



ITS
Institut
Teknologi
Sepuluh Nopember

44.051 / H / 11



RSS
624.1762
Kur
e-1
2011

TUGAS AKHIR RC09-1380

**EVALUASI PERCEPATAN GEMPA UNTUK PETA
GEMPA INDONESIA DI KEPULAUAN MENTAWAI**

DAMAR KURNIA
NRP 3107 100 064

DOSEN PEMBIMBING :
Tavio, S.T., M.T., PhD.
Ir. Iman Wimbadi, M.S.

PERPUSTAKAAN ITS	
Tgl Terima	4-7-2011
Terima Oleh	H
No Agenda Pp.	-

JURUSAN TEKNIK SIPIL
Fakultas Teknik Sipil dan Perencanaan
Institut Teknologi Sepuluh Nopember
Surabaya 2011



ITS
Institut
Teknologi
Sepuluh Nopember

FINAL PROJECT RC09-1380

**EVALUATION OF PEAK GROUND ACCELERATION
FOR INDONESIA EARTHQUAKE MAP IN MENTAWAI**

DAMAR KURNIA
NRP 3107 100 064

SUPERVISOR :
Tavio, S.T.,M.T.,PhD.
Ir.Iman Wimbadi, M.S.

DEPARTEMENT OF CIVIL ENGINEERING
Faculty of Civil Engineering and Planning
Sepuluh Nopember Institute of technology
Surabaya 2011

**EVALUASI PERCEPATAN GEMPA UNTUK PETA
GEMPA INDONESIA DI KEPULAUAN MENTAWAI**

TUGAS AKHIR

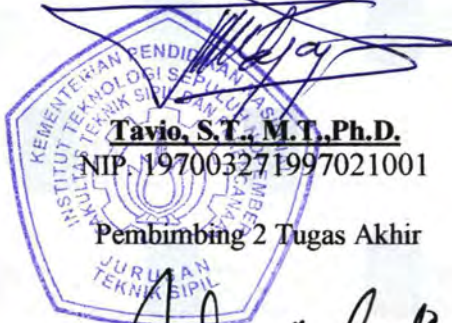
Ditujukan Untuk Memenuhi Salah Satu Syarat
Memperoleh Gelar Sarjana Teknik
Pada Bidang Studi Struktur
Program Studi S-1 Jurusan Teknik Sipil
Fakultas Teknik Sipil Dan Perencanaan
Institut Teknologi Sepuluh Nopember
Surabaya

Oleh:

DAMAR KURNIA
NRP. 3107 100 064

Disetujui Oleh:

Pembimbing 1 Tugas Akhir



Tavio, S.T., M.T., Ph.D.

NIP. 197003271997021001

Pembimbing 2 Tugas Akhir

A handwritten signature in blue ink, which appears to read 'Wibadi', is written below the stamp.

Ir. Iman Wibadi, M.S.

NIP. 194908261978031001

SURABAYA, JULI 2011

KATA PENGANTAR

Assalamualaikum Warahmatullahi Wabarakatuh

Segenap puji syukur kehadiran Allah SWT, karena berkat ridho dan hidayah-Nya maka penulis dapat menyelesaikan Tugas Akhir yang berjudul "Evaluasi Percepatan Gempa Untuk Peta Gempa Indonesia di Kepulauan Mentawai".

Pengerjaan Tugas Akhir ini merupakan prasyarat akademik untuk menuntaskan pendidikan bagi mahasiswa Strata satu (S1) Jurusan Teknik Sipil, Fakultas Teknik Sipil dan Perencanaan, Institut Teknologi Sepuluh Nopember. ITS Surabaya.

Dalam pengerjaan Tugas Akhir ini tentunya tak luput dari sejumlah kesalahan dan masih jauh dari kesempurnaan, namun penulis sudah berusaha semaksimal mungkin untuk dapat menyelesaikan penyusunan Tugas Akhir ini dengan sebaik-baiknya. Untuk itu diharapkan saran dan arahan untuk dapat memperbaiki Tugas Akhir ini. Penulis senantiasa terbuka untuk menerima masukan dan arahan.

Akhir kata, penulis berharap semoga Tugas Akhir ini dapat memberikan manfaat untuk semua orang.

Wassalamualaikum Warahmatullahi Wabarakatuh

Surabaya, Juli 2011

Damar Kurnia

UCAPAN TERIMA KASIH

Dalam tugas Akhir ini, banyak pihak yang telah memberikan masukan dan bantuan kepada penulis dari awal hingga terselesaikannya Tugas Akhir ini. Maka dengan sepenuh hati penulis mengucapkan terima kasih kepada seluruh pihak yang telah membantu, yang terhormat :

1. Bapak TAVIO S.T, M.T, Ph.D., selaku dosen pembimbing pertama yang telah membimbing, mendukung dan memotivasi dalam pengerjaan dan penulisan Tugas Akhir ini.
2. Bapak Ir. Iman Wimbadi M.S., selaku dosen pembimbing kedua yang telah banyak membantu serta memberikan masukan serta saran dalam penulisan Tugas Akhir ini.
3. Bapak Dr. Ir. Hidayat, M.S., selaku Ketua Jurusan Teknik Sipil ITS.
4. Bapak Ir. Happy Kristanto M.S. selaku dosen wali yang telah menjadi "Orang Tua" bagi penulis selama menempuh pendidikan di Teknik Sipil ITS.
5. Bapak Dicky Wahyudi, yang telah memberikan sejumlah referensi dan masukan selama penulisan berlangsung.
6. Seluruh bapak dan ibu dosen Jurusan Teknik Sipil ITS yang telah memberi banyak ilmu selama penulis menempuh perkuliahan.
7. Segenap karyawan Teknik Sipil ITS yang telah banyak membarikan bantuan dalam proses administrasi.
8. Bapak Ir. Budi Dadik M.Sc. dan Ibu Martini Koesariati yang merupakan kedua orang tua tercinta penulis yang telah banyak memberikan motivasi, tempat mencurahkan seluruh resah dan telah banyak memberikan bantuan baik material dan non material yang dibutuhkan oleh penulis.
9. Ismu Galih Nitiharjo, kakakq tersayang yang selalu mendoakan penulis.

10. Semua sahabat dan teman dekat yang telah menjadi tempat “curhat”.
11. Seluruh keluarga yang turut mendoakan penulis hingga penulis dapat menyelesaikan Tugas Akhir ini.
12. Rizka Rachmania, yang mau menjadi tempat “curhat” dan membantu serta mendoakan penulis.
13. Seluruh teman-teman S-50 dan dari angkatan dan jurusan yang lain. Yang tidak dapat disebutkan satu persatu, terima kasih atas bantuan dan dukungannya dalam penyelesaian Tugas Akhir ini.

Terima kasih kepada seluruh teman, rekan, dan kerabat yang telah banyak membantu serta mendoakan. Demikian hasil tugas Akhir ini yang dapat penulis sampaikan, semoga bermanfaat bagi penulis dan rekan-rekan mahasiswa yang lainnya.

EVALUASI PERCEPATAN GEMPA UNTUK PETA GEMPA INDONESIA DI KEPULAUAN MENTAWAI

Nama mahasiswa : Damar Kurnia
NRP : 3107 100 064
Jurusan/fakultas : Teknik Sipil / FTSP
Dosen konsultasi : Tavio, ST., M.T., Ph.D
: Ir. Iman Wimbadi, M.S

ABSTRAK

Akhir-akhir ini sering kita dengar terjadi gempa besar yang melanda sejumlah daerah di Indonesia. Kejadian-kejadian gempa yang terjadi telah menimbulkan banyak kerugian mulai dari kerusakan bangunan, memakan korban jiwa, serta membutuhkan biaya yang sangat mahal dalam proses rehabilitasinya sehingga perlu adanya peta percepatan gempa yang mewakili kondisi saat ini agar bangunan-bangunan dapat didesain sesuai dengan percepatan gempa area tempat bangunan tersebut didirikan.

Sebelumnya telah ada berbagai studi mengenai cara perolehan percepatan gempa maksimum serta hasil dari peta percepatan gempa pernah diterbitkan dalam PPTI-UG 1983 kemudian direvisi dalam SNI 03-1726-2002 dan terakhir direvisi kembali oleh Tim Revisi Gempa Indonesia pada tahun 2010.

Dalam proposal Tugas Akhir ini akan membahas serta menjelaskan tentang cara perolehan percepatan gempa maksimum di Kepulauan Mentawai berdasarkan data yang diperoleh dari USGS, dan juga dari ISC, sehingga data yang diperoleh lebih lengkap dan akurat. Dimana Kepulauan Mentawai ini sendiri merupakan daerah yang berada pada jalur tektonik Indonesia yang dimungkinkan terjadi gempa besar dengan intensitas cukup tinggi, sehingga menjadikan Kepulauan Mentawai daerah yang sering dilanda gempa, oleh karena itu perlu dilakukan perhitungan percepatan gempa maksimum secara berkala agar gedung dan bangunan yang didirikan di

Kepulauan Mentawai dapat bertahan apabila gempa besar terjadi.

Dengan pengerjaan tugas akhir ini nantinya diharapkan dapat membantu menjelaskan proses perolehan percepatan gempa maksimum di Kepulauan Mentawai, dan bermanfaat untuk pembelajaran serta sosialisasi peraturan gempa terbaru. Studi ini masih jauh dari kesempurnaan oleh karena itu perlu diperbaiki dan diharapkan dapat dikerjakan lebih detail dalam studi selanjutnya.

Kata kunci : Percepatan gempa, Gempa, USGS, ISC

EVALUATION OF PEAK GROUND ACCELERATION FOR INDONESIA EARTHQUAKE MAP IN MENTAWAI ISLANDS

Name : Damar Kurnia
NRP : 3107 100 064
Departement : Teknik Sipil / FTSP
Supervisor : Tavio, ST., M.T., Ph.D
: Ir. Iman Wimbadi, M.S

ABSTRACT

These days we often hear the big quake that hit several regions in Indonesia. Earthquake events that occurred have caused many losses likes building damage, casualties, and require very expensive in the rehabilitation process. so that there is need peak ground acceleration map that represents the current state so that buildings can be designed in accordance with the acceleration of the earthquake area where the building is erected.

Previously there have been various studies on how to gain the maximum earthquake acceleration and the result of the earthquake acceleration map was published in PPTI-UG 1983 then revised in SNI 03-1726-2002 and last revised by the Revision Team Earthquake Indonesia in 2010.

In This final proposal will explain how to gain maximum acceleration of earthquakes in the Mentawai Islands is based on data obtained from the USGS, and also from ISC, so that the data obtained is more complete and accurate. Where Mentawai Islands is an area that is on track tectonic Indonesia which made possible a large earthquake with an high intensity, thus making the Mentawai Islands are area that often hit by the earthquake, therefore it is necessary to count the maximum earthquake acceleration periodically so that buildings that built in Mentawai Islands can survive if a large earthquake occurs.

With this final work will be expected to help explain the process of acquiring a peak ground acceleration of earthquakes

in the Mentawai Islands, and useful for learning and dissemination of the latest earthquake regulations. The study is still far from perfection and therefore need to be repaired and is expected to be done more detail in subsequent studies.

Key word : Peak ground acceleration, earthquake, USGS, ISC

DAFTAR ISI

KATA PENGANTAR.....	i
UCAPAN TERIMA KASIH.....	iii
ABSTRAK.....	v
ABSTRACT.....	vii
DAFTAR ISI.....	ix
DAFTAR TABEL.....	xiii
DAFTAR GAMBAR.....	xv
BAB 1 PENDAHULUAN.....	1
1.1 Latar Belakang.....	1
1.2 Perumusan Masalah.....	2
1.2.1 Permasalahan Utama.....	2
1.2.2 Permasalahan Detail.....	3
1.3 Tujuan.....	3
1.4 Ruang Lingkup dan Batasan Masalah.....	3
1.5 Manfaat.....	4
BAB 2 TINJAUAN PUSTAKA.....	5
2.1 Umum.....	5
2.2 Gempa.....	5
2.2.1 Sejarah Kegempaan Indonesia.....	6
2.3 Studi Gempa untuk Kepulauan Mentawai.....	7
2.3.1 Gempa rencana dan Percepatan Gempa.....	7
2.3.2 Katalog Gempa.....	8
2.3.3 Parameter Kejadian Gempa.....	9
2.4 Tatanan Tektonik.....	9
BAB 3 METODE PENELITIAN.....	11
3.1 Diagram Alir.....	11

3.2	Penjelasan Diagram Alir.....	12
3.2.1	Studi Literatur	12
3.2.2	Pengambilan Data Gempa.....	12
3.3	Pengolahan Data Gempa.....	13
3.3.1	Konversi Magnitude Gempa	13
3.3.2	Perhitungan Jarak Epicenter Gempa	13
3.3.3	Perhitungan Hiposenter.....	15
3.3.4	Fungsi Atenuasi	16
3.4	Analisa <i>Hazard</i> Gempa.....	18
3.4.1	Resiko dan Periode Ulang Kejadian Gempa	18
3.4.2	Metoda Distribusi Gumble I.....	18
3.4.3	Metoda Deterministik (DSHA).....	20
3.4.4	Metoda Probabilistik (PSHA)	20
BAB 4 SEJARAH KEGEMPAAN KEPULAUAN		
MENTAWAI.....		23
4.1	Kondisi Seismotektonik Kepulauan Mentawai	23
4.2	Studi Gempa Kepulauan Mentawai	24
4.3	Kejadian Gempa Besar di Kepulauan Mentawai	25
BAB 5 ANALISIS DAN PEMBAHASAN		29
5.1	Pengumpulan Data Gempa	29
5.2	Pengolahan data Gempa	33
5.2.1	Konversi Skala Magnitude.....	33
5.2.2	Perhitungan jarak epicenter gempa	34
5.2.3	Pemisahan Gempa Utama dan Gempa Susulan.....	34
5.2.4	Persamaan Atenuasi	35
5.3	Perhitungan Percepatan Gempa Maksimum	
	Dengan Ditribusi Gumble.....	36
5.3.1	Pengelompokan Data Gempa	38
5.3.2	Pengelompokan Data Persamaan Atenuasi	
	Donovan.....	43
5.3.3	Pengelompokan Data Persamaan Atenuasi	
	Matuscha.....	47

5.3.4	Pengelompokan Data Persamaan Atenuasi Joyner dan Boore	50
5.3.5	Pengelompokan Data Persamaan Atenuasi Campbell.....	54
5.3.6	Pengelompokan Data Persamaan Atenuasi Fukushima dan Tanaka	58
5.3.7	Hubungan antar atenuasi.....	62
5.4	Probabilistic Seismic Hazard Analysis (PSHA).....	63
5.4.1	Analisa hasil PSHA.....	82
BAB 6 KESIMPULAN DAN SARAN.....		85
6.1	Kesimpulan.....	85
6.2	Saran.....	86
DAFTAR PUSTAKA		87
LAMPIRAN A LAMPIRAN DATA GEMPA.....		89

DAFTAR TABEL

Tabel 4-1 Data dan parameter sumber gempa sesar untuk daerah Sumatera. (Ringkasan hasil studi tim revisi peta gempa Indonesia 2010).....	23
Tabel 5-1 Data kejadian gempa maksimum pertahun.....	39
Tabel 5-2 Perhitungan regresi untuk persamaan Donovan	43
Tabel 5-3 Hasil perhitungan percepatan gempa maksimum untuk atenuasi Donovan berdasarkan periode yang ditentukan.....	46
Tabel 5-4. Perhitungan regresi untuk persamaan Matuscha	47
Tabel 5-5. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Matuscha berdasarkan periode yang ditentukan.....	50
Tabel 5-6. Perhitungan regresi untuk persamaan Joyner dan Boore	50
Tabel 5-7. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Joyner dan Boore berdasarkan periode yang ditentukan.....	53
Tabel 5-8. Perhitungan regresi untuk persamaan Campbell	54
Tabel 5-9. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Campbell berdasarkan periode yang ditentukan.....	57
Tabel 5-10. Perhitungan regresi untuk persamaan Fukushima & Tanaka	58
Tabel 5-11. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Fukushima & Tanaka berdasarkan periode yang ditentukan.....	61
Tabel 5-12. b-line Guttenberg Richter.....	64
Tabel 5-13. Nilai fungsi Probabilitas Kerapatan magnitudo gempa.....	66
Tabel 5-14. Nilai percepatan gempa untuk kejadian dengan probabilitas kekuatan dan jarak tertentu.....	68
Tabel 5-15. Peningkatan peluang kemunculan PGA	69

DAFTAR GAMBAR

Gambar 2-1 Data episenter di Indonesia untuk magnituda, $M > 5.0$ 1879-2010. (Irsyam et. al.).....	7
Gambar 2-2 Distribusi gempa di Kepulauan Mentawai tahun 1900-2010 (sumber : <i>ISC map maker</i>)	8
Gambar 2-3 Tektonik utama Indonesia (Hasil Studi Revisi Peta Gempa Indonesia 2010).....	10
Gambar 3-1 Diagram Alir Metodologi Penelitian	11
Gambar 3-2 Garis Hubungan Pusat Bumi Dengan Titik-Titik yang Ditinjau.....	14
Gambar 3-3 Garis Hubung Hiposenter, Episenter, Titik yang Ditinjau	15
Gambar 3-4 PSHA untuk mendapatkan pergerakan tanah di batuan dasar. (Hasil Studi Revisi Peta Gempa Indonesia 2010).....	21
Gambar 4-1 Percepatan gempa maksimum di batuan dasar untuk periode ulang 500 tahun (SNI 03-1726-2002).....	25
Gambar 4-2 Percepatan gempa maksimum di batuan dasar untuk periode ulang 500 tahun (dimodifikasi dari revisi peta gempa 2010).....	26
Gambar 4-3 Percepatan gempa maksimum di batuan dasar untuk periode ulang 2500 tahun (dimodifikasi dari revisi peta gempa 2010).....	27
Gambar 5-1 Radius pengambilan data gempa untuk analisa percepatan gempa di Kepulauan Mentawai. (dimodifikasi dari Google Earth)	30
Gambar 5-2 Input data pencarian catalog gempa dalam <i>USGS</i> ...	31
Gambar 5-3 Input data batasan pencarian catalog gempa dalam <i>USGS</i>	31
Gambar 5-4 Input data pencarian catalog gempa dalam <i>ISC</i>	32
Gambar 5-5 Plot catalog gempa <i>USGS</i> dalam Google Earth	32

Gambar 5-6 kriteria waktu Uhrhammer.....	34
Gambar 5-7 Kriteria jarak Uhrhammer	34
Gambar 5-8 Regresi Persamaan Donovar Hubungan antara nilai Nilai Atenuasi dan N(Data).....	46
Gambar 5-9 Regresi Persamaan Matuscha Hubungan antara nilai Nilai Atenuasi dan N(Data).....	49
Gambar 5-10 Regresi Persamaan Joyner dan Boore Hubungan antara nilai Nilai Atenuasi dan N(Data)	53
Gambar 5-11 Regresi Persamaan Campbell Hubungan antara nilai Nilai Atenuasi dan N(Data)	57
Gambar 5-12 Regresi Persamaan Fukushima & Tanaka Hubungan antara nilai Nilai Atenuasi dan N(Data)	61
Gambar 5-13 Grafik hubungan antar atenuasi	62
Gambar 5-14 Data gempa utama	64
Gambar 5-15 Data gempa utama $m > 5$	64
Gambar 5-16 Regresi perolehan b-line Guttenberg-Richter	65
Gambar 5-17 Kurva Nilai fungsi Probabilitas kerapatan magnitude gempa	67
Gambar 5-18 Kurva resiko percepatan gempa terlampaui T=50 tahun	80
Gambar 5-19 Kurva resiko percepatan gempa terlampaui T=100 tahun	81



BAB I
PENDAHULUAN

BAB 1

PENDAHULUAN

1.1 Latar Belakang

Indonesia merupakan negara kepulauan dengan intensitas gempa yang tinggi hal ini disebabkan karena Indonesia terletak pada pertemuan tiga lempeng tektonik yang bergerak satu sama lainnya. Secara sepiantas lokasi-lokasi gempa aktif sudah dapat dipastikan berada di perbatasan lempeng tektonik tersebut. Daerah aktif gempa bumi di Indonesia banyak terjadi di sepanjang pertemuan lempeng tektonik Eurasia dengan India-Australiana yang membentuk busur dari Sumatera, Jawa, Bali, Nusa Tenggara sampai Maluku, tumbukan lempeng oseanik Pasifik dengan Lempeng kontinen Australia di bagian utara Irian dan beberapa sesar lokal seperti sesar Sumatera, sesar Palu-Koro di Sulawesi dan beberapa sesar lokal lainnya.

Keberadaan interaksi antar lempeng-lempeng ini menempatkan wilayah Indonesia pada wilayah rawan gempa. Daerah aktif gempa bumi di Indonesia salah satunya adalah Kepulauan Mentawai yang memiliki resiko tinggi terhadap terjadinya gempa bumi. Gempa bumi dapat terjadi kapanpun, dan dimanapun tanpa ada yang bisa menundanya. Dampak dari gempa bumi sangat terpengaruh pada atenuasi (peluruhan energi gempa) dan geologi setempat. Peluruhan energy gempa sangat dipengaruhi oleh kekuatan gempa, jarak serta kedalaman pusat gempa, oleh karena itu pencatatan data gempa juga dibatasi oleh kekuatan gempa, jarak serta kedalaman pusat gempa untuk daerah yang akan ditinjau kejadian gempunya.

Atenuasi dapat dihitung melalui persamaan atenuasi yang telah dirumuskan oleh sejumlah ahli peneliti kegempaan yang telah melakukan penelitian di sejumlah tempat dan memperoleh persamaan untuk menghitung percepatan gempa setempat. Dari hasil pengolahan data dengan persamaan atenuasi tersebut dapat

diperoleh data percepatan gempa yang dapat dipetakan ke dalam peta percepatan gempa maksimum. Peta percepatan gempa berisikan seluruh kejadian gempa yang telah diolah dan diperoleh percepatan maksimum gempanya.

Peta percepatan gempa maksimum di Indonesia telah mengalami penyempurnaan sejak muncul dalam PPTI-UG (Peraturan Perencanaan Tahan Gempa Indonesia untuk Gedung) – 1983 kemudian diperbaharui pada tahun 2002 dengan keluarnya Tata Cara Perencanaan Ketahanan Gempa untuk Bangunan Gedung SNI 03-1726-2002 yang mengacu pada UBC 1997, dan kemudian pada tahun 2010 yang di usulkan oleh tim Revisi Gempa Indonesia.

Dalam studi ini berusaha untuk membahas serta menampilkan proses perhitungan percepatan gempa maksimum untuk wilayah Kepulauan Mentawai dengan mempertimbangkan data-data yang diperoleh serta teori, perumusan geologi dan statistika yang selaras dengan perumusan peta percepatan gempa. Maka dengan diadakannya proses evaluasi percepatan gempa ini nantinya diharapkan dapat membantu pembelajaran dalam proses pengolahan data gempa serta menjelaskan mengenai peta percepatan gempa maksimum Indonesia.

1.2 Perumusan Masalah

Dengan penjelasan diatas, maka dalam penulisan proposal Tugas Akhir ini terdapat permasalahan sebagai berikut

1.2.1 Permasalahan Utama

- 1 Bagaimana cara melakukan evaluasi percepatan gempa di suatu lokasi yang ditinjau

1.2.2 Permasalahan Detail

1. Bagaimana cara memperoleh data gempa?
2. Bagaimana cara mengolah serta melakukan analisa terhadap data gempa yang diperoleh?
3. Bagaimana cara memperoleh persamaan regresi dari data gempa?
4. Bagaimana cara memperoleh percepatan gempa maksimum disuatu daerah dengan menggunakan probabilitas?

1.3 Tujuan

Dari rumusan masalah diatas diharapkan mencapai tujuan sebagai berikut :

1. Dapat memperoleh data gempa.
2. Dapat mengolah data gempa.
3. Mendapatkan regresi dari data gempa.
4. Dapat memperoleh percepatan gempa maksimum pada suatu daerah.

1.4 Ruang Lingkup dan Batasan Masalah

Untuk menghindari munculnya penyimpangan terhadap permasalahan yang semakin meluas dalam proposal Tugas Akhir ini, maka diberikan suatu batasan masalah sebagai berikut:

1. Data gempa yang diambil adalah data di Kepulauan Mentawai dalam radius 500 km.
2. Perhitungan percepatan gempa dilakukan dengan menggunakan perumusan Atenuasi Donovan, Matuscha, Joyner dan Boore, Champbell, Fukushima dan Tanaka.
3. Regresi dilakukan untuk data gempa $M > 5$

4. Perhitungan hanya untuk memperoleh nilai percepatan gempa maksimum untuk titik yang ditinjau dengan menggunakan metode Gumble I dan PSHA.

1.5 Manfaat

Manfaat dari tugas akhir ini adalah kita dapat memperoleh percepatan gempa yang mewakili Kepulauan Mentawai. Kemudian dengan adanya proses evaluasi percepatan gempa di Kepulauan Mentawai dapat memberikan gambaran serta pembelajaran bagaimana cara perolehan percepatan gempa maksimum di suatu tempat.



BAB II
TINJAUAN PUSTAKA

BAB 2

TINJAUAN PUSTAKA

2.1 Umum

Gempa bumi merupakan getaran yang terjadi di permukaan bumi. Gempa bumi dapat ditimbulkan oleh pengaruh kegiatan tektonik atau biasa disebut dengan gempa tektonik, dan karena pengaruh aktivitas magma didalam bumi atau biasa disebut dengan gempa vulkanik. Gempa bumi telah menimbulkan banyak kerugian mulai dari kerusakan bangunan, memakan korban jiwa, serta membutuhkan biaya yang sangat mahal dalam proses rehabilitasinya (Irsyam 2010). Kejadian gempa bumi berlangsung sangat singkat, dengan kekuatan gempa tertentu, waktu tertentu, dan tidak diduga-duga datangnya. Dengan sifat gempa bumi yang demikian maka setiap daerah yang ditinjau akan diperoleh data yang berbeda-beda, baik ditinjau dari segi waktu dan tempatnya. Kekuatan gempa yang dirasakan berupa percepatan gempa di permukaan (*Peak Ground Acceleration/PGA*).

2.2 Gempa

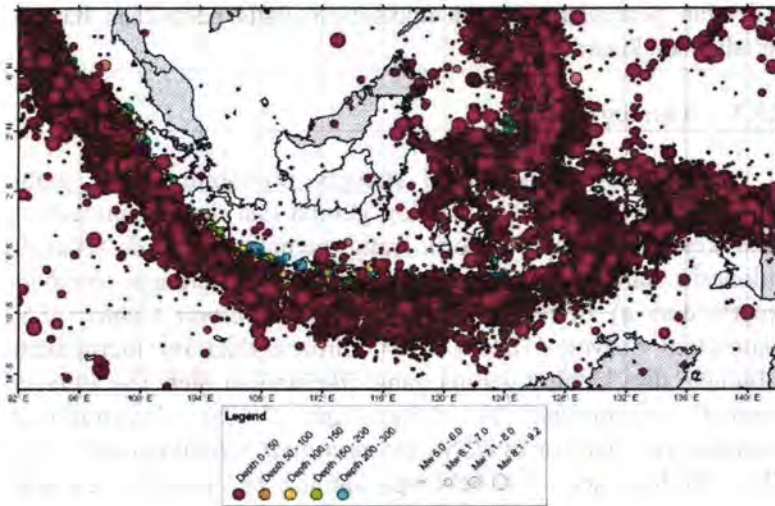
Gempa bumi merupakan getaran yang terjadi di permukaan bumi. Gempa yang banyak dikenal terdiri atas 2 tipe, yaitu gempa tektonik dan gempa vulkanik. Beberapa gempa bumi juga dapat terjadi karena pergerakan magma didalam gunung berapi yang disebut juga sebagai gempa vulkanik, sedangkan gempa bumi yang diakibatkan oleh pergeseran kerak bumi (lempeng bumi) biasa disebut sebagai gempa tektonik. Kejadian gempa tektonik adalah suatu peristiwa pelepasan energi pada suatu tempat di perbatasan lempeng-lempeng tektonik.



2.2.1 Sejarah Kegempaan Indonesia

Indonesia menempati zona tektonik yang sangat aktif karena tiga lempeng besar dunia dan sembilan lempeng kecil lainnya saling bertemu di wilayah Indonesia dan membentuk jalur-jalur pertemuan lempeng. Keberadaan interaksi antar lempeng-lempeng ini menempatkan wilayah Indonesia sebagai wilayah yang sangat rawan terhadap gempa bumi. Tingginya aktivitas kegempaan ini terlihat dari hasil pencatatan dimana dalam rentang waktu 1897-2009 terdapat lebih dari 14.000 kejadian gempa dengan magnituda $M > 5.0$. Kejadian gempa-gempa utama (*main shocks*) dalam rentang waktu tersebut dapat dilihat dalam Gambar 2.1 .

Dalam enam tahun terakhir telah tercatat berbagai aktifitas gempa besar dengan magnitudo $M > 5.0$ di Indonesia, yaitu Gempa Aceh disertai tsunami tahun 2004 ($M_w = 9,2$), Gempa Nias tahun 2005 ($M_w = 8,7$), Gempa Jogja tahun 2006 ($M_w = 6,3$), Gempa Tasik tahun 2009 ($M_w = 7,4$) dan terakhir Gempa Padang tahun 2009 ($M_w = 7,6$). Gempa-gempa tersebut telah menyebabkan ribuan korban jiwa, keruntuhan dan kerusakan ribuan infrastruktur dan bangunan, serta dana trilyunan rupiah untuk rehabilitasi dan rekonstruksi (Irsyam dkk. 2010).



Gambar 2-1 Data episenter di Indonesia untuk magnituda, $M > 5.0$ 1879-2010. (Irsyam et. al.)

2.3 Studi Gempa untuk Kepulauan Mentawai

2.3.1 Gempa rencana dan Percepatan Gempa

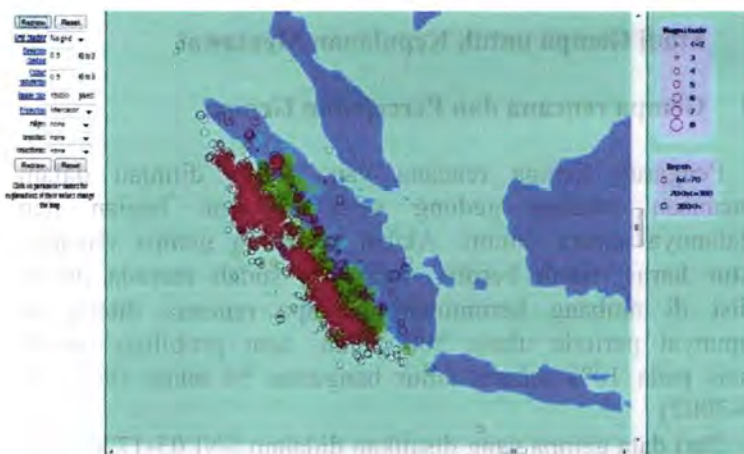
Pengaruh gempa rencana yang harus ditinjau dalam perencanaan struktur gedung serta berbagai bagian dan peralatannya secara umum. Akibat pengaruh gempa rencana, struktur harus masih berdiri, walaupun sudah mereda dalam kondisi di ambang keruntuhan. Gempa rencana ditetapkan mempunyai periode ulang 500 tahun, agar probabilitas terjadi terbatas pada 10% selama umur bangunan 50 tahun (SNI 03-1726-2002)

Dari data gempa yang disajikan didalam SNI 03-1726-2002 bahwasanya percepatan gempa maksimum untuk Kepulauan Mentawai dengan periode ulang 500 berada pada wilayah gempa

6 dengan percepatan gempa maksimum pada permukaan batuan berada pada kisaran 0.30g.

2.3.2 Katalog Gempa

Dalam membuat model statistik probabilitas dari suatu sumber gempa diperlukan katalog gempa dan data seismogenic. Data kejadian gempa historik yang pernah terjadi di wilayah Indonesia dan sekitarnya dikumpulkan dari berbagai sumber, seperti dari a) *Nasional Earthquake Information Center U.S. Geological Survey (NEIC-USGS)*, dimana data ini merupakan gabungan dari katalog gempa yang dikeluarkan oleh *The Bureau Central International de Seismologie (BCIS)*, *International Seimological Summeries (ISS)*, *International Seimological Center (ISC)*, Preliminary dan beberapa katalog perorangan, catalog diambil dari tahun 1900-2010 di kepulauan mentawai dengan tinjauan sejumlah koordinat dengan menggunakan program bantu dalam menetapkan lokasi dan titik tinjau.



Gambar 2-2 Distribusi gempa di Kepulauan Mentawai tahun 1900-2010 (sumber : ISC map maker)

2.3.3 Parameter Kejadian Gempa

Dengan memperoleh rekaman data gempa disuatu lokasi, maka resiko tercapai atau terlampauinya intensitas suatu pergerakan tanah setempat dapat diperkirakan melalui penerapan perumusan – perumusan matematika statistik. Perhitungan resiko gempa dilakukan dengan dasar informasi kegempaan dari suatu daerah. Informasi tersebut dapat berupa:

- pencatatan gempa yang pernah ada pada lokasi tersebut,
- sejarah kejadian gempa pada daerah sekitar lokasi.

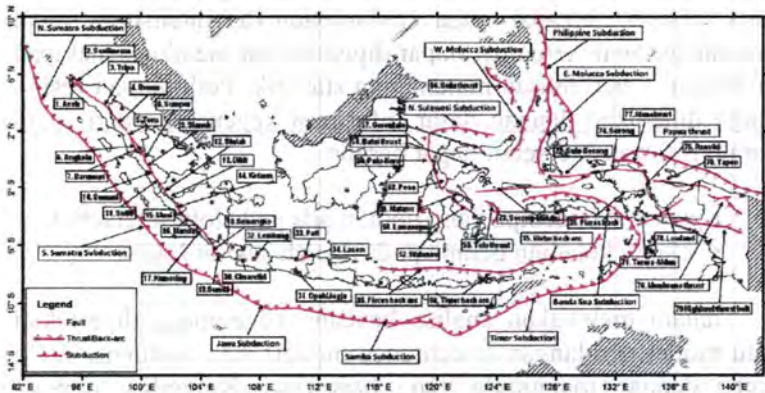
dalam melakukan analisa bencana kegempaan diperlukan suatu model perulangan (reccurence model) atau frekuensi suatu gempa dengan magnitudo yang bervariasi. Kemudian dengan menggunakan model kemunculan gempa (Earthquake Occurence Model) yang dicetuskan oleh sejumlah ahli dan peneliti digunakan untuk memperkirakan besarnya resiko kemunculan suatu kejadian gempa pada suatu perioda perulangan tertentu.

Model kejadian gempa yang digunakan dalam studi ini adalah Least Square Method (Gutenberg & Richter, 1954. Di antara pemodelan yang banyak digunakan adalah model hubungan magnituda versus frekuensi Gutenberg-Richter. Menurut Gutenberg-Richter, frekuensi terjadinya gempa dengan magnituda $M \geq m$ persatuan waktu, menurun secara ekponensial dengan meningkatnya magnituda gempa

2.4 Tatanan Tektonik

Terlihat dalam dalam gambar 2.4 kepulauan Indonesia merupakan tipe struktur busur kepulauan dengan busur tektonik serta terdapat rangkaian pegunungan muda, termasuk diantaranya garis lempeng tektonik yang menjadikan kepulauan Sumatran sebagai *ring of fire* karena seringnya daerah sumatera dilanda

gempa. Sebagian besar wilayah Indonesia terdapat pada tatanan tektonik yang rawan akan terjadinya gempa bumi.



Gambar 2-3 Tektonik utama Indonesia (Hasil Studi Revisi Peta Gempa Indonesia 2010)

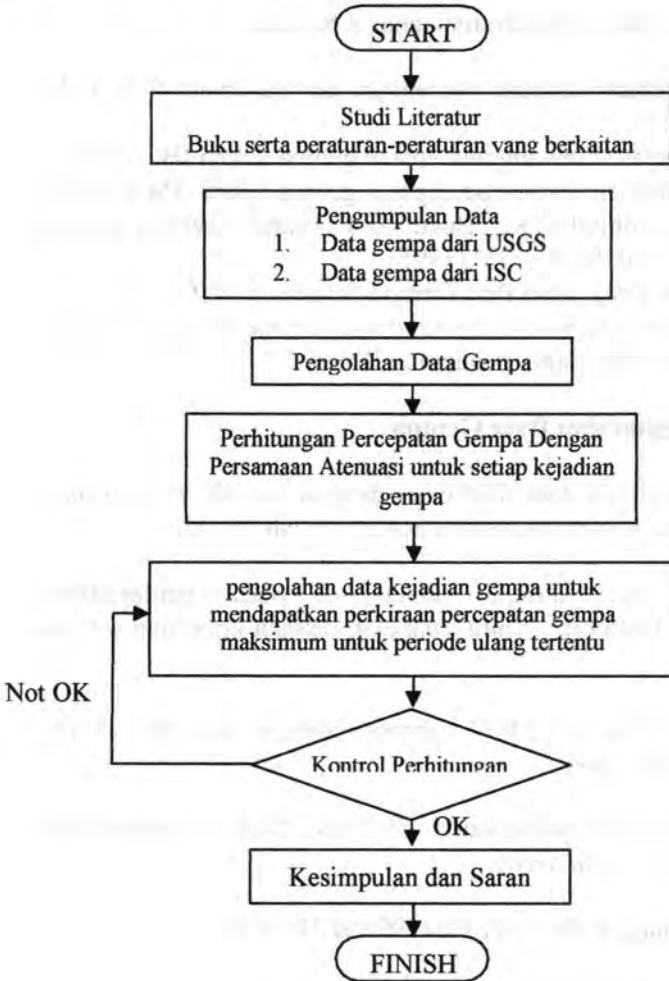
Dari gambar diatas dapat dilihat bahwasanya sepanjang kepulauan sumatera merupakan daerah rawan gempa karena berada diapit dengan jalur tektonik utama Indonesia serta jalur patahan Sumatera.

BAB III
METODE PENELITIAN



BAB 3 METODE PENELITIAN

3.1 Diagram Alir



Gambar 3-1 Diagram Alir Metodologi Penelitian

3.2 Penjelasan Diagram Alir

3.2.1 Studi Literatur

Mempelajari literature-literatur sebagai berikut :

- a. Penjelasan tentang percepatan gempa dalam SNI 1726-2002.
- b. Penjelasan tentang percepatan gempa dalam IBC 2009.
- c. Penjelasan tentang percepatan gempa dalam ASCE 2010.
- d. Tjokrodinuljo K., Buku Ajar Teknik Gempa Jurusan Teknik Sipil UGM., 1995.
- e. Buku Penjelasan Peta Gempa Indonesia 2010;
- f. *An Introduction to Probabilistic Seismic Hazard Analysis*
- g. Buku serta paper penunjang lainnya.

3.2.2 Pengambilan Data Gempa

Pengambilan data dilakukan dengan metode *point source* dengan radius pengambilan data gempa adalah 500 km

Titik yang ditinjau adalah di pusat pemerintahan Kepulauan Mentawai yaitu Tuapejat, dengan koordinat sebagai berikut :

- Koordinat $2^{\circ}12'00''$ Lintang Selatan dan $99^{\circ} 38'12''$ Bujur Timur.
- Radius gempa ditinjau : 500 KM (Metode pengambilan data *circural area*)

Rentang waktu : 01/01/1909 s/d 21/10/2010

- Kekuatan gempa : 1 – 9,9 SR
- Kedalam gempa : 1 – 200 KM

Pengambilan data diatas diperoleh dari (*united State Geological Survey (USGS)*), dan *The International Seismological Center (ISC)*.

3.3 Pengolahan Data Gempa

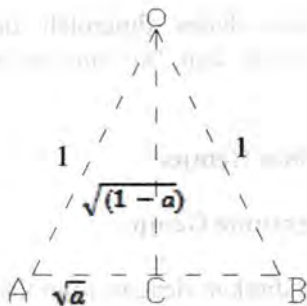
3.3.1 Konversi Magnitude Gempa

Kejadian gempa direkan dengan sejumlah instrument yang mempunyai perbedaan metode dalam penentuan ukuran gempa. dalam catalog gempa terdapat ukuran *surface wave magnitude* (M_s), juga skala magnitude yang lain yaitu *Richter local magnitude*(M_L), *body wave magnitude* (m_b), dan juga moment magnitude (M_w) dalam menentukan ukuran gempa. dengan adanya berbagai ukuran sekala tersebut maka diperlukan konversi kedalam skala magnitude yang sama untuk digunakan dalam analisa resiko gempa. untuk kejadian gempa yang terjadi di Indonesia, Irsyam dkk. (2010) memberikan korelasi korelasi skala magnitudo untuk wilayah Indonesia.

Korelasi Konversi	
$M_w = 0.143M_s^2 - 1.051M_s + 7.285$	(3.1)
$M_w = 0.114m_b^2 - 0.556m_b + 5.560$	(3.2)
$M_w = 0.787M_E - 1.537$	(3.3)
$m_b = 0.125M_L^2 - 0.389M_L - 3.513$	(3.4)
$M_L = 0.717M_D + 1.003$	(3.5)

3.3.2 Perhitungan Jarak Epicenter Gempa

Dalam studi ini untuk menghitung jarak epicenter gempa digunakan perumusan haversine yang diusulkan oleh sinnott dengan permodelan bola sederhana. Dengan rumusan haversine (R.W. Sinnott, "Virtues of the Haversine", *Sky and Telescope*, vol. 68, no. 2, 1984, hal. 159) adalah bebagai berikut :



Gambar 3-2 Garis Hubungan Pusat Bumi Dengan Titik-Titik yang Ditinjau

O merupakan center dari lingkaran Bumi dan A serta B merupakan titik dalam lingkaran. jika sudut AOB adalah θ dan sudut AOC adalah $\frac{\theta}{2}$ maka segmen $AC = \sin(\frac{\theta}{2})$ jadi panjang AB adalah $2 \times \sin(\frac{\theta}{2})$ jika $AC = \sqrt{a}$, diperoleh Pythagoras :

$$OC = \sqrt{OA^2 + AC^2} = \sqrt{1 - a}$$

Diperoleh $\tan \angle AOC = AC/OC = \sqrt{a} / \sqrt{1 - a}$ atau :

$$c = 2 \times \arctan (\sqrt{a} / \sqrt{1 - a})$$

dimana C adalah sudut AOB dan A = (Latitude 1, Longitude 1) dan B = (Latitude 2, Longitude 2)

$$d_{\text{long}} = \text{long}2 - \text{long}1$$

$$d_{\text{lat}} = \text{lat}2 - \text{lat}1$$

$$a = \sin^2(d_{\text{lat}}/2) + \cos(\text{lat}1) \times \cos(\text{lat}2) * \sin^2(d_{\text{long}}/2)$$

$$c = 2 \times \arctan (\text{sqrt}(a)/\text{sqrt}(1-a))$$

$$d = R \times c$$

secara sederhana rumusan diatas dapat dituliskan sebagai berikut :

$$d = \arccos(\sin(\text{lat}1) \cdot \sin(\text{lat}2) + \cos(\text{lat}1) \cdot \cos(\text{lat}2) \cdot \cos(\text{long}2 - \text{long}1)) \cdot R \quad (3.6)$$

Dimana R adalah Radius jari-jari bumi = 6.371 km.

3.3.3 Perhitungan Hiposenter

Perhitungan jarak hiposenter dengan lokasi struktur dapat dihitung dengan Teorema Pythagoras:

$$R = \sqrt{D^2 + H^2} \quad (3.7)$$

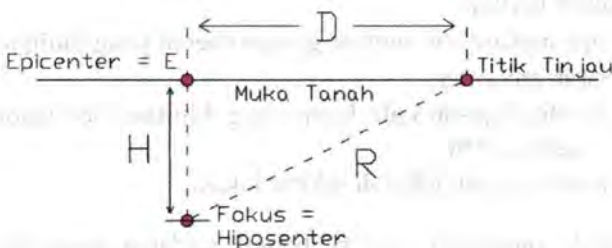
Dimana :

R = Jarak hiposenter

D = Jarak dari episenter ke titik lokasi yang ditinjau

H = Jarak Episenter

Dapat pula digambarkan hubungan antara episenter, hiposenter dan jarak hiposenter :



Gambar 3-3 Garis Hubungan Hiposenter, Episenter, Titik yang Ditinjau

Dimana :

D = Jarak Episenter ke lokasi struktur (distance)

H = Kedalaman Gempa

R = Jarak Hiposenter

3.3.4 Fungsi Atenuasi

Fungsi atenuasi merupakan suatu fungsi yang menggambarkan korelasi antara intensitas gerakan tanah, dan magnitude, serta jarak dari suatu titik dalam daerah radius sumber gempa. fungsi atenuasi telah dipublikasikan oleh sejumlah ahli dan peneliti dengan menggunakan data rekaman gempa untuk suatu daerah. Fungsi ini memberikan hubungan antara parameter gempa dengan factor-faktor yang mempengaruhi parameter tersebut seperti sumber gempa, jalur gempa, dan kondisi daerah setempat.

Sejumlah fungsi atenuasi pernah digunakan untuk malakukan pendekatan perhitungan percepatan gempa di Indonesia. Sejumlah perumusan atenuasi yang dapat digunakan adalah perumusan atenuasi Donovan, Matuschka, Cambell, Cloud, Esteva dll. Secara umum fungsi atenuasi tergantung pada faktor-faktor berikut:

- tipe mekanisme sumber gempa daerah yang ditinjau,
- jarak episenter,
- kondisi lapisan kulit bumi yang dilintasi oleh gelombang gempa, dan
- kondisi tanah lokal di sekitar lokasi

untuk Indonesia sendiri belum terdapat rumusan pasti tentang persamaan atenuasi, oleh karena itu persamaan atenuasi yang digunakan nantinya mengadopsi persamaan atenuasi yang telah digunakan oleh peneliti-peneliti sebelumnya.

penelitian – penelitian mengenai perolehan persamaan atenuasi telah dilakukan oleh banyak ahli sebelumnya dan menghasilkan sejumlah persamaan atenuasi yang berbeda hasil serta keakuratannya, diantaranya yang akan digunakan dalam analisa studi ini yang nantinya digunakan adalah :

- Persamaan Donovan (1973) :

$$a = 1080 \cdot e^{0.5 \cdot M} \cdot (H+25)^{-1.32} \quad (3.8)$$

- Persamaan Matuscha (1980) :

$$a = 119 \cdot e^{0.81 \cdot M} \cdot (H+25)^{-1.15} \quad (3.9)$$

- Persamaan Joyner & Boore (1981) :

$$a = 10^{(0.249 \cdot M - \log D - 0.00255 \cdot D - 1.02)} \cdot 980$$

$$; (D = E^2 + 7.3^2)^{0.5} \quad (3.10)$$

- Persamaan Campbell (198) :

$$a = 0.0185 \cdot e^{(1.28 \cdot M)} \cdot D^{(-1.75)} \cdot (H+25)^{-1.15} \cdot 980$$

$$; (D = E + 0.147 \cdot e^{(0.732 \cdot M)}) \quad (3.11)$$

- Persamaan Fukushima & Tanaka (1990) :

$$a = (10^{(0.41 \cdot M - \log(R + 0.032 \cdot 10^{(0.41 \cdot M)} - 0.0034 \cdot R + 1.30))} \quad (3.12)$$

Keterangan :

a = percepatan gempa (cm/dt²)

e = bilangan natural

M = besar gempa menurut skala Richter

H = jarak hyposenter (km)

Dari perumusan diatas dipilih untuk dilakukan perbandingan keakuratan serta kesesuaiannya dengan daerah setempat mengingat Indonesia belum ada persamaan atenuasi yang mewakili untuk Indonesia sehingga digunakanlah persamaan atenuasi tersebut diatas.

3.4 Analisa Hazard Gempa

3.4.1 Resiko dan Periode Ulang Kejadian Gempa

Besarnya resiko gempa untuk suatu periode ulang tertentu selama usia bangunan dapat dituliskan sebagai berikut :

$$R_N = 1 - (1 - R_A)^t$$

Dimana:

- Resiko gempa (R_N) merupakan kemungkinan terjadinya gempa dalam periode dan dalam usia layan bangunan tertentu
- Resiko tahunan (R_A) adalah kemungkinan kejadian gempa dengan intensitas tertentu setiap tahunnya
- t adalah umur rencana bangunan

3.4.2 Metoda Distribusi Gumble I

Pada studi ini untuk memperoleh percepatan gempa maksimum digunakan metode distribusi Gumble dengan persamaan atenuasi yang digunakan. Distribusi gumble dituliskan sebagai berikut :

$$G(M) = e^{(-\alpha e^{-\beta M})} \quad (3.14)$$

Dimana :

α = jumlah gempa rata-rata pertahun

β = parameter yang menyatakan hubungan antara distribusi gempa dengan magnitudo

M = magnitudo gempa

Dari bentuk persamaan diatas dapat disederhanakan menjadi persamaan linear sebagai berikut :

$$\ln G(M) = -\alpha \cdot e^{\beta M}$$

$$\ln(-\ln G(M)) = \ln \alpha - \beta M$$

Identik dengan : $Y = A + BX$

Dimana:

$$Y = \ln(-\ln G(M))$$

$$A = e^A$$

$$\beta = -B$$

$$X = M \text{ atau percepatan}$$

Persamaan garis diatas terdiri atas titik - titik x_j, y_j dimana :

$$x_j = \text{Percepatan Gempa ke } j$$

j = nomor urut kejadian gempa yang disusun dari nilai a terkecil. Harga untuk a terbesar = N

N = selang waktu pengamatan

$$y_j = \ln(-\ln G(M)) = \ln(-\ln(\frac{j}{N+1}))$$

$$A = \frac{\sum y_j \sum x_j^2 - \sum x_j \sum (x_j y_j)}{n \sum x_j^2 - (\sum x_j)^2} \quad (3.15)$$

$$B = \frac{n \sum x_j y_j - \sum x_j \sum y_j}{n \sum x_j^2 - (\sum x_j)^2} \quad (3.16)$$

$$\alpha = e^A$$

$$\beta = -B$$

Hubungan periode ulang (T) dan percepatan (a)

$$a = \frac{\ln(T \cdot \alpha)}{\beta} \quad (3.17)$$

3.4.3 Metoda Deterministik (DSHA)

Pada dasarnya memperkirakan besarnya guncangan menggunakan metoda deterministik standar adalah dengan persamaan-persamaan atenuasi yang telah disesuaikan dengan daerah yang ditinjau, dimana persamaan atenuasi tersebut merupakan hubungan antara besar kekuatan dan tipe sumber gempa dengan dampak kerusakan berdasarkan data-data kerusakan gempa bumi di dunia yang diperoleh dari catalog pencatatan kejadian gempa. Namun metode ini masih dirasa kurang akurat jika digunakan di Indonesia karena untuk Indonesia sendiri sampai saat ini belum memiliki persamaan atenuasi yang khusus dikembangkan di Indonesia sendiri, sehingga jika menggunakan metode ini haruslah menggunakan persamaan atenuasi dari luar yang dalam perolehan perumusannya menggunakan data gempa dari luar Indonesia.

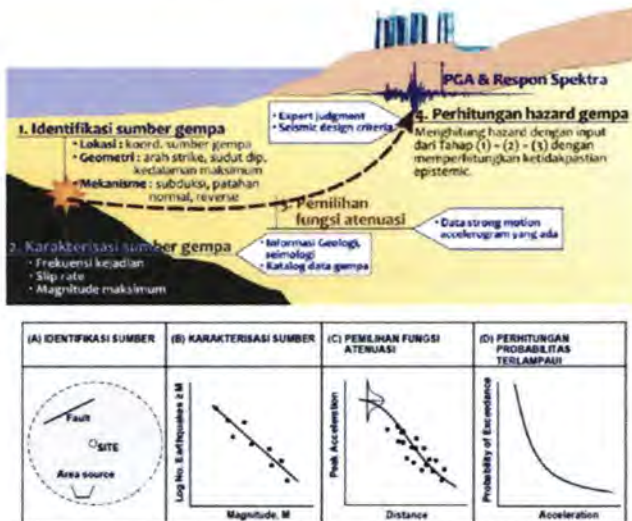
3.4.4 Metoda Probabilistik (PSHA)

PSHA yang merupakan bagian dari SHA (*Seismic Hazard Analysis*) lebih sering digunakan karena mempertimbangkan sejumlah permodelah untuk dijadikan sebagai pembanding dan

barulah kemudian diolah dengan pendekatan probabilistik. Pendekatan probabilistic ditujukan agar diperoleh hasil yang dapat mendekati dengan gambaran dan kondisi daerah yang ditinjau dalam studi.

Metode PSHA telah dikembangkan oleh Cornell (1968), yang kemudian dilanjutkan oleh Merz dan Cornell (1973). Model dan konsep dari analisa ini terus digunakan hingga sekarang dan terus dikembangkan oleh Committee on Seismic Risk (1989) memiliki memiliki empat tahap (Gambar 4), yaitu a) identifikasi sumber gempa, b) karakterisasi sumber gempa, c) pemilihan fungsi atenuasi, dan d) perhitungan *hazard* gempa. Teori ini mengasumsikan magnituda gempa (M) dan jarak (R) sebagai variabel acak independen yang menerus.

$$P(PGA > acc | EQ) = \sum_R \sum_M P(PGA > acc | EQ : M, R) \cdot f(M) \cdot \Delta M \cdot f(R) \cdot \Delta R \quad (3.18)$$



Gambar 3-4 PSHA untuk mendapatkan pergerakan tanah di batuan dasar. (Hasil Studi Revisi Peta Gempa Indonesia 2010).

BAB IV
SEJARAH KEGEMPAAN KEPULAUAN MENTAWAI

BAB 4

SEJARAH KEGEMPAAN KEPULAUAN MENTAWAI

4.1 Kondisi Seismotektonik Kepulauan Mentawai

Kepulauan mentawai merupakan salah satu bagian dari jajaran kepulauan di pulau sumatera terletak di sisi selatan sumatera barat dan terdiri atas empat kepulauan utama yang berpenghuni yaitu Pulau Siberut, Pulau Sipora, Pulau Pagai Utara dan Pulau Pagai Selatan. Kepulauan Mentawai berada pada koordinat 01.30° LS dan 99.00° BT Yang berada tidak jauh dari zona subduksi Sumatera dan zona patahan yang tersebar di kepulauan sumatera.

Zona patahan yang ada di sumatera merupakan jalur patahan yang diakibatkan oleh benturan antara Lempeng Indo-Australia dengan lempeng Eurasia. Keberadaan patahan ini berpotensi menimbulkan gempa bumi yang bersifat merusak. kegempaan dari zona subduksi dipengaruhi oleh umur, komposisi serta kecepatan pergerakan dari lempeng subduksi (Ruf & Kanamori, 1983). Berikut data serta parameter sumber gempa sesar untuk daerah Sumatera

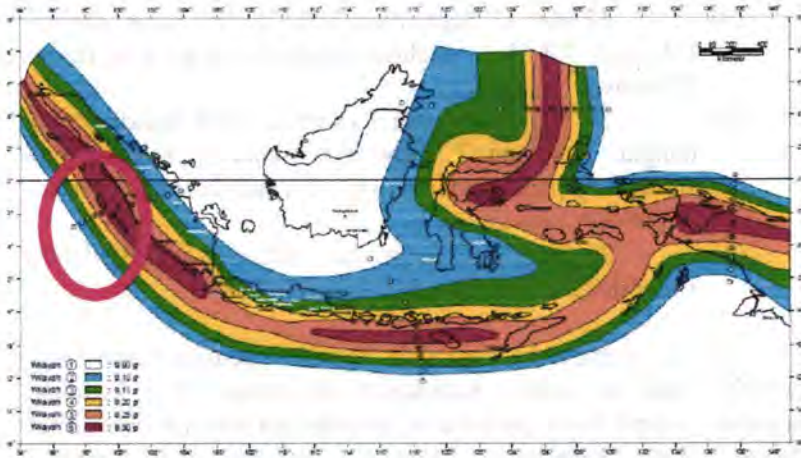
Tabel 4-1 Data dan parameter sumber gempa sesar untuk daerah Sumatera. (Ringkasan hasil studi tim revisi peta gempa Indonesia 2010).

Sesar	Slip Rate	Mmax	Sesar	Slip Rate	Mmax
Nama	mm/th		Nama	mm/th	
Aceh	2	7.7	Suliti	23	7.4
Seulimeum	2.5	7.5	Siulak	23	7.2
Tripa	6	7.7	Dikit	11	7.2
Renun	27	7.8	Ketaun	11	7.3

Sesar	Slip Rate	Mmax	Sesar	Slip Rate	Mmax
Nama	mm/th		Nama	mm/th	
Toru	24	7.4	Musi	11	7.2
Angkola	29	7.6	Manna	11	7.3
Barumun	4	7.5	Kumering	11	7.6
Sumpur	23	6.9	Semangko	5	7.2
Sianok	23	7.3	Sunda	5	7.6
Sumani	23	7.2			

4.2 Studi Gempa Kepulauan Mentawai

Kepulauan Mentawai merupakan daerah dengan tingkat kegempaan yang cukup tinggi. Kepulauan Mentawai sering dilanda gempa bumi yang kekuatannya juga bisa dikatakan gempa kuat. Sejumlah gempa kuat di sekitar kepulauan mentawai pernah tercatat dan mengakibatkan kerusakan yang cukup besar, baru-baru ini tercatat gempa berkekuatan lebih dari 7 Skala Richter terpusat di dekat Kepulauan Mentawai. Gempa-gempa yang bermunculah serta tercatat tersebut telah banyak mengakibatkan kerugian baik secara fisik serta material, sehingga pemerintah mengeluarkan SNI 03-1726-2002 agar dijadikan acuan pembangunan gedung tahan gempa untuk mereduksi adanya korban jiwa serta material. Didalam peta percepatan gempa di batuan dasar dalam SNI 03-1726-2002 percepatan gempa maksimum untuk periode ulang 500 tahun dengan *exeedence rate* 10% didapati bahwasanya Kepulauan Mentawai berada di zona gempa 6 yang merupakan zona tertinggi dengan percepatan batuan dasar 0.30 g, dari hal ini dapat diketahui bahwasanya Kepulauan Mentawai merupakan daerah rawan gempa berkekuatan tinggi yang berbahaya.



Gambar 4-1 Percepatan gempa maksimum di batuan dasar untuk periode ulang 500 tahun (SNI 03-1726-2002)

Kemudian baru-baru ini tim revisi gempa Indonesia tahun 2010 telah menerbitkan peta gempa Indonesia yang terbaru. Dimana dapat kita lihat dalam gambar 4.2 dan 4.3 menempatkan kepulauan mentawai pada area dengan percepatan puncak batuan dasar pada kisaran 0.5-0.6 g untuk probabilitas terlampaui 10% dalam 50 tahun atau terhitung untuk periode ulang 500 tahun, dan 1.1-1.2 g untuk probabilitas terlampaui 2% dalam 50 tahun atau terhitung pada periode ulang 2500 tahun.

4.3 Kejadian Gempa Besar di Kepulauan Mentawai

Kejadian gempa besar pernah tercatat di sekitar kepulauan mentawai dan mengakibatkan sejumlah kerusakan struktur serta korban jiwa. Beberapa gempa besar yang pernah tercatat adalah

- (1) 26 Desember 2004 gempa tercatat dengan kekuatan 8,8 Skala Richter dan menimbulkan Tsunami.
- (2) 28 Maret 2005 terjadi gempa dengan kekuatan 8,2 Skala Richter



Gambar 4-3 Percepatan gempa maksimum di batuan dasar untuk periode ulang 2500 tahun (dimodifikasi dari revisi peta gempa 2010)

BAB V
ANALISIS DAN PEMBAHASAN

BAB 5

ANALISIS DAN PEMBAHASAN

5.1 Pengumpulan Data Gempa

Pada studi ini menggunakan data dari catalog gempa yang disajikan oleh *International Seimological Center (ISC)*, dan *Nasional Earthquake Information Center U.S. Geological Survey (NEIC-USGS)*, catalog tersebut dapat diunduh dari alamat website http://earthquake.usgs.gov/earthquakes/eqarchives/epic/epic_circ.php untuk data dari *U.S. Geological Survey (USGS)*, dan <http://www.isc.ac.uk/search/bulletin/circular.html> untuk data dari *International Seimological Center (ISC)*. Pada gambar 5.1 merupakan gambaran area pengambilan data yang dilakukan pada sumber gempa dengan $M_w \geq 5.0$ dan radius ≤ 500 km pada titik tinjau berada di Kepulauan Mentawai yang meliputi gempa subduksi dan gempa *shallow crustal* dimana kedalaman sumber gempa yang ditinjau adalah ≤ 200 km.

Berikut adalah proses pengambilan data gempa dari catalog *USGS* :

Radius gempa ditinjau : 500 KM (Metode pengambilan data *circural area*)

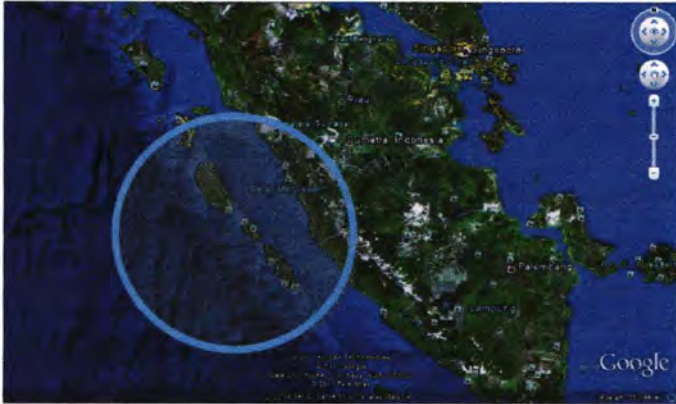
Rentang waktu : 01/01/1900 s/d 12/31/2010

Kekuatan gempa : 1 – 9,9 SR

Kedalam gempa : 1 – 200 KM


Titik Tinjau : - 2°12'00 LS - 99°42'00 BT





Gambar 5-1 Radius pengambilan data gempa untuk analisa percepatan gempa di Kepulauan Mentawai. (dimodifikasi dari Google Earth)

Select **Output File Type:**

- Screen File Format (80 columns)
- Expanded File Format with Headers and Spaces
- Compressed File Format
- Generate Map (This option takes time; please be patient.)
- Spreadsheet Format (comma delimited)
- KML Format 

Select the **Data Base:**

- USGS/NEIC (PDE) 1973 - 2011 04 30
 - USGS/NEIC (PDE-Q) Most Recent Events (2010 12 03 - 2011 04 30)
- Significant Worldwide Earthquakes (2150 B.C. - 1994 A.D.) ([NGDC Significant Earthquake Database](#))
- Significant U.S. Earthquakes (1568 - 1989)
- California, 1769 - 1974 ([California Historical Earthquake Online Database](#))
- Canada, 1568 - 1992 ([Canada's National Earthquake Database](#))
- India, 1063 - 1984
- Mexico, Central America, Caribbean, 1900 - 1979
- South America, 1471 - 1981
- Eastern, Central and Mountain States of U.S., 1350 - 1986

Center Point for Circular Area

Center Latitude Center Longitude

Radius (km)

Gambar 5-2 Input data pencarian catalog gempa dalam *USGS*

Date

Starting

Year Month Day

Ending

Year Month Day

Magnitude

Minimum Maximum

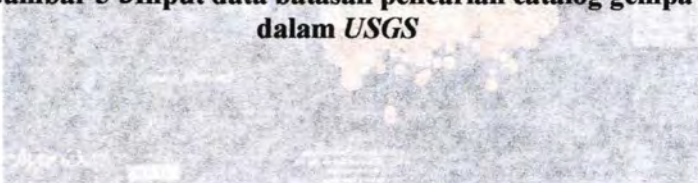
Depth

Minimum Maximum

Intensity

Minimum Maximum

Gambar 5-3 Input data batasan pencarian catalog gempa dalam *USGS*



International Seismological Centre

Home | ISC Bulletin | Registries | Documents | Analysis | Products | Services | IASPEI-G1 | IIR | Links | Site Map

On-line Bulletin: Circular Selection

Bulletin Type: Format:

Select events with a hypocentre computed by agency

that lies within degree kilometres Units: decimal degrees, <0 for west or south

of latitude and longitude

and between Minimum Maximum

date hour # digit year, 2 digit month, day, hour

depth or or kilometres integer count

defining phases or or integer count

and a magnitude of type computed by agency between magnitude or or magnitude units

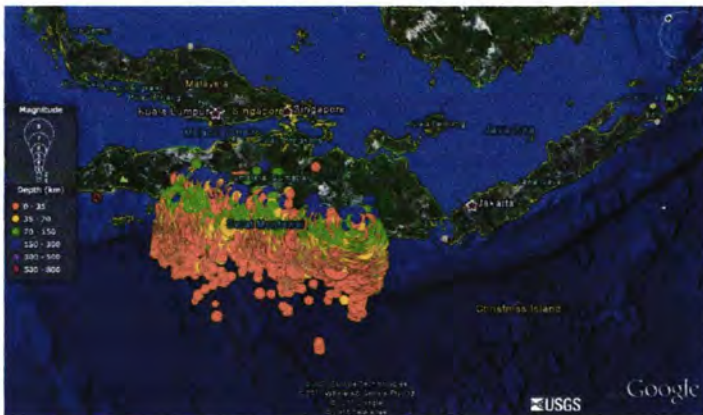
no. amplitudes or or integer count

for each selected event include:

Headers Comments Links Secondary Magnitudes Phases

Gambar 5-4 Input data pencarian catalog gempa dalam ISC

Karena data gempa yang dapat diambil dari catalog gempa *USGS* hanya berkisar dari tahun 1973 – Sekarang, maka untuk data dari tahun 1900 – Sekarang akan di isi dari Katalog *ISC* yang mana nantinya hasil outpiut dari catalog tersebut harus diolah terlebih dahulu.



Gambar 5-5 Plot catalog gempa *USGS* dalam Google Earth

5.2 Pengolahan data Gempa

Pengolahan data gempa dilakukan agar dapat diperoleh data gempa yang sesuai untuk digunakan dalam analisa nantinya. Data gempa yang digunakan adalah data gempa dengan momen magnitude (M_w) ≥ 5.0 , oleh karena itu perlu adanya konversi data gempa untuk mengubah data gempa menjadi skala yang sama. Untuk kemudian dilakukan pemisahan gempa utama (*main events*) dengan gempa awalan (*foreshocks*) dan gempa susulan (*aftershocks*).

5.2.1 Konversi Skala Magnitude

Kejadian gempa direkan dengan sejumlah instrument yang mempunyai perbedaan metode dalam penentuan ukuran gempa. dalam catalog gempa terdapat ukuran *surface wave magnitude* (M_s), juga skala magnitude yang lain yaitu *Richter local magnitude* (M_L), *body wave magnitude* (m_b), dan juga moment magnitude (M_w) dalam menentukan ukuran gempa. dengan adanya berbagai ukuran skala tersebut maka diperlukan konversi kedalam skala magnitude yang sama untuk digunakan dalam analisa resiko gempa. untuk kejadian gempa yang terjadi di Indonesia, Irsyam dkk. (2010) memberikan korelasi konversi antara beberapa skala magnitudo untuk wilayah Indonesia :

Korelasi Konversi	
M_w	$= 0.143M_s^2 - 1.051M_s + 7.285$
M_w	$= 0.114m_b^2 - 0.556m_b + 5.560$
M_w	$= 0.787M_E - 1.537$
m_b	$= 0.125M_L^2 - 0.389M_L - 3.513$
M_L	$= 0.717M_D + 1.003$

5.2.2 Perhitungan jarak epicenter gempa

Dalam studi ini untuk menghitung jarak epicenter gempa digunakan perumusan haversine yang diusulkan oleh sinnott dengan permodelan bola sederhana. Dengan rumusan haversine Dari (R.W. Sinnott, "Virtues of the Haversine", Sky and Telescope, vol. 68, no. 2, 1984, hal. 159) adalah sebagai berikut :

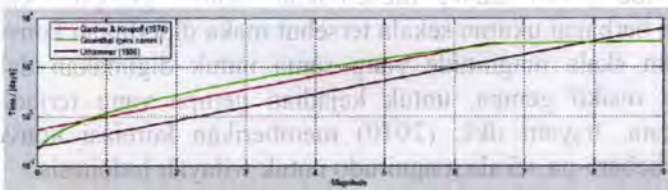
$$d = \arcsin(\sin(\text{lat1}) \cdot \sin(\text{lat2}) + \cos(\text{lat1}) \cdot \cos(\text{lat2}) \cdot \cos(\text{long2} - \text{long1})) \cdot R$$

Dimana :

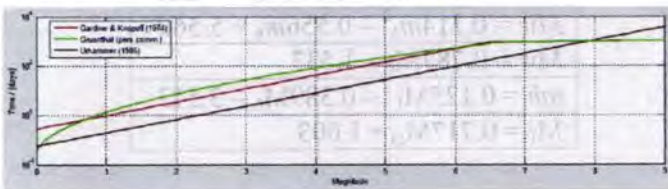
$$R = \text{Diameter Bumi} = 6371 \text{ km.}$$

5.2.3 Pemisahan Gempa Utama dan Gempa Susulan

Pada studi ini gempa dipisahkan antara gempa utama dan gempa susulan dengan menggunakan metode berdasarkan kriteria waktu dan jarak yaitu metode Uhrhammer (1986).



Gambar 5-6 kriteria waktu Uhrhammer



Gambar 5-7 Kriteria jarak Uhrhammer

Data gempa dipisahkan dengan memplotkan data gempa yang ada pada grafik diatas. Dalam memisahkan gempa utama (*main events*) dengan gempa awalan (*foreshocks*) dan gempa susulan (*aftershocks*) akan dibantu ndengan program zmap yaitu melalui proses *declustering*.

5.2.4 Persamaan Atenuasi

penelitian – penelitian mengenai perolehan persamaan atenuasi telah dilakukan oleh banyak ahli sebelumnya dan menghasilkan sejumlah persamaan atenuasi yang berbeda hasil serta keakuratannya, diantaranya yang banyak digunakan adalah :

- Persamaan Donovan (1973) :

$$a = 1080 \cdot e^{0.5 \cdot M} \cdot (H+25)^{-1.32}$$

- Persamaan Matuscha (1980) :

$$a = 119 \cdot e^{0.81 \cdot M} \cdot (H+25)^{-1.15}$$

- Persamaan Joyner & Boore (1981) :

$$a = 10^{(0.249 \cdot M - \log D - 0.00255 \cdot D - 1.02)} \cdot 980$$

$$; (D = E^2 + 7.3^2)^{0.5}$$

- Persamaan Campbell (198) :

$$a = 0.0185 \cdot e^{(1.28 \cdot M)} \cdot D^{(-1.75)} \cdot (H+25)^{-1.15} \cdot 980$$

$$; (D = E + 0.147 \cdot e^{(0.732 \cdot M)})$$

- Persamaan Fukushima & Tanaka (1990) :

$$a = (10^{(0.41 \cdot M - \log(R + 0.032 \cdot 10^{(0.41 \cdot M)} - 0.0034 \cdot R + 1.30))})$$

Keterangan :

a = percepatan gempa (cm/dt^2)

e = bilangan natural

M = besar gempa menurut skala Richter

H = jarak hyposenter (km)

Dari perumusan diatas dipilih untuk dilakukan perbandingan keakuratan serta kesesuaiannya dengan daerah setempat mengingat Indonesia belum ada persamaan atenuasi yang mewakili untuk Indonesia sehingga digunakan lah persamaan atenuasi tersebut diatas. Diharapkan nantinya dari persamaan atenuasi tersebut diatas bisa diketahui persamaan atenuasi yang bisa digunakan untuk Indonesia

5.3 Perhitungan Percepatan Gempa Maksimum Dengan Distribusi Gumble

Pada studi ini untuk memperoleh percepatan gempa maksimum digunakan metode distribusi Gumble dengan persamaan atenuasi yang digunakan adalah persamaan atenuasi Matuscha dan Donovan. Distribusi gumble dituliskan sebagai berikut :

$$G(M) = e^{(-\alpha e^{-\beta M})}$$

Dimana :

α = jumlah gempa rata-rata pertahun

β = parameter yang menyatakan hubungan antara distribusi gempa dengan magnitudo

M = magnitudo gempa

Dari bentuk persamaan diatas dapat disederhanakan menjadi persamaan linear sebagai berikut :

$$\ln G(M) = -\alpha \cdot e^{-\beta M}$$

$$\ln(-\ln G(M)) = \ln \alpha - \beta M$$

Identik dengan : $Y = A + BX$

Dimana:

$$Y = \ln(-\ln G(M))$$

$$A = e^A$$

$$\beta = -B$$

$X = M$ atau percepatan

Persamaan garis diatas terdiri atas titik - titik x_j, y_j dimana :

x_j = Percepatan Gempa ke j

j = nomor urut kejadian gempa yang disusun dari nilai a terkecil. Harga untuk a terbesar = N

N = selang waktu pengamatan

$$y_j = \ln(-\ln G(M)) = \ln(-\ln(\frac{j}{N+1}))$$

$$A = \frac{\sum y_j \sum x_j^2 - \sum x_j \sum (x_j y_j)}{n \sum x_j^2 - (\sum x_j)^2}$$

$$B = \frac{n \sum x_j y_j - \sum x_j \sum y_j}{n \sum x_j^2 - (\sum x_j)^2}$$

$$\alpha = e^A$$

$$\beta = -E$$

Hubungan periode ulang (T) dan percepatan (a)

$$a = \frac{\ln(T.a)}{\beta}$$

5.3.1 Pengelompokan Data Gempa

Pada studi ini untuk memperoleh percepatan gempa maksimum dilakukan tahapan pemilihan data gempa tertinggi tiap-tiap tahun. Untuk kemudian dilakukan perhitungan nilai percepatan gempa maksimumnya.

Tabel 5-1 Data kejadian gempa maksimum pertahun

No	year	mon	day	hour	min	lat	long	lat	long	Depth	Mag	Epic	Hyp
1	1909	6	3	18	40	-2.00	101.00	-0.03	1.76	35.00	7.90	153.08	157.03
2	1914	6	25	0	0	-4.50	99.00	-0.08	1.73	60.00	8.10	265.34	272.04
3	1918	9	22	9	55	-1.00	100.00	-0.02	1.75	35.00	7.00	139.40	143.73
4	1926	6	28	3	23	-1.50	99.50	-0.03	1.74	35.00	7.00	79.31	86.69
5	1927	5	10	6	3	-1.50	99.50	-0.03	1.74	50.00	6.10	79.31	93.76
6	1934	2	19	10	24	-2.50	99.75	-0.04	1.74	35.00	6.30	35.64	49.95
7	1935	12	28	0	0	0.00	98.30	0.00	1.72	60.00	8.10	286.24	292.46
8	1938	7	29	13	6	-1.00	99.00	-0.02	1.73	80.00	6.70	151.05	170.93
9	1941	3	3	7	27	-2.00	100.50	-0.03	1.75	100.00	5.90	98.44	140.32
10	1943	6	9	3	6	-1.00	101.00	-0.02	1.76	50.00	7.90	201.88	207.98
11	1956	4	10	13	16	-3.00	102.00	-0.05	1.78	125.00	7.00	277.15	304.03
12	1960	12	6	21	34	-2.60	101.50	-0.05	1.77	54.00	5.40	211.70	218.48
13	1963	6	18	23	2	-3.20	102.30	-0.06	1.79	200.00	6.00	315.99	373.97
14	1965	7	28	22	29	-2.20	101.90	-0.04	1.78	135.00	5.90	251.45	285.40
15	1966	4	7	23	53	-2.00	100.20	-0.03	1.75	33.00	5.10	66.40	74.14
16	1967	5	21	18	45	-1.00	101.50	-0.02	1.77	173.00	6.50	246.34	301.02

]

No	year	mon	day	hour	min	lat	Long	lat	long	Depth	Mag	Epic	Hyp
17	1969	4	1	20	29	-1.70	100.00	-0.03	1.75	33.00	5.40	68.69	76.21
18	1970	1	7	13	53	-1.80	100.40	-0.03	1.75	40.00	5.40	95.75	103.77
19	1971	12	19	10	38	-1.60	99.90	-0.03	1.74	46.00	6.30	72.84	86.15
20	1972	7	16	17	9	-3.00	101.00	-0.05	1.76	25.00	6.20	175.60	177.37
21	1973	12	18	13	57	-1.70	99.70	-0.03	1.74	60.00	6.10	56.04	82.10
22	1974	12	4	7	12	0.39	97.84	0.01	1.71	20.00	7.10	350.50	351.07
23	1975	12	24	2	24	-2.31	99.04	-0.04	1.73	33.00	7.00	67.45	75.09
24	1976	5	8	12	0	-0.16	99.36	0.00	1.73	34.00	5.10	228.92	231.43
25	1977	11	18	0	0	-4.35	102.02	-0.08	1.78	33.00	6.00	356.55	358.08
26	1978	6	24	16	48	-5.06	102.36	-0.09	1.79	33.00	6.50	438.66	439.90
27	1979	11	13	12	0	-4.44	102.01	-0.08	1.78	47.00	6.40	362.52	365.56
28	1980	12	15	14	24	-3.30	102.71	-0.06	1.79	33.00	6.80	362.56	364.06
29	1981	12	8	9	50	-1.53	100.59	-0.03	1.76	76.00	5.60	129.49	150.15
30	1982	6	14	3	21	-4.71	103.06	-0.08	1.80	56.00	6.10	471.40	474.72
31	1983	5	28	21	21	-1.80	99.60	-0.03	1.74	27.00	5.50	44.67	52.19
32	1984	11	17	0	28	0.20	98.03	0.00	1.71	33.00	7.70	321.15	322.84
33	1985	3	26	23	31	-4.31	101.21	-0.08	1.77	33.00	5.60	292.47	294.33

No	year	mon	day	hour	min	lat	long	lat	long	Depth	Mag	Epic	Hyp
34	1986	4	17	10	4	-0.85	99.90	-0.01	1.74	82.00	5.50	152.93	173.53
35	1987	5	18	3	36	-2.23	100.03	-0.04	1.75	33.00	6.10	43.79	54.84
36	1988	3	7	22	33	-2.28	99.98	-0.04	1.74	28.00	5.20	39.14	48.12
37	1989	11	12	9	36	-3.95	99.30	-0.07	1.73	33.00	5.20	198.16	200.88
38	1990	7	23	14	24	-2.05	99.67	-0.04	1.74	33.00	5.00	17.08	37.16
39	1991	1	21	19	12	-1.88	100.40	-0.03	1.75	67.00	5.20	91.95	113.77
40	1992	4	6	6	14	-1.85	97.74	-0.03	1.71	31.00	5.90	214.37	216.60
41	1993	8	4	0	43	-1.63	99.61	-0.03	1.74	31.00	6.50	63.45	70.62
42	1994	5	11	16	4	-2.01	99.77	-0.04	1.74	20.00	6.50	25.78	32.63
43	1995	10	6	21	36	-2.05	101.44	-0.04	1.77	33.00	6.80	201.04	203.73
44	1996	8	9	21	36	-2.02	99.68	-0.04	1.74	33.00	5.80	20.58	38.89
45	1997	8	25	3	36	-1.97	99.91	-0.03	1.74	33.00	5.50	39.68	51.61
46	1998	4	1	8	38	-0.54	99.26	-0.01	1.73	55.00	7.00	189.28	197.11
47	1999	5	28	14	24	-0.85	98.58	-0.01	1.72	43.00	5.00	190.62	195.41
48	2000	6	4	4	4	-4.72	102.09	-0.08	1.78	33.00	7.90	390.68	392.08
49	2001	5	18	10	48	0.41	97.78	0.01	1.71	33.00	5.90	356.16	357.68
50	2002	12	29	17	16	-1.70	100.05	-0.03	1.75	33.00	5.00	72.09	79.29

No	year	mon	day	hour	min	lat	long	lat	long	Depth	Mag	Epic	Hyp
51	2003	11	3	13	26	-1.38	99.79	-0.02	1.74	21.00	5.20	92.75	95.10
52	2004	5	11	6	43	0.41	97.82	0.01	1.71	21.00	6.10	353.60	354.22
53	2005	4	10	6	43	-1.64	99.61	-0.03	1.74	19.00	6.70	62.34	65.17
54	2006	5	16	22	4	0.09	97.05	0.00	1.69	12.00	6.80	384.12	384.31
55	2007	9	12	17	16	-2.62	100.84	-0.05	1.76	35.00	7.90	141.57	145.84
56	2008	1	22	22	48	1.01	97.44	0.02	1.70	20.00	6.20	432.51	432.97
57	2009	8	18	0	14	-0.91	97.95	-0.02	1.71	10.00	5.90	236.09	236.30
58	2010	3	13	6	57	1.34	97.20	0.02	1.70	35.00	5.80	477.86	479.14

5.3.2 Pengelompokan Data Persamaan Atenuasi Donovan

Persamaan Donovan di usulkan oleh Donovan di tahun 1973 berikut adalah hasil perhitungan dengan menggunakan perumusan Donovan :

Tabel 5-2 Perhitungan regresi untuk persamaan Donovan

<i>Donovan</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
1	2	5.33	1.224	28.441	1.498	6.528
2	3	6.30	1.097	39.723	1.204	6.915
3	4	7.38	0.996	54.454	0.992	7.351
4	5	8.08	0.910	65.324	0.829	7.357
5	6	8.42	0.834	70.955	0.696	7.025
6	7	8.49	0.765	71.996	0.585	6.489
7	8	8.86	0.701	78.416	0.491	6.204
8	9	9.01	0.640	81.219	0.410	5.771
9	10	9.26	0.583	85.774	0.340	5.401
10	11	9.84	0.529	96.867	0.279	5.202
11	12	10.15	0.476	103.094	0.226	4.832
12	13	10.93	0.425	119.498	0.181	4.644
13	14	11.54	0.375	133.278	0.141	4.332
14	15	11.55	0.327	133.307	0.107	3.771
15	16	11.81	0.279	139.367	0.078	3.293
16	17	12.35	0.232	152.519	0.054	2.865
17	18	12.40	0.186	153.759	0.034	2.302
18	19	13.32	0.140	177.369	0.020	1.860
19	20	14.94	0.094	223.077	0.009	1.405
20	21	15.02	0.049	225.613	0.002	0.730
21	22	17.09	0.003	291.935	0.000	0.056

<i>Donovan</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
22	23	18.09	-0.042	327.182	0.002	-0.760
23	24	19.04	-0.087	362.360	0.008	-1.664
24	25	19.59	-0.133	383.919	0.018	-2.606
25	26	21.91	-0.179	480.083	0.032	-3.918
26	27	22.58	-0.225	509.651	0.051	-5.080
27	28	22.91	-0.272	525.047	0.074	-6.224
28	29	25.26	-0.319	638.268	0.102	-8.053
29	30	26.85	-0.367	720.815	0.134	-9.840
30	31	27.09	-0.415	733.911	0.172	-11.242
31	32	28.70	-0.464	823.907	0.216	-13.326
32	33	29.96	-0.514	897.660	0.265	-15.413
33	34	31.34	-0.566	982.038	0.320	-17.726
34	35	31.73	-0.618	1006.592	0.382	-19.609
35	36	33.42	-0.672	1117.146	0.451	-22.452
36	37	34.78	-0.727	1209.345	0.528	-25.277
37	38	35.68	-0.784	1273.220	0.614	-27.961
38	39	35.80	-0.842	1281.522	0.709	-30.148
39	40	40.12	-0.903	1609.751	0.815	-36.219
40	41	42.51	-0.966	1806.859	0.932	-41.043
41	42	43.57	-1.031	1898.748	1.063	-44.922
42	43	49.41	-1.099	2441.437	1.208	-54.311
43	44	59.43	-1.171	3531.492	1.370	-69.569
44	45	59.87	-1.246	3584.640	1.552	-74.594
45	46	59.99	-1.325	3598.691	1.757	-79.508
46	47	62.36	-1.410	3889.246	1.987	-87.919
47	48	65.52	-1.500	4292.730	2.250	-98.274
48	49	68.79	-1.597	4732.255	2.550	-109.853

Donovan						
no	j	xj	yj	xj ²	yj ²	xj*yj
49	50	68.95	-1.702	4754.734	2.897	-117.360
50	51	75.03	-1.817	5629.272	3.301	-136.324
51	52	77.49	-1.944	6004.966	3.780	-150.660
52	53	84.31	-2.087	7108.848	4.356	-175.967
53	54	85.60	-2.250	7326.680	5.064	-192.623
54	55	90.88	-2.442	8258.697	5.962	-221.897
55	56	94.50	-2.674	8929.483	7.149	-252.659
56	57	111.73	-2.970	12484.392	8.822	-331.871
57	58	126.86	-3.384	16093.618	11.453	-429.334
58	59	156.07	-4.086	24359.184	16.695	-637.712
$\Sigma =$	60	2209.800	-33.964	148134.374	97.216	-3469.582

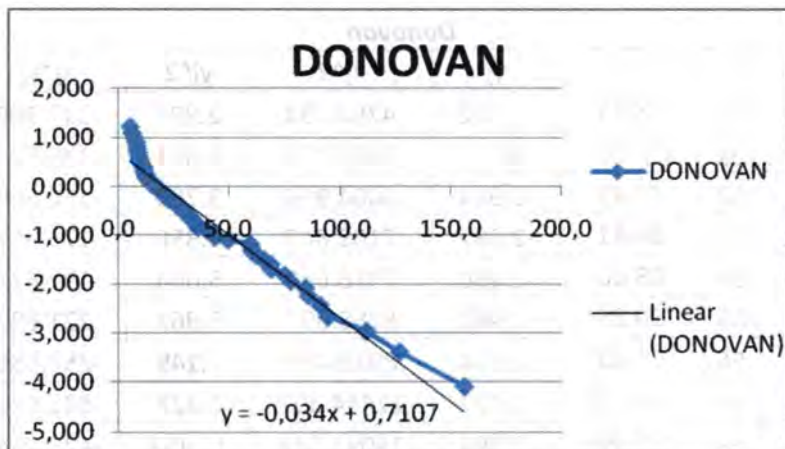
Dari data tersebut diatas diperoleh nilai

$$A = 0,711$$

$$\alpha = 2,035$$

$$B = -0.034$$

$$\beta = 0.034$$



Gambar 5-8 Regresi Persamaan Donovan Hubungan antara nilai Nilai Atenuasi dan N(Data)

Tabel 5-3 Hasil perhitungan percepatan gempa maksimum untuk atenuasi Donovan berdasarkan periode yang ditentukan

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt ²)	a/980 (g)
50	63.6	50	135.867	0.139
50	39.5	100	156.239	0.159
50	10	475	202.034	0.206
50	2	2475	250.549	0.256
100	63.4	100	156.239	0.159
100	39.4	200	176.611	0.180
100	10.0	950	222.406	0.227
100	2.0	4950	270.921	0.276

5.3.3 Pengelompokan Data Persamaan Atenuasi Matuscha

Persamaan Matuscha di usulkan oleh Matuscha di tahun 1980 berikut adalah hasil perhitungan dengan menggunakan perumusan Matuscha :

Tabel 5-4. Perhitungan regresi untuk persamaan Matuscha

<i>Matuscha</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
1	2	10.18	1.224	103.720	1.498	12.467
2	3	12.57	1.097	157.983	1.204	13.791
3	4	13.12	0.996	172.080	0.992	13.068
4	5	13.79	0.910	190.296	0.829	12.557
5	6	14.64	0.834	214.426	0.696	12.213
6	7	15.16	0.765	229.909	0.585	11.596
7	8	15.67	0.701	245.633	0.491	10.980
8	9	15.73	0.640	247.302	0.410	10.070
9	10	15.77	0.583	248.685	0.340	9.197
10	11	16.42	0.529	269.700	0.279	8.680
11	12	17.01	0.476	289.365	0.226	8.095
12	13	18.02	0.425	324.596	0.181	7.655
13	14	19.29	0.375	372.109	0.141	7.238
14	15	19.71	0.327	388.400	0.107	6.437
15	16	22.21	0.279	493.161	0.078	6.195
16	17	23.33	0.232	544.076	0.054	5.412
17	18	23.51	0.186	552.929	0.034	4.365
18	19	25.73	0.140	662.171	0.020	3.594
19	20	27.62	0.094	762.598	0.009	2.597
20	21	29.09	0.049	846.376	0.002	1.415

<i>Matuscha</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
21	22	29.21	0.003	853.484	0.000	0.096
22	23	29.64	-0.042	878.531	0.002	-1.245
23	24	30.84	-0.087	951.154	0.008	-2.696
24	25	32.61	-0.133	1063.276	0.018	-4.337
25	26	32.62	-0.179	1063.996	0.032	-5.833
26	27	35.39	-0.225	1252.422	0.051	-7.963
27	28	37.49	-0.272	1405.455	0.074	-10.183
28	29	39.81	-0.319	1584.563	0.102	-12.689
29	30	40.23	-0.367	1618.101	0.134	-14.743
30	31	40.89	-0.415	1671.964	0.172	-16.968
31	32	43.97	-0.464	1933.530	0.216	-20.414
32	33	46.68	-0.514	2179.334	0.265	-24.016
33	34	56.81	-0.566	3227.295	0.320	-32.135
34	35	57.70	-0.618	3328.925	0.382	-35.659
35	36	59.15	-0.672	3498.259	0.451	-39.730
36	37	62.60	-0.727	3918.200	0.528	-45.498
37	38	68.48	-0.784	4688.972	0.614	-53.658
38	39	69.09	-0.842	4774.054	0.709	-58.188
39	40	69.12	-0.903	4777.688	0.815	-62.397
40	41	69.40	-0.966	4816.172	0.932	-67.008
41	42	69.73	-1.031	4862.187	1.063	-71.886
42	43	72.72	-1.099	5288.362	1.208	-79.934
43	44	77.12	-1.171	5946.948	1.370	-90.279
44	45	86.89	-1.246	7549.741	1.552	-108.255
45	46	94.78	-1.325	8983.954	1.757	-125.624
46	47	108.11	-1.410	11688.027	1.987	-152.413
47	48	109.55	-1.500	12001.314	2.250	-164.319

Matuscha						
no	j	xj	yj	xj ²	yj ²	xj*yj
48	49	111.69	-1.597	12474.200	2.550	-178.354
49	50	120.56	-1.702	14535.417	2.897	-205.196
50	51	121.47	-1.817	14755.499	3.301	-220.710
51	52	135.58	-1.944	18380.597	3.780	-263.586
52	53	136.69	-2.087	18684.235	4.356	-285.279
53	54	152.33	-2.250	23203.383	5.064	-342.791
54	55	152.80	-2.442	23348.342	5.962	-373.098
55	56	172.80	-2.674	29860.212	7.149	-462.027
56	57	180.07	-2.970	32423.531	8.822	-534.829
57	58	193.70	-3.384	37520.028	11.453	-655.541
58	59	217.45	-4.086	47283.459	16.695	-888.481
$\Sigma =$	60	3634.325	-33.964	385590.325	97.216	-5550.246

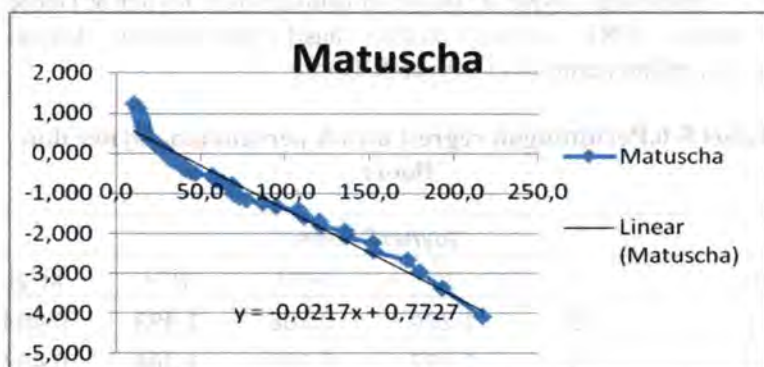
Dari data tersebut diatas diperoleh nilai :

$$A = 0,773$$

$$\alpha = 2,166$$

$$B = -0,022$$

$$\beta = 0,022$$



Gambar 5-9 Regresi Persamaan Matuscha Hubungan antara nilai Nilai Atenuasi dan N(Data)

Tabel 5-5. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Matuscha berdasarkan periode yang ditentukan

(t) usia bangunan (tahun)	R _N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt ²)	a/980 (g)
50	63.6	50	216.112	0.221
50	39.5	100	248.087	0.253
50	10	475	319.966	0.326
50	2	2475	396.113	0.404
100	63.4	100	248.087	0.253
100	39.4	200	280.063	0.286
100	10.0	950	351.942	0.359
100	2.0	4950	428.089	0.437

5.3.4 Pengelompokan Data Persamaan Atenuasi Joyner dan Boore

Persamaan Joyner & Boore di usulkan oleh Joyner & Boore di tahun 1981 berikut adalah hasil perhitungan dengan menggunakan perumusan Joyner & Boore :

Tabel 5-6. Perhitungan regresi untuk persamaan Joyner dan Boore

<i>Joyner&Boore</i>						
no	j	x _j	y _j	x _j ²	y _j ²	x _j *y _j
1	2	0.33	1.224	0.108	1.498	0.403
2	3	0.41	1.097	0.169	1.204	0.452
3	4	0.60	0.996	0.356	0.992	0.595
4	5	0.67	0.910	0.455	0.829	0.614

Joyner&Boore						
no	j	xj	yj	xj ²	yj ²	xj*yj
5	6	0.96	0.834	0.913	0.696	0.797
6	7	1.01	0.765	1.017	0.585	0.771
7	8	1.10	0.701	1.200	0.491	0.768
8	9	1.20	0.640	1.451	0.410	0.771
9	10	1.26	0.583	1.586	0.340	0.735
10	11	1.42	0.529	2.027	0.279	0.752
11	12	1.44	0.476	2.084	0.226	0.687
12	13	1.51	0.425	2.293	0.181	0.643
13	14	1.98	0.375	3.930	0.141	0.744
14	15	2.00	0.327	3.988	0.107	0.652
15	16	2.24	0.279	5.012	0.078	0.625
16	17	2.50	0.232	6.258	0.054	0.580
17	18	2.81	0.186	7.917	0.034	0.522
18	19	2.82	0.140	7.932	0.020	0.393
19	20	2.90	0.094	8.437	0.009	0.273
20	21	2.92	0.049	8.501	0.002	0.142
21	22	3.65	0.003	13.302	0.000	0.012
22	23	3.65	-0.042	13.340	0.002	-0.153
23	24	3.67	-0.087	13.453	0.008	-0.321
24	25	3.71	-0.133	13.776	0.018	-0.494
25	26	5.83	-0.179	33.932	0.032	-1.042
26	27	6.33	-0.225	40.012	0.051	-1.423
27	28	6.64	-0.272	44.047	0.074	-1.803
28	29	7.04	-0.319	49.629	0.102	-2.246
29	30	7.71	-0.367	59.505	0.134	-2.827
30	31	8.36	-0.415	69.816	0.172	-3.467
31	32	8.99	-0.464	80.824	0.216	-4.174

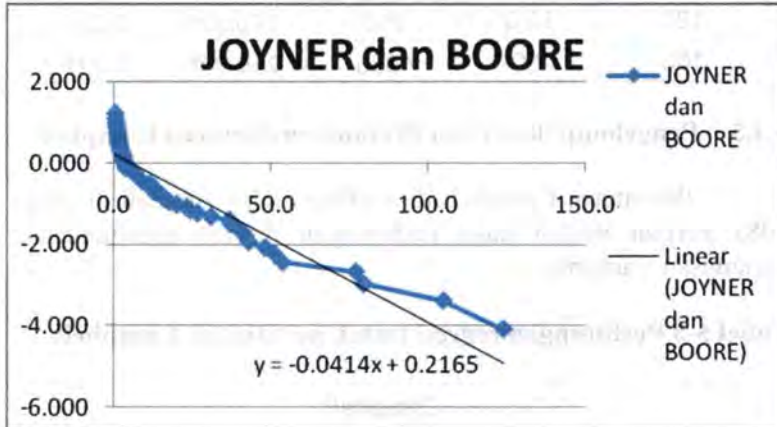
Joyner&Boore						
no	j	xj	yj	xj ²	yj ²	xj*yj
32	33	11.48	-0.514	131.895	0.265	-5.908
33	34	11.64	-0.566	135.449	0.320	-6.583
34	35	11.86	-0.618	140.764	0.382	-7.333
35	36	12.26	-0.672	150.366	0.451	-8.237
36	37	13.12	-0.727	172.040	0.528	-9.534
37	38	14.84	-0.784	220.120	0.614	-11.626
38	39	15.64	-0.842	244.614	0.709	-13.171
39	40	16.35	-0.903	267.188	0.815	-14.756
40	41	17.62	-0.966	310.522	0.932	-17.015
41	42	19.97	-1.031	398.734	1.063	-20.586
42	43	23.02	-1.099	529.938	1.208	-25.304
43	44	24.31	-1.171	591.175	1.370	-28.464
44	45	26.62	-1.246	708.843	1.552	-33.171
45	46	30.81	-1.325	949.411	1.757	-40.838
46	47	36.69	-1.410	1345.962	1.987	-51.721
47	48	37.12	-1.500	1377.819	2.250	-55.676
48	49	39.26	-1.597	1540.990	2.550	-62.687
49	50	40.73	-1.702	1659.265	2.897	-69.329
50	51	41.84	-1.817	1750.288	3.301	-76.015
51	52	42.86	-1.944	1837.126	3.780	-83.332
52	53	48.05	-2.087	2309.250	4.356	-100.292
53	54	51.25	-2.250	2626.773	5.064	-115.336
54	55	53.65	-2.442	2877.961	5.962	-130.990
55	56	76.96	-2.674	5922.622	7.149	-205.768
56	57	79.43	-2.970	6309.544	8.822	-235.930
57	58	104.86	-3.384	10995.915	11.453	-354.882
58	59	123.97	-4.086	15368.429	16.695	-506.533

Joyner&Boore						
no	j	xj	yj	xj^2	yj^2	xj*yj
$\Sigma =$	60	1123.877	-33.964	61370.270	97.216	-2297.036

Dari data tersebut diatas diperoleh nilai :

$$A = 0,217 \qquad \alpha = 1,242$$

$$B = -0.041 \qquad \beta = 0.041$$



Gambar 5-10 Regresi Persamaan Joyner dan Boore
Hubungan antara nilai Nilai Atenuasi dan N(Data)

Tabel 5-7. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Joyner dan Boore berdasarkan periode yang ditentukan

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt ²)	a/980 (g)
50	63.6	50	216.112	0.221
50	39.5	100	248.087	0.253
50	10	475	319.966	0.326

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt ²)	a/980 (g)
50	2	2475	396.113	0.404
100	63.4	100	116.482	0.119
100	39.4	200	133.227	0.136
100	10.0	950	170.869	0.174
100	2.0	4950	210.746	0.215

5.3.5 Pengelompokan Data Persamaan Atenuasi Campbell

Persamaan Campbell di usulkan oleh Campbell di tahun 1981 berikut adalah hasil perhitungan dengan menggunakan perumusan Campbell :

Tabel 5-8. Perhitungan regresi untuk persamaan Campbell

<i>Campbell</i>						
no	j	x_j	y_j	x_j^2	y_j^2	$x_j \cdot y_j$
1	2	0.60	1.224	0.359	1.498	0.734
2	3	0.88	1.097	0.772	1.204	0.964
3	4	0.89	0.996	0.797	0.992	0.889
4	5	1.06	0.910	1.123	0.829	0.964
5	6	1.08	0.834	1.165	0.696	0.900
6	7	1.12	0.765	1.257	0.585	0.857
7	8	1.17	0.701	1.369	0.491	0.820
8	9	1.27	0.640	1.604	0.410	0.811
9	10	1.27	0.583	1.617	0.340	0.742
10	11	1.45	0.529	2.113	0.279	0.768
11	12	1.46	0.476	2.121	0.226	0.693



<i>Campbell</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
12	13	1.55	0.425	2.413	0.181	0.660
13	14	1.66	0.375	2.740	0.141	0.621
14	15	2.02	0.327	4.067	0.107	0.659
15	16	2.02	0.279	4.069	0.078	0.563
16	17	2.24	0.232	5.025	0.054	0.520
17	18	2.63	0.186	6.934	0.034	0.489
18	19	2.84	0.140	8.057	0.020	0.396
19	20	2.98	0.094	8.896	0.009	0.281
20	21	3.28	0.049	10.771	0.002	0.160
21	22	4.21	0.003	17.757	0.000	0.014
22	23	4.32	-0.042	18.660	0.002	-0.182
23	24	4.51	-0.087	20.314	0.008	-0.394
24	25	4.57	-0.133	20.898	0.018	-0.608
25	26	4.97	-0.179	24.719	0.032	-0.889
26	27	5.24	-0.225	27.509	0.051	-1.180
27	28	5.35	-0.272	28.655	0.074	-1.454
28	29	5.43	-0.319	29.485	0.102	-1.731
29	30	6.46	-0.367	41.699	0.134	-2.367
30	31	6.88	-0.415	47.301	0.172	-2.854
31	32	8.53	-0.464	72.813	0.216	-3.961
32	33	9.23	-0.514	85.255	0.265	-4.750
33	34	9.32	-0.566	86.835	0.320	-5.271
34	35	10.63	-0.618	113.080	0.382	-6.572
35	36	11.49	-0.672	131.999	0.451	-7.718
36	37	11.79	-0.727	139.015	0.528	-8.570
37	38	11.90	-0.784	141.701	0.614	-9.328
38	39	16.29	-0.842	265.441	0.709	-13.721



<i>Campbell</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
39	40	17.51	-0.903	306.767	0.815	-15.811
40	41	18.76	-0.966	351.963	0.932	-18.114
41	42	19.94	-1.031	397.580	1.063	-20.556
42	43	21.27	-1.099	452.368	1.208	-23.378
43	44	22.96	-1.171	526.934	1.370	-26.873
44	45	23.71	-1.246	562.339	1.552	-29.545
45	46	23.75	-1.325	564.272	1.757	-31.484
46	47	27.13	-1.410	735.892	1.987	-38.244
47	48	28.50	-1.500	812.024	2.250	-42.742
48	49	34.34	-1.597	1179.426	2.550	-54.842
49	50	38.22	-1.702	1460.749	2.897	-65.049
50	51	41.67	-1.817	1736.247	3.301	-75.710
51	52	41.70	-1.944	1738.770	3.780	-81.071
52	53	42.87	-2.087	1837.958	4.356	-89.475
53	54	45.90	-2.250	2106.918	5.064	-103.295
54	55	46.24	-2.442	2137.681	5.962	-112.893
55	56	51.50	-2.674	2652.566	7.149	-137.706
56	57	60.36	-2.970	3642.997	8.822	-179.273
57	58	75.28	-3.384	5667.737	11.453	-254.784
58	59	103.45	-4.086	10702.477	16.695	-422.703
$\Sigma =$	60	959.676	-33.964	40954.072	97.216	-1881.592

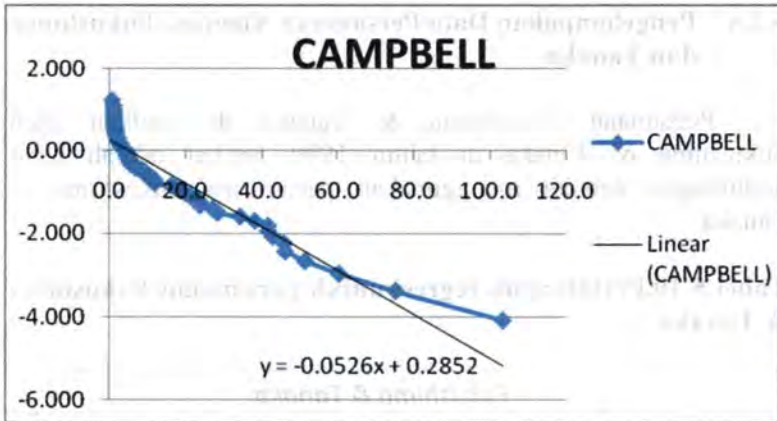
Dari data tersebut diatas diperoleh nilai :

$$A = 0,285$$

$$\alpha = 1,330$$

$$B = -0,053$$

$$\beta = 0,053$$



Gambar 5-11 Regresi Persamaan Campbell Hubungan antara nilai Nilai Atenuasi dan N(Data)

Tabel 5-9. Hasil perhitungan percepatan gempa maksimum untuk atenuasi Campbell berdasarkan periode yang ditentukan

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt ²)	a/980 (g)
50	63.6	50	79.755	0.081
50	39.5	100	92.926	0.095
50	10	475	122.533	0.125
50	2	2475	153.899	0.157
100	63.4	100	92.926	0.095
100	39.4	200	106.097	0.108
100	10.0	950	135.704	0.138
100	2.0	4950	167.070	0.170

5.3.6 Pengelompokan Data Persamaan Atenuasi Fukushima dan Tanaka

Persamaan Fukushima & Tanaka di usulkan oleh Fukushima & Tanaka di tahun 1990 berikut adalah hasil perhitungan dengan menggunakan perumusan Fukushima & Tanaka :

Tabel 5-10. Perhitungan regresi untuk persamaan Fukushima & Tanaka

<i>Fukushima & Tanaka</i>						
no	j	x_j	y_j	x_j^2	y_j^2	$x_j \cdot y_j$
1	2	0.23	1.224	0.053	1.498	0.281
2	3	0.32	1.097	0.101	1.204	0.348
3	4	0.53	0.996	0.279	0.992	0.526
4	5	0.65	0.910	0.420	0.829	0.590
5	6	0.80	0.834	0.646	0.696	0.670
6	7	0.87	0.765	0.756	0.585	0.665
7	8	0.95	0.701	0.902	0.491	0.665
8	9	1.08	0.640	1.176	0.410	0.694
9	10	1.27	0.583	1.603	0.340	0.738
10	11	1.31	0.529	1.716	0.279	0.692
11	12	1.50	0.476	2.239	0.226	0.712
12	13	1.71	0.425	2.916	0.181	0.726
13	14	1.85	0.375	3.407	0.141	0.693
14	15	1.91	0.327	3.641	0.107	0.623
15	16	2.44	0.279	5.936	0.078	0.680
16	17	2.64	0.232	6.966	0.054	0.612
17	18	2.73	0.186	7.474	0.034	0.507
18	19	2.76	0.140	7.616	0.020	0.385

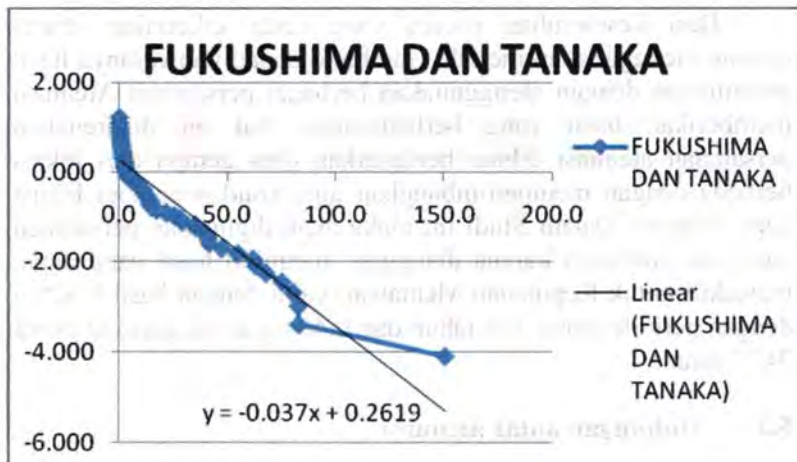
<i>Fukushima & Tanaka</i>						
no	j	xj	yj	xj ²	yj ²	xj*yj
19	20	2.77	0.094	7.660	0.009	0.260
20	21	3.36	0.049	11.322	0.002	0.164
21	22	3.59	0.003	12.888	0.000	0.012
22	23	4.18	-0.042	17.438	0.002	-0.175
23	24	4.27	-0.087	18.230	0.008	-0.373
24	25	5.15	-0.133	26.479	0.018	-0.684
25	26	6.20	-0.179	38.477	0.032	-1.109
26	27	7.78	-0.225	60.553	0.051	-1.751
27	28	9.20	-0.272	84.561	0.074	-2.498
28	29	9.39	-0.319	88.265	0.102	-2.995
29	30	11.12	-0.367	123.761	0.134	-4.077
30	31	11.74	-0.415	137.738	0.172	-4.870
31	32	11.77	-0.464	138.649	0.216	-5.466
32	33	12.92	-0.514	166.815	0.265	-6.644
33	34	13.30	-0.566	176.804	0.320	-7.521
34	35	14.31	-0.618	204.894	0.382	-8.847
35	36	14.52	-0.672	210.842	0.451	-9.754
36	37	14.65	-0.727	214.578	0.528	-10.647
37	38	15.48	-0.784	239.690	0.614	-12.132
38	39	17.63	-0.842	310.900	0.709	-14.849
39	40	22.08	-0.903	487.614	0.815	-19.934
40	41	25.77	-0.966	664.195	0.932	-24.884
41	42	28.67	-1.031	822.033	1.063	-29.558
42	43	29.22	-1.099	853.548	1.208	-32.113
43	44	35.37	-1.171	1250.771	1.370	-41.403
44	45	36.05	-1.246	1299.834	1.552	-44.919
45	46	39.55	-1.325	1563.946	1.757	-52.414

Fukushima & Tanaka						
no	j	xj	yj	xj ²	yj ²	xj*yj
46	47	41.07	-1.410	1687.062	1.987	-57.905
47	48	41.16	-1.500	1694.228	2.250	-61.739
48	49	41.77	-1.597	1744.971	2.550	-66.707
49	50	47.61	-1.702	2266.831	2.897	-81.034
50	51	54.86	-1.817	3009.908	3.301	-99.683
51	52	62.14	-1.944	3861.051	3.780	-120.808
52	53	63.36	-2.087	4014.067	4.356	-132.228
53	54	67.96	-2.250	4618.075	5.064	-152.927
54	55	75.51	-2.442	5702.464	5.962	-184.385
55	56	80.56	-2.674	6489.566	7.149	-215.392
56	57	83.05	-2.970	6897.166	8.822	-246.672
57	58	83.15	-3.384	6914.588	11.453	-281.418
58	59	150.67	-4.086	22701.761	16.695	-615.635
$\Sigma =$	60	1328.453	-33.964	80882.069	97.216	-2644.907

Dari data tersebut diatas diperoleh nilai :

$$A = 0,262 \qquad \alpha = 1,299$$

$$B = -0,037 \qquad \beta = 0,037$$



**Gambar 5-12 Regresi Persamaan Fukushima & Tanaka
Hubungan antara nilai Nilai Atenuasi dan N(Data)**

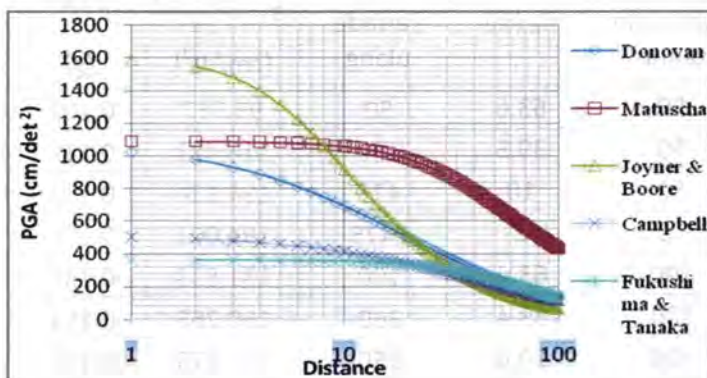
**Tabel 5-11. Hasil perhitungan percepatan gempa maksimum
untuk atenuasi Fukushima & Tanaka berdasarkan periode
yang ditentukan**

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	$a = \frac{\ln(T \cdot \alpha)}{\beta}$ (cm/dt^2)	$a/980$ (g)
50	63.6	50	99.737	0.102
50	39.5	100	116.482	0.119
50	10	475	154.124	0.157
50	2	2475	194.001	0.198
100	63.4	100	131.533	0.134
100	39.4	200	150.265	0.153
100	10.0	950	192.373	0.196
100	2.0	4950	236.983	0.242

Dari keseluruhan proses yang telah dikerjakan diatas dengan menggunakan metode Gumble didapati bahwasanya hasil perhitungan dengan menggunakan berbagai persamaan Atenuasi memberikan hasil yang berbeda-beda, hal ini dikarenakan persamaan atenuasi dibuat berdasarkan data gempa dari lokasi berbeda dengan mempertimbangkan juga kondisi geologi lokasi yang ditinjau. Dalam Studi ini maka akan digunakan persamaan Atenuasi Matuscha karena dianggap memiliki hasil yang dapat mewakili untuk Kepulauan Mentawai, yaitu dengan hasil 0.326 g dengan periode ulang 475 tahun dan 0.404 g untuk periode ulang 2475 tahun.

5.3.7 Hubungan antar atenuasi

Dari keseluruhan atenuasi yg ada dapat dilihat hubungan antar atenuasi yang mana memiliki hasil yang berbeda beda. untuk memperoleh nilai percepatan gempa secara deterministik dari data gempa terbesar yg muncul mewakili Kepulauan Mentawai yaitu gempa dengan kekuatan 8,5 Mw dan kedalam tercatat 34 Km. dari gambar 5.13 dapat dilihat bahwasanya kurva yang dihasilkan oleh persamaan Matuscha tampak lebih stabil dibanding yang lain.



Gambar 5-13 Grafik hubungan antar atenuasi

5.4 Probabilistic Seismic Hazard Analysis (PSHA)

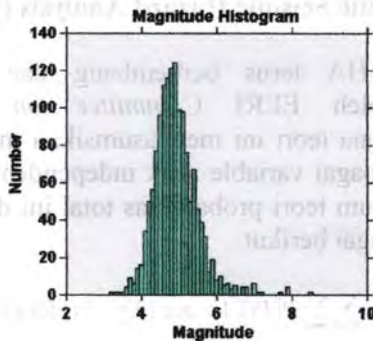
Metode PSHA terus berkembang dan yang terakhir dikembangkan oleh EERI *Committee on Seismic Risk* (EERI, 1989) dimana teori ini mengasumsikan magnitudo gempa M dan jarak R sebagai variable acak independent yang menerus. Dalam bentuk umum teori probabilitas total ini dapat dinyatakan dalam bentuk sebagai berikut :

$$P(PGA > acc | EQ) = \sum_R \sum_M P(PGA > acc | EQ: M, R) \cdot f(M) \cdot \Delta M \cdot f(R) \cdot \Delta R$$

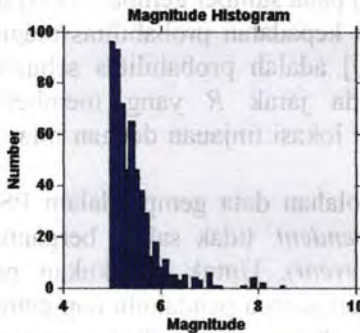
dimana v adalah *annual exceedence rate* (dengan nilai lebih tinggi dari nilai batas M_0) pada sumber gempa I, $f(M)$ dan $f(R)$ berturut-turut adalah fungsi kepadatan probabilitas magnitudo dan jarak. $P[PGA > acc | EQ]$ adalah probabilitas sebuah gempa dengan magnitudo M pada jarak R yang memberikan percepatan maksimum PGA di lokasi tinjauan dengan nilai yang lebih besar dari acc .

Pada pengolahan data gempa dalam PSHA adalah data gempa yang *independent*/ tidak saling bergantung satu dengan yang lain (*main event*). Untuk melakukan pemisahan antara gempa utama dengan gempa pendahulu dan gempa susulan maka digunakan bantuan software *zmap*. Proses pemisahan ini disebut sebagai *declustering*.

Dari proses *declustering* diperoleh gempa utama yang telah dipisahkan dari gempa pendahulu/awalan dan gempa susulan dari keseluruhan data gempa 5114 data. Dalam gambar 5.14 merupakan data gempa setelah dilakukan *decluster*.



Gambar 5-14 Data gempa utama



Gambar 5-15 Data gempa utama $m > 5$

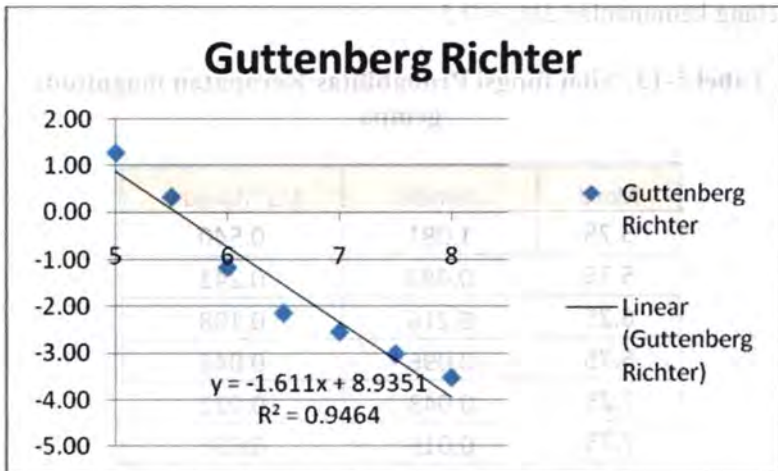
Dari data gempa yang telah dilakukan proses *declustering* diatas dan diambil data gempa dengan magnituda $m > 5$,

kemudian dilakukan perhitungan statistika untuk data-data gempa. berikut merupakan penyajian hasil pengolahan data untuk memperoleh *b-line*.

$$Lr(N) = \alpha - \beta x$$

Tabel 5-12.b-line Guttenberg Richter

Gutenberg-Richter b-line Data			
Magnitude	N	N pertahun	Ln N pertahun
$M \geq 5$	372	3.647	1.29
$M \geq 5.5$	143	1.402	0.34
$M \geq 6$	32	0.314	-1.16
$M \geq 6.5$	12	0.118	-2.14
$M \geq 7$	8	0.078	-2.55
$M \geq 7.5$	5	0.049	-3.02
$M \geq 8$	3	0.029	-3.53



Gambar 5-16 Regresi perolehan b-line Guttenberg-Richter

Dari data diatas diperoleh nilai $\beta = 1.611$

Dari nilai β tersebut kemudian dilakukan perhitungan menggunakan rumus fungsi dari magnitude :

$$f_m(M) = c\beta e^{-\beta(M-m_0)}$$

$$c = \frac{1}{1 - e^{-\beta(M_{\max} - m_0)}}$$

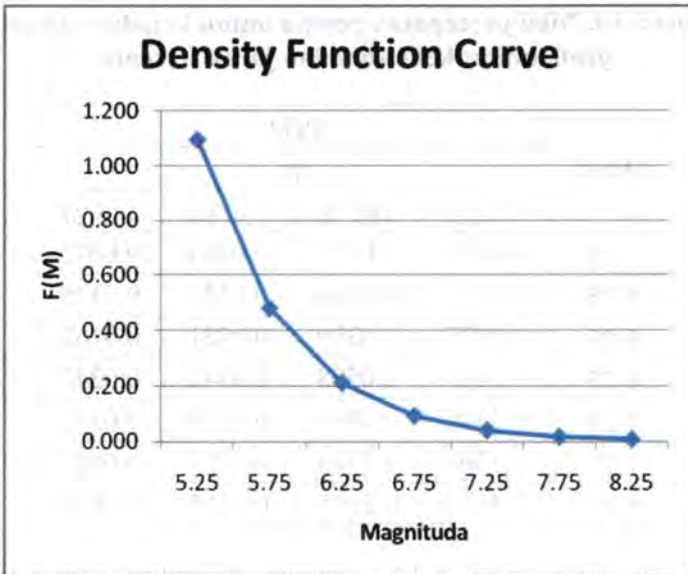
$$c = \frac{1}{1 - e^{-\beta(M_{\max} - m_0)}} = 1.003571$$

$$f_m(M) = c\beta e^{-\beta(M-m_0)} = 1.616752e^{-1.611(M-5)}$$

Dari perhitungan diatas dapat dilihat dalam tabel 5.13 dengan selang kemunculan $\Delta M = 0.5$

Tabel 5-13. Nilai fungsi Probabilitas Kerapatan magnitudo gempa

Mmid	(Mmid)f	$M\Delta * (Mmid)F$
5.25	1.081	0.540
5.75	0.483	0.241
6.25	0.216	0.108
6.75	0.096	0.048
7.25	0.043	0.022
7.75	0.019	0.010
8.25	0.009	0.004



Gambar 5-17 Kurva Nilai fungsi Probabilitas kerapatan magnitudo gempa

Dengan perhitungan tingkat kejadian (*exceedence rate*) :

$$N(5) = e^{-1.611 \cdot 5 + 8.9351} = 2.41114$$

$$N(8) = e^{-1.611 \cdot 8 + 8.9351} = 0.01919$$

$$v = N(5) - N(8) = 2.39194$$

Dari data diperoleh darata jarak gempa dengan membaginya pada empat perolehan jarak dengan yang merupakan rata-rata dari setiap kemungkinan jarak untuk setiap kejadian gempa. data jarak yang diambil adalah : 73,53 ; 189,78 ; 320,84 ; 446,27. Kemudian dari kemungkinan jarak yang terjadi dilakukan analisa percepatan gempa dengan menggunakan atenuasi matuscha.

Tabel 5-14. Nilai percepatan gempa untuk kejadian dengan probabilitas kekuatan dan jarak tertentu

Mmid	PGA			
	R			
	73.53	189.78	320.84	446.27
5.25	0.0435	0.0177	0.0103	0.0072
5.75	0.0652	0.0266	0.0154	0.0108
6.25	0.0977	0.0399	0.0231	0.0162
6.75	0.1465	0.0598	0.0346	0.0242
7.25	0.2196	0.0896	0.0518	0.0363
7.75	0.3293	0.1344	0.0777	0.0544
8.25	0.4937	0.2015	0.1165	0.0816

Dari data dalam tabel 5.14 kemudian dilakukan perhutingan probabilitas kejadian gempa terlampaui lebih besar dari x , dimana x adalah $> 0,05$ g.

$$P(PGA > acc | EQ: R, M) = 1 - \Phi \left(\frac{\log(acc) - \log(PGA)}{\sigma_{\log(PGA)}} \right)$$

Dimana nilai dari standart deviasi untuk kejadian beruntun menurut (Nishenko dan Buland 1987) adalah = 0.205

$$P(PGA > acc = 0.05 | EQ: R = 73.53, M = 5.25) = 1 - \Phi \left(\frac{\log(0.05) - \log(0.0435)}{0.205} \right) = 0.3832826$$

berikut adalah penyajian data peningkatan probabilitas tiap-tiap percepatan (acceleration) dalam tabel yang tercantum di bawah.

Tabel 5-15. Peningkatan peluang kemunculan PGA

P(PGA>acc=0.05g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	0.3832826	0.0140691	0.0003955	1.98E-05
5.75	0.712644	0.0905529	0.0062464	0.0005733
6.25	0.9220683	0.3158407	0.0505113	0.0083366
6.75	0.9886104	0.6475204	0.217131	0.0622888
7.25	0.9991411	0.891888	0.5303211	0.2489354
7.75	0.9999674	0.9818979	0.824867	0.5714836
8.25	0.9999994	0.9984246	0.9634391	0.8503997

P(PGA>acc=0.10g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	0.0387559	0.0001243	7.023E-07	1.215E-08
5.75	0.1821205	0.0025096	3.649E-05	1.178E-06
6.25	0.4803333	0.0257194	0.0009407	5.617E-05
6.75	0.7906502	0.1378997	0.0122131	0.0013311
7.25	0.9522106	0.4083436	0.0819064	0.0159252
7.75	0.9942097	0.7344044	0.2965443	0.0988232
8.25	0.9996411	0.9311201	0.6268912	0.3334924

P(PGA>acc=0.15g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	0.0043415	3.052E-06	6.605E-09	6.083E-11
5.75	0.0386732	0.0001238	6.988E-07	1.208E-08
6.25	0.1818602	0.002502	3.634E-05	1.172E-06
6.75	0.4799407	0.0256605	0.0009375	5.594E-05
7.25	0.7903666	0.1376827	0.0121819	0.0013267
7.75	0.9521125	0.407961	0.0817574	0.015886
8.25	0.9941934	0.7340811	0.2962036	0.0986518

P(PGA>acc=0.20g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	0.0006109	1.432E-07	1.559E-10	9.16E-13
5.75	0.0087566	9.59E-06	2.743E-08	3.033E-10
6.25	0.064538	0.0003175	2.361E-06	4.891E-08
6.75	0.2547041	0.0052601	0.0001001	3.862E-06
7.25	0.5785701	0.0445422	0.0021129	0.0001503
7.75	0.8545692	0.1998239	0.0225991	0.0029192
8.25	0.9722046	0.5062815	0.1261443	0.0288001

P(PGA>acc=0.25g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	0.0001051	1.041E-08	6.642E-12	2.753E-14
5.75	0.0021964	1.032E-06	1.736E-09	1.356E-11
6.25	0.0232686	5.033E-05	2.215E-07	3.248E-09
6.75	0.128714	0.0012188	1.385E-05	3.798E-07
7.25	0.3918521	0.014891	0.0004288	2.181E-05
7.75	0.7202221	0.0942579	0.0066518	0.0006201
8.25	0.925278	0.3238406	0.0528809	0.008859

P(PGA>acc=0.30g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	2.132E-05	1.041E-09	4.283E-13	0
5.75	0.0006088	1.424E-07	1.549E-10	9.095E-13
6.25	0.0087333	9.547E-06	2.728E-08	3.014E-10
6.75	0.0644138	0.0003163	2.35E-06	4.865E-08
7.25	0.254388	0.0052452	9.97E-05	3.844E-06
7.75	0.5781846	0.0444497	0.0021063	0.0001498
8.25	0.854344	0.1995483	0.0225463	0.0029104

P(PGA>acc=0.35g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	4.951E-06	1.327E-10	3.764E-14	0
5.75	0.0001845	2.384E-08	1.792E-11	8.26E-14
6.25	0.0034327	2.094E-06	4.148E-09	3.604E-11
6.75	0.0324962	9.063E-05	4.687E-07	7.645E-09
7.25	0.1617442	0.0019521	2.601E-05	7.922E-07
7.75	0.4485529	0.0212902	0.0007154	4.036E-05
8.25	0.7669007	0.1210396	0.0098936	0.0010202

P(PGA>acc=0.40g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.287E-06	2.046E-11	4.219E-15	0
5.75	6.048E-05	4.66E-09	2.542E-12	9.548E-15
6.25	0.0014124	5.18E-07	7.46E-10	5.262E-12
6.75	0.0166603	2.828E-05	1.067E-07	1.415E-09
7.25	0.1020063	0.0007656	7.481E-06	1.856E-07
7.75	0.3400943	0.010425	0.000259	1.194E-05
8.25	0.6721258	0.0731545	0.0044843	0.0003797

P(PGA>acc=0.45g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.678E-07	3.687E-12	0	0
5.75	2.123E-05	1.035E-09	4.252E-13	0
6.25	0.0006067	1.417E-07	1.539E-10	9.032E-13
6.75	0.00871	9.505E-06	2.713E-08	2.995E-10
7.25	0.0642898	0.0003152	2.339E-06	4.839E-08
7.75	0.2540721	0.0052304	9.931E-05	3.826E-06
8.25	0.5777991	0.0443573	0.0020998	0.0001492

P(PGA>acc=0.50g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.14E-07	7.56E-13	0	0
5.75	7.911E-06	2.56E-10	8.16E-14	0
6.25	0.0002712	4.221E-08	3.563E-11	1.773E-13
6.75	0.0046486	3.407E-06	7.57E-09	7.093E-11
7.25	0.0406726	0.0001356	7.856E-07	1.381E-08
7.75	0.1880952	0.0026894	4.007E-05	1.314E-06
8.25	0.4892533	0.0270881	0.0010144	6.154E-05

P(PGA>acc=0.55g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.79E-08	1.728E-13	0	0
5.75	3.109E-06	6.935E-11	1.754E-14	0
6.25	0.0001257	1.354E-08	9.094E-12	3.897E-14
6.75	0.0025327	1.292E-06	2.288E-09	1.848E-11
7.25	0.0258965	6.069E-05	2.809E-07	4.261E-09
7.75	0.1385509	0.0014163	1.692E-05	4.796E-07
8.25	0.4094902	0.0166959	0.0005047	2.652E-05

P(PGA>acc=0.60g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.34E-08	4.341E-14	0	0
5.75	1.281E-06	2.033E-11	4.219E-15	0
6.25	6.023E-05	4.633E-09	2.524E-12	9.437E-15
6.75	0.0014078	5.154E-07	7.414E-10	5.226E-12
7.25	0.0166195	2.817E-05	1.062E-07	1.407E-09
7.75	0.101831	0.0007631	7.448E-06	1.846E-07
8.25	0.3397333	0.0103978	0.0002581	1.189E-05

P(PGA>acc=0.65g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	5E-09	1.177E-14	0	0
5.75	5.503E-07	6.385E-12	0	0
6.25	2.975E-05	1.677E-09	7.538E-13	2.442E-15
6.75	0.0007977	2.149E-07	2.553E-10	1.588E-12
7.25	0.0107594	1.351E-05	4.212E-08	4.928E-10
7.75	0.0748264	0.00042	3.401E-06	7.453E-08
8.25	0.2800266	0.0065462	0.0001354	5.52E-06

P(PGA>acc=0.70g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.958E-09	3.442E-15	0	0
5.75	2.456E-07	2.131E-12	0	0
6.25	1.511E-05	6.386E-10	2.401E-13	0
6.75	0.0004603	9.329E-08	9.281E-11	5.14E-13
7.25	0.0070295	6.677E-06	1.746E-08	1.82E-10
7.75	0.0550485	0.0002359	1.606E-06	3.139E-08
8.25	0.2297226	0.0041668	7.27E-05	2.648E-06

P(PGA>acc=0.75g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	8.002E-10	0	0	0
5.75	1.134E-07	7.505E-13	0	0
6.25	7.876E-06	2.544E-10	8.094E-14	0
6.75	0.0002702	4.198E-08	3.54E-11	1.76E-13
7.25	0.0046352	3.391E-06	7.527E-09	7.047E-11
7.75	0.0405866	0.0001351	7.817E-07	1.373E-08
8.25	0.1878295	0.0026813	3.991E-05	1.308E-06

P(PGA>acc=0.8g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.401E-10	0	0	0
5.75	5.403E-08	2.774E-13	0	0
6.25	4.202E-06	1.055E-10	2.875E-14	0
6.75	0.0001612	1.952E-08	1.41E-11	6.339E-14
7.25	0.0030847	1.766E-06	3.362E-09	2.846E-11
7.75	0.0300101	7.869E-05	3.912E-07	6.219E-09
8.25	0.1532371	0.0017438	2.236E-05	6.637E-07

P(PGA>acc=0.85g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.497E-10	0	0	0
5.75	2.648E-08	1.071E-13	0	0
6.25	2.291E-06	4.539E-11	1.066E-14	0
6.75	9.763E-05	9.353E-09	5.84E-12	2.387E-14
7.25	0.0020714	9.417E-07	1.551E-09	1.194E-11
7.75	0.0222644	4.662E-05	2.009E-07	2.907E-09
8.25	0.1248492	0.0011459	1.276E-05	3.452E-07

P(PGA>acc=0.90g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	6.807E-11	0	0	0
5.75	1.332E-08	4.308E-14	0	0
6.25	1.275E-06	2.019E-11	4.108E-15	0
6.75	5.999E-05	4.606E-09	2.507E-12	9.326E-15
7.25	0.0014033	5.128E-07	7.369E-10	5.19E-12
7.75	0.0165788	2.805E-05	1.056E-07	1.398E-09
8.25	0.1016559	0.0007605	7.415E-06	1.837E-07

P(PGA>acc=0.95g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.187E-11	0	0	0
5.75	6.866E-09	1.799E-14	0	0
6.25	7.225E-07	9.263E-12	0	0
6.75	3.736E-05	2.326E-09	1.111E-12	3.775E-15
7.25	0.0009588	2.849E-07	3.597E-10	2.328E-12
7.75	0.0123933	1.713E-05	5.672E-08	6.905E-10
8.25	0.0827644	0.0005096	4.379E-06	9.982E-08

P(PGA>acc=1.0g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.533E-11	0	0	0
5.75	3.618E-09	7.772E-15	0	0
6.25	4.167E-07	4.37E-12	0	0
6.75	2.357E-05	1.202E-09	5.077E-13	0
7.25	0.0006605	1.612E-07	1.8E-10	1.075E-12
7.75	0.0093019	1.06E-05	3.109E-08	3.495E-10
8.25	0.0674076	0.0003446	2.627E-06	5.531E-08

P(PGA>acc=1.05g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	7.561E-12	0	0	0
5.75	1.946E-09	3.442E-15	0	0
6.25	2.443E-07	2.116E-12	0	0
6.75	1.505E-05	6.347E-10	2.384E-13	0
7.25	0.0004586	9.28E-08	9.222E-11	5.104E-13
7.75	0.0070102	6.647E-06	1.736E-08	1.809E-10
8.25	0.0549389	0.0002351	1.598E-06	3.121E-08

P(PGA>acc=1.1g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.817E-12	0	0	0
5.75	1.067E-09	0	0	0
6.25	1.454E-07	1.049E-12	0	0
6.75	9.717E-06	3.42E-10	1.148E-13	0
7.25	0.0003209	5.428E-08	4.825E-11	2.482E-13
7.75	0.0053049	4.219E-06	9.866E-09	9.56E-11
8.25	0.0448204	0.0001617	9.857E-07	1.792E-08

P(PGA>acc=1.15g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.968E-12	0	0	0
5.75	5.955E-10	0	0	0
6.25	8.781E-08	5.321E-13	0	0
6.75	6.343E-06	1.877E-10	5.662E-14	0
7.25	0.0002262	3.223E-08	2.576E-11	1.236E-13
7.75	0.004031	2.709E-06	5.699E-09	5.152E-11
8.25	0.0366092	0.0001121	6.157E-07	1.045E-08

P(PGA>acc=1.2g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.036E-12	0	0	0
5.75	3.38E-10	0	0	0
6.25	5.374E-08	2.754E-13	0	0
6.75	4.183E-06	1.048E-10	2.853E-14	0
7.25	0.0001606	1.941E-08	1.401E-11	6.284E-14
7.75	0.0030755	1.758E-06	3.342E-09	2.827E-11
8.25	0.0299431	7.838E-05	3.893E-07	6.183E-09

P(PGA>acc=1.25g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	5.551E-13	0	0	0
5.75	1.949E-10	0	0	0
6.25	3.33E-08	1.454E-13	0	0
6.75	2.785E-06	5.951E-11	1.465E-14	0
7.25	0.0001148	1.185E-08	7.75E-12	3.264E-14
7.75	0.0023559	1.153E-06	1.989E-09	1.578E-11
8.25	0.0245276	5.518E-05	2.489E-07	3.711E-09

P(PGA>acc=1.3g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	3.029E-13	0	0	0
5.75	1.14E-10	0	0	0
6.25	2.089E-08	7.816E-14	0	0
6.75	1.871E-06	3.43E-11	7.661E-15	0
7.25	8.255E-05	7.322E-09	4.359E-12	1.721E-14
7.75	0.0018118	7.635E-07	1.199E-09	8.953E-12
8.25	0.0201237	3.913E-05	1.609E-07	2.257E-09

P(PGA>acc=1.35g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	1.68E-13	0	0	0
5.75	6.763E-11	0	0	0
6.25	1.325E-08	4.274E-14	0	0
6.75	1.268E-06	2.006E-11	4.108E-15	0
7.25	5.975E-05	4.579E-09	2.489E-12	9.326E-15
7.75	0.0013988	5.103E-07	7.324E-10	5.155E-12
8.25	0.0165382	2.793E-05	1.05E-07	1.39E-09

P(PGA>acc=1.4g EQ:R,M)				
Mmid	R			
	73.53	189.78	320.84	446.27
5.25	9.459E-14	0	0	0
5.75	4.065E-11	0	0	0
6.25	8.493E-09	2.376E-14	0	0
6.75	8.67E-07	1.189E-11	2.22E-15	0
7.25	4.351E-05	2.896E-09	1.442E-12	5.107E-15
7.75	0.001084	3.441E-07	4.528E-10	3.01E-12
8.25	0.0136152	2.007E-05	6.925E-08	8.659E-10

Dari keseluruhan nilai resiko diatas dapat digabungkan menjadi satu untuk kemudian dapat dilihat peningkatan nilai risikonya. Dalam tabel 5.16 berikut ini akan disajikan data peningkatan resiko dari setiap nilai percepatan $x > 0,05$ g.

Tabel 5-16. pertambahan nilai resiko kemungkinan pencapaian suatu percepatan (PGA)

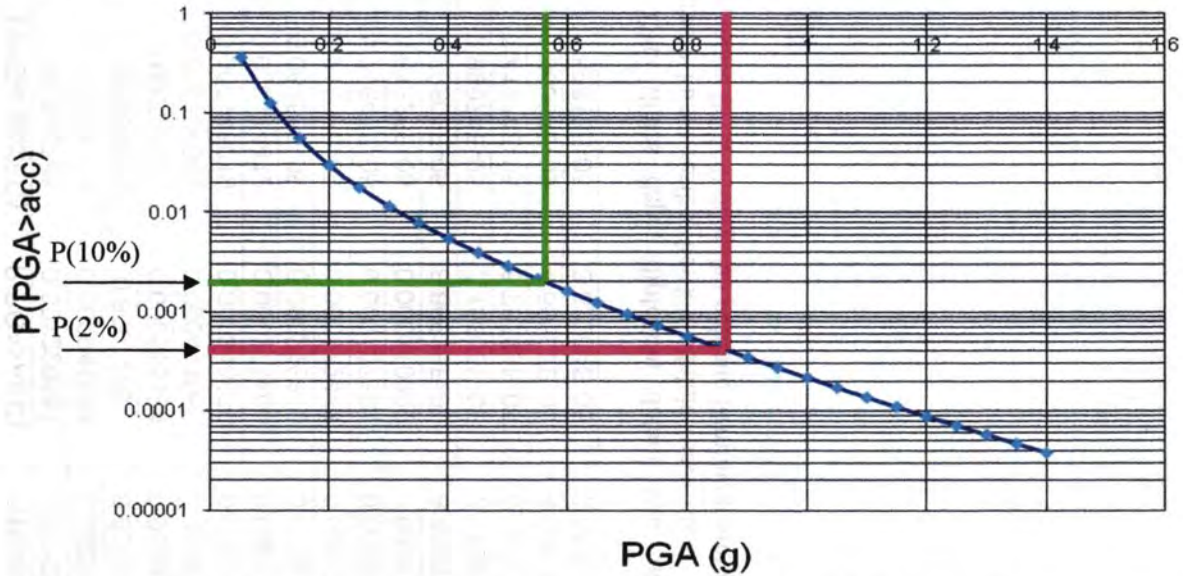
PGA	P(PGA>acc EQ)	aprox.	
		P(PGA>ACC)	P(PGA>ACC)
0.05	0.184207679	0.440614059	0.356358934
0.1	0.055632914	0.133070696	0.124596797
0.15	0.023748064	0.056803989	0.055220762
0.2	0.012505927	0.029913451	0.029470472
0.25	0.007444082	0.017805811	0.017648225
0.3	0.004785109	0.011445703	0.01138045
0.35	0.003237945	0.007744975	0.00771506
0.4	0.002271043	0.005432202	0.005417474
0.45	0.001634769	0.003910272	0.003902637
0.5	0.001199794	0.002869838	0.002865724
0.55	0.000893788	0.002137889	0.002135606
0.6	0.000673742	0.001611552	0.001610254

PGA	P(PGA>acc EQ)	aprox. P(PGA>ACC)	P(PGA>ACC)
0.65	0.000512785	0.001226551	0.001225799
0.7	0.000393439	0.000941084	0.000940642
0.75	0.000303966	0.00072707	0.000726805
0.8	0.00023627	0.000565144	0.000564984
0.85	0.000184649	0.000441669	0.000441572
0.9	0.000145019	0.000346876	0.000346816
0.95	0.000114412	0.000273666	0.000273628
1	9.06455E-05	0.000216819	0.000216795
1.05	7.21007E-05	0.000172461	0.000172446
1.1	5.75647E-05	0.000137691	0.000137682
1.15	4.61226E-05	0.000110322	0.000110316
1.2	3.70802E-05	8.86936E-05	8.86897E-05
1.25	2.99074E-05	7.15368E-05	7.15343E-05
1.3	2.41974E-05	5.78789E-05	5.78772E-05
1.35	1.96364E-05	4.69692E-05	4.69681E-05
1.4	1.59813E-05	3.82264E-05	3.82257E-05

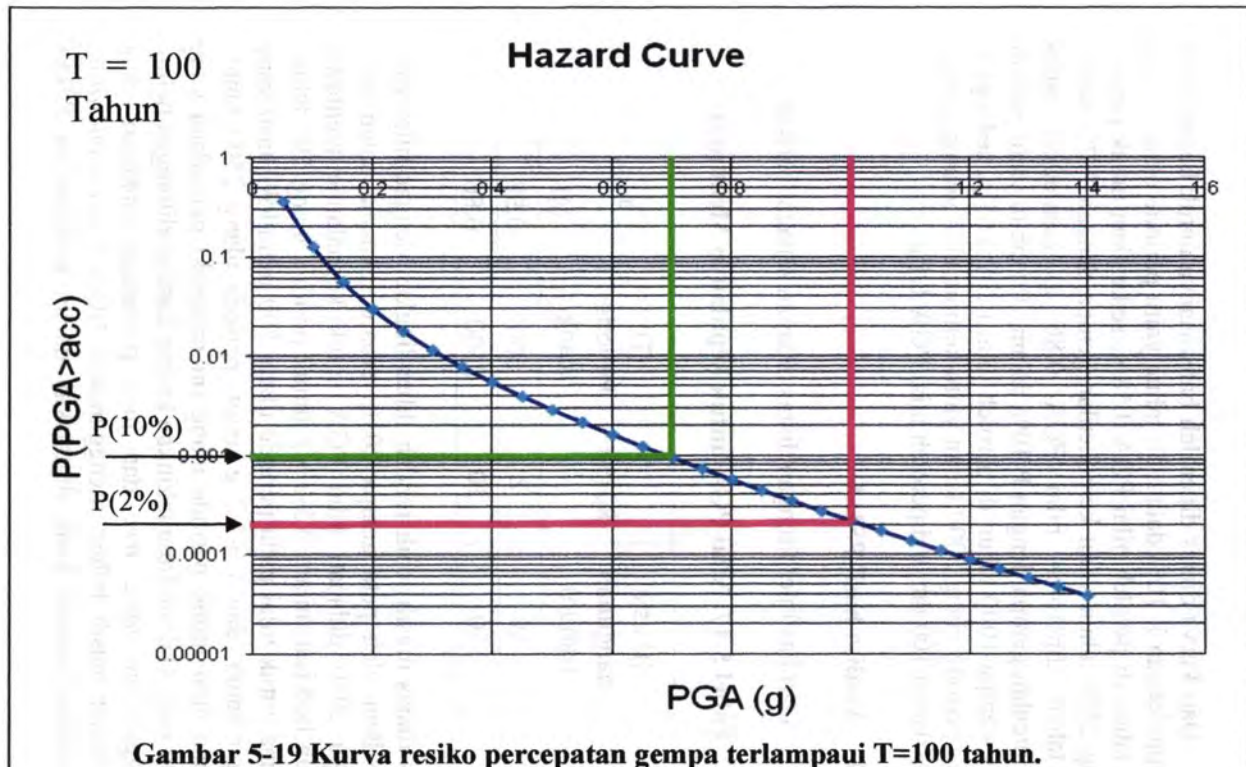
Data diatas dapat diplotkan dalam satu tabel untuk memperoleh kurva resiko, berikut adalah kurva resiko hasil dari plotting antara $PGA > 0.05$ g dan peluang kemunculannya.

T = 50
Tahun

Hazard Curve



Gambar 5-18 Kurva resiko percepatan gempa terlampaui T=50 tahun .



Dari kurva diatas diperoleh bahwasanya untuk kemunculan gempa dengan P 10% dalam 50 tahun yaitu periode ulang gempa 500 tahun di peroleh nilai PGA 0.58 g, sedangkan untuk periode ulang 2500 tahun yaitu kemunculan gempa dengan P 2% dalam 50 tahun diperoleh nilai PGA 0.86 g, Kemudian untuk kemunculan gempa dengan P 10% dalam 100 tahun yaitu periode ulang gempa 1000 tahun di peroleh nilai PGA 0.65 g, sedangkan untuk periode ulang 5000 tahun yaitu kemunculan gempa dengan P 2% dalam 100 tahun diperoleh nilai PGA 1.1 g

5.4.1 Analisa hasil PSHA

Dari hasil perhitungan diatas didapati sebagai berikut :

Tabel 5-17. Nilai PGA untuk kepulauan Mentawai

(t) usia bangunan (tahun)	R_N (%)	(T) Periode ulang	a (g)
50	2	500	0.58
50	10	2500	0.86

Nilai diatas masih lebih rendah dibandingkan dengan nilai yang dihasilkan oleh peta gempa 2010 terbaru. Dimana dalam peta gempa 2010 didapati nilai PGA untuk kepulauan mentawai adalah berkisar antara 0.5-0.6 g untuk periode ulang 500 tahun, dimana untuk nilai pada periode ulang 500 mamiloki hasil yang hampir sama, dan 1.0-1.2 g untuk periode ulang 2500 tahun, dimana nilai untuk periode ulang ini memiliki perbedaan yang cukup jauh. Hal ini dimungkinkan karena hasil perhitungan belum menggunakan *logic tree* dan juga persamaan atenuasi yang digunakan masih belum menggunakan NGA (*Next Generation Atenuation*) seperti yang digunakan dalam perhitungan PSHA

dalam perhitungan PSHA untuk peta gempa 2010 dimana dalam NGA terdapat sejumlah koefisien yang dimasukkan.

The page features a repeating pattern of the ITS logo watermark in a light blue color. The logo consists of a stylized tree inside a circle, with the letters 'ITS' and the text 'Institut Teknologi Sepuluh Nopember' below it.

BAB VI
KESIMPULAN DAN SARAN

BAB 6

KESIMPULAN DAN SARAN

6.1 Kesimpulan

Dari hasil analisa pada data gempa di Kepulauan Mentawai yang telah dilakukan dalam pengerjaan Tugas Akhir ini, maka dapat diperoleh sejumlah kesimpulan sebagai berikut :

1. Data gempa yang digunakan adalah data gempa yang dikombinasi dari sejumlah catalog gempa. semakin lengkap data gempa, maka akan semakin akurat hasil PGA yang diperoleh nantinya.
2. Data gempa yang sudah diperoleh haruslah dikonversikan dalam satu satuan (Mw) momen magnitude, dan juga dilakukan pengecekan terhadap jarak dari point source.
3. Data gempa harus dipisahkan terhadap gempa awalan dan gempa susulan.
4. Hasil perhitungan percepatan gempa untuk setiap atenuasi memiliki perbedaan, tergantung pada *site* (tempat) penelitian.
5. Hasil perhitungan untuk percepatan gempa maksimum dengan menggunakan metode Gumble I dipilih hasil dari persamaan Matuscha dengan hasil 0,326 g untuk periode ulang 475 tahun, dan 0,404 g untuk periode ulang 2475 tahun.
6. Hasil perhitungan untuk percepatan gempa maksimum menggunakan PSHA dengan data percepatan menggunakan atenuasi Matuscha diperoleh hasil 0,58 g untuk periode ulang 475 tahun, dan 0,86 g untuk periode ulang 2475 tahun.
7. Dari hasil perhitungan probabilitas dari metode Gumble I dan PSHA didapati bahwasanya percepatan gempa

maksimum yang dihasilkan dalam perhitungan Gumble lebih kecil $\pm 50\%$ dari perhitungan PSHA.

8. Percepatan gempa maksimum yang dihasilkan oleh metode PSHA lebih akurat karena hasil yang diperoleh dari perhitungan PSHA sudah memperhatikan jumlah kejadian gempa, kekuatan magnituda serta jarak kejadian gempa.
9. Hasil dari PSHA masih lebih kecil dari nilai peta gempa 2010 yang terbaru.

6.2 Saran

Data dan analisa dalam Tugas Akhir ini barulah sebatas perhitungan dan analisa awalan saja. Oleh karena itu untuk memperoleh hasil yang lebih akurat dalam perolehan percepatan gempa maksimum maka disarankan :

1. Perlu dilakukan update data setiap tahunnya, sehingga apabila terdapat kejadian gempa yang cukup besar dikemudian hari dapat terhitung dalam analisa.
2. Penulis berharap nantinya pada studi selanjutnya dapat menggunakan persamaan atenuasi NGA (*next generation attenuation*) yang lebih akurat karena telah memasukkan nilai faktor jenis tanah.

DAFTAR PUSTAKA

- Departemen Pekerjaan Umum. 2010. **Peta Hazard Gempa Indonesia 2010 Sebagai Acuan Dasar Perencanaan dan Perancangan Infrastruktur Tahan Gempa**. Jakarta : DPU.
- http://earthquake.usgs.gov/earthquakes/eqarchives/epic/epic_circ.php
- <http://www.isc.ac.uk/search/bulletin/circular.html>
- http://ir.canterbury.ac.nz/bitstream/10092/1078/2/thesis_fulltext.pdf.txt
- Irsyam, M. **Pengantar Rekayasa Gempa**. Bandung : ITB
- Irsyam, M.; Sengara, I.W.; Fahmi, A.; Sri, W.; Wahyu, T., Danny, H.; Engkon, K.; Irwan, M.; Suhardjono.; M. Asrurifak.; M. Ridwan. 2010. **Ringkasan Hasil Studi Tim Revisi Peta Gempa Indonesia**. Workshop Paparan dan Tinjauan Teknis Peta Gempa Indonesia Terbaru 2010, Bandung 19 Juli 2010.
- Nezamabadi, F.M.; Vageyan, F.Y.; dan Mahmood, H. 2004 *Seismic Hazard Analysis and Developing The Uniform Hazard Spectra For Vulnerability Analysis Of An Existing Building*. 13th World Conference On Earthquake Engineering. Vancouver, B.C., Canada, 8–9 August 2004. Paper No. 2378
- Tjokrodinuljo, K. 1995. **Buku Ajar Teknik Gempa**. Yogyakarta : Jurusan Teknik Sipil FTSP – Universitas Gajah Mada.
- USGS, NEIC. 2008, **Seismic Hazard of Western Indonesia**, Map prepare by United State of Geology Survey, URL http://earthquake.usgs.gov/research/hazmap/product_data/
- Wahjudi, D.I. 2008, *The Application of Seismic Hazard Analysis to Define Earthquake Design Loading on Building Structures*. International Seminar, Civil Engineering XI 2008 Postgraduate Building UPN “Vetern” Jatim, Surabaya, 8–9 juli 2008.

The background of the page is a repeating pattern of the ITS (Institut Teknologi Sepuluh Nopember) logo. Each logo consists of a stylized emblem inside a shield-like shape, with the letters 'ITS' and the full name of the institution below it. The logos are arranged in a grid across the entire page.

LAMPIRAN A
LAMPIRAN DATA GEMPA

no	year	mon	day	time	lat	long	depth	mag	type
1	1973	1	13	9:36:00	-2.7	101.27	105	5.2	mbGS
2	1973	2	25	12:00:00	-1.7	99.68	33	5.9	MsGS
3	1973	2	25	7:12:00	-1.68	99.67	33	4.9	mbGS
4	1973	2	26	0:00:00	-1.76	99.66	33	5.3	MsGS
5	1973	2	27	21:36:00	-1.75	99.66	33	5	mbGS
6	1973	3	29	14:24:00	-2.15	99.71	50	5.2	mbGS
7	1973	4	28	4:48:00	-4.04	102.6	82	5.4	mbGS
8	1973	5	4	2:24:00	-1.47	99.85	51	5.9	mbGS
9	1973	5	12	16:48:00	-3.24	101.24	51	5.5	mbGS
10	1973	5	17	21:36:00	-2.35	100.81	80	5.1	mbGS
11	1973	6	26	14:24:00	-2.36	101.34	80	4.7	mbGS
12	1973	8	15	7:12:00	0.93	99.46	33	4.9	mbGS
13	1973	9	6	12:00:00	0.34	98.06	33	4.7	mbGS
14	1973	9	15	14:24:00	-4.11	102.39	89	5.1	mbGS
15	1973	9	28	12:00:00	1.91	99.15	132	5	mbGS
16	1973	11	20	14:24:00	-1.35	100.63	33	5	mbGS
17	1973	12	1	14:24:00	1.62	99.32	33	4.8	mbGS
18	1973	12	8	12:00:00	-0.25	98.4	33	5.7	mbGS
19	1974	1	21	7:12:00	0.55	96.59	33	5.2	mbGS
20	1974	1	23	16:48:00	2.37	99.44	185	4.9	mbGS
21	1974	2	27	16:48:00	1.27	97.67	33	5.9	mbGS
22	1974	3	17	2:24:00	1.29	98.56	61	5.7	mbGS
23	1974	3	21	9:36:00	-2.98	101.67	68	5.2	mbGS
24	1974	3	30	12:00:00	-2.93	101.11	33	5.1	mbGS
25	1974	4	8	21:36:00	-2.26	99.53	33	4.7	mbGS
26	1974	4	8	14:24:00	-2.13	99.71	33	4.3	mbGS
27	1974	4	8	2:24:00	-2.26	99.69	33	5	mbGS
28	1974	4	9	19:12:00	-4.47	101.93	33	5	mbGS
29	1974	5	29	7:12:00	-4.08	102.74	129	4.9	mbGS
30	1974	7	10	12:00:00	0.67	96.7	33	4.9	mbGS
31	1974	8	3	21:36:00	0.41	98.66	33	5	mbGS
32	1974	8	31	9:36:00	0.58	97.89	33	4.9	mbGS
33	1974	9	2	14:24:00	-2.77	101.21	52	5.7	mbGS
34	1974	9	2	21:36:00	-2.77	101.24	56	5.4	mbGS
35	1974	10	2	2:24:00	0.74	98.82	88	4.6	mbGS
36	1974	10	10	14:24:00	-4.14	102.83	21	6	mbGS
37	1974	10	22	0:00:00	-0.74	98.11	89	4.9	mbGS
38	1974	10	22	7:12:00	-0.78	98.09	33	5.2	mbGS
39	1974	10	22	0:00:00	-0.74	98.09	84	5.2	mbGS
40	1974	11	7	7:12:00	-0.94	97.22	11	4.9	mbGS
41	1974	12	4	7:12:00	0.39	97.84	20	6.9	MsGS
42	1974	12	14	0:00:00	1.92	98.02	64	5	mbGS
43	1974	12	24	2:24:00	-2.31	99.04	33	6.8	MsGS
44	1975	1	8	2:24:00	-2.99	101.78	95	6	mbGS
45	1975	2	28	21:36:00	-4	102.62	33	5	mbGS
46	1975	4	7	19:12:00	-1.65	99.72	18	5.4	mbGS
47	1975	4	13	16:48:00	-2.39	100.14	38	5.1	mbGS
48	1975	5	9	0:00:00	-4.64	102.08	34	5.5	mbGS
49	1975	5	30	2:24:00	-1.47	99.74	33	5.1	mbGS
50	1975	6	21	0:00:00	-0.98	98.01	33	5.1	mbGS
51	1975	7	17	21:36:00	-4.38	102.67	100	5.1	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
52	1975	8	18	7:12:00	-4.81	102.14	70	5	mbGS
53	1975	9	22	2:24:00	-2.22	101.9	37	5	mbGS
54	1975	9	27	19:12:00	-4.37	102.25	98	4.3	mbGS
55	1975	9	30	12:00:00	-4.93	102.2	33	6	MsGS
56	1975	10	1	21:36:00	-4.88	102.2	33	7	MsGS
57	1975	10	1	9:36:00	-4.83	102.1	33	6	mbGS
58	1975	10	1	9:36:00	-4.83	102.07	33	5.8	mbGS
59	1975	10	7	9:36:00	-4.84	101.93	33	5.6	mbGS
60	1975	10	11	9:36:00	-4.68	102.42	33	5	mbGS
61	1975	10	19	12:00:00	-4.76	102.11	40	5.1	mbGS
62	1975	10	23	7:12:00	-3.32	100.75	37	5.3	mbGS
63	1975	11	2	4:48:00	-4.76	102.11	67	4.5	mbGS
64	1975	11	7	16:48:00	-4.7	102.53	132	4.7	mbGS
65	1975	11	20	16:48:00	-4.41	102.41	58	5.8	mbGS
66	1976	1	28	9:36:00	0.69	99.97	53	4.6	mbGS
67	1976	3	2	7:12:00	-3.28	102.65	33	4.8	mbGS
68	1976	3	10	14:24:00	1.56	99.23	45	4.7	mbGS
69	1976	3	10	7:12:00	-3.62	101.93	84	5.3	mbGS
70	1976	3	11	0:00:00	-4.36	102.79	67	5	mbGS
71	1976	3	26	19:12:00	1.68	97.28	55	5	mbGS
72	1976	5	8	12:00:00	-0.16	99.36	34	4.9	mbGS
73	1976	5	9	0:00:00	-2.67	101.74	102	5	mbGS
74	1976	5	26	0:00:00	1.79	99.42	176	4.6	mbGS
75	1976	6	30	2:24:00	-2.11	101.95	138	5.5	mbGS
76	1976	7	20	14:24:00	-4.73	101.82	33	5.8	MsGS
77	1976	8	30	21:36:00	-4.86	102.26	33	4.2	mbGS
78	1976	9	13	2:24:00	-4.91	101.98	53	4.7	mbGS
79	1976	9	28	0:00:00	-0.69	100.67	137	3	mbGS
80	1976	12	16	0:00:00	-1.76	99.45	33	5	mbGS
81	1976	12	17	2:24:00	-1.36	100.04	33	5.2	mbGS
82	1977	1	12	2:24:00	1.58	99.86	178	5.6	mbGS
83	1977	1	23	16:48:00	2.12	97.86	66	3.8	mbGS
84	1977	3	1	19:12:00	-1.15	101.08	116	4.6	mbGS
85	1977	3	8	0:00:00	0.45	100.02	22	6	MsGS
86	1977	3	21	19:12:00	-4.44	102.75	118	4.5	mbGS
87	1977	4	4	12:00:00	-2.77	102.28	133	5.1	mbGS
88	1977	5	1	14:24:00	2.13	97.2	68	4.8	mbGS
89	1977	5	1	16:48:00	2.1	97.18	52	4.9	mbGS
90	1977	5	15	0:00:00	-1.04	98.07	33	4.4	mbGS
91	1977	5	20	21:36:00	-4.44	101.97	37	5.7	mbGS
92	1977	5	23	2:24:00	0.67	98.68	40	5.5	mbGS
93	1977	6	10	0:00:00	-3.1	101.49	33	5.4	mbGS
94	1977	6	24	7:12:00	-3.4	100.74	57	5	mbGS
95	1977	6	24	7:12:00	-2.27	100.83	53	5.5	mbGS
96	1977	6	25	7:12:00	-4.6	102.23	47	5.5	mbGS
97	1977	7	1	16:48:00	1.97	98.06	70	5	mbGS
98	1977	7	29	12:00:00	-2.36	99.98	33	5.3	mbGS
99	1977	8	15	0:00:00	-2.99	101.71	88	5.2	mbGS
100	1977	10	3	7:12:00	0.48	98.73	13	5.5	mbGS
101	1977	10	12	9:36:00	-4.28	102.73	33	5.4	mbGS
102	1977	11	14	14:24:00	0.52	98.72	33	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
103	1977	11	18	0:00:00	-4.35	102.02	33	5.9	MbGS
104	1977	12	15	16:48:00	0.52	98.64	50	4.9	mbGS
105	1977	12	20	14:24:00	-4.43	102.47	105	5.1	mbGS
106	1978	1	8	19:12:00	-4.22	102.82	94	5.3	mbGS
107	1978	2	8	14:24:00	-4.23	102.89	83	5.4	mbGS
108	1978	2	19	19:12:00	-2.77	96.48	33	5	mbGS
109	1978	3	7	19:12:00	-1.68	99.71	33	5.3	mbGS
110	1978	3	11	16:48:00	-2.43	99.99	33	5	mbGS
111	1978	3	22	9:36:00	-3.92	102.76	112	4.2	mbGS
112	1978	6	17	0:00:00	-1.86	99.68	27	4.8	mbGS
113	1978	6	18	7:12:00	-0.89	100.62	114	4.6	mbGS
114	1978	6	24	4:48:00	-5.08	102.28	33	5.6	mbGS
115	1978	7	3	19:12:00	-0.85	98.09	33	5.3	mbGS
116	1978	8	3	4:48:00	-0.42	97.03	33	5.2	mbGS
117	1978	8	5	2:24:00	-4.02	102.41	48	5.9	mbGS
118	1978	9	3	0:00:00	-2.27	99.85	33	4.9	mbGS
119	1978	10	12	14:24:00	0.02	97.66	33	4.5	mbGS
120	1978	10	12	16:48:00	0.17	97.91	33	4.9	mbGS
121	1978	11	7	9:36:00	1.97	99.01	137	4.3	mbGS
122	1978	12	17	0:00:00	1.2	98.89	108	4.6	mbGS
123	1978	12	23	2:24:00	2.02	97.2	57	5	mbGS
124	1978	12	28	19:12:00	-1.04	98.29	33	4.3	mbGS
125	1979	1	3	12:00:00	1.47	99.03	131	4.3	mbGS
126	1979	1	11	16:48:00	-4.08	101.25	32	6.2	MbGS
127	1979	1	11	12:00:00	-4.05	101.25	33	5.2	mbGS
128	1979	1	14	19:12:00	0.45	100.06	164	4.7	mbGS
129	1979	1	29	2:24:00	-4.09	101.1	33	4.2	mbGS
130	1979	2	5	4:48:00	0.37	96.82	34	5.4	mbGS
131	1979	2	19	9:36:00	-3.64	102.33	107	4.6	mbGS
132	1979	3	8	9:36:00	-4.23	101	26	5	mbGS
133	1979	3	13	9:36:00	-1.08	101.86	36	4.6	mbGS
134	1979	3	25	21:36:00	-4.12	102.57	84	5.1	mbGS
135	1979	3	28	7:12:00	2.42	98.35	115	3.8	mbGS
136	1979	3	31	12:00:00	0.21	97.58	33	4	mbGS
137	1979	3	31	12:00:00	0.69	98.91	72	5.3	mbGS
138	1979	4	6	12:00:00	-4.06	102.41	59	5.5	mbGS
139	1979	4	9	19:12:00	1.18	96.98	33	4.2	mbGS
140	1979	4	19	14:24:00	-1.24	98.13	36	5.4	mbGS
141	1979	4	19	2:24:00	-1.21	98.21	33	5.6	mbGS
142	1979	4	26	0:00:00	1.93	99.2	133	4.4	mbGS
143	1979	4	26	4:48:00	1.92	99.52	121	4.5	mbGS
144	1979	4	28	21:36:00	0.54	98.78	72	5.8	mbGS
145	1979	5	8	21:36:00	-0.39	98.25	35	5.4	mbGS
146	1979	5	19	0:00:00	-1.08	100.96	131	5.4	mbGS
147	1979	5	28	16:48:00	-1.93	100.4	50	5.1	mbGS
148	1979	5	31	2:24:00	-4.19	102.44	33	5.3	mbGS
149	1979	6	8	12:00:00	1.84	99.62	171	4.3	mbGS
150	1979	6	13	12:00:00	-0.93	97.29	36	5.3	mbGS
151	1979	6	24	0:00:00	-4.11	101.22	34	5.2	mbGS
152	1979	6	27	16:48:00	0.29	98.58	61	3.9	mbGS
153	1979	7	17	2:24:00	-4.43	98.76	31	5.7	mbGS



no.	year	mon	day	local time	lat	long	depth	mag	type
154	1979	7	17	14:24:00	-4.46	98.73	33	5	mbGS
155	1979	8	16	7:12:00	0.35	98.9	91	4	mbGS
156	1979	8	21	7:12:00	-1.97	99.43	33	4.3	mbGS
157	1979	9	9	14:24:00	-4.88	101.81	33	4.4	mbGS
158	1979	9	14	14:24:00	-1.87	98.59	33	4.4	mbGS
159	1979	10	4	7:12:00	-0.5	98.69	56	4.7	mbGS
160	1979	10	12	4:48:00	1.59	98.17	78	4	mbGS
161	1979	10	14	19:12:00	-0.89	100.96	168	4	mbGS
162	1979	10	22	9:36:00	-2	99.71	33	4.9	mbGS
163	1979	10	27	7:12:00	-0.01	97.74	33	3.8	mbGS
164	1979	11	8	16:48:00	2.19	98.99	153	3.4	mbGS
165	1979	11	11	19:12:00	0.53	98.35	66	4.6	mbGS
166	1979	11	13	12:00:00	-4.44	102.01	47	6.3	MaGS
167	1979	11	22	14:24:00	-4.7	101.55	52	4.7	mbGS
168	1979	12	15	14:24:00	-3.3	102.71	33	6.6	MaGS
169	1979	12	15	19:12:00	-3.35	102.54	33	5	mbGS
170	1979	12	18	12:00:00	-3.22	102.25	33	5	mbGS
171	1979	12	26	9:36:00	-4.37	102.03	33	4.8	mbGS
172	1980	1	2	7:12:00	2	98.15	93	4.8	mbGS
173	1980	1	8	21:36:00	-4.02	101.23	33	5	mbGS
174	1980	1	8	4:48:00	1.89	99.4	167	4.5	mbGS
175	1980	1	30	4:48:00	-3.15	102.56	65	5	mbGS
176	1980	2	5	2:24:00	-4.89	102.19	84	4.3	mbGS
177	1980	2	27	2:24:00	0.61	100.1	158	5.1	mbGS
178	1980	2	27	2:24:00	0.67	98.76	80	4.7	mbGS
179	1980	3	3	12:00:00	-5.09	101.34	33	4.2	mbGS
180	1980	3	18	16:48:00	-4.29	102.05	47	5.4	mbGS
181	1980	3	18	16:48:00	0.65	100.18	193	4.6	mbGS
182	1980	3	22	7:12:00	1.93	97.62	96	4.3	mbGS
183	1980	4	1	12:00:00	-5.57	101.76	33	4.5	mbGS
184	1980	4	8	19:12:00	-1.75	100.51	65	5.1	mbGS
185	1980	4	10	7:12:00	-4.93	101.84	33	5.1	MaGS
186	1980	5	1	14:24:00	1.17	99.75	48	4.4	mbGS
187	1980	5	5	4:48:00	-2.39	101.9	151	3.8	mbGS
188	1980	6	15	19:12:00	-2.21	99.93	33	4.9	mbGS
189	1980	7	18	7:12:00	-1.78	97.21	33	4.4	mbGS
190	1980	7	18	14:24:00	1.71	99.62	186	5	mbGS
191	1980	7	23	9:36:00	-2.79	101.2	54	5.5	mbGS
192	1980	8	19	2:24:00	1.74	97.82	33	4.6	mbGS
193	1980	8	25	0:00:00	-2.91	101.27	72	5.1	mbGS
194	1980	10	4	16:48:00	-3.19	100.97	33	4.6	mbGS
195	1980	11	30	9:36:00	-5.37	101.11	33	4.9	mbGS
196	1980	11	30	14:24:00	-5.39	101.15	33	5.1	mbGS
197	1980	12	9	21:36:00	-4.38	102.09	48	4.9	mbGS
198	1980	12	27	14:24:00	-0.23	99.09	56	4.9	mbGS
199	1980	12	30	21:36:00	0.15	97.31	33	5.4	MaGS
200	1981	1	11	0:00:00	2.06	98.07	69	5.7	mbGS
201	1981	1	16	19:12:00	0.84	98.54	79	4.4	mbGS
202	1981	2	12	2:24:00	0.69	99.02	100	4.9	mbGS
203	1981	4	28	7:12:00	1.25	99.1	63	4.6	mbGS
204	1981	5	3	4:48:00	-4.76	102.29	33	5.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
205	1981	5	5	14:24:00	-3.49	99.62	31	5.2	mbGS
206	1981	5	6	16:48:00	-1.69	99.48	33	4.4	mbGS
207	1981	5	8	4:48:00	0.86	99.59	157	4.2	mbGS
208	1981	6	1	11:16:48	1.99	97.86	87	3.9	mbGS
209	1981	6	21	20:52:48	2.18	99.82	91	4.6	mbGS
210	1981	7	12	10:48:00	-5.19	102.16	33	4.4	mbGS
211	1981	8	8	14:52:48	-2.22	100.6	95	4.7	mbGS
212	1981	8	29	22:48:00	-2.2	100.86	57	4.9	mbGS
213	1981	9	29	8:52:48	1.7	99.11	33	4.5	mbGS
214	1981	10	3	12:00:00	0.11	97.81	33	4.8	mbGS
215	1981	10	3	23:45:36	1.96	99.3	168	4.3	mbGS
216	1981	10	5	13:55:12	1.33	99.03	115	4.4	mbGS
217	1981	10	12	8:38:24	-1.72	100.16	68	4.4	mbGS
218	1981	10	21	16:04:48	-4.51	102.7	57	5.2	mbGS
219	1981	10	23	17:31:12	0.67	99.9	143	4.8	mbGS
220	1981	11	12	9:36:00	-1.01	100.29	54	5.2	mbGS
221	1981	11	17	3:21:36	-0.78	100.17	78	4.4	mbGS
222	1981	11	27	12:00:00	-4.17	102.41	77	4.5	mbGS
223	1981	12	8	9:50:24	-1.53	100.59	76	5.4	mbGS
224	1982	1	6	5:16:48	-3.52	101.59	56	4.9	mbGS
225	1982	1	19	0:00:00	-5.05	102.16	33	5	mbGS
226	1982	2	11	6:14:24	1.86	99.28	17	4	mbGS
227	1982	2	12	4:33:36	-1.13	97.71	33	3.5	mbGS
228	1982	2	21	1:55:12	1.73	99.53	182	4.2	mbGS
229	1982	3	3	1:12:00	-0.46	98.7	52	4.6	mbGS
230	1982	3	4	12:14:24	-5.19	101.9	64	3.8	mbGS
231	1982	3	10	20:52:48	-1.17	97.67	33	4.5	mbGS
232	1982	3	11	10:33:36	-2.11	100.27	33	4.1	mbGS
233	1982	3	16	1:40:48	0.87	98.95	97	4.5	mbGS
234	1982	3	18	12:43:12	-4.6	101.92	30	5.2	mbGS
235	1982	3	31	1:55:12	-0.93	100.29	60	4.8	mbGS
236	1982	5	3	15:21:36	-2.17	99.82	33	4.2	mbGS
237	1982	5	26	15:21:36	-1.54	98.6	33	4	mbGS
238	1982	6	16	17:45:36	-1.34	100.14	31	4.2	mbGS
239	1982	7	4	5:16:48	2.36	99.04	152	3.8	mbGS
240	1982	7	14	16:33:36	-1.95	99.83	33	4.1	mbGS
241	1982	8	13	23:02:24	1.53	99.61	186	4.1	mbGS
242	1982	8	18	16:19:12	-3.76	102.19	77	5.2	mbGS
243	1982	8	24	4:48:00	0.65	98.72	92	4.5	mbGS
244	1982	8	24	5:45:36	1.34	97.64	77	3.9	mbGS
245	1982	8	30	18:00:00	-2.12	100.74	69	4.2	mbGS
246	1982	9	15	18:43:12	1.46	96.96	33	3.9	mbGS
247	1982	9	25	7:40:48	-4.36	102.17	60	5	mbGS
248	1982	10	11	1:12:00	2.04	99.32	170	4	mbGS
249	1982	10	13	6:14:24	-1.98	99.43	33	3.9	mbGS
250	1982	10	31	5:16:48	1.15	99.08	131	4.5	mbGS
251	1982	11	23	18:00:00	-3.7	101.8	83	5	mbGS
252	1982	12	11	6:00:00	2.11	99.16	33	3.7	mbGS
253	1983	1	3	12:28:48	-3.91	102.89	121	5	mbGS
254	1983	1	4	22:19:12	-3.15	101.23	54	5.5	mbGS
255	1983	1	4	14:24:00	-3.23	101.14	51	5.3	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
256	1983	1	11	12:14:24	-2.47	101.79	33	4.8	mbGS
257	1983	1	12	9:21:36	1.39	98.82	139	4.1	mbGS
258	1983	1	21	16:19:12	-0.34	99.22	74	4.5	mbGS
259	1983	1	31	3:36:00	-5.73	101.47	33	4.5	mbGS
260	1983	2	8	2:24:00	-1.67	96.49	33	5.3	mbGS
261	1983	2	13	2:52:48	-3.95	101.23	33	4.7	mbGS
262	1983	2	14	7:40:48	-0.16	100.04	170	3.5	mbGS
263	1983	2	20	5:16:48	-3.9	102.96	79	4.7	mbGS
264	1983	4	7	5:16:48	-6.09	100.75	33	5.1	mbGS
265	1983	4	11	20:38:24	0.87	98.67	119	3.8	mbGS
266	1983	4	11	2:09:36	2.22	99.1	170	3.5	mbGS
267	1983	4	15	5:16:48	0.17	97.56	33	4.6	mbGS
268	1983	4	17	0:28:48	1.78	99.5	181	4.5	mbGS
269	1983	4	20	0:57:36	1.69	98.15	100	3.8	mbGS
270	1983	4	20	9:07:12	-3.57	101.53	58	4.5	mbGS
271	1983	4	23	21:21:36	-3.26	100.6	39	4.9	mbGS
272	1983	5	10	16:19:12	2.25	98	102	4.3	mbGS
273	1983	5	28	21:21:36	-1.8	99.6	27	5.3	mbGS
274	1983	6	14	8:24:00	-0.47	96.32	30	4.9	mbGS
275	1983	6	24	13:55:12	-4.83	102.38	33	4.9	mbGS
276	1983	7	1	16:19:12	-1.42	98.94	33	3.9	mbGS
277	1983	7	6	6:28:48	1.72	98.08	81	5.2	mbGS
278	1983	7	6	2:09:36	1.65	98.06	84	4.7	mbGS
279	1983	7	18	21:21:36	-1.6	100.43	90	4.8	mbGS
280	1983	7	25	7:26:24	1.71	98.22	87	4.6	mbGS
281	1983	7	28	21:36:00	0.25	97.46	20	4.3	mbGS
282	1983	8	9	19:40:48	-0.01	97.1	21	4.7	mbGS
283	1983	8	10	10:19:12	-1.61	97.81	33	4.4	mbGS
284	1983	9	13	2:52:48	2.34	97.8	89	4.6	mbGS
285	1983	9	24	14:38:24	1.2	99.69	51	4.6	mbGS
286	1983	10	21	12:00:00	2.09	99.02	140	3.7	mbGS
287	1983	10	30	13:55:12	2.52	98.98	156	4.7	mbGS
288	1983	10	31	8:52:48	-4.67	102.06	33	5.2	mbGS
289	1983	11	8	1:40:48	1.76	98.39	112	3.7	mbGS
290	1983	11	24	17:16:48	1.62	99.55	171	4.3	mbGS
291	1983	12	18	21:21:36	-4.74	102.49	69	5.4	mbGS
292	1984	1	4	14:24:00	-4.18	102.53	90	5	mbGS
293	1984	1	7	6:43:12	-0.96	97.93	33	4.6	mbGS
294	1984	1	19	14:38:24	2.03	98.04	102	3.6	mbGS
295	1984	2	5	4:48:00	0.27	97.08	33	3.9	mbGS
296	1984	2	11	18:57:36	-0.38	99.5	97	4	mbGS
297	1984	2	25	21:21:36	-1.92	97.85	33	4	mbGS
298	1984	2	29	20:38:24	-0.91	100.01	101	5.2	mbGS
299	1984	3	10	0:43:12	-3.44	101.85	86	4.9	mbGS
300	1984	3	13	14:52:48	-0.82	98.6	33	4	mbGS
301	1984	3	20	6:14:24	-4.65	101.96	33	4.6	mbGS
302	1984	3	20	1:12:00	1.05	98.85	97	4.8	mbGS
303	1984	3	30	0:00:00	-4.04	102.53	104	5.1	mbGS
304	1984	3	31	16:04:48	2.03	99.07	146	4.6	mbGS
305	1984	4	2	1:12:00	1.96	99.01	145	4.5	mbGS
306	1984	5	20	12:57:36	-0.26	98.94	88	4.5	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
307	1984	5	20	7:26:24	-1.65	98.89	28	4.9	mbGS
308	1984	6	1	21:21:36	-1.03	98.44	33	4.7	mbGS
309	1984	6	4	1:12:00	-4.39	102.79	80	5.3	mbGS
310	1984	6	6	20:09:36	0.31	100.04	33	4.6	mbGS
311	1984	6	14	22:04:48	-4.04	101.36	42	4.6	mbGS
312	1984	6	18	2:09:36	-1.07	99.95	75	5.4	mbGS
313	1984	6	20	23:16:48	0.48	100.06	62	4.7	mbGS
314	1984	6	21	5:45:36	-0.96	99.82	80	5	mbGS
315	1984	7	8	13:40:48	0.96	98.91	109	5	mbGS
316	1984	7	11	9:21:36	0.33	98.52	33	4.2	mbGS
317	1984	7	30	20:24:00	1.71	99.62	198	4.7	mbGS
318	1984	8	8	23:45:36	-0.19	100.29	154	4.8	mbGS
319	1984	8	26	1:26:24	0.04	97.79	33	4.7	mbGS
320	1984	8	27	5:16:48	1.76	99.07	32	5.2	mbGS
321	1984	8	27	16:04:48	1.9	99.18	40	5.4	mbGS
322	1984	9	3	13:40:48	1.92	99.33	56	4	mbGS
323	1984	9	13	19:12:00	1.94	98.97	150	5	mbGS
324	1984	9	24	23:45:36	2.06	98.37	99	4.4	mbGS
325	1984	10	1	18:43:12	1.77	99.43	186	4.1	mbGS
326	1984	10	14	6:28:48	0.83	97.71	33	4.8	mbGS
327	1984	10	14	0:43:12	0.85	97.53	42	5	mbGS
328	1984	10	24	23:02:24	-4.89	101.82	33	4.9	mbGS
329	1984	11	17	0:28:48	0.2	98.03	33	7.4	MSBRK
330	1984	11	17	3:50:24	0.27	97.94	33	5.3	mbGS
331	1984	11	17	8:09:36	0.16	97.87	36	5	mbGS
332	1984	11	17	0:00:00	0.02	97.57	33	3.8	mbGS
333	1984	12	5	15:50:24	0.31	97.95	33	4.8	mbGS
334	1984	12	13	14:38:24	-4.95	101.8	28	5.1	mbGS
335	1984	12	13	23:45:36	-4.95	101.8	28	5.2	mbGS
336	1984	12	27	13:12:00	-5.85	100.88	33	4.8	mbGS
337	1984	12	31	19:26:24	1.84	99.43	179	4.4	mbGS
338	1984	12	31	13:12:00	-1.37	99.48	33	4.7	mbGS
339	1985	1	2	15:50:24	1.63	98.78	105	5.3	mbGS
340	1985	1	16	2:24:00	-3.7	101.88	67	5.3	mbGS
341	1985	1	24	14:52:48	-1.76	100.92	106	4.8	mbGS
342	1985	2	10	16:19:12	0.12	96.8	37	4.6	mbGS
343	1985	2	11	11:45:36	1.11	98.93	96	4.8	mbGS
344	1985	2	16	10:33:36	0.52	96.62	33	4.2	mbGS
345	1985	2	21	7:40:48	0.27	97.99	45	4.8	mbGS
346	1985	3	3	16:33:36	-4.68	101.97	33	4.9	mbGS
347	1985	3	7	5:31:12	-2.57	101.99	154	4.6	mbGS
348	1985	3	26	23:31:12	-4.31	101.21	33	5.4	mbGS
349	1985	4	8	18:28:48	-2.56	100.43	33	4.7	mbGS
350	1985	4	11	20:09:36	-2.63	100.62	33	4.5	mbGS
351	1985	4	12	20:52:48	1.47	98.96	124	4.9	mbGS
352	1985	5	3	1:55:12	0.5	97.99	31	4.6	mbGS
353	1985	5	7	3:07:12	0.1	97.86	33	4.6	mbGS
354	1985	5	13	15:21:36	0.39	98.65	63	4.6	mbGS
355	1985	6	4	13:26:24	-4.42	102.69	76	5.2	mbGS
356	1985	6	10	16:04:48	-1.42	101.54	33	4.2	mbGS
357	1985	6	10	5:45:36	-0.53	99.49	52	3.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
358	1985	6	12	22:33:36	-4.1	102.58	81	5.3	mbGS
359	1985	6	16	14:24:00	-0.17	99.17	101	4.1	mbGS
360	1985	6	18	19:12:00	-3.15	102.95	197	5	mbGS
361	1985	6	29	6:14:24	1.36	98.42	76	5.4	mbGS
362	1985	7	8	5:45:36	-0.19	98.45	33	3.9	mbGS
363	1985	7	8	4:33:36	-0.67	98.04	33	3.8	mbGS
364	1985	7	16	4:33:36	-4.86	101.22	33	4.5	mbGS
365	1985	7	23	16:33:36	2.21	97.66	29	3.6	mbGS
366	1985	7	27	7:55:12	-2.28	102.28	180	4.1	mbGS
367	1985	8	20	9:36:00	-3.56	101.92	88	4.5	mbGS
368	1985	8	25	16:48:00	0.75	98.69	87	4.7	mbGS
369	1985	9	20	0:43:12	-4.43	101.74	33	4.6	mbGS
370	1985	9	25	6:28:48	-3.96	101.98	33	4	mbGS
371	1985	10	20	3:36:00	-1.03	99.25	33	4.6	mbGS
372	1985	11	29	18:00:00	-0.41	97.66	27	5	mbGS
373	1985	12	3	16:04:48	1.68	97.28	57	4.8	mbGS
374	1985	12	4	11:02:24	0.52	98.51	74	3.6	mbGS
375	1986	1	24	5:02:24	-4.36	100.2	33	4.7	mbGS
376	1986	1	25	6:00:00	1.55	97.96	82	4.1	mbGS
377	1986	3	7	12:43:12	-1.96	100.64	153	4	mbGS
378	1986	3	11	5:31:12	-1.75	96.2	33	3.2	mbGS
379	1986	3	23	2:38:24	-1.81	100.3	63	4.7	mbGS
380	1986	4	6	17:45:36	-3.13	101.53	74	5.2	mbGS
381	1986	4	10	9:36:00	1.14	98.51	92	5.1	mbGS
382	1986	4	15	9:21:36	-2.02	97.99	33	4.8	mbGS
383	1986	4	17	10:04:48	-0.85	99.9	82	5.3	mbGS
384	1986	4	23	14:38:24	0.32	98.86	89	4.4	mbGS
385	1986	4	29	17:02:24	1.75	99.46	188	4.5	mbGS
386	1986	5	2	1:55:12	1.93	99.02	125	4.8	mbGS
387	1986	5	2	10:48:00	1.91	99.07	150	4.3	mbGS
388	1986	5	6	20:52:48	0.77	97.35	33	4.6	mbGS
389	1986	5	31	6:43:12	0.07	100.26	33	4.5	mbGS
390	1986	6	3	17:45:36	1.99	99.08	144	4.6	mbGS
391	1986	6	14	13:12:00	2.04	98	66	5.4	mbGS
392	1986	6	15	18:00:00	0.48	100.26	179	4.6	mbGS
393	1986	6	15	18:43:12	-1.95	100.85	87	5.3	mbGS
394	1986	6	15	8:52:48	-2.02	100.77	78	5	mbGS
395	1986	6	19	15:50:24	-4.6	102.5	137	4.7	mbGS
396	1986	7	2	15:36:00	-0.68	99.97	90	5.3	mbGS
397	1986	7	3	0:14:24	2.41	98.85	160	3.7	mbGS
398	1986	7	23	0:14:24	-2.46	102.47	57	4.5	mbGS
399	1986	8	1	14:24:00	-4.72	101.82	33	5.3	mbGS
400	1986	8	5	16:48:00	0.92	100.09	66	4.6	mbGS
401	1986	8	10	15:07:12	-3.03	101.85	117	4.5	mbGS
402	1986	8	11	12:43:12	-4.7	101.98	53	4.7	mbGS
403	1986	8	12	17:31:12	0.11	100.24	46	5.3	mbGS
404	1986	9	6	5:45:36	-3.09	101.41	148	4.9	mbGS
405	1986	9	10	4:33:36	-2.81	101.28	83	5.3	mbGS
406	1986	9	11	13:40:48	-1.08	98.26	33	5.3	mbGS
407	1986	9	14	4:33:36	1.78	97.55	71	4.1	mbGS
408	1986	10	3	13:26:24	1.62	98.97	126	5.2	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
409	1986	10	9	4:19:12	-3.38	103.02	195	5	mbGS
410	1986	10	23	8:52:48	0.56	96.63	33	3.9	mbGS
411	1986	10	25	4:04:48	-2.52	102.36	175	4.8	mbGS
412	1986	11	1	16:48:00	-1.18	100.04	81	4.7	mbGS
413	1986	11	9	13:40:48	-4.27	102.37	71	5	mbGS
414	1986	11	18	2:09:36	-2.53	102.33	50	4.7	mbGS
415	1986	11	20	5:16:48	-3.47	101.56	33	4.2	mbGS
416	1986	11	30	8:52:48	2.52	98.96	165	3.8	mbGS
417	1986	12	28	23:31:12	1.67	99.57	181	4.4	mbGS
418	1986	12	31	12:00:00	-4.3	102.77	89	5.4	mbGS
419	1987	1	5	6:00:00	-0.76	99.76	107	3.9	mbGS
420	1987	1	5	1:55:12	0.42	98.94	101	3.1	mbGS
421	1987	1	19	22:19:12	0.87	99.53	26	4.9	mbGS
422	1987	1	23	10:19:12	0.88	99.63	33	4	mbGS
423	1987	1	23	20:38:24	0.77	99.48	33	4.3	mbGS
424	1987	1	27	13:40:48	-2.02	100.79	86	4.5	mbGS
425	1987	1	28	20:52:48	-1.82	99.48	33	4	mbGS
426	1987	2	24	23:02:24	-0.14	98.93	53	4.3	mbGS
427	1987	3	26	9:07:12	-0.65	97.87	11	3.7	mbGS
428	1987	4	1	23:16:48	-4.45	102.72	82	4.8	mbGS
429	1987	4	6	2:52:48	0.85	98.63	69	4	mbGS
430	1987	4	25	4:48:00	2.24	98.87	11	6.6	MsGS
431	1987	4	27	9:07:12	-3.06	101.58	53	5.3	mbGS
432	1987	4	28	13:26:24	2.05	99.09	19	5.6	mbGS
433	1987	4	28	3:50:24	1.99	99.04	33	4.9	mbGS
434	1987	4	29	0:28:48	2.1	99.14	65	4.1	mbGS
435	1987	4	29	9:21:36	2.33	99.01	73	3.8	mbGS
436	1987	4	29	15:50:24	1.87	99.45	177	4.5	mbGS
437	1987	4	30	20:24:00	2.29	99.07	43	4.7	mbGS
438	1987	5	18	3:36:00	-2.23	100.03	33	6	MsGS
439	1987	5	28	17:02:24	2.15	98.28	94	3.9	mbGS
440	1987	6	4	22:33:36	-4.61	101.96	42	5.8	MsGS
441	1987	6	12	13:55:12	-4.21	102.53	94	4.9	mbGS
442	1987	6	15	2:52:48	1.61	98.87	130	4	mbGS
443	1987	6	24	14:24:00	-4.87	102.39	33	4.8	mbGS
444	1987	7	26	10:04:48	-2.89	102.03	125	4.7	mbGS
445	1987	7	31	11:16:48	-0.21	99.53	107	4.6	mbGS
446	1987	8	31	21:07:12	-4.22	101.69	10	3.6	mbGS
447	1987	9	21	23:16:48	1.84	99.5	182	4.5	mbGS
448	1987	10	19	9:07:12	-2.71	102.3	156	4.9	mbGS
449	1987	10	22	1:12:00	2.34	99.08	162	4.4	mbGS
450	1987	10	24	16:48:00	-3.11	102.94	200	4.6	mbGS
451	1987	10	28	18:28:48	-4.42	102.59	72	5	mbGS
452	1987	10	30	2:09:36	0.96	98.75	119	3.8	mbGS
453	1987	11	14	15:07:12	-4.64	101.74	43	5.1	mbGS
454	1987	11	18	16:04:48	-1.42	99.57	33	4.6	mbGS
455	1987	11	23	12:14:24	-1.89	99.6	33	4	mbGS
456	1987	11	29	1:40:48	-1.33	99.61	45	5.2	MsGS
457	1988	1	1	5:16:48	1.38	99.04	128	4.1	mbGS
458	1988	1	10	21:21:36	-0.5	97.93	33	3.6	mbGS
459	1988	1	14	23:31:12	0.93	99.1	116	5	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
460	1988	2	10	0:28:48	0.58	-98.6	60	5.1	mbGS
461	1988	2	10	2:38:24	0.38	98.49	33	3.1	mbGS
462	1988	2	15	18:43:12	-2.1	100.35	33	4.9	mbGS
463	1988	2	22	12:00:00	-4.46	102.77	68	5.3	mbGS
464	1988	2	27	19:12:00	-4.56	102.4	33	4.5	mbGS
465	1988	3	7	22:33:36	-2.28	99.98	28	5	mbGS
466	1988	3	16	1:26:24	-1.1	99.94	77	5	mbGS
467	1988	3	27	15:07:12	-0.08	97.53	33	4.4	mbGS
468	1988	4	3	19:26:24	1.44	99.21	148	3.5	mbGS
469	1988	4	4	2:09:36	1.49	99.62	183	4.8	mbGS
470	1988	4	15	7:12:00	2.42	99.07	157	4.2	mbGS
471	1988	4	21	4:19:12	-2.31	102.26	198	4.7	mbGS
472	1988	4	22	6:00:00	-5.09	101.17	33	3.7	mbGS
473	1988	5	3	19:40:48	2	99.22	163	4.4	mbGS
474	1988	5	5	12:28:48	0.32	98.35	33	4	mbGS
475	1988	5	7	23:16:48	-4.44	101.54	35	5.1	mbGS
476	1988	5	8	23:02:24	-4.92	102.34	33	4.8	mbGS
477	1988	5	9	14:24:00	-3.6	100.21	33	4.4	mbGS
478	1988	5	21	21:07:12	-1.13	98.22	28	5.3	mbGS
479	1988	5	26	22:04:48	-2.51	102.44	179	4.7	mbGS
480	1988	6	15	21:50:24	-3.44	102.12	108	5.3	mbGS
481	1988	6	25	10:33:36	-0.39	97.24	33	4	mbGS
482	1988	7	8	11:02:24	-1.06	100.73	145	4.4	mbGS
483	1988	7	19	0:28:48	-2.93	101.44	80	5	mbGS
484	1988	7	22	22:04:48	-3.88	101.24	33	4.8	mbGS
485	1988	8	5	3:36:00	2.09	99.01	150	3.9	mbGS
486	1988	8	8	23:31:12	-4.89	102.38	33	4.7	mbGS
487	1988	8	9	1:26:24	-1.34	100.75	104	5	mbGS
488	1988	9	2	13:55:12	2.14	97.98	96	4.8	mbGS
489	1988	9	11	9:50:24	1.83	99.22	158	4.7	mbGS
490	1988	9	23	7:26:24	-4.89	101.95	71	5.1	mbGS
491	1988	10	13	17:16:48	2.15	99.5	33	3.9	mbGS
492	1988	10	29	19:55:12	-4.7	101.86	33	5	mbGS
493	1988	11	4	13:26:24	-4.77	101.98	33	4.7	mbGS
494	1988	12	7	23:02:24	-2.4	101.25	109	4.5	mbGS
495	1988	12	14	11:45:36	1.83	98.32	33	4.3	mbGS
496	1988	12	20	19:26:24	1.87	97.13	36	5.5	mbGS
497	1989	1	4	18:43:12	-4.98	102.32	33	4.9	mbGS
498	1989	1	11	19:12:00	-4.39	102.38	95	4.6	mbGS
499	1989	1	28	0:43:12	-2.77	101.6	103	4.6	mbGS
500	1989	1	30	4:19:12	-0.72	100.49	84	4.6	mbGS
501	1989	2	24	23:31:12	1.17	97.36	53	4.5	mbGS
502	1989	4	24	7:55:12	1.21	98.91	107	4.9	mbGS
503	1989	4	25	20:24:00	-2.3	100.86	74	4.7	mbGS
504	1989	4	28	10:04:48	-4.35	101.41	27	5.8	mbGS
505	1989	4	28	14:09:36	-4.29	101.36	30	5.6	mbGS
506	1989	4	28	15:50:24	-4.21	101.37	32	5.7	mbGS
507	1989	4	28	12:43:12	-4.19	101.5	33	5	mbGS
508	1989	4	29	1:40:48	-0.87	98.06	41	4.4	mbGS
509	1989	4	30	16:48:00	-0.87	98.06	33	4.3	mbGS
510	1989	5	1	14:24:00	-4.2	101.37	30	5.6	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
511	1989	5	1	6:43:12	-4.24	101.51	33	3.9	mbGS
512	1989	5	2	1:40:48	-4.32	101.19	51	4.3	mbGS
513	1989	5	21	8:52:48	1.54	99.74	189	4.7	mbGS
514	1989	6	1	1:55:12	0.5	100.11	176	5	mbGS
515	1989	6	2	5:02:24	0.29	100.18	171	4.9	mbGS
516	1989	6	8	8:52:48	-1.29	101.42	167	4.5	mbGS
517	1989	6	10	1:26:24	-4.77	102.5	33	4.4	mbGS
518	1989	6	29	12:28:48	-4.5	102.02	42	5.3	mbGS
519	1989	7	14	13:55:12	1.84	97.93	33	4	mbGS
520	1989	7	21	9:07:12	2.09	99.16	11	3.8	mbGS
521	1989	8	17	1:40:48	-4.22	102.25	84	4.6	mbGS
522	1989	8	22	1:12:00	0.32	98.6	59	4.4	mbGS
523	1989	8	23	1:12:00	-0.13	99.04	33	4.3	mbGS
524	1989	9	10	1:26:24	-2.32	101.89	159	4	mbGS
525	1989	9	12	1:26:24	0.19	98.74	64	4.3	mbGS
526	1989	11	12	9:36:00	-3.95	99.3	33	5	mbGS
527	1989	11	25	18:43:12	1.01	98.87	110	5.1	mbGS
528	1989	11	26	11:45:36	1	98.81	93	5	mbGS
529	1990	3	23	4:48:00	-4.21	102.3	62	5	mbGS
530	1990	4	14	0:14:24	-0.09	99.63	115	4.7	mbGS
531	1990	5	16	3:07:12	-0.36	99.14	68	5	mbGS
532	1990	5	18	12:43:12	-4.16	102.47	77	5.2	mbGS
533	1990	6	1	18:14:24	2.11	97.31	33	4.8	mbGS
534	1990	6	9	7:55:12	1.85	98.96	20	4.5	mbGS
535	1990	6	20	7:26:24	2.38	98.46	115	4	mbGS
536	1990	6	26	4:04:48	-3.39	100.8	57	5.4	mbGS
537	1990	7	1	16:48:00	-3.32	102.05	110	5.3	mbGS
538	1990	7	12	17:31:12	2.26	98.18	101	4.6	mbGS
539	1990	7	23	14:24:00	-2.05	99.67	33	4.7	mbGS
540	1990	8	4	19:12:00	-0.12	99.52	111	5.1	mbGS
541	1990	8	14	18:57:36	-4.07	102.01	33	4.6	mbGS
542	1990	9	11	17:31:12	-3.53	101.64	65	5.1	mbGS
543	1990	9	12	6:14:24	-0.48	98.32	33	5.1	mbGS
544	1990	9	26	22:04:48	-3.99	102.39	58	5.6	mbGS
545	1990	10	9	3:36:00	-3.55	100.83	25	5.6	mbGS
546	1990	10	10	22:48:00	-1.6	99.48	57	5.2	mbGS
547	1990	10	18	6:43:12	-1.9	100.1	68	5.4	mbGS
548	1990	10	27	6:57:36	1.49	99.03	128	4.9	mbGS
549	1990	11	8	18:43:12	-4.99	101.77	33	4.6	mbGS
550	1990	11	10	20:38:24	-1.66	100.48	80	4.9	mbGS
551	1990	11	17	1:40:48	1.26	99.06	127	4.9	mbGS
552	1990	11	24	10:04:48	-4.14	102.36	52	5.2	mbGS
553	1990	12	26	8:09:36	-0.23	99.14	73	5	mbGS
554	1990	12	27	8:24:00	-4.3	102.81	137	5.3	mbGS
555	1991	1	6	11:02:24	0.57	98.55	57	5.4	MwHRV
556	1991	1	9	5:02:24	1.34	98.62	110	4.8	mbGS
557	1991	1	21	19:12:00	-1.88	100.4	67	5	mbGS
558	1991	1	26	21:21:36	-3.52	102.63	112	5.5	MwHRV
559	1991	3	5	13:40:48	-0.35	99.32	63	5.2	mbGS
560	1991	3	5	3:07:12	-3.98	102.37	58	5.7	MwHRV
561	1991	3	14	15:36:00	-1.72	100.81	107	4.7	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
562	1991	3	29	3:07:12	-1.87	100.5	62	4.9	mbGS
563	1991	4	1	12:28:48	1.07	98.31	33	4.7	mbGS
564	1991	4	14	13:40:48	-1.11	99.18	33	4.6	mbGS
565	1991	4	14	6:43:12	-4.38	102.79	104	5.2	mbGS
566	1991	4	28	1:26:24	-1.52	99.61	33	4.6	mbGS
567	1991	5	13	4:33:36	-4.88	101.87	33	5.2	mbGS
568	1991	5	29	12:28:48	-3.24	98.38	26	5.2	mbGS
569	1991	7	2	4:33:36	-1.07	99.84	53	6.2	MwBRK
570	1991	8	3	2:52:48	-1.9	99.48	33	4.6	mbGS
571	1991	9	2	0:43:12	0.24	98.47	69	4.5	mbGS
572	1991	10	19	12:43:12	0.94	97.41	26	5.1	mbGS
573	1991	10	24	15:36:00	-2.69	101.11	51	5.1	mbGS
574	1991	10	28	1:26:24	1.13	96.79	33	5	mbGS
575	1991	11	8	23:45:36	-4.27	102.81	79	5.7	mbGS
576	1991	11	18	0:57:36	-5.16	102.2	33	4.8	mbGS
577	1991	11	23	3:21:36	-0.35	98.09	23	5.2	mbGS
578	1991	11	24	4:48:00	-3.91	100.52	33	4.9	mbGS
579	1991	12	17	1:55:12	-3.61	102.03	72	5.6	mbGS
580	1992	1	4	22:19:12	-0.18	97.4	24	4.8	mbGS
581	1992	1	21	7:12:00	-4.03	102.43	101	5.2	mbGS
582	1992	2	2	12:00:00	-4.16	102.16	62	5.2	mbGS
583	1992	2	10	18:43:12	-1.84	100.53	73	4.9	mbGS
584	1992	3	16	7:12:00	-2.15	102.06	191	4.7	mbGS
585	1992	4	5	6:57:36	-1.04	100.13	125	4	mbGS
586	1992	4	6	6:14:24	-1.85	97.74	31	5.7	mbGS
587	1992	4	6	23:45:36	-2.02	99.74	73	4.6	mbGS
588	1992	4	18	20:09:36	-4.97	102.4	109	5.2	mbGS
589	1992	5	17	9:21:36	-1.3	99.56	33	4.8	mbGS
590	1992	5	17	20:24:00	-3.32	100.91	33	4.9	mbGS
591	1992	5	27	17:16:48	1.49	99.07	125	5.1	mbGS
592	1992	6	12	12:28:48	-2.13	101.71	140	4.6	MwHRV
593	1992	6	13	0:00:00	0.17	98.65	75	5	mbGS
594	1992	6	20	18:00:00	-4.2	102.04	33	5.3	mbGS
595	1992	7	11	9:07:12	-4.37	102.84	57	5.3	mbGS
596	1992	7	14	22:48:00	-2.17	100.88	56	5.2	mbGS
597	1992	8	5	18:57:36	-3.09	101.79	76	5.1	MwHRV
598	1992	9	2	18:57:36	-0.7	100.6	33	4.6	mbGS
599	1992	10	27	23:31:12	1.83	99.4	33	3.9	mbGS
600	1992	11	16	18:28:48	-0.06	100.15	33	4.1	mbGS
601	1992	11	25	7:40:48	-4.07	102.16	58	5.7	MwGS
602	1992	11	27	8:24:00	-1.36	98.64	33	4.6	mbGS
603	1992	12	7	6:28:48	1.87	97.61	33	4.6	mbGS
604	1993	1	4	11:45:36	-4.05	102.45	84	5.2	mbGS
605	1993	2	8	4:48:00	-4.83	101.92	29	5.7	MwHRV
606	1993	2	8	23:31:12	-4.88	101.99	59	4.9	mbGS
607	1993	2	19	15:50:24	2.06	97.26	23	4.8	mbGS
608	1993	2	26	22:04:48	-2.71	102.19	145	4.9	mbGS
609	1993	3	14	12:14:24	1.32	97.71	19	4.9	mbGS
610	1993	3	19	11:45:36	-2.66	102.22	171	4.3	mbGS
611	1993	3	20	19:26:24	-1.56	99.01	22	5.4	mbGS
612	1993	4	22	21:36:00	-4.09	102.31	70	5.4	MwHRV

no	year	mon	day	time	lat	long	depth	mag	type
613	1993	4	29	0:57:36	-1.1	-99.87	174	4.2	mbGS
614	1993	5	16	18:14:24	-1.45	100.38	62	4.8	mbGS
615	1993	5	22	20:52:48	-2.1	102.32	200	4.7	mbGS
616	1993	5	27	2:24:00	-3.3	100.84	58	5.1	mbGS
617	1993	6	6	3:21:36	1.39	97.31	33	4.4	mbGS
618	1993	6	26	18:14:24	-2.12	100.25	33	4.9	mbGS
619	1993	7	2	0:28:48	-4.08	102.6	92	5.4	mbGS
620	1993	7	7	18:43:12	0.03	98.2	33	4.5	mbGS
621	1993	7	21	20:24:00	0.1	98.46	33	4.3	mbGS
622	1993	8	4	0:43:12	-1.63	99.61	31	6.5	MwGS
623	1993	8	5	5:02:24	-2.1	99.07	59	3.7	mbGS
624	1993	9	1	10:33:36	-4.33	102.57	71	5.7	MwGS
625	1993	9	12	12:57:36	-1.29	100.42	48	4.8	mbGS
626	1993	9	13	15:36:00	1.46	97.54	36	5.2	mbGS
627	1993	9	23	11:02:24	-4.28	102.82	79	4.9	mbGS
628	1993	9	25	1:12:00	0.8	100.63	33	4.5	mbGS
629	1993	9	30	1:40:48	-1.68	100.57	68	5.3	mbGS
630	1993	11	1	15:36:00	2.04	98.12	83	5.3	MwHRV
631	1993	11	8	4:33:36	-0.71	99.05	33	4.8	mbGS
632	1993	11	30	11:16:48	-3.58	101.6	45	5.1	mbGS
633	1993	12	14	20:38:24	1.77	97.09	33	4.8	mbGS
634	1994	1	7	8:09:36	-0.59	98.6	29	5.6	MwHRV
635	1994	1	10	18:14:24	-0.73	98.5	30	5	mbGS
636	1994	1	15	7:12:00	-1.05	100.36	102	5.1	mbGS
637	1994	1	27	8:09:36	-4.34	102.69	83	5	mbGS
638	1994	3	3	16:04:48	1.91	97.89	33	4.5	mbGS
639	1994	4	19	21:36:00	-3.77	101.51	42	5	mbGS
640	1994	5	2	21:07:12	-1.12	97.49	15	6.1	MwGS
641	1994	5	2	0:28:48	-1.07	97.59	33	4.9	mbGS
642	1994	5	3	7:55:12	-1.11	97.67	33	4.7	mbGS
643	1994	5	4	13:55:12	-1.72	97.72	33	4.4	mbGS
644	1994	5	4	18:57:36	-0.98	97.38	34	4.8	mbGS
645	1994	5	4	8:24:00	-1.14	97.55	29	4.7	mbGS
646	1994	5	4	6:43:12	-1.05	97.73	33	4.6	mbGS
647	1994	5	4	20:09:36	-1.18	97.54	31	4.5	mbGS
648	1994	5	6	17:02:24	-1.03	97.36	33	4.1	mbGS
649	1994	5	8	18:28:48	-1.09	97.57	33	4.5	mbGS
650	1994	5	8	16:19:12	-1.06	97.55	33	4.7	mbGS
651	1994	5	9	6:14:24	-2.06	99.73	27	5.7	MwHRV
652	1994	5	11	16:04:48	-2.01	99.77	20	6.5	MwGS
653	1994	5	11	18:14:24	-2.06	99.67	28	6.1	MwGS
654	1994	5	16	6:14:24	-2.08	99.51	33	5	mbGS
655	1994	5	17	21:50:24	-2.12	99.52	22	5.9	MwHRV
656	1994	5	17	9:36:00	-1.9	99.62	33	5.9	MwHRV
657	1994	5	18	21:36:00	-2.06	99.74	24	5.2	mbGS
658	1994	5	20	5:45:36	-1.97	99.53	24	5.2	mbGS
659	1994	5	24	7:55:12	-2.05	102.12	33	4.5	mbGS
660	1994	5	31	8:24:00	-1.17	98.59	33	4.8	mbGS
661	1994	6	9	4:33:36	-1.88	99.56	33	5.4	mbGS
662	1994	6	11	3:07:12	-1.72	99.79	41	5.1	mbGS
663	1994	6	12	21:07:12	-1.33	97.58	33	4.5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
664	1994	7	23	12:14:24	-1.03	97.47	31	5.1	MwHRV
665	1994	7	24	16:33:36	-4.11	102.78	82	5.4	mbGS
666	1994	8	5	6:00:00	-3.18	101.47	68	5.4	MwHRV
667	1994	9	12	2:38:24	1.35	98.05	115	4.7	mbGS
668	1994	9	19	10:19:12	-4.21	101.24	33	4.7	mbGS
669	1994	9	28	21:07:12	-4.71	102.2	46	5.5	MwHRV
670	1994	10	11	9:50:24	1.22	97.71	33	4.9	mbGS
671	1994	10	26	15:07:12	-5.28	101.43	33	5	mbGS
672	1994	11	17	0:00:00	-0.52	99.16	64	5.1	mbGS
673	1994	11	17	7:40:48	-1.95	99.82	47	5.2	mbGS
674	1994	11	27	2:09:36	-5.48	101.77	33	4.6	mbGS
675	1994	12	9	5:16:48	-1.08	100.29	86	5.2	mbGS
676	1995	2	2	12:28:48	1.35	99.15	123	4.4	mbGS
677	1995	2	5	22:04:48	-0.05	99.53	109	4.9	mbGS
678	1995	2	13	20:38:24	-0.83	97.89	33	4.6	mbGS
679	1995	2	26	8:52:48	1.29	97.88	53	5.4	MwHRV
680	1995	3	4	9:36:00	-0.19	97.41	23	4.8	mbGS
681	1995	3	11	17:45:36	-3.28	101.72	95	4.7	mbGS
682	1995	3	29	13:12:00	1.63	99.79	180	4.6	mbGS
683	1995	4	26	12:14:24	-1.07	103.27	33	4.4	mbGS
684	1995	4	28	10:33:36	2.41	99.14	166	4.2	mbGS
685	1995	5	10	10:33:36	-1.29	97.49	25	4.6	mbGS
686	1995	5	20	23:16:48	1.54	99.51	33	4.5	mbGS
687	1995	5	21	5:02:24	-3.33	103.27	171	4.5	mbGS
688	1995	6	6	4:19:12	-2.61	102.1	68	4.5	mbGS
689	1995	6	6	2:52:48	-2.84	101.99	150	3.9	mbGS
690	1995	6	6	18:57:36	-1.78	100.67	91	4.3	mbGS
691	1995	6	21	16:33:36	-1.42	99.93	33	4.5	mbGS
692	1995	6	25	10:48:00	-0.08	100.19	33	4.2	mbGS
693	1995	7	2	21:50:24	-1.77	100.39	74	4.5	mbGS
694	1995	7	10	21:07:12	-3.31	101.8	73	4.8	mbGS
695	1995	7	10	1:26:24	-4.95	102.08	73	4.9	mbGS
696	1995	7	31	0:43:12	-2	101.07	33	3.9	mbGS
697	1995	8	17	1:26:24	-2.57	101.95	61	4.7	mbGS
698	1995	8	21	14:09:36	1.01	98.81	112	4.3	mbGS
699	1995	8	30	15:21:36	-0.31	99.22	83	4.8	mbGS
700	1995	9	2	4:04:48	-3.78	102.6	50	4.3	mbGS
701	1995	9	4	4:04:48	1.9	99.04	33	4.2	mbGS
702	1995	9	5	9:07:12	1.59	98.12	33	4.3	mbGS
703	1995	9	21	14:38:24	-1.34	100.86	124	4.2	mbGS
704	1995	10	6	21:36:00	-2.05	101.44	33	6.8	MwHRV
705	1995	10	6	7:40:48	-2.11	101.64	33	5.3	mbGS
706	1995	10	6	16:48:00	-1.9	101.37	33	4.4	mbGS
707	1995	10	6	23:31:12	-1.83	101.46	33	4.3	mbGS
708	1995	10	10	4:19:12	0.69	97.09	33	3.9	mbGS
709	1995	10	22	23:02:24	-2.04	100.62	91	4.7	mbGS
710	1995	10	22	18:00:00	-6.4	98.67	33	5.7	MwHRV
711	1995	11	6	21:50:24	0.5	99.82	33	4.2	mbGS
712	1995	11	14	18:00:00	-3.68	101.92	57	5.1	mbGS
713	1995	11	27	7:55:12	-3.06	102.28	127	4.5	mbGS
714	1995	12	21	13:55:12	-2.56	102.28	151	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
715	1995	12	24	1:26:24	-4.36	102.83	83	4.8	mbGS
716	1996	1	8	15:50:24	-3.59	102.84	100	4.4	mbGS
717	1996	1	10	12:28:48	-3.33	101.84	100	4.6	mbGS
718	1996	1	19	23:16:48	2.31	98.96	146	4.2	mbGS
719	1996	1	23	2:24:00	2.1	97.54	95	4.1	mbGS
720	1996	1	23	20:24:00	-1.88	100.86	90	4.5	mbGS
721	1996	1	27	9:21:36	-2.27	99.87	30	4.3	mbGS
722	1996	1	31	15:07:12	-1.27	100.7	118	4.2	mbGS
723	1996	2	9	10:33:36	0.98	100.39	200	3.8	mbGS
724	1996	3	20	16:33:36	-3.73	102.96	33	4.5	mbGS
725	1996	4	1	4:48:00	-0.28	99.82	109	4	mbGS
726	1996	4	7	15:36:00	-1.61	100.31	81	4.3	mbGS
727	1996	4	14	10:04:48	-2.33	101.82	100	4.1	mbGS
728	1996	4	28	15:07:12	-2.7	101.35	91	4.3	mbGS
729	1996	5	1	18:14:24	-3.27	102.35	99	4.4	mbGS
730	1996	5	24	8:38:24	0.47	97.58	33	4.1	mbGS
731	1996	5	24	8:24:00	-1.61	100.52	63	4.1	mbGS
732	1996	5	30	19:26:24	-1.86	99.9	33	4.3	mbGS
733	1996	5	31	1:26:24	1.69	97.91	33	4.1	mbGS
734	1996	6	5	7:40:48	-4.54	101.93	33	5.5	MwHRV
735	1996	6	24	1:12:00	0.54	97.32	33	3.5	mbGS
736	1996	7	4	6:57:36	-4.72	102.42	33	4	mbGS
737	1996	7	10	9:50:24	-4.27	102.82	108	5.1	MwHRV
738	1996	7	24	11:02:24	-4.53	101.88	33	4.8	mbGS
739	1996	7	31	15:07:12	1.78	99.59	148	4	mbGS
740	1996	8	9	21:36:00	-2.02	99.68	33	5.8	MwHRV
741	1996	8	9	18:14:24	-1.94	99.69	33	4.6	mbGS
742	1996	8	9	12:28:48	-1.99	99.81	33	3.9	mbGS
743	1996	8	9	22:04:48	-1.95	99.68	33	4.2	mbGS
744	1996	8	9	17:45:36	-1.81	99.93	33	4.1	mbGS
745	1996	8	9	22:33:36	-2.11	99.56	33	4.5	mbGS
746	1996	8	10	2:09:36	-2.09	99.6	33	4.3	mbGS
747	1996	8	10	21:07:12	-1.96	99.62	33	5.7	MwHRV
748	1996	8	10	3:36:00	-1.82	99.92	33	4.2	mbGS
749	1996	8	21	1:40:48	-0.91	97.08	33	4.4	mbGS
750	1996	8	24	10:33:36	0.86	99.46	110	5	mbGS
751	1996	9	9	6:57:36	-3.39	101.07	33	4.6	mbGS
752	1996	9	13	10:19:12	2.26	98.05	33	4.4	mbGS
753	1996	9	17	6:57:36	0.24	98.71	33	3.9	mbGS
754	1996	9	23	13:12:00	-1.81	100.08	33	4.7	mbGS
755	1996	9	23	23:45:36	-2.08	99.6	33	4.9	mbGS
756	1996	9	23	17:45:36	-1.92	99.77	33	4.2	mbGS
757	1996	9	25	5:31:12	-2.11	99.72	33	4.8	mbGS
758	1996	9	25	14:24:00	-2.03	99.7	33	4.4	mbGS
759	1996	9	28	13:12:00	-3.68	102.37	91	4.5	mbGS
760	1996	10	9	5:02:24	-3.25	101.41	81	4.7	mbGS
761	1996	10	9	20:24:00	-2.12	99.63	33	4.5	mbGS
762	1996	10	22	18:00:00	1.73	98.14	44	4.9	mbGS
763	1996	11	18	13:55:12	-2	97.59	33	4.1	mbGS
764	1996	11	21	16:19:12	2.46	99.17	142	4.5	mbGS
765	1996	12	6	19:12:00	-2.14	102.1	150	4.3	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
766	1996	12	7	6:43:12	-2.52	101.66	100	4.6	mbGS
767	1996	12	18	0:14:24	-1.85	97.7	33	4.2	mbGS
768	1996	12	28	15:50:24	-1.11	100.49	119	4.3	mbGS
769	1997	1	13	21:36:00	0.49	99.22	100	4.3	mbGS
770	1997	1	23	9:36:00	1.65	99.37	33	4.4	mbGS
771	1997	2	7	22:33:36	0.39	98.76	50	4.5	mbGS
772	1997	2	8	20:24:00	1.66	97.95	33	5.2	MwHRV
773	1997	2	11	18:14:24	-1.09	100.57	109	4.1	mbGS
774	1997	2	17	7:26:24	-2.1	100.99	60	4.6	mbGS
775	1997	2	21	21:07:12	-4.62	101.96	100	4.5	mbGS
776	1997	3	3	0:28:48	-2.75	102.23	100	4.6	mbGS
777	1997	3	6	20:24:00	0.7	99.85	150	4.6	mbGS
778	1997	3	14	10:33:36	-4.39	102.03	33	4.7	mbGS
779	1997	3	17	2:09:36	1.27	99.58	200	4.6	mbGS
780	1997	3	17	7:12:00	-2.58	100.2	33	4.6	mbGS
781	1997	4	7	9:07:12	-4.39	102.3	57	4.6	mbGS
782	1997	4	7	6:14:24	0.47	98.52	43	4.5	mbGS
783	1997	4	15	11:31:12	1.07	98.09	33	4.3	mbGS
784	1997	4	21	13:55:12	-1.75	100.05	33	4.8	mbGS
785	1997	4	22	7:26:24	-3.37	102.14	107	5.9	MwGS
786	1997	4	26	12:57:36	1.44	99.51	100	4.9	mbGS
787	1997	5	2	1:55:12	-2.68	102.21	33	4.5	mbGS
788	1997	5	4	16:04:48	0.73	96.41	30	4.9	mbGS
789	1997	5	7	12:43:12	1.6	97.83	33	4.4	mbGS
790	1997	5	10	14:52:48	-3.15	101.55	33	5.6	MwHRV
791	1997	5	12	21:36:00	2.07	97.67	33	4.5	mbGS
792	1997	5	18	0:28:48	-1.87	99.74	33	5.4	MwHRV
793	1997	5	21	14:24:00	0.6	98.65	63	4	mbGS
794	1997	6	7	22:04:48	-1.79	97.44	33	4.8	mbGS
795	1997	6	7	1:55:12	-4.35	101.84	33	4.6	mbGS
796	1997	6	10	13:26:24	-4.17	102.57	33	4.9	mbGS
797	1997	6	14	15:36:00	0.74	99.04	67	4.9	mbGS
798	1997	6	17	23:31:12	1.85	97.72	33	4.2	mbGS
799	1997	6	22	23:45:36	-3.26	101.7	33	4.6	mbGS
800	1997	6	24	3:50:24	-4.26	101.93	33	4.3	mbGS
801	1997	6	26	12:00:00	-4.09	102.15	33	5.1	mbGS
802	1997	6	26	16:48:00	-1.89	99.93	33	4.2	mbGS
803	1997	7	1	17:02:24	1.66	98.75	100	4.2	mbGS
804	1997	7	2	12:28:48	2.04	98.7	100	4.7	mbGS
805	1997	7	2	20:24:00	-1.13	100.16	100	3.9	mbGS
806	1997	7	7	20:24:00	1.07	97.6	24	5.5	MwHRV
807	1997	7	7	17:02:24	1.07	97.6	28	5.9	MwGS
808	1997	7	7	18:28:48	0.97	97.52	27	4.3	mbGS
809	1997	7	7	14:52:48	0.98	97.52	27	4.5	mbGS
810	1997	7	10	11:45:36	1.04	98	33	3.9	mbGS
811	1997	7	20	6:43:12	0.5	98.66	33	4.4	mbGS
812	1997	8	13	11:45:36	1.24	98.94	33	4	mbGS
813	1997	8	20	9:50:24	0.8	97.45	33	3.9	mbGS
814	1997	8	21	19:55:12	1.95	99.01	134	4.4	mbGS
815	1997	8	22	18:00:00	1.15	100.11	200	4.3	mbGS
816	1997	8	25	3:36:00	-1.97	99.91	33	5.5	MwHRV

no	year	mon	day	time	lat	long	depth	mag	type
817	1997	8	31	18:28:48	1.22	98.4	33	4.5	mbGS
818	1997	9	15	6:43:12	-4.61	102.65	53	4.6	mbGS
819	1997	9	19	8:09:36	1.12	99.07	100	4	mbGS
820	1997	9	29	8:52:48	-0.44	98.07	33	3.5	mbGS
821	1997	10	5	17:45:36	0.08	97.04	33	3.4	mbGS
822	1997	10	10	11:45:36	1.55	97.45	100	4.5	mbGS
823	1997	10	10	12:28:48	-0.32	96.46	33	4.3	mbGS
824	1997	10	25	14:38:24	-2.44	102.35	200	3.9	mbGS
825	1997	11	14	12:57:36	-2.15	100.47	71	4.3	mbGS
826	1997	11	15	23:31:12	-4.35	102.43	66	4.5	mbGS
827	1997	11	23	6:43:12	-2.03	98.91	24	4.6	mbGS
828	1997	11	26	18:57:36	-1.04	98.11	33	4.6	mbGS
829	1997	11	27	10:33:36	-4.54	101.83	33	5	mbGS
830	1997	12	9	5:16:48	0.37	98.58	33	3.5	mbGS
831	1997	12	16	8:24:00	1.43	97.7	33	4.2	mbGS
832	1997	12	18	5:31:12	-1.95	99.62	33	5.7	MwHRV
833	1997	12	18	6:57:36	-1.95	99.66	33	4.1	mbGS
834	1997	12	28	8:52:48	-1	97.4	33	4.3	MLDJA
835	1998	1	2	8:38:24	-2.8	102.02	84	4.6	mbGS
836	1998	1	7	5:02:24	1.92	99.05	126	3.9	mbGS
837	1998	1	20	9:07:12	-4.45	102.53	54	4.3	mbGS
838	1998	2	3	19:12:00	0.17	100.61	200	4.2	mbGS
839	1998	2	8	1:55:12	-0.44	97.03	33	4.9	mbGS
840	1998	2	11	6:28:48	1.41	97.95	100	3.5	mbGS
841	1998	2	18	3:50:24	-3.77	101.88	52	4.6	mbGS
842	1998	2	21	10:33:36	1.2	99.04	100	4.5	mbGS
843	1998	2	24	8:24:00	1.9	99.32	138	4.5	mbGS
844	1998	2	26	8:09:36	1.71	98.99	117	4.8	mbGS
845	1998	3	2	10:48:00	1.66	99.64	169	4.4	MDDJA
846	1998	3	23	7:55:12	1.71	99.14	125	4.7	mbGS
847	1998	4	1	8:38:24	-0.54	99.26	55	7	MwHRV
848	1998	4	3	10:04:48	-0.61	99.25	67	4.8	mbGS
849	1998	4	4	14:38:24	-1.91	100.38	51	4.1	mbGS
850	1998	4	4	1:55:12	-1.04	98.61	33	3.8	mbGS
851	1998	4	5	8:09:36	1.92	98.26	100	4.3	mbGS
852	1998	4	12	18:28:48	-4.32	102.23	33	4.3	mbGS
853	1998	4	13	20:38:24	0.19	99.24	33	3.8	mbGS
854	1998	4	20	19:55:12	-0.53	99.33	63	4.8	mbGS
855	1998	5	23	2:24:00	-1.8	100.54	100	4.4	mbGS
856	1998	5	28	17:16:48	-2.23	99.6	33	4.5	mbGS
857	1998	5	29	5:02:24	-2.29	99.46	33	4.8	mbGS
858	1998	5	29	10:33:36	-2.23	99.48	33	5.5	MwHRV
859	1998	5	29	19:26:24	-2.27	99.57	33	4.9	mbGS
860	1998	5	29	0:57:36	-2.19	99.63	33	5.5	MwHRV
861	1998	6	4	3:36:00	-5.04	101.96	33	4.7	mbGS
862	1998	6	7	13:55:12	-4.5	102.01	33	4.8	mbGS
863	1998	6	10	13:12:00	0.64	99.32	99	4.2	mbGS
864	1998	6	14	15:21:36	0.31	98.99	100	3.4	mbGS
865	1998	7	14	3:36:00	-4.25	102.19	33	4.9	MwHRV
866	1998	7	29	8:24:00	-4.22	102.03	50	4.4	mbGS
867	1998	8	10	1:55:12	0.12	98.58	47	4.6	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
868	1998	8	11	2:09:36	2.47	99.24	168	3.9	mbGS
869	1998	8	18	7:40:48	-0.56	99.28	47	4.1	mbGS
870	1998	8	24	11:02:24	-4.45	102.6	34	5.2	mbGS
871	1998	8	25	22:48:00	-1.68	99.56	33	5.1	MwHRV
872	1998	9	4	10:48:00	-5.32	101.9	33	4.6	mbGS
873	1998	9	9	8:52:48	2.03	97.63	33	4.7	mbGS
874	1998	9	16	1:26:24	-1.68	99.67	33	4.4	mbGS
875	1998	9	27	10:48:00	1.87	99.18	120	4.4	mbGS
876	1998	10	3	13:55:12	-2.55	100.25	33	4.2	mbGS
877	1998	10	5	3:07:12	-3.71	101.82	58	4.8	mbGS
878	1998	10	6	2:24:00	-1.33	100.25	33	3.9	mbGS
879	1998	10	29	11:16:48	1.19	99.35	85	4.5	mbGS
880	1998	10	30	23:02:24	-4.37	102.76	102	4.8	mbGS
881	1998	10	31	6:43:12	-6.22	98.8	33	5.7	MwHRV
882	1998	11	12	12:14:24	-5.78	101.05	33	4.3	mbGS
883	1998	12	8	6:57:36	-1.68	99.96	33	4.8	mbGS
884	1998	12	14	13:40:48	-0.59	99.12	33	4.7	mbGS
885	1998	12	20	3:21:36	-4.76	101.96	33	5.4	MwHRV
886	1998	12	20	16:33:36	-4.8	101.94	33	5.2	MwHRV
887	1998	12	22	17:45:36	-0.24	99.23	33	4.9	MwHRV
888	1998	12	25	21:50:24	-3.98	102.77	69	4.2	mbGS
889	1998	12	25	10:19:12	-4.38	101.88	33	4.8	mbGS
890	1999	1	5	7:12:00	-1.13	99.87	33	4.8	mbGS
891	1999	1	30	18:57:36	-3.77	101.79	33	4.6	mbGS
892	1999	2	15	17:02:24	-3.91	101.35	90	4.3	mbGS
893	1999	2	18	10:48:00	-2.77	101.98	33	5.1	MwHRV
894	1999	2	21	22:04:48	-2.18	100.66	33	4.5	mbGS
895	1999	3	2	6:57:36	-1.12	100.66	120	4.4	mbGS
896	1999	3	12	1:12:00	-0.03	99.76	33	4.4	mbGS
897	1999	3	19	17:31:12	-4.45	102.4	33	4.5	mbGS
898	1999	4	9	15:21:36	-3.06	102.26	159	4.2	mbGS
899	1999	4	22	5:31:12	1.93	98.04	63	5	mbGS
900	1999	4	24	3:36:00	-4.14	102.37	65	5.3	MwHRV
901	1999	5	9	12:57:36	0.87	99	125	4.7	mbGS
902	1999	5	15	12:57:36	-4.08	102.66	94	4.9	MwHRV
903	1999	5	18	1:26:24	-0.39	100.16	104	4.7	mbGS
904	1999	5	19	4:19:12	0.22	98.79	75	4.4	mbGS
905	1999	5	21	22:19:12	1.57	99.82	189	4.1	mbGS
906	1999	5	28	14:24:00	-0.85	98.58	43	4.8	mbGS
907	1999	6	15	10:19:12	-3.59	101.77	33	4.1	mbGS
908	1999	6	20	1:12:00	1.95	99.1	122	4.4	mbGS
909	1999	6	22	8:38:24	-3.59	103.13	152	4.3	mbGS
910	1999	7	11	11:31:12	-3.55	102.68	170	4.4	mbGS
911	1999	7	17	12:28:48	-4.64	102.11	33	4.7	mbGS
912	1999	8	1	19:12:00	-2.17	101.34	103	4.5	mbGS
913	1999	8	15	0:57:36	-0.73	96.81	33	4.4	mbGS
914	1999	8	25	13:55:12	1.96	97.26	33	4.7	mbGS
915	1999	9	7	6:43:12	1.76	97.21	33	4.9	mbGS
916	1999	9	19	18:00:00	-5.02	102.3	33	4.6	mbGS
917	1999	9	22	0:28:48	1.76	99.45	33	4.7	mbGS
918	1999	9	22	16:19:12	1.85	99.57	33	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
919	1999	10	6	9:36:00	-4.5	102.62	71	4.8	mbGS
920	1999	10	8	14:24:00	1.71	97.47	33	4.4	mbGS
921	1999	10	8	21:50:24	-1.91	101.05	70	4.4	mbGS
922	1999	10	20	1:55:12	-3.17	102.91	181	4	mbGS
923	1999	10	24	8:09:36	-1.95	100.85	33	4.4	mbGS
924	1999	11	20	9:50:24	0.49	98.69	46	4.3	mbGS
925	1999	11	30	19:40:48	-4.82	101.87	33	4.8	mbGS
926	1999	12	1	14:38:24	-4.75	101.99	33	4.7	mbGS
927	1999	12	2	7:12:00	-2.89	101.53	67	5	MwHRV
928	1999	12	14	17:45:36	-0.8	98.59	33	4.7	mbGS
929	1999	12	15	0:14:24	-0.27	99.56	129	4.7	mbGS
930	1999	12	29	20:52:48	-0.45	99.63	79	5.3	mbGS
931	2000	1	6	14:09:36	2.01	98.04	33	5.1	MwHRV
932	2000	1	21	21:50:24	-1.23	98.88	33	5	mbGS
933	2000	3	2	5:31:12	0.56	98.5	68	4.9	mbGS
934	2000	3	28	6:43:12	-2.24	99.56	33	4.7	mbGS
935	2000	4	6	19:55:12	1.71	99.89	159	4.1	mbGS
936	2000	4	23	8:24:00	-2.82	101.29	66	4.8	mbGS
937	2000	4	27	13:40:48	-1.01	100.52	33	4.3	mbGS
938	2000	4	30	1:12:00	1.36	98.97	150	3.7	mbGS
939	2000	5	7	13:12:00	-5.21	100.21	33	4.4	mbGS
940	2000	5	8	3:21:36	-0.97	97.9	33	4.7	mbGS
941	2000	5	8	17:16:48	-0.85	98	33	5.7	MwGS
942	2000	5	8	5:31:12	-0.95	97.96	33	4.4	mbGS
943	2000	5	8	3:36:00	-0.86	97.9	33	4.5	mbGS
944	2000	5	9	14:38:24	-0.91	98.07	33	5	mbGS
945	2000	5	29	4:19:12	-1.22	97.5	33	4.6	mbGS
946	2000	5	30	5:02:24	-3.77	101.89	33	4.6	mbGS
947	2000	6	3	0:00:00	-4.32	102.14	83	5	mbGS
948	2000	6	4	4:04:48	-4.72	102.09	33	7.9	MwHRV
949	2000	6	4	14:24:00	-4.65	102.1	33	6.7	mbGS
950	2000	6	4	9:21:36	-4.96	102.1	33	5	mbGS
951	2000	6	4	21:50:24	-4.86	101.92	33	4.8	mbGS
952	2000	6	4	17:31:12	-5.02	102.06	33	4.9	mbGS
953	2000	6	4	14:24:00	-5.12	102.04	33	4.4	mbGS
954	2000	6	4	9:21:36	-4.44	102.09	33	4.9	mbGS
955	2000	6	4	2:24:00	-4.53	102.03	33	5.1	mbGS
956	2000	6	4	0:28:48	-4.59	101.87	33	5	mbGS
957	2000	6	4	21:21:36	-4.77	102.1	33	4.9	mbGS
958	2000	6	4	9:50:24	-4.79	102.25	33	4.9	mbGS
959	2000	6	4	23:31:12	-4.41	102.07	33	4.7	mbGS
960	2000	6	4	12:43:12	-4.78	102.06	33	4.9	mbGS
961	2000	6	4	2:38:24	-4.99	102.12	33	4.5	mbGS
962	2000	6	4	12:00:00	-4.82	102.18	33	5	mbGS
963	2000	6	4	6:28:48	-4.54	102.12	33	4.9	mbGS
964	2000	6	4	13:12:00	-4.62	102.07	33	4.6	mbGS
965	2000	6	4	16:33:36	-4.72	102.3	33	4.1	mbGS
966	2000	6	4	17:02:24	-4.8	102.09	33	5.4	mbGS
967	2000	6	4	9:50:24	-4.81	101.69	33	4.6	mbGS
968	2000	6	4	3:50:24	-4.99	102.13	33	4.9	mbGS
969	2000	6	4	10:48:00	-4.97	102.21	33	5.3	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
970	2000	6	4	18:00:00	-4.43	102.15	33	4.6	mbGS
971	2000	6	5	6:43:12	-4.89	102.38	33	4.9	mbGS
972	2000	6	5	2:09:36	-4.71	102.15	33	4.6	mbGS
973	2000	6	5	4:19:12	-5.14	101.93	33	4.5	mbGS
974	2000	6	5	12:28:48	-5.03	101.85	33	4.5	mbGS
975	2000	6	5	0:57:36	-4.98	102.31	33	5.1	mbGS
976	2000	6	5	12:28:48	-4.56	102.14	33	4.4	mbGS
977	2000	6	5	17:45:36	-4.54	102.34	33	5.1	mbGS
978	2000	6	5	10:04:48	-4.25	101.8	33	4.5	mbGS
979	2000	6	5	23:16:48	-4.53	102.42	33	5	mbGS
980	2000	6	5	23:02:24	-4.46	102.14	33	5	mbGS
981	2000	6	5	6:14:24	-4.81	102.08	33	4.6	mbGS
982	2000	6	5	19:55:12	-4.41	102.25	33	5.3	mbGS
983	2000	6	5	8:24:00	-5.13	101.99	33	4.7	mbGS
984	2000	6	5	11:45:36	-4.46	102.14	33	5.1	mbGS
985	2000	6	5	22:33:36	-4.34	102.23	33	5.2	mbGS
986	2000	6	5	6:57:36	-4.42	102.32	33	5	mbGS
987	2000	6	5	2:38:24	-4.72	102.33	33	4.6	mbGS
988	2000	6	5	19:55:12	-4.43	102.07	33	4.4	mbGS
989	2000	6	5	19:40:48	-4.39	102.33	33	5.1	mbGS
990	2000	6	5	3:50:24	-4.43	102.33	33	4.6	mbGS
991	2000	6	5	14:52:48	0.29	96.72	33	4.7	mbGS
992	2000	6	5	16:19:12	-4.83	102.24	33	4.8	mbGS
993	2000	6	5	5:16:48	-4.46	102.46	33	4.2	mbGS
994	2000	6	5	11:31:12	-4.59	102.18	33	4.4	mbGS
995	2000	6	5	10:04:48	-4.43	102.22	33	4.4	mbGS
996	2000	6	5	7:12:00	-4.5	102.12	33	4.6	mbGS
997	2000	6	5	23:45:36	-4.14	102.01	33	5.5	MwHRV
998	2000	6	6	0:57:36	-4.41	102.13	33	5.4	MwGS
999	2000	6	6	18:43:12	-4.68	102.19	33	4.8	mbGS
1000	2000	6	6	18:28:48	-4.7	101.78	33	4.7	mbGS
1001	2000	6	6	20:52:48	-4.38	102.04	33	4.9	mbGS
1002	2000	6	6	13:26:24	-5.06	101.83	33	4.7	mbGS
1003	2000	6	6	23:31:12	-4.82	102.11	33	4.5	mbGS
1004	2000	6	6	0:57:36	-5.05	102.05	33	4.6	mbGS
1005	2000	6	6	3:21:36	-4.91	101.85	33	4.9	MwGS
1006	2000	6	6	7:26:24	-4.5	102.37	33	4.8	mbGS
1007	2000	6	7	16:48:00	-5.01	102.13	33	4.7	mbGS
1008	2000	6	7	10:04:48	-4.85	102.03	33	4.7	mbGS
1009	2000	6	7	20:24:00	-4.04	102.77	33	4.7	mbGS
1010	2000	6	7	17:02:24	-4.71	102.2	33	4.6	mbGS
1011	2000	6	7	20:09:36	-4.89	102.1	33	4.8	mbGS
1012	2000	6	7	18:28:48	-4.63	101.9	33	4.4	mbGS
1013	2000	6	7	6:57:36	-4.68	101.88	33	4.4	mbGS
1014	2000	6	7	16:19:12	-4.61	101.9	33	6.7	MwHRV
1015	2000	6	7	16:04:48	-4.83	101.75	33	4.8	mbGS
1016	2000	6	8	10:04:48	-4.39	102.04	33	4.7	mbGS
1017	2000	6	8	20:38:24	-4.51	101.9	33	5	mbGS
1018	2000	6	8	6:57:36	-4.65	101.99	33	5.1	mbGS
1019	2000	6	8	0:00:00	-4.85	101.88	33	4.7	mbGS
1020	2000	6	8	1:26:24	-4.47	101.98	33	4.8	mbGS

no.	year	month	day	time	lat	long	depth	mag	type
1021	2000	6	8	3:07:12	-4.63	101.85	33	4.8	mbGS
1022	2000	6	8	20:38:24	-4.61	101.88	33	4.6	mbGS
1023	2000	6	8	23:02:24	-4.46	101.91	33	4.6	mbGS
1024	2000	6	8	11:31:12	-4.48	101.95	33	4.7	mbGS
1025	2000	6	8	17:45:36	-4.57	101.84	33	4.9	mbGS
1026	2000	6	8	21:21:36	-4.52	101.82	33	4.2	mbGS
1027	2000	6	8	11:31:12	-4.48	102.03	33	4.9	mbGS
1028	2000	6	8	15:50:24	-4.47	101.88	33	5	mbGS
1029	2000	6	8	7:12:00	-4.44	101.94	33	4.7	mbGS
1030	2000	6	8	2:09:36	-5.14	101.63	33	4.3	mbGS
1031	2000	6	8	22:19:12	-4.4	101.99	33	3.8	mbGS
1032	2000	6	8	3:21:36	-4.35	102.19	33	5.1	mbGS
1033	2000	6	8	19:12:00	-1.23	99.33	33	3.6	mbGS
1034	2000	6	8	4:33:36	-4.62	101.95	33	4.8	mbGS
1035	2000	6	8	16:33:36	-4.43	102.07	33	4.8	mbGS
1036	2000	6	8	18:28:48	-5.16	101.98	33	4.7	mbGS
1037	2000	6	8	18:00:00	-4.24	102.46	33	4.9	mbGS
1038	2000	6	8	1:40:48	-4.52	102.11	33	4.9	mbGS
1039	2000	6	9	22:33:36	-4.64	102.13	33	4.6	mbGS
1040	2000	6	9	18:28:48	-4.62	101.9	33	4.5	mbGS
1041	2000	6	9	0:00:00	-4.32	101.82	33	4.8	mbGS
1042	2000	6	9	0:57:36	-4.4	101.98	33	4.9	mbGS
1043	2000	6	9	0:28:48	-4.7	102.16	33	4.6	mbGS
1044	2000	6	9	23:02:24	-4.48	102.05	33	5.5	MwHRV
1045	2000	6	10	13:55:12	-5.35	101.92	33	4.8	mbGS
1046	2000	6	10	5:31:12	-4.94	101.97	33	4.5	mbGS
1047	2000	6	10	18:43:12	-4.97	102.22	33	5	mbGS
1048	2000	6	10	6:43:12	-4.37	102.03	33	4.9	mbGS
1049	2000	6	10	6:43:12	-4.65	101.99	33	4.6	mbGS
1050	2000	6	10	21:21:36	-4.87	102.36	33	4.7	mbGS
1051	2000	6	10	0:14:24	-4.93	102.23	33	5.1	mbGS
1052	2000	6	10	22:04:48	-4.74	102.37	33	4.8	mbGS
1053	2000	6	10	19:55:12	-5.07	102.22	33	4.7	mbGS
1054	2000	6	11	8:24:00	-4.48	102.09	33	4.1	mbGS
1055	2000	6	11	20:09:36	-5.54	101.49	33	5.5	MwHRV
1056	2000	6	11	22:04:48	-5.4	101.43	33	4.4	mbGS
1057	2000	6	11	9:07:12	-5.39	101.72	33	4.7	mbGS
1058	2000	6	11	15:21:36	-5.03	102.15	33	5.3	MwHRV
1059	2000	6	12	3:50:24	-5.04	102.03	33	4.4	mbGS
1060	2000	6	12	23:16:48	-4.73	101.93	33	4.2	mbGS
1061	2000	6	12	19:26:24	-5.22	101.98	33	4.6	mbGS
1062	2000	6	13	20:52:48	-4.56	102.05	33	4.2	mbGS
1063	2000	6	14	6:14:24	-4.92	102.03	33	4.9	mbGS
1064	2000	6	14	7:26:24	-4.47	101.96	33	4.3	mbGS
1065	2000	6	14	7:55:12	-4.37	102.19	33	4.8	mbGS
1066	2000	6	15	5:16:48	-4.4	102.05	33	4.8	mbGS
1067	2000	6	15	18:43:12	-4.35	102.14	33	4.4	mbGS
1068	2000	6	15	3:21:36	-4.23	102.33	33	4.7	mbGS
1069	2000	6	16	19:55:12	-4.58	101.92	33	4.8	mbGS
1070	2000	6	16	9:50:24	-4.9	102.19	33	4.5	mbGS
1071	2000	6	16	9:07:12	-4.59	101.96	33	4.3	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1072	2000	6	17	3:50:24	-4.5	102.09	33	4.4	mbGS
1073	2000	6	18	19:40:48	-4.65	102.27	33	4.5	mbGS
1074	2000	6	18	11:02:24	-4.64	102.14	33	4.2	mbGS
1075	2000	6	18	22:19:12	-4.8	101.94	33	4.1	mbGS
1076	2000	6	20	2:24:00	-4.03	101.91	33	4.9	mbGS
1077	2000	6	20	3:07:12	-4.91	102.18	33	5.3	MwHRV
1078	2000	6	20	6:14:24	-4.54	102.16	33	4.9	mbGS
1079	2000	6	20	12:43:12	-4.58	101.92	33	4.5	mbGS
1080	2000	6	22	23:45:36	-4.84	101.84	33	5	mbGS
1081	2000	6	22	9:50:24	-4.79	101.81	33	4.9	mbGS
1082	2000	6	22	13:55:12	-4.37	102.34	33	4.2	mbGS
1083	2000	6	23	17:16:48	-4.42	102.14	33	4.1	mbGS
1084	2000	6	23	4:48:00	-5.07	102.17	33	4.5	mbGS
1085	2000	6	24	1:55:12	-5.01	102.31	33	4.5	mbGS
1086	2000	6	25	18:28:48	-4.95	102.29	33	3.9	mbGS
1087	2000	6	27	20:38:24	-5.08	102.13	33	4.4	mbGS
1088	2000	6	27	13:26:24	-1.54	100.5	33	4.6	mbGS
1089	2000	6	28	8:38:24	-4.46	101.97	33	5	mbGS
1090	2000	7	1	17:31:12	-4.68	101.96	33	4.7	mbGS
1091	2000	7	2	6:00:00	-1.31	100.23	33	4.5	mbGS
1092	2000	7	4	5:31:12	-4.85	102.15	33	4.3	mbGS
1093	2000	7	5	12:14:24	-4.63	101.97	33	5.2	MwHRV
1094	2000	7	7	3:50:24	-4.72	101.93	33	4.6	mbGS
1095	2000	7	10	7:40:48	0.51	98.47	33	4.4	mbGS
1096	2000	7	13	9:07:12	-4.39	102.56	33	4.1	mbGS
1097	2000	7	16	23:45:36	-5.19	102.18	33	5.3	MwHRV
1098	2000	7	18	9:07:12	-4.41	102.48	63	4.9	mbGS
1099	2000	7	22	3:50:24	-4.07	102.37	69	5.7	MwGS
1100	2000	7	23	20:52:48	-5.02	102.1	33	4.1	mbGS
1101	2000	7	26	3:21:36	0.81	97.63	33	4.7	mbGS
1102	2000	7	29	5:02:24	-5.02	102.26	47	4.6	mbGS
1103	2000	7	30	13:12:00	-4.52	101.9	33	4.1	mbGS
1104	2000	7	31	3:50:24	-4.77	102.11	33	4.3	mbGS
1105	2000	8	12	5:16:48	-4.51	102.08	33	4.5	mbGS
1106	2000	8	12	17:16:48	2.06	97.78	58	4.3	mbGS
1107	2000	8	16	0:28:48	-4.39	102.18	33	4.7	mbGS
1108	2000	8	17	11:31:12	-4.43	101.4	33	4.3	mbGS
1109	2000	8	18	18:00:00	-4.55	101.97	33	4.7	mbGS
1110	2000	8	18	18:43:12	-4.27	102.32	33	4.2	mbGS
1111	2000	8	20	21:07:12	-5.61	101.61	33	4.5	mbGS
1112	2000	8	23	22:19:12	-3.97	101.7	33	4.2	mbGS
1113	2000	8	24	4:33:36	-4.66	102.09	33	4.6	mbGS
1114	2000	8	26	1:12:00	-4.32	102.33	33	4.7	mbGS
1115	2000	8	26	12:57:36	-4.47	102.38	33	4.4	mbGS
1116	2000	8	26	6:57:36	-4.33	102.19	33	4.1	mbGS
1117	2000	8	31	0:43:12	-4.28	102.33	33	4.9	mbGS
1118	2000	9	1	19:55:12	1.44	96.59	33	6	MwGS
1119	2000	9	2	8:24:00	0.35	100.96	150	4.7	mbGS
1120	2000	9	5	16:19:12	-4.51	102.3	33	4.7	mbGS
1121	2000	9	6	20:52:48	-4.44	102.23	33	4.5	mbGS
1122	2000	9	6	11:02:24	-4.43	102.06	33	5.2	MwHRV

no.	year	month	day	time	lat	long	depth	mag	type
1123	2000	9	12	10:48:00	-4.51	102.17	33	4.6	mbGS
1124	2000	9	12	13:55:12	-5.43	101.82	33	6	MwGS
1125	2000	9	16	10:04:48	-4.39	101.77	47	4.7	mbGS
1126	2000	9	17	10:04:48	-1.75	100.61	51	4.8	mbGS
1127	2000	9	22	12:57:36	-4.49	102.14	33	4.9	mbGS
1128	2000	9	22	3:36:00	-4.96	102.1	33	6.2	MwGS
1129	2000	9	24	7:12:00	-4.74	102.35	33	4.3	mbGS
1130	2000	9	27	16:48:00	-4.49	102.33	33	5	mbGS
1131	2000	9	29	11:31:12	2.23	99.39	183	4.2	mbGS
1132	2000	9	30	7:40:48	-5.09	102.18	33	4.2	mbGS
1133	2000	10	8	7:12:00	-4.18	101.61	33	4.1	mbGS
1134	2000	10	8	21:21:36	-4.21	101.63	33	4.4	mbGS
1135	2000	10	8	23:16:48	-4.24	101.53	33	5.1	mbGS
1136	2000	10	16	20:38:24	-5.48	101.72	33	5.1	mbGS
1137	2000	10	16	8:09:36	-5.52	101.74	33	4.7	mbGS
1138	2000	10	21	23:45:36	0.96	99	80	4.7	mbGS
1139	2000	10	22	9:21:36	-4.68	102.12	33	4.6	mbGS
1140	2000	11	5	3:50:24	-4.02	102.71	33	4.5	mbGS
1141	2000	11	17	2:09:36	-1.71	100.58	47	5	mbGS
1142	2000	11	24	0:00:00	0.79	99.73	33	4.7	mbGS
1143	2000	11	30	1:12:00	-4.35	102.18	33	4.8	mbGS
1144	2000	12	4	20:09:36	1.44	99.07	94	5.2	mbGS
1145	2000	12	5	22:04:48	-4.48	102.53	50	4.6	mbGS
1146	2000	12	5	6:57:36	-2.98	99.27	33	4.6	mbGS
1147	2000	12	9	12:00:00	-4.35	102.27	51	4.6	mbGS
1148	2000	12	9	14:52:48	-3.56	102.29	92	4.3	mbGS
1149	2000	12	12	9:50:24	0.45	98.96	33	4.7	mbGS
1150	2000	12	23	7:12:00	1.7	97.02	33	4.8	mbGS
1151	2000	12	24	13:12:00	-4.53	101.89	33	4.6	mbGS
1152	2000	12	26	6:00:00	-4.26	102.15	33	4.5	mbGS
1153	2000	12	27	15:07:12	-3.8	101.87	33	4.8	mbGS
1154	2000	12	29	9:07:12	-3.46	101.64	33	4.5	mbGS
1155	2001	1	16	1:55:12	-3.96	101.75	33	6	mbGS
1156	2001	1	16	19:55:12	-4.02	101.78	28	6.9	MwGS
1157	2001	1	16	6:14:24	-4.2	101.61	33	5.4	mbGS
1158	2001	1	16	23:31:12	-4.31	101.45	33	5.1	mbGS
1159	2001	1	16	15:07:12	-4.35	101.63	33	5.2	mbGS
1160	2001	1	16	13:55:12	-4.31	101.65	33	5.6	mbGS
1161	2001	1	16	16:04:48	-4.16	101.66	33	4.9	mbGS
1162	2001	1	16	12:43:12	-4.19	101.6	57	5.7	MwHRV
1163	2001	1	16	21:07:12	-4.28	101.51	33	4.8	mbGS
1164	2001	1	17	23:16:48	-4.42	102.71	33	4.3	mbGS
1165	2001	1	18	9:21:36	-4.05	101.75	55	5.4	MwHRV
1166	2001	1	18	14:38:24	-4.22	101.6	66	4.9	mbGS
1167	2001	1	21	14:52:48	-4.19	101.45	33	4.3	mbGS
1168	2001	1	23	20:24:00	-0.2	99.25	77	5.6	MwHRV
1169	2001	2	6	8:38:24	-4.59	101.99	33	3.9	mbGS
1170	2001	2	7	11:02:24	-4.53	102.48	33	4.2	mbGS
1171	2001	2	13	14:52:48	-5.1	102.12	33	4.2	mbGS
1172	2001	2	13	6:14:24	-4.68	102.56	36	7.4	MwHRV
1173	2001	2	13	23:16:48	-5.15	102.15	33	5.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1174	2001	2	14	3:21:36	-4.98	102.36	33	4.7	mbGS
1175	2001	2	15	7:40:48	-4.29	101.13	33	4.6	mbGS
1176	2001	2	15	5:16:48	-0.58	99.7	33	3.9	mbGS
1177	2001	2	21	20:09:36	-4.9	102.45	33	5.7	MwHRV
1178	2001	2	21	13:55:12	-4.38	101.39	33	4.8	mbGS
1179	2001	2	21	19:12:00	-4.45	102.32	90	4.7	mbGS
1180	2001	2	22	12:43:12	1.51	97.16	33	4.7	mbGS
1181	2001	2	22	14:09:36	-4.36	101.64	33	4.7	mbGS
1182	2001	2	22	14:24:00	-4.35	101.54	33	4.7	mbGS
1183	2001	2	24	9:07:12	-1.88	100.38	82	4.5	mbGS
1184	2001	3	7	3:21:36	0.34	97.68	33	5.1	MwHRV
1185	2001	3	13	14:38:24	-0.61	99.99	110	4.8	mbGS
1186	2001	3	27	11:45:36	-4.35	102.22	52	4.5	mbGS
1187	2001	3	28	4:33:36	-5.08	102.05	33	4.4	mbGS
1188	2001	4	6	5:31:12	-4.19	101.63	33	5.2	MwGS
1189	2001	4	8	11:16:48	-4.38	102.2	64	5.5	MwGS
1190	2001	4	17	13:55:12	-4.39	101.68	33	5	mbGS
1191	2001	4	24	3:07:12	-4.39	102.15	33	4.6	mbGS
1192	2001	4	25	5:45:36	-2.22	100.15	33	4.9	mbGS
1193	2001	4	26	16:04:48	-3.63	101.08	33	5.2	MwHRV
1194	2001	5	1	6:00:00	-4.46	102.02	33	4.4	mbGS
1195	2001	5	3	17:16:48	1.86	99.05	33	4	mbGS
1196	2001	5	11	0:28:48	0.88	98.94	80	5.2	MwHRV
1197	2001	5	14	2:24:00	-2.17	100.09	33	4.8	mbGS
1198	2001	5	14	8:38:24	-4.48	102.27	33	3.6	mbGS
1199	2001	5	16	18:28:48	-4.03	101.21	33	4.2	mbGS
1200	2001	5	18	10:48:00	0.41	97.78	33	5.9	MwGS
1201	2001	5	19	9:50:24	1.49	96.96	23	4.6	mbGS
1202	2001	5	22	22:19:12	-0.3	97.51	33	4.8	mbGS
1203	2001	5	25	20:52:48	-1.09	98.64	33	4.9	mbGS
1204	2001	5	25	1:55:12	-4.08	102.71	99	4.4	mbGS
1205	2001	5	26	13:40:48	-1.14	98.61	33	4.7	mbGS
1206	2001	5	26	10:48:00	-4.3	102.68	51	5.2	mbGS
1207	2001	5	26	17:02:24	-1.09	98.66	33	4.7	mbGS
1208	2001	5	27	1:55:12	-4.33	102.84	100	5.1	MwHRV
1209	2001	5	29	5:45:36	2.35	99.02	152	4.3	MDDJA
1210	2001	6	1	23:16:48	-4.44	102.18	43	4.6	mbGS
1211	2001	6	14	15:21:36	0.47	100.23	103	4.8	mbGS
1212	2001	6	15	13:26:24	-1.37	97.38	33	5.4	MwHRV
1213	2001	6	24	18:28:48	-4.6	101.9	33	4.3	mbGS
1214	2001	6	29	20:38:24	1.1	99.06	120	4.4	mbGS
1215	2001	7	6	13:26:24	-4.52	102.06	33	3.9	mbGS
1216	2001	7	23	8:52:48	0.29	98.54	33	5.1	MwHRV
1217	2001	7	23	2:09:36	-4.46	101.66	33	4.3	mbGS
1218	2001	7	30	2:52:48	-4.21	102.18	33	5	mbGS
1219	2001	8	3	17:02:24	-4.64	102.62	33	4.5	mbGS
1220	2001	8	5	23:16:48	1.72	99.14	150	3.6	mbGS
1221	2001	8	7	0:00:00	-0.23	99.55	106	4.3	mbGS
1222	2001	8	10	9:07:12	-4.51	102.18	33	4.3	mbGS
1223	2001	8	12	17:16:48	0.56	98.64	33	4.2	mbGS
1224	2001	8	19	1:55:12	-3.21	101.57	59	4.4	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
1225	2001	8	24	1:26:24	1.49	99.13	105	4.4	mbGS
1226	2001	8	26	18:28:48	-5.1	102	33	5.1	MwHRV
1227	2001	8	29	16:48:00	-4.14	102.81	33	3.9	mbGS
1228	2001	9	13	6:28:48	-3.18	101.44	73	5.2	mbGS
1229	2001	10	9	21:36:00	-4.58	102.01	33	4.7	mbGS
1230	2001	10	11	18:00:00	0.39	98.82	69	4.9	mbGS
1231	2001	10	16	15:07:12	-0.14	98.51	46	4.6	mbGS
1232	2001	10	16	0:43:12	1.96	99.46	76	4.8	mbGS
1233	2001	10	22	8:24:00	1.33	99.5	33	4.3	mbGS
1234	2001	10	24	23:31:12	-0.59	99.91	87	3.7	mbGS
1235	2001	10	29	23:02:24	-4.98	102.08	33	5	mbGS
1236	2001	11	12	18:57:36	1.84	99.2	150	4.1	mbGS
1237	2001	11	16	0:43:12	1.22	98.57	97	4.7	mbGS
1238	2001	11	18	3:07:12	1.92	98.23	83	4.1	mbGS
1239	2001	11	21	6:00:00	-3.61	102.46	100	4.4	mbGS
1240	2001	12	1	11:31:12	-4.76	101.9	58	5.6	MwHRV
1241	2001	12	2	0:14:24	-1.69	99.71	60	4.2	mbGS
1242	2001	12	6	8:52:48	-4.73	101.83	33	4.1	mbGS
1243	2001	12	7	6:14:24	-4.62	102.06	82	4.6	mbGS
1244	2001	12	14	10:48:00	-4.37	102.06	33	4.6	mbGS
1245	2001	12	16	9:36:00	-5.11	101.92	33	5.1	MwHRV
1246	2001	12	18	23:16:48	-1.92	102.42	200	4.1	mbGS
1247	2001	12	29	17:16:48	-1.7	100.05	33	4.8	mbGS
1248	2002	1	1	11:31:12	-2.03	100.67	100	4.5	mbGS
1249	2002	1	3	14:09:36	-4.33	102.04	33	5.6	MwHRV
1250	2002	1	4	11:31:12	-4.12	101.26	33	4.6	mbGS
1251	2002	1	4	22:04:48	1.95	97.92	42	5.2	MwHRV
1252	2002	1	7	3:36:00	-4.04	101.44	33	5.4	MwHRV
1253	2002	1	11	10:04:48	0.41	96.38	33	4.5	mbGS
1254	2002	1	22	19:55:12	-2.88	101.21	33	5	MwHRV
1255	2002	1	25	18:00:00	-3.52	102.31	111	4.2	mbGS
1256	2002	1	28	10:04:48	-4.46	102.09	33	5	mbGS
1257	2002	2	3	3:36:00	-1.02	100.48	33	4.1	mbGS
1258	2002	2	8	13:40:48	1.97	98.1	33	4.9	mbGS
1259	2002	2	9	20:09:36	-4.16	101.56	33	4.6	mbGS
1260	2002	2	11	13:55:12	1.93	97	26	5	mbGS
1261	2002	2	17	2:09:36	0.7	100.25	150	3.7	mbGS
1262	2002	2	28	5:02:24	-4.12	101.38	32	5.1	MwHRV
1263	2002	3	7	16:48:00	-2.19	102.14	200	4.4	mbGS
1264	2002	3	18	6:28:48	-4.81	102.19	51	5.4	MwHRV
1265	2002	3	20	22:48:00	-5.51	101.69	33	4.1	mbGS
1266	2002	3	25	19:12:00	-2.36	100.13	33	4.7	mbGS
1267	2002	3	27	17:16:48	-0.5	98.68	33	5.1	MwHRV
1268	2002	4	5	22:19:12	-4.64	102.25	33	4.1	mbGS
1269	2002	4	6	18:57:36	-4.11	102.85	88	4.6	mbGS
1270	2002	4	8	22:19:12	-4.09	102.29	33	4.2	mbGS
1271	2002	5	2	5:16:48	1.05	99.16	100	4.7	mbGS
1272	2002	5	11	22:04:48	-3.33	101.75	33	4.2	mbGS
1273	2002	5	17	10:04:48	0.8	98.67	81	4.7	mbGS
1274	2002	5	22	10:33:36	-4.81	101.76	33	5.2	mbGS
1275	2002	5	22	19:12:00	-1.71	100.54	70	4.5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1276	2002	5	27	23:31:12	-5.16	101.96	33	4.5	mbGS
1277	2002	5	30	1:12:00	2.38	99.14	155	4.7	mbGS
1278	2002	6	5	8:09:36	1.72	98.87	124	4.2	mbGS
1279	2002	6	14	13:55:12	-4.49	102.16	33	4.4	mbGS
1280	2002	6	18	18:57:36	0.41	96.7	33	4.2	mbGS
1281	2002	6	23	7:26:24	-0.94	101.08	66	4.6	mbGS
1282	2002	6	29	14:09:36	-2.94	101.41	50	4.8	mbGS
1283	2002	7	9	21:07:12	-3.28	101.49	33	5.1	mbGS
1284	2002	7	17	1:12:00	2	99.46	169	4.7	mbGS
1285	2002	7	21	22:48:00	-2.08	100.27	33	4.3	mbGS
1286	2002	8	3	7:12:00	-4.3	102.23	33	4.4	mbGS
1287	2002	9	7	14:09:36	-0.08	99.13	33	4.7	mbGS
1288	2002	9	9	11:45:36	0.37	99.24	33	4.5	mbGS
1289	2002	9	19	1:55:12	-3.25	101.38	43	5.1	MwHRV
1290	2002	9	20	20:24:00	0.1	98.37	33	4.5	mbGS
1291	2002	9	24	0:00:00	-2.9	100.23	33	4.6	mbGS
1292	2002	10	4	17:31:12	-2.38	102.05	177	4.6	mbGS
1293	2002	10	15	9:07:12	2.49	99.21	200	4.1	mbGS
1294	2002	10	27	19:12:00	-4.6	102.57	33	4.5	mbGS
1295	2002	11	4	6:28:48	-4.37	102.07	58	4.8	mbGS
1296	2002	11	18	11:45:36	-4.21	102.18	33	5.4	MwHRV
1297	2002	11	24	18:43:12	-4.24	102.05	31	4.5	mbGS
1298	2002	12	11	17:45:36	-0.22	99.24	81	4.5	mbGS
1299	2002	12	12	1:40:48	-3.74	101.06	33	4.5	mbGS
1300	2002	12	13	18:28:48	-3.26	101.69	33	4.9	mbGS
1301	2003	1	9	6:57:36	0.54	98.6	45	5.5	MwGS
1302	2003	1	10	2:24:00	0.2	97.96	27	5.7	MwHRV
1303	2003	1	10	12:28:48	0.22	97.92	26	5.3	mbGS
1304	2003	1	12	23:45:36	0.19	97.88	33	3.5	mbGS
1305	2003	1	19	6:43:12	-3.43	101.64	53	5.1	MDDJA
1306	2003	1	27	7:55:12	0.19	99.77	33	4.6	mbGS
1307	2003	2	2	17:16:48	0.99	98.23	100	4.4	mbGS
1308	2003	2	2	10:19:12	1.67	98.34	200	4.1	mbGS
1309	2003	2	3	6:43:12	-2.73	101.2	33	5.6	MwHRV
1310	2003	2	5	1:55:12	-3.23	101.17	33	4.7	mbGS
1311	2003	3	3	14:24:00	-3.86	102.57	75	5.2	MwHRV
1312	2003	3	7	5:02:24	-4.54	102.64	33	4.6	mbGS
1313	2003	3	15	1:55:12	-0.42	98.65	50	4.6	mbGS
1314	2003	3	16	2:09:36	-3.81	101.77	65	4.5	mbGS
1315	2003	3	31	12:57:36	-4.53	102.42	33	4.7	mbGS
1316	2003	4	4	7:12:00	1.74	99.65	177	4.5	mbGS
1317	2003	4	4	23:16:48	-4.33	102.79	95	4.7	mbGS
1318	2003	4	13	14:24:00	2.3	97.65	33	4.7	mbGS
1319	2003	5	2	20:38:24	-4.23	102.22	63	4.8	mbGS
1320	2003	5	12	5:02:24	1.14	98.91	77	5.5	MwGS
1321	2003	5	17	22:19:12	1.55	99.26	57	4.7	mbGS
1322	2003	6	8	20:52:48	-4.75	102.44	33	4.4	mbGS
1323	2003	6	19	7:26:24	0.64	98.61	80	4.8	mbGS
1324	2003	6	29	21:50:24	-5.63	100.68	38	4.7	mbGS
1325	2003	6	29	11:16:48	-3.17	102.03	136	4.1	mbGS
1326	2003	7	2	20:38:24	-3.64	102.06	75	5.1	MwHRV

no	year	mon	day	time	lat	long	depth	mag	type
1327	2003	7	9	1:12:00	-4.29	102.84	98	5	mbGS
1328	2003	7	14	6:28:48	-0.54	100.82	144	5.7	MwGS
1329	2003	7	15	15:36:00	-4.61	102.32	100	4.7	mbGS
1330	2003	7	16	23:31:12	1.97	98.84	124	4.2	mbGS
1331	2003	7	24	11:31:12	-4.56	102.67	33	4.9	mbGS
1332	2003	8	6	9:50:24	-4.41	102.58	33	4.6	mbGS
1333	2003	8	20	8:24:00	1.76	97.22	33	4.5	mbGS
1334	2003	8	24	18:14:24	-1.52	98.84	33	4.2	mbGS
1335	2003	8	25	0:57:36	-1.39	99.74	33	4.6	mbGS
1336	2003	8	27	7:40:48	0.8	97.84	33	4.1	mbGS
1337	2003	8	30	7:12:00	-4.77	102.39	33	4.4	mbGS
1338	2003	9	18	12:28:48	-0.88	100.47	33	4.4	mbGS
1339	2003	9	28	18:28:48	1	100.35	200	4.2	mbGS
1340	2003	10	2	6:57:36	-1.81	99.69	33	4.4	mbGS
1341	2003	10	5	12:28:48	-3.58	101.13	33	4.1	mbGS
1342	2003	10	13	0:14:24	-4.56	102.17	33	4.9	mbGS
1343	2003	10	18	23:16:48	-2.46	101.97	33	4.6	mbGS
1344	2003	11	1	5:02:24	-4.47	101.95	33	4.6	mbGS
1345	2003	11	3	13:26:24	-1.38	99.79	21	5	mbGS
1346	2003	11	4	8:09:36	-4.07	102.63	78	5.1	MwHRV
1347	2003	11	13	1:40:48	-4.86	102.26	61	4.8	mbGS
1348	2003	11	13	3:50:24	0.28	99.94	33	4.5	mbGS
1349	2003	11	14	6:28:48	-3.61	102.04	33	5.4	MwHRV
1350	2003	11	17	9:36:00	-5.84	101.04	29	4.3	mbGS
1351	2003	11	18	12:28:48	-3.47	102.14	24	4.8	mbGS
1352	2003	11	29	14:52:48	-0.44	96.91	33	4.7	mbGS
1353	2003	12	4	3:50:24	-4.36	101.09	33	4.8	mbGS
1354	2003	12	5	5:16:48	1.35	99.06	139	4.7	mbGS
1355	2003	12	7	21:07:12	-3.96	102.49	33	4.4	mbGS
1356	2003	12	11	11:45:36	1.27	98.71	120	4.8	mbGS
1357	2003	12	11	23:02:24	1.75	99.09	33	4.2	mbGS
1358	2003	12	27	12:28:48	-4.14	102.75	33	4.1	mbGS
1359	2004	1	25	20:24:00	-0.17	99.59	105	4.6	mbGS
1360	2004	2	1	10:33:36	-0.21	97.42	25	4.7	mbGS
1361	2004	2	8	19:40:48	-4.96	102.12	10	4.4	mbGS
1362	2004	2	16	21:36:00	-0.47	100.65	55	5.1	MwHRV
1363	2004	2	21	15:36:00	0.32	101.81	177	4	mbGS
1364	2004	2	22	3:36:00	2.34	98.28	123	4.6	mbGS
1365	2004	2	22	0:57:36	-1.56	100.49	42	6	MwGS
1366	2004	2	24	0:14:24	0.99	99.03	117	4.2	mbGS
1367	2004	2	26	21:21:36	-2.76	98.73	10	4.2	mbGS
1368	2004	2	27	14:52:48	-4.8	101.34	45	4.5	mbGS
1369	2004	3	3	3:50:24	-0.76	99.06	51	4.5	mbGS
1370	2004	3	8	5:45:36	-4.45	102.26	27	4.7	mbGS
1371	2004	3	12	2:09:36	-4.96	102.33	45	4.4	mbGS
1372	2004	3	19	7:55:12	-1.75	100.35	44	4.5	mbGS
1373	2004	3	20	14:24:00	-4.5	102.01	43	4	mbGS
1374	2004	3	25	4:04:48	-5.11	101.94	27	4.8	MwHRV
1375	2004	4	1	19:26:24	1.97	99.53	74	4.5	mbGS
1376	2004	4	3	4:04:48	1.46	98.88	10	4.5	mbGS
1377	2004	4	4	14:52:48	1.4	98.94	10	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1378	2004	4	5	7:26:24	-5.56	101.19	34	4.9	MwHRV
1379	2004	4	9	17:02:24	-1.55	100.54	65	5.5	MwGS
1380	2004	4	21	7:40:48	-4.22	98.72	17	4.8	mbGS
1381	2004	4	24	9:36:00	1.08	97.16	10	4.7	mbGS
1382	2004	4	26	15:50:24	-1.53	99.07	45	4.1	mbGS
1383	2004	4	27	23:02:24	-4.28	102.2	60	4.9	MwHRV
1384	2004	4	29	2:52:48	-3.23	100.97	65	4.6	mbGS
1385	2004	4	30	20:09:36	-3.69	100.6	40	4.7	mbGS
1386	2004	5	5	6:57:36	-4.5	102.3	58	4.7	mbGS
1387	2004	5	9	5:16:48	-2.87	101.44	100	4.4	mbGS
1388	2004	5	11	6:43:12	0.41	97.82	21	6.1	MwGS
1389	2004	5	11	6:14:24	0.12	97.61	20	4.5	mbGS
1390	2004	5	13	4:19:12	0.22	97.6	10	4.5	mbGS
1391	2004	5	24	1:12:00	-0.53	97.95	20	4.4	mbGS
1392	2004	5	27	15:36:00	2.3	98.45	104	4.2	mbGS
1393	2004	6	8	5:45:36	1.82	96.71	10	4.5	mbGS
1394	2004	6	10	3:50:24	1.24	97.31	30	4.9	mbGS
1395	2004	6	12	11:16:48	0.26	98.69	67	4.6	mbGS
1396	2004	6	22	23:16:48	-4.66	102.64	10	4.9	mbGS
1397	2004	6	30	18:28:48	-4.81	102.31	58	4.6	mbGS
1398	2004	7	5	23:45:36	-3.44	100.69	40	4.3	mbGS
1399	2004	7	5	15:50:24	0.97	98.16	45	4.4	mbGS
1400	2004	7	11	18:28:48	-3.57	101.45	30	4	mbGS
1401	2004	7	14	0:14:24	-2.62	102.1	192	3.9	mbGS
1402	2004	7	16	8:24:00	-0.56	100.72	60	4.2	mbGS
1403	2004	7	17	6:14:24	1.29	97.38	53	5.1	MwHRV
1404	2004	7	28	14:09:36	-3.5	101.57	82	4.7	mbGS
1405	2004	8	6	21:36:00	-4.34	102.85	91	4.9	MwHRV
1406	2004	8	16	3:50:24	1.09	98.86	104	4.6	mbGS
1407	2004	8	21	9:07:12	-2.51	100.46	75	4.5	mbGS
1408	2004	8	22	9:36:00	2.16	97.44	77	4.6	mbGS
1409	2004	8	25	7:12:00	1.97	97.11	13	4.4	mbGS
1410	2004	8	25	21:36:00	-4.66	102.63	10	4.3	mbGS
1411	2004	8	29	23:45:36	-4.31	101.42	30	4.4	mbGS
1412	2004	8	30	19:55:12	-4.34	101.83	57	4.7	mbGS
1413	2004	8	30	9:36:00	-0.67	98.72	10	4.5	mbGS
1414	2004	9	6	0:28:48	-4.04	102.24	82	5.2	mbGS
1415	2004	9	7	19:55:12	0.11	98.73	59	5.2	MwHRV
1416	2004	9	7	8:52:48	0.57	100.22	182	4.7	mbGS
1417	2004	9	14	11:31:12	0.5	99.46	10	4.4	mbGS
1418	2004	9	16	21:21:36	-3.25	101.9	83	4.9	MwHRV
1419	2004	9	22	1:55:12	2.07	99.31	67	4.5	mbGS
1420	2004	9	22	0:43:12	1.9	98.84	20	4.3	mbGS
1421	2004	9	29	7:55:12	1.98	99.39	64	4.4	mbGS
1422	2004	10	5	16:04:48	1.65	96.68	10	4.2	mbGS
1423	2004	10	6	7:55:12	0.19	97.91	37	5.1	MwHRV
1424	2004	10	6	2:38:24	0.25	97.97	49	4.7	mbGS
1425	2004	10	6	6:28:48	0.12	97.79	10	4.4	mbGS
1426	2004	10	7	10:33:36	0.12	97.79	30	4.3	mbGS
1427	2004	10	7	15:36:00	2.02	97.07	48	4.4	mbGS
1428	2004	10	12	3:21:36	-1.81	99.61	41	4.5	mbGS

no	year	month	day	time	lat	long	depth	mag	type
1429	2004	10	22	9:50:24	-3.94	101.99	45	4.3	mbGS
1430	2004	10	24	3:07:12	-4.89	101.92	32	5.4	MwHRV
1431	2004	10	25	20:52:48	-4.22	102.45	10	4.1	mbGS
1432	2004	10	31	10:19:12	0.79	99.74	176	4	mbGS
1433	2004	11	1	0:28:48	-1.79	100.29	45	4.6	mbGS
1434	2004	11	3	5:02:24	-2.55	101.26	10	4	mbGS
1435	2004	11	6	4:04:48	0.31	99.86	92	4.4	mbGS
1436	2004	11	10	1:55:12	-4.45	101.83	56	4.4	mbGS
1437	2004	11	12	1:55:12	0.48	98.05	75	4.2	mbGS
1438	2004	11	27	7:40:48	1.98	97.93	41	5.4	MwHRV
1439	2004	11	29	14:24:00	-0.52	98.14	43	4.7	mbGS
1440	2004	11	29	1:55:12	-5.19	101.9	27	4.7	mbGS
1441	2004	11	30	15:36:00	-2.16	99.17	10	4.4	mbGS
1442	2004	11	30	5:45:36	-2.07	99.34	26	5.1	MwHRV
1443	2004	12	3	6:43:12	1.46	97.64	36	4.3	mbGS
1444	2004	12	5	21:50:24	-2.74	102.15	150	3.9	mbGS
1445	2004	12	7	13:12:00	-3.09	100.62	36	4.8	MwHRV
1446	2004	12	11	2:09:36	-1.57	100.65	84	4.4	mbGS
1447	2004	12	16	12:00:00	-2.79	101.41	100	4.4	mbGS
1448	2004	12	26	0:57:36	0.06	97.04	30	5.4	mbGS
1449	2004	12	26	8:38:24	-3.46	101.39	30	4.9	mbGS
1450	2004	12	26	3:07:12	-3.36	101.55	52	5	mbGS
1451	2004	12	26	16:19:12	1.04	96.6	16	4	mbGS
1452	2004	12	27	20:09:36	-3.68	100.73	27	4.7	mbGS
1453	2005	1	1	2:38:24	-3.89	102.32	25	4.8	mbGS
1454	2005	1	8	11:16:48	-3.53	101.47	44	4.6	mbGS
1455	2005	1	10	0:00:00	0.17	98.64	35	4.6	mbGS
1456	2005	1	16	16:19:12	0.13	98.64	50	4.1	mbGS
1457	2005	1	21	21:36:00	1.22	97.2	43	4.8	MwHRV
1458	2005	1	21	2:38:24	1.18	97.1	35	4.4	mbGS
1459	2005	1	25	9:36:00	1.07	98.76	30	4.5	mbGS
1460	2005	1	29	17:45:36	-1.51	100.5	30	4.2	mbGS
1461	2005	2	10	3:21:36	2.5	99.46	183	4.1	mbGS
1462	2005	2	14	15:21:36	-0.13	98.73	47	5.8	MwGS
1463	2005	2	19	6:43:12	-5.64	101.61	29	5.4	MwGS
1464	2005	2	19	12:43:12	1.37	98.81	30	4.6	mbGS
1465	2005	2	20	23:16:48	0.79	98.36	30	4.2	mbGS
1466	2005	2	22	22:19:12	-1.41	99.15	30	4.3	mbGS
1467	2005	2	23	16:04:48	-1.37	99.35	30	4.6	mbGS
1468	2005	3	1	12:43:12	-5.13	100.83	26	4.7	mbGS
1469	2005	3	2	1:55:12	-5.61	101.54	28	5	MwHRV
1470	2005	3	4	19:12:00	0.23	98.39	30	4.1	mbGS
1471	2005	3	4	8:24:00	0.87	98.82	97	4.7	mbGS
1472	2005	3	4	1:12:00	-5.61	101.5	25	5.1	mbGS
1473	2005	3	8	6:28:48	-4.65	101.67	30	4.3	mbGS
1474	2005	3	13	1:40:48	-1.68	96.87	10	4.1	mbGS
1475	2005	3	14	23:31:12	0.69	100.05	154	4.5	mbGS
1476	2005	3	17	12:43:12	-4.36	102.01	30	4.3	mbGS
1477	2005	3	20	4:33:36	1.51	97.76	30	4.3	mbGS
1478	2005	3	27	19:40:48	1.48	99.59	177	3.9	mbGS
1479	2005	3	28	23:45:36	2.03	97.2	30	3.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1480	2005	3	28	12:43:12	2.09	97.11	30	8.6	MwHRV
1481	2005	3	28	7:26:24	1.11	97	30	5.8	mbGS
1482	2005	3	28	20:24:00	1.52	97.08	30	5.4	mbGS
1483	2005	3	28	20:52:48	1.63	97.17	30	5.3	mbGS
1484	2005	3	28	2:52:48	0.43	97.67	30	5.2	mbGS
1485	2005	3	28	18:14:24	0.83	97.78	30	4.7	mbGS
1486	2005	3	28	11:02:24	0.93	97.91	30	5	mbGS
1487	2005	3	28	2:24:00	1.23	97.49	30	5.9	mbGS
1488	2005	3	28	9:07:12	1.75	97	30	4.7	mbGS
1489	2005	3	28	11:16:48	0.85	97.52	30	5	mbGS
1490	2005	3	28	7:40:48	0.84	97.38	30	5	mbGS
1491	2005	3	28	18:57:36	0.96	97.34	30	4.8	mbGS
1492	2005	3	28	17:45:36	0.85	97.87	30	4.3	mbGS
1493	2005	3	28	7:40:48	1.12	97.08	30	4.5	mbGS
1494	2005	3	28	4:33:36	0.18	97.7	30	4.6	mbGS
1495	2005	3	28	4:19:12	1.78	97.1	30	5.3	mbGS
1496	2005	3	28	8:24:00	1.63	97.08	30	5	mbGS
1497	2005	3	28	1:26:24	1.04	97.11	30	4.7	mbGS
1498	2005	3	28	6:28:48	1.11	97.08	30	4.8	mbGS
1499	2005	3	28	18:57:36	1.75	97.13	30	4.7	mbGS
1500	2005	3	28	12:00:00	1.03	97.24	30	4.6	mbGS
1501	2005	3	28	15:07:12	1.7	96.83	30	4.8	mbGS
1502	2005	3	28	7:26:24	1	97.87	30	5.4	mbGS
1503	2005	3	28	17:16:48	1.26	97.15	30	4.6	mbGS
1504	2005	3	28	5:02:24	1.01	97.27	30	4.5	mbGS
1505	2005	3	28	6:14:24	1.31	97.14	30	5	mbGS
1506	2005	3	28	17:16:48	0.07	97.81	30	4.5	mbGS
1507	2005	3	28	23:31:12	1.16	97.09	30	4.3	mbGS
1508	2005	3	28	5:02:24	1.12	97.36	30	4.4	mbGS
1509	2005	3	28	15:50:24	1.31	97	30	4.8	mbGS
1510	2005	3	28	1:12:00	1.26	97.08	30	4.8	mbGS
1511	2005	3	28	19:40:48	1.48	96.93	30	4.5	mbGS
1512	2005	3	28	13:26:24	0.92	97.87	36	6.1	mbGS
1513	2005	3	28	2:38:24	0.23	97.59	30	4.4	mbGS
1514	2005	3	28	12:43:12	1.38	97.07	30	4.8	mbGS
1515	2005	3	28	9:50:24	0.82	97.39	30	4.6	mbGS
1516	2005	3	28	4:04:48	0.71	97.37	30	4.4	mbGS
1517	2005	3	28	23:02:24	0.67	97.31	30	4.5	mbGS
1518	2005	3	28	21:50:24	1.01	97.82	30	5.8	mbGS
1519	2005	3	28	5:16:48	0.92	97.37	30	4.7	mbGS
1520	2005	3	28	0:14:24	0.86	97.87	30	4.2	mbGS
1521	2005	3	28	11:02:24	-0.69	97.28	30	4.9	mbGS
1522	2005	3	28	5:16:48	1.85	99.22	30	4.8	mbGS
1523	2005	3	28	22:48:00	1.96	97.06	30	4.6	mbGS
1524	2005	3	28	8:24:00	1.66	97.06	30	4.7	mbGS
1525	2005	3	28	13:26:24	1.04	97.46	23	5.1	mbGS
1526	2005	3	28	3:21:36	1.97	96.94	26	5.3	mbGS
1527	2005	3	28	16:48:00	1.16	97.06	24	4.1	mbGS
1528	2005	3	28	20:38:24	1.95	99.17	30	4.5	mbGS
1529	2005	3	28	22:48:00	1.02	97.16	30	4.4	mbGS
1530	2005	3	28	7:26:24	1.06	97.98	40	4.8	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
1531	2005	3	28	11:16:48	1	97.9	36	5.1	mbGS
1532	2005	3	28	20:38:24	1.52	97.02	25	4.6	mbGS
1533	2005	3	28	11:02:24	1.69	97.08	26	4.5	mbGS
1534	2005	3	28	10:04:48	1.75	97.13	27	5.1	mbGS
1535	2005	3	28	19:26:24	1.7	99.22	30	4.6	mbGS
1536	2005	3	28	13:55:12	1.05	97.02	30	4.2	mbGS
1537	2005	3	28	2:52:48	1.33	97.17	30	4.1	mbGS
1538	2005	3	28	23:02:24	1.37	97.65	29	4.3	mbGS
1539	2005	3	28	10:19:12	0.92	97.34	30	4.4	mbGS
1540	2005	3	28	22:19:12	1.22	97.22	30	4.5	mbGS
1541	2005	3	28	13:55:12	1.01	97.2	30	4.4	mbGS
1542	2005	3	28	19:55:12	1.29	97.21	30	4.8	mbGS
1543	2005	3	28	21:36:00	1.79	99.19	30	4.6	mbGS
1544	2005	3	28	12:28:48	1.44	97.07	30	4.6	mbGS
1545	2005	3	28	12:14:24	1.06	97.22	21	4.6	mbGS
1546	2005	3	28	14:38:24	1.28	97.08	30	4.5	mbGS
1547	2005	3	28	7:40:48	1.08	97.58	30	5	mbGS
1548	2005	3	28	4:19:12	1.15	97.27	30	4.7	mbGS
1549	2005	3	28	22:33:36	1.3	97.15	30	4.5	mbGS
1550	2005	3	28	4:33:36	0.88	97.11	30	4	mbGS
1551	2005	3	28	18:43:12	1.97	97.29	30	4.1	mbGS
1552	2005	3	28	18:57:36	0.88	97.84	30	4.7	mbGS
1553	2005	3	28	12:28:48	1.35	97.21	30	4.4	mbGS
1554	2005	3	28	19:12:00	1.22	97.15	19	4.9	mbGS
1555	2005	3	28	20:52:48	1.01	97.17	30	4.1	mbGS
1556	2005	3	28	4:48:00	1.09	97.22	30	4.5	mbGS
1557	2005	3	28	4:19:12	0.81	97.75	30	4.4	mbGS
1558	2005	3	28	4:04:48	1.32	97.1	30	5	mbGS
1559	2005	3	28	12:28:48	0.52	98.11	30	4	mbGS
1560	2005	3	28	20:09:36	0.09	97.38	30	4	mbGS
1561	2005	3	28	20:09:36	1.53	96.88	30	4	mbGS
1562	2005	3	28	3:50:24	1.58	97.37	30	4.4	mbGS
1563	2005	3	28	22:48:00	1.24	97.12	30	4.2	mbGS
1564	2005	3	28	23:31:12	0.56	97.54	30	4.2	mbGS
1565	2005	3	28	23:16:48	1.28	97.24	30	4.2	mbGS
1566	2005	3	28	19:55:12	1.04	97.4	30	4.9	mbGS
1567	2005	3	28	5:45:36	-0.87	97.59	30	4.2	mbGS
1568	2005	3	28	18:57:36	1.91	98.09	30	4.1	mbGS
1569	2005	3	28	2:09:36	-1.37	98.83	30	3.8	mbGS
1570	2005	3	28	6:43:12	1.34	97.13	23	4.3	mbGS
1571	2005	3	28	23:02:24	0.17	97.04	38	5.7	mbGS
1572	2005	3	28	14:38:24	0.86	97.36	30	4.7	mbGS
1573	2005	3	28	0:28:48	1.28	97.06	22	4.6	mbGS
1574	2005	3	29	10:19:12	1.32	97.24	30	4.3	mbGS
1575	2005	3	29	14:09:36	1.82	96.96	30	4.6	mbGS
1576	2005	3	29	5:31:12	0.74	97.38	30	4.5	mbGS
1577	2005	3	29	7:12:00	0.77	97.45	30	4.3	mbGS
1578	2005	3	29	4:33:36	0.28	97.34	30	4.5	mbGS
1579	2005	3	29	2:38:24	0.94	96.74	30	4.8	mbGS
1580	2005	3	29	21:07:12	1.62	97.13	30	5	mbGS
1581	2005	3	29	3:36:00	0.17	97.9	30	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1582	2005	3	29	18:28:48	1.17	97.07	22	4.6	mbGS
1583	2005	3	29	22:48:00	1.55	97.36	30	4.2	mbGS
1584	2005	3	29	21:36:00	1.46	97.18	30	4.3	mbGS
1585	2005	3	29	2:52:48	1.57	96.82	22	4.3	mbGS
1586	2005	3	29	7:26:24	1.66	99.15	30	4.7	mbGS
1587	2005	3	29	12:57:36	1.88	96.7	24	4.2	mbGS
1588	2005	3	29	3:50:24	1.8	97.09	25	4.5	mbGS
1589	2005	3	29	0:43:12	1.81	97.01	30	4.7	mbGS
1590	2005	3	29	15:07:12	0.79	97.44	30	4.6	mbGS
1591	2005	3	29	19:26:24	1.03	97.48	23	5.1	mbGS
1592	2005	3	29	1:55:12	0.82	97.39	30	4.2	mbGS
1593	2005	3	29	22:33:36	1.11	97.21	23	4.7	mbGS
1594	2005	3	29	12:43:12	1	97.3	30	4.1	mbGS
1595	2005	3	29	22:33:36	1.82	97.43	30	4.6	mbGS
1596	2005	3	29	20:52:48	0.5	97.83	30	4.6	mbGS
1597	2005	3	29	2:52:48	0.73	97.32	30	4.4	mbGS
1598	2005	3	29	6:14:24	0.36	97.75	25	4.7	mbGS
1599	2005	3	29	7:12:00	1.14	97.14	30	4.4	mbGS
1600	2005	3	29	14:52:48	1.03	97.18	22	4.7	mbGS
1601	2005	3	29	14:09:36	1.19	97.13	30	4.4	mbGS
1602	2005	3	29	9:50:24	1.34	97.11	24	4.9	mbGS
1603	2005	3	29	10:33:36	1.33	97.11	30	4.5	mbGS
1604	2005	3	29	6:14:24	1.35	97.21	30	4.5	mbGS
1605	2005	3	29	16:33:36	1.61	97.05	26	5.2	mbGS
1606	2005	3	29	14:38:24	1.25	97.15	25	5.3	mbGS
1607	2005	3	29	9:36:00	1.22	97.16	22	5.2	mbGS
1608	2005	3	29	10:48:00	0.96	97.36	30	4.4	mbGS
1609	2005	3	29	7:40:48	0.3	96.75	27	4.4	mbGS
1610	2005	3	29	3:21:36	1.18	97.31	30	4.6	mbGS
1611	2005	3	29	22:19:12	0.19	97.1	35	5.5	MwHRV
1612	2005	3	29	2:24:00	0.19	98.04	30	4.9	mbGS
1613	2005	3	29	1:12:00	1.17	97.12	24	5.1	mbGS
1614	2005	3	29	20:09:36	0.87	97.48	24	5	mbGS
1615	2005	3	29	1:40:48	1.76	99.2	30	4.3	mbGS
1616	2005	3	29	1:26:24	0.78	97.41	25	4.8	mbGS
1617	2005	3	29	14:52:48	1.78	99.28	30	4.3	mbGS
1618	2005	3	29	18:14:24	0.96	97.82	30	4.2	mbGS
1619	2005	3	29	19:12:00	1.12	97.11	30	4.5	mbGS
1620	2005	3	29	0:43:12	1.13	97.22	30	4.6	mbGS
1621	2005	3	29	5:16:48	1.78	99.21	30	5.5	MwHRV
1622	2005	3	29	15:21:36	1.01	97.45	27	4.8	mbGS
1623	2005	3	29	11:16:48	0.13	97.8	30	4.2	mbGS
1624	2005	3	29	17:31:12	1.04	97.18	30	4.3	mbGS
1625	2005	3	29	20:52:48	1.01	97.21	30	4.4	mbGS
1626	2005	3	29	10:48:00	1.18	97.11	30	4.6	mbGS
1627	2005	3	29	8:24:00	0.66	97.46	30	4.5	mbGS
1628	2005	3	29	16:33:36	1.48	97.36	30	4.6	mbGS
1629	2005	3	29	10:33:36	0.99	97.33	30	4.4	mbGS
1630	2005	3	29	23:02:24	1.64	97.76	30	4.5	mbGS
1631	2005	3	29	18:57:36	0.43	97.26	30	4.3	mbGS
1632	2005	3	29	18:57:36	1.6	97.61	30	4.5	mbGS

no	year	month	day	time	lat	long	depth	mag	type
1633	2005	3	29	19:55:12	1.89	96.97	27	5	mbGS
1634	2005	3	29	21:50:24	0.06	97.12	30	4.6	mbGS
1635	2005	3	29	11:31:12	1.3	97.18	22	5	mbGS
1636	2005	3	29	17:45:36	1.31	97.26	30	4.4	mbGS
1637	2005	3	29	4:48:00	1.08	97.26	24	5.2	MwHRV
1638	2005	3	29	6:14:24	1.09	97.25	30	4.3	mbGS
1639	2005	3	29	18:14:24	0.94	97.11	22	4.6	mbGS
1640	2005	3	29	7:26:24	0.92	97.45	30	4.6	mbGS
1641	2005	3	29	19:55:12	1.16	97.21	21	4.4	mbGS
1642	2005	3	29	5:31:12	1.29	97.2	30	4.4	mbGS
1643	2005	3	29	21:36:00	1.37	97.13	21	4.6	mbGS
1644	2005	3	29	13:26:24	0.96	97.81	30	4.7	mbGS
1645	2005	3	29	1:26:24	1.83	99.35	30	4.3	mbGS
1646	2005	3	29	6:28:48	1.24	97.37	21	4.5	mbGS
1647	2005	3	29	19:55:12	1.83	99.25	30	4.4	mbGS
1648	2005	3	29	9:50:24	0.83	97.43	30	4.5	mbGS
1649	2005	3	29	6:43:12	1.42	97.12	30	4.4	mbGS
1650	2005	3	29	14:38:24	1.05	97.39	30	4.6	mbGS
1651	2005	3	29	10:33:36	1.43	97.32	23	4.4	mbGS
1652	2005	3	29	16:48:00	1.08	97.33	30	4.2	mbGS
1653	2005	3	29	10:48:00	1.2	97.2	30	4.3	mbGS
1654	2005	3	29	17:16:48	1.14	96.48	33	4.1	mbGS
1655	2005	3	29	14:24:00	0.79	97.37	30	4.2	mbGS
1656	2005	3	29	0:43:12	1.11	97.39	30	4.6	mbGS
1657	2005	3	29	6:57:36	1.31	97.07	23	4.7	mbGS
1658	2005	3	29	13:55:12	1.34	97.12	24	5	mbGS
1659	2005	3	29	10:19:12	1.79	96.94	30	4.4	mbGS
1660	2005	3	29	11:45:36	0.9	97.48	30	4.8	mbGS
1661	2005	3	29	4:48:00	0.6	97.41	30	4	mbGS
1662	2005	3	29	2:52:48	1.49	97.62	30	4.4	mbGS
1663	2005	3	29	9:50:24	1.25	97.15	30	4.5	mbGS
1664	2005	3	29	10:48:00	1.07	97.15	22	4.4	mbGS
1665	2005	3	29	6:43:12	0.06	97.08	31	4.5	mbGS
1666	2005	3	29	7:12:00	0.83	97.29	30	4.7	mbGS
1667	2005	3	29	15:21:36	1.8	97.76	37	4.9	MwHRV
1668	2005	3	29	9:36:00	1.26	97.16	23	4.2	mbGS
1669	2005	3	29	11:31:12	0.94	97.37	30	4.3	mbGS
1670	2005	3	29	21:36:00	0.84	97.59	30	4.1	mbGS
1671	2005	3	29	9:21:36	0.82	97.36	21	4.5	mbGS
1672	2005	3	29	10:33:36	1.15	97.16	21	4.7	mbGS
1673	2005	3	29	0:28:48	1.29	97.16	21	4.9	mbGS
1674	2005	3	29	16:04:48	1.32	97.07	30	4.4	mbGS
1675	2005	3	29	1:12:00	-0.86	97.77	30	4.7	mbGS
1676	2005	3	29	18:28:48	1.25	97.21	30	4.3	mbGS
1677	2005	3	29	12:43:12	1.12	97.12	30	4.2	mbGS
1678	2005	3	29	15:50:24	0.92	97.91	30	5	MwHRV
1679	2005	3	29	4:19:12	1.67	99.15	30	4.5	mbGS
1680	2005	3	29	13:12:00	1.36	97.17	30	4.5	mbGS
1681	2005	3	29	8:52:48	0.93	97.36	30	4.2	mbGS
1682	2005	3	29	8:38:24	1.35	97.13	30	4.4	mbGS
1683	2005	3	29	4:33:36	0.55	97.39	30	4.2	mbGS

no.	year	mon	day	hour	time	lat	long	depth	mag	type
1684	2005	3	29	8:52:48	0.95	97.36	30	4.3	mbGS	
1685	2005	3	29	8:52:48	2.1	97.69	30	4.2	mbGS	
1686	2005	3	29	0:14:24	1.32	97.25	30	4.2	mbGS	
1687	2005	3	29	12:14:24	1.82	96.71	30	4.1	mbGS	
1688	2005	3	29	14:38:24	1.41	97.11	24	4.3	mbGS	
1689	2005	3	29	15:21:36	1.59	97.65	30	4.6	mbGS	
1690	2005	3	29	12:00:00	1.63	99.22	30	4.1	mbGS	
1691	2005	3	29	0:28:48	1.63	99.18	30	4.3	mbGS	
1692	2005	3	29	1:12:00	1.65	97.15	30	4.2	mbGS	
1693	2005	3	29	19:55:12	1.35	97.11	26	4.5	mbGS	
1694	2005	3	29	13:55:12	1.44	96.39	30	4.4	mbGS	
1695	2005	3	30	13:12:00	1.23	97.14	25	4.3	mbGS	
1696	2005	3	30	21:07:12	1.07	97.32	25	4.9	MwHRV	
1697	2005	3	30	17:45:36	1.2	97.08	18	4.6	mbGS	
1698	2005	3	30	19:12:00	1.14	97.18	22	4.6	mbGS	
1699	2005	3	30	18:00:00	1.77	97.1	27	5.7	MwGS	
1700	2005	3	30	21:21:36	1.32	97.04	24	4.8	mbGS	
1701	2005	3	30	13:55:12	1.67	96.87	28	4.5	mbGS	
1702	2005	3	30	18:43:12	1.16	97.11	30	4.8	mbGS	
1703	2005	3	30	6:43:12	1.93	99.23	30	4.4	mbGS	
1704	2005	3	30	10:48:00	1.25	97.1	22	4.7	mbGS	
1705	2005	3	30	11:16:48	1.27	97.16	30	4.7	mbGS	
1706	2005	3	30	3:36:00	0.93	97.87	30	4.6	mbGS	
1707	2005	3	30	4:48:00	0.6	97.57	30	4.8	mbGS	
1708	2005	3	30	21:50:24	0.93	97.41	30	4.5	mbGS	
1709	2005	3	30	11:31:12	0.97	97.21	30	4.5	mbGS	
1710	2005	3	30	0:57:36	1.89	96.92	30	4.3	mbGS	
1711	2005	3	30	9:36:00	1.47	97.22	30	4.5	mbGS	
1712	2005	3	30	16:04:48	1.02	97.28	30	4.5	mbGS	
1713	2005	3	30	2:38:24	1.05	97.4	30	4.5	mbGS	
1714	2005	3	30	18:57:36	0.82	97.08	30	4.1	mbGS	
1715	2005	3	30	8:09:36	1.17	97.8	30	4.5	mbGS	
1716	2005	3	30	19:40:48	1.26	97.2	30	4.6	mbGS	
1717	2005	3	30	20:38:24	1.05	97.15	30	4.5	mbGS	
1718	2005	3	30	11:02:24	1.89	96.94	26	5.1	MwHRV	
1719	2005	3	30	17:02:24	1.21	97.07	24	4.1	mbGS	
1720	2005	3	30	14:09:36	0.83	97.4	21	4.6	mbGS	
1721	2005	3	30	1:26:24	1.4	97.71	30	4.3	mbGS	
1722	2005	3	30	16:04:48	1.38	97.3	30	4.8	mbGS	
1723	2005	3	30	19:55:12	1.5	97.04	30	4.3	mbGS	
1724	2005	3	30	5:45:36	0.32	97.68	30	4.4	mbGS	
1725	2005	3	30	1:12:00	0.18	97.72	30	4.8	MwHRV	
1726	2005	3	30	21:36:00	-0.02	98.2	30	4.5	mbGS	
1727	2005	3	30	20:52:48	0.2	98.14	20	5.3	MwHRV	
1728	2005	3	30	6:28:48	1.94	96.79	25	4.5	mbGS	
1729	2005	3	30	3:21:36	0.27	98.63	30	4.4	mbGS	
1730	2005	3	30	17:02:24	0.95	97.23	30	4	mbGS	
1731	2005	3	30	1:55:12	0.77	97.42	23	4.5	mbGS	
1732	2005	3	30	8:52:48	1.26	97.21	24	4.7	mbGS	
1733	2005	3	30	0:00:00	1.12	97.32	30	4.3	mbGS	
1734	2005	3	30	10:33:36	0.19	98.14	30	4.7	mbGS	

no	year	mon	day	time	lat	long	depth	mag	type
1735	2005	3	30	6:00:00	1.26	97.1	23	4.9	mbGS
1736	2005	3	30	1:55:12	0.09	98.12	30	4	mbGS
1737	2005	3	30	22:04:48	1.06	97.19	30	4.3	mbGS
1738	2005	3	30	5:31:12	1.06	97.27	22	4.9	mbGS
1739	2005	3	30	7:40:48	1.15	97.13	29	4.6	mbGS
1740	2005	3	30	10:48:00	1.18	97.16	30	4.1	mbGS
1741	2005	3	30	2:09:36	1.79	97.44	30	4.1	mbGS
1742	2005	3	30	16:33:36	1.1	97.19	30	4.1	mbGS
1743	2005	3	30	12:28:48	0.74	97.74	30	4.1	mbGS
1744	2005	3	30	20:52:48	1	97.34	30	4.3	mbGS
1745	2005	3	30	2:24:00	1.25	97.17	22	4.9	MwHRV
1746	2005	3	30	5:31:12	1.23	97.16	30	4.9	MwHRV
1747	2005	3	30	16:19:12	1.18	97.16	30	4.3	mbGS
1748	2005	3	30	11:45:36	1.86	97.07	26	5.2	MwHRV
1749	2005	3	31	11:02:24	-0.02	96.65	30	4.2	mbGS
1750	2005	3	31	4:48:00	1.01	97.27	22	4.6	mbGS
1751	2005	3	31	15:36:00	1.09	97.3	30	4.1	mbGS
1752	2005	3	31	0:57:36	1.1	97.3	23	5	mbGS
1753	2005	3	31	11:45:36	1.1	97.12	21	4.8	mbGS
1754	2005	3	31	20:24:00	1.09	97.14	30	4.5	mbGS
1755	2005	3	31	21:50:24	1.08	97.28	30	4.6	mbGS
1756	2005	3	31	16:04:48	1.31	97.19	30	5.2	MwHRV
1757	2005	3	31	8:52:48	1.27	97.14	30	4.7	mbGS
1758	2005	3	31	13:40:48	0.8	97.55	30	4.4	mbGS
1759	2005	3	31	13:55:12	1.55	97.06	26	4.8	mbGS
1760	2005	3	31	18:57:36	1.7	97.12	22	5.8	MwHRV
1761	2005	3	31	1:40:48	0.94	97.31	30	4.8	mbGS
1762	2005	3	31	8:38:24	0.18	97.65	22	4.4	mbGS
1763	2005	3	31	2:09:36	0.71	97.63	30	4.1	mbGS
1764	2005	3	31	1:40:48	0.91	97.46	24	4.5	mbGS
1765	2005	3	31	9:07:12	0.78	97.46	23	4.9	mbGS
1766	2005	3	31	7:12:00	2.36	99.22	30	4.3	mbGS
1767	2005	3	31	22:48:00	1.06	97.34	23	4.6	mbGS
1768	2005	3	31	23:31:12	0.57	97.08	30	4.4	mbGS
1769	2005	3	31	8:38:24	0.94	97.68	30	4.2	mbGS
1770	2005	3	31	20:52:48	1.28	97.28	24	4.7	mbGS
1771	2005	3	31	12:43:12	0.46	97.88	30	4.4	mbGS
1772	2005	3	31	1:55:12	0.88	97.39	30	4.5	mbGS
1773	2005	3	31	10:19:12	1.37	97.08	30	4.4	mbGS
1774	2005	3	31	2:52:48	1.32	97.21	30	4.9	MwHRV
1775	2005	3	31	2:24:00	0.99	97.33	30	4.5	mbGS
1776	2005	3	31	1:40:48	0.35	97.74	21	4.8	MwHRV
1777	2005	3	31	20:24:00	0.96	97.82	20	4.7	mbGS
1778	2005	3	31	11:02:24	0.48	99.12	30	4.5	mbGS
1779	2005	3	31	3:21:36	1.36	97.09	25	4.8	MwHRV
1780	2005	3	31	0:14:24	0.31	97.71	28	4.6	mbGS
1781	2005	3	31	11:16:48	0.96	98.12	30	4.4	mbGS
1782	2005	3	31	18:43:12	0.99	97.17	30	4.1	mbGS
1783	2005	3	31	16:33:36	1.34	98.41	30	4.3	mbGS
1784	2005	3	31	0:57:36	0.93	97.49	26	4.7	mbGS
1785	2005	3	31	20:24:00	0.45	97.36	30	4.1	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1786	2005	3	31	4:19:12	-4.18	101.99	35	4.4	mbGS
1787	2005	3	31	11:16:48	1.24	98.62	30	4.1	mbGS
1788	2005	3	31	10:33:36	1.13	97.2	30	4.3	mbGS
1789	2005	4	1	8:24:00	0.67	97.6	30	5	mbGS
1790	2005	4	1	0:28:48	1.11	97.16	22	5	MwHRV
1791	2005	4	1	19:40:48	0.62	97.51	30	4.8	mbGS
1792	2005	4	1	2:38:24	1.12	97.79	30	4	mbGS
1793	2005	4	1	0:28:48	1.02	97.41	30	4.6	mbGS
1794	2005	4	1	3:36:00	0.75	97.42	30	4.6	mbGS
1795	2005	4	1	16:19:12	0.81	97	30	4.6	mbGS
1796	2005	4	1	7:40:48	1.13	97.07	25	4.3	mbGS
1797	2005	4	1	23:31:12	1.19	96.75	30	4.5	mbGS
1798	2005	4	1	10:48:00	1.37	97.32	30	3.9	mbGS
1799	2005	4	1	15:50:24	1.12	97.09	25	4.9	mbGS
1800	2005	4	1	9:36:00	1.26	97.16	21	4.5	mbGS
1801	2005	4	1	17:45:36	0.9	97.37	33	4.4	mbGS
1802	2005	4	1	12:57:36	1.82	97.75	30	4.7	mbGS
1803	2005	4	1	15:21:36	1.33	97.09	24	4.9	mbGS
1804	2005	4	1	16:19:12	0.86	97.74	30	4.4	mbGS
1805	2005	4	1	4:04:48	1.13	97.21	30	4.6	mbGS
1806	2005	4	1	7:12:00	1.04	98.04	30	4.4	mbGS
1807	2005	4	1	7:26:24	0.18	97.16	34	4.7	MwHRV
1808	2005	4	1	14:09:36	0.28	97.22	33	4.7	mbGS
1809	2005	4	1	11:45:36	1.06	97.21	24	4.6	mbGS
1810	2005	4	1	3:07:12	-0.35	96.9	30	4.8	mbGS
1811	2005	4	1	11:16:48	-0.25	97.11	30	4.3	mbGS
1812	2005	4	1	5:31:12	1.13	97.24	26	5.1	MwHRV
1813	2005	4	1	10:33:36	1.11	97.29	30	4.3	mbGS
1814	2005	4	1	16:19:12	2.33	98.65	30	3.9	mbGS
1815	2005	4	1	8:09:36	0.98	97.33	30	4	mbGS
1816	2005	4	1	16:48:00	1.24	97.19	30	4.6	mbGS
1817	2005	4	1	9:07:12	0.32	98.11	29	5.6	MwGS
1818	2005	4	1	6:57:36	-0.2	97.1	30	4.3	mbGS
1819	2005	4	1	5:45:36	1.02	97.19	22	4.6	mbGS
1820	2005	4	1	19:40:48	-0.41	96.89	30	5.1	MwHRV
1821	2005	4	1	21:36:00	0.41	96.64	30	4.1	mbGS
1822	2005	4	1	11:45:36	0.18	98.12	30	4.7	mbGS
1823	2005	4	2	14:09:36	1.86	97.75	30	4.4	mbGS
1824	2005	4	2	5:16:48	0.44	97.98	30	4.5	mbGS
1825	2005	4	2	6:14:24	1.24	97.33	30	4.2	mbGS
1826	2005	4	2	21:07:12	1.23	97.18	30	4.5	mbGS
1827	2005	4	2	11:16:48	1.14	97.19	30	3.8	mbGS
1828	2005	4	2	5:45:36	0.81	97.46	30	4.9	MwHRV
1829	2005	4	2	12:57:36	-1.73	99.84	30	4.8	MwHRV
1830	2005	4	2	13:26:24	-1.84	99.81	30	4.2	mbGS
1831	2005	4	2	16:04:48	0.86	97.58	30	4.5	mbGS
1832	2005	4	2	2:09:36	0.86	97.3	30	4.6	mbGS
1833	2005	4	2	6:14:24	-0.24	96.99	30	4.6	mbGS
1834	2005	4	2	23:31:12	1.14	97.25	30	4.5	mbGS
1835	2005	4	2	5:16:48	1.61	97.63	30	4.4	mbGS
1836	2005	4	2	4:19:12	0.06	98.01	30	4.5	mbGS

no.	year	month	day	time	lat	long	depth	mag	type
1837	2005	4	2	13:55:12	1.04	97.18	22	4.7	mbGS
1838	2005	4	2	23:45:36	1.21	97.08	23	4.4	mbGS
1839	2005	4	2	20:24:00	-2.18	99.39	30	4.2	mbGS
1840	2005	4	2	14:52:48	1.28	97.18	30	4.7	mbGS
1841	2005	4	2	16:19:12	1.15	97.67	30	4.4	mbGS
1842	2005	4	2	16:19:12	0.05	97.78	25	4.4	mbGS
1843	2005	4	2	11:45:36	1.35	97.23	24	4.6	mbGS
1844	2005	4	2	18:28:48	0.99	97.61	50	4.5	mbGS
1845	2005	4	2	5:02:24	-0.42	96.92	23	5	MwHRV
1846	2005	4	2	7:26:24	1.11	97.14	30	4.5	mbGS
1847	2005	4	2	8:38:24	1.42	97.03	27	4.3	mbGS
1848	2005	4	2	13:55:12	0.66	96.93	26	4.8	mbGS
1849	2005	4	2	14:24:00	0.81	97.49	26	4.4	mbGS
1850	2005	4	2	11:16:48	1.46	97.06	26	4.3	mbGS
1851	2005	4	2	2:38:24	1.49	97.42	30	4.6	mbGS
1852	2005	4	3	19:55:12	1	97.19	23	4.4	mbGS
1853	2005	4	3	10:04:48	0.37	-98.32	30	6	MwGS
1854	2005	4	3	6:57:36	1.81	99.45	30	4.4	mbGS
1855	2005	4	3	4:33:36	0.71	97.3	30	3.9	mbGS
1856	2005	4	3	11:16:48	2.02	97.94	36	6.3	MwGS
1857	2005	4	3	3:36:00	0.78	97.4	30	4.5	mbGS
1858	2005	4	3	15:50:24	0.15	96.41	30	4.5	mbGS
1859	2005	4	3	5:45:36	0.01	96.6	30	4.2	mbGS
1860	2005	4	3	20:52:48	0.23	97.69	30	4.3	mbGS
1861	2005	4	3	17:31:12	0.77	97.35	30	4.7	mbGS
1862	2005	4	3	22:04:48	1.32	97.09	32	4.9	mbGS
1863	2005	4	3	12:57:36	1.16	97.16	30	4.5	mbGS
1864	2005	4	3	12:28:48	1.07	97.17	21	4.7	mbGS
1865	2005	4	3	19:26:24	0.2	97.16	30	4.4	mbGS
1866	2005	4	3	1:26:24	1.17	97.14	25	5	MwHRV
1867	2005	4	3	8:09:36	0.26	97.14	30	4.2	mbGS
1868	2005	4	3	6:57:36	0.78	97.69	30	4	mbGS
1869	2005	4	3	8:52:48	0.8	97.46	22	4.3	mbGS
1870	2005	4	3	21:50:24	1.13	97.2	30	4.7	mbGS
1871	2005	4	3	17:02:24	0.24	97.19	30	4.4	mbGS
1872	2005	4	3	11:31:12	1.22	97.15	30	4.3	mbGS
1873	2005	4	3	12:00:00	1.04	97.22	24	4.7	mbGS
1874	2005	4	3	6:28:48	0.23	97.62	27	4.2	mbGS
1875	2005	4	3	15:21:36	1.32	97.17	23	4.6	mbGS
1876	2005	4	3	7:55:12	-0.11	97.93	30	4.3	mbGS
1877	2005	4	3	18:00:00	-1	96.91	30	4.2	mbGS
1878	2005	4	3	6:28:48	-0.28	96.96	30	4.3	mbGS
1879	2005	4	3	17:02:24	1	97.32	21	4.7	mbGS
1880	2005	4	3	13:26:24	1.03	97.41	24	4.7	MwHRV
1881	2005	4	3	10:48:00	1.26	97.21	30	4.2	mbGS
1882	2005	4	3	2:24:00	-0.31	96.95	30	4.2	mbGS
1883	2005	4	3	11:31:12	1.91	96.78	30	4.2	mbGS
1884	2005	4	3	21:21:36	1.84	97.74	30	4.4	mbGS
1885	2005	4	4	15:50:24	1.98	97.31	30	4	mbGS
1886	2005	4	4	17:02:24	0.73	97.43	25	4.4	mbGS
1887	2005	4	4	18:00:00	0.31	96.43	30	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1888	2005	4	4	6:43:12	0.87	97.4	30	4.2	mbGS
1889	2005	4	4	18:28:48	0.84	97.38	30	4.3	mbGS
1890	2005	4	4	11:16:48	0.19	97.05	30	4.3	mbGS
1891	2005	4	4	15:07:12	1.61	97.87	30	5.6	MwGS
1892	2005	4	4	0:14:24	1.14	97.1	30	4.4	mbGS
1893	2005	4	4	0:00:00	0.23	97.05	30	4.4	mbGS
1894	2005	4	4	11:31:12	1.35	97.2	30	4.7	mbGS
1895	2005	4	4	12:14:24	0.84	97.35	30	4.7	mbGS
1896	2005	4	4	22:33:36	1.15	97.16	22	4.2	mbGS
1897	2005	4	4	3:21:36	0.83	97.31	30	4.8	mbGS
1898	2005	4	4	12:28:48	0.29	97.22	34	4.1	mbGS
1899	2005	4	4	19:26:24	1.28	97.15	23	4.9	MwHRV
1900	2005	4	4	5:31:12	1.61	96.96	26	4.5	mbGS
1901	2005	4	4	3:50:24	1.17	97.1	25	4.8	mbGS
1902	2005	4	4	6:14:24	0.95	97.44	30	4.1	mbGS
1903	2005	4	4	12:57:36	1.82	97.73	30	4.4	mbGS
1904	2005	4	4	18:00:00	1.22	97.34	30	4.7	mbGS
1905	2005	4	4	0:28:48	0.94	97.57	30	4.1	mbGS
1906	2005	4	4	11:45:36	-0.28	97.06	30	4.1	mbGS
1907	2005	4	4	15:50:24	1.85	96.92	27	4.3	mbGS
1908	2005	4	4	23:02:24	0.29	97.21	37	4.1	mbGS
1909	2005	4	4	2:38:24	0.31	97.1	31	4.3	mbGS
1910	2005	4	4	6:28:48	0.29	97.15	34	4.2	mbGS
1911	2005	4	4	1:55:12	1.19	97.05	30	4	mbGS
1912	2005	4	4	0:43:12	1.23	97.03	20	4.1	mbGS
1913	2005	4	4	0:28:48	1	97.46	30	4.7	mbGS
1914	2005	4	4	15:21:36	1.34	96.93	30	4.1	mbGS
1915	2005	4	4	12:00:00	1.97	97.86	30	4.7	MwHRV
1916	2005	4	4	6:43:12	0.79	97.41	30	4.5	mbGS
1917	2005	4	4	18:43:12	0.65	97.05	30	4.5	mbGS
1918	2005	4	4	7:55:12	0.81	97.46	30	4.4	mbGS
1919	2005	4	4	22:33:36	0.67	97.47	30	3.7	mbGS
1920	2005	4	5	4:04:48	-0.3	96.94	30	4.6	mbGS
1921	2005	4	5	6:14:24	-0.16	97.64	30	4.3	mbGS
1922	2005	4	5	21:50:24	0.41	97.98	30	4.4	mbGS
1923	2005	4	5	18:14:24	1.3	97.15	30	4.5	mbGS
1924	2005	4	5	22:04:48	1.12	97.32	30	4.2	mbGS
1925	2005	4	5	18:43:12	1.04	97.3	30	4.4	mbGS
1926	2005	4	5	11:16:48	1.08	97.28	30	4.8	mbGS
1927	2005	4	5	18:57:36	1.52	97.06	26	4.4	mbGS
1928	2005	4	5	19:55:12	0.14	97.17	32	4.7	MwHRV
1929	2005	4	5	4:04:48	0.04	96.92	30	4.6	mbGS
1930	2005	4	5	1:26:24	0.47	97.15	30	4.7	mbGS
1931	2005	4	5	22:04:48	1.89	97.01	25	5.1	MwHRV
1932	2005	4	5	10:19:12	1.16	97.16	30	4.1	mbGS
1933	2005	4	5	22:48:00	1.58	97.05	36	4.4	mbGS
1934	2005	4	5	17:02:24	1.34	97.18	30	4.9	mbGS
1935	2005	4	5	11:31:12	1.14	97.19	30	4.4	mbGS
1936	2005	4	5	10:48:00	0.12	96.87	30	4.4	mbGS
1937	2005	4	5	5:02:24	0.19	98.85	30	4.4	mbGS
1938	2005	4	5	3:50:24	0.06	98.69	30	4.6	mbGS

no.	year	mon.	day	time	lat	long.	depth	mag	type
1939	2005	4	5	21:07:12	0.12	97.74	24	4.3	mbGS
1940	2005	4	5	7:40:48	1.16	97.26	30	4.2	mbGS
1941	2005	4	5	16:48:00	1.18	97.12	30	4.3	mbGS
1942	2005	4	5	8:52:48	1.14	97.28	30	4.4	mbGS
1943	2005	4	5	9:07:12	1.04	97.37	30	4.7	mbGS
1944	2005	4	5	3:36:00	0	97.12	30	4	mbGS
1945	2005	4	5	14:52:48	0.46	96.35	25	4.7	mbGS
1946	2005	4	6	6:00:00	-0.22	96.91	30	4.4	mbGS
1947	2005	4	6	17:31:12	1.32	97.15	25	4.8	mbGS
1948	2005	4	6	3:50:24	1.3	97.25	24	4.4	mbGS
1949	2005	4	6	2:38:24	0.92	97.44	30	4.3	mbGS
1950	2005	4	6	7:40:48	1.06	97.18	23	4.7	mbGS
1951	2005	4	6	10:33:36	1.38	97.11	26	4.7	mbGS
1952	2005	4	6	11:16:48	0.34	97.91	30	4.5	mbGS
1953	2005	4	6	2:38:24	1.09	97.02	30	4.5	MbGS
1954	2005	4	6	7:26:24	0.94	97.68	30	4.5	mbGS
1955	2005	4	6	0:00:00	-3.98	102.42	67	5.6	MwGS
1956	2005	4	6	19:12:00	0.68	96.41	30	4.2	mbGS
1957	2005	4	6	16:48:00	0.85	97.51	30	4.4	mbGS
1958	2005	4	6	1:26:24	-2.64	99.75	31	4.6	mbGS
1959	2005	4	7	23:45:36	1.06	98.25	28	4.4	mbGS
1960	2005	4	7	8:38:24	0.29	97.74	30	4.3	mbGS
1961	2005	4	7	22:48:00	1.2	97.24	24	5	MwHRV
1962	2005	4	7	8:52:48	0.78	97	30	4.7	mbGS
1963	2005	4	7	10:33:36	0.98	97.16	25	4.7	mbGS
1964	2005	4	7	1:12:00	1.34	97.15	30	4.6	mbGS
1965	2005	4	7	19:26:24	1.24	97.26	23	4.8	mbGS
1966	2005	4	7	0:57:36	0.45	96.44	31	4.9	MwHRV
1967	2005	4	7	9:50:24	0.21	98.83	30	4.5	mbGS
1968	2005	4	7	23:02:24	0.61	97.42	26	5.6	MwGS
1969	2005	4	7	9:50:24	0.56	97.44	30	5.2	MwHRV
1970	2005	4	7	0:14:24	0.54	97.53	30	4.7	mbGS
1971	2005	4	7	15:50:24	1.19	97.01	30	4.5	mbGS
1972	2005	4	7	2:52:48	1.35	97.16	24	5	MwHRV
1973	2005	4	7	20:09:36	1.18	97.19	30	4.1	mbGS
1974	2005	4	7	13:26:24	1.31	97.2	23	4.9	MwHRV
1975	2005	4	7	3:07:12	0.91	97.47	30	4.4	mbGS
1976	2005	4	7	11:45:36	1.48	96.95	30	4.2	mbGS
1977	2005	4	7	18:43:12	1.17	97.27	30	4.1	mbGS
1978	2005	4	7	17:31:12	-1.57	99.42	17	5.3	MwHRV
1979	2005	4	7	18:14:24	-1.65	99.45	20	5	mbGS
1980	2005	4	7	7:55:12	-1.57	99.57	30	4.3	mbGS
1981	2005	4	8	5:31:12	0.78	97.29	30	4.6	mbGS
1982	2005	4	8	15:21:36	-1.66	99.42	30	4.5	mbGS
1983	2005	4	8	0:00:00	0.99	97.28	30	4	mbGS
1984	2005	4	8	2:38:24	0.79	97.34	30	4.3	mbGS
1985	2005	4	8	8:52:48	0.45	96.62	30	4.1	mbGS
1986	2005	4	8	16:04:48	-1.5	99.75	30	4.1	mbGS
1987	2005	4	8	16:48:00	0.68	97.38	30	5.7	MwGS
1988	2005	4	8	4:48:00	0.39	96.62	30	4.3	mbGS
1989	2005	4	8	4:33:36	0.01	98.58	30	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
1990	2005	4	8	10:19:12	1.23	97.3	30	4.5	mbGS
1991	2005	4	8	16:48:00	1.2	97.09	30	4.4	mbGS
1992	2005	4	8	14:52:48	1.2	97.17	30	4.6	mbGS
1993	2005	4	8	19:55:12	-1.57	99.54	46	4.6	mbGS
1994	2005	4	8	21:07:12	-0.22	97.73	20	6.1	MwGS
1995	2005	4	8	4:04:48	-0.46	97.77	30	4.7	mbGS
1996	2005	4	8	10:04:48	-1.57	99.51	30	4.2	mbGS
1997	2005	4	8	18:00:00	-1.59	99.51	30	4.5	mbGS
1998	2005	4	8	0:28:48	1.24	97.19	30	4.6	mbGS
1999	2005	4	8	9:36:00	0.84	97.95	30	4.5	mbGS
2000	2005	4	8	11:16:48	1.13	97.17	30	4	mbGS
2001	2005	4	8	20:24:00	1.04	97.41	30	4.3	mbGS
2002	2005	4	8	14:38:24	1.13	97.18	30	4.1	mbGS
2003	2005	4	8	21:36:00	0.73	97.35	24	4.6	mbGS
2004	2005	4	8	4:48:00	0.79	97.9	30	4.3	mbGS
2005	2005	4	8	12:28:48	0.62	98.08	29	4.1	mbGS
2006	2005	4	9	22:04:48	0.5	98.01	30	4.8	mbGS
2007	2005	4	9	13:12:00	-0.4	96.89	30	4.2	mbGS
2008	2005	4	9	3:36:00	0.97	97.42	30	4.3	mbGS
2009	2005	4	9	5:16:48	1.22	97.29	30	4.1	mbGS
2010	2005	4	9	14:09:36	0.49	96.64	30	4.8	mbGS
2011	2005	4	9	20:38:24	1.34	97.14	30	4.9	mbGS
2012	2005	4	9	16:19:12	1.4	97.16	30	5.2	MwHRV
2013	2005	4	9	12:43:12	0.35	98.7	30	3.9	mbGS
2014	2005	4	9	0:28:48	1.78	96.94	30	4	mbGS
2015	2005	4	9	19:12:00	1.38	97.19	30	4.7	mbGS
2016	2005	4	9	18:28:48	-1.08	97.19	30	3.9	mbGS
2017	2005	4	9	22:19:12	1.77	97.9	30	4.5	mbGS
2018	2005	4	9	23:31:12	1.42	97.36	30	4.6	mbGS
2019	2005	4	9	5:45:36	0.05	98.02	30	4.6	mbGS
2020	2005	4	9	11:16:48	1.12	97.12	21	4.4	mbGS
2021	2005	4	9	13:12:00	0.97	97.25	22	4.7	mbGS
2022	2005	4	9	3:21:36	0.01	97.7	23	4.9	mbGS
2023	2005	4	9	1:12:00	0.06	97.71	24	4.3	mbGS
2024	2005	4	9	0:14:24	1.15	97.21	24	4.9	mbGS
2025	2005	4	9	12:28:48	0.94	97.85	42	4.7	mbGS
2026	2005	4	9	12:43:12	0.96	97.25	30	4.2	mbGS
2027	2005	4	9	11:31:12	1.49	97.04	30	4.1	mbGS
2028	2005	4	9	13:55:12	-0.62	98.7	30	4.4	mbGS
2029	2005	4	9	19:55:12	2.28	98.93	30	4.6	mbGS
2030	2005	4	9	15:50:24	-0.33	96.94	30	3.9	mbGS
2031	2005	4	9	19:26:24	1.1	97.27	22	4.8	MwHRV
2032	2005	4	9	1:26:24	-0.47	98.8	30	4.2	mbGS
2033	2005	4	10	9:36:00	1.18	97.15	22	4.7	mbGS
2034	2005	4	10	8:09:36	1.59	97.59	30	4.4	mbGS
2035	2005	4	10	11:45:36	-0.37	96.86	29	4.8	mbGS
2036	2005	4	10	11:45:36	0.41	98.14	43	4.5	mbGS
2037	2005	4	10	15:36:00	-1.6	99.71	30	3.9	mbGS
2038	2005	4	10	0:28:48	-0.36	97.01	30	4.4	mbGS
2039	2005	4	10	6:28:48	-0.49	97.04	30	4.1	mbGS
2040	2005	4	10	22:48:00	1.29	97.07	20	4.7	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
2041	2005	4	10	8:24:00	0.98	97.37	30	4.4	mbGS
2042	2005	4	10	23:31:12	0.11	97.77	30	4.3	mbGS
2043	2005	4	10	14:38:24	-1.58	99.54	19	4.8	mbGS
2044	2005	4	10	1:12:00	-0.32	96.92	30	4.1	mbGS
2045	2005	4	10	5:31:12	-0.51	96.72	30	3.8	mbGS
2046	2005	4	10	12:00:00	1.38	97.11	26	5	mbGS
2047	2005	4	10	18:14:24	1.1	97.21	23	4.3	mbGS
2048	2005	4	10	23:16:48	1.15	97.3	30	4.4	mbGS
2049	2005	4	10	22:33:36	1.06	97.27	30	4	mbGS
2050	2005	4	10	6:43:12	-1.64	99.61	19	6.7	MwHRV
2051	2005	4	10	18:43:12	-1.61	99.58	30	5.3	mbGS
2052	2005	4	10	16:19:12	-1.59	99.67	20	4.7	mbGS
2053	2005	4	10	9:50:24	-1.61	99.62	30	5.7	mbGS
2054	2005	4	10	21:21:36	-1.46	99.26	30	5	mbGS
2055	2005	4	10	23:16:48	-1.68	99.78	27	5.2	mbGS
2056	2005	4	10	7:26:24	-1.64	99.78	30	4.7	mbGS
2057	2005	4	10	8:09:36	-1.59	99.69	30	4.4	mbGS
2058	2005	4	10	22:33:36	-1.36	99.87	30	4.4	mbGS
2059	2005	4	10	3:21:36	-1.6	99.57	30	4.5	mbGS
2060	2005	4	10	14:52:48	-1.71	99.78	30	6.5	MwHRV
2061	2005	4	10	17:16:48	-1.76	99.94	30	4.9	mbGS
2062	2005	4	10	3:07:12	-1.37	99.19	30	4.6	mbGS
2063	2005	4	10	23:31:12	-0.93	99.82	30	4.3	mbGS
2064	2005	4	10	13:40:48	-1.61	99.64	30	4.3	mbGS
2065	2005	4	10	9:07:12	-1.88	99.64	30	4.6	mbGS
2066	2005	4	10	2:09:36	-1.63	101.21	30	4.5	mbGS
2067	2005	4	10	9:36:00	-1.68	99.78	23	4.9	mbGS
2068	2005	4	10	10:19:12	-1.54	100.03	30	4.7	mbGS
2069	2005	4	10	8:52:48	-1.95	99.68	30	4.4	mbGS
2070	2005	4	10	11:31:12	-0.45	99.66	30	4.5	mbGS
2071	2005	4	10	19:12:00	-1.62	99.59	30	5.5	mbGS
2072	2005	4	10	6:14:24	-1.69	99.67	30	4.6	mbGS
2073	2005	4	10	20:09:36	-1.51	99.66	30	4.4	mbGS
2074	2005	4	10	22:19:12	-1.72	99.58	30	4.1	mbGS
2075	2005	4	10	11:02:24	-1.81	99.82	30	4.7	mbGS
2076	2005	4	10	16:48:00	-1.71	99.72	29	5.8	MwHRV
2077	2005	4	10	22:19:12	-1.52	99.04	30	5.2	mbGS
2078	2005	4	10	16:48:00	-1.69	99.96	30	4.4	mbGS
2079	2005	4	10	0:43:12	-1.47	99.96	30	4.1	mbGS
2080	2005	4	10	13:12:00	-1.79	99.64	30	3.9	mbGS
2081	2005	4	10	4:19:12	-1.51	99.8	38	4.7	mbGS
2082	2005	4	10	1:40:48	-1.8	99.62	30	4.5	mbGS
2083	2005	4	10	5:31:12	-1.74	99.69	30	4.4	mbGS
2084	2005	4	10	22:48:00	-1.85	99.53	30	3.9	mbGS
2085	2005	4	10	8:24:00	-1.5	99.84	30	4.2	mbGS
2086	2005	4	10	19:40:48	-1.78	99.75	30	4.3	mbGS
2087	2005	4	10	4:48:00	-1.71	99.87	25	5	mbGS
2088	2005	4	10	19:40:48	-1.63	99.7	30	4.6	mbGS
2089	2005	4	10	4:19:12	-1.59	99.62	30	4.9	mbGS
2090	2005	4	10	13:55:12	-1.6	99.78	30	3.8	mbGS
2091	2005	4	10	2:09:36	-1.66	99.74	28	4.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2092	2005	4	10	2:52:48	-1.6	99.58	43	4.7	mbGS
2093	2005	4	10	17:31:12	-1.92	99.31	30	4.2	mbGS
2094	2005	4	10	13:40:48	-1.69	99.65	30	4.6	mbGS
2095	2005	4	10	1:55:12	-2.02	99.3	30	4.3	mbGS
2096	2005	4	10	8:09:36	-1.65	99.86	30	4.2	mbGS
2097	2005	4	10	11:45:36	-1.67	99.69	23	4.4	mbGS
2098	2005	4	10	8:24:00	-1.75	99.73	30	4.3	mbGS
2099	2005	4	10	6:57:36	-1.7	99.88	30	4.1	mbGS
2100	2005	4	10	22:19:12	-1.88	99.66	26	4.3	mbGS
2101	2005	4	10	11:45:36	0.03	97.96	30	4.5	mbGS
2102	2005	4	10	14:38:24	-1.52	99.63	29	4.3	mbGS
2103	2005	4	10	21:50:24	-1.67	99.66	22	4.5	mbGS
2104	2005	4	10	6:14:24	-2.44	99.22	32	4.5	mbGS
2105	2005	4	10	6:43:12	-1.75	99.85	30	4.7	mbGS
2106	2005	4	10	21:07:12	-1.71	99.62	30	4.8	mbGS
2107	2005	4	10	6:00:00	-1.63	99.64	23	5.6	MwHRV
2108	2005	4	10	10:33:36	-1.64	99.7	21	5.3	mbGS
2109	2005	4	10	17:02:24	-1.7	99.61	28	4.5	mbGS
2110	2005	4	10	7:26:24	-1.81	99.68	23	4.8	mbGS
2111	2005	4	10	10:48:00	-1.65	99.81	30	4.3	mbGS
2112	2005	4	10	8:09:36	-1.78	99.93	32	5.5	MwHRV
2113	2005	4	10	2:52:48	-1.58	99.63	23	4.6	mbGS
2114	2005	4	10	16:19:12	-1.7	99.79	30	3.9	mbGS
2115	2005	4	10	9:36:00	-1.64	99.7	30	4.2	mbGS
2116	2005	4	10	3:36:00	-1.74	99.73	20	4.6	mbGS
2117	2005	4	10	19:40:48	-1.62	99.64	30	5.3	MwHRV
2118	2005	4	10	2:09:36	-1.59	99.73	30	4.1	mbGS
2119	2005	4	10	9:07:12	-1.7	99.57	30	4.3	mbGS
2120	2005	4	10	6:00:00	-2.08	99.43	30	4.3	mbGS
2121	2005	4	10	4:48:00	-1.69	99.72	39	4.5	mbGS
2122	2005	4	10	6:00:00	-1.65	99.62	30	5.3	MwHRV
2123	2005	4	10	0:14:24	-1.61	99.74	30	4.5	mbGS
2124	2005	4	10	22:33:36	-1.87	99.42	30	4.2	mbGS
2125	2005	4	10	3:36:00	-1.78	99.91	31	4.3	mbGS
2126	2005	4	10	9:07:12	-1.57	99.68	28	3.8	mbGS
2127	2005	4	10	14:38:24	-1.65	99.91	30	4.4	mbGS
2128	2005	4	10	0:57:36	0.84	97.4	36	4.7	mbGS
2129	2005	4	10	0:00:00	-1.72	99.61	27	4.8	mbGS
2130	2005	4	10	4:33:36	-1.71	99.65	30	4.5	mbGS
2131	2005	4	10	13:40:48	-1.72	99.76	30	4.4	mbGS
2132	2005	4	10	13:26:24	-1.46	99.89	30	4.2	mbGS
2133	2005	4	10	10:04:48	-1.65	99.62	30	4.8	mbGS
2134	2005	4	10	13:40:48	-1.72	99.47	30	4.2	mbGS
2135	2005	4	10	6:00:00	-1.83	99.78	27	5.2	MwHRV
2136	2005	4	10	3:50:24	1.3	97.16	24	4.7	mbGS
2137	2005	4	10	8:38:24	1.09	97.24	16	4.2	mbGS
2138	2005	4	10	7:55:12	-1.75	99.69	25	4.4	mbGS
2139	2005	4	10	12:00:00	-1.75	99.93	30	4.4	mbGS
2140	2005	4	10	7:40:48	1.8	96.93	25	4.6	mbGS
2141	2005	4	10	14:52:48	-1.54	99.65	34	4.2	mbGS
2142	2005	4	10	12:57:36	-1.61	99.68	18	4.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2143	2005	4	10	6:00:00	1.66	97.02	27	4.6	mbGS
2144	2005	4	10	12:57:36	-1.73	99.91	32	4.8	mbGS
2145	2005	4	10	18:43:12	-1.79	99.55	46	4.2	mbGS
2146	2005	4	10	6:28:48	-1.19	101.84	30	4.4	mbGS
2147	2005	4	10	8:52:48	-1.79	100.05	30	4.2	mbGS
2148	2005	4	10	3:36:00	-1.76	99.93	31	4.6	mbGS
2149	2005	4	10	9:36:00	-1.59	99.72	30	6.4	MwGS
2150	2005	4	10	0:43:12	-1.83	99.64	33	4.8	mbGS
2151	2005	4	10	23:02:24	-1.65	99.77	30	4.7	mbGS
2152	2005	4	10	7:40:48	-1.57	99.73	30	4.6	mbGS
2153	2005	4	10	6:43:12	-1.8	99.77	32	4.7	mbGS
2154	2005	4	10	23:02:24	-1.93	99.4	30	4.8	mbGS
2155	2005	4	10	0:00:00	-1.6	99.81	37	4.8	mbGS
2156	2005	4	10	3:07:12	-1.74	99.89	30	4.2	mbGS
2157	2005	4	10	0:28:48	-1.64	99.76	44	4.4	mbGS
2158	2005	4	10	0:57:36	-1.54	99.97	30	4.6	mbGS
2159	2005	4	10	18:57:36	-1.8	99.7	28	4.2	mbGS
2160	2005	4	10	23:31:12	-1.71	99.73	26	3.9	mbGS
2161	2005	4	10	20:52:48	-1.5	100.17	30	4.1	mbGS
2162	2005	4	10	5:02:24	-1.56	99.99	30	4.3	mbGS
2163	2005	4	10	5:45:36	-1.61	99.76	30	4.2	mbGS
2164	2005	4	10	5:45:36	-1.69	99.96	26	3.9	mbGS
2165	2005	4	10	10:33:36	-1.63	99.7	30	4	mbGS
2166	2005	4	10	1:40:48	-1.54	99.93	30	4	mbGS
2167	2005	4	10	4:04:48	-1.74	99.92	29	4.9	mbGS
2168	2005	4	10	22:48:00	-1.4	99.96	32	4.4	mbGS
2169	2005	4	10	9:50:24	-1.59	99.84	30	4	mbGS
2170	2005	4	10	19:12:00	-1.7	99.8	23	5	MwHRV
2171	2005	4	10	7:55:12	-1.7	99.68	33	4.3	mbGS
2172	2005	4	10	21:07:12	-1.64	99.8	28	5	MwHRV
2173	2005	4	10	18:43:12	-1.92	99.48	30	4	mbGS
2174	2005	4	10	15:21:36	0.85	97.75	30	3.8	mbGS
2175	2005	4	10	12:28:48	-1.6	99.77	30	4.2	mbGS
2176	2005	4	10	20:52:48	-1.77	99.65	31	4.2	mbGS
2177	2005	4	10	9:07:12	-1.87	99.33	19	4.3	mbGS
2178	2005	4	10	12:00:00	-1.54	99.15	30	4.2	mbGS
2179	2005	4	10	20:24:00	-1.65	99.64	20	4.9	mbGS
2180	2005	4	10	1:12:00	-1.75	99.79	30	4.9	MwHRV
2181	2005	4	10	3:07:12	-1.76	99.7	30	4.1	mbGS
2182	2005	4	10	4:19:12	-1.66	99.74	28	4.5	mbGS
2183	2005	4	10	3:21:36	-1.54	99.56	27	4.9	MwHRV
2184	2005	4	10	6:43:12	-1.49	100.31	31	4	mbGS
2185	2005	4	10	22:19:12	-1.53	99.6	28	4.3	mbGS
2186	2005	4	10	9:21:36	-1.47	99.93	30	4.3	mbGS
2187	2005	4	10	3:21:36	-1.83	99.61	30	4.2	mbGS
2188	2005	4	10	5:16:48	-1.57	99.65	30	4.5	mbGS
2189	2005	4	10	16:33:36	-1.68	99.87	30	3.9	mbGS
2190	2005	4	10	6:14:24	-1.73	99.67	30	4.3	mbGS
2191	2005	4	10	6:43:12	-1.73	99.78	46	4.4	mbGS
2192	2005	4	10	11:45:36	-1.81	99.67	30	4.5	mbGS
2193	2005	4	10	8:24:00	-0.39	96.89	30	5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2194	2005	4	10	11:45:36	-1.46	99.21	30	4.5	mbGS
2195	2005	4	10	1:12:00	-0.8	98.38	30	4.2	mbGS
2196	2005	4	10	11:16:48	-1.65	99.68	30	4.1	mbGS
2197	2005	4	10	11:02:24	-1.52	99.83	30	4.4	mbGS
2198	2005	4	10	0:14:24	-1.55	99.92	30	4.6	mbGS
2199	2005	4	10	21:36:00	-1.72	99.66	30	4.1	mbGS
2200	2005	4	11	12:14:24	-1.65	99.64	30	4.6	mbGS
2201	2005	4	11	19:12:00	-1.58	99.6	30	4.4	mbGS
2202	2005	4	11	9:07:12	-1.71	99.92	30	4.5	mbGS
2203	2005	4	11	13:26:24	-1.89	99.56	30	4	mbGS
2204	2005	4	11	11:02:24	-1.75	99.6	33	4.5	mbGS
2205	2005	4	11	11:45:36	-1.56	99.64	30	4.2	mbGS
2206	2005	4	11	15:36:00	-1.75	99.5	30	4.3	mbGS
2207	2005	4	11	12:57:36	-1.8	99.71	30	4.4	mbGS
2208	2005	4	11	14:09:36	-1.75	99.49	30	4.2	mbGS
2209	2005	4	11	12:00:00	-1.62	99.88	30	4.7	mbGS
2210	2005	4	11	6:57:36	-1.69	99.66	37	4.9	MwHRV
2211	2005	4	11	21:07:12	-1.64	99.62	30	4.2	mbGS
2212	2005	4	11	16:19:12	-1.61	99.78	30	4.2	mbGS
2213	2005	4	11	11:31:12	0.77	97.51	30	4.3	mbGS
2214	2005	4	11	17:45:36	-1.76	99.52	30	4.4	mbGS
2215	2005	4	11	5:45:36	-1.97	99.41	30	4.1	mbGS
2216	2005	4	11	20:38:24	-1.65	99.61	37	4.6	mbGS
2217	2005	4	11	5:16:48	-1.75	99.66	30	4.6	mbGS
2218	2005	4	11	1:12:00	-1.82	99.77	30	4.7	mbGS
2219	2005	4	11	15:50:24	-0.24	97.12	30	3.8	mbGS
2220	2005	4	11	18:57:36	1.55	96.89	25	4.2	mbGS
2221	2005	4	11	19:55:12	-1.81	99.87	30	4.3	mbGS
2222	2005	4	11	0:00:00	-2.21	99.35	30	4.5	mbGS
2223	2005	4	11	0:00:00	-1.45	99.75	25	4.1	mbGS
2224	2005	4	11	15:50:24	1.01	97.49	33	5	mbGS
2225	2005	4	11	2:24:00	-1.38	99.99	30	4.2	mbGS
2226	2005	4	11	1:12:00	0.91	97.7	30	4.2	mbGS
2227	2005	4	11	16:48:00	-1.85	99.73	29	4.5	mbGS
2228	2005	4	11	23:16:48	-1.67	99.79	30	4.6	mbGS
2229	2005	4	11	16:48:00	0.99	97.42	30	4.2	mbGS
2230	2005	4	11	13:26:24	1.71	99.07	30	4.5	mbGS
2231	2005	4	11	14:09:36	-1.63	100.08	30	4.3	mbGS
2232	2005	4	11	5:31:12	-1.83	99.86	26	4.7	mbGS
2233	2005	4	11	7:26:24	-2.18	99.3	30	4.4	mbGS
2234	2005	4	11	19:55:12	0.72	97.6	30	4.2	mbGS
2235	2005	4	11	18:00:00	-1.74	99.69	30	4.3	mbGS
2236	2005	4	11	13:40:48	-1.64	99.69	30	4.5	mbGS
2237	2005	4	11	0:00:00	-1.71	99.94	30	4.2	mbGS
2238	2005	4	11	4:19:12	1.25	97.31	30	4.5	mbGS
2239	2005	4	11	0:14:24	-1.83	99.63	20	4.7	mbGS
2240	2005	4	11	9:07:12	-1.74	99.47	30	4.2	mbGS
2241	2005	4	11	18:43:12	1.04	97.28	22	5	mbGS
2242	2005	4	11	8:09:36	-1.69	99.86	23	5	mbGS
2243	2005	4	11	10:33:36	-1.71	99.74	30	5.4	mbGS
2244	2005	4	11	5:16:48	1.44	96.97	25	4.5	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
2245	2005	4	11	1:12:00	-1.72	99.89	32	4.8	mbGS
2246	2005	4	11	2:09:36	-1.62	99.78	30	4.2	mbGS
2247	2005	4	11	23:31:12	-1.68	99.62	30	4.2	mbGS
2248	2005	4	11	11:02:24	-1.95	99.28	30	4	mbGS
2249	2005	4	11	17:45:36	-1.68	99.74	30	4.4	mbGS
2250	2005	4	11	0:14:24	-1.04	100.86	30	4.4	mbGS
2251	2005	4	11	6:00:00	-1.58	99.91	30	3.7	mbGS
2252	2005	4	11	12:28:48	1.12	97.21	30	3.9	mbGS
2253	2005	4	11	19:26:24	-1.68	99.81	30	4.6	mbGS
2254	2005	4	11	21:36:00	-1.73	99.64	32	4	mbGS
2255	2005	4	11	12:57:36	-1.55	99.72	30	4.3	mbGS
2256	2005	4	11	5:16:48	-1.72	99.73	30	4.2	mbGS
2257	2005	4	11	19:12:00	-1.68	99.67	30	4.3	mbGS
2258	2005	4	11	16:19:12	1.6	96.74	30	4.5	mbGS
2259	2005	4	11	2:24:00	-1.63	99.72	30	4.5	mbGS
2260	2005	4	12	11:31:12	1.5	97.03	28	4.4	mbGS
2261	2005	4	12	13:55:12	-1.73	99.73	28	4.9	MwHRV
2262	2005	4	12	20:09:36	-1.66	99.64	30	5	mbGS
2263	2005	4	12	3:36:00	-1.74	99.69	29	4.9	MwHRV
2264	2005	4	12	8:52:48	-1.65	99.69	30	4.3	mbGS
2265	2005	4	12	2:09:36	-1.62	99.89	30	4.6	mbGS
2266	2005	4	12	13:40:48	-1.88	99.51	30	4.3	mbGS
2267	2005	4	12	4:19:12	-1.75	99.63	30	4.3	mbGS
2268	2005	4	12	13:40:48	-1.66	99.78	30	4.8	mbGS
2269	2005	4	12	22:48:00	-1.76	99.85	33	5.1	MwHRV
2270	2005	4	12	18:14:24	-1.59	99.45	22	5.2	MwHRV
2271	2005	4	12	15:36:00	-1.76	99.8	30	5.2	MwHRV
2272	2005	4	12	8:24:00	0.75	97.39	30	4.6	mbGS
2273	2005	4	12	15:50:24	1.83	97.06	26	4.5	mbGS
2274	2005	4	12	8:52:48	-2.08	99.23	30	4.4	mbGS
2275	2005	4	12	17:16:48	-1.54	99.85	30	4.3	mbGS
2276	2005	4	12	23:31:12	0.24	97.64	22	4.4	mbGS
2277	2005	4	12	22:48:00	-1.72	99.66	30	4.5	mbGS
2278	2005	4	12	14:52:48	0.67	98.44	22	4.3	mbGS
2279	2005	4	12	1:12:00	1.01	97.28	21	4.9	mbGS
2280	2005	4	12	6:28:48	1.03	97.17	22	4.7	mbGS
2281	2005	4	12	14:52:48	-2	99.53	30	4.3	mbGS
2282	2005	4	12	7:40:48	-1.79	99.82	30	4.8	mbGS
2283	2005	4	12	9:50:24	1.2	97.15	30	4.7	mbGS
2284	2005	4	12	18:57:36	-1.87	99.57	30	4.4	mbGS
2285	2005	4	12	20:09:36	-1.85	99.87	33	4.2	mbGS
2286	2005	4	12	4:48:00	-1.57	99.63	26	4.5	mbGS
2287	2005	4	12	11:45:36	-1.7	99.82	29	4	mbGS
2288	2005	4	12	23:16:48	-1.93	99.76	27	4.6	mbGS
2289	2005	4	12	7:26:24	-1.54	99.87	33	4.3	mbGS
2290	2005	4	12	14:38:24	-1.74	99.86	30	4.3	mbGS
2291	2005	4	12	4:19:12	-1.6	99.64	30	4.5	mbGS
2292	2005	4	12	22:48:00	-1.78	99.74	28	4.8	mbGS
2293	2005	4	12	21:50:24	1.26	97.21	30	4.2	mbGS
2294	2005	4	12	23:45:36	-1.72	99.7	24	4.4	mbGS
2295	2005	4	12	12:00:00	-1.57	99.64	30	4.4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2296	2005	4	12	16:19:12	1.19	97.34	30	4.3	mbGS
2297	2005	4	12	13:40:48	-0.28	96.99	30	4.2	mbGS
2298	2005	4	13	17:31:12	-1.64	100.12	30	4.6	mbGS
2299	2005	4	13	19:12:00	-1.5	99.69	30	4.5	mbGS
2300	2005	4	13	4:48:00	-1.74	99.83	43	4.7	mbGS
2301	2005	4	13	5:31:12	-1.71	99.59	30	4.6	mbGS
2302	2005	4	13	15:36:00	-1.71	99.85	30	5.2	MwHRV
2303	2005	4	13	10:48:00	-0.52	98.83	46	4.6	mbGS
2304	2005	4	13	13:26:24	0.73	97.45	25	4.6	mbGS
2305	2005	4	13	18:28:48	-1.65	99.41	30	4.4	mbGS
2306	2005	4	13	7:40:48	-1.79	99.57	30	4.2	mbGS
2307	2005	4	13	17:16:48	-1.72	99.6	37	4.5	mbGS
2308	2005	4	13	23:02:24	-0.32	96.93	30	4.4	mbGS
2309	2005	4	13	19:12:00	-1.79	99.76	30	4.5	mbGS
2310	2005	4	13	4:04:48	-0.68	98.54	30	4.2	mbGS
2311	2005	4	13	14:38:24	-1.71	99.88	31	5	MwHRV
2312	2005	4	13	19:40:48	1.04	97.28	30	4.4	mbGS
2313	2005	4	13	4:48:00	-1.6	99.75	30	4.4	mbGS
2314	2005	4	13	4:48:00	1.07	98.15	30	4.3	mbGS
2315	2005	4	13	21:21:36	-1.68	99.96	29	4.7	mbGS
2316	2005	4	13	15:50:24	-0.61	97.23	30	4	mbGS
2317	2005	4	14	4:19:12	-1.76	99.78	30	4.4	mbGS
2318	2005	4	14	6:57:36	-1.85	99.69	30	3.9	mbGS
2319	2005	4	14	2:38:24	-1.48	99.79	30	4.5	mbGS
2320	2005	4	14	10:48:00	-1.62	99.43	30	4.3	mbGS
2321	2005	4	14	10:33:36	-1.75	99.65	30	4.6	mbGS
2322	2005	4	14	13:12:00	-1.91	99.95	33	5.7	MwHRV
2323	2005	4	14	2:52:48	-1.53	99.83	38	4.6	mbGS
2324	2005	4	14	1:12:00	-1.5	99.83	30	4.5	mbGS
2325	2005	4	14	2:52:48	-1.8	99.72	30	4.5	mbGS
2326	2005	4	14	23:02:24	1.44	97.63	30	4.9	mbGS
2327	2005	4	14	5:31:12	1.9	97.06	30	4	mbGS
2328	2005	4	14	18:14:24	-1.78	99.84	30	4.5	mbGS
2329	2005	4	14	20:24:00	-1.52	99.79	30	4.3	mbGS
2330	2005	4	15	18:00:00	1.08	97.22	30	4.3	mbGS
2331	2005	4	15	11:45:36	-1.75	99.76	30	4.6	mbGS
2332	2005	4	15	14:38:24	0.97	98.05	30	4.7	mbGS
2333	2005	4	15	22:48:00	-1.67	99.67	30	4.3	mbGS
2334	2005	4	15	10:19:12	1.29	97.08	30	4.6	mbGS
2335	2005	4	15	17:31:12	1.76	97.11	30	4.7	mbGS
2336	2005	4	15	11:02:24	-1.69	99.62	30	4.3	mbGS
2337	2005	4	15	6:14:24	1.1	97.11	23	4.7	MwHRV
2338	2005	4	15	16:19:12	1.31	97.35	21	4.5	mbGS
2339	2005	4	15	3:21:36	1.29	97.25	30	4.6	mbGS
2340	2005	4	15	16:04:48	1.87	96.9	26	4.5	mbGS
2341	2005	4	16	5:45:36	1.07	97.23	30	4.7	mbGS
2342	2005	4	16	17:45:36	1.57	96.96	28	4.5	mbGS
2343	2005	4	16	19:26:24	1.22	97.19	30	4.6	mbGS
2344	2005	4	16	19:40:48	-1.77	99.94	29	5	MwHRV
2345	2005	4	16	14:38:24	0.86	96.91	30	4.3	mbGS
2346	2005	4	16	17:45:36	1.01	97.35	30	4.5	mbGS

no.	year	mon	day	hour	time	lat	long	depth	mag	type
2347	2005	4	16	22:19:12	1.64	97.11	26	4.9	mbGS	
2348	2005	4	16	23:31:12	-0.1	96.63	27	4.4	mbGS	
2349	2005	4	16	15:07:12	-1.66	99.59	29	4.4	mbGS	
2350	2005	4	16	21:36:00	1.81	97.66	31	6.4	MwHRV	
2351	2005	4	16	22:33:36	0.87	97.41	30	3.8	mbGS	
2352	2005	4	16	4:48:00	1.14	97.27	30	4.3	mbGS	
2353	2005	4	16	10:33:36	-1.79	99.83	30	4.3	mbGS	
2354	2005	4	16	4:04:48	-1.86	99.9	30	4.5	mbGS	
2355	2005	4	17	18:28:48	1.15	97.18	30	4	mbGS	
2356	2005	4	17	23:45:36	-1.62	99.56	37	4.7	mbGS	
2357	2005	4	17	12:00:00	0.25	97.67	24	4.4	mbGS	
2358	2005	4	17	9:50:24	0.99	97.2	30	4.4	mbGS	
2359	2005	4	17	11:45:36	1.24	97.12	21	4.8	mbGS	
2360	2005	4	17	8:09:36	1.03	97.17	20	4.5	mbGS	
2361	2005	4	17	21:36:00	0.9	97.49	30	4.7	mbGS	
2362	2005	4	17	20:09:36	0.87	97.36	9	4.4	mbGS	
2363	2005	4	17	13:26:24	0.31	97.66	25	5.5	MwGS	
2364	2005	4	17	18:43:12	-1.72	99.73	36	4.2	mbGS	
2365	2005	4	17	17:02:24	-1.82	99.59	30	3.9	mbGS	
2366	2005	4	17	9:50:24	0.25	98.22	24	4.5	mbGS	
2367	2005	4	17	3:07:12	1.26	97.15	23	4.4	mbGS	
2368	2005	4	17	11:16:48	1.39	97.32	30	4.4	mbGS	
2369	2005	4	17	20:38:24	-1.59	99.8	30	4.5	mbGS	
2370	2005	4	17	20:09:36	-1.62	99.56	19	4.9	MwHRV	
2371	2005	4	17	19:55:12	-1.63	99.62	21	5.4	MwHRV	
2372	2005	4	17	13:40:48	-1.58	99.74	30	4.5	mbGS	
2373	2005	4	18	15:50:24	1.91	97.62	30	4	mbGS	
2374	2005	4	18	17:31:12	0.78	96.9	24	4.6	mbGS	
2375	2005	4	18	4:33:36	-1.87	99.71	28	4.1	mbGS	
2376	2005	4	18	15:36:00	0.98	97.36	30	4	mbGS	
2377	2005	4	18	10:04:48	1.02	97.32	23	4.6	mbGS	
2378	2005	4	18	23:31:12	1.14	97.1	21	4.3	mbGS	
2379	2005	4	18	2:52:48	0.93	97.49	22	5	MwHRV	
2380	2005	4	18	12:43:12	-1.75	99.86	29	4.7	mbGS	
2381	2005	4	18	3:36:00	0.19	97.68	30	4.6	mbGS	
2382	2005	4	18	12:28:48	-1.63	100.15	25	3.9	mbGS	
2383	2005	4	18	23:02:24	-0.07	97.16	29	3.7	mbGS	
2384	2005	4	19	3:07:12	1.24	97.14	23	4.8	mbGS	
2385	2005	4	19	6:00:00	1.19	97.1	22	4.7	mbGS	
2386	2005	4	19	9:36:00	1.2	97.11	30	4.6	mbGS	
2387	2005	4	19	4:04:48	0.65	97.24	30	4.6	mbGS	
2388	2005	4	19	16:04:48	0.89	97.42	30	4.3	mbGS	
2389	2005	4	19	2:24:00	0.98	97.4	30	4.3	mbGS	
2390	2005	4	19	0:57:36	1.22	97.18	40	4.2	mbGS	
2391	2005	4	19	16:19:12	1.31	97.2	30	4.8	mbGS	
2392	2005	4	19	0:00:00	1.21	97.14	22	5	mbGS	
2393	2005	4	19	3:07:12	1.29	97.1	22	4.6	mbGS	
2394	2005	4	19	11:16:48	-1.68	99.67	31	4.4	mbGS	
2395	2005	4	19	6:00:00	-1.88	99.62	30	4.1	mbGS	
2396	2005	4	19	20:24:00	1.28	97.15	30	4	mbGS	
2397	2005	4	19	10:19:12	1.45	96.27	30	4.3	mbGS	

no.	year	mon	day	time	lat	long	depth	mag	type
2398	2005	4	20	17:16:48	1.35	97.07	30	4.5	mbGS
2399	2005	4	20	9:50:24	-2.01	102.24	166	4.5	mbGS
2400	2005	4	20	0:57:36	-0.62	101.03	10	4.2	mbGS
2401	2005	4	20	2:52:48	1.8	97.75	30	4.7	mbGS
2402	2005	4	20	4:19:12	-1.72	99.76	30	4.4	mbGS
2403	2005	4	20	12:28:48	1.26	97.07	24	4.4	mbGS
2404	2005	4	20	12:28:48	1.14	97.19	30	4.4	mbGS
2405	2005	4	21	10:19:12	1.5	97.05	30	4.6	mbGS
2406	2005	4	21	5:02:24	-0.44	97.96	30	4.5	mbGS
2407	2005	4	21	13:26:24	1.12	97.29	30	4.4	mbGS
2408	2005	4	21	7:26:24	1.75	97.04	30	4.4	mbGS
2409	2005	4	21	20:09:36	1.36	97.08	23	4.7	mbGS
2410	2005	4	21	18:57:36	1.14	97.48	30	4.4	mbGS
2411	2005	4	21	9:36:00	0.44	98.1	30	4.6	mbGS
2412	2005	4	21	18:00:00	1.6	97.01	30	4.2	mbGS
2413	2005	4	21	11:16:48	0.8	97.38	22	4.2	mbGS
2414	2005	4	21	0:00:00	1.86	96.78	27	4.3	mbGS
2415	2005	4	21	19:26:24	-0.46	98.27	30	4.1	mbGS
2416	2005	4	22	14:09:36	1.66	97.01	30	4.2	mbGS
2417	2005	4	22	16:19:12	1.7	97.13	29	4.9	mbGS
2418	2005	4	22	5:16:48	1.65	97.03	25	4.6	mbGS
2419	2005	4	22	5:02:24	1.88	96.97	30	4.6	mbGS
2420	2005	4	22	19:26:24	1.11	97.19	30	3.7	mbGS
2421	2005	4	22	16:33:36	1.9	96.74	30	3.9	mbGS
2422	2005	4	22	15:36:00	-1.73	99.8	30	4.4	mbGS
2423	2005	4	22	6:43:12	-0.07	96.81	30	3.8	mbGS
2424	2005	4	23	17:16:48	0.92	97.31	30	4.2	mbGS
2425	2005	4	23	12:14:24	-0.29	96.88	27	4.3	mbGS
2426	2005	4	23	13:40:48	-0.32	96.88	27	4.1	mbGS
2427	2005	4	23	20:52:48	-1.92	99.63	6	4.3	mbGS
2428	2005	4	23	8:24:00	1.17	97.22	30	3.9	mbGS
2429	2005	4	23	12:28:48	0.22	97.83	25	4.2	mbGS
2430	2005	4	24	21:07:12	1.03	97.2	30	4.7	mbGS
2431	2005	4	24	13:26:24	-1.89	99.69	30	4.2	mbGS
2432	2005	4	24	3:07:12	-1.82	99.91	30	4.8	MwHRV
2433	2005	4	24	22:19:12	1.5	97.06	47	4.1	mbGS
2434	2005	4	25	9:36:00	1.08	97.25	24	5.1	MwHRV
2435	2005	4	25	15:36:00	0.34	97.25	30	4.4	mbGS
2436	2005	4	25	9:21:36	0.28	97.27	16	4.6	mbGS
2437	2005	4	25	13:55:12	0.31	97.3	32	4.3	mbGS
2438	2005	4	25	18:14:24	0.89	97.35	30	4.4	mbGS
2439	2005	4	25	12:14:24	-1.87	100.43	30	4.9	mbGS
2440	2005	4	25	20:38:24	-1.79	99.76	28	4.2	mbGS
2441	2005	4	25	23:31:12	0.89	97.47	30	4	mbGS
2442	2005	4	25	7:26:24	1.21	97.16	30	4.1	mbGS
2443	2005	4	25	20:38:24	1.2	97.23	30	4.2	mbGS
2444	2005	4	25	15:07:12	1.22	97.14	30	4.5	mbGS
2445	2005	4	25	15:21:36	0.36	97.28	35	5.6	MwGS
2446	2005	4	25	12:14:24	0.31	97.31	30	4.8	MwHRV
2447	2005	4	25	12:28:48	1.51	97.72	30	4.1	mbGS
2448	2005	4	25	6:57:36	0.33	97.34	34	4.3	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2449	2005	4	25	6:00:00	1.17	97.07	21	4.6	mbGS
2450	2005	4	25	9:21:36	0.4	97.29	35	5.2	MwHRV
2451	2005	4	25	5:45:36	0.46	97.3	30	4.9	mbGS
2452	2005	4	25	6:57:36	1.23	99.14	30	4.2	mbGS
2453	2005	4	25	6:28:48	0.98	97.2	30	4.5	mbGS
2454	2005	4	25	2:38:24	0.42	97.34	30	4.1	mbGS
2455	2005	4	25	14:52:48	0.34	97.32	30	4.3	mbGS
2456	2005	4	25	9:21:36	0.42	97.43	30	4	mbGS
2457	2005	4	25	2:09:36	0.28	97.42	32	4.1	mbGS
2458	2005	4	26	20:38:24	1.03	97.22	30	4.3	mbGS
2459	2005	4	26	21:50:24	-1.74	99.76	30	4.6	mbGS
2460	2005	4	26	7:55:12	0.38	97.27	30	4.3	mbGS
2461	2005	4	26	11:31:12	0.38	97.21	30	4.7	mbGS
2462	2005	4	26	22:04:48	0.26	97.29	30	4.3	mbGS
2463	2005	4	26	13:55:12	1.37	97	30	4.8	mbGS
2464	2005	4	26	13:26:24	1.36	97.17	22	5.2	MwHRV
2465	2005	4	27	0:57:36	1.22	97.12	30	4.6	mbGS
2466	2005	4	27	17:02:24	1.17	97.25	30	4.4	mbGS
2467	2005	4	27	11:16:48	1.07	97.24	30	4.6	mbGS
2468	2005	4	27	2:24:00	1.38	97.06	30	4.5	mbGS
2469	2005	4	27	9:07:12	0.83	98.03	30	4.3	mbGS
2470	2005	4	27	11:02:24	0.24	97.82	30	4.2	mbGS
2471	2005	4	27	12:43:12	1.41	97.65	30	4.3	mbGS
2472	2005	4	28	6:14:24	1.37	97.09	30	4.7	mbGS
2473	2005	4	28	3:07:12	0.36	97.29	30	4.4	mbGS
2474	2005	4	28	4:33:36	-1.3	99.55	30	4.5	mbGS
2475	2005	4	28	10:48:00	1.06	97.17	30	4.6	mbGS
2476	2005	4	29	0:00:00	0.26	98.62	30	4.5	mbGS
2477	2005	4	29	0:57:36	-1.81	99.57	30	4.3	mbGS
2478	2005	4	29	10:48:00	-1.35	99.5	30	4.5	mbGS
2479	2005	4	29	23:02:24	1.12	97.19	21	4.7	mbGS
2480	2005	4	29	11:31:12	-1.52	99.48	21	4.5	mbGS
2481	2005	4	29	17:16:48	-1.64	99.61	30	4.2	mbGS
2482	2005	4	29	8:09:36	0.83	97.35	30	4.1	mbGS
2483	2005	4	29	20:09:36	0.32	97.29	32	4.5	mbGS
2484	2005	4	29	10:48:00	1.02	97.38	30	4.4	mbGS
2485	2005	4	29	6:28:48	0.18	97.94	28	4.8	mbGS
2486	2005	4	29	7:12:00	0.11	97.83	28	4.2	mbGS
2487	2005	4	30	8:52:48	0.36	97.9	30	4.2	mbGS
2488	2005	4	30	17:31:12	-1.81	99.93	35	4.6	mbGS
2489	2005	4	30	6:28:48	0.22	97.56	30	4.3	mbGS
2490	2005	4	30	12:14:24	1.08	97.19	30	4.4	mbGS
2491	2005	4	30	23:02:24	1.97	97.13	30	5.3	MwHRV
2492	2005	5	1	7:40:48	-1.55	99.47	31	4	mbGS
2493	2005	5	1	15:50:24	1.31	97.14	30	4.6	mbGS
2494	2005	5	1	4:33:36	-1.82	99.81	30	4.6	mbGS
2495	2005	5	1	21:36:00	1.91	96.99	30	4.5	mbGS
2496	2005	5	1	10:19:12	0.8	97.87	25	4.7	MwHRV
2497	2005	5	1	14:38:24	-1.66	99.3	29	4.8	MwHRV
2498	2005	5	1	13:26:24	1.45	97.27	47	4.3	mbGS
2499	2005	5	1	3:21:36	1.47	97.41	30	4.4	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
2500	2005	5	1	22:19:12	-1.62	99.86	32	4.8	MwHRV
2501	2005	5	2	18:14:24	-1.61	99.76	22	4.5	mbGS
2502	2005	5	2	18:14:24	1.3	97.09	24	4.8	MwHRV
2503	2005	5	2	6:00:00	1.3	97.2	30	4.4	mbGS
2504	2005	5	2	6:00:00	-1.52	99.57	28	4.7	mbGS
2505	2005	5	2	9:21:36	1.61	96.91	28	4.4	mbGS
2506	2005	5	2	0:00:00	1.04	97.49	24	4.8	mbGS
2507	2005	5	2	3:50:24	-0.41	98.18	30	4.2	mbGS
2508	2005	5	2	8:52:48	1	97.31	30	4	mbGS
2509	2005	5	2	2:52:48	1	97.64	30	4.2	mbGS
2510	2005	5	3	20:52:48	-1.95	99.69	30	4.6	mbGS
2511	2005	5	3	8:24:00	-1.79	99.81	30	4.7	mbGS
2512	2005	5	3	15:50:24	-1.8	99.78	30	4.5	mbGS
2513	2005	5	3	22:33:36	-1.67	100.16	27	4.5	mbGS
2514	2005	5	3	10:04:48	-1.9	99.73	25	4.4	mbGS
2515	2005	5	3	23:16:48	-1.81	99.6	30	4.4	mbGS
2516	2005	5	3	13:26:24	1.24	97.2	30	4.3	mbGS
2517	2005	5	3	22:04:48	1.24	96.97	22	4.7	mbGS
2518	2005	5	3	15:50:24	1.26	97.21	30	4.1	mbGS
2519	2005	5	3	12:00:00	0.88	97.67	30	4.2	mbGS
2520	2005	5	3	14:09:36	1.87	97.74	30	4.4	mbGS
2521	2005	5	4	12:57:36	0.32	97.04	35	5.1	MwHRV
2522	2005	5	4	1:26:24	0.17	97.83	23	4.6	mbGS
2523	2005	5	4	0:57:36	0.81	97.8	13	4.5	mbGS
2524	2005	5	4	17:31:12	1.08	97.4	21	4.7	mbGS
2525	2005	5	4	19:55:12	1.45	97.25	30	4.5	mbGS
2526	2005	5	4	20:52:48	0.89	97.41	30	4.2	mbGS
2527	2005	5	4	12:14:24	0.65	97.05	30	4	mbGS
2528	2005	5	4	1:40:48	1.15	97.16	30	4.1	mbGS
2529	2005	5	4	16:33:36	1.37	97.31	30	4.5	mbGS
2530	2005	5	5	10:19:12	1.3	97.29	30	4.3	mbGS
2531	2005	5	5	7:40:48	1.15	97.22	30	4.6	mbGS
2532	2005	5	5	5:45:36	0.99	97.29	30	4.3	mbGS
2533	2005	5	5	7:12:00	1.59	97.57	30	4.3	mbGS
2534	2005	5	5	9:36:00	1.25	97.2	30	4.4	mbGS
2535	2005	5	6	5:45:36	0.91	97.61	30	4.6	mbGS
2536	2005	5	6	0:14:24	0.87	97.46	30	4.5	mbGS
2537	2005	5	6	21:50:24	0.87	97.39	30	4.6	mbGS
2538	2005	5	6	20:38:24	0.88	97.45	30	4.6	mbGS
2539	2005	5	6	15:07:12	1.3	97.08	30	4.6	mbGS
2540	2005	5	6	21:21:36	1.25	97.17	30	4.7	mbGS
2541	2005	5	6	8:09:36	0.09	97.41	30	4.2	mbGS
2542	2005	5	6	23:16:48	1.65	97.87	30	4.1	mbGS
2543	2005	5	6	13:12:00	1.65	96.86	30	4.2	mbGS
2544	2005	5	6	0:14:24	1.01	97.29	30	3.9	mbGS
2545	2005	5	6	0:43:12	2.12	97.66	30	4	mbGS
2546	2005	5	6	7:55:12	1.09	97.21	30	4.9	mbGS
2547	2005	5	6	15:21:36	0.26	97.42	28	4	mbGS
2548	2005	5	7	12:43:12	0.96	97.42	24	4.8	mbGS
2549	2005	5	7	10:48:00	1.29	97.13	24	4.7	mbGS
2550	2005	5	7	15:21:36	1.27	97.06	20	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2551	2005	5	7	13:55:12	0.98	97.41	16	4.3	mbGS
2552	2005	5	7	13:40:48	0.91	97.42	26	4.3	mbGS
2553	2005	5	7	1:12:00	1.3	97.1	21	4.6	mbGS
2554	2005	5	7	10:19:12	1.23	97	26	4.6	mbGS
2555	2005	5	8	8:52:48	0.32	98.42	30	4.6	mbGS
2556	2005	5	8	21:50:24	0.79	97.43	23	4.5	mbGS
2557	2005	5	8	0:43:12	1.21	97.17	30	4.5	mbGS
2558	2005	5	8	3:36:00	1.16	97.19	30	4.2	mbGS
2559	2005	5	8	15:21:36	1	97.42	30	4.1	mbGS
2560	2005	5	8	8:52:48	-4.51	102.58	30	4.5	mbGS
2561	2005	5	8	11:16:48	0.89	97.4	30	4.1	mbGS
2562	2005	5	8	14:52:48	1.05	97.29	30	4.6	mbGS
2563	2005	5	8	23:16:48	1.62	96.89	27	4.3	mbGS
2564	2005	5	8	16:33:36	1.25	97.13	30	4.1	mbGS
2565	2005	5	8	8:38:24	1.18	97.1	22	4.5	mbGS
2566	2005	5	9	4:33:36	1.52	96.96	24	4.6	mbGS
2567	2005	5	9	19:40:48	0.3	97.71	30	4.1	mbGS
2568	2005	5	9	8:38:24	1.15	97.17	30	4.2	mbGS
2569	2005	5	9	23:02:24	0.92	96.99	23	4	mbGS
2570	2005	5	9	5:31:12	-3.38	101.69	30	4.5	mbGS
2571	2005	5	9	2:52:48	0.97	97.24	30	4.3	mbGS
2572	2005	5	10	10:33:36	-3.79	101.22	30	4.3	mbGS
2573	2005	5	10	15:50:24	0.31	97.27	30	4.6	mbGS
2574	2005	5	10	15:50:24	0.34	97.37	30	4.1	mbGS
2575	2005	5	10	14:24:00	0.69	97.59	30	3.9	mbGS
2576	2005	5	10	17:31:12	0.87	97.41	30	3.9	mbGS
2577	2005	5	10	11:31:12	1.2	97.32	30	5	MwHRV
2578	2005	5	10	22:48:00	1.24	97.23	27	5.3	MwHRV
2579	2005	5	10	19:55:12	-2.31	99.51	30	4.2	mbGS
2580	2005	5	10	10:33:36	0.88	97.49	30	4	mbGS
2581	2005	5	11	1:12:00	1.2	97.18	30	4.2	mbGS
2582	2005	5	11	3:21:36	0.19	97.86	30	4.4	mbGS
2583	2005	5	12	1:55:12	1.17	97.23	22	4.8	mbGS
2584	2005	5	12	16:33:36	0.51	98.75	30	4.5	mbGS
2585	2005	5	12	16:19:12	1.13	97.18	30	4.5	mbGS
2586	2005	5	12	13:40:48	1.16	97.19	30	4.3	mbGS
2587	2005	5	13	19:12:00	0.32	98.93	30	4.8	mbGS
2588	2005	5	13	18:57:36	1.09	97.29	30	4.3	mbGS
2589	2005	5	13	0:00:00	1.71	97.08	30	4.7	mbGS
2590	2005	5	13	13:40:48	-1.64	99.68	30	4.3	mbGS
2591	2005	5	14	5:45:36	1.28	97.15	30	4.4	mbGS
2592	2005	5	14	17:31:12	-1.68	99.77	30	4.2	mbGS
2593	2005	5	14	11:31:12	0.59	98.46	34	6.7	MwGS
2594	2005	5	14	21:50:24	0.23	98.44	30	4.7	mbGS
2595	2005	5	14	9:21:36	0.35	98.57	30	5	MwHRV
2596	2005	5	14	6:43:12	0.33	98.39	30	4.5	mbGS
2597	2005	5	14	11:16:48	-0.25	102.01	136	4.2	mbGS
2598	2005	5	14	10:04:48	0.4	98.36	30	4.2	mbGS
2599	2005	5	14	17:31:12	-1.54	99.64	30	4.5	mbGS
2600	2005	5	14	21:07:12	1.35	96.99	26	4.2	mbGS
2601	2005	5	14	22:04:48	1.25	97.17	30	4.4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2602	2005	5	14	13:26:24	1.25	97.17	23	4.6	mbGS
2603	2005	5	15	17:31:12	1.26	97.16	23	4.2	mbGS
2604	2005	5	15	6:14:24	1.15	97.16	21	4.5	mbGS
2605	2005	5	15	11:45:36	0.32	98.65	30	4	mbGS
2606	2005	5	15	15:36:00	0.88	97.36	21	4.6	mbGS
2607	2005	5	15	10:48:00	0.45	98.67	40	5	mbGS
2608	2005	5	16	21:50:24	1.59	97.05	42	4.4	mbGS
2609	2005	5	16	18:57:36	1.67	97.08	30	4.5	mbGS
2610	2005	5	16	15:50:24	1.15	97.26	30	4.6	mbGS
2611	2005	5	16	7:12:00	1.13	97.22	30	4.4	mbGS
2612	2005	5	16	4:48:00	1.16	97.3	30	4.3	mbGS
2613	2005	5	16	5:02:24	0.49	98.22	30	4.4	mbGS
2614	2005	5	16	17:02:24	0.22	97.93	27	5	MwHRV
2615	2005	5	16	6:57:36	-1.78	99.74	20	4.7	mbGS
2616	2005	5	16	15:50:24	1.13	97.22	21	4.3	mbGS
2617	2005	5	16	5:31:12	1.31	97.18	30	4.7	mbGS
2618	2005	5	17	18:00:00	-2.16	99.17	30	4.3	mbGS
2619	2005	5	18	1:40:48	0.29	98.28	30	4.8	mbGS
2620	2005	5	18	3:36:00	1.94	96.84	30	4.4	mbGS
2621	2005	5	19	14:38:24	1.88	96.95	30	4.7	mbGS
2622	2005	5	19	20:24:00	1.99	97.04	30	6.9	MwHRV
2623	2005	5	19	13:40:48	1.81	96.92	30	4.9	mbGS
2624	2005	5	19	2:38:24	1.22	97.21	30	4.5	mbGS
2625	2005	5	19	0:14:24	0.85	97.5	26	4.6	mbGS
2626	2005	5	19	16:33:36	0.4	97.26	22	4.9	MwHRV
2627	2005	5	19	12:57:36	0.4	97.23	30	4.8	mbGS
2628	2005	5	20	9:07:12	0.43	97.16	29	4.3	mbGS
2629	2005	5	20	3:21:36	0.17	97.51	30	4.2	mbGS
2630	2005	5	20	22:04:48	0.37	97.25	30	4.3	mbGS
2631	2005	5	20	16:33:36	1.04	97.27	30	4.4	mbGS
2632	2005	5	20	1:55:12	0.96	97.4	30	4.4	mbGS
2633	2005	5	20	3:21:36	0.44	97.36	30	4.2	mbGS
2634	2005	5	20	8:38:24	2.05	97.19	30	4.2	mbGS
2635	2005	5	21	10:19:12	0.38	97.23	30	4.1	mbGS
2636	2005	5	21	19:40:48	1.96	97.92	30	4.8	MwHRV
2637	2005	5	21	5:31:12	1.4	97.17	30	5	MwHRV
2638	2005	5	21	23:45:36	1.21	97.15	23	5	mbGS
2639	2005	5	21	21:50:24	1.29	97.12	24	5.1	mbGS
2640	2005	5	21	4:33:36	1.23	97.14	30	4.4	mbGS
2641	2005	5	22	1:55:12	0.2	97.31	32	4.1	mbGS
2642	2005	5	22	6:57:36	0.27	97.41	28	4.8	mbGS
2643	2005	5	22	9:36:00	0.3	97.52	28	4.7	mbGS
2644	2005	5	22	18:57:36	0.84	97.38	30	4.2	mbGS
2645	2005	5	22	18:00:00	0.15	98.72	30	4.2	mbGS
2646	2005	5	22	12:43:12	1.07	97.18	30	4.5	mbGS
2647	2005	5	22	9:21:36	1.45	97.05	27	4.3	mbGS
2648	2005	5	22	6:57:36	-1.77	99.45	30	4.2	mbGS
2649	2005	5	23	18:43:12	1.71	96.49	27	4.1	mbGS
2650	2005	5	23	8:52:48	-1.67	99.81	30	4.2	mbGS
2651	2005	5	23	3:50:24	1.36	97.12	30	4.3	mbGS
2652	2005	5	23	19:40:48	0.8	97.45	23	4.9	MwHRV

no	year	mon	day	time	lat	long	depth	mag	type
2653	2005	5	23	11:02:24	-2.03	100.02	30	4.2	mbGS
2654	2005	5	23	7:12:00	1.17	97.14	30	4.1	mbGS
2655	2005	5	23	15:50:24	0.44	97.3	30	4.3	mbGS
2656	2005	5	23	1:55:12	0.41	97.22	30	4.5	mbGS
2657	2005	5	24	2:09:36	0.86	97.5	30	4.5	mbGS
2658	2005	5	24	11:16:48	0.96	97.34	30	4.5	mbGS
2659	2005	5	24	2:24:00	1.08	97.3	23	4.8	MwHRV
2660	2005	5	25	4:48:00	0.22	98.6	30	4.3	mbGS
2661	2005	5	25	19:40:48	1.35	97.18	25	4.9	MwHRV
2662	2005	5	25	14:38:24	1.84	96.93	30	4.4	mbGS
2663	2005	5	26	7:26:24	0.43	97.07	30	4.5	mbGS
2664	2005	5	27	13:55:12	0.87	97.41	30	4.6	mbGS
2665	2005	5	27	15:50:24	1.07	97.32	22	4.6	mbGS
2666	2005	5	28	4:48:00	0.91	97.4	30	3.9	mbGS
2667	2005	5	28	8:24:00	-1.83	99.74	30	4.6	mbGS
2668	2005	5	28	7:26:24	0.38	98.48	30	4.8	mbGS
2669	2005	5	29	20:09:36	0.77	96.35	42	4.4	mbGS
2670	2005	5	29	14:52:48	1.12	97.25	30	4.6	mbGS
2671	2005	5	29	3:07:12	0.44	97.96	30	4.6	mbGS
2672	2005	5	29	15:21:36	1.06	97.3	23	4.8	mbGS
2673	2005	5	29	0:14:24	1.08	97.08	22	4.6	mbGS
2674	2005	5	30	13:12:00	1.08	97.2	30	4.6	mbGS
2675	2005	5	30	20:09:36	1.23	97.15	30	4.2	mbGS
2676	2005	5	30	0:00:00	0.92	97.72	30	4.4	mbGS
2677	2005	5	30	13:40:48	1.18	97.26	30	4.6	mbGS
2678	2005	5	31	16:48:00	0.7	96.25	34	5	MwHRV
2679	2005	5	31	1:12:00	0.08	98.06	29	4.6	mbGS
2680	2005	5	31	11:31:12	1.12	97.07	30	4.5	mbGS
2681	2005	5	31	6:00:00	0.71	97.8	30	4	mbGS
2682	2005	6	1	13:55:12	0.32	97.55	28	4.5	mbGS
2683	2005	6	1	4:33:36	0.94	97.51	44	4.3	mbGS
2684	2005	6	2	0:57:36	0.23	97.67	30	4.5	mbGS
2685	2005	6	2	7:12:00	1.39	97.18	30	4.6	mbGS
2686	2005	6	3	21:36:00	1.46	97.15	24	5.8	MwGS
2687	2005	6	3	12:43:12	1.27	97.12	30	4.2	mbGS
2688	2005	6	3	14:38:24	1.3	97.04	21	4.6	mbGS
2689	2005	6	3	11:31:12	1.37	97.2	23	4.5	mbGS
2690	2005	6	3	18:00:00	1.33	97.13	24	4.8	mbGS
2691	2005	6	3	3:36:00	0.88	97.32	22	4.2	mbGS
2692	2005	6	3	5:02:24	1.3	97.24	30	4.6	mbGS
2693	2005	6	3	2:24:00	1.36	97.14	30	4.2	mbGS
2694	2005	6	4	16:19:12	1.22	97.42	30	4.3	mbGS
2695	2005	6	5	20:38:24	1.13	97.08	30	4.1	mbGS
2696	2005	6	5	8:09:36	1.39	97.13	48	4.7	mbGS
2697	2005	6	5	19:12:00	1.22	97.22	30	4.2	mbGS
2698	2005	6	5	0:57:36	1.31	97.18	30	4.6	mbGS
2699	2005	6	5	21:50:24	1.71	97.01	25	4	mbGS
2700	2005	6	6	16:19:12	1.27	97.09	29	4.5	mbGS
2701	2005	6	6	5:16:48	-1.75	99.58	35	4.6	mbGS
2702	2005	6	7	6:43:12	0.83	97.36	30	4.6	mbGS
2703	2005	6	7	6:28:48	-0.63	96.55	30	4.6	mbGS



no	year	mon	day	time	lat	long	depth	mag	type
2704	2005	6	7	1:12:00	1.33	97.15	30	4.5	mbGS
2705	2005	6	7	6:00:00	1.43	97.09	27	4.5	mbGS
2706	2005	6	7	11:16:48	-2.15	100.96	79	4.4	mbGS
2707	2005	6	7	3:21:36	1.06	97.27	24	4.6	mbGS
2708	2005	6	8	11:31:12	1.11	97.43	44	4.5	mbGS
2709	2005	6	9	23:02:24	1.73	97.78	30	4.6	mbGS
2710	2005	6	10	4:04:48	-0.28	96.97	30	4	mbGS
2711	2005	6	10	3:36:00	-0.39	96.59	30	4.1	mbGS
2712	2005	6	10	19:40:48	2.19	97.48	30	4.2	mbGS
2713	2005	6	10	12:57:36	1.81	97.09	25	5.5	MwHRV
2714	2005	6	10	4:48:00	1.15	97.23	30	4.4	mbGS
2715	2005	6	11	3:21:36	1.01	97.51	23	5.2	MwHRV
2716	2005	6	11	20:24:00	1.66	97.15	30	4.3	mbGS
2717	2005	6	11	1:26:24	1.39	97.16	30	4.5	mbGS
2718	2005	6	11	12:14:24	1.21	97.28	23	4.5	mbGS
2719	2005	6	12	7:40:48	1.27	98.35	30	4.5	mbGS
2720	2005	6	12	23:16:48	0.08	97.64	14	4.8	MwHRV
2721	2005	6	12	22:04:48	1.84	97.75	30	4.3	mbGS
2722	2005	6	13	4:48:00	1.14	97.18	30	4.3	mbGS
2723	2005	6	14	10:19:12	1.16	98.02	30	4.4	mbGS
2724	2005	6	16	9:36:00	1.25	97.14	30	4.5	mbGS
2725	2005	6	16	15:21:36	1.27	97.21	25	4.8	mbGS
2726	2005	6	16	12:43:12	2	98.98	30	4.7	mbGS
2727	2005	6	16	22:19:12	1.89	98.93	30	4.6	mbGS
2728	2005	6	16	7:12:00	1.1	97.13	25	4.8	mbGS
2729	2005	6	17	13:12:00	-0.32	96.72	30	4.3	mbGS
2730	2005	6	18	12:57:36	1.06	97.17	30	4.5	mbGS
2731	2005	6	18	17:16:48	0.4	96.84	30	4.2	mbGS
2732	2005	6	18	7:26:24	1.32	97.25	53	4.8	mbGS
2733	2005	6	18	4:04:48	1.26	97.24	41	4.7	MwHRV
2734	2005	6	18	21:21:36	1.07	97.2	30	4.1	mbGS
2735	2005	6	18	12:28:48	1.04	97.28	30	4.6	mbGS
2736	2005	6	19	4:48:00	1.2	97.32	26	4.8	mbGS
2737	2005	6	19	20:09:36	1.08	97.17	30	4.2	mbGS
2738	2005	6	19	14:38:24	1.17	97.25	23	5	MwHRV
2739	2005	6	19	7:55:12	1.1	97.23	37	4.6	mbGS
2740	2005	6	20	9:50:24	1.2	97.18	30	4.4	mbGS
2741	2005	6	20	22:33:36	-0.17	98.66	30	3.8	mbGS
2742	2005	6	20	22:48:00	0.82	97.43	30	4	mbGS
2743	2005	6	20	8:09:36	-3.93	101.29	30	4.1	mbGS
2744	2005	6	21	2:38:24	0.9	97.44	30	4.2	mbGS
2745	2005	6	21	22:33:36	1.36	97.15	30	4.7	mbGS
2746	2005	6	21	22:48:00	0.47	98.39	30	4.6	mbGS
2747	2005	6	22	9:36:00	1.13	97.33	38	4.4	mbGS
2748	2005	6	22	13:12:00	0.67	96.94	28	4.7	mbGS
2749	2005	6	22	6:28:48	0.76	97.09	30	4.1	mbGS
2750	2005	6	23	9:21:36	1.96	96.86	47	4.6	mbGS
2751	2005	6	23	12:14:24	1.83	99	113	4.4	mbGS
2752	2005	6	23	12:00:00	1.01	97.35	30	4.7	mbGS
2753	2005	6	23	14:52:48	1.21	97.3	30	4.3	mbGS
2754	2005	6	24	19:40:48	1.79	97.73	30	4.4	mbGS



no.	year	month	day	time	lat	long	depth	mag	type
2755	2005	6	25	21:21:36	0.26	97.31	30	4.2	mbGS
2756	2005	6	27	14:38:24	1.28	97.14	24	4.8	MwHRV
2757	2005	6	27	13:26:24	0.22	97.89	30	4	mbGS
2758	2005	6	27	18:57:36	1.15	97.05	30	4.1	mbGS
2759	2005	6	28	3:50:24	0.73	97.75	30	4.6	mbGS
2760	2005	6	28	14:52:48	1.53	97.04	25	4.9	mbGS
2761	2005	6	29	23:45:36	-1.62	99.67	34	4.8	mbGS
2762	2005	6	29	10:33:36	1.07	97.48	45	4.8	mbGS
2763	2005	6	29	8:52:48	1.04	97.41	35	4.6	mbGS
2764	2005	6	30	15:50:24	1.6	97.05	28	4.5	mbGS
2765	2005	6	30	16:19:12	0.99	97.11	22	4.5	mbGS
2766	2005	6	30	13:40:48	1.18	97.21	35	4.3	mbGS
2767	2005	7	1	17:45:36	1.37	97.16	30	4.2	mbGS
2768	2005	7	1	10:04:48	-0.46	98.06	30	4.6	mbGS
2769	2005	7	1	4:19:12	1.78	97.85	30	4.8	mbGS
2770	2005	7	1	1:12:00	1	98.77	30	4.1	mbGS
2771	2005	7	1	22:04:48	0.93	97.42	21	4.6	mbGS
2772	2005	7	2	18:28:48	0.9	97.24	30	4.5	mbGS
2773	2005	7	2	20:52:48	1.1	97.25	24	4.9	MwHRV
2774	2005	7	2	22:33:36	0.74	97.38	22	4.1	mbGS
2775	2005	7	2	17:16:48	-0.93	97.72	24	4.8	mbGS
2776	2005	7	3	2:38:24	1.63	96.87	28	4.3	mbGS
2777	2005	7	3	4:04:48	1.23	97.15	30	4.1	mbGS
2778	2005	7	3	15:36:00	-1.77	99.84	26	4.7	mbGS
2779	2005	7	3	8:52:48	-1.77	99.87	25	4.4	mbGS
2780	2005	7	3	22:33:36	1.28	97.06	30	4.3	mbGS
2781	2005	7	4	3:21:36	1.59	96.91	24	4.4	mbGS
2782	2005	7	4	6:57:36	0.29	97.57	30	4.2	mbGS
2783	2005	7	5	22:48:00	1.82	97.08	21	6.7	MwHRV
2784	2005	7	5	16:19:12	1.79	96.88	30	4.5	mbGS
2785	2005	7	5	19:12:00	-1.71	99.76	30	4.2	mbGS
2786	2005	7	6	6:00:00	0.82	97.04	30	4.5	mbGS
2787	2005	7	6	0:00:00	1.09	97.16	23	4.8	mbGS
2788	2005	7	8	14:38:24	1.49	96.96	30	4	mbGS
2789	2005	7	8	5:45:36	1.1	97.22	30	4.1	mbGS
2790	2005	7	8	5:16:48	0.94	97.41	30	3.9	mbGS
2791	2005	7	8	17:45:36	1.17	97.27	27	4.7	MwHRV
2792	2005	7	9	14:52:48	0.24	96.27	26	4	mbGS
2793	2005	7	10	18:57:36	1.14	97.16	22	4.4	mbGS
2794	2005	7	11	9:36:00	1.8	99.48	30	4.4	mbGS
2795	2005	7	11	14:38:24	1.87	99.22	30	4.5	mbGS
2796	2005	7	11	18:43:12	1.45	97.11	30	4.5	mbGS
2797	2005	7	11	13:55:12	1.33	97.11	30	4.7	MwHRV
2798	2005	7	11	12:57:36	1.27	97.23	23	5.6	MwGS
2799	2005	7	11	4:04:48	0.8	97.33	6	4.5	mbGS
2800	2005	7	11	8:09:36	0.26	97.09	30	4.2	mbGS
2801	2005	7	11	22:33:36	0.26	97.13	33	4.2	mbGS
2802	2005	7	11	22:48:00	1.76	96.86	30	4.2	mbGS
2803	2005	7	12	2:38:24	1.87	97.04	30	4.2	mbGS
2804	2005	7	12	19:26:24	-0.3	96.88	29	4.7	mbGS
2805	2005	7	12	4:33:36	1.03	97.15	30	4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2806	2005	7	13	9:36:00	-0.17	97.3	23	4.6	mbGS
2807	2005	7	13	17:16:48	1.3	97.16	30	4.6	mbGS
2808	2005	7	13	14:52:48	-2.36	100.58	30	4.6	mbGS
2809	2005	7	13	7:55:12	1.31	97.16	30	4.3	mbGS
2810	2005	7	14	1:12:00	0.83	97.37	30	4.4	mbGS
2811	2005	7	14	3:50:24	1.41	97.03	30	4.5	mbGS
2812	2005	7	14	10:48:00	1.04	97.25	30	4.1	mbGS
2813	2005	7	14	0:28:48	2.04	97.85	30	4.8	mbGS
2814	2005	7	15	18:57:36	1.13	97.16	30	4.1	mbGS
2815	2005	7	16	23:31:12	1.2	97.16	30	4.5	mbGS
2816	2005	7	17	1:40:48	1.17	97.29	51	4.6	mbGS
2817	2005	7	19	2:38:24	0.91	97.82	30	4.8	mbGS
2818	2005	7	20	19:12:00	0.85	97.34	22	4.3	mbGS
2819	2005	7	20	15:36:00	0.99	97.18	30	4.6	mbGS
2820	2005	7	21	8:52:48	-5.18	102.15	30	4.7	mbGS
2821	2005	7	22	16:33:36	1.18	97.13	30	4.5	mbGS
2822	2005	7	23	10:33:36	-2.27	100.54	30	4.5	mbGS
2823	2005	7	24	19:55:12	-1.49	99.63	30	4.8	MwHRV
2824	2005	7	24	11:45:36	0.05	98.54	30	4.6	mbGS
2825	2005	7	25	1:12:00	1.22	96.64	30	4.4	mbGS
2826	2005	7	25	8:24:00	1.18	96.84	25	5.3	MwHRV
2827	2005	7	25	5:45:36	0.02	97.24	30	4	mbGS
2828	2005	7	25	21:36:00	1	97.38	30	4.1	mbGS
2829	2005	7	26	7:26:24	1.9	97.02	27	5	MwHRV
2830	2005	7	26	0:57:36	1.03	97.15	24	4.8	mbGS
2831	2005	7	28	17:02:24	1.61	97.06	30	4.2	mbGS
2832	2005	7	28	13:12:00	-2.58	102.32	30	4.5	mbGS
2833	2005	7	28	17:16:48	1.39	97.05	30	4.7	mbGS
2834	2005	7	29	17:02:24	0.28	97.27	32	4.8	mbGS
2835	2005	7	29	20:38:24	0.31	97.3	32	4.4	mbGS
2836	2005	7	29	9:07:12	1	97.41	30	4.4	mbGS
2837	2005	7	29	2:38:24	0.24	97.71	25	4.6	mbGS
2838	2005	7	29	4:33:36	0.81	97.45	19	3.8	mbGS
2839	2005	7	30	16:19:12	1.09	97.42	25	5.3	MwHRV
2840	2005	7	30	13:12:00	0.99	97.43	30	5	mbGS
2841	2005	7	30	12:43:12	0.88	97.43	30	4.1	mbGS
2842	2005	7	30	21:21:36	0.32	97.3	30	4.7	MwHRV
2843	2005	7	31	14:09:36	-0.19	96.87	30	4.5	mbGS
2844	2005	7	31	21:36:00	0.97	97.03	18	4.6	mbGS
2845	2005	7	31	12:14:24	1.52	97.03	27	4.8	mbGS
2846	2005	7	31	23:02:24	0.23	97.7	30	4.1	mbGS
2847	2005	7	31	1:26:24	1.64	97.02	30	4.2	mbGS
2848	2005	7	31	15:36:00	0.35	97.76	26	5.1	MwHRV
2849	2005	7	31	4:19:12	0.38	97.82	29	5	MwHRV
2850	2005	7	31	10:48:00	0.22	97.61	30	4.5	mbGS
2851	2005	7	31	13:12:00	-0.25	96.92	30	3.9	mbGS
2852	2005	8	1	4:48:00	1.22	97.15	30	4.7	MwHRV
2853	2005	8	1	5:31:12	-1.67	99.58	30	4.4	mbGS
2854	2005	8	2	16:48:00	1.12	97.13	30	4.5	mbGS
2855	2005	8	2	8:52:48	1.61	96.7	30	4.2	mbGS
2856	2005	8	4	1:26:24	1.27	97.18	30	4.8	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
2857	2005	8	5	15:07:12	0.82	97.39	30	4.4	mbGS
2858	2005	8	6	16:04:48	1.05	97.96	30	4.9	mbGS
2859	2005	8	6	23:45:36	1.33	97.04	30	4.3	mbGS
2860	2005	8	7	7:40:48	0.22	98.26	46	4.8	mbGS
2861	2005	8	7	0:57:36	0.99	97.18	30	4.1	mbGS
2862	2005	8	8	23:45:36	1.05	98.04	30	4.1	mbGS
2863	2005	8	8	20:09:36	-1.86	99.77	30	4.7	mbGS
2864	2005	8	9	21:07:12	1.05	97.24	26	4	mbGS
2865	2005	8	9	16:19:12	1.03	97.15	26	4.5	mbGS
2866	2005	8	10	2:09:36	0.21	97.54	27	4.5	mbGS
2867	2005	8	10	4:19:12	1.88	97.62	30	4	mbGS
2868	2005	8	11	6:00:00	1.28	97.15	30	4.5	mbGS
2869	2005	8	13	10:33:36	1.37	97.21	30	5	MwHRV
2870	2005	8	13	17:02:24	1.3	97.11	30	4.4	mbGS
2871	2005	8	14	17:16:48	0.08	98.57	30	4.1	mbGS
2872	2005	8	14	3:21:36	0.61	97.13	37	4	mbGS
2873	2005	8	15	9:36:00	0.14	98.32	30	4.3	mbGS
2874	2005	8	15	18:00:00	1.02	97.17	20	4.7	mbGS
2875	2005	8	15	7:12:00	1.08	97.21	30	4.4	mbGS
2876	2005	8	16	5:45:36	-3.76	101.47	10	4.6	mbGS
2877	2005	8	16	1:12:00	-3.99	101.13	30	4.5	mbGS
2878	2005	8	16	4:33:36	1.37	97.13	35	4.6	mbGS
2879	2005	8	17	5:45:36	2.01	97.83	30	5	mbGS
2880	2005	8	18	7:40:48	0.99	97.24	30	4.6	mbGS
2881	2005	8	18	11:31:12	1.59	96.82	30	4.4	mbGS
2882	2005	8	19	6:14:24	1.11	97.09	30	4.5	mbGS
2883	2005	8	21	4:04:48	0.09	98.46	48	4.6	mbGS
2884	2005	8	22	23:02:24	1.34	97.11	30	4.4	mbGS
2885	2005	8	23	3:36:00	1.2	98.06	30	4.9	mbGS
2886	2005	8	23	6:14:24	1.04	97.29	24	4.7	mbGS
2887	2005	8	23	11:45:36	1.06	97.28	24	4.6	mbGS
2888	2005	8	23	3:21:36	1.29	97.15	30	4.3	mbGS
2889	2005	8	24	7:26:24	1.09	97.4	51	4.8	mbGS
2890	2005	8	25	9:50:24	0.82	97.44	30	4.5	mbGS
2891	2005	8	26	22:48:00	1.12	97.22	30	4.1	mbGS
2892	2005	8	27	20:24:00	-1.59	99.54	30	4.4	mbGS
2893	2005	8	28	14:38:24	0.12	97.87	39	4.3	mbGS
2894	2005	8	28	0:57:36	1.47	97.14	30	5	MwHRV
2895	2005	8	29	4:19:12	0.32	97.74	26	5.3	MwHRV
2896	2005	8	30	23:16:48	0.13	97.76	30	4	mbGS
2897	2005	8	30	16:33:36	-1.66	99.62	29	5	MwHRV
2898	2005	8	30	14:38:24	-1.73	99.56	30	4.7	mbGS
2899	2005	8	31	6:43:12	-1.14	99.34	30	4.7	mbGS
2900	2005	9	1	12:57:36	1.62	96.81	30	4.5	mbGS
2901	2005	9	1	19:55:12	1.14	97.26	30	4.5	mbGS
2902	2005	9	2	18:28:48	1	97.29	30	4.4	mbGS
2903	2005	9	2	12:57:36	0.99	97.35	30	4.4	mbGS
2904	2005	9	2	22:04:48	1.04	97.39	23	4.7	mbGS
2905	2005	9	2	23:31:12	2.45	98.92	147	5.5	MwHRV
2906	2005	9	2	2:24:00	-1.91	99.67	35	4.2	mbGS
2907	2005	9	3	11:45:36	1.51	96.91	30	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
2908	2005	9	3	14:52:48	1.34	97.46	30	4.4	mbGS
2909	2005	9	3	7:12:00	-3.8	102.7	103	4.9	MwHRV
2910	2005	9	4	17:02:24	1.28	97.16	30	4.6	mbGS
2911	2005	9	5	21:21:36	0.72	97.25	30	4.3	mbGS
2912	2005	9	6	14:38:24	0.03	97.6	27	5.6	MwGS
2913	2005	9	6	2:24:00	0.05	97.61	27	5.2	MwHRV
2914	2005	9	6	16:04:48	0.39	96.63	30	4.8	mbGS
2915	2005	9	6	16:04:48	-0.01	97.56	19	4.7	MwHRV
2916	2005	9	7	14:09:36	0.08	97.7	13	5.1	MwHRV
2917	2005	9	7	6:14:24	1.61	97.04	30	4.4	mbGS
2918	2005	9	7	13:40:48	1.68	97.09	30	3.8	mbGS
2919	2005	9	7	0:00:00	0.86	97.56	46	4.8	mbGS
2920	2005	9	7	22:19:12	0.44	96.63	19	4.5	mbGS
2921	2005	9	7	1:55:12	-1.71	100.07	30	4.1	mbGS
2922	2005	9	8	20:52:48	-0.02	97.57	30	4.8	mbGS
2923	2005	9	8	6:00:00	1.22	97.16	24	4.9	mbGS
2924	2005	9	8	3:50:24	-4.53	101.84	35	4.5	mbGS
2925	2005	9	8	4:19:12	0.63	97.4	30	4.8	MwHRV
2926	2005	9	9	16:04:48	1.32	97.14	24	4.9	mbGS
2927	2005	9	9	10:48:00	0.27	97.83	30	4.1	mbGS
2928	2005	9	9	11:45:36	1.15	97.25	22	4.9	mbGS
2929	2005	9	10	22:04:48	1.81	96.95	30	4.8	mbGS
2930	2005	9	11	5:02:24	0.97	96.5	26	4.2	mbGS
2931	2005	9	12	22:04:48	0.45	97.71	30	4	mbGS
2932	2005	9	13	23:45:36	1.77	99.03	127	4.7	mbGS
2933	2005	9	13	8:24:00	0.96	97.31	30	4.6	mbGS
2934	2005	9	14	13:55:12	0.69	97.45	24	4.5	mbGS
2935	2005	9	15	4:04:48	0.45	96.68	30	4.7	mbGS
2936	2005	9	16	19:40:48	-0.23	100.96	150	4	mbGS
2937	2005	9	17	16:48:00	1.1	97.22	30	4.3	mbGS
2938	2005	9	17	5:02:24	1.94	99.58	20	4.5	mbGS
2939	2005	9	18	2:52:48	1.24	97.11	30	4.1	mbGS
2940	2005	9	18	16:04:48	1.36	97.38	27	4.3	mbGS
2941	2005	9	19	11:16:48	-0.09	97.54	30	4.7	mbGS
2942	2005	9	19	20:09:36	1.34	97.17	30	4.9	MwHRV
2943	2005	9	20	14:24:00	0.99	97.08	30	4.6	mbGS
2944	2005	9	20	10:04:48	1.07	97.23	30	4.6	mbGS
2945	2005	9	20	3:21:36	1.28	99.42	131	4.6	mbGS
2946	2005	9	21	5:02:24	1.61	96.98	28	4.6	mbGS
2947	2005	9	21	16:19:12	-3.06	102.14	130	4.7	mbGS
2948	2005	9	22	22:19:12	0.81	97.43	30	4.5	mbGS
2949	2005	9	22	23:02:24	-1.77	99.78	34	4.7	mbGS
2950	2005	9	22	20:09:36	1.66	99.21	30	4.3	mbGS
2951	2005	9	23	18:14:24	1.08	97.36	30	4.2	mbGS
2952	2005	9	23	17:45:36	0.41	97.24	30	3.8	mbGS
2953	2005	9	24	2:52:48	1.31	97.07	30	4.4	mbGS
2954	2005	9	25	20:52:48	1.03	97.15	30	4.9	mbGS
2955	2005	9	25	11:16:48	0.07	97.87	28	5	MwHRV
2956	2005	9	25	2:09:36	0.24	98.48	30	4.2	mbGS
2957	2005	9	27	12:43:12	0.17	96.27	30	4.2	mbGS
2958	2005	9	30	10:04:48	0.24	98.01	30	4.8	MwHRV

no.	year	mon	day	time	lat	long	depth	mag	type
2959	2005	10	2	6:43:12	1.42	97.82	30	4.2	mbGS
2960	2005	10	3	4:33:36	1.11	97.24	23	5.2	MwHRV
2961	2005	10	3	6:00:00	1.06	97.18	30	4.2	mbGS
2962	2005	10	7	4:48:00	1.69	97.05	30	4.5	mbGS
2963	2005	10	8	2:52:48	1.96	97.85	30	5.6	mbGS
2964	2005	10	9	20:09:36	1.98	97.87	30	4.9	MwHRV
2965	2005	10	11	20:24:00	-0.47	98.68	50	4.6	mbGS
2966	2005	10	15	1:12:00	0.76	97.39	30	4.6	mbGS
2967	2005	10	16	10:04:48	2.03	97.94	38	5.7	MwGS
2968	2005	10	16	8:52:48	0.09	97.81	30	4.3	mbGS
2969	2005	10	16	1:55:12	1.32	97.12	30	4.8	mbGS
2970	2005	10	17	7:26:24	1.69	97.18	26	4.3	mbGS
2971	2005	10	18	23:45:36	1.4	97.14	30	4.6	mbGS
2972	2005	10	19	10:19:12	1.1	97.21	30	4.6	mbGS
2973	2005	10	20	2:24:00	1.05	97.11	30	4.5	mbGS
2974	2005	10	21	12:00:00	1.49	97.64	30	3.8	mbGS
2975	2005	10	22	6:57:36	0.69	100.07	30	4.9	mbGS
2976	2005	10	22	20:38:24	1.71	97.15	30	4.7	mbGS
2977	2005	10	23	19:40:48	0.72	97.59	30	4.3	mbGS
2978	2005	10	23	16:19:12	0.26	97.72	30	4.2	mbGS
2979	2005	10	23	3:50:24	1.38	97.19	30	4.1	mbGS
2980	2005	10	24	9:50:24	-1.46	99.53	25	4.8	MwHRV
2981	2005	10	24	8:24:00	-1.54	99.55	30	4.3	mbGS
2982	2005	10	24	0:00:00	-1.51	99.55	30	4.3	mbGS
2983	2005	10	25	4:33:36	0.79	98.19	26	4.8	MwHRV
2984	2005	10	27	11:02:24	-1.79	99.54	47	4.7	MwHRV
2985	2005	10	28	14:52:48	1.18	97.24	22	4.7	mbGS
2986	2005	10	28	14:38:24	-2	101.06	103	4.2	mbGS
2987	2005	10	30	16:04:48	1.69	97.13	26	4.7	MwHRV
2988	2005	10	31	6:14:24	-1.68	99.44	30	4.2	mbGS
2989	2005	10	31	8:52:48	-1.56	99.8	30	4.3	mbGS
2990	2005	10	31	23:45:36	-1.68	99.45	30	4.8	mbGS
2991	2005	10	31	8:52:48	-1.69	99.45	30	4.4	mbGS
2992	2005	11	1	14:38:24	0.89	97.4	41	4.4	mbGS
2993	2005	11	1	18:43:12	1.15	95.98	27	4.5	mbGS
2994	2005	11	3	0:00:00	1.32	97.18	30	4.5	mbGS
2995	2005	11	3	18:57:36	1.21	97.24	30	4.4	mbGS
2996	2005	11	4	3:36:00	1.23	97.27	30	5.5	MwGS
2997	2005	11	8	10:19:12	1.47	97.52	30	4.2	mbGS
2998	2005	11	8	6:00:00	-1.52	100.16	76	4.3	mbGS
2999	2005	11	11	11:16:48	1.48	97	30	3.9	mbGS
3000	2005	11	12	19:55:12	1.03	97.38	26	4.8	mbGS
3001	2005	11	12	12:57:36	1.01	97.43	30	4.3	mbGS
3002	2005	11	12	16:04:48	1.06	97.54	30	4.1	mbGS
3003	2005	11	12	10:19:12	1	97.46	30	4.2	mbGS
3004	2005	11	12	20:09:36	1.86	97.04	30	5.2	mbGS
3005	2005	11	12	1:55:12	0.74	97.23	30	4.4	mbGS
3006	2005	11	12	3:07:12	1.66	99.18	30	4.7	mbGS
3007	2005	11	12	21:50:24	1.29	97.13	22	4.8	mbGS
3008	2005	11	13	10:33:36	1.05	97.2	30	4.3	mbGS
3009	2005	11	15	21:21:36	1.15	97.25	30	3.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3010	2005	11	15	11:02:24	1.28	97.15	30	4.4	mbGS
3011	2005	11	15	17:16:48	1.43	97.14	30	3.8	mbGS
3012	2005	11	18	8:52:48	0.75	97.07	30	4	mbGS
3013	2005	11	18	18:57:36	1.19	97.14	21	4.7	mbGS
3014	2005	11	18	23:02:24	0.78	97.42	30	4	mbGS
3015	2005	11	19	17:02:24	1.4	97.52	30	3.9	mbGS
3016	2005	11	19	18:43:12	1.79	98.93	119	4.6	mbGS
3017	2005	11	22	2:38:24	0.78	98.17	30	4.8	mbGS
3018	2005	11	22	5:45:36	1.64	97.6	30	4.2	mbGS
3019	2005	11	22	6:57:36	0.73	96.94	27	5	MwHRV
3020	2005	11	24	15:50:24	1.15	97.17	30	4.6	mbGS
3021	2005	11	25	14:38:24	1.09	97.16	30	4.5	mbGS
3022	2005	11	27	5:45:36	1.08	97.26	30	4.4	mbGS
3023	2005	11	27	7:12:00	1.16	97.27	24	5.6	MwGS
3024	2005	11	28	3:07:12	1.14	97.24	30	5.2	MwHRV
3025	2005	11	29	6:43:12	1.33	97.06	30	4.9	mbGS
3026	2005	12	1	5:16:48	0.69	98.42	30	4.1	mbGS
3027	2005	12	3	7:12:00	1.74	97.08	40	4.3	mbGS
3028	2005	12	3	15:07:12	0.28	98.49	30	4.6	mbGS
3029	2005	12	3	18:14:24	1.06	97.16	30	4.9	MwHRV
3030	2005	12	4	6:28:48	0.83	97.05	30	4.1	mbGS
3031	2005	12	4	10:04:48	0.79	97.46	24	4.8	MwHRV
3032	2005	12	4	17:02:24	1.42	96.98	30	4.4	mbGS
3033	2005	12	5	12:14:24	1.77	96.58	30	4.4	mbGS
3034	2005	12	6	6:57:36	-1.32	99.61	30	4.6	mbGS
3035	2005	12	7	8:09:36	1.36	97.2	30	5.1	MwHRV
3036	2005	12	7	6:14:24	0.15	97.33	20	4.7	MwHRV
3037	2005	12	8	9:36:00	1.07	97.15	30	4.3	mbGS
3038	2005	12	10	1:26:24	0.75	97.47	30	4.7	mbGS
3039	2005	12	12	15:21:36	-1.2	99.78	30	5.2	mbGS
3040	2005	12	14	15:07:12	0.03	97.86	29	4.4	mbGS
3041	2005	12	16	8:24:00	0.93	97.25	30	4	mbGS
3042	2005	12	17	16:33:36	-1.44	100.72	30	4.3	mbGS
3043	2005	12	19	13:40:48	-2.44	99.24	30	4.7	mbGS
3044	2005	12	22	12:57:36	-3.73	100.85	30	4.4	mbGS
3045	2005	12	23	4:04:48	-0.54	96.88	34	4.5	mbGS
3046	2005	12	23	18:43:12	-1.1	99.54	49	4.3	mbGS
3047	2005	12	23	1:40:48	1.1	97.07	30	4.6	mbGS
3048	2005	12	23	2:09:36	1.12	97.12	27	4.6	mbGS
3049	2005	12	24	0:43:12	0.83	97.36	30	4.2	mbGS
3050	2005	12	25	20:24:00	1.94	97.03	48	4.5	mbGS
3051	2005	12	25	12:57:36	1.3	97.12	22	4.6	mbGS
3052	2005	12	26	6:00:00	1.67	99.53	170	4.4	mbGS
3053	2005	12	27	11:45:36	1.59	96.98	30	4.3	mbGS
3054	2005	12	29	21:21:36	1.16	97.15	30	4.7	mbGS
3055	2005	12	30	9:07:12	1.03	97.18	22	4.6	mbGS
3056	2005	12	31	2:24:00	-3.66	100.94	30	4.3	mbGS
3057	2006	1	2	7:55:12	1.59	97.16	35	4.4	mbGS
3058	2006	1	4	19:55:12	-0.38	99.46	64	4.3	mbGS
3059	2006	1	5	6:14:24	1.24	96.97	25	4.5	mbGS
3060	2006	1	5	13:26:24	0.93	98.98	93	4.8	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
3061	2006	1	6	22:33:36	0.82	97.42	30	4.2	mbGS
3062	2006	1	6	7:40:48	1.23	97.17	40	4.4	mbGS
3063	2006	1	8	18:43:12	0.76	97.35	26	4.3	mbGS
3064	2006	1	8	6:43:12	1.87	98.82	120	4.1	mbGS
3065	2006	1	9	11:45:36	-4.81	101.78	30	3.8	mbGS
3066	2006	1	9	14:24:00	2.05	98.92	13	4.3	mbGS
3067	2006	1	10	23:31:12	2.15	98.95	30	4	mbGS
3068	2006	1	11	10:48:00	0.12	97.9	22	5.1	MwHRV
3069	2006	1	11	3:36:00	0.03	97.78	25	4.5	mbGS
3070	2006	1	11	8:52:48	0.04	97.86	30	4.9	MwHRV
3071	2006	1	12	5:45:36	1.25	97.09	24	4.7	mbGS
3072	2006	1	13	17:02:24	0.96	97.45	44	4.5	mbGS
3073	2006	1	13	12:00:00	0.98	97.53	40	5.1	MwHRV
3074	2006	1	13	1:12:00	1.33	97.11	43	4.9	MwHRV
3075	2006	1	13	22:19:12	1.24	97.1	30	4.5	mbGS
3076	2006	1	13	10:48:00	1.25	97.11	30	4.7	mbGS
3077	2006	1	14	15:36:00	1.66	97.02	30	4.2	mbGS
3078	2006	1	15	2:24:00	-3.05	101.04	40	4.5	mbGS
3079	2006	1	18	13:12:00	1.85	96.99	47	4.3	mbGS
3080	2006	1	19	7:55:12	0.92	97.61	42	4.2	mbGS
3081	2006	1	19	0:14:24	1.21	96.98	30	4.3	mbGS
3082	2006	1	19	18:14:24	-1.99	100.82	78	4.7	mbGS
3083	2006	1	21	8:24:00	1.16	97.08	30	4.2	mbGS
3084	2006	1	21	5:45:36	1.04	97.28	45	4.7	mbGS
3085	2006	1	21	12:43:12	0.18	98.47	30	3.9	mbGS
3086	2006	1	21	2:09:36	1.2	97.11	24	4.5	mbGS
3087	2006	1	22	2:38:24	1.04	97.16	22	4.4	mbGS
3088	2006	1	26	21:21:36	1.45	97.24	30	4	mbGS
3089	2006	1	26	4:33:36	1.9	96.74	30	4.3	mbGS
3090	2006	1	26	23:16:48	1.05	97.17	30	4.4	mbGS
3091	2006	1	27	2:52:48	1.09	97.2	30	4.2	mbGS
3092	2006	1	28	20:52:48	0.05	98	30	4.5	mbGS
3093	2006	1	30	0:00:00	-0.42	96.43	10	4.4	mbGS
3094	2006	1	30	18:14:24	1.05	97.27	23	4.8	mbGS
3095	2006	1	30	3:36:00	0.12	97.26	34	4	mbGS
3096	2006	1	31	5:02:24	0.66	97.42	30	4.3	mbGS
3097	2006	2	1	7:12:00	1.46	96.94	30	4	mbGS
3098	2006	2	1	8:38:24	1.3	97.18	18	4.3	mbGS
3099	2006	2	1	11:31:12	0.44	100.44	153	3.9	mbGS
3100	2006	2	2	9:50:24	-5.41	101.93	45	4.6	mbGS
3101	2006	2	2	11:45:36	1.61	97.02	30	4.3	mbGS
3102	2006	2	3	2:24:00	-0.32	96.61	30	3.7	mbGS
3103	2006	2	4	8:09:36	1.22	97.49	62	4.1	mbGS
3104	2006	2	5	3:36:00	0.8	97.4	30	4.6	mbGS
3105	2006	2	5	12:00:00	0.97	97.33	30	3.9	mbGS
3106	2006	2	6	21:07:12	1.61	97.1	26	5.2	MwGS
3107	2006	2	9	12:43:12	-2.12	99.41	7	4.1	mbGS
3108	2006	2	10	0:57:36	1.06	97.22	30	4.9	MwHRV
3109	2006	2	11	21:21:36	0.86	97.88	30	4.2	mbGS
3110	2006	2	12	22:04:48	1.16	97.1	30	4.4	mbGS
3111	2006	2	15	21:50:24	0.99	97.35	38	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3112	2006	2	16	14:52:48	0.82	96.88	30	4.2	mbGS
3113	2006	2	19	1:55:12	1.06	97.18	30	4.3	mbGS
3114	2006	2	19	13:55:12	1.07	97.1	30	4.4	mbGS
3115	2006	2	23	2:24:00	0.42	98.18	28	4.7	mbGS
3116	2006	2	23	15:07:12	0.32	97.96	28	4.5	mbGS
3117	2006	2	25	6:28:48	1.7	97.76	30	4.5	mbGS
3118	2006	2	26	19:55:12	0.71	98.11	30	4.1	mbGS
3119	2006	2	26	3:36:00	0.92	97.35	30	4.2	mbGS
3120	2006	2	26	3:07:12	0.26	97.71	30	4.1	mbGS
3121	2006	2	26	14:38:24	1.21	97.03	21	4.4	mbGS
3122	2006	2	27	14:24:00	1.45	96.53	30	4	mbGS
3123	2006	3	1	19:40:48	0.25	98.46	30	4.4	mbGS
3124	2006	3	1	7:40:48	1	97.22	30	3.9	mbGS
3125	2006	3	2	8:09:36	0.79	97.41	30	4.5	mbGS
3126	2006	3	5	13:12:00	-1.84	99.57	36	4.5	mbGS
3127	2006	3	5	18:14:24	-4.63	101.98	30	4.3	mbGS
3128	2006	3	5	15:07:12	-1.79	99.52	30	4.3	mbGS
3129	2006	3	5	3:07:12	-4.55	101.44	30	4.8	MwHRV
3130	2006	3	5	0:43:12	-4.57	101.41	28	4.9	MwHRV
3131	2006	3	7	11:31:12	0.81	97.37	30	4.1	mbGS
3132	2006	3	8	20:24:00	1.11	97.14	25	4.8	mbGS
3133	2006	3	12	22:48:00	-3.27	101.04	30	4.2	mbGS
3134	2006	3	12	18:14:24	1.66	97.08	26	4.7	MwHRV
3135	2006	3	17	8:24:00	1.06	98.82	100	4.3	mbGS
3136	2006	3	18	0:57:36	1.74	97.66	30	3.9	mbGS
3137	2006	3	21	18:14:24	-0.41	98.19	35	4.2	mbGS
3138	2006	3	23	3:07:12	0.17	97.77	30	3.8	mbGS
3139	2006	3	23	15:50:24	0.17	97.77	30	4.1	mbGS
3140	2006	3	26	11:02:24	1.69	97.04	25	4.4	mbGS
3141	2006	3	26	16:04:48	-4.86	102.31	35	4.2	mbGS
3142	2006	3	27	3:50:24	0.54	98.16	30	3.8	mbGS
3143	2006	3	27	5:45:36	0.96	97.22	22	4.6	mbGS
3144	2006	3	27	22:33:36	0.41	98.08	10	4.3	mbGS
3145	2006	3	28	10:33:36	1.27	97.11	22	4.7	mbGS
3146	2006	3	28	7:40:48	1.23	97.1	23	4.4	mbGS
3147	2006	4	1	10:04:48	2.42	99.1	159	3.7	mbGS
3148	2006	4	4	7:55:12	0.29	97.35	33	5.1	MwHRV
3149	2006	4	4	20:09:36	0.21	97.25	30	4.4	mbGS
3150	2006	4	4	7:26:24	0.22	97.26	30	4.3	mbGS
3151	2006	4	5	9:36:00	0.39	98.49	30	4.4	mbGS
3152	2006	4	7	7:26:24	-3.17	101.78	30	4.3	mbGS
3153	2006	4	8	5:45:36	1.04	97.18	23	4.3	mbGS
3154	2006	4	10	18:57:36	-0.63	100.01	76	4.9	MwHRV
3155	2006	4	10	16:19:12	-0.33	99.55	35	4.3	mbGS
3156	2006	4	12	2:52:48	1.65	97.07	37	5	mbGS
3157	2006	4	13	6:14:24	2.44	98.96	147	4.1	mbGS
3158	2006	4	13	22:04:48	1.8	97.65	30	4.5	mbGS
3159	2006	4	13	19:26:24	0.28	97.78	45	4.6	mbGS
3160	2006	4	18	14:09:36	1.33	97.11	43	4.3	mbGS
3161	2006	4	19	21:50:24	1.18	97.06	30	4.1	mbGS
3162	2006	4	19	23:45:36	1.57	96.9	24	4.7	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3163	2006	4	20	19:55:12	1.75	97.77	45	4.1	mbGS
3164	2006	4	23	0:57:36	1.47	97.08	27	4.9	mbGS
3165	2006	4	23	5:45:36	1.5	96.95	30	4	mbGS
3166	2006	4	23	7:26:24	1.52	97.04	30	4.1	mbGS
3167	2006	4	23	4:33:36	-3.81	101.88	30	4.6	mbGS
3168	2006	4	23	-9:36:00	1.49	97.08	26	4.6	mbGS
3169	2006	4	24	20:24:00	-1.56	99.23	30	4.3	mbGS
3170	2006	4	25	3:36:00	1.99	97	21	6.3	MwHRV
3171	2006	4	25	22:19:12	1.74	96.88	29	4.5	mbGS
3172	2006	4	26	11:45:36	0.78	97.38	23	4.2	mbGS
3173	2006	4	26	6:28:48	1.23	97.64	30	4	mbGS
3174	2006	4	26	21:07:12	1.33	97.04	30	4.7	mbGS
3175	2006	4	27	22:33:36	-1.5	99.6	30	4.7	mbGS
3176	2006	4	28	19:55:12	2.27	99.09	158	4.4	mbGS
3177	2006	4	28	2:52:48	-1.57	99.56	30	4.1	mbGS
3178	2006	4	30	12:57:36	0.42	97.3	30	4.1	mbGS
3179	2006	5	4	21:50:24	-1.92	100.25	30	4.5	mbGS
3180	2006	5	7	8:52:48	1.57	96.77	28	4.5	mbGS
3181	2006	5	8	2:09:36	-4.85	102.35	36	5.9	MwHRV
3182	2006	5	9	16:48:00	-3.62	101.25	30	4.8	mbGS
3183	2006	5	9	9:36:00	-5.17	101.99	30	4.2	mbGS
3184	2006	5	9	4:48:00	1.3	97.16	23	4.8	MwHRV
3185	2006	5	12	2:38:24	1.19	97.11	30	4.2	mbGS
3186	2006	5	14	3:07:12	0.74	97.02	30	4.3	mbGS
3187	2006	5	14	3:07:12	0.83	98.12	30	4.2	mbGS
3188	2006	5	15	12:14:24	-4.22	102.3	30	4.4	mbGS
3189	2006	5	16	20:52:48	0.1	98.24	30	4.1	mbGS
3190	2006	5	16	19:26:24	1.22	97.03	30	4.4	mbGS
3191	2006	5	16	22:04:48	0.09	97.05	12	6.8	MwGS
3192	2006	5	16	19:40:48	-0.02	97	30	4.4	mbGS
3193	2006	5	16	20:09:36	0.19	97.32	30	4.7	mbGS
3194	2006	5	16	12:00:00	-0.02	97.12	28	5.1	mbGS
3195	2006	5	16	7:26:24	0.12	97.16	33	5.3	mbGS
3196	2006	5	16	3:07:12	0.23	97.22	36	4.2	mbGS
3197	2006	5	16	5:45:36	0.13	97.07	32	4.7	mbGS
3198	2006	5	16	12:14:24	0.05	97.15	30	4.3	mbGS
3199	2006	5	16	15:21:36	0.02	97.11	30	4.3	mbGS
3200	2006	5	16	21:50:24	-0.12	97.15	25	4.5	mbGS
3201	2006	5	16	1:40:48	0.06	97.06	30	4.1	mbGS
3202	2006	5	16	2:24:00	0.12	98.34	30	4.2	mbGS
3203	2006	5	16	2:09:36	0.28	97.32	30	4.4	mbGS
3204	2006	5	16	5:45:36	0.23	97.14	30	4.7	mbGS
3205	2006	5	16	18:57:36	-0.01	97.96	14	4.4	mbGS
3206	2006	5	16	14:24:00	0.18	96.95	30	4.6	mbGS
3207	2006	5	16	18:14:24	0.14	97.12	31	4.9	mbGS
3208	2006	5	16	5:45:36	0.13	97.08	30	4.2	mbGS
3209	2006	5	16	6:14:24	0.01	97.19	30	3.9	mbGS
3210	2006	5	17	16:19:12	0.24	96.94	36	4.7	mbGS
3211	2006	5	17	14:24:00	0.06	96.75	30	4	mbGS
3212	2006	5	17	15:36:00	-4.46	102.74	38	5	mbGS
3213	2006	5	17	19:55:12	0.17	97.01	30	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3214	2006	5	17	16:33:36	-0.22	98.52	47	4.8	mbGS
3215	2006	5	17	21:07:12	-0.09	96.86	28	4.8	mbGS
3216	2006	5	17	9:36:00	0.04	97.06	30	4.1	mbGS
3217	2006	5	17	14:09:36	0.18	96.94	30	4.6	mbGS
3218	2006	5	18	7:55:12	0.09	96.93	30	4.8	MwHRV
3219	2006	5	18	19:40:48	0.14	96.69	30	4	mbGS
3220	2006	5	18	19:40:48	0.1	96.89	30	3.7	mbGS
3221	2006	5	18	0:14:24	1.1	97.18	30	4.8	mbGS
3222	2006	5	18	1:26:24	0.06	97.35	24	4.2	mbGS
3223	2006	5	18	7:12:00	0.11	96.97	30	4.2	mbGS
3224	2006	5	18	8:52:48	0.32	97.36	30	3.9	mbGS
3225	2006	5	18	17:45:36	0.12	97.15	15	4.7	mbGS
3226	2006	5	19	6:14:24	0.11	96.9	29	4.6	mbGS
3227	2006	5	19	21:21:36	1.19	97.07	19	4.9	mbGS
3228	2006	5	19	5:16:48	0.96	97.16	30	4.6	mbGS
3229	2006	5	19	6:14:24	1.74	98.79	117	4.7	mbGS
3230	2006	5	20	3:21:36	1.68	97.69	30	3.8	mbGS
3231	2006	5	21	21:50:24	-2.71	102.38	193	4.1	mbGS
3232	2006	5	21	12:00:00	0.22	96.84	30	4.2	mbGS
3233	2006	5	21	12:28:48	0.15	97	30	3.9	mbGS
3234	2006	5	21	19:26:24	0.15	97.18	31	4.7	mbGS
3235	2006	5	22	11:16:48	0.23	97.35	30	3.8	mbGS
3236	2006	5	22	3:21:36	1.3	97.08	30	4.8	mbGS
3237	2006	5	22	21:21:36	1.74	99.58	180	5	MwHRV
3238	2006	5	22	13:55:12	0.16	96.83	30	4.4	mbGS
3239	2006	5	23	17:02:24	0.12	97	30	4.4	mbGS
3240	2006	5	23	1:26:24	0.11	96.72	30	4.7	mbGS
3241	2006	5	23	13:12:00	0.1	96.82	25	4.8	mbGS
3242	2006	5	23	13:55:12	0.17	96.98	30	4.3	mbGS
3243	2006	5	24	11:45:36	0.95	96.83	30	4	mbGS
3244	2006	5	24	3:50:24	0.03	97.13	34	4.6	mbGS
3245	2006	5	24	21:07:12	-4.45	102.14	30	4.7	mbGS
3246	2006	5	24	9:36:00	0.14	96.7	30	4.4	mbGS
3247	2006	5	26	22:04:48	-0.06	98.18	30	4.4	mbGS
3248	2006	5	26	8:24:00	0.39	98.79	30	4	mbGS
3249	2006	5	27	17:16:48	0.24	97.7	30	4.1	mbGS
3250	2006	5	27	13:55:12	0.29	98.41	30	4.3	mbGS
3251	2006	5	29	16:04:48	0.05	96.91	30	4.4	mbGS
3252	2006	5	29	10:48:00	0.75	97	30	4.3	mbGS
3253	2006	5	29	0:28:48	-4.32	102.77	72	4.9	mbGS
3254	2006	5	29	20:38:24	0.97	97.31	30	4.3	mbGS
3255	2006	5	29	14:52:48	0.99	97.24	30	4	mbGS
3256	2006	5	29	19:40:48	-0.12	97.17	25	4.2	mbGS
3257	2006	5	30	5:31:12	-1.92	100.19	42	4.7	mbGS
3258	2006	5	30	3:36:00	0.02	97.08	30	4.5	mbGS
3259	2006	5	30	22:48:00	0.06	97.1	29	4.3	mbGS
3260	2006	5	30	18:00:00	-0.01	97.17	30	4.8	MwHRV
3261	2006	5	30	13:55:12	0.09	97.04	30	4	mbGS
3262	2006	5	30	17:31:12	0.67	96.92	34	4.3	mbGS
3263	2006	6	1	18:57:36	-0.13	98.96	30	4.5	mbGS
3264	2006	6	5	14:09:36	0.93	97.38	30	4.5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3265	2006	6	6	19:40:48	-1.17	97.11	30	4.8	mbGS
3266	2006	6	7	14:52:48	-1.99	100.37	30	4.9	mbGS
3267	2006	6	9	16:33:36	0.09	96.93	20	4.5	mbGS
3268	2006	6	9	18:00:00	1.61	99.74	175	4.2	mbGS
3269	2006	6	10	14:24:00	-4.16	102.39	30	4.8	mbGS
3270	2006	6	10	13:26:24	1.22	97.14	30	4.9	mbGS
3271	2006	6	11	16:04:48	-0.37	96.44	29	4	mbGS
3272	2006	6	11	13:40:48	1.77	97.62	30	4.6	mbGS
3273	2006	6	14	6:00:00	0.39	98.75	30	4.2	mbGS
3274	2006	6	15	13:26:24	0.14	97.12	30	4.4	mbGS
3275	2006	6	17	14:52:48	1.86	97.77	15	4.9	mbGS
3276	2006	6	17	0:43:12	1.09	97.16	30	4.7	mbGS
3277	2006	6	18	11:16:48	1.21	97.08	25	4.9	mbGS
3278	2006	6	20	15:21:36	1.86	98.07	30	3.9	mbGS
3279	2006	6	20	23:45:36	0.25	96.73	35	4.6	mbGS
3280	2006	6	21	5:16:48	-0.16	96.92	35	4.4	mbGS
3281	2006	6	21	22:48:00	1.42	97.13	30	4.9	MwHRV
3282	2006	6	24	13:55:12	0.12	97.13	30	4.4	mbGS
3283	2006	6	24	12:28:48	1.69	99.33	140	3.8	mbGS
3284	2006	6	25	7:26:24	-4.75	102.15	48	4.8	MwHRV
3285	2006	6	28	7:12:00	0.86	98.7	83	4.9	mbGS
3286	2006	6	28	9:21:36	0.43	100.22	30	4.1	mbGS
3287	2006	6	30	12:43:12	1.54	96.87	30	4.3	mbGS
3288	2006	7	2	8:24:00	1.84	97.61	30	3.9	mbGS
3289	2006	7	2	16:19:12	0.02	97.16	40	4.9	mbGS
3290	2006	7	3	3:21:36	1.79	97.7	30	4.4	mbGS
3291	2006	7	4	15:36:00	1.12	97.13	30	3.9	mbGS
3292	2006	7	4	21:07:12	1.07	97.01	30	4.5	mbGS
3293	2006	7	5	6:28:48	0.94	97.25	30	3.9	mbGS
3294	2006	7	5	0:28:48	0.95	97.21	30	4.1	mbGS
3295	2006	7	6	16:04:48	0.06	97.06	30	4.2	mbGS
3296	2006	7	6	1:12:00	0.65	96.97	30	4.2	mbGS
3297	2006	7	9	2:52:48	1.85	96.67	30	4.2	mbGS
3298	2006	7	9	2:09:36	-1.51	99.43	30	4.4	mbGS
3299	2006	7	9	7:40:48	1.96	97.79	51	4.6	mbGS
3300	2006	7	11	16:33:36	0.74	97.33	46	5.2	mbGS
3301	2006	7	14	23:16:48	-1.75	99.92	43	4.3	mbGS
3302	2006	7	17	9:21:36	-4.9	102.17	35	5.1	mbGS
3303	2006	7	17	18:14:24	1.35	97.04	25	4.7	mbGS
3304	2006	7	17	9:21:36	1.42	97.04	30	4.6	mbGS
3305	2006	7	17	22:04:48	0.33	96.92	35	5.3	mbGS
3306	2006	7	18	7:12:00	-2.03	102.03	174	4.6	mbGS
3307	2006	7	19	17:31:12	1.32	97.13	30	4.3	mbGS
3308	2006	7	21	15:36:00	1.18	96.88	24	4.3	mbGS
3309	2006	7	22	14:24:00	0.36	98.44	30	4.7	mbGS
3310	2006	7	22	17:16:48	-4.85	102.25	43	5	mbGS
3311	2006	7	23	13:12:00	1.24	98.14	30	5	mbGS
3312	2006	7	24	21:50:24	1.22	97.04	30	4.2	mbGS
3313	2006	7	26	2:09:36	1.82	97.09	41	4.7	mbGS
3314	2006	7	27	8:52:48	1.71	97.15	20	6.3	MwHRV
3315	2006	7	27	12:28:48	1.2	99.67	167	4.1	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
3316	2006	7	28	22:04:48	-4.88	101.6	30	5.1	MwHRV
3317	2006	7	29	18:14:24	1.84	96.63	10	4.1	mbGS
3318	2006	7	30	16:33:36	1.46	97.18	30	5.6	MwGS
3319	2006	7	30	4:33:36	1.2	97.11	30	4.8	mbGS
3320	2006	7	31	20:52:48	1.16	97.15	30	5	mbGS
3321	2006	7	31	12:00:00	0.06	97.13	30	4	mbGS
3322	2006	8	1	18:28:48	1.29	97.18	42	4.9	mbGS
3323	2006	8	1	15:36:00	0.73	97.34	30	4.3	mbGS
3324	2006	8	2	14:09:36	1.07	97	30	4	mbGS
3325	2006	8	3	16:19:12	-1.32	99.73	49	4.3	mbGS
3326	2006	8	4	19:12:00	-4.14	101.56	35	4.7	mbGS
3327	2006	8	7	17:31:12	0.8	97.41	39	4.5	mbGS
3328	2006	8	8	4:33:36	1.37	97.54	80	4.6	mbGS
3329	2006	8	9	17:16:48	1.11	99.39	111	4.3	mbGS
3330	2006	8	10	21:50:24	-2.3	102.38	190	4.6	mbGS
3331	2006	8	12	8:09:36	-0.43	97.4	35	4.2	mbGS
3332	2006	8	15	8:24:00	0.84	97.21	30	5.1	mbGS
3333	2006	8	16	17:31:12	1.45	98.53	35	4	mbGS
3334	2006	8	16	10:19:12	0.76	99.93	128	4.1	mbGS
3335	2006	8	17	0:57:36	-3.43	100.7	30	4.7	mbGS
3336	2006	8	18	12:43:12	1.34	97.09	30	4.9	mbGS
3337	2006	8	18	10:19:12	1.3	96.99	30	4.2	mbGS
3338	2006	8	18	3:07:12	-1.97	99.56	24	4.3	mbGS
3339	2006	8	18	13:55:12	-2.11	99.43	2	4	mbGS
3340	2006	8	25	16:33:36	1.17	97.09	30	4.6	mbGS
3341	2006	8	25	6:14:24	-1.9	99.79	30	4.3	mbGS
3342	2006	8	30	22:48:00	1.59	97.74	30	4.5	mbGS
3343	2006	8	31	6:28:48	0.05	97.17	30	3.9	mbGS
3344	2006	9	3	19:12:00	0.19	97.18	49	5.4	MwGCMT
3345	2006	9	4	13:40:48	1.55	97.16	29	4.8	mbGS
3346	2006	9	6	21:50:24	0.87	97.42	25	4.4	mbGS
3347	2006	9	6	13:12:00	0.81	97.42	30	4	mbGS
3348	2006	9	6	17:02:24	0.96	97.21	30	4.3	mbGS
3349	2006	9	7	14:38:24	1.7	97.32	30	4.1	mbGS
3350	2006	9	8	21:36:00	1.89	97.63	30	4.2	mbGS
3351	2006	9	9	17:02:24	1.12	99.59	14	5.3	mbGS
3352	2006	9	10	2:09:36	1.46	97.13	30	4.6	mbGS
3353	2006	9	10	6:57:36	1.28	98.85	101	4.5	mbGS
3354	2006	9	10	18:14:24	0.02	96.72	30	4.1	mbGS
3355	2006	9	11	5:31:12	0.21	97.27	30	4.2	mbGS
3356	2006	9	12	9:36:00	1.72	97	30	4.6	mbGS
3357	2006	9	13	16:48:00	-3.63	101.31	10	4.2	mbGS
3358	2006	9	16	8:52:48	1.1	96.86	30	4.4	mbGS
3359	2006	9	17	19:40:48	-4.46	102.48	30	4.1	mbGS
3360	2006	9	17	21:50:24	-0.06	98.42	30	4.5	mbGS
3361	2006	9	19	8:09:36	-0.09	100.43	157	3.9	mbGS
3362	2006	9	19	4:33:36	-4.5	101.71	30	4.3	mbGS
3363	2006	9	21	13:26:24	1.1	97.07	30	4.2	mbGS
3364	2006	9	22	16:19:12	0.79	100.09	10	4.5	mbGS
3365	2006	9	22	18:57:36	0.55	99.62	30	3.9	mbGS
3366	2006	9	24	18:00:00	-3.59	101.83	30	4.2	mbGS

no.	year	month	day	time	lat	long	depth	mag	type
3367	2006	9	25	22:33:36	0.73	100.06	30	4.5	mbGS
3368	2006	9	26	1:12:00	-2.16	102.19	186	4.4	mbGS
3369	2006	9	28	10:33:36	1.52	97.28	55	4.8	mbGS
3370	2006	9	28	20:09:36	1.28	97.06	30	4.1	mbGS
3371	2006	9	29	10:33:36	1.64	96.85	30	4	mbGS
3372	2006	10	1	16:33:36	0.99	97.36	30	4.2	mbGS
3373	2006	10	2	17:45:36	2.49	98.96	150	4.3	mbGS
3374	2006	10	4	12:28:48	1.07	97.47	50	5	MwGCMT
3375	2006	10	6	19:26:24	1.32	97.25	30	5.4	MwGS
3376	2006	10	6	18:43:12	1.21	97.09	30	4.4	mbGS
3377	2006	10	8	2:09:36	1.07	97.15	30	4	mbGS
3378	2006	10	9	7:26:24	1.11	97.11	23	4.9	mbGS
3379	2006	10	12	21:21:36	-4.01	101.24	30	4.4	mbGS
3380	2006	10	12	23:45:36	1.81	96.78	30	3.6	mbGS
3381	2006	10	15	18:57:36	1.88	97.65	35	4.5	mbGS
3382	2006	10	15	21:07:12	-2.05	101.16	113	4.2	mbGS
3383	2006	10	16	12:57:36	0.39	97.07	30	4.3	mbGS
3384	2006	10	16	1:55:12	0.59	97.35	30	4.6	mbGS
3385	2006	10	16	15:50:24	0.99	97.33	30	4.4	mbGS
3386	2006	10	18	11:02:24	1.33	97.13	25	5	mbGS
3387	2006	10	19	14:09:36	1.09	97.09	30	4.1	mbGS
3388	2006	10	19	4:48:00	1.18	97.07	30	4.5	mbGS
3389	2006	10	20	12:43:12	1.13	97.1	30	4.1	mbGS
3390	2006	10	21	5:45:36	0.16	96.99	30	4	mbGS
3391	2006	10	21	20:52:48	1.22	97.04	28	4.7	mbGS
3392	2006	10	21	18:28:48	1.05	97.11	38	4.5	mbGS
3393	2006	10	22	7:55:12	0.06	97.07	30	4.4	mbGS
3394	2006	10	25	6:28:48	1.81	97.53	30	4.2	mbGS
3395	2006	10	25	10:48:00	1.11	97.43	23	5.2	MwGCMT
3396	2006	10	25	7:26:24	1.04	97.36	20	5	MwGCMT
3397	2006	10	25	21:07:12	1.02	97.29	30	4.5	mbGS
3398	2006	10	26	2:09:36	-3.02	100.92	30	4	mbGS
3399	2006	10	26	7:40:48	-2.08	100.2	43	5	mbGS
3400	2006	10	29	4:19:12	2.52	99.04	154	4.3	mbGS
3401	2006	10	29	15:21:36	-4.85	102.39	35	4.4	mbGS
3402	2006	10	31	8:24:00	0.68	97.48	30	4.5	mbGS
3403	2006	11	2	7:40:48	0.82	97.43	30	4.9	mbGS
3404	2006	11	4	1:12:00	2.33	99.25	153	4.2	mbGS
3405	2006	11	9	18:14:24	0.19	97.95	30	3.6	mbGS
3406	2006	11	9	8:38:24	0.91	97.21	24	5.2	MwGCMT
3407	2006	11	10	3:07:12	1.45	96.83	30	4.4	mbGS
3408	2006	11	11	23:16:48	1.37	97.02	30	3.4	mbGS
3409	2006	11	11	20:52:48	0.35	97.69	30	4.6	mbGS
3410	2006	11	11	9:50:24	0.65	97.32	30	4.5	mbGS
3411	2006	11	14	6:28:48	1.18	97.32	30	4	mbGS
3412	2006	11	14	23:45:36	1.03	97.12	30	4.4	mbGS
3413	2006	11	15	12:28:48	0.57	98.57	30	4.3	mbGS
3414	2006	11	17	3:07:12	0.23	97.68	30	4	mbGS
3415	2006	11	18	22:33:36	0.22	97.69	30	3.9	mbGS
3416	2006	11	18	14:38:24	-3.34	102.28	30	4.3	mbGS
3417	2006	11	19	20:09:36	0.84	97.33	30	3.9	mbGS

no.	year	mon.	day	time	lat	long	depth	mag	type
3418	2006	11	20	8:52:48	-4.16	102.47	30	4.9	mbGS
3419	2006	11	22	1:26:24	1.66	96.98	30	4.7	mbGS
3420	2006	11	23	0:43:12	1.66	99.53	180	4.3	mbGS
3421	2006	11	26	20:38:24	0.83	96.88	24	4.3	mbGS
3422	2006	11	28	8:24:00	-3.64	100.95	35	4.5	mbGS
3423	2006	11	28	2:24:00	1.61	96.88	30	4.4	mbGS
3424	2006	11	29	21:21:36	-1.9	102.18	188	3.8	mbGS
3425	2006	12	1	0:28:48	0.96	97.22	30	4.1	mbGS
3426	2006	12	4	9:21:36	0.14	96.99	30	4.6	mbGS
3427	2006	12	8	7:12:00	1.15	96.7	30	4	mbGS
3428	2006	12	9	15:36:00	-3.76	101.74	74	4.1	mbGS
3429	2006	12	13	20:24:00	1.24	97.05	30	4	mbGS
3430	2006	12	14	2:24:00	-4.6	102.27	22	4.3	mbGS
3431	2006	12	15	10:04:48	-4.41	102.4	30	4.4	mbGS
3432	2006	12	15	22:48:00	1.27	97.04	30	4.4	mbGS
3433	2006	12	15	7:26:24	1.3	97.08	30	4.5	mbGS
3434	2006	12	16	20:52:48	0.35	96.97	30	4.6	mbGS
3435	2006	12	17	10:48:00	0.63	99.86	30	5.8	MwGCMT
3436	2006	12	17	22:19:12	0.05	100	30	4.1	mbGS
3437	2006	12	17	5:16:48	0.5	99.96	30	4.5	mbGS
3438	2006	12	17	0:14:24	0.46	99.98	30	4.2	mbGS
3439	2006	12	17	18:00:00	0.51	99.69	30	4	mbGS
3440	2006	12	18	5:16:48	0.56	99.37	30	4.7	mbGS
3441	2006	12	18	17:31:12	0.55	100.22	30	4.2	mbGS
3442	2006	12	19	22:33:36	0.57	100.09	35	4.4	mbGS
3443	2006	12	19	21:50:24	-4.97	102.15	30	4.2	mbGS
3444	2006	12	27	19:55:12	1.8	97.48	30	3.8	mbGS
3445	2006	12	29	15:21:36	1.67	97.65	30	4.2	mbGS
3446	2006	12	30	22:04:48	1.2	96.98	30	4.6	mbGS
3447	2007	1	3	16:19:12	0.06	99.56	30	4.4	mbGS
3448	2007	1	3	2:24:00	-5.44	101.41	30	5.2	MwGCMT
3449	2007	1	3	22:04:48	-5.45	101.48	30	5.3	mbGS
3450	2007	1	4	18:00:00	-5.54	101.36	30	4.6	mbGS
3451	2007	1	5	21:07:12	0.25	97.96	30	5.3	MwGS
3452	2007	1	6	5:02:24	0.47	96.52	4	4.4	mbGS
3453	2007	1	6	16:48:00	0.76	96.74	30	4.4	mbGS
3454	2007	1	8	0:14:24	0.35	99.74	30	4.2	mbGS
3455	2007	1	14	4:33:36	1.25	97.77	30	4.1	mbGS
3456	2007	1	15	4:33:36	0.26	97.29	30	4.2	mbGS
3457	2007	1	15	20:24:00	-4.98	102.23	36	4.6	mbGS
3458	2007	1	17	6:43:12	-5.62	101.34	30	4.3	mbGS
3459	2007	1	18	1:55:12	1.12	97.06	30	4.2	mbGS
3460	2007	1	18	9:07:12	1.01	97.22	30	4.7	mbGS
3461	2007	1	18	7:40:48	-5.49	101.45	17	5.9	MwGS
3462	2007	1	18	9:50:24	-6.18	100.64	30	4.4	mbGS
3463	2007	1	18	4:33:36	-5.59	101.43	30	4.4	mbGS
3464	2007	1	20	14:52:48	0.35	97.39	33	4.7	mbGS
3465	2007	1	22	3:36:00	1.12	97.11	30	3.8	mbGS
3466	2007	1	23	19:12:00	0.7	96.99	30	4.3	mbGS
3467	2007	1	25	0:43:12	1.73	97.11	30	5	MwGCMT
3468	2007	1	26	2:24:00	0.65	96.81	31	3.7	mbGS

no.	year	station	tidy	time	lat	long	depth	mag	type
3469	2007	1	31	20:52:48	1.11	97.21	30	4	mbGS
3470	2007	1	31	0:43:12	0.58	98.22	30	4.3	mbGS
3471	2007	2	1	10:48:00	-1.22	101.68	170	3.9	mbGS
3472	2007	2	9	0:28:48	1.19	97.09	30	4.2	mbGS
3473	2007	2	10	0:57:36	1.18	97.21	30	4.7	mbGS
3474	2007	2	10	11:31:12	1.06	97.14	30	4.5	mbGS
3475	2007	2	12	19:26:24	1.51	97.11	30	5	mbGS
3476	2007	2	14	16:48:00	0.43	97.31	16	5.7	MwGCMT
3477	2007	2	14	22:19:12	0.64	97.23	4	5.4	MwGCMT
3478	2007	2	15	23:16:48	0.57	97.2	35	4.7	mbGS
3479	2007	2	17	12:43:12	-3.1	100.26	30	4.6	mbGS
3480	2007	2	18	23:45:36	1.07	97.37	30	5.1	MwGCMT
3481	2007	2	18	21:50:24	1.23	97.05	30	4.8	mbGS
3482	2007	2	21	18:28:48	0.17	97.59	30	4.2	mbGS
3483	2007	2	24	22:04:48	1	97.37	30	3.8	mbGS
3484	2007	2	26	2:24:00	-0.63	98.92	30	4.4	mbGS
3485	2007	3	6	3:07:12	-0.97	100.04	20	4.7	mbGS
3486	2007	3	6	21:36:00	-0.49	100.5	19	6.4	MwGCMT
3487	2007	3	6	10:19:12	-0.49	100.53	11	6.3	MwGCMT
3488	2007	3	6	12:14:24	-0.45	100.78	20	4.6	mbGS
3489	2007	3	6	9:07:12	-0.54	100.71	20	4.9	mbGS
3490	2007	3	6	2:52:48	1.4	97.06	30	4.8	mbGS
3491	2007	3	6	13:55:12	-0.54	100.81	20	4.4	mbGS
3492	2007	3	6	20:38:24	-0.4	100.91	20	5	MwGCMT
3493	2007	3	6	16:04:48	-0.45	101.01	20	4.5	mbGS
3494	2007	3	6	23:45:36	-0.47	100.67	20	4.2	mbGS
3495	2007	3	6	22:19:12	-0.55	100.74	20	4.9	mbGS
3496	2007	3	6	7:12:00	-0.58	100.6	20	4.3	mbGS
3497	2007	3	6	7:55:12	-0.67	100.66	20	4.6	mbGS
3498	2007	3	7	14:09:36	1.96	97.91	35	5.9	MwGS
3499	2007	3	8	13:40:48	-1.11	100	35	4.6	mbGS
3500	2007	3	8	0:28:48	-0.72	100.51	20	4.2	mbGS
3501	2007	3	10	23:45:36	-3.25	101.36	54	4.4	mbGS
3502	2007	3	14	3:50:24	0.09	97.02	30	4.3	mbGS
3503	2007	3	16	12:28:48	1.57	97.04	30	4.1	mbGS
3504	2007	3	16	11:31:12	-2.13	101.99	163	4.1	mbGS
3505	2007	3	26	0:00:00	0.93	97.23	30	4.7	mbGS
3506	2007	3	27	16:33:36	0.91	97.24	30	4.5	mbGS
3507	2007	3	30	11:16:48	1.08	97.26	30	3.8	mbGS
3508	2007	3	31	3:07:12	0.74	97.46	30	4.2	mbGS
3509	2007	4	2	2:38:24	1.68	97.69	30	4.2	mbGS
3510	2007	4	5	6:43:12	1.13	97.2	45	4.6	mbGS
3511	2007	4	6	1:12:00	0.61	99.86	160	4.1	mbGS
3512	2007	4	11	1:12:00	1.27	97.14	30	4.9	mbGS
3513	2007	4	13	22:04:48	1.71	97.15	39	4.9	mbGS
3514	2007	4	15	5:31:12	1.78	97.68	30	4.5	mbGS
3515	2007	4	19	20:52:48	-4.91	102.11	30	4.2	mbGS
3516	2007	4	20	23:16:48	0.23	98.78	30	4.2	mbGS
3517	2007	4	20	16:33:36	2.35	99.12	153	4.2	mbGS
3518	2007	4	21	20:24:00	-2.96	101.19	45	5	mbGS
3519	2007	4	21	17:31:12	1.16	97.09	30	4.6	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
3520	2007	4	24	8:38:24	1.59	97.05	24	4.7	mbGS
3521	2007	4	26	19:40:48	0.95	97.28	30	4.5	mbGS
3522	2007	4	26	0:57:36	-5.84	101	30	4.2	mbGS
3523	2007	4	28	7:55:12	1.76	99.27	23	4.9	MwGCMT
3524	2007	4	28	10:48:00	-1.19	100	64	4.3	mbGS
3525	2007	4	29	9:21:36	1.72	97.71	30	4.3	mbGS
3526	2007	5	2	20:09:36	0.86	97.42	30	4.4	mbGS
3527	2007	5	4	22:33:36	1.07	97.13	25	4.5	mbGS
3528	2007	5	4	2:09:36	-2.33	99.87	30	5	MwGCMT
3529	2007	5	6	2:38:24	0.83	97.38	27	4.3	mbGS
3530	2007	5	7	0:57:36	1.83	97.04	30	4.8	mbGS
3531	2007	5	8	5:16:48	1.2	97.07	30	3.7	mbGS
3532	2007	5	8	19:26:24	-4.45	102	30	4.4	mbGS
3533	2007	5	9	17:45:36	0.86	100.11	7	4.8	mbGS
3534	2007	5	10	19:12:00	1.35	98.95	91	4.5	mbGS
3535	2007	5	14	2:24:00	1.25	97.25	30	5.5	MwGS
3536	2007	5	15	22:04:48	1.49	97.07	30	4.7	mbGS
3537	2007	5	16	9:50:24	1.26	97.01	30	4.4	mbGS
3538	2007	5	16	12:14:24	1.16	97.12	30	3.9	mbGS
3539	2007	5	18	0:28:48	1.32	97.19	36	4.9	mbGS
3540	2007	5	18	23:31:12	0.25	97.73	30	4.7	mbGS
3541	2007	5	18	15:50:24	1.13	97.22	35	4.2	mbGS
3542	2007	5	18	0:00:00	1.1	97.18	20	4.6	mbGS
3543	2007	5	18	3:50:24	-3.62	100.72	30	4.4	mbGS
3544	2007	5	19	9:36:00	1.98	99.06	145	3.9	mbGS
3545	2007	5	22	15:21:36	1.53	99.05	30	4.2	mbGS
3546	2007	5	26	2:52:48	0.31	98.23	30	3.9	mbGS
3547	2007	6	3	6:43:12	0.63	97.01	30	4.3	mbGS
3548	2007	6	8	13:40:48	-5.06	101.44	30	3.9	mbGS
3549	2007	6	10	19:26:24	-3.93	102.04	30	4.2	mbGS
3550	2007	6	11	0:00:00	-0.38	99.8	100	4.5	mbGS
3551	2007	6	12	7:55:12	1.21	97.14	30	4.9	mbGS
3552	2007	6	15	8:52:48	0.61	97.26	30	4.1	mbGS
3553	2007	6	16	7:55:12	1.04	97.19	30	4.2	mbGS
3554	2007	6	16	4:33:36	1.05	97.15	30	3.8	mbGS
3555	2007	6	20	6:14:24	-3.97	101.51	30	4.1	mbGS
3556	2007	6	20	5:45:36	-1.77	99.85	10	4.1	mbGS
3557	2007	6	20	17:31:12	-1.76	99.81	37	4.4	mbGS
3558	2007	6	22	8:38:24	0.29	97.34	30	3.7	mbGS
3559	2007	6	23	14:09:36	1.12	97.26	30	4.9	mbGS
3560	2007	6	23	17:16:48	1.19	97.33	51	5	mbGS
3561	2007	6	29	9:07:12	0.21	97.1	38	4	mbGS
3562	2007	6	30	20:38:24	2.45	99.04	150	4	mbGS
3563	2007	7	8	18:14:24	0.11	97.05	30	4.4	mbGS
3564	2007	7	10	23:16:48	0.94	97.49	43	4.5	mbGS
3565	2007	7	11	10:04:48	1.27	97.09	30	4.1	mbGS
3566	2007	7	15	1:12:00	0.93	97.61	24	4.2	mbGS
3567	2007	7	16	22:04:48	1.23	97.2	23	4.3	mbGS
3568	2007	7	19	1:40:48	-1.73	100.62	76	4.2	mbGS
3569	2007	7	22	18:57:36	0.25	97.76	30	4.3	mbGS
3570	2007	7	24	19:26:24	0.1	98.66	30	4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3571	2007	7	24	16:04:48	0.08	98.71	30	4.2	mbGS
3572	2007	7	24	16:19:12	2.27	98	62	5.3	MwGCMT
3573	2007	7	26	2:09:36	0.94	97.56	30	3.5	mbGS
3574	2007	7	27	19:40:48	-2.65	101.28	30	4.2	mbGS
3575	2007	7	30	4:33:36	1.91	97.84	30	4.9	mbGS
3576	2007	7	31	22:19:12	0.71	97.85	30	4	mbGS
3577	2007	7	31	16:48:00	1.2	97.1	30	4.2	mbGS
3578	2007	8	1	7:55:12	1.22	97.24	30	4	mbGS
3579	2007	8	2	21:36:00	-0.76	100.42	30	4.6	mbGS
3580	2007	8	2	17:45:36	-3.62	102.03	81	4.6	mbGS
3581	2007	8	2	18:57:36	-1.11	99.92	30	4.8	mbGS
3582	2007	8	4	1:12:00	1.32	97.13	24	4.5	mbGS
3583	2007	8	5	6:14:24	1.02	97.28	30	4	mbGS
3584	2007	8	10	18:57:36	-6.17	98.85	10	4.3	mbGS
3585	2007	8	10	1:12:00	0.28	97.92	30	4.1	mbGS
3586	2007	8	10	18:28:48	0.25	97.66	23	4.2	mbGS
3587	2007	8	11	22:48:00	-3.43	102.97	128	3.8	mbGS
3588	2007	8	12	2:38:24	-0.56	101.3	183	4.5	mbGS
3589	2007	8	12	16:33:36	0.27	97.69	13	4.6	mbGS
3590	2007	8	12	8:09:36	0.23	97.69	23	4.3	mbGS
3591	2007	8	12	21:21:36	0.25	97.73	16	4.6	mbGS
3592	2007	8	14	13:55:12	0.05	97.48	30	4.5	mbGS
3593	2007	8	15	6:00:00	1.57	99.42	169	4.4	mbGS
3594	2007	8	16	5:16:48	2.04	98.01	69	4.8	mbGS
3595	2007	8	17	6:43:12	1.7	96.97	30	4.1	mbGS
3596	2007	8	19	7:12:00	0.89	97.54	30	5	mbGS
3597	2007	8	19	22:04:48	0.88	97.41	30	4.6	mbGS
3598	2007	8	19	7:55:12	0.81	97.53	30	4.4	mbGS
3599	2007	8	19	10:33:36	0.94	97.42	30	4.4	mbGS
3600	2007	8	19	16:48:00	0.87	97.53	30	5	mbGS
3601	2007	8	20	18:57:36	0.04	98.35	30	4.5	mbGS
3602	2007	8	22	0:57:36	1.32	99.38	106	4.1	mbGS
3603	2007	8	26	9:50:24	-4.51	102.02	15	4	mbGS
3604	2007	8	30	22:19:12	1.8	99.32	145	5.4	MwGCMT
3605	2007	9	5	13:40:48	0.46	99.73	122	4.1	mbGS
3606	2007	9	5	17:31:12	-4.8	102.39	30	4	mbGS
3607	2007	9	7	9:50:24	0.46	97.98	30	3.8	mbGS
3608	2007	9	7	10:48:00	0.35	97.75	30	4	mbGS
3609	2007	9	8	4:04:48	-2.3	102	167	4.3	mbGS
3610	2007	9	8	4:04:48	0.29	97.75	25	5.2	MwGCMT
3611	2007	9	8	8:09:36	0.34	97.8	30	5.1	MwGCMT
3612	2007	9	8	5:31:12	0.27	97.7	30	3.9	mbGS
3613	2007	9	11	13:40:48	1.29	97.94	35	3.8	mbGS
3614	2007	9	12	19:55:12	-4.44	101.37	34	8.5	MwGCMT
3615	2007	9	12	14:38:24	-2.59	101.79	35	5	mbGS
3616	2007	9	12	13:40:48	-4.26	101.36	35	5.3	mbGS
3617	2007	9	12	18:28:48	-2.84	100.22	35	5.5	mbGS
3618	2007	9	12	21:21:36	-2.74	100.8	35	4.7	mbGS
3619	2007	9	12	9:36:00	-3.04	100.93	35	4.7	mbGS
3620	2007	9	12	10:48:00	-4.18	101.31	35	5	mbGS
3621	2007	9	12	22:19:12	-3.93	101.33	35	4.5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3622	2007	9	12	2:24:00	-2.71	100.28	35	5.2	mbGS
3623	2007	9	12	1:55:12	-3.68	101.46	35	4.7	mbGS
3624	2007	9	12	13:55:12	-3.21	100.98	35	4.5	mbGS
3625	2007	9	12	1:12:00	-2.98	100.76	35	4.1	mbGS
3626	2007	9	12	5:31:12	-2.92	100.54	35	4.9	mbGS
3627	2007	9	12	10:33:36	-2.93	101.38	35	5.6	mbGS
3628	2007	9	12	20:52:48	-3.53	100.75	35	5	mbGS
3629	2007	9	12	3:21:36	-3.26	100.72	43	5.2	mbGS
3630	2007	9	12	17:02:24	-3.5	101.49	35	4.7	mbGS
3631	2007	9	12	20:24:00	-4.86	101.81	35	4.4	mbGS
3632	2007	9	12	14:38:24	-4.16	101.29	21	4.7	mbGS
3633	2007	9	12	5:16:48	-4.46	101.11	24	3.9	mbGS
3634	2007	9	12	3:07:12	-4.2	101.19	25	4.9	mbGS
3635	2007	9	12	18:28:48	-3.55	100.23	35	4.3	mbGS
3636	2007	9	12	6:57:36	-4.31	100.84	23	4.1	mbGS
3637	2007	9	12	13:55:12	-2.78	100.2	24	4.9	mbGS
3638	2007	9	12	17:45:36	-3.21	101.04	35	4.7	mbGS
3639	2007	9	12	17:31:12	-3.16	101.46	35	5.9	mbGS
3640	2007	9	12	3:50:24	-3.47	100.52	35	4.1	mbGS
3641	2007	9	12	7:40:48	-4.28	101.53	35	4.3	mbGS
3642	2007	9	12	17:02:24	-3.32	101.26	11	4.7	mbGS
3643	2007	9	12	21:50:24	-4.07	101.33	35	4.4	mbGS
3644	2007	9	12	14:09:36	-3.2	100.97	35	4.9	mbGS
3645	2007	9	12	20:24:00	-3.92	101	35	4.4	mbGS
3646	2007	9	12	10:33:36	-3.52	101.18	35	4.4	mbGS
3647	2007	9	12	9:21:36	-4.17	100.96	35	3.9	mbGS
3648	2007	9	12	22:48:00	-4.08	101.18	35	5	mbGS
3649	2007	9	12	8:24:00	-3.52	100.99	35	4.5	mbGS
3650	2007	9	12	10:33:36	-2.77	100.15	21	4.7	mbGS
3651	2007	9	12	19:26:24	-4.05	100.69	35	4.2	mbGS
3652	2007	9	12	20:09:36	-3.98	101.05	35	4.2	mbGS
3653	2007	9	12	22:04:48	-3.14	101.4	35	5.8	mbGS
3654	2007	9	12	2:38:24	-3.07	100.46	42	5	mbGS
3655	2007	9	12	11:31:12	-3.98	100.45	35	4.4	mbGS
3656	2007	9	12	18:14:24	-2.87	100.33	35	4.4	mbGS
3657	2007	9	12	5:02:24	-3.18	101.45	35	4.6	mbGS
3658	2007	9	12	2:52:48	-4.03	101.31	35	4.4	mbGS
3659	2007	9	12	23:31:12	-3.14	100.96	35	4.1	mbGS
3660	2007	9	12	9:36:00	-4.15	101.39	35	4.1	mbGS
3661	2007	9	12	5:02:24	-4.43	101.26	35	4.3	mbGS
3662	2007	9	12	0:28:48	-4.42	101.31	13	4.8	mbGS
3663	2007	9	12	1:55:12	-2.99	100.26	35	4.3	mbGS
3664	2007	9	12	8:09:36	-4.23	101.22	17	4.7	mbGS
3665	2007	9	12	9:07:12	-3.65	100.49	35	4	mbGS
3666	2007	9	12	10:48:00	-3.53	100.82	35	4.3	mbGS
3667	2007	9	12	7:12:00	-3.95	101.3	35	4.1	mbGS
3668	2007	9	12	18:57:36	-3.19	101.11	35	4.3	mbGS
3669	2007	9	12	6:14:24	-3.93	101.6	30	4.1	mbGS
3670	2007	9	12	6:00:00	-3.28	100.96	35	4.5	mbGS
3671	2007	9	12	1:40:48	-3.66	100.69	28	4.6	mbGS
3672	2007	9	12	20:24:00	-3.08	101.21	20	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mbg	type
3673	2007	9	12	5:16:48	-4.22	101.11	28	4.4	mbGS
3674	2007	9	12	15:50:24	-4.43	101.4	28	5.1	mbGS
3675	2007	9	12	3:21:36	-3.23	101.12	26	4.4	mbGS
3676	2007	9	12	17:16:48	-3.74	100.92	26	4.7	mbGS
3677	2007	9	12	13:12:00	-2.8	100.91	35	5.1	mbGS
3678	2007	9	12	6:00:00	-4.36	101.18	35	4.1	mbGS
3679	2007	9	12	23:45:36	-4.01	101	26	5.1	mbGS
3680	2007	9	12	17:16:48	-2.62	100.84	35	7.9	MwGCMT
3681	2007	9	13	23:45:36	-1.89	99.57	35	5	mbGS
3682	2007	9	13	6:57:36	-2.3	99.43	14	5.2	mbGS
3683	2007	9	13	5:02:24	-2.11	99.74	35	4.8	mbGS
3684	2007	9	13	3:21:36	-2.56	100.32	35	5.2	mbGS
3685	2007	9	13	14:52:48	-2.09	99.26	35	4.2	mbGS
3686	2007	9	13	0:57:36	-0.61	100.93	35	4.6	mbGS
3687	2007	9	13	22:19:12	-4.14	101.23	24	4.6	mbGS
3688	2007	9	13	10:04:48	-1.9	99.82	16	5.7	mbGS
3689	2007	9	13	10:33:36	-1.88	99.72	29	5.1	mbGS
3690	2007	9	13	0:57:36	-2.15	99.49	27	4.7	mbGS
3691	2007	9	13	10:33:36	-2.2	99.47	24	5.1	mbGS
3692	2007	9	13	20:38:24	-3.82	101.75	30	5	mbGS
3693	2007	9	13	18:28:48	-3.66	100.55	35	4.4	mbGS
3694	2007	9	13	4:48:00	-2.51	99	35	4.3	mbGS
3695	2007	9	13	5:45:36	-4.37	101.28	36	4.4	mbGS
3696	2007	9	13	7:12:00	-1.69	99.67	28	6.5	MwGCMT
3697	2007	9	13	21:21:36	-1.92	99.54	35	4.1	mbGS
3698	2007	9	13	11:16:48	-2.26	99.42	21	4.8	mbGS
3699	2007	9	13	21:21:36	-2.04	99.79	28	5.4	mbGS
3700	2007	9	13	3:21:36	-1.95	99.67	9	4.7	mbGS
3701	2007	9	13	7:26:24	-2.89	101.07	10	4.5	mbGS
3702	2007	9	13	17:16:48	-2.13	99.63	22	7	MwGCMT
3703	2007	9	13	2:09:36	-1.98	99.64	35	5.1	mbGS
3704	2007	9	13	16:04:48	-1.61	99.64	29	5.1	mbGS
3705	2007	9	13	7:40:48	-4.18	101.66	35	4.1	mbGS
3706	2007	9	13	1:55:12	-2.34	99.42	35	4.3	mbGS
3707	2007	9	13	4:04:48	-2.08	99.86	35	4.5	mbGS
3708	2007	9	13	5:31:12	-1.72	99.64	32	5.5	mbGS
3709	2007	9	13	23:16:48	-3.72	100.69	28	5	mbGS
3710	2007	9	13	3:21:36	-3.97	100.52	27	4.9	mbGS
3711	2007	9	13	10:33:36	-3.61	101.74	35	4.6	mbGS
3712	2007	9	13	12:43:12	-3.7	100.84	35	5	mbGS
3713	2007	9	13	3:21:36	-1.98	99.52	28	5	mbGS
3714	2007	9	13	12:14:24	-1.94	99.51	34	5.2	mbGS
3715	2007	9	13	0:28:48	-2.76	100.26	35	4.8	mbGS
3716	2007	9	13	12:43:12	-3.24	101.12	35	4.4	mbGS
3717	2007	9	13	0:28:48	-1.72	99.64	35	4.7	mbGS
3718	2007	9	13	18:43:12	-1.7	99.94	35	4.5	mbGS
3719	2007	9	13	20:24:00	-2.15	99.82	35	5.3	mbGS
3720	2007	9	13	20:24:00	-3.52	101.2	35	4.5	mbGS
3721	2007	9	13	3:07:12	-4.49	101.37	35	4.6	mbGS
3722	2007	9	13	21:07:12	-3.43	101.66	35	5.1	mbGS
3723	2007	9	13	14:52:48	-2.18	100.28	35	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3724	2007	9	13	13:26:24	-2.57	100.49	35	5	mbGS
3725	2007	9	13	18:00:00	-1.84	99.62	35	4.9	mbGS
3726	2007	9	13	23:45:36	-3.59	100.85	35	5.1	mbGS
3727	2007	9	13	18:57:36	-1.83	99.34	35	4.9	mbGS
3728	2007	9	13	16:33:36	-3.74	100.75	35	4.5	mbGS
3729	2007	9	13	10:04:48	-2.75	100.97	17	5.5	mbGS
3730	2007	9	13	13:40:48	-0.91	100.86	35	4.1	mbGS
3731	2007	9	13	22:33:36	-2.92	100.27	35	5.1	mbGS
3732	2007	9	13	0:28:48	-4.01	101.39	35	4.4	mbGS
3733	2007	9	13	22:04:48	-2.2	99.53	35	4.4	mbGS
3734	2007	9	13	15:21:36	-4.37	101.26	35	4.1	mbGS
3735	2007	9	13	16:19:12	-4.3	101.27	24	5.2	MwGCMT
3736	2007	9	13	8:24:00	-4.34	101.26	35	3.5	mbGS
3737	2007	9	13	20:52:48	-3.17	101.52	53	6	MwGCMT
3738	2007	9	13	18:00:00	-3.75	100.46	35	3.7	mbGS
3739	2007	9	13	21:50:24	-2.23	99.95	30	5.5	MwGCMT
3740	2007	9	13	6:57:36	-3.6	100.85	26	4.4	mbGS
3741	2007	9	13	13:55:12	-2.31	100.32	35	4.7	mbGS
3742	2007	9	13	21:36:00	-2.42	99.88	41	5	mbGS
3743	2007	9	13	4:48:00	-2.73	101.24	35	4.5	mbGS
3744	2007	9	13	17:31:12	-3.04	101.35	35	4.6	mbGS
3745	2007	9	13	0:28:48	-3.2	100.49	35	4.2	mbGS
3746	2007	9	13	10:04:48	-1.76	99.59	35	4.8	mbGS
3747	2007	9	13	4:48:00	-2.84	101.23	35	5	mbGS
3748	2007	9	13	20:09:36	-4.23	101.22	35	4.3	mbGS
3749	2007	9	14	8:24:00	-3.78	101.83	26	5.4	MwGCMT
3750	2007	9	14	10:33:36	-3.73	100.76	27	4.9	mbGS
3751	2007	9	14	16:19:12	-0.36	98.2	28	4.8	mbGS
3752	2007	9	14	16:48:00	-2.92	101.14	40	5.1	mbGS
3753	2007	9	14	8:09:36	-2.15	100.12	29	5.2	MwGCMT
3754	2007	9	14	17:16:48	-1.1	100.56	35	4.3	mbGS
3755	2007	9	14	6:28:48	-4.07	101.17	23	6.4	MwGCMT
3756	2007	9	14	12:43:12	-4.42	100.95	25	5.8	mbGS
3757	2007	9	14	2:24:00	-1.69	99.75	35	4.5	mbGS
3758	2007	9	14	19:40:48	-1.9	99.38	35	4.3	mbGS
3759	2007	9	14	11:16:48	-2	100.01	35	4.6	mbGS
3760	2007	9	14	15:07:12	-4.2	99.75	35	4	mbGS
3761	2007	9	14	7:12:00	-3.17	102.17	35	4.4	mbGS
3762	2007	9	14	6:14:24	-3	102.35	35	5.3	MwGCMT
3763	2007	9	14	20:52:48	-4.23	101.2	35	5.1	MwGCMT
3764	2007	9	14	16:19:12	-2.97	100.36	35	3.9	mbGS
3765	2007	9	14	21:21:36	-4.42	101.28	35	4.4	mbGS
3766	2007	9	14	9:07:12	-2.74	100.61	35	4.5	mbGS
3767	2007	9	14	6:14:24	-2.08	99.78	35	4.7	mbGS
3768	2007	9	14	0:14:24	-3.09	100.8	35	4.3	mbGS
3769	2007	9	14	4:33:36	-3.09	101.2	35	4.7	mbGS
3770	2007	9	14	21:36:00	-3.46	100.81	35	4.6	mbGS
3771	2007	9	15	4:19:12	-3.02	101.06	35	4.8	mbGS
3772	2007	9	15	6:28:48	-2.31	99.96	35	4.3	mbGS
3773	2007	9	15	16:19:12	-2.69	101.02	35	4.6	mbGS
3774	2007	9	15	12:57:36	-2.84	100.25	35	5	mbGS

no.	year	mon.	day	time	lat	long	depth	mag	type
3775	2007	9	15	11:45:36	-2.05	100.15	21	4.7	mbGS
3776	2007	9	15	18:28:48	-3.02	100.94	35	4.8	mbGS
3777	2007	9	15	5:45:36	-2.95	100.46	35	4.5	mbGS
3778	2007	9	15	18:28:48	-1.55	99.79	35	4.6	mbGS
3779	2007	9	15	17:02:24	-2.69	100.56	35	4.6	mbGS
3780	2007	9	15	5:31:12	-2.94	101	35	4.3	mbGS
3781	2007	9	15	12:57:36	-3.64	100.68	35	4.3	mbGS
3782	2007	9	15	14:24:00	-4.23	101.22	35	5	MwGCMT
3783	2007	9	15	4:19:12	-2.79	101.19	35	5.5	MwGCMT
3784	2007	9	15	7:55:12	-2.8	101.24	35	5	MwGCMT
3785	2007	9	15	6:14:24	-3.18	100.46	35	4.6	mbGS
3786	2007	9	15	20:38:24	-2.87	101.05	35	4.5	mbGS
3787	2007	9	15	22:19:12	-1.76	99.72	35	5	MwGCMT
3788	2007	9	15	14:24:00	-1.8	99.54	30	5	mbGS
3789	2007	9	15	4:33:36	-4.33	101.69	35	4.4	mbGS
3790	2007	9	15	7:55:12	-2.85	101.19	35	4.8	mbGS
3791	2007	9	15	20:38:24	-1.76	99.58	35	4.8	mbGS
3792	2007	9	16	0:14:24	-2.69	101.07	35	4.4	mbGS
3793	2007	9	16	22:33:36	-2.76	101.11	38	5.2	MwGCMT
3794	2007	9	16	5:31:12	-2.24	99.41	27	4.6	mbGS
3795	2007	9	16	18:57:36	-2.72	101.13	35	4.5	mbGS
3796	2007	9	16	18:43:12	-2	100.19	37	4.6	mbGS
3797	2007	9	16	15:36:00	-3.18	100.61	35	4	mbGS
3798	2007	9	16	5:31:12	-4.43	101.22	35	4.9	mbGS
3799	2007	9	16	15:36:00	-2.05	100.11	37	4.7	mbGS
3800	2007	9	16	19:55:12	-2.94	101.14	35	4.5	mbGS
3801	2007	9	16	15:50:24	-2.35	100.53	35	4.8	mbGS
3802	2007	9	16	14:09:36	-3.19	100.49	35	4.7	mbGS
3803	2007	9	16	19:26:24	-2.72	101.17	35	5.2	MwGCMT
3804	2007	9	16	14:24:00	-2.69	101.43	35	4.2	mbGS
3805	2007	9	16	23:45:36	-2.83	101.2	35	5.3	MwGCMT
3806	2007	9	16	5:45:36	-1.62	99.65	17	4.8	mbGS
3807	2007	9	16	20:09:36	-3.33	100.87	35	4.1	mbGS
3808	2007	9	16	12:43:12	-2.88	101.15	35	4.9	mbGS
3809	2007	9	16	6:28:48	-3.25	100.62	35	4.7	mbGS
3810	2007	9	16	6:57:36	-3.33	101.25	35	4.9	mbGS
3811	2007	9	17	7:12:00	-2.78	101.25	35	4.7	mbGS
3812	2007	9	17	2:09:36	-3.54	101.05	35	4.7	mbGS
3813	2007	9	17	16:19:12	-2.2	100.11	35	4.4	mbGS
3814	2007	9	17	5:02:24	-1.51	100.19	35	3.9	mbGS
3815	2007	9	17	11:16:48	-3.74	101.13	35	4.7	mbGS
3816	2007	9	17	13:26:24	-1.69	99.68	35	4.3	mbGS
3817	2007	9	17	8:24:00	-2.85	101.21	35	4.4	mbGS
3818	2007	9	17	1:12:00	-1.84	100.64	35	4.5	mbGS
3819	2007	9	17	11:16:48	-4.6	100.94	35	4.4	mbGS
3820	2007	9	17	21:36:00	-3.64	100.77	25	5.1	MwGCMT
3821	2007	9	17	0:43:12	-2.77	102.57	35	4.5	mbGS
3822	2007	9	17	8:38:24	-1.73	99.82	35	4.2	mbGS
3823	2007	9	17	19:40:48	-3.84	101.17	35	4.5	mbGS
3824	2007	9	17	14:38:24	-2.95	101.01	35	4.3	mbGS
3825	2007	9	17	11:16:48	-3.46	101.67	35	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3826	2007	9	17	16:19:12	-2.85	102.48	35	4.3	mbGS
3827	2007	9	18	7:26:24	-4.04	101.03	25	5	mbGS
3828	2007	9	18	18:43:12	-3.26	101.35	35	5.6	MwGCMT
3829	2007	9	18	3:07:12	0.13	97.71	25	5.1	mbGS
3830	2007	9	18	2:24:00	-1.86	100.02	44	4.6	mbGS
3831	2007	9	18	11:31:12	-3.3	101.02	35	4.3	mbGS
3832	2007	9	18	1:26:24	-2.79	101.21	35	4.9	mbGS
3833	2007	9	18	23:31:12	-2.16	99.45	35	4.3	mbGS
3834	2007	9	18	17:31:12	-2.23	99.43	19	4.7	mbGS
3835	2007	9	18	6:43:12	-2.94	100.11	35	4.2	mbGS
3836	2007	9	18	2:38:24	-3.36	102.22	35	3.9	mbGS
3837	2007	9	18	8:24:00	-1.65	99.51	35	4.4	mbGS
3838	2007	9	18	8:09:36	-2.08	99.63	35	4.3	mbGS
3839	2007	9	18	16:04:48	-3.68	101.59	35	4.1	mbGS
3840	2007	9	18	5:16:48	-3.44	102.63	35	4.2	mbGS
3841	2007	9	19	18:14:24	-3.04	101.3	35	4.7	mbGS
3842	2007	9	19	16:48:00	-2.75	100.89	35	6	MwGCMT
3843	2007	9	19	10:33:36	-3.97	100.99	27	4.8	mbGS
3844	2007	9	19	10:48:00	-3.6	100.75	35	4.8	mbGS
3845	2007	9	19	18:00:00	-4.17	101.48	35	4.4	mbGS
3846	2007	9	20	9:21:36	-4.3	101.23	27	5	MwGCMT
3847	2007	9	20	20:24:00	-3.89	100.57	9	4.5	mbGS
3848	2007	9	20	11:45:36	-2	100.14	30	6.7	MwGCMT
3849	2007	9	20	7:55:12	-3.55	100.6	35	4.2	mbGS
3850	2007	9	20	4:33:36	-3.38	100.45	35	4	mbGS
3851	2007	9	20	3:07:12	-3.77	99.58	35	4.2	mbGS
3852	2007	9	21	4:33:36	-3.57	100.84	35	4	mbGS
3853	2007	9	21	23:16:48	-4.27	101	35	4.3	mbGS
3854	2007	9	21	14:52:48	-2.18	99.53	25	5.1	mbGS
3855	2007	9	21	3:21:36	1.85	97.12	35	4.4	mbGS
3856	2007	9	21	8:52:48	-4.72	99.64	35	4.5	mbGS
3857	2007	9	21	2:09:36	-3.4	101.18	35	4.6	mbGS
3858	2007	9	21	16:48:00	-3.38	100.93	35	4.3	mbGS
3859	2007	9	22	20:52:48	-2.73	101.31	35	4.4	mbGS
3860	2007	9	22	4:04:48	-3.57	101.54	36	4.6	mbGS
3861	2007	9	22	17:16:48	-2.78	100.81	30	4.8	mbGS
3862	2007	9	22	14:24:00	-4.34	101.06	28	5	mbGS
3863	2007	9	22	5:02:24	-2	99.94	35	5.3	MwGCMT
3864	2007	9	23	21:36:00	-2.13	99.93	28	5.5	MwGS
3865	2007	9	23	10:48:00	-3.12	101.37	8	4.8	mbGS
3866	2007	9	23	18:28:48	-4.03	101.56	35	4.7	mbGS
3867	2007	9	23	18:00:00	-2.37	102.04	197	3.8	mbGS
3868	2007	9	23	6:28:48	1.33	97.12	35	4.7	mbGS
3869	2007	9	23	6:57:36	-3.68	100.85	35	5.4	MwGS
3870	2007	9	23	14:24:00	-3.6	100.83	26	5.1	mbGS
3871	2007	9	23	17:45:36	-3.65	100.7	23	4.6	mbGS
3872	2007	9	23	15:07:12	-3.61	100.83	39	5	MwGCMT
3873	2007	9	24	12:43:12	-1.83	100.42	35	4.1	mbGS
3874	2007	9	24	12:00:00	-3.3	100.96	35	4.5	mbGS
3875	2007	9	24	17:45:36	-3.01	101.38	35	5	mbGS
3876	2007	9	24	4:19:12	-3.15	100.36	18	5.7	MwGCMT

no	year	mon	day	time	lat	long	depth	mag	type
3877	2007	9	24	0:14:24	-1.57	100.07	35	5.4	MwGCMT
3878	2007	9	24	23:02:24	-4.39	101.46	35	5.3	MwGCMT
3879	2007	9	24	3:50:24	-1.96	100.12	38	4.3	mbGS
3880	2007	9	24	2:52:48	-4.41	101.3	35	5	mbGS
3881	2007	9	25	10:19:12	1.36	97.14	25	4.7	mbGS
3882	2007	9	25	11:16:48	-1.77	100.46	35	5.3	MwGCMT
3883	2007	9	25	13:12:00	-3.23	100.68	32	4.6	mbGS
3884	2007	9	25	2:24:00	-2.64	101.89	35	4.3	mbGS
3885	2007	9	26	15:50:24	-2.74	101.18	35	4.5	mbGS
3886	2007	9	26	10:33:36	-3.96	101.58	27	4.5	mbGS
3887	2007	9	26	4:19:12	-4.36	101.36	35	4.8	mbGS
3888	2007	9	26	17:45:36	-2.3	98.83	35	4.8	mbGS
3889	2007	9	26	20:24:00	-2.31	98.79	35	4.2	mbGS
3890	2007	9	26	10:33:36	-1.79	99.49	26	6.1	MwGCMT
3891	2007	9	26	13:40:48	-1.83	99.46	24	5.1	mbGS
3892	2007	9	26	4:04:48	-3.41	100.27	35	4.5	mbGS
3893	2007	9	26	6:28:48	-3.96	101.46	35	4.4	mbGS
3894	2007	9	27	22:04:48	-1.89	99.49	12	4.6	mbGS
3895	2007	9	27	8:09:36	-3.49	100.84	35	5	mbGS
3896	2007	9	27	14:52:48	-3.01	101.43	35	4.5	mbGS
3897	2007	9	27	17:16:48	1.9	97.36	35	3.7	mbGS
3898	2007	9	27	17:45:36	-4.4	101.3	35	4.1	mbGS
3899	2007	9	29	21:36:00	-3.51	100.08	35	3.6	mbGS
3900	2007	9	29	13:12:00	-3.81	101.83	37	4.6	mbGS
3901	2007	9	29	8:38:24	-3.55	100.11	35	4.5	mbGS
3902	2007	9	30	15:50:24	-2.24	100.93	35	4.7	mbGS
3903	2007	9	30	21:21:36	-3.5	100.65	35	4.2	mbGS
3904	2007	9	30	14:09:36	-3.4	100.39	35	4.6	mbGS
3905	2007	9	30	23:16:48	-3.48	100.4	35	4.8	mbGS
3906	2007	10	1	10:33:36	-1.89	100.39	35	4.3	mbGS
3907	2007	10	1	21:50:24	0.73	97	35	4.2	mbGS
3908	2007	10	2	21:50:24	-4.24	101.21	22	5.9	MwGCMT
3909	2007	10	2	9:07:12	-4.23	101.88	35	4.6	mbGS
3910	2007	10	2	20:38:24	-1.85	99.78	35	5.1	mbGS
3911	2007	10	2	17:45:36	-3.56	100.55	35	4.8	mbGS
3912	2007	10	3	6:28:48	-3.31	100.42	26	4.6	mbGS
3913	2007	10	3	16:19:12	-4.47	101.03	35	4.3	mbGS
3914	2007	10	4	12:00:00	-3.38	100.83	35	4.5	mbGS
3915	2007	10	5	15:07:12	-2.63	100.32	35	4.2	mbGS
3916	2007	10	5	10:04:48	-4.38	101.34	35	5.1	mbGS
3917	2007	10	5	14:09:36	-4.52	102.34	35	4.7	mbGS
3918	2007	10	5	10:48:00	-4.01	100.83	35	4.7	mbGS
3919	2007	10	6	19:12:00	-3.01	100.96	35	4.8	mbGS
3920	2007	10	6	13:40:48	-3.07	100.96	35	4.6	mbGS
3921	2007	10	6	17:31:12	-4.3	100.66	35	4.4	mbGS
3922	2007	10	6	7:26:24	-4.5	100.92	35	3.9	mbGS
3923	2007	10	7	18:43:12	-3.2	101.15	48	4.6	mbGS
3924	2007	10	7	9:50:24	-3.43	101.7	35	4.2	mbGS
3925	2007	10	8	16:33:36	-2.76	100.97	61	4.5	mbGS
3926	2007	10	9	23:02:24	-2.02	99.56	35	4.2	mbGS
3927	2007	10	9	12:43:12	-2.04	100.06	39	4.7	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3928	2007	10	9	17:45:36	-2.22	100.03	35	4.5	mbGS
3929	2007	10	10	18:57:36	-1.74	99.48	27	5.9	MwGS
3930	2007	10	10	18:28:48	-2.96	101.15	35	4.8	mbGS
3931	2007	10	10	8:09:36	1.04	97.42	35	3.4	mbGS
3932	2007	10	10	4:19:12	-2.94	100.5	35	4.6	mbGS
3933	2007	10	11	7:40:48	-3.9	100.98	35	5.4	MwGCMT
3934	2007	10	12	2:24:00	-3.29	100.51	15	5.7	MwGCMT
3935	2007	10	12	21:50:24	-3.43	100.28	35	4.4	mbGS
3936	2007	10	12	10:04:48	-1.79	99.62	35	4.6	mbGS
3937	2007	10	12	15:36:00	-3.1	102.69	35	4.5	mbGS
3938	2007	10	12	16:19:12	-4.31	102.26	35	4.6	mbGS
3939	2007	10	12	4:48:00	-3.62	101.02	35	4.4	mbGS
3940	2007	10	12	3:36:00	-3.68	100.42	35	4.1	mbGS
3941	2007	10	13	0:43:12	-4.43	101.48	35	4.4	mbGS
3942	2007	10	13	21:50:24	-4.68	101.28	35	4.4	mbGS
3943	2007	10	13	12:00:00	-1.88	99.52	35	4.9	mbGS
3944	2007	10	13	22:04:48	-3.27	101	35	3.7	mbGS
3945	2007	10	13	0:43:12	-3.88	101.55	35	4	mbGS
3946	2007	10	14	5:16:48	0.76	98.75	75	5	mbGS
3947	2007	10	15	8:52:48	1.39	97.38	35	4.8	mbGS
3948	2007	10	16	11:16:48	-3.36	101.28	35	4.3	mbGS
3949	2007	10	17	0:28:48	0.42	97.82	35	3.7	mbGS
3950	2007	10	17	8:24:00	-4.64	101.08	35	4.5	mbGS
3951	2007	10	17	9:07:12	-4.39	101.38	35	4.2	mbGS
3952	2007	10	17	22:19:12	-4.21	101.3	35	4.8	mbGS
3953	2007	10	18	8:52:48	-3.41	101.68	39	4.9	MwGCMT
3954	2007	10	18	11:16:48	-2.53	101.65	35	4.9	mbGS
3955	2007	10	19	15:36:00	-2.1	99.34	35	4	mbGS
3956	2007	10	20	6:28:48	-1.48	99.44	35	4.9	mbGS
3957	2007	10	20	19:26:24	-1.69	99.69	35	4.7	mbGS
3958	2007	10	21	7:26:24	-3.24	100.51	35	5.2	mbGS
3959	2007	10	21	5:16:48	-3.21	100.48	23	5.2	MwGCMT
3960	2007	10	21	2:09:36	-3.59	100.8	35	5.5	MwGCMT
3961	2007	10	21	16:19:12	-3.74	100.72	26	4.4	mbGS
3962	2007	10	21	22:48:00	-3.22	100.61	23	5	mbGS
3963	2007	10	21	6:57:36	-3.59	100.8	35	4.5	mbGS
3964	2007	10	21	0:57:36	-3.59	100.86	27	5.6	MwGCMT
3965	2007	10	21	19:40:48	-3.3	100.36	35	3.9	mbGS
3966	2007	10	21	23:45:36	-3.6	100.79	35	4.7	mbGS
3967	2007	10	22	10:04:48	-3.47	101.79	42	4.8	mbGS
3968	2007	10	22	8:24:00	-2.56	100.02	35	4.8	mbGS
3969	2007	10	23	10:48:00	1.84	97.05	35	5	mbGS
3970	2007	10	23	17:16:48	0.38	98.46	35	4.9	mbGS
3971	2007	10	23	9:21:36	-2	99.9	30	5.8	MwGCMT
3972	2007	10	24	17:02:24	-4.06	100.93	35	4.3	mbGS
3973	2007	10	24	14:38:24	-3.9	101.02	21	6.8	MwGCMT
3974	2007	10	24	8:38:24	-4.23	101.3	35	4.9	mbGS
3975	2007	10	24	20:09:36	-4.05	100.89	35	3.7	mbGS
3976	2007	10	24	14:52:48	0.3	96.89	35	3.3	mbGS
3977	2007	10	25	13:12:00	-3.54	100.79	29	5.5	MwGCMT
3978	2007	10	25	0:00:00	-4.13	101.12	61	4.9	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
3979	2007	10	25	10:04:48	1.17	98.25	35	4.1	mbGS
3980	2007	10	26	9:07:12	-4.17	100.62	35	5.1	mbGS
3981	2007	10	26	14:09:36	-2.07	99.65	35	4.1	mbGS
3982	2007	10	28	3:21:36	1.88	97.97	35	4.7	mbGS
3983	2007	10	28	4:33:36	1.89	96.96	35	4.1	mbGS
3984	2007	10	28	8:38:24	1.2	97.43	35	4.7	mbGS
3985	2007	10	30	8:24:00	1.39	98.8	91	4.8	mbGS
3986	2007	10	30	20:09:36	0.89	97.61	35	4.1	mbGS
3987	2007	10	31	5:02:24	-3.55	100.92	27	4.2	mbGS
3988	2007	10	31	15:50:24	-2.99	101.28	48	5.3	MwGCMT
3989	2007	10	31	8:09:36	-5.03	101.03	35	4.9	mbGS
3990	2007	11	1	0:00:00	1.43	96.61	35	4.3	mbGS
3991	2007	11	2	15:07:12	-4.28	101.85	35	4.8	mbGS
3992	2007	11	2	16:33:36	-1.77	100.63	35	4.4	mbGS
3993	2007	11	2	16:19:12	1.53	97.94	35	3.8	mbGS
3994	2007	11	3	16:19:12	-4.02	101.01	35	4.2	mbGS
3995	2007	11	3	22:19:12	-4.42	101.07	19	4.5	mbGS
3996	2007	11	5	3:21:36	-3.74	101.09	25	5	mbGS
3997	2007	11	7	1:12:00	-3.64	100.72	31	5.1	mbGS
3998	2007	11	9	21:21:36	-3.22	100.65	35	4.3	mbGS
3999	2007	11	9	19:26:24	-3.81	99.08	35	4.1	mbGS
4000	2007	11	10	8:09:36	-4.44	101.31	35	5.1	mbGS
4001	2007	11	10	7:40:48	-3.28	100.53	15	5.9	MwGCMT
4002	2007	11	10	11:31:12	-0.55	99.47	35	5.5	MwGCMT
4003	2007	11	11	8:09:36	-3.33	100.65	51	4.8	mbGS
4004	2007	11	11	19:55:12	-3.61	100.83	35	4.4	mbGS
4005	2007	11	11	11:16:48	-3.75	100.76	25	4.9	mbGS
4006	2007	11	11	22:33:36	-3.75	100.69	35	4.3	mbGS
4007	2007	11	11	13:40:48	-1.77	99.56	35	4.1	mbGS
4008	2007	11	13	7:26:24	-3.17	101.16	35	4.6	mbGS
4009	2007	11	14	21:07:12	-1.88	99.43	35	4.8	mbGS
4010	2007	11	14	20:52:48	-1.93	99.3	21	4.6	mbGS
4011	2007	11	14	14:09:36	-4.66	101	35	3.7	mbGS
4012	2007	11	14	23:45:36	-3.52	100.94	27	4.4	mbGS
4013	2007	11	14	2:09:36	-3.88	100.51	26	4	mbGS
4014	2007	11	15	8:38:24	-1.47	99.19	35	4.5	mbGS
4015	2007	11	15	3:50:24	-3.53	100.68	15	4.8	mbGS
4016	2007	11	16	7:40:48	-4.96	101.98	13	4.3	mbGS
4017	2007	11	17	22:04:48	-3.26	100.36	29	4.9	mbGS
4018	2007	11	18	15:36:00	-4.33	100.97	26	4.4	mbGS
4019	2007	11	18	18:14:24	-2.37	96.77	35	3.7	mbGS
4020	2007	11	18	14:09:36	-0.88	100.69	107	5	MwGCMT
4021	2007	11	18	18:43:12	0.64	97.2	35	3.7	mbGS
4022	2007	11	19	9:07:12	-3.12	101.19	33	4.7	mbGS
4023	2007	11	20	14:52:48	-4.33	101.26	35	5.4	mbGS
4024	2007	11	22	0:14:24	-3.49	100.66	40	4.7	mbGS
4025	2007	11	23	19:26:24	-4.52	101.17	35	4.1	mbGS
4026	2007	11	23	21:50:24	-4.32	100.82	35	4.5	mbGS
4027	2007	11	24	16:04:48	1.11	97.32	35	4.8	mbGS
4028	2007	11	25	5:16:48	-2.81	101.16	55	5.9	MwGCMT
4029	2007	11	25	21:07:12	-4.22	100.88	35	4.3	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
4030	2007	11	25	13:12:00	-5.05	102.21	35	4.9	mbGS
4031	2007	11	25	12:57:36	-1.82	99.52	36	4.6	mbGS
4032	2007	11	25	0:57:36	-2.24	100.41	35	6	MwGS
4033	2007	11	25	6:43:12	-2.41	100.32	35	4.7	mbGS
4034	2007	11	26	3:21:36	-3.32	100.95	35	4.4	mbGS
4035	2007	11	26	2:24:00	0.27	96.97	36	5	MwGCMT
4036	2007	11	26	13:55:12	-2.26	100.46	35	5	MwGCMT
4037	2007	11	26	20:38:24	-2.14	100.62	54	4.4	mbGS
4038	2007	11	26	2:24:00	1.09	97.1	35	5	mbGS
4039	2007	11	26	21:36:00	1.25	97.19	35	4.8	mbGS
4040	2007	11	26	18:00:00	-2.22	100.55	67	4.8	mbGS
4041	2007	11	26	5:31:12	-3.32	100.26	35	4.7	mbGS
4042	2007	11	27	4:19:12	-5.09	100.43	35	4.6	mbGS
4043	2007	11	27	16:19:12	1.8	97.75	35	4.7	mbGS
4044	2007	11	27	22:04:48	-2.23	100.48	50	4.7	mbGS
4045	2007	11	27	20:24:00	-1.63	100.44	35	5.3	mbGS
4046	2007	11	28	11:02:24	-2.26	100.53	50	5.2	mbGS
4047	2007	11	29	2:38:24	-2.86	101.14	35	5.4	MwGCMT
4048	2007	11	29	14:24:00	-2.25	100.5	47	4.8	mbGS
4049	2007	11	30	4:19:12	-3.63	100.88	35	4.6	mbGS
4050	2007	12	1	4:19:12	-2.77	101.25	71	4.8	mbGS
4051	2007	12	1	22:48:00	1.98	97.88	44	5.9	MwGS
4052	2007	12	1	21:07:12	-2.91	101.11	102	4.7	mbGS
4053	2007	12	1	5:31:12	-4.62	101.36	10	5.3	MwGCMT
4054	2007	12	1	2:38:24	-4.45	101.36	27	5.1	mbGS
4055	2007	12	2	0:14:24	-2.28	100.45	51	5.3	MwGCMT
4056	2007	12	3	6:43:12	-2.56	100.31	35	4.3	mbGS
4057	2007	12	5	19:12:00	-1.88	99.79	35	4.6	mbGS
4058	2007	12	6	15:50:24	-4.2	102.18	35	4.7	mbGS
4059	2007	12	7	1:55:12	-3.22	101.17	35	4.9	mbGS
4060	2007	12	9	1:40:48	0.06	98.34	35	4.8	mbGS
4061	2007	12	9	8:52:48	0.04	98.18	35	3.9	mbGS
4062	2007	12	10	15:50:24	0.83	97.29	35	4	mbGS
4063	2007	12	10	4:04:48	1	97.25	35	4.2	mbGS
4064	2007	12	10	1:40:48	-3.05	100.98	35	4.6	mbGS
4065	2007	12	10	11:31:12	-3.44	100.68	35	4.8	mbGS
4066	2007	12	10	9:07:12	-4.11	101.05	40	4.9	mbGS
4067	2007	12	10	13:12:00	1.27	97.05	35	4	mbGS
4068	2007	12	11	12:57:36	-1.88	99.89	32	3.8	mbGS
4069	2007	12	11	9:36:00	-3.27	100.89	50	4.9	mbGS
4070	2007	12	11	20:52:48	-3.41	100.66	35	4.2	mbGS
4071	2007	12	12	19:26:24	-4.52	100.84	22	5	MwGCMT
4072	2007	12	13	5:45:36	-3.91	101.28	20	4.6	mbGS
4073	2007	12	14	0:14:24	-2.44	100.24	35	4.3	mbGS
4074	2007	12	14	11:45:36	1.13	97.35	35	4.5	mbGS
4075	2007	12	15	4:48:00	1.13	97.45	35	4.7	mbGS
4076	2007	12	16	14:09:36	-3.27	100.63	43	5.1	mbGS
4077	2007	12	17	3:36:00	-2.98	100.09	35	4.2	mbGS
4078	2007	12	18	19:55:12	0.19	97.58	35	4.3	mbGS
4079	2007	12	20	19:55:12	-2.41	100.34	51	4.4	mbGS
4080	2007	12	20	10:48:00	-3.5	100.62	27	5.1	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4081	2007	12	20	15:21:36	0.11	97.69	35	4.1	mbGS
4082	2007	12	23	3:36:00	-3.13	100.31	17	4.4	mbGS
4083	2007	12	23	9:07:12	-3.37	100.08	35	4.7	mbGS
4084	2007	12	24	4:48:00	-4.33	101.29	25	5.2	mbGS
4085	2007	12	24	19:26:24	-4.3	101.23	27	5.2	mbGS
4086	2007	12	25	17:45:36	0.12	97.02	38	5.1	mbGS
4087	2007	12	26	5:31:12	-4.3	101.45	26	4.3	mbGS
4088	2007	12	27	16:48:00	-4.42	101.2	17	4.1	mbGS
4089	2007	12	27	19:26:24	-4.52	101.15	26	4.8	mbGS
4090	2007	12	27	18:57:36	-1.84	100.49	44	4.6	mbGS
4091	2007	12	28	3:07:12	-2.35	99.82	35	4.2	mbGS
4092	2007	12	29	19:55:12	0.39	98.82	70	3.7	mbGS
4093	2007	12	30	5:45:36	0.23	98.57	33	4.9	mbGS
4094	2008	1	1	6:43:12	-3.37	101.17	35	4.5	mbGS
4095	2008	1	2	17:31:12	-3.14	100.9	35	4.2	mbGS
4096	2008	1	3	15:21:36	-1.95	99.42	28	4.4	mbGS
4097	2008	1	3	14:09:36	-4.54	101.01	35	4.2	mbGS
4098	2008	1	4	7:12:00	-2.78	101.03	35	6	MwUCMT
4099	2008	1	5	17:45:36	-4.45	102.11	35	4.2	mbGS
4100	2008	1	8	13:26:24	-2.25	99.92	19	4.6	mbGS
4101	2008	1	9	8:52:48	-0.53	99.91	95	4.7	mbGS
4102	2008	1	10	7:12:00	1.89	97.93	63	4.3	mbGS
4103	2008	1	11	16:33:36	-0.88	100.24	35	4.5	mbGS
4104	2008	1	12	8:52:48	-2.88	101.14	51	4.3	mbGS
4105	2008	1	15	10:19:12	-4.53	102.08	34	4.4	mbGS
4106	2008	1	17	12:14:24	-3.15	101.1	35	4.5	mbGS
4107	2008	1	17	20:38:24	-3.04	101	45	4.8	mbGS
4108	2008	1	19	7:12:00	-3.49	101.05	35	4.5	mbGS
4109	2008	1	22	1:40:48	0.92	97.46	10	5.4	mbGS
4110	2008	1	22	22:48:00	1.01	97.44	20	6.2	MwGS
4111	2008	1	22	14:24:00	0.73	96.99	10	4.1	mbGS
4112	2008	1	22	20:09:36	1.26	97.1	7	4.6	mbGS
4113	2008	1	22	20:38:24	1.12	97.15	10	4.6	mbGS
4114	2008	1	22	3:50:24	0.94	97.18	10	4.2	mbGS
4115	2008	1	22	22:04:48	1.05	97.08	10	4.3	mbGS
4116	2008	1	22	16:48:00	0.81	97.03	10	3.2	mbGS
4117	2008	1	22	7:26:24	0.96	97.29	10	4.5	mbGS
4118	2008	1	23	11:45:36	1.34	97.16	23	5	MwGCMT
4119	2008	1	23	-10:19:12	-2.83	101.22	50	5	MwGCMT
4120	2008	1	24	18:14:24	0.95	97.33	10	4.3	mbGS
4121	2008	1	24	10:33:36	-4.03	101.87	35	5.3	mbGS
4122	2008	1	24	2:09:36	1.03	97.27	10	5.3	MwGCMT
4123	2008	1	24	20:38:24	0.94	97.14	10	4.3	mbGS
4124	2008	1	26	12:28:48	1.04	97.14	10	4.5	mbGS
4125	2008	1	26	9:50:24	-3.12	100.15	23	4.2	mbGS
4126	2008	1	28	3:21:36	-3.05	100.95	35	3.8	mbGS
4127	2008	1	28	7:12:00	-2.42	100.32	53	4.4	mbGS
4128	2008	1	30	0:28:48	-1.31	99.97	51	4.2	mbGS
4129	2008	1	31	5:31:12	-3.41	102	128	4	mbGS
4130	2008	2	2	20:24:00	1.24	97.14	27	4.6	mbGS
4131	2008	2	4	23:31:12	0.73	97.04	35	3.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4132	2008	2	6	21:50:24	-3.57	100.56	22	4.5	mbGS
4133	2008	2	9	14:24:00	-3.35	100.79	35	4.3	mbGS
4134	2008	2	9	15:50:24	-3.86	100.46	35	3.9	mbGS
4135	2008	2	10	0:14:24	-3.67	100.7	29	4.8	mbGS
4136	2008	2	11	14:52:48	-5.16	102.02	36	4.9	MwGCMT
4137	2008	2	11	0:43:12	1.82	96.62	35	3.9	mbGS
4138	2008	2	12	21:50:24	-3.01	101.21	47	5.5	MwGCMT
4139	2008	2	12	12:57:36	1.88	97.88	61	4.2	mbGS
4140	2008	2	13	3:07:12	-3.12	100.23	35	4.5	mbGS
4141	2008	2	14	15:07:12	-4.61	102.59	35	4.3	mbGS
4142	2008	2	18	7:12:00	0.09	97.88	35	4.8	mbGS
4143	2008	2	19	5:31:12	-1.99	97.71	35	4.3	mbGS
4144	2008	2	19	22:04:48	-3.29	100.93	35	5.3	MwGCMT
4145	2008	2	19	8:52:48	-4.29	101.05	35	4.1	mbGS
4146	2008	2	19	14:38:24	-2.43	99.95	14	5.4	MwGCMT
4147	2008	2	19	0:28:48	-2.4	99.87	25	4.9	mbGS
4148	2008	2	20	6:14:24	-2.26	100.07	35	4.1	mbGS
4149	2008	2	20	22:04:48	-3.37	100.84	26	5	mbGS
4150	2008	2	20	0:57:36	1.71	97.01	35	4.2	mbGS
4151	2008	2	20	3:36:00	-4.09	101.25	18	4.1	mbGS
4152	2008	2	21	4:48:00	2.42	98.95	152	3.7	mbGS
4153	2008	2	21	11:31:12	-2.29	99.91	15	4.2	mbGS
4154	2008	2	21	3:50:24	-3.31	101.13	35	4.1	mbGS
4155	2008	2	21	20:24:00	-4.36	102.5	79	4.8	mbGS
4156	2008	2	21	11:02:24	-2.32	99.88	24	5.7	MwGS
4157	2008	2	23	18:28:48	-2.29	100.07	35	4.6	mbGS
4158	2008	2	23	11:31:12	-2.51	99.96	32	5.6	MwGCMT
4159	2008	2	23	9:50:24	-2.38	100.38	35	4.8	mbGS
4160	2008	2	23	6:00:00	-2.3	100.14	35	4.6	mbGS
4161	2008	2	23	15:36:00	0.39	98.57	35	4.2	mbGS
4162	2008	2	23	0:00:00	-2.33	100.1	35	4.8	mbGS
4163	2008	2	24	6:00:00	-3.74	101.99	44	5.2	MwGCMT
4164	2008	2	24	22:48:00	-2.34	99.95	27	5.2	MwGCMT
4165	2008	2	24	4:33:36	-2.54	99.98	35	4.7	mbGS
4166	2008	2	24	22:19:12	-2.47	99.96	22	5.3	mbGS
4167	2008	2	24	11:16:48	-2.4	99.93	22	6.5	MwGCMT
4168	2008	2	24	15:21:36	-2.52	99.98	24	5.4	mbGS
4169	2008	2	25	2:09:36	-2.41	100.36	35	4.2	mbGS
4170	2008	2	25	0:43:12	-2.49	99.97	25	7.2	MwGCMT
4171	2008	2	25	1:55:12	-2.6	100.05	35	4.9	mbGS
4172	2008	2	25	13:26:24	-2.47	99.88	35	5.1	mbGS
4173	2008	2	25	0:43:12	-2.31	99.97	35	5.3	mbGS
4174	2008	2	25	3:21:36	-2.3	100	38	5	mbGS
4175	2008	2	25	21:36:00	-2.33	99.89	25	6.6	MwGCMT
4176	2008	2	25	10:04:48	-2.24	99.81	25	6.7	MwGCMT
4177	2008	2	26	6:57:36	-2.34	99.7	35	4	mbGS
4178	2008	2	26	16:19:12	-2.69	99.93	35	4.7	mbGS
4179	2008	2	26	7:12:00	-2.54	100.18	35	4.5	mbGS
4180	2008	2	26	1:26:24	1.21	97.25	35	4.5	mbGS
4181	2008	2	26	12:43:12	-3.85	101.07	20	5.9	MwGCMT
4182	2008	2	27	17:45:36	1.09	97.24	35	4.7	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
4183	2008	2	27	15:21:36	-2.38	100.24	35	4.9	mbGS
4184	2008	2	29	8:24:00	-3.62	100.76	35	4.8	mbGS
4185	2008	3	1	20:38:24	-3.25	101.06	35	4.2	mbGS
4186	2008	3	1	5:45:36	-4.44	101.33	27	5.3	mbGS
4187	2008	3	1	17:16:48	-2.52	100.19	35	4	mbGS
4188	2008	3	3	2:52:48	-2.18	99.82	25	6.2	MwGCMT
4189	2008	3	3	15:36:00	-4.66	102.55	35	4.6	mbGS
4190	2008	3	3	23:16:48	-4.47	100.76	10	4.1	mbGS
4191	2008	3	3	2:52:48	-4.47	101.45	27	5.6	mbGS
4192	2008	3	3	16:48:00	1.23	97.2	44	4.3	mbGS
4193	2008	3	3	6:57:36	1.14	97.15	32	5	mbGS
4194	2008	3	3	17:16:48	-4.45	101.46	33	5.4	mbGS
4195	2008	3	4	12:14:24	-4.5	101.46	35	4.2	mbGS
4196	2008	3	4	5:16:48	-3.79	102.02	35	3.9	mbGS
4197	2008	3	5	18:14:24	1.5	97.06	27	4.3	mbGS
4198	2008	3	5	5:45:36	-2.12	100.03	27	4.1	mbGS
4199	2008	3	6	16:04:48	-2.23	99.79	35	5.3	MwGCMT
4200	2008	3	9	11:16:48	-2.53	99.98	35	4.6	mbGS
4201	2008	3	10	8:38:24	1.09	97.34	44	4.6	mbGS
4202	2008	3	11	22:04:48	-3.76	100.81	27	5	MwGCMT
4203	2008	3	11	17:45:36	-3.61	100.74	35	4.5	mbGS
4204	2008	3	12	10:04:48	-3.65	100.86	29	5	mbGS
4205	2008	3	13	7:12:00	-4.22	101.44	45	5	mbGS
4206	2008	3	14	10:04:48	0.74	98.32	35	4.6	mbGS
4207	2008	3	14	2:52:48	1.74	99.15	35	4.5	mbGS
4208	2008	3	16	13:55:12	-2.9	101.1	35	5.2	MwGS
4209	2008	3	19	5:45:36	1.73	99.24	35	3.9	mbGS
4210	2008	3	20	7:55:12	-2.78	100.13	35	4.1	mbGS
4211	2008	3	21	2:24:00	-4.26	100.96	35	4.6	mbGS
4212	2008	3	23	18:14:24	-1.77	99.9	39	4.2	mbGS
4213	2008	3	24	7:26:24	-2.7	100.94	35	4.5	mbGS
4214	2008	3	24	4:33:36	0.96	97.04	53	4.5	mbGS
4215	2008	3	24	18:14:24	-2.48	100.7	35	4.5	mbGS
4216	2008	3	25	0:28:48	-2.6	100.17	35	4.5	mbGS
4217	2008	3	26	8:52:48	-3.36	101.5	116	4.3	mbGS
4218	2008	3	29	11:31:12	1.29	97.17	42	4.7	mbGS
4219	2008	3	30	11:02:24	0.11	98.24	49	5.2	MwGCMT
4220	2008	3	31	13:40:48	0.95	100.28	42	4.1	mbGS
4221	2008	3	31	20:38:24	-2.86	101.18	50	5.1	mbGS
4222	2008	3	31	22:33:36	-3.09	100.98	47	4.7	mbGS
4223	2008	3	31	13:55:12	-2.93	101.12	63	4.7	mbGS
4224	2008	4	2	17:31:12	-4.35	102.72	67	5.7	MwGCMT
4225	2008	4	2	7:55:12	-0.16	99.19	81	5.3	mbGS
4226	2008	4	3	1:55:12	-4.3	102.2	35	4.9	mbGS
4227	2008	4	4	17:31:12	2.02	98.96	134	3.7	mbGS
4228	2008	4	6	14:38:24	1.28	97.2	44	4.6	mbGS
4229	2008	4	8	15:07:12	-2.16	99.4	35	4.5	mbGS
4230	2008	4	9	6:00:00	-3.92	100.49	25	4	mbGS
4231	2008	4	10	4:33:36	1.19	97.38	52	4.4	mbGS
4232	2008	4	14	0:14:24	-1.77	99.75	35	4.2	mbGS
4233	2008	4	15	17:16:48	2.34	99.23	159	4.7	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4234	2008	4	18	9:50:24	-1.91	99.43	35	4.3	mbGS
4235	2008	4	19	13:55:12	-3.44	101.65	35	4.1	mbGS
4236	2008	4	21	6:28:48	-4.57	101.8	35	4.4	mbGS
4237	2008	4	21	4:48:00	-2.98	101.3	100	4	mbGS
4238	2008	4	22	15:36:00	-2.1	99.55	35	4.5	mbGS
4239	2008	4	22	1:26:24	-4.36	101.05	35	4.9	mbGS
4240	2008	4	22	19:26:24	-4.41	100.93	35	3.9	mbGS
4241	2008	4	22	1:55:12	-3.27	100.98	35	4.2	mbGS
4242	2008	4	27	23:16:48	-3.27	101.41	46	5.2	MwGCMT
4243	2008	4	29	13:12:00	-3.48	100.59	35	4.5	mbGS
4244	2008	4	29	18:57:36	-1.67	99.17	35	4.2	mbGS
4245	2008	5	1	16:19:12	-2.87	101.21	49	5	mbGS
4246	2008	5	1	8:09:36	-0.7	98.89	59	4	mbGS
4247	2008	5	3	22:19:12	-3.02	101.32	50	5.3	MwGCMT
4248	2008	5	3	17:43:36	1.37	97.07	35	4.4	mbGS
4249	2008	5	4	20:09:36	-3.54	99.97	35	3.8	mbGS
4250	2008	5	5	4:04:48	-4.11	102.03	35	4.1	mbGS
4251	2008	5	5	3:21:36	-2.52	100.5	35	4.6	mbGS
4252	2008	5	6	9:36:00	1.1	97.18	35	4.3	mbGS
4253	2008	5	6	12:28:48	-2.1	102.2	180	4.3	mbGS
4254	2008	5	7	1:55:12	0.89	97.19	35	3.7	mbGS
4255	2008	5	8	13:26:24	-1.26	99.47	35	4	mbGS
4256	2008	5	9	15:07:12	-3.22	101.12	35	4.2	mbGS
4257	2008	5	9	6:43:12	-4.33	102.68	81	4.9	mbGS
4258	2008	5	10	11:31:12	-2.01	100.46	35	4.1	mbGS
4259	2008	5	11	23:31:12	-3.96	101.03	26	4.6	mbGS
4260	2008	5	12	4:33:36	-4.49	102.03	35	4.6	mbGS
4261	2008	5	15	18:14:24	-2.46	100	35	4.5	mbGS
4262	2008	5	15	18:57:36	-2.53	99.86	35	4.6	mbGS
4263	2008	5	18	23:02:24	1.2	97.12	19	4.9	mbGS
4264	2008	5	18	8:09:36	-3.2	101.41	32	5.7	MwGCMT
4265	2008	5	18	0:28:48	0.86	97.32	23	4.3	mbGS
4266	2008	5	18	19:12:00	1.32	97.24	35	4.1	mbGS
4267	2008	5	19	0:28:48	1.64	99.15	10	6	MwUCMT
4268	2008	5	19	0:28:48	1.34	98.96	10	4.9	mbGS
4269	2008	5	19	16:33:36	1.72	99.18	10	5.3	MwGCMT
4270	2008	5	19	13:12:00	1.41	99.04	10	4.4	mbGS
4271	2008	5	19	20:09:36	1.49	99.04	10	4	mbGS
4272	2008	5	19	16:19:12	0.78	99.8	10	4	mbGS
4273	2008	5	19	0:28:48	1.41	99.21	10	4.1	mbGS
4274	2008	5	20	4:48:00	-3.18	101.47	47	5.7	MwGS
4275	2008	5	20	15:36:00	-3.2	101.41	45	5	mbGS
4276	2008	5	21	20:09:36	-4.19	102.46	53	4.9	MwGCMT
4277	2008	5	21	16:33:36	-4.13	101.27	19	5.5	MwGCMT
4278	2008	5	21	4:48:00	-4.45	101.1	22	5.2	MwGCMT
4279	2008	5	22	0:57:36	1.66	99.19	35	4.5	mbGS
4280	2008	5	22	2:09:36	1.75	99.17	40	4.9	mbGS
4281	2008	5	23	13:12:00	-3.61	101.39	146	3.8	mbGS
4282	2008	5	24	2:52:48	-2.58	98.91	35	4.1	mbGS
4283	2008	5	24	0:28:48	1.2	98.45	35	4.7	mbGS
4284	2008	5	24	1:40:48	0.35	99.59	35	4.4	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
4285	2008	5	25	19:12:00	0.08	97.23	35	3.4	mbGS
4286	2008	5	27	21:21:36	-3.58	100.8	35	4.8	mbGS
4287	2008	5	27	15:36:00	-3.74	100.84	28	4	mbGS
4288	2008	5	28	8:24:00	-3.7	100.31	35	4.1	mbGS
4289	2008	6	1	22:33:36	1.5	99.06	35	4.4	mbGS
4290	2008	6	2	16:48:00	1.28	97.06	35	4.3	mbGS
4291	2008	6	2	8:38:24	1.71	97.07	35	4.8	mbGS
4292	2008	6	3	21:07:12	0.33	97.68	35	4.6	mbGS
4293	2008	6	3	6:28:48	0.3	97.65	35	4.4	mbGS
4294	2008	6	3	21:21:36	0.35	97.76	35	5.3	MwGCMT
4295	2008	6	3	1:40:48	-2.08	99.97	35	5.2	MwGCMT
4296	2008	6	5	2:09:36	-2.6	99.76	27	4.3	mbGS
4297	2008	6	6	15:07:12	-4.38	101.61	35	4.1	mbGS
4298	2008	6	6	17:16:48	-2.65	100.07	28	4.6	mbGS
4299	2008	6	6	6:00:00	-2.22	101.97	35	4.1	mbGS
4300	2008	6	7	20:52:48	1.74	99.15	35	4.2	mbGS
4301	2008	6	8	3:36:00	-3.99	101.25	35	4.4	mbGS
4302	2008	6	8	19:55:12	1.15	97.16	35	4.3	mbGS
4303	2008	6	11	7:26:24	-3.67	100.94	35	4	mbGS
4304	2008	6	12	5:45:36	1.45	97.07	35	4	mbGS
4305	2008	6	13	15:21:36	0.82	97.48	23	5.1	MwGCMT
4306	2008	6	17	14:09:36	-2.97	100.04	25	4.2	mbGS
4307	2008	6	17	19:26:24	0.54	98.19	35	3.9	mbGS
4308	2008	6	18	7:40:48	-1.92	101.43	35	3.9	mbGS
4309	2008	6	20	14:52:48	-3.09	101.27	58	5	mbGS
4310	2008	6	20	2:24:00	-2.04	98.7	24	5.2	mbGS
4311	2008	6	20	11:31:12	-2.49	100.42	27	4.3	mbGS
4312	2008	6	21	14:09:36	-2.18	98.41	24	4.4	mbGS
4313	2008	6	21	0:57:36	-0.65	98.91	35	3.8	mbGS
4314	2008	6	22	16:33:36	-3.48	100.58	35	4.2	mbGS
4315	2008	6	23	15:50:24	0.05	97.14	35	4.1	mbGS
4316	2008	6	23	6:28:48	0.18	96.67	30	4.7	mbGS
4317	2008	6	24	8:09:36	0.81	97.38	32	4	mbGS
4318	2008	6	24	5:31:12	0.19	96.63	35	4.2	mbGS
4319	2008	6	24	18:00:00	-5.12	101.62	10	4	mbGS
4320	2008	6	24	3:36:00	-3.18	101.43	49	5.1	MwGCMT
4321	2008	6	25	0:57:36	1.32	97.16	19	5.5	MwGCMT
4322	2008	6	25	10:33:36	1.34	97.19	16	5.7	MwGCMT
4323	2008	6	25	19:55:12	0.42	98.59	40	4.7	mbGS
4324	2008	6	25	5:16:48	1.21	97.25	35	3.9	mbGS
4325	2008	6	25	23:16:48	1.25	97.22	44	4.4	mbGS
4326	2008	6	26	0:43:12	-2.43	100.73	35	4.1	mbGS
4327	2008	6	26	0:14:24	-4.99	101.66	35	3.9	mbGS
4328	2008	6	27	3:36:00	0.21	96.67	35	5.1	mbGS
4329	2008	6	27	9:36:00	0.21	96.73	35	4.6	mbGS
4330	2008	6	27	19:12:00	0.29	96.7	35	4.4	mbGS
4331	2008	6	27	9:36:00	0.17	96.66	35	4.2	mbGS
4332	2008	6	28	6:43:12	0.21	96.69	29	4	mbGS
4333	2008	6	29	11:02:24	0.18	96.75	35	4.5	mbGS
4334	2008	6	29	23:31:12	0.09	96.68	26	4.5	mbGS
4335	2008	6	29	11:02:24	-3.69	100.8	32	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4336	2008	6	30	14:52:48	-2.51	100.88	40	4.3	mbGS
4337	2008	7	1	13:26:24	-0.96	100.22	35	4.2	mbGS
4338	2008	7	2	3:50:24	1.11	97.08	21	4.9	mbGS
4339	2008	7	5	18:57:36	-3.59	100.57	2	4.3	mbGS
4340	2008	7	6	13:26:24	-5.32	101.25	35	3.7	mbGS
4341	2008	7	7	5:45:36	-2.02	99.66	35	4.2	mbGS
4342	2008	7	8	17:45:36	-2.11	99.56	35	4.4	mbGS
4343	2008	7	9	10:48:00	0.12	97.4	35	3.5	mbGS
4344	2008	7	9	2:38:24	-1.83	101.14	53	5.3	MwGCMT
4345	2008	7	9	19:26:24	-1.99	100.92	35	4.2	mbGS
4346	2008	7	13	20:24:00	0.76	99.72	10	4.3	mbGS
4347	2008	7	13	4:19:12	-4.63	101.85	35	3.9	mbGS
4348	2008	7	13	12:28:48	-3.85	100.48	35	3.9	mbGS
4349	2008	7	13	21:36:00	1.19	97.1	35	3.7	mbGS
4350	2008	7	14	12:43:12	1.44	96.35	35	3.8	mbGS
4351	2008	7	17	1:26:24	0.21	96.6	22	4.3	mbGS
4352	2008	7	18	2:38:24	-1.21	100.73	112	4.5	mbGS
4353	2008	7	19	7:40:48	0.22	96.68	27	4.3	mbGS
4354	2008	7	19	23:31:12	0.29	96.66	29	4.3	mbGS
4355	2008	7	19	15:36:00	-3.48	100.63	36	4.7	mbGS
4356	2008	7	19	11:02:24	-0.44	96.95	35	5.2	mbGS
4357	2008	7	20	13:12:00	-2.41	99.89	27	4.6	mbGS
4358	2008	7	22	15:36:00	-3.59	100.48	25	4.5	mbGS
4359	2008	7	22	6:28:48	1.29	97.27	35	4.9	mbGS
4360	2008	7	22	4:04:48	-3.35	100.93	35	4.4	mbGS
4361	2008	7	22	0:57:36	-2.95	100.9	35	4.2	mbGS
4362	2008	7	24	12:57:36	-3.45	101.66	75	5.1	mbGS
4363	2008	7	24	12:00:00	-1.8	99.85	44	4.4	mbGS
4364	2008	7	27	22:19:12	-4.04	100.81	35	4.4	mbGS
4365	2008	7	28	19:55:12	0.16	96.58	35	4.1	mbGS
4366	2008	7	28	13:55:12	-1.07	99.79	84	5.3	MwGCMT
4367	2008	7	28	17:31:12	-4.26	102.1	35	4.3	mbGS
4368	2008	7	29	21:21:36	0.21	96.62	35	4.4	mbGS
4369	2008	7	30	14:09:36	1.12	97.04	35	3.9	mbGS
4370	2008	7	31	22:33:36	1.75	97	21	4.7	mbGS
4371	2008	8	3	1:26:24	1.5	97.12	41	4.5	mbGS
4372	2008	8	8	21:50:24	-3.94	101.08	23	5.8	MwUCMT
4373	2008	8	8	1:12:00	-4.11	100.95	35	4.6	mbGS
4374	2008	8	8	9:21:36	-3.91	100.99	36	5.3	MwGCMT
4375	2008	8	8	15:36:00	-4.56	102.7	35	4.9	mbGS
4376	2008	8	8	22:19:12	-4.02	101.08	35	4.3	mbGS
4377	2008	8	9	22:04:48	-1.96	99.08	35	4.1	mbGS
4378	2008	8	13	0:28:48	1.44	98.24	90	4	mbGS
4379	2008	8	14	2:38:24	0.72	99.76	35	4.3	mbGS
4380	2008	8	19	19:55:12	-5.07	102.29	75	4.1	mbGS
4381	2008	8	20	5:02:24	1.03	97.27	35	4.4	mbGS
4382	2008	8	20	1:26:24	0.33	100.45	167	4.3	mbGS
4383	2008	8	21	5:16:48	-4.74	101.87	26	3.9	mbGS
4384	2008	8	25	3:21:36	0.37	98.63	43	4.4	mbGS
4385	2008	8	26	7:12:00	-0.16	97.07	35	4.1	mbGS
4386	2008	8	27	5:02:24	-2.14	99.95	35	4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4387	2008	8	27	9:21:36	-2.2	99.77	35	3.9	mbGS
4388	2008	8	27	6:14:24	0.57	97.49	35	4.1	mbGS
4389	2008	8	28	11:16:48	-0.79	101.26	132	4	mbGS
4390	2008	8	29	19:40:48	-3.5	101.63	50	4.9	mbGS
4391	2008	8	29	22:04:48	-2.13	99.6	35	4	mbGS
4392	2008	8	31	9:36:00	-2.38	99.92	31	4.6	mbGS
4393	2008	9	2	9:07:12	-4.48	101.46	24	5	mbGS
4394	2008	9	2	4:48:00	0.49	98.09	35	5.1	MwGCMT
4395	2008	9	2	6:00:00	0.83	97.44	35	3.7	mbGS
4396	2008	9	3	21:36:00	-3.32	100.47	35	4.6	mbGS
4397	2008	9	3	17:16:48	-3.69	100.02	35	4.8	mbGS
4398	2008	9	3	18:43:12	1.31	97.15	25	4.8	mbGS
4399	2008	9	4	16:04:48	-2.63	101.13	89	4.3	mbGS
4400	2008	9	5	13:26:24	-0.31	98.37	65	4.6	mbGS
4401	2008	9	6	9:07:12	-1.91	99.59	35	4.1	mbGS
4402	2008	9	6	16:19:12	-4.18	101.02	26	3.8	mbGS
4403	2008	9	8	5:45:36	1.08	96.81	35	4.4	mbGS
4404	2008	9	8	18:43:12	-2.22	100.51	66	5.1	MwGCMT
4405	2008	9	9	12:00:00	-3.93	103.06	25	5.2	MwGCMT
4406	2008	9	12	2:52:48	-2.14	100.62	40	3.8	mbGS
4407	2008	9	13	9:50:24	-3.9	103.08	48	4.3	mbGS
4408	2008	9	14	16:19:12	1.63	99.68	174	3.6	mbGS
4409	2008	9	15	2:24:00	-2.79	101.25	64	4.6	mbGS
4410	2008	9	20	10:19:12	-0.99	100.06	59	4.6	mbGS
4411	2008	9	23	5:45:36	-2.92	101.29	83	3.9	mbGS
4412	2008	9	24	7:40:48	0.4	97.85	31	4.2	mbGS
4413	2008	9	25	9:36:00	-2.24	99.89	35	4.3	mbGS
4414	2008	9	27	21:36:00	-2.33	99.33	35	4.4	mbGS
4415	2008	10	1	22:48:00	0.96	96.85	26	4.9	mbGS
4416	2008	10	1	17:31:12	-4.6	100.83	35	4.9	mbGS
4417	2008	10	3	6:43:12	2.01	99.05	35	4.3	mbGS
4418	2008	10	6	14:09:36	-3.55	100.37	35	4.1	mbGS
4419	2008	10	6	14:38:24	-5.1	101.98	35	4.4	mbGS
4420	2008	10	10	15:07:12	1.23	97.12	35	4.5	mbGS
4421	2008	10	11	6:14:24	0.1	98.46	35	4.1	mbGS
4422	2008	10	11	11:31:12	1.12	97.19	35	4	mbGS
4423	2008	10	12	23:02:24	-4.33	102.37	37	4.7	mbGS
4424	2008	10	12	3:21:36	-1.23	99.86	35	4.1	mbGS
4425	2008	10	15	9:50:24	1.96	97.97	61	5	mbGS
4426	2008	10	18	16:04:48	1.14	96.75	32	4.3	mbGS
4427	2008	10	19	15:36:00	-2.73	99.86	35	4.1	mbGS
4428	2008	10	21	18:43:12	2.42	99.1	158	3.8	mbGS
4429	2008	10	22	8:38:24	0.72	99.73	152	4.7	mbGS
4430	2008	10	23	17:02:24	-3.64	100.53	40	4.3	mbGS
4431	2008	10	25	6:43:12	-4.77	100.76	10	4.4	mbGS
4432	2008	10	26	16:19:12	1.2	97.16	35	4.5	mbGS
4433	2008	10	26	11:45:36	-3.63	100.75	35	5.1	mbGS
4434	2008	10	27	8:24:00	-4.48	101.11	35	4.2	mbGS
4435	2008	10	28	7:26:24	1.32	97.28	37	4.1	mbGS
4436	2008	10	29	6:00:00	-2.48	100.2	35	4.4	mbGS
4437	2008	11	1	7:55:12	0.17	98.6	54	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4438	2008	11	3	10:48:00	1.14	97.25	10	5.7	MwUCMT
4439	2008	11	3	17:02:24	0.94	97.13	10	4.1	mbGS
4440	2008	11	3	1:55:12	1.02	97.17	10	4.6	mbGS
4441	2008	11	3	8:38:24	1.03	97.21	10	3.8	mbGS
4442	2008	11	3	16:33:36	1.05	97.17	10	4.3	mbGS
4443	2008	11	3	4:48:00	1.06	97.25	10	4.3	mbGS
4444	2008	11	4	4:19:12	-3.75	102.03	77	4.6	mbGS
4445	2008	11	6	1:40:48	-2.3	100.05	35	4.9	mbGS
4446	2008	11	9	18:14:24	1.15	97.25	35	4.8	mbGS
4447	2008	11	10	10:19:12	-4.52	100.84	35	4.1	mbGS
4448	2008	11	10	10:48:00	-0.25	100.14	126	5.1	MwGCMT
4449	2008	11	11	11:45:36	-4.15	102.19	65	5	mbGS
4450	2008	11	11	9:21:36	1.03	97.11	30	4.1	mbGS
4451	2008	11	13	13:55:12	1.66	99.51	166	4	mbGS
4452	2008	11	14	14:52:48	-3.48	101.54	44	4.4	mbGS
4453	2008	11	14	14:38:24	-3.65	100.68	35	4.6	mbGS
4454	2008	11	14	9:36:00	-3.86	100.42	35	4.1	mbGS
4455	2008	11	15	19:40:48	0.83	97.34	30	4	mbGS
4456	2008	11	16	18:00:00	1.79	99.03	35	4.2	mbGS
4457	2008	11	21	10:19:12	-4.26	101.92	35	4.2	mbGS
4458	2008	11	22	23:02:24	-2.76	100.83	80	4.5	mbGS
4459	2008	11	22	16:48:00	-4.35	101.26	24	6.3	MwUCMT
4460	2008	11	22	5:45:36	-4.48	101.42	23	5.7	mbGS
4461	2008	11	22	1:40:48	-4.23	101.46	45	4	mbGS
4462	2008	11	22	9:50:24	-4.61	101.22	35	5.1	mbGS
4463	2008	11	24	1:12:00	0.51	96.7	35	4.3	mbGS
4464	2008	11	26	18:43:12	-5.24	100.65	30	4	mbGS
4465	2008	11	27	1:26:24	1.34	97.19	35	4.2	mbGS
4466	2008	11	28	21:50:24	-4.76	101.76	25	5.9	MwGCMT
4467	2008	11	28	1:40:48	1.14	97.28	35	4.1	mbGS
4468	2008	11	29	2:52:48	1.76	99.06	35	3.9	mbGS
4469	2008	11	30	22:04:48	1.75	99.08	21	4.4	mbGS
4470	2008	12	1	8:24:00	-0.69	98.32	35	4	mbGS
4471	2008	12	1	23:45:36	-4.73	101.83	35	4.2	mbGS
4472	2008	12	1	11:45:36	-1.41	97.32	35	4.2	mbGS
4473	2008	12	5	0:28:48	-1.99	99.72	35	4	mbGS
4474	2008	12	7	3:07:12	0.18	98.21	35	4.1	mbGS
4475	2008	12	8	18:57:36	1.17	97.19	35	4.2	mbGS
4476	2008	12	9	8:09:36	1.06	97.23	35	4.3	mbGS
4477	2008	12	11	20:38:24	-3.65	100.75	14	5.7	MwGCMT
4478	2008	12	15	2:24:00	-2.83	101.04	48	5.3	MwGCMT
4479	2008	12	16	6:43:12	0.21	97.68	30	4.1	mbGS
4480	2008	12	17	20:52:48	-2.38	100.65	35	3.8	mbGS
4481	2008	12	17	4:04:48	-2.28	99.86	35	4.2	mbGS
4482	2008	12	17	3:21:36	0.45	98.12	48	4.6	mbGS
4483	2008	12	19	5:16:48	-1.75	99.76	28	4.7	mbGS
4484	2008	12	19	1:12:00	-1.74	99.74	27	4.2	mbGS
4485	2008	12	19	1:40:48	-3.83	99.52	35	4.4	mbGS
4486	2008	12	20	0:57:36	-4.43	102.29	35	4.5	mbGS
4487	2008	12	20	20:24:00	0.5	98.01	41	4.3	mbGS
4488	2008	12	23	14:52:48	-2.44	102.05	35	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4489	2008	12	30	22:33:36	-4.79	101.84	35	4.7	mbGS
4490	2008	12	30	14:09:36	1.23	97.18	35	4.5	mbGS
4491	2008	12	30	14:38:24	-4.3	101.22	20	5.9	MwGS
4492	2008	12	30	2:52:48	-4.31	101.25	10	4.5	mbGS
4493	2008	12	30	0:28:48	-4.37	101.19	10	5.1	mbGS
4494	2008	12	31	14:24:00	-4.36	101.24	10	4.1	mbGS
4495	2009	1	1	2:38:24	-4.33	101.3	19	5.5	MwGCMT
4496	2009	1	1	2:52:48	-4.33	101.24	26	5.3	mbGS
4497	2009	1	5	7:55:12	-3.53	100.72	27	5.2	MwGCMT
4498	2009	1	8	12:57:36	1.88	96.72	10	5	mbGS
4499	2009	1	9	1:40:48	-2.23	99.76	16	5.1	mbGS
4500	2009	1	11	8:52:48	-1.59	99.73	35	5	mbGS
4501	2009	1	24	9:50:24	0.11	97.03	35	4.9	MwGCMT
4502	2009	1	26	15:21:36	0.07	100.04	127	5	MwGCMT
4503	2009	1	26	17:31:12	-0.35	98.18	10	5.7	MwGCMT
4504	2009	1	27	17:45:36	0.37	97.37	28	4.9	mbGS
4505	2009	1	28	2:52:48	-0.45	98.18	10	4.4	mbGS
4506	2009	1	28	14:09:36	-0.26	98.28	20	5.7	MwUCMT
4507	2009	1	28	23:31:12	-0.2	98.42	10	5	mbGS
4508	2009	1	28	21:36:00	-0.46	98.15	26	4.9	mbGS
4509	2009	1	28	23:31:12	-0.37	98.21	10	4.7	mbGS
4510	2009	2	14	17:45:36	1.77	97.1	40	4.7	mbGS
4511	2009	2	15	18:28:48	1.72	97.06	38	4.9	mbGS
4512	2009	2	19	11:16:48	0.12	97.1	35	4.1	mbGS
4513	2009	2	23	16:19:12	0.48	98.55	35	5.4	MwUCMT
4514	2009	2	24	13:26:24	1.42	97.17	23	5.6	MwGCMT
4515	2009	2	26	0:14:24	1.06	97.16	35	4.9	mbGS
4516	2009	2	26	3:07:12	-3.41	100.35	3	4.9	mbGS
4517	2009	2	27	11:45:36	1.52	97.09	35	5.1	mbGS
4518	2009	2	27	20:09:36	-3.15	100.53	35	4.5	mbGS
4519	2009	2	28	14:52:48	-1.15	99.98	70	4.4	mbGS
4520	2009	3	3	15:21:36	-4.36	102.12	35	4.3	mbGS
4521	2009	3	7	17:31:12	-3.62	100.54	28	4.3	mbGS
4522	2009	3	10	5:02:24	1.02	97.39	23	4.6	mbGS
4523	2009	3	19	3:21:36	1.63	96.93	35	4.5	mbGS
4524	2009	3	20	11:16:48	1.3	97	35	4.4	mbGS
4525	2009	3	23	13:26:24	1.26	97.15	40	4.3	mbGS
4526	2009	3	25	3:36:00	1.77	99.34	163	4.6	mbGS
4527	2009	3	25	1:26:24	0.73	98.55	89	5	mbGS
4528	2009	3	26	12:00:00	-3.51	100.68	35	4.3	mbGS
4529	2009	3	27	0:14:24	0.17	97.77	35	4.1	mbGS
4530	2009	4	1	16:19:12	-3.51	100.63	26	5.3	MwGCMT
4531	2009	4	11	12:28:48	1.18	97.29	42	4.9	MwGCMT
4532	2009	4	12	19:26:24	-4.56	102.07	35	4.1	mbGS
4533	2009	4	13	18:43:12	-3.83	99.67	35	4.2	mbGS
4534	2009	4	15	18:28:48	-3.08	100.42	19	5.7	MwGCMT
4535	2009	4	15	16:19:12	-3.12	100.47	22	6.3	MwGCMT
4536	2009	4	16	21:50:24	-3.33	100.32	7	5.5	MwGCMT
4537	2009	4	16	13:55:12	-3.24	100.41	22	4.9	mbGS
4538	2009	4	16	8:24:00	-3.22	100.46	41	5	mbGS
4539	2009	4	18	1:40:48	1.3	97.04	23	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4540	2009	4	18	13:40:48	-3.31	100.36	35	4.1	mbGS
4541	2009	4	20	1:12:00	-3.97	100.71	35	4.7	mbGS
4542	2009	4	29	19:55:12	1.25	97.05	15	4.3	mbGS
4543	2009	5	10	8:09:36	-5.44	101.14	31	5.2	MwGCMT
4544	2009	5	18	7:12:00	-4.26	101.24	35	5	mbGS
4545	2009	5	19	6:43:12	-2.15	99.52	35	4.6	mbGS
4546	2009	5	21	7:26:24	1.53	97.04	26	4.5	mbGS
4547	2009	5	23	2:38:24	0.04	100.44	51	4.2	mbGS
4548	2009	5	25	14:09:36	-1.18	100.44	96	4.4	mbGS
4549	2009	6	2	18:57:36	-3.24	100.05	35	4.9	mbGS
4550	2009	6	2	2:09:36	-2.34	100.7	35	4.4	mbGS
4551	2009	6	4	14:52:48	-3.23	100.33	25	4.5	mbGS
4552	2009	6	6	15:07:12	-4.44	102.78	35	4.3	mbGS
4553	2009	6	7	19:55:12	1.15	97.24	35	4.1	mbGS
4554	2009	6	9	2:52:48	1.89	97.13	51	4.4	mbGS
4555	2009	6	11	19:12:00	1.76	97.19	40	4.9	mbGS
4556	2009	6	15	9:07:12	1.68	96.93	35	4.3	mbGS
4557	2009	6	22	9:21:36	-4.26	102.2	51	4.6	mbGS
4558	2009	6	25	11:16:48	-1.2	98.79	44	5	mbGS
4559	2009	6	26	0:57:36	1.11	97.15	35	4.2	mbGS
4560	2009	7	1	13:12:00	0.27	98.66	54	4.4	mbGS
4561	2009	7	1	11:02:24	0.3	96.71	35	5	MwGCMT
4562	2009	7	2	11:02:24	-1.05	100.33	35	5.1	MwGCMT
4563	2009	7	3	1:26:24	-2.58	102.3	163	5	MwGCMT
4564	2009	7	4	23:31:12	-3.76	101.83	35	4.5	mbGS
4565	2009	7	5	23:45:36	1.31	99.7	181	4.5	mbGS
4566	2009	7	7	13:40:48	1.29	97.1	35	4.1	mbGS
4567	2009	7	10	4:04:48	-0.32	98.25	46	5	mbGS
4568	2009	7	11	14:09:36	-3.56	98.71	10	4.3	mbGS
4569	2009	7	12	7:55:12	-3.79	101.05	28	4.7	mbGS
4570	2009	7	12	4:19:12	-1.13	97.54	35	4.4	mbGS
4571	2009	7	13	18:00:00	2.04	97.99	71	4.6	mbGS
4572	2009	7	18	9:36:00	-3.47	100.59	35	4.4	mbGS
4573	2009	7	22	15:36:00	-2.31	99.88	35	4.3	mbGS
4574	2009	7	22	16:48:00	-3.66	101.14	47	4.7	mbGS
4575	2009	7	23	15:50:24	0.19	97.1	35	4.3	mbGS
4576	2009	7	25	0:57:36	1.87	97.02	39	5.2	mbGS
4577	2009	7	28	10:48:00	-5.5	101.71	16	5.6	MwUCMT
4578	2009	7	29	2:52:48	-5.52	101.58	3	5.2	MwGCMT
4579	2009	8	10	6:28:48	-4.89	101.75	58	4.6	mbGS
4580	2009	8	16	16:48:00	-1.48	99.49	20	6.7	MwGCMT
4581	2009	8	16	13:40:48	-1.51	99.58	10	4.9	mbGS
4582	2009	8	16	2:24:00	-1.57	99.51	10	4.7	mbGS
4583	2009	8	16	9:36:00	-1.53	99.43	10	4.7	mbGS
4584	2009	8	16	16:48:00	-1.5	99.58	10	4.2	mbGS
4585	2009	8	16	14:52:48	-1.98	99.1	10	4.5	mbGS
4586	2009	8	16	9:36:00	-1.54	99.52	26	4.4	mbGS
4587	2009	8	16	0:14:24	-1.47	99.47	33	4.9	mbGS
4588	2009	8	16	8:52:48	-1.5	99.38	10	4.2	mbGS
4589	2009	8	16	22:04:48	-1.57	99.34	10	4.7	mbGS
4590	2009	8	16	6:57:36	-1.55	99.42	10	5.4	mbGS

no	year	month	day	time	lat	long	depth	mag	type
4591	2009	8	16	17:45:36	-1.53	99.54	31	4.9	mbGS
4592	2009	8	16	23:31:12	-1.65	99.26	10	4.5	mbGS
4593	2009	8	16	2:24:00	-1.33	99.53	34	4.6	mbGS
4594	2009	8	16	23:31:12	-1.64	99.41	10	4.3	mbGS
4595	2009	8	16	16:19:12	-1.49	99.51	10	4.6	mbGS
4596	2009	8	16	2:09:36	-1.45	99.43	21	5.8	MwGCMT
4597	2009	8	16	0:57:36	-1.57	99.43	10	5	mbGS
4598	2009	8	16	3:21:36	-1.53	99.32	10	4.6	mbGS
4599	2009	8	16	16:33:36	-1.62	99.27	10	4	mbGS
4600	2009	8	16	4:04:48	-1.61	99.46	10	4.4	mbGS
4601	2009	8	16	19:12:00	-1.53	99.27	23	4.9	MwGCMT
4602	2009	8	16	1:26:24	-1.46	99.4	10	5.2	mbGS
4603	2009	8	16	0:28:48	-1.55	99.38	10	4.7	mbGS
4604	2009	8	16	8:24:00	-1.47	99.36	10	4.9	mbGS
4605	2009	8	16	23:02:24	-1.54	99.36	10	4.5	mbGS
4606	2009	8	16	4:19:12	-1.39	99.48	10	4.8	mbGS
4607	2009	8	16	17:16:48	-1.7	99.39	10	4.9	mbGS
4608	2009	8	16	15:07:12	-1.38	99.55	30	5	MwGCMT
4609	2009	8	16	13:40:48	-1.62	99.51	10	4.5	mbGS
4610	2009	8	16	21:21:36	-1.54	99.41	19	4.5	mbGS
4611	2009	8	16	20:24:00	-1.52	99.33	10	4.1	mbGS
4612	2009	8	16	0:43:12	-1.51	99.39	10	4.9	mbGS
4613	2009	8	16	3:21:36	-1.71	99.21	10	4	mbGS
4614	2009	8	16	4:04:48	-1.46	99.38	10	4.7	mbGS
4615	2009	8	17	17:02:24	-4.32	101.81	38	5.3	mbGS
4616	2009	8	17	23:02:24	-1.57	99.55	10	4.9	mbGS
4617	2009	8	17	6:57:36	-1.2	100.01	35	4.4	mbGS
4618	2009	8	17	8:38:24	-1.56	99.4	10	4	mbGS
4619	2009	8	17	6:43:12	-1.6	99.35	10	4.2	mbGS
4620	2009	8	17	10:19:12	-1.59	99.47	10	4.6	mbGS
4621	2009	8	17	15:07:12	-1.59	99.43	10	4.9	mbGS
4622	2009	8	17	4:19:12	-1.54	99.4	10	4.3	mbGS
4623	2009	8	17	11:16:48	-1.44	99.45	10	5	mbGS
4624	2009	8	17	17:16:48	-1.44	99.43	10	4.8	mbGS
4625	2009	8	17	16:04:48	-1.6	99.63	10	4.2	mbGS
4626	2009	8	18	3:07:12	-1.5	99.51	10	4.1	mbGS
4627	2009	8	18	3:50:24	-1.57	99.41	10	4.5	mbGS
4628	2009	8	18	12:28:48	-1.69	99.46	10	4.6	mbGS
4629	2009	8	18	22:04:48	-1.45	99.42	26	4.9	MwGCMT
4630	2009	8	18	18:57:36	-1.5	99.43	10	4.1	mbGS
4631	2009	8	18	0:57:36	-0.93	97.97	34	4.5	mbGS
4632	2009	8	18	21:21:36	-0.96	97.96	19	5.1	mbGS
4633	2009	8	18	0:14:24	-0.91	97.95	10	5.9	MwGS
4634	2009	8	18	8:38:24	-0.99	98.01	31	4.9	mbGS
4635	2009	8	18	1:12:00	-1.58	99.53	10	4.5	mbGS
4636	2009	8	19	4:48:00	-1.44	99.43	10	4.9	mbGS
4637	2009	8	19	3:36:00	-1.37	99.37	10	5.5	MwUCMT
4638	2009	8	19	7:12:00	-1.39	99.43	10	4.7	mbGS
4639	2009	8	19	22:19:12	-1.42	99.48	10	5	MwGCMT
4640	2009	8	19	8:09:36	-1.45	99.56	10	4.5	mbGS
4641	2009	8	19	7:26:24	-1.41	99.48	10	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4642	2009	8	20	11:02:24	-1.62	99.29	10	4	mbGS
4643	2009	8	20	7:12:00	-1.35	99.53	29	4.8	mbGS
4644	2009	8	20	22:33:36	-1.49	99.54	10	4.3	mbGS
4645	2009	8	20	11:45:36	-0.32	99.36	77	4.4	mbGS
4646	2009	8	20	10:04:48	-1.44	99.42	10	4.7	mbGS
4647	2009	8	20	3:36:00	-1.51	99.42	10	4.8	mbGS
4648	2009	8	20	15:50:24	-1.5	99.37	10	4.8	mbGS
4649	2009	8	20	6:14:24	-1.41	99.46	10	4.6	mbGS
4650	2009	8	20	9:36:00	-1.54	99.49	10	4.3	mbGS
4651	2009	8	21	15:21:36	0.84	97.41	35	4.4	mbGS
4652	2009	8	21	23:31:12	0.96	97.43	30	4.6	mbGS
4653	2009	8	21	20:52:48	-1.53	99.51	9	4.8	mbGS
4654	2009	8	22	9:21:36	-1.54	99.39	29	4.6	mbGS
4655	2009	8	22	21:07:12	-2.92	101.08	60	4.7	mbGS
4656	2009	8	23	0:00:00	0.27	96.97	35	5.4	MwGCMT
4657	2009	8	23	6:43:12	-1.76	99.12	10	4.2	mbGS
4658	2009	8	23	20:38:24	-1.65	99.57	18	5.4	MwGS
4659	2009	8	24	11:02:24	-1.57	99.39	10	4	mbGS
4660	2009	8	24	0:00:00	-1.4	99.51	10	4.3	mbGS
4661	2009	8	25	7:12:00	-1.52	99.42	10	4.7	mbGS
4662	2009	8	26	4:48:00	-1.63	99.19	10	4.5	mbGS
4663	2009	8	27	12:43:12	0.25	98.61	35	4.6	mbGS
4664	2009	8	27	2:52:48	-1.49	99.32	10	4.1	mbGS
4665	2009	8	27	11:31:12	-1.43	99.53	10	4.4	mbGS
4666	2009	8	28	17:31:12	-3.38	100.08	10	4.9	mbGS
4667	2009	8	29	4:33:36	-0.94	97.97	35	5	mbGS
4668	2009	8	30	12:43:12	-1.69	99.24	10	4.3	mbGS
4669	2009	8	30	18:28:48	-1.48	99.53	10	4.7	mbGS
4670	2009	9	1	14:52:48	-1.36	99.47	10	4.9	MwGCMT
4671	2009	9	1	13:55:12	-1.43	99.5	32	4.7	mbGS
4672	2009	9	2	22:19:12	-1.59	99.28	10	4.5	mbGS
4673	2009	9	2	3:07:12	-1.51	99.35	10	4.8	mbGS
4674	2009	9	4	6:57:36	-1.03	100.44	45	4.7	mbGS
4675	2009	9	4	17:02:24	-1.47	99.38	10	4.6	mbGS
4676	2009	9	5	1:55:12	1.13	97.19	35	4.8	mbGS
4677	2009	9	5	4:48:00	-1.54	99.3	10	4.7	mbGS
4678	2009	9	5	17:02:24	-1.56	99.31	10	4.3	mbGS
4679	2009	9	6	14:24:00	-1.55	99.39	10	4.1	mbGS
4680	2009	9	6	7:12:00	-1.77	99.42	10	4.1	mbGS
4681	2009	9	8	9:50:24	-1.59	99.4	10	4.1	mbGS
4682	2009	9	8	19:12:00	-1.72	99.45	10	4.2	mbGS
4683	2009	9	8	18:14:24	-2.98	101.03	47	4.9	mbGS
4684	2009	9	8	5:02:24	-1.85	100.87	56	4.4	mbGS
4685	2009	9	10	10:04:48	-1.51	99.3	10	4.6	mbGS
4686	2009	9	16	5:16:48	-1.54	99.4	10	4.5	mbGS
4687	2009	9	16	4:04:48	-4.5	102.67	69	5	MwGCMT
4688	2009	9	18	0:28:48	-1.54	99.34	10	4.9	mbGS
4689	2009	9	18	9:36:00	-1.87	99.35	10	4	mbGS
4690	2009	9	18	18:57:36	0.88	97.49	35	4.4	mbGS
4691	2009	9	19	0:43:12	0.54	100.29	37	4.4	mbGS
4692	2009	9	19	22:33:36	0.53	99.97	38	5.1	MwGCMT

no	year	mon	day	local time	lat	long	depth	mag	type
4693	2009	9	19	23:45:36	1.42	97	36	4.2	mbGS
4694	2009	9	19	3:36:00	0.73	99.39	116	4.5	mbGS
4695	2009	9	22	4:33:36	-3.95	100.33	36	4.8	mbGS
4696	2009	9	22	22:33:36	-1.62	99.28	10	4.6	mbGS
4697	2009	9	24	13:40:48	-2.88	101.15	35	4.5	mbGS
4698	2009	9	25	14:24:00	-1.65	99.54	10	4.5	mbGS
4699	2009	9	27	14:38:24	1.97	97.07	43	4.7	mbGS
4700	2009	9	27	18:57:36	-0.56	98.84	35	4.6	mbGS
4701	2009	9	29	6:43:12	-5.18	100.97	30	4.6	mbGS
4702	2009	9	30	6:00:00	-0.72	99.87	81	7.6	MwGCMT
4703	2009	9	30	19:26:24	-0.73	100.13	83	5.4	mbGS
4704	2009	9	30	14:52:48	-1.48	99.43	10	4.5	mbGS
4705	2009	9	30	21:07:12	-0.84	100.01	92	4.2	mbGS
4706	2009	9	30	12:00:00	-0.85	99.72	89	4.4	mbGS
4707	2009	10	1	3:36:00	-1.32	99.55	10	4.5	mbGS
4708	2009	10	1	7:40:48	-2.48	101.52	9	6.6	MwUCMT
4709	2009	10	1	22:48:00	-2.41	101.42	10	5.3	mbGS
4710	2009	10	1	1:12:00	-2.6	101.46	10	4.4	mbGS
4711	2009	10	1	0:57:36	-2.36	101.66	10	4.8	mbGS
4712	2009	10	1	8:24:00	-0.67	100.22	103	4.4	mbGS
4713	2009	10	2	14:24:00	-2.57	101.57	10	4.5	mbGS
4714	2009	10	2	5:02:24	-2.5	101.7	10	4.5	mbGS
4715	2009	10	2	1:55:12	-0.94	100.45	74	4.5	mbGS
4716	2009	10	3	7:12:00	-2.48	101.51	10	4.4	mbGS
4717	2009	10	5	3:07:12	-0.79	99.87	93	4.8	mbGS
4718	2009	10	5	19:12:00	-4.55	102.64	35	4.4	mbGS
4719	2009	10	7	17:16:48	-0.75	100.12	90	4.6	mbGS
4720	2009	10	11	11:45:36	0.22	97.35	30	4.4	mbGS
4721	2009	10	15	1:55:12	0.36	101.45	82	3.9	mbGS
4722	2009	10	18	15:50:24	-3.54	101.51	59	4.6	mbGS
4723	2009	10	18	19:26:24	-0.94	97.88	28	4.7	mbGS
4724	2009	10	19	3:36:00	-1.74	100.54	73	5	mbGS
4725	2009	10	21	16:04:48	-1.57	99.39	10	4.4	mbGS
4726	2009	10	24	8:09:36	1.02	97.24	35	4.3	mbGS
4727	2009	10	25	7:26:24	-1.57	99.35	10	4.7	mbGS
4728	2009	10	25	3:07:12	-1.52	100.41	43	4.4	mbGS
4729	2009	10	26	2:38:24	-0.84	99.82	88	4.4	mbGS
4730	2009	10	27	0:00:00	-1.71	99.21	10	4	mbGS
4731	2009	10	29	19:40:48	-1.5	99.41	10	4.5	mbGS
4732	2009	10	31	4:19:12	-3.63	101.98	81	4.7	mbGS
4733	2009	11	1	10:04:48	-1.49	99.17	10	4.2	mbGS
4734	2009	11	2	0:00:00	-4.42	101.79	52	4.5	mbGS
4735	2009	11	9	6:57:36	-0.86	99.83	84	4	mbGS
4736	2009	11	10	12:14:24	-1.49	99.27	11	4.9	mbGS
4737	2009	11	10	17:45:36	-0.8	100.13	56	4.4	mbGS
4738	2009	11	11	19:40:48	-1.56	99.44	10	4.7	mbGS
4739	2009	11	12	15:21:36	0.35	98.42	52	5	mbGS
4740	2009	11	12	0:14:24	-1.95	99.48	10	4.3	mbGS
4741	2009	11	14	14:24:00	-1.37	99.52	10	4.4	mbGS
4742	2009	11	14	6:00:00	0.82	96.84	11	4.5	mbGS
4743	2009	11	17	5:31:12	1.26	97.07	35	4.4	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4744	2009	11	18	8:52:48	-3.94	100.86	35	4.7	mbGS
4745	2009	11	25	17:16:48	0.97	98.67	70	4.2	mbGS
4746	2009	11	26	19:12:00	1.33	99.29	8	4.1	mbGS
4747	2009	11	28	18:00:00	-2.25	100.87	35	4.5	mbGS
4748	2009	11	29	1:55:12	-0.77	99.98	90	4.3	mbGS
4749	2009	11	30	10:48:00	-4.56	101.99	39	4.4	mbGS
4750	2009	12	6	10:19:12	0.08	97.11	33	4.7	mbGS
4751	2009	12	6	18:57:36	0.03	97.09	32	4.6	mbGS
4752	2009	12	6	11:31:12	0.12	97.18	30	4.2	mbGS
4753	2009	12	7	0:00:00	0.12	97.11	27	4.9	MwGCMT
4754	2009	12	7	10:48:00	0.14	97.12	31	4.6	mbGS
4755	2009	12	8	10:04:48	-1.48	99.49	38	4.2	mbGS
4756	2009	12	9	21:36:00	2.42	99.21	166	4.4	mbGS
4757	2009	12	10	1:26:24	-1.98	100.87	88	4.6	mbGS
4758	2009	12	11	11:31:12	-1.07	97.53	35	4.4	mbGS
4759	2009	12	12	13:55:12	1.96	99.37	163	4.5	mbGS
4760	2009	12	16	4:48:00	0.93	97.4	35	4.2	mbGS
4761	2009	12	23	4:48:00	-1.43	99.39	19	6	MwUCMT
4762	2009	12	23	1:40:48	-1.45	99.4	10	4.8	mbGS
4763	2009	12	23	0:14:24	-1.37	99.63	25	4.5	mbGS
4764	2009	12	23	14:38:24	-1.71	99.06	10	4	mbGS
4765	2009	12	24	11:16:48	-1.51	99.46	10	4.6	mbGS
4766	2009	12	25	12:28:48	-1.51	99.36	27	4.6	mbGS
4767	2010	1	1	4:48:00	-1.9	101.14	27	4.3	mbGS
4768	2010	1	4	7:26:24	0.39	97.04	35	4.4	mbGS
4769	2010	1	7	12:00:00	-1.93	99.56	10	4.1	mbGS
4770	2010	1	9	2:52:48	-1.47	99.44	37	4.3	mbGS
4771	2010	1	12	19:40:48	-1.46	99.46	26	4.3	mbGS
4772	2010	1	16	21:21:36	-1.5	99.43	10	4	mbGS
4773	2010	1	17	14:38:24	-2.48	101.92	150	4.4	mbGS
4774	2010	1	19	0:28:48	1.02	97.3	35	4.4	mbGS
4775	2010	1	25	8:09:36	-4.26	102.69	61	5.2	mbGS
4776	2010	1	26	22:48:00	-0.32	99.09	63	5.2	mbGS
4777	2010	1	27	16:19:12	1.7	97.72	50	4.5	mbGS
4778	2010	1	27	16:48:00	0.17	98.07	45	4.5	mbGS
4779	2010	1	31	6:28:48	-2.88	100.91	50	5.3	mbGS
4780	2010	2	2	22:48:00	-3.45	99.94	10	4.8	mbGS
4781	2010	2	5	22:33:36	-0.9	99.85	79	4.8	mbGS
4782	2010	2	5	6:28:48	-1.55	99.3	27	4.5	mbGS
4783	2010	2	7	12:57:36	-3.42	102.92	132	4.3	mbGS
4784	2010	2	9	5:31:12	1.2	96.93	12	4.5	mbGS
4785	2010	2	10	12:00:00	1.52	97.06	30	5	mbGS
4786	2010	2	11	10:04:48	-3.28	100.21	10	4.7	mbGS
4787	2010	2	12	14:09:36	-2.13	100.93	35	4.5	mbGS
4788	2010	2	14	20:52:48	-1.44	99.44	38	4.6	mbGS
4789	2010	2	17	15:36:00	1.33	98.34	61	4.3	mbGS
4790	2010	2	22	7:55:12	-3.53	101.52	55	4.9	mbGS
4791	2010	2	26	16:04:48	-4.72	100.7	10	4.3	mbGS
4792	2010	2	28	22:33:36	-3.75	100.58	42	4.7	mbGS
4793	2010	2	28	20:38:24	2.11	99.01	58	5.1	mbGS
4794	2010	2	28	10:04:48	2.07	98.87	25	4	mbGS

no.	year	mon	day	time	lat	long	depth	mag	type
4795	2010	2	28	13:40:48	1.98	99	10	4	mbGS
4796	2010	3	5	16:19:12	-3.76	100.99	26	6.8	MwUCMT
4797	2010	3	5	22:04:48	-3.76	100.94	35	5.4	mbGS
4798	2010	3	5	15:36:00	-3.88	100.86	33	4.5	mbGS
4799	2010	3	6	13:12:00	-2.69	101.03	79	4.4	mbGS
4800	2010	3	12	1:26:24	-0.85	99.94	77	4.8	mbGS
4801	2010	3	12	0:57:36	1.36	97.08	35	4.6	mbGS
4802	2010	3	13	6:57:36	1.34	97.2	35	5.8	MwUCMT
4803	2010	3	13	13:26:24	1.24	97.09	37	4.1	mbGS
4804	2010	3	14	16:04:48	0.93	99.47	26	4.8	mbGS
4805	2010	3	15	6:57:36	1.19	97.14	36	4.8	mbGS
4806	2010	3	15	17:02:24	-1.42	101.03	40	4.6	mbGS
4807	2010	3	18	6:43:12	-0.95	99.77	35	3.8	mbGS
4808	2010	3	21	20:24:00	-4.54	101.8	37	4.4	mbGS
4809	2010	3	21	1:40:48	2.11	98.93	35	4.2	mbGS
4810	2010	3	21	23:02:24	-3.49	102.28	96	4.9	mbGS
4811	2010	3	22	0:43:12	-4.57	101.77	35	4.2	mbGS
4812	2010	3	27	14:52:48	-1.51	99.38	35	4.2	mbGS
4813	2010	3	29	14:52:48	0.8	97.42	21	4.3	mbGS
4814	2010	3	29	1:40:48	0.12	97.64	35	4.1	mbGS
4815	2010	3	31	9:21:36	-2.32	99.95	35	4.7	mbGS
4816	2010	4	1	23:16:48	-3.67	101.09	54	4.7	mbGS
4817	2010	4	2	7:12:00	-1.85	100.57	82	4.6	mbGS
4818	2010	4	3	6:00:00	1.77	99.01	121	4.8	mbGS
4819	2010	4	3	18:14:24	-2.15	100.14	47	5.1	mbGS
4820	2010	4	5	11:16:48	-0.57	100.38	12	4.3	mbGS
4821	2010	4	6	1:55:12	-0.82	100.44	35	4.4	mbGS
4822	2010	4	6	15:36:00	-2.48	99.62	27	4.2	mbGS
4823	2010	4	6	7:40:48	1.5	97.12	35	4	mbGS
4824	2010	4	7	7:40:48	0.98	96.86	35	4.4	mbGS
4825	2010	4	7	3:36:00	0.95	96.88	35	4.2	mbGS
4826	2010	4	8	7:40:48	1.65	97.08	31	4.6	mbGS
4827	2010	4	8	13:40:48	1.65	96.95	35	4.2	mbGS
4828	2010	4	9	17:02:24	1.86	99.17	34	4.4	mbGS
4829	2010	4	9	11:45:36	1.65	99.17	35	4.2	mbGS
4830	2010	4	10	6:14:24	-1.32	97.64	35	4.3	mbGS
4831	2010	4	11	13:12:00	-5.56	101.73	13	5.2	MwGS
4832	2010	4	14	10:04:48	1.98	97.07	41	4.4	mbGS
4833	2010	4	17	1:12:00	1.79	96.92	35	4.1	mbGS
4834	2010	4	21	23:02:24	-0.54	100.99	174	4.9	mbGS
4835	2010	5	5	5:02:24	-4.05	101.1	27	6.6	MwGCMT
4836	2010	5	5	16:33:36	-3.93	101.1	44	4.7	mbGS
4837	2010	5	5	1:55:12	-4.13	101.16	30	4	mbGS
4838	2010	5	6	1:55:12	-4.3	100.96	22	4.6	mbGS
4839	2010	5	6	12:00:00	-4.32	100.99	25	4.7	mbGS
4840	2010	5	6	20:38:24	-3.88	101	27	5.3	mbGS
4841	2010	5	10	17:45:36	-2.88	101.1	56	4.6	mbGS
4842	2010	5	10	4:04:48	-4.46	101.96	47	4.7	mbGS
4843	2010	5	12	23:45:36	-3.59	100.71	35	4.7	mbGS
4844	2010	5	13	10:33:36	-3.28	102.93	193	4.7	mbGS
4845	2010	5	14	7:55:12	-2.65	101.86	62	4.6	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4846	2010	5	16	22:48:00	-0.57	99.53	68	4.2	mbGS
4847	2010	5	17	23:45:36	1.86	96.97	34	4.1	mbGS
4848	2010	5	26	7:55:12	-1.69	99.72	10	4.4	mbGS
4849	2010	5	28	18:00:00	-3.86	100.97	24	5.3	MwGS
4850	2010	5	30	8:52:48	-3.91	101.08	38	4.1	mbGS
4851	2010	6	4	9:07:12	-4.29	102.35	59	4.9	mbGS
4852	2010	6	5	18:43:12	-4.83	102.44	35	4.5	mbGS
4853	2010	6	6	13:55:12	1.33	97.14	36	4.3	mbGS
4854	2010	6	8	4:04:48	-2.75	101.58	151	4.4	mbGS
4855	2010	6	10	2:24:00	0.85	97.16	44	4.4	mbGS
4856	2010	6	12	9:36:00	0.06	97.21	35	4.3	mbGS
4857	2010	6	14	12:28:48	2.06	97.69	35	4	mbGS
4858	2010	6	14	17:02:24	1.4	96.87	12	4.6	mbGS
4859	2010	6	14	12:00:00	0.34	98.35	7	4.5	mbGS
4860	2010	6	15	9:50:24	-1.88	99.66	30	4.6	mbGS
4861	2010	6	19	22:04:48	-2.34	100.36	53	4.7	mbGS
4862	2010	6	24	11:45:36	1.65	97.08	35	4.3	mbGS
4863	2010	6	24	8:09:36	-3.14	100.35	35	4.8	mbGS
4864	2010	6	24	11:02:24	-2.31	100.34	54	4.7	mbGS
4865	2010	6	26	15:36:00	0.39	98.63	58	4.8	mbGS
4866	2010	6	27	19:26:24	-1.72	99.36	11	4.4	mbGS
4867	2010	6	27	1:40:48	-4.49	101.34	27	5.5	MwGCMT
4868	2010	6	29	21:36:00	1.24	97.11	40	4.4	mbGS
4869	2010	6	30	19:26:24	-4.5	101.4	32	4.8	mbGS
4870	2010	6	30	11:31:12	-0.74	99.79	88	5.4	mbGS
4871	2010	6	30	2:52:48	-0.58	100.06	109	4.7	mbGS
4872	2010	7	1	13:40:48	1.24	97.19	37	5	mbGS
4873	2010	7	1	13:12:00	1.17	97.08	35	4.4	mbGS
4874	2010	7	3	15:07:12	1.65	96.93	37	4.5	mbGS
4875	2010	7	6	19:12:00	2.31	99.1	151	4.3	mbGS
4876	2010	7	8	15:36:00	-2.96	102.14	63	4.4	mbGS
4877	2010	7	11	0:28:48	-3.16	100.44	35	4.4	mbGS
4878	2010	7	12	10:04:48	0.34	98.85	75	4.5	mbGS
4879	2010	7	13	5:02:24	1.32	97.15	40	4.9	mbGS
4880	2010	7	13	6:14:24	1.39	97.14	32	5.2	mbGS
4881	2010	7	13	20:38:24	-2.43	101.5	7	4.4	mbGS
4882	2010	7	13	6:28:48	1.37	97.18	42	5	mbGS
4883	2010	7	14	5:31:12	-1.87	100.11	35	4.4	mbGS
4884	2010	7	20	21:36:00	-0.37	98.06	35	4.4	mbGS
4885	2010	7	21	11:45:36	-5	101.13	25	5.2	mbGS
4886	2010	7	22	6:28:48	-5.15	100.99	35	4.6	mbGS
4887	2010	7	22	1:55:12	-2	99.99	35	4.6	mbGS
4888	2010	7	22	11:45:36	0.45	97.38	35	4	mbGS
4889	2010	7	23	6:00:00	-4.53	102.45	35	5.1	mbGS
4890	2010	7	24	15:36:00	1	99.54	42	5.3	mbGS
4891	2010	7	24	20:24:00	0.94	99.58	35	4.7	mbGS
4892	2010	7	24	14:09:36	-1.35	99.53	35	5	mbGS
4893	2010	7	24	13:55:12	-1.54	99.27	35	4.1	mbGS
4894	2010	7	25	7:12:00	1.69	96.78	17	4.2	mbGS
4895	2010	7	27	9:21:36	-3.59	101.92	86	4.8	mbGS
4896	2010	7	28	3:50:24	-3.17	100.83	35	4.8	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4897	2010	8	3	13:26:24	1.25	97.17	35	4.3	mbGS
4898	2010	8	4	15:07:12	-3.66	100.64	26	4.6	mbGS
4899	2010	8	5	17:16:48	-2.98	101.08	51	4.2	mbGS
4900	2010	8	10	12:14:24	0.89	96.42	35	4.4	mbGS
4901	2010	8	12	13:12:00	1.26	97	30	4.4	mbGS
4902	2010	8	14	1:12:00	-3.95	100.57	35	5	mbGS
4903	2010	8	15	8:09:36	-3.53	99.69	35	4.7	mbGS
4904	2010	8	19	5:16:48	-3.29	102.71	91	4.3	mbGS
4905	2010	8	24	10:19:12	-2.92	102.03	112	4.6	mbGS
4906	2010	8	27	18:28:48	-5.57	101.61	35	4.6	mbGS
4907	2010	8	28	15:21:36	1.31	97.04	31	4.4	mbGS
4908	2010	9	1	13:26:24	-4.31	102.19	61	4.4	mbGS
4909	2010	9	2	15:50:24	0.09	97.12	37	4.6	mbGS
4910	2010	9	3	20:38:24	-3.65	101.96	73	5.6	mbGS
4911	2010	9	5	7:40:48	-4.3	100.89	24	4.5	mbGS
4912	2010	9	10	18:43:12	-4.49	102.07	35	4.4	mbGS
4913	2010	9	12	10:48:00	-2.55	99.68	28	4.1	mbGS
4914	2010	9	13	19:26:24	-0.58	99.16	51	4.8	mbGS
4915	2010	9	13	7:40:48	0.62	100.88	29	4.3	mbGS
4916	2010	9	15	9:50:24	1.09	96.96	23	4.3	mbGS
4917	2010	9	15	14:24:00	0.77	97.03	27	4	mbGS
4918	2010	9	17	14:52:48	1.07	97.19	35	4.5	mbGS
4919	2010	9	18	21:07:12	-2.43	100.48	50	4.3	mbGS
4920	2010	9	19	18:57:36	0.15	100.25	165	4.4	mbGS
4921	2010	9	21	11:16:48	-0.62	99.04	51	4.2	mbGS
4922	2010	9	25	19:55:12	-3.54	100.57	35	4.2	mbGS
4923	2010	9	28	17:02:24	1.94	96.93	25	5.3	mbGS
4924	2010	9	30	6:57:36	1.19	97.22	38	4.3	mbGS
4925	2010	10	2	18:14:24	-4.52	102.51	55	4.1	mbGS
4926	2010	10	2	10:48:00	1.81	96.99	38	4.4	mbGS
4927	2010	10	4	3:07:12	-2.22	100.86	74	4.7	mbGS
4928	2010	10	5	11:45:36	-4.06	101.17	50	4.6	mbGS
4929	2010	10	5	19:26:24	-4.59	102.07	51	4.7	mbGS
4930	2010	10	7	19:26:24	-4.21	101.93	55	4.5	mbGS
4931	2010	10	7	22:04:48	-0.36	99.99	35	4.1	mbGS
4932	2010	10	9	14:52:48	-4.78	101.85	43	4.2	mbGS
4933	2010	10	11	18:28:48	1.95	99.07	139	4.1	mbGS
4934	2010	10	13	18:43:12	0.07	100.18	47	4.2	UKDJA
4935	2010	10	13	18:14:24	-5.53	101.82	11	4.3	mbGS
4936	2010	10	14	10:04:48	1.04	97.26	35	4.1	mbGS
4937	2010	10	14	21:21:36	1.35	99.92	199	4.7	mbGS
4938	2010	10	17	10:48:00	1.19	97.24	32	4.3	mbGS
4939	2010	10	18	6:14:24	-3.35	101.64	69	4.9	mbGS
4940	2010	10	19	22:48:00	-4.71	102.6	54	4.7	mbGS
4941	2010	10	22	18:28:48	-4.66	102.54	57	4.3	mbGS
4942	2010	10	25	11:02:24	-3.49	100.08	20	7.8	MwGCMT
4943	2010	10	25	12:28:48	-3.62	99.92	10	4.7	mbGS
4944	2010	10	25	2:38:24	-2.94	100.14	10	4	mbGS
4945	2010	10	25	22:04:48	-3.34	100.12	26	4.8	mbGS
4946	2010	10	25	0:43:12	-3.08	99.96	10	4	mbGS
4947	2010	10	25	0:28:48	-3.41	99.94	25	5	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
4948	2010	10	25	12:00:00	-3.78	99.92	11	4.7	mbGS
4949	2010	10	25	12:28:48	-3.22	100.22	26	4.5	mbGS
4950	2010	10	25	5:16:48	-3.76	99.5	10	4.1	mbGS
4951	2010	10	25	22:48:00	-3.04	100.21	19	4.4	mbGS
4952	2010	10	25	11:02:24	-3.6	99.68	10	4.3	mbGS
4953	2010	10	25	17:45:36	-3.46	99.88	31	4.7	mbGS
4954	2010	10	25	15:50:24	-4.09	99.67	10	4	mbGS
4955	2010	10	25	20:24:00	-3.45	99.97	26	4.8	mbGS
4956	2010	10	25	14:24:00	-2.85	99.46	3	4.4	mbGS
4957	2010	10	25	21:50:24	-2.86	99.78	26	4.9	mbGS
4958	2010	10	25	0:00:00	-3.51	99.75	10	4.7	mbGS
4959	2010	10	25	3:36:00	-2.96	100.37	26	6.3	MwGCMT
4960	2010	10	25	7:12:00	-2.96	100.5	31	5.7	mbGS
4961	2010	10	25	0:00:00	-3.15	100.27	10	4.8	mbGS
4962	2010	10	25	13:26:24	-3.59	99.89	10	4.4	mbGS
4963	2010	10	25	11:02:24	-3.46	99.92	10	4.9	mbGS
4964	2010	10	25	1:40:48	-3.52	99.66	10	4	mbGS
4965	2010	10	25	14:24:00	-3.18	99.33	10	4.6	mbGS
4966	2010	10	25	0:43:12	-2.81	100.09	18	5	mbGS
4967	2010	10	25	6:28:48	-4.45	102.62	63	4.9	mbGS
4968	2010	10	25	12:43:12	-3.66	99.81	10	4.6	mbGS
4969	2010	10	25	8:52:48	-3.3	100.46	19	5.9	MwGCMT
4970	2010	10	25	0:57:36	-3.41	99.48	10	5	mbGS
4971	2010	10	26	22:33:36	-3.56	99.75	10	4.5	mbGS
4972	2010	10	26	18:14:24	-3.26	100.26	10	5	mbGS
4973	2010	10	26	11:02:24	-3.1	100.14	20	4.8	mbGS
4974	2010	10	26	13:55:12	-3.45	99.57	10	4.3	mbGS
4975	2010	10	26	13:40:48	-3.59	99.81	16	4.9	mbGS
4976	2010	10	26	17:02:24	-3.23	100.28	10	4.2	mbGS
4977	2010	10	26	1:26:24	-3.36	99.65	10	4.1	mbGS
4978	2010	10	26	19:12:00	-2.79	99.78	10	4.6	mbGS
4979	2010	10	26	2:09:36	-3.7	99.75	10	5.5	mbGS
4980	2010	10	26	6:57:36	-3.24	100.11	10	4.7	mbGS
4981	2010	10	26	20:38:24	-2.72	99.82	22	4.7	mbGS
4982	2010	10	26	23:45:36	-2.49	99.92	31	5.2	mbGS
4983	2010	10	26	9:36:00	-3.52	99.51	10	4.4	mbGS
4984	2010	10	26	2:24:00	-3.2	100.22	19	4.5	mbGS
4985	2010	10	26	11:16:48	-2.28	99.55	26	4.7	mbGS
4986	2010	10	26	12:00:00	-3.54	99.38	10	4.1	mbGS
4987	2010	10	26	15:50:24	-5.01	101.91	24	4.5	mbGS
4988	2010	10	26	4:33:36	-2.39	99.46	10	4	mbGS
4989	2010	10	26	15:50:24	-3.59	99.81	10	4.1	mbGS
4990	2010	10	26	18:28:48	1.19	97.12	35	4.2	mbGS
4991	2010	10	26	14:24:00	-3.6	99.79	4	5.1	mbGS
4992	2010	10	26	5:45:36	-3.87	99.2	10	4.1	mbGS
4993	2010	10	26	0:43:12	-2.26	99.57	17	4.8	mbGS
4994	2010	10	26	18:43:12	-3.39	99.46	10	4.4	mbGS
4995	2010	10	26	3:21:36	-3.69	99.72	10	4.7	mbGS
4996	2010	10	26	12:28:48	-3.78	99.62	11	5	mbGS
4997	2010	10	26	12:00:00	-2.36	99.85	25	5.5	MwGCMT
4998	2010	10	27	3:07:12	-3.5	99.66	32	5.2	mbGS

no.	year	month	day	time	lat	long	depth	mag	type
4999	2010	10	27	17:16:48	-3.46	99.57	31	5.1	mbGS
5000	2010	10	27	17:31:12	-3.79	99.52	10	4.3	mbGS
5001	2010	10	27	13:55:12	-3.91	99.53	10	4.6	mbGS
5002	2010	10	27	2:52:48	-3.54	99.86	10	5.2	mbGS
5003	2010	10	27	3:36:00	-2.74	99.59	10	4.5	mbGS
5004	2010	10	27	21:36:00	-3.55	99.5	10	4.5	mbGS
5005	2010	10	27	7:26:24	-3.57	99.56	2	5.1	mbGS
5006	2010	10	27	20:09:36	-3.8	99.89	10	4.1	mbGS
5007	2010	10	27	10:48:00	-2.51	99.57	10	4.2	mbGS
5008	2010	10	27	10:04:48	-2.91	99.84	13	4.9	mbGS
5009	2010	10	28	16:33:36	-3.77	99.71	10	4.3	mbGS
5010	2010	10	28	15:07:12	-3.18	100.2	10	4.5	mbGS
5011	2010	10	28	6:28:48	-3.48	99.45	10	4.4	mbGS
5012	2010	10	29	1:40:48	-3.66	100.1	10	4.4	mbGS
5013	2010	10	29	14:09:36	-3.25	100.02	10	4.2	mbGS
5014	2010	10	29	13:40:48	-3.62	99.62	10	4.5	mbGS
5015	2010	10	29	23:31:12	-3.84	99.75	10	4.4	mbGS
5016	2010	10	29	12:14:24	-3.68	99.67	10	4.2	mbGS
5017	2010	10	29	16:33:36	-3.42	99.65	5	5	mbGS
5018	2010	10	29	4:04:48	-4.86	101.71	35	4.2	mbGS
5019	2010	10	29	21:21:36	-3.78	99.74	31	4.5	mbGS
5020	2010	10	29	2:09:36	-3.54	99.44	10	4	mbGS
5021	2010	10	30	18:57:36	-3.62	99.5	31	4.6	mbGS
5022	2010	10	30	22:04:48	-3.75	99.76	28	4.4	mbGS
5023	2010	10	30	3:07:12	-3.47	99.72	10	4.3	mbGS
5024	2010	10	31	4:19:12	-3.66	99.74	10	4.8	mbGS
5025	2010	10	31	20:24:00	-3.64	99.75	10	4.3	mbGS
5026	2010	10	31	1:12:00	-3.76	99.55	10	4.1	mbGS
5027	2010	10	31	6:00:00	-3.76	99.59	10	4.1	mbGS
5028	2010	10	31	18:00:00	-3.56	99.82	10	4	mbGS
5029	2010	10	31	22:19:12	-3.26	99.75	10	4.5	mbGS
5030	2010	10	31	19:26:24	-3.46	100.04	9	5.1	mbGS
5031	2010	10	31	21:50:24	-3.73	100.22	10	4.3	mbGS
5032	2010	11	1	12:00:00	-3.68	99.68	10	4.3	mbGS
5033	2010	11	1	12:28:48	-3.53	99.69	29	4.5	mbGS
5034	2010	11	1	20:24:00	-3.57	99.6	10	4.3	mbGS
5035	2010	11	1	17:02:24	-2.75	99.38	26	4.5	mbGS
5036	2010	11	2	4:48:00	-3.62	99.6	10	4.5	mbGS
5037	2010	11	2	21:21:36	-3.83	99.99	10	4.5	mbGS
5038	2010	11	3	1:12:00	-3.62	99.82	10	4.6	mbGS
5039	2010	11	4	8:38:24	-3.49	100.38	14	4.7	mbGS
5040	2010	11	4	5:16:48	-3.68	99.72	10	4.6	mbGS
5041	2010	11	4	2:52:48	-3.01	100.17	26	4.4	mbGS
5042	2010	11	5	17:16:48	-2.18	99.42	35	4.9	mbGS
5043	2010	11	6	9:50:24	-3.75	100.77	24	4.5	mbGS
5044	2010	11	6	23:16:48	-3.55	99.75	10	4.5	mbGS
5045	2010	11	7	10:04:48	-3.72	99.7	10	4.1	mbGS
5046	2010	11	7	4:48:00	-3.71	99.39	10	4.1	mbGS
5047	2010	11	7	1:55:12	-3.67	99.65	2	5	mbGS
5048	2010	11	7	8:52:48	-3.79	99.6	10	4.3	mbGS
5049	2010	11	7	14:38:24	-3.77	99.47	10	4.2	mbGS

no	year	mon	day	time	lat	long	depth	mag	type
5050	2010	11	7	0:00:00	-3.79	99.54	10	4	mbGS
5051	2010	11	7	9:07:12	-3.69	99.56	10	4.2	mbGS
5052	2010	11	7	4:19:12	-3.67	99.64	10	4.2	mbGS
5053	2010	11	7	7:55:12	-3.49	99.64	10	4.4	mbGS
5054	2010	11	8	13:40:48	-3.63	99.78	33	4.6	mbGS
5055	2010	11	8	14:09:36	-3.72	99.68	10	4.3	mbGS
5056	2010	11	9	10:48:00	-1.74	99.42	27	5.3	MwGS
5057	2010	11	9	20:09:36	-3.77	99.65	10	4.4	mbGS
5058	2010	11	9	12:14:24	-3.79	99.53	10	4.3	mbGS
5059	2010	11	11	6:57:36	0.3	98.24	35	4	mbGS
5060	2010	11	12	8:38:24	-3.07	99.89	10	4.6	mbGS
5061	2010	11	14	4:04:48	-3.62	99.19	10	4.2	mbGS
5062	2010	11	14	4:33:36	-3.79	100.05	28	4.9	mbGS
5063	2010	11	14	8:52:48	-3.53	99.61	35	4.5	mbGS
5064	2010	11	15	17:31:12	1.31	97.13	39	4.9	mbGS
5065	2010	11	15	4:04:48	-3.26	100.41	35	4.1	mbGS
5066	2010	11	15	6:43:12	-3.11	101.27	58	5	mbGS
5067	2010	11	17	6:14:24	-3.26	100.35	35	4.2	mbGS
5068	2010	11	17	14:52:48	-3.18	100.25	35	4.5	mbGS
5069	2010	11	19	20:52:48	-3.8	99.82	10	4.5	mbGS
5070	2010	11	19	16:33:36	-3.35	99.46	10	4.5	mbGS
5071	2010	11	20	9:36:00	-3.26	100.26	14	4.8	mbGS
5072	2010	11	21	6:28:48	-3.67	99.78	10	4.2	mbGS
5073	2010	11	22	21:07:12	-3.67	99.57	10	4.6	mbGS
5074	2010	11	22	16:04:48	-3.33	99.67	10	4.4	mbGS
5075	2010	11	22	1:26:24	-3.66	99.61	10	4.7	mbGS
5076	2010	11	23	11:16:48	-3.78	100.05	39	4.9	mbGS
5077	2010	11	23	13:26:24	-3.74	99.63	10	4.1	mbGS
5078	2010	11	25	21:21:36	1.02	99.44	41	4.5	mbGS
5079	2010	11	26	0:00:00	-4.39	102.02	40	4.2	mbGS
5080	2010	11	27	10:19:12	-3.56	99.94	10	4.9	mbGS
5081	2010	11	27	21:50:24	-3.94	99.53	10	4.3	mbGS
5082	2010	11	28	5:31:12	-3.62	99.63	10	4.9	mbGS
5083	2010	11	29	13:26:24	-3.6	99.97	14	4.8	mbGS
5084	2010	11	30	19:55:12	-3.67	99.84	13	4.7	mbGS
5085	2010	11	30	21:21:36	-3.84	99.67	10	4.3	mbGS
5086	2010	11	30	1:40:48	-2.92	100.16	35	4.9	mbGS
5087	2010	11	30	22:33:36	-3.67	99.46	10	4.4	mbGS
5088	2010	12	1	11:45:36	-2.93	100.16	35	4.8	mbGS
5089	2010	12	3	7:55:12	-1.2	100.2	29	4.4	mbGS
5090	2010	12	3	23:16:48	-3.88	99.67	10	4.1	mbGS
5091	2010	12	4	20:24:00	-2.39	100.03	35	4.3	mbGS
5092	2010	12	4	10:33:36	-1.41	100.14	3	4.1	mbGS
5093	2010	12	5	5:02:24	-3.38	99.4	10	4	mbGS
5094	2010	12	6	1:40:48	-3.85	100.01	31	4.6	mbGS
5095	2010	12	6	18:14:24	-3.78	100.16	35	5.3	mbGS
5096	2010	12	8	22:33:36	-1.89	99.59	41	4.2	mbGS
5097	2010	12	9	21:21:36	-4.25	102.17	53	4.6	mbGS
5098	2010	12	11	15:50:24	-3.86	100.2	27	4.7	mbGS
5099	2010	12	18	15:36:00	-0.78	100.14	97	4.2	mbGS
5100	2010	12	19	2:38:24	-0.95	97.92	22	4.7	mbGS

no	year	mon	day	shot time	lat	long	depth	mag	type
5101	2010	12	22	0:28:48	1.3	96.99	27	4.6	mbGS
5102	2010	12	24	3:36:00	-1.87	100.55	89	4	mbGS
5103	2010	12	25	14:38:24	1.15	97.09	35	4.2	mbGS
5104	2010	12	25	3:21:36	1.66	96.88	28	4.2	mbGS
5105	2010	12	29	17:31:12	-1.07	100.45	102	4.4	mbGS
5106	2010	12	29	8:52:48	-3.23	99.59	35	4.5	mbGS
5107	2010	12	31	2:38:24	0.88	97.4	38	4	mbGS
5108	1914	6	25	0:00:00	-4.5	99	60	8.1	NOAA
5109	1935	12	28	0:00:00	0	98.3	60	8.1	NOAA
5110	1943	6	9	0:00:00	-1	101	50	7.6	NOAA
5111	1971	2	4	0:00:00	0.5	98.7	40	7.1	NOAA
5112	1979	12	15		-3.4	102.6	33	6.4	NOAA
5113	1984	8	27	0:00:00	1.9	99.1	40	5.3	NOAA
5114	1987	4	25	0:00:00	2.4	98.9	30	6.5	NOAA

no	year	mon	day	time	lat	long	depth	mag	type
5101	2010	12	22	0:28:48	1.3	96.99	27	4.6	mbGS
5102	2010	12	24	3:36:00	-1.87	100.55	89	4	mbGS
5103	2010	12	25	14:38:24	1.15	97.09	35	4.2	mbGS
5104	2010	12	25	3:21:36	1.66	96.88	28	4.2	mbGS
5105	2010	12	29	17:31:12	-1.07	100.45	102	4.4	mbGS
5106	2010	12	29	8:52:48	-3.23	99.59	35	4.5	mbGS
5107	2010	12	31	2:38:24	0.88	97.4	38	4	mbGS
5108	1914	6	25	0:00:00	-4.5	99	60	8.1	NOAA
5109	1935	12	28	0:00:00	0	98.3	60	8.1	NOAA
5110	1943	6	9	0:00:00	-1	101	50	7.6	NOAA
5111	1971	2	4	0:00:00	0.5	98.7	40	7.1	NOAA
5112	1979	12	15		-3.4	102.6	33	6.4	NOAA
5113	1984	8	27	0:00:00	1.9	99.1	40	5.3	NOAA
5114	1987	4	25	0:00:00	2.4	98.9	30	6.5	NOAA

BIODATA PENULIS



Penulis di Malang, 17 Maret 1989, merupakan anak terakhir dari dua bersaudara. Penulis telah menempuh pendidikan formal yaitu di TK Dharma Wanita Tulungagung, SDN Pangarangan 1 Sumenep, SMPN 1 Sumenep, dan SMAN 1 Sumenep. Setelah lulus dari SMAN pada tahun 2007, Penulis mengikuti seleksi penerimaan mahasiswa baru dan diterima di Jurusan Teknik Sipil FTSP-ITS pada tahun pada tahun yang sama, dan terdaftar dengan NRP. 3107 100 064. Di Jurusan Teknik Sipil ini Penulis mengambil judul Tugas Akhir pada Bidang Studi Struktur. Jika ingin berkomunikasi dengan penuli bisa melalui email : Unbreak_spirit@yahoo.com