

SEISMOLOGICAL BULLETIN OF SYOWA STATION, ANTARCTICA, 1996

Yoshifumi NOGI*, Hiroaki NEGISHI** and Masaki KANAO*

* National Institute of Polar Research,
9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173

** Disaster Prevention Research Institute,
Kyoto University, Gokasho, Uji 611

1. Introduction

Seismic observations at Syowa Station (69.00°S, 39.60°E), East Antarctica started by using short-period seismometers with a 1.0 s natural period in 1959 (Eto, 1962). A three-component long-period seismograph was installed and phase readings of the teleseismic events, detected on the three-component short- and long-period seismograms, have been regularly reported to US Coastal Geodetic Survey (USCGS), and to the International Seismological Center (ISC) since 1967 (Kaminuma *et al.*, 1968). A three-component broadband seismometer (STreckeisen Seismometer; STS, Streckeisen and Messegeraete, 1987) was installed in April 1989, based on the recommendation from the Working Group of Solid Earth Geophysics of Scientific Committee on Antarctic Research (SCAR). Syowa Station has also an important role in the framework of the Japanese Pacific Orient Seismic Digital Observation Network (POSEIDON) (Tsuboi, 1995). All of these observation systems were maintained in scaled by two of the authors, Nogi and Negishi throughout the wintering season of the 37th Japanese Antarctic Research Expedition in 1996.

2. Observations

2.1. Short- and long-periods of seismographs

Seismic observations at Syowa Station have been carried out mainly by two types of seismometers, one called HES-type with a pendulum of 1.0 s natural period of the pendulum and the other called PELS-type with a pendulum of 12.0 s natural period. The three-component short-period and long-period seismographs had been operated since 1961 and 1967, respectively (Kaminuma *et al.*, 1968). The current seismographic vault was constructed in March 1970 (Kaminuma and Chiba, 1973). The old type of long-period seismometer (Press-Ewing-type) was replaced by PELS in 1982. The geodetic coordinates of the seismographic vault are 69°00' 31.7"S, 39°35' 31.6"E and the elevation is 20 m above mean sea level. Seismic signals of the short- and long-period seismometers in the vault are transmitted by analog cable of 700 m in length to the Earth Science Laboratory (ESL) where two sets of thermal pen-recorders have been operated for monitoring (Fig. 1). The overall frequency responses and the magnifications of the short- and long-period seismometers are shown in Fig. 2.

2.2. Broadband seismographs

A set of STS seismometers has wide dynamic-range of 140 dB and three outputs of different frequency characteristics. Velocity output (BRoadBand; BRB) is characterized by a flat frequency response over 0.1-360 s and is digitized at 20 Hz sampling by a 24-bit analog-to-digital (A/D) converter. The Long-Period output (LP) has a flat response to acceleration for longer periods than 20 s and is A/D converted to 7.5 digits at 3.0 s sampling intervals. The digital recording system for the BRB output started from May 1990 (Nagasaka *et al.*, 1992), and from February 1992 for the LP output (Kanao and Kaminuma, 1994), respectively. Boom-POSition (POS) output is analog-monitored, which is proportional to the offset of the null position of the pendulum. The amplitude and phase responses for the BRB output are shown in Fig. 3 (after

Streckeisen and Messegeraete, 1987). The block diagram of the recording system at Syowa Station is illustrated in Fig. 4. The system reference clock has been calibrated to the Coordinated Universal Time (UTC) from a Global Positioning System (GPS) receiver.

2.3. Data transmission via the satellite telecommunication system

Transmission of the digital waveform data by a broadband seismographs from Syowa Station to National Institute of Polar Research (NIPR) has been successfully made since 1993 via the INMARSAT telecommunication link. The UUCP protocol has been used for the file transfer. Block diagram of the off-line editing and data transmission system is illustrated in Fig. 5. In addition, e-mail communication started from May 1995, and phase read-out data can be sent to the National Earthquake Information Center (NEIC) of the United States Geological Survey (USGS) regularly with time delay of a week.

3. Data

Since there is a delay time of 1-2 years between the publication of this report and the observing wintering period, which is inevitable since the re-supply ship visits Syowa Station only once a year, the Preliminary Determination of Epicenters (PDE) reports by NEIC are referred to and only the seismograms of teleseismic events are edited. The arrival-time data and the corresponding hypocentral data of teleseismic events are presented in this report.

3.1. Phase read-out data

The phase arrival-time of the teleseismic events was detected on the short-period monitoring seismograms. Most phases were scaled on the vertical component, and for shear waves only clear phases were scaled on the horizontal components. These phases were identified by comparing the observed travel time with the calculated one which is

within 3 s in time difference. The most arrival times consist of *P*- and *S*- phases and are listed in Table 1. The phase *K* denotes the *PKP* phase while *X* denotes the clear phase whose wave type can be identified within 3-10 s difference by comparing with the observed and calculated travel times. Symbols *E* and *I* in the phase column denote emergent and sharp onsets, respectively. The initial ground motion is denoted by + for upward and - for downward direction. Arrival time is given in UTC. The accuracy of the read-out data is limited to 0.2 s. The teleseismic events identified in the PDE are labeled by the serial numbers (#-xxx) in the table. These serial numbers correspond to those in Table 2. The events without serial numbers are teleseisms whose locations have not been determined by NEIC.

3.2. List of teleseismic events

Figure 6 shows the hypocenters of 840 teleseismic events whose initial phases were detected at Syowa Station. The list of hypocentral parameters of the teleseismic events is shown in Table 2, together with the same serial numbers as given in the remarks of Table 1. The seismograms of these events are available from the authors.

An local intraplate earthquake occurred around Syowa Station on September 25. The location was determined by NEIC. The location map and digital and analog seismograms are shown in the Appendix. It is the first time to record like the local event with magnitude larger than 4 around Syowa Staion.

Data Processing Staff

The seismic observation system at Syowa Station was designed by M. Kanao, K. Kaminuma, and K. Shibuya of National Institute of Polar Research. With the establishment of the Center for Antarctic Environment Monitoring (CAEM; Director M. Fukuchi), archive and exchange of Syowa seismic data moved under the administration of

CAEM, and the staff member Ms. A. Ibaraki assisted preparing this data report. Readers can refer to the URL sites below for finding data directory or access; <http://geoipx.nipr.ac.jp/~goin/GOIN.html>, and http://geoipx.nipr.ac.jp/~kanao/seismic_obs/index.html.

References

- Eto, T. (1962): On the electromagnetic seismographs at Syowa Base. *Nankyoku Shiryô (Antarct. Rec.)*, **14**, 48-50.
- Kaminuma, K. and Chiba, H. (1973): The new seismographic vault and the detection capability of Syowa Station, Antarctica. *Nankyoku Shiryô (Antarct. Rec.)*, **46**, 67-82.
- Kaminuma, K., Eto, T. and Yoshida, M. (1968): Seismological observation at Syowa Station, Antarctica. *Nankyoku Shiryô (Antarct. Rec.)*, **33**, 65-70.
- Kanao, M. and Kaminuma, K. (1994): Broadband and wide dynamic-range seismic observations with an STS-seismograph at Syowa Station, East Antarctica. *Proc. NIPR Symp. Antarct. Geosci.*, **7**, 1-13.
- Nagasaka, K., Kaminuma, K. and Shibuya, K. (1992): Seismological observations by a three-component broadband digital seismograph at Syowa Station, Antarctica. *Recent Progress in Antarctic Earth Science*, ed. by Y. Yoshida *et al.* Tokyo, Terra Sci. Publ., 595-601.
- Streckeisen, G. and Messergeraete, A. G. (1987): Very-broad-band Feedback Seismometers STS-1V/VBB and STS-1H/VBB Manual. 34-35.
- Tsuboi, S (1995): POSEIDON. *IRIS Newsletter, Arlington, Vol. XIV*, **1**, 8-9.

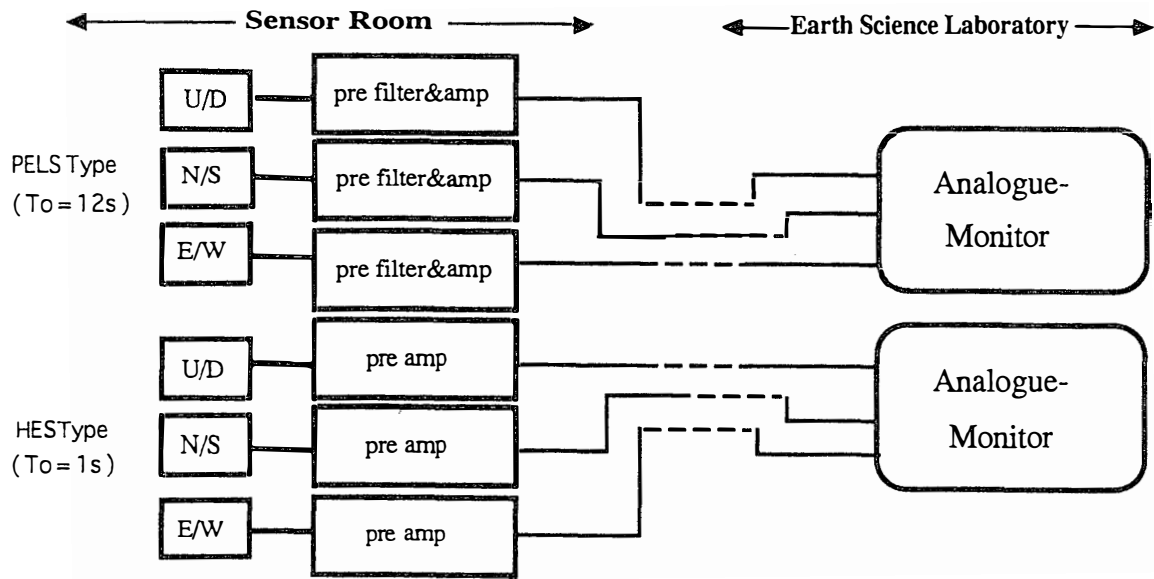


Fig. 1. Block diagram of on-line recording system for the three-component short-period (HES-type) and long-period (PELS-type) seismographs at Syowa Station.

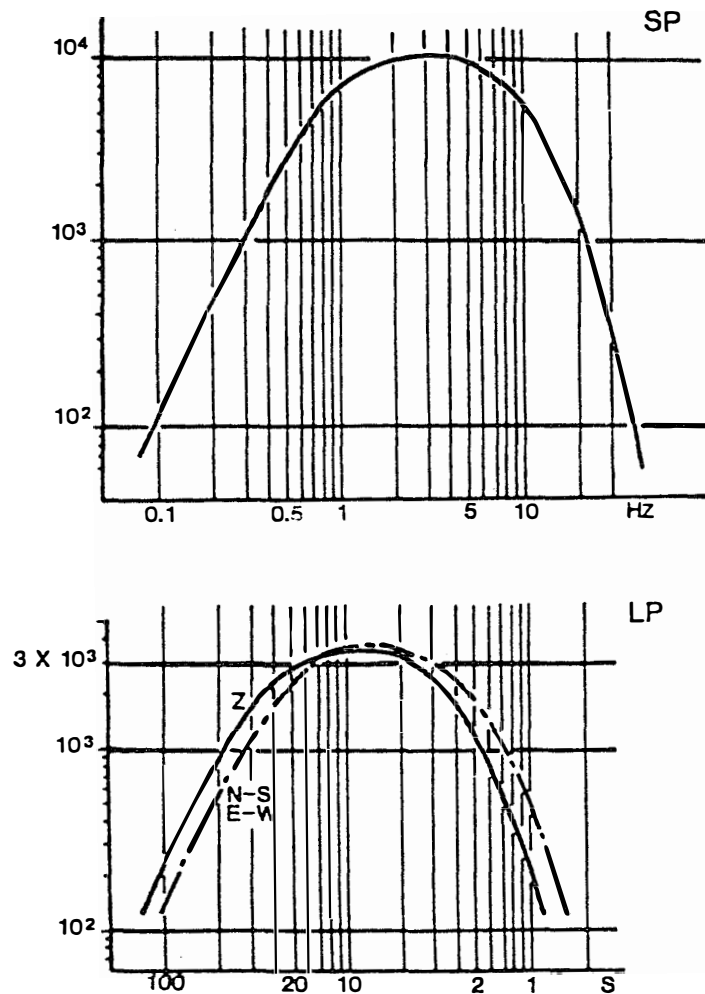
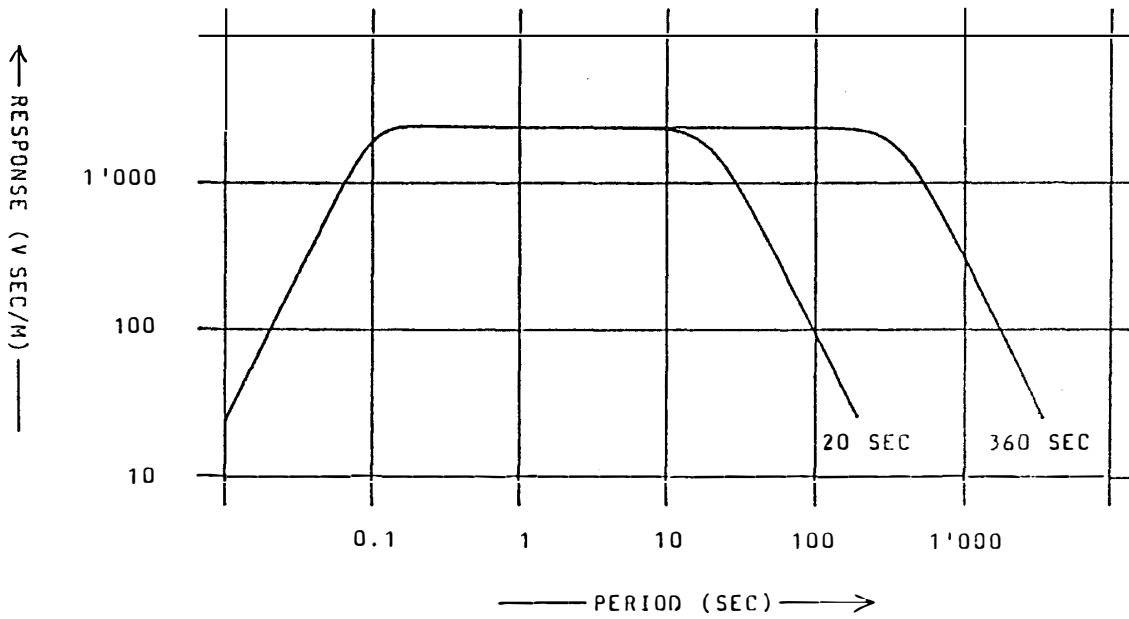


Fig. 2. Over-all frequency responses of the short- and long-period seismographs.

VELOCITY RESPONSE AT BRB OUTPUT



PHASE RESPONSE AT BRB OUTPUT

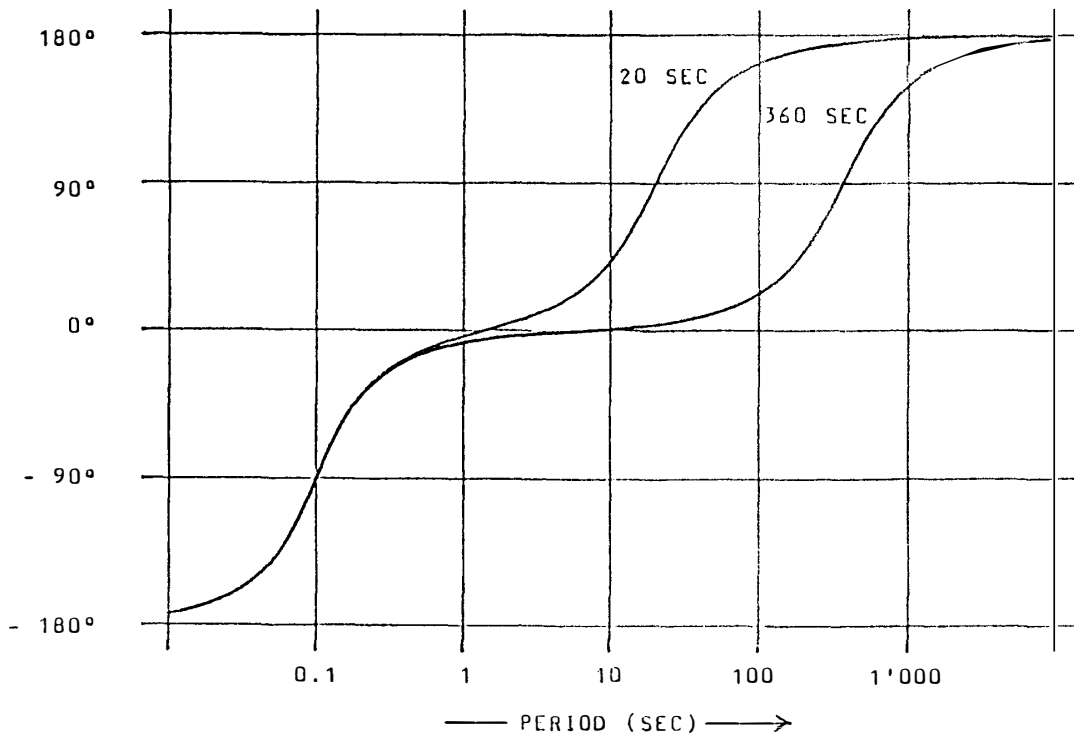


Fig. 3. Amplitude responses (upper figure) and phase responses (lower figure) for the velocity (BRB) output of the broadband seismograph (STS) in the two distinct signal modes of 20-s and 360-s (after Streckeisen and Messergeraete, 1987).

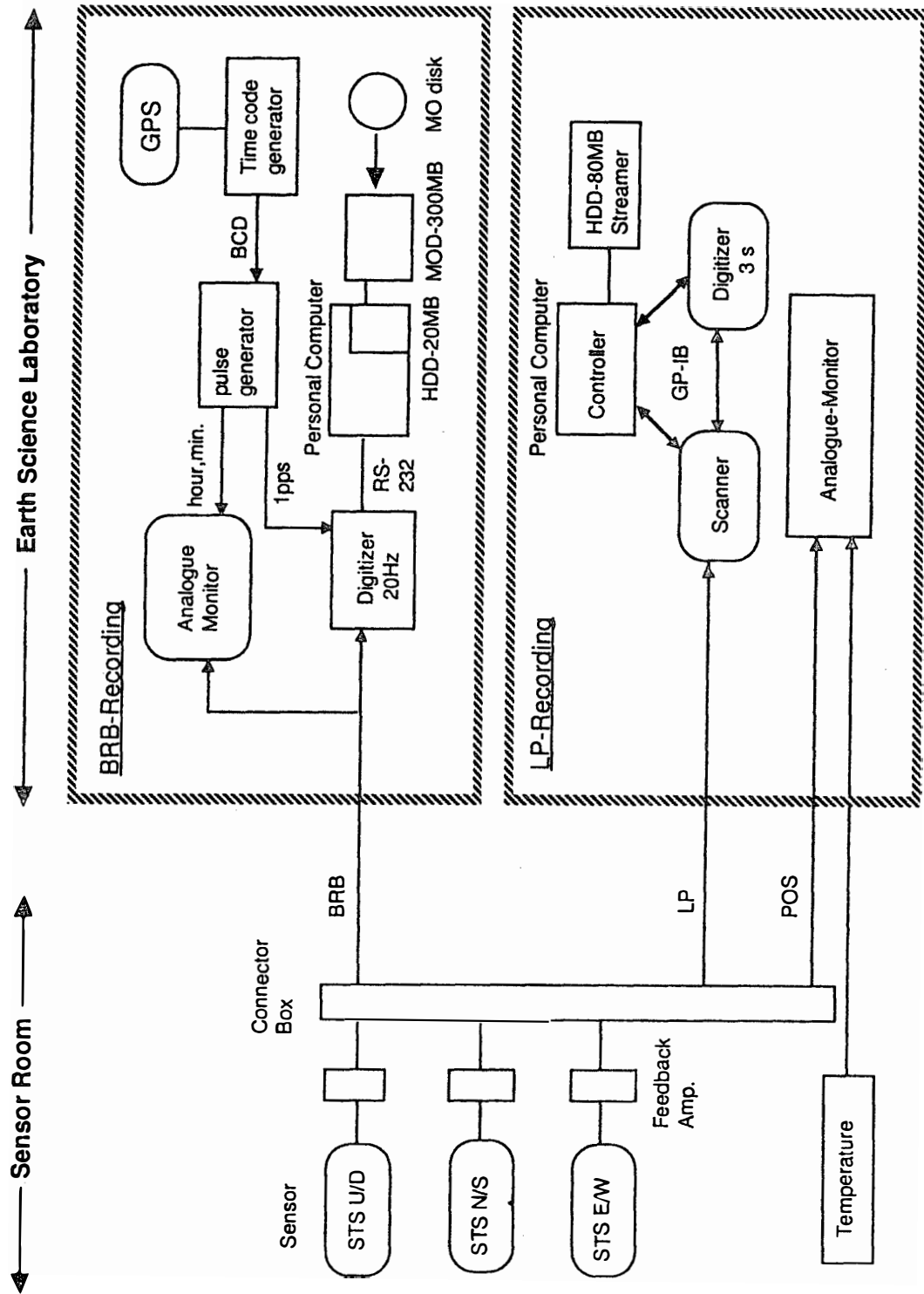


Fig. 4. Block diagram of on-line recording system for the STS seismograph at Syowa Station. Upper figure: recording system of BRB output ; Lower figure: recording system of LP and POS outputs.

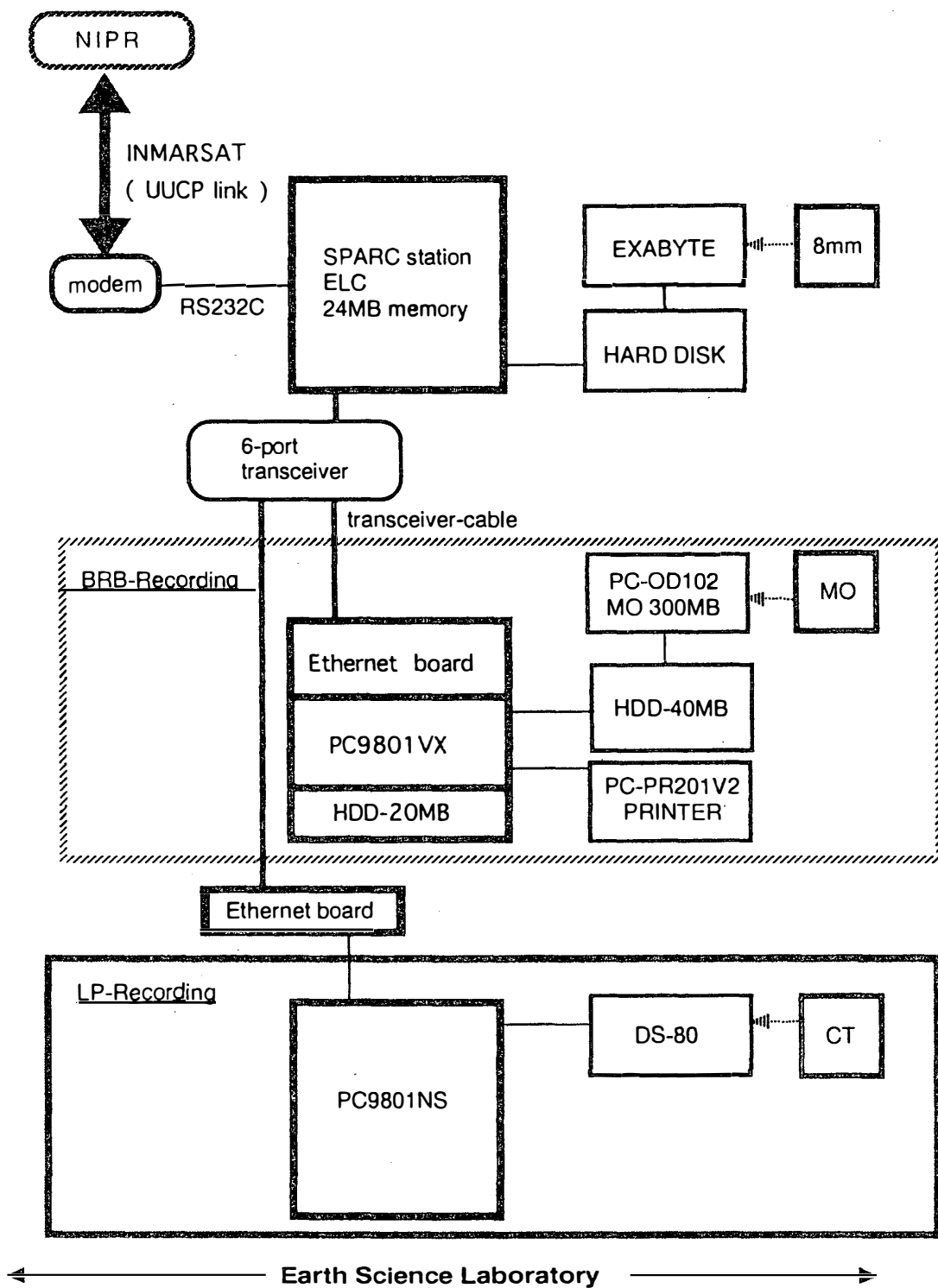
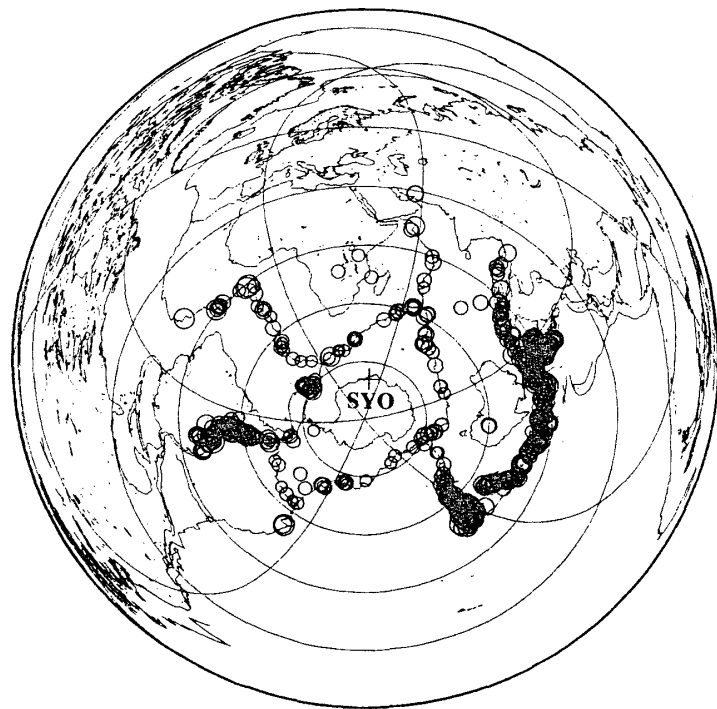
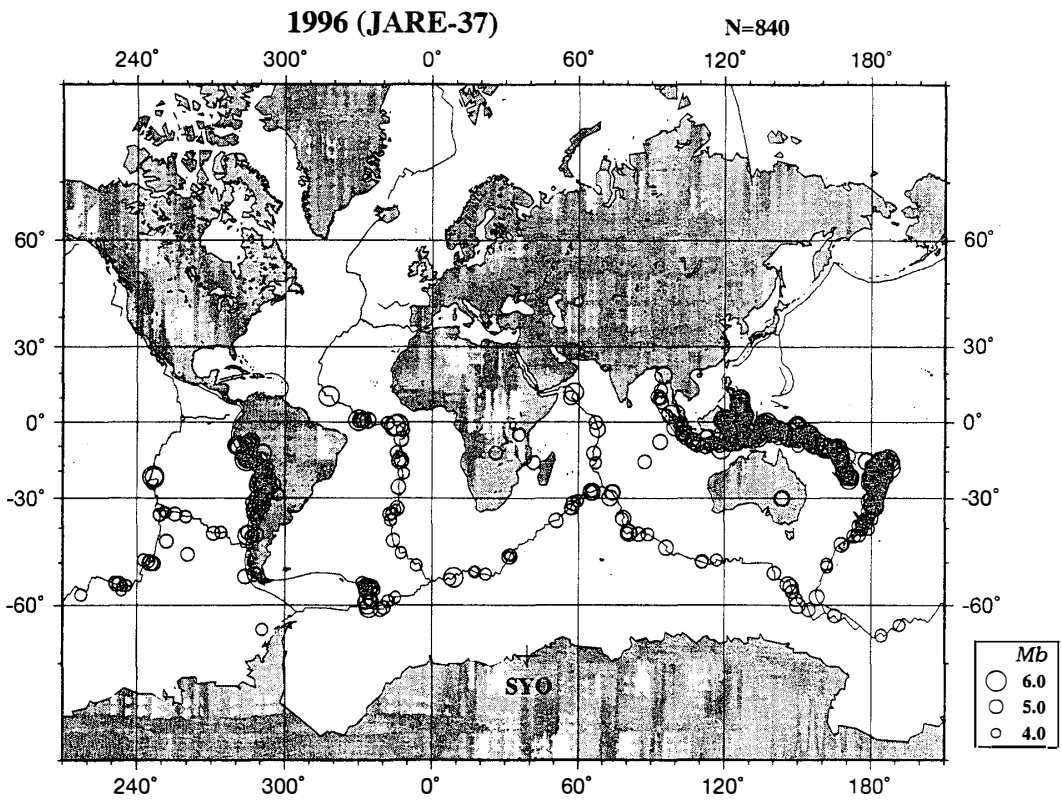


Fig. 5. Block diagram of off-line editing and data transmission system at Syowa Station. Digital data have been successfully transmitted from the Earth Science Laboratory (ESL) at Syowa Station to National Institute of Polar Research (NIPR) from 1994 via the satellite telecommunication link.



1996 (JARE-37)
N=840

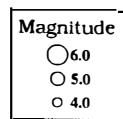


Fig. 6. Epicenters of the 840 earthquakes recorded at Syowa Station. The sizes of earthquake circles are proportional to the body-wave magnitude (M_b) determined by National Earthquake Information Center (NEIC).

Table 1. List of phase arrival-time data.

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
JAN. 01	-IPZ	0147 02.5	#-1		-EPZ	1753 56.0	
	ESH	0157 40.0		JAN. 09	-EPZ	0013 21.5	
	+EPZ	0758 50.0			+EPZ	0114 39.0	
	+EPZ	0817 55.0	#-2		+EPZ	1326 55.0	#-16
	ESH	0828 35.0			-EPZ	1536 56.5	#-17
	-IPZ	0927 18.3	#-3	JAN. 10	-IPZ	2248 40.1	#-18
	-EPZ	1017 35.0		JAN. 11	-EPZ	0404 33.7	#-19
	-EPZ	1049 23.2			+EPZ	1154 22.0	
	+EPZ	1355 40.4			-EPZ	1957 43.3	#-20
	+EPZ	2051 02.8		JAN. 12	+EPZ	0229 48.4	#-21
	-EPZ	2145 39.6	#-4		-EPZ	0504 16.0	
JAN. 02	+EPZ	0652 57.6	#-5		-EPZ	1950 54.3	#-22
	-EPZ	0923 55.0		JAN. 13	-EPZ	0019 55.6	#-23
JAN. 03	+EPZ	0416 57.8			+EPZ	0546 07.6	
	+EPZ	0944 23.0			-EPZ	1225 32.4	
JAN. 04	-EPZ	2339 51.6	#-6		+EPZ	1900 27.0	
JAN. 05	+EPZ	0945 53.6	#-7	JAN. 14	-EPZ	0647 42.4	
	-EPZ	1833 10.8	#-8		+IPZ	1336 09.3	
JAN. 06	-EPZ	0521 42.0		JAN. 15	-EPZ	0140 11.4	
JAN. 07	-EPZ	0221 43.4			+EPZ	1019 34.4	
	+EPZ	0229 33.5		JAN. 16	+EPZ	0527 43.0	#-24
	-EPZ	0354 30.7	#-9		ESH	0537 55.0	
	ESH	0404 13.0		JAN. 17	+EPZ	1019 33.0	#-25
	+EPZ	0539 26.8	#-10	JAN. 18	+EPZ	0256 26.0	
	+EPZ	0813 30.5	#-11		+EPZ	0319 04.0	#-26
	+EPZ	1327 38.3	#-12		-EPZ	0951 44.5	#-27
	-EPZ	1554 13.0	#-13		+EXZ	2010 27.5	#-28
	-EPZ	2019 47.5			+EXZ	2126 45.6	#-29
JAN. 08	+EPZ	1024 17.0		JAN. 19	+EPZ	1914 56.2	#-30
	-EPZ	1352 50.4	#-14		ESH	1925 44.0	
	+EPZ	1707 53.0	#-15		-EPZ	2105 20.0	

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
JAN. 20	+IPZ	0406 17.3	#-31	FEB. 03	+EPZ	0249 37.1	#-44
	+EPZ	0406 17.4			-EPZ	1132 54.7	
	-EPZ	0855 52.5	#-32		+EPZ	1848 55.2	
	-EPZ	0919 41.7		FEB. 04	+IPZ	1021 44.8	#-45
JAN. 21	-EPZ	1434 51.5			+EPZ	1332 50.0	
JAN. 22	+EPZ	0912 57.7	#-33		-IPZ	2308 36.2	#-46
	-EPZ	2325 45.9	#-34		-EPZ	2339 35.5	
	ESH	2330 26.0			+EXZ	2346 25.9	#-47
JAN. 23	+IPZ	1738 55.9		FEB. 05	+EPZ	1852 00.9	
	-EPZ	2026 49.0			+EPZ	2133 50.3	#-48
JAN. 24	+EPZ	1137 47.0		FEB. 06	-EPZ	1811 40.5	#-49
JAN. 25	+EPZ	2241 18.3		FEB. 07	-EPZ	0810 03.2	#-50
JAN. 26	(NIL)				+EPZ	2139 47.8	
JAN. 27	+EPZ	0614 19.5	#-35		-EPZ	2155 58.1	
	+EPZ	1801 40.2	#-36		EXH	2159 42.0	
	+EPZ	1851 27.5		FEB. 08	(NIL)		
	-EPZ	1926 56.0	#-37	FEB. 09	+EPZ	0010 57.3	
JAN. 28	(NIL)				+EPZ	0240 55.6	
JAN. 29	+EPZ	1336 11.4			+EXZ	0428 00.5	#-51
JAN. 30	-EXZ	1407 33.2	#-38		-IPZ	1746 49.8	#-52
	+EPZ	2211 49.4	#-39		ESH	1757 40.0	
	+EPZ	2241 34.1	#-40		+IPZ	1945 22.9	
	ESH	2250 20.0		FEB. 10	(NIL)		
	+EPZ	2338 43.1		FEB. 11	-EPZ	0948 14.8	
JAN. 31	+EPZ	0139 44.0		FEB. 12	-IPZ	0010 42.9	
	-EPZ	0630 50.9			-EPZ	0521 53.0	
	-EPZ	1036 26.9			+IPZ	0919 55.4	#-53
	-EPZ	1940 47.0		FEB. 13	(extreme micro tremor)		
	+EPZ	2040 04.8		FEB. 14	-EPZ	2145 32.0	
	-EXZ	2310 35.2	#-41	FEB. 15	(NIL)		
FEB. 01	-IPZ	0433 14.4	#-42	FEB. 16	+IPZ	0036 05.0	
FEB. 02	+EPZ	1619 12.2	#-43				

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
JAN. 20	+IPZ	0406 17.3	#-31	FEB. 03	+EPZ	0249 37.1	#-44
	+EPZ	0406 17.4			-EPZ	1132 54.7	
	-EPZ	0855 52.5	#-32		+EPZ	1848 55.2	
	-EPZ	0919 41.7		FEB. 04	+IPZ	1021 44.8	#-45
JAN. 21	-EPZ	1434 51.5			+EPZ	1332 50.0	
JAN. 22	+EPZ	0912 57.7	#-33		-IPZ	2308 36.2	#-46
	-EPZ	2325 45.9	#-34		-EPZ	2339 35.5	
	ESH	2330 26.0			+EXZ	2346 25.9	#-47
JAN. 23	+IPZ	1738 55.9		FEB. 05	+EPZ	1852 00.9	
	-EPZ	2026 49.0			+EPZ	2133 50.3	#-48
JAN. 24	+EPZ	1137 47.0		FEB. 06	-EPZ	1811 40.5	#-49
JAN. 25	+EPZ	2241 18.3		FEB. 07	-EPZ	0810 03.2	#-50
JAN. 26	(NIL)				+EPZ	2139 47.8	
JAN. 27	+EPZ	0614 19.5	#-35		-EPZ	2155 58.1	
	+EPZ	1801 40.2	#-36		EXH	2159 42.0	
	+EPZ	1851 27.5		FEB. 08	(NIL)		
	-EPZ	1926 56.0	#-37	FEB. 09	+EPZ	0010 57.3	
JAN. 28	(NIL)				+EPZ	0240 55.6	
JAN. 29	+EPZ	1336 11.4			+EXZ	0428 00.5	#-51
JAN. 30	-EXZ	1407 33.2	#-38		-IPZ	1746 49.8	#-52
	+EPZ	2211 49.4	#-39		ESH	1757 40.0	
	+EPZ	2241 34.1	#-40		+IPZ	1945 22.9	
	ESH	2250 20.0		FEB. 10	(NIL)		
	+EPZ	2338 43.1		FEB. 11	-EPZ	0948 14.8	
JAN. 31	+EPZ	0139 44.0		FEB. 12	-IPZ	0010 42.9	
	-EPZ	0630 50.9			-EPZ	0521 53.0	
	-EPZ	1036 26.9			+IPZ	0919 55.4	#-53
	-EPZ	1940 47.0		FEB. 13	(extreme micro tremor)		
	+EPZ	2040 04.8		FEB. 14	-EPZ	2145 32.0	
	-EXZ	2310 35.2	#-41	FEB. 15	(NIL)		
FEB. 01	-IPZ	0433 14.4	#-42	FEB. 16	+IPZ	0036 05.0	
FEB. 02	+EPZ	1619 12.2	#-43				

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
MAR. 09	-EXZ	0449 58.8	#-93	MAR. 25	-EPZ	0411 54.9	#-107
	-EXZ	1532 48.5	#-94	MAR. 26	(extreme micro tremor)		
	+EPZ	2028 13.0		MAR. 27	(NIL)		
MAR. 10	+IPZ	0908 53.2	#-95	MAR. 28	-IPZ	0741 57.7	
MAR. 11	+EPZ	0032 53.0		MAR. 29	+EPZ	1049 52.3	#-108
	+EPZ	0635 35.1		MAR. 30	-IPZ	1006 32.3	#-109
	-IPZ	1205 49.1	#-96		+EPZ	1325 47.7	
	+EPZ	2325 35.0			+EPZ	2324 41.8	
MAR. 12	(NIL)			MAR. 31	-EPZ	2354 48.3	#-110
MAR. 13	(NIL)			APR. 01	(NIL)		
MAR. 14	(NIL)			APR. 02	+EPZ	0317 09.1	#-111
MAR. 15	-EPZ	0215 05.6	#-97		-IPZ	1903 42.0	#-112
	-IPZ	1129 55.0	#-98	APR. 03	+EPZ	1739 25.0	#-113
MAR. 16	+EPZ	0422 09.7		APR. 04	+EPZ	1124 24.8	
	-EPZ	0929 07.6	#-99	APR. 05	+EPZ	1232 10.2	
	+IPZ	2222 05.5		APR. 06	+EPZ	0418 08.0	#-114
MAR. 17	-IPZ	1501 32.4	#-100		+IPZ	1226 20.3	#-115
	-IPZ	1501 34.4			-EPZ	1601 01.7	
	ESH	1512 04.9			+EPZ	2224 01.3	
	-EXZ	1811 23.3	#-101	APR. 07	-IPZ	1438 55.4	
MAR. 18	-EPZ	0326 33.5	#-102		+EPZ	2003 41.9	
	+EPZ	0916 48.1	#-103	APR. 08	-EPZ	0304 48.7	#-116
	+EPZ	1042 14.9			-EPZ	0334 07.9	#-117
MAR. 19	(NIL)				+IPZ	0935 40.2	
MAR. 20	-EPZ	1300 00.0	#-104		EPZ	0952 29.1	
MAR. 21	+EPZ	2122 26.6	#-105		+IPZ	1702 50.2	#-118
MAR. 22	-EPZ	0344 10.2			-IXZ	1703 04.8	
	-EPZ	1712 27.7		APR. 09	-EPZ	0625 57.6	
	-IPZ	1712 28.8		APR. 10	-EPZ	0223 43.4	#-119
MAR. 23	+EPZ	0810 01.3		APR. 11	-IPZ	0022 17.7	#-120
MAR. 24	+EPZ	2227 21.5	#-106		+EPZ	0151 43.4	#-121

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	+EPZ	1137 26.1	#-122
APR. 12	EPZ	1858 57.8	#-123
APR. 13	-EPZ	1058 02.1	
APR. 14	(NIL)		
APR. 15	+IPZ	1508 40.7	#-124
	+IPZ	2014 02.0	#-125
APR. 16	+EPZ	0043 10.0	#-126
	+IPZ	1410 37.1	#-127
APR. 17	+EPZ	0307 40.9	
	+IPZ	1427 15.3	#-128
APR. 18	+EPZ	0011 30.8	#-129
	+EPZ	0400 14.4	#-130
	+IPZ	1047 03.3	#-131
	-EPZ	1727 49.4	
APR. 19	+IPZ	0031 06.6	#-132
	ISH	0041 01.6	
	EPZ	0052 07.5	
	-IXZ	0242 01.3	#-133
	-IXZ	0244 16.3	
	ESH	0251 56.4	
	-EPZ	0329 01.7	#-134
APR. 20	-EPZ	1129 30.3	
	-IPZ	1928 17.7	#-135
	ISH	1937 37.5	
	-EPZ	2315 02.2	#-136
	ESH	2324 39.0	
APR. 21	-EPZ	1054 15.6	
APR. 22	(NIL)		
APR. 23	-IPZ	0500 40.3	#-137
	EPZ	2023 22.3	
APR. 24	-IPZ	0948 25.4	#-138

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-IPZ	1719 23.9	#-139
APR. 25	-EPZ	0502 17.0	#-140
	+EPZ	0601 36.6	#-141
	ESH	0611 08.0	
	+EPZ	1757 32.0	#-142
	-EPZ	2318 11.7	
APR. 26	-EPZ	0028 01.5	#-143
	-EPZ	1326 44.6	#-144
APR. 27	EPZ	0036 07.5	
	-EPZ	0317 00.3	#-145
	-EPZ	1600 57.8	#-146
APR. 28	(NIL)		
APR. 29	+IPZ	1453 49.7	#-147
	EXH	1504 51.6	
APR. 30	EPZ	0540 55.7	
MAY 01	-EXZ	0343 07.3	#-148
	-EPZ	0934 33.8	#-149
	-EPZ	1018 19.9	
	+EPZ	1405 43.5	#-150
	-EXZ	1609 30.5	#-151
MAY 02	+EPZ	0245 44.1	#-152
	+EPZ	0410 32.9	#-153
	-IPZ	0604 00.4	
	+EPZ	0651 33.0	#-154
	-IPZ	1346 56.1	#-155
	-IPZ	1347 02.9	
	ESH	1357 28.5	
MAY 03	+EPZ	0424 46.1	
	+EPZ	2349 13.7	#-156
MAY 04	+IPZ	0030 41.4	#-157
	-EXZ	0252 18.1	#-158

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
	-EPZ	1719 47.5	#-159		-IPZ	1746 17.1	#-179
MAY 05	+EPZ	0045 46.1	#-160		+EPZ	2321 45.7	#-180
	-EPZ	2210 14.8		MAY 15	+EPZ	0758 14.1	#-181
MAY 06	+EXZ	0952 04.3	#-161		+EPZ	1158 46.5	#-182
	+IPZ	1222 51.8	#-162		-EPZ	1641 54.2	#-183
	-EPZ	1224 56.0			+EPZ	1732 37.1	#-184
	ESH	1232 15.8		MAY 16	-EPZ	2111 57.4	#-185
MAY 07	+EPZ	0124 57.0	#-163	MAY 17	-IPZ	1235 22.9	
	+IPZ	0857 36.6	#-164		+EPZ	1332 05.8	#-186
	EPZ	1225 31.3			+EPZ	1846 46.0	
	+EPZ	1356 01.6	#-165	MAY 18	+IPZ	0350 13.7	
	+EPZ	2050 57.8	#-166		-IXZ	0350 22.2	
	-EPZ	2155 37.4	#-167		-IPZ	0753 49.5	#-187
MAY 08	(NIL)				-IPZ	0754 14.8	
MAY 09	-EPZ	0447 35.7	#-168	MAY 19	-IPZ	1829 19.7	#-188
	+EXZ	1157 48.6	#-169		+IPZ	2137 12.5	
MAY 10	+EPZ	0836 18.3	#-170		+EPZ	2220 30.1	
	-IPZ	1032 05.2	#-171		+EPZ	2334 32.0	#-189
	+EPZ	1733 24.2	#-172	MAY 20	+EPZ	0747 49.0	
MAY 11	-EPZ	0303 44.7			+IPZ	1719 06.4	#-190
	-EPZ	0948 01.9	#-173		ESH	1728 31.7	
	ESH	0958 48.8			+IPZ	2056 03.8	
	-EPZ	1356 34.3		MAY 21	+EPZ	1532 41.0	
	ESH	1407 23.4			-EPZ	1636 09.3	
	+EPZ	1642 33.0	#-174		-IPZ	1637 22.4	
	-EPZ	2133 08.7	#-175		-EPZ	1637 27.5	
MAY 12	(NIL)				+EPZ	2050 01.0	
MAY 13	+EPZ	1012 04.0	#-176		+EPZ	2051 23.2	#-191
	+EPZ	2326 11.1		MAY 22	-EPZ	2007 01.6	
MAY 14	-EPZ	0446 30.7	#-177		-EPZ	2038 25.8	#-192
	+EPZ	1248 51.5	#-178	MAY 23	+IPZ	0344 54.9	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	ESH	0349 55.2	
	+IXZ	0355 11.8	
	-IPZ	1515 04.6	#-193
	-IPZ	2034 04.8	#-194
MAY 24	(NIL)		
MAY 25	-EPZ	0511 41.4	
	-EPZ	0821 05.1	#-195
	-IPZ	1221 35.6	#-196
MAY 26	+IXZ	0156 01.4	#-197
	-IPZ	0917 26.7	
	-IPZ	1024 21.7	
MAY 27	-EPZ	0138 01.6	
	-EXZ	1242 51.4	
MAY 28	+IPZ	1235 21.9	
MAY 29	+EPZ	1345 56.5	#-198
MAY 30	+IPZ	0309 50.5	#-199
	ISH	0315 46.4	
	IXZ	0317 13.6	
	IXH	0321 13.4	
	EPZ	0754 01.7	
	+EPZ	2139 26.3	
MAY 31	+EPZ	0144 14.5	#-200
	EPZ	0147 25.7	
	IXH	0154 24.8	
	-IPZ	2141 54.0	
JUN. 01	-EPZ	0958 03.6	#-201
	+EPZ	1924 23.8	#-202
JUN. 02	-EPZ	0103 40.2	#-203
	+IXZ	0305 48.1	#-204
	-IPZ	0306 23.7	
	+EPZ	0956 24.5	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-IXZ	0956 37.2	
	+EPZ	1007 05.7	
	+ESH	1011 57.6	
	-IPZ	1222 23.8	#-205
JUN. 03	-IXZ	0828 44.2	#-206
	-IXZ	0828 52.0	
	+IPZ	0829 05.1	
	+EPZ	1059 08.5	#-207
	-EPZ	1103 15.0	#-208
	-EPZ	1103 24.7	
	-EPZ	1103 36.5	
	-EPZ	1103 44.7	
	-IXZ	2015 10.0	
JUN. 04	+IPZ	0423 23.5	#-209
	-EPZ	1939 29.2	
JUN. 05	+EPZ	0117 54.3	
	EPZ	1435 16.8	
	-EPZ	1642 02.5	
JUN. 06	-EPZ	0639 14.8	#-210
	+EPZ	1742 29.4	#-211
	+EPZ	1742 40.6	
	EPZ	1743 40.8	
	EPZ	1743 54.4	
	+EPZ	2331 59.7	#-212
JUN. 07	+EPZ	0838 35.1	#-213
JUN. 08	+IPZ	0314 43.0	
	-EPZ	0728 08.2	
	-EPZ	1612 50.5	
	+EPZ	2105 54.2	
	-EPZ	2339 03.3	
	+IXZ	2339 28.3	

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
JUN. 09	EPZ	0130 33.2			-IPZ	1951 05.4	
	+IPZ	0420 14.1	#-214		-IXZ	1951 30.3	
	-EPZ	2022 21.2	#-215	JUN. 17	+IPZ	1133 32.0	#-225
JUN. 10	+EPZ	0117 23.1	#-216		-IPZ	1214 54.0	#-226
	+EPZ	2303 56.8			-EPZ	1248 18.3	#-227
JUN. 11	+EPZ	0714 43.5			-IPZ	1620 59.7	
	-EPZ	1323 05.0			-EPZ	1723 41.3	
	+IPZ	1836 38.1			-EPZ	2217 00.5	#-228
	+EPZ	1847 55.8		JUN. 18	+EPZ	0402 56.3	
	+EPZ	2221 37.8			-EPZ	0431 21.3	
JUN. 12	+EPZ	0236 37.6			+IPZ	0621 44.2	#-229
	-IXZ	0237 00.8			+EPZ	1408 31.0	#-230
	+IPZ	0329 34.4			-IPZ	1409 05.4	
	-IPZ	0814 43.3	#-217		-IPZ	1409 10.2	
	-IPZ	1453 10.9		JUN. 19	-IPZ	1549 28.8	
JUN. 13	-IPZ	0034 57.8		JUN. 20	(NIL)		
	+EPZ	0709 45.3	#-218	JUN. 21	+EPZ	0357 54.8	#-231
	-IXZ	0719 17.6			+EPZ	1416 48.7	
	-IXZ	0719 34.5			-EPZ	1650 26.0	
JUN. 14	+EPZ	0001 47.3	#-219		-IPZ	2314 22.2	#-232
	-EPZ	0235 56.1	#-220	JUN. 22	+IPZ	0036 56.9	#-233
	+EPZ	1342 02.3	#-221		+EPZ	0054 45.2	
	+EPZ	1352 56.9			+IPZ	0403 36.9	
JUN. 15	+EPZ	1011 55.9	#-222		+IPZ	1029 35.5	
	+EPZ	1513 40.4			+IXZ	1029 48.0	
JUN. 16	-EPZ	0012 06.2	#-223		-EPZ	1107 26.5	
	+EPZ	0107 59.0	#-224		+EPZ	1351 48.4	
	+EPZ	0242 08.3			-IPZ	1509 44.3	
	+EPZ	0748 41.0			+IPZ	1510 18.3	
	-EPZ	0932 55.0			-IPZ	1707 13.6	
	-EPZ	0933 06.0			+IPZ	1707 34.6	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
JUN. 23	-IPZ	0137 34.7	
	-IPZ	0216 03.0	
	-EPZ	0443 05.7	
	-EPZ	1100 41.0	#-234
	-IPZ	1304 46.2	
	-IXZ	1305 18.5	
	+EPZ	1518 09.7	
	-IPZ	1555 05.6	
JUN. 24	+EPZ	0337 17.3	
	-IPZ	0338 14.2	
	+IPZ	0338 24.3	
	ESH	0358 22.8	
	+EPZ	2359 32.0	#-235
JUN. 25	+EXZ	0741 45.0	#-236
	-IPZ	1642 50.3	
	+EPZ	2322 40.5	#-237
JUN. 26	-IPZ	0339 58.1	
	+IXZ	0342 48.0	
	-IPZ	0413 04.3	
	+EPZ	1435 49.8	#-238
	-IPZ	2201 44.5	#-239
	-IXZ	2202 08.3	
JUN. 27	+EPZ	0345 34.0	#-240
	+EPZ	0705 55.4	#-241
	-EPZ	1724 22.8	#-242
	+EPZ	1739 40.9	#-243
	+EPZ	2143 35.0	
JUN. 28	+EPZ	0253 51.0	#-244
	EPZ	0947 19.4	
	+IPZ	2058 35.2	#-245
JUN. 29	+IXZ	0459 32.4	#-246

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	+EPZ	1421 29.6	#-247
	+EPZ	1422 55.0	
JUN. 30	+IPZ	0112 22.6	
	+EPZ	0243 50.4	#-248
	-EPZ	0311 24.0	#-249
	+IPZ	1152 16.0	
	-IXZ	1152 53.7	
	+EPZ	2236 43.4	#-250
JUL. 01	+EPZ	0002 07.3	
	+EPZ	1631 06.0	#-251
	-IPZ	1631 24.4	
	-EPZ	1632 41.1	
	+EPZ	2141 55.0	
	EPZ	2213 19.6	
JUL. 02	+EPZ	0553 24.2	
	+EPZ	1609 02.5	#-252
	-EPZ	1941 04.3	
JUL. 03	+EPZ	0353 45.0	#-253
	+EPZ	0602 20.2	#-254
	+EPZ	1225 12.2	#-255
	-EPZ	1302 16.2	
	-EPZ	1605 42.0	
	+IPZ	1700 09.5	#-256
JUL. 04	+EPZ	1200 57.0	
	ESH	1211 26.5	
	-IPZ	1549 03.4	#-257
	-IPZ	1736 25.7	#-258
JUL. 05	+EPZ	1847 49.0	#-259
	-EPZ	2337 44.7	
JUL. 06	-EPZ	0516 42.4	#-260
	-EPZ	1934 27.0	

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
	+EPZ	2154 41.0			-IPZ	1913 17.2	#-271
	+IXZ	2157 52.4		JUL. 16	-EPZ	0321 13.0	
JUL. 07	+EPZ	0523 21.8			EPZ	0408 22.0	
	-EPZ	0523 47.5			-EPZ	0449 15.3	
	-EXZ	0524 56.6			-EPZ	0706 22.7	
	+EPZ	0624 19.1	#-261		+EPZ	1020 22.5	#-272
	-IPZ	1109 51.7			ESH	1031 01.3	
JUL. 08	-EPZ	1637 42.0			+EPZ	1457 51.6	
JUL. 09	-IPZ	1221 25.1			+EPZ	1714 28.7	#-273
JUL. 10	EPZ	0101 05.6	#-262		-EPZ	1842 15.8	#-274
	+IXZ	0608 44.2		JUL. 17	-EPZ	1429 21.4	#-275
	+EPZ	0732 49.8			-EPZ	1920 09.0	#-276
JUL. 11	-EPZ	0742 31.5		JUL. 18	+EPZ	0351 21.5	#-277
	+EPZ	1223 03.2	#-263		ESH	0400 52.5	
	+EPZ	1550 22.3			+EPZ	1811 31.2	
JUL. 12	-EPZ	0310 25.3			+EPZ	2314 39.2	
	-EPZ	0846 38.3	#-264	JUL. 19	-EPZ	0625 07.7	#-278
	-EPZ	1552 54.4			-EPZ	0642 29.0	
	+EPZ	1744 35.7			-IPZ	0849 11.0	
	-EPZ	1938 43.3			-EPZ	1712 25.2	#-279
	-EPZ	2059 52.6	#-265		+EPZ	1939 40.0	#-280
JUL. 13	EPZ	1530 16.7			+EPZ	2113 02.8	
	-IXZ	1530 43.2			-EPZ	2341 25.4	#-281
	EPZ	2208 11.0	#-266		-EPZ	2341 34.0	
	-EPZ	2317 43.6			+EPZ	2347 49.0	#-282
JUL. 14	-EPZ	0711 18.7	#-267	JUL. 20	+EPZ	0002 02.5	
	+IPZ	1933 03.2	#-268		-EPZ	0007 48.4	
	ESH	1942 40.5			-EPZ	0426 03.4	#-283
JUL. 15	+EPZ	0220 15.2	#-269		+IPZ	0753 22.7	#-284
	+EPZ	0805 36.0	#-270		+EPZ	1509 00.2	#-285
	+EPZ	1709 38.0			+EXZ	1712 05.6	#-286

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	+IPZ	2356 23.9	#-287
JUL. 21	+EPZ	2202 13.6	
JUL. 22	+EPZ	0020 54.2	
	+EPZ	0135 31.5	#-288
	+EPZ	0557 45.1	#-289
	IXZ	0557 59.1	
	-EPZ	0848 57.2	
	-EPZ	0924 41.3	#-290
	+EPZ	1133 15.6	#-291
	+EPZ	1432 20.1	#-292
	+EPZ	1443 50.7	#-293
	+EPZ	1509 07.1	#-294
	-EPZ	1513 10.1	
	+EPZ	1528 30.6	
	-EPZ	1601 37.0	
JUL. 23	-EPZ	0344 21.6	#-295
	ESH	0354 25.0	
	-EPZ	0532 14.7	#-296
	ESH	0542 17.5	
	-EPZ	0650 25.4	#-297
	ESH	0700 30.0	
	+EPZ	0833 55.9	
	-EXZ	2321 42.7	#-298
JUL. 24	+EPZ	0300 05.0	#-299
	-EPZ	0421 36.3	#-300
	+IPZ	0806 31.2	
	+EPZ	2035 39.8	
	IXZ	2035 41.0	
	ESH	2036 10.8	
	+IPZ	2113 43.4	#-301
JUL. 25	-EPZ	0350 28.4	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-IPZ	0509 28.2	#-302
	ESH	0520 21.8	
	-IPZ	0950 11.3	
	+EPZ	1259 42.5	#-303
	-EPZ	1810 02.3	
JUL. 26	+EPZ	1311 40.3	#-304
JUL. 27	+IPZ	1152 02.2	#-305
	ESH	1201 54.1	
	-IPZ	2246 54.5	
JUL. 28	+EPZ	0624 14.0	#-306
	EPZ	1040 12.6	#-307
	+EPZ	1053 26.9	#-308
	EPZ	1100 38.4	#-309
	EPZ	2354 41.1	#-310
JUL. 29	+EPZ	1102 34.1	#-311
	+IPZ	1619 23.9	
JUL. 30	-EPZ	0107 38.8	#-312
	+EPZ	0107 56.0	
	-EPZ	1752 15.4	
JUL. 31	-EPZ	1039 09.7	#-313
	-EPZ	2238 45.2	#-314
AUG. 01	+EPZ	0124 27.9	#-315
	+EPZ	0420 55.8	#-316
	ESH	0431 24.4	
	+EPZ	0457 29.0	#-317
	-EPZ	0652 43.5	#-318
	-EPZ	1156 10.0	#-319
	-EPZ	2203 53.1	#-320
	+EPZ	2207 23.4	#-321
AUG. 02	-EPZ	1220 09.8	#-322
	+EPZ	1308 29.4	#-323

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		HRMN	SEC			HRMN	SEC
		IXH 1318	58.7			-IPZ 1349	51.7 #-346
		-EPZ 1635	45.8 #-324			-EPZ 1729	31.6
		-EPZ 1823	56.3 #-325			-IPZ 2259	00.1
AUG. 03		+EPZ 0347	31.2 #-326	AUG. 09		+EXZ 0039	03.6 #-347
		-EPZ 0959	49.6 #-327			-IPZ 1554	18.6
		+EPZ 1105	07.1 #-328			+EPZ 1554	36.8
AUG. 04		+EXZ 0408	09.9 #-329	AUG. 10		+EPZ 0053	22.7
		-IPZ 0700	54.5 #-330			+EPZ 0053	25.6
		-EPZ 1126	10.3 #-331			+EXZ 0519	30.4 #-348
		+EPZ 1552	42.7 #-332			+EPZ 0735	58.6 #-349
		+EPZ 2011	13.2 #-333			+EPZ 1133	31.5 #-350
		+EPZ 2154	33.7 #-334			-EPZ 1211	55.4 #-351
AUG. 05		+EPZ 0045	03.3			+IPZ 1523	30.1
		+EPZ 0222	07.4 #-335			EXZ 1828	09.3
		ESH 0232	37.6			-EPZ 1913	20.3
		-IPZ 0356	21.3 #-336			EPZ 2247	49.5
		+EPZ 1016	24.5	AUG. 11		+EPZ 0144	05.0 #-352
		-IPZ 1114	37.5			-EPZ 0640	23.1 #-353
		+EPZ 1704	43.2 #-337			-EPZ 1431	13.9
		+EPZ 1714	16.4 #-338			-EPZ 1713	40.8
		-EPZ 2152	54.1	AUG. 12		-EXZ 0915	50.4 #-354
		+IPZ 2247	41.1 #-339			+EXZ 1540	06.7 #-355
		-EPZ 2250	06.0 #-340			-EPZ 1557	34.3 #-356
		+EPZ 2315	29.7			-EPZ 1713	13.5 #-357
AUG. 06		-EPZ 0040	51.4 #-341			-EPZ 1825	26.5 #-358
		-EPZ 1025	54.0 #-342	AUG. 13		+EPZ 0441	06.5 #-359
		IXZ 1026	09.0			-EPZ 0651	06.6 #-360
		+EPZ 1519	30.3 #-343			+EPZ 0952	48.7 #-361
AUG. 07		+IPZ 0251	16.2 #-344			+EPZ 0953	35.4 #-362
		-IPZ 1650	13.5 #-345			EXH 1001	54.0
AUG. 08		+EPZ 0327	19.5			EXH 1003	41.9

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	+EPZ	1020 19.3	#-363
	-EPZ	1116 36.4	#-364
	-EPZ	1832 53.3	#-365
	-EPZ	1944 05.6	#-366
	-EPZ	2019 54.7	#-367
AUG. 14	-EPZ	0612 06.1	
	-EPZ	0940 03.0	#-368
	-IPZ	1103 46.3	
	+IPZ	1248 51.0	#-369
	ESH	1258 25.0	
	+IPZ	1551 04.4	#-370
	+EPZ	1647 09.3	#-371
	-IPZ	2133 41.4	#-372
AUG. 15	-EPZ	0417 41.2	#-373
	-EPZ	0637 40.8	#-374
	IXZ	0637 57.4	
	+IPZ	0746 47.3	#-375
AUG. 16	+EPZ	0945 07.8	#-376
	+EPZ	1140 16.4	#-377
	-EPZ	1302 42.3	#-378
	-EPZ	1307 51.4	#-379
	-IPZ	1349 02.6	#-380
	-EPZ	1742 44.7	#-381
	+EPZ	1936 22.2	#-382
AUG. 17	+EPZ	2239 20.5	#-383
AUG. 18	-EXZ	0728 48.5	#-384
	+EPZ	0854 07.2	#-385
	-IPZ	0854 14.5	
	-EPZ	1654 12.0	
	+EPZ	1734 07.2	#-386
AUG. 19	-IPZ	0439 04.3	

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		HRMN SEC	
	+IXZ	0439 27.0	
	-EPZ	0548 51.8	
	+EPZ	0631 02.2	#-387
	-EPZ	1533 15.7	#-388
AUG. 20	+EPZ	0030 45.0	
	+EPZ	0341 35.6	#-389
	+EPZ	0355 53.1	#-390
	+EPZ	0707 36.6	#-391
	+EPZ	1219 44.8	
	EPZ	1222 37.7	
	IXZ	1222 50.2	
AUG. 21	-EPZ	0148 07.2	#-392
	+EPZ	0911 36.6	#-393
	+EPZ	1230 51.0	#-394
	+EPZ	1740 36.5	#-395
	+EPZ	2205 15.8	#-396
AUG. 22	-IPZ	0546 57.2	#-397
	IXH	0556 15.1	
	-EPZ	0605 27.3	
	-IPZ	0715 24.2	
	-EPZ	0741 00.6	
	-EPZ	2017 24.0	#-398
AUG. 23	-EPZ	1303 56.5	
	-EPZ	1305 26.8	
	ESH	1305 52.5	
	-EPZ	1344 38.5	
	+EPZ	1805 58.5	#-399
	-EPZ	2242 34.5	
AUG. 24	+EPZ	0903 00.6	#-400
	ESH	0912 30.5	
	+EPZ	1211 33.4	#-401

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	-EPZ	1420 55.6			+EPZ	1154 24.0	#-427
	-EPZ	1424 05.2	#-402		-EPZ	2132 12.4	
AUG. 25	-EPZ	0052 21.4	#-403		IXZ	2142 58.0	
	+EPZ	0547 56.5	#-404		-EPZ	2312 07.4	#-428
	+EPZ	0600 10.6	#-405	AUG. 31	+IPZ	1611 09.0	#-429
	EPZ	0928 06.1			IXH	1621 23.6	
	-EPZ	2046 15.7	#-406		-EPZ	1908 01.7	#-430
AUG. 26	-EPZ	0559 53.3	#-407		-IPZ	2107 08.0	
	-EPZ	1434 38.6	#-408		IXZ	2107 33.0	
AUG. 27	+EPZ	0012 57.2		SEP. 01	-EPZ	0451 19.8	#-431
	-EPZ	0118 42.6	#-409		+EPZ	0658 25.5	#-432
	+EPZ	0153 26.5	#-410		ESH	0709 06.8	
	-EPZ	0632 11.2	#-411		-EPZ	1801 22.3	#-433
	-IPZ	0635 40.6	#-412		-EPZ	1946 38.0	
	IXH	0645 06.3		SEP. 02	+EPZ	0254 45.1	
	-EPZ	0646 14.4	#-413		-EPZ	0803 23.7	
	+EPZ	1058 13.6	#-414		-EPZ	1740 27.7	
	+EPZ	1447 56.5	#-415	SEP. 03	+EPZ	0024 41.5	#-434
	-EPZ	2306 20.4	#-416		IXZ	0024 49.4	
AUG. 28	-EPZ	0643 16.5	#-417		+EPZ	0037 44.0	
	-EPZ	1614 45.9	#-418		-EXZ	0933 19.9	#-435
	+EXZ	1701 06.4	#-419	SEP. 04	-EPZ	1046 23.0	#-436
AUG. 29	-IPZ	0331 32.4	#-420		+EPZ	1423 38.7	#-437
	-EPZ	0457 32.3	#-421		-EPZ	1437 23.7	#-438
	-EPZ	0831 46.4	#-422		EPZ	1537 30.5	
	-EPZ	1523 37.0	#-423		+EPZ	1733 55.5	
	-IPZ	1701 16.6	#-424		-EPZ	1811 19.1	
	-EPZ	2034 43.6	#-425		+EPZ	1931 30.7	#-439
AUG. 30	-EPZ	0222 33.3			-EPZ	2253 23.5	#-440
	-EPZ	1120 05.2	#-426	SEP. 05	+IPZ	0002 01.4	#-441

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
	-EPZ	0827 02.5	#-442		-EPZ	1135 10.7	#-462
	EXH	0837 43.3			-EPZ	1240 36.5	#-463
	-EPZ	0844 53.3		SEP.08	+EXZ	0240 34.4	#-464
	-EPZ	0853 01.7			+EPZ	0508 37.4	
	-EPZ	0923 09.1	#-443		-EPZ	0820 32.2	#-465
	-EPZ	0959 47.8	#-444		+EXZ	0825 52.0	#-466
	ESH	1010 27.6			+IPZ	1127 32.6	
	-EPZ	1539 25.3	#-445		+EPZ	1146 37.6	#-467
	+EPZ	1549 10.7	#-446		+EPZ	1149 31.5	#-468
	-EXZ	1850 56.2	#-447		+IPZ	1154 37.0	
	+EPZ	2133 12.1			-EPZ	1241 49.5	
	+EPZ	2155 47.0	#-448		-EPZ	1348 22.4	
SEP.06	-EPZ	0000 04.3			-EPZ	1705 43.0	#-469
	-EPZ	0011 48.7		SEP.09	+IPZ	0031 34.3	
	-EPZ	0906 50.7	#-449		+EPZ	0059 42.7	
	+EPZ	0931 04.4	#-450		+EPZ	0333 16.1	#-470
	-IPZ	1252 50.0	#-451		+EPZ	0943 48.0	#-471
	IXZ	1253 31.2			ESH	0953 26.5	
	-EPZ	1716 55.7	#-452		+EPZ	1831 22.0	#-472
	+EPZ	1906 04.2	#-453	SEP.10	-EPZ	0247 03.6	#-473
	-EPZ	1926 51.8	#-454		+EPZ	0633 40.8	#-474
	-EXZ	2019 47.0	#-455		-EPZ	0906 05.5	#-475
	+EXZ	2312 44.1	#-456		-EPZ	1023 26.0	
SEP.07	-EXZ	0001 55.5	#-457		-EXZ	1253 38.3	#-476
	+EPZ	0308 16.8	#-458		+EPZ	1407 05.3	#-477
	+EXZ	0443 05.3	#-459		+EPZ	1451 44.2	#-478
	+EPZ	0919 13.5	#-460	SEP.11	-EPZ	0021 21.0	
	-EPZ	0919 21.5			-IPZ	0256 14.6	
	+EPZ	1043 37.0	#-461		-EXZ	0354 14.1	#-479
	IXZ	1043 50.9		SEP.12	+EPZ	0059 46.8	#-480

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
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	-EPZ	1916 14.7			+IPZ	2156 55.4	#-494
	+EPZ	2125 46.5			-EPZ	2317 45.5	#-495
	+IPZ	2358 50.0		SEP. 17	-EPZ	1605 49.3	#-496
	-EPZ	2359 21.1			+EPZ	1651 09.5	#-497
SEP. 13	-EPZ	0327 29.9	#-481		-EPZ	1659 09.8	#-498
	-EPZ	0354 01.6			+EPZ	1844 34.0	
	-IPZ	1401 10.2			-EPZ	2221 36.0	#-499
	-EPZ	1605 02.0			+EPZ	2321 48.8	#-500
SEP. 14	+EPZ	0305 53.2	#-482	SEP. 18	+EXZ	0424 08.9	#-501
	ESH	0316 17.6			+EPZ	0542 36.0	#-502
	+EPZ	0808 07.0			+EPZ	1048 01.2	#-503
	+EPZ	1323 55.2	#-483	SEP. 19	+EPZ	0323 08.6	
	ESH	1334 47.5			-EPZ	1227 04.6	
	-EPZ	1341 11.3			+EPZ	1247 57.3	#-504
SEP. 15	EPZ	0030 44.5			-IPZ	2116 53.8	#-505
	EXZ	0030 54.8			ESH	2126 22.7	
	-EPZ	0724 48.6	#-484	SEP. 20	+EPZ	0016 49.9	#-506
	-EPZ	0937 12.2	#-485		+EPZ	0210 54.0	#-507
	+EPZ	1830 45.7	#-486		-IPZ	0211 02.0	
	ESH	1841 46.0			+EPZ	0423 59.3	#-508
SEP. 16	+EPZ	0450 25.5			-EPZ	0725 30.3	#-509
	+EXZ	0600 44.3	#-487		EPZ	1238 15.8	#-510
	-EPZ	0927 16.7	#-488		-EPZ	1247 36.4	#-511
	+EPZ	1304 27.7	#-489		-IPZ	1741 49.6	
	-EPZ	1413 51.0			EPZ	1938 31.4	#-512
	-EPZ	1434 54.9	#-490		-EPZ	2351 49.0	#-513
	-EPZ	1532 58.5	#-491	SEP. 21	-EPZ	0013 12.6	#-514
	-EPZ	1549 07.5			-EPZ	0136 33.0	#-515
	+EXZ	1719 14.9	#-492		+IPZ	0304 54.7	#-516
	-EPZ	1720 05.7	#-493		ESH	0314 33.0	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-EPZ	0438 37.8	#-517
	-EPZ	0548 59.5	#-518
	-EPZ	2251 52.1	#-519
SEP. 22	+IPZ	0233 42.4	#-520
	+EPZ	0248 03.0	
	+EPZ	1902 34.8	#-521
	-EPZ	2204 46.0	#-522
SEP. 23	-EPZ	0652 41.3	#-523
SEP. 24	+IPZ	0453 01.1	
	+EPZ	1329 11.7	#-524
SEP. 25	-IPZ	1045 46.9	#-525
	-IXZ	1046 36.3	
	+EPZ	1159 09.7	#-526
	+EPZ	1425 03.6	#-527
	-IPZ	1500 49.6	
	+EPZ	2127 41.0	#-528
	-EPZ	2127 48.0	
SEP. 26	-EPZ	0833 30.4	
	+EPZ	1448 11.7	#-529
	+EPZ	1542 05.0	#-530
	+EPZ	1841 47.3	#-531
SEP. 27	+EPZ	0130 16.4	#-532
	+EPZ	0921 35.0	
	-EPZ	1230 06.5	#-533
	+IPZ	1408 20.6	#-534
	+EPZ	2302 47.0	#-535
SEP. 28	+EPZ	1332 37.4	#-536
	+EPZ	1836 17.2	#-537
SEP. 29	+EPZ	0001 02.6	#-538
	+EPZ	0129 35.9	

DATE	PHASE	UTC TIME	REMARKS
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	+EPZ	0628 33.0	#-539
	-EPZ	0913 40.8	#-540
SEP. 30	-EPZ	0044 53.2	#-541
	+EPZ	0148 48.7	#-542
	+EPZ	0213 16.5	#-543
	+EPZ	0528 33.3	#-544
	+IPZ	0609 27.2	
	+EPZ	0849 56.0	#-545
	+EPZ	1025 09.5	#-546
	+EPZ	1040 47.4	
	+EPZ	1141 10.6	#-547
	+EPZ	1853 49.7	#-548
OCT. 01	-EPZ	0112 47.2	
	-EPZ	1211 24.5	#-549
	-EPZ	1211 31.6	
	-EPZ	1339 56.9	
	+IPZ	1504 56.7	#-550
	ESH	1514 45.2	
	+EXZ	1602 48.7	#-551
	-EXZ	2316 58.0	#-552
OCT. 02	-EPZ	1001 39.5	
	EPZ	1144 01.6	
	+EPZ	1255 18.0	
	+EPZ	1318 23.5	#-553
	+IPZ	1620 04.3	
	-IPZ	1745 12.7	
	-EPZ	2204 36.7	#-554
OCT. 03	-EPZ	1029 40.7	
	+EXZ	1143 13.8	#-555
OCT. 04	+EPZ	0002 59.1	

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
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	-EPZ	0719 05.4	#-556		EXH	1351 38.6	
	-EPZ	0815 53.3	#-557		+EPZ	1500 05.0	
	-EPZ	1923 51.0	#-558		+EPZ	2317 11.4	
OCT.05	-EPZ	0020 26.0	#-559	OCT.10	-EXZ	0033 14.0	#-574
	-EPZ	0512 28.2			+EPZ	0835 37.7	#-575
	-EPZ	2132 21.5	#-560		+EXZ	1533 27.2	#-576
OCT.06	+EPZ	0128 47.3		OCT.11	+EPZ	1720 19.4	#-577
	-EPZ	0428 56.2	#-561	OCT.12	-EPZ	1048 47.3	#-578
	+EPZ	0531 41.9	#-562		+EPZ	1549 07.1	#-579
	-EPZ	0641 36.4	#-563		-EPZ	1604 45.0	#-580
	+EPZ	0750 30.7			-EPZ	1840 17.7	#-581
	+EPZ	1014 31.7	#-564	OCT.13	-EPZ	0142 14.4	#-582
	-EPZ	2033 16.5			+IPZ	2115 55.4	
	+EXZ	2033 50.5		OCT.14	-EPZ	0021 01.8	#-583
	+EPZ	2052 22.6	#-565		+IPZ	2339 29.4	#-584
OCT.07	+IPZ	0855 52.3	#-566	OCT.15	+EPZ	0538 13.9	
	ESH	0904 03.0		OCT.16	+EPZ	0131 35.6	#-585
	-IPZ	0935 29.0	#-567		ESH	0141 52.4	
	ESH	0945 04.5		OCT.17	+EPZ	0345 23.4	#-586
	+EPZ	1952 52.8	#-568		-EPZ	1559 23.2	
OCT.08	-EPZ	0143 58.1	#-569		+IPZ	1628 31.9	#-587
	-EPZ	0517 13.2	#-570		-EPZ	2104 51.6	#-588
	+EPZ	0646 13.2	#-571	OCT.18	-EPZ	0517 02.6	#-589
	+EPZ	0811 25.5			+IPZ	0637 03.8	#-590
	-EPZ	0822 02.7			+EPZ	0857 43.6	#-591
	-EPZ	1153 44.4	#-572		-EPZ	1109 09.7	
	-EPZ	2247 35.0	#-573		+IPZ	1132 11.5	#-592
OCT.09	+EPZ	1324 53.8			-IPZ	1351 42.8	#-593
	+EXZ	1329 11.2			-EPZ	1531 08.8	#-594
	-EPZ	1340 44.2			+IPZ	1703 06.6	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-EPZ	1703 12.0	
	-EPZ	1742 57.5	#-595
OCT. 19	-EPZ	0704 22.2	#-596
	-EPZ	0850 39.1	
	EPZ	1419 52.6	
	+EPZ	1503 30.6	
	+IPZ	1505 31.2	#-597
	IXH	1514 58.4	
OCT. 20	+EPZ	0944 26.7	#-598
	-IPZ	1432 37.0	#-599
	-EPZ	1933 38.1	#-600
OCT. 21	-IPZ	1944 57.8	#-601
	ESH	1954 51.5	
OCT. 22	-IPZ	0110 19.4	#-602
	-EPZ	0233 10.9	
	+EPZ	0514 13.5	#-603
	+EPZ	0833 32.2	#-604
	-EPZ	0912 29.2	#-605
	+EPZ	1059 19.8	#-606
OCT. 23	+EPZ	0200 21.0	#-607
	-EPZ	1031 13.4	#-608
OCT. 24	-EPZ	0458 18.3	#-609
	-EPZ	1038 40.8	#-610
	-EPZ	1044 05.5	
	-IPZ	1409 34.8	#-611
	+EPZ	1812 17.3	#-612
	-EPZ	1951 55.5	
	IXZ	1953 04.5	
OCT. 25	-IPZ	0727 35.5	#-613
	-EPZ	1039 09.4	#-614

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	+EPZ	1039 47.7	
	-IPZ	2011 43.2	
	+IPZ	2012 05.4	
	ESH	2021 40.7	
	-EPZ	2204 15.6	#-615
OCT. 26	(NIL)		
OCT. 27	+EPZ	1541 55.7	
	+EPZ	2110 42.3	#-616
OCT. 28	-EPZ	2338 10.4	#-617
OCT. 29	-EPZ	0407 14.7	#-618
	-EPZ	0851 42.6	
	+EPZ	0853 05.3	
	-EPZ	1317 10.8	#-619
OCT. 30	-EPZ	0453 44.3	
	+EPZ	0931 31.0	
	-EPX	1702 59.9	#-620
	-EXZ	2243 33.5	#-621
	-EPZ	2310 17.5	#-622
	+EPZ	2343 03.3	#-623
OCT. 31	-EPZ	0410 30.5	#-624
	-EPZ	1017 38.8	#-625
	+EPZ	1101 05.3	#-626
	-EPZ	1255 37.5	#-627
	-EPZ	1416 09.1	#-628
	-EPZ	1518 55.0	#-629
	+EXZ	1832 18.9	#-630
	+EPZ	1837 22.4	#-631
	-EPZ	1856 15.2	#-632
	+EPZ	1951 04.3	#-633
NOV. 01	-EPZ	0345 58.5	#-634

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
	-EPZ	0713 40.4	#-635		-EPZ	1303 37.5	#-654
	-EPZ	1327 47.0	#-636	NOV.06	-EPZ	0906 12.9	
	+EPZ	2050 06.2	#-637		-EPZ	1223 23.1	#-655
NOV.02	+IPZ	0020 21.0	#-638		+EPZ	1716 11.2	#-656
	ESH	0029 50.2			-IPZ	2019 52.4	
	-EPZ	1730 59.7	#-639		+EPZ	2029 56.6	
	-EPZ	1844 32.2	#-640	NOV.07	-EPZ	0323 59.8	#-657
NOV.03	-EPZ	0553 51.5			-EXZ	0623 52.2	#-658
	-EPZ	0755 10.8	#-641		-EPZ	1003 47.6	#-659
	-EPZ	1616 21.0	#-642	NOV.08	+EPZ	0907 56.0	#-660
	-EPZ	2156 35.7	#-643		+IPZ	1412 26.9	#-661
NOV.04	+EPZ	0528 48.4			ISH	1422 06.9	
	+EPZ	1307 09.3	#-644		+EPZ	1648 59.2	#-662
	+EPZ	1334 49.4		NOV.09	+EPZ	0313 01.1	#-663
	-EPZ	1655 27.7	#-645		-EPZ	0519 38.6	#-664
	-EPZ	1715 09.2	#-646		+IPZ	0634 57.5	#-665
	-EPZ	1743 09.7			-IPZ	0804 41.8	#-666
	IXH	1749 51.0			ESH	0813 56.4	
	+EXZ	1933 37.1	#-647		+IPZ	0946 16.7	#-667
	+EPZ	2018 15.6	#-648		-EPZ	1332 37.1	#-668
	+EPZ	2019 27.7	#-649		+IPZ	1740 27.9	#-669
	+IXH	2029 29.0		NOV.10	-IPZ	0637 48.5	#-670
NOV.05	-EXZ	0108 01.7	#-650		-EPZ	1114 11.8	#-671
	-IPZ	0952 41.8	#-651		-EPZ	1724 14.3	
	ESH	1001 50.2			-EPZ	1828 56.0	#-672
	+EPZ	1017 29.0	#-652		-EXZ	2019 43.4	#-673
	-EPZ	1019 29.8			-IPZ	2254 35.3	#-674
	-EPZ	1022 50.2		NOV.11	+IPZ	0058 59.7	#-675
	EXH	1027 04.9			ESH	0108 29.7	
	+EPZ	1243 19.1	#-653		-EPZ	0650 02.4	#-676

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
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	+EPZ	0710 44.5			+EXZ	1244 33.9	#-702
	-EPZ	0935 49.9	#-677		+EPZ	1704 15.8	
	ESH	0946 54.4			-EPZ	1848 55.3	#-703
	-IXZ	1228 13.5	#-678	NOV. 14	+EPZ	0251 26.7	#-704
	-EPZ	1659 27.9	#-679		+EPZ	0305 22.2	#-705
	+EPZ	1808 49.0	#-680		-EPZ	0630 04.0	#-706
NOV. 12	-EPZ	0155 29.4	#-681		+EXZ	0812 01.7	#-707
	-EPZ	1259 17.1			-IPZ	0844 35.7	
	+EPZ	1608 03.4			-EPZ	1052 18.3	#-708
	+EPZ	1712 15.8	#-682		+IPZ	1156 39.8	#-709
	-IPZ	1722 32.4	#-683		-EXZ	1251 52.4	#-710
	-EPZ	1728 47.1	#-684		+EPZ	1306 32.1	#-711
	+IPZ	1751 59.4	#-685		-IPZ	1359 58.3	#-712
	+EPZ	1830 01.4	#-686		-IPZ	1717 33.2	#-713
	-EPZ	1839 25.6	#-687		-IPZ	1756 29.3	#-714
	+EPZ	1843 42.9	#-688	NOV. 15	+EPZ	0902 02.8	#-715
	+EPZ	1854 49.3	#-689		+EPZ	1507 01.2	
	-EPZ	1959 03.9	#-690		+EPZ	1543 29.6	
	-EPZ	2020 18.3	#-691		+EPZ	1752 13.6	#-716
	+EPZ	2156 28.5	#-692	NOV. 16	+IPZ	0451 13.9	#-717
	+IPZ	2347 46.5	#-693		+IPZ	0452 54.4	#-718
NOV. 13	+EPZ	0040 51.6	#-694		ESH	0502 28.8	
	+EPZ	0053 18.3	#-695		+EPZ	0539 52.5	#-719
	+EPZ	0237 30.5	#-696		-EPZ	0541 33.4	
	+EPZ	0254 12.4	#-697		+EXZ	1001 01.7	#-720
	-EPZ	0300 03.2	#-698		-EPZ	1059 39.3	#-721
	+EPZ	0456 18.7	#-699		-IPZ	1242 17.8	#-722
	-IPZ	0522 42.0			-EPZ	1454 52.4	#-723
	+EPZ	0754 21.1	#-700	NOV. 17	+EPZ	0201 07.4	#-724
	+EPZ	1004 43.5	#-701		-EPZ	0540 06.9	#-725

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
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	EPZ	0847 07.0	#-726	NOV. 23	+EPZ	0409 58.2	
	-EPZ	0909 08.8	#-727		+EPZ	0627 55.3	
	+EXZ	1202 39.1	#-728		-EPZ	1048 57.5	#-744
	+EPZ	1323 39.0	#-729		+EPZ	1400 55.5	
	EXH	1328 38.2			+EPZ	1711 26.3	
	-EPZ	1330 00.5			+EPZ	1744 21.3	
	+IPZ	1747 13.7	#-730		-EPZ	1956 51.0	
	-IPZ	2122 52.6	#-731		-EPZ	2306 36.5	#-745
	ISH	2132 28.7		NOV. 24	-EPZ	0006 34.4	
	+IPZ	2338 23.0	#-732		+EPZ	0512 21.9	
NOV. 18	-EPZ	0753 11.7	#-733		+EPZ	0811 31.4	#-746
	-EPZ	1057 06.2	#-734		+EPZ	1523 29.9	
	-EPZ	1057 08.9			-EPZ	1723 47.8	
	+EPZ	1503 42.3			-EPZ	1822 11.6	
NOV. 19	+IPZ	0826 07.0	#-735	NOV. 25	+EXZ	1128 59.1	#-747
	+EPZ	1103 12.5			+EPZ	1336 54.8	#-748
	+EPZ	1829 30.4	#-736	NOV. 26	-EPZ	0143 02.6	#-749
NOV. 20	-EPZ	0046 46.3			-EPZ	0446 33.5	#-750
	EPZ	0246 45.5			-EPZ	0929 25.5	#-751
	+EPZ	0812 56.1			+EPZ	1039 18.4	#-752
	-EPZ	1322 06.6	#-737		+EPZ	1524 01.3	#-753
	-EPZ	1956 34.7			-EPZ	2142 43.9	#-754
	-EPZ	2201 04.2			+EPZ	2354 42.6	#-755
NOV. 21	-EPZ	0737 57.2	#-738	NOV. 27	+EPZ	0011 40.9	#-756
	+EPZ	0756 56.2	#-739		-EPZ	0152 01.4	#-757
	+EPZ	1759 13.9	#-740		+EPZ	1842 38.6	#-758
	+EXZ	2158 29.8	#-741		-EPZ	2037 00.5	
NOV. 22	-EPZ	0111 46.0			+EPZ	2037 28.2	
	+EPZ	0813 57.4	#-742		-EPZ	2357 32.7	#-759
	+EPZ	2256 24.7	#-743	NOV. 28	+IPZ	0759 38.0	

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
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	EXH	1420 12.4			+EPZ	1309 52.8	#-778
	ESH	1420 16.7			-EPZ	1335 33.1	
	-EPZ	1530 10.6			-EPZ	1441 24.2	#-779
	ESH	1540 01.2		DEC.04	+EPZ	1812 55.3	#-780
	-EPZ	2138 18.2		DEC.05	+EPZ	0015 06.1	#-781
NOV.29	-EPZ	0057 52.4	#-761		-EPZ	0409 44.2	
	-EPZ	0100 50.9			+EPZ	1732 57.2	#-782
	+EPZ	0109 00.6	#-762		-IPZ	1733 12.9	
	+EPZ	0446 36.8	#-763		-EPZ	2008 12.0	
	-EPZ	1604 09.2	#-764		+EPZ	2118 25.2	
NOV.30	+EPZ	0237 26.3	#-765		-EPZ	2341 56.5	#-783
	-IPZ	2226 22.1	#-766	DEC.06	-EPZ	0110 05.4	#-784
	ESH	2236 16.5			+EPZ	1014 53.2	#-785
DEC.01	-EPZ	0030 07.9	#-767	DEC.07	-EPZ	0312 25.2	#-786
	+EPZ	0213 25.1	#-768		+EPZ	0412 34.4	
	+EXZ	0249 36.2	#-769		-EPZ	1212 02.7	
	+EPZ	0949 54.3			+EPZ	2259 10.1	#-787
	-EPZ	1350 39.5	#-770		+EPZ	2313 38.3	#-788
	+EPZ	2320 53.3	#-771	DEC.08	-EPZ	0223 34.1	
	-EPZ	2322 30.3			+EPZ	0333 06.3	
	ESH	2330 04.2			-EPZ	0524 02.3	
DEC.02	+EPZ	0851 56.0	#-772		+EPZ	1833 40.6	
	-EPZ	0929 25.8	#-773		+EPZ	1926 18.2	#-789
	-EPZ	1928 36.2			+EPZ	1939 05.7	#-790
	-EPZ	2000 32.0	#-774	DEC.09	+EPZ	0405 52.2	#-791
	-EPZ	2137 26.7	#-775		ESH	0415 23.6	
	-IPZ	2236 45.4			+EPZ	1934 25.3	#-792
	-EPZ	2352 36.0	#-776	DEC.10	-EPZ	0226 24.6	#-793
DEC.03	-EPZ	0025 06.9			-EPZ	0848 48.0	#-794

DATE	PHASE	UTC TIME	REMARKS	DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC				HRMN SEC	
	ESH	0859 13.0			+EPZ	2313 20.1	
	-EPZ	0935 54.2	#-795	DEC. 17	-EPZ	0102 06.3	
	+IPZ	1717 58.9			-EPZ	0431 36.6	
DEC. 11	+EPZ	0327 42.3	#-796		+EPZ	0458 27.3	
	+EPZ	0434 51.8	#-797		+EPZ	0505 42.8	
	-EPZ	0526 01.6			+EPZ	0514 36.7	
	-EPZ	0534 28.8	#-798		+EPZ	0515 44.6	
	+EPZ	0957 23.4	#-799		-EPZ	0521 45.1	
	+EPZ	1230 34.8	#-800		-EPZ	0845 33.9	
	-EPZ	1513 48.8	#-801		-EPZ	1928 19.8	
DEC. 12	-EPZ	1834 53.1	#-802		-EPZ	2252 49.3	#-814
DEC. 13	-EXZ	0113 16.5	#-803	DEC. 18	+IPZ	1024 00.5	#-815
	+IPZ	0857 23.7	#-804		+EPZ	2226 55.1	
	+EPZ	1007 38.9	#-805	DEC. 19	+EPZ	0841 08.3	
	+EPZ	1241 34.5	#-806		-EPZ	1009 26.7	#-816
DEC. 14	-EXZ	0958 38.7	#-807		-IPZ	1125 56.7	#-817
	-EPZ	1423 40.8	#-808	DEC. 20	+EPZ	0219 48.2	
	EPZ	1639 28.0			-EPZ	0403 55.0	
	+IPZ	1818 03.7	#-809	DEC. 21	+IPZ	0147 44.5	
	+EPZ	1818 27.6			+EPZ	0844 36.9	#-818
DEC. 15	-EPZ	0604 20.9			-EXZ	0939 09.1	#-819
	-EPZ	1001 59.3			+EPZ	1641 52.1	
	+EPZ	1551 12.2			+EPZ	1913 23.3	
	+EPZ	1835 24.2	#-810		+EPZ	2330 52.6	
	-EPZ	2324 08.5	#-811		-EPZ	2351 58.6	#-820
DEC. 16	+EPZ	0241 23.5	#-812	DEC. 22	EPZ	1511 58.0	
	+EPZ	0249 12.4			+EXZ	1512 14.7	
	+EPZ	0435 56.5			+IXZ	1515 19.5	
	+EPZ	1712 51.3	#-813		-EPZ	1524 26.3	
	ESH	1722 36.4		DEC. 23	-EPZ	0041 22.3	#-821

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-EPZ	0432 02.0	#-822
	+EPZ	0605 30.4	#-823
DEC. 24	-EPZ	1324 02.0	
	+EPZ	1500 45.8	
	+EPZ	2342 46.8	#-824
DEC. 25	+EPZ	0136 31.6	
	-EPZ	0705 14.3	#-825
	-EPZ	0852 56.1	#-826
	-EPZ	1540 24.6	
DEC. 26	+EPZ	1351 46.9	
	-EPZ	1408 22.4	
	-EPZ	1421 03.6	
	-EPZ	1947 12.8	#-827
	+EPZ	2101 25.3	#-828
DEC. 27	-EXZ	0302 49.5	#-829
	-EPZ	1132 52.1	#-830
DEC. 28	+EPZ	1832 37.3	#-831
DEC. 29	+EPZ	0355 58.5	#-832
	ESH	0406 45.3	
	+EPZ	0456 53.5	#-833
	-EPZ	2102 22.7	#-834
DEC. 30	+EPZ	0851 18.6	
	-EPZ	1919 12.5	#-835
	-EPZ	1927 38.7	
	-EPZ	1954 28.2	#-836
	ESH	2003 09.0	
DEC. 31	-EXZ	0316 34.7	#-837
	-EPZ	0324 18.5	
	+EPZ	0857 13.4	#-838
	-EPZ	0947 30.4	

DATE	PHASE	UTC TIME	REMARKS
		HRMN SEC	
	-EPZ	1301 40.1	#-839
	-EPZ	1526 18.5	#-840

**Table 2. List of hypocenters of teleseismic events detected at Syowa Station.
The total number of events are 840.**

No.	Date	Origin Time			Geographic		Coordinates		Depth (km)	Magnitude		Epicentral distance (deg)	Region
		h	m	s	Latitude (deg)	Longitude (deg)		(Mb)		(Ms)			
1	1 1	1	34	16	20.391 S	174.234 W	33	5.5	5.7	87.57	TONGA ISLANDS.		
2	1 1	8	5	10.8	0.729 N	119.931 E	33	6.3	7.6	87.21	MINAHASSA PENINSULA, SULAWESI.		
3	1 1	9	14	34.1	0.523 N	119.838 E	33	5.6		86.99	MINAHASSA PENINSULA, SULAWESI.		
4	1 1	21	32	53.9	0.749 N	120.037 E	33	5.1	4.7	87.27	MINAHASSA PENINSULA, SULAWESI.		
5	1 2	6	41	3.4	18.895 S	69.211 W	108	5.2		79.03	NORTHERN CHILE.		
6	1 4	23	33	27.7	55.574 S	27.072 W	33	5.0	5.5	31.91	SOUTH SANDWICH ISLANDS REGION.		
7	1 5	9	33	22.8	6.465 S	130.644 E	33	5.0	4.5	84.39	BANDA SEA.		
8	1 5	18	20	26.2	3.168 S	130.566 E	33	4.8	4.3	87.42	SERAM, INDONESIA.		
9	1 7	3	42	46.7	24.197 S	178.844 W	390	5.0		82.96	SOUTH OF FIJI ISLANDS.		
10	1 7	5	28	0.9	6.922 S	125.256 E	524	5.2		82.03	BANDA SEA.		
11	1 7	8	0	29.9	10.653 S	161.260 E	33	5.1	5.0	90.84	SOLOMON ISLANDS.		
12	1 7	13	14	30.4	6.921 S	155.843 E	43	5.6	5.3	92.67	SOLOMON ISLANDS.		
13	1 7	15	43	6.6	2.863 S	67.866 E	10	5.3	5.1	68.70	CARLBERG RIDGE.		
14	1 8	13	40	58	18.096 S	178.304 W	597	4.8		88.99	FIJI ISLANDS REGION.		
15	1 8	16	55	7.6	0.988 N	120.202 E	33	5.2		87.55	MINAHASSA PENINSULA, SULAWESI.		
16	1 9	13	13	43.5	5.200 S	153.543 E	49	4.9	4.9	93.54	NEW IRELAND REGION, P.N.G.		

17	1	9	15	24	41.2	22.619	S	171.068	E	56	5.1	5.1	82.17	LOYALTY ISLANDS REGION.
18	1	10	22	36	3.2	6.129	S	133.564	E	38	5.9	5.5	85.75	ARU ISLANDS REGION, INDONESIA.
19	1	11	3	51	34.4	8.428	S	158.693	E	93	5.5		92.15	SOLOMON ISLANDS.
20	1	11	19	45	1.3	0.460	N	119.580	E	38	5.2	5.2	86.84	MINAHASSA PENINSULA, SULAWESI.
21	1	12	2	17	31.3	23.261	S	170.797	E	15	5.8	5.5	81.49	LOYALTY ISLANDS REGION.
22	1	12	19	38	20.8	5.815	S	130.215	E	33	5.5	5.4	84.84	BANDA SEA.
23	1	13	0	7	23.9	19.542	S	168.892	E	33	5.0		84.55	VANUATU ISLANDS.
24	1	16	5	15	29.5	18.882	S	177.320	W	356	5.4		88.44	FIJI ISLANDS REGION.
25	1	17	10	6	46.7	4.399	S	140.068	E	109	5.7	5.5	89.67	IRIAN JAYA, INDONESIA.
26	1	18	3	6	47.4	22.452	S	171.219	E	64	5.3	5.2	82.37	LOYALTY ISLANDS REGION.
27	1	18	9	39	3	0.896	S	122.286	E	37	4.9	4.6	86.54	MINAHASSA PENINSULA, SULAWESI.
28	1	18	20	2	5.4	58.277	S	157.885	E	10	5.2	4.9	45.43	MACQUARIE ISLANDS REGION.
29	1	18	21	14	34.8	10.113	N	56.714	E	25	5.1	4.6	79.84	CARLBERG RIDGE.
30	1	19	19	1	58.5	10.359	S	78.748	W	34	5.6	5.1	90.09	NEAR COAST OF PERU.
31	1	20	3	54	8.9	26.867	S	177.220	W	52	5.3		80.70	SOUTH OF FIJI ISLANDS.
32	1	20	8	43	7.5	3.496	S	152.122	E	319	4.9		94.66	NEW IRELAND REGION, P.N.G.
33	1	22	8	59	54.3	2.979	S	141.650	E	35	5.9	5.2	91.55	NEAR COAST OF NEW GUINEA.
34	1	22	23	19	57.4	60.614	S	25.901	W	10	5.8	6.0	27.72	SOUTH SANDWICH ISLANDS REGION.
35	1	27	6	1	42.1	3.138	S	127.344	E	33	5.2	4.5	86.28	SERAM, INDONESIA.
36	1	27	17	48	9.3	9.187	N	126.416	E	33	5.6	5.7	97.37	MINDANAO, PHILIPPINE ISLANDS.
37	1	27	19	14	10.3	1.005	N	120.154	E	33	5.2	4.6	87.55	MINAHASSA PENINSULA, SULAWESI.
38	1	30	13	59	29.4	57.009	S	147.775	E	10	5.0	5.3	44.00	WEST OF MACQUARIE ISLAND.

39	1 30	22 0 9.5	32.953 S	178.253 W	14	5.6 6.2	74.59	SOUTH OF KERMADEC ISLANDS.
40	1 30	22 29 57.1	32.921 S	178.298 W	33	5.6 6.7	74.61	SOUTH OF KERMADEC ISLANDS.
41	1 31	22 59 2	23.446 S	69.725 W	112	4.5	74.95	NORTHERN CHILE.
42	2 1	4 21 19.7	18.080 S	178.349 W	574	5.0	89.00	FIJI ISLANDS REGION.
43	2 2	16 6 9.4	6.911 S	155.790 E	86	5.0	92.66	SOLOMON ISLANDS.
44	2 3	2 37 0.8	5.570 S	131.147 E	33	4.9	85.40	BANDA SEA.
45	2 4	10 8 39.3	5.986 S	154.322 E	81	5.2	93.05	SOLOMON ISLANDS.
46	2 4	22 56 58.6	32.465 S	179.504 W	28	5.7 5.3	74.81	SOUTH OF KERMADEC ISLANDS.
47	2 4	23 35 0.9	32.565 S	179.692 W	100	5.1	74.68	SOUTH OF KERMADEC ISLANDS.
48	2 5	21 20 42	6.216 S	154.853 E	55	5.5	93.01	SOLOMON ISLANDS.
49	2 6	17 58 57.7	0.986 N	120.115 E	33	5.4 5.1	87.51	MINAHASSA PENINSULA, SULAWESI.
50	2 7	7 57 18.1	1.019 N	120.187 E	14	5.6 5.6	87.57	MINAHASSA PENINSULA, SULAWESI.
51	2 9	4 20 32.2	31.822 S	57.874 E	10	5.1 5.2	38.67	SOUTHWEST INDIAN RIDGE.
52	2 9	17 33 54.2	6.000 S	146.629 E	69	5.6 5.7	90.47	EASTERN NEW GUINEA REG., P.N.G.
53	2 12	9 8 7.9	11.044 S	118.670 E	8	5.9 5.8	75.84	SOUTH OF SUMBAWA, INDONESIA
54	2 16	9 44 58.4	1.496 S	15.279 W	11	6.2 6.4	76.62	NORTH OF ASCENSION ISLAND.
55	2 16	18 20 46.7	17.798 S	167.797 E	29	4.9 4.7	85.92	VANUATU ISLANDS.
56	2 17	5 59 30.5	0.891 S	136.952 E	33	6.5 8.1	91.82	IRIAN JAYA REGION, INDONESIA.
57	2 17	6 33 55.2	0.740 S	136.569 E	33	5.5	91.82	IRIAN JAYA REGION, INDONESIA.
58	2 17	8 17 16.4	0.939 S	137.188 E	33	5.5	91.86	IRIAN JAYA REGION, INDONESIA.
59	2 17	8 42 10.2	0.834 S	136.588 E	33	5.4 6.0	91.74	IRIAN JAYA REGION, INDONESIA.
60	2 17	10 18 2.8	6.945 S	125.194 E	532	5.8	81.98	BANDA SEA.

61	2 17	13 25	37.6	6.191 S	154.755 E	57 5.5	93.00	SOLOMON ISLANDS.
62	2 17	14 21	22.3	0.567 S	135.840 E	19 5.8 6.5	91.72	IRIAN JAYA REGION, INDONESIA.
63	2 17	20 17	50.4	0.897 S	136.088 E	33 5.7	91.50	IRIAN JAYA REGION, INDONESIA.
64	2 17	21 57	44.9	0.945 S	136.641 E	33 5.3 5.2	91.66	IRIAN JAYA REGION, INDONESIA.
65	2 18	0 22	24.8	0.573 S	135.756 E	33 5.3 5.6	91.69	IRIAN JAYA REGION, INDONESIA.
66	2 18	2 25	33.3	1.336 S	136.464 E	10 5.9 6.3	91.23	IRIAN JAYA REGION, INDONESIA.
67	2 18	12 2	49	0.801 S	136.552 E	33 5.4 5.1	91.76	IRIAN JAYA REGION, INDONESIA.
68	2 18	13 58	14.8	0.912 S	136.393 E	33 5.2 4.6	91.60	IRIAN JAYA REGION, INDONESIA.
69	2 18	23 9	55.3	3.362 S	139.743 E	33 5.1 4.9	90.52	IRIAN JAYA REGION, INDONESIA.
70	2 18	23 49	28.1	1.266 S	14.273 W	10 6.3 6.5	76.53	NORTH OF ASCENSION ISLAND.
71	2 19	2 18	22.8	0.639 S	134.885 E	33 5.1 4.8	91.31	IRIAN JAYA REGION, INDONESIA.
72	2 19	3 59	29.1	16.616 S	177.478 W	33 5.0 5.0	90.60	FIJI ISLANDS REGION.
73	2 19	7 10	6.4	42.132 S	75.283 W	8 5.9 5.4	59.29	OFF COAST OF SOUTHERN CHILE.
74	2 19	23 48	38.5	20.341 S	169.217 E	43 5.8 5.3	83.87	VANUATU ISLANDS.
75	2 20	8 14	5.3	1.571 S	136.498 E	33 5.1 4.6	91.03	IRIAN JAYA REGION, INDONESIA.
76	2 21	12 51	1.3	9.593 S	79.587 W	10 5.8 6.6	91.08	OFF COAST OF SOUTHERN CHILE.
77	2 22	13 40	53.4	33.672 S	71.671 W	43 5.9 5.5	66.06	NEAR COAST OF CENTRAL CHILE.
78	2 24	15 52	59.1	0.869 S	137.346 E	33 5.6 5.8	91.98	IRIAN JAYA REGION, INDONESIA.
79	2 25	4 17	11.3	22.249 S	175.894 W	33 5.7	85.45	TONGA ISLANDS REGION.
80	2 26	8 8	19.2	28.285 N	57.059 E	32 5.3 5.1	97.85	SOUTHERN IRAN.
81	2 26	8 9	24.9	28.336 N	57.081 E	33 5.4	97.90	SOUTHERN IRAN.
82	2 27	18 3	1.7	14.072 S	167.468 E	13 5.6 5.5	89.39	VANUATU ISLANDS.

83	2	28	14	23	7.9	44.982	S	167.658	E	118	5.1	60.03	SOUTH ISLAND, NEW ZEALAND.	
84	2	29	11	55	49.3	10.475	N	92.698	E	28	5.2	4.5	87.46	ANDAMAN ISLANDS, INDIA
85	3	1	2	27	24.1	23.479	S	70.358	W	27	5.1	4.5	75.13	NEAR COAST OF NORTHERN CHILE.
86	3	2	1	50	4.5	5.973	S	146.565	E	59	6.0	6.1	90.47	EASTERN NEW GUINEA REG., P.N.G.
87	3	3	2	41	27.5	0.729	S	136.563	E	33	5.5	5.7	91.83	IRIAN JAYA REGION, INDONESIA.
88	3	4	15	59	5.5	2.798	N	125.167	E	151	5.8		91.00	TALAUD ISLANDS, INDONESIA.
89	3	6	1	35	3	18.656	S	174.864	W	134	5.4		89.14	TONGA ISLANDS.
90	3	7	5	57	26.7	24.459	S	179.141	E	536	4.7		82.29	SOUTH OF FIJI ISLANDS.
91	3	7	8	38	57.5	23.267	S	70.285	W	31	5.3	4.9	75.30	NEAR COAST OF NORTHERN CHILE.
92	3	7	9	32	47.3	2.099	S	124.622	E	33	5.1	5.1	86.27	CERAM SEA.
93	3	9	4	38	1	30.409	S	177.811	W	33	5.3	4.9	77.14	KERMADEC ISLANDS, NEW ZEALAND.
94	3	9	15	19	39.7	4.946	S	152.682	E	104	4.9	5.5	93.49	NEW BRITAIN REGION, P.N.G.
95	3	10	8	56	22.3	12.969	S	69.425	W	33	5.8	5.4	84.63	CENTRAL PERU.
96	3	11	11	56	7.8	42.184	S	71.888	W	126	5.2		58.26	S. CHILE-ARGENTINA BORDER REGION.
97	3	15	2	6	41.8	35.313	S	17.261	W	10	5.0	4.9	45.74	SOUTHERN MID-ATLANTIC RIDGE.
98	3	15	11	17	45	7.456	S	128.265	E	139	4.8		82.62	BANDA SEA.
99	3	16	9	16	29.8	5.440	S	131.830	E	33	4.8		85.77	BANDA SEA.
100	3	17	14	48	56.7	14.705	S	167.297	E	164	5.8	6.0	88.74	VANUATU ISLANDS.
101	3	17	17	58	20.3	6.269	S	147.904	E	33	5.5	6.0	90.65	EASTERN NEW GUINEA REG., P.N.G.
102	3	18	3	15	16.7	24.027	S	67.972	W	149	4.9		73.84	CHILE-ARGENTINA BORDER REGION.
103	3	18	9	4	49.8	21.569	S	178.072	W	403	4.8		85.67	FIJI ISLANDS REGION.
104	3	20	12	49	17.1	32.400	S	179.500	E	500	4.5		74.68	SOUTH OF KERMADEC ISLANDS.

105	3	21	21	10	58.6	23.260	S	179.710	W	584	4.7	83.69	SOUTH OF FIJI ISLANDS.	
106	3	24	22	19	2.6	55.420	S	146.006	E	10	5.3	5.8	44.90	WEST OF MACQUARIE ISLAND.
107	3	25	4	5	37.2	55.764	S	28.179	W	125	4.5	32.16	SOUTH SANDWICH ISLANDS REGION.	
108	3	29	10	41	24.7	33.630	S	14.454	W	10	5.2	4.5	46.31	SOUTHERN MID-ATLANTIC RIDGE.
109	3	30	9	56	59.4	55.850	S	125.670	W	10	4.4	5.1	54.98	SOUTHERN EAST PACIFIC RISE.
110	3	31	23	41	43.1	11.178	S	165.644	E	33	5.6	6.1	91.63	SANTA CRUZ ISLANDS.
111	4	2	3	4	2.9	11.218	S	165.671	E	33	5.1	5.5	91.60	SANTA CRUZ ISLANDS.
112	4	2	18	50	36.6	3.065	N	126.286	E	41	5.7	5.4	91.65	TALAUD ISLANDS, INDONESIA.
113	4	3	17	26	38.1	1.112	N	120.407	E	33	5.4	4.7	87.74	MINAHASSA PENINSULA, SULAWESI.
114	4	6	4	4	35	10.273	N	125.984	E	45	5.1	4.7	98.22	LEYTE, PHILIPPINE ISLANDS.
115	4	6	12	17	29.3	53.449	S	76.351	W	10	5.1	5.0	49.21	OFF COAST OF SOUTHERN CHILE.
116	4	8	2	52	13.1	12.799	S	74.037	W	72	5.0	86.30	CENTRAL PERU.	
117	4	8	3	21	22.2	8.815	S	74.692	W	141	5.0	90.25	PERU-BRAZIL BORDER REGION.	
118	4	8	16	49	42.4	6.252	S	154.858	E	58	5.5	5.5	92.98	SOLOMON ISLANDS.
119	4	10	2	10	51.6	17.161	S	174.136	W	111	5.3	90.74	TONGA ISLANDS.	
120	4	11	0	9	7.3	5.489	S	153.326	E	54	5.1	4.8	93.19	NEW IRELAND REGION, P.N.G.
121	4	11	1	40	11.2	33.272	S	178.585	W	45	4.6	74.21	SOUTH OF KERMADEC ISLANDS.	
122	4	11	11	24	26.9	10.803	S	161.543	E	43	5.9	5.8	90.78	SOLOMON ISLANDS.
123	4	12	18	45	52	6.306	S	154.681	E	55	5.3	5.8	92.87	SOLOMON ISLANDS.
124	4	15	14	55	32.6	6.188	S	154.832	E	56	5.7	93.03	SOLOMON ISLANDS.	
125	4	15	20	2	46.2	25.949	S	68.683	W	109	4.4	72.29	CHILE-ARGENTINA BORDER REGION.	
126	4	16	0	30	54.6	24.061	S	177.036	W	111	6.4	6.8	83.46	SOUTH OF FIJI ISLANDS.

127	4	16	14	3	25.4	33.373	S	57.331	E	10	5.1	4.2	37.07	SOUTHWEST INDIAN RIDGE.
128	4	17	14	14	58	24.249	S	176.855	W	100	5.0		83.31	SOUTH OF FIJI ISLANDS.
129	4	18	0	1	18.1	16.107	S	87.279	E	10	5.0		60.64	SOUTH INDIAN OCEAN.
130	4	18	3	47	58.4	24.204	S	176.948	W	108	4.9		83.34	SOUTH OF FIJI ISLANDS.
131	4	18	10	33	49.4	4.589	S	153.096	E	38	5.0	5.0	93.96	NEW IRELAND REGION, P.N.G.
132	4	19	0	19	31.1	23.944	S	70.093	W	50	6.0	6.1	74.61	NEAR COAST OF NORTHERN CHILE.
133	4	19	2	30	9.6	17.757	S	179.865	W	610	5.0		88.99	FIJI ISLANDS REGION.
134	4	19	3	17	10.5	17.744	S	179.886	W	612	4.7		89.00	FIJI ISLANDS REGION.
135	4	20	19	17	6.1	24.071	S	66.786	W	197	5.2		73.41	SALTA PROVINCE, ARGENTINA.
136	4	20	23	3	29.7	22.293	S	179.692	W	593	5.2		84.63	SOUTH OF FIJI ISLANDS.
137	4	23	4	49	38.8	28.666	S	69.283	W	111	4.7		69.96	CHILE-ARGENTINA BORDER REGION.
138	4	24	9	36	27.2	17.866	S	178.674	W	542	5.1		89.14	FIJI ISLANDS REGION.
139	4	24	17	6	36.3	8.128	S	74.362	W	151	5.6		90.79	PERU-BRAZIL BORDER REGION.
140	4	25	4	51	16.1	30.074	S	71.213	W	61	5.4		69.26	NEAR COAST OF CENTRAL CHILE.
141	4	25	5	50	8.7	22.073	S	179.056	E	639	5.1		84.58	SOUTH OF FIJI ISLANDS.
142	4	25	17	45	26.9	27.755	S	177.022	W	33	4.4		79.87	KERMADEC ISLANDS REGION.
143	4	26	0	14	58	9.685	S	80.082	W	34	5.0	4.4	91.14	OFF COAST OF NORTHERN PERU.
144	4	26	13	16	30	37.310	S	71.529	W	103	4.5		62.65	S. CHILE-ARGENTINA BORDER REGION.
145	4	27	3	5	0	8.946	S	123.729	E	79	4.8		79.60	FLORES REGION, INDONESIA.
146	4	27	15	49	1.1	18.385	S	177.921	W	538	4.5		88.79	FIJI ISLANDS REGION.
147	4	29	14	40	41	6.518	S	154.999	E	44	6.3	7.5	92.77	SOLOMON ISLANDS.
148	5	1	3	30	3.5	6.593	S	155.129	E	40	5.0	4.5	92.75	SOLOMON ISLANDS.

149	5	1	9	21	24.2	6.659	S	154.848	E	33	5.5	5.9	92.59	SOLOMON ISLANDS.
150	5	1	13	52	34.4	6.796	S	154.934	E	33	5.1		92.49	SOLOMON ISLANDS.
151	5	1	15	56	12.5	6.659	S	154.810	E	33	4.8		92.58	SOLOMON ISLANDS.
152	5	2	2	32	35.2	6.440	S	154.577	E	33	5.3	5.9	92.71	SOLOMON ISLANDS.
153	5	2	4	0	11.1	36.202	S	71.143	W	92	4.8		63.55	CENTRAL CHILE.
154	5	2	6	38	24.3	6.680	S	154.816	E	33	5.3	5.3	92.56	SOLOMON ISLANDS.
155	5	2	13	34	28.9	4.548	S	154.833	E	500	5.6		94.57	SOLOMON ISLANDS.
156	5	3	23	37	3.1	7.267	S	128.939	E	150	5.0		83.03	BANDA SEA.
157	5	4	0	19	5.5	8.262	S	115.639	E	196	4.7		77.34	BALI REGION, INDONESIA.
158	5	4	2	46	50.7	59.047	S	18.083	W	10	4.6		26.08	SOUTHWESTERN ATLANTIC OCEAN.
159	5	4	17	13	51	50.640	S	6.488	W	10	4.7		28.55	SOUTHERN MID-ATLANTIC RIDGE.
160	5	5	0	33	58	28.577	S	177.630	W	150	4.8		78.96	KERMADEC ISLANDS REGION.
161	5	6	9	41	40.1	41.213	S	86.296	W	10	4.7	5.1	63.07	WEST CHILE RISE.
162	5	6	12	11	30	24.628	S	178.755	E	561	5.0		82.04	SOUTH OF FIJI ISLANDS.
163	5	7	1	16	49.9	57.143	S	147.481	E	10	4.8		43.80	WEST OF MACQUARIE ISLAND.
164	5	7	8	44	36.6	1.621	N	126.558	E	33	5.9	5.9	90.41	NORTHERN MOLUCCA SEA.
165	5	7	13	42	57.3	3.418	S	142.967	E	33	4.9	5.0	91.60	NEAR N COAST OF NEW GUINEA, P.N.G.
166	5	7	20	38	14	1.047	N	124.848	E	123	5.0		89.26	MINAHASSA PENINSULA, SULAWESI.
167	5	7	21	43	39.9	15.321	S	70.014	W	242	5.0		82.63	SOUTHERN PERU.
168	5	9	4	36	3.7	32.611	S	179.384	W	77	5.4	5.0	74.70	SOUTH OF KERMADEC ISLANDS.
169	5	9	11	44	56	1.205	N	123.009	E	44	4.6	4.5	88.75	MINAHASSA PENINSULA, SULAWESI.
170	5	10	8	23	44.5	17.739	S	175.121	W	232	4.1		89.99	TONGA ISLANDS.

171	5 10	10 19 38.3	14.009 S	74.467 W	101 5.4	85.31	CENTRAL PERU.
172	5 10	17 22 48.6	33.409 S	70.096 W	102 4.5	65.81	CHILE-ARGENTINA BORDER REGION.
173	5 11	9 35 6.3	3.313 S	135.856 E	24 5.4 5.7	89.18	IRIAN JAYA REGION, INDONESIA.
174	5 11	16 29 25.3	7.146 S	154.859 E	33 5.1 5.3	92.14	SOLOMON ISLANDS.
175	5 11	21 26 39.4	37.511 S	50.922 E	10 5.1 4.2	32.16	SOUTHWEST INDIAN RIDGE.
176	5 13	9 59 20.1	4.740 S	145.186 E	195 5.1	91.14	NEAR N COAST OF NEW GUINEA, P.N.G.
177	5 14	4 34 40.2	20.396 S	69.615 W	78 4.8	77.76	NORTHERN CHILE.
178	5 14	12 36 59.4	17.955 S	178.546 W	605 5.5	89.08	FIJI ISLANDS REGION.
179	5 14	17 34 10.1	24.518 S	177.541 W	170 5.1	82.92	SOUTH OF FIJI ISLANDS.
180	5 14	23 8 55.2	19.101 S	173.952 W	58 5.3	88.89	TONGA ISLANDS.
181	5 15	7 47 34.2	43.983 S	108.190 W	10 4.9	64.82	SOUTHERN EAST PACIFIC RISE.
182	5 15	11 46 25.4	6.897 S	129.955 E	80 4.5	83.74	BANDA SEA.
183	5 15	16 28 49	0.668 S	135.814 E	33 5.5 5.4	91.62	IRIAN JAYA REGION, INDONESIA.
184	5 15	17 20 9.3	18.819 S	168.433 E	83 4.7	85.12	VANUATU ISLANDS.
185	5 16	21 0 58.1	26.999 S	66.904 W	160 4.4	70.73	CATAMARCA PROVINCE, ARGENTINA.
186	5 17	13 19 17.2	9.830 S	149.889 E	33 4.7 4.5	87.99	EASTERN NEW GUINEA REG., P.N.G.
187	5 18	7 42 21.6	23.953 S	68.823 W	97 5.3	74.19	NORTHERN CHILE.
188	5 19	18 18 21	6.037 S	112.328 E	613 5.0	78.24	JAWA, INDONESIA.
189	5 19	23 21 40.4	1.370 N	122.564 E	32 5.2 5.4	88.74	MINAHASSA PENINSULA, SULAWESI.
190	5 20	17 7 42.5	21.786 S	67.075 W	204 4.6	75.63	CHILE-BOLIVIA BORDER REGION.
191	5 21	20 40 5.7	25.483 S	179.138 E	582 4.4	81.29	SOUTH OF FIJI ISLANDS.
192	5 22	20 26 33.4	21.171 S	178.099 W	443 4.8	86.05	FIJI ISLANDS REGION.

193	5	23	15	4	9.8	28.920	S	67.543	W	125	4.5	69.16	LA RIOJA PROVINCE, ARGENTINA.	
194	5	23	20	22	21.2	9.247	S	113.479	E	33	4.7	75.66	SOUTH OF JAWA, INDONESIA.	
195	5	25	8	9	36.1	24.100	S	179.805	W	545	4.4	82.86	SOUTH OF FIJI ISLANDS.	
196	5	25	12	9	55.6	1.848	S	102.421	E	221	4.6	78.79	SOUTHERN SUMATERA, INDONESIA.	
197	5	26	1	43	44.5	22.191	S	171.475	E	108	5.6	82.68	LOYALTY ISLANDS REGION.	
198	5	29	13	33	14.7	13.101	S	167.042	E	173	4.5	90.19	VANUATU ISLANDS.	
199	5	30	3	4	37.6	56.720	S	26.311	W	84	5.7	30.75	SOUTH SANDWICH ISLANDS REGION.	
200	5	31	1	31	37.3	5.504	S	147.998	E	243	5.3	91.40	EASTERN NEW GUINEA REG., P.N.G.	
201	6	1	9	46	22.7	25.465	S	178.866	W	345	4.3	81.73	SOUTH OF FIJI ISLANDS.	
202	6	1	19	12	50.5	22.152	S	179.564	W	600	4.3	84.80	SOUTH OF FIJI ISLANDS.	
203	6	2	0	50	37	9.682	S	79.584	W	33	5.3	4.9	90.99	OFF COAST OF NORTHERN PERU.
204	6	2	2	52	9.5	10.797	N	42.254	W	10	6.1	6.9	97.09	NORTHERN MID-ATLANTIC RIDGE.
205	6	2	12	11	38.4	31.038	S	69.079	W	116	4.4	67.69	SAN JUAN PROVINCE, ARGENTINA.	
206	6	3	8	15	39.5	9.309	S	157.170	E	33	5.6	6.0	90.84	SOLOMON ISLANDS.
207	6	3	10	46	0.5	9.270	S	157.198	E	33	5.3	6.0	90.89	SOLOMON ISLANDS.
208	6	3	10	50	10.7	9.320	S	157.239	E	10	5.8	6.2	90.86	SOLOMON ISLANDS.
209	6	4	4	13	16.9	50.005	S	114.775	W	10	5.3	5.7	59.80	SOUTHERN EAST PACIFIC RISE.
210	6	6	6	26	52.2	21.509	S	169.175	E	33	5.2	5.1	82.75	LOYALTY ISLANDS REGION.
211	6	6	17	35	38.1	41.329	S	80.666	E	20	5.5	5.9	35.09	MID-INDIAN RIDGE.
212	6	6	23	20	17.6	26.509	S	178.171	W	300	4.1	80.86	SOUTH OF FIJI ISLANDS.	
213	6	7	8	31	19.7	64.700	S	69.355	W	22	4.7	37.62	SOUTHERN PACIFIC OCEAN.	
214	6	9	4	8	46.1	23.138	S	179.832	E	589	4.6	83.71	SOUTH OF FIJI ISLANDS.	

215	6	9	20	12	33.5	12.589	S	26.095	E	10	5.0	4.1	57.04	ZAMBIA.
216	6	10	1	4	46.9	13.481	S	167.130	E	200	5.8	5.9	89.86	VANUATU ISLANDS.
217	6	12	8	3	29.4	24.052	S	66.740	W	188	4.4		73.41	SALTA PROVINCE, ARGENTINA.
218	6	13	6	57	58.2	20.416	S	178.310	W	535	5.1		86.74	FIJI ISLANDS REGION.
219	6	13	23	49	10.8	13.681	S	167.260	E	200	4.9		89.70	VANUATU ISLANDS.
220	6	14	2	25	47.6	49.724	S	115.170	W	10	4.5	4.6	60.12	SOUTHERN EAST PACIFIC RISE.
221	6	14	13	34	3.1	58.727	S	149.068	E	10	5.0		42.85	WEST OF MACQUARIE ISLAND.
222	6	15	10	2	41.3	16.461	S	41.638	E	10	5.0	4.6	52.54	MOZAMBIQUE CHANNEL.
223	6	16	0	6	17.7	60.275	S	26.288	W	33	5.2		28.10	SOUTH SANDWICH ISLANDS REGION.
224	6	16	0	56	44.6	36.481	S	178.922	E	33	4.8	5.3	70.61	OFF E. COAST OF N. ISLAND, NEW ZEALAN
225	6	17	11	22	18.5	7.137	S	122.589	E	587	6.6		80.87	FLORES SEA.
226	6	17	12	3	42	7.445	S	122.691	E	600	5.2		80.62	FLORES SEA.
227	6	17	12	37	4.4	7.138	S	122.600	E	600	4.4		80.87	FLORES SEA.
228	6	17	22	5	45.9	7.248	S	122.892	E	600	5.1		80.87	FLORES SEA.
229	6	18	6	10	29	7.129	S	122.344	E	571	5.3		80.79	FLORES SEA.
230	6	18	13	55	34.2	16.073	S	178.118	E	33	5.6	5.4	90.16	FIJI ISLANDS.
231	6	21	3	50	53.9	41.820	S	84.683	E	10	5.1		35.92	SOUTHEAST INDIAN RIDGE.
232	6	21	23	2	13.2	7.348	S	128.038	E	150	5.1		82.63	BANDA SEA.
233	6	22	0	32	13.4	53.774	S	8.800	E	10	5.9	5.8	20.86	BOUVET ISLAND REGION.
234	6	23	10	51	20.6	50.460	S	161.680	E	10	4.7		53.48	NORTH OF MACQUARIE ISLAND.
235	6	24	23	50	13.4	51.108	S	161.827	E	10	4.6		52.92	NORTH OF MACQUARIE ISLAND.
236	6	25	7	28	58.1	8.275	N	94.220	E	27	5.0		85.81	NICOBAR ISLANDS, INDIA.

237	6 25	23 11 13.5	24.685 S	69.833 W	54 4.9	73.83	NORTHERN CHILE.
238	6 26	14 24 38.5	26.424 S	65.048 W	45 4.3	70.66	TUCUMAN PROVINCE, ARGENTINA.
239	6 26	21 50 4.9	22.175 S	69.103 W	91 4.5	75.94	NORTHERN CHILE.
240	6 27	3 34 32.9	38.280 S	177.740 E	33 5.0	68.64	NORTH ISLAND, NEW ZEALAND.
241	6 27	6 53 44.4	7.332 S	128.464 E	124 4.3	82.80	BANDA SEA.
242	6 27	17 12 26.5	17.492 S	69.600 W	161 4.6	80.47	PERU-BOLIVIA BORDER REGION.
243	6 27	17 27 8.3	22.522 S	176.048 W	36 4.9 4.8	85.15	SOUTH OF FIJI ISLANDS.
244	6 28	2 41 13.3	21.712 S	175.213 W	36 5.3 5.1	86.10	TONGA ISLANDS.
245	6 28	20 45 30.5	5.953 N	125.926 E	139 5.5	94.20	MINDANAO, PHILIPPINE ISLANDS.
246	6 29	4 46 28	2.767 S	139.126 E	33 5.4 5.9	90.85	NEAR NORTH COAST OF IRIAN JAYA.
247	6 29	14 8 25	2.801 S	139.268 E	33 5.2 5.7	90.87	NEAR NORTH COAST OF IRIAN JAYA.
248	6 30	2 30 48	15.244 S	173.499 W	93 4.7	92.73	TONGA ISLANDS.
249	6 30	2 58 33.2	14.557 S	166.247 E	33 5.0 5.1	88.58	VANUATU ISLANDS.
250	6 30	22 27 4.3	55.177 S	127.084 W	10 4.9 5.1	55.74	PACIFIC-ANTARCTIC RIDGE.
251	7 1	16 23 55.6	41.963 S	88.432 E	10 4.8	37.03	SOUTHEAST INDIAN RIDGE.
252	7 2	16 3 32.4	60.894 S	21.217 W	33 5.0	25.89	SOUTHWESTERN ATLANTIC OCEAN.
253	7 3	3 41 21.3	16.375 S	74.112 W	33 4.4 4.1	82.97	NEAR COAST OF PERU.
254	7 3	5 49 46.1	18.268 S	175.541 W	200 4.2	89.39	TONGA ISLANDS.
255	7 3	12 13 22.9	21.427 S	69.963 W	55 4.4	76.91	NORTHERN CHILE.
256	7 3	16 48 27.5	23.376 S	70.405 W	33 5.3 5.4	75.24	NEAR COAST OF NORTHERN CHILE.
257	7 4	15 37 50.6	7.148 S	122.395 E	600 5.3	80.79	FLORES SEA.
258	7 4	17 25 20.9	28.070 S	69.275 W	106 4.1	70.51	CHILE-ARGENTINA BORDER REGION.

259	7	5	18	34	42	10.112	S	160.898	E	83	5.5	5.2	91.24	SOLOMON ISLANDS.
260	7	6	5	3	33.5	2.973	N	128.354	E	33	5.4	5.2	92.31	HALMAHERA, INDONESIA.
261	7	7	6	11	35.3	0.088	S	123.742	E	65	4.3		87.81	SOUTH SANDWICH ISLANDS REGION.
262	7	10	0	49	26.4	4.267	S	102.819	E	109	5.1		76.66	SOUTHERN SUMATERA, INDONESIA.
263	7	11	12	11	21.2	9.495	S	113.288	E	33	3.9		75.36	SOUTH OF JAWA, INDONESIA.
264	7	12	8	35	24.3	23.408	S	66.612	W	214	3.5		73.97	JUJUY PROVINCE, ARGENTINA.
265	7	12	20	48	8.8	31.806	S	177.776	W	33	4.5		75.79	KERMADEC ISLANDS REGION.
266	7	13	21	55	32.1	0.083	N	124.251	E	100	5.0		88.15	MINAHASSA PENINSULA, SULAWESI.
267	7	14	7	0	21	31.070	S	179.530	W	500	4.2		76.16	KERMADEC ISLANDS REGION.
268	7	14	19	21	30.3	21.451	S	179.439	W	639	5.0		85.50	FIJI ISLANDS REGION.
269	7	15	2	8	44	33.060	S	178.640	W	33	4.5		74.41	SOUTH OF KERMADEC ISLANDS.
270	7	15	7	54	0.5	33.200	S	178.640	W	33	4.6		74.27	SOUTH OF KERMADEC ISLANDS.
271	7	15	19	1	53.6	23.913	S	67.518	W	138	4.6		73.80	CHILE-ARGENTINA BORDER REGION.
272	7	16	10	7	36.6	1.016	N	120.254	E	33	6.0	6.4	87.59	MINAHASSA PENINSULA, SULAWESI.
273	7	16	17	2	17.5	21.092	S	177.260	W	282	4.8		86.30	FIJI ISLANDS REGION.
274	7	16	18	30	21.3	17.754	S	178.305	W	600	4.5		89.33	FIJI ISLANDS REGION.
275	7	17	14	19	0.1	36.586	S	71.608	W	100	3.5		63.34	CENTRAL CHILE.
276	7	17	19	8	36	23.859	S	69.957	W	82	4.1		74.64	NORTHERN CHILE.
277	7	18	3	39	44.7	21.856	S	68.449	W	122	4.6		76.02	CHILE-BOLIVIA BORDER REGION.
278	7	19	6	12	28.8	15.604	S	167.806	E	100	4.9		88.02	VANUATU ISLANDS.
279	7	19	17	0	48.2	32.652	S	178.831	W	33	4.6		74.77	SOUTH OF KERMADEC ISLANDS.
280	7	19	19	27	53	29.901	S	177.329	W	100	4.5		77.73	KERMADEC ISLANDS, NEW ZEALAND.

281	7 19	23 36 38.4	48.183 S	31.623 E	10 4.0	21.26	SOUTH OF AFRICA.
282	7 19	23 43 3.9	48.247 S	31.642 E	10 5.2 4.9	21.20	SOUTH OF AFRICA.
283	7 20	4 14 15.8	20.554 S	69.032 W	86 4.7	77.42	NORTHERN CHILE.
284	7 20	7 41 15.2	19.820 S	177.643 W	357 5.7	87.46	FIJI ISLANDS REGION.
285	7 20	14 55 52.8	10.529 S	165.315 E	33 5.0 5.1	92.15	SANTA CRUZ ISLANDS.
286	7 20	16 59 19.9	9.929 N	92.953 E	33 4.6	87.02	NICOBAR ISLANDS, INDIA.
287	7 20	23 44 34.8	8.655 S	114.675 E	33 5.1	76.63	BALI REGION, INDONESIA.
288	7 22	1 22 28.2	6.943 S	155.281 E	71 4.7	92.47	SOLOMON ISLANDS.
289	7 22	5 44 36	5.075 S	151.805 E	46 5.0	93.08	NEW BRITAIN REGION, P.N.G.
290	7 22	9 11 54.7	1.031 N	120.366 E	33 5.1	87.65	MINAHASSA PENINSULA, SULAWESI.
291	7 22	11 20 36.8	12.501 S	166.922 E	216 4.5	90.73	SANTA CRUZ ISLANDS.
292	7 22	14 19 35.7	1.000 N	120.450 E	33 6.0 6.9	87.65	MINAHASSA PENINSULA, SULAWESI.
293	7 22	14 31 5.1	1.036 N	120.459 E	33 5.6	87.68	MINAHASSA PENINSULA, SULAWESI.
294	7 22	14 56 4.2	16.788 S	173.458 W	33 5.0	91.23	TONGA ISLANDS.
295	7 23	3 32 12.6	26.753 S	177.199 W	33 5.8 6.4	80.81	SOUTH OF FIJI ISLANDS.
296	7 23	5 20 4.2	26.769 S	177.250 W	33 5.7 6.2	80.79	SOUTH OF FIJI ISLANDS.
297	7 23	6 38 15.6	26.647 S	177.162 W	33 5.2	80.92	SOUTH OF FIJI ISLANDS.
298	7 23	23 9 34.3	26.030 S	177.380 W	33 4.5	81.48	SOUTH OF FIJI ISLANDS.
299	7 24	2 52 22.6	49.268 S	116.756 E	10 4.7 5.1	40.77	SOUTH OF AUSTRALIA.
300	7 24	4 9 26.2	26.795 S	177.086 W	33 4.8 4.4	80.79	SOUTH OF FIJI ISLANDS.
301	7 24	21 0 33.4	15.141 S	173.493 W	33 5.3 5.2	92.83	TONGA ISLANDS.
302	7 25	4 57 51.4	22.421 S	68.406 W	85 4.4	75.48	NORTHERN CHILE.

303	7 25	12 49	37	50.149	S	113.538	W	10	5.1	5.7	59.51	SOUTHERN EAST PACIFIC RISE.
304	7 26	12 59	29.8	26.965	S	177.010	W	33	4.5		80.64	SOUTH OF FIJI ISLANDS.
305	7 27	11 40	2.8	28.655	S	177.465	W	48	5.6	5.5	78.91	KERMADEC ISLANDS REGION.
306	7 28	6 11	23.1	5.716	S	147.495	E	126	5.5		91.03	EASTERN NEW GUINEA REG., P.N.G.
307	7 28	10 27	25.2	1.045	N	120.112	E	33	5.0		87.57	MINAHASSA PENINSULA, SULAWESI.
308	7 28	10 40	43.6	1.006	N	120.196	E	33	5.5	5.5	87.56	MINAHASSA PENINSULA, SULAWESI.
309	7 28	10 47	52	0.985	N	120.094	E	33	5.0		87.51	MINAHASSA PENINSULA, SULAWESI.
310	7 28	23 41	17.7	2.604	S	152.469	E	33	5.1	5.0	95.61	NEW IRELAND REGION, P.N.G.
311	7 29	10 56	9.9	55.780	S	27.924	W	33	4.6		32.05	SOUTH SANDWICH ISLANDS REGION.
312	7 30	0 55	6.2	6.492	S	132.339	E	33	4.7		84.97	TANIMBAR ISLANDS REG., INDONESIA.
313	7 31	10 29	10.4	12.739	S	66.307	E	10	5.1	4.9	58.77	MID-INDIAN RIDGE.
314	7 31	22 30	35.5	27.600	S	65.547	E	10	5.6	5.4	44.16	SOUTH INDIAN OCEAN.
315	8 1	1 11	42.9	3.071	S	129.656	E	33	4.9		87.18	SERAM, INDONESIA.
316	8 1	4 8	23.2	0.018	S	122.939	E	149	5.5		87.59	MINAHASSA PENINSULA, SULAWESI.
317	8 1	4 49	18.4	27.594	S	65.712	E	10	5.1	4.7	44.20	SOUTH INDIAN OCEAN.
318	8 1	6 44	30.1	27.410	S	65.830	E	10	4.6		44.40	SOUTH INDIAN OCEAN.
319	8 1	11 48	0	27.554	S	65.594	E	10	4.5		44.21	SOUTH INDIAN OCEAN.
320	8 1	21 51	47.8	17.810	S	70.623	W	74	5.0		80.50	NEAR COAST OF PERU.
321	8 1	21 56	20.7	31.060	S	179.970	E	426	4.0		76.07	KERMADEC ISLANDS REGION.
322	8 2	12 7	54.2	22.280	S	171.250	E	75	5.1		82.54	LOYALTY ISLANDS REGION.
323	8 2	12 55	29.3	10.769	S	161.445	E	33	6.2	7.1	90.78	SOLOMON ISLANDS.
324	8 2	16 23	36.6	26.923	S	177.171	W	33	5.3	5.7	80.65	SOUTH OF FIJI ISLANDS.

325	8	2	18	12	16.6	21.141	S	68.396	W	121	4.4		76.67	CHILE-BOLIVIA BORDER REGION.
326	8	3	3	35	42.5	8.352	S	113.729	E	33	4.4		76.58	JAWA, INDONESIA.
327	8	3	9	51	38.8	27.530	S	65.627	E	10	4.8		44.24	SOUTH INDIAN OCEAN.
328	8	3	10	56	56.1	27.567	S	65.658	E	10	4.5		44.21	SOUTH INDIAN OCEAN.
329	8	4	3	54	43.5	9.291	N	126.348	E	33	4.8	4.3	97.44	MINDANAO, PHILIPPINE ISLANDS.
330	8	4	6	48	32.9	7.758	S	128.671	E	33	5.0		82.48	BANDA SEA.
331	8	4	11	14	34.2	22.385	S	68.803	W	95	4.6		75.64	NORTHERN CHILE.
332	8	4	15	39	37.3	5.803	N	124.717	E	116	4.8		93.63	MINDANAO, PHILIPPINE ISLANDS.
333	8	4	19	59	58.3	27.471	S	179.859	W	501	4.4		79.58	KERMADEC ISLANDS REGION.
334	8	4	21	42	57.9	34.850	S	108.420	W	10	4.4		73.78	SOUTHERN EAST PACIFIC RISE.
335	8	5	2	8	58.2	15.267	S	173.126	W	41	6.0	6.7	92.78	TONGA ISLANDS.
336	8	5	3	45	6.8	36.840	S	179.390	W	33	4.6		70.60	EAST OF NORTH ISLAND, NEW ZEALAND.
337	8	5	16	52	7.7	0.126	N	123.757	E	147	4.3		88.02	MINAHASSA PENINSULA, SULAWESI.
338	8	5	17	1	5.2	15.293	S	173.332	W	33	4.9	5.0	92.71	TONGA ISLANDS.
339	8	5	22	35	6.8	15.647	S	167.733	E	133	5.0		87.96	VANUATU ISLANDS.
340	8	5	22	38	22	20.690	S	178.310	W	550	6.4		86.48	FIJI ISLANDS REGION.
341	8	6	0	29	2.1	20.697	S	178.434	W	500	4.6		86.44	FIJI ISLANDS REGION.
342	8	6	10	13	14.3	21.356	S	175.461	W	33	5.4	4.8	86.40	TONGA ISLANDS.
343	8	6	15	8	24.1	28.607	S	67.535	W	33	5.0	4.2	69.45	LA RIOJA PROVINCE, ARGENTINA.
344	8	7	2	39	45.3	23.695	S	179.936	E	522	4.2		83.20	SOUTH OF FIJI ISLANDS.
345	8	7	16	38	42.4	24.465	S	69.978	W	53	4.3		74.09	NORTHERN CHILE.
346	8	8	13	38	48.1	28.461	S	69.358	W	100	4.7		70.17	CHILE-ARGENTINA BORDER REGION.

347	8	9	0	27	5.9	2.017	S	99.675	E	33	5.4	5.5	77.75	SOUTHERN SUMATERA, INDONESIA.
348	8	10	5	7	58.9	32.600	S	178.910	W	33	4.4		74.80	SOUTH OF KERMADEC ISLANDS.
349	8	10	7	23	18.9	12.514	S	166.977	E	209	4.5		90.73	SANTA CRUZ ISLANDS.
350	8	10	11	20	19.7	4.938	S	152.131	E	33	5.6	6.0	93.32	NEW BRITAIN REGION, P.N.G.
351	8	10	12	0	17.8	21.980	S	68.770	W	101	4.4		76.01	CHILE-BOLIVIA BORDER REGION.
352	8	11	1	31	16.7	13.396	S	166.692	E	100	5.6	5.8	89.81	VANUATU ISLANDS.
353	8	11	6	34	5.7	55.871	S	27.649	W	100	4.3		31.89	SOUTH SANDWICH ISLANDS REGION.
354	8	12	9	5	23	36.143	S	71.351	W	100	3.9		63.67	CENTRAL CHILE.
355	8	12	15	32	56.4	33.780	S	56.903	E	10	4.5		36.61	SOUTHWEST INDIAN RIDGE.
356	8	12	15	44	46.3	1.253	N	120.891	E	33	4.9		88.04	MINAHASSA PENINSULA, SULAWESI.
357	8	12	17	0	27.9	0.266	S	125.094	E	42	5.7	5.5	88.13	SOUTHERN MOLUCCA SEA.
358	8	12	18	14	12.1	22.371	S	65.937	W	254	4.4		74.71	JUJUY PROVINCE, ARGENTINA.
359	8	13	4	30	11.5	30.040	S	143.560	E	10	5.0		67.09	NEW SOUTH WALES, AUSTRALIA.
360	8	13	6	38	17.2	0.239	S	125.017	E	28	5.7	5.3	88.13	SOUTHERN MOLUCCA SEA.
361	8	13	9	41	43.7	34.506	S	179.156	E	200	5.3		72.57	SOUTH OF KERMADEC ISLANDS.
362	8	13	9	41	21.3	21.601	S	170.351	E	110	5.3		82.96	LOYALTY ISLANDS REGION.
363	8	13	10	7	8.7	4.970	N	127.397	E	75	5.4	5.0	93.81	TALAUD ISLANDS, INDONESIA.
364	8	13	11	5	25.8	27.519	S	69.417	W	84	4.0		71.06	NORTHERN CHILE.
365	8	13	18	22	28	15.785	S	13.100	W	10	4.7	4.5	62.46	SOUTHERN MID-ATLANTIC RIDGE.
366	8	13	19	33	40.4	15.702	S	13.200	W	10	5.6	5.5	62.56	SOUTHERN MID-ATLANTIC RIDGE.
367	8	13	20	9	28.9	15.635	S	13.104	W	10	4.8		62.60	SOUTHERN MID-ATLANTIC RIDGE.
368	8	14	9	29	6.9	30.003	S	143.434	E	10	5.3		67.09	NEW SOUTH WALES, AUSTRALIA.

369	8 14	12 37 21.7	22.506 S	179.030 E	595 4.8	84.15	SOUTH OF FIJI ISLANDS.
370	8 14	15 39 32.5	23.857 S	179.701 E	500 4.4	82.99	SOUTH OF FIJI ISLANDS.
371	8 14	16 35 1	9.188 S	125.261 E	33 4.6	79.93	TIMOR REGION, INDONESIA.
372	8 14	21 23 47.4	42.547 S	73.587 W	33 4.9 5.0	58.42	SOUTHERN CHILE.
373	8 15	4 5 9.7	22.580 S	174.994 W	33 4.9 4.7	85.30	TONGA ISLANDS REGION.
374	8 15	6 25 30.4	17.648 S	71.143 W	58 5.1	80.83	NEAR COAST OF PERU.
375	8 15	7 33 50.5	13.302 S	166.838 E	33 5.7 6.0	89.94	VANUATU ISLANDS.
376	8 16	9 31 58.8	14.707 S	176.286 W	33 5.0 5.4	92.70	FIJI ISLANDS REGION.
377	8 16	11 28 20	21.338 S	177.486 W	400 4.2	86.02	FIJI ISLANDS REGION.
378	8 16	12 51 23.5	0.068 S	66.997 E	10 4.9 4.6	71.28	CARLSBERG RIDGE.
379	8 16	12 56 32.4	0.032 S	66.997 E	10 4.9	71.31	CARLSBERG RIDGE.
380	8 16	13 36 34.7	4.340 S	155.039 E	495 4.8	94.83	SOLOMON ISLANDS.
381	8 16	17 29 17.3	7.453 N	126.856 E	33 4.9 4.9	95.92	MINDANAO, PHILIPPINE ISLANDS.
382	8 16	19 24 12	27.099 S	177.012 W	33 4.3	80.51	KERMADEC ISLANDS REGION.
383	8 17	22 27 9.6	26.900 S	176.970 W	33 3.9	80.71	SOUTH OF FIJI ISLANDS.
384	8 18	7 16 10.8	0.696 N	30.021 W	10 5.0 5.2	83.44	CENTRAL MID-ATLANTIC RIDGE.
385	8 18	8 43 42.3	35.873 S	71.370 W	91 4.9	63.93	CENTRAL CHILE.
386	8 18	17 26 43.9	37.049 S	78.071 E	10 4.8	38.25	MID-INDIAN RIDGE.
387	8 19	6 24 11	41.523 S	80.416 E	10 5.4 5.9	34.84	MID-INDIAN RIDGE.
388	8 19	15 26 24.2	41.524 S	80.153 E	10 4.6	34.75	MID-INDIAN RIDGE.
389	8 20	3 28 49.2	0.995 N	120.061 E	33 5.2	87.50	MINAHASSA PENINSULA, SULAWESI.
390	8 20	3 43 6.4	1.010 N	120.047 E	33 5.0	87.51	MINAHASSA PENINSULA, SULAWESI.

391	8 20	6 54	50.7	0.811	N	126.941	E	126	5.1		89.80	NORTHERN MOLUCCA SEA.
392	8 21	1 35	21.1	0.987	N	120.053	E	34	5.1	4.8	87.49	MINAHASSA PENINSULA, SULAWESI.
393	8 21	9 1	30	47.649	S	99.698	W	10	4.9		59.83	SOUTHERN PACIFIC OCEAN.
394	8 21	12 17	47.3	9.507	S	155.489	E	33	5.1	4.8	90.12	D'ENTRECASTEAUX ISLANDS REGION.
395	8 21	17 27	37.3	9.467	S	155.417	E	33	5.1	5.0	90.14	D'ENTRECASTEAUX ISLANDS REGION.
396	8 21	21 53	7.6	19.145	S	169.615	E	249	5.2		85.12	VANUATU ISLANDS.
397	8 22	5 35	42	7.124	S	123.275	E	596	5.8		81.13	BANDA SEA.
398	8 22	20 6	9.1	24.186	S	66.941	W	170	4.5		73.36	SALTA PROVINCE, ARGENTINA.
399	8 23	17 53	6.1	19.035	S	173.579	W	33	5.2	4.6	89.02	TONGA ISLANDS.
400	8 24	8 51	15.2	30.752	S	178.235	W	59	5.1		76.73	KERMADEC ISLANDS, NEW ZEALAND.
401	8 24	12 1	55.9	55.396	S	128.255	W	10	5.1		55.58	PACIFIC-ANTARCTIC RIDGE.
402	8 24	14 14	19.3	55.350	S	128.530	W	10	-		55.64	PACIFIC-ANTARCTIC RIDGE.
403	8 25	0 41	8	23.974	S	66.694	W	198	4.3		73.47	JUJUY PROVINCE, ARGENTINA.
404	8 25	5 35	1.9	12.144	S	167.106	E	109	4.7		91.12	SANTA CRUZ ISLANDS.
405	8 25	5 48	42.7	25.823	S	70.852	W	33	4.2		73.10	NEAR COAST OF NORTHERN CHILE.
406	8 25	20 33	26.4	19.039	S	174.350	W	61	5.0		88.87	TONGA ISLANDS.
407	8 26	5 48	38.5	8.031	S	93.583	E	10	5.2	4.6	70.17	SOUTH INDIAN OCEAN.
408	8 26	14 23	6.5	3.215	S	103.529	E	247	4.2		77.88	SOUTHERN SUMATERA, INDONESIA.
409	8 27	1 6	0.4	0.635	S	124.066	E	72	5.0		87.42	SOUTHERN MOLUCCA SEA.
410	8 27	1 41	46.2	7.292	S	107.075	E	33	4.8		75.26	JAWA, INDONESIA.
411	8 27	6 19	31.7	5.779	S	133.720	E	33	5.1		86.13	ARU ISLANDS REGION, INDONESIA.
412	8 27	6 24	7.9	22.570	S	179.792	W	575	5.6		84.34	SOUTH OF FIJI ISLANDS.

413	8 27	6 34	42.1	22.435	S	179.746	W	581	5.0		84.48	SOUTH OF FIJI ISLANDS.
414	8 27	10 50	49.4	36.883	S	78.486	E	10	5.3	5.8	38.53	MID-INDIAN RIDGE.
415	8 27	14 36	39.1	6.933	S	12.724	W	10	5.2	5.1	70.70	ASCENSION ISLAND REGION.
416	8 27	22 54	4.2	7.249	S	128.745	E	97	4.9		82.98	BANDA SEA.
417	8 28	6 30	49.6	0.950	N	28.095	W	10	5.1	4.7	83.03	CENTRAL MID-ATLANTIC RIDGE.
418	8 28	16 1	45.2	10.644	S	161.345	E	33	5.6	5.3	90.87	SOLOMON ISLANDS.
419	8 28	16 53	11.7	59.994	S	149.942	E	10	5.3	6.1	41.97	WEST OF MACQUARIE ISLAND.
420	8 29	3 20	20.1	24.062	S	66.737	W	194	4.2		73.40	SALTA PROVINCE, ARGENTINA.
421	8 29	4 47	3.9	42.490	S	172.755	E	33	5.0		63.55	SOUTH ISLAND, NEW ZEALAND.
422	8 29	8 18	47.9	2.809	S	137.119	E	33	5.0	5.0	90.10	IRIAN JAYA, INDONESIA.
423	8 29	15 10	59.2	2.989	S	126.171	E	34	5.2		86.00	CERAM SEA.
424	8 29	16 50	20.3	30.373	S	69.080	W	60	4.4		68.31	CHILE-ARGENTINA BORDER REGION.
425	8 29	20 22	15.9	1.086	N	28.185	W	10	5.1	4.6	83.18	CENTRAL MID-ATLANTIC RIDGE.
426	8 30	11 7	9.7	5.445	S	150.716	E	145	5.1		92.37	NEW BRITAIN REGION, P.N.G.
427	8 30	11 41	55.8	1.073	N	29.087	W	10	5.0	5.0	83.48	CENTRAL MID-ATLANTIC RIDGE.
428	8 30	23 0	30.9	3.333	S	12.039	W	10	4.9	4.8	73.91	NORTH OF ASCENSION ISLAND.
429	8 31	15 58	29.7	14.930	S	167.331	E	126	5.2		88.53	VANUATU ISLANDS.
430	8 31	18 59	20.9	52.992	S	72.378	W	33	5.1		48.58	SOUTHERN CHILE.
431	9 1	4 39	54.1	23.220	S	178.910	E	600	4.0		83.43	SOUTH OF FIJI ISLANDS.
432	9 1	6 45	41.5	11.811	S	166.618	E	187	5.5		91.30	SANTA CRUZ ISLANDS.
433	9 1	17 49	50.6	23.464	S	179.818	W	531	4.7		83.47	SOUTH OF FIJI ISLANDS.
434	9 3	0 11	31.7	7.172	S	155.669	E	33	5.4	5.1	92.38	SOLOMON ISLANDS.

435	9	3	9	21	33.7	7.896	S	122.355	E	250	5.1	80.08	FLORES SEA.	
436	9	4	10	38	7.3	55.989	S	147.121	E	10	5.2	44.71	WEST OF MACQUARIE ISLAND.	
437	9	4	14	11	57.9	20.753	S	178.873	W	600	4.8	86.30	FIJI ISLANDS REGION.	
438	9	4	14	27	58.3	56.920	S	126.270	W	10	4.3	53.95	SOUTHERN EAST PACIFIC RISE.	
439	9	4	19	18	59.2	6.450	S	130.444	E	33	5.0	84.33	BANDA SEA.	
440	9	4	22	40	13.6	7.150	S	155.692	E	33	4.9	4.6	92.40	SOLOMON ISLANDS.
441	9	4	23	51	26.8	42.003	S	174.741	E	33	5.1	64.44	OFF E. COAST OF S. ISLAND, NEW ZEALAN	
442	9	5	8	14	14.4	22.118	S	113.436	W	10	6.2	7.0	87.05	EASTER ISLAND REGION.
443	9	5	9	10	20.7	22.054	S	113.099	W	10	5.6	6.3	87.06	EASTER ISLAND REGION.
444	9	5	9	46	59.4	22.056	S	113.083	W	10	5.6	5.9	87.06	EASTER ISLAND REGION.
445	9	5	15	26	40.8	0.399	N	120.436	E	33	5.1	4.8	87.08	MINAHASSA PENINSULA, SULAWESI.
446	9	5	15	36	27.1	0.360	N	120.453	E	33	5.3	5.0	87.05	MINAHASSA PENINSULA, SULAWESI.
447	9	5	18	39	12.3	32.930	S	178.520	W	33	4.5	74.56	SOUTH OF KERMADEC ISLANDS.	
448	9	5	21	44	9.1	32.600	S	178.680	W	33	4.6	74.85	OFF COAST OF CENTRAL CHILE.	
449	9	6	8	54	15.8	5.102	S	153.979	E	400	4.7	93.77	NEW IRELAND REGION, P.N.G.	
450	9	6	9	18	20	0.402	N	120.403	E	33	4.9	87.07	MINAHASSA PENINSULA, SULAWESI.	
451	9	6	12	39	41.4	7.271	S	155.824	E	33	5.5	5.8	92.33	SOLOMON ISLANDS.
452	9	6	17	3	46.8	7.310	S	155.887	E	33	5.6	6.1	92.32	SOLOMON ISLANDS.
453	9	6	18	53	19.7	0.484	N	120.500	E	33	4.8	87.19	MINAHASSA PENINSULA, SULAWESI.	
454	9	6	19	13	41.8	7.246	S	155.933	E	33	5.3	5.0	92.39	SOLOMON ISLANDS.
455	9	6	20	6	51.9	5.566	S	149.786	E	150	5.1	91.94	NEW BRITAIN REGION, P.N.G.	
456	9	6	23	1	59.1	31.648	S	68.951	W	111	4.9	67.09	SAN JUAN PROVINCE, ARGENTINA.	

457	9	6	23	48	45.5	7.361	S	155.828	E	33	5.3	5.2	92.25	SOLOMON ISLANDS.
458	9	7	2	55	30.3	20.520	S	174.360	W	36	5.0	5.0	87.43	TONGA ISLANDS.
459	9	7	4	29	55.2	7.240	S	155.660	E	33	4.9	4.5	92.31	SOLOMON ISLANDS.
460	9	7	9	6	0.8	7.178	S	155.676	E	10	5.4	5.6	92.37	SOLOMON ISLANDS.
461	9	7	10	31	58.4	32.653	S	178.530	W	33	5.0	5.2	74.82	SOUTH OF KERMADEC ISLANDS.
462	9	7	11	23	31.6	32.551	S	178.475	W	33	4.9		74.93	SOUTH OF KERMADEC ISLANDS.
463	9	7	12	28	57.1	32.550	S	178.610	W	33	4.6	4.8	74.91	SOUTH OF KERMADEC ISLANDS.
464	9	8	2	27	25.9	2.950	N	126.943	E	33	5.1		91.78	NORTHERN MOLUCCA SEA.
465	9	8	8	8	13.4	15.573	S	73.049	W	98	5.4		83.38	SOUTHERN PERU.
466	9	8	8	12	44.3	2.857	N	127.254	E	33	5.7	5.1	91.81	NORTHERN MOLUCCA SEA.
467	9	8	11	34	58.5	19.610	S	179.296	W	678	4.8		87.32	FIJI ISLANDS REGION.
468	9	8	11	37	46.6	19.520	S	179.141	W	600	4.7		87.44	FIJI ISLANDS REGION.
469	9	8	16	54	15.3	23.337	S	179.910	E	600	4.2		83.54	SOUTH OF FIJI ISLANDS.
470	9	9	3	21	47.2	35.402	S	104.642	W	10	5.0	5.1	72.59	SOUTHERN PACIFIC OCEAN.
471	9	9	9	32	11.3	21.217	S	179.167	W	625	5.0		85.79	FIJI ISLANDS REGION.
472	9	9	18	19	47.2	35.544	S	110.812	W	10	4.8	5.0	73.48	SOUTHERN EAST PACIFIC RISE.
473	9	10	2	34	15.9	1.028	N	120.098	E	33	5.4	5.2	87.55	MINAHASSA PENINSULA, SULAWESI.
474	9	10	6	20	53.2	1.119	N	120.208	E	33	5.3	4.7	87.67	MINAHASSA PENINSULA, SULAWESI.
475	9	10	8	52	59.1	2.942	N	127.132	E	33	4.7		91.84	NORTHERN MOLUCCA SEA.
476	9	10	12	40	38	4.785	N	125.593	E	144	5.1		93.00	TALAUD ISLANDS, INDONESIA.
477	9	10	13	55	42.2	23.645	S	179.556	E	634	4.6		83.16	SOUTH OF FIJI ISLANDS.
478	9	10	14	38	54.5	7.943	S	74.345	W	150	4.8		90.96	PERU-BRAZIL BORDER REGION.

479	9 11	3 41 26.6	10.017 N	93.824 E	33 4.8	87.35	ANDAMAN ISLANDS, INDIA.
480	9 12	0 48 43	31.262 S	73.548 W	33 4.6	68.87	OFF COAST OF CENTRAL CHILE.
481	9 13	3 16 33.4	38.560 S	175.810 E	33 4.7	67.97	NORTH ISLAND, NEW ZEALAND.
482	9 14	2 53 24.5	0.006 S	122.795 E	181 5.5	87.55	MINAHASSA PENINSULA, SULAWESI.
483	9 14	13 10 53.9	10.878 S	165.991 E	73 6.0 6.0	92.01	SANTA CRUZ ISLANDS.
484	9 15	7 12 42.8	26.119 S	177.741 W	100 4.9	81.32	SOUTH OF FIJI ISLANDS.
485	9 15	9 25 41.5	24.427 S	179.919 W	493 4.8	82.52	SOUTH OF FIJI ISLANDS.
486	9 15	18 17 38.6	6.488 S	154.799 E	50 5.7 5.8	92.74	SOLOMON ISLANDS.
487	9 16	5 47 32.3	3.420 S	146.351 E	33 5.5 5.8	92.78	BISMARCK SEA.
488	9 16	9 14 55.5	25.100 S	175.269 W	33 4.9 4.8	82.79	SOUTH OF TONGA ISLANDS.
489	9 16	12 52 28	17.779 S	178.219 W	500 5.1	89.32	FIJI ISLANDS REGION.
490	9 16	14 22 49.5	23.712 S	177.693 W	200 4.7	83.67	SOUTH OF FIJI ISLANDS.
491	9 16	15 26 59.5	59.339 S	27.232 W	33 5.2 5.1	29.11	SOUTH SANDWICH ISLANDS REGION.
492	9 16	17 7 16.1	17.700 S	178.290 W	500 4.8	89.38	FIJI ISLANDS REGION.
493	9 16	17 8 14.1	17.812 S	178.342 W	600 4.6	89.26	FIJI ISLANDS REGION.
494	9 16	21 45 16.7	1.244 S	102.219 E	262 5.0	79.30	SOUTHERN SUMATERA, INDONESIA.
495	9 16	23 4 39.2	3.324 S	143.452 E	33 4.9	91.86	NEAR N COAST OF NEW GUINEA, P.N.G.
496	9 17	15 54 46.7	28.819 S	69.915 W	106 -	70.01	CHILE-ARGENTINA BORDER REGION.
497	9 17	16 38 18.8	1.302 N	122.989 E	50 4.7	88.83	MINAHASSA PENINSULA, SULAWESI.
498	9 17	16 48 1.9	24.113 S	66.699 W	200 4.1	73.34	SALTA PROVINCE, ARGENTINA.
499	9 17	22 11 56.1	54.919 S	129.001 W	10 4.6	56.10	PACIFIC-ANTARCTIC RIDGE.
500	9 17	23 9 24.2	0.908 N	26.370 W	10 5.3 5.2	82.41	CENTRAL MID-ATLANTIC RIDGE.

501	9 18	4 11 44.4	19.754 S	168.688 E	32	5.4 5.4	84.30	VANUATU ISLANDS.
502	9 18	5 29 3.6	9.553 N	126.256 E	33	5.5 5.3	97.65	MINDANAO, PHILIPPINE ISLANDS.
503	9 18	10 35 48.1	23.044 S	169.675 E	33	4.6	81.41	LOYALTY ISLANDS REGION.
504	9 19	12 37 7.4	32.969 S	72.149 W	33	4.9	66.86	OFF COAST OF CENTRAL CHILE.
505	9 19	21 5 28.1	25.360 S	179.786 E	485	5.1	81.55	SOUTH OF FIJI ISLANDS.
506	9 20	0 3 18.3	9.597 N	126.293 E	33	5.8 6.2	97.70	MINDANAO, PHILIPPINE ISLANDS.
507	9 20	2 2 49.6	29.821 S	73.011 E	26	5.3	43.71	MID-INDIAN RIDGE.
508	9 20	4 10 27.6	9.463 N	126.284 E	33	5.8 6.4	97.58	MINDANAO, PHILIPPINE ISLANDS.
509	9 20	7 12 43.6	2.468 N	128.665 E	205	5.1	91.95	HALMAHERA, INDONESIA.
510	9 20	12 24 42.1	9.446 N	126.544 E	33	5.4 6.0	97.65	MINDANAO, PHILIPPINE ISLANDS.
511	9 20	12 34 4.7	9.463 N	126.566 E	33	5.1	97.68	MINDANAO, PHILIPPINE ISLANDS.
512	9 20	19 24 57.3	9.570 N	126.643 E	33	5.5 5.6	97.80	MINDANAO, PHILIPPINE ISLANDS.
513	9 20	23 44 29.4	43.491 S	16.030 W	10	-	38.02	SOUTHERN MID-ATLANTIC RIDGE.
514	9 21	0 5 54.4	43.701 S	16.096 W	10	5.0	37.86	SOUTHERN MID-ATLANTIC RIDGE.
515	9 21	1 23 33.3	6.155 S	146.174 E	10	5.7 5.8	90.17	EASTERN NEW GUINEA REG., P.N.G.
516	9 21	2 53 18.6	18.999 S	67.531 W	224	5.0	78.38	CENTRAL BOLIVIA.
517	9 21	4 32 26.7	55.968 S	24.721 W	51	5.1	30.77	SOUTH SANDWICH ISLANDS REGION.
518	9 21	5 36 13.8	1.124 N	120.466 E	44	5.1	87.77	MINAHASSA PENINSULA, SULAWESI.
519	9 21	22 38 54.4	6.203 S	146.212 E	33	5.0	90.13	EASTERN NEW GUINEA REG., P.N.G.
520	9 22	2 21 33.3	15.903 S	71.727 W	140	5.0	82.65	SOUTHERN PERU.
521	9 22	18 54 26	37.320 S	16.910 W	10	4.7	43.81	SOUTHERN MID-ATLANTIC RIDGE.
522	9 22	21 53 18.7	22.520 S	67.900 W	148	4.1	75.22	CHILE-BOLIVIA BORDER REGION.

523	9 23	6 40 4.8	3.555 S	151.699 E	400	4.7		94.47	NEW IRELAND REGION, P.N.G.
524	9 24	13 16 49.1	20.187 S	176.326 W	220	5.0		87.37	FIJI ISLANDS REGION.
525	9 25	10 35 16.8	39.193 S	174.895 E	226	5.0		67.16	NORTH ISLAND, NEW ZEALAND.
526	9 25	11 46 56.2	6.890 S	129.452 E	144	4.9		83.57	BANDA SEA.
527	9 25	14 12 10.1	1.299 N	123.237 E	33	4.5		88.92	MINAHASSA PENINSULA, SULAWESI.
528	9 25	21 16 9.6	9.295 S	108.725 E	33	5.2	5.7	73.96	SOUTH OF JAWA, INDONESIA.
529	9 26	14 36 35.5	20.737 S	68.439 W	164	4.0		77.06	CHILE-BOLIVIA BORDER REGION.
530	9 26	15 29 7.9	6.155 S	146.035 E	33	5.1		90.12	EASTERN NEW GUINEA REG., P.N.G.
531	9 26	18 35 5.6	47.338 S	12.860 W	10	4.6		33.57	SOUTHERN MID-ATLANTIC RIDGE.
532	9 27	1 17 30.6	3.238 S	130.732 E	33	5.0	4.2	87.41	SERAM, INDONESIA.
533	9 27	12 22 30.3	30.825 S	59.736 E	10	4.7		39.95	SOUTHWEST INDIAN RIDGE.
534	9 27	13 57 28.9	31.879 S	179.880 E	500	4.5		75.26	KERMADEC ISLANDS REGION.
535	9 27	22 49 57.7	5.904 S	148.245 E	143	5.3		91.11	NEW BRITAIN REGION, P.N.G.
536	9 28	13 20 41.4	28.080 S	177.720 W	102	-		79.42	KERMADEC ISLANDS REGION.
537	9 28	18 24 12.2	18.165 S	70.037 W	56	-		79.98	NEAR COAST OF NORTHERN CHILE.
538	9 28	23 49 28.8	19.482 S	67.445 W	224	3.9		77.90	SOUTHERN BOLIVIA.
539	9 29	6 15 43.6	10.549 S	165.867 E	185	5.2		92.29	SANTA CRUZ ISLANDS.
540	9 29	9 0 44.2	0.866 N	126.477 E	33	5.3	4.9	89.68	NORTHERN MOLUCCA SEA.
541	9 30	0 32 3.6	0.150 S	125.268 E	33	5.2	5.4	88.30	SOUTHERN MOLUCCA SEA.
542	9 30	1 37 22.3	24.770 S	178.900 W	500	4.5		82.40	SOUTH OF FIJI ISLANDS.
543	9 30	2 7 24.8	59.115 S	24.906 W	33	4.7		28.46	SOUTH SANDWICH ISLANDS REGION.
544	9 30	5 17 31	31.400 S	179.826 E	400	4.5		75.71	KERMADEC ISLANDS REGION.

545	9 30	8 37 1.9	5.929 S	148.134 E	100 5.2	91.05	NEW BRITAIN REGION, P.N.G.
546	9 30	10 13 28.2	6.844 S	126.885 E	400 4.7	82.68	BANDA SEA.
547	9 30	11 28 57.1	23.029 S	169.859 E	33 4.6	81.47	LOYALTY ISLANDS REGION.
548	9 30	18 42 16.2	22.304 S	68.406 W	126 4.9	75.59	NORTHERN CHILE.
549	10 1	12 3 5.6	35.246 S	16.362 W	10 4.6 4.2	45.49	SOUTHERN MID-ATLANTIC RIDGE.
550	10 1	14 53 11.5	19.699 S	178.253 W	594 4.9	87.45	FIJI ISLANDS REGION.
551	10 1	15 50 23.6	12.434 N	58.066 E	10 5.8 5.9	82.28	ARABIAN SEA.
552	10 1	23 4 12.6	12.681 S	76.813 W	62 5.5	87.30	NEAR COAST OF PERU.
553	10 2	13 7 9.8	22.678 S	66.202 W	248 4.6	74.51	JUJUY PROVINCE, ARGENTINA.
554	10 2	21 52 58.5	19.252 S	179.425 W	685 5.2	87.64	FIJI ISLANDS REGION.
555	10 3	11 33 37.1	16.531 S	67.098 E	10 4.7	55.23	MID-INDIAN RIDGE.
556	10 4	7 8 16.4	12.383 S	14.725 W	10 4.8 4.3	66.16	SOUTHERN MID-ATLANTIC RIDGE.
557	10 4	8 3 7.2	1.023 N	120.406 E	33 5.2	87.65	MINAHASSA PENINSULA, SULAWESI.
558	10 4	19 13 18.2	41.559 S	89.262 W	10 5.0	63.46	SOUTHERN PACIFIC OCEAN.
559	10 5	0 9 28.6	28.974 S	68.843 W	120 4.5	69.53	LA RIOJA PROVINCE, ARGENTINA.
560	10 5	21 21 37.2	40.573 S	175.907 E	33 4.7	66.05	NORTH ISLAND, NEW ZEALAND.
561	10 6	4 16 3.8	18.621 S	175.672 W	33 5.0 4.9	89.02	TONGA ISLANDS.
562	10 6	5 23 20.8	52.672 S	140.319 E	10 5.0	45.65	WEST OF MACQUARIE ISLAND.
563	10 6	6 33 16.3	52.652 S	140.174 E	10 4.9 5.0	45.62	WEST OF MACQUARIE ISLAND.
564	10 6	10 2 42.1	9.785 S	118.002 E	54 4.9	76.77	SUMBA REGION, INDONESIA.
565	10 6	20 40 13.6	7.314 S	128.611 E	157 4.7	82.87	BANDA SEA.
566	10 7	8 45 52.4	28.689 S	62.915 W	616 4.7	67.86	SANTIAGO DEL ESTERO PROV., ARGENTINA.

567	10	7	9	23	56.9	22.113	S	179.577	W	606	5.2		84.83	SOUTH OF FIJI ISLANDS.
568	10	7	19	41	34.8	30.475	S	179.430	W	300	4.4		76.76	KERMADEC ISLANDS REGION.
569	10	8	1	36	53.9	45.778	S	96.025	E	10	5.2	5.9	36.32	SOUTHEAST INDIAN RIDGE.
570	10	8	5	4	8.8	3.996	N	126.227	E	79	4.8		92.49	TALAUD ISLANDS, INDONESIA.
571	10	8	6	34	22	30.440	S	177.600	W	33	4.6		77.15	KERMADEC ISLANDS REGION.
572	10	8	11	40	35.1	6.507	S	154.939	E	33	4.9		92.77	SOLOMON ISLANDS.
573	10	8	22	34	53.4	5.303	S	133.751	E	33	4.9		86.58	ARU ISLANDS REGION, INDONESIA.
574	10	10	0	21	46.5	23.985	S	179.648	W	500	4.4		83.00	SOUTH OF FIJI ISLANDS.
575	10	10	8	22	28.4	5.564	N	126.546	E	96	5.4		94.06	MINDANAO, PHILIPPINE ISLANDS.
576	10	10	15	21	4.7	3.445	N	97.943	E	33	5.7	6.1	82.35	NORTHERN SUMATERA, INDONESIA.
577	10	11	17	7	10.1	3.494	S	144.889	E	33	5.1	4.8	92.20	NEAR N COAST OF NEW GUINEA, P.N.G.
578	10	12	10	37	9.3	32.770	S	177.946	W	33	4.6		74.82	SOUTH OF KERMADEC ISLANDS.
579	10	12	15	36	1.2	7.250	S	155.471	E	33	5.4	5.9	92.24	SOLOMON ISLANDS.
580	10	12	15	51	59.5	0.839	N	120.171	E	33	4.8		87.40	MINAHASSA PENINSULA, SULAWESI.
581	10	12	18	27	10.2	7.281	S	155.393	E	33	5.3	5.6	92.19	SOLOMON ISLANDS.
582	10	13	1	29	6.2	7.228	S	155.351	E	33	5.2	5.3	92.22	SOLOMON ISLANDS.
583	10	14	0	7	58	7.228	S	155.488	E	33	5.4	5.8	92.27	SOLOMON ISLANDS.
584	10	14	23	26	20	7.133	S	155.568	E	24	5.9	6.9	92.38	SOLOMON ISLANDS.
585	10	16	1	19	18.5	19.616	S	169.297	E	143	5.3		84.59	VANUATU ISLANDS.
586	10	17	3	33	29	30.000	S	177.330	W	33	4.8		77.63	KERMADEC ISLANDS REGION.
587	10	17	16	15	25.7	5.704	N	125.945	E	117	5.7		93.97	MINDANAO, PHILIPPINE ISLANDS.
588	10	17	20	53	27.4	25.710	S	70.310	W	66	4.8		73.03	NEAR COAST OF NORTHERN CHILE.

589	10 18	5 4 3	5.949 S	148.708 E	62 5.3	91.22	NEW BRITAIN REGION, P.N.G.
590	10 18	6 25 17.1	20.188 S	178.313 W	550 4.9	86.96	FIJI ISLANDS REGION.
591	10 18	8 45 43.6	28.745 S	176.859 W	33 4.6	78.94	KERMADEC ISLANDS REGION.
592	10 18	11 19 18.6	0.389 N	126.221 E	44 5.6 6.3	89.15	NORTHERN MOLUCCA SEA.
593	10 18	13 41 3.4	32.436 S	70.041 W	122 5.2	66.70	CHILE-ARGENTINA BORDER REGION.
594	10 18	15 26 58	52.974 S	21.862 E	10 4.7	18.11	SOUTH OF AFRICA.
595	10 18	17 34 53	62.141 S	165.014 E	10 4.9	43.50	BALLENY ISLANDS REGION.
596	10 19	6 51 31.8	8.650 S	76.058 W	135 4.7	90.85	CENTRAL PERU.
597	10 19	14 53 48.7	20.412 S	178.510 W	591 6.1	86.70	FIJI ISLANDS REGION.
598	10 20	9 39 37.8	48.022 S	31.868 E	10 4.7	21.40	SOUTH OF AFRICA.
599	10 20	14 20 26.8	4.914 S	129.153 E	254 4.7	85.29	BANDA SEA.
600	10 20	19 20 46.7	0.309 N	126.411 E	55 4.9	89.14	NORTHERN MOLUCCA SEA.
601	10 21	19 33 1.3	19.231 S	177.350 W	500 5.1	88.09	FIJI ISLANDS REGION.
602	10 22	0 59 28.6	37.810 S	176.930 E	150 4.9	68.92	NORTH ISLAND, NEW ZEALAND.
603	10 22	5 1 13.7	10.643 S	165.965 E	100 5.0	92.23	SANTA CRUZ ISLANDS.
604	10 22	8 28 47.8	54.185 S	7.347 E	10 4.7	20.96	BOUVET ISLAND REGION.
605	10 22	8 59 57.4	22.751 S	174.936 W	53 4.9	85.14	TONGA ISLANDS REGION.
606	10 22	10 51 25	60.880 S	154.473 E	10 4.9	42.31	WEST OF MACQUARIE ISLAND.
607	10 23	1 50 6.4	49.307 S	117.264 W	10 4.8 4.9	60.76	SOUTH PACIFIC OCEAN.
608	10 23	10 18 55	22.283 S	170.811 E	33 4.9 4.6	82.43	LOYALTY ISLANDS REGION.
609	10 24	4 46 36.3	20.275 S	178.469 W	600 4.9	86.85	FIJI ISLANDS REGION.
610	10 24	10 26 1.2	21.763 S	175.326 W	33 4.7	86.03	TONGA ISLANDS.

611	10 24	13 58 34.2	31.026 S	179.925 E	445	4.4		76.09	KERMADEC ISLANDS REGION.
612	10 24	17 59 19.3	7.076 S	155.837 E	127	4.8		92.52	SOLOMON ISLANDS.
613	10 25	7 14 57.3	22.012 S	174.170 W	33	5.3	4.6	86.01	TONGA ISLANDS REGION.
614	10 25	10 28 15.1	38.970 S	175.780 E	33	4.5		67.57	NORTH ISLAND, NEW ZEALAND.
615	10 25	21 51 46.3	0.268 N	122.465 E	177	5.0		87.69	MINAHASSA PENINSULA, SULAWESI.
616	10 27	20 57 49.9	1.336 N	122.606 E	37	5.0		88.73	MINAHASSA PENINSULA, SULAWESI.
617	10 28	23 32 11.9	58.740 S	25.582 W	33	5.0	5.0	28.97	SOUTH SANDWICH ISLANDS REGION.
618	10 29	3 55 23.6	17.829 S	179.605 W	600	4.8		88.97	FIJI ISLANDS REGION.
619	10 29	13 11 39.7	58.366 S	15.131 W	10	4.6		25.52	SOUTHWESTERN ATLANTIC OCEAN.
620	10 30	16 55 39	49.899 S	110.697 E	10	4.8		38.09	SOUTHEAST INDIAN RIDGE.
621	10 30	22 30 25	11.315 S	165.669 E	33	4.9	5.1	91.50	SANTA CRUZ ISLANDS.
622	10 30	22 57 54.5	24.593 S	176.165 W	33	5.0	5.3	83.11	SOUTH OF FIJI ISLANDS.
623	10 30	23 30 40	24.587 S	176.118 W	33	5.2	5.2	83.13	SOUTH OF FIJI ISLANDS.
624	10 31	3 58 7.3	24.646 S	176.064 W	33	4.8		83.08	SOUTH OF FIJI ISLANDS.
625	10 31	10 4 39.8	5.007 S	151.721 E	143	5.0		93.11	NEW BRITAIN REGION, P.N.G.
626	10 31	10 52 42.1	63.888 S	168.374 W	10	4.6		45.92	PACIFIC-ANTARCTIC RIDGE.
627	10 31	12 42 32	5.377 S	151.676 E	83	4.9		92.75	NEW BRITAIN REGION, P.N.G.
628	10 31	14 4 12.8	18.070 S	178.171 W	550	4.7		89.05	FIJI ISLANDS REGION.
629	10 31	15 7 9.3	30.040 S	177.800 W	100	4.3		77.50	KERMADEC ISLANDS REGION.
630	10 31	18 18 43	9.902 N	126.387 E	33	5.5	5.4	98.02	MINDANAO, PHILIPPINE ISLANDS.
631	10 31	18 23 46.9	9.946 N	126.534 E	33	5.2		98.11	MINDANAO, PHILIPPINE ISLANDS.
632	10 31	18 42 40.2	9.848 N	126.396 E	33	5.3	5.0	97.97	MINDANAO, PHILIPPINE ISLANDS.

633	10	31	19	38	53.4	0.259	S	18.323	W	10	4.8	4.6	78.72	CENTRAL MID-ATLANTIC RIDGE.
634	11	1	3	32	34.6	1.230	S	149.525	E	33	5.7	5.7	95.91	NEW IRELAND REGION, P.N.G.
635	11	1	7	0	16.6	1.339	S	149.476	E	33	5.3	5.5	95.79	NEW IRELAND REGION, P.N.G.
636	11	1	13	19	22.7	34.030	S	14.700	W	10	4.4		46.03	TRISTAN DA CUNHA REGION.
637	11	1	20	38	36.8	30.882	S	178.430	W	200	4.7		76.56	KERMADEC ISLANDS REGION.
638	11	2	0	8	50.6	7.558	S	117.301	E	302	5.5		78.58	BALI SEA.
639	11	2	17	17	34.5	1.256	S	149.590	E	33	5.0	4.6	95.91	NEW IRELAND REGION, P.N.G.
640	11	2	18	31	41.7	1.274	N	122.688	E	33	5.0	4.2	88.70	MINAHASSA PENINSULA, SULAWESI.
641	11	3	7	41	36.5	9.825	N	126.399	E	33	5.4	5.4	97.95	MINDANAO, PHILIPPINE ISLANDS.
642	11	3	16	2	47.3	9.756	N	126.330	E	33	5.1	4.2	97.86	MINDANAO, PHILIPPINE ISLANDS.
643	11	3	21	44	55.7	22.290	S	179.278	W	500	4.1		84.72	SOUTH OF FIJI ISLANDS.
644	11	4	12	53	36.3	9.732	N	126.414	E	33	5.4	5.5	97.87	MINDANAO, PHILIPPINE ISLANDS.
645	11	4	16	42	27.2	13.274	N	93.814	E	33	4.9		90.44	ANDAMAN ISLANDS, INDIA.
646	11	4	17	1	34.6	9.822	N	126.248	E	33	5.3	5.4	97.90	MINDANAO, PHILIPPINE ISLANDS.
647	11	4	19	24	13.5	57.810	S	142.520	W	10	4.6		53.47	PACIFIC-ANTARCTIC RIDGE.
648	11	4	20	4	42.6	9.759	N	126.331	E	33	5.2	4.8	97.87	MINDANAO, PHILIPPINE ISLANDS.
649	11	4	20	7	25	20.410	S	177.889	W	381	4.8		86.84	FIJI ISLANDS REGION.
650	11	5	0	58	10.9	20.662	S	11.698	W	22	4.7		57.44	SOUTHERN MID-ATLANTIC RIDGE.
651	11	5	9	41	34.7	31.160	S	179.998	E	369	5.9		75.98	KERMADEC ISLANDS REGION.
652	11	5	10	5	56.6	22.135	S	179.589	W	600	5.0		84.81	SOUTH OF FIJI ISLANDS.
653	11	5	12	29	45.9	9.756	N	126.360	E	33	5.7	5.5	97.88	MINDANAO, PHILIPPINE ISLANDS.
654	11	5	12	50	3.7	9.754	N	126.425	E	33	5.2		97.90	MINDANAO, PHILIPPINE ISLANDS.

655	11	6	12	10	16.9	3.270	S	142.948	E	33	5.3	4.8	91.73	NEAR N COAST OF NEW GUINEA, P.N.G.
656	11	6	17	4	33.8	7.761	S	106.981	E	33	5.4	4.8	74.79	JAWA, INDONESIA.
657	11	7	3	10	57.7	16.082	S	177.724	W	33	5.1	5.0	91.07	FIJI ISLANDS REGION.
658	11	7	6	10	16.7	9.785	N	126.340	E	33	5.7	6.0	97.90	MINDANAO, PHILIPPINE ISLANDS.
659	11	7	9	50	13.6	9.821	N	126.359	E	33	5.3	4.8	97.94	MINDANAO, PHILIPPINE ISLANDS.
660	11	8	8	55	39.4	22.270	S	170.320	E	33	4.7	4.6	82.32	LOYALTY ISLANDS REGION.
661	11	8	14	0	50.5	22.258	S	179.223	W	553	5.2		84.77	SOUTH OF FIJI ISLANDS.
662	11	8	16	37	14	31.130	S	177.740	W	50	4.8		76.45	KERMADEC ISLANDS REGION.
663	11	9	3	1	18.5	5.550	S	102.616	E	33	4.7		75.39	SOUTHERN SUMATERA, INDONESIA.
664	11	9	5	8	25.8	36.650	S	97.250	W	10	-		69.94	WEST CHILE RISE.
665	11	9	6	22	8.4	1.232	N	122.974	E	59	4.9		88.76	MINAHASSA PENINSULA, SULAWESI.
666	11	9	7	53	22.7	34.551	S	179.383	E	84	5.4		72.57	SOUTH OF KERMADEC ISLANDS.
667	11	9	9	34	46	32.409	S	179.150	W	100	5.2		74.94	SOUTH OF KERMADEC ISLANDS.
668	11	9	13	20	13.7	24.680	S	175.910	W	33	4.4		83.08	SOUTH OF TONGA ISLANDS.
669	11	9	17	28	41.2	31.184	S	177.963	W	33	5.3		76.36	KERMADEC ISLANDS REGION.
670	11	10	6	26	21.7	23.212	S	179.925	E	600	5.1		83.66	SOUTH OF FIJI ISLANDS.
671	11	10	11	0	37.9	10.019	N	126.352	E	33	5.1		98.12	PHILIPPINE ISLANDS REGION.
672	11	10	18	15	21.5	9.959	N	126.321	E	33	5.5	5.2	98.05	MINDANAO, PHILIPPINE ISLANDS.
673	11	10	20	7	0.5	3.537	S	131.137	E	62	4.8		87.28	IRIAN JAYA REGION, INDONESIA.
674	11	10	22	42	0.9	18.680	S	168.247	E	33	4.6	4.8	85.20	VANUATU ISLANDS.
675	11	11	0	47	21.1	32.538	S	179.049	W	33	5.9	5.9	74.83	SOUTH OF KERMADEC ISLANDS.
676	11	11	6	38	42.1	25.053	S	64.386	W	33	5.0	4.5	71.71	SALTA PROVINCE, ARGENTINA.

677	11 11	9 22 27.7	19.330 N	95.013 E	80	5.6 5.4	96.54	MYANMAR.
678	11 11	12 16 46	22.117 S	179.643 W	598	4.7	84.81	SOUTH OF FIJI ISLANDS.
679	11 11	16 47 57.9	7.997 S	109.079 E	130	4.5	75.29	JAWA, INDONESIA.
680	11 11	17 55 37.8	4.552 S	152.978 E	60	5.1	93.96	NEW BRITAIN REGION, P.N.G.
681	11 12	1 42 20.4	15.302 S	173.947 W	33	5.0	92.59	TONGA ISLANDS.
682	11 12	16 59 44	14.993 S	75.675 W	33	6.5 7.3	84.77	NEAR COAST OF PERU.
683	11 12	17 10 0.4	14.935 S	75.609 W	33	5.6	84.80	NEAR COAST OF PERU.
684	11 12	17 16 16.4	15.111 S	75.069 W	33	5.1	84.46	NEAR COAST OF PERU.
685	11 12	17 39 26.6	14.819 S	75.555 W	33	5.2	84.89	NEAR COAST OF PERU.
686	11 12	18 17 31.3	15.306 S	75.296 W	33	5.2	84.35	NEAR COAST OF PERU.
687	11 12	18 26 56.8	15.511 S	75.173 W	33	4.6	84.12	NEAR COAST OF PERU.
688	11 12	18 31 10.8	15.330 S	75.400 W	33	4.6	84.36	NEAR COAST OF PERU.
689	11 12	18 42 16.4	15.031 S	75.729 W	33	4.7	84.75	NEAR COAST OF PERU.
690	11 12	19 46 33.1	15.339 S	75.435 W	33	-	84.37	NEAR COAST OF PERU.
691	11 12	20 7 46.2	15.114 S	75.657 W	33	4.9	84.65	NEAR COAST OF PERU.
692	11 12	21 43 58	15.269 S	75.511 W	33	5.2	84.46	NEAR COAST OF PERU.
693	11 12	23 35 14.2	14.929 S	75.556 W	33	5.5 4.9	84.79	NEAR COAST OF PERU.
694	11 13	0 28 20	15.053 S	75.623 W	33	5.2	84.69	NEAR COAST OF PERU.
695	11 13	0 40 48	15.345 S	75.436 W	33	4.5	84.36	NEAR COAST OF PERU.
696	11 13	2 24 58	14.915 S	75.700 W	33	5.1	84.85	NEAR COAST OF PERU.
697	11 13	2 41 39.9	14.843 S	75.692 W	33	5.6 5.8	84.91	NEAR COAST OF PERU.
698	11 13	2 47 33.2	15.360 S	75.571 W	33	5.1	84.39	NEAR COAST OF PERU.

699	11 13	4 43 48.2	15.194 S	75.231 W	33	5.2 4.8	84.44	NEAR COAST OF PERU.
700	11 13	7 42 44	27.354 S	178.447 W	300	3.7	79.98	KERMADEC ISLANDS REGION.
701	11 13	9 52 11.7	14.959 S	75.489 W	33	5.2	84.74	NEAR COAST OF PERU.
702	11 13	12 32 9.8	15.474 S	75.414 W	33	5.4 5.8	84.23	NEAR COAST OF PERU.
703	11 13	18 36 23	15.017 S	75.470 W	33	4.3	84.68	NEAR COAST OF PERU.
704	11 14	2 38 57	15.452 S	75.512 W	33	5.3 5.1	84.29	NEAR COAST OF PERU.
705	11 14	2 53 11	7.009 S	129.540 E	156	4.9	83.49	BANDA SEA.
706	11 14	6 18 15.3	20.632 S	178.064 W	506	4.8	86.58	FIJI ISLANDS REGION.
707	11 14	7 58 58.5	11.384 S	166.461 E	109	5.7	91.66	SANTA CRUZ ISLANDS.
708	11 14	10 42 57	25.860 S	13.836 W	10	5.2 5.2	53.27	SOUTHERN MID-ATLANTIC RIDGE.
709	11 14	11 44 6.7	14.802 S	75.746 W	33	5.4 5.2	84.97	NEAR COAST OF PERU.
710	11 14	12 45 52.7	58.773 S	24.841 W	33	4.8	28.69	SOUTH SANDWICH ISLANDS REGION.
711	11 14	12 54 2.1	15.321 S	75.470 W	33	5.0	84.39	NEAR COAST OF PERU.
712	11 14	13 47 38.1	21.237 S	176.621 W	192	5.9	86.29	FIJI ISLANDS REGION.
713	11 14	17 6 3.7	23.682 S	179.880 W	550	4.7	83.25	SOUTH OF FIJI ISLANDS.
714	11 14	17 44 53.9	21.625 S	68.086 W	130	-	76.11	CHILE-BOLIVIA BORDER REGION.
715	11 15	8 49 30.7	14.871 S	75.479 W	33	5.2 5.5	84.82	NEAR COAST OF PERU.
716	11 15	17 44 54.5	49.601 S	110.825 E	10	4.9 5.2	38.39	SOUTHEAST INDIAN RIDGE.
717	11 16	4 39 48.3	24.352 S	179.768 E	550	4.3	82.52	SOUTH OF FIJI ISLANDS.
718	11 16	4 41 24.7	23.463 S	179.953 E	550	4.7	83.42	SOUTH OF FIJI ISLANDS.
719	11 16	5 27 23.7	15.455 S	75.082 W	33	4.9	84.15	NEAR COAST OF PERU.
720	11 16	9 47 50.8	15.101 S	176.300 W	33	5.3 5.7	92.32	SOUTH OF FIJI ISLANDS.

721	11 16	10 46 30.4	2.940 N	128.521 E	33 4.7	92.34	HALMAHERA, INDONESIA.
722	11 16	12 29 50.1	21.092 S	176.030 W	143 5.2	86.55	FIJI ISLANDS REGION.
723	11 16	14 42 55.9	19.030 S	177.570 W	500 4.3	88.24	FIJI ISLANDS REGION.
724	11 17	1 50 2	29.510 S	71.298 W	50 4.9	69.81	NEAR COAST OF CENTRAL CHILE.
725	11 17	5 28 14.4	17.904 S	178.490 W	600 4.2	89.14	FIJI ISLANDS REGION.
726	11 17	8 34 0.3	15.327 S	176.189 W	33 5.0 5.3	92.12	FIJI ISLANDS REGION.
727	11 17	8 57 39.4	9.597 S	108.301 E	33 4.4	73.53	SOUTH OF JAWA, INDONESIA.
728	11 17	11 49 27.6	15.375 S	176.217 W	33 4.8 5.2	92.07	FIJI ISLANDS REGION.
729	11 17	13 17 24.6	56.060 S	27.399 W	100 4.9	31.65	SOUTH SANDWICH ISLANDS REGION.
730	11 17	17 35 46.9	24.991 S	179.725 E	500 4.6	81.90	SOUTH OF FIJI ISLANDS.
731	11 17	21 11 20.2	22.196 S	179.704 W	592 5.5	84.72	SOUTH OF FIJI ISLANDS.
732	11 17	23 26 36.2	30.660 S	178.187 W	55 5.3	76.82	KERMADEC ISLANDS, NEW ZEALAND.
733	11 18	7 41 17.3	17.340 S	179.193 W	600 4.6	89.54	FIJI ISLANDS REGION.
734	11 18	10 46 29.3	35.326 S	72.593 W	33 4.9	64.80	NEAR COAST OF CENTRAL CHILE.
735	11 19	8 14 8.1	17.575 S	178.409 W	550 4.8	89.48	FIJI ISLANDS REGION.
736	11 19	18 17 13.1	6.293 S	130.311 E	150 4.9	84.43	BANDA SEA.
737	11 20	13 8 41.7	7.735 N	126.628 E	33 5.0	96.10	MINDANAO, PHILIPPINE ISLANDS.
738	11 21	7 26 8.5	19.897 S	68.918 W	111 5.0	78.00	CHILE-BOLIVIA BORDER REGION.
739	11 21	7 43 38.3	6.659 N	126.463 E	53 5.8	95.04	MINDANAO, PHILIPPINE ISLANDS.
740	11 21	17 46 35.1	11.052 S	73.818 W	108 4.7	87.87	CENTRAL PERU.
741	11 21	21 45 15.4	3.297 S	146.625 E	39 5.3 5.4	92.99	BISMARCK SEA.
742	11 22	8 7 50.1	56.568 S	24.128 W	33 5.1 4.3	30.09	SOUTH SANDWICH ISLANDS REGION.

743	11 22	22 43 58.8	20.754 S	169.938 E	33	5.2		83.67	VANUATU ISLANDS.
744	11 23	10 35 45.5	3.236 S	146.868 E	10	5.1	5.6	93.13	BISMARCK SEA.
745	11 23	22 53 29.7	5.231 S	154.141 E	96	5.0		93.70	SOLOMON ISLANDS.
746	11 24	7 58 32	6.079 S	148.257 E	58	5.2		90.95	NEW BRITAIN REGION, P.N.G.
747	11 25	11 15 57.6	3.086 S	139.663 E	55	5.4	4.9	90.75	IRIAN JAYA, INDONESIA.
748	11 25	13 23 53.2	2.749 S	139.389 E	33	5.5	5.0	90.96	NEAR NORTH COAST OF IRIAN JAYA.
749	11 26	1 30 7.8	3.253 N	125.747 E	120	5.2		91.63	TALAUD ISLANDS, INDONESIA.
750	11 26	4 34 1.6	18.093 S	168.287 E	80	5.0		85.77	VANUATU ISLANDS.
751	11 26	9 17 53.5	22.194 S	179.610 W	600	4.7		84.75	SOUTH OF FIJI ISLANDS.
752	11 26	10 29 44.4	55.685 S	124.358 W	10	4.7	4.8	55.06	SOUTHERN EAST PACIFIC RISE.
753	11 26	15 11 55.2	7.553 S	128.083 E	159	4.4		82.46	BANDA SEA.
754	11 26	21 30 12.1	12.780 S	74.003 W	70	4.5		86.31	CENTRAL PERU.
755	11 26	23 43 47.9	32.006 S	67.577 W	33	-		66.32	MENDOZA PROVINCE, ARGENTINA.
756	11 27	0 0 47.2	31.770 S	68.090 W	5	-		66.70	SAN JUAN PROVINCE, ARGENTINA.
757	11 27	1 40 26.1	21.581 S	179.367 W	600	4.6		85.39	FIJI ISLANDS REGION.
758	11 27	18 31 55	32.902 S	68.806 W	28	4.8		65.88	MENDOZA PROVINCE, ARGENTINA.
759	11 27	23 45 3.5	15.535 S	75.452 W	33	5.0		84.19	NEAR COAST OF PERU.
760	11 28	14 5 49.4	55.576 S	26.046 W	33	4.9		31.55	SOUTH SANDWICH ISLANDS REGION.
761	11 29	0 51 40.5	56.513 S	25.345 W	33	5.1	5.3	30.57	SOUTH SANDWICH ISLANDS REGION.
762	11 29	0 57 18.8	31.965 S	178.127 W	33	4.8		75.57	KERMADEC ISLANDS REGION.
763	11 29	4 34 6.3	19.810 S	175.747 W	178	4.9		87.85	TONGA ISLANDS.
764	11 29	15 52 48.3	23.725 S	67.587 W	150	4.6		74.00	CHILE-ARGENTINA BORDER REGION.

765	11	30	2	25	48.8	34.590	S	109.050	W	10	4.4		74.14	SOUTHERN EAST PACIFIC RISE.
766	11	30	22	14	31	18.410	S	177.774	W	600	5.0		88.80	FIJI ISLANDS REGION.
767	12	1	0	17	37.9	15.450	S	75.361	W	33	4.9	4.8	84.24	NEAR COAST OF PERU.
768	12	1	2	0	57.5	23.962	S	175.016	W	33	4.6		83.95	TONGA ISLANDS REGION.
769	12	1	2	37	51.3	20.700	S	68.939	W	120	4.2		77.26	CHILE-BOLIVIA BORDER REGION.
770	12	1	13	39	59.8	31.555	S	67.249	W	117	3.7		66.63	SAN JUAN PROVINCE, ARGENTINA.
771	12	1	23	9	40.5	30.522	S	179.675	W	356	5.3		76.66	KERMADEC ISLANDS REGION.
772	12	2	8	39	28.6	20.510	S	170.000	E	33	4.3		83.92	VANUATU ISLANDS.
773	12	2	9	17	56.6	24.457	S	179.816	E	500	4.7		82.43	SOUTH OF FIJI ISLANDS.
774	12	2	19	48	10.5	7.917	S	129.920	E	50	4.7		82.78	BANDA SEA.
775	12	2	21	25	28.5	13.983	S	170.307	E	600	5.2		90.24	VANUATU ISLANDS REGION.
776	12	2	23	40	57	3.953	S	103.313	E	150	4.4		77.11	SOUTHERN SUMATERA, INDONESIA.
777	12	3	4	46	27.1	10.662	S	112.140	E	33	4.5		73.88	SOUTH OF JAWA, INDONESIA.
778	12	3	12	56	56.9	18.651	S	172.275	W	33	6.0	6.0	89.63	TONGA ISLANDS REGION.
779	12	3	14	29	51.4	10.666	S	112.158	E	33	4.6	4.8	73.88	SOUTH OF JAWA, INDONESIA.
780	12	4	18	6	34.8	55.795	S	26.204	W	33	-		31.43	SOUTH SANDWICH ISLANDS REGION.
781	12	5	0	2	19.5	15.598	S	167.340	E	33	5.1	5.2	87.90	VANUATU ISLANDS REGION.
782	12	5	17	24	53.3	65.708	S	175.784	W	10	4.8		43.30	PACIFIC-ANTARCTIC RIDGE.
783	12	5	23	29	7	0.274	S	125.201	E	33	5.3	5.1	88.17	SOUTHERN MOLUCCA SEA.
784	12	6	1	3	32.6	54.989	S	28.614	W	33	4.7		32.92	SOUTH SANDWICH ISLANDS REGION.
785	12	6	10	9	2.3	59.235	S	24.728	W	33	4.9	4.8	28.31	SOUTH SANDWICH ISLANDS REGION.
786	12	7	2	59	21.4	2.274	S	139.163	E	33	5.0		91.32	NEAR NORTH COAST OF IRIAN JAYA.

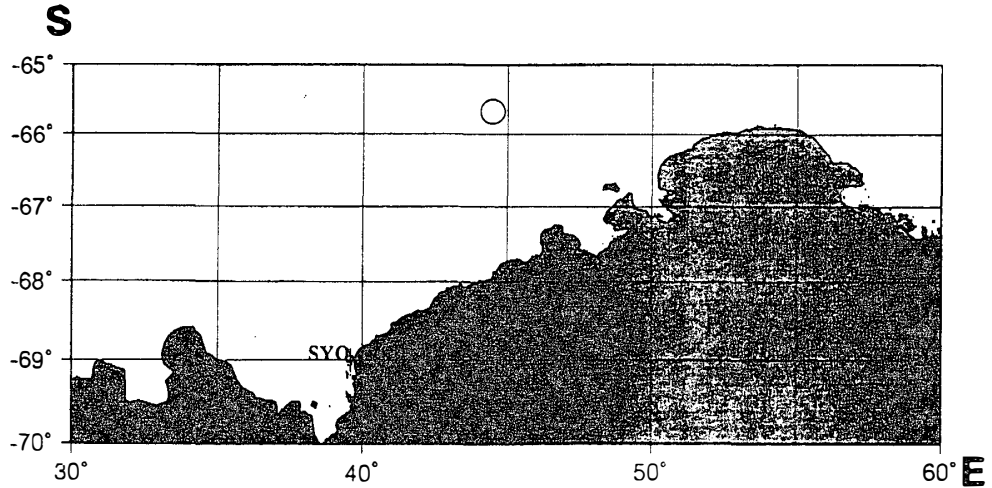
787	12	7	22	46	35.8	7.384	S	146.108	E	190	4.9		89.00	EASTERN NEW GUINEA REG., P.N.G.
788	12	7	23	0	39.9	5.298	S	145.842	E	57	4.6		90.85	EASTERN NEW GUINEA REG., P.N.G.
789	12	8	19	17	54.3	27.849	S	74.078	E	10	5.3	5.2	45.86	MID-INDIAN RIDGE.
790	12	8	19	30	41.8	27.880	S	74.153	E	10	5.1		45.85	MID-INDIAN RIDGE.
791	12	9	3	54	16.3	7.936	S	107.489	E	51	5.5	5.7	74.80	JAWA, INDONESIA.
792	12	9	19	23	5.4	36.223	S	100.330	W	10	4.7	4.6	70.98	SOUTHERN PACIFIC OCEAN.
793	12	10	2	15	8.2	25.266	S	179.321	E	600	4.7		81.54	SOUTH OF FIJI ISLANDS.
794	12	10	8	36	18.7	0.870	N	30.039	W	10	6.0	6.2	83.61	CENTRAL MID-ATLANTIC RIDGE.
795	12	10	9	23	25.4	0.796	N	29.620	W	10	5.2		83.40	CENTRAL MID-ATLANTIC RIDGE.
796	12	11	3	23	9	52.264	S	17.156	E	10	4.2		19.86	SOUTHWEST OF AFRICA.
797	12	11	4	21	58.6	0.071	S	125.144	E	10	5.2	5.2	88.33	SOUTHERN MOLUCCA SEA.
798	12	11	5	29	56.9	52.395	S	17.349	E	10	4.7		19.69	SOUTHWEST OF AFRICA.
799	12	11	9	44	39	1.488	N	120.157	E	62	5.1	4.4	88.00	MINAHASSA PENINSULA, SULAWESI.
800	12	12	12	18	50.9	4.736	S	103.195	E	63	5.2	4.7	76.34	SOUTHERN SUMATERA, INDONESIA.
801	12	11	15	2	9.8	20.999	S	178.903	W	600	4.7		86.05	FIJI ISLANDS REGION.
802	12	12	18	23	53	6.030	S	112.959	E	606	5.1		78.47	JAWA, INDONESIA.
803	12	13	1	0	7.7	16.406	S	171.609	W	33	5.4	5.0	91.95	SAMOA ISLANDS REGION.
804	12	13	8	44	41.2	5.554	S	147.219	E	202	5.1		91.08	EASTERN NEW GUINEA REG., P.N.G.
805	12	13	9	56	1.5	6.230	S	104.104	E	69	5.2		75.24	SUNDA STRAIT.
806	12	13	12	35	24.5	56.267	S	27.056	W	114	5.2		31.37	SOUTH SANDWICH ISLANDS REGION.
807	12	14	9	48	23.9	41.362	S	75.288	W	10	5.0		60.00	OFF COAST OF SOUTHERN CHILE.
808	12	14	14	15	29.3	27.603	S	65.772	E	10	4.9		44.20	SOUTH INDIAN OCEAN.

809	12 14	18 5	20.6	0.036	S	124.117	E	83	5.1		88.00	SOUTHERN MOLUCCA SEA.
810	12 15	18 22	48.3	18.165	S	168.089	E	33	4.8		85.65	VANUATU ISLANDS.
811	12 15	23 13	20	40.220	S	178.543	E	47	4.8		66.93	OFF E. COAST OF N. ISLAND, NEW ZEALAN
812	12 16	2 28	16.9	11.085	S	165.317	E	33	4.7	4.9	91.62	SANTA CRUZ ISLANDS.
813	12 16	17 1	5	18.884	S	179.316	W	600	4.9		88.02	FIJI ISLANDS REGION.
814	12 17	22 40	54	18.182	S	178.036	W	550	5.4		88.97	FIJI ISLANDS REGION.
815	12 18	10 12	27.4	25.120	S	70.683	W	33	5.8	5.0	73.70	NEAR COAST OF NORTHERN CHILE.
816	12 19	9 56	11.7	7.083	N	126.757	E	100	5.1		95.54	MINDANAO, PHILIPPINE ISLANDS.
817	12 19	11 14	9.3	8.199	S	121.541	E	193	5.0		79.51	FLORES REGION, INDONESIA.
818	12 21	8 34	3.7	5.215	S	35.545	E	10	4.8		63.76	TANZANIA.
819	12 21	9 27	21.6	22.367	S	70.151	W	33	4.3		76.10	NEAR COAST OF NORTHERN CHILE.
820	12 21	23 39	32	22.601	S	175.303	W	100	4.7		85.22	TONGA ISLANDS REGION.
821	12 23	0 28	44.9	22.682	S	175.320	W	10	5.2	5.6	85.14	TONGA ISLANDS REGION.
822	12 23	4 20	23.4	29.800	S	178.360	W	170	4.4		77.63	KERMADEC ISLANDS REGION.
823	12 23	5 59	14	48.810	S	8.280	W	10	-		30.72	SOUTHERN MID-ATLANTIC RIDGE.
824	12 24	23 30	22.4	15.610	S	74.466	W	60	5.1		83.80	NEAR COAST OF PERU.
825	12 25	6 59	44.6	60.451	S	19.943	W	10	5.0		25.75	SOUTHWESTERN ATLANTIC OCEAN.
826	12 25	8 41	28.7	29.815	S	178.852	W	263	4.3		77.51	KERMADEC ISLANDS, NEW ZEALAND.
827	12 26	19 34	11.5	5.360	S	151.357	E	107	5.3	5.5	92.66	NEW BRITAIN REGION, P.N.G.
828	12 26	20 48	23.2	2.236	S	138.938	E	33	6.0	6.1	91.28	IRIAN JAYA, INDONESIA.
829	12 27	2 49	47.2	16.071	S	178.144	E	33	5.5	5.0	90.17	FIJI ISLANDS.
830	12 27	11 19	48.3	2.184	S	138.956	E	33	5.4	5.2	91.33	IRIAN JAYA, INDONESIA.

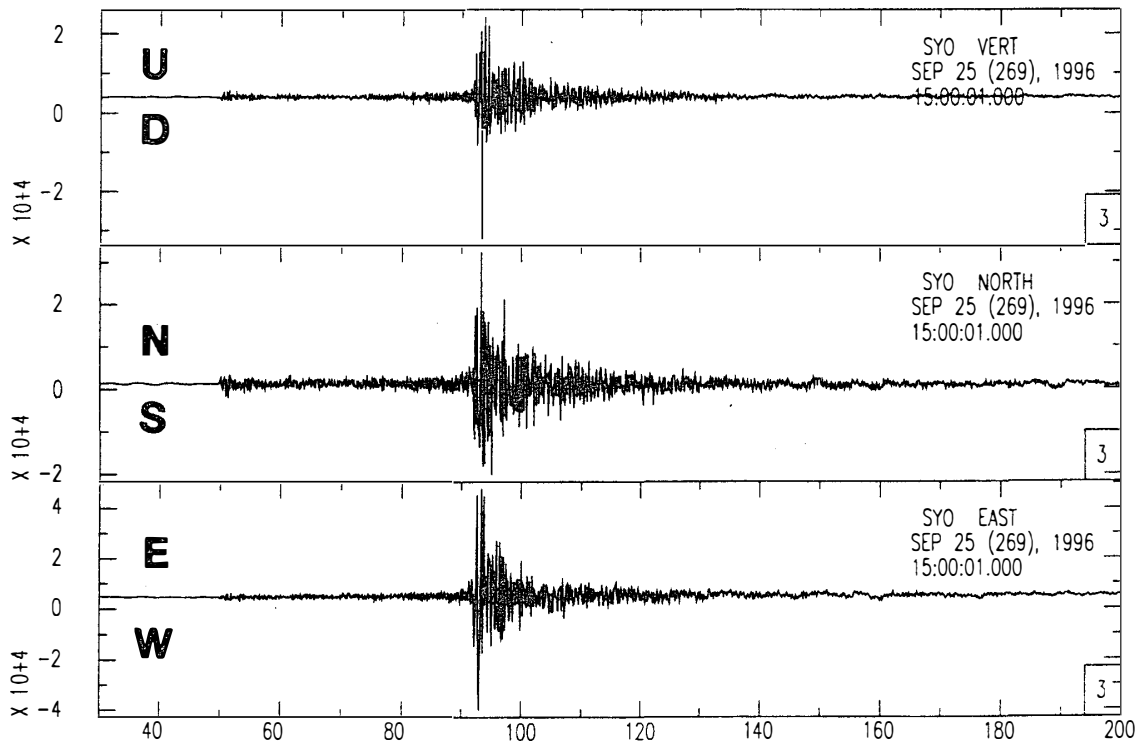
831	12 28	18 20 49.1	18.019 S	178.535 W	650	4.6		89.02	FIJI ISLANDS REGION.
832	12 29	3 43 28.3	6.884 S	131.066 E	31	5.8	5.3	84.15	TANIMBAR ISLANDS REG., INDONESIA.
833	12 29	4 45 21.4	22.176 S	179.651 W	600	4.9		84.75	SOUTH OF FIJI ISLANDS.
834	12 29	20 49 23.5	10.194 S	161.136 E	53	4.9		91.23	SOLOMON ISLANDS.
835	12 30	19 6 11.3	11.329 S	166.182 E	52	5.2		91.64	SANTA CRUZ ISLANDS.
836	12 30	19 41 52	3.993 S	128.105 E	33	6.0	5.9	85.76	SERAM, INDONESIA.
837	12 31	3 5 13.4	34.380 S	179.610 W	33	4.9		72.94	SOUTH OF KERMADEC ISLANDS.
838	12 31	8 44 4.8	6.900 S	155.304 E	33	5.4	5.6	92.51	SOLOMON ISLANDS.
839	12 31	12 50 16.7	33.770 S	179.380 W	100	4.8		73.57	SOUTH OF KERMADEC ISLANDS.
840	12 31	15 14 36.5	6.859 S	126.911 E	400	5.0		82.68	BANDA SEA.

APPENDIX

Hypocenter (QED)
 Origin time : 1996/09/25
 14h59m50.30s
 Location : 65.678°S
 44.461°E
 depth : 10km
 magnitude : mb=4.6
 distance from SYO : $\Delta = 3.8^\circ$



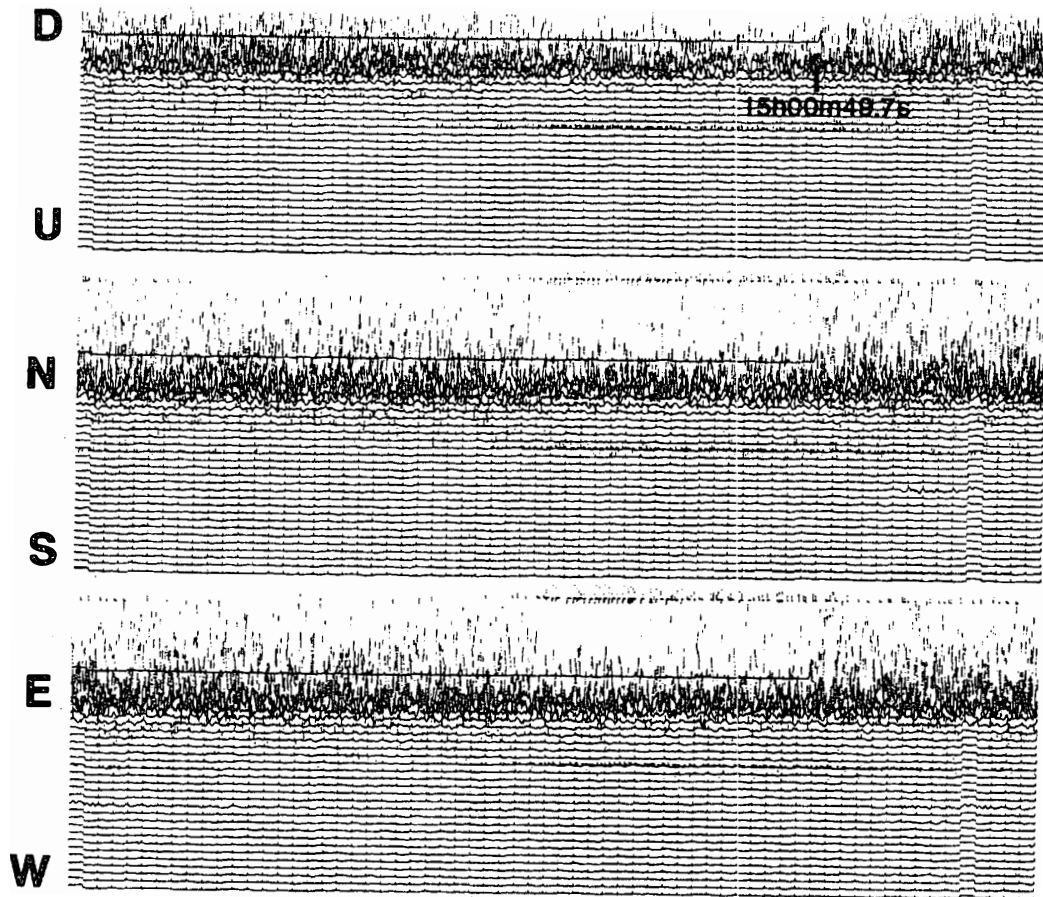
Appendix 1. Location of the local event occurred on September 25, 1996.



Appendix 2. Three components digital seismograms of the event in Appendix 1

Syowa Station

Sep. 25, 1996



Appendix 3. Three components HES seismograms of the event in Appendix 1.