

中国地震台网观测报告

BULLETIN OF SEISMOLOGICAL
OBSERVATIONS OF CHINESE STATIONS

1977

国家地震局地球物理研究所编

地震出版社出版

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国家地震局地球物理研究所

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目 录

说 明

台站目录 (1)

仪器常数 (2)

仪器放大倍率示意图 (3)

1977年地震活动简况 (5)

1977年地震目录..... (9)

一、全世界地震目录..... (9)

二、中国及邻区地震目录..... (22)

震中分布图 (27)

一、世界震中分布..... (27)

二、中国地震震中分布..... (28)

1977年地震数据..... (31)

1 月..... (31)

2 月..... (58)

3 月..... (81)

4 月..... (109)

5 月..... (127)

6 月..... (150)

7 月..... (176)

8 月..... (192)

9 月..... (207)

10月..... (219)

11月..... (238)

12月..... (255)

附地震图

CONTENTS

Annotations

List of seismological stations	(1)
Constants of seismographs	(2)
Magnification curve of seismographs	(3)
A Brief review of the seismic activity in 1977	(5)
Catalogue of earthquakes in 1977	(9)
1. Catalogue of earthquakes near and within China	(9)
2. Catalogue of earthquakes in the World	(22)
Illustrations of epicentral distribution	(27)
1. Epicentral distribution of earthquakes of the world	(27)
2. Epicentral distribution of earthquakes in China	(28)
Observed seismological data in 1977	(31)
January	(31)
February	(58)
March	(81)
April	(109)
May	(127)
June	(150)
July	(176)
August	(192)
September	(207)
October	(219)
November	(238)
December	(255)

Typical seismograms

台 站 目 录

Lits of Seismic Stations

台 名 Stations	代 号 Code	Geographical Co-ordinates		海 拔 高 度 Altitude(h) m	仪 器 Instruments
		ϕ	λ		
Beijing (Peking)	BJI(PEK)	40°02'25"	116°10'30"	43	64, 513, SK
Baotow	BTO	40°35'54"	110°01'06"	1120	64, SK
Chengdu	CDU	30°39'37"	104°00'40"	506	SK, DD-1
Changchun(1)	CNH(1)	43°49'45"	125°18'48"	236	DD-1, 64, SK, 513
Changchun(2)	CNH(2)	43°48'05"	125°26'54"	230	DD-1, SK, 513, 64
Guiyang	GYA	26°27'31"	106°39'50"	1162	SK, 65, DK-1, 513
Guangzhou	GZH	23°05'13"	113°20'38"	11	SK, DD-1
Kunming	KMI	25°07'24"	102°44'24"	1945	SK, DD-1, DK-1
Kashi	KSH	39°27'19"	75°58'48"	1286	SK
Lhasa	LSA	29°42'00"	91°09'00"	3789	DD-1, SK
Lanzhou	LZH	36°05'12"	103°50'40"	1560	64, 513, SK, DD-1 DK-1
Nanjing(1)	NJI(1)	32°03'48"	118°47'00"	10	SK, SW(1), 64
Nanjing(2)	NJI(2)	32°03'06"	118°51'16"	45	SK, SW(1), 513, 64, DD-1, DK-1
Quanzhou	QZH	24°56'35"	118°35'30"	21	64, SK, DD-1, 513
Shanghai(1)	SSH(1)	31°05'48"	121°11'11"	90	64, SK, SW(2), DD-1
Shanghai(2)	SSH(2)	31°05'44"	121°11'12"	9.9	DD-1, DK-1, SK, SW (2), 64
Tai'an	TIA	36°12'41"	117°07'28"	300	64, 513, DD-1, SK, DK-1
Wuhan	WHN	30°32'37"	114°21'01"	26	64, SK, DD-1
Urümqi	WMQ	43°49'16"	87°41'42"	970	SK, 62, 763, DD-1
Xi'an	XAN	34°02'22"	108°55'17"	630	64, SK, DD-1, DK-1 513

注：长春台于1976年10月15日中止工作。于1977年元月迁至新址，座标为43°48'05"N，125°26'54"E，N=230m，台基为火山岩和板岩互层。

上海佘山于1976年11月15日迁至新址，座标为31°05'44"N，121°11'12"E，h=9.9m，台基为变质辉绿岩。

南京台于1976年11月中止工作。新台址座标为32°03'06"N，118°51'16"E，h=45m。

Changchun seismological station stopped operation on Oct. 15, 1976, and it was moved to a new site at 43°48'05"N and 125°26'54"E, h=230m.

The foundation of the station is volcanic rock and slate.

On Nov. 15, 1976, the Shanghai seismological station was moved to a new site at 31°05'44"N and 121°11'12"E, h=9.9m, the foundation of station is metamorphic diabase.

Nanjing seismological station stopped operation in Nov. 1976, and it was moved to a new site at 32°03'06"N and 118°51'16"E, h=45m

仪 器 常 数

Constants of Seismographs

仪 器 型 号 type of Instruments	分 向 comp	T_1	T_2	D_1	D_2	σ^2	r_1	V_0	R_v
62(BJI)	N-S	1.5	0.41	0.7	1.5	.058		3.05×10^4	60
	E-W	1.5	0.42	0.7	1.5	.058		3.05×10^4	60
	U-D	1.5	0.41	0.7	1.5	.058		3.05×10^4	60
62(WMQ)	N-S	2.0	0.5	0.5	1.6	.0595		6.47×10^5	120
	E-W	2.0	0.5	0.5	1.6	.0600		6.87×10^5	120
	U-D	2.0	0.5	0.5	1.6	.0600		6.67×10^5	120
64	N-S	1.5	0.10	0.5	5.0	.30		5×10^4	60
	E-W	1.5	0.10	0.5	5.0	.30		5×10^4	60
	U-D	1.5	0.10	0.5	5.0	.30		5×10^4	60
64	N-S	1.5		0.7				$2 \sim 3 \times 10^5$	120
	E-W	1.5		0.7				$2 \sim 3 \times 10^5$	120
	U-D	1.5		0.7				$2 \sim 3 \times 10^5$	120
513	N-S	4		0.3			0.1	50	30
	E-W	4		0.3			0.1	50	30
763	N-S	31.5	85	1	1	.3		2.9×10^3	6
	E-W	31.5	85	1	1	.3		2.9×10^3	6
	U-D	34.0	103	1	1	.3		3.7×10^2	6
SK	N-S	12.5	1.2	0.45	5.0	.07		1.6×10^3	30
	E-W	12.5	1.2	0.45	5.0	.07		1.6×10^3	30
	U-D	12.5	1.2	0.45	5.0	.30		900	30
VGK	N-S	1.0	0.1	0.5	4.0	.3		3×10^4	120
	E-W	1.0	0.1	0.5	4.0	.3		3×10^4	120
	U-D	1.0	0.1	0.5	4.0	.3		3×10^4	120
SW (1)	N-S	1~2		0.43				1.2×10^3	30
	E-W	1~2		0.45				1.2×10^3	30
SW (2)	N-S	6					0.18	200	30
	E-W	6					0.18	200	30
DD-1	N-S	1.0		0.45				5×10^4	120
	E-W	1.0		0.45				5×10^4	120
	U-D	1.0		0.45				8×10^4	120
DK-1	N-S ₁	15		0.45				2×10^3	30
	N-S ₂	15		0.45				80	30
	E-W ₁	15		0.45				2×10^3	30
	E-W ₂	15		0.45				80	30
	U-D	15		0.45				2×10^3	30
65	N-S	1.0		0.45				36×10^5	120
	E-W	1.0		0.45				36×10^5	120
	U-D	1.0		0.45				36×10^5	120

62 type 62 galvanometric seismographs

64 type 64 galvanometric seismographs or with electronic amplifier and pen recorder

513 type 513 low magnification, mechanical registration, horizontal seismographs

763 type 763 long-period galvanometric seismographs

SK type SK Kirnos galvanometric seismographs

VGK type VGK Vegik galvanometric seismographs

SW(1) type SW(1) Wiechert(1) type mechanical registration horizontal seismographs (17,000)

SW(2) type SW(2) Wiechert (2) type mechanical registration horizontal seismographs (1200)

DD-1 type DD-1 with electronic amplification, pen recorder

DK-1 type DK-1 with electronic amplification, pen recorder

65 type 65 with electronic amplification, pen recorder

T_1 Pendulum period

T_2 Galvanometer period

D_1 Damping factor of pendulum

D_2 Damping factor of galvanometer

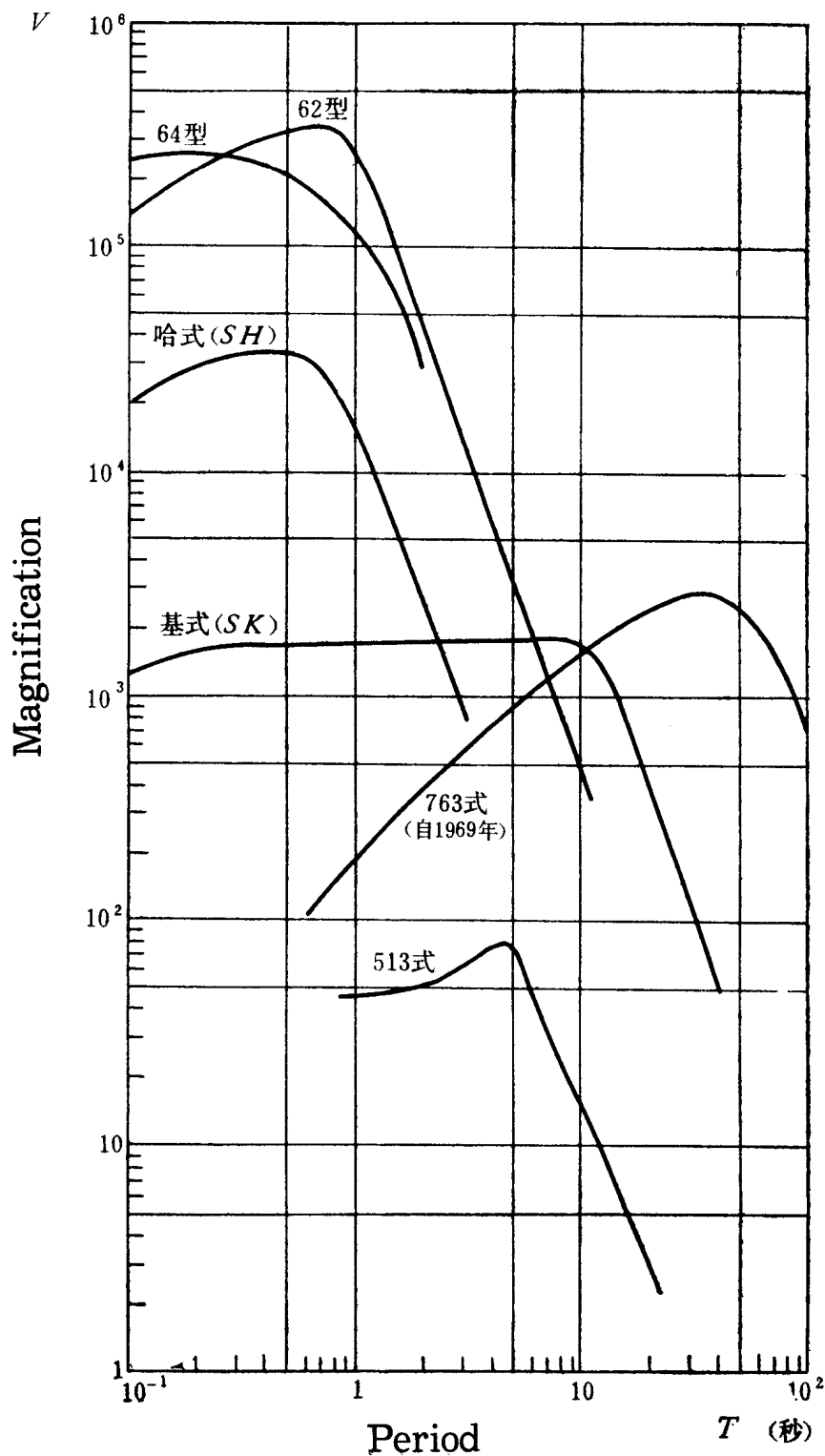
σ^2 Coupling coefficient

r_1 Amplitude of solid friction

V_0 Static magnification

R_v The recording paper speed, mm/min

地震仪放大倍率示意图
Magnification Curves of Seismographs



1977 年 地 震 活 动 简 况

全球范围地震活动情况

根据中国地震台网观测资料,1977年能够测出震中位置的地震,全球5.5级以上(震级都按 M_s 标度)共计192次。其中6级以上的有78次,7级以上的15次。有一次震级等于8级,6月22日发生在西南太平洋的汤加群岛地区;另一次震级等于8.1级,8月19日发生在印度尼西亚的松巴哇岛附近。全年地震活动,仍以环太平洋地震带的西半部为主,突出地区有印度尼西亚和新几内亚地区,西南太平洋的萨摩亚和汤加群岛地区,所罗门群岛地区。在伊朗,阿留申群岛,大西洋和南美洲的阿根廷都各发生一次7级以上的大地震,和往年的活动水平相差不大。在北美洲没有6级以上的地震。在罗马尼亚和红海南部出现少有的大地震活动。罗马尼亚于3月4日一次震级等于7的中等深度地震,是本世纪以来这一地区最大的一次地震活动。红海地区于12月28日发生一次7.1级地震,是这一地区少有的大地震活动,也是该区十年来最大的一次,红海地区于1967年3月28日,发生过震级等于6.7的地震($H=02-41-33.5$, $19.9^{\circ}N$, $38.7^{\circ}E$, 据 USGS)。上述的大地震,都在震中地区造成了不同程度的破坏和伤亡。就地震活动的地区分布来看,和1976年比较,欧亚大陆上的地震活动要弱得多,仅罗马尼亚和伊朗有两次7级以上活动,南北美洲的地震活动也是较弱的。按7级以上的次数统计,和1904年以来的全球年平均次数(18次)比较,总的说来,全球范围1977年的地震活动要弱一些($M \geq 7$ 的共15次),比1976年($M \geq 7$ 共22次)也弱得多。

国内地震活动简况

1977年是我国国内地震活动很弱的年份,不仅比1976年弱得多,与有史以来历年情况比较,也是相当弱的年份。地震活动的主要特点是:总次数较少,最大地震的强度较低,空间分布分散。全年4级以上地震总数为120次,按5级以上的次数统计是33次,1976年为76次,按5.5级以上的统计次数是14次。1976年是34次。其中6至6.6级的只有6次。最大震级6.6,震中在西藏拉萨西北部。青海省在1月份连续发生6.4级和6.3级地震共二次。新疆西部12月份有一次6.2级地震,唐山5月12日一次6.2级较强余震,也是近三年以来(1977至1979年)最大的一次余震。东海地区12月份一次6.5级地震,是这一地区少有的地震活动。在4级以上的120次总数中,包括前一年的几次大地震的余震在内,其中有唐山地区余震2次,四川盐源宁蒗地区余震10次,云南龙陵潞西的余震7次。全部余震的震级,除唐山地区的6.2外,都小于5.2级。河北邢台和辽宁海城营口地区的4级以下余震活动仍在持续之中。从震中的地理分布情况来看(详见“中国地震震中分布图”),一年中虽然震级都不大,但各地区在各个地震带上都有零星小地震活动,和1976年的震中分布情况比较,形成鲜明的对照。1976年的地震强烈,大小地震都集中在五、六个局部地点,在面积上的活动则十分稀疏(参阅1976年的震中分布图)。另外,我国东部地区,河北省磁县3月10日一次4级,江苏溧阳5月10日一次4.1级,山东成武7月9日一次4.1级。广西壮族自治区平果县10月19日一天中连续二次,先是5.0级,后是4.2级,当地有破坏。

A Brief Review of Seismic Activity in 1977

The Seismic Activity of the world

Using the observed data of the Chinese seismological station network, in 1977, the epicentral locations of 192 earthquakes with $M \geq 5.5$ (magnitude scale M_s is used) have been determined, among them 78 earthquakes with $M \geq 6.0$, 15 with $M \geq 7.0$, one with $M=8$, which occurred on June 22 in Tonga Islands of the Southwest Pacific Ocean; the other with $M=8.1$, which occurred on August 19 near the Sunbawa Island of Indonesia. Most earthquakes of the year were still distributed along the western half of the Circum-Pacific seismic belt, particularly in the regions of Indonesia-New Guinea, Samoa-Tonga Islands and Solomon Islands. Some major shocks with $M=7 \sim 7.9$ occurred in Iran, Aleutian Islands, the Atlantic Ocean, and Argentina of South America, whose seismic level was not greatly different from that in the past years. In North America no earthquake with magnitude greater than 6 has been recorded. In Romania and the southern part of the Red Sea, unusually large shocks occurred. An intermediate depth earthquake with $M=7.0$, occurred on March 4, which was the greatest earthquake in the region since the beginning of this century. In the Red Sea region an earthquake with $M=7.1$ occurred on December 28 which was both a great earthquake rarely occurred in history and the greatest one in ten years within this region. On March 28, 1967 an earthquake with $M=6.7$ occurred in the Red Sea region ($H=02h41m33.5s$, $19.9^\circ N$, $38.7^\circ E$, according to USGS). The above mentioned major earthquakes caused different degrees of damages and casualties in the epicentral regions. Comparing with 1976 the seismic activity of the Eurasia Continent was much lower in view of its regional distributions. Only two earthquakes with magnitude greater than 7 occurred in Romania and Iran. The seismic activities of South and North America are low too. Statistically for earthquakes with magnitude above 7, the annual average number of 1977 compared with that of the whole world since 1904 which is 18 in number, the world-wide seismic activity in 1977 (15 for $M \geq 7$) is lower while much lower than in 1976 (22 for $M \geq 7$).

The Seismic Activity of China

The year 1977 was the year in which the seismic activity was very low in China. It was not only much lower than the year 1976, but also relatively lower than in past years and in history. Its main features are as follows: total number of earthquakes was less, the magnitude of the largest earthquake, lower and the geographic distribution scattered. Total number of the earthquakes with $M \geq 4$ in 1977 was 120, in which 33 for $M \geq 5$, while 76 for 1976, 14 for $M \geq 5.5$, while 34 for 1976. Only 6 earthquakes of magnitudes $6 \leq M \leq 6.6$ occurred, and the maximum magnitude was 6.6, the epicenter of which was located northwest of Lhasa in Xizang. In the Qinghai Province two earthquakes with $M=6.4$ and $M=6.3$ occurred in January successively and in December an earthquake of magnitude 6.2 occurred in western Xinjiang. A strong aftershock with $M=6.2$ occurred on May 12 in the Tangshan Earthquake region which was the largest aftershock for the last three years (1977-1979). In the East China Sea an earthquake with $M=6.5$ occurred in December, a rare event for this region. Among the total of 120 shocks with $M \geq 4$, there are aftershocks of several major shocks of the preceding year including 22 aftershocks of the Tangshan Earthquake, 10 aftershock of the Yanyuan-Ninglang Yizu Zizhixian (Yanyuan-Ninglang, Autonomous County of Yi Nationality) Earthquake, Sichuan Province and 7 aftershocks of the Longling-Luxi Earthquake, Yunnan Province. The magnitudes of all these aftershocks with the exception of the Tangshan aftershock with $M=6.2$, are smaller than 5.2. The aftershock activities with $M < 4$ in the Xingtai area of Hebei Province and the Haicheng-Yingkow region of Liaoning Province are still going on. From the geographical distribution of epicenters (See Map of Epicentral Distribution of Earthquakes in China), in every region and on all seismic belts there were sporadic weak seismic activities during 1977, a sharp contrast in comparison with the year 1976. In 1976 the seismic activities were strong, concentrated in 5-6 local areas, and sparsely distributed in other areas. (See Epicentral Distribution of Earthquakes in China, 1976). Besides, in East China several events took place during 1977, namely, on March 10, a shock, $M=4$ in Ci Xian of Hebei Province; on May 10, $M=4.1$, in Liyang of Jiangsu Province; on July 9, $M=4.1$, in Chengwu of Shandong Province; on October 19, two successive shocks with $M=5$ and $M=4.2$, in Pingguo County, Guangxi Province, causing some damages in the epicentral area.

1977 年 地 震 目 录

Catalogue of Earthquakes in 1977

全世界地震目录 Catalogue of Earthquakes in the World

No.	Date	GMT h -m- s	Location		Depth (Km)	M	Remarks	
			ϕ	λ				
01	Jan	1	17-35-54.0	7.6 S	108.3 E	100	5.2*	印度尼西亚瓜哇 Java, Indonesia
02		1	19-01-39.4	2.4 S	126.7 E	25	6.2	苏拉海 Ceram Sea
03		1	21-39-40.5	38.2 N	91.2 E	16	6.4	中国青海西北部 Northwestern Qinghai, China
04		2	00-53-05.8	38.2 N	91.2 E	33	4.7	中国青海西北部 Northwestern Qinghai, China
05		2	09-55-29.3	10.0 S	119.1 E	20	6.4	印度尼西亚松巴岛地区 Sumba I.
06		3	05-36-25.0	39.6 N	118.6 E	15	4.2	中国唐山地区 Tangshan area, China
07		6	06-11-41.9	3.3 S	144.6 E	30	7.0	新几内亚 New Guinea
08		6	16-02-13.1	52.3 N	176.6 W	35	5.6	阿留申群岛 Aleutian Is.
09		6	21-50-08.4	31.3 N	88.3 E	33	5.0	中国西藏拉萨西部 Western Lhasa, China
10		7	19-36-47.5	21.1 N	120.0 E	30	5.7	中国台湾以南 South of Taiwan, China
11		12	17-43-32.2	28.2 N	102.5 E	18	4.8	中国四川南部 Southern Sichuan, China
12		12	23-35-20.3	1.5 N	99.8 E	188	5.5*	苏门答腊岛北部 Northern Sumatra
13		14	12-09-33.1	34.7 N	82.8 E	33	5.2	中国西藏西部 Western Xizang Zizhiqu, China
14		14	22-46-53.0	39.7 N	118.8 E	15	4.5	中国唐山东 Tangshan, China
15		15	04-23-47.0	27.6 N	101.3 E	20	4.3	中国四川南部 Southern Sichuan, China
16		15	10-49-06.7	12.9 N	126.0 E	33	5.3	菲律宾群岛地区 Philippine Is.
17		17	06-23-37.2	26.7 N	142.7 E	33	5.9	小笠原群岛 Bonin Is.
18		17	19-04-38.6	14.7 S	177.3 W	36	5.7	斐济群岛 Fiji Is.
19		17	21-27-13.8	24.8 S	68.6 W	33	6.8*	智利阿根廷边境地区 Chili-Argentina border region
20		19	00-46-16.1	37.1 N	95.8 E	18	6.3	中国青海北部 Northern Qinghai, China
21		19	13-54-05.7	5.1 N	126.6 E	50	6.0	菲律宾群岛 Philippine Is.
22		20	20-10-11.1	21.2 N	120.1 E	30	5.0	中国台湾以南 South of Taiwan, China
23		21	02-20-04.2	23.8 N	122.0 E	13	5.2	中国台湾北部 Northern Taiwan, China
24		23	01-38-25.6	13.3 S	166.5 E	48	5.5	新赫布里底群岛 New Hebrides Is.
25		28	18-00-52.0	17.4 S	168.8 E	14	5.6	新赫布里底群岛 New Hebrides Is.
26		30	04-11-56.5	39.5 N	118.2 E	25	4.7	中国唐山地区 Tangshan, China

No.	Date	GMT h-m-s	Location		Depth	M	Remarks
			ϕ	λ			
27	30	10-36-07.5	39.6 N	73.4 E	45	4.8	中国新疆西部 Western Xinjiang Uyghur Zizhiqu, China
28	31	14-26-15.1	40.2 N	70.9 E	20	6.3	塔吉克 Tadzhik SSR
29	Feb. 1	21-18-47.8	39.6 N	73.2 E	50	4.6	中国新疆西部 Western Xinjiang Uyghur Zizhiqu, China
30	2	05-44-09.0	40.2 N	112.3 E	18	4.0	中国呼和浩特以南 South of Hohhot, China
31	2	21-28-52.0	25.0 N	99.4 E	20	4.3	中国云南西部 Western Yunnan, China
32	4	07-46-33.8	24.7 S	63.4 W	540	6.5*	阿根廷 Northern Argentina
33	5	03-29-20.0	66.5 S	82.6 W	33	6.3	南太平洋 Southern Pacific Ocean
34	5	08-57-01.0	45.2 N	111.9 E	20	4.4	中国二连浩特市以北 North of Erenhot, China
35	6	05-07-26.7	20.9 N	120.0 E	20	5.3	中国台湾以南 South of Taiwan, China
36	6	16-53-58	24.4 N	92.9 E	N	4.2	印度阿萨姆 Assam, India
37	7	00-57-30.1	27.3 N	101.1 E	6	5.1	中国四川南部 Southern Sichuan, China,
38	10	07-55-56.9	22.0 S	170.2 E	41	5.3	洛亚尔提群岛 Loylty Is.
39	10	22-41-06.2	60.9 S	23.1 W	33	6.0	南桑德韦奇群岛 South Sandwich Is.
40	12	04-49-16.4	37.0 N	71.2 E	98	4.2	阿富汗 Afghanistan
41	13	04-06-45.9	15.8 N	119.1 E	26	5.7	南中国海 South China Sea
42	13	04-07-14.6	15.5 N	119.3 E	33	5.8	南中国海 South China Sea
43	13	13-06-51.5	0.1 S	125.2 E	33	5.8	马鲁古海 Molucca Sea
44	14	00-22-38.6	33.6 N	73.2 E	30	4.6	巴基斯坦北部 Northern Pakistan
45	16	10-40-19.0	0.5 N	126.0 E	17	5.6	马鲁古海峡 Molucca Sea
46	16	19-55-26.4	39.7 N	73.3 E	33	4.4	中国新疆西部 Western Xinjiang Uyghur Zizhiqu, China
47	17	16-28-26.2	27.2 N	101.1 E	8	4.4	中国四川南部 Southern Sichuan, China
48	18	04-08-13.6	41.4 N	142.1 E	5	5.5	日本北海道 Hokkaido, Japan
49	18	20-51-31.2	33.1 N	140.8 E	59	5.9	日本本州以南 South of Honshu, Japan
50	19	06-15-22.7	31.9 N	78.4 E	17	5.0	中国克什米尔边境 Kashmir-China border
51	19	07-53-22.8	41.2 S	80.7 E	30	6.0	印度洋南部 Southern Indian Ocean
52	19	22-34-04.8	53.5 N	170.1 E	42	6.9	阿留申群岛 Aleutian Is.
53	19	23-43-27.6	34.6 N	81.2 E	24	5.6	中国西藏西部 Western Xizang Zizhiqu, China

No.	Date	GMT h-m-s	Location		Depth	M	Remarks
			ϕ	λ			
54	23	12-37-17.9	17.4 N	120.3 E	61	4.7	菲律宾群岛 Philippine Is.
55	25	01-18-52.9	6.4 S	147.6 E	52	5.7	新几内亚地区 New Guinea region
56	25	05-52-56.0	27.5 N	101.2 E	20	4.3	中国四川南部 Southern Sichuan, China
57	25	06-02-58.9	27.1 N	101.2 E	20	4.7	中国四川南部 Southern Sichuan, China
58	27	09-21-56.9	38.1 N	72.8 E	110	6.0	苏联塔吉克 Tadjik SSR
59	March 2	09-53-19.0	6.4 N	124.0 E	50	6.2	菲律宾群岛 Philippine Is.
60	4	19-21-54.7	45.8 N	26.6 E	97	7.0*	罗马尼亚东部 Eastern Romania
61	7	00-28-42.0	40.0 N	119.0 E	18	5.7	中国唐山地区 Tangshan area, China
62	8	08-07-20.3	8.3 S	156.4 E	33	5.6	所罗门群岛 Solomon Is.
63	8	23-17-28.2	0.3 N	99.9 E	20	6.6	苏门答腊 Sumatra
64	9	14-27-58.2	41.6 N	131.1 E	592	6.8*	朝鲜东北部 Northeast of Korea
65	10	09-43-38.0	36.3 N	114.3 E	15	4.0	中国河北南部 Southern Hebei, China
66	11	06-58-02.9	19.3 N	121.2 E	40	5.4	中国台湾以南 South of Taiwan, China
67	13	22-16-58.9	40.6 N	112.5 E	15	4.5	中国古呼浩特东南部 Southeast of Hohhot, China
68	15	08-55-04.7	4.9 S	131.0 E	N	5.6	班达海 Banda Sea
69	15	19-55-42.7	6.8 S	155.0 E	27	5.5	所罗门群岛 Solomon Is.
70	16	22-08-51.8	32.9 N	104.2 E	31	4.8	中国四川北部 Northern Sichuan, China
71	16	23-54-58.9	25.8 N	99.7 E	23	5.4	中国云南西北部 Northwestern Yunnan, China
72	18	21-43-51.7	16.8 N	122.4 E	27	7.3	菲律宾群岛 Philippine Is.
73	19	10-56-23.0	44.1 N	148.3 E	54	5.4	千岛群岛 Kuril Is.
74	19	12-56-07.5	16.8 N	122.5 E	57	5.5	菲律宾群岛 Philippine Is.
75	19	19-35-08.2	16.8 N	122.5 E	33	6.0	菲律宾群岛 Philippine Is.
76	21	07-35-30.0	36.8 N	71.3 E	120	4.5	阿富汗-苏联边境地区 Afghanistan-USSR border region
77	21	21-18-55.8	27.8 N	56.4 E	37	7.1	伊朗南部 Southern Iran
78	22	02-22-41.0	24.0 N	123.6 E	20	4.4	琉球群岛 Ryukyu Is.
79	22	11-57-32.3	27.7 N	56.5 E	47	5.9	伊朗南部 Southern Iran
80	22	20-09-38.1	36.4 N	71.1 E	131	4.5	阿富汗-苏联边境地区 Afghanistan-USSR border region
81	23	07-19-15.4	13.6 S	177.8 W	33	6.2	斐济群岛地区 Fiji Is.
82	23	17-10-21.6	14.5 S	178.0 W	14	6.0	斐济群岛地区 Fiji Is.