1.824948	8.997057	4.982116	3.302657	4.47E-05	MT3531	1.843447	8.552185	4.281996	1.092687	0.00031
MT1374	-1.43012	9.210982	-4.9801	3.296131	4.49E-05	MT3561	-1.48898	9.590693	-4.27989	1.086241	0.000311
MT3690	-1.1556	9.360576	-4.98001	3.295846	4.49E-05	MT0328	2.010656	8.289215	4.279594	1.085325	0.000311
MT3183	-1.23957	9.300554	-4.97877	3.29183	4.50E-05	MT3665	1.665654	8.138025	4.279353	1.084588	0.000311
MT1943	-1.5008	8.986099	-4.97696	3.285995	4.51E-05	MT0880	-1.19989	8.775828	-4.2783	1.081352	0.000312
MT2488.1	1.719931	8.940421	4.976888	3.285748	4.51E-05	MT0116.1	1.442089	8.460801	4.277739	1.07964	0.000313
MT3504	1.511481	8.927785	4.976774	3.285379	4.51E-05	MT0409	1.198434	9.008374	4.276424	1.075613	0.000314
MT0668	1.683563	9.494354	4.976326	3.283931	4.52E-05	MT1865	-1.07492	8.326281	-4.27564	1.07321	0.000314
MT0726	-1.47299	9.501855	-4.9716	3.268637	4.58E-05	MT3576	1.154035	9.432039	4.268278	1.050667	0.000321
MT3004	1.673846	8.676493	4.971037	3.266832	4.59E-05	MT2317	-1.37948	8.638667	-4.26825	1.050591	0.000321
MT3774	-1.19094	9.218905	-4.96553	3.249037	4.67E-05	MT3217	-1.20664	9.357198	-4.26588	1.043324	0.000323
MT2595	-1.63876	9.962649	-4.96279	3.240171	4.70E-05	MT2894	0.992244	8.685054	4.26404	1.037697	0.000325
MT0488	-1.85147	10.03443	-4.95601	3.218295	4.80E-05	MT1636	1.514354	9.609576	4.263784	1.036914	0.000325
MT3706	2.32077	8.792555	4.955804	3.217616	4.80E-05	MT1526	1.227508	9.282518	4.262717	1.03365	0.000326
MT3138	-1.28261	9.028547	-4.95552	3.216693	4.80E-05	MT0244	0.980722	9.176649	4.262144	1.031899	0.000326
MT0795	-1.37201	9.198656	-4.95414	3.212251	4.82E-05	MT0536	1.502414	9.492131	4.260199	1.025949	0.000328
MT2622	-1.82611	8.825605	-4.953	3.208561	4.83E-05	MT2120	1.153785	8.969877	4.259244	1.023029	0.000329
MT1734	1.385721	9.114702	4.952952	3.208406	4.83E-05	MT3253	-1.08883	9.267419	-4.25688	1.015788	0.000331
MT3575	-1.13936	9.123391	-4.95243	3.206711	4.83E-05	MT2868	1.464963	9.059775	4.255376	1.0112	0.000332
MT3310	1.579203	8.695778	4.951333	3.203176	4.84E-05	MT2512	1.366946	10.16663	4.253899	1.006687	0.000334
MT3782	-1.2315	9.25498	-4.95087	3.201671	4.85E-05	MT2806	1.349561	8.544747	4.250556	0.996468	0.000337
MT3973	-1.47107	9.082724	-4.94766	3.191314	4.89E-05	MT0401.1	1.038127	8.872211	4.25049	0.996268	0.000337
MT3225	-1.53255	9.596831	-4.94673	3.188324	4.90E-05	MT0214	1.525188	9.854943	4.247538	0.987248	0.00034
MT3404	1.962267	9.33601	4.946291	3.186901	4.90E-05	MT1695	1.48024	8.512918	4.245666	0.981531	0.000342
MT0413	-1.4133	9.286578	-4.94518	3.183301	4.92E-05	MT3346	-1.0986	8.841955	-4.2452	0.980122	0.000342
MT2856	1.444745	9.54079	4.937607	3.158877	5.04E-05	MT2967	1.280146	8.875095	4.245004	0.979509	0.000342
MT1664	-1.35876	8.886494	-4.9359	3.153369	5.06E-05	MT1884	-1.07693	9.229459	-4.24118	0.967836	0.000346
MT0633	1.462177	9.274675	4.933769	3.146498	5.09E-05	MT3904	-1.2269	9.248203	-4.2398	0.963633	0.000347
MT2703	-1.2556	9.290558	-4.93259	3.142704	5.11E-05	MT1057	-1.0834	9.312628	-4.23941	0.962417	0.000347
MT2462	-1.10973	9.293655	-4.9297	3.133387	5.15E-05	MT0501	1.551841	9.086865	4.239231	0.961886	0.000347
MT2895	1.148822	8.798615	4.929512	3.13277	5.15E-05	MT1143.1	-1.51614	9.414881	-4.23226	0.940613	0.000355
MT3308	2.341237	8.535682	4.928968	3.131015	5.15E-05	MT0728	-1.1729	9.184653	-4.23039	0.934903	0.000356
MT2455	-1.11924	9.203512	-4.92815	3.128377	5.16E-05	MT3714	-1.15313	8.978728	-4.22925	0.931429	0.000357
MT3318	-1.23461	9.21615	-4.92655	3.123227	5.18E-05	MT2783	1.437454	9.302012	4.226109	0.921862	0.000361
MT0692	-1.57948	9.275165	-4.92474	3.117393	5.21E-05	MT2394	-1.03904	8.945104	-4.22175	0.908579	0.000365
MT1986	2.16627	9.065288	4.924038	3.115122	5.21E-05	MT1276	-1.09625	9.157707	-4.22171	0.90846	0.000365
MT0262	-1.29542	9.019037	-4.92251	3.110204	5.23E-05	MT2509	-1.1258	8.997808	-4.21931	0.901136	0.000368
MT1476	1.411498	8.838203	4.920334	3.103184	5.27E-05	MT3423	1.378497	9.039279	4.217926	0.896933	0.000369
MT0768.1	2.400981	8.849997	4.915163	3.086522	5.35E-05	MT1877	-1.48535	9.383439	-4.21749	0.895615	0.000369
MT0608.1	1.879763	8.872868	4.912376	3.077544	5.40E-05	MT3467	-1.83923	8.699415	-4.21358	0.883708	0.000374
MT3789	-1.40537	9.980929	-4.91022	3.070589	5.43E-05	MT1885	-1.46208	9.191109	-4.21016	0.8733	0.000378
MT3695	1.822202	8.72564	4.905592	3.055694	5.51E-05	MT2840	-1.39415	9.680641	-4.2079	0.866417	0.00038
MT0475	1.350606	10.13012	4.900929	3.040682	5.59E-05	MT3939	-1.19795	9.476135	-4.20665	0.862622	0.000381
MT0150	1.578105	8.651526	4.899768	3.036946	5.60E-05	MT0458	-1.20871	8.978805	-4.20664	0.86257	0.000381
MT3119	-1.35771	8.845734	-4.89797	3.031168	5.63E-05	MT3736	-1.40942	10.15691	-4.20508	0.857826	0.000383
MT0029	-1.21727	9.067442	-4.89765	3.030115	5.63E-05	MT0539	-1.44595	9.389456	-4.20443	0.855871	0.000383
MT0384.1	-1.47307	9.283837	-4.89497	3.021496	5.68E-05	MT3891	1.218617	9.276419	4.202075	0.848698	0.000386
MT3960	-1.47434	9.984166	-4.89377	3.017635	5.69E-05	MT2852	1.659457	8.863548	4.201336	0.846451	0.000386
MT2026	-1.21954	8.952303	-4.89291	3.014864	5.70E-05	MT1044	-1.19468	8.856116	-4.2011	0.845746	0.000386
MT1550	-1.37747	9.529527	-4.89025	3.006324	5.75E-05	MT0085.1	1.665957	9.260079	4.200156	0.842864	0.000387
MT4027	1.662256	9.614532	4.886213	2.993334	5.82E-05	MT3211	-1.24936	9.332163	-4.1977	0.835395	0.00039
MT3582	2.110661	8.580767	4.880048	2.973513	5.93E-05	MT1162	-1.10784	9.830796	-4.19639	0.831412	0.000391

MT1480	-1.15716	9.208199	-4.87941	2.971446	5.94E-05	MT1778	1.136559	9.861855	4.196141	0.830661	0.000391
MT2751	1.900155	8.94285	4.877733	2.96607	5.97E-05	MT1430	1.553312	8.472545	4.194719	0.826341	0.000393
MT1918	-1.55854	9.20515	-4.87217	2.948204	6.07E-05	MT2012	-0.89333	9.009631	-4.19441	0.825403	0.000393
MT2204	-1.42439	8.944208	-4.86988	2.940822	6.11E-05	MT1278	1.548826	8.922112	4.192544	0.819734	0.000395
MT0754	1.933389	9.267956	4.869364	2.939177	6.11E-05	MT0684	-1.31345	9.390941	-4.19098	0.814986	0.000396
MT1246	1.358268	9.073674	4.869108	2.938355	6.11E-05	MT1908	1.605679	8.727304	4.18962	0.810854	0.000398
MT0748	1.392889	9.106109	4.868147	2.935268	6.13E-05	MT2797	-0.95097	8.909563	-4.18952	0.810559	0.000398
MT3906	1.527376	9.044446	4.867174	2.932144	6.14E-05	MT0983	1.419173	9.137128	4.188826	0.808442	0.000398
MT3684	1.715306	9.723742	4.865098	2.925476	6.18E-05	MT2862.1	-1.24176	8.726547	-4.18605	0.800012	0.000401
MT1898	1.244998	9.281669	4.863429	2.920116	6.20E-05	MT0335	-1.26603	8.911747	-4.18316	0.791244	0.000405
MT1513	1.906541	8.683081	4.862988	2.9187	6.21E-05	MT3969	-1.02236	9.480673	-4.17787	0.775197	0.000411
MT2117	1.317741	9.755087	4.862407	2.916833	6.21E-05	MT0412	-1.26246	9.790209	-4.17143	0.75566	0.00042
MT3971	-1.18056	9.128161	-4.86105	2.912483	6.23E-05	MT0870	1.362589	9.342775	4.166397	0.740425	0.000426
MT2473	-1.15269	9.481273	-4.86048	2.910656	6.24E-05	MT2892	-1.07688	8.724142	-4.16444	0.734486	0.000428
MT1253	1.385972	8.983186	4.859772	2.908372	6.25E-05	MT3820	-1.04252	9.2026	-4.1627	0.729237	0.00043
MT2862	1.49138	9.198861	4.858641	2.904742	6.26E-05	MT2926	-1.38685	8.449747	-4.16211	0.727429	0.000431
MT2651	-1.23154	8.994366	-4.85595	2.896087	6.31E-05	MT3256	-1.075	8.86318	-4.16205	0.727265	0.000431
MT1825	-1.35838	9.062764	-4.85556	2.894859	6.31E-05	MT1076	-1.42243	9.390159	-4.1618	0.72649	0.000431
MT1804	-1.24493	9.986885	-4.85486	2.892597	6.32E-05	MT0062	1.139744	9.212527	4.160561	0.722752	0.000432
MT0719.2	-1.05622	9.20547	-4.85367	2.888781	6.34E-05	MT2516	-1.04084	9.611321	-4.1586	0.716812	0.000434
MT1481	1.714092	10.18054	4.853214	2.887322	6.34E-05	MT0486	-1.40382	9.412642	-4.15847	0.716429	0.000434
MT1345	-1.3772	9.037919	-4.85169	2.882445	6.37E-05	MT3893	-1.09226	9.301335	-4.15816	0.715489	0.000434
MT0056	1.636875	8.33387	4.851066	2.880429	6.37E-05	MT1729	-1.06159	9.176399	-4.15701	0.711996	0.000436
MT3734	-1.1749	9.403423	-4.85101	2.880249	6.37E-05	MT2575	1.248799	9.400145	4.156769	0.711276	0.000436
MT0152	2.569062	8.676519	4.847459	2.868855	6.43E-05	MT3059	1.197719	8.630035	4.15611	0.70928	0.000436
MT3274	-1.58332	9.123434	-4.84745	2.868818	6.43E-05	MT0398	-1.05584	9.760887	-4.1547	0.705004	0.000438
MT1333	2.02067	9.025034	4.846772	2.866651	6.44E-05	MT3626	-0.98895	9.125227	-4.15273	0.699055	0.00044
MT0964	-1.36786	9.276247	-4.84349	2.856113	6.50E-05	MT0930	1.250299	9.740111	4.151727	0.696024	0.000441
MT2578	-1.6077	9.391953	-4.84279	2.853883	6.51E-05	MT0442	-1.03292	8.86597	-4.15137	0.694942	0.000442
MT1010	1.311831	9.108531	4.841995	2.851331	6.52E-05	MT3181	1.14613	9.399909	4.148392	0.68594	0.000445
MT0775	1.472179	8.675618	4.841074	2.848376	6.53E-05	MT0452	1.26821	8.90446	4.145871	0.678317	0.000449
MT1919	-1.11037	9.250224	-4.84099	2.848116	6.53E-05	MT3468	-1.17061	9.188313	-4.14457	0.67439	0.00045
MT1572	-1.26323	9.557547	-4.83483	2.828354	6.66E-05	MT1226	1.347422	9.159838	4.142582	0.66838	0.000453
MT0948	1.575193	10.36079	4.831609	2.818032	6.72E-05	MT1820	1.134903	8.835853	4.140099	0.66088	0.000456
MT0869	1.691159	8.539302	4.830745	2.815264	6.73E-05	MT0366	-0.89654	9.269274	-4.13973	0.659751	0.000456
MT3896	1.620695	9.008452	4.829975	2.812796	6.74E-05	MT0826	-1.25592	9.395509	-4.13435	0.643533	0.000464
MT2885	-1.17732	9.163522	-4.82625	2.800851	6.82E-05	MT0424	1.815674	9.769969	4.132462	0.637822	0.000466
MT1705	1.556133	9.459193	4.82529	2.797785	6.84E-05	MT0091	1.765571	8.28055	4.130131	0.630787	0.000469
MT3641	1.630361	8.598	4.822251	2.788054	6.90E-05	MT3174.2	-1.18398	9.002151	-4.12955	0.629039	0.00047
MT2303	2.088442	9.406027	4.820852	2.783572	6.92E-05	MT3863	-1.16477	8.294662	-4.12793	0.624134	0.000472
MT1543	1.829233	8.625073	4.8191	2.777961	6.96E-05	MT3783	-1.3077	8.769097	-4.12667	0.620336	0.000473
MT2431	1.167697	8.769217	4.818486	2.775996	6.96E-05	MT0746	0.982573	9.841234	4.121513	0.604795	0.000481
MT1262	1.353441	9.22107	4.817529	2.772932	6.98E-05	MT2691.1	1.707512	8.778476	4.119686	0.59929	0.000483
MT1843	-1.1975	8.864808	-4.81678	2.77052	6.99E-05	MT3807	-1.26815	8.792214	-4.11565	0.587132	0.000489
MT0996	1.644245	8.825701	4.814961	2.764709	7.02E-05	MT0892.1	1.192	9.083828	4.114546	0.583804	0.00049
MT2628	1.814438	9.753552	4.814497	2.763224	7.02E-05	MT0812	1.230581	9.956473	4.11412	0.58252	0.000491
MT0159	-1.37358	9.133102	-4.81429	2.762548	7.02E-05	MT0325	-1.23131	8.685857	-4.11118	0.573676	0.000495
MT0993	-1.31562	9.274357	-4.80735	2.740366	7.18E-05	MT0998	1.134322	9.216346	4.11048	0.571558	0.000495
MT3445	2.124594	8.653314	4.805824	2.735468	7.21E-05	MT2008	-0.93042	9.602371	-4.11033	0.571118	0.000495
MT1984	1.45472	9.24703	4.802796	2.725782	7.27E-05	MT1046	-0.93808	9.487787	-4.10997	0.570011	0.000496
MT0463	-1.61641	9.031943	-4.80278	2.72572	7.27E-05	MT1368	-1.12027	9.242357	-4.10939	0.568273	0.000496
MT1433	1.464671	8.699068	4.802145	2.723699	7.28E-05	MT1634	1.346241	9.26488	4.107637	0.563001	0.000499
MT1325	-1.1064	8.956217	-4.7992	2.71429	7.34E-05	MT3940	-1.24389	9.425806	-4.10735	0.562132	0.000499
MT1346	-1.7516	10.01387	-4.79656	2.705824	7.39E-05	MT3769	-1.1292	9.110992	-4.10712	0.561453	0.000499
MT1574	-1.23168	9.235233	-4.79615	2.704512	7.39E-05	MT3509	-1.19368	9.081715	-4.10439	0.553233	0.000503
MT0815	-1.11065	9.132414	-4.79611	2.704398	7.39E-05	MT0076	-1.2218	10.01307	-4.10234	0.547058	0.000506
MT3868	-1.64327	8.97594	-4.79192	2.691017	7.49E-05	MT2752	-1.27288	9.071656	-4.10144	0.544368	0.000507
MT1741	1.395257	8.934678	4.791793	2.6906	7.49E-05	MT1093	1.485894	8.85285	4.100935	0.542837	0.000507
MT2064.1	-1.22198	8.657997	-4.78968	2.683846	7.53E-05	MT2674	-1.42196	9.385343	-4.10038	0.541182	0.000507
MT0426	1.642487	9.33548	4.789037	2.681789	7.54E-05	MT1212	-1.16376	8.995411	-4.10038	0.541173	0.000507
MT4008	1.648967	8.647385	4.781633	2.658135	7.72E-05	MT2902	1.232114	9.408391	4.099094	0.5373	0.000509
MT2085	-1.30025	8.955281	-4.77669	2.642363	7.84E-05	MT3218	-1.20979	9.103755	-4.09754	0.532635	0.000511
MT2451	1.441346	8.673788	4.771276	2.625065	7.96E-05	MT3570	-1.12992	8.817781	-4.09073	0.512158	0.000522
MT1197	1.659626	8.718997	4.771123	2.624575	7.96E-05	MT0597	-1.17247	9.075379	-4.09053	0.511575	0.000522
MT1361	-1.36982	9.510411	-4.77111	2.624531	7.96E-05	MT0399	0.890629	9.242887	4.090305	0.510887	0.000522
MT2330.1	1.284806	9.437944	4.770295	2.621934	7.97E-05	MT1533.2	-1.51711	10.30625	-4.09012	0.510322	0.000522
MT2187	-1.30301	9.093675	-4.76574	2.607393	8.09E-05	MT2831	-1.30282	8.961771	-4.08855	0.505615	0.000524
MT3723	2.155324	8.745468	4.761816	2.594878	8.19E-05	MT1833	-1.35448	9.337971	-4.0859	0.497661	0.000528
MT1829	1.881566	8.507221	4.760339	2.590168	8.22E-05	MT1533.1	-1.30975	9.605534	-4.08493	0.494739	0.000529
MT2678	1.351855	9.063853	4.758493	2.584281	8.26E-05	MT0927	1.188655	8.720688	4.083937	0.491766	0.00053
MT3579	-1.40294	8.986742	-4.75789	2.582352	8.27E-05	MT0278	1.068775	9.12597	4.082668	0.487954	0.000532
MT3259	1.46008	9.489384	4.750563	2.558998	8.46E-05	MT2673.1	-1.03988	9.207017	-4.08261	0.487781	0.000532
MT3321	1.569285	8.981693	4.747342	2.548732	8.54E-05	MT3135	-1.15549	9.099276	-4.08042	0.481214	0.000535
MT2888	-1.61513	8.918526	-4.74686	2.547202	8.55E-05	MT1071	-1.34828	8.719209	-4.08015	0.480393	0.000535
MT0961	-1.0959	9.533014	-4.74574	2.543623	8.57E-05	MT2177	-1.22118	9.273589	-4.07887	0.476555	0.000537
MT1227	1.787295	8.875496	4.744111	2.538439	8.61E-05	MT2544	-1.1153	9.985456	-4.07543	0.466243	0.000542
MT3412	-1.54888	9.226167	-4.73559	2.511315	8.85E-05	MT1145	-1.07395	9.045865	-4.07469	0.464027	0.000543
MT3071	1.566616	9.553527	4.732437	2.501261	8.93E-05	MT1743	1.004671	8.657586	4.074418	0.463206	0.000543
MT3131	-1.60619	9.246014	-4.72992	2.493247	9.00E-05	MT2284	1.073202	8.676347	4.073569	0.460661	0.000544
MT0543	1.944673	8.998123	4.729435	2.491706	9.00E-05	MT0559	-1.08413	8.98024	-4.07337	0.46005	0.000544
MT3580.1	1.834695	8.574636	4.72522	2.478292	9.12E-05	MT0081	-0.9865	9.072277	-4.07286	0.45852	0.000545
MT1770	-1.19595	8.990928	-4.72471	2.476669	9.12E-05	MT3088	1.259252	9.152673	4.071927	0.455736	0.000546
MT2229	1.101694	9.309223	4.724481	2.475942	9.12E-05	MT2282	1.115142	9.792919	4.070372	0.451076	0.000548
MT2936	-1.16195	8.823472	-4.72403	2.474496	9.13E-05	MT1401	1.045584	9.809165	4.0688	0.446365	0.000551
MT3370	1.635216	8.569694	4.721715	2.467142	9.19E-05	MT1610	-1.18111	9.227686	-4.06731	0.441903	0.000553
MT0447	-1.35409	9.243763	-4.72079	2.464199	9.21E-05	MT3750	1.504343	8.60891	4.066824	0.440446	0.000553
MT0502	1.261888	9.227519	4.711567	2.434873	9.49E-05	MT1751	-1.33193	9.155668	-4.0657	0.437063	0.000555
MT2825	-1.40841	9.245864	-4.70795	2.423381	9.59E-05	MT1599	-1.32573	8.613384	-4.06553	0.436575	0.000555
MT0144	1.376694	9.443498	4.707439	2.421754	9.60E-05	MT3824	1.560139	9.002921	4.065063	0.435169	0.000555
MT2268	1.496576	8.918981	4.706345	2.41828	9.62E-05	MT2157	1.129867	9.301954	4.061727	0.425178	0.000561
MT1189	-1.26823	8.932561	-4.70323	2.408386	9.71E-05	MT1132	1.057069	10.10371	4.060731	0.422197	0.000562
MT3985	-0.9971	9.247897	-4.70234	2.405568	9.73E-05	MT0397	1.015767	8.908121	4.059983	0.419957	0.000563
MT3146	2.104263	8.249059	4.700089	2.398407	9.79E-05	MT0723	1.425004	8.80398	4.056459	0.409411	0.000569
MT3606	-1.55183	9.324403	-4.69926	2.395775	9.81E-05	MT2137	1.100173	9.758416	4.055605	0.406853	0.00057
MT1814	-1.64808	10.11634	-4.69235	2.373847	0.0001	MT3927	-0.98797	9.106322	-4.05527	0.405844	0.00057
MT3678	1.570778	8.804534	4.691681	2.37171	0.0001	MT0886	1.342504	8.711514	4.051872	0.395687	0.000576
MT2786	-1.5631	9.545184	-4.68722	2.357546	0.000102	MT0324	1.338644	9.138392	4.049398	0.388288	0.00058
MT0745	-1.24229	9.455218	-4.68561	2.352436	0.000102	MT3267	-0.92766	9.576084	-4.04758	0.382847	0.000583

MT0339	-1.08023	9.083133	-4.68469	2.349534	0.000102	MT3083	0.972702	9.489486	4.046349	0.379172	0.000585
MT2359	-1.59101	9.227434	-4.68212	2.341369	0.000103	MT2908	1.31062	8.705024	4.040198	0.360796	0.000596
MT3141	-1.67038	9.080095	-4.68083	2.337271	0.000104	MT1840	-1.19938	9.418385	-4.03988	0.359839	0.000596
MT2122	1.558804	8.432835	4.676952	2.324985	0.000105	MT2096	-1.40666	8.559608	-4.03772	0.353394	0.000599
MT1758	1.928338	8.439804	4.675552	2.320548	0.000105	MT1647	-1.13349	9.24359	-4.03759	0.353014	0.000599
MT2668.1	-1.29133	7.966126	-4.67484	2.31828	0.000105	MT1344	-1.09884	9.344524	-4.03127	0.334143	0.000611
MT0365	-1.14093	9.453506	-4.66854	2.298325	0.000107	MT2305	1.365034	8.659599	4.026502	0.319922	0.00062
MT0086	1.362744	8.92236	4.668372	2.297792	0.000107	MT2685	-1.06986	9.05669	-4.02399	0.312433	0.000624
MT0704	1.474984	8.686796	4.664824	2.28655	0.000109	MT2252	-0.86913	9.246381	-4.02239	0.307656	0.000627
MT2022	1.27293	8.657401	4.661896	2.277277	0.000109	MT3402	-1.27588	9.100838	-4.02198	0.306447	0.000627
MT1466	1.659762	8.753055	4.660665	2.273377	0.00011	MT2231	-0.92291	9.29426	-4.02136	0.304591	0.000628
MT1659	-1.20596	8.959232	-4.65876	2.267349	0.00011	MT0515	1.335974	8.686366	4.020262	0.301319	0.00063
MT0947	-1.24814	9.169885	-4.65864	2.26697	0.00011	MT0813	1.39968	8.465046	4.018485	0.296024	0.000632
MT3733	-1.49155	9.298077	-4.65791	2.264669	0.000111	MT3238	1.273132	8.864683	4.018458	0.295943	0.000632
MT0162	1.271448	9.152787	4.656968	2.26167	0.000111	MT0721	-0.98182	8.969201	-4.0156	0.287424	0.000638
MT2714	1.435561	9.162025	4.656437	2.25999	0.000111	MT1682	1.079558	9.220278	4.015247	0.286381	0.000638
MT3628	-1.70742	9.39079	-4.65446	2.253739	0.000111	MT2333	-1.34158	9.000132	-4.0137	0.281766	0.00064
MT2608	1.250522	9.1493	4.65305	2.249269	0.000112	MT1446	1.414465	9.031814	4.010815	0.273184	0.000646
MT1070.1	1.508754	9.648865	4.652866	2.248687	0.000112	MT1425	1.915528	8.676462	4.008083	0.265052	0.000651
MT3354	1.72613	8.588536	4.652125	2.246342	0.000112	MT1274	1.311571	9.911184	4.00679	0.261207	0.000653
MT1330.1	-1.11392	9.264633	-4.65134	2.243867	0.000112	MT3656	-1.13047	8.547378	-4.0059	0.258545	0.000654
MT0487	-1.07572	9.199394	-4.64754	2.231821	0.000113	MT1900	1.695929	8.809568	4.005804	0.258273	0.000654
MT2278	-1.12646	9.301607	-4.64727	2.230996	0.000113	MT2673	-1.05684	9.498633	-4.00572	0.258022	0.000654
MT2779	-1.31908	9.452707	-4.63689	2.19814	0.000117	MT0123	-1.10013	9.787494	-4.00378	0.252267	0.000657
MT0780	1.444838	9.722615	4.636196	2.19596	0.000117	MT3476	1.504433	8.593212	4.003476	0.251347	0.000658
MT1035	1.346233	9.483517	4.635234	2.192921	0.000118	MT0015	1.141155	10.553	4.000086	0.241268	0.000664
MT2481	-1.40927	8.622392	-4.6349	2.191866	0.000118	MT3041.1	1.163596	9.127012	3.999772	0.240335	0.000664
MT1857	1.407774	9.766576	4.63376	2.188261	0.000118	MT3422	1.113468	9.220232	3.992284	0.218085	0.00068
MT4000	1.258098	9.138316	4.631486	2.181077	0.000119	MT2931	-0.96926	9.315022	-3.9911	0.214566	0.000682
MT3099	-1.57772	9.770333	-4.62967	2.175348	0.000119	MT2801.1	-0.99919	9.09268	-3.99054	0.212909	0.000682
MT0007	1.491499	8.644816	4.626768	2.166171	0.00012	MT3735	-1.07563	9.267541	-3.99001	0.211329	0.000683
MT1019	1.578976	8.842645	4.622266	2.151954	0.000122	MT2633	-1.29548	8.40562	-3.98974	0.210535	0.000683
MT3302	1.424056	9.798787	4.621881	2.150738	0.000122	MT2553	-1.17147	8.739285	-3.98882	0.207792	0.000685
MT2360	-1.02548	9.13226	-4.6217	2.150176	0.000122	MT3502	1.492247	9.026921	3.987714	0.204518	0.000687
MT3411	-1.41161	9.091604	-4.62108	2.148217	0.000122	MT1380	-1.05965	9.101876	-3.98508	0.196686	0.000692
MT2998	-1.26688	9.455937	-4.62008	2.145039	0.000123	MT3848	-1.33535	8.687368	-3.98363	0.19239	0.000694
MT1186	1.476649	9.651963	4.618796	2.140998	0.000123	MT0978	1.347697	9.019844	3.982881	0.190176	0.000696
MT0625	-1.26907	8.906688	-4.61797	2.138378	0.000123	MT2051	-1.2269	8.911375	-3.98102	0.184661	0.000699
MT2406	1.532738	9.414798	4.615449	2.130432	0.000124	MT1598	-0.97871	9.383735	-3.98003	0.181729	0.0007
MT1657	1.812593	8.995077	4.614623	2.127828	0.000124	MT3033	-1.54743	9.788684	-3.97999	0.181613	0.0007
MT3595	-1.15942	8.884976	-4.61365	2.124758	0.000125	MT2068	1.439842	9.071347	3.979811	0.181069	0.0007
MT0963	-1.5018	9.663644	-4.61275	2.121909	0.000125	MT2686	-1.03302	8.855611	-3.97964	0.180553	0.0007
MT2063	-1.30249	9.832277	-4.61222	2.120242	0.000125	MT3987	1.210969	9.462016	3.972572	0.15961	0.000715
MT1418	-1.25913	9.349663	-4.61011	2.113599	0.000126	MT1624	1.064594	9.3628	3.972468	0.159303	0.000715
MT3432	1.944279	8.847143	4.60723	2.104505	0.000127	MT1086	-1.11486	9.00342	-3.97117	0.155453	0.000717
MT1237	-1.42215	9.342357	-4.60648	2.102141	0.000127	MT2610	1.531467	8.422645	3.970597	0.153761	0.000718
MT3965	-1.36468	9.283534	-4.60493	2.09724	0.000127	MT0375	1.1405	9.268718	3.970546	0.153609	0.000718
MT0046	2.002778	9.275001	4.603912	2.09404	0.000128	MT2015.2	-0.97711	9.225073	-3.9702	0.152576	0.000718
MT2743	2.008685	9.45794	4.598355	2.076523	0.00013	MT3270.1	-1.49196	9.678242	-3.96909	0.149308	0.00072
MT0017	1.546606	9.087448	4.596311	2.070081	0.000131	MT1161	-1.2017	9.362157	-3.96863	0.147941	0.000721
MT3424	-1.52531	8.92987	-4.59593	2.068891	0.000131	MT0472.1	1.179037	8.978968	3.966799	0.142512	0.000724
MT1392	1.566561	9.182832	4.592883	2.059279	0.000132	MT3007	-1.00879	9.506129	-3.96596	0.140022	0.000726
MT3235	1.306188	9.280265	4.592531	2.058172	0.000132	MT3567	-0.96397	9.214945	-3.96482	0.136665	0.000728
MT3836	-1.24572	8.90279	-4.58982	2.049628	0.000133	MT1310	1.539024	10.06097	3.964564	0.135894	0.000728
MT0461	1.764135	9.085149	4.586474	2.039093	0.000134	MT3037	-1.23847	10.05369	-3.96411	0.134545	0.000728
MT2589.1	-1.12866	9.044852	-4.57968	2.01771	0.000137	MT1753.1	1.303834	8.283464	3.962726	0.130455	0.000731
MT1133	-1.09022	9.077898	-4.57826	2.013244	0.000138	MT2900	-0.9414	9.741532	-3.96147	0.12675	0.000733
MT3856	-1.14555	9.293369	-4.57778	2.011738	0.000138	MT3415	-1.04426	9.260268	-3.95952	0.120957	0.000737
MT0380	-1.36904	9.274682	-4.57548	2.004499	0.000139	MT3050	-0.97012	9.172294	-3.95899	0.119394	0.000738
MT1926	1.665773	10.02358	4.575391	2.004212	0.000139	MT0827	-1.41617	8.992124	-3.95836	0.117537	0.000739
MT1675	-1.18537	9.307677	-4.57504	2.003093	0.000139	MT3431	1.594087	9.73322	3.958224	0.117136	0.000739
MT0651	1.538375	8.75287	4.573212	1.997356	0.000139	MT2577	-1.52617	8.688431	-3.95399	0.104627	0.000748
MT1334	1.257912	9.192129	4.57243	1.994897	0.00014	MT2773	-1.00875	9.17755	-3.95335	0.102731	0.000749
MT3165	1.554265	8.646994	4.572289	1.994453	0.00014	MT2583	1.33633	9.260486	3.953129	0.102069	0.000749
MT3742	-1.04772	9.803706	-4.57101	1.99044	0.00014	MT3005	-1.54354	8.97593	-3.95231	0.099637	0.00075
MT3704	1.714024	10.35952	4.570445	1.988654	0.00014	MT2430	-1.26361	9.02834	-3.95032	0.093756	0.000754
MT0975	-1.32154	9.112326	-4.56782	1.980392	0.000141	MT3483	1.065656	9.128197	3.950283	0.093659	0.000754
MT1119	1.416281	8.672941	4.565337	1.972594	0.000142	MT3935	-1.35534	9.324151	-3.94975	0.092096	0.000755
MT2079	-1.13266	8.845008	-4.56447	1.969855	0.000143	MT0711	-1.07053	9.258513	-3.94648	0.082428	0.000762
MT1789	1.596232	8.557997	4.563974	1.96831	0.000143	MT2541	1.339881	9.049914	3.944701	0.077171	0.000766
MT0588	1.326346	9.014505	4.563703	1.967458	0.000143	MT2976	-0.89238	9.273631	-3.94457	0.076771	0.000766
MT0019	-1.32095	8.578958	-4.56261	1.964019	0.000143	MT2015	1.317284	10.30073	3.943634	0.07402	0.000767
MT0014	-1.5359	8.793481	-4.56183	1.961572	0.000143	MT1603	-0.8389	9.090582	-3.94285	0.071714	0.000769
MT1249	1.60545	10.02757	4.561665	1.961053	0.000143	MT2197	-1.30354	9.286174	-3.94074	0.065463	0.000773
MT1771	-1.14177	9.108548	-4.55992	1.955554	0.000144	MT3008	-0.98109	9.138855	-3.93954	0.061927	0.000775
MT3249	1.256187	8.856787	4.5589	1.952366	0.000144	MT0542	-1.26146	8.728409	-3.93946	0.061709	0.000775
MT3154	-1.19907	9.954509	-4.55483	1.939593	0.000146	MT0468	1.126614	8.992035	3.938696	0.059444	0.000777
MT3196	1.367307	9.69602	4.55389	1.936628	0.000146	MT0737	-1.48319	8.87923	-3.9385	0.058855	0.000777
MT2167	1.891551	10.00105	4.549556	1.923018	0.000148	MT1341	1.208292	10.003	3.938118	0.057741	0.000777
MT1243	1.685158	8.708296	4.546982	1.914938	0.000149	MT2478	1.369389	8.52726	3.937195	0.055018	0.000778
MT1536	-1.30035	9.260499	-4.54169	1.898326	0.000152	MT3013	-1.46334	9.646512	-3.93716	0.054903	0.000778
MT0430	-1.48088	9.244908	-4.53716	1.884123	0.000154	MT1406	-1.37157	9.824645	-3.93674	0.053677	0.000779
MT2344	-1.25515	9.548016	-4.5369	1.883316	0.000154	MT3532	1.543455	10.58141	3.934296	0.046467	0.000784
MT1720	-1.36841	9.333994	-4.52852	1.857027	0.000158	MT2532	-1.14848	9.672401	-3.9327	0.041749	0.000787
MT0840	1.416794	8.521513	4.527979	1.855338	0.000158	MT2605	1.296013	9.36703	3.930624	0.03564	0.000792
MT1692	1.624974	8.541818	4.524042	1.843001	0.00016	MT4007	0.86147	8.87482	3.930458	0.035152	0.000792
MT2098	-1.15311	9.4798	-4.52342	1.841049	0.00016	MT2858	-0.96415	8.975711	-3.92858	0.02962	0.000796
MT1370	-1.30071	9.54113	-4.52194	1.836431	0.000161	MT3849	1.152164	9.180853	3.926025	0.022086	0.000802
MT3827	-1.43697	9.280593	-4.52177	1.835874	0.000161	MT1288	-1.17117	8.927709	-3.92489	0.018754	0.000804
MT2077	-1.24186	9.093228	-4.51719	1.821551	0.000163	MT0490	1.084675	9.41661	3.924114	0.016457	0.000806
MT3763	1.420336	8.492621	4.517107	1.821282	0.000163	MT3761	-1.20505	8.693883	-3.92298	0.013104	0.000808
MT3106.1	1.3886	8.943355	4.515778	1.817119	0.000164	MT3176	1.283577	8.781355	3.919031	0.001492	0.000817
MT3130	-1.66445	9.771713	-4.51464	1.813541	0.000164	MT2461	1.220281	9.198299	3.918649	0.000368	0.000818
MT0049	-1.41682	9.21917	-4.51411	1.811883	0.000164	MT3090	1.053291	9.196605	3.917631	-0.00263	0.00082
MT2654	1.775923	9.049123	4.513114	1.80878	0.000165	MT2055	-1.19031	9.140429	-3.91535	-0.00935	0.000825
MT1388	1.426849	9.184637	4.512475	1.806779	0.000165	MT1973	-0.82553	9.418451	-3.91402	-0.01326	0.000828
MT0242	-1.1883	8.982229	-4.51139	1.803386	0.000165	MT0867	1.059985	9.032766	3.91233	-0.01822	0.000832
MT1418.1	-1.43706	9.368008	-4.50989	1.798696	0.000166	MT4026.1	-0.9584	9.003381	-3.91198	-0.01927	0.000832

MT3100	-1.74028	9.374976	-4.509	1.795905	0.000166	MT3882	-1.17128	9.843423	-3.91187	-0.01956	0.000832
MT1745	1.091555	9.05496	4.503862	1.779832	0.000169	MT1662	1.269281	8.810711	3.911633	-0.02027	0.000832
MT2031	-1.5542	9.55775	-4.50313	1.777535	0.000169	MT0928	-1.25578	8.737609	-3.90964	-0.02614	0.000836
MT1393	1.327423	9.888413	4.502676	1.776123	0.000169	MT3024	-1.00593	9.64444	-3.90964	-0.02614	0.000836
MT1304	-1.28417	8.554025	-4.50047	1.76922	0.00017	MT2758	-1.36082	10.23681	-3.90856	-0.02931	0.000838
MT1981	1.594929	9.373361	4.50042	1.769069	0.00017	MT2277	1.09999	9.688283	3.907461	-0.03254	0.00084
MT2860	1.311611	8.958481	4.499022	1.764697	0.000171	MT1238	1.361222	8.799872	3.906641	-0.03495	0.000842
MT0080	-1.60478	9.731398	-4.49844	1.762868	0.000171	MT2521	-1.03746	8.88901	-3.90396	-0.04283	0.000848
MT0733	1.504439	8.947289	4.495735	1.754421	0.000173	MT2835	-1.11328	9.325151	-3.90089	-0.05186	0.000856
MT3441	1.317503	8.894974	4.493891	1.748657	0.000173	MT1785	1.193784	9.456582	3.899195	-0.05682	0.00086
MT2658	-1.2469	9.046782	-4.49363	1.747832	0.000173	MT3574	1.250124	9.192245	3.897239	-0.06256	0.000865
MT1452	1.497634	8.786679	4.492195	1.74336	0.000174	MT3549	1.544393	8.076723	3.8968	-0.06385	0.000865
MT0211	1.260632	9.195904	4.489847	1.736024	0.000175	MT2260	1.17179	9.567424	3.895744	-0.06695	0.000867
MT0099	1.214489	9.200354	4.489745	1.735704	0.000175	MT1349	1.0205	9.749373	3.894704	-0.07	0.00087
MT1541	-1.34897	8.774004	-4.48947	1.734855	0.000175	MT1395	-1.05283	9.683305	-3.89184	-0.07841	0.000877
MT2370.2	-1.20353	9.297021	-4.48356	1.716395	0.000178	MT3578	1.256028	8.825779	3.890876	-0.08123	0.000879
MT3566	-1.59943	9.161182	-4.48156	1.710132	0.000179	MT2365.1	0.882083	10.07191	3.890025	-0.08373	0.000881
MT1104	1.211449	8.935929	4.480825	1.707849	0.00018	MT2774	-1.26028	9.004799	-3.88681	-0.09316	0.000889
MT0420	-1.2386	9.126683	-4.47813	1.699444	0.000181	MT1570	-1.24518	9.122828	-3.8865	-0.09408	0.000889
MT1947	-1.1279	8.855711	-4.4772	1.696544	0.000181	MT2640	-0.98195	8.832389	-3.88555	-0.09686	0.000891
MT3866	-1.07811	9.12743	-4.47544	1.691047	0.000182	MT1011	1.141818	9.043585	3.884676	-0.09941	0.000893
MT0414	-1.33412	9.947977	-4.47372	1.685665	0.000183	MT1519	-0.93678	9.005539	-3.88433	-0.10044	0.000893
MT2083	-1.72803	8.749995	-4.47331	1.684399	0.000183	MT1178	-0.8887	9.060068	-3.88352	-0.1028	0.000895
MT0291.4	1.934217	8.86162	4.472446	1.681703	0.000184	MT0989	-0.95989	8.792162	-3.88207	-0.10705	0.000898
MT0950	-1.09248	9.123377	-4.47235	1.681397	0.000184	MT1279	1.137719	8.819647	3.882055	-0.10709	0.000898
MT0645	1.327577	9.812352	4.4709	1.67688	0.000184	MT1102	-1.28392	8.718916	-3.88004	-0.113	0.000903
MT2435	1.198691	8.665999	4.470496	1.675621	0.000184	MT0445	-0.98336	8.961386	-3.87956	-0.1144	0.000904
MT1131	-1.41237	9.100379	-4.47022	1.674774	0.000184	MT0181	1.233368	8.885814	3.878856	-0.11646	0.000905
MT1643	-1.30841	8.870738	-4.46828	1.668714	0.000185	MT0958	-0.937	9.604005	-3.87752	-0.12036	0.000908
MT1560	1.417849	10.03777	4.468218	1.668516	0.000185	MT0683	-1.08612	9.335045	-3.87487	-0.12814	0.000915
MT1172.1	-1.17426	9.329691	-4.46726	1.665531	0.000186	MT0787	-0.93696	9.180781	-3.87309	-0.13335	0.000919
MT0876	-1.09425	9.205928	-4.46341	1.653539	0.000188	MT2875	-0.90778	9.052296	-3.87206	-0.13635	0.000922
MT0839	1.317847	9.046812	4.460907	1.645727	0.000189	MT2666	1.370713	8.742816	3.871342	-0.13845	0.000923
MT0005	-1.01865	9.445054	-4.46023	1.643604	0.000189	MT2216	1.780447	8.422924	3.869241	-0.1446	0.000929
MT0708	-1.75112	9.340293	-4.45947	1.641242	0.00019	MT0762.1	1.213388	8.863363	3.867334	-0.15018	0.000933
MT2655	-1.10728	9.168905	-4.45903	1.639868	0.00019	MT2630	1.455171	9.258506	3.8671	-0.15086	0.000934
MT1679	-1.13829	9.205737	-4.45795	1.636508	0.00019	MT0407	1.448307	9.000644	3.86474	-0.15776	0.00094
MT1414.1	1.249452	9.991691	4.45667	1.632526	0.000191	MT0465	1.12763	9.257237	3.863875	-0.16029	0.000942
MT3080.1	1.372052	9.086617	4.456607	1.63233	0.000191	MT2987	1.27515	9.682733	3.863424	-0.16161	0.000942
MT0772	1.204789	8.451006	4.455462	1.628763	0.000191	MT3792	-0.97972	9.275873	-3.86179	-0.16637	0.000947
MT0628	-1.35371	8.640224	-4.45501	1.627342	0.000191	MT3599	1.144644	8.962796	3.860577	-0.16992	0.000949
MT2272	1.585504	8.652307	4.452767	1.620371	0.000193	MT2992	1.474174	8.820763	3.857309	-0.17947	0.000958
MT1862	-1.27717	9.609917	-4.45067	1.613851	0.000194	MT0381	1.502501	8.754593	3.854134	-0.18874	0.000967
MT0495	-1.65719	9.241489	-4.45064	1.613735	0.000194	MT1601	-0.91307	9.120516	-3.85099	-0.1979	0.000976
MT1811	1.449282	9.976139	4.449343	1.60971	0.000194	MT0688	-0.96317	9.45418	-3.84775	-0.20736	0.000985
MT3472	1.528514	8.894398	4.448915	1.608377	0.000194	MT3047	-1.01626	8.485875	-3.84774	-0.20739	0.000985
MT1828	1.219236	9.118392	4.448148	1.605988	0.000195	MT3632	-0.93413	9.55999	-3.84685	-0.20999	0.000987
MT3277	-1.38165	9.175234	-4.44743	1.603745	0.000195	MT1823	-0.89327	9.155946	-3.84587	-0.21284	0.000989
MT1169	1.673715	8.311676	4.446694	1.601464	0.000195	MT2479	-1.307	8.790232	-3.84553	-0.21384	0.000989
MT2474	-1.22026	9.113529	-4.44629	1.600192	0.000195	MT3197	-1.295	9.411821	-3.84298	-0.22126	0.000997
MT1718	1.414142	10.42602	4.440474	1.58211	0.000199	MT0344	1.377936	9.129931	3.841388	-0.22591	0.001001
MT3643	-1.31273	9.551878	-4.43999	1.58061	0.000199	MT3095	1.488936	10.03978	3.840132	-0.22958	0.001004
MT1731	2.371704	8.93691	4.436896	1.57098	0.000201	MT0067	1.240572	9.937173	3.838163	-0.23531	0.001009
MT2549	1.307889	8.797724	4.435884	1.567834	0.000202	MT3078	1.295658	10.03861	3.838089	-0.23553	0.001009
MT3262	-1.04181	9.115805	-4.43008	1.549786	0.000205	MT1563	-0.95943	9.142344	-3.83718	-0.23817	0.001011
MT2955	1.545537	9.301285	4.429965	1.549436	0.000205	MT0532	0.917816	8.593776	3.836347	-0.2406	0.001013
MT1493	-1.10985	8.940837	-4.42919	1.547036	0.000205	MT2061	-0.9186	9.633133	-3.83564	-0.24265	0.001015
MT3933	-1.35077	9.953631	-4.4284	1.544572	0.000206	MT3104	-1.16114	8.840894	-3.83481	-0.24506	0.001016
MT0281	-1.29207	8.732532	-4.42832	1.544308	0.000206	MT3567.1	-0.88691	9.400288	-3.83475	-0.24526	0.001016
MT1351	-1.41804	9.248562	-4.4245	1.532466	0.000208	MT2487	1.342296	9.639087	3.833354	-0.24931	0.00102
MT4025	1.846822	8.957915	4.424416	1.532193	0.000208	MT3176.1	1.050319	8.599943	3.83287	-0.25072	0.001021
MT1505	1.307053	9.426112	4.420571	1.520253	0.00021	MT2115	1.188593	9.203264	3.826561	-0.26908	0.00104
MT3344	-0.96723	9.161263	-4.42041	1.519759	0.00021	MT0524	-1.00839	9.04037	-3.82656	-0.26908	0.00104
MT1367	1.91463	8.135861	4.419975	1.518401	0.00021	MT1953	-1.24766	9.808964	-3.82384	-0.277	0.001048
MT2379	-1.31048	9.130996	-4.41943	1.516724	0.000211	MT0188	-1.03527	9.836632	-3.82317	-0.27893	0.001049
MT0792	1.050885	9.532664	4.413964	1.499742	0.000214	MT0272	1.381951	8.917065	3.822522	-0.28082	0.001051
MT0113	-1.10996	9.163505	-4.41147	1.492016	0.000216	MT0132	1.526163	10.36152	3.820104	-0.28785	0.001058
MT1995	-1.06735	9.763971	-4.40642	1.476342	0.000219	MT2552	1.123116	10.07125	3.819704	-0.28901	0.001058
MT1269	-1.10584	9.672425	-4.40587	1.474618	0.000219	MT3434	1.209307	8.278644	3.81938	-0.28995	0.001059
MT2917	1.879333	9.404116	4.401779	1.46195	0.000222	MT3644	1.081488	9.181773	3.817901	-0.29425	0.001063
MT2514	-1.16146	8.407824	-4.40088	1.459161	0.000222	MT0637	1.072076	8.671072	3.815904	-0.30005	0.001068
MT1020	-1.25495	8.679598	-4.40068	1.458545	0.000222	MT0154	1.192731	9.055908	3.815797	-0.30036	0.001068
MT1464	1.079499	9.909038	4.399689	1.45547	0.000223	MT1292	-1.21126	9.032441	-3.81432	-0.30465	0.001073
MT1910	1.123371	9.046873	4.399529	1.454975	0.000223	MT0541	1.263807	9.05691	3.811201	-0.31371	0.001082
MT2457	-1.28383	9.547478	-4.39795	1.450079	0.000224	MT0408	1.068045	8.515453	3.805845	-0.32925	0.001099
MT1932	-1.30599	8.948403	-4.396	1.444041	0.000225	MT2477	1.313469	8.277967	3.804871	-0.33207	0.001102
MT3952	-1.55906	9.001078	-4.39597	1.443944	0.000225	MT2721	-0.95364	9.328417	-3.80435	-0.33359	0.001103
MT1929	-1.58025	9.406473	-4.39594	1.443867	0.000225	MT3920	-1.2167	8.0049	-3.80367	-0.33554	0.001105
MT0180	-1.11455	9.477618	-4.3956	1.442795	0.000225	MT1523	-1.01733	9.223696	-3.80302	-0.33743	0.001106
MT1750	-0.97984	9.131986	-4.39358	1.436545	0.000226	MT0254	1.281637	10.47091	3.800445	-0.3449	0.001114
MT1470	1.327046	8.719607	4.392789	1.43409	0.000226	MT2124	1.602635	8.292897	3.799997	-0.3462	0.001115
MT0182	1.127292	9.150149	4.3921	1.431957	0.000227	MT1864	1.137636	9.712488	3.795578	-0.359	0.00113
MT3192	-1.25738	10.13451	-4.39095	1.428394	0.000227	MT0730	-1.05688	8.820031	-3.79382	-0.3641	0.001135
MT1313	1.3674	8.261804	4.38855	1.420964	0.000229	MT0052	1.430556	8.742337	3.791897	-0.36966	0.001141
MT0916	-1.98576	10.02919	-4.38799	1.41923	0.000229	MT0804	1.581199	8.63198	3.7904	-0.37399	0.001145
MT2547.1	-1.14891	9.115306	-4.38633	1.414087	0.00023	MT0630	1.233343	9.103535	3.790389	-0.37403	0.001145
MT1027	-1.01455	9.484252	-4.38481	1.409389	0.000231	MT3972	-1.20792	9.016689	-3.78985	-0.3756	0.001145
MT1107	1.389374	9.187624	4.381511	1.399177	0.000234	MT0273	1.454179	8.544578	3.789843	-0.37561	0.001145
MT1043	-0.98938	9.19493	-4.37915	1.391877	0.000235	MT0289	1.076218	8.981331	3.789669	-0.37611	0.001145
MT0801	-1.4767	9.1759	-4.37774	1.387513	0.000236	MT0238	1.268605	8.985291	3.784671	-0.39057	0.001162
MT2641	-1.15722	9.435357	-4.3764	1.383375	0.000237	MT3462	1.203803	8.761815	3.781576	-0.39952	0.001172
MT2769	2.080967	8.858401	4.374538	1.377607	0.000238	MT0710	-1.0005	8.973424	-3.77912	-0.40661	0.001181
MT0169	-1.62149	9.014496	-4.37281	1.372255	0.000239	MT0878	1.498452	9.271872	3.778285	-0.40903	0.001183
MT0110	-1.07877	9.150958	-4.37094	1.366473	0.00024	MT3823	-1.38172	10.05477	-3.77806	-0.40968	0.001183
MT3023	-1.03282	9.052362	-4.3687	1.359555	0.000242	MT1152	1.03646	9.705123	3.77761	-0.41098	0.001184
MT3805	1.844544	9.224322	4.368616	1.359299	0.000242	MT0353	1.307876	9.146949	3.777003	-0.41273	0.001185
MT1859	1.362167	9.26931	4.367028	1.354392	0.000243	MT3988	-0.89306	9.158557	-3.77521	-0.41792	0.001191
MT0116	1.305555	8.717656	4.365176	1.348669	0.000244	MT1876	1.21525	9.110391	3.773934	-0.4216	0.001195

MT2896	1.268122	8.828303	4.362966	1.341843	0.000246	MT3519	1.263608	8.825901	3.772961	-0.42441	0.001198
MT0135	1.415745	9.049864	4.359798	1.332058	0.000248	MT3902	1.225047	10.02325	3.771373	-0.42899	0.001203
MT2427	1.163033	8.929556	4.358463	1.327935	0.000249	MT0028	-0.96556	8.697317	-3.77061	-0.4312	0.001205
MT3671.1	1.397773	8.720508	4.357787	1.325848	0.000249	MT2995	-0.98425	9.465026	-3.77046	-0.43162	0.001205
MT0026	1.894064	8.284221	4.35461	1.316041	0.000252	MT3648	1.084494	9.722243	3.768945	-0.436	0.001209
MT2470	1.263443	10.44592	4.34881	1.298145	0.000256	MT3917	1.284685	9.002239	3.766136	-0.4441	0.001219
MT2808	1.186085	9.227859	4.346458	1.290889	0.000258	MT1384	1.153788	10.2993	3.764692	-0.44827	0.001224
MT3921	1.648623	8.70234	4.345513	1.287975	0.000258	MT2762	1.299384	8.54149	3.761995	-0.45604	0.001233
MT0798	-1.65352	8.831883	-4.34188	1.27678	0.000261	MT3110	1.32551	8.724039	3.7617	-0.45689	0.001233
MT1477	-1.20495	8.376082	-4.33921	1.268553	0.000263	MT3420	-1.11595	9.173305	-3.75976	-0.4625	0.00124
MT2776	1.191406	9.051504	3.709473	-0.6069	0.00142	MT3724	1.016647	9.983047	3.759595	-0.46296	0.00124
MT0313	0.892092	8.340816	3.706265	-0.61608	0.001434	MT0734	1.374947	8.725211	3.758207	-0.46696	0.001244
MT0954	-0.96143	9.617508	-3.70568	-0.61775	0.001435	MT3388	-1.07672	10.18714	-3.7551	-0.4759	0.001255
MT2574	-1.03373	9.184334	-3.70561	-0.61794	0.001435	MT2787	-0.88601	9.263955	-3.75176	-0.48552	0.001267
MT0373	1.408223	8.538725	3.704832	-0.62018	0.001437	MT2396	1.117879	9.014825	3.747955	-0.49648	0.001282
MT0201	1.321754	8.773597	3.70198	-0.62833	0.001449	MT0270.1	1.039988	9.72934	3.744986	-0.50502	0.001292
MT1319	1.119204	9.700381	3.69958	-0.63519	0.001458	MT3098	1.428772	9.821809	3.742861	-0.51113	0.001299
MT0368	-1.36342	9.28888	-3.69795	-0.63985	0.001465	MT3248	1.064186	9.413044	3.742665	-0.5117	0.001299
MT4002	1.184199	9.262408	3.697798	-0.64028	0.001465	MT2037	1.231995	9.331066	3.742595	-0.5119	0.001299
MT2018	0.981858	9.427785	3.697417	-0.64137	0.001465	MT3833	-0.96013	9.070231	-3.74101	-0.51645	0.001305
MT1053	1.31271	8.723531	3.697253	-0.64184	0.001465	MT3150	-0.95643	9.41663	-3.74038	-0.51827	0.001307
MT3012	-1.23917	9.381341	-3.69623	-0.64475	0.001469	MT2764	-1.13416	9.177619	-3.73913	-0.52186	0.001311
MT1669	1.192777	10.55821	3.695848	-0.64585	0.00147	MT3202	-0.98865	8.570232	-3.7365	-0.52942	0.001321
MT3634	-0.955	9.183659	-3.69531	-0.64739	0.001471	MT2997	-1.0193	8.887453	-3.73437	-0.53552	0.001328
MT0994	1.467391	8.579319	3.685405	-0.67565	0.001515	MT1467	-1.51669	8.524799	-3.73287	-0.53983	0.001334
MT1379	-1.00455	9.551167	-3.68437	-0.6786	0.001519	MT2432	1.29828	8.878903	3.732291	-0.5415	0.001335
MT0582	1.173552	8.829247	3.682747	-0.68323	0.001525	MT3375	-1.03254	8.978436	-3.72937	-0.54987	0.001346
MT0474	1.1078	9.616931	3.680121	-0.69072	0.001537	MT1144	1.166629	9.351624	3.723536	-0.56662	0.001369
MT1496	1.346202	9.428084	3.679936	-0.69124	0.001537	MT2407	-1.10827	10.33421	-3.72331	-0.56728	0.00137
MT3034	0.978295	10.15775	3.678178	-0.69625	0.001544	MT1798	1.043691	9.131037	3.722037	-0.57092	0.001374
MT2258	-1.12767	9.162838	-3.67798	-0.69681	0.001544	MT3909	0.899886	10.08604	3.719062	-0.57944	0.001386
MT1759	1.144104	9.383615	3.677451	-0.69832	0.001545	MT0177	1.378692	9.408532	3.717452	-0.58406	0.001392
MT1667	1.173072	9.078376	3.677433	-0.69838	0.001545	MT3772	-0.91015	8.808905	-3.71664	-0.58638	0.001394
MT3070	-1.2431	9.27726	-3.67618	-0.70195	0.001549	MT3260	-1.01176	9.636098	-3.71607	-0.58801	0.001395
MT1339	0.989616	9.325763	3.675981	-0.70251	0.001549	MT2488	1.021538	8.872285	3.715977	-0.58828	0.001395
MT3806	1.075324	9.229788	3.675404	-0.70415	0.001551	MT1177	-0.95992	8.786303	-3.71386	-0.59435	0.001403
MT1181	1.016655	9.721794	3.669795	-0.72012	0.001577	MT2371	-0.90774	9.202815	-3.71185	-0.60011	0.001411
MT1761	1.330847	8.774864	3.667812	-0.72576	0.001585	MT0715	-1.26719	8.652954	-3.43364	-1.37985	0.002875
MT3244	-1.07674	8.865314	-3.66719	-0.72752	0.001587	MT1026	1.10541	9.427738	3.433083	-1.38138	0.002877
MT0226	0.976879	9.392247	3.666994	-0.72808	0.001587	MT2375	-0.96309	9.347497	-3.43301	-1.38157	0.002877
MT1611	1.288223	9.988051	3.666134	-0.73053	0.001591	MT0074	-1.11366	9.2004	-3.43165	-1.3853	0.002887
MT0146	-1.01208	9.119824	-3.66507	-0.73357	0.001595	MT2160	1.250516	8.256256	3.431235	-1.38644	0.002889
MT0842	-1.03679	9.594323	-3.6646	-0.73489	0.001596	MT2876	-0.8792	9.038197	-3.43084	-1.38752	0.002891
MT1816	-0.95955	8.961744	-3.66351	-0.738	0.0016	MT0910.1	0.857131	9.137895	3.430552	-1.38831	0.002892
MT1051	-1.17641	8.829963	-3.66309	-0.73917	0.001601	MT0920	0.997951	9.409938	3.429964	-1.38992	0.002895
MT2646	-1.3259	8.774042	-3.66107	-0.74491	0.00161	MT3741	-1.09874	8.723145	-3.42833	-1.39438	0.002908
MT0821	1.057829	9.049119	3.660622	-0.7462	0.001611	MT3011	-0.9559	9.831408	-3.4234	-1.40788	0.002947
MT3492	-1.27827	8.149109	-3.65971	-0.74878	0.001615	MT0066	-0.80797	9.201862	-3.42332	-1.4081	0.002947
MT3653	-0.9588	9.216497	-3.65878	-0.75144	0.001618	MT0951	-0.80298	9.416053	-3.42295	-1.40912	0.002949
MT2859	-0.93879	9.003117	-3.65721	-0.7559	0.001625	MT2816	1.057289	9.524118	3.421632	-1.41272	0.002959
MT0078	-1.03569	9.342476	-3.65698	-0.75653	0.001625	MT0968.1	1.055048	9.475555	3.420347	-1.41623	0.002968
MT0383	1.194079	9.139555	3.653751	-0.76571	0.00164	MT4041.2	-1.23933	9.375926	-3.41928	-1.41916	0.002976
MT3245	-0.94182	9.480844	-3.65291	-0.76809	0.001643	MT0749	-0.86791	9.717569	-3.41521	-1.43028	0.00301
MT2503	-1.05701	9.29848	-3.65212	-0.77035	0.001646	MT0905	0.994126	9.038176	3.414766	-1.43149	0.003011
MT0167	1.035968	8.910147	3.651821	-0.77119	0.001647	MT0824	1.488015	10.5433	3.414735	-1.43157	0.003011
MT1309	-1.09567	9.114505	-3.65032	-0.77546	0.001653	MT1891	-0.90773	8.547016	-3.41243	-1.43787	0.00303
MT0847	-0.88485	9.212575	-3.64682	-0.78537	0.001669	MT0233	-0.88959	9.021767	-3.41146	-1.44052	0.003037
MT1629	-0.90008	9.284101	-3.64675	-0.78557	0.001669	MT0147	0.971127	9.264836	3.411089	-1.44153	0.003038
MT3751	1.375485	8.705701	3.646651	-0.78585	0.001669	MT0206	-1.02179	8.773126	-3.40867	-1.44812	0.003058
MT2401	1.310317	10.37405	3.646446	-0.78643	0.001669	MT0479	-0.99932	9.805737	-3.40733	-1.45177	0.003068
MT1009	-1.13878	8.630565	-3.64539	-0.78942	0.001673	MT2794	-0.85082	10.11007	-3.40703	-1.45259	0.003069
MT3293	-1.25956	8.74798	-3.64264	-0.79722	0.001686	MT3385	0.98044	9.375689	3.406888	-1.45299	0.003069
MT0192	-0.87458	9.093141	-3.64232	-0.79812	0.001687	MT1280.1	1.470991	8.306369	3.405437	-1.45695	0.00308
MT3356	1.214873	8.159933	3.641766	-0.7997	0.001687	MT1387	0.884986	9.611323	3.405082	-1.45791	0.00308
MT3345	0.886159	9.668586	3.641759	-0.79972	0.001687	MT0761	1.026955	8.850917	3.405076	-1.45793	0.00308
MT0010	-1.04609	8.966947	-3.64067	-0.80279	0.001692	MT0933	-1.16562	9.273315	-3.40377	-1.4615	0.003091
MT1751.1	1.03023	8.768066	3.639396	-0.80641	0.001697	MT2749	1.323098	8.694275	3.397529	-1.4785	0.003146
MT0476	-1.13221	9.027144	-3.6386	-0.80865	0.0017	MT3121	-1.08493	8.993705	-3.39473	-1.48611	0.003169
MT3383	-1.1392	8.822734	-3.63741	-0.81204	0.001706	MT2659	-0.86945	9.009971	-3.39462	-1.48641	0.003169
MT1982	-1.11449	8.845713	-3.63661	-0.81429	0.001709	MT1533	-1.09372	9.265967	-3.3943	-1.48729	0.00317
MT3562	-1.16619	8.49961	-3.63553	-0.81736	0.001713	MT2737	-1.00797	9.265469	-3.39211	-1.49324	0.003189
MT3997	1.27184	9.04387	3.634055	-0.82153	0.001719	MT2240	-1.11363	9.316047	-3.39186	-1.49392	0.00319
MT0854	1.16608	9.441883	3.633954	-0.82182	0.001719	MT1711	1.197751	8.870671	3.391126	-1.49592	0.003195
MT1287	0.91462	8.760138	3.633892	-0.82199	0.001719	MT2065	0.774871	9.540791	3.390513	-1.49759	0.003197
MT1639	1.149107	8.888529	3.632187	-0.82682	0.001726	MT2354	-0.84948	8.870089	-3.39048	-1.49767	0.003197
MT1414	1.13633	10.37198	3.631634	-0.82838	0.001728	MT3044	-1.16032	9.366813	-3.38743	-1.50598	0.003224
MT0731	1.105004	8.901594	3.629136	-0.83545	0.00174	MT2058	-1.11425	9.734838	-3.38567	-1.51075	0.003239
MT2978	-0.91774	9.687287	-3.62872	-0.83663	0.001742	MT0385	-0.89484	9.301033	-3.38526	-1.51188	0.003241
MT2383	-1.0262	9.834108	-3.62828	-0.83787	0.001743	MT0312	-1.20634	8.108273	-3.38512	-1.51224	0.003241
MT2186	1.116982	10.44412	3.627493	-0.84009	0.001746	MT2999	-0.95915	9.134581	-3.38276	-1.51867	0.003261
MT0352	-1.19098	8.884289	-3.62615	-0.84389	0.001752	MT1502	1.276608	9.544492	3.381527	-1.52201	0.003271
MT0900	1.006733	8.803416	3.620951	-0.85858	0.001778	MT1097	0.918217	8.550772	3.379593	-1.52726	0.003288
MT1358	-1.17848	9.015734	-3.61777	-0.86755	0.001794	MT3276	-1.0035	9.006317	-3.37802	-1.53154	0.003301
MT1540	1.167144	8.995912	3.617413	-0.86857	0.001795	MT3544	1.210154	8.279646	3.375673	-1.5379	0.003322
MT0629	-1.35299	8.906613	-3.61649	-0.87116	0.001799	MT1143	-0.82771	9.318807	-3.37543	-1.53856	0.003323
MT2408	-1.04812	9.03496	-3.61306	-0.88085	0.001817	MT2070	1.412977	9.753771	3.374662	-1.54064	0.003328
MT3284	1.671674	8.601718	3.61226	-0.88311	0.00182	MT3257	0.951976	9.040038	3.373092	-1.5449	0.003342
MT1100	-0.80715	8.958526	-3.61066	-0.88763	0.001828	MT3188	-0.82136	9.073705	-3.37215	-1.54746	0.003349
MT3701	1.651455	8.155068	3.610297	-0.88865	0.001829	MT2108	0.848409	9.285976	3.370471	-1.55201	0.003364
MT2905	1.327846	8.172278	3.608378	-0.89406	0.001838	MT1260	1.089869	8.858069	3.369362	-1.55501	0.003373
MT2436	-1.0466	8.849978	-3.60716	-0.89748	0.001844	MT0149	1.283773	8.702287	3.365681	-1.56498	0.003408
MT3312	-1.00335	9.372068	-3.60693	-0.89814	0.001844	MT2219	1.383631	8.013464	3.365316	-1.56597	0.003409
MT0449	-1.21255	9.319138	-3.6056	-0.90188	0.00185	MT2114	1.300295	9.180596	3.363912	-1.56977	0.003421
MT3469	-0.8397	9.163094	-3.60466	-0.90454	0.001855	MT2318	0.989443	9.725411	3.362235	-1.57431	0.003436
MT0357.1	1.140948	9.298489	3.604307	-0.90553	0.001855	MT3586	1.023334	9.395258	3.361098	-1.57739	0.003446
MT2511	-1.48352	8.616126	-3.60299	-0.90924	0.001862	MT2409	-0.92168	8.920063	-3.35979	-1.58092	0.003457
MT1597	-0.96644	9.275844	-3.59915	-0.92004	0.001882	MT1954	-1.2276	9.689583	-3.35801	-1.58575	0.003471
MT3379	-1.12841	8.843976	-3.59743	-0.9249	0.001891	MT2526	-0.868	9.207863	-3.3579	-1.58604	0.003471

MT2428	-0.9397	9.085775	-3.59689	-0.92642	0.001893	MT1235	-1.14902	10.40271	-3.35789	-1.58606	0.003471
MT1673	-0.96167	8.918762	-3.59663	-0.92714	0.001893	MT0622	-1.39171	8.216884	-3.35729	-1.58767	0.003475
MT3602	-0.78997	9.491629	-3.59498	-0.93178	0.001901	MT1141	-0.77187	9.591266	-3.35572	-1.59194	0.003489
MT0889	1.473965	8.521979	3.59211	-0.93986	0.001917	MT2069	-0.73143	9.021347	-3.3555	-1.59253	0.003489
MT2309	1.060187	9.32365	3.591806	-0.94071	0.001917	MT0785	-0.92995	9.43901	-3.35518	-1.5934	0.003491
MT2149	-1.0588	8.979384	-3.59032	-0.94489	0.001925	MT1196	-1.03933	8.890409	-3.35441	-1.59547	0.003497
MT3036	-0.99806	8.76441	-3.59012	-0.94546	0.001925	MT3169	1.701364	9.60564	3.353557	-1.59778	0.003503
MT2373	-1.0654	8.807835	-3.58582	-0.95755	0.001949	MT1472	-1.10543	10.04619	-3.35091	-1.60492	0.003529
MT2506	-1.05017	9.249554	-3.58523	-0.95918	0.001951	MT2739	0.870288	8.802814	3.349697	-1.6082	0.003539
MT2637	-0.83915	9.059214	-3.58232	-0.96738	0.001967	MT2356	0.909309	9.493672	3.348816	-1.61058	0.003546
MT3727	1.40673	8.899444	3.580701	-0.97191	0.001975	MT2603	-1.03429	9.161726	-3.34651	-1.61681	0.003568
MT1547	-0.89685	8.979738	-3.57977	-0.97453	0.00198	MT2142	0.906762	9.96884	3.346077	-1.61797	0.003571
MT1207	-0.97471	9.805105	-3.57899	-0.9767	0.001983	MT2370.1	-0.92038	9.509092	-3.34528	-1.62013	0.003577
MT3170	1.079448	8.891701	3.576691	-0.98316	0.001996	MT0663	-0.77887	9.238865	-3.34309	-1.62604	0.003598
MT0786	-1.08464	9.275519	-3.57427	-0.98995	0.002009	MT0891	1.279227	8.474952	3.341644	-1.62993	0.003611
MT0717	-0.89533	8.906147	-3.57237	-0.99529	0.002019	MT3916	1.002051	8.932627	3.341421	-1.63053	0.003612
MT1399	-0.952	9.123376	-3.57114	-0.99872	0.002025	MT1892	-0.97145	8.967818	-3.34106	-1.6315	0.003614
MT2467	1.562631	10.02444	3.56887	-1.00509	0.002038	MT3143	0.825818	9.255668	3.340858	-1.63205	0.003614
MT2712	1.48195	8.47885	3.568268	-1.00677	0.00204	MT0125	0.960128	9.628638	3.340127	-1.63402	0.00362
MT1666	-0.9003	9.369512	-3.56701	-1.0103	0.002047	MT3222	-0.86792	9.292753	-3.33497	-1.64792	0.003672
MT2250	1.097853	9.298436	3.565804	-1.01368	0.002053	MT0388	1.219686	8.821326	3.33431	-1.64969	0.003677
MT3304	-0.96632	8.787778	-3.56254	-1.02281	0.002072	MT3382	-0.83953	8.973298	-3.33369	-1.65136	0.00368
MT1284	-0.99069	8.775989	-3.56226	-1.02358	0.002073	MT1099	-0.80785	9.348976	-3.33368	-1.65138	0.00368
MT2110	1.076416	8.973619	3.561749	-1.02503	0.002075	MT3377.1	-0.77718	9.815272	-3.3324	-1.65484	0.003692
MT2540	-1.06639	9.555544	-3.5591	-1.03244	0.00209	MT1215	0.794041	8.663782	3.332234	-1.65528	0.003692
MT1080	-1.33544	8.661328	-3.55499	-1.04394	0.002114	MT0088	0.875675	9.566376	3.330257	-1.6606	0.003711
MT1149	-1.01637	9.113622	-3.55477	-1.04454	0.002115	MT0035	-0.88456	8.913199	-3.32675	-1.67004	0.003747
MT2785	-1.2375	9.441265	-3.55433	-1.04576	0.002116	MT2571	0.93525	9.177417	3.324261	-1.67673	0.003772
MT3194.1	1.08327	9.408852	3.552967	-1.04958	0.002124	MT2182	-0.72684	8.748157	-3.32244	-1.68161	0.00379
MT0652	-1.29133	8.205709	-3.55136	-1.05408	0.002133	MT1994	0.980725	9.620574	3.321379	-1.68447	0.003799
MT3926	-0.97903	8.896915	-3.55087	-1.05545	0.002134	MT2321	-0.89398	8.727585	-3.3202	-1.68764	0.00381
MT2205	-0.85492	9.809564	-3.54987	-1.05823	0.00214	MT1462	-0.9759	10.68207	-3.31925	-1.69019	0.003819
MT1687	1.4648	8.553493	3.549662	-1.05882	0.00214	MT0719	-0.90136	9.056525	-3.31851	-1.69218	0.003825
MT0968	-0.88957	9.223254	-3.54919	-1.06014	0.002141	MT3153	-1.06405	9.87134	-3.31749	-1.69492	0.003834
MT1895	0.9241	8.994948	3.547185	-1.06574	0.002153	MT1937	-0.81493	9.691753	-3.31551	-1.70022	0.003854
MT1976	-0.80356	9.265617	-3.54542	-1.07066	0.002163	MT3615.3	1.025282	8.511346	3.315013	-1.70156	0.003858
MT0719.1	-0.95346	9.333267	-3.54347	-1.07612	0.002175	MT1151	-1.13677	8.969028	-3.3141	-1.704	0.003866
MT1385	-1.01349	9.48247	-3.54285	-1.07785	0.002177	MT0660	0.987878	9.623241	3.313532	-1.70553	0.00387
MT2353	-0.97525	9.312656	-3.54232	-1.07932	0.002179	MT1906	-0.8567	9.01145	-3.31117	-1.71188	0.003895
MT2570	-0.86248	9.223666	-3.54195	-1.08036	0.002181	MT1312.1	-0.73681	9.242316	-3.3068	-1.72358	0.00394
MT3859	1.273628	9.580111	3.540299	-1.08495	0.00219	MT3718.1	-0.91086	9.221468	-3.30679	-1.7236	0.00394
MT2598	1.350026	9.917139	3.538491	-1.09	0.002201	MT2732	1.104805	9.07823	3.300463	-1.74055	0.00401
MT3107	-1.5336	9.27131	-3.53479	-1.1003	0.002224	MT2986	-1.00839	8.708133	-3.29714	-1.74943	0.004047
MT0343	-0.79332	9.770208	-3.53255	-1.10654	0.002237	MT1803	-1.13546	9.429275	-3.29464	-1.75612	0.004074
MT1017	-1.04836	10.28195	-3.53111	-1.11056	0.002246	MT0662.1	-1.25344	8.929967	-3.29442	-1.75672	0.004075
MT2341	-0.91643	9.084424	-3.52925	-1.11575	0.002257	MT1696	1.582757	8.629816	3.293639	-1.7588	0.004082
MT0065	-0.82782	10.13756	-3.52679	-1.12259	0.002272	MT3530	1.082538	10.32091	3.29222	-1.76259	0.004096
MT2667	-1.0789	8.484191	-3.52627	-1.12404	0.002274	MT3785	-0.92142	9.346181	-3.29057	-1.76699	0.004113
MT2708	-1.20878	8.78985	-3.52599	-1.12482	0.002275	MT2627.1	-0.96669	8.845824	-3.28984	-1.76894	0.00412
MT1324	-0.895	10.53729	-3.52518	-1.12707	0.002279	MT0906	-0.80831	8.984498	-3.28831	-1.77304	0.004136
MT3041	-1.19248	9.227139	-3.52425	-1.12967	0.002284	MT1066	1.327399	9.212485	3.288153	-1.77346	0.004136
MT2426	1.402386	8.858666	3.514946	-1.15552	0.002347	MT0246	-0.7665	9.087368	-3.28498	-1.78192	0.004171
MT0105	1.118402	9.194975	3.514469	-1.15684	0.002349	MT3076	-1.16898	8.44093	-3.2838	-1.78507	0.004183
MT2402	-1.17373	8.844021	-3.51141	-1.16534	0.002369	MT0722	1.088646	8.661716	3.282846	-1.78762	0.004193
MT2772	0.919163	8.942453	3.510947	-1.16662	0.002371	MT1079	0.885268	8.626911	3.280096	-1.79495	0.004224
MT0434	-1.10841	9.034305	-3.50925	-1.17133	0.002381	MT2372	1.010162	9.872928	3.278454	-1.79933	0.004242
MT0121	-0.99584	10.00199	-3.50651	-1.17892	0.002399	MT2507	-0.68772	9.237582	-3.27777	-1.80114	0.004248
MT0070	1.215954	8.842561	3.505823	-1.18084	0.002403	MT0099.1	0.811381	9.017624	3.276537	-1.80443	0.004261
MT2335	-0.9043	9.141229	-3.50564	-1.18135	0.002403	MT2518	0.832118	8.991823	3.274866	-1.80888	0.004279
MT2554.2	-1.01538	9.412496	-3.50535	-1.18215	0.002404	MT1779	1.076043	8.771018	3.273014	-1.81381	0.004299
MT0200	1.193967	8.699981	3.503382	-1.18761	0.002416	MT1960	0.87947	9.159156	3.270197	-1.82131	0.004332
MT3672	-0.90322	9.559251	-3.49725	-1.2046	0.002459	MT1776	-0.80302	8.953284	-3.26908	-1.82428	0.004344
MT2799	1.236676	9.069533	3.496006	-1.20805	0.002467	MT3870	-1.03485	8.860388	-3.26752	-1.82843	0.004361
MT2777.1	-1.00187	8.686362	-3.4954	-1.20973	0.00247	MT2697	0.948258	8.732097	3.267271	-1.8291	0.004362
MT1423	-1.196	8.189369	-3.49507	-1.21064	0.002471	MT0794	0.880361	9.407739	3.266497	-1.83116	0.004367
MT0221	-0.96641	9.745352	-3.49109	-1.22166	0.002499	MT2536	-0.96339	9.126748	-3.26646	-1.83126	0.004367
MT1654	-0.81955	9.140741	-3.49017	-1.2242	0.002504	MT0360	0.897591	9.690346	3.266021	-1.83242	0.004371
MT0103	-1.85995	10.35034	-3.49001	-1.22465	0.002504	MT2759	-0.81823	8.807973	-3.26512	-1.83481	0.00438
MT0726.1	-1.04203	8.496345	-3.48933	-1.22653	0.002508	MT0059	-1.16807	9.488296	-3.26184	-1.84352	0.004419
MT3853	-1.05273	9.177252	-3.48891	-1.2277	0.002509	MT0219	-0.901	8.359901	-3.25549	-1.8604	0.004498
MT2032	1.126712	10.04723	3.486418	-1.23458	0.002525	MT1707	1.019582	9.201633	3.255152	-1.86129	0.004498
MT2206	-0.97385	8.573579	-3.48624	-1.23507	0.002525	MT2565	-1.14763	8.149005	-3.25508	-1.86149	0.004498
MT2254	1.057597	8.905806	3.486175	-1.23525	0.002525	MT0259	0.728358	9.30555	3.253773	-1.86495	0.004513
MT1402	-1.18334	9.010281	-3.48461	-1.23956	0.002536	MT2332	-1.28827	9.084769	-3.25359	-1.86543	0.004513
MT1568	-1.03316	9.3059	-3.48372	-1.24203	0.002541	MT0690	-0.98567	8.770514	-3.25337	-1.86601	0.004513
MT1688	1.006899	8.897757	3.483558	-1.24248	0.002541	MT2589	-0.82965	9.02956	-3.25262	-1.868	0.00452
MT3526	-1.14585	8.5296	-3.48257	-1.24522	0.002547	MT0073	-1.11069	9.021326	-3.25253	-1.86825	0.00452
MT3285	1.217337	10.50236	3.480377	-1.25127	0.002562	MT1809	1.080698	9.705319	3.252156	-1.86924	0.004522
MT2314	0.931162	9.635981	3.474548	-1.26736	0.002605	MT0359	-0.83291	9.260752	-3.25191	-1.8699	0.004523
MT1670	-0.83284	9.006804	-3.47263	-1.27265	0.002617	MT3652	0.836651	9.634103	3.249338	-1.87671	0.004554
MT3290	0.997767	9.040543	3.472523	-1.27295	0.002617	MT1800	-0.90755	9.142262	-3.24667	-1.88379	0.004587
MT1045	-0.98115	8.689639	-3.47244	-1.27318	0.002617	MT3858	-1.06534	8.582003	-3.24646	-1.88434	0.004587
MT2306	-1.14928	8.661122	-3.47063	-1.27816	0.002629	MT3815	1.4971	8.161325	3.245681	-1.8864	0.004595
MT0054	1.415602	8.364829	3.469645	-1.28088	0.002635	MT2850	-0.75514	9.205306	-3.24546	-1.88698	0.004595
MT1618	0.917992	9.703427	3.465199	-1.29314	0.002669	MT2210	1.358589	8.296245	3.240557	-1.89996	0.004658
MT1015	-0.956	9.081841	-3.46455	-1.29492	0.002672	MT0224	-0.86516	8.960193	-3.24002	-1.90137	0.004663
MT1075	-1.02902	9.296406	-3.46346	-1.29792	0.002679	MT2033	-0.82819	9.124212	-3.23757	-1.90785	0.004693
MT3162	1.020361	9.136542	3.463261	-1.29848	0.002679	MT0686	-0.89676	8.913231	-3.23608	-1.91179	0.00471
MT3348	-0.87304	9.64086	-3.46269	-1.30004	0.002682	MT3496	0.698721	8.864297	3.23398	-1.91735	0.004736
MT3111	-1.03751	8.427416	-3.46184	-1.30238	0.002688	MT1860	-1.17632	9.151045	-3.23031	-1.92704	0.004784
MT1546	-1.13968	9.362109	-3.46165	-1.30292	0.002688	MT0529	1.024069	9.980688	3.228754	-1.93115	0.004803
MT1158	-0.9222	9.041122	-3.46015	-1.30703	0.002698	MT2696	1.198905	8.921551	3.228548	-1.9317	0.004803
MT3623	0.964488	9.26436	3.459866	-1.30782	0.002699	MT1342	-0.81633	9.411327	-3.22623	-1.93782	0.004832
MT0667	-1.00235	10.03061	-3.45945	-1.30896	0.002699	MT0230	0.928754	9.168159	3.223757	-1.94434	0.004864
MT1638	-1.05685	8.74959	-3.45944	-1.309	0.002699	MT1047	0.988223	10.28252	3.214836	-1.96784	0.004987
MT3161	0.93211	9.910858	3.459172	-1.30973	0.0027	MT3745	-0.7615	9.248028	-3.21346	-1.97146	0.005003
MT3485	-0.94604	9.267554	-3.45764	-1.31396	0.002711	MT1691	1.396846	8.77652	3.212738	-1.97337	0.005011
MT3198	1.09802	9.13298	3.455631	-1.31948	0.002725	MT0560	1.173561	9.533873	3.211909	-1.97555	0.005021

MT1799	-1.10105	9.554527	-3.45498	-1.32126	0.002729	MT1258	0.962806	8.815855	3.2113	-1.97715	0.005027
MT3756.3	1.535172	8.230057	3.454819	-1.32171	0.002729	MT0738	0.948854	8.861831	3.209327	-1.98234	0.005052
MT1525	1.015457	9.599589	3.454514	-1.32255	0.00273	MT0908	-1.03186	9.077882	-3.20634	-1.99018	0.005093
MT1142	1.108468	9.958241	3.453256	-1.32601	0.002738	MT1171	0.871331	8.57673	3.204858	-1.99409	0.005112
MT0898	-0.81264	8.838008	-3.44966	-1.33588	0.002766	MT1259	-0.67133	8.994454	-3.20431	-1.99554	0.005117
MT1757	1.285163	8.397329	3.449461	-1.33644	0.002766	MT0899	0.880905	9.082617	3.203965	-1.99643	0.00512
MT2367.1	-0.8409	9.654991	-3.44916	-1.33726	0.002767	MT3876	-0.9595	10.29823	-3.20189	-2.00189	0.005147
MT3854	-1.02692	8.566833	-3.44599	-1.34597	0.002791	MT3255	-1.07721	8.569079	-3.20019	-2.00635	0.00517
MT1713	-1.23512	7.953023	-3.44119	-1.35914	0.002829	MT0868	-1.10549	8.984647	-3.19748	-2.01346	0.005207
MT3573.5	-1.00328	9.258832	-3.44082	-1.36017	0.002831	MT3499	-0.75866	9.061244	-3.19604	-2.01725	0.005225
MT1614	-0.94861	9.419079	-3.44038	-1.36138	0.002832	MT2726	0.948347	9.376539	3.191551	-2.02901	0.00529
MT1390	1.021134	9.070872	3.440264	-1.36169	0.002832	MT3373	-1.22028	9.191328	-3.19044	-2.03191	0.005304
MT1382	0.855478	10.09203	3.439939	-1.36258	0.002833	MT1025.2	-0.73516	9.191366	-3.18963	-2.03405	0.005313
MT3394	0.825745	9.209431	3.438712	-1.36594	0.002842	MT1060	-0.80023	9.187114	-3.18915	-2.03531	0.005318
MT3182	-1.17664	9.059049	-3.43823	-1.36726	0.002844	MT0918	-0.76273	9.328233	-3.18608	-2.04333	0.005361
MT3604	-1.08091	9.172394	-3.43813	-1.36755	0.002844	MT2518.1	-0.91355	8.997845	-3.18594	-2.04371	0.005361
MT0676	0.950364	9.3037	3.437691	-1.36875	0.002846	MT2814	0.923508	8.894213	3.185059	-2.04601	0.005372
MT0421	-0.86519	9.188751	-3.436	-1.37339	0.002858	MT2368	-0.91529	9.836107	-3.18469	-2.04697	0.005374
MT0649	1.472661	8.226024	3.434963	-1.37622	0.002866	MT1602	-0.83505	9.351932	-3.18144	-2.05547	0.005421
MT1583	-1.12386	9.120917	-3.09703	-2.27436	0.006642	MT0284	-0.97901	8.661742	-3.18112	-2.05632	0.005424
MT3692	0.708832	8.577204	3.096687	-2.27524	0.006645	MT0085	-0.8786	9.183684	-3.18024	-2.05862	0.005434
MT1120	0.998354	8.679071	3.096125	-2.27668	0.006653	MT0009	0.971591	9.185246	3.177791	-2.06502	0.005469
MT3189	0.869532	9.12971	3.095328	-2.27873	0.006664	MT2647	-0.88346	8.95161	-3.17499	-2.07233	0.00551
MT2087	1.111341	9.128809	3.09512	-2.27927	0.006665	MT3186.1	-0.78578	8.972526	-3.17437	-2.07395	0.005517
MT0441	0.967039	9.052713	3.093806	-2.28264	0.006686	MT0917	-0.96264	9.108147	-3.17323	-2.07693	0.005532
MT2184	-1.24591	8.503931	-3.09157	-2.28839	0.006725	MT1468	1.715986	9.204047	3.168909	-2.08821	0.005597
MT3101	1.120216	10.65185	3.091274	-2.28914	0.006727	MT0546	0.955985	8.528003	3.167583	-2.09167	0.005615
MT2232	-0.69214	8.793459	-3.09013	-2.29209	0.006742	MT3495	1.197339	8.159384	3.166308	-2.09499	0.005633
MT2221	1.360701	8.334856	3.090112	-2.29213	0.006742	MT2865	-0.76973	9.12024	-3.16205	-2.10609	0.005698
MT2880	-0.85937	8.616568	-3.08926	-2.29432	0.006755	MT0866	0.782738	9.395697	3.159647	-2.11235	0.005732
MT1222	-0.80664	9.272994	-3.08896	-2.29509	0.006757	MT3840	-1.00334	10.10751	-3.15956	-2.11258	0.005732
MT2295	1.205808	8.221561	3.088401	-2.29652	0.006765	MT2720	-0.86043	9.182592	-3.15941	-2.11297	0.005732
MT3524	0.956439	9.267077	3.087406	-2.29907	0.00678	MT1354	-0.8759	9.046719	-3.15911	-2.11375	0.005734
MT2399	-1.03779	8.943292	-3.08556	-2.30382	0.006812	MT0644	1.033886	8.513208	3.157743	-2.1173	0.005753
MT3941	-0.8716	9.172733	-3.08501	-2.30522	0.006819	MT2600.1	0.862807	9.026002	3.157289	-2.11849	0.005757
MT1645	0.924834	9.026694	3.084773	-2.30582	0.00682	MT1173	-1.36378	9.833528	-3.15714	-2.11887	0.005757
MT3928	-0.88365	9.548067	-3.08458	-2.30632	0.006821	MT3622	-1.06528	9.725821	-3.1559	-2.12211	0.005775
MT0557	-1.0258	8.54052	-3.08344	-2.30924	0.006839	MT1403	0.876404	9.538073	3.154975	-2.12451	0.005787
MT1050	-0.72673	9.164663	-3.08075	-2.31614	0.006887	MT3002	-0.70198	9.045882	-3.15385	-2.12745	0.005802
MT0924	0.898252	9.760151	3.07801	-2.32315	0.006935	MT1052	-0.94269	9.284228	-3.15263	-2.13062	0.005819
MT2139	0.864204	9.522068	3.077923	-2.32337	0.006935	MT2241	-0.92791	8.882416	-3.15029	-2.13669	0.005853
MT1928	0.835754	9.493576	3.076947	-2.32587	0.00695	MT2225	-0.91823	9.244176	-3.15025	-2.1368	0.005853
MT0518	1.084098	8.764673	3.073067	-2.3358	0.007022	MT0589	-0.82849	9.344098	-3.14613	-2.1475	0.005918
MT1693	1.229598	8.501883	3.069679	-2.34446	0.007085	MT0470	-1.06522	8.704445	-3.14549	-2.14915	0.005926
MT0607	-1.06516	8.005057	-3.06857	-2.34729	0.007101	MT3953	-0.65699	9.262102	-3.14427	-2.15232	0.005943
MT0909	-0.82151	8.869383	-3.06856	-2.34732	0.007101	MT0419	-0.76225	9.496291	-3.14118	-2.16035	0.005992
MT1012	-0.75899	9.499674	-3.06815	-2.34837	0.007105	MT1686	-1.01886	9.628305	-3.14046	-2.16221	0.006001
MT0527	-0.89713	9.590938	-3.06772	-2.34948	0.00711	MT2300	-0.78991	9.479802	-3.14029	-2.16265	0.006001
MT0883	0.960026	9.274229	3.065239	-2.3558	0.007156	MT0044	0.978539	9.222383	3.139998	-2.16341	0.006003
MT1194	-1.095	7.804196	-3.06164	-2.36499	0.007224	MT0291	1.17093	8.542424	3.139588	-2.16448	0.006007
MT0902	0.892508	8.838175	3.061468	-2.36543	0.007224	MT1820.1	1.12173	8.73695	3.137722	-2.16931	0.006035
MT0790	-1.06851	8.866888	-3.05986	-2.36952	0.007253	MT0127	1.100218	9.167359	3.137102	-2.17092	0.006043
MT0631	0.68778	8.860133	3.059461	-2.37055	0.007258	MT2550	-1.04511	9.271159	-3.13692	-2.1714	0.006043
MT1979	0.750153	9.45164	3.059174	-2.37128	0.00726	MT2127	-0.77607	9.069441	-3.13281	-2.18204	0.00611
MT2034	0.94814	9.589768	3.05639	-2.37837	0.007313	MT0013	0.84278	9.601281	3.132359	-2.18321	0.006115
MT1094	0.99918	9.572971	3.056029	-2.37929	0.007315	MT4006	-0.79143	8.519191	-3.13183	-2.18458	0.006121
MT2891	0.888882	8.831564	3.055932	-2.37954	0.007315	MT3884	-0.74375	8.813958	-3.12829	-2.19374	0.006179
MT0001	-0.9972	9.016581	-3.05558	-2.38043	0.007319	MT0692.1	-0.81106	9.422861	-3.12776	-2.1951	0.006185
MT1957.1	-0.93191	8.999937	-3.05516	-2.3815	0.007324	MT2416	-0.86008	8.919869	-3.12453	-2.20348	0.006238
MT0910.2	-1.09182	8.849238	-3.05465	-2.38282	0.007331	MT1824	0.872908	9.528538	3.123316	-2.2066	0.006257
MT2627	1.27631	8.817738	3.053647	-2.38536	0.007348	MT0632	1.262943	8.135137	3.122997	-2.20743	0.006259
MT3943	-1.16869	8.069667	-3.05073	-2.3928	0.007404	MT0516	0.929902	9.053788	3.122503	-2.2087	0.006265
MT0267	0.748867	8.710077	3.050403	-2.39362	0.007404	MT0372	0.893519	7.669831	3.119751	-2.21581	0.00631
MT2993	0.910463	9.888696	3.050381	-2.39368	0.007404	MT0161	-0.9464	9.238597	-3.11822	-2.21976	0.006334
MT2588	-0.78049	9.124259	-3.04969	-2.39543	0.007414	MT0784	-0.85688	8.736207	-3.118	-2.22032	0.006335
MT2050	0.655056	9.012304	3.045528	-2.40602	0.007497	MT0077	-0.91309	9.336491	-3.11688	-2.22324	0.006352
MT0480	-1.14629	9.020844	-3.04505	-2.40723	0.007503	MT1492	-0.83794	9.154353	-3.11475	-2.22872	0.006386
MT0237	-0.87311	8.993139	-3.04382	-2.41037	0.007525	MT0789	-0.95858	9.094588	-3.11444	-2.22952	0.006389
MT0431	-0.73355	8.952282	-3.04361	-2.4109	0.007526	MT2485	-0.89751	8.909417	-3.11403	-2.23057	0.006393
MT2796	-0.76668	8.879877	-3.04181	-2.41547	0.00756	MT0931	-0.74048	9.418997	-3.11319	-2.23275	0.006403
MT3754	0.911592	8.917634	3.040911	-2.41775	0.007572	MT2688	-0.76454	9.109893	-3.1131	-2.23298	0.006403
MT1579	-0.93566	9.613398	-3.04088	-2.41783	0.007572	MT0810	-1.05078	9.628997	-3.11272	-2.23397	0.006405
MT3053	-0.76878	9.084275	-3.03725	-2.42705	0.007645	MT3281	-1.30203	8.917031	-3.11267	-2.23409	0.006405
MT2897	1.262116	8.142848	3.036943	-2.42783	0.007648	MT1203	-0.90133	9.07638	-3.11191	-2.23605	0.006415
MT1646	0.991232	9.183652	3.035735	-2.43089	0.00767	MT0241	0.807223	9.293111	3.106381	-2.2503	0.006512
MT3730	1.413956	11.02202	3.030658	-2.44377	0.007774	MT3981	-0.98002	9.02333	-3.10573	-2.25198	0.006521
MT0318	1.091127	8.574637	3.02834	-2.44964	0.00782	MT1945	-0.83224	9.324535	-3.10487	-2.25419	0.006533
MT1154	0.98241	9.347622	3.026457	-2.45441	0.007857	MT3287	-1.05418	8.679957	-3.1046	-2.25489	0.006535
MT3440	-0.806	8.944057	-3.02519	-2.45761	0.007881	MT3600	-0.94298	9.550356	-3.10359	-2.25747	0.00655
MT1587	-0.91835	9.24824	-3.023	-2.46315	0.007925	MT3817	-0.89053	8.710462	-3.10344	-2.25787	0.00655
MT2623	1.086111	8.823979	3.0222	-2.46518	0.007939	MT2017	-0.76371	9.046132	-3.10304	-2.2589	0.006554
MT0160	-1.03441	8.786244	-3.02169	-2.46647	0.007946	MT3163	-0.84643	9.04248	-3.10236	-2.26064	0.00656
MT2316	-0.71895	9.393413	-3.02099	-2.46824	0.007958	MT1116	1.105226	8.330407	3.102356	-2.26066	0.00656
MT1381	-0.95518	8.766642	-3.01968	-2.47155	0.007983	MT2585	0.907306	8.358109	3.099661	-2.26759	0.006607
MT0351	-0.89893	8.480088	-3.0155	-2.48211	0.008071	MT3709	1.046897	8.903834	3.098872	-2.26962	0.006617
MT0740.1	-0.75011	9.218799	-3.01482	-2.48382	0.008083	MT3767	-1.01786	9.384063	-3.09875	-2.26994	0.006617
MT3379.1	-1.20327	9.876048	-3.01455	-2.48451	0.008085	MT3585	-1.01517	9.448484	-3.09731	-2.27363	0.00664
MT2581	-0.72392	8.788006	-3.01311	-2.48814	0.008113	MT1363.1	-0.73064	9.402681	-2.77683	-3.06855	0.014144
MT3889	-0.72296	9.359251	-3.01239	-2.48996	0.008125	MT0338	1.074588	8.698062	2.771871	-3.08037	0.014323
MT2763	-0.97945	8.687326	-3.0113	-2.49272	0.008146	MT2447	-0.78965	8.940372	-2.77111	-3.08218	0.014345
MT2927	0.899765	8.84095	3.010387	-2.49502	0.008163	MT0778	0.863853	8.717504	2.770734	-3.08308	0.014353
MT0403	0.930132	9.272209	3.008214	-2.5005	0.008208	MT0411	0.839903	10.00581	2.770097	-3.0846	0.014371
MT2616	0.922742	8.595529	3.007567	-2.50213	0.008219	MT1469	-0.63768	8.925718	-2.76861	-3.08813	0.014421
MT0140	1.169457	10.60797	3.00591	-2.50631	0.008252	MT3924	0.999808	8.401949	2.764206	-3.09862	0.014583
MT3923	-0.82201	8.997227	-3.00546	-2.50746	0.008259	MT0477	-0.80253	9.094001	-2.76195	-3.10398	0.014663
MT1357	-0.86902	9.064315	-3.00503	-2.50854	0.008264	MT3748	0.89389	9.335245	2.761727	-3.10451	0.014665
MT2929	-0.79625	8.694727	-2.99787	-2.52655	0.008424	MT1025.3	-0.96104	8.899695	-2.76003	-3.10854	0.014724
MT3152	-0.73853	9.007448	-2.99729	-2.52801	0.008434	MT1375	0.973682	9.372294	2.757764	-3.11393	0.014806

MT3879	-0.82087	9.286483	-2.99676	-2.52934	0.008442	MT2415	-0.75237	9.326262	-2.75754	-3.11447	0.014808
MT3209	0.808588	9.421646	2.996125	-2.53095	0.008453	MT2094	0.907293	8.513065	2.756148	-3.11777	0.014856
MT0655	1.063519	8.487532	2.995685	-2.53205	0.008459	MT3471	0.739406	8.479237	2.753739	-3.12348	0.014943
MT0535	1.242572	8.758017	2.995452	-2.53264	0.008461	MT0945	-0.82338	8.393594	-2.75239	-3.12667	0.01499
MT2230	-0.75577	9.276081	-2.99363	-2.53722	0.008499	MT3703	-0.8864	9.483369	-2.75212	-3.12731	0.014994
MT1036	-0.90119	9.350529	-2.99296	-2.53891	0.008511	MT1591	-0.75212	8.727539	-2.7497	-3.13306	0.015083
MT0129	-1.02801	8.699153	-2.99221	-2.54078	0.008524	MT2486	0.83289	8.818551	2.746429	-3.14081	0.015206
MT2671	0.836654	9.141042	2.990693	-2.5446	0.008556	MT2515	0.641191	8.697453	2.744771	-3.14473	0.015265
MT3944	1.049332	9.585212	2.990224	-2.54578	0.008563	MT0537	-1.00189	8.952539	-2.74374	-3.14717	0.0153
MT1444	0.973986	8.801993	2.983746	-2.56204	0.008712	MT1299	-0.69931	9.032477	-2.74334	-3.14811	0.015309
MT0586	-0.76621	9.045664	-2.98252	-2.56512	0.008737	MT0985	-0.88795	8.858505	-2.74269	-3.14966	0.015329
MT3999	-0.81831	9.032374	-2.98092	-2.56912	0.008771	MT0966	-0.80317	9.248663	-2.74156	-3.15233	0.015368
MT1195	0.946953	9.094791	2.980651	-2.56979	0.008774	MT3948	-0.85929	8.726157	-2.7385	-3.15957	0.015484
MT3793	0.818101	9.049424	2.979466	-2.57277	0.008798	MT1685	-0.79989	8.671997	-2.73642	-3.16447	0.015562
MT2576	0.935298	8.600076	2.979114	-2.57365	0.008803	MT2746	1.054108	8.545706	2.735182	-3.1674	0.015606
MT2634	-1.05837	8.518415	-2.97837	-2.57552	0.008816	MT1040	0.781691	8.750863	2.734884	-3.1681	0.015611
MT1128	-1.0098	9.691128	-2.97799	-2.57647	0.008822	MT3292	-0.89621	8.858947	-2.73152	-3.17604	0.01574
MT0774	0.741218	8.961341	2.977786	-2.57697	0.008822	MT2702	0.750389	9.219276	2.731393	-3.17634	0.01574
MT0225	-0.84725	9.126773	-2.97552	-2.58265	0.008873	MT0528	0.703941	9.305207	2.72977	-3.18016	0.0158
MT0361	-1.05496	9.636743	-2.9746	-2.58496	0.008891	MT3831	0.784345	9.116249	2.729619	-3.18052	0.0158
MT1845	-0.95263	9.105395	-2.97422	-2.5859	0.008896	MT2165	-0.70808	9.098122	-2.72835	-3.18351	0.015845
MT3018	-0.92831	9.895444	-2.97346	-2.5878	0.008911	MT2915	1.076776	8.391202	2.726057	-3.18891	0.015932
MT0108	-0.94123	8.310009	-2.97303	-2.58889	0.008917	MT3296	-0.79832	7.591288	-2.72594	-3.18919	0.015932
MT1436	-0.91584	8.841555	-2.97161	-2.59243	0.008948	MT0207	-0.79176	9.390661	-2.72529	-3.19072	0.015952
MT3511	0.857498	9.458241	2.969783	-2.597	0.008988	MT2510	0.725526	10.02474	2.725025	-3.19134	0.015956
MT2501	0.840146	8.870187	2.964283	-2.61074	0.00912	MT0530	0.860594	9.716699	2.724522	-3.19253	0.01597
MT0601	-0.83934	8.617681	-2.96106	-2.6188	0.009196	MT3712.1	-0.79451	9.143471	-2.72417	-3.19336	0.015978
MT2546	1.013137	9.238143	2.960409	-2.62041	0.009208	MT0706	-0.7246	9.759038	-2.72332	-3.19535	0.016006
MT1398	-0.75414	9.240173	-2.95983	-2.62184	0.009218	MT1854.1	-0.70514	8.84625	-2.72317	-3.1957	0.016006
MT0165	0.883902	9.452629	2.958489	-2.6252	0.009248	MT0850	-0.73769	8.910685	-2.72183	-3.19885	0.016048
MT2947	0.852743	9.212322	2.957443	-2.62781	0.00927	MT2046	-0.68772	9.060846	-2.72183	-3.19887	0.016048
MT0271	-1.04349	9.11846	-2.95013	-2.64602	0.009452	MT2519	0.832319	10.13701	2.718318	-3.20712	0.016189
MT1303	0.792094	8.927743	2.946623	-2.65475	0.009538	MT0066.1	-0.72792	9.605928	-2.71796	-3.20797	0.016197
MT3120	0.977236	9.028678	2.946146	-2.65593	0.009546	MT2672	-0.63475	9.106828	-2.71677	-3.21075	0.016237
MT3852	-0.95134	9.580217	-2.94414	-2.66091	0.009592	MT1564	0.939029	8.581456	2.716675	-3.21098	0.016237
MT3787	-1.12491	9.034784	-2.94403	-2.66119	0.009592	MT3074	0.784517	9.092164	2.715303	-3.2142	0.016288
MT2151	0.948477	9.116842	2.942536	-2.6649	0.009627	MT2440	0.701226	8.684473	2.712284	-3.22129	0.01641
MT3498	1.005524	8.615556	2.941825	-2.66667	0.009641	MT1028	-0.69048	9.356618	-2.70699	-3.2337	0.01663
MT2275	-0.8152	8.605001	-2.9404	-2.6702	0.009674	MT0069	0.80157	9.450976	2.705494	-3.23721	0.016687
MT2661	-0.87618	9.317937	-2.9395	-2.67245	0.009693	MT0988	-0.79192	8.671845	-2.70471	-3.23904	0.016714
MT1180	-1.04034	9.811886	-2.93902	-2.67363	0.009701	MT2207	-0.73896	8.90674	-2.70141	-3.24676	0.01685
MT1422	-0.98813	8.122141	-2.93758	-2.67721	0.009735	MT2045.1	0.755638	10.00433	2.699847	-3.25042	0.016912
MT0016	0.726378	8.702177	2.936342	-2.68028	0.009763	MT1567	0.751427	10.1605	2.699048	-3.25229	0.01694
MT0624	-1.11928	10.26695	-2.93572	-2.68182	0.009775	MT2965	-0.67339	9.082022	-2.69808	-3.25456	0.016975
MT3174.1	-0.96802	9.741103	-2.93555	-2.68225	0.009775	MT1233	0.722468	9.799035	2.697279	-3.25643	0.017003
MT0137	-0.91618	9.43659	-2.93512	-2.68331	0.009782	MT3749	0.726274	9.222692	2.69654	-3.25815	0.017028
MT0402	-0.71707	8.88836	-2.93462	-2.68455	0.009791	MT0934.1	-0.99702	8.660056	-2.69552	-3.26053	0.017066
MT0808	0.860109	9.630255	2.933386	-2.68761	0.009819	MT1219	-0.67798	9.439648	-2.69195	-3.26886	0.017217
MT1916	0.987871	9.71573	2.933184	-2.68811	0.00982	MT0075	0.743655	8.700621	2.689685	-3.27416	0.017311
MT2901	-0.95708	8.734321	-2.93251	-2.68978	0.009834	MT1315	-0.6251	8.838989	-2.68918	-3.27533	0.017326
MT1241	0.975388	9.023829	2.931764	-2.69163	0.009849	MT3350	0.845725	10.27675	2.688986	-3.27579	0.017328
MT1308	-0.9151	8.824616	-2.93047	-2.69483	0.009879	MT1054	-0.85331	8.557409	-2.68865	-3.27657	0.017333
MT1709	-1.18101	8.870933	-2.92996	-2.69609	0.009888	MT1167	-1.00132	8.189515	-2.68855	-3.27681	0.017333
MT1542	-0.76478	9.160626	-2.92919	-2.69802	0.009905	MT2724	0.934216	8.901472	2.688298	-3.27739	0.017337
MT0114	0.812832	9.488541	2.928927	-2.69866	0.009907	MT3946	-0.80757	8.654693	-2.68806	-3.27794	0.01734
MT0877	-0.88744	9.335625	-2.92872	-2.69918	0.009908	MT1676	-0.74117	9.077611	-2.68542	-3.28411	0.017452
MT0022	-0.78209	8.452598	-2.92832	-2.70015	0.009914	MT0914	0.830937	9.217159	2.685213	-3.28458	0.017453
MT3220.1	0.695517	9.520088	2.923567	-2.71193	0.010034	MT0197	0.869521	9.021936	2.68462	-3.28596	0.017473
MT3077	-0.84458	8.70275	-2.92356	-2.71195	0.010034	MT0483	-0.81148	9.085869	-2.68223	-3.29153	0.017574
MT0304	1.120849	8.436847	2.923251	-2.71271	0.010038	MT2218	0.819837	8.562447	2.681827	-3.29247	0.017584
MT1369	0.692984	9.409168	2.92202	-2.71575	0.010066	MT0724	-0.85608	9.802369	-2.68128	-3.29373	0.017596
MT3085	0.832121	9.047927	2.921667	-2.71662	0.010071	MT0700	0.733876	8.875624	2.681154	-3.29403	0.017596
MT2476	0.922641	8.631331	2.919899	-2.721	0.010115	MT2756	-0.66383	9.1993	-2.68098	-3.29444	0.017596
MT1301	-0.84647	8.953858	-2.91784	-2.72609	0.010167	MT2601	0.779663	8.691462	2.680912	-3.2946	0.017596
MT3366	1.025872	10.35706	2.915444	-2.732	0.010228	MT0767	0.923741	9.238484	2.680217	-3.29621	0.017621
MT1216	1.104027	8.240223	2.913766	-2.73614	0.01027	MT1749	-0.66835	9.494585	-2.67998	-3.29676	0.017622
MT2244	1.063375	8.561007	2.912067	-2.74033	0.010313	MT1291	-1.10689	9.521297	-2.67986	-3.29705	0.017622
MT0992	0.850596	9.469181	2.909372	-2.74698	0.010383	MT2004	0.781318	9.532707	2.677216	-3.30319	0.017735
MT2365	-1.15308	10.18558	-2.90853	-2.74905	0.0104	MT0645.1	0.6682	8.957413	2.674616	-3.30923	0.017847
MT2325	0.99002	8.064899	2.908434	-2.74929	0.0104	MT1214	-0.64647	9.009677	-2.67417	-3.31026	0.01786
MT3269	-0.82825	8.823149	-2.90804	-2.75027	0.010407	MT3876.1	-0.65789	9.962419	-2.67251	-3.31412	0.017929
MT1411	-0.70592	9.510827	-2.90775	-2.75099	0.01041	MT0621	0.833075	9.058571	2.671851	-3.31565	0.017945
MT1648	1.085448	10.12931	2.903236	-2.7621	0.010533	MT0556	1.000028	8.100199	2.671846	-3.31566	0.017945
MT2813	-1.10328	8.452256	-2.90271	-2.76339	0.010543	MT2131	0.897633	9.028805	2.671265	-3.31701	0.017958
MT0940	0.989356	9.025631	2.901854	-2.7655	0.010563	MT0285	0.912992	9.784175	2.671226	-3.3171	0.017958
MT3922	-1.077	8.141532	-2.89936	-2.77164	0.010627	MT3049	-0.79153	9.096749	-2.67065	-3.31843	0.017978
MT3798	-0.7249	9.348939	-2.89927	-2.77186	0.010627	MT3990	0.858821	9.183574	2.670131	-3.31964	0.017994
MT0435	-1.00089	8.714682	-2.89907	-2.77235	0.010628	MT2047	-0.7264	9.078523	-2.66971	-3.32062	0.018006
MT3184	-1.12451	8.885944	-2.89837	-2.77407	0.010643	MT0382	-0.86184	8.819268	-2.6694	-3.32134	0.018013
MT0367	0.907569	9.249539	2.897364	-2.77654	0.010667	MT0282	-0.68291	9.345346	-2.66862	-3.32315	0.018042
MT0163	-0.80157	9.299548	-2.89656	-2.77851	0.010685	MT3084	0.871609	8.992947	2.668338	-3.3238	0.018047
MT1963	0.786708	8.967672	2.89623	-2.77933	0.010688	MT2074	-0.97639	8.876575	-2.66616	-3.32885	0.018141
MT2980	-0.86557	8.770117	-2.89613	-2.77956	0.010688	MT0310	-0.79847	8.278025	-2.66427	-3.33322	0.018222
MT2618	-1.02837	8.50714	-2.89436	-2.78391	0.010734	MT0706.1	-0.77099	9.591437	-2.66227	-3.33787	0.018308
MT3300	0.804308	9.679795	2.893975	-2.78487	0.010741	MT2162	0.821239	8.51485	2.66076	-3.34136	0.018372
MT0770	0.956016	8.614146	2.892883	-2.78755	0.010768	MT0390	-0.91162	8.421738	-2.6593	-3.34474	0.018433
MT0953	0.955481	9.172787	2.892333	-2.7889	0.010779	MT3237	0.757185	8.686684	2.658902	-3.34565	0.018444
MT2830	0.837824	9.006938	2.889151	-2.79671	0.010866	MT1499	1.241805	8.107878	2.658256	-3.34715	0.018464
MT1903	1.028542	9.44167	2.887991	-2.79956	0.010896	MT2591	0.858471	9.425356	2.658165	-3.34736	0.018464
MT1791	0.956571	10.04777	2.884155	-2.80896	0.010999	MT2579	0.707521	9.658759	2.656773	-3.35058	0.018522
MT1443	0.858228	9.008717	2.884145	-2.80899	0.010999	MT2957	0.808102	8.989937	2.656308	-3.35165	0.018537
MT1008	0.726823	8.803161	2.883004	-2.81178	0.011028	MT0393	0.984944	8.684371	2.654294	-3.3563	0.018625
MT0387	-0.6586	9.089472	-2.8786	-2.82258	0.011151	MT1449	-1.01289	8.401188	-2.65311	-3.35904	0.018674
MT2934	0.895577	9.522018	2.878518	-2.82277	0.011151	MT1935	-0.69817	9.336823	-2.65238	-3.36072	0.018701
MT2404	1.081372	8.424899	2.878094	-2.8238	0.011159	MT1576	-0.5632	9.184749	-2.6507	-3.3646	0.018774
MT0982	1.203593	10.38163	2.876438	-2.82786	0.011204	MT3263	-0.67239	8.940187	-2.65002	-3.36618	0.0188
MT3122	0.940265	9.534221	2.875041	-2.83127	0.011241	MT1704	-0.76245	9.742528	-2.649	-3.36853	0.018841
MT3975	-0.89915	8.669228	-2.86839	-2.84753	0.011438	MT3594	-0.72907	8.852251	-2.64715	-3.37279	0.018923

MT1293	-0.78492	9.78677	-2.86592	-2.85355	0.011506	MT1263	0.848336	8.589213	2.645735	-3.37605	0.018983
MT2821	0.847739	8.750721	2.865837	-2.85375	0.011506	MT2804	-0.76771	9.378812	-2.64258	-3.38333	0.01913
MT2722	-1.10871	8.659682	-2.86105	-2.86542	0.011649	MT1082	0.778504	9.010971	2.640132	-3.38895	0.019242
MT3386	-0.81466	9.318173	-2.85782	-2.87329	0.01174	MT2921	0.845206	7.850408	2.639041	-3.39146	0.019288
MT2130	0.938769	9.752549	2.857814	-2.87331	0.01174	MT2285	1.063653	9.97201	2.638636	-3.3924	0.019296
MT0063	-0.95	10.09835	-2.85577	-2.87829	0.011799	MT0910.4	-0.79623	9.627087	-2.63855	-3.39259	0.019296
MT2826	-0.73883	9.03252	-2.85459	-2.88115	0.011831	MT0290	0.968258	8.702545	2.637703	-3.39454	0.01933
MT2209	-0.76979	9.548578	-2.85429	-2.88187	0.011835	MT0669.1	-0.83608	8.671691	-2.63611	-3.3982	0.019395
MT1593	-0.90663	9.056921	-2.85288	-2.88531	0.011874	MT2586.1	0.760837	9.586921	2.636068	-3.3983	0.019395
MT0455	0.841533	9.359747	2.850266	-2.89167	0.011952	MT1270	0.808332	9.846582	2.635852	-3.3988	0.019397
MT1848	0.846423	9.312308	2.84975	-2.89292	0.011964	MT0364	-0.65959	9.314901	-2.63382	-3.40346	0.019475
MT0860	-0.99825	8.577758	-2.84888	-2.89504	0.011986	MT1332	0.808761	9.443325	2.633816	-3.40348	0.019475
MT2765	-1.08775	8.808943	-2.84546	-2.90336	0.012091	MT1137	-0.62807	8.988868	-2.63382	-3.40348	0.019475
MT3203	-0.7521	8.760872	-2.84321	-2.9088	0.012158	MT0275	0.652301	9.19216	2.633655	-3.40384	0.019475
MT3266	-0.78286	9.251691	-2.84299	-2.90933	0.01216	MT1897	0.69402	9.279375	2.6329	-3.40558	0.019504
MT0672	-0.92046	8.975938	-2.84	-2.9166	0.012248	MT0443	0.761328	9.337051	2.631476	-3.40885	0.019567
MT1378	-0.73116	8.88856	-2.83994	-2.91673	0.012248	MT2059	0.713761	9.584119	2.630887	-3.4102	0.019589
MT3323	-0.69783	9.056909	-2.8377	-2.92218	0.012316	MT0675	-1.05123	7.952029	-2.62957	-3.41322	0.019643
MT0533	1.10447	8.671144	2.837401	-2.92289	0.01232	MT0742	-0.62004	9.20393	-2.62948	-3.41342	0.019643
MT0999.1	1.171824	8.948626	2.837085	-2.92366	0.012325	MT2782	-0.82634	8.708256	-2.62723	-3.4186	0.019744
MT3810	-0.80356	8.951295	-2.83637	-2.9254	0.012343	MT3372	0.813729	8.681143	2.627148	-3.41878	0.019744
MT1448	-0.78723	9.070766	-2.83506	-2.92857	0.012381	MT3297	0.81657	8.767503	2.626472	-3.42033	0.01977
MT1455	0.973236	8.922571	2.833694	-2.93187	0.01242	MT1271	-0.90845	8.886494	-2.62309	-3.42808	0.019933
MT1163	-0.74608	9.683372	-2.83066	-2.9392	0.012515	MT2754	0.653556	9.096568	2.622734	-3.42889	0.019943
MT0863	0.964254	10.59947	2.829305	-2.94248	0.01255	MT0837	-0.76038	8.956746	-2.62161	-3.43146	0.019992
MT1724	-0.69416	8.883718	-2.82928	-2.94254	0.01255	MT2663	1.255088	8.563835	2.621089	-3.43265	0.02001
MT0220	0.81857	9.176811	2.828481	-2.94448	0.012572	MT2824	0.996832	9.676819	2.620207	-3.43467	0.020047
MT1040.1	0.730707	9.499377	2.827069	-2.94789	0.012613	MT1894	0.889763	8.392481	2.619777	-3.43566	0.020061
MT3206	-0.67447	8.977806	-2.82665	-2.9489	0.012622	MT2944	-0.66767	9.123056	-2.61874	-3.43802	0.020106
MT1710	-0.95732	8.75454	-2.82581	-2.95093	0.012644	MT1340	-0.87346	9.867458	-2.61858	-3.4384	0.020106
MT3968	-0.84684	9.144528	-2.82541	-2.95189	0.012652	MT3118	0.838781	9.114343	2.618085	-3.43953	0.020123
MT1924.1	-1.24455	10.01158	-2.82487	-2.95321	0.012665	MT3601	-0.80204	9.366525	-2.61589	-3.44455	0.020228
MT4020	-0.66187	8.69555	-2.82435	-2.95445	0.012677	MT0773	-0.71691	8.688478	-2.61285	-3.45148	0.020376
MT2342	-1.00732	9.407275	-2.82407	-2.95514	0.012681	MT1658	-0.75435	9.390856	-2.61228	-3.45279	0.020393
MT0769	0.813205	9.270851	2.823716	-2.95599	0.012685	MT3224	0.699704	9.287637	2.612203	-3.45297	0.020393
MT0932	-0.73272	9.664756	-2.8236	-2.95626	0.012685	MT0509	0.831363	8.748881	2.611145	-3.45538	0.02044
MT2245	-0.71618	8.756134	-2.823	-2.95771	0.0127	MT2998.1	-0.87992	8.608788	-2.6106	-3.45662	0.02046
MT0156	-0.7996	9.506769	-2.82273	-2.95838	0.012702	MT1250	1.054407	8.372427	2.610279	-3.45736	0.020468
MT1306	1.135459	8.473814	2.822604	-2.95868	0.012702	MT2016	-0.64216	9.440332	-2.60867	-3.46102	0.020544
MT2298	-0.78881	9.207073	-2.82208	-2.95994	0.012714	MT0603	-0.56137	8.643642	-2.60844	-3.46155	0.020547
MT3655	0.844764	9.512568	2.821632	-2.96102	0.012724	MT3880	-0.71627	9.269118	-2.60724	-3.46428	0.0206
MT2818	-0.72495	9.246149	-2.82031	-2.96422	0.012763	MT1110	0.916904	8.544877	2.60711	-3.46458	0.0206
MT2117.1	-1.01772	9.648954	-2.81978	-2.9655	0.012775	MT3780	-0.7737	9.51338	-2.60654	-3.46589	0.020622
MT1221	-0.74571	8.811501	-2.81831	-2.96904	0.01282	MT3156	-0.64262	9.394456	-2.60414	-3.47136	0.020739
MT1707.1	-0.7484	9.170778	-2.81454	-2.97813	0.012943	MT3482	-0.73916	8.12781	-2.60342	-3.473	0.020769
MT4014	0.911728	8.20469	2.813564	-2.98047	0.012964	MT2163	-0.87982	8.500894	-2.60256	-3.47495	0.020806
MT1592	0.694693	9.366355	2.813537	-2.98054	0.012964	MT2803.1	0.800304	8.364043	2.602398	-3.47532	0.020806
MT0571	0.968019	8.96101	2.813434	-2.98079	0.012964	MT3640	0.741277	9.210215	2.60193	-3.47639	0.020822
MT0809	0.82378	9.624207	2.813201	-2.98135	0.012966	MT3688	-0.58971	9.39366	-2.59995	-3.48088	0.020918
MT1575	-0.77034	8.664345	-2.81176	-2.98481	0.01301	MT1429	1.019349	8.178419	2.595828	-3.49026	0.021123
MT2636	-0.85036	8.772084	-2.81021	-2.98855	0.013058	MT2625	-0.92341	8.601766	-2.5958	-3.49033	0.021123
MT2983	0.869324	9.044376	2.807454	-2.99518	0.013148	MT3693	0.803737	9.15109	2.595249	-3.49158	0.021143
MT2971	0.801252	9.293769	2.805204	-3.00059	0.01322	MT0942	1.011521	8.540948	2.593766	-3.49495	0.021208
MT3872	-0.66132	9.10079	-2.7958	-3.02317	0.013547	MT3075	0.754415	8.418147	2.593727	-3.49503	0.021208
MT3384	-0.74362	8.87095	-2.79459	-3.02607	0.013585	MT1677	1.056469	8.940889	2.592368	-3.49812	0.021272
MT0507	-0.85491	9.925383	-2.79055	-3.03575	0.013725	MT1302	0.767444	9.240721	2.591672	-3.4997	0.021301
MT0825	1.023549	8.992909	2.790191	-3.03661	0.013731	MT2202	-0.68162	8.792799	-2.59054	-3.50227	0.021354
MT1905	0.839658	9.637038	2.78711	-3.04398	0.013835	MT1931	0.71252	9.433383	2.587655	-3.50881	0.021502
MT2170	0.716873	9.456355	2.787026	-3.04418	0.013835	MT3195	-0.81758	9.027122	-2.58695	-3.51042	0.021532
MT2266	-0.65531	8.808564	-2.78646	-3.04552	0.013844	MT1376.1	-0.99581	8.941681	-2.58447	-3.51603	0.021658
MT3527	-0.93782	8.387007	-2.78643	-3.04562	0.013844	MT2015.1	-0.79982	8.932528	-2.58402	-3.51706	0.021674
MT3157	1.018576	8.393502	2.784594	-3.05	0.013905	MT1983	-0.76297	8.915392	-2.58321	-3.51889	0.02171
MT2619	-0.88162	8.202974	-2.78195	-3.05632	0.013996	MT1732	1.007498	8.781148	2.582168	-3.52124	0.021755
MT3057	0.878964	10.37834	2.780838	-3.05897	0.014031	MT3465	-0.72922	8.222771	-2.58206	-3.52148	0.021755
MT1527	0.796276	9.347396	2.77989	-3.06124	0.01406	MT3409	-0.83705	8.732835	-2.58081	-3.5243	0.02181
MT3801	0.706404	9.565703	2.779724	-3.06163	0.01406	MT2251	-0.91818	8.997592	-2.58075	-3.52445	0.02181
MT3089	-0.75006	8.876999	-2.77902	-3.06331	0.01408	MT3516	-0.79328	9.329548	-2.57806	-3.53054	0.02195
MT2410	-0.76057	8.987567	-2.77852	-3.0645	0.014093	MT0473	-0.7734	9.298132	-2.57687	-3.53323	0.022007
MT2423.1	0.738159	9.492891	2.778196	-3.06528	0.014099	MT1853	0.718903	8.569591	2.575661	-3.53595	0.02206
MT3673	0.725732	9.74521	2.505476	-3.69289	0.025593	MT0952	-0.64205	8.612968	-2.5756	-3.53609	0.02206
MT0949	-0.69248	9.616706	-2.50422	-3.69567	0.025663	MT0186	-0.68727	8.889223	-2.57482	-3.53787	0.022094
MT2364.1	-0.59262	8.832494	-2.50389	-3.69641	0.025674	MT3861	0.721263	9.484108	2.574465	-3.53866	0.022105
MT2105	-0.69572	8.663377	-2.50314	-3.69807	0.025712	MT2056	-0.79045	10.04852	-2.57394	-3.53983	0.022125
MT2715	-0.64486	9.268916	-2.50225	-3.70002	0.025759	MT0938	-0.94675	8.946491	-2.57377	-3.54023	0.022126
MT0650	0.752573	8.6542	2.501151	-3.70246	0.025815	MT1326	-0.81526	10.53022	-2.57343	-3.54099	0.022136
MT3239	1.150671	8.172142	2.501051	-3.70268	0.025815	MT0881	0.701155	8.481201	2.572745	-3.54254	0.022165
MT0047	-0.69685	8.496706	-2.49655	-3.71261	0.026095	MT2803.2	0.843008	9.099288	2.572602	-3.54286	0.022165
MT0142	0.634993	8.894526	2.496363	-3.71303	0.026097	MT2755	0.868683	8.351854	2.571897	-3.54446	0.022195
MT3116	1.08965	8.769733	2.495708	-3.71448	0.026129	MT0050	-0.90359	9.087227	-2.57117	-3.54609	0.022219
MT1506	0.927962	8.47364	2.49382	-3.71864	0.026241	MT0612	-0.86098	10.67326	-2.57115	-3.54614	0.022219
MT3881	0.823419	8.327386	2.492608	-3.72131	0.02631	MT3888	-0.6334	8.98197	-2.56679	-3.55598	0.022456
MT2009	-0.93975	8.79816	-2.49148	-3.7238	0.026373	MT2490	-0.61029	8.900622	-2.56355	-3.56327	0.022631
MT2642	0.801713	9.153443	2.491257	-3.72429	0.026378	MT3250	-0.80186	8.181851	-2.56294	-3.56465	0.022656
MT1684	0.671365	9.535947	2.489421	-3.72833	0.026487	MT3765	-0.67888	9.337294	-2.56148	-3.56794	0.022731
MT2234	-0.64136	9.493098	-2.48907	-3.7291	0.0265	MT3890	-0.74875	9.726794	-2.56086	-3.56932	0.022757
MT0873	-1.04062	9.868039	-2.48797	-3.73152	0.026562	MT0832	-0.784	8.741389	-2.55911	-3.57326	0.022841
MT3456	0.653715	8.58652	2.48572	-3.73648	0.0267	MT3497	0.813446	9.240839	2.559068	-3.57335	0.022841
MT2800	0.771104	8.754398	2.48382	-3.74065	0.026815	MT3794	-1.10195	9.849435	-2.55806	-3.57562	0.02289
MT2215	-0.77997	8.325613	-2.48292	-3.74263	0.026864	MT3529	0.834276	9.165987	2.556775	-3.5785	0.022955
MT2556	-0.71951	8.543771	-2.48243	-3.74371	0.026887	MT2276	-0.92491	8.62699	-2.55389	-3.58498	0.023113
MT0407.1	-0.75054	9.233861	-2.48216	-3.74431	0.026894	MT1524	-0.90681	8.879646	-2.55333	-3.58624	0.023136
MT3377	-0.76977	8.80916	-2.4818	-3.7451	0.026907	MT3538	0.997466	8.335804	2.552817	-3.58739	0.023157
MT2066	0.659362	9.887501	2.480097	-3.74883	0.02701	MT4017	0.682846	9.003519	2.552284	-3.58859	0.023178
MT2169	-0.93117	10.97812	-2.47942	-3.75033	0.027045	MT1727.1	-0.84304	8.401866	-2.55022	-3.59321	0.023289
MT3491	-0.65601	9.549329	-2.47918	-3.75086	0.027051	MT2350	-0.77152	9.022473	-2.55002	-3.59367	0.023292
MT2091	0.910056	8.957421	2.47821	-3.75297	0.027105	MT3720	-0.84434	8.900086	-2.54746	-3.59941	0.023433
MT1737	-0.66318	9.360003	-2.47666	-3.75638	0.027198	MT3825	-0.61711	9.234741	-2.54502	-3.60487	0.023567
MT1114	0.742991	9.805963	2.476478	-3.75678	0.0272	MT2925	0.86362	9.406849	2.542999	-3.6094	0.023672

MT2035	-0.74256	9.339947	-2.47583	-3.75819	0.027233	MT0707	-0.73945	9.125149	-2.54291	-3.6096	0.023672
MT2982	0.781564	9.276992	2.472047	-3.76649	0.027477	MT1062	0.632738	9.148091	2.542761	-3.60993	0.023672
MT1733	1.129981	8.227626	2.471107	-3.76854	0.027531	MT2845	-0.55514	9.603254	-2.54026	-3.61552	0.023812
MT2389	-1.04457	8.515668	-2.46596	-3.7798	0.027871	MT0845	-0.60983	8.937994	-2.53927	-3.61773	0.023861
MT3559	-0.77362	9.063899	-2.46164	-3.78924	0.028158	MT2223	0.861925	9.060799	2.537371	-3.62198	0.023965
MT0716	-0.90862	8.956501	-2.46128	-3.79003	0.028172	MT3776	-0.70904	9.951986	-2.5369	-3.62303	0.023984
MT0593	-0.62118	9.441844	-2.46054	-3.79165	0.028212	MT1105	-0.85771	8.643971	-2.53621	-3.62457	0.024015
MT0697	0.655987	8.521201	2.460305	-3.79216	0.028218	MT0575	-0.7521	8.640659	-2.53608	-3.62487	0.024015
MT0717.1	0.811243	9.149152	2.459679	-3.79352	0.02825	MT2208	0.702203	8.971615	2.535335	-3.62652	0.02405
MT3931	0.643607	9.61987	2.459498	-3.79392	0.028252	MT1022	-1.04189	8.098711	-2.53288	-3.63201	0.024188
MT1810	-0.64653	8.89775	-2.45413	-3.80562	0.028616	MT3650	-0.87638	9.259809	-2.5313	-3.63552	0.024274
MT1923	-0.82596	9.100786	-2.45189	-3.81049	0.028762	MT2465	0.586345	9.039642	2.531021	-3.63615	0.024282
MT0256	-0.93513	8.655034	-2.45117	-3.81207	0.028802	MT2076	0.66047	9.441646	2.530747	-3.63676	0.024289
MT2883	-0.68222	9.49403	-2.44854	-3.81778	0.028977	MT1206	-1.02632	9.170624	-2.53056	-3.63719	0.02429
MT2847	-0.57753	9.688263	-2.4478	-3.8194	0.029019	MT0554	0.821977	8.447214	2.530407	-3.63752	0.02429
MT1155	-0.61702	8.678744	-2.44672	-3.82174	0.029084	MT3671	0.630019	9.236189	2.529396	-3.63977	0.024342
MT4032	-0.65358	8.989695	-2.44645	-3.82234	0.029093	MT1974	-0.95017	9.173426	-2.52828	-3.64225	0.0244
MT2419	0.821444	9.513232	2.444729	-3.82607	0.029204	MT0171	-0.81567	8.172632	-2.52493	-3.64973	0.024595
MT2351	0.629025	9.799133	2.444521	-3.82652	0.029208	MT2508	-0.91253	9.072065	-2.52412	-3.65153	0.024636
MT2444	-0.59304	9.413596	-2.44363	-3.82846	0.02926	MT1305.1	-0.6042	9.090953	-2.52332	-3.65331	0.024675
MT0911	-0.9321	8.953294	-2.44113	-3.83387	0.029428	MT3501	0.896826	8.307018	2.521514	-3.65732	0.024774
MT0666	-0.95096	9.363754	-2.43966	-3.83706	0.029523	MT3003	0.646348	8.59187	2.521285	-3.65783	0.024774
MT3155	-0.7026	8.696522	-2.4387	-3.83916	0.029572	MT0503	-0.82732	9.429909	-2.52124	-3.65793	0.024774
MT0098	-0.57031	8.952335	-2.4386	-3.83937	0.029572	MT1655	0.86974	8.878909	2.519336	-3.66216	0.024881
MT0971	-0.77914	8.278602	-2.43852	-3.83954	0.029572	MT0106	-0.70616	9.578891	-2.51919	-3.66248	0.024881
MT2322	0.965927	9.894532	2.437199	-3.8424	0.029649	MT0806	-1.01764	8.406758	-2.51871	-3.66355	0.024892
MT2790	-0.5937	9.022946	-2.43714	-3.84253	0.029649	MT0158	-0.78212	9.511693	-2.51855	-3.66391	0.024892
MT1619	-0.67069	8.808154	-2.43393	-3.84948	0.029871	MT0565	-1.1352	8.247121	-2.51854	-3.66393	0.024892
MT1565	0.847788	8.827987	2.433483	-3.85045	0.029892	MT1124	0.715975	8.734668	2.517651	-3.6659	0.024937
MT3818	-0.7242	8.721711	-2.43325	-3.85095	0.029897	MT1681	-0.72482	9.014807	-2.51733	-3.66661	0.024947
MT2377	-1.07017	8.723873	-2.43216	-3.85331	0.029966	MT1904	-0.71819	8.978722	-2.51712	-3.66709	0.024951
MT0984	0.612421	8.770058	2.431195	-3.8554	0.030025	MT2554	-0.6803	9.454539	-2.51683	-3.66773	0.024959
MT1408	-0.51004	9.20479	-2.43101	-3.85579	0.030027	MT0355	-0.81464	8.174454	-2.51561	-3.67045	0.025025
MT0788	0.694074	9.604337	2.428055	-3.86218	0.030233	MT2945	0.67505	10.06395	2.511603	-3.67932	0.025266
MT1942	-0.65418	9.056424	-2.42581	-3.86703	0.030382	MT3728	0.738449	9.455264	2.509926	-3.68304	0.025361
MT0638	-0.82144	8.494994	-2.42572	-3.86723	0.030382	MT1318	0.663545	8.835379	2.509127	-3.68481	0.025402
MT0089	0.743897	9.388659	2.425543	-3.86761	0.030384	MT2178	-0.64857	8.905381	-2.50886	-3.68541	0.025409
MT3777	0.69829	9.174002	2.425337	-3.86805	0.030387	MT1112	0.831173	8.645911	2.507514	-3.68838	0.025484
MT3560	0.648123	8.642483	2.425185	-3.86838	0.030387	MT3977	-0.6434	9.110415	-2.50721	-3.68906	0.025493
MT3800	-0.82252	8.207982	-2.42463	-3.86958	0.030407	MT3052.2	0.68697	8.508711	2.183893	-4.36869	0.049618
MT0386	-0.73381	8.767442	-2.42461	-3.86963	0.030407	MT0643	0.862453	8.373257	2.183738	-4.369	0.049618
MT2227	0.757453	8.765758	2.422775	-3.87358	0.030531	MT2924	-0.59931	9.114861	-2.18274	-4.37098	0.049714
MT0645.2	-0.78696	8.673294	-2.4218	-3.87568	0.030592	MT0297	-0.51452	8.900438	-2.18101	-4.37441	0.049894
MT0590	0.68015	8.925561	2.420966	-3.87748	0.030633	MT1065	0.840128	7.854573	2.18006	-4.3763	0.049985
MT0735	-0.87969	8.55826	-2.42093	-3.87755	0.030633	MT0006	-0.58658	9.249388	-2.25101	-4.23372	0.043429
MT2723	-0.67427	8.771568	-2.41833	-3.88316	0.030817	MT2175	-0.77877	9.18618	-2.24851	-4.2388	0.043667
MT2468	-0.84081	8.695563	-2.41806	-3.88373	0.030825	MT1510	-0.68018	8.854145	-2.24718	-4.24149	0.043787
MT3132	-0.70577	9.12604	-2.41769	-3.88453	0.030841	MT3685	0.630335	8.352509	2.246597	-4.24269	0.043831
MT1861	0.701695	9.830443	2.416752	-3.88656	0.0309	MT3339	-0.73131	9.024218	-2.24538	-4.24515	0.043939
MT1426	0.900002	8.295905	2.414523	-3.89135	0.031048	MT3867	-0.67737	9.692885	-2.24316	-4.24966	0.044151
MT0944	-0.57341	8.869757	-2.41447	-3.89148	0.031048	MT0615	0.617706	9.274381	2.242352	-4.25131	0.044219
MT1209	0.989345	8.682299	2.413304	-3.89398	0.031124	MT2981	-0.61637	9.251693	-2.23957	-4.25694	0.04449
MT3236	-0.5428	9.172729	-2.41297	-3.89469	0.031138	MT1058	-0.57236	8.993335	-2.23835	-4.25941	0.0446
MT2418	-0.73003	9.778623	-2.41245	-3.89582	0.031166	MT0834	0.71312	8.61032	2.234167	-4.26789	0.04502
MT1608	-0.62996	9.705356	-2.41219	-3.89636	0.031173	MT2557	0.615932	9.462671	2.233284	-4.26968	0.04508
MT2717	-1.23939	10.51429	-2.41134	-3.8982	0.031217	MT0922	0.597884	8.931459	2.233237	-4.26977	0.04508
MT1612	-0.80527	9.022764	-2.4113	-3.89827	0.031217	MT1716	-0.69143	8.860714	-2.23314	-4.26998	0.04508
MT2044	0.777017	8.933508	2.410139	-3.90078	0.031293	MT4029	-0.56422	8.994322	-2.2315	-4.27329	0.045236
MT0505	-0.73182	8.939902	-2.40982	-3.90146	0.031306	MT3282	-0.72139	9.529736	-2.23117	-4.27396	0.04525
MT2438	0.65719	9.164645	2.408189	-3.90496	0.031418	MT3883	-0.67388	8.972339	-2.23106	-4.27418	0.04525
MT0521	0.529188	9.181556	2.403424	-3.91519	0.031772	MT1083	0.708289	9.281768	2.23002	-4.27628	0.045328
MT3547	0.881505	8.354204	2.400805	-3.9208	0.031962	MT0685	-0.67406	9.164493	-2.23	-4.27631	0.045328
MT1224	-0.88557	9.158616	-2.4005	-3.92144	0.031973	MT1797	0.610753	9.489138	2.229595	-4.27713	0.045355
MT1013	-0.6622	10.03622	-2.39969	-3.92319	0.032024	MT3145.1	-0.65029	9.025298	-2.22938	-4.27757	0.045361
MT2615.1	0.992239	8.094904	2.39866	-3.92539	0.032092	MT0756.1	-0.56315	9.162595	-2.22897	-4.27841	0.045389
MT3133	0.689145	9.433291	2.398457	-3.92582	0.032096	MT2273	0.583105	8.759772	2.228743	-4.27886	0.045396
MT0997	0.784091	8.476573	2.397413	-3.92806	0.032165	MT3140	-0.64759	8.835279	-2.2271	-4.28216	0.045552
MT1512	1.025916	8.536452	2.397019	-3.9289	0.032183	MT1744	0.714102	9.267867	2.226675	-4.28303	0.045582
MT0404.1	-0.75512	8.263843	-2.39618	-3.93069	0.032236	MT3186	-0.613	9.260661	-2.22506	-4.28628	0.045736
MT3136	-0.69947	9.591144	-2.3916	-3.94048	0.032583	MT0901	0.861562	8.335125	2.224674	-4.28707	0.045761
MT0092	0.683464	8.578717	2.391042	-3.94167	0.032615	MT3449.2	0.642894	8.725891	2.222566	-4.29132	0.045969
MT1356	-0.68601	9.016218	-2.38856	-3.94697	0.032799	MT2791	-0.71215	8.915621	-2.22193	-4.2926	0.04602
MT2504	0.72517	9.328041	2.387378	-3.94949	0.03288	MT3456.1	0.613704	9.600022	2.220431	-4.29562	0.046163
MT3898	0.699456	9.304662	2.387066	-3.95015	0.032893	MT1254	0.569561	9.873965	2.22003	-4.29642	0.04619
MT2946	0.706907	9.438688	2.386872	-3.95057	0.032896	MT0401	-0.61144	8.9049	-2.21796	-4.30058	0.046395
MT0604	0.541627	8.865277	2.386509	-3.95134	0.032912	MT2639	-0.69975	9.382338	-2.2172	-4.30212	0.04646
MT3081	0.621205	9.21211	2.385588	-3.9533	0.032973	MT3838	-0.58843	9.282247	-2.21536	-4.30581	0.046641
MT2889	-0.74854	8.798789	-2.38518	-3.95418	0.032993	MT2336	0.537757	10.251	2.214139	-4.30827	0.046757
MT1977	0.623338	9.065361	2.383794	-3.95713	0.033091	MT3436	0.832991	8.06259	2.212086	-4.31239	0.046963
MT0665	0.64083	9.136538	2.383547	-3.95765	0.033099	MT3712	0.643142	9.199149	2.211631	-4.3133	0.046995
MT2053	0.818356	8.8609	2.383343	-3.95809	0.033103	MT2911	0.691144	8.591059	2.211349	-4.31387	0.047009
MT3488	-0.6127	9.571039	-2.38192	-3.96112	0.033204	MT3115	0.6638	8.985654	2.210006	-4.31657	0.047139
MT3164	-0.76077	8.562332	-2.37972	-3.96579	0.033368	MT1336	-0.64319	8.312088	-2.20984	-4.3169	0.04714
MT0606	0.670295	8.899741	2.378993	-3.96734	0.033414	MT0295	0.84699	8.523539	2.207881	-4.32083	0.047337
MT3410	-0.78455	9.703413	-2.37555	-3.97465	0.03368	MT1372	-0.66066	8.790339	-2.20738	-4.32182	0.047374
MT2307	-0.74633	8.324564	-2.37531	-3.97517	0.033687	MT2531	-0.71646	8.992076	-2.20427	-4.32806	0.047699
MT2492	-0.78748	9.488584	-2.37393	-3.9781	0.033786	MT2200	-0.65618	9.068887	-2.20326	-4.33007	0.047793
MT0002	-0.68128	10.69251	-2.37144	-3.98339	0.033977	MT0912	-0.59982	8.459275	-2.20301	-4.33058	0.047804
MT0330	-0.92822	8.255751	-2.3707	-3.98496	0.034024	MT3026	-0.64473	9.067374	-2.20269	-4.33122	0.047822
MT3341	-0.78657	9.708727	-2.36776	-3.99118	0.034253	MT2348	0.561524	9.738551	2.201678	-4.33324	0.047917
MT3915	-0.7328	8.931653	-2.36687	-3.99308	0.034314	MT2864	-0.64965	9.193962	-2.20131	-4.33397	0.04794
MT3342	-0.59383	9.017179	-2.36668	-3.99348	0.034317	MT1508	-0.64766	8.533455	-2.19962	-4.33736	0.048104
MT3998	-0.67016	8.711753	-2.36646	-3.99394	0.034322	MT2843	0.509713	8.905154	2.199525	-4.33755	0.048104
MT2433	-1.19533	8.395646	-2.36611	-3.99467	0.034337	MT1780	0.744563	7.836428	2.198338	-4.33992	0.048218
MT1769	0.892097	8.339276	2.364823	-3.9974	0.034431	MT3338	0.682447	8.789408	2.197832	-4.34093	0.048258
MT1202	0.576002	9.381297	2.364349	-3.99841	0.034457	MT1821.1	0.584035	8.746291	2.197476	-4.34164	0.04828
MT1573	-0.68297	10.13409	-2.36369	-3.9998	0.034499	MT3573.3	-0.5549	8.122508	-2.19649	-4.34361	0.048373
MT2893	0.878324	8.155004	2.363145	-4.00095	0.034531	MT2000	-0.73745	9.599815	-2.19358	-4.34941	0.04868

MT2174	-0.65313	8.814417	-2.36119	-4.0051	0.034681	MT3592	0.851391	8.307715	2.19035	-4.35585	0.049026
MT0907	0.758953	9.179336	2.359616	-4.00841	0.034795	MT0136	-0.6584	10.01774	-2.19015	-4.35625	0.049031
MT0699	-1.03169	9.357136	-2.35951	-4.00863	0.034795	MT3976	0.549812	9.255497	2.187167	-4.36218	0.04935
MT3892	-0.61369	8.828662	-2.35819	-4.01143	0.034888	MT1475	-0.50654	9.076369	-2.18672	-4.36306	0.049373
MT3680	0.621289	8.582695	2.358084	-4.01165	0.034888	MT0782	0.564603	9.395734	2.186657	-4.3632	0.049373
MT2226	-0.75192	8.749449	-2.3539	-4.02047	0.035227	MT0265	0.595931	9.377651	2.184519	-4.36745	0.049599
MT3617	-0.8793	8.599602	-2.35335	-4.02164	0.03526	MT2296	-0.58284	8.495282	-2.1842	-4.36809	0.049601
MT2454	-0.65752	8.744253	-2.3531	-4.02218	0.035269	MT4037	0.569274	9.384856	2.184196	-4.36809	0.049601
MT0336	-0.62666	9.049874	-2.35254	-4.02336	0.035303	MT3316	0.6162	10.11008	2.275683	-4.18327	0.041393
MT2604	-0.82467	9.30886	-2.35024	-4.0282	0.035484	MT3842	-0.73834	8.926846	-2.27461	-4.18548	0.041483
MT0425	0.593247	9.006405	2.347749	-4.03344	0.035683	MT3760	0.968114	10.00489	2.273622	-4.1875	0.04155
MT0055	0.741993	8.393831	2.34455	-4.04017	0.035944	MT1972	-0.62554	8.960776	-2.27361	-4.18753	0.04155
MT1311	-0.90798	8.85543	-2.33553	-4.0591	0.036692	MT1530	-0.91751	8.377809	-2.27336	-4.18803	0.041555
MT0578	-0.63577	8.981662	-2.33552	-4.05911	0.036692	MT3264	-0.73413	9.016627	-2.27325	-4.18827	0.041555
MT2154	-0.93256	8.855099	-2.33545	-4.05927	0.036692	MT2520	0.833274	8.985141	2.273062	-4.18865	0.041558
MT3788	-0.66442	9.097545	-2.33497	-4.06027	0.036721	MT2848	-0.58115	8.87008	-2.27135	-4.19216	0.04171
MT2904	0.80756	8.541415	2.333859	-4.0626	0.036804	MT3545	-0.86367	8.100246	-2.27053	-4.19384	0.041775
MT3753	-0.58982	8.877955	-2.333	-4.0644	0.036866	MT1479.1	-0.76334	8.947112	-2.26912	-4.19673	0.041894
MT1049	-0.83645	9.184112	-2.33269	-4.06505	0.03688	MT2191	0.7582	9.209164	2.269014	-4.19695	0.041894
MT1298	0.599998	9.414879	2.332428	-4.0656	0.036889	MT2713	-0.64733	8.813029	-2.26825	-4.1985	0.041953
MT0773.1	0.905603	8.392489	2.331521	-4.0675	0.036955	MT2089	1.103981	8.201503	2.267031	-4.20101	0.042059
MT3359	-0.69195	9.182186	-2.33084	-4.06893	0.037002	MT3622.1	-0.73655	8.411038	-2.26488	-4.20541	0.042256
MT3199	-0.69887	9.006183	-2.32997	-4.07074	0.037064	MT2555	-0.75856	9.099794	-2.2637	-4.20783	0.042358
MT1503	-0.61991	9.28798	-2.32895	-4.07288	0.037141	MT1210	-0.6949	8.766702	-2.2625	-4.21026	0.042461
MT3930	-0.63757	9.798333	-2.32761	-4.07567	0.037246	MT2832	0.825119	8.147551	2.261682	-4.21195	0.042527
MT2611	0.656143	9.123285	2.326493	-4.07802	0.037331	MT0771	0.665174	9.164731	2.261105	-4.21312	0.042569
MT1726	-0.64025	9.282672	-2.3247	-4.08176	0.037477	MT2761	0.760848	9.096532	2.260669	-4.21401	0.042597
MT1606	-0.63826	9.072492	-2.32428	-4.08265	0.037501	MT1899	0.749228	8.477051	2.259671	-4.21605	0.042682
MT3573.12	0.739561	8.895433	2.32384	-4.08355	0.037526	MT0617	0.631223	8.59954	2.257397	-4.22069	0.042894
MT2363	0.620632	8.720396	2.323142	-4.08501	0.037574	MT0800	-0.78353	8.713098	-2.25681	-4.2219	0.042937
MT1747	-0.6997	8.667836	-2.3214	-4.08865	0.037716	MT3204	0.638405	9.785981	2.255292	-4.22499	0.043074
MT0974	-0.70624	9.806562	-2.31992	-4.09174	0.037836	MT1773	0.672201	9.373151	2.253896	-4.22783	0.043199
MT2183	-0.64758	8.829938	-2.31946	-4.09269	0.037863	MT0307	0.505084	8.999497	2.252508	-4.23066	0.043324
MT1294	-0.74133	8.649001	-2.31902	-4.09362	0.037889	MT2385	-0.65232	8.993974	-2.25217	-4.23135	0.043342
MT2679	0.762977	10.04244	2.318571	-4.09454	0.037915	MT4026	-0.63587	8.667805	-2.25118	-4.23336	0.043427
MT3131.1	0.587809	9.219437	2.318276	-4.09516	0.037928	MT4041.1	-0.61672	9.36965	-2.28623	-4.16156	0.040599
MT2003	-0.57767	9.769633	-2.31734	-4.09711	0.037998	MT0638.1	0.68949	10.69192	2.285855	-4.16234	0.040621
MT3508	-0.66548	9.283935	-2.31689	-4.09804	0.038024	MT1328	-0.57183	9.308245	-2.2854	-4.16329	0.04065
MT0051	0.639744	9.245014	2.315254	-4.10145	0.038158	MT1113	0.798234	9.64725	2.283464	-4.16727	0.040812
MT0848	-0.70935	8.985525	-2.31255	-4.10709	0.03839	MT1435	-0.67872	8.76544	-2.28302	-4.16819	0.040812
MT3391	-0.86426	8.590148	-2.30847	-4.11557	0.038749	MT2364	0.705437	9.331975	2.282976	-4.16827	0.040812
MT1338	0.619824	9.488098	2.307237	-4.11812	0.038848	MT3368	0.646413	8.496189	2.282972	-4.16828	0.040812
MT0444	-0.61427	8.865744	-2.3068	-4.11902	0.038873	MT2898	-0.6389	9.083726	-2.28293	-4.16836	0.040812
MT1373	0.722522	8.971454	2.306459	-4.11973	0.038891	MT1630	0.609682	9.33928	2.282121	-4.17003	0.040875
MT1126	-0.61763	8.86973	-2.30611	-4.12046	0.038909	MT3839	-0.81382	9.275361	-2.28114	-4.17204	0.040954
MT1415	-0.63158	8.945546	-2.30465	-4.12348	0.039029	MT3572.1	-0.52632	9.351478	-2.27886	-4.17674	0.04116
MT3681	0.606659	9.545777	2.302926	-4.12706	0.039174	MT0199	-0.80486	8.352312	-2.27869	-4.17709	0.041161
MT1538	0.70187	9.732359	2.302071	-4.12883	0.039239	MT1518	-0.61728	8.940704	-2.27838	-4.17773	0.041176
MT0270.2	-0.89256	8.17416	-2.29852	-4.13618	0.039555	MT2933	0.696523	9.048796	2.277064	-4.18043	0.041289
MT1793	-0.64327	9.364067	-2.29774	-4.1378	0.039604	MT3667	0.54388	9.096515	2.276602	-4.18138	0.041319
MT2617	-0.87539	8.51828	-2.29769	-4.1379	0.039604	MT2352	-0.61695	9.046568	-2.29343	-4.14671	0.03996
MT0551	0.549139	8.147644	2.297077	-4.13917	0.039647	MT0671	-0.59009	9.798296	-2.29155	-4.1506	0.040123
MT0943	0.70661	8.925437	2.294836	-4.14381	0.039843	MT3731	-0.64181	9.895369	-2.29106	-4.15161	0.040155

Statistically Significant Genes Detected in ATB Caseum of the Classical Granuloma

Name	logFC	AveExpr	t	B	Adj.P.Val	Name	logFC	AveExpr	t	B	Adj.P.Val
MT3573.15	4.205262	9.623418	10.87784	22.47687	7.55E-11	MT0787.1	-1.16288	9.2519	-5.26613	4.192351	1.78E-05
MT2498	3.241809	9.43664	10.72747	22.02743	7.55E-11	MT0723	1.848263	8.80398	5.26132	4.176511	1.81E-05
MT2441	3.632888	9.388154	10.46285	21.22899	1.15E-10	MT2852	2.077398	8.863548	5.25946	4.170388	1.82E-05
MT2123	3.975458	8.710353	10.36003	20.91616	1.19E-10	MT3098	2.008771	9.529182	5.256973	4.162207	1.83E-05
MT2635	3.222875	9.618782	10.25139	20.58406	1.22E-10	MT0659	1.735759	8.274002	5.256401	4.160325	1.84E-05
MT0613	3.443198	9.285747	10.22573	20.50539	1.22E-10	MT2691.1	2.177243	8.778476	5.252997	4.149125	1.85E-05
MT0841	2.98302	9.407726	9.980286	19.74845	2.28E-10	MT3856	-1.31277	9.293369	-5.24599	4.126076	1.90E-05
MT3035	-2.98261	9.552538	-9.90042	19.50042	2.58E-10	MT3797	-1.38528	9.859211	-5.24373	4.118654	1.91E-05
MT3615.4	3.798352	9.475116	9.813817	19.23054	3.03E-10	MT0409	1.468195	9.008374	5.239025	4.103172	1.94E-05
MT2161	3.529678	8.778055	9.5993	18.55785	5.43E-10	MT2964	1.708555	8.973037	5.238972	4.102997	1.94E-05
MT3781	3.338947	9.523994	9.562524	18.44194	5.43E-10	MT3664	1.820484	9.197362	5.238649	4.101937	1.94E-05
MT0327	5.150823	9.59999	9.545711	18.38889	5.43E-10	MT2951	1.46048	9.399188	5.230925	4.076546	1.98E-05
MT3942	3.271352	9.072349	9.5176	18.30012	5.49E-10	MT2530	-1.19602	9.420529	-5.22976	4.072703	1.99E-05
MT0567	4.257914	9.465235	9.47594	18.16837	5.79E-10	MT2786	-1.59986	9.67939	-5.22859	4.06886	2.00E-05
MT3258	-3.0604	9.753391	-9.45353	18.09742	5.79E-10	MT3573.14	1.956579	8.405537	5.227129	4.064074	2.00E-05
MT3439	2.599511	9.235395	9.427631	18.01533	5.79E-10	MT1088	-1.47386	8.970728	-5.2254	4.058388	2.01E-05
MT3814	3.727367	9.156371	9.419367	17.98912	5.79E-10	MT3423	1.707631	9.039279	5.225011	4.057112	2.01E-05
MT1321	3.233896	9.318785	9.394143	17.90907	5.94E-10	MT1365	1.863773	9.510562	5.223859	4.053327	2.02E-05
MT2374	-2.33559	10.07953	-9.34508	17.75314	6.61E-10	MT1995	-1.26521	9.763971	-5.22326	4.051356	2.02E-05
MT0369	-2.21465	9.79634	-9.24413	17.43138	8.28E-10	MT0018	1.987811	8.227373	5.221699	4.04623	2.03E-05
MT0854.1	3.357581	9.413646	9.240225	17.41893	8.28E-10	MT0339	-1.20297	9.083133	-5.21701	4.030837	2.06E-05
MT2327	2.939443	8.898768	9.218614	17.34988	8.28E-10	MT2211	2.363356	8.974773	5.214637	4.023036	2.07E-05
MT0117	2.852466	8.858264	9.218135	17.34835	8.28E-10	MT0801	-1.52603	9.281317	-5.20944	4.005966	2.11E-05
MT1083.2	-2.46681	9.622093	-9.19016	17.25889	8.71E-10	MT2527.1	-1.68654	9.725851	-5.20872	4.003599	2.11E-05
MT2645	-2.21852	9.319561	-9.11869	17.02991	1.06E-09	MT3866	-1.25375	9.12743	-5.20457	3.989989	2.14E-05
MT1911	3.100044	9.798416	9.072416	16.88131	1.19E-09	MT0702	1.909787	8.868446	5.200253	3.975814	2.17E-05
MT0506	-2.61375	9.642873	-8.99503	16.63229	1.48E-09	MT3874	-1.23292	9.571285	-5.19791	3.968117	2.18E-05
MT4005	2.40622	9.016342	8.928858	16.41879	1.77E-09	MT2062	-1.69985	9.219108	-5.19696	3.965018	2.19E-05
MT1096	3.143339	8.700538	8.913641	16.36962	1.77E-09	MT2916	2.139106	8.660923	5.193403	3.953335	2.21E-05
MT0195	3.01585	9.468882	8.909576	16.35649	1.77E-09	MT1876	1.401129	9.182339	5.189523	3.940609	2.24E-05
MT3725	3.072345	9.076183	8.894822	16.30878	1.79E-09	MT0311	1.890969	9.036096	5.188261	3.93647	2.24E-05
MT3697	3.771747	9.56015	8.833212	16.10934	2.13E-09	MT2575	1.490119	9.337325	5.18541	3.927118	2.26E-05
MT1497.1	3.339374	9.024522	8.816169	16.05409	2.19E-09	MT2380	-1.58674	9.577022	-5.17993	3.909159	2.30E-05
MT2263	3.444778	8.944733	8.745314	15.82406	2.70E-09	MT2802.1	1.594246	9.164934	5.17646	3.897774	2.33E-05
MT4013	3.380615	9.365195	8.678544	15.60679	3.27E-09	MT1760	-1.26524	9.083986	-5.17564	3.895074	2.33E-05
MT2963	3.131404	9.29353	8.669705	15.578	3.28E-09	MT3766	-1.33719	9.663672	-5.17531	3.894011	2.33E-05

MT3380	-3.3448	10.03848	-8.65065	15.51588	3.35E-09	MT0090	1.812177	9.669999	5.171224	3.880613	2.36E-05
MT0694	-2.22766	9.290264	-8.64681	15.50338	3.35E-09	MT3575	-1.18945	9.123391	-5.17015	3.877105	2.37E-05
MT3674	3.466993	10.41051	8.639597	15.47985	3.35E-09	MT1026	1.540491	9.366325	5.164971	3.860124	2.40E-05
MT0534	2.66173	9.539875	8.624623	15.43099	3.43E-09	MT4000	1.402821	9.138316	5.164262	3.857798	2.41E-05
MT0879	-2.50224	9.688513	-8.60161	15.35588	3.62E-09	MT3907	1.618949	8.865965	5.163629	3.855724	2.41E-05
MT3573.2	2.918086	9.035956	8.590537	15.3197	3.62E-09	MT2902	1.551904	9.408391	5.162996	3.853653	2.41E-05
MT3475	3.024805	9.141123	8.587334	15.30924	3.62E-09	MT3071	1.493441	9.602766	5.160071	3.84407	2.43E-05
MT3349	3.413361	9.233644	8.551489	15.19207	3.99E-09	MT3893	-1.35513	9.301335	-5.1589	3.84023	2.44E-05
MT2093	3.196247	9.291977	8.503493	15.03497	4.59E-09	MT2589	-1.31556	9.02956	-5.15762	3.836053	2.45E-05
MT0756	2.735068	9.78721	8.495455	15.00864	4.61E-09	MT3502	1.427942	9.108181	5.154153	3.824691	2.47E-05
MT3185	-2.41825	9.440802	-8.48052	14.95968	4.66E-09	MT2542	1.324099	9.912597	5.153853	3.823706	2.47E-05
MT0962	-2.75346	9.945139	-8.47941	14.95605	4.66E-09	MT0972	-1.40386	9.089373	-5.15265	3.819764	2.48E-05
MT1234	3.778225	9.164303	8.434222	14.80783	5.32E-09	MT1161	-1.55973	9.362157	-5.15102	3.814438	2.49E-05
MT0299	3.141351	9.547729	8.420921	14.76416	5.38E-09	MT3008	-1.28178	9.138855	-5.14698	3.801218	2.52E-05
MT2670	3.257336	9.630314	8.416878	14.75088	5.38E-09	MT0468	1.206841	8.978787	5.145308	3.795733	2.53E-05
MT2906	2.305113	9.262911	8.413654	14.74029	5.38E-09	MT0815	-1.19098	9.132414	-5.14298	3.788125	2.55E-05
MT1117	3.145934	9.184878	8.404324	14.70964	5.40E-09	MT1343	-1.54698	10.27848	-5.14144	3.783067	2.56E-05
MT3159	2.639444	8.904386	8.395466	14.68054	5.40E-09	MT2272	1.830699	8.652307	5.141377	3.782868	2.56E-05
MT0753	3.227842	9.675262	8.393494	14.67406	5.40E-09	MT1574	-1.3184	9.235233	-5.13381	3.758104	2.62E-05
MT0511	2.758263	9.289449	8.386018	14.64948	5.40E-09	MT3184	-1.51335	8.969282	-5.13263	3.754245	2.63E-05
MT0772.2	4.566526	8.725905	8.381365	14.63419	5.40E-09	MT1384	1.572965	10.2993	5.132424	3.753577	2.63E-05
MT3573.11	3.71115	9.26155	8.378303	14.62412	5.40E-09	MT2808.1	2.00365	8.582509	5.132136	3.752634	2.63E-05
MT1297.1	2.970507	9.111971	8.370281	14.59774	5.40E-09	MT1842	-1.47198	9.459573	-5.13144	3.750362	2.63E-05
MT2869	3.745375	9.241533	8.370051	14.59698	5.40E-09	MT0238	1.719705	8.985291	5.130455	3.747137	2.64E-05
MT3407	2.714662	9.313873	8.357682	14.5563	5.54E-09	MT2597	1.450023	9.702978	5.130084	3.745925	2.64E-05
MT2884	-2.02033	9.62192	-8.34197	14.50458	5.75E-09	MT1637	-1.47489	8.784272	-5.1291	3.742719	2.64E-05
MT3363	2.454224	9.742719	8.3262	14.45268	5.96E-09	MT3572	-1.43166	9.720035	-5.12536	3.730488	2.67E-05
MT2903	2.381602	9.323402	8.306856	14.38896	6.27E-09	MT0116.1	1.72662	8.460801	5.121759	3.718704	2.70E-05
MT0087	3.05295	9.582017	8.295124	14.3503	6.27E-09	MT1132	1.33316	10.10371	5.121336	3.717321	2.70E-05
MT0691	2.277164	8.883195	8.295109	14.35025	6.27E-09	MT2900	-1.21647	9.741532	-5.11895	3.709525	2.72E-05
MT2985	3.701617	9.805532	8.293352	14.34446	6.27E-09	MT2897	1.910901	7.975422	5.116271	3.700765	2.74E-05
MT3027	-1.84466	9.263971	-8.27324	14.27814	6.61E-09	MT3142	-1.2641	9.547956	-5.11595	3.699722	2.74E-05
MT0228	2.261985	9.496754	8.26349	14.24599	6.66E-09	MT0424	2.247738	9.769969	5.115839	3.699352	2.74E-05
MT0558	3.185947	9.248889	8.259852	14.23399	6.66E-09	MT2608	1.37394	9.1493	5.112275	3.687706	2.77E-05
MT2194	2.631115	8.960833	8.258217	14.2286	6.66E-09	MT0666	-1.67498	9.495195	-5.11019	3.6809	2.79E-05
MT3996	2.651888	9.010538	8.242281	14.17601	6.89E-09	MT1998.1	-1.4008	9.465858	-5.10892	3.67676	2.80E-05
MT2961	3.440054	9.161763	8.240045	14.16863	6.89E-09	MT1262	1.434468	9.22107	5.105943	3.667021	2.82E-05
MT0772.5	2.761358	8.885375	8.206323	14.05726	7.41E-09	MT2743	2.230026	9.45794	5.105057	3.664125	2.83E-05
MT1286	3.234663	9.632831	8.205037	14.05301	7.41E-09	MT3521	-1.10628	9.264238	-5.10272	3.65648	2.85E-05
MT3621	3.029611	10.0836	8.204897	14.05255	7.41E-09	MT3191	-1.68832	9.557816	-5.1026	3.656111	2.85E-05
MT3957	-2.26896	9.600729	-8.20293	14.04605	7.41E-09	MT3654	1.767611	8.667111	5.102068	3.654363	2.85E-05
MT0261	-2.39859	9.459942	-8.1759	13.9567	8.02E-09	MT0795	-1.41277	9.198656	-5.10133	3.651955	2.85E-05
MT2283	2.887381	9.895059	8.170457	13.9387	8.07E-09	MT3829	-1.2972	8.837178	-5.09752	3.639505	2.89E-05
MT1003	2.966797	9.109635	8.156544	13.89268	8.36E-09	MT1348	-1.64842	9.04033	-5.0948	3.63064	2.91E-05
MT0807	2.579034	9.234788	8.152774	13.8802	8.36E-09	MT3836	-1.66688	8.909147	-5.09353	3.626481	2.92E-05
MT3539	3.004275	8.920769	8.147703	13.86342	8.40E-09	MT2837	1.971562	9.732092	5.092963	3.624634	2.92E-05
MT0124	2.200138	9.85001	8.139656	13.83679	8.53E-09	MT0181	1.61927	8.885814	5.092489	3.623088	2.92E-05
MT3995	2.52892	8.846655	8.133501	13.81641	8.58E-09	MT3139	-1.50077	9.21477	-5.09219	3.622128	2.92E-05
MT1432	3.609649	9.404354	8.130885	13.80776	8.58E-09	MT1981	1.553505	9.271546	5.090628	3.617015	2.93E-05
MT0235	2.468026	9.357989	8.107825	13.73139	9.09E-09	MT2840	-1.3617	9.710799	-5.09037	3.616184	2.93E-05
MT3060	2.665752	8.672405	8.107032	13.72876	9.09E-09	MT0692	-1.63248	9.275165	-5.08999	3.614944	2.93E-05
MT2650	-1.80536	9.48948	-8.10262	13.71413	9.13E-09	MT3243	-1.31292	9.177402	-5.08517	3.599195	2.98E-05
MT1031	2.798618	8.7173	8.054107	13.55331	1.06E-08	MT1246	1.418449	9.073674	5.084846	3.598144	2.98E-05
MT0484	3.111029	10.19006	8.022613	13.44879	1.17E-08	MT0184	1.711914	9.553324	5.082512	3.59053	3.00E-05
MT3454	-2.31571	9.661904	-8.01735	13.43132	1.17E-08	MT0826	-1.5438	9.395509	-5.08199	3.588842	3.00E-05
MT1851	3.634685	8.8008	8.016621	13.4289	1.17E-08	MT2117	1.374795	9.755087	5.072932	3.559282	3.09E-05
MT2648	2.875706	9.592774	7.999932	13.37347	1.23E-08	MT0867	1.373675	9.032766	5.070139	3.550175	3.11E-05
MT2080	-2.16354	9.28627	-7.99604	13.36055	1.23E-08	MT2187	-1.3862	9.093675	-5.06998	3.549656	3.11E-05
MT0292	3.003973	9.558184	7.980562	13.30911	1.28E-08	MT1692	1.528006	8.599813	5.069378	3.547695	3.12E-05
MT1621	3.857999	9.115022	7.973047	13.28413	1.30E-08	MT3112	1.804331	8.59384	5.068789	3.545774	3.12E-05
MT3396	2.5134	9.033961	7.965901	13.26038	1.32E-08	MT3308	2.404636	8.535682	5.06244	3.525079	3.18E-05
MT0469	2.11282	8.79114	7.960682	13.24302	1.33E-08	MT3606	-1.45582	9.45995	-5.05894	3.513682	3.22E-05
MT2382	-2.72541	9.431028	-7.95666	13.22964	1.33E-08	MT0475	1.702152	9.996261	5.053952	3.497425	3.27E-05
MT3275.1	-2.29277	9.713363	-7.95341	13.21883	1.34E-08	MT1019	1.822955	8.793501	5.050589	3.486471	3.30E-05
MT0405	2.649027	9.151958	7.946471	13.19576	1.35E-08	MT2014	1.77488	9.25265	5.049593	3.483228	3.31E-05
MT0802	2.995253	9.70387	7.936266	13.16181	1.39E-08	MT1513	1.572573	8.650395	5.047888	3.477674	3.33E-05
MT0440	2.731459	9.018321	7.903726	13.05351	1.54E-08	MT2506	-1.62632	9.281002	-5.04751	3.476431	3.33E-05
MT3522	2.775609	9.10633	7.898277	13.03537	1.55E-08	MT0460	-1.30121	9.549218	-5.04512	3.468672	3.35E-05
MT3058	2.351853	8.898516	7.872578	12.94977	1.67E-08	MT1920	-1.3944	9.236429	-5.04376	3.464228	3.36E-05
MT3374	-1.94573	9.333949	-7.86984	12.94063	1.67E-08	MT0936	-1.51645	9.558946	-5.0433	3.462722	3.36E-05
MT1296	1.993249	9.210002	7.868255	12.93536	1.67E-08	MT3220.2	1.560239	8.721331	5.041272	3.456135	3.38E-05
MT2036	3.050438	8.627336	7.848487	12.86947	1.77E-08	MT1450	1.610149	8.495273	5.040717	3.454328	3.39E-05
MT0926	2.629988	8.963073	7.843262	12.85205	1.79E-08	MT1804	-1.29163	9.986885	-5.03699	3.442189	3.42E-05
MT0758	2.662575	9.050107	7.834012	12.82121	1.82E-08	MT1310	1.47431	9.820152	5.036692	3.441229	3.42E-05
MT0093	2.88002	9.221245	7.83205	12.81467	1.82E-08	MT1705	1.430948	9.390196	5.035586	3.437631	3.43E-05
MT1317	2.624629	9.419164	7.824207	12.78851	1.86E-08	MT1369	1.1939	9.409168	5.034174	3.433033	3.45E-05
MT1240	2.310152	8.801986	7.820432	12.77591	1.86E-08	MT3253	-1.43461	9.349735	-5.03123	3.423471	3.48E-05
MT1605	-2.23008	9.545465	-7.81394	12.75427	1.88E-08	MT2915	1.806862	8.493232	5.030096	3.419767	3.49E-05
MT1866	2.812182	9.287048	7.81345	12.75262	1.88E-08	MT0635	1.588658	9.551061	5.028484	3.414524	3.50E-05
MT3937	3.513149	9.057041	7.808471	12.73601	1.88E-08	MT2917	2.146776	9.404116	5.028185	3.413551	3.50E-05
MT2878	2.37759	9.056244	7.807347	12.73226	1.88E-08	MT2082	-1.10404	9.37158	-5.02741	3.411023	3.51E-05
MT1091	-2.09057	9.840446	-7.80407	12.72134	1.89E-08	MT2061	-1.49119	9.685845	-5.02716	3.410205	3.51E-05
MT3105	2.472955	8.72085	7.797131	12.69816	1.92E-08	MT1634	1.726895	9.244396	5.025432	3.404597	3.52E-05
MT0893	2.798475	9.294581	7.787883	12.66729	1.96E-08	MT0726.1	-1.36501	8.601189	-5.02487	3.402755	3.53E-05
MT2013	-1.79729	9.348536	-7.77895	12.63747	1.99E-08	MT3176	1.644719	8.781355	5.021674	3.392375	3.56E-05
MT2111	3.435999	9.11471	7.778553	12.63615	1.99E-08	MT1761	2.005693	8.975667	5.019903	3.386616	3.58E-05
MT0882	-2.1538	9.791201	-7.77614	12.6281	1.99E-08	MT2861	-1.34872	9.553315	-5.01937	3.384874	3.58E-05
MT3663	2.76902	8.634216	7.766315	12.59528	2.03E-08	MT0487	-1.16133	9.199394	-5.01741	3.378508	3.60E-05
MT1838	2.964261	9.929175	7.766269	12.59512	2.03E-08	MT1526	1.38787	9.297738	5.014329	3.368497	3.63E-05
MT0779	2.342896	10.05242	7.760057	12.57438	2.04E-08	MT0187	-1.64749	9.328527	-5.01176	3.360134	3.66E-05
MT2854	-2.02404	9.682303	-7.75961	12.57287	2.04E-08	MT0630	1.746047	8.979519	5.010235	3.35519	3.68E-05
MT3378	-3.12029	9.9877	-7.7568	12.56349	2.05E-08	MT2806	1.590518	8.544747	5.00947	3.352705	3.68E-05
MT2106	2.552358	9.699626	7.731762	12.47983	2.21E-08	MT0519	1.588546	9.726406	5.008793	3.350504	3.69E-05
MT3387	2.686958	9.273094	7.710139	12.40755	2.37E-08	MT3318	-1.32313	9.238822	-5.00805	3.348101	3.69E-05
MT3708	3.375706	9.115935	7.706119	12.39411	2.38E-08	MT0516	1.49076	9.053788	5.005802	3.340788	3.72E-05
MT3762	2.409541	9.25059	7.702141	12.3808	2.40E-08	MT0396	1.558842	9.142233	5.005386	3.339436	3.72E-05
MT0320	2.746549	8.694073	7.684749	12.32263	2.52E-08	MT0082	-1.38066	9.134274	-5.00454	3.336696	3.72E-05
MT0921	2.566625	9.259171	7.682763	12.31598	2.52E-08	MT0162	1.366253	9.152787	5.004211	3.335619	3.72E-05

MT0139	-1.78335	9.407821	-7.67505	12.29018	2.57E-08	MT2240	-1.64278	9.316047	-5.00353	3.333398	3.73E-05
MT3666	2.97207	8.417146	7.668302	12.26759	2.61E-08	MT1905	1.347952	9.450002	5.000463	3.323444	3.76E-05
MT2593.2	-1.9155	9.894557	-7.66572	12.25894	2.62E-08	MT1330.1	-1.34551	9.237275	-4.99979	3.321268	3.77E-05
MT3964	-2.1848	9.614199	-7.65808	12.23339	2.67E-08	MT0081	-1.21037	9.072277	-4.99712	3.312577	3.80E-05
MT1728	2.682217	9.165254	7.629726	12.13844	2.91E-08	MT3715	-1.26316	9.27915	-4.99425	3.303258	3.83E-05
MT2935	2.585917	10.25278	7.628204	12.13335	2.91E-08	MT3756.3	2.277633	8.307937	4.991588	3.29463	3.86E-05
MT3279	-2.76672	9.47761	-7.62039	12.10718	2.97E-08	MT2609	-1.74242	9.014001	-4.99007	3.289692	3.88E-05
MT1025	2.114574	9.076375	7.618274	12.10009	2.97E-08	MT0762.1	1.564768	8.863363	4.98726	3.280582	3.91E-05
MT1874	-1.95991	9.175658	-7.61489	12.08875	2.99E-08	MT2448	1.157041	9.001805	4.985666	3.27541	3.93E-05
MT0977	-2.07208	9.36344	-7.61109	12.07603	2.99E-08	MT2518	1.448619	8.902591	4.984052	3.270172	3.94E-05
MT3231	2.406339	9.142072	7.610206	12.07306	2.99E-08	MT2425	1.824336	8.588735	4.983587	3.268661	3.95E-05
MT1498	2.615687	8.682064	7.605792	12.05827	3.02E-08	MT3286	-1.43139	9.046256	-4.98235	3.264659	3.96E-05
MT2948	-2.29463	9.458696	-7.59761	12.03086	3.08E-08	MT1142	1.489902	9.885798	4.980371	3.258228	3.98E-05
MT1555	-2.58534	9.629929	-7.59594	12.02526	3.08E-08	MT3482	-1.38243	8.062315	-4.97607	3.244273	4.03E-05
MT2664	3.022188	8.837624	7.578365	11.96635	3.25E-08	MT3774	-1.24484	9.197927	-4.97561	3.242787	4.04E-05
MT1471	-1.81621	9.292917	-7.57029	11.93928	3.32E-08	MT2070	1.944045	9.810036	4.973634	3.236377	4.05E-05
MT3696	2.703653	9.237557	7.56709	11.92854	3.33E-08	MT0560	1.847146	9.558478	4.973624	3.236345	4.05E-05
MT0979	-2.0469	9.385179	-7.55222	11.87867	3.49E-08	MT2783	1.690441	9.302012	4.969889	3.224234	4.10E-05
MT0176	-1.74716	9.321283	-7.54162	11.8431	3.57E-08	MT2895	1.158034	8.798615	4.969037	3.221472	4.11E-05
MT3280	-2.62639	9.805526	-7.54156	11.84291	3.57E-08	MT3334	1.650025	8.868858	4.967469	3.21639	4.13E-05
MT1560.1	-1.78325	9.164373	-7.53403	11.81765	3.62E-08	MT0910.3	-1.59297	9.208945	-4.9658	3.210986	4.15E-05
MT3427.1	2.129236	9.821324	7.533802	11.81689	3.62E-08	MT0482	-1.17679	9.236822	-4.96413	3.205566	4.16E-05
MT2624	1.976172	9.628919	7.53193	11.81061	3.62E-08	MT1786	1.750417	8.887999	4.961108	3.195774	4.20E-05
MT0513	3.048794	9.220351	7.510261	11.73789	3.87E-08	MT3009	-1.48163	9.318067	-4.96024	3.192963	4.21E-05
MT0037	-1.68624	9.458443	-7.49385	11.68278	4.07E-08	MT2231	-1.13839	9.29426	-4.96023	3.192916	4.21E-05
MT1623	-2.40114	9.619064	-7.4828	11.64569	4.21E-08	MT1669	1.600706	10.55821	4.959824	3.191614	4.21E-05
MT1532	-1.96233	9.142025	-7.47711	11.62659	4.26E-08	MT3300	1.377718	9.679795	4.957161	3.182986	4.24E-05
MT0328.1	3.417506	8.906909	7.468366	11.59722	4.27E-08	MT2974	-1.94788	10.08703	-4.95684	3.181949	4.24E-05
MT2393	-2.38835	9.750252	-7.46778	11.59525	4.27E-08	MT0633	1.144154	9.350426	4.956437	3.180641	4.24E-05
MT3421	-2.0206	9.211891	-7.46718	11.59325	4.27E-08	MT1956	1.28786	9.380071	4.956353	3.180368	4.24E-05
MT3487	-2.21036	9.558185	-7.46696	11.59248	4.27E-08	MT0474	1.490564	9.616931	4.951665	3.165184	4.30E-05
MT2599	3.260582	9.470865	7.466657	11.59148	4.27E-08	MT0543	1.906031	8.954397	4.949826	3.159229	4.32E-05
MT3958	-2.0072	9.715324	-7.4659	11.58892	4.27E-08	MT3736	-2.10011	10.21076	-4.94827	3.154194	4.34E-05
MT1887	2.559	8.717936	7.46257	11.57775	4.27E-08	MT2554.1	-1.71728	10.01123	-4.94459	3.142291	4.39E-05
MT1991	2.502363	9.302337	7.461332	11.57359	4.27E-08	MT2850	-1.07506	9.234206	-4.94151	3.132291	4.43E-05
MT2942	-1.93964	9.280611	-7.46115	11.57299	4.27E-08	MT0840	1.794922	8.63826	4.93961	3.126159	4.46E-05
MT1095	2.64242	8.709213	7.458392	11.56371	4.28E-08	MT3805	2.085227	9.224322	4.938648	3.123044	4.47E-05
MT3691	2.513576	10.12205	7.448228	11.52956	4.41E-08	MT2142	1.473626	9.815563	4.93823	3.121693	4.47E-05
MT2990	2.766254	9.816687	7.446694	11.52441	4.41E-08	MT2167	2.052752	10.00105	4.937276	3.118605	4.48E-05
MT1427	2.768759	9.025629	7.444948	11.51854	4.41E-08	MT0762	1.307132	10.21009	4.935093	3.11154	4.51E-05
MT3556	1.782734	9.13437	7.440076	11.50217	4.44E-08	MT1337	-1.50555	9.017415	-4.93488	3.110858	4.51E-05
MT2885	-1.81474	9.163522	-7.43925	11.49938	4.44E-08	MT1227	2.045511	8.796731	4.933647	3.106864	4.52E-05
MT2989	2.215709	8.839936	7.433853	11.48126	4.48E-08	MT1844	1.583233	9.455284	4.933635	3.106825	4.52E-05
MT3455	-2.03442	9.480807	-7.43344	11.47986	4.48E-08	MT0821	1.42421	9.049119	4.928486	3.090169	4.59E-05
MT1273	-2.11927	9.42067	-7.43142	11.47307	4.49E-08	MT1208	1.377015	9.519268	4.924959	3.078764	4.64E-05
MT3437.1	2.474765	8.926545	7.427149	11.45872	4.53E-08	MT2136	-1.17051	9.343413	-4.92444	3.0771	4.64E-05
MT2705	2.397327	9.14579	7.421845	11.4409	4.59E-08	MT1495	-1.21753	9.164318	-4.92338	3.073652	4.65E-05
MT3925.1	4.162868	9.272264	7.41787	11.42753	4.63E-08	MT2665	1.576222	9.380539	4.923173	3.07299	4.65E-05
MT0415	-2.10327	9.579497	-7.416	11.42126	4.63E-08	MT0278	1.288496	9.12597	4.921992	3.069172	4.67E-05
MT2217	2.47218	8.513244	7.396518	11.35574	4.93E-08	MT0564	1.928604	8.661908	4.918629	3.058302	4.72E-05
MT3062	2.26099	9.393364	7.393234	11.3447	4.95E-08	MT1395	-1.50178	9.878275	-4.91695	3.052872	4.74E-05
MT3862	2.022934	9.717451	7.392001	11.34055	4.95E-08	MT1143.1	-1.55409	9.582864	-4.91638	3.051029	4.74E-05
MT2057	-2.31458	9.437021	-7.38849	11.32873	4.98E-08	MT0670	-1.63708	9.232554	-4.916	3.04979	4.74E-05
MT2041	-2.24472	9.569654	-7.3853	11.31803	4.99E-08	MT1279	1.439848	8.819647	4.912957	3.039973	4.79E-05
MT1456	2.324297	9.459188	7.384323	11.31473	4.99E-08	MT0669	-1.44303	9.134728	-4.9096	3.029134	4.84E-05
MT1930	-1.91546	9.673593	-7.38374	11.31275	4.99E-08	MT0040	-1.1588	9.313995	-4.90862	3.025969	4.85E-05
MT2700	2.750248	9.813175	7.348616	11.1946	5.60E-08	MT3671.1	1.701495	8.735922	4.905995	3.017482	4.89E-05
MT3055	2.748705	9.099208	7.340483	11.16722	5.71E-08	MT0073	-1.6736	9.021326	-4.90096	3.001209	4.96E-05
MT3405	2.355626	9.278286	7.340114	11.16598	5.71E-08	MT0226	1.30491	9.392247	4.898355	2.992815	5.00E-05
MT0432	-1.87493	9.29751	-7.33854	11.16069	5.71E-08	MT1075.1	-2.30035	10.44967	-4.89689	2.988098	5.02E-05
MT3278	-1.96031	9.433517	-7.3252	11.11578	5.95E-08	MT0940	1.516476	9.098535	4.896163	2.985739	5.03E-05
MT0967	-2.00767	9.512776	-7.29906	11.02776	6.48E-08	MT1540	1.579516	8.995912	4.895505	2.983615	5.03E-05
MT2212	3.027806	8.790497	7.292276	11.00492	6.60E-08	MT2394	-1.49114	8.966355	-4.89542	2.983342	5.03E-05
MT1867	-2.02088	9.590973	-7.28584	10.98326	6.71E-08	MT1750	-1.09131	9.131986	-4.89341	2.976852	5.06E-05
MT1140	-1.90025	9.395871	-7.28469	10.97938	6.71E-08	MT3175	-1.45227	9.716626	-4.89207	2.972518	5.08E-05
MT2949	-2.89153	9.799222	-7.27738	10.95476	6.81E-08	MT0946	-1.6234	10.03071	-4.89157	2.970925	5.08E-05
MT1796	-4.0134	10.83965	-7.27738	10.95474	6.81E-08	MT2673	-1.29018	9.498633	-4.89016	2.966382	5.10E-05
MT3523	2.382064	9.756478	7.274922	10.94646	6.83E-08	MT0975	-1.41472	9.112326	-4.88989	2.965482	5.10E-05
MT0205	-2.21044	9.77179	-7.26649	10.91806	6.99E-08	MT1882	-1.22552	9.411739	-4.88621	2.953638	5.16E-05
MT2242	-1.73333	9.537445	-7.2656	10.91506	6.99E-08	MT3566	-1.25341	9.323706	-4.88518	2.950294	5.17E-05
MT2125	2.528094	8.505398	7.258762	10.89202	7.10E-08	MT0434	-1.2932	9.121106	-4.88517	2.950256	5.17E-05
MT3645	-1.85625	9.531931	-7.25837	10.8907	7.10E-08	MT0125	1.408166	9.568879	4.882683	2.942248	5.20E-05
MT2467.1	2.617914	8.436064	7.24897	10.85902	7.30E-08	MT2473	-1.15727	9.481273	-4.87983	2.933034	5.25E-05
MT0562	2.619158	9.931077	7.228549	10.7902	7.79E-08	MT2773	-1.24507	9.17755	-4.87949	2.931947	5.25E-05
MT0939	2.155774	8.740124	7.214103	10.7415	8.15E-08	MT3704	2.148288	10.19175	4.87021	2.902041	5.41E-05
MT0349	2.430361	9.418702	7.208445	10.72242	8.28E-08	MT1771	-1.19943	9.137941	-4.87001	2.901392	5.41E-05
MT0109	-2.32348	9.55733	-7.19809	10.6875	8.54E-08	MT3988	-1.15143	9.158557	-4.86744	2.893104	5.45E-05
MT1073	3.512986	9.234047	7.189159	10.65739	8.76E-08	MT0721	-1.18927	8.969201	-4.86409	2.882315	5.51E-05
MT1600	2.047979	9.309388	7.184806	10.64271	8.86E-08	MT0316	1.391432	8.724054	4.859132	2.866356	5.59E-05
MT0300	3.054337	9.021048	7.183114	10.63701	8.87E-08	MT2031	-1.67613	9.55775	-4.8564	2.857569	5.64E-05
MT2563	2.781318	9.700133	7.180391	10.62782	8.87E-08	MT2030	1.316011	9.686979	4.853973	2.849747	5.68E-05
MT2912	2.241226	8.740285	7.180253	10.62736	8.87E-08	MT1891	-1.29102	8.547016	-4.85336	2.847764	5.68E-05
MT1264	2.64201	9.235986	7.178453	10.62128	8.89E-08	MT2570	-1.46037	9.217456	-4.85299	2.846594	5.69E-05
MT0416	-1.93967	9.692088	-7.1751	10.60997	8.91E-08	MT2190	-1.24738	8.996907	-4.85208	2.843649	5.70E-05
MT1396	-2.24347	9.520627	-7.17448	10.6079	8.91E-08	MT0337	1.49381	9.831156	4.850892	2.839829	5.72E-05
MT3289	-2.26704	9.280413	-7.17374	10.60538	8.91E-08	MT3921	1.749111	8.750521	4.850339	2.838048	5.72E-05
MT1482	-2.12525	9.076516	-7.17028	10.59371	8.98E-08	MT2757	1.667572	9.516637	4.848593	2.832429	5.75E-05
MT1514.1	2.354261	10.35523	7.168892	10.58903	8.98E-08	MT0706	-1.28982	9.759038	-4.84761	2.82926	5.76E-05
MT2101	-1.81162	9.155003	-7.16742	10.58406	8.98E-08	MT3665	1.78479	8.283809	4.846677	2.826265	5.77E-05
MT3039	1.815519	9.246124	7.16471	10.57493	8.99E-08	MT0878	1.646204	9.257364	4.843219	2.81514	5.84E-05
MT2315	2.238575	9.193495	7.164659	10.57476	8.99E-08	MT0887	-1.17017	9.004474	-4.84149	2.809577	5.86E-05
MT0990	-1.77803	9.165786	-7.13051	10.45954	1.01E-07	MT3043	-1.57628	9.093734	-4.83899	2.801525	5.91E-05
MT2331	-1.67811	9.60632	-7.12819	10.45171	1.01E-07	MT1636	1.851614	9.437579	4.835944	2.791743	5.96E-05
MT1123	2.277285	8.901078	7.111666	10.39594	1.07E-07	MT2020	1.604111	8.840423	4.834238	2.78626	5.99E-05
MT0141	2.263777	9.05657	7.110484	10.39195	1.07E-07	MT1392	1.469597	9.132876	4.833458	2.783751	6.00E-05
MT1118	2.208196	9.034446	7.104121	10.37047	1.08E-07	MT3982	-1.47671	9.206681	-4.83101	2.775889	6.04E-05
MT1557	-1.88336	9.321165	-7.10212	10.36373	1.09E-07	MT1135	-1.49688	9.444983	-4.82971	2.771695	6.06E-05
MT3028	-1.81	9.236627	-7.0901	10.32315	1.13E-07	MT0902	1.407233	8.838175	4.827069	2.763216	6.11E-05

MT2841	3.406638	9.820739	7.08973	10.32189	1.13E-07	MT0530	1.523574	9.716699	4.823423	2.751501	6.18E-05
MT3947	2.956785	9.290751	7.083469	10.30075	1.15E-07	MT2149	-1.42188	8.979384	-4.82148	2.745251	6.21E-05
MT2049	2.661635	10.01331	7.066657	10.24399	1.21E-07	MT0651	1.620226	8.857479	4.820645	2.742579	6.23E-05
MT1697	2.48698	9.120388	7.052711	10.19689	1.26E-07	MT3434	1.526173	8.278644	4.820147	2.740977	6.23E-05
MT3978	-1.83879	9.464067	-7.04799	10.18096	1.28E-07	MT1752	1.463741	9.431088	4.819552	2.739067	6.24E-05
MT2594	2.828103	9.893369	7.046921	10.17733	1.28E-07	MT3400	-1.10591	9.095171	-4.81876	2.736524	6.25E-05
MT3550	2.634149	8.944673	7.045426	10.17229	1.28E-07	MT3193	-1.66457	9.437983	-4.81645	2.729098	6.29E-05
MT3045	-1.72065	9.457954	-7.026	10.10666	1.36E-07	MT2430	-1.53937	9.02834	-4.81242	2.716158	6.37E-05
MT3887	2.160028	8.802146	7.025942	10.10647	1.36E-07	MT3782	-1.33839	9.314146	-4.81125	2.712406	6.39E-05
MT3571	-1.96699	9.438402	-7.02503	10.1034	1.36E-07	MT2868	1.710964	9.118238	4.80989	2.708046	6.41E-05
MT1934	-2.18221	9.405179	-7.02148	10.09139	1.36E-07	MT3707	1.672593	8.889037	4.807966	2.701869	6.45E-05
MT0260	-1.75316	9.229524	-7.02139	10.09108	1.36E-07	MT0389	1.558559	8.942489	4.804578	2.690998	6.51E-05
MT1032	2.360425	8.832712	7.015845	10.07236	1.38E-07	MT1249	1.504841	9.88154	4.80424	2.689915	6.51E-05
MT1615	1.970953	9.158332	7.010987	10.05595	1.40E-07	MT1543	1.823242	8.625073	4.803316	2.68695	6.53E-05
MT4022	2.449517	9.341308	7.010114	10.053	1.40E-07	MT2456	1.425782	9.23086	4.800785	2.67883	6.57E-05
MT0714	-2.3519	9.974899	-7.00719	10.04311	1.40E-07	MT1320	-1.22731	9.50843	-4.80077	2.678768	6.57E-05
MT2168	-2.05045	9.397354	-7.00704	10.04263	1.40E-07	MT1839.1	1.857657	8.832751	4.797804	2.669269	6.63E-05
MT1959	-2.10356	9.238997	-7.00361	10.03102	1.41E-07	MT2347	-1.11621	9.771799	-4.79739	2.66795	6.63E-05
MT2735	-1.79757	9.472094	-7.00355	10.03084	1.41E-07	MT0726	-1.74787	9.547717	-4.79624	2.664261	6.65E-05
MT2994	2.820468	9.361821	7.002212	10.0263	1.41E-07	MT0780	1.494244	9.722615	4.794729	2.659407	6.68E-05
MT3955	-1.59845	9.416047	-7.0003	10.01986	1.41E-07	MT1069	1.514244	8.763882	4.794153	2.65756	6.69E-05
MT2369	-1.86024	9.579815	-6.99912	10.01587	1.41E-07	MT0363	-1.14799	9.058378	-4.79348	2.655405	6.69E-05
MT2805	2.631585	9.345105	6.99463	10.00069	1.43E-07	MT2535	-1.14426	9.352164	-4.79154	2.649193	6.73E-05
MT1551	-1.9338	9.417601	-6.99186	9.991315	1.44E-07	MT0352	-1.67758	8.9131	-4.79079	2.646775	6.74E-05
MT2337	-1.96637	9.709126	-6.98641	9.972921	1.46E-07	MT1183	-1.72251	9.640121	-4.79049	2.645813	6.74E-05
MT1229	3.020807	8.68847	6.95927	9.881195	1.60E-07	MT1859	1.263523	9.347943	4.789741	2.643416	6.75E-05
MT3507	-1.62671	9.655102	-6.95545	9.868277	1.61E-07	MT2769	2.278167	8.858401	4.789087	2.64132	6.76E-05
MT2734	2.007318	8.778286	6.950861	9.852772	1.63E-07	MT4025	1.998621	8.957915	4.78808	2.638092	6.78E-05
MT2580	-1.77842	9.34011	-6.94592	9.836082	1.66E-07	MT1133	-1.13878	9.077898	-4.78216	2.619134	6.91E-05
MT2173	2.377469	9.057517	6.943092	9.826511	1.67E-07	MT0343	-1.07378	9.770208	-4.78141	2.616716	6.92E-05
MT3945	2.497176	9.010281	6.929769	9.781476	1.72E-07	MT0408	1.341266	8.515453	4.779434	2.610391	6.95E-05
MT2984	2.064309	9.036345	6.929163	9.779426	1.72E-07	MT1388	1.51122	9.184637	4.779304	2.609973	6.95E-05
MT3486	-2.11758	10.03075	-6.92835	9.776675	1.72E-07	MT0996	1.629605	8.825701	4.772089	2.586869	7.12E-05
MT2789	-2.34757	9.582305	-6.92785	9.77498	1.72E-07	MT2286	-1.24509	8.918927	-4.75309	2.526097	7.57E-05
MT0884	-2.24375	9.779121	-6.92761	9.774172	1.72E-07	MT1825	-1.1423	9.093881	-4.75073	2.518542	7.63E-05
MT3954.1	-2.35351	9.743378	-6.92417	9.762537	1.74E-07	MT0869	1.662015	8.539302	4.747497	2.508203	7.70E-05
MT0508	-2.06861	9.583072	-6.91864	9.743868	1.77E-07	MT1476	1.454333	8.910114	4.746436	2.504811	7.72E-05
MT0696	-1.83039	9.377935	-6.91133	9.719144	1.80E-07	MT3345	1.154753	9.668586	4.745573	2.502054	7.73E-05
MT1174	-1.74792	9.240309	-6.90781	9.707247	1.82E-07	MT3517	1.620317	9.099467	4.745518	2.501878	7.73E-05
MT1986	2.709964	9.04868	6.898777	9.676695	1.87E-07	MT1536	-1.39887	9.382854	-4.74207	2.490865	7.81E-05
MT0656	2.50349	8.811055	6.891415	9.651803	1.91E-07	MT1668	-1.54713	9.26686	-4.74092	2.487186	7.83E-05
MT3160	2.455187	9.027109	6.884284	9.62769	1.95E-07	MT1943	-1.5762	9.016353	-4.73882	2.480493	7.88E-05
MT1531	-1.95046	9.222482	-6.88427	9.627629	1.95E-07	MT3141	-1.60863	9.257335	-4.73764	2.476699	7.91E-05
MT1236	-2.313	9.488434	-6.88069	9.615543	1.96E-07	MT0486	-1.40066	9.306789	-4.73531	2.469272	7.95E-05
MT2914	2.749962	8.846026	6.879046	9.609977	1.97E-07	MT0731	1.441783	8.901594	4.735209	2.468947	7.95E-05
MT2028	2.113525	10.18724	6.859524	9.543959	2.10E-07	MT0518	1.669525	8.764673	4.732563	2.4605	8.02E-05
MT0570	-2.18064	8.875937	-6.85084	9.514599	2.15E-07	MT3714	-1.28345	9.112784	-4.73174	2.457865	8.03E-05
MT1096.2	2.345559	9.706331	6.849255	9.509229	2.15E-07	MT2587	-1.81311	9.146283	-4.73156	2.457281	8.03E-05
MT3860	1.998092	9.694792	6.848494	9.506655	2.15E-07	MT1360	-2.28308	9.807629	-4.72923	2.449854	8.08E-05
MT3309	2.604048	9.712	6.847939	9.504779	2.15E-07	MT3310	1.43268	8.693716	4.728115	2.446299	8.11E-05
MT3543	2.571212	9.486302	6.84762	9.503701	2.15E-07	MT1266	-1.69878	9.072357	-4.72778	2.44522	8.11E-05
MT2991	2.611178	8.699066	6.84297	9.487975	2.18E-07	MT3870	-1.16938	8.892463	-4.7228	2.429344	8.24E-05
MT2825	-1.66815	9.311928	-6.83964	9.47671	2.19E-07	MT2960	1.552745	10.05236	4.72242	2.428127	8.24E-05
MT0384.1	-1.83175	9.261685	-6.83958	9.476512	2.19E-07	MT2359	-1.60402	9.227434	-4.7204	2.421683	8.29E-05
MT0030.1	1.72141	9.44165	6.816114	9.397137	2.36E-07	MT2721	-1.18301	9.328417	-4.71936	2.418367	8.30E-05
MT3954	-1.77334	9.339712	-6.81583	9.396188	2.36E-07	MT0822	-1.18417	9.409681	-4.71899	2.417171	8.30E-05
MT3756.1	2.620677	8.714187	6.810836	9.379282	2.39E-07	MT0514	1.307676	8.762937	4.718653	2.416111	8.30E-05
MT0512	2.756445	8.689631	6.805532	9.361341	2.43E-07	MT1516	-1.24643	9.381638	-4.71859	2.415916	8.30E-05
MT1936	-1.87539	9.372378	-6.80346	9.354326	2.43E-07	MT3841	1.409002	8.945999	4.718528	2.415712	8.30E-05
MT3212	-1.81775	9.152279	-6.80286	9.352296	2.43E-07	MT2292	1.43937	8.877705	4.7176	2.412751	8.32E-05
MT0739	-1.65236	9.190225	-6.80169	9.348339	2.43E-07	MT2835	-1.34619	9.325151	-4.71697	2.410753	8.33E-05
MT3361	2.055892	9.112358	6.79828	9.336808	2.46E-07	MT2250	1.335522	9.149422	4.716554	2.409414	8.33E-05
MT3171	2.319138	9.048424	6.795607	9.327768	2.47E-07	MT1566	-1.24648	9.16186	-4.71419	2.401866	8.39E-05
MT3961	-1.99449	10.18855	-6.79144	9.313659	2.50E-07	MT0313	1.134631	8.340816	4.713912	2.400989	8.39E-05
MT2233	-1.88239	9.718747	-6.79009	9.30911	2.50E-07	MT1753	1.676546	8.691936	4.710321	2.389543	8.48E-05
MT1839	2.01728	8.730464	6.783675	9.287401	2.55E-07	MT2772	1.232995	8.942453	4.709696	2.38755	8.49E-05
MT1966	-2.02523	9.765657	-6.77679	9.264123	2.60E-07	MT1278	1.721389	8.843675	4.709414	2.386652	8.49E-05
MT1683	-1.78057	9.154545	-6.7619	9.21372	2.73E-07	MT3495	1.541626	8.238551	4.709178	2.385899	8.49E-05
MT2397	-1.92618	9.31357	-6.76041	9.208701	2.73E-07	MT3315	-1.34887	9.092893	-4.70867	2.384278	8.50E-05
MT1231	1.837029	9.018908	6.75978	9.206563	2.73E-07	MT2977	-1.59475	9.224354	-4.70267	2.365162	8.66E-05
MT2887	-2.12059	9.310708	-6.75866	9.202777	2.73E-07	MT1502	1.784361	9.44421	4.70265	2.365098	8.66E-05
MT2247	2.045212	8.834249	6.745493	9.158226	2.85E-07	MT2971	1.342197	9.293769	4.699064	2.353675	8.75E-05
MT3210	-1.92129	9.812398	-6.74388	9.152779	2.86E-07	MT1715	-1.26267	8.822779	-4.69569	2.342945	8.84E-05
MT1787	2.259459	8.808608	6.736132	9.126552	2.93E-07	MT2503	-1.36651	9.3865	-4.6953	2.341674	8.85E-05
MT0379	-2.11859	9.553124	-6.73519	9.123378	2.93E-07	MT0144	1.381821	9.366039	4.694631	2.339558	8.86E-05
MT1490	-1.82344	9.528706	-6.73099	9.109158	2.96E-07	MT2751	1.828165	8.94285	4.692931	2.334146	8.90E-05
MT2166	-1.83129	9.512843	-6.72251	9.080477	3.04E-07	MT2407	-1.39448	10.33421	-4.68484	2.308401	9.13E-05
MT1556	-2.03137	9.700317	-6.71643	9.059875	3.10E-07	MT1533	-1.50927	9.265967	-4.68392	2.305457	9.15E-05
MT2866	2.388126	9.691585	6.71479	9.054342	3.10E-07	MT3441	1.373124	8.894974	4.683609	2.304478	9.15E-05
MT0291.3	2.340887	8.876682	6.71036	9.039353	3.13E-07	MT0202	1.384525	8.672354	4.682782	2.301846	9.17E-05
MT2523	2.009259	9.554469	6.710235	9.03893	3.13E-07	MT3066	2.01343	9.3841	4.682445	2.300774	9.17E-05
MT2330.1	1.805732	9.437944	6.704419	9.019248	3.18E-07	MT1066	1.672776	9.229354	4.681019	2.296239	9.21E-05
MT2674.1	-2.19687	9.320586	-6.70422	9.018559	3.18E-07	MT3904	-1.08696	9.406053	-4.67947	2.291319	9.25E-05
MT2846	1.898945	9.491542	6.699793	9.003598	3.22E-07	MT2894	1.088631	8.685054	4.67825	2.287432	9.28E-05
MT1089	-1.60734	9.569709	-6.69476	8.986579	3.26E-07	MT2777.1	-1.34015	8.686362	-4.6756	2.279015	9.35E-05
MT3401	2.57739	9.438215	6.693189	8.98125	3.27E-07	MT3023	-1.10504	9.052362	-4.67418	2.274491	9.39E-05
MT1957	-1.62317	9.62515	-6.69052	8.972222	3.29E-07	MT1900	1.819016	8.695517	4.669163	2.258544	9.53E-05
MT1988	3.180162	9.079643	6.689873	8.970029	3.29E-07	MT2578	-1.54997	9.391953	-4.6689	2.257698	9.53E-05
MT2338	-2.52092	9.578678	-6.68805	8.963845	3.30E-07	MT3106.1	1.50261	9.014113	4.667825	2.254292	9.56E-05
MT2040	2.166583	9.430835	6.674846	8.919181	3.44E-07	MT2109	1.492634	9.007728	4.666645	2.250542	9.59E-05
MT3124	2.566192	9.409051	6.667256	8.893498	3.53E-07	MT0049	-1.45514	9.176492	-4.66575	2.247708	9.61E-05
MT0306	2.622915	8.766973	6.663358	8.880309	3.56E-07	MT1957.1	-1.42263	8.999937	-4.66395	2.241974	9.66E-05
MT2147	2.558896	9.434651	6.659692	8.867903	3.60E-07	MT1375	1.64644	9.372294	4.663219	2.239656	9.67E-05
MT0830	1.992479	9.340833	6.65623	8.856189	3.63E-07	MT0730	-1.42138	8.917044	-4.66216	2.2363	9.70E-05
MT0240	-1.93987	9.33885	-6.64208	8.808303	3.80E-07	MT0173	-1.48082	8.760685	-4.66153	2.234297	9.71E-05
MT2249	-1.69724	9.403928	-6.64143	8.806099	3.80E-07	MT0648	1.675215	8.50668	4.660749	2.231811	9.73E-05
MT2913	2.604929	9.24685	6.640293	8.802258	3.80E-07	MT1126	-1.1812	8.713173	-4.65661	2.218675	9.85E-05
MT0056	2.240012	8.33387	6.63853	8.796293	3.81E-07	MT1464	1.365889	9.725057	4.655596	2.21545	9.88E-05

MT3389	-1.94065	9.204038	-6.63518	8.784949	3.85E-07	MT2488	1.279651	8.872285	4.654899	2.213235	9.89E-05
MT1550	-1.86801	9.529527	-6.63177	8.773415	3.88E-07	MT1468	2.39095	9.171606	4.654642	2.21242	9.89E-05
MT3137	-1.80209	9.300495	-6.62904	8.764173	3.91E-07	MT1734	1.301614	9.114702	4.652329	2.20508	9.96E-05
MT0818	-1.84313	9.661598	-6.62666	8.756139	3.92E-07	MT0876	-1.13932	9.205928	-4.64725	2.188954	0.000101
MT3330	2.304547	8.950973	6.626429	8.755345	3.92E-07	MT2470	1.349029	10.44592	4.643399	2.176743	0.000102
MT1553	-1.86068	9.543189	-6.62157	8.738908	3.97E-07	MT1255	1.338743	8.882355	4.643187	2.176073	0.000102
MT3803	2.507979	8.71178	6.615839	8.71951	4.04E-07	MT3576	1.029051	9.418142	4.641394	2.170385	0.000103
MT0713	-2.19231	9.474579	-6.60955	8.698235	4.12E-07	MT0429	-1.22643	9.297038	-4.63977	2.165234	0.000103
MT3022	-2.57186	10.01386	-6.60608	8.686497	4.15E-07	MT1735	1.475551	8.813728	4.6387	2.161841	0.000104
MT2654	2.599251	9.049123	6.605418	8.684246	4.15E-07	MT2340	-1.52576	9.091698	-4.63802	2.159689	0.000104
MT2527	-1.75115	9.489828	-6.60448	8.681072	4.15E-07	MT0015	1.281246	10.43458	4.63751	2.158071	0.000104
MT2213	3.088692	9.045264	6.603037	8.67619	4.15E-07	MT2703	-1.17984	9.290558	-4.63496	2.15	0.000105
MT3166	2.469846	9.738598	6.602973	8.675973	4.15E-07	MT1948	1.392538	9.163777	4.634796	2.149466	0.000105
MT3381	2.144904	9.076173	6.599756	8.665089	4.17E-07	MT3218	-1.36837	9.103755	-4.63466	2.14902	0.000105
MT3353	3.031026	8.725336	6.599742	8.66504	4.17E-07	MT1361	-1.33059	9.510411	-4.63448	2.148478	0.000105
MT3972.1	-1.91357	9.539993	-6.59671	8.654786	4.19E-07	MT3099	-1.27102	10.01833	-4.63354	2.145487	0.000105
MT1441	1.958509	9.147696	6.596496	8.654058	4.19E-07	MT3135	-1.18831	9.114858	-4.63307	2.144008	0.000105
MT0498	3.031802	8.507177	6.596379	8.65366	4.19E-07	MT1643	-1.35644	8.870738	-4.63229	2.141522	0.000105
MT0378	-1.78353	9.628063	-6.59152	8.637221	4.25E-07	MT1177	-1.16544	8.81245	-4.631	2.137434	0.000105
MT3052.1	2.210884	9.483295	6.589905	8.631753	4.26E-07	MT1446	1.632864	9.031814	4.630102	2.134589	0.000106
MT1801	-1.87679	9.607768	-6.58837	8.626575	4.26E-07	MT3321	1.529244	8.981693	4.626212	2.122266	0.000107
MT1912	2.306752	9.399777	6.588331	8.626428	4.26E-07	MT0150	1.489802	8.651526	4.625601	2.120329	0.000107
MT2952	2.275502	9.009831	6.580222	8.598988	4.37E-07	MT3917	1.577758	9.002239	4.625297	2.119368	0.000107
MT1300	-1.5834	9.135694	-6.57209	8.571489	4.48E-07	MT1541	-1.16341	8.937622	-4.62497	2.11834	0.000107
MT2099	-1.87823	9.602062	-6.56817	8.55822	4.53E-07	MT0038	-1.32634	9.159507	-4.62111	2.106112	0.000108
MT0657	2.388305	9.465002	6.566449	8.552384	4.54E-07	MT1238	1.582858	8.868447	4.618711	2.098511	0.000109
MT0133	1.964479	8.989529	6.565956	8.550718	4.54E-07	MT1407	-1.19963	9.03453	-4.61812	2.096637	0.000109
MT1987	2.960791	8.91347	6.561884	8.536938	4.59E-07	MT3255	-1.55408	8.569079	-4.6169	2.092777	0.00011
MT2011	-1.87616	9.331092	-6.55047	8.498316	4.76E-07	MT1485	1.514022	8.976768	4.615266	2.087608	0.00011
MT0302	2.078571	9.897228	6.547378	8.487855	4.79E-07	MT3743.1	-0.95362	9.329221	-4.6145	2.08519	0.00011
MT0645	1.944053	9.812352	6.547016	8.486631	4.79E-07	MT0373	1.752836	8.538725	4.61146	2.075561	0.000111
MT3896	2.195671	9.008452	6.543512	8.474774	4.84E-07	MT3192	-1.49437	10.06776	-4.61022	2.071643	0.000112
MT1872	-1.42769	9.270294	-6.54053	8.464678	4.84E-07	MT3131	-1.23432	9.097583	-4.60894	2.067579	0.000112
MT2310	2.80448	9.495408	6.540095	8.463213	4.84E-07	MT3971	-1.11852	9.128161	-4.60562	2.057074	0.000113
MT1585	2.043371	9.483511	6.540077	8.463153	4.84E-07	MT1399	-1.22775	9.123376	-4.60552	2.056762	0.000113
MT2305	2.217141	8.659599	6.540004	8.462905	4.84E-07	MT2026	-1.25988	8.984796	-4.60491	2.054836	0.000113
MT4016	2.016959	9.086546	6.536867	8.452291	4.87E-07	MT0920	1.193722	9.395892	4.603269	2.049653	0.000114
MT2940	2.041294	9.311614	6.536622	8.451464	4.87E-07	MT3162	1.356145	9.136542	4.60296	2.048676	0.000114
MT0218	2.321027	9.374531	6.526978	8.418833	5.03E-07	MT3235	1.495619	9.299851	4.602477	2.047149	0.000114
MT2533	2.372795	9.300724	6.523006	8.405394	5.08E-07	MT0495	-1.71369	9.241489	-4.60237	2.046816	0.000114
MT1879	-1.55053	9.311457	-6.51769	8.387404	5.16E-07	MT0710	-1.35448	9.138789	-4.60045	2.04074	0.000114
MT0741.1	-1.96893	9.522112	-6.51683	8.384484	5.17E-07	MT3933	-1.43275	9.968079	-4.59946	2.037598	0.000115
MT3390	2.090637	9.12797	6.513953	8.374766	5.20E-07	MT0143	-1.41011	9.461452	-4.59849	2.034529	0.000115
MT1459	-2.0086	9.650183	-6.50943	8.359447	5.26E-07	MT3854	-1.26144	8.657442	-4.5968	2.029192	0.000115
MT0464	-1.75065	9.527564	-6.50916	8.35855	5.26E-07	MT1645	1.37782	9.026694	4.595701	2.02573	0.000116
MT3051	2.47595	9.090237	6.50724	8.352055	5.28E-07	MT3590	-1.69066	9.797398	-4.5948	2.022885	0.000116
MT2855	-2.55053	9.560479	-6.50605	8.348014	5.29E-07	MT1568	-1.33738	9.298142	-4.59085	2.010419	0.000117
MT1290	-1.62229	9.023672	-6.50495	8.344294	5.30E-07	MT0167	1.3016	8.910147	4.588184	2.001981	0.000118
MT1205	-1.73411	9.311354	-6.49766	8.319656	5.42E-07	MT3274	-1.49652	9.123434	-4.58172	1.981559	0.000121
MT1157.1	2.364756	10.09228	6.4971	8.317748	5.42E-07	MT0201	1.635579	8.773597	4.580944	1.979122	0.000121
MT1678	2.548751	9.726445	6.496304	8.315057	5.42E-07	MT0120	-1.52516	8.507139	-4.57992	1.975897	0.000121
MT2863	-1.59585	9.215075	-6.49527	8.311556	5.42E-07	MT2759	-1.14744	8.807973	-4.5788	1.972363	0.000122
MT0701	-1.72317	9.143697	-6.49369	8.306224	5.44E-07	MT0814	-1.22243	9.230516	-4.5756	1.962272	0.000123
MT1765	-1.71546	9.359632	-6.48951	8.292087	5.50E-07	MT0746	1.090483	9.841234	4.574154	1.957698	0.000123
MT1949	2.455575	9.502725	6.488919	8.290073	5.50E-07	MT0755	1.369452	8.343195	4.57263	1.952889	0.000124
MT3767.2	-1.69086	9.530484	-6.48466	8.275668	5.57E-07	MT3182	-1.56426	9.059049	-4.57089	1.947406	0.000124
MT0600	-1.60899	9.185349	-6.4752	8.243677	5.74E-07	MT0084	1.408984	9.998427	4.568928	1.941212	0.000125
MT0846	-1.41297	9.236293	-6.47305	8.236405	5.77E-07	MT2282	1.251607	9.792919	4.568482	1.939807	0.000125
MT1616	-1.84566	9.610717	-6.47177	8.232047	5.77E-07	MT2372	1.407494	9.872928	4.567986	1.938244	0.000125
MT3358	-2.01875	9.157592	-6.47161	8.23153	5.77E-07	MT3488	-1.17439	9.571039	-4.56553	1.930504	0.000126
MT0605	2.687152	10.06038	6.468312	8.220361	5.82E-07	MT3163	-1.24515	9.04248	-4.56377	1.924947	0.000127
MT0448	2.715282	9.247418	6.464671	8.208047	5.86E-07	MT3041	-1.54416	9.227139	-4.5636	1.924429	0.000127
MT0981	2.041291	9.344489	6.46463	8.207906	5.86E-07	MT3815	1.713717	8.312451	4.563228	1.923241	0.000127
MT1649	1.84103	9.878229	6.457784	8.184751	5.99E-07	MT2655	-1.13281	9.168905	-4.56182	1.918796	0.000127
MT1836	2.519842	9.648624	6.452756	8.167743	6.08E-07	MT3733	-1.46065	9.298077	-4.56143	1.917566	0.000127
MT2753	2.073349	9.196365	6.450843	8.161271	6.11E-07	MT2216	1.698299	8.259073	4.560618	1.915015	0.000128
MT0724.1	2.698321	9.17254	6.44965	8.157236	6.11E-07	MT2734.1	1.435202	9.336769	4.556976	1.90354	0.000129
MT2100	-2.08965	10.34238	-6.44921	8.155742	6.11E-07	MT3751	1.601599	8.666328	4.556397	1.901718	0.000129
MT3506	-1.52585	9.39097	-6.44542	8.142928	6.17E-07	MT3048	1.383076	8.982922	4.553124	1.891408	0.000131
MT2158	2.284681	9.048178	6.444806	8.14085	6.17E-07	MT0273	1.746509	8.544578	4.551706	1.886943	0.000131
MT1463	1.919386	9.01988	6.443789	8.137414	6.18E-07	MT2063	-1.37761	9.867178	-4.54832	1.876296	0.000132
MT2559	1.815589	9.146938	6.439149	8.121718	6.26E-07	MT3987	1.276674	9.406315	4.547461	1.873577	0.000133
MT3908	-1.63974	9.33164	-6.43704	8.114599	6.28E-07	MT0014	-1.62576	8.730816	-4.54687	1.871707	0.000133
MT3346	-1.66566	8.841955	-6.43641	8.112468	6.28E-07	MT2797	-1.28106	8.77229	-4.54649	1.870519	0.000133
MT1826	-1.50355	9.79417	-6.43579	8.110349	6.28E-07	MT3384	-1.31284	9.184365	-4.54564	1.86783	0.000133
MT2499	2.37684	8.939679	6.435716	8.110108	6.28E-07	MT3531	1.956537	8.552185	4.544682	1.864831	0.000133
MT1561	-2.12037	9.571069	-6.43128	8.095107	6.35E-07	MT2381	-1.23242	9.301933	-4.54365	1.861592	0.000134
MT2297	2.033872	9.245842	6.430996	8.094144	6.35E-07	MT0933	-1.38369	9.355852	-4.5431	1.859849	0.000134
MT0885	3.161243	9.084435	6.42841	8.085397	6.39E-07	MT0805	-1.36667	9.514348	-4.5427	1.858579	0.000134
MT0031	-2.11133	9.840762	-6.42778	8.083267	6.39E-07	MT1481	1.926936	10.00822	4.537863	1.843375	0.000136
MT2718	-1.65288	9.375357	-6.41527	8.040947	6.66E-07	MT1313	1.412806	8.261804	4.534276	1.832094	0.000137
MT3449.1	2.81402	9.222847	6.413822	8.036059	6.67E-07	MT1598	-1.11452	9.383735	-4.53234	1.825994	0.000138
MT0263	-2.06286	9.798419	-6.41196	8.029778	6.70E-07	MT2390	-1.8707	9.043956	-4.53171	1.824014	0.000138
MT1122	2.239164	9.771831	6.406391	8.010931	6.82E-07	MT2401	1.62575	10.37405	4.524258	1.800603	0.000142
MT1440	2.462261	9.32357	6.397685	7.981492	7.01E-07	MT1153	-1.13551	9.26291	-4.52337	1.797808	0.000142
MT3326	-1.60285	9.055386	-6.3909	7.958542	7.16E-07	MT1783	1.946335	8.727725	4.522282	1.794397	0.000142
MT2270	2.708401	9.069433	6.390301	7.956523	7.16E-07	MT2975	1.17277	9.824398	4.521577	1.79218	0.000143
MT1993	-1.71808	9.099822	-6.38903	7.952231	7.16E-07	MT1918	-1.44636	9.20515	-4.5215	1.791941	0.000143
MT1437	2.031913	9.840562	6.388696	7.951094	7.16E-07	MT2260	1.359569	9.567424	4.520035	1.787337	0.000143
MT0654	1.926536	8.413624	6.387198	7.946029	7.18E-07	MT2992	1.726995	8.820763	4.518839	1.78358	0.000144
MT0591	-1.80371	9.60528	-6.38659	7.943987	7.18E-07	MT2536	-1.1766	9.285841	-4.51252	1.763728	0.000146
MT3449	1.916559	8.850505	6.385708	7.940991	7.19E-07	MT1406	-1.54129	9.871458	-4.51175	1.761337	0.000147
MT1901	2.174027	8.843739	6.379585	7.92029	7.32E-07	MT1824	1.459949	9.510388	4.5112	1.759599	0.000147
MT0048	-1.87097	9.33125	-6.37371	7.90042	7.46E-07	MT2402	-1.32595	8.880019	-4.50931	1.753652	0.000148
MT2959	1.87477	8.594503	6.371578	7.893218	7.49E-07	MT3909	1.303807	10.0914	4.507771	1.748838	0.000148
MT2853	-1.37653	9.281666	-6.36682	7.877126	7.60E-07	MT2553	-1.27908	8.843136	-4.50679	1.745748	0.000149
MT2871	2.630398	9.315626	6.360639	7.856236	7.75E-07	MT1053	1.620901	8.891095	4.503957	1.736874	0.00015
MT1277	1.610883	8.874345	6.359573	7.85263	7.76E-07	MT3354	1.873175	8.504439	4.503462	1.735321	0.00015

MT2690	2.287559	8.379377	6.356582	7.842517	7.82E-07	MT2682	1.360407	8.977207	4.500828	1.727061	0.000151
MT4040.1	-2.29815	9.496923	-6.35222	7.827763	7.92E-07	MT1425	1.594556	8.603252	4.500062	1.724658	0.000151
MT1061	-1.62558	9.368891	-6.34894	7.816675	8.00E-07	MT3965	-1.2916	9.403663	-4.49946	1.722783	0.000152
MT2890	-2.04416	9.237265	-6.34409	7.800274	8.11E-07	MT2321	-1.21027	8.727585	-4.49492	1.708527	0.000154
MT3328	1.708555	8.755034	6.342045	7.793377	8.15E-07	MT0836	-1.37895	9.371182	-4.49336	1.703638	0.000154
MT0067	2.238339	9.960498	6.332401	7.760781	8.38E-07	MT2627	1.671064	8.884522	4.492809	1.701924	0.000155
MT0934	-1.94726	9.50997	-6.33208	7.759688	8.38E-07	MT2686	-1.16531	8.855611	-4.48927	1.690845	0.000156
MT0122	-1.70594	9.319715	-6.33194	7.759207	8.38E-07	MT3826	-1.49382	9.590359	-4.48915	1.690449	0.000156
MT2437	2.786306	9.258056	6.331563	7.757949	8.38E-07	MT2333	-1.06678	9.150949	-4.48899	1.68997	0.000156
MT1404	-2.17236	9.206192	-6.33012	7.753065	8.38E-07	MT1877	-1.85137	9.483307	-4.48825	1.687643	0.000156
MT3579	-1.62441	9.096179	-6.32948	7.750919	8.38E-07	MT1209	1.550591	8.845126	4.486583	1.682417	0.000157
MT2001	-1.33518	9.602086	-6.32939	7.750609	8.38E-07	MT2219	1.558375	8.12817	4.484769	1.676737	0.000158
MT1802	-1.81184	9.585535	-6.32473	7.734866	8.50E-07	MT0332	-1.02266	8.900832	-4.48384	1.673824	0.000158
MT1690	2.13522	9.166475	6.321598	7.724266	8.57E-07	MT3724	1.212452	9.983047	4.483687	1.673348	0.000158
MT2857	-1.62457	9.408924	-6.31776	7.711305	8.67E-07	MT3047	-1.1835	8.485875	-4.48095	1.66477	0.000159
MT1024	1.77529	9.374485	6.316389	7.706664	8.69E-07	MT2776	1.439139	9.051504	4.480796	1.664297	0.000159
MT4040	-2.27992	10.31494	-6.31235	7.693013	8.80E-07	MT3004	1.508749	8.676493	4.480726	1.664079	0.000159
MT2628	2.374738	9.753552	6.301219	7.6554	9.12E-07	MT2223	1.522006	9.060799	4.480545	1.663512	0.000159
MT3960	-1.89706	9.984166	-6.2969	7.640821	9.24E-07	MT1770	-1.13359	8.990928	-4.47835	1.656637	0.00016
MT3633	1.630425	9.59865	6.292186	7.624876	9.37E-07	MT3695	1.663039	8.72564	4.477106	1.652749	0.000161
MT1925	-2.21025	9.085183	-6.29061	7.619551	9.40E-07	MT1328	-1.409	9.363796	-4.47611	1.649622	0.000161
MT1480	-1.49044	9.208199	-6.28476	7.599792	9.57E-07	MT2586.1	1.291749	9.586921	4.475513	1.647764	0.000161
MT2784	2.223455	9.031711	6.277821	7.576343	9.78E-07	MT3132	-1.17591	9.291696	-4.47495	1.645988	0.000162
MT3362	-1.98555	9.695174	-6.27683	7.573005	9.80E-07	MT1799	-1.35131	9.471112	-4.474	1.643014	0.000162
MT3993	2.249985	9.849414	6.271906	7.556358	9.94E-07	MT3248	1.2719	9.413044	4.473178	1.640459	0.000162
MT0904	2.418131	8.971416	6.269179	7.547147	1.00E-06	MT1675	-1.35739	9.452684	-4.46869	1.626433	0.000165
MT2196	-1.53491	9.527927	-6.26655	7.538271	1.01E-06	MT1100	-0.9984	8.958526	-4.46619	1.618597	0.000166
MT2612	2.267618	8.884509	6.2566	7.504655	1.04E-06	MT0463	-1.27354	9.052137	-4.4642	1.612368	0.000167
MT3093	3.150698	9.080372	6.256434	7.504095	1.04E-06	MT3018	-1.45218	9.910599	-4.46258	1.607333	0.000168
MT3200	-1.28893	9.291555	-6.24968	7.481269	1.06E-06	MT1301	-1.2944	8.953858	-4.46189	1.605161	0.000168
MT1999	-1.78219	9.175646	-6.24606	7.469067	1.07E-06	MT2419	1.496968	9.513232	4.455181	1.584201	0.000171
MT0046	2.716186	9.275001	6.243868	7.461652	1.08E-06	MT0719.2	-0.96861	9.20547	-4.45108	1.571394	0.000173
MT3637	1.591858	9.194167	6.23377	7.42755	1.11E-06	MT3225	-1.46448	9.704767	-4.44987	1.567608	0.000174
MT2278	-1.51093	9.301607	-6.23343	7.426411	1.11E-06	MT3404	1.690417	9.290046	4.448589	1.563614	0.000175
MT2150	2.387533	9.664413	6.231697	7.420549	1.12E-06	MT1028	-1.13326	9.356618	-4.44289	1.545817	0.000178
MT2856	1.721072	9.422164	6.219584	7.379647	1.16E-06	MT2779	-1.05234	9.409623	-4.44246	1.544501	0.000178
MT3658	2.024458	8.980206	6.216788	7.370208	1.17E-06	MT2370.2	-0.9754	9.302092	-4.43862	1.53251	0.00018
MT1924	-1.68376	9.134691	-6.21179	7.353326	1.19E-06	MT1128	-1.34189	9.9475	-4.43729	1.528352	0.000181
MT3722	-1.8762	9.639591	-6.21047	7.348864	1.19E-06	MT1414.1	1.394824	9.919271	4.430276	1.506493	0.000185
MT0555	2.012199	9.908035	6.209136	7.344371	1.20E-06	MT1359	-1.3993	9.473032	-4.42505	1.490217	0.000188
MT3567.1	-1.43577	9.400288	-6.20781	7.339891	1.20E-06	MT2015.2	-0.98702	9.149357	-4.42079	1.476935	0.00019
MT3208	-1.59011	9.287662	-6.2006	7.315567	1.23E-06	MT0958	-1.276	9.734087	-4.42067	1.476569	0.00019
MT1107	1.963601	9.187624	6.192386	7.28783	1.26E-06	MT2764	-1.34074	9.177619	-4.4202	1.475105	0.00019
MT2471	1.77654	9.604222	6.186351	7.267458	1.28E-06	MT3928	-1.25868	9.569137	-4.41722	1.465817	0.000192
MT1085	-1.9961	9.246003	-6.17873	7.241752	1.32E-06	MT1382	1.403368	9.911114	4.417013	1.465181	0.000192
MT3128	-2.24426	9.824787	-6.17624	7.233346	1.32E-06	MT1345	-1.2531	9.037919	-4.41451	1.45739	0.000193
MT0915.1	-1.5344	9.471376	-6.17603	7.232624	1.32E-06	MT2426	1.835456	8.858307	4.411023	1.446541	0.000195
MT4034	1.920922	9.257547	6.174896	7.2288	1.33E-06	MT0393	1.784024	8.65992	4.408998	1.440241	0.000196
MT3179	1.847339	9.116207	6.173072	7.222645	1.33E-06	MT3639	1.656009	9.092682	4.407843	1.436648	0.000197
MT1363	-1.72595	9.199213	-6.17089	7.215288	1.34E-06	MT2780	-1.19174	8.690476	-4.40754	1.435699	0.000197
MT2144	1.42202	9.107319	6.161448	7.183419	1.38E-06	MT3165	1.497196	8.646994	4.404405	1.425956	0.000199
MT1134	-1.77941	9.280961	-6.15575	7.164205	1.41E-06	MT2412	-1.38429	10.30479	-4.40418	1.425245	0.000199
MT3767.3	-1.81624	9.609612	-6.15066	7.147011	1.43E-06	MT0092	1.258532	8.578717	4.40287	1.421183	0.0002
MT0125.1	-1.84932	9.409047	-6.14868	7.140339	1.43E-06	MT1466	1.363334	8.655633	4.402401	1.419725	0.0002
MT1896	1.886453	10.07264	6.147703	7.137046	1.44E-06	MT2545	-1.44424	9.56851	-4.39999	1.412231	0.000201
MT0754	2.126505	9.297952	6.144292	7.125537	1.45E-06	MT2699	-1.13111	9.300134	-4.39934	1.410214	0.000202
MT0003	-2.02764	10.04218	-6.14199	7.117767	1.46E-06	MT0488	-1.67603	9.993173	-4.39834	1.407104	0.000202
MT2532	-1.37462	9.751212	-6.14143	7.115875	1.46E-06	MT0431	-1.34749	8.966431	-4.39803	1.406132	0.000202
MT3967	-1.79015	9.269739	-6.13178	7.08334	1.51E-06	MT3624	-1.21956	9.009448	-4.39798	1.40598	0.000202
MT1035	1.779504	9.483517	6.127038	7.067341	1.53E-06	MT3582	1.90113	8.580767	4.395594	1.39857	0.000203
MT3822	-1.65986	9.224056	-6.12266	7.052583	1.55E-06	MT3293	-1.51976	8.74798	-4.39511	1.397073	0.000204
MT0079	-1.84142	9.43314	-6.12007	7.043845	1.56E-06	MT2254	1.333203	8.905806	4.39466	1.395666	0.000204
MT1272	-2.15575	9.222258	-6.11601	7.030147	1.58E-06	MT1647	-1.02449	9.233656	-4.39376	1.392886	0.000204
MT3242	-1.48775	9.496049	-6.1145	7.025056	1.58E-06	MT3275	-1.16638	9.501535	-4.39282	1.389938	0.000205
MT1168	2.251069	9.574091	6.111417	7.014662	1.60E-06	MT2408	-1.05081	9.10192	-4.38971	1.380291	0.000206
MT1657	2.304458	9.009225	6.10509	6.993331	1.63E-06	MT0099	1.186829	9.200354	4.387488	1.373395	0.000208
MT0718	2.377129	9.558862	6.103228	6.987051	1.64E-06	MT2801.1	-1.1361	9.135254	-4.38731	1.372845	0.000208
MT2370.3	-1.45279	9.032003	-6.10263	6.985042	1.64E-06	MT3944	1.491521	9.502187	4.386361	1.369894	0.000208
MT3734	-1.47767	9.403423	-6.10112	6.979956	1.64E-06	MT2019	1.542071	9.34614	4.383934	1.36236	0.00021
MT2072	-1.6613	9.397433	-6.10093	6.979297	1.64E-06	MT3952	-1.50925	8.94497	-4.38308	1.359713	0.00021
MT1979	1.494296	9.45164	6.09384	6.955401	1.67E-06	MT0711	-1.18894	9.258513	-4.38299	1.359444	0.00021
MT0510	1.998282	9.160364	6.093508	6.954284	1.67E-06	MT0628	-1.53786	8.537147	-4.37624	1.3385	0.000215
MT3505	-1.70815	9.114628	-6.09069	6.944771	1.69E-06	MT3476	1.502355	8.669537	4.37539	1.335855	0.000215
MT2564	2.240648	8.558266	6.086876	6.931927	1.70E-06	MT0789	-1.3466	9.094588	-4.37512	1.335015	0.000215
MT1458	-1.51505	9.288106	-6.08674	6.931478	1.70E-06	MT0734	1.600191	8.725211	4.373877	1.331163	0.000216
MT3804	2.486993	10.16842	6.086632	6.931105	1.70E-06	MT2130	1.347902	9.664051	4.372858	1.328003	0.000216
MT0428	2.768715	9.160942	6.082796	6.918174	1.72E-06	MT3686	1.124247	9.353922	4.371202	1.32287	0.000217
MT0329	2.156501	8.212085	6.082528	6.917272	1.72E-06	MT0608.1	1.752698	8.901475	4.370605	1.32102	0.000217
MT0064	-1.95025	9.597999	-6.08189	6.915128	1.72E-06	MT1210	-1.34211	8.766702	-4.36971	1.318238	0.000218
MT1917	-1.96105	8.954287	-6.08059	6.910755	1.72E-06	MT0704	1.380535	8.686796	4.366118	1.307112	0.00022
MT3710	1.604563	9.048286	6.080096	6.909074	1.72E-06	MT0455	1.216351	9.591543	4.364643	1.302542	0.000221
MT0426	2.083991	9.33548	6.076339	6.896414	1.74E-06	MT1119	1.398927	8.666583	4.362647	1.296361	0.000223
MT3986	-1.68656	9.479476	-6.07409	6.888819	1.75E-06	MT0063	-1.38307	10.12604	-4.35337	1.267647	0.000229
MT0323	-1.74905	9.179795	-6.07343	6.886593	1.75E-06	MT2656	1.52554	9.052674	4.35159	1.26213	0.00023
MT1333	2.530641	9.025034	6.069986	6.875002	1.77E-06	MT3997	1.522821	9.04387	4.351187	1.26088	0.00023
MT2303	2.626064	9.406027	6.061873	6.847664	1.82E-06	MT1720	-1.31476	9.333994	-4.35096	1.260165	0.00023
MT0641	2.019192	9.389768	6.060084	6.841638	1.83E-06	MT3573.5	-1.26857	9.258832	-4.35063	1.259164	0.00023
MT0748	1.733662	9.106109	6.059147	6.838479	1.83E-06	MT1696	1.914549	8.634615	4.349528	1.255748	0.000231
MT0741	-1.6384	9.122072	-6.05423	6.82191	1.85E-06	MT1309	-1.30452	9.114505	-4.34612	1.245211	0.000233
MT1881	-1.48623	9.432834	-6.05381	6.820514	1.85E-06	MT2637.1	-1.21878	8.876109	-4.34197	1.232362	0.000236
MT3546	1.570654	8.690442	6.052349	6.815577	1.86E-06	MT1800	-1.21223	9.142262	-4.33665	1.215936	0.00024
MT3752	2.625554	8.544877	6.046419	6.7956	1.90E-06	MT0017	1.459126	9.087448	4.336332	1.214949	0.00024
MT3025	-1.89134	9.817972	-6.04218	6.781329	1.92E-06	MT2461	1.349738	9.198299	4.334371	1.20889	0.000242
MT0190	-1.9762	9.654385	-6.03703	6.763976	1.95E-06	MT0892.1	1.173732	8.952913	4.333134	1.20507	0.000243
MT3690	-1.35823	9.20555	-6.02302	6.716808	2.04E-06	MT2740	-1.85596	9.575227	-4.3319	1.201255	0.000243
MT2741	2.471389	8.757274	6.022263	6.714243	2.05E-06	MT2967	1.306283	8.875095	4.331674	1.200561	0.000243
MT0467	-2.22768	9.406462	-6.01729	6.697506	2.08E-06	MT2583	1.464288	9.260486	4.331653	1.200493	0.000243
MT1572	-1.56946	9.557547	-6.00689	6.662473	2.15E-06	MT1370	-1.19879	9.626245	-4.33033	1.196417	0.000244

MT3187	-1.5314	9.327004	-6.00319	6.650033	2.17E-06	MT0551	1.034104	8.147644	4.325711	1.182147	0.000248
MT3325	2.448237	8.297534	6.002791	6.648686	2.17E-06	MT1816	-1.27154	8.999838	-4.32538	1.181134	0.000248
MT2422	1.799914	9.818115	6.00253	6.647809	2.17E-06	MT0420	-1.008	9.089119	-4.32491	1.179691	0.000248
MT3262	-1.41076	9.115805	-5.99897	6.635833	2.19E-06	MT1151	-1.48346	8.969028	-4.32484	1.17947	0.000248
MT3903	-1.97891	9.538777	-5.99855	6.634422	2.19E-06	MT0842	-1.2231	9.594323	-4.32311	1.174121	0.000249
MT3259	1.843614	9.489384	5.998439	6.634038	2.19E-06	MT2685	-1.14869	9.05669	-4.32051	1.166108	0.000251
MT3743	-1.66335	9.447343	-5.99833	6.633657	2.19E-06	MT2068	1.782416	8.944406	4.319487	1.162944	0.000251
MT3056	2.07386	8.689282	5.995667	6.624709	2.20E-06	MT1060	-1.34838	9.050499	-4.3184	1.159596	0.000252
MT0843	1.606472	9.193172	5.992873	6.615304	2.22E-06	MT1624	1.156648	9.3628	4.315963	1.152074	0.000254
MT3291	2.089611	8.947635	5.977267	6.562788	2.34E-06	MT2955	1.145029	9.112202	4.31505	1.149256	0.000255
MT0768.1	2.452177	8.772474	5.975641	6.55732	2.35E-06	MT0952	-1.0746	8.612968	-4.31082	1.136227	0.000258
MT3899	-1.5322	9.390555	-5.97239	6.546393	2.37E-06	MT3605	-1.21063	9.801017	-4.30133	1.106965	0.000266
MT3460	1.832263	9.488522	5.966928	6.528004	2.41E-06	MT0129	-0.96121	8.703095	-4.30056	1.1046	0.000266
MT3424	-1.97973	8.92987	-5.96516	6.52207	2.42E-06	MT2541	1.460639	9.049914	4.300222	1.103569	0.000266
MT1907	1.980692	9.339994	5.962301	6.512442	2.44E-06	MT3304	-1.24565	8.655199	-4.30022	1.10355	0.000266
MT1682	1.601808	9.220278	5.957671	6.496868	2.47E-06	MT0844	-1.52374	8.850984	-4.29615	1.09104	0.000269
MT1635	2.149757	9.487174	5.952763	6.480359	2.51E-06	MT2175	-1.48796	9.18618	-4.29611	1.090903	0.000269
MT3868	-1.77456	9.199567	-5.95274	6.480287	2.51E-06	MT0947	-1.16119	9.060921	-4.29448	1.085897	0.00027
MT3551	2.54777	8.423011	5.950199	6.471738	2.53E-06	MT1106	-1.36001	9.085967	-4.29157	1.076953	0.000273
MT0446	-1.64581	9.570759	-5.94932	6.46878	2.53E-06	MT2138.1	-0.99282	9.064034	-4.29139	1.076398	0.000273
MT3080.1	1.831039	9.086617	5.947459	6.462522	2.54E-06	MT1412	1.109346	9.298675	4.289248	1.069795	0.000274
MT1511	1.584557	10.07881	5.944344	6.452049	2.56E-06	MT3859	1.445285	9.633465	4.286496	1.061332	0.000277
MT1745	1.516734	9.038412	5.944326	6.451989	2.56E-06	MT2983	1.277994	9.075467	4.283205	1.051215	0.000279
MT3086	-1.65321	9.340812	-5.94409	6.451189	2.56E-06	MT2696	1.323135	8.963256	4.282937	1.05039	0.000279
MT0695	-1.91089	9.54669	-5.9378	6.430058	2.60E-06	MT3281	-1.50656	8.967889	-4.28285	1.050132	0.000279
MT2605	1.957756	9.36703	5.937595	6.429357	2.60E-06	MT3143	1.183083	9.375708	4.281778	1.046827	0.00028
MT2484	-1.80755	9.166182	-5.9324	6.411894	2.65E-06	MT1204	-1.20393	9.346626	-4.28155	1.04612	0.00028
MT3569	1.772872	9.661909	5.917837	6.362939	2.78E-06	MT0786	-1.29916	9.275519	-4.28119	1.045025	0.00028
MT0793	-1.8006	9.516818	-5.91649	6.358413	2.79E-06	MT3653	-1.56537	9.185464	-4.27707	1.032362	0.000284
MT0595	2.441941	9.092365	5.914062	6.350254	2.81E-06	MT2859	-1.71567	8.97344	-4.27612	1.029447	0.000284
MT3395	1.825021	9.002756	5.912474	6.344917	2.81E-06	MT2831	-1.04298	9.120684	-4.27453	1.024568	0.000286
MT3428	-1.8237	9.200818	-5.91238	6.344607	2.81E-06	MT3277	-1.32772	9.175234	-4.27383	1.022415	0.000286
MT1251	2.085219	9.630604	5.910214	6.337322	2.83E-06	MT3602	-0.93804	9.491629	-4.26883	1.007048	0.00029
MT3821	-1.50185	9.148118	-5.90952	6.334995	2.83E-06	MT3567	-1.03771	9.214945	-4.26814	1.004946	0.000291
MT2979	1.621305	8.947475	5.908105	6.330236	2.84E-06	MT0366	-0.92307	9.269274	-4.26224	0.98682	0.000296
MT2237	-1.51635	9.517409	-5.90483	6.319245	2.86E-06	MT0546	1.462865	8.519326	4.258786	0.976241	0.000299
MT0599	-1.7097	9.119528	-5.90475	6.318979	2.86E-06	MT0629	-0.99919	9.063567	-4.25647	0.969147	0.000301
MT0128	1.90176	9.186067	5.904156	6.316967	2.86E-06	MT3981	-1.10685	9.140204	-4.24814	0.943622	0.000309
MT2795	-1.58268	9.751504	-5.90322	6.313827	2.87E-06	MT3772	-1.03949	8.756282	-4.24727	0.940933	0.00031
MT2879	1.925081	9.029538	5.899107	6.300007	2.90E-06	MT1178	-0.97149	9.060068	-4.24531	0.934945	0.000312
MT3351	-1.69659	9.189106	-5.89887	6.299222	2.90E-06	MT2614	1.75668	8.482168	4.244999	0.933992	0.000312
MT3985	-1.46895	9.333822	-5.89329	6.280453	2.95E-06	MT3356	1.490723	8.238644	4.244726	0.933155	0.000312
MT0720	-2.02689	9.499713	-5.89328	6.280427	2.95E-06	MT1931	1.168448	9.433383	4.243448	0.929241	0.000313
MT0112	-1.69458	9.938527	-5.88929	6.267026	2.98E-06	MT1116	1.491966	8.537403	4.242315	0.925775	0.000314
MT0772	1.59146	8.451006	5.885422	6.254036	3.02E-06	MT4006	-1.12485	8.514922	-4.23943	0.916958	0.000316
MT1931.1	-1.9876	9.217448	-5.88398	6.249184	3.03E-06	MT2516	-1.20321	9.627233	-4.23895	0.915468	0.000317
MT2334	-2.05795	9.320857	-5.87812	6.229529	3.08E-06	MT1137	-1.15059	8.764289	-4.23871	0.914739	0.000317
MT1033	2.753005	8.24269	5.875299	6.22004	3.11E-06	MT0291	1.580316	8.542424	4.237266	0.910321	0.000318
MT1560	1.714316	9.916589	5.874513	6.217403	3.11E-06	MT0277	-1.07547	9.200233	-4.23595	0.906298	0.000319
MT3037	-1.83495	10.05369	-5.87331	6.213366	3.12E-06	MT1162	-1.11817	9.830796	-4.2355	0.904909	0.000319
MT3835	-1.55394	9.268255	-5.86748	6.193782	3.18E-06	MT2258	-1.09728	9.061622	-4.23515	0.903854	0.000319
MT0348	-1.54139	9.224241	-5.86063	6.170808	3.25E-06	MT1857	1.286414	9.766576	4.234295	0.901233	0.00032
MT0948	1.910226	10.36079	5.859259	6.166191	3.25E-06	MT3324	1.279085	8.745711	4.230872	0.890763	0.000323
MT0289	1.663953	8.981331	5.859251	6.166164	3.25E-06	MT3969	-0.89255	9.572743	-4.228	0.881986	0.000326
MT1908	2.243881	8.727304	5.854849	6.151391	3.30E-06	MT3122	1.474335	9.425007	4.225666	0.874846	0.000328
MT2006	-1.72512	9.209189	-5.85347	6.146751	3.31E-06	MT0028	-1.08121	8.697317	-4.22222	0.864329	0.000332
MT3627	-1.80384	9.38775	-5.85203	6.141932	3.32E-06	MT2901	-1.15057	8.710909	-4.22183	0.863119	0.000332
MT1139	-1.65452	9.374769	-5.84657	6.123609	3.37E-06	MT0889	1.731544	8.521979	4.219841	0.857049	0.000334
MT3138	-1.53784	8.994355	-5.8436	6.113628	3.40E-06	MT2732	1.161462	8.986575	4.219498	0.856003	0.000334
MT2204	-1.70847	8.944208	-5.84112	6.105305	3.43E-06	MT3742	-0.96587	9.803706	-4.21392	0.838963	0.000339
MT2728	2.270757	10.00468	5.837085	6.091779	3.47E-06	MT1042	-1.11682	9.184528	-4.2139	0.838918	0.000339
MT0208	-1.89409	9.724516	-5.83188	6.074301	3.53E-06	MT3973	-0.99884	9.087472	-4.21373	0.838394	0.000339
MT0042	1.882412	9.858261	5.830928	6.071123	3.53E-06	MT0817	-1.03723	9.065147	-4.21351	0.837711	0.000339
MT1104	1.574853	8.935929	5.824956	6.051094	3.60E-06	MT2999	-1.19427	9.134581	-4.21196	0.832997	0.000341
MT2736.1	2.116296	8.588684	5.820881	6.037424	3.64E-06	MT0971	-1.34538	8.278602	-4.21074	0.829252	0.000342
MT0223	-1.56982	9.207638	-5.81877	6.030361	3.66E-06	MT1344	-1.14646	9.344524	-4.20595	0.81465	0.000347
MT3220	-2.00519	9.444753	-5.81503	6.017797	3.71E-06	MT3170	1.268831	8.891701	4.2042	0.809314	0.000349
MT1556.1	1.763973	9.978553	5.813129	6.01143	3.72E-06	MT0385	-1.07577	9.3213	-4.20361	0.807518	0.000349
MT1596.1	1.677629	8.867065	5.805616	5.986239	3.81E-06	MT1610	-1.07727	9.322227	-4.20285	0.80521	0.000349
MT3932	-1.71436	9.184328	-5.80208	5.97439	3.86E-06	MT3727	1.651114	8.899444	4.20276	0.804923	0.000349
MT1843	-1.3481	8.955064	-5.80139	5.972073	3.86E-06	MT0211	1.17997	9.195904	4.202562	0.804321	0.000349
MT0245	-1.71547	9.330945	-5.80033	5.968521	3.87E-06	MT1054.1	-1.29608	9.005152	-4.20168	0.801632	0.00035
MT0880	-1.64947	8.7668	-5.79881	5.963415	3.88E-06	MT1984	1.272382	9.24703	4.200803	0.798956	0.000351
MT1607	-1.5734	9.234557	-5.78738	5.925119	4.03E-06	MT3799	-1.278	9.235475	-4.2004	0.797741	0.000351
MT1431	2.346168	8.737883	5.785821	5.919892	4.04E-06	MT2830	1.217363	9.006938	4.197951	0.790265	0.000354
MT3127	1.523406	9.400433	5.783464	5.911995	4.07E-06	MT3889	-1.00634	9.359251	-4.19316	0.775661	0.000359
MT2201	-1.43468	9.23266	-5.77889	5.896661	4.13E-06	MT3059	1.208313	8.630035	4.19287	0.774786	0.000359
MT2543	1.669628	9.653773	5.777355	5.891526	4.14E-06	MT1759	1.304313	9.383615	4.192405	0.773369	0.000359
MT1200	2.036334	9.20021	5.772844	5.876415	4.20E-06	MT0477	-1.61588	9.116866	-4.19153	0.7707	0.00036
MT0587	1.926302	9.599818	5.772378	5.874853	4.20E-06	MT0107	-1.13099	9.515298	-4.19122	0.76977	0.00036
MT3970	-1.90777	9.630347	-5.76922	5.864274	4.24E-06	MT0233	-1.06496	9.06131	-4.18817	0.760467	0.000363
MT0669.1	-1.82942	8.671691	-5.76808	5.860449	4.25E-06	MT1120	1.350386	8.679071	4.187855	0.759513	0.000363
MT2085	-1.56976	8.955281	-5.76681	5.856214	4.26E-06	MT0465	1.196943	9.211354	4.187395	0.758114	0.000364
MT3706	2.700419	8.792555	5.766512	5.855205	4.26E-06	MT1381	-1.19405	8.815504	-4.18716	0.757396	0.000364
MT0481	-1.40231	9.26599	-5.76049	5.83504	4.34E-06	MT0727	-1.53822	8.897676	-4.18704	0.757046	0.000364
MT1454	-1.40726	9.274675	-5.75974	5.832539	4.35E-06	MT0728	-1.16079	9.184653	-4.18672	0.756062	0.000364
MT0915	-1.24711	9.496648	-5.75438	5.814569	4.42E-06	MT2077	-1.15097	9.093228	-4.1866	0.755695	0.000364
MT0116	1.914086	8.790234	5.752761	5.809155	4.44E-06	MT3467	-1.19871	8.862446	-4.18516	0.751324	0.000365
MT2781	2.265222	9.004156	5.752074	5.806856	4.44E-06	MT3238	1.39782	8.989528	4.183032	0.744837	0.000367
MT0787	-1.43736	9.11351	-5.7509	5.802911	4.45E-06	MT1779	1.375175	8.771018	4.182887	0.744395	0.000367
MT0445	-1.45764	8.961386	-5.75071	5.802302	4.45E-06	MT1154	1.408664	9.345978	4.181086	0.738914	0.000369
MT1961	-1.6274	9.374133	-5.74639	5.787816	4.50E-06	MT2266	-1.44066	8.791113	-4.18084	0.738162	0.000369
MT0155	-1.33879	9.043335	-5.74587	5.786087	4.50E-06	MT0430	-1.36359	9.244908	-4.17781	0.728963	0.000372
MT0091	2.60909	8.455199	5.74572	5.785583	4.50E-06	MT0784	-1.14807	8.736207	-4.17759	0.728293	0.000372
MT3580.1	2.249859	8.534105	5.74485	5.782673	4.51E-06	MT2421	1.326884	10.28852	4.177394	0.727685	0.000372
MT1997	-1.58502	9.622921	-5.74113	5.770236	4.56E-06	MT0664	-1.32132	9.298696	-4.17683	0.725984	0.000373
MT1952	1.897062	8.767357	5.738928	5.762851	4.59E-06	MT3750	1.637543	8.781987	4.173527	0.71593	0.000376
MT0036	-1.8312	9.478539	-5.7374	5.757751	4.60E-06	MT2537	-1.01229	9.531347	-4.17114	0.708661	0.000379

MT3301	-1.89886	9.48136	-5.73219	5.74031	4.68E-06	MT1611	1.465068	9.988051	4.169414	0.703431	0.000381
MT0703	1.873556	8.679622	5.729955	5.732821	4.71E-06	MT2622	-1.5371	8.825605	-4.16912	0.702527	0.000381
MT0525	-1.6574	9.217695	-5.72966	5.731822	4.71E-06	MT1075	-1.23851	9.296406	-4.16855	0.700794	0.000381
MT3939	-1.63118	9.476135	-5.72798	5.726216	4.73E-06	MT2083	-1.60871	8.749995	-4.16444	0.688328	0.000386
MT3103	1.926664	9.571826	5.718173	5.693401	4.88E-06	MT0959	1.117602	8.998999	4.162952	0.683803	0.000388
MT2005	-1.74854	9.484561	-5.71299	5.676056	4.96E-06	MT0242	-1.09592	8.982229	-4.16067	0.676881	0.00039
MT1474	1.727252	8.469146	5.712304	5.673771	4.96E-06	MT3156	-1.02612	9.394456	-4.15818	0.669333	0.000393
MT3014	-1.41708	9.097885	-5.71204	5.672905	4.96E-06	MT0931	-0.98874	9.418997	-4.15696	0.665614	0.000394
MT0185	-1.83011	10.1918	-5.71041	5.667432	4.98E-06	MT1707	1.290288	9.229431	4.155062	0.659858	0.000396
MT2362	2.01542	8.805454	5.704821	5.648747	5.07E-06	MT1811	1.350212	9.976139	4.145196	0.629944	0.000409
MT2406	1.890128	9.414798	5.691638	5.604672	5.30E-06	MT1045	-1.17045	8.689639	-4.14238	0.621422	0.000412
MT2812	1.862786	8.767048	5.690098	5.599525	5.32E-06	MT0490	1.144587	9.41661	4.140863	0.616816	0.000414
MT3820	-1.40709	9.226267	-5.68552	5.584226	5.39E-06	MT1679	-0.89628	9.12797	-4.14058	0.615951	0.000414
MT2870	1.714533	8.968457	5.685452	5.583996	5.39E-06	MT0983	1.402242	9.137128	4.138853	0.61073	0.000416
MT1327	2.141522	9.403327	5.683907	5.578833	5.41E-06	MT2883	-1.16288	9.589716	-4.13791	0.607888	0.000417
MT1585.1	2.239125	10.15229	5.672712	5.541426	5.61E-06	MT3902	1.420617	9.772379	4.136934	0.604918	0.000418
MT3427	-1.92682	9.207014	-5.67141	5.537067	5.63E-06	MT3656	-1.20132	8.601414	-4.13573	0.60127	0.000419
MT2455	-1.2879	9.203512	-5.67081	5.535075	5.63E-06	MT0963	-1.34642	9.663644	-4.1355	0.600586	0.000419
MT3684	1.772262	9.635948	5.668851	5.528528	5.66E-06	MT2803	1.109629	8.53515	4.13515	0.599516	0.000419
MT1659	-1.46692	8.959232	-5.66689	5.521983	5.69E-06	MT1660	-1.23271	9.697044	-4.13205	0.590122	0.000423
MT0123	-1.5568	9.787494	-5.66576	5.51819	5.70E-06	MT2712	1.820225	8.352109	4.131178	0.587498	0.000424
MT1438	1.906411	9.752178	5.657095	5.489262	5.87E-06	MT0917	-1.2929	9.364172	-4.13014	0.584368	0.000425
MT3111	-1.32085	8.460965	-5.65564	5.484401	5.89E-06	MT3041.1	1.200412	9.127012	4.126327	0.572822	0.00043
MT1364	-1.67659	9.483369	-5.65514	5.48274	5.89E-06	MT0066	-1.08048	9.082388	-4.12432	0.566745	0.000433
MT3591	-1.63533	9.514055	-5.65168	5.471176	5.95E-06	MT0088	1.149107	9.515129	4.124231	0.566484	0.000433
MT3906	1.772084	9.044446	5.646966	5.455445	6.04E-06	MT2882	-1.12879	9.912147	-4.12361	0.564616	0.000433
MT3628	-2.06899	9.39079	-5.64009	5.432503	6.17E-06	MT0906	-1.01353	8.984498	-4.1232	0.563361	0.000433
MT1522	-1.81514	9.77564	-5.63973	5.431295	6.17E-06	MT3848	-1.31447	8.831012	-4.1226	0.561549	0.000434
MT3247	1.546284	9.152965	5.63823	5.426285	6.19E-06	MT2467	1.677265	10.05724	4.120868	0.556319	0.000436
MT3647	-1.47921	9.272906	-5.63413	5.412591	6.27E-06	MT3468	-1.16332	9.188313	-4.11877	0.549977	0.000439
MT0536	1.777244	9.497357	5.632559	5.407359	6.30E-06	MT3383	-1.28909	8.822734	-4.11602	0.541656	0.000442
MT2414	-1.26028	9.116776	-5.63196	5.405362	6.30E-06	MT2034	1.276505	9.589768	4.114896	0.538276	0.000443
MT3541	1.874534	9.757073	5.630551	5.400658	6.32E-06	MT1579	-1.26544	9.613398	-4.11268	0.531589	0.000446
MT3689	-1.48941	9.202846	-5.62376	5.377988	6.46E-06	MT2197	-1.35981	9.286174	-4.11083	0.526011	0.000449
MT3934	-1.71943	9.205106	-5.62148	5.370378	6.50E-06	MT2630	1.546794	9.258506	4.110588	0.525266	0.000449
MT1548	2.550008	9.253878	5.618335	5.359902	6.56E-06	MT0804	1.65193	8.584167	4.10828	0.518299	0.000452
MT2943	-1.49629	9.416399	-5.61818	5.35937	6.56E-06	MT0995	1.196897	9.621525	4.106879	0.514071	0.000453
MT2521	-1.49192	8.88901	-5.61409	5.345734	6.64E-06	MT0993	-1.11366	9.367788	-4.10488	0.508037	0.000456
MT3897	-1.89285	9.802364	-5.61356	5.343963	6.64E-06	MT0476	-1.28604	9.014952	-4.10321	0.503001	0.000458
MT2892	-1.45135	8.724142	-5.61254	5.340584	6.65E-06	MT2986	-1.18412	8.772431	-4.10145	0.497702	0.00046
MT3042	-1.51448	9.444725	-5.61066	5.334321	6.69E-06	MT3239	1.894579	8.193846	4.100685	0.495388	0.000461
MT0919	-1.98673	9.473358	-5.61	5.332119	6.69E-06	MT1094	1.340405	9.572971	4.099678	0.492351	0.000462
MT1014	-2.23415	9.58461	-5.60739	5.323413	6.74E-06	MT0188	-1.22184	9.835038	-4.0989	0.48999	0.000463
MT3095	2.173946	10.03978	5.60685	5.321603	6.74E-06	MT1374	-1.086	9.156581	-4.09796	0.487157	0.000464
MT1722	-1.41485	9.187112	-5.60647	5.32033	6.74E-06	MT3561	-1.47124	9.480139	-4.09607	0.481484	0.000467
MT3542	2.205146	8.437932	5.605903	5.318443	6.75E-06	MT0214	1.488665	9.883882	4.093142	0.472649	0.00047
MT0916	-2.12381	10.14517	-5.60447	5.313658	6.77E-06	MT1940	1.219623	10.38567	4.093139	0.472641	0.00047
MT1070	-1.62226	9.076864	-5.60137	5.30334	6.83E-06	MT1718	1.303421	10.42602	4.092803	0.471629	0.00047
MT2615	2.448135	8.40654	5.598927	5.295185	6.88E-06	MT0388	1.432803	8.798174	4.091673	0.468225	0.000472
MT0812	1.674494	9.956473	5.598224	5.292845	6.89E-06	MT0539	-1.40605	9.389456	-4.08842	0.458421	0.000476
MT4027	1.904344	9.614532	5.597833	5.291539	6.89E-06	MT1025.2	-0.94093	9.191366	-4.0824	0.440304	0.000485
MT3518	1.607566	9.026712	5.595935	5.285212	6.92E-06	MT0077	-1.37379	9.442681	-4.08079	0.435445	0.000487
MT3648	1.536944	9.724817	5.594303	5.279774	6.95E-06	MT0070	1.415307	8.842561	4.080596	0.434875	0.000487
MT3723	2.531514	8.745468	5.592944	5.275245	6.97E-06	MT0896	1.855007	9.412381	4.080075	0.433308	0.000488
MT3119	-1.45748	8.848561	-5.59189	5.271721	6.99E-06	MT1051	-1.30967	8.829963	-4.07805	0.427204	0.000491
MT3649	-1.69452	9.846567	-5.58964	5.264231	7.03E-06	MT3876	-1.00164	10.28549	-4.07487	0.417656	0.000495
MT0541	1.852726	9.05691	5.587177	5.256026	7.08E-06	MT1493	-0.9767	8.936866	-4.07232	0.409992	0.000499
MT3940	-1.69192	9.425806	-5.58673	5.254552	7.08E-06	MT1020	-1.16101	8.679598	-4.07128	0.406846	0.0005
MT3494	-1.36656	9.498663	-5.58423	5.246204	7.13E-06	MT3355	1.169269	9.449854	4.07003	0.403104	0.000502
MT0357.1	1.62251	9.44202	5.583209	5.242802	7.15E-06	MT2103	-1.16153	9.365603	-4.0689	0.399701	0.000503
MT1926	2.03024	10.02358	5.576476	5.220371	7.30E-06	MT0824	1.968096	10.40995	4.068621	0.39887	0.000503
MT0870	1.822964	9.342775	5.574092	5.21243	7.35E-06	MT0663	-1.06179	9.321717	-4.06822	0.397661	0.000504
MT2676	-1.39019	9.26722	-5.56509	5.182436	7.57E-06	MT0900	1.403998	9.019906	4.064542	0.386615	0.000509
MT2834	-1.47199	9.32564	-5.5632	5.176166	7.60E-06	MT0524	-0.84811	8.986811	-4.06294	0.381806	0.000511
MT0950	-1.35892	9.123377	-5.56307	5.175721	7.60E-06	MT2451	1.378603	8.846344	4.062731	0.381177	0.000511
MT2596	-1.43993	9.288249	-5.56053	5.167264	7.66E-06	MT3256	-0.94971	8.82957	-4.06098	0.375915	0.000514
MT0152	2.944699	8.676519	5.556233	5.152962	7.76E-06	MT3651	-1.05213	9.275476	-4.05852	0.368535	0.000518
MT0684	-1.7406	9.390941	-5.55393	5.14531	7.81E-06	MT0924	1.183495	9.760151	4.055442	0.359302	0.000522
MT1010	1.503806	9.108531	5.550576	5.134133	7.88E-06	MT1131	-1.40571	9.019322	-4.05383	0.354476	0.000525
MT2595	-1.83281	9.962649	-5.55043	5.133631	7.88E-06	MT2037	1.33318	9.331066	4.049976	0.342907	0.000531
MT1622.1	-2.40495	9.967141	-5.55003	5.132327	7.88E-06	MT1070.1	1.312898	9.648865	4.048863	0.339569	0.000532
MT0808	1.576777	9.57733	5.549591	5.130855	7.88E-06	MT0318	1.45798	8.574637	4.046513	0.332527	0.000536
MT3612.1	1.836484	9.409338	5.543432	5.110358	8.04E-06	MT1172.1	-1.06267	9.329691	-4.04273	0.321182	0.000542
MT2534	-1.37254	9.740894	-5.54259	5.10755	8.05E-06	MT0328	1.999698	8.306408	4.041524	0.317579	0.000544
MT1858	1.380157	9.606304	5.538631	5.094384	8.15E-06	MT3373	-1.23166	9.243266	-4.04048	0.31445	0.000545
MT2829	-1.32353	9.407386	-5.53647	5.087182	8.20E-06	MT3603	-1.00092	9.427978	-4.03436	0.296138	0.000555
MT0461	1.775782	8.919237	5.536031	5.085732	8.20E-06	MT0735	-1.29583	8.536196	-4.03321	0.292688	0.000557
MT3302	1.704671	9.798787	5.532637	5.074444	8.28E-06	MT1258	1.208801	8.815855	4.03178	0.288409	0.000559
MT0614	1.782481	9.455077	5.529416	5.063729	8.36E-06	MT3789	-1.27338	10.11943	-4.02934	0.281117	0.000563
MT3249	1.521262	8.856787	5.520897	5.035398	8.60E-06	MT1753.1	1.324598	8.283464	4.025833	0.270623	0.000569
MT3792	-1.39931	9.275873	-5.5157	5.01812	8.74E-06	MT0602	1.109456	8.838847	4.025259	0.268906	0.000569
MT2828	1.714131	9.317476	5.511371	5.003731	8.86E-06	MT2431	0.975437	8.769217	4.025126	0.26851	0.000569
MT3442	1.772979	9.639325	5.510984	5.002444	8.86E-06	MT0286	-1.35275	9.350681	-4.02466	0.267126	0.00057
MT3370	1.782233	8.62009	5.510473	5.000746	8.86E-06	MT1402	-1.11931	8.918271	-4.0232	0.262754	0.000572
MT3614	1.895516	8.809175	5.506657	4.988062	8.97E-06	MT1558	-1.23955	9.111871	-4.02102	0.256233	0.000576
MT0078	-1.55866	9.342476	-5.50356	4.97778	9.05E-06	MT1884	-1.02073	9.229459	-4.01984	0.252714	0.000577
MT3767.1	2.142086	9.532966	5.498312	4.960332	9.20E-06	MT2379	-1.01478	9.159193	-4.01644	0.242567	0.000583
MT1186	1.529488	9.577135	5.495245	4.950143	9.29E-06	MT0502	1.074709	9.227519	4.012689	0.231353	0.00059
MT1731	2.934964	8.93691	5.490621	4.934784	9.42E-06	MT3898	1.175404	9.304662	4.011356	0.227374	0.000592
MT0264	-1.91862	9.611632	-5.48975	4.931892	9.44E-06	MT0773	-1.00388	8.68125	-4.01127	0.227108	0.000592
MT3461	1.730053	9.502228	5.488971	4.929302	9.45E-06	MT2474	-1.09991	9.113529	-4.00774	0.216585	0.000597
MT2432	2.022348	8.92321	5.48828	4.927007	9.45E-06	MT3284	1.768733	8.854792	4.007733	0.216565	0.000597
MT0262	-1.44425	9.019037	-5.48806	4.926265	9.45E-06	MT1237	-1.23674	9.342357	-4.00591	0.211126	0.0006
MT2874	1.704039	8.899428	5.486463	4.920973	9.49E-06	MT3372	1.240307	8.681143	4.004366	0.206521	0.000603
MT0763	1.808176	9.036696	5.485513	4.917818	9.51E-06	MT2416	-1.10185	8.919869	-4.00286	0.202036	0.000605
MT3914	1.429239	10.03797	5.484713	4.915163	9.52E-06	MT0770	1.322756	8.614146	4.00263	0.201344	0.000605
MT1782	1.538391	9.161567	5.480641	4.90164	9.64E-06	MT3267	-0.91729	9.576084	-4.00233	0.200435	0.000606
MT1043	-1.34613	9.145731	-5.48001	4.899562	9.65E-06	MT0951	-1.36767	9.464692	-4.00191	0.199193	0.000606

MT0792	1.479039	9.508003	5.479497	4.897843	9.65E-06	MT2198	-0.97105	9.25976	-4.00045	0.194834	0.000608
MT4033	-1.56107	9.644394	-5.47727	4.890461	9.70E-06	MT1547	-1.00198	8.979738	-3.99939	0.191675	0.00061
MT3432	2.042045	8.816594	5.477141	4.890021	9.70E-06	MT3157	1.311386	8.557901	3.996297	0.18247	0.000616
MT2097	1.685966	9.511714	5.476438	4.887688	9.71E-06	MT3580	1.239852	8.921254	3.994039	0.175744	0.00062
MT3462	1.567738	8.796224	5.46986	4.86585	9.92E-06	MT0054	1.629276	8.364829	3.993361	0.173722	0.00062
MT0740	-1.62551	9.786293	-5.46821	4.860386	9.96E-06	MT3827	-1.1148	9.373299	-3.99222	0.170314	0.000622
MT0776	1.755878	9.086138	5.463965	4.846286	1.01E-05	MT2802	1.1048	8.7344	3.991469	0.168087	0.000623
MT3534	1.961042	9.103519	5.460585	4.835073	1.02E-05	MT1274	1.306548	9.911184	3.991445	0.168017	0.000623
MT1346	-1.69578	10.17092	-5.45864	4.828616	1.03E-05	MT3536	1.246699	9.280743	3.989156	0.161201	0.000627
MT3090	1.465372	9.196605	5.450329	4.801051	1.05E-05	MT3130	-1.47045	9.771713	-3.98844	0.159061	0.000628
MT3034	1.638448	10.01939	5.449988	4.79992	1.05E-05	MT1899	1.150017	8.465248	3.987946	0.157599	0.000629
MT1397	-1.48176	9.425488	-5.44178	4.772694	1.08E-05	MT3745	-0.91442	9.204217	-3.98768	0.156799	0.000629
MT0026	2.364925	8.284221	5.437159	4.757379	1.10E-05	MT0854	1.279523	9.441883	3.987485	0.156229	0.000629
MT0247	2.165641	8.447274	5.433878	4.746504	1.11E-05	MT3412	-1.10411	9.350678	-3.98552	0.15038	0.000632
MT2582	-2.02245	9.728471	-5.43216	4.74081	1.11E-05	MT3074	1.120524	9.046659	3.98511	0.14916	0.000633
MT1898	1.519834	9.144431	5.428692	4.729318	1.12E-05	MT1080	-1.49651	8.661328	-3.98377	0.145174	0.000635
MT3865	1.614347	9.415171	5.42864	4.729143	1.12E-05	MT3181	1.203612	9.322705	3.983275	0.143702	0.000635
MT2370	-1.73856	8.989007	-5.42563	4.719177	1.13E-05	MT1027	-0.92128	9.484252	-3.98169	0.138999	0.000638
MT1373	1.69963	8.971454	5.425617	4.719128	1.13E-05	MT2589.1	-1.29197	9.065809	-3.98108	0.137175	0.000639
MT0149	1.974694	8.64721	5.424945	4.716899	1.13E-05	MT0035	-0.97437	8.901092	-3.98107	0.137131	0.000639
MT0733	1.814647	8.947289	5.422734	4.709573	1.14E-05	MT1011	1.170004	9.043585	3.980568	0.135652	0.000639
MT1164	-1.32256	9.23102	-5.42258	4.709075	1.14E-05	MT3312	-0.93683	9.360367	-3.98001	0.133995	0.00064
MT3445	2.232561	8.714464	5.421087	4.704118	1.14E-05	MT2958	1.231525	8.987993	3.979386	0.132136	0.000641
MT1341	1.296716	10.02704	5.41752	4.692302	1.16E-05	MT1039	-1.34699	8.932117	-3.97819	0.128573	0.000643
MT2488.1	1.870668	8.940421	5.41307	4.677561	1.17E-05	MT2610	1.468558	8.332273	3.977343	0.126063	0.000644
MT3927	-1.31788	9.106322	-5.40943	4.665501	1.19E-05	MT3884	-1.22198	8.767988	-3.97722	0.125704	0.000644
MT0874	1.725102	9.342572	5.408541	4.662561	1.19E-05	MT0626	-0.83532	8.907786	-3.97679	0.124404	0.000644
MT3595	-1.35859	8.884976	-5.4062	4.654825	1.20E-05	MT1862	-1.19822	9.68311	-3.97616	0.122552	0.000645
MT1086	-1.51752	9.00342	-5.40547	4.652405	1.20E-05	MT1732	1.43178	8.809967	3.976082	0.122314	0.000645
MT1351	-1.73238	9.248562	-5.40531	4.65187	1.20E-05	MT2344	-1.0999	9.548016	-3.97573	0.121267	0.000645
MT1418	-1.47597	9.349663	-5.40403	4.647636	1.20E-05	MT1596	0.894324	9.281486	3.97465	0.118059	0.000647
MT1604	-1.69046	9.223914	-5.39666	4.62324	1.23E-05	MT2512	1.409497	10.17543	3.969094	0.101553	0.000658
MT2071	-1.31555	9.689223	-5.39321	4.611809	1.24E-05	MT2012	-0.84517	9.009631	-3.96831	0.09924	0.000659
MT3431	2.171383	9.73322	5.391691	4.606782	1.25E-05	MT2354	-0.99373	8.870089	-3.96621	0.093001	0.000663
MT3411	-1.64488	9.091604	-5.38473	4.58374	1.27E-05	MT2862	1.217299	9.198861	3.965734	0.091578	0.000663
MT3196	1.616691	9.69602	5.384476	4.58291	1.27E-05	MT1398	-1.01043	9.240173	-3.96571	0.091503	0.000663
MT2931	-1.72098	9.46025	-5.3831	4.578364	1.28E-05	MT2205	-0.95492	9.809564	-3.96506	0.08959	0.000664
MT2098	-1.37193	9.4798	-5.38182	4.574138	1.28E-05	MT3110	1.397035	8.724039	3.964683	0.088457	0.000665
MT0072	-1.48075	9.376709	-5.38103	4.571503	1.28E-05	MT0778	1.679386	8.797864	3.964446	0.087756	0.000665
MT1781	1.548193	8.707829	5.378157	4.562008	1.30E-05	MT3562	-1.20705	8.538778	-3.96077	0.076841	0.000672
MT2318	1.582231	9.725411	5.376593	4.556837	1.30E-05	MT2232	-0.88713	8.793459	-3.96066	0.076523	0.000672
MT3413	-1.43563	9.0878	-5.37224	4.542449	1.32E-05	MT0368	-0.94946	9.428092	-3.95932	0.072543	0.000674
MT2022	1.540194	8.690153	5.37171	4.540688	1.32E-05	MT0244	0.910999	9.176649	3.959132	0.071989	0.000674
MT0751	-1.70236	9.322571	-5.37118	4.538926	1.32E-05	MT2079	-0.98088	8.845008	-3.95282	0.053264	0.000687
MT0964	-1.5164	9.276247	-5.36943	4.533157	1.32E-05	MT3101	1.432066	10.65185	3.951836	0.050357	0.000689
MT1394	-1.60269	9.267666	-5.36928	4.532666	1.32E-05	MT0380	-1.46424	9.243026	-3.94949	0.043408	0.000693
MT1253	1.669747	9.015757	5.36911	4.53209	1.32E-05	MT2678	1.340938	8.895281	3.948278	0.039818	0.000695
MT3974	1.672607	9.05503	5.367811	4.527796	1.33E-05	MT1276	-1.24511	9.146276	-3.94389	0.026824	0.000705
MT0708	-1.46912	9.32802	-5.36715	4.525598	1.33E-05	MT4024	1.093965	9.234508	3.94296	0.02407	0.000706
MT1460	1.458652	9.338536	5.367019	4.525178	1.33E-05	MT2708	-1.11554	8.895641	-3.94168	0.020295	0.000709
MT3217	-1.51807	9.357198	-5.36688	4.524725	1.33E-05	MT0930	1.052911	9.79782	3.940974	0.018193	0.00071
MT2896	1.559675	8.828303	5.366051	4.521976	1.33E-05	MT3161	0.911726	9.735542	3.939025	0.012427	0.000714
MT2547.1	-1.43895	9.098174	-5.36557	4.520374	1.33E-05	MT0509	1.252157	8.748881	3.932774	-0.00606	0.000727
MT1334	1.474842	9.192129	5.360955	4.505132	1.35E-05	MT0147	1.118795	9.264836	3.929772	-0.01494	0.000733
MT1885	-1.32288	9.206568	-5.3607	4.504283	1.35E-05	MT1105	-1.32895	8.643971	-3.92968	-0.01522	0.000733
MT1570	-1.71702	9.122828	-5.35924	4.499472	1.35E-05	MT3849	0.987233	9.208737	3.928505	-0.01868	0.000736
MT0816	-1.56531	9.563236	-5.3559	4.488432	1.37E-05	MT1292	-1.15543	9.346797	-3.92582	-0.02662	0.000741
MT2657	1.601513	8.73796	5.354905	4.485138	1.37E-05	MT1693	1.240772	8.567582	3.925747	-0.02682	0.000741
MT1226	1.739523	9.159838	5.348079	4.462588	1.40E-05	MT0998	1.08328	9.216346	3.925515	-0.02751	0.000741
MT1197	1.824751	8.694203	5.346356	4.456894	1.41E-05	MT0392	-1.10936	9.004664	-3.92446	-0.03062	0.000743
MT1201	-1.59694	9.45572	-5.34603	4.455811	1.41E-05	MT3070	-0.95029	9.184443	-3.92354	-0.03335	0.000745
MT3678	1.788577	8.804534	5.342214	4.443215	1.42E-05	MT0127	1.33788	9.188376	3.921368	-0.03976	0.000749
MT2008	-1.20868	9.602371	-5.33958	4.434513	1.44E-05	MT3244	-1.19328	8.828102	-3.92099	-0.04087	0.00075
MT1465	1.955292	8.997057	5.337956	4.429154	1.44E-05	MT0159	-1.03519	9.155683	-3.91971	-0.04466	0.000752
MT1725	-1.76202	9.319246	-5.33675	4.425163	1.45E-05	MT2509	-1.04572	8.997808	-3.91918	-0.04622	0.000753
MT0180	-1.30635	9.556098	-5.33315	4.413298	1.46E-05	MT0425	0.990091	9.006405	3.91824	-0.04899	0.000754
MT0668	1.803609	9.494354	5.33116	4.406716	1.47E-05	MT1743	0.966139	8.657586	3.918151	-0.04925	0.000754
MT2998	-1.50288	9.522396	-5.32535	4.387543	1.50E-05	MT0246	-1.02977	9.091426	-3.91425	-0.06076	0.000763
MT1829	2.102188	8.507221	5.318509	4.364963	1.53E-05	MT0074	-1.26984	9.2004	-3.91289	-0.06476	0.000766
MT2815	-1.50412	9.112844	-5.3182	4.363934	1.53E-05	MT0644	1.276997	8.518966	3.911227	-0.06967	0.000769
MT1758	2.168333	8.461687	5.314549	4.3519	1.55E-05	MT3721	-0.94848	9.56129	-3.90921	-0.07563	0.000774
MT0192	-1.27522	9.093141	-5.31088	4.339794	1.56E-05	MT2120	1.05888	8.969877	3.908897	-0.07654	0.000774
MT2683	1.493405	9.264324	5.306108	4.32406	1.59E-05	MT3930	-1.25766	9.863102	-3.90817	-0.07869	0.000775
MT3147	1.795066	8.664046	5.305273	4.321306	1.59E-05	MT3823	-1.13549	10.07949	-3.90604	-0.08496	0.00078
MT1785	1.339397	9.293933	5.301924	4.310265	1.61E-05	MT0585	-1.0569	9.010491	-3.90512	-0.08767	0.000782
MT1614	-1.11185	9.473035	-5.30026	4.304767	1.61E-05	MT3285	1.364775	10.50236	3.901905	-0.09714	0.000789
MT0775	1.518209	8.820957	5.299558	4.302464	1.62E-05	MT2367.1	-1.47205	9.307677	-3.90095	-0.09996	0.000791
MT3006	-1.53264	9.435348	-5.29661	4.29275	1.63E-05	MT2259	1.732932	9.629841	3.899201	-0.1051	0.000795
MT1565	1.844764	8.827987	5.295191	4.288069	1.64E-05	MT1189	-1.02761	8.884523	-3.89677	-0.11225	0.0008
MT2875	-1.72576	9.130552	-5.28957	4.269555	1.66E-05	MT2462	-1.14685	9.398318	-3.89541	-0.11627	0.000803
MT0113	-1.33089	9.163505	-5.28955	4.269481	1.66E-05	MT3169	2.021868	9.669548	3.895187	-0.11692	0.000803
MT0213	-1.34497	9.128317	-5.28514	4.25495	1.69E-05	MT0444	-1.03724	8.865744	-3.89518	-0.11694	0.000803
MT0407	1.653099	8.977989	5.281471	4.242861	1.71E-05	MT0272	1.494209	8.86884	3.893531	-0.12179	0.000806
MT3183	-1.31433	9.300554	-5.27906	4.234934	1.72E-05	MT2577	-1.50274	8.688431	-3.89329	-0.12249	0.000806
MT0625	-1.44984	8.906688	-5.27574	4.223971	1.74E-05	MT1057	-0.94637	9.29214	-3.89308	-0.12311	0.000806
MT1778	1.427587	9.861855	5.270607	4.207083	1.76E-05	MT3599	1.153975	8.962796	3.892047	-0.12615	0.000809
MT0573	-1.49342	9.595516	-5.26733	4.196283	1.78E-05	MT3078	1.312952	10.03861	3.889319	-0.13418	0.000814
MT2620	-1.7999	9.560741	-5.26709	4.195505	1.78E-05	MT0662.1	-1.10126	8.851571	-3.88931	-0.13422	0.000814
MT1410	-1.16284	9.182985	-3.86752	-0.19819	0.000865	MT1525	1.143217	9.599589	3.889143	-0.13469	0.000814
MT0221	-0.86319	9.870216	-3.86751	-0.19821	0.000865	MT1144	1.242063	9.398637	3.887048	-0.14085	0.000819
MT1886	-1.51346	8.837621	-3.86426	-0.20774	0.000873	MT0085.1	1.117434	9.189639	3.885289	-0.14602	0.000823
MT1982	-1.24483	8.713064	-3.86393	-0.2087	0.000873	MT2055	-0.95357	9.138725	-3.88425	-0.14909	0.000825
MT2114	1.846543	9.170536	3.863794	-0.2091	0.000873	MT0459	-1.24872	9.503341	-3.88101	-0.15859	0.000833
MT2396	1.329571	8.979181	3.858889	-0.22347	0.000886	MT3276	-1.15288	9.006317	-3.88085	-0.15905	0.000833
MT1284	-1.01787	8.90958	-3.85832	-0.22514	0.000887	MT3604	-1.21911	9.172394	-3.87773	-0.16823	0.000841
MT3641	1.303474	8.598	3.855392	-0.23371	0.000895	MT2332	-1.0912	9.184861	-3.87242	-0.18381	0.000854
MT2230	-1.14737	9.258289	-3.85313	-0.24033	0.0009	MT0745	-1.02657	9.455218	-3.87195	-0.18518	0.000855
MT0346	1.233655	9.99203	3.852931	-0.24091	0.0009	MT1505	1.143859	9.426112	3.868636	-0.19491	0.000863

MT2860	1.122834	8.958481	3.85149	-0.24512	0.000904	MT1340	-1.06495	9.924753	-3.33566	-1.69843	0.00348
MT0029	-0.95683	9.067442	-3.84979	-0.25011	0.000908	MT2352	-1.18034	9.236383	-3.3354	-1.69911	0.003481
MT3840	-1.22151	10.10751	-3.8466	-0.25941	0.000917	MT1036	-1.00379	9.350529	-3.33372	-1.70366	0.003496
MT1241	1.14358	8.994662	3.84475	-0.26484	0.000921	MT1436	-1.0812	8.746019	-3.33254	-1.70684	0.003506
MT2816	1.187831	9.524118	3.844095	-0.26675	0.000923	MT0988	-0.86127	8.473634	-3.32769	-1.71991	0.003554
MT3379.1	-1.53429	9.876048	-3.84386	-0.26744	0.000923	MT2641	-0.87826	9.435357	-3.32144	-1.73677	0.003617
MT1602	-0.90184	9.34948	-3.84089	-0.27611	0.000931	MT3394	0.797523	9.209431	3.321184	-1.73745	0.003618
MT0690	-1.16362	8.770514	-3.84071	-0.27665	0.000931	MT0153	-0.83028	8.619321	-3.32092	-1.73817	0.003619
MT2018	1.019511	9.427785	3.839207	-0.28103	0.000934	MT0101	-1.14065	9.471527	-3.32068	-1.73881	0.003619
MT1056	-1.0884	9.200527	-3.83602	-0.29035	0.000943	MT2617	-0.83113	8.552721	-3.31814	-1.74564	0.003644
MT3388	-1.09975	10.18714	-3.83544	-0.29204	0.000944	MT3879	-0.98794	9.393129	-3.3172	-1.74819	0.003652
MT0989	-1.09228	8.743612	-3.83455	-0.29464	0.000946	MT2316	-0.96377	9.59679	-3.31671	-1.7495	0.003654
MT1212	-1.2	8.938631	-3.83102	-0.30493	0.000956	MT3975	-0.83966	8.741003	-3.31664	-1.74968	0.003654
MT3519	0.984675	8.779906	3.829912	-0.30816	0.000959	MT1751.1	0.938841	8.768066	3.316552	-1.74992	0.003654
MT3643	-1.22227	9.453914	-3.82495	-0.32263	0.000973	MT1727.1	-1.15846	8.381604	-3.31392	-1.75699	0.003677
MT2176	1.235397	9.638021	3.819364	-0.33891	0.000989	MT2982	1.047711	9.276992	3.313856	-1.75717	0.003677
MT0065	-0.89641	10.13756	-3.81901	-0.33995	0.00099	MT3100	-1.16127	9.463898	-3.31379	-1.75736	0.003677
MT1533.1	-1.05468	9.639893	-3.81858	-0.34119	0.00099	MT3508	-0.77685	9.374498	-3.31211	-1.76186	0.003693
MT3364	-1.19016	8.747442	-3.81716	-0.34532	0.000994	MT1667	1.056491	9.078376	3.311966	-1.76225	0.003693
MT1741	1.111448	8.934678	3.817094	-0.34553	0.000994	MT2418	-1.01118	9.763406	-3.31076	-1.7655	0.003704
MT2435	1.023159	8.665999	3.815855	-0.34913	0.000997	MT1599	-0.97349	8.629344	-3.30835	-1.77197	0.003728
MT3783	-1.29096	8.645652	-3.81552	-0.35011	0.000997	MT1932	-0.87968	8.965593	-3.30475	-1.78164	0.003765
MT0259	1.16438	9.202555	3.815025	-0.35155	0.000998	MT2155	-1.01689	9.477401	-3.30237	-1.78803	0.003789
MT3735	-1.02814	9.267541	-3.81384	-0.35501	0.001001	MT0825	1.210916	8.992909	3.300954	-1.79183	0.003803
MT0796	-0.85115	9.195635	-3.81306	-0.35728	0.001003	MT2876	-0.84533	9.038197	-3.29869	-1.7979	0.003826
MT0888	-0.9139	8.759035	-3.81298	-0.35751	0.001003	MT1709	-0.92879	8.952127	-3.29775	-1.80042	0.003834
MT3530	1.253182	10.32091	3.811183	-0.36274	0.001008	MT3972	-1.05073	9.016689	-3.29666	-1.80333	0.003843
MT3623	1.061109	9.26436	3.806473	-0.37644	0.001021	MT0839	1.034312	9.044679	3.296629	-1.80343	0.003843
MT3693	1.248692	9.139381	3.806413	-0.37661	0.001021	MT0785	-0.91317	9.43901	-3.29461	-1.80884	0.003863
MT3069	-0.988	8.765429	-3.80564	-0.37886	0.001023	MT0270.1	0.914789	9.72934	3.294147	-1.81008	0.003867
MT2518.1	-1.09121	8.997845	-3.80552	-0.3792	0.001023	MT2360	-0.948	9.081043	-3.2932	-1.8126	0.003875
MT3644	1.372235	9.240566	3.804113	-0.3833	0.001027	MT3838	-0.85708	9.307202	-3.291	-1.81852	0.003897
MT2785	-1.09712	9.426054	-3.80359	-0.38483	0.001028	MT2858	-0.80765	8.975711	-3.29088	-1.81884	0.003897
MT1418.1	-1.17626	9.446435	-3.80261	-0.38768	0.00103	MT0099.1	0.814246	9.017624	3.28811	-1.82625	0.003927
MT3204	1.075723	9.785981	3.800207	-0.39465	0.001037	MT1597	-0.88252	9.275844	-3.28665	-1.83016	0.003941
MT3379	-1.19176	8.843976	-3.79939	-0.39704	0.001039	MT0473	-0.94256	9.202406	-3.28403	-1.83717	0.003969
MT2487	1.300293	9.61231	3.797993	-0.40108	0.001043	MT0868	-1.21444	8.767506	-3.28325	-1.83926	0.003976
MT0637	1.183225	8.84044	3.797688	-0.40197	0.001043	MT1919	-0.75266	9.250224	-3.28147	-1.84402	0.003994
MT0367	1.189143	9.249539	3.796272	-0.40608	0.001047	MT0618	-1.05144	10.24791	-3.28092	-1.84546	0.003999
MT1457	1.047619	8.927974	3.795402	-0.40861	0.001049	MT1324	-0.83274	10.53729	-3.27997	-1.84801	0.004007
MT1662	1.231402	8.810711	3.794898	-0.41007	0.00105	MT2571	0.922757	9.177417	3.279858	-1.84831	0.004007
MT0022	-1.01305	8.452598	-3.79307	-0.41537	0.001056	MT2314	0.889131	9.634578	3.278594	-1.85169	0.00402
MT1567	1.055925	10.1605	3.792775	-0.41624	0.001056	MT1942	-0.82591	9.237402	-3.27792	-1.85348	0.004025
MT2673.1	-1.52521	9.060065	-3.79249	-0.41707	0.001056	MT0052	1.236443	8.742337	3.277373	-1.85495	0.004028
MT3786	1.182988	9.053069	3.790026	-0.42421	0.001064	MT3136	-0.95848	9.591144	-3.27719	-1.85543	0.004028
MT2277	1.066331	9.688283	3.787894	-0.4304	0.00107	MT3504	0.985663	8.836312	3.277178	-1.85547	0.004028
MT2131	1.272654	9.028805	3.78729	-0.43215	0.001071	MT2215	-1.37323	8.270488	-3.27604	-1.8585	0.004039
MT1994	1.239328	9.486531	3.787158	-0.43253	0.001071	MT1646	1.069247	9.183652	3.274664	-1.86219	0.004053
MT1757	1.52428	8.423541	3.784068	-0.44149	0.001081	MT0395	1.492454	8.483645	3.271758	-1.86994	0.004085
MT1304	-1.07783	8.554025	-3.77734	-0.46099	0.001103	MT0398	-0.86509	9.769024	-3.27151	-1.87061	0.004086
MT1629	-0.93219	9.284101	-3.77688	-0.46232	0.001103	MT0044	1.01948	9.222383	3.271375	-1.87097	0.004086
MT1666	-1.08959	9.298347	-3.77686	-0.46239	0.001103	MT2552	0.961315	10.07125	3.269421	-1.87618	0.004107
MT3741	-1.20827	8.723145	-3.77009	-0.48197	0.001125	MT2554	-0.82879	9.689429	-3.26834	-1.87906	0.004117
MT1814	-1.36727	10.20337	-3.7692	-0.48457	0.001128	MT0466	-1.02665	9.719651	-3.26741	-1.88154	0.004126
MT1795	1.204239	8.668271	3.769084	-0.48489	0.001128	MT3758	1.069919	8.337688	3.266064	-1.88513	0.00414
MT0086	1.072384	8.969681	3.764323	-0.49866	0.001143	MT3667	0.780128	9.096515	3.265502	-1.88662	0.004145
MT0220	1.089189	9.176811	3.763575	-0.50082	0.001145	MT2881	-1.31367	9.361571	-3.26412	-1.8903	0.004159
MT3377.1	-1.02485	9.803768	-3.76265	-0.5035	0.001148	MT3440	-0.86902	8.944057	-3.26171	-1.89672	0.004185
MT2491	1.016175	9.862643	3.761865	-0.50577	0.00115	MT1083.1	-0.80256	8.657333	-3.26162	-1.89696	0.004185
MT2309	1.110298	9.32365	3.761577	-0.5066	0.00115	MT2350	-0.98613	9.022473	-3.25936	-1.90299	0.00421
MT1243	1.392305	8.708296	3.75679	-0.52043	0.001167	MT1079	0.87954	8.626911	3.258871	-1.90428	0.004214
MT0267	0.921757	8.710077	3.754644	-0.52663	0.001173	MT0968.1	1.048068	9.460583	3.256636	-1.91023	0.004239
MT1664	-1.03358	8.886494	-3.75464	-0.52665	0.001173	MT1015	-0.89843	9.081841	-3.25592	-1.91213	0.004246
MT1235	-1.2844	10.40271	-3.75353	-0.52984	0.001176	MT3491.1	-1.16044	8.608149	-3.25465	-1.91552	0.004259
MT1030	1.295419	8.66539	3.753368	-0.53031	0.001176	MT2814	1.059176	8.991946	3.254241	-1.9166	0.004262
MT0110	-0.81247	9.077145	-3.75055	-0.53844	0.001185	MT2015	1.300681	10.0908	3.25219	-1.92206	0.004284
MT0441	1.172293	9.052713	3.750467	-0.53868	0.001185	MT1376	1.097719	9.44969	3.252054	-1.92242	0.004284
MT3935	-1.05516	9.455503	-3.74743	-0.54744	0.001196	MT1181	0.888042	9.481089	3.251973	-1.92263	0.004284
MT3626	-0.89185	9.125227	-3.74503	-0.55438	0.001204	MT2774	-1.0299	9.10621	-3.24578	-1.93907	0.004358
MT2295	1.460906	8.221561	3.741777	-0.56375	0.001215	MT0443	0.938706	9.337051	3.244569	-1.9423	0.004371
MT0324	1.236496	9.138392	3.740401	-0.56771	0.001219	MT0345	-1.45056	8.043084	-3.2431	-1.94621	0.004387
MT1947	-1.11752	9.010215	-3.73976	-0.56955	0.001221	MT0922	0.884315	8.951838	3.241294	-1.95099	0.004408
MT1601	-0.85638	9.289927	-3.73923	-0.57108	0.001222	MT1017	-0.98052	10.36948	-3.23981	-1.95493	0.004424
MT3154	-1.21755	9.897797	-3.73884	-0.57221	0.001223	MT0281	-0.94456	8.732532	-3.2373	-1.96157	0.004454
MT0375	1.073667	9.268718	3.737874	-0.57499	0.001226	MT0661	1.050675	10.0371	3.235255	-1.967	0.004478
MT2808	1.05026	9.263974	3.73086	-0.59519	0.001252	MT1338	0.819422	9.336109	3.234513	-1.96897	0.004485
MT2554.2	-1.07978	9.412496	-3.72767	-0.60436	0.001263	MT3002	-0.83389	9.076664	-3.23386	-1.9707	0.004492
MT3472	1.280302	8.894398	3.726465	-0.60783	0.001266	MT3747	0.789652	9.255771	3.233271	-1.97226	0.004497
MT2659	-0.92692	9.113873	-3.72641	-0.60798	0.001266	MT1897	0.984851	9.308636	3.233129	-1.97263	0.004497
MT0293	1.507526	8.448316	3.726373	-0.60809	0.001266	MT3833	-0.82962	9.070231	-3.2325	-1.97429	0.004502
MT1433	1.133649	8.690489	3.725279	-0.61124	0.00127	MT1044	-0.91861	8.856116	-3.23028	-1.98017	0.004529
MT3977	-0.94163	9.073268	-3.72075	-0.62426	0.001286	MT0503	-1.05943	9.429909	-3.22861	-1.9846	0.004548
MT3570	-1.35491	8.701899	-3.71725	-0.63431	0.001299	MT0009	0.954247	9.188746	3.228408	-1.98513	0.004548
MT0472.1	1.544483	8.967964	3.716873	-0.6354	0.0013	MT0819	1.014768	9.716191	3.228266	-1.98551	0.004548
MT0588	1.079769	9.014505	3.71528	-0.63997	0.001306	MT1712	-1.052	8.922876	-3.22503	-1.99406	0.004588
MT0529	1.048803	9.801253	3.714983	-0.64083	0.001306	MT3796	-0.9393	9.316317	-3.22407	-1.99661	0.004599
MT2115	1.199053	9.177833	3.711864	-0.64978	0.001318	MT0383	1.05354	9.139555	3.223718	-1.99753	0.004601
MT0005	-0.84733	9.445054	-3.71012	-0.65479	0.001324	MT3007	-0.99452	9.601081	-3.22359	-1.99788	0.004601
MT3718.2	-1.23857	9.02026	-3.70928	-0.6572	0.001327	MT2423	1.413012	8.611903	3.222098	-2.00182	0.004618
MT3450	-1.08538	9.356634	-3.70803	-0.66079	0.001331	MT1444	1.049168	8.912758	3.221758	-2.00272	0.00462
MT0542	-1.18707	8.728409	-3.70715	-0.66331	0.001334	MT3107	-1.1571	9.377986	-3.22109	-2.00449	0.004627
MT2145	1.061363	8.571352	3.705315	-0.66856	0.001341	MT1924.1	-1.24557	10.13943	-3.21774	-2.01332	0.004669
MT2668.1	-1.23841	8.067999	-3.70442	-0.67113	0.001343	MT2848	-1.06538	8.808914	-3.21678	-2.01588	0.004679
MT0617	1.035261	8.59954	3.702328	-0.67713	0.001351	MT1673	-1.02621	8.913077	-3.21578	-2.0185	0.00469
MT0241	0.99546	9.21848	3.697708	-0.69037	0.00137	MT2375	-0.90128	9.347497	-3.21271	-2.0266	0.004729
MT0582	1.178141	8.829247	3.697149	-0.69197	0.001371	MT3215	-1.04439	9.506329	-3.21141	-2.03003	0.004744
MT2640	-1.10587	8.804589	-3.6962	-0.69468	0.001374	MT3089	-0.90786	8.812026	-3.21102	-2.03107	0.004748
MT1403	0.897661	9.527021	3.69483	-0.69861	0.001379	MT1582	-0.84361	9.180612	-3.20922	-2.03582	0.00477

MT0806	-1.12592	8.3383	-3.69214	-0.70631	0.00139	MT1145	-0.97267	9.063446	-3.20711	-2.04137	0.004794
MT3257	1.041585	9.040038	3.690597	-0.71072	0.001395	MT2494	0.817429	9.07344	3.207058	-2.04151	0.004794
MT2457	-1.07693	9.547478	-3.68918	-0.71477	0.001401	MT0910.1	0.796664	9.15119	3.206001	-2.04429	0.004806
MT1833	-1.47555	9.406231	-3.68844	-0.7169	0.001402	MT3174.2	-0.8638	9.087056	-3.20384	-2.04999	0.004834
MT3237	1.171097	8.816644	3.688389	-0.71704	0.001402	MT1194	-0.96576	7.964213	-3.19993	-2.06027	0.004885
MT0886	1.201784	8.744193	3.688206	-0.71756	0.001402	MT0749	-0.81249	9.717569	-3.1971	-2.06772	0.004921
MT3211	-1.22449	9.255059	-3.68791	-0.7184	0.001403	MT2306	-1.09476	8.64459	-3.19704	-2.06788	0.004921
MT0501	1.267238	9.214533	3.684328	-0.72865	0.001416	MT3712.1	-0.9323	9.143471	-3.19659	-2.06906	0.004925
MT1521	-1.265	8.626861	-3.68433	-0.72865	0.001416	MT2096	-1.11297	8.559608	-3.19469	-2.07406	0.004949
MT3858	-1.01053	8.689014	-3.68314	-0.73205	0.001421	MT2221	1.27084	8.442056	3.194424	-2.07476	0.00495
MT1820	1.152762	8.910147	3.682525	-0.7338	0.001423	MT2050	0.83314	9.051558	3.193976	-2.07593	0.004954
MT1158	-0.98138	9.041122	-3.68218	-0.73478	0.001423	MT3924	1.154956	8.401949	3.19315	-2.0781	0.004959
MT4020	-0.86268	8.69555	-3.68123	-0.7375	0.001426	MT2702	0.848843	9.083572	3.193128	-2.07816	0.004959
MT2051	-1.04913	8.920694	-3.68111	-0.73785	0.001426	MT1040.1	0.825321	9.499377	3.193127	-2.07817	0.004959
MT0132	1.635147	10.35377	3.6808	-0.73873	0.001427	MT0105	1.015998	9.051391	3.190034	-2.08629	0.005001
MT1733	1.340294	8.206879	3.679326	-0.74294	0.001432	MT3871	-0.96202	9.047823	-3.18965	-2.08731	0.005004
MT1009	-1.10259	8.66949	-3.67893	-0.74407	0.001433	MT3036	-1.05012	8.684884	-3.18665	-2.09518	0.005044
MT2598	1.465793	10.01279	3.677948	-0.74688	0.001437	MT3677	-0.85657	9.601145	-3.18608	-2.09666	0.005049
MT2588	-0.94078	9.124259	-3.676	-0.75245	0.001444	MT2356	0.923468	9.380823	3.185924	-2.09708	0.005049
MT2383	-1.13958	9.961745	-3.67554	-0.75375	0.001446	MT1809	1.057898	9.705319	3.183542	-2.10333	0.005081
MT2444	-0.98812	9.46491	-3.67179	-0.76444	0.001461	MT3415	-0.83931	9.260268	-3.1824	-2.10634	0.005094
MT1764	-1.15529	8.362525	-3.6717	-0.76471	0.001461	MT1047	0.978219	10.28252	3.182293	-2.10661	0.005094
MT1798	1.036953	9.134848	3.670984	-0.76676	0.001463	MT1704	-0.91509	9.742528	-3.17932	-2.11441	0.005135
MT1071	-1.07707	8.640988	-3.66948	-0.77105	0.001469	MT2754	0.791796	9.096568	3.177495	-2.11918	0.005159
MT3264	-1.18475	9.016627	-3.6686	-0.77356	0.001472	MT3057	1.05214	10.41655	3.175549	-2.12428	0.005185
MT0594	-1.06053	9.490893	-3.66679	-0.77872	0.001479	MT1143	-0.77863	9.318807	-3.17531	-2.12491	0.005186
MT0207	-1.0652	9.390661	-3.66647	-0.77964	0.00148	MT3499	-0.85268	9.07179	-3.17423	-2.12772	0.0052
MT1840	-0.88155	9.390429	-3.66532	-0.7829	0.001484	MT2746	1.223028	8.545706	3.173492	-2.12966	0.005208
MT1198	1.482554	8.672527	3.662145	-0.79195	0.001498	MT2322	1.515905	9.862825	3.169906	-2.13905	0.005258
MT1630	0.978313	9.33928	3.661955	-0.7925	0.001498	MT2724	0.925993	8.925017	3.167969	-2.14411	0.005282
MT0899	1.20644	9.1978	3.661809	-0.79291	0.001498	MT0612	-1.06205	10.77953	-3.16794	-2.1442	0.005282
MT3024	-0.94182	9.64444	-3.66048	-0.79671	0.001503	MT1099	-0.76766	9.348976	-3.16782	-2.14451	0.005282
MT1270	1.153788	9.903111	3.660257	-0.79733	0.001503	MT2495	0.876456	9.264029	3.166968	-2.14673	0.005292
MT0169	-1.35667	9.014496	-3.65863	-0.80196	0.001509	MT0342	1.073496	9.503158	3.166558	-2.1478	0.005296
MT1141	-0.95939	9.641627	-3.65804	-0.80366	0.001511	MT0447	-1.01371	9.29283	-3.16549	-2.15059	0.005309
MT0397	0.91354	8.908121	3.651384	-0.82259	0.001541	MT1455	1.086063	8.922571	3.162203	-2.15918	0.005356
MT2796	-1.05414	8.88454	-3.64724	-0.83438	0.00156	MT1494	-1.26241	8.200384	-3.15742	-2.17165	0.005426
MT3077	-1.05338	8.70275	-3.64634	-0.83692	0.001563	MT1773	0.940825	9.373151	3.154594	-2.17903	0.005467
MT3999	-1.00079	9.032374	-3.64565	-0.83889	0.001565	MT0579	0.915958	9.304049	3.152222	-2.18522	0.005499
MT0537	-0.94105	9.03733	-3.64515	-0.84032	0.001567	MT1291	-1.30198	9.521297	-3.15218	-2.18533	0.005499
MT2033	-0.81571	9.086217	-3.64431	-0.84271	0.00157	MT2239	-0.98327	8.835794	-3.14928	-2.19287	0.005542
MT0863	1.336881	10.43468	3.643204	-0.84585	0.001574	MT1848	0.935261	9.312308	3.148851	-2.194	0.005546
MT1358	-1.03562	8.901096	-3.64274	-0.84718	0.001576	MT0686	-0.90465	8.999441	-3.14839	-2.1952	0.005551
MT3931	1.167058	9.430133	3.639909	-0.8552	0.001588	MT2092	1.092775	9.212065	3.148132	-2.19587	0.005552
MT2371	-0.89004	9.202815	-3.6395	-0.85635	0.001589	MT3622	-1.05222	9.713991	-3.14766	-2.1971	0.005557
MT0361	-1.29043	9.636743	-3.63852	-0.85914	0.001593	MT0359	-0.80566	9.260752	-3.14549	-2.20275	0.005588
MT2634	-1.06879	8.39657	-3.63684	-0.86391	0.0016	MT1196	-0.88374	8.772565	-3.14375	-2.20728	0.005613
MT3763	1.143247	8.492621	3.635878	-0.86665	0.001604	MT3269	-0.79392	8.7498	-3.14204	-2.21173	0.005637
MT1477	-1.01516	8.432628	-3.63577	-0.86695	0.001604	MT2813	-1.01756	8.538764	-3.13825	-2.22159	0.005695
MT0080	-1.00098	9.869637	-3.63268	-0.87571	0.001617	MT2593.1	-0.89386	9.160047	-3.13666	-2.22572	0.005718
MT0850	-0.98454	8.910685	-3.63264	-0.87584	0.001617	MT1654	-0.93576	9.039639	-3.13478	-2.23059	0.005745
MT1207	-0.99295	9.968424	-3.63199	-0.87769	0.001619	MT0089	0.960859	9.388659	3.132967	-2.2353	0.00577
MT2821	1.263784	8.876368	3.630505	-0.88189	0.001626	MT2697	0.909269	8.732097	3.132934	-2.23539	0.00577
MT1904	-0.94392	9.048351	-3.63011	-0.88301	0.001627	MT4004	1.209768	8.880972	3.132231	-2.23722	0.005779
MT2335	-0.93624	9.141229	-3.62946	-0.88485	0.001629	MT1744	1.004166	9.267867	3.131138	-2.24005	0.005794
MT2688	-1.10365	8.98575	-3.62857	-0.88739	0.001631	MT3544	1.175855	8.297021	3.129002	-2.24559	0.005825
MT2514	-0.94481	8.446198	-3.62836	-0.88797	0.001631	MT3385	0.880385	9.363847	3.128877	-2.24592	0.005825
MT1259	-0.76016	8.994454	-3.6283	-0.88815	0.001631	MT2065	0.750407	9.531982	3.124856	-2.25634	0.005887
MT2666	1.463765	8.735791	3.628228	-0.88835	0.001631	MT1823	-0.92307	9.234263	-3.12476	-2.25659	0.005887
MT0620	1.146626	8.871509	3.627437	-0.89059	0.001634	MT3679	-0.98704	9.139339	-3.12288	-2.26146	0.005916
MT0790	-1.26464	8.866888	-3.62153	-0.90732	0.001663	MT0401.1	0.851136	8.968953	3.12102	-2.26628	0.005944
MT2284	1.148989	8.875049	3.620363	-0.91063	0.001668	MT0737	-1.17493	8.87923	-3.11994	-2.26908	0.005959
MT2550	-1.20449	9.271159	-3.61529	-0.92499	0.001692	MT0652	-1.13337	8.205709	-3.11694	-2.27684	0.006007
MT3420	-0.84361	9.256925	-3.61382	-0.92913	0.001699	MT3892	-0.81076	8.828662	-3.11547	-2.28066	0.006029
MT2108	0.909449	9.285976	3.612964	-0.93156	0.001702	MT3198	0.847124	9.073315	3.115303	-2.28108	0.006029
MT0722	1.078692	8.732251	3.612809	-0.932	0.001702	MT2803.2	1.020238	9.099288	3.113453	-2.28586	0.006057
MT3471	0.969716	8.479237	3.611473	-0.93578	0.001708	MT2209	-0.90648	9.46454	-3.11272	-2.28776	0.006067
MT2663	1.113372	8.439403	3.611199	-0.93655	0.001709	MT3963	-0.67236	9.763484	-3.10976	-2.29539	0.006113
MT3824	1.474257	9.132794	3.609884	-0.94027	0.001715	MT0685	-0.85147	9.24519	-3.1097	-2.29557	0.006113
MT2674	-1.25107	9.385343	-3.6076	-0.94674	0.001725	MT3717	-0.7415	9.018818	-3.10758	-2.30104	0.006145
MT3263	-1.16767	8.942018	-3.60411	-0.95658	0.001743	MT1223	1.000801	9.175488	3.107483	-2.30129	0.006145
MT3748	1.063024	9.209503	3.602081	-0.96232	0.001752	MT1519	-0.93052	9.033879	-3.10373	-2.31097	0.006207
MT1452	1.045438	8.798865	3.601493	-0.96398	0.001754	MT2978	-0.7847	9.687287	-3.10266	-2.31373	0.006222
MT0338	1.395818	8.698062	3.600473	-0.96686	0.001759	MT2477	1.070841	8.277967	3.102024	-2.31538	0.006231
MT0738	1.123045	8.847181	3.599912	-0.96844	0.001761	MT3882	-0.92854	9.843423	-3.10116	-2.31759	0.006243
MT3188	-0.87575	9.073705	-3.59544	-0.98105	0.001783	MT3497	0.984211	9.240839	3.09629	-2.33016	0.006325
MT0719	-1.12169	9.050621	-3.59537	-0.98125	0.001783	MT1280.1	1.336989	8.306369	3.095214	-2.33293	0.006341
MT2500	1.501565	8.196168	3.593831	-0.9856	0.00179	MT1260	1.000302	8.858069	3.092464	-2.34001	0.006387
MT1729	-0.91774	9.176399	-3.59372	-0.98591	0.00179	MT1040	0.828027	8.706017	3.089678	-2.34718	0.006434
MT0742	-0.84715	9.20393	-3.59264	-0.98894	0.001795	MT0282	-0.83112	9.357877	-3.08673	-2.35476	0.006484
MT0597	-1.02945	9.075379	-3.59158	-0.99195	0.001799	MT2847	-0.72818	9.688263	-3.08632	-2.35582	0.006489
MT3146	1.731165	8.306113	3.591467	-0.99226	0.001799	MT4032	-0.98365	8.935726	-3.08542	-2.35814	0.006499
MT2245	-0.91098	8.756134	-3.59086	-0.99397	0.001801	MT0527	-0.82198	9.694321	-3.08539	-2.35822	0.006499
MT0160	-1.39269	8.626007	-3.58728	-1.00406	0.00182	MT0284	-0.87284	8.750098	-3.0846	-2.36024	0.006511
MT3186.1	-1.0364	8.879809	-3.58643	-1.00645	0.001823	MT1864	0.795189	9.512481	3.084146	-2.36141	0.006516
MT0156	-1.19897	9.488013	-3.58575	-1.00836	0.001826	MT1913	0.753856	9.436541	3.08261	-2.36535	0.006541
MT0219	-0.99232	8.359901	-3.58542	-1.00929	0.001827	MT0945	-0.91743	8.571624	-3.0815	-2.3682	0.006558
MT0515	1.191132	8.686366	3.584398	-1.01217	0.001831	MT2794	-0.76943	10.11007	-3.08114	-2.36912	0.006562
MT2548	-1.01477	8.561726	-3.58406	-1.01312	0.001832	MT3776	-0.86035	9.951986	-3.0783	-2.37641	0.006611
MT0230	1.087469	9.21536	3.58051	-1.02312	0.001851	MT1533.2	-1.1197	10.46899	-3.07807	-2.37702	0.006612
MT1390	1.062665	9.070872	3.580186	-1.02403	0.001852	MT0571	1.131078	8.828209	3.074907	-2.38512	0.006666
MT2122	1.145041	8.503098	3.577097	-1.03272	0.001868	MT0404	0.976637	8.588151	3.07479	-2.38542	0.006666
MT0458	-1.10128	8.981546	-3.57676	-1.03366	0.001869	MT0848	-0.94303	8.985525	-3.07436	-2.38653	0.006669
MT3785	-0.8985	9.580855	-3.57637	-1.03478	0.00187	MT0401	-0.84751	8.9049	-3.07429	-2.38671	0.006669
MT2039	-0.94773	9.032629	-3.57608	-1.03557	0.00187	MT2970	0.761804	9.475181	3.07416	-2.38704	0.006669
MT1670	-0.95317	9.066251	-3.57553	-1.03712	0.001873	MT2519	0.933669	9.996648	3.072401	-2.39155	0.006698
MT2015.1	-1.10599	8.932528	-3.5732	-1.04367	0.001884	MT3366	0.808311	10.47425	3.07199	-2.3926	0.006703
MT3386	-1.01855	9.318173	-3.57306	-1.04408	0.001884	MT0774	0.713666	8.87523	3.069067	-2.40009	0.006755

MT1903	1.272382	9.44167	3.572656	-1.0452	0.001886	MT2737	-0.91151	9.265469	-3.06749	-2.40413	0.006781
MT1093	1.294382	8.85285	3.57238	-1.04598	0.001886	MT0961	-0.70779	9.533014	-3.06507	-2.41033	0.006824
MT3033	-1.57385	9.812784	-3.57209	-1.0468	0.001887	MT3189	0.860936	9.12971	3.06473	-2.4112	0.006827
MT0435	-1.04878	8.627363	-3.57129	-1.04904	0.00189	MT0810	-1.03424	9.628997	-3.06372	-2.41378	0.006843
MT0719.1	-0.9606	9.333267	-3.57001	-1.05263	0.001896	MT1496	1.119956	9.428084	3.061479	-2.41951	0.006883
MT2481	-1.15886	8.683663	-3.56414	-1.06913	0.001929	MT1576	-0.83616	9.352738	-3.0585	-2.42714	0.006937
MT2714	1.191449	9.123739	3.563629	-1.07056	0.001931	MT0851	1.049171	8.783492	3.05753	-2.4296	0.006952
MT1906	-0.92163	9.01145	-3.56213	-1.07478	0.001939	MT3245	-0.78819	9.480844	-3.05706	-2.43081	0.006956
MT1475	-0.85118	9.127944	-3.56092	-1.07817	0.001945	MT1681	-0.83919	8.979431	-3.05699	-2.43099	0.006956
MT0411	1.091135	10.00093	3.560438	-1.07951	0.001946	MT2458	-0.89503	9.673603	-3.05639	-2.43251	0.006965
MT3642	-0.84797	9.512665	-3.55545	-1.0935	0.001974	MT2348	0.662277	9.682466	3.054862	-2.43642	0.00699
MT0135	1.178969	9.088177	3.553333	-1.09943	0.001986	MT3950	0.998296	9.643857	3.054744	-2.43672	0.00699
MT2490	-0.84531	8.900622	-3.55075	-1.10667	0.002	MT0062	0.836118	9.212527	3.052196	-2.44323	0.007036
MT3485	-0.97076	9.267554	-3.54799	-1.1144	0.002016	MT0769	0.843028	9.256885	3.048423	-2.45285	0.007107
MT1325	-0.81749	8.956217	-3.54601	-1.11994	0.002026	MT2826	-1.01121	8.94945	-3.04529	-2.46084	0.007166
MT2758	-1.22208	10.35943	-3.54421	-1.12498	0.002036	MT2996	-0.92927	9.401695	-3.04268	-2.4675	0.007212
MT1820.1	1.266732	8.73695	3.543323	-1.12745	0.00204	MT3329	-0.96864	8.472192	-3.04261	-2.46766	0.007212
MT2353	-0.97529	9.312656	-3.54247	-1.12984	0.002045	MT0676	0.904361	9.23431	3.038441	-2.47828	0.007293
MT1448	-0.98346	9.070766	-3.54174	-1.13188	0.002048	MT3560	0.811859	8.642483	3.037862	-2.47975	0.007301
MT0557	-0.92641	8.500591	-3.54117	-1.13347	0.00205	MT0535	1.25994	8.758017	3.037321	-2.48113	0.007309
MT1046	-0.80767	9.487787	-3.5386	-1.14065	0.002065	MT0001	-0.99074	9.016581	-3.03578	-2.48506	0.007337
MT3375	-1.16065	8.879464	-3.53806	-1.14217	0.002067	MT1006.1	1.27371	9.073868	3.035608	-2.48549	0.007337
MT0312	-1.09655	8.123596	-3.53459	-1.15187	0.002087	MT2170	0.773178	9.475703	3.035287	-2.4863	0.00734
MT1512	1.219036	8.482877	3.532222	-1.15848	0.0021	MT2276	-0.9838	8.571013	-3.03419	-2.48908	0.007359
MT0399	0.769106	9.242887	3.532197	-1.15855	0.0021	MT3515	-0.83806	9.090108	-3.03178	-2.49522	0.007405
MT2585	1.033004	8.358109	3.529088	-1.16723	0.002118	MT2064.1	-0.88257	8.719934	-3.03124	-2.4966	0.00741
MT3344	-0.77219	9.161263	-3.52903	-1.1674	0.002118	MT2862.1	-0.89918	8.726547	-3.03121	-2.49667	0.00741
MT2341	-0.91629	9.084424	-3.52871	-1.16829	0.002119	MT1583	-1.08	9.061863	-3.03096	-2.49729	0.007411
MT1591	-0.96512	8.727539	-3.52842	-1.16909	0.002119	MT2218	0.9795	8.492365	3.03053	-2.49839	0.007417
MT0019	-0.94777	8.675363	-3.52452	-1.17998	0.002143	MT1103	-0.7892	9.667285	-3.0301	-2.49948	0.007422
MT2567	-1.14495	8.981484	-3.52405	-1.18128	0.002145	MT0953	1.002986	9.173293	3.029146	-2.50191	0.007438
MT1199	-1.09847	8.83349	-3.52317	-1.18375	0.002149	MT1315	-0.88615	8.804471	-3.02801	-2.5048	0.007458
MT2603	-0.87484	9.247211	-3.52048	-1.19123	0.002165	MT0386	-0.91628	8.767442	-3.0275	-2.50609	0.007466
MT2669	0.90019	8.513149	3.519671	-1.1935	0.002169	MT1929	-0.89943	9.485266	-3.02239	-2.51906	0.007568
MT3951	1.184508	9.367278	3.517056	-1.20078	0.002185	MT3075	0.97155	8.416959	3.020808	-2.52306	0.007598
MT1430	1.301803	8.472545	3.515517	-1.20507	0.002193	MT2616	0.926314	8.595529	3.019208	-2.52712	0.007628
MT2089	1.621039	8.300228	3.5154	-1.20539	0.002193	MT2285.2	0.894376	8.960548	3.018635	-2.52857	0.007636
MT0798	-1.34391	8.814173	-3.51192	-1.21509	0.002215	MT2687	1.046387	11.52329	3.017968	-2.53026	0.007647
MT0412	-1.06273	9.790209	-3.51146	-1.21636	0.002217	MT0929	0.861082	8.819824	3.017211	-2.53217	0.00766
MT0381	1.138422	8.703103	3.510405	-1.2193	0.002223	MT2351	1.15899	9.615884	3.016847	-2.5331	0.007664
MT2285	1.414586	10.07888	3.509732	-1.22117	0.002226	MT0140	1.242642	10.73086	3.012639	-2.54375	0.007746
MT0677	1.219066	8.163805	3.509255	-1.2225	0.002228	MT3761	-1.02379	8.798904	-3.01262	-2.54379	0.007746
MT2465	0.812812	9.039642	3.508593	-1.22434	0.002231	MT2044	0.886466	8.953954	3.00932	-2.55214	0.007814
MT1393	1.057161	9.861711	3.507487	-1.22742	0.002236	MT0643	1.091278	8.438485	3.003979	-2.56564	0.007925
MT3675	0.825199	9.195321	3.507411	-1.22763	0.002236	MT2713	-0.85722	8.813029	-3.00375	-2.56622	0.007927
MT2651	-1.19721	9.049955	-3.5047	-1.23516	0.002253	MT1888	1.02876	8.242771	3.003426	-2.56704	0.00793
MT1523	-0.93747	9.223696	-3.50448	-1.23577	0.002254	MT0007	0.968121	8.644816	3.003203	-2.5676	0.007932
MT1312.1	-1.04183	9.114575	-3.50193	-1.24285	0.002269	MT1860	-0.66296	9.365387	-3.00164	-2.57155	0.007962
MT0254	1.22386	10.50974	3.500607	-1.24654	0.002277	MT0198	-0.81157	8.911097	-3.00134	-2.57229	0.007963
MT2540	-0.9267	9.663131	-3.49601	-1.25931	0.002307	MT2438	0.819047	9.164645	3.001293	-2.57242	0.007963
MT2180	-0.8984	9.291931	-3.48995	-1.27613	0.002348	MT2442	-0.89535	8.783384	-3.00036	-2.57478	0.00798
MT2087	1.251167	9.128809	3.484541	-1.29111	0.002384	MT3920	-0.95943	8.0049	-2.99939	-2.57722	0.007997
MT2907	1.199715	8.650151	3.475995	-1.31478	0.002444	MT1865	-0.75397	8.326281	-2.99903	-2.57812	0.008002
MT1953	-1.13338	9.808964	-3.47359	-1.32143	0.00246	MT3209	0.88851	9.280161	2.998634	-2.57913	0.008007
MT2244	1.285663	8.574971	3.472706	-1.32387	0.002465	MT2925	1.018224	9.406849	2.998244	-2.58011	0.008012
MT0275	0.859885	9.19216	3.471774	-1.32645	0.002471	MT3145.1	-0.94069	9.06473	-2.99582	-2.58623	0.008059
MT0683	-0.96169	9.321307	-3.46768	-1.33777	0.002499	MT2183	-0.83641	8.829938	-2.9958	-2.58628	0.008059
MT2436	-1.21007	8.78097	-3.46419	-1.34742	0.002524	MT0809	1.149106	9.622405	2.995359	-2.58738	0.008065
MT0593	-0.72848	9.395022	-3.46343	-1.34952	0.002528	MT3250	-1.11198	8.30864	-2.99285	-2.59371	0.008116
MT1687	1.526081	8.490106	3.461864	-1.35383	0.002538	MT2810	-0.87688	8.268743	-2.99271	-2.59407	0.008116
MT0360	0.855974	9.652758	3.461784	-1.35405	0.002538	MT3323	-0.74004	9.07502	-2.99019	-2.60041	0.008169
MT2139	1.048625	9.481103	3.461537	-1.35473	0.002538	MT3046	-0.88401	9.592577	-2.98486	-2.61382	0.008285
MT2229	0.807138	9.309223	3.461314	-1.35535	0.002538	MT2956	-1.00703	8.892574	-2.984	-2.61599	0.008301
MT0154	1.081922	9.055908	3.461298	-1.35539	0.002538	MT1828	0.817837	9.118392	2.98372	-2.61668	0.008304
MT0344	1.127013	9.021197	3.46038	-1.35792	0.002543	MT1287	0.750621	8.760138	2.982303	-2.62024	0.008332
MT3152	-0.93087	9.026776	-3.45902	-1.36169	0.002552	MT1711	1.041396	8.774264	2.981463	-2.62236	0.008344
MT3953	-0.75608	9.125758	-3.45763	-1.36552	0.002561	MT0286.1	-0.82911	9.404558	-2.98146	-2.62237	0.008344
MT1380	-1.12493	9.175963	-3.45134	-1.38285	0.002607	MT2798	-0.70115	9.382542	-2.98019	-2.62555	0.008367
MT3049	-1.07949	9.203943	-3.45119	-1.38327	0.002607	MT1171	0.810239	8.57673	2.980153	-2.62565	0.008367
MT1492	-0.93253	9.176724	-3.45088	-1.38412	0.002608	MT1298	0.765753	9.414879	2.976785	-2.6341	0.00844
MT0325	-1.02606	8.77918	-3.45077	-1.38443	0.002608	MT1379	-0.64619	9.554331	-2.97662	-2.63451	0.00844
MT3402	-0.82058	9.151065	-3.45026	-1.38582	0.00261	MT3634	-0.76893	9.183659	-2.97532	-2.63778	0.008467
MT1050	-0.89535	9.087307	-3.44877	-1.38993	0.00262	MT1012	-0.73595	9.499674	-2.97499	-2.63861	0.008471
MT2207	-0.87034	9.073526	-3.44742	-1.39365	0.00263	MT2086	-0.81221	9.092788	-2.97479	-2.63911	0.008471
MT2658	-0.78252	9.139968	-3.44718	-1.3943	0.00263	MT2311	-0.71117	9.134269	-2.97405	-2.64097	0.008485
MT1695	1.201653	8.512918	3.446616	-1.39586	0.002632	MT2998.1	-0.86917	8.691494	-2.97361	-2.64206	0.008491
MT1408	-0.8932	9.178004	-3.4466	-1.39591	0.002632	MT3013	-1.10465	9.646512	-2.97209	-2.64588	0.008523
MT2317	-1.11372	8.638667	-3.44596	-1.39766	0.002635	MT0271	-1.05096	9.11846	-2.97125	-2.64799	0.008539
MT3652	0.887123	9.634103	3.445358	-1.39933	0.002639	MT2378	0.943754	9.246409	2.9684	-2.65513	0.008602
MT0121	-1.05303	10.12017	-3.44444	-1.40186	0.002644	MT0076	-1.07166	10.11413	-2.96432	-2.66535	0.008694
MT2720	-0.91114	9.394125	-3.44281	-1.40634	0.002656	MT0330	-1.08469	8.326443	-2.96239	-2.67017	0.008736
MT1618	1.190423	9.690217	3.441287	-1.41053	0.002666	MT2478	0.969723	8.491272	2.961429	-2.67258	0.008755
MT1472	-1.13493	10.04619	-3.44035	-1.41309	0.002672	MT1751	-0.96905	9.155668	-2.95802	-2.6811	0.008833
MT0505	-1.04465	8.939902	-3.43997	-1.41414	0.002674	MT3936	-0.94254	9.984871	-2.95655	-2.68478	0.008864
MT0165	1.027595	9.452629	3.439442	-1.4156	0.002677	MT0788	0.844726	9.604337	2.955075	-2.68846	0.008896
MT1928	0.933818	9.493576	3.437983	-1.41962	0.002687	MT3491	-0.78175	9.549329	-2.95437	-2.69021	0.008909
MT2576	1.228846	8.741067	3.437683	-1.42044	0.002688	MT1527	0.854383	9.403849	2.954177	-2.6907	0.00891
MT1973	-0.7245	9.418451	-3.43501	-1.42778	0.002707	MT3545	-1.0154	8.012534	-2.95392	-2.69135	0.008912
MT0999.1	1.418161	8.948626	3.433488	-1.43197	0.002718	MT0768	0.871559	8.604118	2.953455	-2.6925	0.00892
MT2162	1.058738	8.51485	3.43024	-1.44089	0.002742	MT2765	-1.12885	8.808943	-2.95299	-2.69367	0.008926
MT2373	-1.01807	8.831786	-3.43018	-1.44106	0.002742	MT0845	-0.70915	8.937994	-2.95281	-2.69411	0.008926
MT1411	-0.83246	9.510827	-3.42897	-1.44436	0.00275	MT2581	-0.788	8.860092	-2.95273	-2.6943	0.008926
MT4041.2	-1.28158	9.480742	-3.42781	-1.44754	0.002758	MT1041	0.948756	8.926482	2.952276	-2.69545	0.008933
MT2799	1.211331	9.069533	3.424357	-1.45703	0.002785	MT0206	-0.88476	8.773126	-2.95154	-2.69728	0.008947
MT4008	1.179711	8.647385	3.420897	-1.46652	0.002812	MT2987	0.795442	9.55882	2.950963	-2.69872	0.008957
MT2296	-0.91262	8.495282	-3.42002	-1.46892	0.002817	MT2574	-0.82297	9.184334	-2.95009	-2.70089	0.008974
MT0927	0.995284	8.720688	3.419561	-1.47018	0.00282	MT2066	0.805829	9.779454	2.946733	-2.70927	0.009053
MT0740.1	-0.85067	9.218799	-3.419	-1.47172	0.002822	MT2529	-0.70035	8.925625	-2.94656	-2.70971	0.009053

MT3270.1	-1.28516	9.678242	-3.41893	-1.47192	0.002822	MT0968	-0.81777	9.020533	-2.9446	-2.71459	0.009097
MT1916	1.068426	9.728304	3.415723	-1.48069	0.002847	MT0085	-0.74951	9.305216	-2.94211	-2.72079	0.009155
MT0954	-0.88558	9.617508	-3.41332	-1.48727	0.002866	MT2411	-0.94845	9.971487	-2.94043	-2.72496	0.009193
MT1368	-0.92963	9.242357	-3.41007	-1.49617	0.002892	MT3382	-0.89756	8.981332	-2.9394	-2.72753	0.009214
MT2954	-0.91669	9.088345	-3.408	-1.50184	0.002908	MT1443	0.873192	9.008717	2.934434	-2.73989	0.009335
MT1923	-1.05551	9.31864	-3.40701	-1.50453	0.002914	MT3685	-0.84863	8.330452	-2.93202	-2.74589	0.009393
MT2102	-0.96794	9.353523	-3.40689	-1.50488	0.002914	MT1218	-0.84479	9.349204	-2.9312	-2.74792	0.009409
MT0928	-1.09356	8.737609	-3.40459	-1.51115	0.002932	MT2290	-1.01289	8.677654	-2.92936	-2.75249	0.009452
MT1352	0.951008	9.822155	3.404282	-1.512	0.002933	MT3199	-0.74702	9.174232	-2.92697	-2.75842	0.00951
MT2908	1.104063	8.705024	3.403451	-1.51427	0.002939	MT1665	-0.86376	9.285444	-2.92596	-2.76094	0.009532
MT1954	-1.24403	9.689583	-3.40294	-1.51565	0.002941	MT1763	-0.8194	8.784643	-2.92446	-2.76465	0.009566
MT2157	0.873162	9.194136	3.402864	-1.51587	0.002941	MT1546	-0.961	9.362109	-2.9189	-2.77842	0.009707
MT0407.1	-0.95385	9.29839	-3.39849	-1.52783	0.002977	MT1415	-0.79984	8.945546	-2.91863	-2.77909	0.00971
MT3203	-0.89764	8.760872	-3.39339	-1.54175	0.003021	MT3754	0.874506	8.917634	2.917198	-2.78264	0.009743
MT0270.2	-1.31761	8.17416	-3.39309	-1.54256	0.003022	MT0182	0.748323	9.150149	2.915578	-2.78665	0.009782
MT0667	-1.03007	10.20199	-3.39251	-1.54414	0.003025	MT2485	-0.71754	8.890136	-2.91386	-2.79091	0.009823
MT2905	1.104063	8.172914	3.391533	-1.5468	0.003032	MT3890	-0.85104	9.726794	-2.91073	-2.79866	0.009902
MT2888	-1.19138	8.960497	-3.39143	-1.54708	0.003032	MT4007	0.637903	8.87482	2.910433	-2.79938	0.009906
MT3195	-1.09938	9.084502	-3.3889	-1.55398	0.003053	MT3559	-0.91442	9.063899	-2.90964	-2.80135	0.009923
MT2365.1	0.767903	10.07191	3.386486	-1.56056	0.003073	MT3895	-0.81494	8.963534	-2.9092	-2.80242	0.00993
MT0252	-0.92836	9.291045	-3.38269	-1.57089	0.003105	MT1716	-0.90067	8.860714	-2.90893	-2.80308	0.009931
MT3319	-0.78796	10.05435	-3.38209	-1.57253	0.003109	MT2007	-0.74788	8.758573	-2.90883	-2.80334	0.009931
MT3730	1.40265	10.97256	3.381528	-1.57406	0.003113	MT1221	-0.76921	8.811501	-2.90713	-2.80755	0.009973
MT1892	-0.95974	8.8789	-3.37953	-1.57949	0.003129	MT2507	-0.68046	9.287276	-2.90631	-2.80957	0.009991
MT0827	-1.09345	9.059531	-3.37722	-1.58578	0.003148	MT2898	-0.80086	9.097889	-2.90568	-2.81112	0.010003
MT1113	1.180534	9.64725	3.37709	-1.58614	0.003148	MT2930	-0.89854	8.878183	-2.90458	-2.81382	0.010029
MT1902	-1.09	9.134653	-3.37674	-1.5871	0.00315	MT2225	-0.8451	9.244176	-2.89937	-2.82668	0.010166
MT2091	1.262168	8.825058	3.376095	-1.58885	0.003154	MT4026.1	-0.71019	9.003381	-2.89883	-2.82801	0.010176
MT2936	-0.88691	8.80053	-3.37491	-1.59206	0.003163	MT0224	-0.92272	8.967809	-2.89832	-2.82928	0.01018
MT0655	1.363001	8.629833	3.373288	-1.59648	0.003177	MT2667	-0.88676	8.484191	-2.89828	-2.82936	0.01018
MT0291.4	1.458582	8.86162	3.372648	-1.59822	0.003181	MT1029	-1.23638	8.407539	-2.89823	-2.8295	0.01018
MT0881	0.91905	8.481201	3.372268	-1.59925	0.003183	MT2824	1.102378	9.676819	2.897636	-2.83096	0.010192
MT2252	-0.94363	9.233264	-3.3715	-1.60133	0.003188	MT2995	-0.75632	9.465026	-2.89731	-2.83175	0.010196
MT1385	-1.20066	9.4778	-3.37057	-1.60387	0.003196	MT0877	-0.74182	9.42018	-2.89524	-2.83685	0.010245
MT0982	1.243017	10.39213	3.369442	-1.60693	0.003204	MT2939	-0.74119	8.812694	-2.89522	-2.83692	0.010245
MT0069	0.997355	9.450976	3.366315	-1.61542	0.003232	MT0771	0.851463	9.164731	2.894351	-2.83905	0.010265
MT2492	-0.75744	9.589956	-3.36114	-1.62946	0.003279	MT0580	1.02448	9.024473	2.893792	-2.84043	0.010276
MT2752	-1.05656	9.076183	-3.36093	-1.63003	0.00328	MT2336	0.949716	10.11803	2.891345	-2.84645	0.010336
MT3701	1.662186	8.058541	3.358724	-1.63602	0.003299	MT3290	0.875572	8.962102	2.891315	-2.84653	0.010336
MT1470	0.922756	8.652813	3.357321	-1.63982	0.003309	MT1387	0.751274	9.611323	2.89061	-2.84826	0.010351
MT3532	1.26553	10.50733	3.35731	-1.63985	0.003309	MT2160	1.052598	8.256256	2.888176	-2.85425	0.010414
MT2370.1	-0.94827	9.585582	-3.35707	-1.64051	0.00331	MT3206	-0.90411	9.010176	-2.88663	-2.85804	0.010453
MT3818	-1.0084	8.761015	-3.35649	-1.64208	0.003314	MT1271	-0.9991	8.886494	-2.88485	-2.86243	0.010499
MT1302	0.993349	9.240721	3.354561	-1.6473	0.003331	MT0559	-0.76737	8.98024	-2.88322	-2.86643	0.01054
MT3222	-1.04355	9.29541	-3.35389	-1.64912	0.003336	MT2767	0.789899	9.772481	2.882327	-2.86862	0.010561
MT1688	0.968771	8.897757	3.351649	-1.65519	0.003356	MT1058	-0.73686	8.993335	-2.88166	-2.87024	0.010574
MT1269	-0.9108	9.647555	-3.34999	-1.65967	0.00337	MT1564	0.996025	8.581456	2.881568	-2.87048	0.010574
MT0119	1.127697	8.400334	3.349542	-1.66089	0.003373	MT3194.1	0.750776	9.462111	2.880943	-2.87201	0.010587
MT2615.1	1.307602	8.141954	3.348838	-1.6628	0.003378	MT3600	-0.89186	9.480414	-2.87624	-2.88355	0.010717
MT0520	-0.89748	9.049215	-3.34723	-1.66714	0.003392	MT2522	0.632699	9.306713	2.874263	-2.8884	0.010769
MT1895	0.871876	8.994948	3.34672	-1.66853	0.003395	MT2300	-0.83285	9.582997	-2.8738	-2.88954	0.010778
MT0419	-0.81176	9.496291	-3.34519	-1.67267	0.003409	MT2342	-1.02455	9.407275	-2.87239	-2.89298	0.010814
MT1331	0.956173	9.136265	3.344601	-1.67426	0.003412	MT2127	-0.73091	9.190324	-2.87209	-2.89371	0.010818
MT0837	-0.97703	9.141768	-3.34435	-1.67494	0.003412	MT1910	0.796674	9.087376	2.869041	-2.90118	0.010902
MT1376.1	-1.28859	8.941681	-3.34432	-1.67501	0.003412	MT1658	-0.82764	9.390856	-2.86605	-2.90849	0.010985
MT2268	0.884695	8.940383	3.343524	-1.67717	0.003418	MT3608	-0.79013	9.133904	-2.86419	-2.91305	0.011035
MT3926	-0.97281	8.926741	-3.34332	-1.67773	0.003419	MT1960	0.769801	9.159156	2.862405	-2.91741	0.011079
MT2739	0.868545	8.802814	3.342989	-1.67862	0.00342	MT3922	-1.06327	8.141532	-2.8624	-2.91743	0.011079
MT0452	1.022409	8.90446	3.34233	-1.6804	0.003424	MT2838	1.187438	9.502055	2.861805	-2.91888	0.011092
MT2662	1.381619	8.21149	3.342306	-1.68047	0.003424	MT3469	-0.66591	9.163094	-2.85863	-2.92664	0.011182
MT3084	1.09071	8.992947	3.339092	-1.68915	0.003451	MT0621	1.0224	9.08755	2.857561	-2.92924	0.011209
MT2544	-0.94041	9.960202	-3.33903	-1.68933	0.003451	MT0376	-0.72097	8.625115	-2.85727	-2.92995	0.011213
MT2241	-1.02881	8.970563	-3.33899	-1.68942	0.003451	MT2177	-0.75127	9.278563	-2.85605	-2.93293	0.011244
MT2993	1.057688	9.654668	3.338248	-1.69143	0.003456	MT2169	-1.02066	11.0508	-2.8559	-2.93329	0.011244
MT2976	-0.80493	9.28816	-3.33823	-1.69148	0.003456	MT2787	-0.6837	9.225233	-2.85492	-2.93568	0.011269
MT0897	0.918717	8.674326	2.529943	-3.69564	0.023546	MT3297	1.16374	8.897623	2.851003	-2.94523	0.011383
MT2671	0.707651	9.141042	2.529561	-3.69649	0.02356	MT1426	1.062518	8.295905	2.850519	-2.94641	0.011393
MT3594	-0.69572	8.852251	-2.52607	-3.70429	0.023753	MT2186	0.922469	10.47507	2.849273	-2.94945	0.011426
MT2459	0.666145	10.13923	2.525839	-3.7048	0.023753	MT2947	0.771585	9.125253	2.840177	-2.97158	0.011701
MT3863	-0.9173	8.368466	-2.52583	-3.70481	0.023753	MT2698	-0.86071	8.618997	-2.8391	-2.9742	0.01173
MT1827	-0.87547	9.302925	-2.52415	-3.70856	0.023838	MT0688	-0.69951	9.459862	-2.83845	-2.97578	0.011745
MT2046	-0.63776	9.060846	-2.52409	-3.70871	0.023838	MT2074	-0.83774	8.999512	-2.8328	-2.9895	0.011918
MT1195	0.879237	9.083379	2.523732	-3.7095	0.02385	MT0866	0.701715	9.395697	2.832588	-2.99	0.01192
MT3625	-0.67698	9.361597	-2.52329	-3.71048	0.023867	MT3503	-0.71867	8.681556	-2.83242	-2.99042	0.01192
MT1152	0.692196	9.705123	2.522865	-3.71143	0.023884	MT2747	-1.09765	8.820929	-2.83166	-2.99226	0.011939
MT0610	-0.79571	8.561362	-2.52125	-3.71503	0.023971	MT2819	-0.89672	8.307618	-2.83005	-2.99617	0.011986
MT2476	0.796589	8.631331	2.520979	-3.71563	0.023978	MT2601	0.822355	8.691462	2.827711	-3.00183	0.012055
MT1083	0.800345	9.281768	2.519855	-3.71814	0.024036	MT2889	-0.79048	8.904718	-2.82707	-3.00337	0.012068
MT1648	0.984359	10.02919	2.514741	-3.72952	0.024335	MT1414	0.761174	10.40938	2.826997	-3.00356	0.012068
MT2029	-0.6721	8.800735	-2.5145	-3.73005	0.02434	MT3044	-0.97097	9.450349	-2.82507	-3.00823	0.012121
MT2206	-0.70233	8.573579	-2.51421	-3.73069	0.024348	MT1869	-1.09256	8.481638	-2.82502	-3.00835	0.012121
MT1288	-0.80447	9.125931	-2.51364	-3.73196	0.024373	MT3513	-0.79996	8.798181	-2.82453	-3.00952	0.012132
MT2413	0.61547	9.978796	2.512741	-3.73397	0.024417	MT0891	1.080542	8.474952	2.822631	-3.01413	0.012188
MT3549	1.149793	8.042297	2.512623	-3.73423	0.024417	MT0010	-0.76292	9.01529	-2.82167	-3.01646	0.012214
MT3021	-0.72319	9.604389	-2.51246	-3.73459	0.024417	MT3755	0.713623	8.480806	2.819018	-3.02286	0.012295
MT3806	0.701506	9.158769	2.508797	-3.74273	0.024632	MT0200	0.984042	8.684865	2.818197	-3.02485	0.012317
MT2479	-0.75255	8.809608	-2.50707	-3.74657	0.024728	MT1821.1	-0.85223	8.828703	-2.81781	-3.02578	0.012324
MT3228	-0.57615	8.999891	-2.50501	-3.75114	0.024846	MT1593	-0.89517	9.056921	-2.81683	-3.02815	0.012351
MT1293	-0.62448	9.870832	-2.50432	-3.75266	0.024879	MT3221	-0.81381	9.129415	-2.81603	-3.0301	0.012372
MT1217	0.63406	8.711991	2.50285	-3.75592	0.02496	MT1349	0.703256	9.738423	2.814648	-3.03342	0.012412
MT0024	-0.81735	8.657022	-2.50129	-3.75937	0.025047	MT3509	-0.61419	9.27172	-2.8143	-3.03428	0.012419
MT2600.1	0.760851	8.953806	2.500942	-3.76015	0.02506	MT0319	0.87802	8.919234	2.812958	-3.0375	0.012458
MT0499	0.89445	8.808196	2.500608	-3.76089	0.025071	MT1149	-0.8143	9.216816	-2.81181	-3.04027	0.01249
MT3151	-0.86154	8.390012	-2.4989	-3.76466	0.025168	MT3705	1.028865	9.08036	2.809356	-3.04619	0.012564
MT0335	-0.75563	8.911747	-2.4967	-3.76953	0.025296	MT2042.1	-0.7119	8.541893	-2.80928	-3.04638	0.012564
MT1187	-0.9419	8.406841	-2.49498	-3.77334	0.025394	MT0813	1.208946	8.493568	2.808122	-3.04917	0.012597
MT0197	0.807899	9.021936	2.494363	-3.7747	0.025424	MT0483	-0.84951	9.085869	-2.80793	-3.04964	0.012598
MT2385	-0.72197	8.993974	-2.49264	-3.77851	0.025513	MT1216	1.063494	8.240223	2.806789	-3.05238	0.012631

MT0177	0.968704	9.188192	2.492639	-3.77851	0.025513	MT0965	-0.9259	8.542993	-2.80645	-3.0532	0.012637
MT1573	-0.71997	10.13409	-2.49172	-3.78055	0.025562	MT3853	-0.8464	9.177252	-2.80512	-3.05641	0.012676
MT0581	-0.6991	8.106674	-2.49148	-3.78107	0.025567	MT3769	-0.77086	9.110992	-2.80378	-3.05964	0.012716
MT3900	0.60882	9.638331	2.488865	-3.78685	0.025723	MT2701	-0.61752	9.604671	-2.80249	-3.06275	0.012754
MT2801	0.665118	8.699185	2.487453	-3.78996	0.025804	MT0905	0.815579	9.038176	2.801467	-3.0652	0.012781
MT3998	-0.70286	8.711753	-2.48196	-3.80208	0.026147	MT0556	1.048512	8.100199	2.801385	-3.0654	0.012781
MT2415	-0.76343	9.42198	-2.48073	-3.80478	0.026216	MT2299	0.804939	9.110374	2.800158	-3.06835	0.012817
MT1603	-0.54817	9.141517	-2.4783	-3.81013	0.026364	MT0987	0.911987	8.739491	2.799691	-3.06947	0.012827
MT0573.1	0.817338	8.731384	2.477095	-3.81277	0.026433	MT3341	-0.74599	9.766097	-2.79886	-3.07148	0.01285
MT0326	-0.57684	8.756413	-2.47522	-3.81689	0.026545	MT2445	0.915997	8.668286	2.792568	-3.0866	0.013058
MT1285	-0.71392	9.270809	-2.47481	-3.81778	0.026562	MT2722	-1.08213	8.659682	-2.79247	-3.08684	0.013058
MT3265	0.687091	9.305524	2.474427	-3.81863	0.026577	MT3011	-0.7355	9.928756	-2.78972	-3.09344	0.013148
MT2629	0.890305	8.950966	2.47135	-3.82539	0.026769	MT2945	0.749319	10.06395	2.787932	-3.09772	0.013204
MT3839	-0.88152	9.275361	-2.47091	-3.82636	0.026789	MT4039	-0.75036	9.0634	-2.78733	-3.09917	0.01322
MT1710	-0.83678	8.75454	-2.47	-3.82834	0.026838	MT1632	0.828009	8.643036	2.78142	-3.11333	0.013418
MT0706.1	-0.70534	9.615076	-2.4688	-3.83099	0.026908	MT2287	-0.866	8.535025	-2.78138	-3.11343	0.013418
MT2339	-0.78904	9.255592	-2.46592	-3.8373	0.027089	MT3104	-0.84135	8.840894	-2.77869	-3.11987	0.013508
MT2988	0.66131	9.733898	2.465094	-3.83911	0.027134	MT0601	-0.78729	8.617681	-2.77741	-3.12293	0.013547
MT0631	0.554044	8.860133	2.464557	-3.84028	0.02716	MT2756	-0.68732	9.1993	-2.77585	-3.12665	0.013597
MT3673	0.712775	9.74521	2.460742	-3.84863	0.027405	MT0494	-0.7948	8.968717	-2.77382	-3.13151	0.013665
MT2502	-0.67729	8.966082	-2.46043	-3.84931	0.027416	MT0456	-0.86136	8.414872	-2.77198	-3.13592	0.013725
MT2032	0.794373	10.04723	2.458052	-3.85451	0.027562	MT0797	-0.81676	8.783513	-2.77138	-3.13735	0.013741
MT1362	0.714348	9.346039	2.45797	-3.85469	0.027562	MT1215	0.660216	8.663782	2.770628	-3.13914	0.013763
MT1357	-0.71023	9.064315	-2.45592	-3.85917	0.02769	MT3088	0.794589	9.06467	2.769503	-3.14182	0.013798
MT0608	-0.78128	8.448326	-2.45355	-3.86434	0.027841	MT3529	0.927982	9.120472	2.767532	-3.14653	0.013864
MT2399	-0.6735	9.008686	-2.45201	-3.86771	0.027933	MT1691	1.202898	8.77652	2.766657	-3.14862	0.01389
MT3968	-0.61954	9.12214	-2.4519	-3.86794	0.027933	MT0391	-0.85686	8.50755	-2.76641	-3.14921	0.013893
MT0985	-0.7935	8.858505	-2.45094	-3.87003	0.027989	MT3492	-0.96572	8.149109	-2.76488	-3.15287	0.013943
MT2549	0.72217	8.797724	2.449337	-3.87354	0.028085	MT1367	1.160368	8.188764	2.764589	-3.15355	0.013948
MT2749	0.953751	8.694275	2.449096	-3.87406	0.028085	MT2627.1	-0.81229	8.845824	-2.76439	-3.15403	0.01395
MT3989	0.961699	9.266686	2.449082	-3.87409	0.028085	MT0421	-0.69561	9.188751	-2.76252	-3.15847	0.014012
MT3483	0.701608	9.177008	2.444115	-3.88491	0.028418	MT0032	-0.71653	9.446499	-2.76144	-3.16106	0.014046
MT1535	0.747513	9.441645	2.440762	-3.8922	0.028642	MT1222	-0.72915	9.420206	-2.7609	-3.16234	0.01406
MT0934.1	-0.74699	8.720335	-2.44025	-3.89331	0.028667	MT2973	-0.87252	9.008954	-2.75996	-3.16458	0.014089
MT2182	-0.53376	8.748157	-2.43987	-3.89414	0.028683	MT0146	-0.76178	9.119824	-2.75866	-3.16766	0.014131
MT1332	0.613964	9.4729	2.438018	-3.89817	0.028802	MT0976	0.776563	9.591356	2.75747	-3.17051	0.01417
MT0860	-0.85302	8.577758	-2.43439	-3.90604	0.029048	MT0193	1.124202	9.606353	2.756413	-3.17302	0.014203
MT0910.4	-0.73439	9.627087	-2.43363	-3.9077	0.029087	MT3287	-0.93485	8.679957	-2.75316	-3.18076	0.014319
MT2358	0.604004	9.752419	2.433531	-3.90791	0.029087	MT0994	1.09613	8.579319	2.752969	-3.18121	0.01432
MT0051	0.672054	9.245014	2.432183	-3.91083	0.029172	MT1307	0.863516	9.409857	2.752237	-3.18295	0.014342
MT3923	-0.56722	9.084469	-2.43103	-3.91333	0.029239	MT2717	-0.94407	10.66267	-2.75144	-3.18485	0.014366
MT2235	-0.6586	9.004575	-2.43092	-3.91356	0.029239	MT0576	-0.64144	8.843708	-2.7474	-3.19444	0.01451
MT3260	-0.70316	9.604019	-2.43079	-3.91384	0.029239	MT0761	0.77732	8.748597	2.747324	-3.19462	0.01451
MT3584	-0.63257	8.790406	-2.43035	-3.91481	0.02926	MT0632	1.254843	8.201807	2.746967	-3.19547	0.014517
MT1267	0.587992	8.958833	2.428527	-3.91875	0.029379	MT2791	-0.77444	8.912137	-2.74538	-3.19924	0.014572
MT2163	-0.96851	8.684535	-2.42785	-3.92022	0.029417	MT1013	-0.75753	10.03622	-2.74513	-3.19984	0.014573
MT0355	-0.99481	8.335756	-2.42699	-3.92207	0.029467	MT0693	-0.77949	9.665063	-2.74503	-3.20007	0.014573
MT1518	-0.6574	8.940704	-2.42644	-3.92328	0.029496	MT2275	-0.76066	8.605001	-2.74368	-3.20326	0.014618
MT1342	-0.6137	9.411327	-2.4254	-3.92551	0.02956	MT2404	0.920753	8.451248	2.743216	-3.20437	0.01463
MT3601	-0.7434	9.366525	-2.42464	-3.92716	0.029595	MT1445	-0.81112	8.064332	-2.74278	-3.20541	0.014641
MT1589	0.670748	9.089853	2.424608	-3.92723	0.029595	MT2090	0.67601	9.505128	2.741132	-3.20931	0.014698
MT2762	0.751436	8.425394	2.423307	-3.93004	0.029678	MT3083	1.011014	9.446131	2.740848	-3.20998	0.014703
MT2928	0.754216	8.487633	2.422833	-3.93107	0.029701	MT0908	-0.8809	9.077882	-2.73725	-3.21851	0.014836
MT2291	-0.67026	9.270353	-2.42113	-3.93476	0.029814	MT0353	0.768707	9.285446	2.73229	-3.23024	0.015023
MT2056	-0.56668	10.11897	-2.41989	-3.93743	0.029893	MT2636	-0.81619	8.85926	-2.73106	-3.23314	0.015065
MT1685	-0.70658	8.671997	-2.41723	-3.94318	0.030076	MT1504	0.795241	9.156877	2.725888	-3.24536	0.015263
MT1252	-0.60866	8.069081	-2.41668	-3.94436	0.030105	MT0715	-0.71508	8.680516	-2.72533	-3.24668	0.015274
MT1319	0.730855	9.700381	2.415873	-3.9461	0.030153	MT2672	-0.99693	8.967807	-2.72529	-3.24678	0.015274
MT0118	-0.83872	8.492473	-2.41382	-3.95053	0.030293	MT3586	0.829711	9.395258	2.725153	-3.2471	0.015274
MT3150	-0.65043	9.341549	-2.41112	-3.95634	0.030481	MT0624	-1.03887	10.26695	-2.72481	-3.2479	0.015281
MT3317	-0.64556	9.997248	-2.41023	-3.95826	0.030536	MT3270	-0.74846	9.503681	-2.72433	-3.24905	0.015294
MT1537	-0.69646	9.640658	-2.40944	-3.95995	0.030583	MT3825	-0.66014	9.234741	-2.72245	-3.25348	0.015358
MT3134	-0.87695	9.146133	-2.40868	-3.9616	0.030624	MT0675	-0.91518	7.784888	-2.7224	-3.25359	0.015358
MT1097	0.787361	8.675672	2.408579	-3.96181	0.030624	MT2601.2	-0.78003	9.014789	-2.72193	-3.2547	0.015371
MT0179	-0.68202	9.224755	-2.40826	-3.96249	0.030637	MT1534	-0.78436	8.801304	-2.71983	-3.25966	0.015449
MT0549	0.728059	10.23729	2.405968	-3.96743	0.030796	MT1102	-0.83505	8.644822	-2.71759	-3.26494	0.015533
MT1021	-0.7091	8.270855	-2.4054	-3.96864	0.030827	MT1838.1	0.941346	9.138	2.71714	-3.26599	0.015545
MT3831	0.691021	9.116249	2.40484	-3.96985	0.030858	MT2329	0.787907	10.28819	2.716894	-3.26657	0.015546
MT2929	-0.63853	8.694727	-2.40404	-3.97157	0.030906	MT1972	-0.74748	8.960776	-2.7168	-3.26678	0.015546
MT0336	-0.63975	9.049874	-2.40169	-3.97662	0.031072	MT2845	-0.7248	9.625737	-2.71412	-3.2731	0.015648
MT2842	-0.70946	9.281341	-2.40057	-3.97901	0.031144	MT3052	1.001431	8.323658	2.70975	-3.28337	0.01582
MT1076	-0.74382	9.391001	-2.39833	-3.98383	0.031303	MT1138	-0.59241	9.574286	-2.70954	-3.28387	0.015822
MT0171	-0.77455	8.172632	-2.39764	-3.98531	0.031344	MT0276	0.986821	8.699064	2.70874	-3.28575	0.015849
MT4018	-0.67896	8.761967	-2.39644	-3.98789	0.031423	MT2618	-0.71112	8.39111	-2.70731	-3.28912	0.015901
MT0767	0.618819	9.305419	2.395171	-3.9906	0.031508	MT1354	-0.7501	9.046719	-2.70539	-3.29361	0.015974
MT3855	0.532443	9.597469	2.394409	-3.99223	0.031555	MT2619	-0.85716	8.202974	-2.70478	-3.29505	0.015993
MT3303	-0.72754	9.035776	-2.39241	-3.9965	0.031696	MT3342	-0.67803	9.017179	-2.70227	-3.30095	0.016091
MT0966	-0.70041	9.248663	-2.39079	-3.99998	0.031809	MT2649	0.736234	9.186194	2.700754	-3.30449	0.016148
MT2208	0.726227	8.942782	2.388921	-4.00397	0.031941	MT1822	-0.72787	9.046291	-2.70006	-3.30612	0.01617
MT2944	-0.64561	9.120991	-2.38857	-4.00472	0.031956	MT2637	-0.82121	9.011681	-2.69965	-3.30708	0.016181
MT0136	-0.75754	10.00427	-2.38697	-4.00815	0.032068	MT2453	-0.68703	8.295598	-2.69938	-3.30772	0.016186
MT3438	-0.86508	9.995345	-2.38668	-4.00877	0.032079	MT2174	-0.74653	8.814417	-2.69885	-3.30895	0.016201
MT1461	0.733084	9.085623	2.382161	-4.01841	0.032419	MT3857	-0.77597	8.938778	-2.69853	-3.30971	0.016208
MT0114	0.660208	9.488541	2.378969	-4.02522	0.032657	MT3759	-0.74406	8.895903	-2.69816	-3.31057	0.016217
MT3565	0.788105	9.184335	2.378174	-4.02691	0.032708	MT3176.1	0.739143	8.599943	2.697313	-3.31256	0.016246
MT2365	-0.94224	10.18558	-2.37669	-4.03006	0.032813	MT0589	-0.70913	9.344098	-2.69287	-3.32297	0.016428
MT3526	-0.78184	8.5296	-2.37625	-4.03101	0.032836	MT2137	0.730115	9.758416	2.691449	-3.32628	0.016481
MT3316	0.775644	10.00228	2.374942	-4.03379	0.032928	MT3616	-0.80674	8.252337	-2.69122	-3.32681	0.016484
MT3617	-0.88684	8.599602	-2.37353	-4.0368	0.033027	MT0442	-0.98523	8.837923	-2.69074	-3.32794	0.016498
MT2443	-0.59632	9.424812	-2.37307	-4.03779	0.033052	MT3510.1	0.790253	9.475087	2.688447	-3.3333	0.01659
MT0623	0.668013	9.187056	2.372889	-4.03816	0.033054	MT2220	-0.93119	8.273334	-2.68766	-3.33513	0.016617
MT1289	-0.6232	8.887669	-2.37213	-4.03978	0.033103	MT3671.2	0.7382	9.846051	2.685733	-3.33964	0.016693
MT1650	-0.60999	8.767736	-2.37049	-4.04326	0.033222	MT0158	-0.83361	9.511693	-2.68438	-3.3428	0.016745
MT1590	-0.88942	9.342316	-2.3699	-4.04453	0.033257	MT3943	-1.02796	8.069667	-2.68335	-3.34519	0.016782
MT0191	0.651083	9.2018	2.368967	-4.0465	0.033313	MT0194	0.845046	9.024282	2.679763	-3.35357	0.016932
MT2248	-0.8154	8.294363	-2.36889	-4.04666	0.033313	MT1854	-0.8813	8.725076	-2.67286	-3.36964	0.017229
MT1873	-0.51347	9.245595	-2.36675	-4.0512	0.033473	MT1625	-0.73121	9.065465	-2.67053	-3.37506	0.017325
MT2738	-0.87931	8.70205	-2.36646	-4.05181	0.033484	MT3793	0.817072	9.030437	2.668694	-3.37934	0.017401

MT1563	-0.56941	9.30437	-2.36539	-4.05409	0.033558	MT1737	-0.59139	9.50723	-2.66781	-3.3814	0.017433
MT1980.2	-0.79577	8.515246	-2.36445	-4.05608	0.033621	MT3392	0.806743	9.130725	2.666115	-3.38533	0.017496
MT0470	-0.80024	8.704445	-2.36303	-4.05909	0.033713	MT2891	0.775493	8.831564	2.666105	-3.38535	0.017496
MT2124	0.99659	8.292897	2.363009	-4.05914	0.033713	MT1305.1	-0.68207	9.044757	-2.66509	-3.38772	0.017535
MT3155	-0.6803	8.696522	-2.3613	-4.06276	0.03384	MT2199	-0.94358	8.787487	-2.66469	-3.38864	0.017546
MT1363.1	-0.5577	9.731286	-2.3585	-4.0687	0.034056	MT0679	1.052278	8.218689	2.663124	-3.39228	0.017609
MT1542	-0.61571	9.160626	-2.35825	-4.06922	0.034063	MT2004	0.776764	9.532707	2.661611	-3.39578	0.017671
MT4031	0.574969	8.897729	2.355597	-4.07484	0.034268	MT3498	0.909435	8.615556	2.660703	-3.39789	0.017705
MT3891	0.682997	9.276419	2.355132	-4.07582	0.034294	MT3425	0.617344	9.787848	2.660246	-3.39895	0.017719
MT1613	-0.68341	9.576054	-2.35362	-4.07901	0.034406	MT0489	-0.71314	9.600948	-2.65781	-3.4046	0.017823
MT3478	-0.68113	8.721458	-2.34877	-4.08927	0.034796	MT2526	-0.8462	9.132214	-2.65721	-3.40598	0.017843
MT2159	-0.98521	7.716001	-2.34602	-4.09506	0.035012	MT3149.1	-0.64953	9.361349	-2.65612	-3.4085	0.017886
MT2420	-0.86921	8.988049	-2.34387	-4.0996	0.03518	MT2804	-0.77106	9.378812	-2.65414	-3.4131	0.017963
MT0883	0.733965	9.274229	2.343456	-4.10046	0.035202	MT3031	-0.84449	10.8396	-2.65413	-3.41313	0.017963
MT0910.2	-0.65268	8.778398	-2.34319	-4.10102	0.035211	MT3296	-0.77706	7.591288	-2.65335	-3.41493	0.017992
MT0106	-0.65842	9.671271	-2.34163	-4.10431	0.03533	MT3760	1.129683	10.00489	2.653069	-3.41558	0.017998
MT1214	-0.57437	8.965385	-2.33984	-4.10806	0.035468	MT0692.1	-0.68652	9.422861	-2.64749	-3.42848	0.01825
MT2864	-0.69027	9.193962	-2.33896	-4.10993	0.03553	MT1619	-0.71826	8.751094	-2.64705	-3.42951	0.018263
MT2409	-0.6414	8.920063	-2.33809	-4.11175	0.035591	MT0586	-0.6799	9.045664	-2.64655	-3.43065	0.018279
MT0172	0.934317	9.669052	2.337683	-4.11261	0.035597	MT2178	-0.65184	8.921569	-2.64588	-3.4322	0.018303
MT1739	0.576312	9.02502	2.337601	-4.11278	0.035597	MT1922	-0.81639	8.721643	-2.64148	-3.44237	0.018503
MT0712	0.768614	9.79001	2.337568	-4.11285	0.035597	MT0941	0.727348	8.839449	2.640961	-3.44356	0.01852
MT0209	-0.77561	8.702592	-2.33572	-4.11674	0.035742	MT0756.1	-0.66695	9.201845	-2.63935	-3.44728	0.018588
MT0322	-0.74822	8.828022	-2.33525	-4.11772	0.035768	MT3465	-0.67955	8.393077	-2.63922	-3.44757	0.018588
MT1656	0.995988	8.359402	2.332436	-4.12363	0.035992	MT0023	-0.70463	8.864098	-2.63878	-3.44858	0.018602
MT3737	0.829279	9.20765	2.332329	-4.12385	0.035992	MT0672	-0.75611	9.091608	-2.63762	-3.45125	0.018648
MT1528	-0.74004	10.13753	-2.33214	-4.12425	0.035995	MT0997	0.862615	8.476573	2.637503	-3.45153	0.018648
MT2355	0.865777	9.940768	2.3319	-4.12475	0.036003	MT0310	-0.78993	8.278025	-2.63578	-3.4555	0.018719
MT4030	0.841098	8.373341	2.331147	-4.12633	0.036055	MT2922	-0.97321	8.618028	-2.63569	-3.45569	0.018719
MT1821	-0.84269	8.740121	-2.32944	-4.12991	0.036189	MT2679	0.759828	9.897535	2.634928	-3.45746	0.018749
MT2440	0.753165	8.660278	2.327091	-4.13483	0.036378	MT1789	0.892667	8.64885	2.63453	-3.45838	0.01876
MT3787	-0.62649	9.160379	-2.32654	-4.13598	0.036413	MT2957	0.694291	9.039667	2.633583	-3.46056	0.018797
MT3585	-0.57454	9.461672	-2.32636	-4.13637	0.036416	MT3144	-0.91887	8.528379	-2.63345	-3.46087	0.018797
MT3660	-0.83661	8.803772	-2.32552	-4.13813	0.036476	MT2803.1	0.809326	8.364043	2.631736	-3.46481	0.018872
MT1063	-0.75301	8.516828	-2.32518	-4.13882	0.036491	MT1219	-0.66977	9.533962	-2.62906	-3.47097	0.018994
MT0390	-1.02932	8.47519	-2.32502	-4.13916	0.036492	MT3712	0.816613	9.247389	2.628207	-3.47292	0.019028
MT0291.1	-0.71089	8.438677	-2.32468	-4.13987	0.036508	MT0636	0.8294	8.985911	2.627753	-3.47397	0.019042
MT0287	-0.85591	9.192728	-2.32345	-4.14246	0.036603	MT0225	-0.74799	9.126773	-2.62691	-3.4759	0.019076
MT1790	-0.63305	8.29575	-2.32089	-4.1478	0.036812	MT3861	0.690594	9.545056	2.626632	-3.47654	0.019082
MT3180	-0.60964	8.919817	-2.32069	-4.14822	0.036817	MT2926	-0.94395	8.469594	-2.62366	-3.48337	0.019219
MT2000	-0.51083	9.739654	-2.31904	-4.15167	0.036948	MT2060	-0.66781	9.081014	-2.61971	-3.49242	0.019406
MT1239	0.649147	8.833328	2.315232	-4.15962	0.03727	MT1652	-0.6586	9.700785	-2.61786	-3.49666	0.01949
MT1775	-0.5843	8.859296	-2.31448	-4.16118	0.037323	MT0645.2	-0.84998	8.673294	-2.61572	-3.50158	0.019589
MT2733	0.901569	8.802072	2.313113	-4.16404	0.037431	MT1638	-0.79856	8.74959	-2.61399	-3.50555	0.019668
MT2504	0.800141	9.300891	2.312309	-4.16572	0.037478	MT0365	-0.63866	9.453506	-2.61332	-3.50707	0.019693
MT3731	-0.49184	10.13597	-2.31229	-4.16576	0.037478	MT0413	-0.74658	9.286578	-2.61229	-3.50942	0.019732
MT3703	-0.74441	9.483369	-2.31128	-4.16787	0.037554	MT3306	0.811227	8.729494	2.612236	-3.50955	0.019732
MT0387	-0.52848	9.089472	-2.30986	-4.17082	0.037667	MT1810	-0.84376	8.746228	-2.61151	-3.5112	0.019754
MT2695	-0.68568	9.05516	-2.30842	-4.17382	0.037782	MT0717.1	0.95651	9.140194	2.611495	-3.51124	0.019754
MT1280	1.001706	8.795299	2.308182	-4.17431	0.03779	MT3718.1	-0.71927	9.221468	-2.61124	-3.51182	0.019758
MT3422	0.629645	9.187174	2.307485	-4.17576	0.037839	MT1677	0.787454	8.870979	2.610007	-3.51465	0.019812
MT2195	0.807269	9.373731	2.30508	-4.18077	0.038041	MT0414	-0.96297	9.787195	-2.60987	-3.51496	0.019812
MT0186	-0.59729	8.95153	-2.30135	-4.18851	0.038365	MT0800	-0.68592	8.828923	-2.6092	-3.5165	0.019838
MT1467	-0.6106	8.653785	-2.29711	-4.19732	0.038737	MT2273	0.682354	8.759772	2.608095	-3.51902	0.019886
MT0382	-0.79934	8.715667	-2.29686	-4.19783	0.038746	MT0978	0.881782	9.019844	2.605953	-3.52391	0.019987
MT1173	-0.90857	10.00668	-2.29655	-4.19847	0.03876	MT2427	0.775625	8.828289	2.604537	-3.52715	0.020051
MT0700	0.731865	8.870818	2.296225	-4.19915	0.038777	MT3883	-0.78655	8.972339	-2.60409	-3.52816	0.020065
MT3050	-0.5626	9.172294	-2.29592	-4.19978	0.038791	MT3496	0.562429	8.864297	2.603163	-3.53028	0.020099
MT1627	-0.78828	9.471918	-2.29536	-4.20093	0.038828	MT1469	-0.59956	8.925718	-2.60312	-3.53038	0.020099
MT3174.1	-0.75659	9.741103	-2.29438	-4.20297	0.038904	MT3749	0.700799	9.222692	2.601956	-3.53304	0.020151
MT3220.1	0.545692	9.520088	2.293788	-4.2042	0.038945	MT1861	0.856061	9.683432	2.601443	-3.53421	0.020164
MT2274	-0.95262	8.347384	-2.29201	-4.20788	0.039095	MT3676	0.716666	8.743557	2.601388	-3.53433	0.020164
MT3573.12	0.727891	8.884134	2.291817	-4.20828	0.039098	MT1937	-0.63916	9.691753	-2.6004	-3.53658	0.020207
MT1622	0.87566	8.245286	2.290722	-4.21054	0.039185	MT0002	-0.74611	10.69251	-2.5971	-3.54411	0.020361
MT1423	-0.7827	8.189369	-2.28729	-4.21764	0.03949	MT0892	-0.8303	7.919329	-2.59709	-3.54413	0.020361
MT1672	-0.53317	9.346497	-2.28621	-4.21987	0.039576	MT1747	-0.78121	8.667836	-2.59184	-3.55608	0.020626
MT2510	0.608467	10.02474	2.285359	-4.22163	0.039641	MT3524	0.824677	9.240011	2.591585	-3.55666	0.020631
MT2003	-0.53179	9.691647	-2.28423	-4.22397	0.039732	MT0603	-0.55746	8.643642	-2.59027	-3.55965	0.020688
MT3574	0.699524	9.143837	2.284089	-4.22425	0.039732	MT2200	-0.77142	9.068887	-2.59019	-3.55985	0.020688
MT1025.3	-0.79502	8.899695	-2.28325	-4.22598	0.039796	MT0479	-0.75894	9.805737	-2.58772	-3.56545	0.020809
MT0673	-0.71071	9.94246	-2.28292	-4.22666	0.039813	MT1038	-0.83749	8.576409	-2.58729	-3.56643	0.020824
MT1254	0.585131	9.873965	2.280715	-4.23121	0.040004	MT0222	0.722631	9.247057	2.586865	-3.56739	0.020838
MT1129	0.573384	9.028546	2.280514	-4.23162	0.040004	MT1963	0.72685	8.930405	2.584964	-3.57171	0.020927
MT3537	0.731051	8.840775	2.280435	-4.23179	0.040004	MT2251	-0.74151	8.9966	-2.58484	-3.57199	0.020927
MT3073	0.631028	9.102261	2.279949	-4.23279	0.040035	MT1726	-0.71186	9.282672	-2.58471	-3.57228	0.020927
MT0449	-0.48092	9.465773	-2.27973	-4.23324	0.040042	MT0304	1.065491	8.495599	2.584187	-3.57347	0.020947
MT1754	0.731319	8.40673	2.279265	-4.2342	0.040071	MT0859	-0.67862	9.185721	-2.58226	-3.57785	0.021041
MT2932	-0.65527	9.621244	-2.27864	-4.23549	0.040117	MT2572	-0.86932	9.061718	-2.58169	-3.57913	0.021063
MT3948	-0.69695	8.75508	-2.2781	-4.23659	0.040153	MT3292	-0.76856	8.747529	-2.58153	-3.57951	0.021063
MT3573.1	-0.66373	8.439625	-2.27668	-4.23952	0.040273	MT1612	-0.86183	9.022764	-2.58067	-3.58145	0.021098
MT1587	-0.6915	9.24824	-2.27625	-4.2404	0.040299	MT3791	-0.81535	9.314858	-2.58057	-3.58167	0.021098
MT0615	0.76944	9.178117	2.274891	-4.2432	0.040414	MT1909	0.66044	9.085647	2.57867	-3.58599	0.021191
MT1224	-0.83875	9.158616	-2.27359	-4.24588	0.040523	MT0364	-0.64573	9.314901	-2.57848	-3.58643	0.021193
MT2410	-0.62192	8.987567	-2.27201	-4.24912	0.040659	MT1335	0.820558	8.772272	2.577153	-3.58942	0.021256
MT1245	0.748643	8.808395	2.270915	-4.25138	0.040749	MT2121	-0.83717	8.261175	-2.57639	-3.59114	0.021282
MT0047	-0.64928	8.679	-2.26724	-4.25893	0.041077	MT2361	0.750708	8.717529	2.57632	-3.59131	0.021282
MT1122.1	0.666793	8.454186	2.267203	-4.259	0.041077	MT2923	-0.65377	9.984543	-2.5762	-3.59157	0.021282
MT2164	0.605528	8.664832	2.266096	-4.26127	0.041169	MT3494.1	-0.7535	8.227888	-2.57335	-3.59803	0.021427
MT0907	0.728354	9.179336	2.264483	-4.26457	0.04131	MT0832	-0.71242	8.917361	-2.57301	-3.59879	0.021437
MT2110	0.680121	8.919797	2.264141	-4.26528	0.041329	MT1837	-0.98841	8.582942	-2.57196	-3.60118	0.021486
MT0256	-0.8636	8.655034	-2.26369	-4.26621	0.041358	MT3153.1	-0.76838	8.966537	-2.5712	-3.60291	0.021519
MT2395	-0.62663	9.75444	-2.26295	-4.26772	0.041415	MT1792	-0.605	9.273363	-2.57104	-3.60327	0.02152
MT3597	-0.90495	8.518761	-2.2621	-4.26946	0.041483	MT2202	-0.55601	8.785407	-2.57023	-3.60508	0.021555
MT2493	-0.55774	9.214395	-2.2581	-4.27764	0.041858	MT3399	0.657672	9.19251	2.569533	-3.60667	0.021584
MT3117	0.810123	9.460924	2.257239	-4.27941	0.041927	MT1803	-0.91771	9.430118	-2.5645	-3.61804	0.021844
MT2625	-0.80253	8.601766	-2.25599	-4.28195	0.042035	MT1350	0.698351	8.867973	2.564479	-3.61808	0.021844
MT1915	0.613576	9.639194	2.254836	-4.28432	0.042134	MT2228	-0.70215	8.963474	-2.56365	-3.61995	0.021881
MT1306	-0.76529	8.334768	-2.25464	-4.28471	0.042138	MT1462	-0.753	10.68207	-2.56114	-3.62561	0.022011

MT1945	-0.59143	9.341858	-2.25222	-4.28966	0.042362	MT1156	-0.68767	9.496902	-2.55856	-3.63142	0.022146
MT1417	0.720445	9.004797	2.2506	-4.29296	0.042508	MT3202	-0.67643	8.570232	-2.55649	-3.63608	0.022253
MT2560	0.743175	8.781533	2.248277	-4.2977	0.042724	MT3443	-0.84223	9.086699	-2.5558	-3.63764	0.022283
MT1641	-0.79156	9.967337	-2.24698	-4.30034	0.042838	MT0923	-0.76668	8.796012	-2.55479	-3.63993	0.022331
MT2704	-0.76825	8.676566	-2.24674	-4.30082	0.042847	MT0898	-0.60177	8.838008	-2.55455	-3.64047	0.022336
MT2763	-0.76513	8.665945	-2.24629	-4.30175	0.042877	MT1155	-0.64404	8.678744	-2.55386	-3.64201	0.022366
MT1941	-0.59936	9.284306	-2.24371	-4.30701	0.043121	MT1339	0.687423	9.325763	2.553469	-3.64289	0.022379
MT0943	0.690637	8.925437	2.242961	-4.30852	0.043181	MT2660	-0.86424	8.357273	-2.55264	-3.64476	0.022417
MT3236	-0.50448	9.172729	-2.24261	-4.30923	0.0432	MT2800	0.782452	8.593758	2.549977	-3.65075	0.022559
MT3711	0.563909	9.025196	2.240924	-4.31267	0.043355	MT1832	0.704798	9.207834	2.548927	-3.6531	0.022609
MT2661	-0.66761	9.317937	-2.23975	-4.31506	0.043459	MT2646	-0.82212	8.773688	-2.54793	-3.65535	0.022657
MT2613	-0.8187	8.030331	-2.23724	-4.32015	0.043698	MT1447	1.162638	8.412659	2.547079	-3.65726	0.022697
MT3661	-0.77875	8.66368	-2.2329	-4.32895	0.044126	MT1084	-0.78453	8.775861	-2.545	-3.66193	0.022807
MT2058	-0.69214	9.732437	-2.2319	-4.33098	0.044212	MT2377	-0.66466	8.846912	-2.54421	-3.66369	0.022843
MT2265	-0.52986	8.284227	-2.23033	-4.33417	0.044359	MT2400	-0.6294	9.141474	-2.54401	-3.66414	0.022846
MT0638	-0.69187	8.471755	-2.23014	-4.33455	0.044363	MT1175	0.853288	9.212438	2.541804	-3.66909	0.022964
MT0270	0.697696	8.63123	2.22937	-4.3361	0.044426	MT3005	-0.83378	8.781447	-2.54089	-3.67114	0.023007
MT2590	0.486121	9.885731	2.228255	-4.33836	0.044526	MT3615.3	0.785772	8.511346	2.540615	-3.67176	0.023014
MT3153	-0.85418	9.903117	-2.22741	-4.34007	0.044584	MT3810	-0.71948	8.951295	-2.53961	-3.67402	0.023064
MT3572.1	-0.51444	9.351478	-2.22739	-4.3401	0.044584	MT2515	0.61369	8.765487	2.539234	-3.67485	0.023076
MT1713	-0.93625	7.995012	-2.22574	-4.34345	0.04474	MT2633	-0.82416	8.40562	-2.53821	-3.67714	0.023127
MT2818	-0.58562	9.148802	-2.22304	-4.3489	0.045005	MT0013	0.846055	9.432189	2.536893	-3.68009	0.023191
MT3778	-0.56965	8.993441	-2.22247	-4.35006	0.045048	MT2520	0.929952	8.985141	2.536788	-3.68033	0.023191
MT1793	-0.62215	9.364067	-2.2223	-4.3504	0.045051	MT0161	-0.76981	9.238597	-2.53639	-3.68122	0.023206
MT1965	-0.5711	9.745731	-2.22206	-4.35087	0.045059	MT3807	-0.80837	8.984405	-2.53594	-3.68223	0.023223
MT2623	0.943014	8.873968	2.220187	-4.35466	0.04524	MT0911	-0.64352	8.868448	-2.53393	-3.68672	0.023331
MT2234	-0.57196	9.493098	-2.21973	-4.35558	0.045267	MT2904	0.876029	8.541415	2.531733	-3.69164	0.02345
MT2872	0.583197	8.978879	2.219493	-4.35606	0.045267	MT3449.2	0.629539	8.725891	2.176398	-4.44231	0.049468
MT2675	-0.73321	8.498645	-2.21948	-4.3561	0.045267	MT0377	-0.52997	8.982055	-2.17374	-4.44758	0.049752
MT1845	-0.73159	9.259233	-2.21659	-4.36192	0.045555	MT0216	-0.63521	8.985833	-2.17316	-4.44874	0.049802
MT0918	-0.6443	9.328273	-2.21548	-4.36415	0.045655	MT2546	0.740932	9.013904	2.172821	-4.4494	0.049823
MT4023	0.514112	9.096544	2.215183	-4.36475	0.045671	MT0760	0.612365	9.472801	2.17223	-4.45058	0.049873
MT1955	-0.72262	8.781798	-2.21197	-4.37122	0.045995	MT0163	-0.60107	9.299548	-2.17202	-4.45099	0.049879
MT1169.1	-0.68912	8.193827	-2.21104	-4.37308	0.046078	MT1206	-0.59796	9.303331	-2.17181	-4.4514	0.049886
MT0901	0.85576	8.335125	2.209695	-4.37579	0.046206	MT0528	0.537697	9.361183	2.171163	-4.45269	0.049943
MT0572	-0.62678	9.458388	-2.20722	-4.38077	0.046454	MT1054	-0.68893	8.557409	-2.17072	-4.45357	0.049976
MT1281	0.840319	8.433118	2.206425	-4.38236	0.046523	MT1108	-0.73924	8.154433	-2.19278	-4.40968	0.047842
MT2946	0.670129	9.333141	2.20473	-4.38576	0.046689	MT2428	-0.6676	9.011964	-2.19209	-4.41106	0.047887
MT0578	-0.59991	8.981662	-2.20378	-4.38766	0.046775	MT4037	0.571327	9.384856	2.192071	-4.4111	0.047887
MT1401	0.566271	9.809165	2.203596	-4.38804	0.046779	MT0847	-0.53172	9.212575	-2.19143	-4.41237	0.04793
MT3320	0.694992	8.963005	2.200042	-4.39516	0.047147	MT2792	0.632188	9.931307	2.191373	-4.41249	0.04793
MT0523	0.561106	9.1649	2.199485	-4.39627	0.047191	MT3798	-0.71518	9.256939	-2.18626	-4.42269	0.048479
MT1776	-0.53212	8.937598	-2.19861	-4.39802	0.04727	MT0569	-0.80052	7.682429	-2.18586	-4.42349	0.048507
MT0960	0.695933	9.165495	2.198373	-4.3985	0.047279	MT0773.1	0.91145	8.331278	2.185265	-4.42467	0.048557
MT1680	0.546575	8.986361	2.197832	-4.39958	0.047322	MT1581	-0.60752	8.949695	-2.1817	-4.43177	0.048938
MT0075	0.606281	8.700621	2.192823	-4.4096	0.047842	MT2105	-0.606	8.663377	-2.1803	-4.43455	0.049078
MT1002	0.631604	9.144336	2.176649	-4.44181	0.049456	MT0910	0.616978	9.642531	2.178359	-4.43841	0.04928
MT1002	0.631604	9.144336	2.176649	-4.44181	0.049456						

Statistically Significant Genes Detected in LTBI Classical Granuloma

Name	logFC	AveExpr	t	B	Adj.P.Val	Name	logFC	AveExpr	t	B	Adj.P.Val
MT3573.15	3.989944	9.623418	9.586266	18.41151	3.81E-09	MT2196	-0.86825	9.527927	-3.29249	-1.66942	0.00779
MT0567	4.594617	9.465235	9.497465	18.13627	3.81E-09	MT3105	1.123869	8.72085	3.291299	-1.67257	0.007808
MT3615.4	3.775889	9.475116	9.061395	16.77005	1.07E-08	MT3208	-1.17947	9.234001	-3.29033	-1.67515	0.007822
MT2648	2.7508	9.768911	8.697671	15.61279	2.38E-08	MT1240	1.147875	8.855305	3.290002	-1.67601	0.007822
MT1796	-5.12853	10.83965	-8.63752	15.41995	2.38E-08	MT2407	-1.05373	10.33421	-3.2881	-1.68105	0.007857
MT2563	3.591707	9.700133	8.612544	15.33975	2.38E-08	MT0324	1.169604	9.138392	3.286224	-1.68605	0.007892
MT2961	3.776744	9.161763	8.402623	14.66309	4.15E-08	MT1465	1.295773	8.997057	3.285682	-1.68749	0.007897
MT1432	3.955063	9.404354	8.274834	14.24894	5.59E-08	MT2627	1.315112	8.884522	3.284131	-1.6916	0.007924
MT0299	3.280249	9.547729	8.167383	13.89946	6.79E-08	MT3033	-1.55767	9.812784	-3.28374	-1.69264	0.007925
MT0753	3.068176	9.670762	8.152122	13.84973	6.79E-08	MT2461	1.100394	9.198299	3.282145	-1.69687	0.007954
MT2441	3.015963	9.388154	8.067838	13.57471	8.22E-08	MT0245	-1.04462	9.330945	-3.28064	-1.70085	0.00798
MT0534	2.659146	9.539875	8.002972	13.36262	9.40E-08	MT0876	-1.18449	9.204606	-3.27778	-1.70843	0.008031
MT0802	3.129898	9.978339	7.903198	13.03566	1.22E-07	MT2987	0.916712	9.507664	3.277746	-1.70853	0.008031
MT1234	3.365552	8.900395	7.871855	12.93278	1.26E-07	MT2799	1.247894	9.069533	3.276626	-1.7115	0.008044
MT3781	2.92199	9.523994	7.772751	12.60695	1.65E-07	MT1111	0.943989	9.419672	3.276524	-1.71177	0.008044
MT2951	2.317398	9.399188	7.709329	12.39803	1.93E-07	MT2757	1.254914	9.379626	3.273963	-1.71856	0.008095
MT0328.1	3.788263	8.906909	7.689347	12.33214	1.94E-07	MT0352	-1.23388	8.9131	-3.27289	-1.7214	0.008112
MT1621	3.980496	9.115022	7.640688	12.17158	2.04E-07	MT1314	1.098023	9.190679	3.271912	-1.72399	0.008127
MT0093	3.021936	9.221245	7.633053	12.14637	2.04E-07	MT3380	-1.36124	10.03848	-3.26998	-1.7291	0.008162
MT1122	2.870484	9.771831	7.628088	12.12998	2.04E-07	MT3434	1.390214	8.177305	3.269727	-1.72977	0.008162
MT3475	2.872089	9.141123	7.573418	11.94933	2.34E-07	MT0867	0.953585	9.032766	3.269101	-1.73143	0.008169
MT1585	2.53616	9.483511	7.539549	11.83732	2.52E-07	MT0486	-1.04039	9.306789	-3.26699	-1.73701	0.008211
MT2866	2.531691	9.690681	7.491715	11.67899	2.84E-07	MT2940	1.098115	9.311614	3.266096	-1.73938	0.008224
MT1836	3.174104	9.720636	7.43698	11.49764	3.18E-07	MT3580.1	1.491219	8.710459	3.262665	-1.74845	0.008289
MT1437	2.333997	9.968772	7.43489	11.49071	3.18E-07	MT1657	1.846415	9.125194	3.262609	-1.74859	0.008289
MT2594	3.191671	9.893369	7.386782	11.33117	3.61E-07	MT0068	1.517072	8.877377	3.262349	-1.74928	0.008289
MT1003	3.330774	9.208633	7.36899	11.27212	3.69E-07	MT2355	1.439722	9.59918	3.261908	-1.75045	0.008291
MT0327	4.271381	9.59999	7.352467	11.21728	3.77E-07	MT0734	1.58016	8.77006	3.261005	-1.75283	0.008305
MT0962	-2.55215	9.945139	-7.30003	11.04312	4.23E-07	MT3014	-1.12734	8.996483	-3.25758	-1.76189	0.008378
MT2599	3.431641	9.470865	7.299043	11.03985	4.23E-07	MT0591	-1.54462	9.508031	-3.25708	-1.7632	0.008378
MT3363	2.308668	9.742719	7.274903	10.95962	4.45E-07	MT3217	-0.99184	9.357198	-3.2569	-1.76367	0.008378
MT0995	2.275477	9.621525	7.252048	10.88365	4.67E-07	MT0813	1.509373	8.493568	3.256406	-1.76498	0.008382
MT2040	2.527004	9.430835	7.231108	10.81401	4.87E-07	MT0147	0.997957	9.264836	3.25583	-1.7665	0.008388
MT1073	3.535648	9.396241	7.190629	10.67933	5.44E-07	MT2011	-1.00367	9.331092	-3.25482	-1.76915	0.008404
MT0235	2.343254	9.357989	7.150017	10.54414	6.02E-07	MT2322	1.674227	9.862825	3.251784	-1.77717	0.00847
MT2994	3.246088	9.171772	7.143778	10.52337	6.02E-07	MT1636	1.242274	9.609576	3.248763	-1.78514	0.008534
MT0779	2.319933	10.05242	7.137075	10.50105	6.02E-07	MT1550	-0.98514	9.529527	-3.24849	-1.78587	0.008534
MT2123	2.933907	8.710353	7.101551	10.38272	6.63E-07	MT0884	-1.13245	9.779121	-3.24759	-1.78823	0.008547

MT3696	2.627406	9.273723	7.065364	10.26212	7.24E-07	MT0384.1	-1.05193	9.283837	-3.24674	-1.79046	0.00856
MT3947	3.170316	9.290751	7.054429	10.22567	7.24E-07	MT1994	1.142637	9.486531	3.24316	-1.7999	0.008634
MT2303	3.290011	9.406027	7.053941	10.22404	7.24E-07	MT1164	-0.85158	9.23102	-3.24304	-1.80022	0.008634
MT0641	2.523662	9.389768	7.035018	10.16096	7.55E-07	MT2541	1.185509	9.049914	3.241797	-1.80349	0.008657
MT0484	2.93416	10.19006	7.027949	10.13739	7.56E-07	MT3939	-0.9938	9.476135	-3.24138	-1.80459	0.008659
MT0511	2.70359	9.268364	7.016492	10.09918	7.69E-07	MT0116.1	1.423231	8.637023	3.238842	-1.81126	0.008714
MT2985	3.664233	9.978914	7.003834	10.05697	7.85E-07	MT0192	-0.83718	9.093141	-3.23843	-1.81234	0.008716
MT2498	2.274853	9.43664	6.991914	10.01721	7.89E-07	MT0275	1.02818	9.190803	3.237361	-1.81516	0.008734
MT1514.1	2.469033	10.35523	6.983246	9.98829	7.89E-07	MT2544	-0.98153	9.960202	-3.23696	-1.81622	0.008736
MT3925.1	4.019809	9.107042	6.980612	9.979505	7.89E-07	MT3870	-0.86094	8.892463	-3.22959	-1.83558	0.008909
MT0605	3.120984	10.06038	6.977875	9.970374	7.89E-07	MT0048	-1.02062	9.33125	-3.22941	-1.83606	0.008909
MT3035	-2.25836	9.552538	-6.9628	9.920089	8.15E-07	MT1177	-0.8747	8.81245	-3.22833	-1.8389	0.008928
MT1949	2.83192	9.502725	6.950775	9.879953	8.33E-07	MT3533	1.015698	9.603974	3.225419	-1.84653	0.008994
MT3674	2.998388	10.41051	6.940031	9.844097	8.48E-07	MT3866	-0.83388	9.12743	-3.2152	-1.87332	0.009243
MT0885	3.626586	9.084435	6.84978	9.542795	1.14E-06	MT1971	0.860246	9.484165	3.215141	-1.87347	0.009243
MT3814	2.896534	9.156371	6.798783	9.372456	1.33E-06	MT0788	0.988858	9.604337	3.213066	-1.87891	0.009289
MT2635	2.287743	9.618782	6.758952	9.239383	1.50E-06	MT2735	-0.85777	9.452505	-3.21198	-1.88175	0.009309
MT2111	3.201502	9.11471	6.731822	9.148724	1.62E-06	MT3532	1.30309	10.50733	3.210896	-1.88459	0.009329
MT2837	2.802471	9.732092	6.724101	9.122923	1.64E-06	MT0535	1.331199	8.629937	3.208652	-1.89046	0.00938
MT2014	2.537736	9.25265	6.70605	9.062599	1.72E-06	MT0741	-0.93471	9.122072	-3.2081	-1.89191	0.009381
MT2523	2.15729	9.554469	6.691806	9.014993	1.76E-06	MT0860	-1.21021	8.577758	-3.20795	-1.89229	0.009381
MT3431	2.596096	9.6748	6.688369	9.003507	1.76E-06	MT0933	-1.05171	9.355852	-3.20734	-1.89388	0.009389
MT1988	3.453355	9.141923	6.676853	8.965015	1.77E-06	MT1161	-1.04492	9.362157	-3.20525	-1.89934	0.009435
MT3349	2.868726	9.233644	6.675468	8.960385	1.77E-06	MT3808.1	-1.04438	10.90226	-3.20494	-1.90017	0.009435
MT0428	3.445218	9.272396	6.673956	8.955333	1.77E-06	MT2583	1.229949	9.374919	3.204376	-1.90163	0.009442
MT1438	2.472582	9.713524	6.658283	8.902946	1.84E-06	MT2967	1.33163	8.769982	3.202041	-1.90774	0.009496
MT3461	2.000305	9.659258	6.641691	8.847488	1.91E-06	MT3159	1.083652	8.904386	3.201514	-1.90911	0.009501
MT3543	2.683159	9.486302	6.637144	8.832289	1.92E-06	MT1924.1	-1.33318	10.13943	-3.19895	-1.9158	0.009561
MT0841	2.224037	9.27153	6.62954	8.806871	1.94E-06	MT3490	0.752639	9.437249	3.198338	-1.9174	0.009569
MT3378	-2.51868	9.99399	-6.62269	8.783972	1.94E-06	MT1984	1.096559	9.125263	3.197125	-1.92057	0.009593
MT0448	2.992568	9.247418	6.617722	8.767367	1.94E-06	MT3835	-1.02884	9.328369	-3.19629	-1.92275	0.009607
MT0718	2.535211	9.405892	6.617111	8.765323	1.94E-06	MT0304	1.242331	8.44399	3.194765	-1.92673	0.00964
MT0087	2.61722	9.582017	6.605056	8.725025	1.99E-06	MT0015	0.94939	10.43458	3.191757	-1.93457	0.009713
MT3022	-2.7649	10.01386	-6.59644	8.696226	2.02E-06	MT2372	1.057568	9.872928	3.18801	-1.94434	0.009808
MT2213	3.307365	9.045264	6.567262	8.598687	2.21E-06	MT0487	-0.79306	9.199394	-3.18246	-1.95879	0.009954
MT3767.1	2.742968	9.532966	6.539523	8.505961	2.36E-06	MT3175	-1.01699	9.716626	-3.18198	-1.96003	0.009958
MT1175	2.181912	9.295033	6.537022	8.4976	2.36E-06	MT3986	-0.95011	9.479476	-3.17824	-1.96975	0.010055
MT1264	2.588632	9.235986	6.532806	8.483507	2.36E-06	MT2527	-0.90649	9.489828	-3.17551	-1.97684	0.010123
MT3942	2.416761	9.072349	6.530807	8.476823	2.36E-06	MT0389	1.108661	8.942489	3.174417	-1.97969	0.010145
MT1728	2.292517	9.178143	6.528832	8.470222	2.36E-06	MT3326	-1.46409	9.19369	-3.17401	-1.98074	0.010147
MT2150	2.476886	9.559801	6.518906	8.437042	2.41E-06	MT2272	1.377014	8.66989	3.173543	-1.98196	0.010152
MT0292	2.835119	9.513392	6.512767	8.416519	2.44E-06	MT1417	1.090574	9.006475	3.17182	-1.98644	0.010192
MT3621	2.312726	10.21096	6.50463	8.389321	2.46E-06	MT3345	0.830199	9.668586	3.168944	-1.9939	0.010266
MT2664	3.018409	8.805604	6.501345	8.37834	2.46E-06	MT3959	-1.10794	10.11427	-3.16616	-2.00114	0.010337
MT2917	2.987614	9.404116	6.499533	8.372281	2.46E-06	MT3384	-0.98426	9.184365	-3.16539	-2.00312	0.01035
MT1838	2.488006	10.06742	6.494566	8.355679	2.47E-06	MT1702	-0.90058	8.84543	-3.16404	-2.00663	0.01038
MT0714	-2.34506	9.974899	-6.48949	8.338714	2.49E-06	MT0917	-1.03323	9.108147	-3.16351	-2.00801	0.010386
MT3724	1.885696	9.983047	6.477024	8.297042	2.57E-06	MT2031	-1.1751	9.55775	-3.16237	-2.01095	0.01041
MT3993	2.496662	9.849414	6.46417	8.254078	2.65E-06	MT2239	-1.06272	8.835794	-3.16151	-2.01319	0.010426
MT1731	4.125881	8.944845	6.447959	8.199896	2.77E-06	MT3351	-0.97775	9.189106	-3.15756	-2.0234	0.010533
MT2963	2.502502	9.29353	6.435357	8.157777	2.86E-06	MT0723	1.193152	8.80398	3.154712	-2.03078	0.010608
MT2283	2.691985	9.646032	6.432707	8.148919	2.86E-06	MT2651	-1.30489	9.043282	-3.15433	-2.03178	0.01061
MT0562	2.431612	9.967098	6.42485	8.12266	2.91E-06	MT0160	-1.31777	8.626007	-3.15271	-2.03596	0.010649
MT3390	2.218701	9.12797	6.420929	8.109556	2.92E-06	MT2529	-0.80656	8.925625	-3.15187	-2.03814	0.010664
MT1911	2.343505	9.798416	6.370214	7.940085	3.44E-06	MT1462	-0.99748	10.68207	-3.15119	-2.03991	0.010675
MT2533	2.372838	9.213987	6.365267	7.923557	3.46E-06	MT3982	-1.03661	9.206681	-3.14985	-2.04335	0.0107
MT2871	3.316175	8.953684	6.362296	7.913629	3.46E-06	MT0459	-0.96793	9.64771	-3.14973	-2.04368	0.0107
MT0812	2.045944	9.956473	6.353216	7.883295	3.54E-06	MT1100	-0.75795	8.958526	-3.14923	-2.04497	0.010701
MT0756	2.191243	9.78721	6.32182	7.778412	3.90E-06	MT3077	-1.12138	8.655968	-3.14906	-2.04541	0.010701
MT4013	2.646263	9.365195	6.309824	7.738342	4.03E-06	MT1291	-1.55453	9.506953	-3.14626	-2.05262	0.010775
MT3541	2.125994	9.813008	6.304556	7.720746	4.06E-06	MT1874	-1.17068	9.079165	-3.14181	-2.06413	0.010901
MT1622.1	-2.93905	9.967141	-6.29985	7.705033	4.07E-06	MT1116	1.204119	8.330407	3.139373	-2.07041	0.010961
MT2805	2.551134	9.345105	6.29816	7.699384	4.07E-06	MT0361	-1.19862	9.636743	-3.13911	-2.0711	0.010961
MT2093	2.545845	9.291977	6.291033	7.675582	4.12E-06	MT3704	1.376027	10.3232	3.138913	-2.0716	0.010961
MT2422	2.060581	9.770906	6.288988	7.668753	4.12E-06	MT3861	0.88819	9.545056	3.137728	-2.07465	0.010987
MT3280	-2.35357	9.805526	-6.27714	7.629178	4.25E-06	MT3604	-1.06104	9.172394	-3.13473	-2.08238	0.01107
MT2903	1.98237	9.28207	6.244395	7.519858	4.72E-06	MT1345	-0.95784	9.037919	-3.13418	-2.08379	0.011077
MT1896	2.049398	10.07264	6.203349	7.382852	5.39E-06	MT1800	-0.94286	9.142262	-3.13293	-2.08703	0.011099
MT0195	2.259374	9.468882	6.199668	7.370569	5.41E-06	MT1397	-1.42162	9.431319	-3.13274	-2.08752	0.011099
MT1157.1	2.423916	10.09228	6.185627	7.323718	5.63E-06	MT1787	1.26204	8.886616	3.132527	-2.08806	0.011099
MT2705	2.203798	9.269809	6.166789	7.26087	5.96E-06	MT2598	1.342618	10.01279	3.129093	-2.0969	0.011196
MT1682	1.947269	9.191608	6.153864	7.217758	6.17E-06	MT1558	-1.01667	9.224583	-3.12753	-2.10093	0.011236
MT0405	2.203381	9.151958	6.139182	7.168788	6.44E-06	MT3334	1.366823	8.941845	3.127021	-2.10223	0.011242
MT0558	2.835549	9.154991	6.132062	7.145048	6.54E-06	MT2817	0.913499	10.20731	3.124387	-2.10901	0.011315
MT3449.1	3.566044	9.355908	6.113282	7.082431	6.92E-06	MT0013	0.904545	9.601281	3.122629	-2.11353	0.01136
MT3093	3.311348	9.080372	6.107422	7.062895	7.00E-06	MT2552	0.988368	10.07125	3.122171	-2.1147	0.011365
MT2310	2.914395	9.41082	6.09108	7.008423	7.34E-06	MT3733	-1.0754	9.298077	-3.11931	-2.12206	0.011446
MT0830	1.960652	9.340833	6.083704	6.983841	7.47E-06	MT3544	1.261775	8.297021	3.118652	-2.12375	0.011457
MT1678	2.627441	9.908956	6.080652	6.973668	7.48E-06	MT2370.3	-0.79903	9.032003	-3.11753	-2.12662	0.011483
MT3944	2.149247	9.452575	6.065332	6.922622	7.82E-06	MT2545	-1.53991	9.619012	-3.11658	-2.12907	0.011503
MT1897	1.984108	9.403025	6.06277	6.914085	7.83E-06	MT0821	0.969106	9.049119	3.114897	-2.13339	0.011537
MT3804	2.69966	10.21281	6.005386	6.722985	9.47E-06	MT2781	1.320678	9.004156	3.114896	-2.13339	0.011537
MT1778	1.750183	9.861855	6.001705	6.710732	9.51E-06	MT2995	-0.87508	9.465026	-3.11363	-2.13663	0.011568
MT2935	2.189357	10.25278	5.998702	6.700737	9.53E-06	MT2063	-1.01465	9.867178	-3.11154	-2.14199	0.011625
MT0228	1.765891	9.496754	5.991986	6.678382	9.63E-06	MT3059	0.965289	8.630035	3.111161	-2.14297	0.011628
MT2437	2.838575	9.258056	5.991223	6.675845	9.63E-06	MT0793	-1.01877	9.516818	-3.10924	-2.14789	0.01168
MT3937	2.899161	9.057041	5.985146	6.65562	9.67E-06	MT3238	1.1185	8.989528	3.108915	-2.14873	0.01168
MT1468	3.309374	9.171606	5.984041	6.651944	9.67E-06	MT3826	-1.11336	9.590359	-3.10765	-2.15198	0.011711
MT0854.1	2.340062	9.413646	5.981587	6.643778	9.67E-06	MT1876	0.903023	9.182339	3.106573	-2.15473	0.011733
MT2161	2.635104	8.809243	5.978625	6.63392	9.67E-06	MT3015	1.255536	9.406719	3.106371	-2.15525	0.011733
MT2783	2.189342	9.302012	5.978514	6.633552	9.67E-06	MT2127	-0.85085	9.190324	-3.10543	-2.15767	0.011748
MT3062	1.958523	9.393364	5.948362	6.533251	1.06E-05	MT1572	-0.79458	9.525421	-3.10529	-2.15803	0.011748
MT1321	2.203885	9.318785	5.946387	6.526684	1.06E-05	MT3081	1.039659	9.032627	3.102958	-2.16399	0.011814
MT0030.1	1.616252	9.44165	5.944215	6.519462	1.06E-05	MT2550	-1.1123	9.271159	-3.10096	-2.16911	0.011858
MT0513	2.592659	9.220351	5.932058	6.47904	1.10E-05	MT1953	-1.08925	9.808964	-3.10074	-2.16966	0.011858
MT1132	1.660392	10.10371	5.924402	6.453587	1.12E-05	MT0173	-1.06046	8.760685	-3.10067	-2.16985	0.011858
MT3573.11	2.824174	9.26155	5.922049	6.445766	1.12E-05	MT2406	1.400848	9.273448	3.100309	-2.17077	0.01186
MT0807	2.123218	9.259638	5.917344	6.430124	1.13E-05	MT2336	1.095834	10.11803	3.09873	-2.17481	0.011902

MT3052.1	2.422287	9.510908	5.911916	6.412087	1.15E-05	MT1183	-1.19911	9.640121	-3.09749	-2.17799	0.011933
MT1497.1	2.407112	9.024522	5.90261	6.381161	1.18E-05	MT0630	1.161242	8.979519	3.094981	-2.1844	0.012006
MT3396	1.994289	9.033961	5.870764	6.275373	1.30E-05	MT2876	-0.85358	9.038197	-3.09381	-2.18738	0.012035
MT0416	-1.8157	9.700043	-5.86843	6.267639	1.30E-05	MT3169	1.728631	9.669548	3.09322	-2.1889	0.012044
MT1556	-1.90923	9.700317	-5.86326	6.250463	1.32E-05	MT3276	-0.98905	9.006317	-3.0924	-2.191	0.012061
MT0924	1.839578	9.760151	5.854946	6.222855	1.35E-05	MT1744	1.032369	9.252252	3.091418	-2.1935	0.012075
MT1208	1.756922	9.519268	5.836457	6.161488	1.43E-05	MT1904	-0.86543	9.048351	-3.09136	-2.19364	0.012075
MT4040	-2.26857	10.31494	-5.83386	6.152864	1.43E-05	MT0254	1.163118	10.50974	3.09007	-2.19694	0.012103
MT3958	-1.68664	9.715324	-5.82702	6.130177	1.45E-05	MT3138	-0.86103	9.028547	-3.08992	-2.19731	0.012103
MT0506	-1.82022	9.642873	-5.8183	6.101236	1.49E-05	MT1152	0.91193	9.705123	3.087162	-2.20436	0.012186
MT3210	-2.4231	9.705103	-5.80878	6.069684	1.53E-05	MT3896	1.169273	8.948862	3.082883	-2.21528	0.012311
MT3725	2.009043	9.092154	5.781599	5.979554	1.67E-05	MT2882	-1.00705	9.986729	-3.08285	-2.21535	0.012311
MT0613	2.487214	9.149062	5.76818	5.935086	1.72E-05	MT2170	0.782316	9.509047	3.082111	-2.21725	0.012326
MT1010	1.823803	9.28609	5.766022	5.927938	1.72E-05	MT2535	-1.17643	9.299832	-3.0795	-2.22389	0.012405
MT2914	2.655974	8.910726	5.765902	5.927539	1.72E-05	MT1929	-1.19109	9.406473	-3.07755	-2.22888	0.012462
MT3762	1.995992	9.332233	5.762816	5.917314	1.72E-05	MT2682	1.001247	8.977207	3.076789	-2.2308	0.012478
MT2512	1.958184	10.21013	5.762002	5.914618	1.72E-05	MT3076	1.23349	8.311497	3.073063	-2.24029	0.012597
MT0208	-2.00908	9.724516	-5.74562	5.860352	1.81E-05	MT0549	1.000558	10.23729	3.071135	-2.24519	0.012654
MT2543	1.787155	9.653773	5.743871	5.854566	1.81E-05	MT3141	-1.17964	9.080095	-3.07035	-2.24719	0.012671
MT3684	1.915834	9.635948	5.691912	5.68262	2.15E-05	MT0383	1.057175	8.990524	3.068092	-2.25293	0.012733
MT1952	2.330549	8.849538	5.681975	5.649765	2.22E-05	MT0600	-0.98578	9.288009	-3.06796	-2.25327	0.012733
MT2624	1.604291	9.628919	5.679336	5.641039	2.22E-05	MT2773	-0.84226	9.17755	-3.06591	-2.25848	0.012784
MT3166	2.28226	9.738598	5.667189	5.600889	2.30E-05	MT1349	0.891156	9.670233	3.065891	-2.25852	0.012784
MT0184	1.870349	9.671332	5.661826	5.583165	2.33E-05	MT2090	1.074219	9.497744	3.064712	-2.26151	0.012815
MT0424	2.787618	9.779019	5.644005	5.524294	2.46E-05	MT3858	-1.08256	8.582003	-3.06411	-2.26304	0.012826
MT2767	1.728088	9.621105	5.63712	5.501557	2.51E-05	MT3595	-0.82882	8.884976	-3.06335	-2.26497	0.012842
MT0046	2.539972	9.260644	5.610045	5.412189	2.73E-05	MT1842	-0.94575	9.459573	-3.06229	-2.26766	0.012869
MT3103	2.026838	9.650326	5.602491	5.387264	2.79E-05	MT0720	-1.13303	9.499713	-3.05986	-2.27383	0.012942
MT1107	1.911531	9.187624	5.599113	5.376121	2.80E-05	MT0842	-0.9319	9.594323	-3.05941	-2.27498	0.012942
MT2630	2.266393	9.258506	5.594222	5.359992	2.82E-05	MT2166	-1.02016	9.523903	-3.05927	-2.27533	0.012942
MT1567	1.727649	10.16336	5.594202	5.359925	2.82E-05	MT1334	0.856065	9.24842	3.058972	-2.27608	0.012942
MT0349	2.192162	9.45258	5.581252	5.317224	2.93E-05	MT0700	1.049592	8.870818	3.0587	-2.27677	0.012942
MT3066	2.114634	9.470884	5.574557	5.295157	2.98E-05	MT1253	1.023741	9.015757	3.057558	-2.27967	0.012972
MT3404	2.278229	9.290046	5.568764	5.276066	3.02E-05	MT3978	-0.8585	9.464067	-3.05636	-2.28271	0.013005
MT1548	2.719289	9.253878	5.564863	5.26321	3.04E-05	MT1376.1	-1.26675	8.941681	-3.05364	-2.28959	0.013092
MT1912	2.097193	9.399777	5.563471	5.258622	3.04E-05	MT3931	1.053793	9.430133	3.052717	-2.29194	0.013109
MT3534	2.149395	9.103519	5.559064	5.244102	3.05E-05	MT1475	-0.83222	9.012491	-3.05256	-2.29232	0.013109
MT0893	2.150188	9.294581	5.557859	5.240133	3.05E-05	MT0530	1.033743	9.883474	3.051709	-2.29449	0.013129
MT3325	2.440412	8.297534	5.557709	5.239641	3.05E-05	MT0409	0.909292	9.002494	3.051204	-2.29577	0.013136
MT1540	1.777072	8.874086	5.547028	5.20446	3.14E-05	MT2580	-0.84076	9.34011	-3.05	-2.29882	0.013169
MT3196	1.792075	9.69602	5.543776	5.193752	3.16E-05	MT3529	1.137998	9.076599	3.046278	-2.30823	0.013294
MT2242	-1.549	9.548767	-5.53074	5.15082	3.29E-05	MT2798	0.846147	9.305588	3.045724	-2.30963	0.013303
MT3860	1.733815	9.694792	5.5197	5.114504	3.40E-05	MT0843	0.878436	9.193172	3.043723	-2.3147	0.013365
MT3095	2.303027	10.03978	5.516989	5.105586	3.41E-05	MT3300	0.910282	9.679795	3.042157	-2.31865	0.013412
MT2270	2.513071	9.069433	5.507394	5.074022	3.47E-05	MT1269	-0.82141	9.672425	-3.03971	-2.32485	0.013492
MT1866	2.133964	9.287048	5.507056	5.072912	3.47E-05	MT2309	0.965724	9.32365	3.038899	-2.32689	0.013498
MT3279	-2.15265	9.47761	-5.50705	5.072878	3.47E-05	MT0940	1.01333	9.098535	3.038813	-2.3271	0.013498
MT3691	1.99933	10.12205	5.502735	5.0587	3.49E-05	MT2444	-0.88039	9.46491	-3.03863	-2.32756	0.013498
MT1991	1.935404	9.244678	5.502435	5.057713	3.49E-05	MT0785	-0.90646	9.43901	-3.03762	-2.33011	0.013524
MT2869	3.00935	9.455537	5.49981	5.049083	3.49E-05	MT3933	-1.01831	9.968079	-3.03633	-2.33336	0.013561
MT2628	2.65416	9.751244	5.499234	5.047189	3.49E-05	MT2714	1.321256	9.094708	3.03507	-2.33655	0.013588
MT2597	1.67009	9.702978	5.488104	5.010599	3.60E-05	MT2595	-1.0789	9.962649	-3.03477	-2.33731	0.013588
MT3160	2.495916	8.949645	5.485265	5.001268	3.62E-05	MT1447	1.299925	8.252419	3.034709	-2.33746	0.013588
MT3666	2.283567	8.417146	5.472516	4.959378	3.76E-05	MT1758	1.486422	8.45113	3.03399	-2.33927	0.013604
MT3124	2.262796	9.409051	5.460552	4.920086	3.90E-05	MT2020	1.083044	8.840423	3.031607	-2.34528	0.013682
MT2665	1.881599	9.380539	5.458685	4.913955	3.90E-05	MT1223	1.050314	9.175488	3.029095	-2.35162	0.013766
MT2100	-1.90132	10.34238	-5.45032	4.886495	4.00E-05	MT2758	-1.12403	10.35943	-3.02784	-2.35478	0.013802
MT1561	-1.93318	9.571069	-5.44617	4.872888	4.03E-05	MT2699	-0.83777	9.300134	-3.02652	-2.35811	0.013841
MT2142	1.748952	9.815563	5.443709	4.864796	4.05E-05	MT3756.3	1.563984	8.222981	3.025265	-2.36127	0.013877
MT1297.1	2.078503	9.111971	5.439928	4.85239	4.08E-05	MT2103	-0.84977	9.508806	-3.0248	-2.36243	0.013884
MT3442	1.805019	9.639428	5.436229	4.840254	4.11E-05	MT1864	0.83944	9.512481	3.02404	-2.36435	0.013901
MT1605	-1.66987	9.545465	-5.4346	4.834907	4.11E-05	MT3803	1.233881	8.71178	3.023203	-2.36646	0.013916
MT1986	2.295596	9.04868	5.427967	4.813152	4.18E-05	MT2780	-0.73172	8.775598	-3.02305	-2.36683	0.013916
MT2382	-2.00008	9.431028	-5.42348	4.798449	4.23E-05	MT2122	1.318329	8.46227	3.019166	-2.37661	0.014054
MT2784	2.040404	9.0023	5.421011	4.79034	4.24E-05	MT0624	-1.23857	10.26695	-3.01739	-2.38108	0.014111
MT0896	2.292359	9.544315	5.420007	4.787047	4.24E-05	MT4033	-0.92545	9.644394	-3.01598	-2.38463	0.014155
MT2654	2.642805	8.994125	5.418576	4.782356	4.24E-05	MT3080.1	1.056259	9.115879	3.013996	-2.3896	0.014214
MT0691	1.600928	8.883195	5.416674	4.77612	4.24E-05	MT0936	-0.97567	9.558946	-3.01385	-2.38998	0.014214
MT2471	1.673852	9.604222	5.413893	4.767001	4.26E-05	MT1051	-1.04125	8.829963	-3.01145	-2.396	0.014295
MT0758	2.101013	8.998477	5.409838	4.75371	4.30E-05	MT4014	1.299561	8.299705	3.011201	-2.39662	0.014295
MT3051	2.228436	9.166236	5.393027	4.698628	4.51E-05	MT0721	-1.19154	9.105281	-3.01051	-2.39836	0.01431
MT0488	-2.09285	9.977866	-5.3929	4.6982	4.51E-05	MT3900	0.792704	9.638331	3.009928	-2.39982	0.014321
MT1317	1.944534	9.419164	5.384199	4.669717	4.63E-05	MT2145	0.928022	8.571352	3.009212	-2.40161	0.014327
MT0205	-1.75879	9.77179	-5.37021	4.623933	4.83E-05	MT2589	-0.82637	9.02956	-3.00919	-2.40166	0.014327
MT2879	1.939567	9.132895	5.36741	4.614761	4.85E-05	MT3985	-0.8071	9.333822	-3.00753	-2.40584	0.014381
MT3309	2.320531	9.672346	5.358939	4.587044	4.96E-05	MT1622	1.237474	8.245286	3.006808	-2.40764	0.014397
MT3748	1.684156	9.241669	5.358169	4.584526	4.96E-05	MT1609	0.887283	9.58546	3.006373	-2.40874	0.014403
MT0668	1.971449	9.54543	5.355979	4.577362	4.96E-05	MT0669.1	-1.09271	8.662254	-3.00559	-2.4107	0.014422
MT1907	2.052298	9.361448	5.355256	4.574998	4.96E-05	MT3505	-0.9073	9.114628	-3.00488	-2.41248	0.014438
MT0185	-1.84757	10.1918	-5.35457	4.572753	4.96E-05	MT0851	1.119673	8.597443	3.000419	-2.42365	0.014604
MT2870	1.944664	9.141987	5.351999	4.564346	4.98E-05	MT2419	1.084965	9.513232	2.999174	-2.42677	0.014642
MT1096	2.02707	8.700538	5.33907	4.522073	5.17E-05	MT3994	1.24564	8.144199	2.99833	-2.42888	0.014656
MT0536	2.026756	9.492131	5.337953	4.518425	5.17E-05	MT2808.1	1.41727	8.41635	2.998239	-2.42911	0.014656
MT3353	2.811862	8.870292	5.33682	4.514719	5.17E-05	MT1027	-0.7807	9.536214	-2.99588	-2.43502	0.014734
MT3185	-1.63411	9.440802	-5.32273	4.468687	5.40E-05	MT0348	-0.84827	9.224241	-2.9957	-2.43547	0.014734
MT3957	-1.57647	9.600729	-5.29371	4.37396	5.93E-05	MT3617	-1.20478	8.599602	-2.99495	-2.43735	0.014753
MT3454	-1.64493	9.661904	-5.28966	4.360734	5.99E-05	MT3401	1.241114	9.438215	2.993626	-2.44065	0.014777
MT1226	1.851958	9.159838	5.288492	4.356924	5.99E-05	MT2367.1	-1.21611	9.307677	-2.99332	-2.44142	0.014777
MT2554.1	-1.9769	10.01123	-5.28697	4.35196	5.99E-05	MT0103	-1.71744	10.35034	-2.99322	-2.44167	0.014777
MT0512	2.313531	8.745345	5.282471	4.337286	6.06E-05	MT3820	-0.79743	9.226267	-2.99278	-2.44278	0.014777
MT1940	1.693632	10.38567	5.27938	4.327207	6.07E-05	MT0703	1.329771	8.50177	2.992711	-2.44294	0.014777
MT2397	-1.61946	9.31357	-5.27933	4.327044	6.07E-05	MT2487	1.128186	9.639087	2.992571	-2.44329	0.014777
MT0702	1.793823	8.897244	5.276901	4.319125	6.09E-05	MT0291.4	1.568765	8.875311	2.991171	-2.44679	0.014822
MT1511	1.509863	10.07881	5.260977	4.267228	6.40E-05	MT0902	0.938447	8.838175	2.989926	-2.4499	0.014861
MT2263	2.230436	8.944733	5.259409	4.262119	6.41E-05	MT3893	-0.84497	9.301335	-2.98779	-2.45523	0.014936
MT3706	2.388671	8.783033	5.25588	4.250622	6.46E-05	MT0599	-0.86917	9.127508	-2.9842	-2.46419	0.015071
MT1024	1.670032	9.375691	5.252168	4.238531	6.51E-05	MT3011	-0.84683	9.928756	-2.98336	-2.46629	0.015094
MT3258	-1.82752	9.753391	-5.24339	4.20995	6.68E-05	MT1316	1.292595	8.061864	2.982254	-2.46905	0.015127

MT0635	1.829041	9.732735	5.225329	4.151177	7.05E-05	MT3262	-0.7548	9.115805	-2.98119	-2.47171	0.015159
MT0141	1.977888	9.280068	5.225166	4.150647	7.05E-05	MT0077	-1.07945	9.442681	-2.97822	-2.47911	0.015271
MT1905	1.515807	9.450002	5.222909	4.143306	7.07E-05	MT2793	1.031514	8.696843	2.977496	-2.48091	0.015289
MT1070.1	1.836273	9.370801	5.21757	4.125943	7.17E-05	MT2477	1.410959	8.444585	2.977108	-2.48188	0.015293
MT1981	1.912651	9.464223	5.216623	4.122864	7.17E-05	MT3149.1	0.867955	9.399311	2.973238	-2.49151	0.015442
MT1286	2.209919	9.632831	5.206682	4.090546	7.38E-05	MT0814	-1.29732	9.175135	-2.97295	-2.49222	0.015442
MT2147	2.152906	9.434651	5.204266	4.082697	7.41E-05	MT1312.1	-0.95213	9.114575	-2.97262	-2.49306	0.015444
MT3395	1.928659	9.011533	5.202897	4.078245	7.42E-05	MT3965	-0.9182	9.403663	-2.97099	-2.4971	0.0155
MT1966	-1.91742	9.871522	-5.19544	4.054025	7.57E-05	MT2115	1.032333	9.177833	2.968292	-2.50382	0.015603
MT0762	1.814882	10.1072	5.192557	4.044654	7.62E-05	MT0880	-0.90858	8.7668	-2.96682	-2.50747	0.015653
MT0031	-1.83443	9.840762	-5.18727	4.0275	7.72E-05	MT1916	0.998559	9.728304	2.965139	-2.51165	0.015712
MT0768.1	2.72753	8.849997	5.18623	4.024107	7.72E-05	MT2680	1.122487	8.661358	2.961927	-2.51963	0.015838
MT1083.2	-1.49827	9.622093	-5.18453	4.018579	7.73E-05	MT0316	1.358981	8.663395	2.961425	-2.52088	0.015847
MT2778	1.360127	9.814631	5.182317	4.011404	7.76E-05	MT0662	1.041527	9.198907	2.960836	-2.52234	0.015858
MT3569	1.48935	9.594068	5.177737	3.996536	7.85E-05	MT2085	-0.86765	8.955281	-2.96059	-2.52295	0.015858
MT1814	-2.01773	10.20337	-5.16641	3.959784	8.13E-05	MT1138	0.91481	9.596073	2.958916	-2.5271	0.015918
MT1427	2.497952	9.285747	5.165066	3.955422	8.13E-05	MT3641	1.365543	8.757457	2.958114	-2.52909	0.01594
MT2542	1.42623	9.912597	5.156253	3.926843	8.33E-05	MT0360	0.787188	9.652758	2.956998	-2.53186	0.015976
MT1887	1.903421	8.717936	5.15568	3.924983	8.33E-05	MT3130	-1.1735	9.771713	-2.95642	-2.53329	0.015984
MT0064	-1.81373	9.712931	-5.14926	3.904169	8.48E-05	MT1151	-1.09171	8.969028	-2.95622	-2.53379	0.015984
MT0190	-1.81386	9.654385	-5.1467	3.895878	8.52E-05	MT0350	1.19424	8.807694	2.953362	-2.54087	0.016096
MT1168	1.741511	9.795454	5.141906	3.880338	8.59E-05	MT2703	-1.08904	9.35984	-2.95284	-2.54216	0.016106
MT3025	-1.73287	9.817972	-5.14189	3.880296	8.59E-05	MT1771	-0.78284	9.137941	-2.95233	-2.54342	0.016116
MT2902	1.772037	9.376613	5.139929	3.873935	8.61E-05	MT1392	1.083596	9.182832	2.950792	-2.54724	0.016171
MT3302	1.704033	9.798787	5.136919	3.864183	8.64E-05	MT0571	1.092499	8.96101	2.949218	-2.55113	0.016227
MT1075.1	-2.59785	10.44967	-5.13656	3.863029	8.64E-05	MT3277	-0.97309	9.24444	-2.94532	-2.56077	0.016387
MT1333	2.532982	9.223712	5.128454	3.836768	8.85E-05	MT1205	-0.83024	9.326862	-2.94483	-2.56199	0.016396
MT1635	2.184136	9.377812	5.121482	3.814198	9.03E-05	MT1669	1.255654	10.47317	2.943828	-2.56447	0.016428
MT3576	1.221096	9.418142	5.115574	3.795078	9.18E-05	MT0359	-0.81104	9.260752	-2.94112	-2.57115	0.016536
MT3171	1.878965	9.048424	5.113914	3.789706	9.19E-05	MT1881	-0.8707	9.448359	-2.93847	-2.5777	0.016643
MT3523	1.800754	9.756478	5.108135	3.77101	9.34E-05	MT0156	-1.0576	9.488013	-2.93784	-2.57927	0.016658
MT3767.3	-1.62365	9.609612	-5.10709	3.767617	9.34E-05	MT0363	-0.80811	9.078702	-2.93714	-2.58099	0.016677
MT2393	-1.75663	9.750252	-5.10161	3.749904	9.45E-05	MT0181	1.005394	8.885814	2.936839	-2.58173	0.016677
MT2106	1.813086	9.699626	5.101388	3.749189	9.45E-05	MT0076	-1.14277	10.11413	-2.93602	-2.58375	0.016679
MT2338	-2.1547	9.541813	-5.09198	3.718768	9.71E-05	MT3586	0.962405	9.395258	2.93599	-2.58383	0.016679
MT3697	2.340527	9.56015	5.091232	3.716356	9.71E-05	MT3974	0.984938	9.05503	2.935926	-2.58399	0.016679
MT1645	2.028328	9.060418	5.083455	3.691227	9.93E-05	MT0329	1.357201	8.118951	2.934961	-2.58637	0.01671
MT2374	-1.36673	10.07953	-5.07926	3.67768	0.0001	MT2232	-0.70738	8.793459	-2.93338	-2.59026	0.016769
MT0132	2.317963	10.2885	5.077578	3.672243	0.000101	MT0977	-0.85957	9.36344	-2.93261	-2.59215	0.01679
MT2683	1.641401	9.218411	5.075848	3.666658	0.000101	MT2365.1	0.715203	10.07191	2.929579	-2.59964	0.016914
MT1555	-1.82389	9.719702	-5.07426	3.661545	0.000101	MT2231	-0.86284	9.400178	-2.92923	-2.6005	0.016914
MT2036	2.115745	8.627336	5.056153	3.603087	0.000107	MT1086	-0.88531	9.00342	-2.92906	-2.60092	0.016914
MT3736	-2.30916	10.21076	-5.05358	3.594783	0.000107	MT0601	-0.89379	8.617681	-2.9287	-2.6018	0.016917
MT2139	1.647471	9.481103	5.051257	3.587296	0.000108	MT1838.1	1.091267	9.138	2.925678	-2.60925	0.017043
MT2582	-2.01458	9.728471	-5.02589	3.505547	0.000117	MT0460	-0.81192	9.549218	-2.92398	-2.61343	0.017108
MT2670	2.093232	9.630314	5.023874	3.499048	0.000117	MT1604	-1.11022	9.256733	-2.9213	-2.62002	0.017219
MT1396	-1.68972	9.520627	-5.019	3.483351	0.000119	MT2330	1.144199	8.504652	2.920915	-2.62096	0.017223
MT0475	1.818982	9.996261	5.016423	3.475056	0.00012	MT3766	-0.81246	9.663672	-2.92065	-2.62162	0.017223
MT2217	1.926064	8.644846	5.011198	3.458237	0.000121	MT1602	-0.82503	9.351932	-2.91955	-2.62431	0.01726
MT0555	1.74794	9.908035	5.009793	3.453717	0.000121	MT3675	0.739085	9.195321	2.917799	-2.62863	0.017329
MT3542	2.083728	8.390734	5.008069	3.448171	0.000122	MT2578	-1.04131	9.391953	-2.91341	-2.6394	0.017522
MT2125	1.877288	8.505398	5.006489	3.443087	0.000122	MT1344	-0.85433	9.344524	-2.91116	-2.64492	0.017615
MT1025	1.493021	9.076375	4.996118	3.40973	0.000126	MT1579	-0.96429	9.613398	-2.91088	-2.64562	0.017615
MT1229	2.331442	8.68847	4.988827	3.38629	0.000128	MT1936	-0.86342	9.372378	-2.90935	-2.64936	0.017674
MT0218	1.90933	9.374531	4.987076	3.380664	0.000128	MT3024	-0.80542	9.64444	-2.90754	-2.6538	0.017747
MT0560	1.961781	9.533873	4.98702	3.380482	0.000128	MT0244	0.720072	9.176649	2.906638	-2.65602	0.017777
MT2803.2	1.925057	9.140444	4.977967	3.351394	0.000132	MT3417	0.878942	9.592926	2.904509	-2.66123	0.017866
MT0921	1.78878	9.259171	4.973303	3.336415	0.000134	MT1221	-0.82729	8.811501	-2.90408	-2.66228	0.017872
MT1857	1.68233	9.703584	4.971384	3.330253	0.000134	MT3379	-0.82188	8.847394	-2.9028	-2.66541	0.017916
MT3486	-1.63257	10.03075	-4.9613	3.297888	0.000138	MT1479.1	-0.92337	8.983804	-2.90246	-2.66625	0.017916
MT1459	-1.64807	9.650183	-4.96088	3.296526	0.000138	MT1523	-0.83588	9.223696	-2.90232	-2.66659	0.017916
MT3708	2.597546	9.182737	4.956722	3.283194	0.000139	MT2467	1.367863	10.02444	2.901682	-2.66816	0.017933
MT2856	1.474431	9.422164	4.949025	3.258504	0.000142	MT0302	0.990269	9.897228	2.89727	-2.67895	0.018126
MT3573.2	1.809739	9.035956	4.948472	3.256733	0.000142	MT0135	1.070976	9.015673	2.897155	-2.67923	0.018126
MT3231	1.492382	9.226953	4.947587	3.253894	0.000142	MT0149	1.188954	8.702287	2.895227	-2.68395	0.018206
MT1332	1.34132	9.4729	4.947201	3.252657	0.000142	MT1061	-0.79789	9.368891	-2.89448	-2.68578	0.018229
MT1957	-1.29219	9.62515	-4.94714	3.25245	0.000142	MT0113	-0.77435	9.30465	-2.89383	-2.68736	0.018243
MT1908	2.039019	8.727304	4.941631	3.234797	0.000143	MT0240	-0.90987	9.33885	-2.89363	-2.68784	0.018243
MT3970	-1.61476	9.581879	-4.94142	3.23413	0.000143	MT1925	-0.89216	9.271428	-2.89257	-2.69045	0.018281
MT3752	2.499324	8.587373	4.930484	3.199079	0.000148	MT3882	-1.05942	9.842211	-2.88985	-2.69708	0.018388
MT1556.1	1.60801	9.978553	4.921978	3.171837	0.000152	MT1589	1.023956	9.254859	2.889837	-2.69711	0.018388
MT2593.2	-1.32319	9.894557	-4.9184	3.160386	0.000153	MT0319	0.950259	8.907144	2.889401	-2.69818	0.018395
MT1375	1.953474	9.158588	4.91389	3.145947	0.000155	MT0989	-0.76904	8.792162	-2.88885	-2.69951	0.018409
MT1117	2.21786	9.170315	4.912307	3.140884	0.000155	MT1338	0.890026	9.428436	2.888528	-2.70031	0.018411
MT3128	-1.91985	9.824787	-4.90739	3.125164	0.000158	MT2072	-0.98449	9.335883	-2.88639	-2.70553	0.018503
MT0930	1.589654	9.740111	4.902871	3.110698	0.000159	MT3285	1.085936	10.50236	2.883717	-2.71204	0.018622
MT1387	1.370931	9.611323	4.899364	3.099481	0.00016	MT1309	-1.11463	9.217838	-2.88186	-2.71657	0.018701
MT3954.1	-1.95645	9.674506	-4.89903	3.098429	0.00016	MT3047	-0.81926	8.485875	-2.88108	-2.71848	0.018726
MT3099	-1.79735	9.770333	-4.89876	3.097555	0.00016	MT3041.1	0.902266	9.127012	2.880717	-2.71935	0.01873
MT0782	1.362304	9.548094	4.895929	3.088502	0.000161	MT0539	-1.06635	9.389456	-2.87997	-2.72117	0.018742
MT1274	1.725106	9.911184	4.895008	3.085557	0.000161	MT0312	-1.10495	8.108273	-2.87993	-2.72127	0.018742
MT0003	-1.73919	10.04218	-4.89324	3.079921	0.000162	MT3573.12	0.866487	8.879679	2.878881	-2.72382	0.018769
MT2862	1.612613	9.198861	4.879662	3.036525	0.000168	MT1880	0.914691	9.957432	2.878823	-2.72396	0.018769
MT2925	1.783498	9.406849	4.877859	3.030768	0.000169	MT0431	-0.74659	8.952282	-2.87723	-2.72783	0.018835
MT3539	2.035206	8.853472	4.877182	3.028606	0.000169	MT3382	-0.89255	9.093041	-2.87504	-2.73318	0.018932
MT2260	1.839896	9.520884	4.87563	3.02365	0.000169	MT2559	0.872516	9.146938	2.874203	-2.73521	0.01896
MT1634	1.801594	9.244396	4.869646	3.00455	0.000172	MT0922	0.828268	8.931459	2.87357	-2.73675	0.018972
MT3805	2.30832	9.458891	4.862446	2.981574	0.000176	MT3731	-0.65798	10.13597	-2.87317	-2.73773	0.018972
MT0498	2.35615	8.496351	4.860355	2.974903	0.000176	MT0427	1.181229	8.413529	2.872946	-2.73827	0.018972
MT3989	2.029533	9.218211	4.856315	2.962019	0.000178	MT0442	-1.13252	8.837923	-2.87285	-2.7385	0.018972
MT1365	1.598212	9.268029	4.853795	2.953983	0.000179	MT1368	-0.84295	9.242357	-2.87203	-2.74048	0.018999
MT1809	1.736413	9.705319	4.853478	2.952973	0.000179	MT3411	-0.94437	9.091604	-2.87146	-2.74187	0.019014
MT2330.1	1.406407	9.437944	4.850114	2.94225	0.00018	MT0708	-0.84611	9.32802	-2.87109	-2.74277	0.019019
MT3275.1	-1.83654	9.739032	-4.84846	2.936963	0.000181	MT1352	0.862867	9.822155	2.868921	-2.74805	0.019116
MT1096.2	1.803199	9.824459	4.837906	2.90335	0.000186	MT0769	0.85384	9.256885	2.867759	-2.75087	0.019161
MT2906	1.900066	9.317977	4.837403	2.901747	0.000186	MT0688	-0.76473	9.404061	-2.86659	-2.75369	0.019206
MT0133	1.556532	8.929496	4.816748	2.836004	0.000199	MT3018	-0.96323	9.895444	-2.86573	-2.75581	0.019224
MT2991	2.233864	8.905088	4.814506	2.828874	0.000199	MT1290	-0.7611	9.054044	-2.86569	-2.7559	0.019224

MT1683	-1.53593	9.09316	-4.81406	2.827458	0.000199	MT2007	-0.79301	8.758573	-2.86482	-2.758	0.019255
MT2974	-1.55933	9.873931	-4.81381	2.826663	0.000199	MT2458	0.914585	9.632987	2.8632	-2.76193	0.019324
MT4040.1	-1.87386	9.496923	-4.8108	2.817078	0.000201	MT0081	-0.74604	9.072277	-2.86087	-2.76758	0.01943
MT3194.1	1.348953	9.462111	4.80789	2.807837	0.000202	MT3139.1	-0.9407	9.941499	-2.85891	-2.77233	0.019518
MT3964	-1.4757	9.614199	-4.8044	2.796744	0.000204	MT0323	-0.90083	9.262645	-2.85855	-2.7732	0.019522
MT4027	1.759399	9.614532	4.803654	2.794373	0.000204	MT0086	1.009229	8.880845	2.857445	-2.77588	0.019565
MT1186	1.641264	9.610031	4.794954	2.766731	0.000208	MT1193	1.293963	8.234604	2.853857	-2.78457	0.019725
MT3934	-1.80886	9.023711	-4.79371	2.762783	0.000208	MT2616	1.120394	8.666705	2.853853	-2.78458	0.019725
MT2852	1.99196	8.655994	4.793361	2.761673	0.000208	MT3042	-0.82921	9.444725	-2.85329	-2.78593	0.019735
MT1707	1.602532	9.229431	4.793258	2.761344	0.000208	MT1533	-0.98979	9.265967	-2.85311	-2.78637	0.019735
MT0264	-1.78182	9.430642	-4.7821	2.725918	0.000216	MT3647	-0.80635	9.272906	-2.85268	-2.78742	0.019743
MT1687	2.298272	8.564972	4.766911	2.677744	0.000226	MT3829	-0.78123	8.837178	-2.85143	-2.79045	0.019784
MT0270.1	1.721879	9.750205	4.764795	2.671033	0.000227	MT2258	-0.79537	9.061622	-2.85136	-2.79061	0.019784
MT0172	1.555403	9.766915	4.75605	2.643323	0.000233	MT3977	-0.77663	9.073268	-2.85034	-2.79307	0.01981
MT1585.1	1.796628	10.34485	4.75108	2.627581	0.000236	MT1115	1.188778	8.283405	2.850284	-2.79321	0.01981
MT0968.1	1.645409	9.460583	4.748831	2.620459	0.000237	MT1833	-1.03512	9.386949	-2.85002	-2.79385	0.01981
MT2828	1.589008	9.317476	4.74542	2.60966	0.00024	MT2400	-0.75822	9.141474	-2.84658	-2.80216	0.019978
MT4005	1.375767	9.016342	4.741748	2.598038	0.000242	MT3521	-0.66421	9.264238	-2.8456	-2.80453	0.020016
MT0088	1.422057	9.515129	4.740592	2.594378	0.000242	MT3566	-0.78593	9.323706	-2.84512	-2.80568	0.020021
MT2964	1.664055	8.973037	4.739339	2.590414	0.000242	MT3822	-0.83033	9.224056	-2.84481	-2.80644	0.020021
MT1917	-1.64482	8.954287	-4.73707	2.583231	0.000243	MT1853	0.854837	8.569591	2.844689	-2.80673	0.020021
MT1811	1.661154	9.976139	4.736811	2.582414	0.000243	MT3502	0.880436	9.054214	2.842658	-2.81164	0.020115
MT1851	2.581378	8.723927	4.732254	2.567998	0.000246	MT3183	-0.76182	9.300554	-2.84209	-2.813	0.02013
MT2605	2.005234	9.214194	4.726778	2.550685	0.00025	MT2588	-0.78267	9.124259	-2.84052	-2.81679	0.020199
MT0981	1.836296	9.310508	4.725735	2.547385	0.00025	MT0975	-0.8847	9.112326	-2.84025	-2.81744	0.020199
MT2194	1.78146	9.045959	4.724981	2.545004	0.00025	MT1694	1.109717	8.117658	2.838875	-2.82076	0.020259
MT1118	1.69747	8.887862	4.716735	2.518944	0.000256	MT0669	-1.01762	9.12413	-2.83814	-2.82254	0.020284
MT0505	-1.5406	8.939902	-4.712	2.503975	0.000259	MT3628	-1.12073	9.39079	-2.83767	-2.82367	0.020294
MT3550	1.942392	8.910462	4.707118	2.488572	0.000263	MT3932	-0.90251	9.184328	-2.83706	-2.82515	0.020313
MT1134	-1.84835	9.147682	-4.6985	2.461382	0.00027	MT1973	-0.64406	9.418451	-2.83628	-2.82702	0.02034
MT3487	-1.49304	9.558185	-4.68474	2.41799	0.000281	MT3772	-0.74755	8.808905	-2.83539	-2.82915	0.020373
MT1273	-1.75899	9.503738	-4.68457	2.417439	0.000281	MT3212	-0.99389	9.254426	-2.83294	-2.83507	0.020489
MT1600	1.435882	9.309388	4.678874	2.399491	0.000286	MT2365	-1.20909	10.18558	-2.83273	-2.83558	0.020489
MT0760	1.282938	9.35753	4.675968	2.390334	0.000288	MT2609	-1.06463	9.014001	-2.83195	-2.83745	0.020502
MT3522	1.768202	9.10633	4.673464	2.382448	0.000289	MT3715	-1.06434	9.25549	-2.83193	-2.83751	0.020502
MT2700	1.882779	9.813175	4.67268	2.379978	0.000289	MT3009	-0.95018	9.384839	-2.83034	-2.84133	0.020571
MT0194	1.586177	9.024282	4.671977	2.377765	0.000289	MT2980	-0.91066	8.770117	-2.83013	-2.84183	0.020571
MT1690	1.634273	8.991421	4.671482	2.376207	0.000289	MT1646	0.994674	9.183652	2.829451	-2.84346	0.020592
MT3235	1.634045	9.299851	4.670545	2.373255	0.000289	MT0202	1.170054	8.473203	2.829194	-2.84408	0.020592
MT3990	1.616546	9.183574	4.668216	2.365921	0.00029	MT0651	1.02357	8.857479	2.828657	-2.84537	0.020607
MT1498	1.725405	8.682064	4.659964	2.339951	0.000297	MT1526	0.876591	9.282518	2.82743	-2.84832	0.020659
MT0125	1.443483	9.568879	4.64889	2.305121	0.000308	MT1172	0.848016	9.444092	2.826444	-2.85069	0.020698
MT2327	1.509902	8.672065	4.647401	2.300441	0.000308	MT2052	0.852034	9.689843	2.825845	-2.85213	0.020716
MT0090	1.62497	9.570457	4.646533	2.297712	0.000309	MT1143.1	-0.96148	9.582864	-2.82516	-2.85378	0.020739
MT0311	1.822543	9.036096	4.644598	2.291632	0.00031	MT1466	1.082969	8.753055	2.824562	-2.85521	0.020757
MT1254	1.282609	9.873965	4.643503	2.288188	0.00031	MT0998	1.079171	9.189414	2.82415	-2.8562	0.020765
MT2340	-1.64377	9.091698	-4.64111	2.28067	0.000312	MT3346	-0.78604	8.841955	-2.82122	-2.86323	0.020912
MT1481	2.120328	10.00822	4.637887	2.270546	0.000314	MT3619	0.703824	9.5439	2.819038	-2.86848	0.021018
MT2949	-2.01091	9.808375	-4.63731	2.268747	0.000314	MT2229	0.707197	9.309223	2.816868	-2.87368	0.021124
MT2097	1.446209	9.582244	4.63396	2.25821	0.000317	MT3165	1.069177	8.828887	2.815661	-2.87658	0.021177
MT3693	1.543454	9.15109	4.62905	2.242796	0.00032	MT2254	0.919098	8.905806	2.813998	-2.88056	0.021255
MT0084	1.474241	9.939443	4.628842	2.242141	0.00032	MT0344	0.942	9.089375	2.813721	-2.88123	0.021255
MT3571	-1.3941	9.438402	-4.6246	2.228818	0.000324	MT2362	1.148119	8.818469	2.810376	-2.88924	0.02142
MT0357.1	1.522362	9.437825	4.623328	2.224838	0.000324	MT1080	-1.13658	8.661328	-2.81027	-2.88949	0.02142
MT1360	-2.15292	9.870626	-4.6228	2.223192	0.000324	MT4000	0.821767	9.138316	2.80988	-2.89043	0.021427
MT0440	1.866617	9.053438	4.622323	2.221683	0.000324	MT1346	-1.10459	10.01387	-2.8095	-2.89133	0.021433
MT3996	1.598372	9.010538	4.614271	2.196426	0.000332	MT0429	-0.65936	9.29972	-2.80778	-2.89545	0.021514
MT2314	1.327549	9.635981	4.601047	2.154984	0.000346	MT1708	0.771293	9.452416	2.807545	-2.89602	0.021514
MT1979	1.213559	9.45164	4.596725	2.141447	0.00035	MT3264	-0.97576	9.016627	-2.80639	-2.89877	0.021564
MT2499	1.704945	8.828676	4.592385	2.127859	0.000354	MT3418	0.694827	9.45323	2.800373	-2.91316	0.021892
MT0879	-1.4352	9.688513	-4.58245	2.096766	0.000365	MT3797	-0.95979	9.74791	-2.80015	-2.9137	0.021892
MT3445	2.179009	8.653314	4.578086	2.083124	0.000369	MT0546	1.141491	8.526684	2.799284	-2.91576	0.021926
MT1456	1.550364	9.459188	4.574945	2.073304	0.000372	MT3355	0.865283	9.449854	2.797529	-2.91995	0.021996
MT1310	1.44074	9.820152	4.571674	2.063081	0.000375	MT2326	1.020636	9.424467	2.79744	-2.92016	0.021996
MT3897	-1.58677	9.912383	-4.55884	2.02298	0.00039	MT0545	1.240935	8.406232	2.797268	-2.92058	0.021996
MT3407	1.593801	9.313873	4.55761	2.019151	0.000391	MT3041	-1.01886	9.227139	-2.79682	-2.92164	0.022007
MT2802.1	1.648386	9.287343	4.550721	1.997651	0.000399	MT3385	0.866045	9.375689	2.795186	-2.92554	0.022076
MT3960	-1.47367	9.984166	-4.54339	1.974779	0.000407	MT0499	1.067226	8.756051	2.795092	-2.92577	0.022076
MT2315	1.796488	9.106916	4.54308	1.973817	0.000407	MT2946	0.913976	9.333141	2.79296	-2.93085	0.022185
MT3517	1.669519	9.099467	4.541593	1.969181	0.000408	MT1060	-0.75416	9.187114	-2.79163	-2.93402	0.022247
MT2816	1.510089	9.524118	4.539157	1.961587	0.00041	MT1784	0.694873	9.033958	2.791329	-2.93474	0.022249
MT2070	1.906975	9.810036	4.531537	1.937842	0.000419	MT3930	-0.96671	9.863102	-2.79022	-2.93737	0.022298
MT0882	-1.35097	9.791201	-4.53043	1.934408	0.00042	MT0492	0.878349	9.411568	2.789839	-2.93829	0.022305
MT0369	-1.16644	9.79634	-4.52229	1.909033	0.00043	MT0964	-0.84772	9.276247	-2.78805	-2.94255	0.022395
MT1348	-1.57496	9.04033	-4.52128	1.905903	0.00043	MT1464	0.873593	9.727002	2.787274	-2.9444	0.022425
MT1414.1	1.363681	9.991691	4.517901	1.895386	0.000434	MT0187	-0.98615	9.328527	-2.7864	-2.94647	0.022461
MT1388	1.957631	9.041451	4.514408	1.88452	0.000438	MT2416	-0.89777	8.720597	-2.78611	-2.94716	0.022462
MT3579	-1.24646	9.096179	-4.51111	1.874268	0.000442	MT1471	-0.83519	9.188692	-2.78385	-2.95254	0.022562
MT1364	-1.43843	9.483369	-4.50649	1.859897	0.000447	MT2764	-0.90908	9.177619	-2.78375	-2.95277	0.022562
MT0763	1.597554	9.036696	4.501583	1.844644	0.000453	MT2394	-0.91286	8.966355	-2.78363	-2.95308	0.022562
MT2351	1.476059	9.631341	4.499401	1.837863	0.000456	MT2476	1.045347	8.562977	2.782603	-2.95551	0.022605
MT2623	1.832459	8.919173	4.498612	1.835414	0.000456	MT1270	0.918652	9.846582	2.782376	-2.95605	0.022605
MT3681	1.484337	9.556225	4.494535	1.822748	0.000461	MT0677	1.040447	8.163805	2.781893	-2.9572	0.022618
MT1987	2.453882	8.984043	4.478543	1.773114	0.000484	MT0903	1.068904	8.766175	2.781546	-2.95802	0.022622
MT2712	1.999473	8.47885	4.471699	1.751895	0.000493	MT2676	-1.17763	9.210586	-2.77939	-2.96315	0.022735
MT0291.3	1.679373	8.876682	4.471421	1.751035	0.000493	MT2942	-0.77756	9.280611	-2.77812	-2.96617	0.022796
MT0379	-1.42841	9.64125	-4.47009	1.746912	0.000494	MT2674	-0.84875	9.547962	-2.77683	-2.96921	0.022857
MT0128	1.583334	9.23322	4.464957	1.731004	0.000501	MT2832	1.299632	8.17244	2.775597	-2.97215	0.022915
MT4022	1.562017	9.386446	4.464726	1.730286	0.000501	MT0153	-0.74653	8.619321	-2.77343	-2.9773	0.02303
MT3612.1	1.59015	9.409338	4.458234	1.71018	0.00051	MT3008	-0.74318	9.138855	-2.77181	-2.98113	0.023112
MT3472	1.769226	8.913628	4.456397	1.704495	0.000512	MT3634	-0.77105	9.183659	-2.77118	-2.98264	0.023132
MT3192	-1.37321	10.13451	-4.45411	1.697427	0.000515	MT0660	0.889331	9.623241	2.770668	-2.98384	0.023132
MT2952	1.657343	9.009831	4.451526	1.689417	0.000518	MT0868	-1.1033	8.767506	-2.77048	-2.98429	0.023132
MT1623	-1.53676	9.619064	-4.44821	1.679162	0.000522	MT3170	1.132659	8.891531	2.770419	-2.98443	0.023132
MT0808	1.403208	9.630255	4.444986	1.669188	0.000526	MT2206	-0.83282	8.573579	-2.76914	-2.98746	0.023194
MT0124	1.292511	9.85001	4.441438	1.658216	0.000531	MT1533.1	-0.95554	9.605534	-2.76808	-2.98996	0.023242
MT2890	-1.53909	9.237265	-4.4366	1.643247	0.000538	MT0886	0.970767	8.744193	2.767174	-2.99212	0.023273
MT3248	1.354	9.413044	4.422979	1.601193	0.000562	MT3774	-0.71451	9.218905	-2.76706	-2.99239	0.023273

MT2247	1.571331	9.026763	4.420973	1.595003	0.000564	MT4041	-1.22999	10.95217	-2.76659	-2.9935	0.023285
MT0467	-1.70944	9.382901	-4.41868	1.587931	0.000567	MT0074	-0.96633	9.2004	-2.76571	-2.99558	0.023322
MT1393	1.783528	9.750224	4.409756	1.560401	0.000582	MT1455	1.15294	8.925432	2.765466	-2.99617	0.023322
MT3055	1.73888	8.9797	4.409378	1.559238	0.000582	MT2702	0.791298	9.083572	2.764788	-2.99777	0.023342
MT0741.1	-1.43336	9.522112	-4.40651	1.55039	0.000586	MT3640	0.892494	9.260531	2.76461	-2.99819	0.023342
MT0263	-1.52499	9.798419	-4.40271	1.538684	0.000592	MT2673.1	-0.75782	9.207017	-2.76349	-3.00085	0.023395
MT2855	-1.85633	9.560479	-4.39819	1.52476	0.000599	MT1439	-0.81188	8.661962	-2.76155	-3.00542	0.023477
MT1903	1.643748	9.392664	4.395518	1.516534	0.000603	MT2201	-0.73807	9.23266	-2.76133	-3.00596	0.023477
MT2620	-1.61657	9.560741	-4.3939	1.511546	0.000605	MT2195	1.041151	9.373731	2.761305	-3.00601	0.023477
MT0415	-1.38689	9.626264	-4.392	1.505697	0.000607	MT3362	-0.94035	9.695174	-2.7611	-3.0065	0.023477
MT3961	-1.33345	10.21144	-4.38836	1.494497	0.000613	MT3567	-0.72219	9.214945	-2.75897	-3.01152	0.023592
MT1502	1.780871	9.544492	4.381479	1.473334	0.000625	MT3245	-0.76517	9.480844	-2.75653	-3.01731	0.023718
MT3591	-1.3647	9.514055	-4.38068	1.470873	0.000625	MT0573	-0.8414	9.595516	-2.7564	-3.01759	0.023718
MT2916	1.937929	8.660923	4.370092	1.438335	0.000646	MT0874	0.930799	9.309916	2.755349	-3.02008	0.023767
MT0152	2.644582	8.705849	4.369264	1.435792	0.000646	MT2589.1	-0.96262	9.065809	-2.75509	-3.02069	0.023767
MT2854	-1.22679	9.682303	-4.36843	1.433228	0.000646	MT2285.2	0.878725	8.960548	2.754714	-3.02158	0.023775
MT0072	-1.29293	9.376709	-4.36407	1.419843	0.000653	MT1357	-0.85729	9.064315	-2.75347	-3.02452	0.023827
MT0983	1.591767	9.137128	4.363846	1.419153	0.000653	MT3013	-1.10177	9.646512	-2.75335	-3.02479	0.023827
MT2137	1.27004	9.928941	4.360961	1.410295	0.000658	MT3871	-0.89394	9.047823	-2.75296	-3.02571	0.023835
MT2753	1.50823	9.196365	4.358577	1.402979	0.000661	MT2059	0.841079	9.392905	2.752548	-3.0267	0.023844
MT2297	1.482679	9.245842	4.354466	1.390365	0.000669	MT3793	0.813538	9.049424	2.751962	-3.02808	0.02386
MT2091	1.579271	8.876672	4.349301	1.374526	0.000678	MT2451	1.005315	8.846344	2.751782	-3.0285	0.02386
MT3031	-1.55579	10.68885	-4.34673	1.366643	0.000683	MT0773.1	1.017314	8.301022	2.749417	-3.03408	0.023991
MT1292	-1.48343	9.032441	-4.33891	1.342693	0.000699	MT3879	-0.93937	9.372956	-2.74761	-3.03833	0.024089
MT2846	1.32197	9.491542	4.332152	1.321988	0.000712	MT0648	1.062878	8.50668	2.746639	-3.04063	0.024133
MT3921	1.768635	8.70234	4.330031	1.315494	0.000715	MT3561	-1.06075	9.480139	-2.74303	-3.04912	0.024334
MT1227	1.756107	8.875496	4.32955	1.314023	0.000715	MT2443	0.830927	9.477584	2.74295	-3.04931	0.024334
MT0926	1.560789	8.963073	4.323349	1.29505	0.000727	MT3243	-0.8053	9.175893	-2.73966	-3.05706	0.024527
MT1200	1.624592	9.222155	4.322933	1.293777	0.000727	MT1816	-0.86702	8.999838	-2.73941	-3.05765	0.024527
MT0904	1.795021	8.971416	4.322484	1.292403	0.000727	MT2266	-1.01571	8.791113	-2.73782	-3.06138	0.024612
MT4025	1.941976	8.957915	4.321235	1.288584	0.000728	MT0026	1.159456	8.310679	2.737381	-3.06241	0.024624
MT2984	1.948956	8.971271	4.320195	1.285405	0.000729	MT3907	0.923907	8.865965	2.737051	-3.06318	0.024628
MT0116	1.390873	8.717656	4.319437	1.283086	0.000729	MT3100	-1.03071	9.463898	-2.73187	-3.07535	0.024946
MT3887	1.545009	8.774088	4.318961	1.281631	0.000729	MT0801	-0.86138	9.281317	-2.73122	-3.07688	0.024972
MT0772.2	2.531045	8.725905	4.314811	1.268945	0.000737	MT1070	-0.85127	9.076864	-2.73008	-3.07954	0.025029
MT0042	1.731122	9.772033	4.311625	1.25921	0.000743	MT1153	-0.73748	9.26291	-2.7287	-3.08279	0.025102
MT3648	1.274805	9.724817	4.309874	1.253862	0.000746	MT1920	-1.01771	9.224766	-2.72708	-3.08659	0.025191
MT2068	1.816683	9.045416	4.303126	1.233254	0.000761	MT4026.1	-0.71917	9.003381	-2.72654	-3.08786	0.025203
MT0469	1.228988	8.79114	4.300989	1.226732	0.000764	MT2473	-0.69612	9.481273	-2.72638	-3.08822	0.025203
MT1144	1.450449	9.351624	4.299898	1.223403	0.000765	MT2939	-0.75123	8.812694	-2.72556	-3.09014	0.02524
MT3710	1.220819	9.048286	4.296728	1.213729	0.000772	MT2066	0.779964	9.887501	2.724914	-3.09166	0.025265
MT0474	1.391706	9.616931	4.29419	1.205987	0.000776	MT1394	-0.87538	9.267666	-2.72395	-3.09392	0.025312
MT2028	1.423695	10.18724	4.291772	1.198613	0.000781	MT1596.1	1.101673	8.802612	2.72361	-3.09471	0.025317
MT0661	1.432191	10.12827	4.286783	1.183402	0.000792	MT2981	0.901575	9.303885	2.721538	-3.09956	0.025437
MT3727	1.827132	8.862459	4.279238	1.160416	0.000809	MT2250	0.829351	9.149422	2.720477	-3.10205	0.02549
MT3257	1.50037	9.102509	4.273962	1.144351	0.000822	MT0650	1.019582	8.726187	2.718007	-3.10782	0.025637
MT1174	-1.74613	9.09012	-4.26293	1.11079	0.000849	MT1242	0.950763	8.505892	2.717468	-3.10908	0.025656
MT3078	1.548988	10.03861	4.261924	1.107725	0.000849	MT1637	-0.92194	8.794466	-2.71525	-3.11426	0.025787
MT0238	1.538013	8.985291	4.261817	1.107401	0.000849	MT0411	0.89546	10.00093	2.713963	-3.11727	0.025854
MT1705	1.30287	9.390196	4.258537	1.097429	0.000856	MT0017	0.983064	9.087448	2.713593	-3.11814	0.025854
MT3695	1.735027	8.576546	4.25758	1.094522	0.000857	MT1799	-0.88227	9.471112	-2.71316	-3.11915	0.025854
MT3058	1.410065	8.726427	4.252958	1.080478	0.000868	MT0107	-0.78821	9.515298	-2.71304	-3.11944	0.025854
MT2030	1.240154	9.686979	4.248606	1.067259	0.000877	MT0953	0.870549	9.26463	2.71296	-3.11962	0.025854
MT2776	1.430824	9.154345	4.24858	1.06718	0.000877	MT0719.1	-0.97861	9.092184	-2.70966	-3.12733	0.026048
MT3187	-1.1664	9.327004	-4.24694	1.0622	0.000879	MT2402	-0.85779	8.880019	-2.70956	-3.12754	0.026048
MT1930	-1.18532	9.673593	-4.24396	1.053152	0.000886	MT0804	1.216613	8.63198	2.708845	-3.12922	0.026071
MT0519	1.448684	9.726406	4.242676	1.049258	0.000888	MT1249	1.026365	10.02757	2.708705	-3.12955	0.026071
MT1251	1.504384	9.843177	4.239837	1.040645	0.000894	MT2850	-0.634	9.234206	-2.70678	-3.13405	0.026185
MT3037	-1.42554	10.05369	-4.23811	1.035396	0.000897	MT2117	0.94329	9.477512	2.705678	-3.1366	0.026229
MT3259	1.31939	9.490427	4.236293	1.029894	0.000899	MT0816	-0.85134	9.563236	-2.70561	-3.13676	0.026229
MT3862	1.60363	9.687128	4.236216	1.029662	0.000899	MT0420	-0.67884	9.089119	-2.70529	-3.13752	0.026234
MT1066	1.499519	9.342066	4.228924	1.007553	0.000918	MT3318	-0.76892	9.238822	-2.70322	-3.14233	0.026357
MT0676	1.354624	9.23431	4.227279	1.002571	0.000921	MT1566	-0.76898	9.16186	-2.70128	-3.14686	0.026473
MT3242	-1.10729	9.496049	-4.22692	1.001485	0.000921	MT0588	0.845135	9.014505	2.700969	-3.14757	0.026476
MT2337	-1.28052	9.709126	-4.22579	0.998048	0.000922	MT0516	0.865743	9.053788	2.700149	-3.14948	0.026502
MT0300	2.192325	9.000726	4.224887	0.995322	0.000923	MT4024	0.806536	9.234508	2.700073	-3.14966	0.026502
MT4016	1.695089	9.009681	4.220804	0.982959	0.000933	MT0948	1.091299	10.39835	2.699816	-3.15025	0.026502
MT2005	-1.38915	9.484561	-4.21569	0.967487	0.000947	MT3910	-0.75936	9.706596	-2.69945	-3.15111	0.02651
MT1236	-1.52432	9.488434	-4.21178	0.955659	0.000955	MT0334	0.814547	9.336936	2.696762	-3.15736	0.026677
MT3439	1.250319	9.235395	4.211773	0.955624	0.000955	MT3004	0.977413	8.676493	2.696141	-3.1588	0.026703
MT3191	-1.49995	9.557816	-4.21065	0.952217	0.000956	MT0180	-0.71057	9.556098	-2.69441	-3.16283	0.026805
MT2990	1.794404	9.928113	4.210101	0.950566	0.000956	MT2802	0.84354	8.616817	2.693355	-3.16528	0.026836
MT3530	1.489381	10.32091	4.207115	0.941536	0.000962	MT2777.1	-0.83109	8.686362	-2.6932	-3.16564	0.026836
MT2295	2.063777	8.276311	4.207043	0.941319	0.000962	MT0155	-0.67554	9.043335	-2.69296	-3.1662	0.026836
MT1496	1.472715	9.437792	4.205982	0.938111	0.000963	MT0577	0.689239	9.754545	2.692935	-3.16625	0.026836
MT2237	-1.16245	9.517409	-4.20454	0.933743	0.000966	MT1474	1.056094	8.544686	2.692457	-3.16736	0.026852
MT1359	-1.43096	9.473032	-4.2031	0.929392	0.000968	MT2943	-0.94861	9.516465	-2.69111	-3.17049	0.026928
MT0563	1.734105	8.384437	4.199618	0.918875	0.000977	MT3914	0.75478	10.03797	2.690311	-3.17234	0.026959
MT0529	1.27613	9.801253	4.198468	0.915402	0.000979	MT1957.1	-0.88338	8.999937	-2.68996	-3.17316	0.026959
MT1734	1.264111	9.114702	4.196685	0.910017	0.000981	MT0892.1	0.784456	8.952913	2.689892	-3.17331	0.026959
MT0915.1	-1.12245	9.471376	-4.19635	0.909005	0.000981	MT1075	-0.8939	9.325693	-2.68959	-3.17402	0.026963
MT2989	1.345244	8.839936	4.192136	0.896279	0.000993	MT2421	0.919491	10.28852	2.688765	-3.17593	0.026977
MT1382	1.432523	9.911114	4.187856	0.883359	0.001004	MT3718.1	-0.79736	9.221468	-2.68871	-3.17606	0.026977
MT1243	1.694124	8.726004	4.181019	0.862736	0.001025	MT3971	-0.88842	9.092888	-2.68837	-3.17684	0.026977
MT2488.1	1.879365	8.946244	4.17856	0.855323	0.001031	MT2756	-0.71667	9.1993	-2.68837	-3.17685	0.026977
MT0818	-1.25041	9.661598	-4.17567	0.846598	0.001038	MT1773	1.016331	9.250177	2.687986	-3.17774	0.026986
MT2334	-1.76712	9.459879	-4.17058	0.831273	0.001053	MT0125.1	-0.87018	9.409047	-2.68727	-3.1794	0.027019
MT0455	1.117784	9.470677	4.1695	0.82802	0.001054	MT3817	-0.82935	8.710462	-2.68453	-3.18574	0.027192
MT0080	-1.60123	9.731398	-4.16903	0.826612	0.001054	MT2321	-0.77814	8.727585	-2.68428	-3.18633	0.027192
MT0091	1.91685	8.28055	4.164854	0.814031	0.001062	MT0992	0.87467	9.552549	2.683988	-3.18701	0.027195
MT2983	1.337886	9.075467	4.164783	0.813817	0.001062	MT1089	-0.82497	9.535367	-2.68275	-3.18987	0.027264
MT3751	1.575793	8.666328	4.163896	0.811146	0.001062	MT0326	-0.67295	8.756413	-2.68208	-3.19142	0.027293
MT2887	-1.40652	9.310708	-4.16374	0.810687	0.001062	MT3389	-0.84437	9.204038	-2.68146	-3.19287	0.02732
MT1463	1.661295	8.934033	4.163607	0.810277	0.001062	MT0781	1.232936	8.806662	2.680733	-3.19454	0.027353
MT3354	1.662461	8.588536	4.16162	0.804298	0.001067	MT1660	-0.86085	9.697044	-2.68017	-3.19584	0.027375
MT0724.1	1.87333	9.17254	4.159009	0.796442	0.001074	MT2083	-0.9503	8.613113	-2.67816	-3.20049	0.027499
MT1294	-1.42963	8.649001	-4.15382	0.780845	0.00109	MT1662	0.934858	8.810711	2.675955	-3.2056	0.027638
MT2769	2.124399	8.858401	4.147976	0.763266	0.001108	MT3476	1.082183	8.593212	2.674842	-3.20817	0.0277

MT0713	-1.48036	9.474579	-4.14543	0.755609	0.001115	MT3441	0.954844	8.978669	2.673399	-3.2115	0.027781
MT3060	1.467073	8.672405	4.144067	0.751522	0.001118	MT2331	-0.67755	9.60632	-2.6732	-3.21196	0.027781
MT2728	1.783567	10.14056	4.143226	0.748995	0.001119	MT1571	0.936687	9.114992	2.67225	-3.21416	0.027831
MT2510	1.186122	10.02474	4.137899	0.733	0.001136	MT0618	-0.92191	10.24791	-2.67196	-3.21483	0.027834
MT1531	-1.26194	9.222482	-4.13706	0.730485	0.001137	MT0701	-0.76323	9.143697	-2.67146	-3.21597	0.027851
MT0464	-1.19692	9.527564	-4.13356	0.719986	0.001147	MT0054	1.250627	8.269345	2.669641	-3.22018	0.027964
MT2691.1	1.996291	8.814716	4.133042	0.718425	0.001147	MT3375	-0.84581	9.073354	-2.66918	-3.22125	0.027979
MT1926	1.617191	10.02358	4.125787	0.696667	0.001171	MT1877	-1.18495	9.483307	-2.6682	-3.2235	0.028032
MT0112	-1.27746	9.938527	-4.12365	0.690259	0.001177	MT0092	0.861911	8.730667	2.663488	-3.23437	0.028355
MT2077	-1.22036	9.093228	-4.12303	0.688404	0.001177	MT2078	0.875301	9.865214	2.662459	-3.23674	0.0284
MT3198	1.390241	9.200693	4.116587	0.669101	0.001199	MT1924	-0.77696	9.134691	-2.66238	-3.23693	0.0284
MT0461	1.420844	8.919237	4.114229	0.66204	0.001206	MT3656	-0.83246	8.601414	-2.6619	-3.23803	0.028416
MT2622	-1.63225	8.825605	-4.11208	0.655595	0.001212	MT1154	0.96522	9.345978	2.660976	-3.24016	0.028465
MT0625	-1.21547	8.906688	-4.10812	0.643742	0.001223	MT3625	-0.76856	9.361597	-2.66071	-3.24077	0.028467
MT1114	1.326781	9.805963	4.10755	0.642052	0.001223	MT3904	-0.6652	9.406053	-2.65991	-3.24261	0.028507
MT3898	1.576122	9.210872	4.10709	0.640675	0.001223	MT2500	1.168516	8.162456	2.657764	-3.24755	0.028646
MT1826	-1.03302	9.79417	-4.107	0.640415	0.001223	MT0214	1.026265	9.854943	2.654644	-3.25472	0.028858
MT0272	1.885091	8.827199	4.103694	0.630515	0.001234	MT2553	-0.81089	8.843136	-2.65378	-3.25671	0.028903
MT2785	-1.50794	9.548852	-4.09802	0.613567	0.001254	MT1298	0.734785	9.414879	2.653089	-3.2583	0.028936
MT3220.1	1.313482	9.671774	4.092159	0.596042	0.001275	MT1301	-0.82831	8.953858	-2.65203	-3.26072	0.028996
MT3867	-1.32956	9.692885	-4.08955	0.588266	0.001283	MT1255	0.942483	8.694596	2.65084	-3.26346	0.029066
MT3427.1	1.243956	9.821324	4.088166	0.584118	0.001286	MT1872	-0.66473	9.280128	-2.65023	-3.26486	0.029093
MT3518	1.496216	9.104534	4.087205	0.581249	0.001288	MT3107	-1.02485	9.377986	-2.64987	-3.2657	0.029101
MT3388	-1.26142	10.18714	-4.08614	0.578083	0.00129	MT1886	-0.90286	8.906619	-2.64933	-3.26693	0.029123
MT0446	-1.5903	9.50878	-4.08045	0.5611	0.001307	MT2479	-0.85545	8.809608	-2.64704	-3.27218	0.029275
MT1460	1.112576	9.43022	4.08007	0.559958	0.001307	MT1237	-0.8795	9.342357	-2.64602	-3.27453	0.029333
MT3367	1.288969	9.320173	4.07959	0.558527	0.001307	MT0082	-1.14865	9.107969	-2.64577	-3.27509	0.029333
MT2098	-1.11966	9.4798	-4.07958	0.55851	0.001307	MT2188	1.11651	9.603697	2.643087	-3.28125	0.029517
MT2212	2.050697	8.811283	4.077054	0.550964	0.001316	MT0583	0.850671	9.500394	2.642504	-3.28258	0.029542
MT1791	1.576259	9.966969	4.073817	0.541314	0.001327	MT3567.1	-0.65792	9.400288	-2.64218	-3.28333	0.029548
MT3328	1.181378	8.755034	4.073075	0.539104	0.001327	MT3701	1.407156	8.058541	2.641009	-3.286	0.029606
MT2223	1.488589	9.060799	4.07026	0.530716	0.001336	MT3225	-0.93574	9.704767	-2.6409	-3.28625	0.029606
MT3972.1	-1.2709	9.539993	-4.06939	0.528115	0.001336	MT2933	-0.8303	8.921417	-2.6395	-3.28946	0.029694
MT1319	1.191734	9.651233	4.069336	0.527963	0.001336	MT2435	0.959989	8.655904	2.639031	-3.29053	0.029703
MT3381	1.522327	9.068109	4.067583	0.52274	0.00134	MT0288	-0.75134	8.714963	-2.63888	-3.29087	0.029703
MT0916	-1.65939	10.14517	-4.06725	0.521745	0.00134	MT3972	-0.76834	9.144888	-2.63664	-3.29601	0.029847
MT3723	1.980464	8.745468	4.06406	0.51225	0.001351	MT3655	0.665844	9.540234	2.6365	-3.29632	0.029847
MT0036	-1.51953	9.606817	-4.06041	0.501379	0.001365	MT0481	-0.71701	9.092403	-2.63555	-3.29849	0.029878
MT0824	1.904475	10.5433	4.059366	0.498277	0.001367	MT1581	-0.79011	8.949695	-2.63546	-3.29869	0.029878
MT2915	1.639575	8.560451	4.055077	0.485517	0.001383	MT3174.1	-0.93562	9.741103	-2.63534	-3.29897	0.029878
MT0570	-1.38902	8.875937	-4.05322	0.480009	0.001388	MT1829	1.135489	8.593022	2.632011	-3.30658	0.030115
MT3891	1.265093	9.276419	4.051839	0.475889	0.001391	MT0049	-0.88902	9.21917	-2.63086	-3.30921	0.030184
MT3428	-1.34546	9.200818	-4.05146	0.474773	0.001391	MT0939	0.846273	8.740124	2.630405	-3.31025	0.0302
MT3690	-1.01171	9.360576	-4.0496	0.46923	0.001396	MT2904	1.059437	8.664866	2.629778	-3.31168	0.030226
MT2807	1.508106	7.986348	4.049374	0.468561	0.001396	MT2840	-0.75733	9.710799	-2.62958	-3.31214	0.030226
MT2899	1.154409	9.512178	4.042884	0.449278	0.001419	MT2399	-0.77641	9.008686	-2.62545	-3.32155	0.03052
MT4034	1.604742	9.192994	4.042715	0.448774	0.001419	MT0603	-0.6083	8.643642	-2.62529	-3.32193	0.03052
MT1522	-1.40074	9.77564	-4.04239	0.447818	0.001419	MT3963	-0.61104	9.763484	-2.62501	-3.32256	0.030522
MT3247	1.193254	9.152965	4.041285	0.44453	0.001422	MT0139	-0.70313	9.293135	-2.62202	-3.32936	0.030736
MT3945	1.567251	9.010281	4.039626	0.439603	0.001427	MT2204	-0.82544	8.944208	-2.62123	-3.33117	0.030779
MT3536	1.358856	9.280743	4.038553	0.436416	0.001429	MT2875	-0.92055	9.130552	-2.62071	-3.33235	0.0308
MT1557	-1.30421	9.291523	-4.03747	0.433196	0.00143	MT2174	-0.77968	8.814417	-2.61807	-3.33836	0.030989
MT1954	-1.58903	9.689583	-4.03728	0.43263	0.00143	MT3436	1.060996	8.06259	2.617031	-3.34073	0.031051
MT3162	1.139132	9.074146	4.034119	0.423256	0.001442	MT0447	-0.8079	9.243763	-2.61613	-3.34278	0.031093
MT0748	1.265719	9.16763	4.032141	0.417389	0.001448	MT2892	-0.77668	8.756371	-2.61601	-3.34304	0.031093
MT2650	-0.96702	9.48948	-4.03116	0.414481	0.00145	MT0623	0.792608	9.187056	2.615077	-3.34517	0.031147
MT2169	-1.62736	10.97812	-4.02473	0.395421	0.001477	MT1610	-0.91581	9.231838	-2.61448	-3.34653	0.031159
MT2456	1.286178	9.23086	4.022474	0.388728	0.001485	MT3044	-0.94173	9.477392	-2.61444	-3.34662	0.031159
MT3432	1.614123	8.816594	4.021224	0.385026	0.001489	MT0419	-0.68296	9.496291	-2.61412	-3.34735	0.031165
MT0291	1.790702	8.620886	4.014375	0.364741	0.001517	MT1820	0.771192	8.835853	2.613048	-3.34978	0.031212
MT1615	1.214935	9.158332	4.014107	0.363947	0.001517	MT3782	-0.78254	9.314146	-2.61285	-3.35023	0.031212
MT3940	-1.30852	9.425806	-4.01321	0.361302	0.001519	MT0795	-0.80936	9.07344	-2.61278	-3.35039	0.031212
MT0002	-1.24034	10.69251	-4.01016	0.35227	0.00153	MT2587	-1.0763	9.146283	-2.60882	-3.35938	0.031509
MT3686	1.250593	9.324945	4.009408	0.350041	0.00153	MT1505	0.80895	9.368918	2.606698	-3.3642	0.031644
MT3722	-1.30399	9.639591	-4.00915	0.349279	0.00153	MT3154	-0.9139	9.897797	-2.60664	-3.36433	0.031644
MT1235	-1.47582	10.40271	-4.00594	0.339776	0.001542	MT2615.1	1.095649	8.141954	2.606292	-3.36512	0.031652
MT1404	-1.47986	9.206192	-4.00528	0.337837	0.001542	MT2733	0.863617	8.724288	2.605613	-3.36666	0.031687
MT0694	-1.33228	9.30085	-4.00522	0.33766	0.001542	MT0925	0.968859	8.82084	2.60331	-3.37188	0.031849
MT1757	1.659518	8.414183	3.998039	0.316427	0.001574	MT2285	1.264301	10.06692	2.603113	-3.37232	0.031849
MT1043	-0.97043	9.19493	-3.98958	0.29144	0.001614	MT3494	-0.68525	9.498663	-2.60084	-3.37746	0.032013
MT2151	1.382886	9.116842	3.98487	0.27755	0.001635	MT0393	1.038785	8.684371	2.600137	-3.37906	0.032051
MT3405	1.375724	9.278286	3.98163	0.267993	0.001649	MT2601.1	-1.34889	9.190747	-2.59917	-3.38125	0.03211
MT1934	-1.33081	9.405179	-3.97721	0.254973	0.001669	MT1760	-0.68387	9.083986	-2.59836	-3.38308	0.032155
MT1327	1.612638	9.403327	3.975525	0.249996	0.001675	MT2244	1.223573	8.645387	2.597312	-3.38546	0.032221
MT1262	1.558884	9.289424	3.97466	0.247446	0.001677	MT2547.1	-0.88948	9.208163	-2.59632	-3.3877	0.032279
MT3605	-1.03964	9.661339	-3.97251	0.241116	0.001683	MT3190	0.694252	10.10117	2.596115	-3.38816	0.032279
MT0979	-1.15231	9.431345	-3.9725	0.241074	0.001683	MT0848	-0.85705	8.985525	-2.5952	-3.39022	0.032334
MT1296	1.082968	9.210002	3.970685	0.235738	0.00169	MT3572.1	-0.64519	9.351478	-2.5947	-3.39137	0.032355
MT0375	1.25367	9.241409	3.967338	0.225884	0.001703	MT0809	0.948024	9.609024	2.593283	-3.39456	0.032451
MT2586.1	1.23274	9.586921	3.967065	0.225081	0.001703	MT1582	-0.7337	9.180612	-2.59243	-3.39649	0.032501
MT3291	1.667752	9.013979	3.964911	0.218741	0.001712	MT3146	1.343108	8.306113	2.588079	-3.40631	0.032841
MT2233	-1.18292	9.718747	-3.96328	0.213935	0.001718	MT3687	0.783771	9.531833	2.587042	-3.40865	0.032907
MT3286	-1.44276	8.928852	-3.96129	0.208093	0.001726	MT2131	0.839108	9.007919	2.586566	-3.40972	0.032926
MT2841	2.015604	9.863353	3.959361	0.202413	0.001728	MT1059	-0.98598	9.850501	-2.58535	-3.41246	0.033007
MT3460	1.366904	9.41318	3.958846	0.200899	0.001728	MT1794	0.618273	9.476772	2.584781	-3.41375	0.033034
MT1779	1.401231	8.771018	3.958776	0.200692	0.001728	MT0364	-0.69684	9.314901	-2.58454	-3.4143	0.033034
MT3098	1.628619	9.529182	3.958748	0.20061	0.001728	MT0672	-1.08712	8.978526	-2.58414	-3.41519	0.033047
MT2615	1.859782	8.287572	3.958187	0.198962	0.001728	MT0654	0.839068	8.413624	2.583828	-3.41589	0.033053
MT2080	-1.20113	9.237996	-3.95281	0.183147	0.001754	MT2686	-0.73683	8.777931	-2.58312	-3.41749	0.033092
MT2948	-1.28517	9.458696	-3.95238	0.181881	0.001754	MT1898	0.777691	9.144431	2.580115	-3.42426	0.033324
MT2240	-1.39402	9.316047	-3.94366	0.15629	0.0018	MT0579	0.745096	9.271588	2.579801	-3.42496	0.03333
MT0109	-1.37023	9.55733	-3.9428	0.153768	0.001802	MT1412	0.718229	9.298675	2.579348	-3.42598	0.033347
MT3903	-1.59573	9.567095	-3.93758	0.138434	0.001828	MT1289	-0.73549	8.787906	-2.57769	-3.42971	0.033449
MT0780	1.320537	9.722615	3.935737	0.133037	0.001836	MT2408	-0.66433	9.10192	-2.57766	-3.42978	0.033449
MT2947	1.408611	9.016914	3.934717	0.130045	0.001839	MT1725	-1.26786	9.266192	-2.5751	-3.43553	0.033645
MT3582	2.079758	8.897105	3.931007	0.119171	0.001857	MT3182	-0.9486	9.059049	-2.57458	-3.4367	0.033654
MT2671	1.183506	9.141042	3.92943	0.114548	0.001863	MT1910	0.769673	9.087376	2.574513	-3.43686	0.033654
MT1031	1.469638	8.7173	3.928412	0.111567	0.001866	MT2012	-0.59012	9.009631	-2.57357	-3.43896	0.033713

MT1667	1.387136	9.175065	3.925777	0.103846	0.001879	MT1057.1	0.606523	9.732389	2.573277	-3.43963	0.033717
MT2884	-1.02326	9.62192	-3.92433	0.099606	0.001879	MT0614	0.892803	9.455077	2.572426	-3.44154	0.033769
MT1403	1.026468	9.527021	3.924284	0.099475	0.001879	MT0482	-0.65629	9.236822	-2.57141	-3.44383	0.033835
MT2881	-1.97718	9.229882	-3.92428	0.099468	0.001879	MT2286	-0.72481	8.918927	-2.57001	-3.44697	0.033934
MT1482	-1.25182	9.076516	-3.92283	0.095227	0.001884	MT1399	-0.73706	9.123376	-2.56805	-3.45136	0.034081
MT3590	-1.37308	9.896398	-3.92051	0.088434	0.001895	MT0993	-0.74948	9.367788	-2.56589	-3.45621	0.034246
MT1560.1	-0.9988	9.164373	-3.91946	0.085365	0.001896	MT1361	-1.1379	9.615554	-2.56267	-3.46342	0.034504
MT0162	1.151956	9.152787	3.918985	0.083964	0.001896	MT3070	-0.76875	9.089635	-2.56174	-3.46551	0.034564
MT2412	-1.32603	10.30479	-3.91856	0.082706	0.001896	MT0710	-0.8119	9.138789	-2.56133	-3.46643	0.034579
MT3117	1.639428	9.491048	3.918333	0.082054	0.001896	MT2381	-0.97859	9.202753	-2.55784	-3.47424	0.034862
MT3142	-1.04213	9.547956	-3.91743	0.079402	0.001897	MT3151	0.949289	8.390012	2.557453	-3.4751	0.034875
MT3127	1.024499	9.339257	3.916578	0.076922	0.001897	MT2600.1	0.836282	8.953806	2.553228	-3.48454	0.035225
MT1802	-1.20794	9.585535	-3.91653	0.076792	0.001897	MT3883	-0.82982	8.972339	-2.55179	-3.48775	0.035323
MT3455	-1.15356	9.480807	-3.9149	0.072006	0.001904	MT2234	-0.9061	9.497858	-2.55164	-3.48808	0.035323
MT3181	1.266099	9.300763	3.904388	0.041285	0.001964	MT4006	-0.88476	8.615671	-2.5512	-3.48908	0.035341
MT0787	-1.04971	9.11351	-3.90097	0.031306	0.001982	MT3136	-0.80315	9.591144	-2.55064	-3.49032	0.035354
MT2353	-1.36406	9.124789	-3.8995	0.027025	0.001988	MT1765	-0.72589	9.359632	-2.55057	-3.49047	0.035354
MT3756.1	1.678041	8.942528	3.898461	0.023981	0.00199	MT1305.1	-0.70262	9.044757	-2.55	-3.49175	0.035383
MT0656	1.524647	8.811055	3.898207	0.023239	0.00199	MT3201	0.85076	8.764747	2.549439	-3.49299	0.035411
MT0367	1.189082	9.281301	3.893643	0.009921	0.002015	MT3626	-0.89599	9.078092	-2.54739	-3.49756	0.03557
MT1969	1.436637	9.3787	3.890778	0.001565	0.00203	MT1535	0.839838	9.441645	2.547036	-3.49835	0.03557
MT1300	-1.0659	9.117967	-3.88941	-0.00243	0.002035	MT0476	-0.85939	9.014952	-2.54679	-3.4989	0.03557
MT2101	-1.05762	9.155003	-3.8865	-0.01092	0.002051	MT1782	0.769627	9.161567	2.5467	-3.4991	0.03557
MT3220	-1.4426	9.444753	-3.88576	-0.01306	0.002052	MT3622	-0.91625	9.713991	-2.54582	-3.50106	0.035608
MT2133	1.369985	9.150167	3.882634	-0.02217	0.002069	MT0787.1	-0.60525	9.2519	-2.54579	-3.50112	0.035608
MT3437.1	1.392231	8.926545	3.880901	-0.02722	0.002077	MT3394	0.658031	9.209431	2.545241	-3.50236	0.035615
MT1759	1.299631	9.383615	3.880026	-0.02976	0.00208	MT0740.1	-0.68176	9.218799	-2.54508	-3.50272	0.035615
MT3859	1.407768	9.633465	3.878047	-0.03553	0.002087	MT2534	-0.67852	9.740894	-2.54499	-3.50291	0.035615
MT0154	1.304998	9.055908	3.877803	-0.03624	0.002087	MT0210	-0.82718	10.35732	-2.54205	-3.50946	0.035856
MT0608.1	1.673911	8.901475	3.877038	-0.03846	0.002089	MT2786	-0.91261	9.545184	-2.54182	-3.50998	0.035856
MT0564	1.634329	8.661908	3.871449	-0.05473	0.002123	MT0452	0.904428	8.794004	2.54104	-3.51171	0.035891
MT0226	1.236076	9.240555	3.866258	-0.06982	0.002154	MT3542.1	-1.32238	8.869456	-2.54084	-3.51216	0.035891
MT2885	-1.01511	9.163522	-3.86509	-0.07323	0.002158	MT1088	-0.85627	9.055157	-2.54042	-3.51309	0.035891
MT0037	-0.93579	9.458443	-3.86276	-0.08	0.00217	MT2641	-0.65849	9.327279	-2.54026	-3.51345	0.035891
MT1035	1.207738	9.483517	3.8624	-0.08103	0.00217	MT2018	0.726202	9.427785	2.540039	-3.51394	0.035891
MT3426	1.439666	10.03336	3.861405	-0.08392	0.002171	MT3923	-0.74794	8.997227	-2.53999	-3.51404	0.035891
MT3056	1.79209	8.722931	3.860789	-0.08571	0.002171	MT0754	0.945978	9.297952	2.538749	-3.5168	0.035981
MT0337	1.280001	9.831156	3.860733	-0.08587	0.002171	MT3603	-0.90141	9.258387	-2.5382	-3.51803	0.03601
MT1839.1	1.769026	8.838953	3.858337	-0.09283	0.002184	MT2455	-0.62043	9.203512	-2.53738	-3.51984	0.036062
MT3645	-0.99747	9.454371	-3.8567	-0.0976	0.002192	MT0246	-0.71851	9.091426	-2.53672	-3.52131	0.0361
MT1095	1.580155	8.672241	3.855351	-0.1015	0.002196	MT2713	-1.03268	8.70614	-2.5363	-3.52225	0.036106
MT1697	1.463557	9.120388	3.855018	-0.10247	0.002196	MT2002	1.15719	9.389159	2.53617	-3.52254	0.036106
MT1785	1.048288	9.293933	3.854232	-0.10475	0.002198	MT2430	-0.87278	9.02834	-2.5343	-3.52669	0.036254
MT0960	1.378332	9.197621	3.853862	-0.10582	0.002198	MT0597	-0.78191	9.075379	-2.53377	-3.52787	0.036281
MT2614	1.716612	8.482168	3.852921	-0.10855	0.002201	MT3600	-0.82872	9.550356	-2.53342	-3.52865	0.03629
MT0746	0.988613	9.841234	3.851687	-0.11213	0.002206	MT3091	1.301401	8.281947	2.533104	-3.52935	0.03629
MT0443	1.198997	9.337051	3.849273	-0.11914	0.002217	MT0931	-0.64859	9.418997	-2.53278	-3.53006	0.03629
MT0339	-0.95556	9.083133	-3.8491	-0.11964	0.002217	MT0836	-0.86065	9.311005	-2.53272	-3.53021	0.03629
MT2136	-1.08815	9.403014	-3.84859	-0.12111	0.002217	MT2207	-0.68834	9.073526	-2.53245	-3.5308	0.036292
MT0388	1.51459	8.821326	3.845794	-0.12923	0.002233	MT3049	-0.80256	9.195453	-2.53156	-3.53277	0.036352
MT2977	-1.39988	9.224354	-3.83421	-0.16279	0.002311	MT2930	-0.84304	8.878183	-2.53121	-3.53356	0.036362
MT1733	1.503306	8.206879	3.833087	-0.16603	0.002316	MT2019	0.958114	9.34614	2.529938	-3.53637	0.036456
MT0262	-1.43064	8.876797	-3.83153	-0.17054	0.002323	MT0430	-0.88868	9.244908	-2.52898	-3.53849	0.036508
MT2158	1.46144	9.048178	3.829113	-0.17753	0.002337	MT1085	-0.87954	9.246003	-2.52873	-3.53904	0.036508
MT0994	1.7049	8.481455	3.823393	-0.19407	0.002375	MT1071	-0.79909	8.640988	-2.52865	-3.53922	0.036508
MT0085.1	1.183604	9.189639	3.822441	-0.19682	0.002379	MT0850	-0.73743	8.910685	-2.52722	-3.5424	0.036617
MT3916	1.47298	8.941467	3.821798	-0.19868	0.00238	MT1751.1	0.844616	8.805429	2.526985	-3.54292	0.036617
MT0052	1.549218	8.742337	3.814145	-0.22079	0.002433	MT3048	0.826239	8.982922	2.526399	-3.54422	0.036649
MT0946	-1.36259	10.03071	-3.81346	-0.22275	0.002435	MT0906	-0.73936	9.094496	-2.52474	-3.54789	0.036779
MT3086	-1.06884	9.332861	-3.81206	-0.22681	0.002442	MT0401.1	-0.79932	8.797382	-2.52394	-3.54965	0.036831
MT1931.1	-1.34439	9.101135	-3.81085	-0.23031	0.002447	MT3433	0.900673	8.232313	2.521663	-3.5547	0.037019
MT3823	-1.49612	10.05477	-3.7997	-0.26245	0.002529	MT2829	-0.64872	9.407386	-2.5205	-3.55727	0.037099
MT0176	-1.24602	9.489981	-3.7964	-0.27194	0.002551	MT2726	0.806285	9.376539	2.520325	-3.55766	0.037099
MT1533.2	-1.48575	10.46899	-3.79362	-0.27997	0.002569	MT1632	0.991711	8.680965	2.520049	-3.55827	0.037103
MT0739	-0.99203	9.190225	-3.79287	-0.28213	0.002571	MT0163	0.7506	9.299548	2.519304	-3.55992	0.03715
MT0079	-1.22702	9.43314	-3.78783	-0.29661	0.002604	MT2065	0.619599	9.540791	2.518136	-3.5625	0.037236
MT1241	1.212981	8.994662	3.787813	-0.29667	0.002604	MT2796	-0.78339	8.88454	-2.51757	-3.56376	0.037267
MT0528	1.009575	9.361183	3.786402	-0.30073	0.002612	MT3413	-0.83305	9.13212	-2.51705	-3.56489	0.037293
MT1287	1.023443	8.760138	3.776835	-0.32823	0.002686	MT0775	0.775958	8.820957	2.515821	-3.56762	0.037386
MT1458	-1.01192	9.288106	-3.77604	-0.3305	0.002688	MT0840	0.983819	8.63826	2.514752	-3.56998	0.037463
MT2144	0.937955	9.107319	3.774786	-0.33411	0.002693	MT1426	0.927633	8.320394	2.514391	-3.57077	0.037475
MT3637	1.395954	9.125616	3.77457	-0.33473	0.002693	MT2138.1	-0.78042	9.204336	-2.51412	-3.57137	0.037478
MT3083	1.297221	9.51825	3.774062	-0.33619	0.002693	MT2806	0.859259	8.544747	2.513683	-3.57234	0.037484
MT2173	1.390367	9.057517	3.771382	-0.34388	0.002711	MT1764	-0.73427	8.37218	-2.51359	-3.57253	0.037484
MT2849	1.302636	9.921101	3.770417	-0.34665	0.002715	MT2795	-0.72542	9.751504	-2.51314	-3.57353	0.037504
MT3270.1	-1.52493	9.678242	-3.76804	-0.35347	0.002731	MT2853	-0.58488	9.281666	-2.51266	-3.57459	0.037513
MT0919	-1.4365	9.473358	-3.76758	-0.35479	0.002731	MT1169.1	1.074436	8.216195	2.512281	-3.57543	0.037513
MT0990	-1.011	9.165786	-3.76588	-0.35966	0.002739	MT3156	-0.66742	9.394456	-2.5121	-3.57583	0.037513
MT0260	-1.10754	9.210449	-3.76578	-0.35996	0.002739	MT2751	1.053514	8.94285	2.511899	-3.57627	0.037513
MT3316	1.377775	10.02029	3.759426	-0.37817	0.002788	MT3101	0.980008	10.65185	2.511877	-3.57632	0.037513
MT0899	1.399259	9.061312	3.756097	-0.38771	0.00281	MT1431	1.096137	8.737883	2.510752	-3.5788	0.037596
MT1551	-1.11844	9.417601	-3.75599	-0.38801	0.00281	MT1570	-0.86555	9.122828	-2.5093	-3.58201	0.03771
MT3239	1.867498	8.193846	3.754368	-0.39266	0.002814	MT2845	-0.59003	9.603254	-2.50771	-3.58551	0.037837
MT1858	1.007216	9.606304	3.754309	-0.39283	0.002814	MT3097	0.883176	8.870671	2.506226	-3.58878	0.037955
MT3119	-1.05339	8.848561	-3.75386	-0.3941	0.002814	MT2210	0.944446	8.158913	2.50474	-3.59205	0.038073
MT2912	1.261435	8.740285	3.753635	-0.39476	0.002814	MT1859	0.84058	9.26931	2.50304	-3.59579	0.038212
MT3497	1.283815	9.240839	3.751361	-0.40127	0.002828	MT3027	-0.60072	9.263971	-2.50243	-3.59713	0.038234
MT3906	1.267325	9.044446	3.751042	-0.40218	0.002828	MT2982	0.851768	9.276992	2.502343	-3.59733	0.038234
MT1384	1.189753	10.17347	3.750406	-0.404	0.002828	MT2814	0.876386	8.991946	2.500979	-3.60032	0.038341
MT2741	1.656786	8.757274	3.749885	-0.40549	0.002828	MT0690	-0.81564	8.770514	-2.50053	-3.60131	0.038361
MT2527.1	-1.3072	9.725851	-3.74981	-0.40571	0.002828	MT4041.2	-0.9752	9.375926	-2.49905	-3.60456	0.03848
MT3665	1.552493	8.174323	3.749351	-0.40702	0.002828	MT3263	-0.68246	8.940187	-2.49829	-3.60624	0.038528
MT2021	2.079581	8.123352	3.748356	-0.40987	0.002832	MT0285	0.919244	9.784175	2.498088	-3.60668	0.038528
MT0508	-1.32987	9.545882	-3.74786	-0.41129	0.002833	MT2107	0.649229	9.44386	2.493238	-3.61733	0.038971
MT2732	1.110368	8.986575	3.746759	-0.41444	0.002838	MT0117	0.83046	8.858264	2.492725	-3.61845	0.038998
MT2004	1.175776	9.532707	3.742079	-0.42782	0.002875	MT0069	0.798213	9.387711	2.492183	-3.61964	0.039028
MT3824	1.545864	9.002921	3.741177	-0.4304	0.002879	MT0065	-0.62956	10.13756	-2.49123	-3.62173	0.039097
MT3743	-1.11678	9.447343	-3.74064	-0.43194	0.00288	MT2187	-0.73318	9.093675	-2.49073	-3.62282	0.039123

MT2959	1.18477	8.594503	3.739953	-0.43389	0.002882	MT0987	0.873333	8.739491	2.490202	-3.62398	0.039152
MT2734	1.463819	8.804102	3.738746	-0.43734	0.002888	MT2601.2	-0.7681	9.014789	-2.48952	-3.62548	0.039176
MT0541	1.337415	8.924266	3.738296	-0.43863	0.002888	MT0839	1.004887	8.875181	2.489453	-3.62562	0.039176
MT3868	-1.37898	8.97594	-3.735	-0.44804	0.002914	MT1900	1.044078	8.695517	2.489251	-3.62607	0.039176
MT0772.5	1.615056	8.847398	3.733993	-0.45092	0.002916	MT3293	0.843469	8.79967	2.488186	-3.6284	0.039247
MT0543	1.547985	8.954397	3.733875	-0.45126	0.002916	MT2350	-0.81046	9.022473	-2.48806	-3.62868	0.039247
MT1441	1.193094	9.147696	3.732463	-0.45529	0.002924	MT3180	-0.70346	8.919817	-2.48722	-3.63052	0.039306
MT3387	1.21821	9.485405	3.731298	-0.45861	0.002929	MT0968	-0.74276	9.020533	-2.48415	-3.63724	0.039583
MT0889	1.648306	8.521979	3.73107	-0.45926	0.002929	MT3519	0.687476	8.779906	2.483628	-3.63838	0.039611
MT1997	-1.10877	9.622921	-3.73025	-0.4616	0.002932	MT2763	-0.91047	8.665945	-2.48274	-3.64032	0.039675
MT0140	1.560622	10.60797	3.725825	-0.47423	0.002968	MT3102	0.649233	8.943031	2.481169	-3.64375	0.039804
MT3614	1.633735	8.906183	3.724247	-0.47873	0.002974	MT0295	1.076822	8.256029	2.480963	-3.6442	0.039804
MT2734.1	1.262817	9.336769	3.724236	-0.47876	0.002974	MT3284	1.178424	8.854792	2.480111	-3.64606	0.039865
MT0044	1.247537	9.222383	3.718243	-0.49584	0.003025	MT0378	-0.72213	9.628063	-2.47888	-3.64875	0.039955
MT0089	1.226731	9.388659	3.715168	-0.5046	0.003049	MT3356	0.890259	8.159933	2.478736	-3.64907	0.039955
MT3987	1.122112	9.406315	3.712431	-0.51239	0.00307	MT2894	1.041282	8.408346	2.47705	-3.65275	0.040099
MT3039	1.012317	9.246124	3.710629	-0.51752	0.003083	MT2294	0.812389	8.886548	2.475727	-3.65564	0.040198
MT2360	-1.14978	9.081043	-3.70985	-0.51974	0.003085	MT2230	-0.79366	9.258289	-2.47558	-3.65596	0.040198
MT3927	-0.973	9.106322	-3.70957	-0.52055	0.003085	MT0479	-0.78157	9.805737	-2.47518	-3.65682	0.040215
MT1995	-0.96637	9.763971	-3.70555	-0.53197	0.003116	MT3341	0.88485	9.708727	2.47401	-3.65938	0.040308
MT1451	1.122284	8.282814	3.705036	-0.53343	0.003116	MT0783	0.86492	8.54023	2.47319	-3.66117	0.040361
MT2425	1.74877	8.598976	3.704951	-0.53368	0.003116	MT0985	0.904501	8.961376	2.472978	-3.66163	0.040361
MT0073	-1.36172	9.021326	-3.70381	-0.53691	0.003122	MT1530	-1.07448	8.377809	-2.47279	-3.66204	0.040361
MT1521	-1.3686	8.626861	-3.70236	-0.54105	0.003132	MT0789	-0.81882	9.094588	-2.471	-3.66594	0.040516
MT3361	1.43664	9.104977	3.701105	-0.54461	0.00314	MT1370	-0.73617	9.626245	-2.46995	-3.66822	0.040598
MT1974	-1.49717	9.173426	-3.70023	-0.54709	0.003141	MT3799	-0.80898	9.235475	-2.46963	-3.66892	0.0406
MT1180	-1.04315	9.709189	-3.70009	-0.5475	0.003141	MT1659	-0.89649	8.907174	-2.46947	-3.66927	0.0406
MT2426	1.589054	8.858666	3.699327	-0.54966	0.003144	MT2278	-0.6437	9.301607	-2.46659	-3.67554	0.040865
MT3806	1.113295	9.158769	3.698091	-0.55317	0.003152	MT2370.1	-0.74993	9.585582	-2.46593	-3.67699	0.040909
MT1999	-1.1347	9.175646	-3.69374	-0.56551	0.00319	MT1956	0.689213	9.380071	2.463655	-3.68193	0.041114
MT0247	1.673553	8.528792	3.692577	-0.56883	0.003197	MT1105	-0.73483	8.660187	-2.46343	-3.68241	0.041114
MT0920	1.412521	9.399896	3.691644	-0.57148	0.003201	MT1761	0.974905	8.693219	2.461648	-3.68629	0.041259
MT2049	1.496303	10.01331	3.689931	-0.57634	0.003214	MT1745	0.67621	9.038412	2.461546	-3.68651	0.041259
MT2167	1.65126	10.00105	3.688922	-0.5792	0.003219	MT4002	0.810499	9.23316	2.459433	-3.6911	0.04145
MT0067	1.283556	9.937173	3.688498	-0.5804	0.003219	MT0191	0.902184	9.250556	2.458587	-3.69293	0.041513
MT3767.2	-1.03498	9.530484	-3.68674	-0.58539	0.003232	MT0524	-0.55215	8.986811	-2.45685	-3.6967	0.041667
MT3682	0.980825	9.338533	3.686068	-0.58729	0.003235	MT0659	1.004973	8.381503	2.456188	-3.69814	0.041711
MT1961	-1.12376	9.374133	-3.6856	-0.58864	0.003235	MT3246	-1.01031	9.455108	-2.4555	-3.69964	0.041738
MT0866	0.982544	9.395697	3.683897	-0.59345	0.003246	MT0544	0.763402	10.20506	2.455469	-3.6997	0.041738
MT0963	-1.26415	9.656911	-3.68359	-0.59434	0.003246	MT0083	-0.58059	9.546848	-2.45304	-3.70496	0.041963
MT0320	1.416724	8.694073	3.681804	-0.59938	0.00326	MT2329	0.764598	10.28819	2.448858	-3.71402	0.042371
MT1553	-1.11358	9.543189	-3.68081	-0.6022	0.003265	MT1860	-0.58226	9.365387	-2.44864	-3.71449	0.042371
MT2484	-1.20729	9.166182	-3.68031	-0.60361	0.003266	MT2954	-0.72996	8.988464	-2.44838	-3.71504	0.042374
MT3321	1.400389	9.003786	3.67952	-0.60586	0.003269	MT3317	0.911226	9.840845	2.447958	-3.71596	0.042394
MT1083	1.257391	9.281768	3.677067	-0.6128	0.00329	MT0011	0.676316	9.428028	2.446366	-3.71941	0.042536
MT2370	-1.26806	8.989007	-3.67563	-0.61687	0.0033	MT1538	0.802548	9.732359	2.444928	-3.72251	0.042662
MT2992	1.659928	8.766245	3.67344	-0.62308	0.003317	MT2470	0.890759	10.49605	2.442667	-3.7274	0.042875
MT1231	1.319998	8.973998	3.667877	-0.63881	0.003369	MT0726.1	-0.78496	8.496345	-2.44141	-3.73012	0.042962
MT2216	1.551362	8.337404	3.665319	-0.64605	0.003391	MT3237	0.834561	8.816644	2.441378	-3.73018	0.042962
MT2736.1	1.434402	8.588684	3.664513	-0.64833	0.003395	MT1885	-0.64849	9.206568	-2.44082	-3.73138	0.042984
MT1272	-1.39013	9.222258	-3.66318	-0.65209	0.003401	MT0206	-0.81833	8.841604	-2.44071	-3.73162	0.042984
MT2087	1.499697	9.046541	3.662571	-0.65382	0.003401	MT1139	-0.74292	9.374769	-2.43839	-3.73663	0.043204
MT1033	1.847478	8.24269	3.662143	-0.65503	0.003401	MT2838	1.089053	9.502055	2.437873	-3.73775	0.043235
MT1959	-1.18418	9.238997	-3.66198	-0.65547	0.003401	MT2530	-0.71022	9.396091	-2.43757	-3.73841	0.043243
MT0967	-1.52891	9.303084	-3.66117	-0.65778	0.003401	MT2058	-0.8135	9.732437	-2.43653	-3.74064	0.043329
MT2612	1.502798	9.076051	3.660729	-0.65902	0.003401	MT0209	-0.87081	8.702592	-2.43572	-3.74238	0.04339
MT1620	1.485451	8.159761	3.660705	-0.65909	0.003401	MT3459	0.710151	8.26401	2.4339	-3.74631	0.043559
MT0207	-1.14483	9.390661	-3.6601	-0.66081	0.003401	MT2211	1.194393	8.973872	2.433192	-3.74783	0.04361
MT1626	-1.48861	10.30335	-3.66009	-0.66083	0.003401	MT3712.1	-0.85032	9.210917	-2.43265	-3.749	0.043644
MT3668	1.526679	7.955996	3.656722	-0.67034	0.003431	MT3602	-0.68416	9.520859	-2.43214	-3.7501	0.043674
MT1040.1	1.264449	9.47925	3.65119	-0.68595	0.003485	MT2688	-0.79619	8.98575	-2.43139	-3.75172	0.04371
MT4030	1.564058	8.503204	3.649085	-0.69189	0.003503	MT3244	-0.79656	8.828102	-2.43111	-3.75231	0.04371
MT2071	-0.95792	9.689223	-3.64753	-0.69627	0.003515	MT1390	0.776896	9.070872	2.431111	-3.75231	0.04371
MT3658	1.278648	8.980206	3.647046	-0.69764	0.003515	MT3304	-0.75773	8.655199	-2.42966	-3.75543	0.043841
MT3551	1.680363	8.423011	3.645083	-0.70317	0.003529	MT3275	-0.90045	9.43155	-2.42662	-3.76197	0.044143
MT0070	1.378532	8.72331	3.644894	-0.7037	0.003529	MT3954	-0.83196	9.378586	-2.42611	-3.76306	0.044173
MT2304	1.269396	9.258379	3.642657	-0.71001	0.003549	MT0684	-0.81848	9.390941	-2.42575	-3.76385	0.044188
MT0645	1.164286	9.812352	3.641899	-0.71214	0.003552	MT1109	1.123085	8.157213	2.424486	-3.76655	0.044299
MT2857	-1.00759	9.408924	-3.63949	-0.71893	0.003574	MT3649	-0.79118	9.846567	-2.42409	-3.76741	0.044318
MT3057	1.298067	10.41655	3.638944	-0.72047	0.003575	MT0224	-0.82937	8.967809	-2.41968	-3.77685	0.044771
MT3330	1.36228	8.950973	3.638258	-0.7224	0.003578	MT1351	-0.93969	9.342531	-2.41878	-3.7788	0.044845
MT3278	-1.04811	9.433517	-3.63776	-0.7238	0.003579	MT2446	1.01764	8.804676	2.416188	-3.78435	0.045082
MT1369	0.928678	9.409168	3.637126	-0.72559	0.003581	MT2037	0.91947	9.231281	2.416155	-3.78442	0.045082
MT3721	-0.94968	9.56129	-3.63559	-0.72992	0.003593	MT1495	-0.64313	9.164318	-2.41554	-3.78573	0.045124
MT3556	0.937162	9.13437	3.632775	-0.73783	0.003619	MT3995	0.864824	8.786569	2.413498	-3.7901	0.045324
MT3466	1.027317	9.74387	3.631681	-0.74091	0.003627	MT0978	1.02116	8.927099	2.411069	-3.7953	0.045567
MT2318	1.218625	9.996855	3.630783	-0.74344	0.003632	MT2637.1	-0.81137	9.042074	-2.41065	-3.79619	0.045588
MT0328	1.835333	8.289215	3.628379	-0.7502	0.003654	MT0951	-0.88684	9.464692	-2.41025	-3.79705	0.045607
MT0223	-1.05366	9.207638	-3.62757	-0.75247	0.003657	MT1704	-0.74666	9.742528	-2.40949	-3.79867	0.045666
MT1732	1.405959	8.809967	3.626477	-0.75555	0.003657	MT0706	-0.66528	9.775885	-2.40888	-3.79997	0.045709
MT3421	-1.0565	9.211891	-3.62644	-0.75564	0.003657	MT3090	0.811128	9.084962	2.408444	-3.80091	0.045732
MT3707	1.556347	8.77692	3.626424	-0.7557	0.003657	MT1747	-0.78125	8.667836	-2.4075	-3.80293	0.045812
MT1091	-1.04571	9.840446	-3.62578	-0.75749	0.00366	MT3573.14	0.969566	8.405537	2.405894	-3.80635	0.045966
MT3179	1.167287	9.116207	3.622978	-0.76538	0.003686	MT2765	-0.98981	8.808943	-2.40496	-3.80835	0.046045
MT1019	1.407612	8.793501	3.622281	-0.76734	0.003689	MT3747	0.699275	9.154134	2.404297	-3.80976	0.046093
MT2960	1.42671	10.0347	3.620304	-0.77289	0.003707	MT2415	-0.79613	9.42198	-2.40284	-3.81288	0.046231
MT2718	-1.00388	9.375357	-3.61901	-0.77651	0.003713	MT3988	-0.6116	9.158557	-2.40138	-3.81598	0.046345
MT2015	1.301458	10.30073	3.618932	-0.77674	0.003713	MT0386	-0.78245	8.767442	-2.4013	-3.81615	0.046345
MT2168	-1.13976	9.397354	-3.61771	-0.78019	0.003722	MT1777	0.585716	9.516584	2.401144	-3.81648	0.046345
MT0657	1.550211	9.578778	3.616407	-0.78383	0.003732	MT1053	0.929977	8.891095	2.400177	-3.81854	0.046428
MT1278	1.43277	9.032385	3.615276	-0.787	0.00374	MT1330.1	-0.69529	9.237275	-2.39975	-3.81945	0.046451
MT2124	1.867005	8.134847	3.614264	-0.78984	0.003747	MT1452	0.749722	8.798865	2.398931	-3.8212	0.046518
MT1440	1.474677	9.271248	3.611281	-0.79821	0.003774	MT1381	-0.73599	8.815504	-2.39721	-3.82486	0.046668
MT2423	1.637411	8.601357	3.611044	-0.79888	0.003774	MT3176.1	0.707227	8.599943	2.397149	-3.82499	0.046668
MT0934	-1.04586	9.424127	-3.60904	-0.80451	0.003792	MT0504	-0.78572	8.810024	-2.39623	-3.82695	0.046746
MT1993	-1.04474	9.099822	-3.60855	-0.80587	0.003793	MT3218	-0.8556	9.075586	-2.39548	-3.82855	0.046806
MT2082	-1.14267	9.478117	-3.60807	-0.8072	0.003794	MT0692.1	-0.66855	9.422861	-2.39467	-3.83026	0.046871
MT2893	1.534506	8.274342	3.604534	-0.81712	0.00383	MT0719.2	-0.56093	9.20547	-2.39418	-3.83131	0.046902

MT3664	1.3484	9.197362	3.603997	-0.81863	0.00383	MT3254	-0.86947	9.617059	-2.39145	-3.83711	0.047186
MT0056	1.622561	8.550671	3.603697	-0.81947	0.00383	MT1480	-0.76589	9.252482	-2.39025	-3.83965	0.047298
MT0425	1.514872	8.853607	3.603123	-0.82108	0.003831	MT1597	-0.69071	9.275844	-2.3892	-3.84188	0.04737
MT0278	1.212293	9.16667	3.602835	-0.82188	0.003831	MT2401	0.924315	10.37405	2.389168	-3.84196	0.04737
MT1804	-1.23528	9.929848	-3.60222	-0.82361	0.003833	MT0805	-0.77367	9.514348	-2.38859	-3.84319	0.04739
MT1618	1.071226	9.695901	3.598914	-0.83286	0.003867	MT0610	-0.8116	8.561362	-2.38855	-3.84328	0.04739
MT2130	1.19413	9.664051	3.598254	-0.83471	0.00387	MT1418.1	-0.795	9.446435	-2.38713	-3.84629	0.047527
MT0776	1.244414	9.086138	3.59676	-0.83889	0.003883	MT1461	0.790787	9.085623	2.386767	-3.84705	0.047542
MT2041	-1.04302	9.635565	-3.59399	-0.84664	0.00391	MT1119	0.797059	8.672941	2.386421	-3.84779	0.047556
MT1649	1.260284	9.86932	3.59332	-0.84851	0.003914	MT1094	0.839917	9.572971	2.38607	-3.84853	0.047558
MT3627	-1.19197	9.38775	-3.59175	-0.8529	0.003927	MT2080.1	0.734614	10.04848	2.385902	-3.84889	0.047558
MT3899	-0.99153	9.390555	-3.58983	-0.85828	0.003945	MT3955	-0.61313	9.418413	-2.38573	-3.84925	0.047558
MT1341	0.94304	10.00576	3.587963	-0.86349	0.003963	MT2180	-0.66234	9.28552	-2.38355	-3.85387	0.047783
MT3071	1.278134	9.553527	3.586178	-0.86847	0.003979	MT0277	-0.65109	9.200233	-2.38191	-3.85735	0.047946
MT2186	1.188611	10.44412	3.585364	-0.87075	0.003984	MT1828	0.702381	9.118392	2.380112	-3.86116	0.048129
MT2504	1.236913	9.235014	3.582261	-0.87942	0.004016	MT0670	-0.87207	9.134369	-2.37917	-3.86315	0.048212
MT0122	-1.22768	9.24962	-3.58149	-0.88157	0.004021	MT0598	-0.82962	8.618685	-2.37857	-3.86443	0.048256
MT2608	1.035883	9.1493	3.58006	-0.88556	0.004033	MT0862	-0.83175	10.2244	-2.37663	-3.86853	0.048456
MT2674.1	-1.25961	9.320586	-3.57036	-0.91261	0.004147	MT0764	0.997499	8.221108	2.376286	-3.86925	0.04847
MT1149	-1.11306	9.216816	-3.56988	-0.91394	0.004148	MT1013	-0.7572	10.09905	-2.37576	-3.87035	0.04848
MT1142	1.149604	9.885798	3.569317	-0.91552	0.00415	MT1014	-0.91954	9.551717	-2.37575	-3.87039	0.04848
MT2333	-0.91176	9.150949	-3.56357	-0.93152	0.004215	MT0463	-0.72958	9.052137	-2.37541	-3.87111	0.048494
MT0870	1.25467	9.342775	3.56335	-0.93213	0.004215	MT2898	-0.70471	9.097889	-2.37484	-3.87232	0.04853
MT3173	1.456546	8.659994	3.561362	-0.93767	0.004235	MT2928	0.795863	8.487633	2.37465	-3.87271	0.04853
MT2478	1.255185	8.491272	3.560365	-0.94044	0.004243	MT2044	0.752936	8.953954	2.374093	-3.87388	0.048569
MT0018	1.839528	8.217281	3.559684	-0.94234	0.004246	MT0028	-0.65411	8.697317	-2.37255	-3.87715	0.048724
MT0825	1.13274	8.98986	3.557522	-0.94835	0.004269	MT1882	-0.67843	9.258524	-2.37227	-3.87774	0.04873
MT3427	-1.29983	9.207014	-3.5536	-0.95924	0.004309	MT3422	0.696063	9.187174	2.369325	-3.88395	0.049041
MT0261	-1.12236	9.459942	-3.55341	-0.95978	0.004309	MT0398	-0.67449	9.769024	-2.36918	-3.88427	0.049041
MT0518	1.349525	8.764673	3.553181	-0.96042	0.004309	MT0737	-0.88299	8.774542	-2.3675	-3.8878	0.049206
MT1093	1.434336	8.806292	3.547657	-0.97577	0.004376	MT0580	0.902262	9.024473	2.367171	-3.88849	0.049206
MT0695	-1.22874	9.54669	-3.54637	-0.97935	0.004387	MT3807	-0.78527	8.792214	-2.36711	-3.88862	0.049206
MT2868	1.357729	9.118238	3.545196	-0.9826	0.004397	MT3653.1	0.666	9.461439	2.366801	-3.88927	0.049216
MT2013	-0.88148	9.348536	-3.54364	-0.98693	0.004411	MT2739	0.730203	8.755021	2.365625	-3.89175	0.049329
MT0293	1.543344	8.448316	3.543376	-0.98765	0.004411	MT2710	0.961991	7.994903	2.365276	-3.89248	0.049344
MT2062	-1.24694	9.219108	-3.54095	-0.99439	0.004438	MT3319	-0.59316	10.05435	-2.36475	-3.89359	0.04938
MT3301	-1.26223	9.48136	-3.53916	-0.99935	0.004456	MT0377	-0.7546	9.02707	-2.3645	-3.89412	0.049384
MT2380	-1.56227	9.457336	-3.53858	-1.00096	0.004459	MT1536	-0.75052	9.382854	-2.36313	-3.897	0.049511
MT2057	-1.19297	9.437021	-3.53708	-1.0051	0.004474	MT0883	0.796793	9.274229	2.362979	-3.89732	0.049511
MT0414	-1.13515	9.947977	-3.53558	-1.00927	0.004489	MT3287	-0.61439	8.644414	-2.36176	-3.89989	0.04963
MT0950	-0.92923	9.123377	-3.53325	-1.01572	0.004514	MT1825	-0.71109	9.062764	-2.36088	-3.90173	0.049708
MT3122	1.421946	9.484627	3.528607	-1.02858	0.004572	MT3801	1.0487	9.503572	3.348165	-1.52068	0.00687
MT0915	-0.82316	9.496648	-3.52788	-1.03059	0.004577	MT0726	-1.06762	9.501855	-3.34693	-1.52398	0.006887
MT2305	1.286933	8.659599	3.52593	-1.03599	0.004598	MT0972	-1.03003	9.129617	-3.34381	-1.53237	0.006943
MT1490	-1.02735	9.528706	-3.52241	-1.04574	0.004641	MT3281	-1.26552	8.967889	-3.34154	-1.53846	0.006982
MT1343	-1.14084	10.27848	-3.52173	-1.0476	0.004645	MT0959	1.207454	9.056353	3.339711	-1.54336	0.007011
MT0177	1.646253	9.351545	3.520071	-1.0522	0.004662	MT0733	1.202186	8.947289	3.336806	-1.55115	0.007064
MT0762.1	1.188911	8.863363	3.519609	-1.05348	0.004664	MT1844	1.134096	9.391503	3.334513	-1.55729	0.007098
MT2874	1.027695	9.024735	3.518695	-1.056	0.004671	MT1485	1.177618	8.976768	3.33428	-1.55791	0.007098
MT3028	-0.96592	9.236627	-3.51439	-1.06791	0.004725	MT1173	-1.5505	9.833528	-3.33392	-1.55888	0.007098
MT1696	1.738961	8.628861	3.514016	-1.06893	0.004725	MT2575	1.078282	9.400145	3.333717	-1.55942	0.007098
MT1573	-1.0923	10.13409	-3.51123	-1.07662	0.004759	MT3671.1	1.353796	8.738971	3.331661	-1.56492	0.007133
MT1104	1.347297	9.091686	3.509255	-1.08208	0.004782	MT1313	1.117338	8.261804	3.330757	-1.56734	0.007145
MT1202	0.919956	9.381297	3.50742	-1.08714	0.004802	MT0396	1.116138	9.142233	3.32879	-1.57261	0.007178
MT2537	-0.91598	9.531347	-3.50567	-1.09198	0.004822	MT1032	1.411435	8.953792	3.328335	-1.57383	0.00718
MT1532	-0.99037	9.142025	-3.50506	-1.09366	0.004825	MT0005	-0.81795	9.445054	-3.32652	-1.57867	0.007211
MT1331	1.281362	9.066832	3.50419	-1.09605	0.004832	MT0846	-0.96296	9.212796	-3.32513	-1.58241	0.007233
MT2878	1.147381	9.056244	3.499511	-1.10895	0.004894	MT1624	0.959236	9.3628	3.324565	-1.58391	0.007237
MT0881	1.026126	8.481201	3.497171	-1.11539	0.004922	MT1786	1.194398	8.825554	3.321772	-1.59137	0.007288
MT1363	-1.29784	9.253072	-3.496	-1.1186	0.004934	MT3592	1.38851	8.307715	3.317926	-1.60164	0.007362
MT1848	1.435972	9.415551	3.4956	-1.11972	0.004934	MT1372	-1.06892	8.790339	-3.31722	-1.60352	0.00737
MT2369	-0.99902	9.579815	-3.49126	-1.13167	0.004992	MT0465	1.020258	9.211354	3.315228	-1.60885	0.007405
MT1801	-1.00501	9.528992	-3.49085	-1.1328	0.004993	MT0127	1.251623	9.167359	3.314794	-1.61	0.007407
MT2863	-0.92303	9.215075	-3.4894	-1.13677	0.005008	MT2789	-1.20822	9.582305	-3.31175	-1.61812	0.007465
MT1918	-1.20095	9.20515	-3.48707	-1.14318	0.005037	MT2432	1.31335	8.92321	3.310503	-1.62145	0.007484
MT3289	-1.18577	9.280413	-3.48515	-1.14847	0.005057	MT1718	1.134805	10.42602	3.309714	-1.62356	0.007494
MT0755	1.46159	8.464064	3.484822	-1.14937	0.005057	MT0366	-0.7716	9.269274	-3.30925	-1.62479	0.007496
MT1162	-0.99043	9.830796	-3.48461	-1.14996	0.005057	MT0230	1.081313	9.21536	3.306837	-1.63122	0.007536
MT1752	1.137956	9.431088	3.480173	-1.16214	0.005118	MT3045	-0.87182	9.457954	-3.30654	-1.632	0.007536
MT3997	1.426242	9.019681	3.478081	-1.16789	0.005144	MT0740	-0.85476	9.628905	-3.30638	-1.63245	0.007536
MT1135	-1.50408	9.215022	-3.47565	-1.17457	0.005175	MT0772.1	1.171894	7.809754	3.299366	-1.65112	0.007682
MT3770	1.196483	9.401637	3.474156	-1.17866	0.005192	MT3928	-1.01209	9.569137	-3.29902	-1.65205	0.007682
MT3546	1.273023	8.858379	3.469022	-1.19274	0.005266	MT1216	1.34965	8.35912	3.296802	-1.65794	0.007724
MT2099	-1.15399	9.709992	-3.46821	-1.19497	0.005272	MT3012	-1.15501	9.492469	-3.29598	-1.66012	0.007735
MT0731	1.278585	8.942402	3.467292	-1.19749	0.005281	MT0515	1.222705	8.69764	3.294765	-1.66336	0.007754
MT2120	1.286643	9.136729	3.464518	-1.20509	0.005318	MT1054.1	-1.17228	8.987933	-3.29269	-1.66888	0.00779
MT0501	1.282479	9.214533	3.463246	-1.20857	0.005332	MT4035.1	1.22845	9.778661	3.391137	-1.40487	0.006268
MT3644	1.344767	9.240566	3.46262	-1.21029	0.005336	MT1373	1.160192	8.969491	3.389384	-1.40961	0.006293
MT3876	-0.91621	10.28549	-3.46204	-1.21187	0.005339	MT2656	1.278872	9.052674	3.388323	-1.41248	0.006306
MT1820.1	1.096554	8.647176	3.461188	-1.21421	0.005347	MT1798	1.029197	9.134848	3.384191	-1.42365	0.006376
MT0063	-1.18366	10.12604	-3.4605	-1.21609	0.005352	MT1862	-1.38794	9.614954	-3.3837	-1.42496	0.006378
MT2390	-1.53669	9.043956	-3.45762	-1.22398	0.005391	MT1611	1.37331	9.83178	3.383311	-1.42602	0.006378
MT0910.4	0.927161	9.602026	3.456224	-1.22779	0.005408	MT0445	-1.38353	8.940753	-3.38296	-1.42696	0.006378
MT0655	1.530886	8.478471	3.454974	-1.23121	0.005416	MT4037	-1.27013	9.089728	-3.38215	-1.42916	0.006387
MT3174.2	-1.00288	9.087056	-3.45492	-1.23135	0.005416	MT2913	1.427712	9.24685	3.380375	-1.43395	0.006413
MT1324	-0.94388	10.53729	-3.4531	-1.23635	0.00544	MT1238	1.247111	8.868447	3.380001	-1.43496	0.006413
MT0819	1.16746	9.716191	3.449669	-1.24571	0.005489	MT0241	0.928491	9.330443	3.377959	-1.44048	0.006445
MT0426	1.269419	9.33548	3.437829	-1.27804	0.005677	MT2108	1.09036	9.324706	3.376056	-1.44561	0.006474
MT1123	1.356616	8.581723	3.433882	-1.2888	0.005733	MT1120	1.171645	8.679071	3.374914	-1.44869	0.006489
MT3006	-1.07971	9.552429	-3.43309	-1.29096	0.005733	MT2564	1.337163	8.558266	3.373947	-1.4513	0.0065
MT0510	1.362607	8.93834	3.433022	-1.29114	0.005733	MT0242	-1.61243	8.928302	-3.37081	-1.45975	0.006553
MT1454	-0.90304	9.274675	-3.43298	-1.29126	0.005733	MT3663	1.293258	8.634216	3.369048	-1.46451	0.00658
MT1266	-1.32661	9.072357	-3.42923	-1.30147	0.00579	MT0101	-1.16942	9.543659	-3.36526	-1.47471	0.006646
MT1320	-0.94368	9.50843	-3.42857	-1.30327	0.005795	MT2645	-0.88135	9.319561	-3.36473	-1.47614	0.006649
MT1783	1.588273	8.727725	3.427663	-1.30574	0.005804	MT1753	1.380957	8.548105	3.362978	-1.48086	0.006671
MT3606	-1.06114	9.45995	-3.42496	-1.31309	0.005844	MT0472.1	1.45841	8.959632	3.362908	-1.48105	0.006671
MT3392	1.115461	9.130725	3.423983	-1.31575	0.005854	MT2282	0.92526	9.83984	3.362383	-1.48246	0.006673
MT3735	-0.99354	9.267541	-3.42316	-1.31799	0.005862	MT3827	-1.01078	9.373299	-3.36205	-1.48336	0.006673

MT3572	-1.02923	9.720035	-3.4224	-1.32007	0.005869	MT0221	-1.00162	9.745352	-3.36074	-1.48687	0.006692
MT0854	1.181917	9.441883	3.421142	-1.32348	0.005884	MT2006	-1.06617	9.209189	-3.36012	-1.48855	0.006697

Statistically Significant Genes Detected in LTBI Caseum of the Classical Granuloma

Name	logFC	AveExpr	t	B	Adj.P.Val	Name	logFC	AveExpr	t	B	Adj.P.Val
MT0962	-2.60076	9.945139	-8.00915	13.22136	1.10E-06	MT0272	1.338287	8.86884	3.487238	-0.98362	0.005486
MT2123	2.922011	8.710353	7.61475	11.96148	2.14E-06	MT1903	1.211101	9.392664	3.486761	-0.98491	0.005487
MT3258	-2.28813	9.74602	-7.33486	11.05965	3.74E-06	MT1882	-0.87438	9.411739	-3.48619	-0.98645	0.00549
MT3958	-1.9306	9.715324	-7.181	10.56166	4.05E-06	MT1957.1	-1.0627	8.999937	-3.48395	-0.99251	0.005517
MT1122	2.504096	9.771831	7.16438	10.50779	4.05E-06	MT0691	0.95634	8.883195	3.483695	-0.99321	0.005517
MT3380	-2.72711	10.03848	-7.05312	10.14676	4.96E-06	MT1033	1.770818	8.298879	3.480197	-1.00266	0.005567
MT1234	2.760147	8.900395	6.950562	9.813431	5.94E-06	MT2353	-1.12994	9.124789	-3.47773	-1.00932	0.005601
MT1728	2.256391	9.178143	6.91838	9.708744	5.94E-06	MT3277	-1.06693	9.24444	-3.47684	-1.01174	0.005606
MT3454	-1.85518	9.661904	-6.42294	8.093642	2.78E-05	MT3990	1.118227	9.183574	3.476643	-1.01226	0.005606
MT2869	2.86023	9.241533	6.391956	7.992538	2.78E-05	MT1679	-0.88752	9.205737	-3.47583	-1.01446	0.005612
MT3099	-1.74682	10.01833	-6.36809	7.914663	2.78E-05	MT3013	-1.2917	9.646512	-3.47534	-1.01579	0.005613
MT1682	1.868686	9.191608	6.358071	7.881975	2.78E-05	MT0931	-0.8258	9.444969	-3.47495	-1.01682	0.005613
MT0506	-1.81711	9.642873	-6.25347	7.540746	3.44E-05	MT3058	1.034833	8.738977	3.47432	-1.01854	0.005617
MT1887	2.144003	8.717936	6.252353	7.537087	3.44E-05	MT2212	1.620728	8.811283	3.469141	-1.03251	0.005697
MT3185	-1.77306	9.440802	-6.21791	7.424751	3.62E-05	MT2682	1.048407	8.977207	3.468595	-1.03399	0.005699
MT0327	3.331275	9.59999	6.173652	7.280456	3.77E-05	MT0188	-1.03383	9.835038	-3.46816	-1.03515	0.005699
MT1083.2	-1.64684	9.622093	-6.13535	7.15562	3.77E-05	MT1673	-0.9268	8.918762	-3.46623	-1.04037	0.005725
MT3475	2.158981	9.141123	6.129285	7.135841	3.77E-05	MT0434	-0.91728	9.121106	-3.46509	-1.04343	0.005737
MT3035	-2.14706	9.747107	-6.12427	7.119495	3.77E-05	MT0784	-0.9521	8.736207	-3.4645	-1.04503	0.00574
MT1010	1.796315	9.28609	6.114314	7.087057	3.77E-05	MT1533.2	-1.25961	10.46899	-3.46268	-1.04994	0.005764
MT0185	-1.95798	10.1918	-6.10939	7.071017	3.77E-05	MT3428	-0.98778	9.274571	-3.46232	-1.0509	0.005764
MT2582	-1.83823	9.683681	-6.05342	6.888697	4.30E-05	MT1558	-1.06702	9.111871	-3.46136	-1.05349	0.005773
MT0802	2.182451	9.945589	6.045281	6.862196	4.30E-05	MT1481	1.469282	10.00822	3.460106	-1.05687	0.005787
MT2441	2.08395	9.388154	6.001854	6.720829	4.64E-05	MT3606	-0.99515	9.45995	-3.45811	-1.06224	0.005815
MT2906	1.642554	9.262911	5.995317	6.699557	4.64E-05	MT1877	-1.21713	9.383439	-3.45589	-1.06822	0.005846
MT0300	2.546258	9.021048	5.988228	6.676488	4.64E-05	MT1598	-0.8496	9.383735	-3.45498	-1.07065	0.005846
MT1796	-3.28333	10.83965	-5.95357	6.563728	5.04E-05	MT3174.1	-1.29601	9.673043	-3.45494	-1.07077	0.005846
MT0879	-1.71702	9.688513	-5.90237	6.397288	5.80E-05	MT3043	-1.12534	9.093734	-3.45465	-1.07154	0.005846
MT0369	-1.40482	9.79634	-5.86386	6.272164	6.29E-05	MT0525	-0.99917	9.217695	-3.45414	-1.07293	0.005848
MT0093	2.154414	9.221245	5.858806	6.255765	6.29E-05	MT0467	-1.24103	9.382901	-3.45373	-1.07403	0.005848
MT3022	-2.22626	9.978803	-5.84944	6.22536	6.29E-05	MT3041	-1.168	9.227139	-3.45192	-1.07891	0.005872
MT1959	-1.75084	9.238997	-5.82923	6.15976	6.54E-05	MT1748	1.142082	9.177786	3.448036	-1.08934	0.00593
MT2854	-1.51442	9.682303	-5.80586	6.083906	6.56E-05	MT3304	-0.99873	8.655199	-3.44781	-1.08995	0.00593
MT3573.15	2.23987	9.623418	5.793918	6.045172	6.56E-05	MT0933	-1.04916	9.355852	-3.44474	-1.09819	0.005973
MT1557	-1.53568	9.321165	-5.79103	6.035795	6.56E-05	MT0936	-0.8655	9.30155	-3.44455	-1.09872	0.005973
MT0893	2.074293	9.294581	5.772555	5.975895	6.56E-05	MT2070	1.345443	9.810036	3.442174	-1.1051	0.006004
MT1432	2.562665	9.404354	5.77251	5.975751	6.56E-05	MT0101	-1.11096	9.543659	-3.442	-1.10556	0.006004
MT0302	1.832308	9.897228	5.771665	5.97301	6.56E-05	MT2263	1.416804	8.975152	3.440811	-1.10875	0.006018
MT1687	2.581886	8.564972	5.765536	5.953142	6.56E-05	MT1333	1.452183	9.195459	3.430858	-1.13545	0.006189
MT3645	-1.3831	9.454371	-5.75754	5.92723	6.56E-05	MT1387	1.001364	9.609687	3.429534	-1.139	0.006206
MT2994	2.429541	9.171772	5.756505	5.923868	6.56E-05	MT1040.1	0.886308	9.499377	3.42908	-1.14022	0.006207
MT3942	2.163946	8.878633	5.737932	5.863685	6.83E-05	MT3904	-0.79637	9.406053	-3.42845	-1.14192	0.006211
MT0292	2.156492	9.558184	5.729084	5.835023	6.88E-05	MT2881	-1.12067	9.510007	-3.42776	-1.14376	0.006216
MT3993	1.929117	10.04109	5.721186	5.809441	6.91E-05	MT0002	-0.98421	10.69251	-3.4259	-1.14873	0.006243
MT0714	-1.91476	9.974899	-5.70477	5.756286	7.12E-05	MT2407	-1.01846	10.33421	-3.42156	-1.16036	0.006315
MT0416	-1.63784	9.700043	-5.69923	5.738343	7.12E-05	MT3945	1.321627	8.870148	3.417742	-1.17057	0.006379
MT0841	1.766961	9.27153	5.670681	5.645973	7.49E-05	MT2845	-0.74658	9.603254	-3.41625	-1.17455	0.006399
MT1966	-1.69374	9.765657	-5.66758	5.635944	7.49E-05	MT3220	-1.2563	9.391453	-3.41435	-1.17963	0.006428
MT1622.1	-2.45092	9.967141	-5.65612	5.598871	7.49E-05	MT0291.3	1.420263	8.823306	3.413846	-1.18099	0.00643
MT2683	1.591581	9.264324	5.654931	5.595035	7.49E-05	MT3316	1.161593	10.02029	3.412433	-1.18476	0.006449
MT3522	1.985723	9.10633	5.650578	5.58096	7.49E-05	MT2676	-0.85213	9.26722	-3.41118	-1.1881	0.006465
MT2964	1.842279	8.973037	5.649012	5.575898	7.49E-05	MT2031	-1.12819	9.614407	-3.41053	-1.18984	0.00647
MT2111	2.644399	8.959128	5.630886	5.517309	7.67E-05	MT0430	-0.87914	9.460096	-3.40904	-1.19382	0.006491
MT1897	1.483458	9.279375	5.627789	5.5073	7.67E-05	MT1896	1.045651	10.07264	3.407639	-1.19757	0.00651
MT2563	2.179217	9.700133	5.625977	5.501446	7.67E-05	MT1406	-1.18657	9.824645	-3.40573	-1.20266	0.006539
MT3210	-1.5998	9.812398	-5.61545	5.467431	7.80E-05	MT1204	-0.95693	9.346626	-3.40312	-1.20962	0.006581
MT1621	2.714913	9.115022	5.610714	5.452141	7.80E-05	MT2006	-1.00273	9.209189	-3.40234	-1.21171	0.006589
MT1560.1	-1.70895	9.358493	-5.60345	5.428681	7.86E-05	MT1207	-0.92996	9.968424	-3.40159	-1.21372	0.006596
MT3710	1.475835	9.048286	5.592312	5.392717	8.03E-05	MT2778	0.828732	9.717011	3.400772	-1.21589	0.006604
MT1441	1.658473	9.147696	5.585939	5.372146	8.06E-05	MT0659	1.292493	8.320985	3.398545	-1.22183	0.006625
MT1321	1.921414	9.318785	5.581516	5.357871	8.06E-05	MT0967	-0.79792	9.503477	-3.39852	-1.2219	0.006625
MT1561	-1.83754	9.571069	-5.57343	5.331784	8.15E-05	MT1929	-1.22168	9.406473	-3.39848	-1.222	0.006625
MT3944	1.828983	9.452575	5.557055	5.278956	8.49E-05	MT3330	1.29024	9.096055	3.396632	-1.22693	0.006654
MT0748	1.619559	9.107081	5.549781	5.255497	8.51E-05	MT3135	-0.72982	9.213059	-3.39409	-1.2337	0.00669
MT0613	1.867826	9.285747	5.547134	5.246963	8.51E-05	MT0352	-1.11473	8.884289	-3.39399	-1.23397	0.00669
MT3666	2.147478	8.417146	5.540755	5.226398	8.57E-05	MT2657	1.159981	8.923021	3.392191	-1.23876	0.006718
MT0484	2.411955	10.16478	5.522818	5.168591	8.97E-05	MT3267	-0.77697	9.576084	-3.39007	-1.24439	0.006751
MT2194	1.757424	8.960833	5.515986	5.14658	8.97E-05	MT3823	-0.98532	10.07949	-3.38944	-1.24609	0.006756
MT1732	1.985792	8.809967	5.514586	5.142073	8.97E-05	MT1611	1.275942	9.83178	3.38432	-1.2597	0.00685
MT0511	1.971861	9.268364	5.509632	5.126115	8.99E-05	MT0088	0.88867	9.566376	3.379681	-1.27203	0.006936
MT1930	-1.42518	9.673593	-5.4938	5.075126	9.36E-05	MT2330.1	0.854662	9.464098	3.377494	-1.27784	0.006972
MT3279	-1.99263	9.47761	-5.48831	5.057477	9.40E-05	MT3078	1.129134	10.12233	3.376958	-1.27926	0.006975
MT3028	-1.40007	9.236627	-5.48436	5.044758	9.40E-05	MT1348	-0.91254	9.138765	-3.3726	-1.29083	0.007056
MT2948	-1.65285	9.458696	-5.47266	5.007109	9.54E-05	MT1359	-0.86364	9.497709	-3.3707	-1.29586	0.007085
MT0641	1.822307	9.389768	5.469182	4.995924	9.54E-05	MT0318	1.429711	8.544582	3.370425	-1.2966	0.007085
MT3381	1.777227	9.076173	5.468432	4.993513	9.54E-05	MT3699	1.058846	8.611967	3.367313	-1.30486	0.007141
MT1514.1	1.792167	10.35523	5.457275	4.957632	9.78E-05	MT2714	1.037887	9.162025	3.366527	-1.30694	0.007148
MT1949	2.062764	9.502725	5.450906	4.937157	9.78E-05	MT3401	1.410346	9.415724	3.366242	-1.3077	0.007148
MT1396	-1.70421	9.520627	-5.44998	4.934174	9.78E-05	MT1879	-0.80071	9.311457	-3.36579	-1.3089	0.007149
MT1031	1.890546	8.7173	5.440777	4.904601	9.78E-05	MT1625	-0.92143	9.065465	-3.36524	-1.31035	0.007152
MT2879	1.825689	9.132895	5.439434	4.900283	9.78E-05	MT1061	-0.91779	9.398763	-3.36402	-1.31358	0.00717
MT3957	-1.60756	9.589623	-5.43909	4.899172	9.78E-05	MT3856	-0.84156	9.293369	-3.36298	-1.31635	0.00717
MT3242	-1.32152	9.496049	-5.43129	4.87413	9.92E-05	MT2411	-1.08472	9.971487	-3.36289	-1.31657	0.00717
MT3275.1	-1.5573	9.713363	-5.40213	4.78047	0.000108	MT1229	1.459712	8.68847	3.362853	-1.31668	0.00717
MT1649	1.758063	9.86932	5.396708	4.763085	0.000109	MT3442	1.036725	9.639428	3.361602	-1.31999	0.007188
MT3160	2.277698	8.949645	5.389281	4.739258	0.00011	MT3954	-1.07057	9.378586	-3.36116	-1.32115	0.007189
MT0702	1.700681	8.897244	5.386282	4.729637	0.00011	MT2887	-1.05428	9.310708	-3.36017	-1.32377	0.007202

MT1556	-1.628	9.700317	-5.38273	4.718231	0.00011	MT0247	1.413234	8.528792	3.357154	-1.33176	0.007257
MT2213	2.513579	9.045264	5.373555	4.688825	0.00011	MT3425	0.778782	9.787848	3.35591	-1.33506	0.007276
MT0481	-1.30723	9.26599	-5.3699	4.677109	0.00011	MT1190	1.055662	9.045283	3.353149	-1.34236	0.007326
MT3960	-1.61749	9.984166	-5.36893	4.673999	0.00011	MT2208	0.920521	8.865787	3.352711	-1.34352	0.007327
MT3486	-1.64013	10.03075	-5.36625	4.66539	0.00011	MT3142	-0.82766	9.547956	-3.34962	-1.35169	0.007385
MT2374	-1.34047	10.07953	-5.36342	4.656343	0.00011	MT2878	1.0199	9.056244	3.349069	-1.35314	0.007389
MT0228	1.467599	9.496754	5.361435	4.649972	0.00011	MT0703	1.094357	8.679622	3.346906	-1.35886	0.007427
MT3349	2.319858	9.1698	5.360651	4.647461	0.00011	MT1279	0.980417	8.819647	3.345319	-1.36305	0.007453
MT2802.1	1.64882	9.164934	5.353662	4.625065	0.00011	MT1028	-0.85319	9.356618	-3.34489	-1.36417	0.007453
MT3722	-1.61735	9.639591	-5.35364	4.625009	0.00011	MT3542	1.292529	8.390734	3.344541	-1.36511	0.007453
MT3696	1.848907	9.273723	5.352905	4.622643	0.00011	MT0763	1.10158	9.036696	3.341895	-1.37209	0.007503
MT1957	-1.29706	9.62515	-5.34631	4.601518	0.000111	MT1913	0.816905	9.436541	3.340424	-1.37598	0.007526
MT0846	-1.16608	9.236293	-5.342	4.587708	0.000111	MT1334	0.918154	9.192129	3.33743	-1.38387	0.007584
MT0048	-1.56719	9.33125	-5.33882	4.577529	0.000111	MT3107	-1.19848	9.377986	-3.33628	-1.3869	0.0076
MT3198	1.696018	9.13298	5.337619	4.573682	0.000111	MT2871	1.614859	8.953684	3.335631	-1.38862	0.0076
MT0555	1.727024	9.908035	5.329157	4.546591	0.000113	MT2431	0.808333	8.769217	3.335574	-1.38877	0.0076
MT2935	1.806253	10.25278	5.328271	4.543755	0.000113	MT3633	0.86412	9.59865	3.334838	-1.3907	0.007607
MT1107	1.674481	9.187624	5.280622	4.391382	0.000131	MT1533.1	-1.06871	9.605534	-3.33318	-1.39507	0.007636
MT2161	2.21009	8.960411	5.273596	4.368937	0.000132	MT3566	-0.85445	9.323706	-3.33021	-1.4029	0.007693
MT0414	-1.57217	9.947977	-5.272	4.363833	0.000132	MT2971	0.978551	9.248915	3.328702	-1.40687	0.007718
MT0741.1	-1.59271	9.522112	-5.27161	4.362605	0.000132	MT0091	1.455672	8.462374	3.327362	-1.4104	0.00774
MT2412	-1.65326	10.30479	-5.25993	4.325297	0.000136	MT1374	-0.88165	9.156581	-3.32687	-1.41169	0.00774
MT1497.1	1.911177	8.904887	5.241562	4.26669	0.000143	MT1360	-1.60596	9.807629	-3.32662	-1.41235	0.00774
MT0995	1.527075	9.621525	5.23981	4.261102	0.000143	MT0428	1.594151	9.272396	3.324782	-1.41719	0.007773
MT3743	-1.449	9.447343	-5.22534	4.214953	0.000148	MT0708	-1.129	9.481451	-3.32438	-1.41824	0.007773
MT0882	-1.44579	9.791201	-5.21992	4.197683	0.00015	MT0056	1.121187	8.33387	3.322765	-1.4225	0.007796
MT3025	-1.63084	9.817972	-5.20997	4.165994	0.000153	MT1758	1.355632	8.461687	3.322633	-1.42284	0.007796
MT3051	1.998105	9.166236	5.206161	4.153852	0.000153	MT1884	-0.77526	9.413763	-3.32164	-1.42546	0.007808
MT3964	-1.48509	9.614199	-5.20548	4.151682	0.000153	MT3571	-0.92997	9.438402	-3.32136	-1.42619	0.007808
MT2674.1	-1.70304	9.320586	-5.1972	4.12533	0.000155	MT2391	0.97025	9.617973	3.317558	-1.43618	0.007882
MT1437	1.515341	9.968772	5.196985	4.124634	0.000155	MT2915	1.191628	8.493232	3.317356	-1.43671	0.007882
MT0003	-1.71428	10.04218	-5.19277	4.111201	0.000156	MT3510	1.048766	8.996791	3.316047	-1.44015	0.007897
MT2498	1.566189	9.43664	5.182674	4.079084	0.00016	MT3647	-0.87059	9.272906	-3.31595	-1.4404	0.007897
MT3378	-1.82978	9.99399	-5.17998	4.070509	0.00016	MT1143.1	-1.04785	9.582864	-3.3149	-1.44318	0.007905
MT4005	1.394655	9.016342	5.175204	4.055321	0.000162	MT2954	-0.89163	9.088345	-3.31485	-1.4433	0.007905
MT2101	-1.30242	9.155003	-5.15285	3.984263	0.000173	MT2952	1.145502	9.009831	3.312527	-1.4494	0.007949
MT2985	2.297211	9.805532	5.146826	3.965118	0.000175	MT2020	1.098577	8.840423	3.310735	-1.4541	0.007982
MT3328	1.383033	8.755034	5.133728	3.923523	0.00018	MT0870	1.22229	9.394792	3.310106	-1.45575	0.007988
MT1801	-1.46234	9.607768	-5.13347	3.922701	0.00018	MT1370	-0.91613	9.626245	-3.30931	-1.45784	0.007998
MT3615.4	1.984927	9.475116	5.128463	3.906811	0.000182	MT1054.1	-1.01951	9.005152	-3.30509	-1.46891	0.008085
MT2151	1.576943	9.095696	5.124289	3.893564	0.000182	MT2057	-1.0353	9.437021	-3.30481	-1.46964	0.008085
MT1286	2.276207	9.52944	5.124171	3.893191	0.000182	MT0733	1.296372	8.918551	3.300482	-1.48098	0.008178
MT2527	-1.3729	9.372659	-5.11771	3.872704	0.000184	MT1650.1	-0.8696	9.83512	-3.29882	-1.48533	0.008197
MT1804	-1.31074	9.986885	-5.11152	3.853052	0.000185	MT1916	1.025439	9.554655	3.298605	-1.4859	0.008197
MT0562	1.852	9.931077	5.111288	3.852322	0.000185	MT3476	1.202174	8.635162	3.29859	-1.48594	0.008197
MT3954.1	-2.12131	9.742013	-5.10607	3.835789	0.000187	MT3767.1	1.283676	9.532966	3.294942	-1.49549	0.008274
MT0261	-1.49544	9.459942	-5.0974	3.808285	0.000192	MT2862.1	-0.97722	8.726547	-3.29427	-1.49724	0.008275
MT2870	1.533	8.968457	5.08348	3.764193	0.000199	MT2085	-0.89669	8.955281	-3.29417	-1.49752	0.008275
MT0513	2.058992	9.220351	5.072028	3.727936	0.000206	MT0840	1.030062	8.521513	3.29201	-1.50316	0.008318
MT0072	-1.39333	9.376709	-5.06335	3.700462	0.00021	MT2217	1.174675	8.644846	3.29045	-1.50724	0.008347
MT0379	-1.59002	9.553124	-5.05481	3.673469	0.000214	MT2720	-0.89554	9.182592	-3.28834	-1.51275	0.008389
MT0448	2.122467	9.247418	5.053268	3.668584	0.000214	MT3682	0.811916	9.338533	3.285112	-1.52119	0.008458
MT3353	2.46854	8.870292	5.044238	3.640035	0.000219	MT0953	1.08741	9.173293	3.284119	-1.52379	0.008473
MT1634	1.650351	9.26488	5.035532	3.612522	0.000223	MT2853	-1.01065	9.156501	-3.28357	-1.52522	0.008478
MT1226	1.445768	9.214972	5.035395	3.612087	0.000223	MT1312	-0.87129	10.17589	-3.28145	-1.53076	0.008521
MT2369	-1.33669	9.579815	-5.02926	3.592707	0.000225	MT1925	-0.93976	9.271428	-3.2804	-1.5335	0.008537
MT2098	-1.28175	9.4798	-5.02808	3.588983	0.000225	MT3551	1.329329	8.536042	3.278818	-1.53762	0.008567
MT1881	-1.27815	9.396679	-5.02266	3.571861	0.000227	MT2415	-1.0088	9.42198	-3.27804	-1.53966	0.008578
MT3693	1.647131	9.139381	5.020982	3.56657	0.000227	MT0483	-0.83777	9.248057	-3.27665	-1.54329	0.008603
MT1200	1.751886	9.222155	5.01888	3.559934	0.000227	MT1765	-1.08497	9.286991	-3.27149	-1.55673	0.008722
MT3534	1.802135	9.103519	5.018103	3.557482	0.000227	MT3263	-1.05969	8.942018	-3.27084	-1.55841	0.008729
MT2650	-1.11716	9.48948	-5.0139	3.5442	0.000228	MT1502	1.238601	9.44421	3.264309	-1.57543	0.008885
MT2100	-1.62291	10.34238	-5.00873	3.527914	0.000231	MT3262	-0.76739	9.115805	-3.26317	-1.57839	0.008902
MT1427	1.860278	9.025629	5.002122	3.507057	0.000234	MT1828	1.067965	9.040841	3.262892	-1.57911	0.008902
MT0534	1.542772	9.539875	4.99894	3.497022	0.000235	MT2182	-0.71303	8.748157	-3.25935	-1.58831	0.008984
MT1091	-1.59039	9.887853	-4.9947	3.483661	0.000237	MT1783	1.136623	8.868811	3.257523	-1.59307	0.009022
MT0758	1.799024	8.998477	4.987231	3.46011	0.00024	MT2281	-0.99391	8.908283	-3.25703	-1.59435	0.009025
MT1157.1	1.814279	10.09228	4.984679	3.452066	0.00024	MT3677	-0.88612	9.551785	-3.25618	-1.59656	0.009038
MT2304	1.578694	9.293836	4.984435	3.4513	0.00024	MT2139	0.914136	9.522068	3.25576	-1.59766	0.009039
MT3487	-1.4752	9.558185	-4.98347	3.448251	0.00024	MT1848	1.241674	9.415551	3.254246	-1.60159	0.009069
MT1610	-1.6193	9.231838	-4.97706	3.428068	0.000243	MT3270	-0.89386	9.503681	-3.25355	-1.6034	0.009078
MT0958	-1.39425	9.654475	-4.97634	3.425792	0.000243	MT2518.1	-0.86372	8.978224	-3.25278	-1.6054	0.009089
MT0299	1.854837	9.547729	4.972204	3.412771	0.000244	MT1655	1.12239	8.878909	3.251172	-1.60957	0.009121
MT0498	2.04033	8.482688	4.971623	3.410942	0.000244	MT1375	1.147707	9.372294	3.250656	-1.61091	0.009125
MT4040	-1.79236	10.31494	-4.96245	3.382065	0.00025	MT0172	0.986863	9.766915	3.248832	-1.61564	0.009163
MT2231	-1.357	9.400178	-4.95987	3.373936	0.00025	MT3500	1.011842	8.521328	3.248193	-1.6173	0.009171
MT3947	2.117363	9.26523	4.953907	3.355188	0.000251	MT2781	1.321419	8.782626	3.247671	-1.61865	0.009175
MT2735	-1.40433	9.55471	-4.95312	3.352697	0.000251	MT0296	-1.53136	9.338291	-3.24354	-1.62936	0.009274
MT3591	-1.43297	9.514055	-4.95232	3.350205	0.000251	MT1934	-1.30176	9.349573	-3.2414	-1.63491	0.009322
MT1555	-1.71935	9.537536	-4.94925	3.340554	0.000251	MT2812	1.028826	8.76544	3.239322	-1.64029	0.009368
MT0455	1.379006	9.591543	4.948299	3.337548	0.000251	MT1942	-0.81582	9.237402	-3.23787	-1.64406	0.009397
MT3539	1.824313	8.920769	4.947605	3.335365	0.000251	MT1139	-1.01821	9.386028	-3.23694	-1.64646	0.009412
MT0229	-1.83417	8.744064	-4.94517	3.327711	0.000251	MT0630	1.053056	9.103535	3.23632	-1.64807	0.009419
MT3573.11	2.190089	9.26155	4.944352	3.325138	0.000251	MT0516	0.936367	9.004061	3.234213	-1.65352	0.009466
MT0030.1	1.246352	9.44165	4.935067	3.295953	0.000257	MT3708	1.415855	9.115935	3.232139	-1.65888	0.009513
MT2554.1	-1.7136	10.01123	-4.93399	3.292577	0.000257	MT0972	-0.88001	9.089373	-3.22992	-1.66461	0.009552
MT3814	1.951443	9.156371	4.931458	3.284612	0.000258	MT0919	-1.14381	9.473358	-3.2298	-1.66492	0.009552
MT2691.1	1.921439	8.742692	4.927184	3.271185	0.00026	MT3354	1.198334	8.588536	3.229653	-1.66531	0.009552
MT1272	-1.73478	9.222258	-4.92168	3.25391	0.000264	MT1725	-1.06584	9.319246	-3.22819	-1.66909	0.009582
MT1296	1.280933	9.158695	4.915847	3.235588	0.000267	MT1829	1.275116	8.507221	3.226027	-1.67468	0.009631
MT1243	1.848187	8.726004	4.910773	3.219663	0.00027	MT3576	0.715129	9.418142	3.225492	-1.67606	0.009636
MT3018	-1.59741	9.910599	-4.90887	3.213705	0.000271	MT1275	-0.90722	9.943272	-3.22203	-1.68499	0.009711
MT2544	-1.34259	9.985456	-4.90599	3.204661	0.000272	MT3791	-1.01791	9.314858	-3.22169	-1.68588	0.009711
MT2103	-1.27857	9.508806	-4.89992	3.185624	0.000275	MT3910	-0.84171	9.706596	-3.22151	-1.68635	0.009711
MT3505	-1.37392	9.114628	-4.89895	3.182577	0.000275	MT1363.1	-0.7617	9.731286	-3.22122	-1.68711	0.009711
MT1702	-1.29321	8.84543	-4.89166	3.159731	0.00028	MT3742	-0.73828	9.803706	-3.22099	-1.68768	0.009711
MT2776	1.659159	9.180162	4.889071	3.151604	0.000281	MT1771	-0.79263	9.137941	-3.21829	-1.69464	0.009776
MT2012	-1.04059	9.009631	-4.88587	3.141564	0.000282	MT4000	0.87381	9.138316	3.216792	-1.69852	0.009802

MT0031	-1.6046	9.840762	-4.88508	3.139099	0.000282	MT1895	1.04099	8.915482	3.216501	-1.69927	0.009802
MT2961	2.349053	9.196602	4.879162	3.120556	0.000286	MT2068	1.327197	8.944406	3.216316	-1.69975	0.009802
MT1908	1.86915	8.727304	4.877081	3.114038	0.000287	MT2317	-1.03914	8.638667	-3.2152	-1.70262	0.00982
MT0946	-1.61808	10.03071	-4.87552	3.109137	0.000287	MT0005	-0.73425	9.445054	-3.21498	-1.70319	0.00982
MT1328	-1.53284	9.363796	-4.86953	3.09039	0.00029	MT0792	0.866959	9.508003	3.211882	-1.71117	0.009897
MT1838	1.732587	10.06742	4.869234	3.089469	0.00029	MT3991	-1.16646	8.65871	-3.21149	-1.71218	0.009898
MT2270	2.061636	9.069433	4.8643	3.074025	0.000293	MT2227	1.002444	8.765758	3.206401	-1.72528	0.010032
MT0488	-1.85092	9.993173	-4.85732	3.052186	0.000298	MT2327	1.021784	8.898768	3.204495	-1.73019	0.010076
MT3052.1	1.846229	9.510908	4.851267	3.033256	0.000303	MT0608.1	1.284504	8.901475	3.203098	-1.73378	0.010105
MT0718	1.947729	9.582661	4.84991	3.029013	0.000303	MT2339	-1.02482	9.255592	-3.2028	-1.73455	0.010105
MT0776	1.557885	9.086138	4.847848	3.022566	0.000303	MT0785	-0.88715	9.43901	-3.20073	-1.73988	0.010154
MT2080	-1.31145	9.28627	-4.84685	3.019455	0.000303	MT0474	1.051711	9.538444	3.193156	-1.75933	0.010358
MT3907	1.518089	8.865965	4.841935	3.004082	0.000306	MT0684	-1.00069	9.390941	-3.19301	-1.75969	0.010358
MT0046	2.034928	9.260644	4.838976	2.994834	0.000308	MT0588	0.927452	9.014505	3.191187	-1.76438	0.010402
MT0465	1.381907	9.211354	4.834472	2.980764	0.00031	MT1205	-1.04565	9.30397	-3.19076	-1.76547	0.010404
MT1227	1.820911	8.875496	4.83334	2.977226	0.00031	MT0064	-1.04375	9.712931	-3.19032	-1.7666	0.010407
MT3697	2.061117	9.56015	4.827015	2.957474	0.000315	MT0625	-0.87643	8.906688	-3.18919	-1.7695	0.01043
MT3037	-1.50549	10.05369	-4.81878	2.931767	0.000321	MT1089	-0.7654	9.569709	-3.18799	-1.77259	0.010455
MT3374	-1.1913	9.333949	-4.81842	2.930651	0.000321	MT2230	-0.94887	9.258289	-3.18652	-1.77635	0.010487
MT0389	1.562743	8.942489	4.817476	2.927699	0.000321	MT0311	1.118918	9.058019	3.186206	-1.77715	0.010487
MT3362	-1.52306	9.695174	-4.81478	2.9193	0.000322	MT0599	-0.86062	9.127508	-3.18129	-1.78974	0.010621
MT2331	-1.13131	9.60632	-4.80553	2.890438	0.000327	MT2346	-0.82777	9.993059	-3.18087	-1.79083	0.010621
MT1973	-1.01356	9.418451	-4.80548	2.890293	0.000327	MT0505	-0.96591	8.939902	-3.18069	-1.79129	0.010621
MT1490	-1.30082	9.528706	-4.80179	2.878763	0.000327	MT3460	1.041889	9.427391	3.179402	-1.79458	0.010649
MT3027	-1.07052	9.263971	-4.80128	2.877187	0.000327	MT3144	-1.10829	8.528379	-3.17634	-1.80243	0.010732
MT0539	-1.40072	9.50553	-4.80073	2.875483	0.000327	MT0070	1.064227	8.873611	3.175686	-1.80409	0.010737
MT1600	1.368193	9.309388	4.799954	2.873049	0.000327	MT3384	-0.91712	9.184365	-3.17547	-1.80464	0.010737
MT1585	1.499454	9.483511	4.799198	2.870692	0.000327	MT3644	0.998696	9.131342	3.171323	-1.81525	0.010852
MT3627	-1.09697	9.36239	-4.79809	2.867238	0.000327	MT3033	-1.39714	9.812784	-3.17102	-1.81603	0.010852
MT2805	1.936814	9.270296	4.797621	2.86578	0.000327	MT2414	-0.70937	9.116776	-3.17004	-1.81853	0.010864
MT0085.1	1.378161	9.189639	4.791827	2.847723	0.000332	MT2874	0.859936	9.024735	3.169936	-1.81879	0.010864
MT3395	1.648221	9.011533	4.787094	2.832981	0.000335	MT3686	0.814631	9.353922	3.167377	-1.82533	0.010932
MT1731	2.558371	8.93691	4.786105	2.829902	0.000335	MT2535	-1.12372	9.299832	-3.16695	-1.82642	0.010934
MT1485	1.451598	8.907862	4.775756	2.797681	0.000345	MT0384.1	-0.95212	9.283837	-3.16388	-1.83425	0.011019
MT1175	1.427374	9.310307	4.772101	2.786307	0.000348	MT2617	-0.79187	8.552721	-3.1614	-1.84058	0.011085
MT0235	1.503848	9.510963	4.769824	2.779222	0.000349	MT2402	-0.96984	8.792435	-3.16061	-1.8426	0.011099
MT2624	1.385324	9.684858	4.761596	2.753633	0.000356	MT3932	-0.88121	9.201179	-3.1586	-1.84771	0.011151
MT3280	-1.96707	9.835156	-4.7612	2.752394	0.000356	MT1522	-1.43074	9.583867	-3.15266	-1.86286	0.011329
MT1814	-1.47212	10.09184	-4.7568	2.73871	0.000359	MT3006	-0.91184	9.435348	-3.1512	-1.86658	0.011364
MT0934	-1.46249	9.50997	-4.75571	2.735332	0.000359	MT2983	0.939786	9.075467	3.1497	-1.87039	0.011401
MT2837	1.963168	9.643975	4.750373	2.718748	0.000364	MT1401	0.808189	9.809165	3.145001	-1.88234	0.011542
MT1988	2.280593	9.141923	4.747286	2.709156	0.000366	MT2574	-0.87715	9.184334	-3.14433	-1.88406	0.011553
MT0125.1	-1.42646	9.409047	-4.74273	2.695021	0.00037	MT3916	0.942234	8.932627	3.141959	-1.89008	0.011599
MT0753	1.87106	9.528729	4.740869	2.689226	0.000371	MT0787	-0.76007	9.180781	-3.14187	-1.8903	0.011599
MT0772.2	2.699711	8.529612	4.735516	2.672608	0.000375	MT1032	1.057056	8.832712	3.141867	-1.89031	0.011599
MT1912	1.657765	9.399777	4.734755	2.670247	0.000375	MT1548	1.575088	9.163725	3.138546	-1.89875	0.011697
MT1438	1.627455	9.713524	4.718322	2.619268	0.000391	MT0459	-0.94579	9.56339	-3.13794	-1.9003	0.011706
MT1235	-1.6145	10.40271	-4.7182	2.618896	0.000391	MT1278	1.153918	9.032385	3.134779	-1.90831	0.011799
MT3614	1.922187	8.906183	4.717582	2.616974	0.000391	MT3131	-0.83497	9.030097	-3.13401	-1.91025	0.011813
MT3767.3	-1.39298	9.609612	-4.71729	2.616071	0.000391	MT0316	1.039884	8.620668	3.133374	-1.91187	0.011815
MT0037	-1.06078	9.458443	-4.71426	2.606675	0.000393	MT2154	1.122691	8.785134	3.133265	-1.91215	0.011815
MT1866	1.695866	9.287048	4.711845	2.599192	0.000394	MT3868	-1.07408	8.97594	-3.13212	-1.91506	0.011842
MT1236	-1.58333	9.488434	-4.71008	2.593708	0.000395	MT3827	-0.7197	9.365907	-3.12987	-1.92076	0.011906
MT1463	1.739609	8.934033	4.693984	2.543874	0.000415	MT1446	1.103541	9.031814	3.129169	-1.92253	0.011918
MT1532	-1.46332	9.100417	-4.68435	2.514051	0.000426	MT3318	-0.82639	9.238822	-3.1279	-1.92575	0.011949
MT3421	-1.14033	9.27871	-4.68312	2.510246	0.000426	MT3439	0.861739	9.235395	3.125265	-1.93242	0.012026
MT3187	-1.1915	9.327004	-4.67079	2.47214	0.000442	MT0323	-0.77216	9.291598	-3.124	-1.93563	0.012057
MT0109	-1.50436	9.55733	-4.66048	2.440302	0.000456	MT0921.1	0.783684	8.910675	3.122417	-1.93963	0.012099
MT2079	-1.15621	8.845008	-4.65937	2.436857	0.000456	MT2651	-0.79167	8.994366	-3.12155	-1.94184	0.012117
MT1842	-1.33615	9.459573	-4.65793	2.432433	0.000456	MT3874	-0.74031	9.571285	-3.12111	-1.94295	0.012121
MT1003	2.075139	9.055845	4.656262	2.427268	0.000457	MT1079	0.841926	8.626911	3.119504	-1.947	0.012153
MT0756	1.497314	9.78721	4.650841	2.410536	0.000462	MT0740	-0.74905	9.628905	-3.11948	-1.94706	0.012153
MT3231	1.30278	9.226953	4.649983	2.407891	0.000462	MT2170	0.735237	9.509047	3.118604	-1.94928	0.012171
MT3461	1.499415	9.536809	4.643619	2.388257	0.00047	MT2784	1.089797	9.0023	3.117288	-1.9526	0.012205
MT0676	1.380424	9.23431	4.637902	2.370628	0.000477	MT2326	0.97123	9.451591	3.113341	-1.96258	0.012323
MT1096	1.633031	8.700538	4.630825	2.348817	0.000487	MT1556.1	0.944677	9.978553	3.11316	-1.96304	0.012323
MT2471	1.233255	9.469366	4.628649	2.342113	0.000488	MT0353	1.07743	9.146949	3.111501	-1.96723	0.012369
MT2376	-1.2098	10.09372	-4.6271	2.337345	0.000489	MT2120	0.842484	8.969877	3.110062	-1.97086	0.012407
MT0836	-1.41915	9.371182	-4.62433	2.328803	0.000491	MT0904	1.198347	8.971416	3.106801	-1.97909	0.012509
MT0605	1.919628	10.06038	4.620784	2.317889	0.000495	MT2605	1.223978	9.214194	3.106281	-1.9804	0.012516
MT2614	1.788118	8.611683	4.613972	2.296919	0.000502	MT0727	-1.14071	8.897676	-3.10501	-1.9836	0.012548
MT0915	-0.99991	9.496648	-4.61377	2.296297	0.000502	MT2885	-0.97147	9.101151	-3.1035	-1.98742	0.012578
MT2340	-1.51759	9.091698	-4.6132	2.294541	0.000502	MT1361	-0.89103	9.510411	-3.10349	-1.98744	0.012578
MT1244	-1.36299	9.347922	-4.61	2.284695	0.000505	MT1088	-0.87516	8.970728	-3.10278	-1.98922	0.012585
MT2857	-1.18475	9.408924	-4.60735	2.276555	0.000508	MT3220.1	0.852095	9.502184	3.102632	-1.9896	0.012585
MT0205	-1.40099	9.77179	-4.60553	2.270947	0.000508	MT1340	-0.9902	9.924753	-3.10155	-1.99233	0.012611
MT1273	-1.31286	9.42067	-4.60367	2.265238	0.000508	MT0340	-0.84447	9.293639	-3.09757	-2.00236	0.01274
MT3995	1.431392	8.846655	4.603637	2.265125	0.000508	MT1199	-0.96524	8.83349	-3.09586	-2.00666	0.012779
MT0388	1.610776	8.798174	4.599913	2.253675	0.000512	MT2375	-0.72203	9.175687	-3.09581	-2.00678	0.012779
MT1605	-1.46782	9.535925	-4.59142	2.227582	0.000524	MT1259	-0.76891	8.997458	-3.09304	-2.01375	0.012866
MT1310	1.343818	9.820152	4.590892	2.225949	0.000524	MT0939	1.0079	8.80075	3.092031	-2.01629	0.012891
MT0786	-1.39283	9.275519	-4.58987	2.222817	0.000524	MT3879	-0.92044	9.393129	-3.09056	-2.01998	0.012922
MT3972.1	-1.81568	9.641072	-4.585	2.207852	0.00053	MT2249	-0.92704	9.155391	-3.0905	-2.02014	0.012922
MT3388	-1.31353	10.18714	-4.58102	2.195647	0.000535	MT0742	-0.72857	9.20393	-3.08975	-2.02202	0.012937
MT3289	-1.44657	9.280413	-4.57749	2.184791	0.000539	MT1777	0.699767	9.516584	3.088525	-2.0251	0.012967
MT2533	1.581581	9.213987	4.567797	2.155057	0.000555	MT3880	-0.73284	9.223211	-3.08825	-2.02578	0.012967
MT1981	1.392821	9.271546	4.564088	2.143684	0.000559	MT1365	1.101493	9.510562	3.087311	-2.02815	0.012989
MT0981	1.647034	9.310508	4.563478	2.141816	0.000559	MT2314	0.826303	9.635981	3.083277	-2.03828	0.013124
MT0375	1.384014	9.35519	4.560812	2.133643	0.000562	MT3529	1.005267	9.165987	3.080805	-2.04449	0.013201
MT2917	2.006672	9.248624	4.557393	2.123164	0.000566	MT1394	-0.9195	9.267666	-3.08049	-2.04527	0.013201
MT1498	1.565731	8.682064	4.55277	2.109001	0.000572	MT0332	-0.70194	8.900832	-3.07764	-2.05243	0.01329
MT3445	1.873481	8.714464	4.549174	2.097986	0.000575	MT1395	-0.83246	9.683305	-3.07724	-2.05344	0.01329
MT0087	1.674277	9.582017	4.549154	2.097923	0.000575	MT2499	1.166084	8.934633	3.077094	-2.0538	0.01329
MT2082	-1.33697	9.478117	-4.54507	2.085427	0.000581	MT0218	1.493249	9.201367	3.076559	-2.05514	0.013298
MT2974	-1.36689	9.873931	-4.54307	2.079285	0.000581	MT3575	-0.70748	9.123391	-3.07516	-2.05864	0.013326
MT3390	1.630462	9.135649	4.542549	2.077704	0.000581	MT2831	-0.75033	9.120684	-3.07513	-2.05871	0.013326
MT3970	-1.50111	9.630347	-4.53947	2.068278	0.000585	MT1317	1.030929	9.419164	3.073273	-2.06337	0.013371
MT2664	1.808579	8.837624	4.535149	2.055058	0.000591	MT3521	-0.66613	9.264238	-3.07253	-2.06524	0.013371

MT0917	-1.41922	9.364172	-4.53365	2.050464	0.000592	MT0240	-0.89731	9.33885	-3.07237	-2.06563	0.013371
MT0885	2.777024	8.928977	4.526495	2.028594	0.000598	MT0192	-0.73769	9.093141	-3.07223	-2.06599	0.013371
MT1471	-1.26061	9.188692	-4.52386	2.02055	0.000598	MT1898	0.971068	9.233329	3.07218	-2.06611	0.013371
MT0018	2.03526	8.230743	4.523419	2.019193	0.000598	MT3649	-0.93127	9.846567	-3.07196	-2.06666	0.013371
MT2741	1.688498	8.78381	4.523068	2.01812	0.000598	MT1923	-0.95149	9.31864	-3.07125	-2.06845	0.013385
MT0990	-1.12741	9.165786	-4.52133	2.012799	0.000598	MT2467.1	1.339104	8.526854	3.070461	-2.07041	0.013402
MT2040	1.467394	9.430835	4.520772	2.011105	0.000598	MT1786	1.049978	8.84596	3.069789	-2.07209	0.013415
MT3396	1.426062	9.033961	4.519723	2.0079	0.000598	MT2554.2	-0.88816	9.412496	-3.06617	-2.08114	0.013538
MT2382	-1.54809	9.431028	-4.51954	2.007326	0.000598	MT1785	0.773867	9.293933	3.063307	-2.08831	0.01361
MT0760	1.151745	9.35753	4.519486	2.007173	0.000598	MT2097	0.942962	9.511714	3.062976	-2.08914	0.01361
MT3674	1.698241	10.41927	4.519203	2.00631	0.000598	MT1319	0.926568	9.700381	3.062811	-2.08955	0.01361
MT3055	1.692132	9.099208	4.518879	2.00532	0.000598	MT1753.1	1.007705	8.283464	3.062707	-2.08981	0.01361
MT3192	-1.46385	10.06776	-4.51608	1.996783	0.0006	MT1117	1.284312	9.170315	3.06259	-2.0901	0.01361
MT0117	1.397398	8.858264	4.515882	1.996166	0.0006	MT3156	-0.82121	9.424226	-3.06232	-2.09078	0.01361
MT0328.1	2.277156	8.996045	4.505159	1.963428	0.000619	MT0713	-1.01521	9.474579	-3.06074	-2.09472	0.013657
MT1572	-1.1769	9.557547	-4.50444	1.961237	0.000619	MT0673	-1.0851	10.05924	-3.0594	-2.09807	0.013696
MT2863	-1.10493	9.215075	-4.49716	1.939018	0.000631	MT2456	0.908041	9.23086	3.057486	-2.10285	0.013756
MT2106	1.565644	9.677835	4.496616	1.937363	0.000631	MT3217	-0.86389	9.357198	-3.05414	-2.11121	0.013864
MT0779	1.356505	10.05242	4.492969	1.926244	0.000636	MT1753	1.087017	8.691936	3.054018	-2.11151	0.013864
MT1162	-1.18571	9.830796	-4.49135	1.921296	0.000638	MT3404	1.211131	9.33601	3.0529	-2.1143	0.013894
MT1704	-1.29151	9.742528	-4.4871	1.908354	0.000644	MT2455	-0.73142	9.131451	-3.05025	-2.1209	0.013984
MT2242	-1.16626	9.548767	-4.48328	1.896716	0.00065	MT2898	-0.75312	9.026254	-3.04558	-2.13255	0.014145
MT0415	-1.27125	9.579497	-4.48236	1.893922	0.00065	MT2836	0.874381	8.864238	3.045477	-2.13279	0.014145
MT0635	1.456997	9.732735	4.481423	1.891059	0.00065	MT3893	-0.79973	9.301335	-3.04451	-2.13521	0.01416
MT3959	-1.45624	10.11427	-4.48039	1.887927	0.00065	MT3532.2	-0.96569	9.713087	-3.04444	-2.13537	0.01416
MT1164	-1.09239	9.23102	-4.47889	1.883339	0.000651	MT1802	-0.87145	9.585535	-3.04206	-2.14131	0.014241
MT2656	1.568833	9.052674	4.475084	1.871756	0.000656	MT1534	-0.87696	8.801304	-3.04091	-2.14416	0.014273
MT0656	1.62562	8.811055	4.474882	1.871144	0.000656	MT0155	-0.70817	9.043335	-3.03936	-2.14801	0.014316
MT3634	-1.15583	9.183659	-4.47244	1.863696	0.000657	MT3563	0.917478	8.824884	3.039188	-2.14844	0.014316
MT2071	-1.09068	9.689223	-4.4713	1.860236	0.000657	MT3011	-0.80105	9.928756	-3.03837	-2.15048	0.014336
MT3483	1.084541	8.9978	4.470747	1.858557	0.000657	MT2826	-0.78572	9.03252	-3.03574	-2.15703	0.014427
MT2380	-1.36931	9.577022	-4.47013	1.856682	0.000657	MT1144	0.969308	9.398637	3.033459	-2.16268	0.014505
MT0710	-1.31555	9.138789	-4.46824	1.850919	0.000659	MT3245	-0.78185	9.480844	-3.03248	-2.16511	0.014518
MT1511	1.301216	10.02927	4.466042	1.844243	0.000661	MT3200	-0.62537	9.291555	-3.03226	-2.16567	0.014518
MT2951	1.246759	9.399188	4.465454	1.842452	0.000661	MT3152	-0.81594	9.026776	-3.03192	-2.1665	0.014518
MT3748	1.317224	9.209503	4.463443	1.836337	0.000663	MT3400	-0.69581	9.095171	-3.03187	-2.16663	0.014518
MT3128	-1.34165	9.728538	-4.46125	1.829653	0.000665	MT1085	-1.00591	9.308509	-3.03145	-2.16767	0.014522
MT2093	1.829344	9.240518	4.460594	1.827674	0.000665	MT1056	-0.96058	9.146097	-3.03041	-2.17024	0.01455
MT0190	-1.45979	9.654385	-4.45946	1.824238	0.000666	MT2637	-0.92035	9.011681	-3.02555	-2.18232	0.014734
MT3257	1.453705	9.102509	4.458367	1.820901	0.000666	MT1564	1.045528	8.581456	3.024783	-2.18421	0.014744
MT2393	-1.42415	9.750252	-4.45297	1.804488	0.000676	MT1141	-0.79327	9.641627	-3.02464	-2.18457	0.014744
MT3840	-1.4128	10.10751	-4.44899	1.792393	0.000683	MT2743	1.246232	9.4636	3.024229	-2.18559	0.014744
MT3940	-1.34656	9.425806	-4.44637	1.784443	0.000686	MT3196	0.907962	9.69602	3.024018	-2.18611	0.014744
MT1073	2.027208	9.396241	4.438775	1.76139	0.000699	MT1800	-1.08201	9.046378	-3.02107	-2.19341	0.014851
MT1095	1.571957	8.709213	4.436945	1.755838	0.000699	MT2597	0.853621	9.702978	3.020054	-2.19593	0.01488
MT2916	1.637549	8.584201	4.436327	1.75396	0.000699	MT2847	-0.71204	9.688263	-3.01792	-2.20122	0.014955
MT1986	1.742653	9.04868	4.436286	1.753837	0.000699	MT3961	-0.88543	10.18855	-3.015	-2.20845	0.015062
MT0768.1	1.820408	8.772474	4.436101	1.753275	0.000699	MT1301	-0.87444	8.953858	-3.01425	-2.2103	0.01508
MT2674	-1.25661	9.547962	-4.42627	1.723453	0.00072	MT2622	-1.11109	8.825605	-3.01364	-2.2118	0.015092
MT1363	-1.23617	9.199213	-4.41976	1.703718	0.000733	MT2859	-1.20851	8.97344	-3.01208	-2.21565	0.015143
MT3903	-1.45657	9.538777	-4.41521	1.689938	0.000739	MT1851	1.525853	8.723927	3.011591	-2.21687	0.015151
MT2635	1.387867	9.618782	4.414555	1.687957	0.000739	MT1330.1	-0.87887	9.317151	-3.00991	-2.22103	0.015205
MT0793	-1.2328	9.56041	-4.41358	1.685013	0.000739	MT2274	0.944679	8.402576	3.009436	-2.2222	0.015205
MT2334	-1.54512	9.320857	-4.41332	1.684209	0.000739	MT2395	-0.83323	9.75444	-3.00904	-2.22318	0.015205
MT0666	-1.44446	9.495195	-4.4069	1.664767	0.000749	MT2929	-0.79921	8.694727	-3.00902	-2.22323	0.015205
MT3319	-1.02666	10.05435	-4.40665	1.664022	0.000749	MT3628	-1.10366	9.39079	-3.0086	-2.22426	0.015206
MT0124	1.191	9.85001	4.406238	1.662776	0.000749	MT3488	-0.77384	9.571039	-3.00836	-2.22485	0.015206
MT1297.1	1.57567	9.131986	4.405575	1.66077	0.000749	MT0762	0.796448	10.21009	3.007	-2.22821	0.01524
MT1208	1.231068	9.519268	4.402971	1.65289	0.000753	MT0923	-1.04817	8.809371	-3.00691	-2.22842	0.01524
MT0694	-1.12942	9.401183	-4.39521	1.629419	0.00077	MT2182.1	1.018138	8.550681	3.005233	-2.23257	0.015298
MT0112	-1.26423	9.938527	-4.39366	1.624732	0.000771	MT2055	-0.72411	9.076928	-3.00412	-2.23532	0.015331
MT3955	-1.12974	9.481175	-4.39308	1.622988	0.000771	MT2846	0.980662	9.576357	3.002481	-2.23937	0.015387
MT2963	1.581864	9.29353	4.379598	1.582243	0.000803	MT2913	1.177578	9.24685	3.001794	-2.24106	0.015403
MT2795	-1.17395	9.751504	-4.37871	1.579564	0.000803	MT3602	-0.74055	9.432774	-3.00014	-2.24513	0.015459
MT2956	-1.47625	8.892574	-4.37438	1.566478	0.000812	MT2609	-0.99568	8.928866	-2.99551	-2.25654	0.015643
MT1133	-1.04141	9.077898	-4.37329	1.563205	0.000813	MT3782	-0.83225	9.314146	-2.9918	-2.2657	0.01579
MT0787.1	-0.96498	9.2519	-4.36991	1.552993	0.00082	MT2861	-0.80366	9.553315	-2.99089	-2.26791	0.015806
MT3986	-1.41092	9.41505	-4.36687	1.543825	0.000825	MT3181	0.903718	9.322705	2.990796	-2.26816	0.015806
MT3725	1.408362	9.092154	4.36355	1.53382	0.000831	MT0425	0.755472	9.006405	2.989748	-2.27074	0.015838
MT0854.1	1.585335	9.413646	4.362919	1.531919	0.000831	MT2526	-0.77262	9.207863	-2.98889	-2.27284	0.015862
MT2599	1.848021	9.58701	4.360224	1.523793	0.000836	MT2701	0.820948	9.557766	2.988427	-2.27398	0.015868
MT2645	-1.06064	9.319561	-4.35953	1.521694	0.000836	MT3305	-0.83654	9.358139	-2.98647	-2.27879	0.01594
MT3543	1.932901	9.428128	4.353808	1.50446	0.000849	MT0149	1.086241	8.64721	2.984157	-2.28448	0.016027
MT3124	1.673292	9.409051	4.347403	1.485169	0.000862	MT0038	-0.8731	9.237975	-2.98127	-2.29157	0.01614
MT2799	1.537806	9.069533	4.347281	1.484804	0.000862	MT2451	0.900155	8.673788	2.979775	-2.29524	0.016193
MT0916	-1.64699	10.14517	-4.3462	1.481548	0.000863	MT0277	-0.79971	9.099751	-2.9782	-2.29911	0.016238
MT0769	1.200237	9.256885	4.340102	1.463195	0.000875	MT2849	0.982666	9.826395	2.978139	-2.29926	0.016238
MT3312	-1.2073	9.372068	-4.34009	1.463146	0.000875	MT3507	-0.7703	9.47382	-2.97762	-2.30054	0.016239
MT2803.2	1.558481	9.140444	4.338873	1.459498	0.000876	MT3565	0.986707	9.184335	2.977472	-2.30089	0.016239
MT0052	1.63614	8.742337	4.336828	1.453346	0.000878	MT1987	1.51502	8.984043	2.976929	-2.30222	0.016249
MT3835	-1.14846	9.268255	-4.33642	1.452132	0.000878	MT1799	-0.89905	9.471112	-2.97664	-2.30293	0.016249
MT2036	1.684995	8.627336	4.335333	1.448849	0.000879	MT1793	-0.8768	9.406309	-2.97592	-2.30471	0.016267
MT2903	1.242667	9.323402	4.334334	1.445844	0.000879	MT0514	0.824303	8.762937	2.974438	-2.30833	0.016319
MT2705	1.398989	9.14579	4.331107	1.436144	0.000884	MT0899	0.817456	9.082617	2.973194	-2.31138	0.016361
MT3751	1.522379	8.666328	4.331022	1.435886	0.000884	MT0230	0.902532	9.21536	2.971601	-2.31529	0.016418
MT2530	-0.98969	9.420529	-4.32758	1.425533	0.000892	MT2926	-0.85186	8.427143	-2.97026	-2.31858	0.016464
MT4033	-1.23311	9.644394	-4.32656	1.422476	0.000892	MT0254	1.038073	10.50974	2.969199	-2.32117	0.016498
MT0558	2.094819	9.099199	4.324599	1.416582	0.000895	MT3909	0.858558	10.0914	2.968371	-2.3232	0.016522
MT2527.1	-1.40006	9.725851	-4.32394	1.414609	0.000895	MT3086	-0.77246	9.332861	-2.96611	-2.32872	0.01661
MT1905	1.163858	9.450002	4.317533	1.395361	0.000911	MT3009	-1.28451	9.293791	-2.96358	-2.33493	0.016711
MT3042	-1.16486	9.444725	-4.31544	1.389064	0.000915	MT2426	1.182264	8.858666	2.963232	-2.33577	0.016712
MT3664	1.33868	9.129295	4.313536	1.383362	0.000918	MT1119	0.949997	8.666583	2.962629	-2.33725	0.016718
MT2783	1.538064	9.549367	4.311818	1.378205	0.000921	MT0754	1.025299	9.297952	2.962484	-2.3376	0.016718
MT0420	-1.17119	9.186036	-4.31018	1.373287	0.000923	MT2850	-0.64437	9.234206	-2.96187	-2.33911	0.016732
MT1604	-1.3489	9.223914	-4.30627	1.361571	0.000932	MT0998	0.816761	9.216346	2.959721	-2.34435	0.016816
MT1961	-1.21885	9.374133	-4.30378	1.354093	0.000935	MT2637.1	-0.92512	9.042074	-2.95924	-2.34553	0.016824
MT2512	1.382899	10.16663	4.303545	1.353389	0.000935	MT0877	-0.75792	9.42018	-2.95809	-2.34834	0.016863
MT3706	1.816434	8.783033	4.303041	1.351878	0.000935	MT3821	-0.80394	9.139456	-2.95693	-2.35118	0.016889

MT0889	1.763876	8.521979	4.298636	1.338672	0.000946	MT1238	0.905404	8.782119	2.956904	-2.35124	0.016889
MT1540	1.457263	8.948831	4.297523	1.335337	0.000946	MT3626	-0.70389	9.125227	-2.95573	-2.35411	0.016929
MT0788	1.227968	9.604337	4.295754	1.330037	0.000949	MT0536	1.04171	9.492131	2.953842	-2.35871	0.017002
MT1920	-1.18657	9.236429	-4.292	1.318775	0.000956	MT1173	-1.16792	10.00668	-2.95211	-2.36293	0.017068
MT0339	-0.98964	9.083133	-4.29185	1.318332	0.000956	MT3420	-0.68895	9.256925	-2.95128	-2.36497	0.017081
MT0079	-1.2902	9.43314	-4.28805	1.306971	0.000965	MT2169	-1.10836	10.97812	-2.95121	-2.36514	0.017081
MT2150	1.642625	9.664413	4.287412	1.30505	0.000965	MT3561	-1.05977	9.480139	-2.95049	-2.36689	0.017101
MT3455	-1.03632	9.45514	-4.28251	1.29038	0.000978	MT1197	1.026076	8.718997	2.94978	-2.36862	0.017119
MT3663	1.517888	8.569206	4.281787	1.288213	0.000978	MT3704	1.105749	10.35952	2.948479	-2.37179	0.017166
MT3727	1.592857	8.824591	4.277128	1.274275	0.00099	MT1596.1	1.107521	8.802612	2.947891	-2.37322	0.017171
MT0208	-1.38872	9.724516	-4.27583	1.270405	0.000992	MT3655	0.882525	9.512568	2.947758	-2.37355	0.017171
MT1440	1.642993	9.32357	4.268984	1.249922	0.001011	MT0898	-0.71239	8.849088	-2.94689	-2.37567	0.017197
MT1697	1.504828	9.120388	4.267473	1.245407	0.001011	MT1099	-0.71401	9.348976	-2.94642	-2.3768	0.017205
MT1550	-1.202	9.529527	-4.26733	1.244993	0.001011	MT0010	-0.79613	9.01529	-2.9445	-2.3815	0.017273
MT2914	1.825105	8.910726	4.265779	1.240345	0.001011	MT1608	-0.76894	9.705356	-2.94436	-2.38181	0.017273
MT2594	1.703034	9.829941	4.265762	1.240294	0.001011	MT2697	1.041567	8.75222	2.942896	-2.38539	0.017325
MT3093	2.261501	8.922553	4.264237	1.235738	0.001014	MT0886	0.958821	8.744193	2.942566	-2.38619	0.017325
MT3334	1.728103	8.941845	4.256523	1.212703	0.001037	MT0350	0.808565	8.954084	2.942344	-2.38673	0.017325
MT1003.1	1.236469	7.922658	4.255573	1.209866	0.001037	MT3989	1.154982	9.266686	2.941302	-2.38927	0.017359
MT0440	1.470137	9.018321	4.253977	1.205104	0.00104	MT2601	0.855277	8.691462	2.940916	-2.39021	0.017361
MT3208	-1.41593	9.234001	-4.25267	1.201205	0.001042	MT3735	-0.79274	9.267541	-2.94065	-2.39084	0.017361
MT2041	-1.14542	9.635565	-4.24927	1.191067	0.00105	MT3248	0.835218	9.413044	2.937399	-2.39876	0.017501
MT3767.2	-1.10714	9.530484	-4.24602	1.181375	0.001058	MT3928	-0.84128	9.548067	-2.9367	-2.40047	0.01752
MT0177	1.64991	9.188192	4.245494	1.179797	0.001058	MT0519	0.931233	9.726406	2.936239	-2.40158	0.017527
MT3762	1.477612	9.354468	4.24218	1.169918	0.001067	MT0162	0.984578	9.061176	2.935457	-2.40348	0.01755
MT3934	-1.48633	9.023711	-4.24083	1.165895	0.001069	MT3358	-0.91503	9.157592	-2.93337	-2.40854	0.017622
MT0975	-0.89254	9.110689	-4.23981	1.162852	0.001069	MT3188	-1.04605	9.056181	-2.93334	-2.40862	0.017622
MT2593.2	-1.05929	9.894557	-4.2392	1.161028	0.001069	MT0201	0.934757	8.758372	2.932374	-2.41097	0.017654
MT2484	-1.29116	9.166182	-4.2376	1.156268	0.001072	MT3127	0.772217	9.400433	2.931645	-2.41274	0.017674
MT1635	1.574991	9.425638	4.234624	1.147399	0.00108	MT1744	0.90823	9.252252	2.928098	-2.42135	0.01783
MT1705	1.363326	9.459193	4.227428	1.125974	0.001102	MT4006	-0.94293	8.615671	-2.92728	-2.42333	0.017855
MT3963	-0.9138	9.763484	-4.22647	1.123131	0.001103	MT1452	0.97561	8.786679	2.926369	-2.42554	0.017885
MT2196	-1.03339	9.527927	-4.219	1.100885	0.001127	MT0013	0.786137	9.601281	2.921835	-2.43653	0.018091
MT3541	1.320765	9.813008	4.21682	1.094412	0.00113	MT0924	0.852549	9.760151	2.9214	-2.43759	0.018097
MT2099	-1.20579	9.602062	-4.21666	1.09395	0.00113	MT0303	1.00849	8.747015	2.920374	-2.44007	0.018133
MT3175	-1.24989	9.716626	-4.21035	1.075191	0.00115	MT1300	-0.74303	9.117967	-2.91905	-2.44327	0.018183
MT0133	1.258977	8.989529	4.207929	1.067989	0.001156	MT0209	-0.96858	8.702592	-2.9168	-2.44871	0.018279
MT3808.1	-1.27199	10.90226	-4.20255	1.052002	0.001173	MT1132	0.758796	10.10371	2.914916	-2.45328	0.018358
MT3965	-1.20534	9.403663	-4.19898	1.041405	0.001181	MT0492	0.831283	9.468719	2.914555	-2.45415	0.018361
MT3804	1.71527	10.16842	4.197928	1.03829	0.001181	MT2883	-0.8117	9.49403	-2.91327	-2.45725	0.018393
MT1911	1.540251	9.851158	4.19755	1.037168	0.001181	MT1026	0.890293	9.308971	2.91303	-2.45784	0.018393
MT2166	-1.30008	9.523903	-4.19746	1.036897	0.001181	MT2925	0.989215	9.406849	2.912824	-2.45834	0.018393
MT2018	1.277933	9.313126	4.189719	1.013939	0.001208	MT2626	-1.08136	8.744846	-2.91271	-2.45861	0.018393
MT0084	1.238775	9.939443	4.187583	1.007603	0.001214	MT3921	1.104664	8.70234	2.91172	-2.46101	0.018427
MT0723	1.622414	8.650673	4.186489	1.004362	0.001215	MT0136	-0.70843	9.939683	-2.91114	-2.46242	0.018441
MT2884	-1.01332	9.62192	-4.18402	0.997053	0.001222	MT2764	-0.88275	9.177619	-2.91028	-2.46449	0.018455
MT2712	1.733026	8.47885	4.172815	0.963855	0.001263	MT3936	-0.9277	9.984871	-2.91001	-2.46514	0.018455
MT2728	1.740283	10.07423	4.170562	0.957184	0.001267	MT0306	1.126571	8.738248	2.90996	-2.46526	0.018455
MT3797	-1.1017	9.859211	-4.1703	0.956411	0.001267	MT3041.1	0.846357	9.127012	2.90929	-2.46688	0.018474
MT1760	-1.01931	9.083986	-4.16965	0.954491	0.001267	MT2216	1.14358	8.337404	2.908922	-2.46777	0.018477
MT3715	-1.05382	9.27915	-4.16655	0.945318	0.001277	MT3308	1.448023	8.433775	2.908626	-2.46848	0.018477
MT3859	1.497376	9.580111	4.162253	0.932605	0.001291	MT1692	0.875654	8.599813	2.905109	-2.47697	0.018638
MT3766	-1.07485	9.663672	-4.15997	0.92586	0.001296	MT0724	-0.74027	9.83716	-2.90339	-2.48111	0.018702
MT2014	1.462045	9.25265	4.159566	0.924661	0.001296	MT3049	-0.85489	9.195453	-2.90326	-2.48143	0.018702
MT3691	1.329688	10.12915	4.158941	0.922813	0.001296	MT1979	0.711389	9.45164	2.901093	-2.48666	0.018796
MT3889	-0.99781	9.359251	-4.15759	0.918834	0.001299	MT1461	0.892579	9.085623	2.900443	-2.48822	0.018814
MT2297	1.31462	9.245842	4.15676	0.916366	0.001299	MT2804	0.979467	9.284916	2.899005	-2.49169	0.018872
MT1907	1.243872	9.211846	4.156162	0.9146	0.001299	MT2702	0.769304	9.083572	2.893921	-2.50393	0.019117
MT0564	1.627771	8.661908	4.151398	0.900524	0.001307	MT1664	-0.79596	8.886494	-2.89144	-2.50991	0.019228
MT2338	-1.63152	9.541813	-4.15106	0.899512	0.001307	MT3820	-0.71398	9.271862	-2.89117	-2.51054	0.019228
MT3870	-1.02777	8.892463	-4.15086	0.898929	0.001307	MT1240	0.853941	8.801986	2.890799	-2.51144	0.019232
MT1642	-1.15482	9.619386	-4.15063	0.898248	0.001307	MT3581	-0.94363	8.768539	-2.88915	-2.5154	0.019292
MT0807	1.312827	9.234788	4.150074	0.896614	0.001307	MT2587	-1.10707	9.146283	-2.88905	-2.51566	0.019292
MT3899	-1.0646	9.390555	-4.14972	0.895566	0.001307	MT0814	-0.7716	9.230516	-2.88813	-2.51786	0.019298
MT2866	1.466584	9.69301	4.149177	0.893965	0.001307	MT0154	0.902725	9.055908	2.888007	-2.51815	0.019298
MT1264	1.526353	9.235986	4.147166	0.888027	0.001312	MT1480	-0.68486	9.208199	-2.88784	-2.51855	0.019298
MT2990	1.714285	9.941491	4.144328	0.879648	0.001321	MT1886	-0.91399	8.906619	-2.88752	-2.51932	0.019298
MT2992	1.738667	8.766245	4.142543	0.87438	0.001326	MT2065	0.659902	9.540791	2.887456	-2.51948	0.019298
MT1456	1.303383	9.459188	4.140866	0.869432	0.00133	MT2942	-0.75052	9.280611	-2.88701	-2.52056	0.019306
MT0366	-0.89649	9.269274	-4.13951	0.865437	0.001333	MT3014	-0.71584	9.097885	-2.88546	-2.52429	0.019359
MT2337	-1.16411	9.709126	-4.13603	0.855158	0.001345	MT1051	-0.90918	8.916954	-2.88539	-2.52445	0.019359
MT1046	-1.02332	9.431367	-4.13518	0.852654	0.001345	MT3503	-0.79675	8.832138	-2.88437	-2.52688	0.019397
MT1936	-1.13916	9.372378	-4.13261	0.845074	0.001351	MT0357.1	0.837921	9.44202	2.883364	-2.52931	0.019434
MT0508	-1.2356	9.583072	-4.13258	0.845003	0.001351	MT0509	0.917756	8.748881	2.882487	-2.53141	0.019465
MT3291	1.442514	8.947635	4.126265	0.826386	0.001375	MT4027	1.040176	9.638355	2.880221	-2.53685	0.019568
MT0618	-1.32194	10.24791	-4.12498	0.822599	0.001378	MT3733	-0.92182	9.298077	-2.87874	-2.54041	0.019631
MT2949	-1.67226	9.830365	-4.12082	0.810343	0.001392	MT2810	-0.84292	8.268743	-2.87679	-2.54508	0.019714
MT2523	1.233778	9.554469	4.120396	0.809102	0.001392	MT0152	1.617036	8.705849	2.876325	-2.54619	0.019714
MT0979	-1.11657	9.385179	-4.1197	0.807063	0.001392	MT3150	-0.77585	9.341549	-2.87606	-2.54682	0.019714
MT0017	1.385549	9.087448	4.117672	0.801086	0.001396	MT1412	0.743828	9.298675	2.875986	-2.547	0.019714
MT2444	-1.10805	9.46491	-4.11745	0.800432	0.001396	MT3779	-0.63687	9.899022	-2.87377	-2.55232	0.019816
MT1343	-1.23832	10.27848	-4.11558	0.794936	0.001401	MT2048	0.955931	8.869506	2.872513	-2.55532	0.019867
MT1462	-1.20894	10.68207	-4.11189	0.784084	0.001414	MT2912	0.896338	8.740285	2.871613	-2.55748	0.0199
MT2310	1.762674	9.495408	4.110586	0.780237	0.001417	MT3351	-0.82579	9.189106	-2.87118	-2.55852	0.019907
MT0816	-0.94847	9.566568	-4.11002	0.778562	0.001417	MT3502	0.825657	9.054214	2.870075	-2.56116	0.01995
MT3519	1.376262	8.825901	4.109328	0.776539	0.001417	MT3012	-0.98964	9.369953	-2.86975	-2.56193	0.019952
MT2260	1.2358	9.567424	4.10855	0.774251	0.001417	MT2488	0.788196	8.872285	2.867167	-2.56812	0.020075
MT2543	1.186951	9.653773	4.107164	0.770177	0.00142	MT3303	-0.77327	9.104369	-2.86445	-2.57461	0.020201
MT1142	1.317598	9.958241	4.10477	0.763139	0.001428	MT3343	0.800574	9.098774	2.864257	-2.57507	0.020201
MT3590	-1.2165	9.902977	-4.10409	0.761146	0.001428	MT2767	0.814808	9.621105	2.861631	-2.58135	0.020327
MT2013	-0.9481	9.348536	-4.10352	0.759464	0.001428	MT0860	-1.00248	8.577758	-2.86094	-2.583	0.020349
MT3822	-1.14813	9.389621	-4.10224	0.755706	0.00143	MT2828	1.18213	9.177492	2.86035	-2.58441	0.020365
MT1153	-1.02694	9.26291	-4.09085	0.722247	0.00148	MT2149	-0.8281	8.914079	-2.85944	-2.58658	0.020399
MT1468	2.116873	9.117552	4.08761	0.712752	0.001492	MT3137	-0.77721	9.300495	-2.859	-2.58763	0.020407
MT2397	-1.16444	9.31357	-4.08689	0.710639	0.001492	MT0996	0.974435	8.825701	2.853508	-2.60073	0.020687
MT1104	1.456786	9.091686	4.085209	0.705708	0.001493	MT2282	0.78171	9.792919	2.853314	-2.60119	0.020687
MT1750	-0.91092	9.131986	-4.08455	0.703765	0.001493	MT1014	-1.13669	9.58461	-2.85293	-2.60211	0.020693
MT2665	1.307648	9.380539	4.084308	0.703068	0.001493	MT1025	0.791765	9.076375	2.852527	-2.60306	0.020699

MT3550	1.503048	8.823924	4.084066	0.702357	0.001493	MT3325	1.184982	8.104795	2.851065	-2.60655	0.020764
MT2673.1	-1.038	9.207017	-4.07522	0.67643	0.001532	MT0187	-0.93711	9.328527	-2.85075	-2.6073	0.020765
MT3506	-1.0861	9.34652	-4.07361	0.671699	0.001535	MT1231	0.952794	8.973998	2.850413	-2.6081	0.020768
MT1553	-1.21909	9.508365	-4.07336	0.670976	0.001535	MT0903	0.975782	8.842285	2.84976	-2.60966	0.020788
MT3385	1.14519	9.363847	4.069991	0.661116	0.001546	MT2087	1.083198	9.046541	2.848114	-2.61358	0.020856
MT0349	1.484682	9.45258	4.069673	0.660185	0.001546	MT3095	1.142925	10.10682	2.847953	-2.61396	0.020856
MT1602	-1.0665	9.351932	-4.06327	0.641447	0.001575	MT2758	-0.98182	10.35943	-2.84743	-2.6152	0.020867
MT0460	-1.04768	9.549218	-4.06213	0.638121	0.001577	MT2806	0.995049	8.522287	2.84719	-2.61578	0.020867
MT2882	-1.11167	9.912147	-4.06106	0.634992	0.001579	MT2603	-0.70731	9.247211	-2.84632	-2.61786	0.020888
MT1867	-1.1251	9.590973	-4.05631	0.621085	0.0016	MT0450	-0.67652	9.389237	-2.84622	-2.61808	0.020888
MT3860	1.464438	9.631469	4.052774	0.610755	0.001613	MT3225	-0.93647	9.704767	-2.8455	-2.6198	0.020913
MT3736	-1.71984	10.21076	-4.05228	0.609307	0.001613	MT0825	0.959259	8.885578	2.844956	-2.62109	0.020927
MT0122	-1.09163	9.319715	-4.05179	0.607886	0.001613	MT3803	1.061944	8.739303	2.843532	-2.62448	0.02099
MT1836	1.581395	9.648624	4.049602	0.601487	0.001618	MT1860	-0.62726	9.365387	-2.84	-2.63287	0.021173
MT2670	1.566976	9.630314	4.049027	0.599807	0.001618	MT0915.1	-0.70519	9.471376	-2.83841	-2.63665	0.021246
MT0431	-1.24051	8.966431	-4.04885	0.599282	0.001618	MT2816	0.846076	9.464988	2.838068	-2.63746	0.021247
MT3908	-1.03097	9.33164	-4.04724	0.59458	0.00162	MT2945	-0.75854	10.29226	-2.83782	-2.63804	0.021247
MT1043	-0.91438	9.19493	-4.04721	0.594501	0.00162	MT1336	-1.05373	8.332237	-2.83603	-2.6423	0.021329
MT0512	1.637871	8.689631	4.043826	0.584619	0.001634	MT1645	1.050962	9.060418	2.835794	-2.64286	0.021329
MT3062	1.552473	9.348418	4.042191	0.579845	0.001639	MT2773	-0.72219	9.17755	-2.8303	-2.6559	0.021627
MT2753	1.298519	9.196365	4.040104	0.573754	0.001647	MT1120	0.912433	8.679071	2.829663	-2.6574	0.021647
MT2144	0.931057	9.107319	4.034162	0.55642	0.001673	MT1075	-0.81068	9.287032	-2.82852	-2.66011	0.021697
MT3937	1.81479	9.057041	4.033628	0.554864	0.001673	MT3653.1	0.811264	9.558434	2.828174	-2.66092	0.0217
MT1787	1.35285	8.808608	4.033255	0.553777	0.001673	MT0444	-0.91434	8.843295	-2.82728	-2.66304	0.021735
MT1027	-0.93218	9.484252	-4.02881	0.540807	0.001693	MT2315	0.882795	9.193495	2.825425	-2.66744	0.021826
MT1019	1.376053	8.842645	4.028235	0.539142	0.001693	MT3756.1	1.087032	8.714187	2.825071	-2.66827	0.02183
MT1024	1.063633	9.411713	4.024374	0.527894	0.00171	MT2900	-0.7519	9.847414	-2.82416	-2.67043	0.021866
MT3326	-1.00906	9.055386	-4.02333	0.524844	0.00171	MT1474	0.853603	8.469146	2.823004	-2.67317	0.021913
MT2370	-1.28914	8.989007	-4.02308	0.524134	0.00171	MT3499	-0.75827	9.07179	-2.82278	-2.67369	0.021913
MT3373	-1.22555	9.243266	-4.02044	0.516436	0.001721	MT0458	-0.84895	9.040463	-2.82134	-2.67709	0.02198
MT2115	1.334452	9.114237	4.017352	0.507447	0.001734	MT0200	0.984563	8.684865	2.819689	-2.681	0.02206
MT2789	-1.36069	9.582305	-4.01548	0.502005	0.001741	MT2987	0.759629	9.55882	2.818102	-2.68476	0.022137
MT0648	1.442522	8.50668	4.013355	0.495818	0.001747	MT2410	-0.77115	8.987567	-2.81718	-2.68693	0.022154
MT1874	-1.03291	9.175658	-4.01318	0.495299	0.001747	MT1407	-0.73179	9.03453	-2.81713	-2.68705	0.022154
MT0194	1.265213	9.024282	4.012174	0.492382	0.001749	MT1069	0.815422	8.676006	2.816948	-2.68748	0.022154
MT4013	1.683057	9.332849	4.011134	0.489355	0.001751	MT0692.1	-0.73015	9.422861	-2.81571	-2.6904	0.02221
MT3866	-0.9658	9.12743	-4.0092	0.483742	0.001759	MT0510	0.923094	9.160364	2.814858	-2.69242	0.022244
MT1364	-1.18829	9.483369	-4.0081	0.480533	0.001759	MT3927	-0.68554	9.106322	-2.81388	-2.69473	0.022285
MT2944	-1.02184	9.123056	-4.00792	0.480001	0.001759	MT3219	-0.9283	10.83354	-2.8136	-2.69539	0.022285
MT2422	1.200653	9.818115	4.004056	0.468777	0.001777	MT3071	0.813867	9.602766	2.812039	-2.69907	0.02235
MT3449.1	2.087143	9.254655	4.003361	0.46676	0.001777	MT1475	-0.67211	9.127944	-2.81175	-2.69975	0.02235
MT3781	1.396271	9.523994	3.998829	0.453591	0.001799	MT0688	-0.70381	9.45418	-2.81164	-2.70002	0.02235
MT3567.1	-0.92466	9.400288	-3.99793	0.450973	0.001801	MT2808.1	1.234112	8.41635	2.810833	-2.70192	0.022381
MT1533	-1.28801	9.265967	-3.99728	0.449087	0.001801	MT2223	0.954415	9.060799	2.809647	-2.70471	0.022435
MT3897	-1.30044	9.857014	-3.99371	0.438723	0.001818	MT1574	-0.72096	9.235233	-2.80741	-2.71	0.022552
MT0884	-1.29232	9.779121	-3.99006	0.42813	0.001835	MT2690	1.08532	8.529042	2.802571	-2.72138	0.02282
MT1826	-0.932	9.79417	-3.98932	0.425988	0.001836	MT2022	0.765185	8.657401	2.802364	-2.72187	0.02282
MT1918	-1.27584	9.20515	-3.98842	0.423372	0.001838	MT1637	-0.80563	8.784272	-2.80167	-2.72351	0.022845
MT1531	-1.12947	9.222482	-3.98653	0.41789	0.001845	MT0184	0.859374	9.671332	2.800805	-2.72554	0.02288
MT2620	-1.13187	9.569325	-3.98537	0.414547	0.001845	MT2575	0.804729	9.337325	2.800347	-2.72662	0.022891
MT3925.1	2.131438	9.107042	3.984995	0.413448	0.001845	MT2367	-0.76744	8.898916	-2.79984	-2.7278	0.022903
MT2437	1.753574	9.258056	3.984798	0.412875	0.001845	MT2580	-0.7168	9.34011	-2.79958	-2.72841	0.022903
MT2989	1.232015	8.868386	3.984169	0.411052	0.001845	MT1854.1	-0.99963	8.75405	-2.7973	-2.73378	0.023025
MT1161	-0.8958	9.417695	-3.98311	0.407984	0.001848	MT0232	0.774713	9.032607	2.796299	-2.73614	0.023049
MT0706.1	-1.13779	9.615076	-3.98247	0.406135	0.001848	MT4041.2	-1.01349	9.375926	-2.79619	-2.73638	0.023049
MT0479	-1.1677	9.805737	-3.98143	0.403103	0.001851	MT0319	0.872745	8.919234	2.796059	-2.7367	0.023049
MT3494	-0.97377	9.498663	-3.97913	0.39644	0.00186	MT0600	-0.83429	9.288009	-2.79545	-2.73813	0.023069
MT0657	1.445279	9.465002	3.973675	0.380645	0.001886	MT3718.1	-0.76979	9.221468	-2.79467	-2.73996	0.023071
MT1678	1.558983	9.726445	3.973563	0.380322	0.001886	MT2892	-0.72264	8.724142	-2.79454	-2.74026	0.023071
MT1607	-1.0801	9.234557	-3.9729	0.378402	0.001886	MT3841	0.722046	8.901921	2.794427	-2.74053	0.023071
MT2283	1.402739	9.895059	3.969346	0.368113	0.001904	MT1258	0.837718	8.815855	2.794086	-2.74134	0.023071
MT0076	-1.43421	10.11413	-3.96718	0.361848	0.00191	MT3287	-0.6751	8.644414	-2.79401	-2.74152	0.023071
MT1809	1.318275	9.705319	3.967099	0.361608	0.00191	MT2056	-0.85791	10.04852	-2.79362	-2.74242	0.023078
MT2122	1.269267	8.503098	3.965179	0.356055	0.001918	MT1271	-0.95531	9.031592	-2.79325	-2.7433	0.023082
MT2960	1.303567	10.05236	3.964587	0.354343	0.001918	MT3472	1.029916	8.913628	2.792989	-2.74391	0.023082
MT2278	-1.02017	9.335104	-3.96304	0.349859	0.001924	MT0073	-0.9536	9.021326	-2.7925	-2.74506	0.023095
MT0291.4	1.713062	8.929492	3.959131	0.338565	0.001944	MT1254	0.716328	9.873965	2.792096	-2.74601	0.023103
MT0080	-1.08998	9.869637	-3.95568	0.32858	0.001962	MT2303	1.208849	9.406027	2.790445	-2.74988	0.023187
MT0782	1.020932	9.548094	3.950254	0.312917	0.001992	MT0624	-1.06366	10.26695	-2.78983	-2.75132	0.023201
MT0830	1.182056	9.340833	3.948866	0.308911	0.001992	MT0741	-0.75494	9.122072	-2.78965	-2.75175	0.023201
MT3752	1.825384	8.687958	3.948372	0.307484	0.001992	MT0812	0.834066	9.956473	2.788478	-2.7545	0.023225
MT1349	1.065755	9.670233	3.947548	0.305104	0.001992	MT0361	-0.98891	9.636743	-2.78836	-2.75478	0.023225
MT0515	1.360663	8.69764	3.947482	0.304914	0.001992	MT3675	0.743244	9.187733	2.788206	-2.75514	0.023225
MT1174	-0.9988	9.240309	-3.94728	0.304328	0.001992	MT2400	-0.70314	9.14759	-2.78814	-2.75528	0.023225
MT3605	-1.11045	9.801017	-3.94539	0.298866	0.002	MT0527	-0.74221	9.694321	-2.78596	-2.7604	0.023314
MT2919	1.120216	9.364305	3.94404	0.29498	0.002004	MT2547.1	-0.7297	9.115306	-2.78587	-2.76062	0.023314
MT0669.1	-1.25078	8.671691	-3.94366	0.29389	0.002004	MT2642	0.84871	9.233956	2.785632	-2.76117	0.023314
MT3407	1.28038	9.313873	3.941932	0.288898	0.002005	MT3595	-0.83918	8.822959	-2.78545	-2.76159	0.023314
MT3933	-1.20234	9.953631	-3.94178	0.288453	0.002005	MT0597	-0.79835	9.075379	-2.78531	-2.76192	0.023314
MT0876	-1.32304	9.204606	-3.94175	0.288387	0.002005	MT2750	1.10129	8.553093	2.784324	-2.76424	0.023358
MT0264	-1.39311	9.551164	-3.94078	0.285588	0.002007	MT1570	-0.89192	9.122828	-2.78389	-2.76525	0.023367
MT2062	-1.28853	9.219108	-3.93942	0.28166	0.002009	MT4025	1.048334	8.903495	2.781037	-2.77194	0.023527
MT3194.1	1.026517	9.462111	3.939043	0.280567	0.002009	MT1388	0.878572	9.184637	2.778526	-2.77781	0.023652
MT0507	-1.2067	9.925383	-3.93882	0.279928	0.002009	MT2019	0.9773	9.34614	2.778353	-2.77822	0.023652
MT3518	1.130344	9.026712	3.934727	0.268123	0.002029	MT0834	0.886768	8.61032	2.778197	-2.77858	0.023652
MT2751	1.50949	8.791567	3.934198	0.266598	0.002029	MT3290.1	-0.89097	9.023313	-2.77593	-2.78388	0.023776
MT2855	-1.59531	9.372063	-3.93389	0.26571	0.002029	MT0910.2	-0.77282	8.778398	-2.77448	-2.78728	0.02385
MT0363	-1.00492	9.078702	-3.93237	0.261338	0.002035	MT0580	0.982095	9.024473	2.774069	-2.78823	0.023852
MT1931.1	-1.28828	9.101135	-3.93165	0.259254	0.002036	MT2588	-0.70991	9.124259	-2.77388	-2.78867	0.023852
MT3721	-0.95362	9.56129	-3.93039	0.255635	0.00204	MT2546	1.02437	9.162913	2.773308	-2.79001	0.02387
MT2943	-1.28667	9.516465	-3.92989	0.254173	0.00204	MT0082	-0.76504	9.134274	-2.77306	-2.7906	0.02387
MT0795	-1.0874	9.198656	-3.92647	0.24433	0.002059	MT2155	-0.80085	9.288314	-2.7724	-2.79214	0.023879
MT1926	1.057303	10.04066	3.925466	0.241445	0.002061	MT1312.1	-0.82478	9.114575	-2.77236	-2.79224	0.023879
MT3309	1.577062	9.672346	3.921094	0.228862	0.002082	MT1178	-0.63322	9.216918	-2.77063	-2.79626	0.02397
MT2510	1.011944	10.01432	3.920534	0.227251	0.002082	MT2930	-0.85637	8.878183	-2.76826	-2.8018	0.024103
MT0446	-1.08446	9.570759	-3.92015	0.226138	0.002082	MT3088	0.794096	9.06467	2.767784	-2.80291	0.024115
MT1623	-1.26279	9.634642	-3.92009	0.225958	0.002082	MT0848	-0.84889	8.985525	-2.76746	-2.80366	0.024118
MT2654	1.505994	9.111573	3.919333	0.223794	0.002083	MT1885	-0.68249	9.206568	-2.76563	-2.80794	0.024218

MT0396	1.22007	9.142233	3.917601	0.218813	0.002091	MT1626	-1.04399	10.30335	-2.76359	-2.81268	0.024329
MT3517	1.596214	9.038786	3.916784	0.216464	0.002092	MT1734	0.772879	9.114702	2.762483	-2.81527	0.024383
MT2671	1.095566	9.141042	3.916198	0.214777	0.002092	MT4034	0.863621	9.228426	2.760951	-2.81884	0.024464
MT2700	1.464395	9.813175	3.912839	0.205121	0.002111	MT0530	0.868507	9.883474	2.760395	-2.82014	0.024482
MT0074	-1.18964	9.192043	-3.911	0.199827	0.002119	MT0344	0.858265	9.089375	2.76006	-2.82092	0.024482
MT1096.2	1.339168	9.706331	3.910497	0.19839	0.002119	MT1589	-0.667	9.255089	-2.75984	-2.82143	0.024482
MT1070.1	1.276653	9.370801	3.905447	0.183882	0.002149	MT0482	-0.65403	9.236822	-2.75891	-2.82358	0.024524
MT1615	1.097141	9.158332	3.9027	0.175992	0.002164	MT0868	-1.02021	8.767506	-2.75815	-2.82536	0.024556
MT1861	1.132667	9.830443	3.901092	0.171377	0.002171	MT2525	0.686848	8.546945	2.756555	-2.82908	0.024641
MT0529	1.471469	9.830587	3.900441	0.169509	0.002171	MT3658	0.897517	8.980206	2.75613	-2.83006	0.024651
MT1997	-1.22291	9.561208	-3.8985	0.163948	0.002181	MT0207	-0.80054	9.390661	-2.75549	-2.83155	0.024671
MT1253	1.111359	8.983186	3.896869	0.159259	0.002188	MT2173	0.94347	9.057517	2.755282	-2.83204	0.024671
MT3648	1.070184	9.724817	3.895349	0.154898	0.002195	MT3119	-1.1136	8.768486	-2.75481	-2.83314	0.024684
MT2967	1.587532	8.992794	3.891307	0.143308	0.002219	MT1585.1	0.967289	10.34485	2.753958	-2.83512	0.024712
MT0670	-1.32339	9.134369	-3.88713	0.131321	0.002244	MT0620	0.870481	8.871509	2.753832	-2.83541	0.024712
MT1237	-1.19974	9.342357	-3.88608	0.128326	0.002247	MT0378	-0.74432	9.628063	-2.75084	-2.84236	0.024888
MT2902	1.244064	9.376613	3.885027	0.125311	0.002251	MT1707	0.861499	9.201633	2.750452	-2.84326	0.024896
MT3621	1.434044	10.0836	3.883727	0.121587	0.002256	MT3140	-0.70344	9.027555	-2.74938	-2.84576	0.024935
MT0337	1.045797	9.974054	3.881936	0.116457	0.002265	MT2959	0.923592	8.598805	2.749312	-2.84591	0.024935
MT0443	1.179111	9.198361	3.879044	0.108179	0.002282	MT2595	-0.90774	9.962649	-2.74897	-2.8467	0.024939
MT0245	-1.14622	9.330945	-3.87558	0.098271	0.002302	MT2072	-0.74821	9.397433	-2.74771	-2.84964	0.025001
MT0858	1.076142	9.286334	3.874604	0.095471	0.002305	MT3449	0.824612	8.850505	2.747492	-2.85014	0.025001
MT0156	-1.29377	9.488013	-3.86928	0.080243	0.002339	MT3368	0.777446	8.496189	2.745749	-2.85418	0.025097
MT3046	-1.1458	9.592577	-3.86879	0.078849	0.002339	MT1315	-0.80308	8.804471	-2.74415	-2.85789	0.025184
MT1690	1.255724	8.991421	3.864482	0.066534	0.002367	MT1906	-0.69133	9.050795	-2.7423	-2.86217	0.025256
MT0098	-0.90289	8.952335	-3.86069	0.055699	0.002389	MT1294	-0.87659	8.649001	-2.74215	-2.86254	0.025256
MT2138.1	-1.11303	9.204336	-3.86038	0.054806	0.002389	MT1411	-0.66569	9.510827	-2.74204	-2.86279	0.025256
MT1924	-0.99883	9.227934	-3.85772	0.04721	0.002405	MT2600.1	0.749228	9.026002	2.741668	-2.86365	0.025256
MT3066	1.358666	9.470884	3.856159	0.042765	0.00241	MT3620	-1.26743	8.811919	-2.74159	-2.86382	0.025256
MT3623	1.052364	9.331246	3.855973	0.042235	0.00241	MT0983	0.928721	9.137128	2.741209	-2.86471	0.025256
MT2977	-1.08018	9.222939	-3.84769	0.018618	0.002468	MT2732	0.917586	9.07823	2.741171	-2.8648	0.025256
MT1513	1.198507	8.650395	3.847152	0.017072	0.002469	MT2015.2	-0.6745	9.225073	-2.74061	-2.8661	0.025275
MT0469	1.020187	8.79114	3.84386	0.00769	0.002489	MT0424	1.203913	9.769969	2.740098	-2.86728	0.025291
MT2432	1.336835	8.878903	3.843127	0.005602	0.002489	MT1579	-0.7908	9.780099	-2.73964	-2.86835	0.025304
MT3569	1.026629	9.594068	3.842585	0.004057	0.002489	MT1177	-0.68907	8.81245	-2.7381	-2.87192	0.025388
MT2233	-1.06521	9.718747	-3.84237	0.003459	0.002489	MT1029	-0.92848	8.43571	-2.73703	-2.8744	0.025442
MT3579	-0.98346	9.096179	-3.83204	-0.02596	0.002565	MT3413	-0.73116	9.0878	-2.73606	-2.87664	0.025488
MT1137	-0.91368	8.988868	-3.83152	-0.02746	0.002565	MT1006.1	1.147567	9.073868	2.734974	-2.87915	0.025542
MT2564	1.41018	8.558266	3.830852	-0.02935	0.002566	MT2958	0.85328	8.904862	2.734088	-2.8812	0.025583
MT3405	1.227913	9.278286	3.826168	-0.04267	0.002599	MT0202	0.807105	8.672354	2.729816	-2.89107	0.025852
MT2125	1.447118	8.338822	3.825346	-0.045	0.002602	MT0957	-0.84416	10.41835	-2.72952	-2.89175	0.025854
MT3973	-0.90635	9.087472	-3.82354	-0.05014	0.002612	MT3106.1	0.827926	9.028258	2.727744	-2.89586	0.025956
MT3573.2	1.330583	8.938556	3.821798	-0.05509	0.002622	MT2381	-0.73971	9.301933	-2.72713	-2.89728	0.025979
MT3154	-1.152	9.987797	-3.81958	-0.06139	0.00263	MT2357	0.722223	9.427995	2.726298	-2.8992	0.026017
MT2537	-0.92682	9.531347	-3.81896	-0.06315	0.00263	MT2801.1	-0.68224	9.09268	-2.7247	-2.90289	0.026108
MT3411	-1.16657	9.091604	-3.81892	-0.06326	0.00263	MT2290	-0.94193	8.677654	-2.72413	-2.9042	0.026128
MT3988	-0.86617	9.169196	-3.8187	-0.06388	0.00263	MT1845	-0.7732	9.254993	-2.72334	-2.90602	0.026164
MT3523	1.51178	9.653633	3.814403	-0.07609	0.002661	MT0591	-0.76899	9.60528	-2.72283	-2.9072	0.02618
MT2168	-1.11546	9.397354	-3.8119	-0.08319	0.002677	MT0127	0.928743	9.188376	2.722176	-2.90871	0.026207
MT0066.1	-1.02073	9.605928	-3.81127	-0.08498	0.002678	MT0186	-0.70643	8.95153	-2.72188	-2.9094	0.026209
MT1075.1	-1.7892	10.44967	-3.80877	-0.09208	0.002694	MT3021	-0.78312	9.604389	-2.72065	-2.91222	0.026274
MT0896	1.495621	9.544315	3.8072	-0.09653	0.002703	MT1213	-1.03085	9.060488	-2.71908	-2.91585	0.026364
MT1168	1.197403	9.795454	3.80632	-0.09902	0.002706	MT2699	-0.69854	9.300134	-2.7169	-2.92087	0.026495
MT3355	1.092898	9.449854	3.804196	-0.10504	0.00272	MT1493	-0.68061	8.940837	-2.7162	-2.92248	0.026525
MT0543	1.46431	8.954397	3.802707	-0.10927	0.002728	MT0336	-0.72282	9.049874	-2.71353	-2.92863	0.02669
MT2673	-1.00289	9.498633	-3.80126	-0.11337	0.002736	MT1660	-0.80945	9.697044	-2.71328	-2.92919	0.02669
MT1066	1.251731	9.342066	3.800631	-0.11515	0.002737	MT2560	1.078977	8.786418	2.712999	-2.92984	0.026691
MT1035	1.103558	9.483517	3.799678	-0.11785	0.002737	MT1781	0.780356	8.707829	2.710822	-2.93485	0.026824
MT3281	-1.33644	8.967889	-3.79922	-0.11914	0.002737	MT2629	1.025606	9.140551	2.708435	-2.94034	0.026972
MT0993	-1.02985	9.3564	-3.79908	-0.11954	0.002737	MT2370.1	-0.7649	9.585582	-2.7079	-2.94157	0.026991
MT3302	1.247239	9.954411	3.796012	-0.12823	0.002758	MT0341	-0.71037	9.218015	-2.70669	-2.94435	0.027035
MT3141	-1.35323	9.080095	-3.79209	-0.13935	0.00278	MT0910.3	-0.85705	9.185798	-2.70666	-2.94442	0.027035
MT2250	1.073652	9.149422	3.791728	-0.14036	0.00278	MT1376	0.91356	9.44969	2.706474	-2.94484	0.027035
MT3612.1	1.375116	9.428122	3.791236	-0.14175	0.00278	MT0489	-0.7257	9.600948	-2.70463	-2.94908	0.027144
MT2862	1.163662	9.198861	3.790996	-0.14243	0.00278	MT1351	-0.86675	9.248562	-2.70439	-2.94961	0.027144
MT3286	-1.28242	8.928852	-3.79087	-0.14278	0.00278	MT2677	-0.72947	8.89061	-2.70355	-2.95156	0.027168
MT0724.1	1.584637	9.17254	3.787671	-0.15184	0.002803	MT2061	-0.80194	9.685845	-2.70352	-2.95161	0.027168
MT0176	-1.15427	9.489981	-3.78635	-0.15556	0.00281	MT0869	1.053031	8.67982	2.702929	-2.95298	0.027184
MT3891	1.061217	9.223129	3.782951	-0.16519	0.00283	MT2545	-0.88715	9.56851	-2.70277	-2.95335	0.027184
MT0818	-1.05216	9.661598	-3.78287	-0.16543	0.00283	MT3887	0.830603	8.802146	2.701709	-2.95578	0.02724
MT0773	-1.03768	8.688478	-3.78193	-0.16807	0.00283	MT4026.1	-0.66156	9.003381	-2.70033	-2.95893	0.027318
MT0721	-1.39028	9.105281	-3.78181	-0.16841	0.00283	MT0014	-0.90902	8.793481	-2.69993	-2.95985	0.027318
MT0270.1	1.269309	9.750205	3.781603	-0.169	0.00283	MT2001	-0.58292	9.605018	-2.69961	-2.96059	0.027318
MT2899	1.002331	9.512178	3.779286	-0.17555	0.00284	MT1975	-0.78426	9.590678	-2.69954	-2.96075	0.027318
MT0720	-1.29974	9.499713	-3.77908	-0.17614	0.00284	MT3996	0.868072	9.010538	2.698037	-2.96419	0.027406
MT3982	-1.15506	9.206681	-3.77874	-0.17709	0.00284	MT0328	1.333851	8.306408	2.695803	-2.96931	0.027536
MT0772.5	1.271182	8.885375	3.777753	-0.17987	0.00284	MT1376.1	-1.03866	8.941681	-2.69568	-2.96959	0.027536
MT0019	-1.01581	8.675363	-3.77752	-0.18053	0.00284	MT1523	-0.73474	9.218345	-2.69177	-2.97855	0.027798
MT2534	-1.27692	9.809124	-3.77738	-0.18092	0.00284	MT1209	0.930142	8.845126	2.691335	-2.97954	0.02781
MT3582	1.660466	8.603782	3.773388	-0.1922	0.002871	MT1465	0.985283	8.997057	2.689828	-2.98298	0.027899
MT0464	-1.01409	9.527564	-3.77053	-0.20027	0.002892	MT1325	-0.61995	8.956217	-2.68912	-2.98461	0.027916
MT0824	1.641418	10.5433	3.76677	-0.21088	0.002919	MT0178	-0.85314	9.397964	-2.689	-2.98487	0.027916
MT1070	-1.00913	9.151664	-3.76654	-0.21153	0.002919	MT1853	0.750483	8.569591	2.688806	-2.98532	0.027916
MT2147	1.411688	9.268664	3.765124	-0.21552	0.002927	MT1928	0.824328	9.541129	2.688435	-2.98617	0.027924
MT0405	1.46066	9.167855	3.762952	-0.22165	0.002942	MT1618	0.742806	9.695901	2.686783	-2.98994	0.028024
MT2237	-0.96609	9.517409	-3.76207	-0.22413	0.002945	MT3044	-0.89859	9.477392	-2.68586	-2.99205	0.028072
MT1667	1.232446	9.175065	3.755271	-0.24329	0.003003	MT2197	-0.8374	9.360794	-2.68511	-2.99377	0.028108
MT3653	-0.96446	9.22611	-3.75446	-0.24557	0.003003	MT2457	-0.76677	9.521674	-2.68423	-2.99578	0.028153
MT0263	-1.35454	9.850285	-3.75422	-0.24624	0.003003	MT1834	1.082391	8.864343	2.683896	-2.99653	0.028158
MT2931	-1.19986	9.46025	-3.75306	-0.2495	0.003009	MT1093	0.923279	8.884856	2.682876	-2.99886	0.0282
MT3247	1.028439	9.152965	3.750009	-0.2581	0.003033	MT1963	-0.72872	8.967672	-2.68275	-2.99914	0.0282
MT0141	1.193582	9.05657	3.749021	-0.26088	0.003038	MT3032	-0.85498	9.187982	-2.68254	-2.99964	0.0282
MT0926	1.25624	8.963073	3.746414	-0.26822	0.003055	MT1191	0.961296	8.37881	2.681249	-3.00257	0.028274
MT3440	-0.9981	8.944057	-3.74618	-0.26887	0.003055	MT1665	-0.79115	9.285444	-2.68001	-3.0054	0.028346
MT0260	-0.93523	9.229524	-3.74557	-0.27059	0.003056	MT2540	-0.72422	9.621364	-2.67889	-3.00796	0.028409
MT2005	-1.14625	9.484561	-3.74513	-0.27183	0.003056	MT2794	-0.66883	10.11007	-2.6783	-3.0093	0.028433
MT1984	1.13416	9.24703	3.744459	-0.27371	0.003058	MT2940	0.836246	9.311614	2.677823	-3.01038	0.028449
MT2984	1.115116	9.036345	3.743056	-0.27766	0.003066	MT0662	0.792175	9.32101	2.676328	-3.01379	0.028539

MT3045	-0.91615	9.457954	-3.74096	-0.28354	0.003081	MT0266	0.920796	9.194555	2.674842	-3.01717	0.02863
MT1998.1	-1.02555	9.465858	-3.74034	-0.2853	0.003083	MT1521	-0.91745	8.626861	-2.67209	-3.02344	0.028814
MT3159	1.175596	8.904386	3.739302	-0.28821	0.003088	MT2049	0.955728	10.1157	2.670837	-3.02629	0.028883
MT2852	1.442725	8.655994	3.73775	-0.29257	0.003098	MT0113	-0.63035	9.127388	-2.67064	-3.02673	0.028883
MT2280	1.012353	8.954274	3.736445	-0.29624	0.003106	MT3829	-1.03837	8.820675	-2.66986	-3.0285	0.028913
MT1778	1.011375	9.861855	3.733968	-0.30319	0.003125	MT3169	1.402992	9.73121	2.669714	-3.02884	0.028913
MT0406	1.242958	8.75516	3.732973	-0.30599	0.003129	MT1183	-0.95958	9.640121	-2.66871	-3.03114	0.028969
MT2247	1.228924	9.026763	3.722565	-0.33519	0.003226	MT0401	0.738191	8.961061	2.666526	-3.03609	0.029112
MT4040.1	-1.18464	9.649499	-3.71731	-0.34993	0.003273	MT0367	0.880947	9.218453	2.666069	-3.03713	0.029127
MT0695	-1.19608	9.54669	-3.71663	-0.35182	0.003275	MT1160	-0.66897	9.670553	-2.66493	-3.03971	0.029193
MT0419	-0.98799	9.460446	-3.71614	-0.35319	0.003275	MT3191	-0.88049	9.557816	-2.66109	-3.04842	0.029463
MT0567	2.289199	9.277018	3.714219	-0.35857	0.003289	MT2008	-0.75953	9.774613	-2.65935	-3.05238	0.029576
MT2333	-0.88253	9.150949	-3.71368	-0.36008	0.00329	MT0774	0.661889	8.961341	2.659087	-3.05297	0.029576
MT3997	1.414015	9.019681	3.712507	-0.36337	0.003297	MT1118	0.829719	9.055505	2.658068	-3.05528	0.029629
MT2596	-0.96125	9.288249	-3.71201	-0.36475	0.003297	MT2779	-0.6296	9.409623	-2.65787	-3.05573	0.029629
MT3695	1.404587	8.576546	3.710841	-0.36803	0.003304	MT0685	-0.80323	9.164493	-2.65733	-3.05696	0.02965
MT3363	1.093358	9.742719	3.709326	-0.37227	0.003315	MT0210	-0.803	10.35732	-2.65684	-3.05806	0.029668
MT3060	1.21854	8.672405	3.705798	-0.38214	0.003341	MT2204	-0.77676	8.944208	-2.65568	-3.06069	0.029736
MT1459	-1.14347	9.650183	-3.70574	-0.3823	0.003341	MT2077	-0.7296	9.093228	-2.65387	-3.06478	0.029855
MT0445	-0.93827	8.961386	-3.70168	-0.39364	0.003378	MT1843	-0.61588	8.955064	-2.65037	-3.07272	0.030105
MT2037	1.306777	9.231281	3.697054	-0.40658	0.003421	MT3399	-0.73433	9.180506	-2.64934	-3.07504	0.030164
MT0963	-1.17752	9.656911	-3.69411	-0.41481	0.003447	MT1931	0.728981	9.433383	2.647436	-3.07935	0.030292
MT2615	1.511314	8.048723	3.693052	-0.41775	0.003453	MT3031	-0.84168	10.8396	-2.64528	-3.08421	0.030439
MT3100	-1.29291	9.463898	-3.68943	-0.42786	0.003486	MT0380	-0.98049	9.243026	-2.64468	-3.08557	0.030466
MT0042	1.190713	9.858261	3.688331	-0.43093	0.003492	MT3174.2	-0.71292	9.087056	-2.64421	-3.08665	0.03048
MT3212	-0.98524	9.152279	-3.68723	-0.43401	0.003499	MT1140	-0.6897	9.395871	-2.64399	-3.08714	0.03048
MT1872	-0.80441	9.270294	-3.68516	-0.43979	0.003516	MT2998	-0.59496	9.489408	-2.64369	-3.0878	0.030482
MT2841	1.828049	9.80826	3.68351	-0.44438	0.003529	MT3370	0.915263	8.569694	2.642838	-3.08973	0.030528
MT1683	-1.09122	9.09316	-3.6823	-0.44776	0.003537	MT3537	0.691772	8.720795	2.642595	-3.09028	0.030528
MT3862	1.007395	9.717451	3.681121	-0.45104	0.003544	MT0528	0.654278	9.361183	2.641907	-3.09183	0.030562
MT2136	-0.9661	9.403014	-3.67879	-0.45753	0.003564	MT3978	-0.68835	9.464067	-2.6384	-3.09975	0.030817
MT1991	1.200516	9.244678	3.674667	-0.46901	0.003601	MT2823	-0.88631	8.8827	-2.63616	-3.1048	0.030965
MT3238	1.227867	8.989528	3.67444	-0.46965	0.003601	MT3513	-0.64737	8.830857	-2.63601	-3.10513	0.030965
MT0036	-1.17195	9.478539	-3.67188	-0.47677	0.003624	MT2438	0.719149	9.164645	2.63523	-3.10689	0.031006
MT1954	-1.0653	9.868629	-3.67116	-0.47877	0.003624	MT0290	0.967187	8.702545	2.634785	-3.10789	0.031021
MT1839.1	1.563238	8.838953	3.670777	-0.47984	0.003624	MT2774	-0.92486	9.110603	-2.63379	-3.11012	0.031058
MT1269	-0.92127	9.672425	-3.67052	-0.48057	0.003624	MT2158	0.797864	8.876391	2.633419	-3.11097	0.031058
MT1551	-1.01344	9.417601	-3.66419	-0.49816	0.003689	MT2766	0.730859	8.979501	2.633013	-3.11188	0.031058
MT0583	1.029569	9.457737	3.662613	-0.50255	0.003701	MT0739	-0.87324	9.056239	-2.6325	-3.11303	0.031058
MT3434	1.159318	8.278644	3.661501	-0.50564	0.003709	MT2888	-1.10292	8.946333	-2.63238	-3.11331	0.031058
MT1820	1.002212	8.835853	3.656043	-0.5208	0.003765	MT2842	-0.60731	9.286613	-2.63236	-3.11334	0.031058
MT2462	-1.07589	9.398318	-3.65441	-0.52534	0.003775	MT1599	-0.85833	8.613384	-2.63218	-3.11376	0.031058
MT0067	1.291698	9.960498	3.654293	-0.52566	0.003775	MT0143	-0.80707	9.461452	-2.63193	-3.11432	0.031058
MT0706	-0.97191	9.759038	-3.65278	-0.52987	0.003787	MT1076	-0.76329	9.42854	-2.63173	-3.11477	0.031058
MT2240	-1.19825	9.316047	-3.6496	-0.53868	0.003814	MT2063	-0.79704	9.867178	-2.63153	-3.11522	0.031058
MT3255	-1.22845	8.569079	-3.6495	-0.53897	0.003814	MT1042	-0.83986	9.199015	-2.63151	-3.11527	0.031058
MT3690	-0.82159	9.20555	-3.6433	-0.55615	0.00388	MT0411	0.901886	9.927204	2.630511	-3.11751	0.031116
MT0930	1.096698	9.740111	3.641681	-0.56064	0.003894	MT2488.1	0.908471	8.940421	2.628803	-3.12135	0.031232
MT2108	1.091913	9.324706	3.639945	-0.56546	0.003909	MT0843	0.704613	9.193172	2.628527	-3.12197	0.031234
MT3836	-0.89014	8.937402	-3.639	-0.56806	0.003915	MT1015	-0.72471	9.081841	-2.62637	-3.12682	0.031386
MT2739	0.944276	8.802814	3.634476	-0.5806	0.00396	MT2201	-0.66809	9.141648	-2.62607	-3.12749	0.031389
MT2991	1.56622	8.905088	3.634249	-0.58123	0.00396	MT1219	-0.66886	9.533962	-2.62549	-3.1288	0.031415
MT0902	1.058416	8.838175	3.630562	-0.59143	0.003994	MT1460	0.713101	9.338536	2.62381	-3.13257	0.031511
MT3432	1.532098	8.847143	3.630512	-0.59157	0.003994	MT1458	-0.74823	9.258156	-2.62379	-3.13261	0.031511
MT3276	-0.93948	9.162908	-3.62642	-0.60288	0.004038	MT1472	-0.70014	10.02951	-2.62297	-3.13445	0.03155
MT2300	-0.98809	9.586298	-3.62406	-0.6094	0.004061	MT3070	-0.8869	9.27726	-2.6228	-3.13484	0.03155
MT0107	-0.97752	9.515298	-3.6225	-0.61372	0.004075	MT1909	0.671462	9.085647	2.621702	-3.1373	0.0316
MT1995	-0.87726	9.763971	-3.62167	-0.61602	0.004079	MT2360	-0.75469	9.081043	-2.62167	-3.13738	0.0316
MT3254	-1.22255	9.617059	-3.62026	-0.6199	0.004087	MT0075	0.724716	8.700621	2.621186	-3.13846	0.031609
MT3572	-1.14461	9.597767	-3.61972	-0.62141	0.004087	MT0559	-0.60128	9.167112	-2.62105	-3.13877	0.031609
MT1431	1.162371	8.646699	3.619289	-0.62259	0.004087	MT0805	-0.78819	9.514348	-2.61987	-3.14141	0.031645
MT2648	1.063016	9.768911	3.618685	-0.62426	0.004087	MT1573	-0.70965	9.982523	-2.61985	-3.14146	0.031645
MT1999	-1.09133	9.092767	-3.61864	-0.62438	0.004087	MT2729	1.029349	8.551364	2.619839	-3.14148	0.031645
MT0180	-0.88632	9.556098	-3.61837	-0.62514	0.004087	MT3050	-0.774	9.188494	-2.61876	-3.14391	0.031712
MT1151	-1.24059	8.969028	-3.61678	-0.62953	0.004101	MT2080.1	-0.86909	10.14406	-2.61801	-3.14558	0.031734
MT0291	1.315855	8.612588	3.613618	-0.63825	0.004129	MT1167	0.875814	8.403918	2.61782	-3.14601	0.031734
MT1675	-1.09764	9.452684	-3.61356	-0.6384	0.004129	MT1940	0.950321	10.49617	2.617723	-3.14623	0.031734
MT2583	1.422733	9.284305	3.609898	-0.64851	0.00417	MT3426	0.876392	10.07445	2.617016	-3.14781	0.031771
MT2027	-0.94385	9.044277	-3.60664	-0.65749	0.0042	MT3243	-0.67541	9.177402	-2.61598	-3.15013	0.031834
MT0195	1.220712	9.468882	3.606287	-0.65847	0.0042	MT3052.2	0.804196	8.44886	2.615489	-3.15123	0.031854
MT1251	1.272305	9.630604	3.606141	-0.65887	0.0042	MT3885	0.943951	8.53358	2.614729	-3.15294	0.031882
MT3724	0.974904	9.983047	3.605227	-0.66139	0.004206	MT0690	-0.79215	8.770514	-2.61464	-3.15314	0.031882
MT2634	-1.05798	8.39657	-3.60007	-0.6756	0.004266	MT2717	-0.84627	10.61389	-2.61359	-3.15548	0.031946
MT2890	-1.15905	9.237265	-3.59712	-0.68371	0.004298	MT1324	-0.66602	10.48835	-2.61332	-3.15608	0.031948
MT3301	-1.19071	9.48136	-3.59446	-0.69105	0.004324	MT3211	-0.77762	9.332163	-2.61272	-3.15744	0.031977
MT0668	1.215979	9.494354	3.594228	-0.69168	0.004324	MT3536	0.866268	9.359765	2.612118	-3.15878	0.032005
MT3776	-0.94561	10.0801	-3.59279	-0.69562	0.004337	MT0221	-0.69128	9.817008	-2.61167	-3.15979	0.03202
MT0432	-0.91719	9.29751	-3.58991	-0.70355	0.004369	MT0016	-0.72392	8.6141	-2.61143	-3.16032	0.03202
MT1309	-1.07711	9.114505	-3.58849	-0.70747	0.004381	MT2188	0.725789	9.611996	2.610515	-3.16237	0.032074
MT0223	-0.96573	9.128241	-3.58803	-0.70873	0.004382	MT1291	-1.07757	9.521297	-2.60887	-3.16605	0.032173
MT2628	1.351249	9.753552	3.585456	-0.7158	0.00441	MT1641.1	-0.87922	10.17589	-2.6088	-3.1662	0.032173
MT2305	1.215264	8.659599	3.584719	-0.71782	0.004414	MT1944	0.610321	9.704854	2.607702	-3.16866	0.032242
MT2734	1.034459	8.778286	3.582085	-0.72506	0.004443	MT0390	-1.15417	8.47519	-2.60703	-3.17016	0.032277
MT3640	1.072943	9.260531	3.578262	-0.73556	0.004488	MT2175	-0.90253	9.18618	-2.60584	-3.17282	0.032354
MT1575	-1.04429	8.621234	-3.57762	-0.73732	0.004491	MT0701	-0.71394	9.129986	-2.60288	-3.17942	0.032577
MT0128	1.17756	9.23322	3.575156	-0.74408	0.004518	MT2759	-0.65214	8.807973	-2.60233	-3.18065	0.032601
MT2318	1.05112	9.725411	3.57182	-0.75323	0.004556	MT2473	-0.6171	9.481273	-2.60209	-3.18118	0.032601
MT0696	-0.94586	9.377935	-3.57146	-0.75422	0.004556	MT0910.4	0.648152	9.602026	2.601302	-3.18295	0.032646
MT1476	1.093537	8.910114	3.568924	-0.76117	0.004581	MT2011	-0.74479	9.331092	-2.60038	-3.185	0.032701
MT0429	-0.77841	9.29972	-3.5688	-0.76152	0.004581	MT0237	-0.74584	8.993139	-2.60011	-3.18561	0.032703
MT1210	-1.09515	8.766702	-3.56563	-0.77018	0.004616	MT0504	-0.79174	8.810024	-2.59963	-3.18669	0.032723
MT0730	-0.99324	8.820031	-3.56535	-0.77097	0.004616	MT3091	1.240052	8.281947	2.598656	-3.18885	0.032782
MT2532	-0.79774	9.751212	-3.56408	-0.77444	0.004627	MT0463	-0.74122	9.052137	-2.59823	-3.18981	0.032797
MT3838	-0.92808	9.307202	-3.56362	-0.77571	0.004628	MT2494	0.661117	9.109096	2.596257	-3.1942	0.032941
MT1696	1.636817	8.628861	3.561073	-0.78267	0.004651	MT1255	0.748382	8.882355	2.595628	-3.1956	0.032972
MT0487	-0.8242	9.199394	-3.56085	-0.78327	0.004651	MT2612	0.989539	9.076051	2.595174	-3.19661	0.032989
MT0413	-1.01761	9.286578	-3.56062	-0.78391	0.004651	MT1320	-0.66334	9.50843	-2.59473	-3.1976	0.033006
MT2266	-0.83709	8.808564	-3.55939	-0.78728	0.004662	MT3772	-0.63489	8.756282	-2.59409	-3.19902	0.033038

MT0842	-1.00691	9.594323	-3.55898	-0.78841	0.004662	MT0745	-0.61805	9.351614	-2.59237	-3.20285	0.033162
MT0595	1.469352	9.092365	3.558578	-0.7895	0.004662	MT2980	-0.77426	8.770117	-2.59062	-3.20674	0.033288
MT3389	-1.01338	9.280434	-3.55803	-0.791	0.004663	MT3774	-0.64765	9.197927	-2.58865	-3.21112	0.033433
MT0023	-0.94994	8.864098	-3.55743	-0.79264	0.004666	MT1837	-0.77849	8.61389	-2.58756	-3.21355	0.033498
MT0320	1.269575	8.694073	3.552226	-0.80687	0.004732	MT2124	1.09122	8.292897	2.587384	-3.21394	0.033498
MT2045.1	-1.00927	10.07125	-3.54988	-0.8133	0.00476	MT1862	-0.74237	9.609917	-2.58701	-3.21477	0.033499
MT1367	1.489723	8.188764	3.549282	-0.81492	0.004762	MT0382	-0.8352	8.819268	-2.58689	-3.21505	0.033499
MT0541	1.17599	9.05691	3.546377	-0.82286	0.004797	MT2363	0.706621	8.700731	2.584774	-3.21974	0.033657
MT2993	1.123238	9.654668	3.545137	-0.82624	0.004808	MT0063	-0.85962	10.09835	-2.58408	-3.22128	0.033675
MT0262	-0.93285	9.019037	-3.54478	-0.82722	0.004808	MT1060	-0.7058	9.10251	-2.58389	-3.2217	0.033675
MT3931	1.443632	9.317206	3.543083	-0.83185	0.004825	MT1097	0.847378	8.698543	2.583812	-3.22188	0.033675
MT1338	0.897498	9.336109	3.542704	-0.83289	0.004825	MT3112	0.919636	8.59384	2.583474	-3.22263	0.033683
MT3278	-0.93799	9.616679	-3.54223	-0.83419	0.004826	MT0693	-0.73313	9.665063	-2.58177	-3.22641	0.033807
MT1134	-1.29318	9.147682	-3.53918	-0.84251	0.004864	MT2226	-0.8159	8.776026	-2.5815	-3.22701	0.033809
MT2868	1.192533	9.135578	3.53732	-0.84758	0.004885	MT0139	-0.59959	9.407821	-2.58045	-3.22933	0.033877
MT2390	-1.45973	9.043956	-3.53614	-0.8508	0.004894	MT0948	0.841165	10.36079	2.580117	-3.23008	0.033877
MT1262	0.993353	9.22107	3.535807	-0.8517	0.004894	MT3679	-0.92035	9.205124	-2.57996	-3.23042	0.033877
MT1657	1.333639	9.009225	3.533144	-0.85896	0.004927	MT3604	-0.6844	9.32213	-2.57942	-3.23163	0.033903
MT1917	-1.13822	8.954287	-3.52927	-0.86953	0.004978	MT0486	-0.76287	9.306789	-2.57909	-3.23236	0.03391
MT0238	1.149281	9.004083	3.528558	-0.87146	0.004982	MT4024	0.715261	9.234508	2.578001	-3.23477	0.033973
MT0359	-0.9035	9.260752	-3.52749	-0.87436	0.004992	MT1337	-0.78646	9.017415	-2.57786	-3.23508	0.033973
MT3235	1.145257	9.299851	3.524304	-0.88304	0.005033	MT2740	-1.10417	9.575227	-2.57717	-3.2366	0.03401
MT3974	1.09665	9.05503	3.519424	-0.89632	0.0051	MT1290	-0.63515	9.054044	-2.57471	-3.24207	0.034197
MT1496	1.14388	9.437792	3.51719	-0.90239	0.005127	MT1433	0.850966	8.759171	2.57451	-3.2425	0.034197
MT0651	1.181067	8.857479	3.51402	-0.91101	0.005163	MT3661	-0.8974	8.66368	-2.57309	-3.24564	0.034299
MT0726	-1.28058	9.547717	-3.51399	-0.91109	0.005163	MT2685	-0.68378	9.05669	-2.57186	-3.24837	0.034384
MT0977	-0.95629	9.36344	-3.51262	-0.91481	0.005178	MT3680	0.67991	8.57068	2.571196	-3.24984	0.03442
MT3431	1.413687	9.73322	3.510279	-0.92117	0.005205	MT0426	0.843448	9.345354	2.569191	-3.25427	0.034573
MT1397	-1.47947	9.431319	-3.51004	-0.92183	0.005205	MT2117	0.69619	9.755087	2.568912	-3.25489	0.034576
MT3876.1	-0.86395	9.962419	-3.50956	-0.92311	0.005206	MT2707	0.65543	8.937207	2.568612	-3.25555	0.034581
MT2630	1.506404	9.051639	3.502894	-0.94121	0.005303	MT2286	-0.67263	8.918927	-2.56773	-3.2575	0.034636
MT3805	1.543073	9.458891	3.499551	-0.95028	0.005345	MT3139.1	-0.78463	9.941499	-2.56733	-3.25838	0.03465
MT0348	-0.92026	9.224241	-3.49899	-0.9518	0.005345	MT3083	0.819412	9.51825	2.566637	-3.25991	0.034689
MT3734	-0.84743	9.403423	-3.49895	-0.9519	0.005345	MT3939	-0.73067	9.476135	-2.56577	-3.26183	0.034736
MT3975	-1.00665	8.673085	-3.49689	-0.9575	0.005371	MT2207	-0.65309	8.987692	-2.56554	-3.26234	0.034736
MT1274	1.114414	9.788589	3.495761	-0.96055	0.005383	MT0103	-1.57792	10.40417	-2.56535	-3.26275	0.034736
MT1629	-0.88174	9.104754	-3.49243	-0.96956	0.005429	MT2435	0.687786	8.665999	2.565087	-3.26334	0.034738
MT3166	1.258143	9.677956	3.489606	-0.97722	0.005468	MT3746	0.693353	9.309538	2.564766	-3.26405	0.034745
MT0147	1.445091	9.114608	3.487799	-0.98211	0.005486	MT1211	0.879455	9.010194	2.562515	-3.26901	0.034921
MT3826	-0.99786	9.594639	-3.48741	-0.98315	0.005486	MT1454	-0.85502	9.296831	-2.5621	-3.26994	0.034936
MT3684	0.876485	9.568305	2.553866	-3.28808	0.035492	MT0283	0.682194	8.887413	2.561095	-3.27215	0.035003
MT1344	-0.69605	9.344524	-2.55357	-3.28872	0.035495	MT1638	-0.66243	8.817482	-2.55998	-3.2746	0.035079
MT3437.1	1.134807	9.084653	2.553344	-3.28922	0.035495	MT2344	-0.70795	9.548016	-2.55896	-3.27685	0.035148
MT0844	-0.72546	8.995871	-2.55046	-3.29557	0.035731	MT1295	0.81789	8.566032	2.558024	-3.27892	0.035209
MT1752	0.774466	9.431088	2.550026	-3.29652	0.035748	MT0397	0.745006	9.074919	2.557002	-3.28117	0.035278
MT2489	-0.63384	10.42053	-2.5482	-3.30053	0.03589	MT2092	0.886682	9.212065	2.554407	-3.28689	0.03547
MT3183	-0.6259	9.368329	-2.54627	-3.30478	0.036015	MT3147	0.933662	8.729648	2.554348	-3.28701	0.03547
MT1535	-0.65665	9.656098	-2.54626	-3.3048	0.036015	MT3830	0.500347	9.578929	2.428104	-3.55973	0.044229
MT2330	0.926378	8.504652	2.546083	-3.30519	0.036015	MT1417	0.776896	9.004797	2.426948	-3.56218	0.044329
MT2370.3	-0.60567	9.032003	-2.54418	-3.30937	0.036165	MT4016	0.905136	9.009681	2.426519	-3.56309	0.044341
MT1703	-0.64655	9.672283	-2.54388	-3.31002	0.03617	MT0992	0.734439	9.552549	2.426378	-3.56339	0.044341
MT2988	0.68215	9.733898	2.542777	-3.31244	0.036248	MT2319	-0.77651	9.692789	-2.42615	-3.56388	0.044342
MT0808	0.74544	9.630255	2.542309	-3.31347	0.036269	MT1410	-0.54318	9.226189	-2.42412	-3.56817	0.044537
MT0952	-0.78539	8.681002	-2.54167	-3.31486	0.03628	MT3580.2	0.552557	8.95553	2.422376	-3.57186	0.044701
MT0099	0.6875	9.200354	2.541562	-3.31511	0.03628	MT0626	-0.50865	8.907786	-2.42157	-3.57356	0.044764
MT3785	-0.63849	9.580855	-2.54141	-3.31544	0.03628	MT2091	0.904844	8.825058	2.420312	-3.57622	0.044857
MT3607	-0.61774	9.638655	-2.54122	-3.31586	0.03628	MT2329	0.716513	10.31836	2.420263	-3.57632	0.044857
MT0270	0.795086	8.63123	2.540563	-3.3173	0.036315	MT0132	1.025542	10.2885	2.418636	-3.57976	0.044989
MT0252	-0.69718	9.291045	-2.54034	-3.31778	0.036315	MT1847	0.880578	9.435239	2.418595	-3.57985	0.044989
MT3654	0.771809	8.71856	2.539043	-3.32063	0.036412	MT2715	-0.62304	9.268916	-2.4176	-3.58195	0.045073
MT3743.1	-0.5243	9.329221	-2.53706	-3.32497	0.036571	MT0663	-0.63065	9.321717	-2.41631	-3.58467	0.04519
MT3348	-0.56153	9.563198	-2.53645	-3.32632	0.03659	MT3850	-0.64872	9.118531	-2.41457	-3.58835	0.045319
MT1779	0.960947	8.739546	2.536362	-3.3265	0.03659	MT2492	-0.54412	9.589956	-2.41456	-3.58836	0.045319
MT1466	0.795397	8.662977	2.535429	-3.32855	0.036654	MT3077	-0.79859	8.655968	-2.41446	-3.58858	0.045319
MT1223	0.913069	9.222622	2.534517	-3.33054	0.036715	MT1188	0.685811	9.368596	2.412098	-3.59356	0.045554
MT2611	0.714656	9.123285	2.533963	-3.33175	0.036744	MT3427	-0.63064	9.155723	-2.4117	-3.5944	0.045573
MT1741	0.918188	9.087692	2.531823	-3.33644	0.036917	MT3059	0.694912	8.630035	2.411359	-3.59512	0.045585
MT1293	-0.63129	9.870832	-2.5316	-3.33692	0.036917	MT3524	0.672524	9.215785	2.408463	-3.60121	0.045882
MT1915	0.696873	9.668552	2.53098	-3.33828	0.036952	MT0778	1.020144	8.797864	2.408205	-3.60176	0.045885
MT2814	0.733666	8.894213	2.530317	-3.33973	0.036991	MT2252	-0.57322	9.280984	-2.40792	-3.60236	0.045892
MT3573.1	-0.73754	8.439625	-2.52986	-3.34072	0.037011	MT3197	-0.71565	9.246131	-2.40711	-3.60407	0.045957
MT3753	-0.63951	8.877955	-2.52955	-3.3414	0.037017	MT0286	-0.67571	9.373332	-2.40675	-3.60481	0.045971
MT0683	-0.70081	9.321307	-2.52699	-3.347	0.037233	MT3218	-0.79834	9.075586	-2.40645	-3.60545	0.045979
MT2662	1.069907	8.203145	2.526565	-3.34793	0.03725	MT1735	0.765405	8.813728	2.406211	-3.60596	0.045981
MT0044	0.786897	9.222383	2.525044	-3.35124	0.037369	MT1904	-0.6256	9.048351	-2.4059	-3.60661	0.04599
MT2927	0.754456	8.84095	2.524219	-3.35304	0.037423	MT2937	-0.71551	9.32068	-2.40416	-3.61026	0.046159
MT0731	0.768089	8.901594	2.522614	-3.35655	0.037534	MT2427	0.715877	8.828289	2.403905	-3.6108	0.046162
MT2616	0.919842	8.666705	2.522558	-3.35667	0.037534	MT3450	-0.62204	9.463047	-2.40083	-3.61727	0.046482
MT3161	0.583683	9.735542	2.521747	-3.35844	0.037587	MT3322	-0.74929	8.828838	-2.40021	-3.61856	0.046505
MT0780	0.936801	9.796003	2.52102	-3.36002	0.037633	MT1710	-0.68013	8.805438	-2.40017	-3.61864	0.046505
MT3004	1.075697	8.556653	2.520472	-3.36122	0.037649	MT2211	1.065858	8.865421	2.39992	-3.61918	0.046508
MT0398	-0.6405	9.760887	-2.52035	-3.36148	0.037649	MT3968	-0.60628	9.12214	-2.39944	-3.62019	0.046537
MT0233	-0.64081	9.06131	-2.52013	-3.36196	0.037649	MT3184	-0.70735	8.969282	-2.39903	-3.62104	0.046551
MT2982	0.796403	9.276992	2.518983	-3.36446	0.037726	MT2186	0.776645	10.47507	2.39886	-3.6214	0.046551
MT1221	-0.72376	8.775864	-2.51883	-3.36479	0.037726	MT1418	-0.65819	9.359291	-2.39838	-3.62241	0.04658
MT3671.2	0.692232	9.846051	2.518489	-3.36554	0.037735	MT3285	0.845323	10.57404	2.397819	-3.62359	0.046618
MT3625	-0.67551	9.361597	-2.5178	-3.36704	0.037778	MT0454	0.826154	9.07271	2.396453	-3.62645	0.04674
MT0954	-0.65306	9.617508	-2.51712	-3.36852	0.03782	MT1901	0.816602	8.843739	2.396283	-3.62681	0.04674
MT3828	0.818019	9.43921	2.516417	-3.37005	0.037842	MT1937	-0.66057	9.84677	-2.396	-3.6274	0.046747
MT2661	-0.90743	9.484624	-2.5164	-3.37009	0.037842	MT1816	-0.6452	9.086482	-2.3937	-3.63223	0.046982
MT0478	-0.69817	10.30581	-2.51594	-3.37108	0.03785	MT1563	-0.57616	9.30437	-2.39343	-3.63279	0.046987
MT0940	0.879789	9.139872	2.515705	-3.3716	0.03785	MT1241	0.711237	8.994662	2.3912	-3.63746	0.047199
MT3792	-0.6382	9.275873	-2.51561	-3.37182	0.03785	MT0278	0.747305	9.16667	2.39112	-3.63763	0.047199
MT1833	-0.84843	9.386949	-2.51501	-3.37312	0.037872	MT3896	0.861535	8.932098	2.390774	-3.63835	0.047212
MT0116.1	1.026452	8.637023	2.514895	-3.37336	0.037872	MT0452	0.987539	8.705159	2.389781	-3.64043	0.0473
MT2259	1.108288	9.720542	2.513452	-3.3765	0.037963	MT0242	-1.06149	8.928302	-2.38911	-3.64183	0.047351
MT3345	0.611604	9.668586	2.513448	-3.37651	0.037963	MT2889	-0.97572	8.758509	-2.38875	-3.64258	0.047366
MT2848	-0.83231	8.808914	-2.51306	-3.37735	0.037977	MT2763	-0.77678	8.687326	-2.38821	-3.64372	0.047403

MT3883	-0.67814	8.944729	-2.51254	-3.37849	0.038005	MT0667	-0.69123	10.03061	-2.38567	-3.64904	0.047669
MT0494	-0.71967	8.968717	-2.51163	-3.38046	0.038068	MT3424	-0.97578	9.071611	-2.38018	-3.6605	0.048278
MT3745	-0.57581	9.204217	-2.51104	-3.38175	0.038102	MT3315	-0.6817	9.092893	-2.37968	-3.66154	0.04831
MT1403	0.609946	9.527021	2.510577	-3.38275	0.038123	MT1347	0.723265	8.924842	2.378245	-3.66453	0.048451
MT3819	-0.6326	8.652299	-2.50991	-3.3842	0.038148	MT2593.1	-0.67752	9.160047	-2.37751	-3.66606	0.048483
MT1865	-0.79277	8.348257	-2.50977	-3.38452	0.038148	MT3089	-0.67215	8.812026	-2.37733	-3.66644	0.048483
MT1727.1	-0.87729	8.381604	-2.5096	-3.38487	0.038148	MT1924.1	-0.92023	10.13943	-2.37729	-3.66652	0.048483
MT1147	0.610376	9.019304	2.509272	-3.38559	0.038151	MT0864	-0.63584	9.149933	-2.37699	-3.66714	0.048492
MT1345	-0.71223	9.037919	-2.5091	-3.38597	0.038151	MT3406	0.834406	8.349757	2.375703	-3.66983	0.048616
MT0384	0.788898	8.924366	2.507328	-3.38981	0.038296	MT1565	0.827254	8.827987	2.374543	-3.67224	0.048726
MT0123	-0.68472	9.746723	-2.5061	-3.39248	0.038391	MT3145.1	-0.69245	9.025298	-2.37393	-3.67351	0.048771
MT2875	-0.81683	9.130552	-2.50363	-3.39782	0.038604	MT3749	0.639245	9.222692	2.373416	-3.67459	0.048806
MT3935	-0.70421	9.455503	-2.50101	-3.4035	0.038833	MT1805	0.740332	9.150195	2.37307	-3.67531	0.04882
MT1106	-0.82905	9.092387	-2.49899	-3.40788	0.039005	MT1980.2	-0.58192	8.661659	-2.37278	-3.6759	0.048827
MT2718	-0.69788	9.326538	-2.49782	-3.41042	0.039096	MT0275	0.699819	9.190803	2.372327	-3.67686	0.048855
MT0503	-0.85555	9.389658	-2.49653	-3.41321	0.039198	MT2550	-0.82126	9.370994	-2.37154	-3.67849	0.04892
MT1888	0.870473	8.179301	2.496133	-3.41407	0.039208	MT3297	0.736841	8.951695	2.370495	-3.68067	0.049018
MT2586.1	0.720396	9.586921	2.495951	-3.41446	0.039208	MT0880	-0.67409	8.7668	-2.36979	-3.68213	0.049057
MT0409	0.690584	9.002494	2.49489	-3.41676	0.039288	MT0850	-0.61593	8.832705	-2.36972	-3.68228	0.049057
MT0965	0.692278	8.541036	2.493522	-3.41972	0.039399	MT1102	-0.78403	8.718916	-2.36936	-3.68302	0.049067
MT1780	0.977219	7.980032	2.493082	-3.42067	0.039419	MT2840	-0.63377	9.710799	-2.36919	-3.68339	0.049067
MT1536	-0.7133	9.260499	-2.4913	-3.42452	0.03957	MT0161	-0.75435	9.148968	-2.36862	-3.68457	0.049107
MT1400	-0.81432	9.742171	-2.49033	-3.42661	0.039625	MT2474	-0.6497	9.113529	-2.36732	-3.68727	0.049235
MT1817	-0.80982	8.658071	-2.49026	-3.42676	0.039625	MT2891	0.68836	8.831564	2.366548	-3.68887	0.049299
MT3924	0.851616	8.422361	2.487609	-3.43249	0.039863	MT1418.1	-0.75394	9.368008	-2.36605	-3.6899	0.04932
MT0549	0.752298	10.23729	2.486069	-3.43581	0.039992	MT0941	0.779696	8.907528	2.365929	-3.69016	0.04932
MT1516	-0.85402	9.276383	-2.48537	-3.43732	0.040038	MT1013	-0.7002	10.09905	-2.36529	-3.69148	0.049369
MT1624	0.677608	9.350897	2.483964	-3.44035	0.040154	MT0250	0.95155	8.400722	2.363065	-3.6961	0.049589
MT1194	-0.74929	7.964213	-2.48268	-3.44311	0.040249	MT2621	0.915675	8.160719	2.362989	-3.69626	0.049589
MT1811	0.808562	9.976139	2.482312	-3.44391	0.040249	MT0570	-0.75184	8.875937	-2.36204	-3.69822	0.049676
MT3029	-0.61827	9.608313	-2.4823	-3.44394	0.040249	MT3639	0.789879	9.26724	2.361661	-3.69901	0.049695
MT2096	-0.86456	8.559608	-2.48165	-3.44533	0.04029	MT0573	-0.66942	9.595516	-2.36107	-3.70024	0.049739
MT3329	-0.68957	8.425325	-2.47745	-3.45438	0.040662	MT0910.1	0.611383	9.137895	2.446978	-3.51963	0.04289
MT0402	-0.88407	8.825884	-2.47736	-3.45457	0.040662	MT2121	-0.79509	8.261175	-2.4469	-3.51979	0.04289
MT2815	-0.61694	9.162004	-2.47714	-3.45505	0.040662	MT0971	-0.78123	8.278602	-2.44505	-3.52373	0.04306
MT3985	-0.52523	9.247897	-2.47699	-3.45536	0.040662	MT1425	0.866124	8.603252	2.444325	-3.52528	0.043112
MT0550	0.733513	8.044556	2.476244	-3.45697	0.040705	MT2659	-0.62591	9.009971	-2.44377	-3.52646	0.043146
MT0535	0.92305	8.704434	2.476087	-3.45731	0.040705	MT2187	-0.70226	9.091244	-2.44298	-3.52815	0.043206
MT2921	0.812837	7.918174	2.473856	-3.46211	0.040892	MT3023	-0.57716	9.052362	-2.44132	-3.53167	0.043357
MT0058	0.798366	9.987652	2.473768	-3.4623	0.040892	MT0364	-0.61087	9.314901	-2.4393	-3.53597	0.043547
MT0212	-0.72058	10.19822	-2.47322	-3.46347	0.040917	MT0462	-0.67543	9.727776	-2.43776	-3.53924	0.043687
MT1017	-0.73419	10.28195	-2.47291	-3.46414	0.040917	MT1965	0.626377	9.745731	2.437127	-3.54059	0.04373
MT1426	0.92173	8.295905	2.472815	-3.46434	0.040917	MT1331	0.620682	9.167754	2.436528	-3.54186	0.043746
MT2423	1.084183	8.611903	2.472267	-3.46552	0.040948	MT1982	-0.78496	8.713064	-2.43651	-3.54189	0.043746
MT1784	0.692928	9.018412	2.470014	-3.47036	0.041153	MT1126	-0.61732	8.713173	-2.43366	-3.54796	0.044027
MT3138	-0.63901	9.028547	-2.46888	-3.47279	0.041244	MT0050	-0.71766	9.046472	-2.43328	-3.54876	0.044038
MT3239	1.135111	8.172142	2.46723	-3.47633	0.041388	MT2515	0.58803	8.765487	2.433064	-3.54922	0.044038
MT2736.1	0.99454	8.540697	2.466521	-3.47785	0.041437	MT2142	0.659191	9.96884	2.432506	-3.5504	0.044038
MT1825	-0.68978	9.062764	-2.46565	-3.47971	0.041501	MT1443	0.965928	9.063418	2.432069	-3.55133	0.044038
MT3056	1.062272	8.722931	2.463877	-3.48352	0.041659	MT1187	-0.91805	8.406841	-2.4318	-3.5519	0.044038
MT3375	-0.80803	8.879464	-2.46315	-3.48507	0.041709	MT3081	0.756738	9.032627	2.431629	-3.55226	0.044038
MT0944	-0.70969	8.998588	-2.46223	-3.48705	0.041778	MT1856	0.643975	9.161065	2.431376	-3.5528	0.044038
MT0222	0.687757	9.247057	2.462022	-3.48749	0.041778	MT3689	-0.64391	9.202846	-2.43128	-3.55299	0.044038
MT3556	0.589801	9.13437	2.461478	-3.48866	0.04181	MT2636	-0.7266	8.85926	-2.43128	-3.553	0.044038
MT3021.1	-0.71342	8.848376	-2.46086	-3.48997	0.041849	MT3132	-0.63752	9.260749	-2.43126	-3.55305	0.044038
MT2896	0.688297	8.73942	2.459727	-3.4924	0.041942	MT3367	0.881504	9.347879	2.430466	-3.55473	0.044071
MT0637	0.766104	8.84044	2.458894	-3.49419	0.042004	MT3321	0.80333	8.981693	2.430205	-3.55528	0.044071
MT2294	0.723092	8.820019	2.458154	-3.49577	0.042054	MT1313	1.027677	8.213199	2.430111	-3.55548	0.044071
MT3632	-0.59686	9.55999	-2.45792	-3.49626	0.042054	MT0740.1	-0.60461	9.218799	-2.43003	-3.55565	0.044071
MT3881	0.93497	8.33759	2.457708	-3.49672	0.042054	MT2464	-0.62296	10.07285	-2.42921	-3.55739	0.044135
MT3906	0.828225	9.036189	2.456855	-3.49855	0.042118	MT0759	0.751284	8.690113	2.450903	-3.51126	0.042615
MT3163	-0.67021	9.04248	-2.45649	-3.49932	0.042132	MT2602	-0.83392	8.696529	-2.4506	-3.51191	0.042615
MT1808	0.645137	8.843608	2.454406	-3.50378	0.042324	MT1983	-0.69233	8.841816	-2.45045	-3.51223	0.042615
MT2179	-0.70845	9.005753	-2.45283	-3.50714	0.042463	MT1993	-0.65886	9.099822	-2.45009	-3.513	0.042629
MT0686	-0.70471	8.999441	-2.45254	-3.50775	0.042469	MT3274	-0.74817	9.252526	-2.44872	-3.51591	0.042747

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BIOGRAPHY

Teresa Anne Hudock was born in Shady Grove, Maryland. She attended the University of Maryland in College Park on scholarship via the James R. Ferguson Memorial fund and graduated with a B.S. in Animal Science in 2006. During her time at the University of Maryland, she also received a citation in Environmental Studies from the College Park Scholars Program. She then went on to attend Michigan State University College of Veterinary Medicine in East Lansing, MI. She graduated as a Doctor of Veterinary Medicine in 2011. She then became a Ruth L. Kirschstein National Service Award recipient/T32 Post-Doctoral Fellow at Tulane University and began her PhD training in the summer of 2012. It was during this time she joined the Kaushal Lab at Tulane National Primate Research Center under the mentorship of Dr. Deepak Kaushal and Dr. Andrew Lackner. During here time at the Tulane National Primate Research Center she won the Early Investigator Award at the 31st Annual Symposium of Non-human Primate Models for AIDS in Atlanta, Georgia as well as gave a presentation on *Mtb* transcriptomics. She was a speaker on the same topic at the Keystone Symposia Meeting entitled “Granulomas in Infectious and Non-Infectious Diseases” in January 2015. Additionally, she has been an invited speaker at other conferences and universities as well as mentored students and visiting scientists. A list of her publications pertaining to the research outlined here can be found on PubMed.