

SEP - Oct. 1960

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MATSUSHIRO SEISMOLOGICAL OBSERVATORY, JAPAN.

Seismological Bulletin

for September 1 to October 31, 1960

Date	Phase	Comp.	Time(GMT)		
			h	m	s
1.	P	Z	00	03	26
1.	P	E	00	04	36
1.	iP P:E,C	EZ	05	34	38.0
✓ 1.	iP i eS e eL	Z Z NE N NE	07	46	25.0 48 03 56 18 08 01 20 06.6
27.6 S., 176.9 W. Tonga Is. region. h:500 km ca. H:07 35 21.9 USCGS					
✓ 1.	eP S ScS eL	Z NE E NE	09	38	20 46 31 48 18 53 03
Mag. 6 - 6 $\frac{1}{4}$ (Mat.) 16.8 S., 167.6 E. New Hebrides Is. h:63 km ca. H=09 28 19.5 USCGS					
✓ 1.	iP S ScS L L	Z E E E N	10	45	07.0 53 19 55 05 59 51 53
P:D Mag. 6 - 6 $\frac{1}{4}$ (Mat.) 16.5 S., 167.6 E. New Hebrides Is. h:27 km ca. H=10 35 01.1 USCGS					
1.	P	EZ	11	25	03
16.6 S., 167.4 E. New Hebrides Is. h:35 km ca. H=11 14 59.6 USCGS					
1.	iP i i	Z N E	12	09	43.3 43.5 43.8
P:D 27.7 S., 176.2 W. Kermadec Is. region. h:92 km ca. H=11 57 59.3 USCGS					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
✓ 1.	iP i S e L	EZ E NE N NE	15	46	00.5 49 24.0 53 05 55 44 58 56
P:W,C Mag. 6 $\frac{1}{2}$ (Mat.) 56.1 N., 153.7 W. Kodiak I., Alaska. h:24 km ca. H=15 37 14.4 USCGS					
1.	iP	Z	16	37	13.0
1.	iP eS	EZ E	18	44	17.8 39
P:E,D					
✓ 1.	P eS eLr eLr	Z N N E	18	52	00 01 05 10 12 11 50
P:C 15.8 S., 179.2 E. Fiji Is. h:33 km ca. H=18 41 16.2 USCGS					
✓ 1.	iP i S Lq Lq Lr	Z Z NE E N E	20	12	44.5 13 05 21 40 28 56 29 01 32.3
P:C Mag. 5 $\frac{3}{4}$ - 6 (Mat.) 16.1 S., 179.6 W. Fiji Is. h:183 km ca. H=20 02 12.8 USCGS					
2.	iP S	E EZ	05	35	49.5 36 14
✓ 2.	P i eS e eL	EZ E N E E	11	02	05 39.5 09 53 10 01 16 35
15.2 S., 167.4 E. New Hebrides Is. h:163 km ca. H=10 52 18.2 USCGS					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
2.	P S P:D	Z NEZ	11	19	48.5 20 05
2.	P e	EZ E	13	18	42.5 19 01
2.	P e é S i eL	Z E Z E N NE	13	52	51.5 54 15 55 33 58 22 14 00 47 03 05
Mag. 5 3/4 - 6 (Mat.) 28.7 N., 98.3 E. Tibet. h:48 km ca. H=13 46 10.0 USCGS					
2.	P e e e L	Z N E N E	18	44	59 45 25 30 48 15 46
2.	iPKP 1 iPKP 2 P:C	EZ Z	18	52	44.9 53 16
31.9 S., 68.9 W. San Juan Province, Argentina. h:25 km ca. H=18 32 18.9 USCGS					
2.	iP e e PcP S eL eL eLr P:W,C	EZ N EZ Z NE N E Z	22	10	08.4 11 31 35 12 21 16 02 18 33 36 20 44
Mag. 6 1/2 (Mat.) 52.0 N., 171.4 W. Fox Is., Aleutian Is. h:49 km ca. H=22 02 48.9 USCGS					
2.	eP i	EZ Z	22	50	39 50
3.	iP S P:W,C	EZ E	00	21	19.6 48
42.8 N., 144.8 E. Near SE coast of Hokkaido, Japan. h:60 km ca. H=00 19 22 J.M.A.					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
3.	P i eS L L	NEZ E N N E	05	53	05 22.6 06 02 31 11 45 12 00 ca.
Mag. 5 1/2 (Mat.) 20.9 S., 174.4 W. Tonga Is. h:61 km ca. H=05 41 39.9 USCGS					
3.	iP Z,P P:C	NE NE	07	56	59.6
19.0 S., 169.1 E. New Hebrides Is. h:212 km ca. H=07 46 53.5 USCGS					
3.	iP PcP ScP S e i	NEZ Z Z NE Z N	12	49	12.1 50 45 53 59 55 22 58 43 13 01 09
P:S,E,D Mag. 6 (Mat.) 6.1 S., 154.5 E. Solomon Is. h:457 km ca. H=12 41 34.9 USCGS					
3.	iP S i	NEZ E Z	13	24	17.3 25 39 50
P:S,W,C Mag. 5.3 (J.M.A.) 41.2 N., 142.4 E. Off E coast of NE Honshu, Japan. h:50 km ca. H=13 22 53 J.M.A.					
3.	iP P:E,D	EZ	15	27	39.5
20.1 S., 178.6 W. Fiji Is. h:645 km ca. H=15 17 28.4 USCGS					
3.	eL	N	16	25	1
34.7 S., 179.7 W. Kermadec Is. region. h:79 km ca. H=15 47 12.3 USCGS					
3.	P eS?	Z N	20	53	47.6 21 04.1
48.5 S., 126.3 E. South of Australia. (cont.)					

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
continued			h:30 km ca. H=20 41 08.6			USCGS					
3.	P. e	Z EZ	22	39	55 40 18	6.	iP S	EZ E	16	43	47.8 59
3.	iP S e Lr P:W,C Mag. 6 (Mat.) 44 N., 149 3/4 E. Kurile Is. h:60 km ca. H=23 46 27	NEZ E NE Z	23	49	10.6 51 30 43 52 35	6.	e eP eS eL eL	N Z N N N	08	29	3 10 10 39 20 44 32 55 47.9
J.M.A.			34.0 S., 179.2 W. Kermadec Is. region. h:117 km ca. H=09 58 32.3 USCGS								
4.	P e S	Z Z Z	01	15	09 16 22 17 07	6.	eP e i	Z Z E	11	27	35 45 46.6
Mag. 5.1 (J.M.A.) 32 N., 132 E. Near E coast of Kyushu, Japan. h:20 km ca. H=01 13 25 J.M.A.			35.7 S., 179.3 E. North of North I., New Zealand. h:600 km ca. H=11 16 02.2 USCGS								
4.	P S e	Z Z E	03	51	54 53 00 53 02	6.	iP e i e e	EZ N EZ N E	12	43	18.4 44 38 46 22 49 25 57
P:E			4.9 S., 145.1 E. Near coast of New Guinea. h:38 km ca. H=12 35 16.1 USCGS								
4.	P i eS e eL P:C Mag. 5 1/4 - 5 1/2 (Mat.) 56.3 N., 153.1 W. Kodiak I. h:48 km ca. H:05 21 22.1	Z E N E N	05	30	04.6 14.1 37 09 11 40 54	6.	iP i ePPP eS eScS SS L L	EZ Z N NE N N N E	14	13	30.9 14 06 17 50 22 05 23 26 26 29 29 13 30 16
Near south east of Mindanao, P. I. h:204 km ca. H=12 59 38.7 USCGS			P:N,W,C Mag. 5 1/4 - 5 1/2 (Mat.) 20.4 S., 169.4 E. Loyalty Is. h:35 km ca. H=14 03 01.8 USCGS								
4.	e	N	13	12	3	6.	iP S P:C	NEZ NEZ	14	22	06.5 22
5.8 N., 125.1 E. Near south east of Mindanao, P. I. h:204 km ca. H=12 59 38.7 USCGS											
4.	P S	Z E	14	28	10.0 30	6.	iP S P:N,W,C	NEZ NEZ	14	22	06.5 22
4.	e	N	17	23	6	6.	e	Z	14	41	22
4.	iP S P:C	Z NE	20	04	27.0 05 41	6.	iP S P:N,W,C	NEZ NEZ	14	22	06.5 22
5.	e	N	06	12	5	6.	e	Z	14	41	22
5.	eP e e	E NE N	14	03	12.1 05 19 50	6.	iP S eL	NEZ N E	15	26	13.6 27 25 52
									(cont.)		

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
	i	E	23	38	09
	S	N			49.2
	i	E			50.2
12.	iP	Z	01	31	14.2
	S	Z			46
	P:C				
12.	iP	Z	02	53	05.7
	i	NE			06.2
	P:C				
	60.8 N., 151.9 W. Southern Alaska. h:230 km ca. H=02 44 48.1				
	USCGS				
12.	iP	EZ	12	18	54.9
	i	N			55.5
	i	E			19 10
	i	Z			45
	i	EZ			20 10
	i	N			10.2
	P:S,W,C				
12.	iP	EZ	12	20	16.2
	i	Z			30
	S	NE			22 49
	i	Z			23 32
	L	Z			42
	ScS	NE			32 50.2
	P:E,C				
	Mag. 6.3 (Mat.) 26 3/4 N., 128 1/4 E. Ryukyu Is. h:60 km ca. H=12 17 13				
	J.M.A.				
12.	P	Z	12	29	16.2
	S	Z			54
12.	iP	EZ, eP	12	45	52.7
	S	Z			46 11.2
	i	Z			53
	P:W,C				
12.	iP	Z	16	09	51.3
	i	NE			51.9
	PcP	Z			11 11.7
	pP	Z			45
	PP	Z			53.2
	ScP	Z			14 08.2
	S	NE			16 03
	ScS	NE			18 42.2
	sS	N			19 23
	e	N			22 17
	e	N			25 05
	P:C				
	7.0 S., 117.0 E. Java Sea.				

(cont.)

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
	h:611 km ca. H=16 02 05.8				
	USCGS				
12.	iP	NEZ	17	11	32.4
	S	NE			34.2
	P:S,W,C				
12.	iP	NEZ	17	53	24.5
	S	NEZ			48
	P:N,W,C				
12.	iP	NEZ	22	42	16.7
	i	Z			45
	P:S,D				
	5.5 S., 130.5 E. Banda Sea. h:57 km ca. H=22 34 22.5				
	USCGS				
13.	eL	E	01	55.1	
	eL	N			55.5
13.	iP	NEZ	03	11	22.2
	i	EZ			24.4
	i	E			39
	e	NZ			12 43
	e	E			49
	i	NE			13 05
	i	E			07
	S	NEZ			09
	P:N,W,C				
	Mag. 5.9 (Mat.) 27 N., 140 1/2 E. Bonin Is. region. h:480 km ca. H=03 09 09				
	J.M.A.				
13.	P	Z	03	19	49
13.	iP	NEZ	04	33	39.4
	i	E			40.2
	S	NE			56
	P:N,E,C				
13.	P	NEZ	09	42	36
	i	NE			41
	S?	NE			53
13.	iP	Z	15	50	32.2
	i	Z			42.2
	P:C				
13.	iP	NEZ	19	29	54.8
	S	NE			30 02
	P:N,E,C				
13.	iP	NEZ	20	36	08.8
	S	N			16
	P:N,E,C				

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Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
13.	iP	NEZ	23	26	31.0	14.	iP	Z	23	30	06.3
	S	N			37.6		i	E			07.3
	P:N,E						eS	E			39 22
14.	P	Z	00	39	39		e	N			33
	i	NE			44.3		eScS	E			40 15
	PP	Z			40 15		L	E			47 59
	eS	NE			44 12		L	N			48 55
	eL	NE			45 25		P:C				
	P:D						Mag. 5 1/2 (Mat.) 20.9 S., 174.1 W. Tonga Is. h:25 km ca. H=23 18 35.1				
	16.9 N., 122.3 E. Luzon I., P.I. h:50 km ca. H=00 34 25.3						USCGS				
14.	eP	Z	01	51	41	15.	eP	Z	02	17	42
	i	Z			52 04.3		i	N			47.3
	e	E			02 23 05		i	E			50.3
	eL?	E			52 32		S	Z			18 37
	eL?	N			51		i	E			38
14.	iP	NZ, eP	03	51	27.3	15.	e	N	02	49	51
	i	NEZ			30		e	E			51 23
	S	NEZ			52 46		e	N			53 45
	P:N,C					15.	P	EZ	03	41	17.3
	30 N., 138 1/2 E. South of Honshu, Japan. h:450 km ca. H=03 49 47						i	E			35
	J.M.A.						P:W,C				
14.	ePKP	Z	05	25	05 ca.		16.5 S., 167.3 E. New Hebrides Is. h:69 km ca. H=03 31 17.5				
	i	Z			26 17		USCGS				
	eSKKS	N			35 51	15.	e	E	04	21	05
	e	E			59		e	NE			23 59
	e	NE			50 15	15.	P	NEZ	08	17	05 ca.
	e	N			57 51		i	E			20
14.	iP	NEZ	11	04	45.8		i	NE			28
	S?	Z			05 01		i	E			30
	P:E,C					15.	P	NEZ	11	36	05
14.	eP	Z	16	07	30		S	NEZ			06.4
	eL?	E			23 59	15.	P	Z	12	04	04
	6.5 S., 155.1 E. Solomon Is. h:100 km ca. H=15 59 01.7					15.	iP	NEZ	12	46	03.1
	USCGS						i	EZ			26.5
14.	iP	NEZ	16	34	17.8		i	Z			30
	P:E,D						P:S,W,C				
	17.5 S., 178.9 W. Fiji Is. region. h:562 km ca. H=16 24 12.8					15.	iP	Z	16	46	07.6
	USCGS						S	NEZ			20
14.	iP	NEZ	20	09	01.2	15.	iP	NEZ	18	01	02.9
	S	E			17		i	Z			03.9
	P:E,D						i	E			02 21
							S	NE			03 43
							i	NEZ			46

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(cont.)



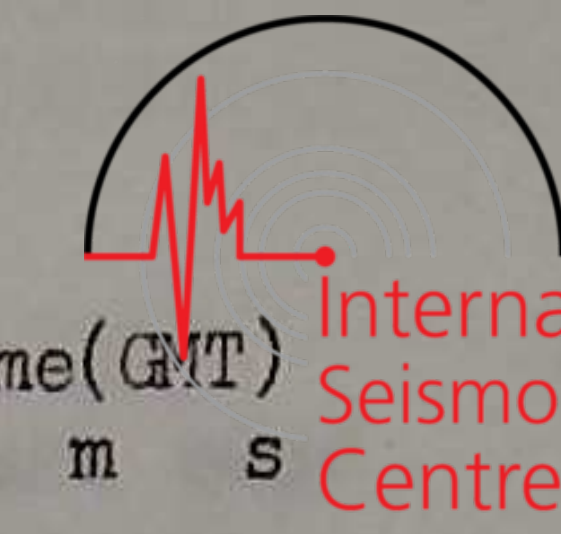
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Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
	i	E	18	03	49
	ScP	Z		08	47
P:S,D Mag. 6.7 (Mat.) 21 3/4 N., 144 1/2 E. Volcano Is. region. h:320 km ca. H=17 57 43 J.M.A.					
16.	eP	Z	01	47	39
	i	Z		48	17
	i	E			22
38.5 N., 68.7 E. Tadzhik SSR. h:88 km ca. H=01 39 03.3 USCGS					
16.	eP	E	02	35	58
	i	Z		36	32.4
	i	NE			33.4
	i	E		38	30
	i	N			46
16.	iP EZ,P N		02	43	38.7
	i	Z			53
	i	E			54
	S	Z		44	08.5
P:W,C					
16.	iP	NEZ	05	51	04.9
	i	N			11
	i	E			15
	i	Z			19
P:C					
16.	iP	NEZ	05	55	57.4
	i	Z		56	12
P:N,E,C					
16.	P	Z	14	05	02
	e	Z		06	55
	i	Z		07	26
	i	Z			43
	eS	N		10	25
	L	N		12	09
	L	E			27
16.	iP	NEZ	14	42	50.2
	S	Z			51.4
P:N,E,D					
17.	iP	NZ	05	00	34.5
	i	E			36
	eS	E		05	49
	eL	N		08	21
	eL	N		10	25
P:N,C					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
17.	iP	Z	07	22	56.5
	e	E			32 50
	eL	E			37 57
	eL	N			39 05
P:D 17.4 S., 167.4 E. New Hebrides Is. h:23 km ca. H=07 12 48.1 USCGS					
17.	P	Z	07	25	14
	i	E			17
	i	N			20
17.	iP	Z	07	57	00.0
	i	NE			00.5
	i	Z			27
	S	NE		08	00 25
	i	Z			41
	PcP	NE		01	02
	L	EZ		02	09
	Lr	Z			53
	Lr	N			57
P:C Mag. 5 3/4 - 6 (Mat.) 49 1/4 N., 155 1/2 E. Kurile Is. h:shallow. H=07 52 53 J.M.A.					
17.	iP	Z	08	09	39.0
	i	NE			39.5
	i	Z			10 13
	e	NE			12 31
	S	NE			13 03
	i	NEZ			05
	PcP	NE			40
	L	N		14	29
	L	Z			43
	L	E			47
	ScS	NE			21 50
P:C Mag. 6 1/4 - 6 1/2 (Mat.) 49 1/2 N., 155 1/4 E. Kurile Is. h:shallow. H=08 05 32 J.M.A.					
17.	P Z,eP	NE	13	07	02.0
	PcP or PP	Z		08	36
	ePPP	E		09	40
	eL	E		14	21
P:D 6.3 S., 154.4 E. Solomon Is. h:134 km ca. H=12 58 56.4 USCGS					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
17.	eS	E	15	25	42
	e	N			47
	e	N		28	21
	e	E			46
eScS or eSS NE 29 35 3.6 S., 149.5 E. Bismarck Sea. h:220 km ca. H=15 12 18.4 USCGS					
17.	P	E	16	02	37.0
	i	NZ			38.3
	i	Z			47.5
	eS?	NE		09	18
	eL	E		13	47
	eL	N		15	51
P:E 6.3 S., 148.8 E. New Britain. h:79 km ca. H=15 54 38.1 USCGS					
17.	iP	NEZ	16	17	28.2
	S	NEZ			31
P:S,E,C					
17.	iP EZ,P N		18	57	17.4
	S	NEZ			30
P:E,D					
17.	eP	NEZ	18	58	27
	eS	NEZ			41
	i	EZ			59 00
17.	iP	NEZ	20	07	39.3
	i	Z			45
	ePP	E		10	18
	eS	E		16	55
	eScS	E		17	38
	eL	E		25	41
	eL	E		29	38
P:N,W,C Mag. 5 1/2 - 5 3/4 (Mat.) 20.9 S., 174.5 W. Tonga Is. h:28 km ca. H=19 56 11.1 USCGS					
17.	iP	NEZ	20	41	00.1
	i	N			42 22
P:S,W 39.9 N., 142.5 E. Near E coast of NE Honshu, Japan. h:40 km ca. H=20 39 48 J.M.A.					
18.	iP	NEZ	04	54	28.5
P:N,E,D					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
18.	iP	Z	06	39	44.4
	S	NEZ			40 20
P:D					
18.	iP	Z	09	48	30.7
	i	NE			31.2
	pP	Z			49 04.2
	ScP	Z			53 50.2
	S	NE		54	48.3
	sS	E			55 42
	sS	N			49
	ScS	NE			58 13
	eSS	E			43
	sSS	E			59 23
P:C Mag. 5 1/2 - 5 3/4 (Mat.) 6.8 S., 129.2 E. Banda Sea. h:83 km ca. H=09 40 28.3 USCGS					
18.	iP	Z	19	33	49.7
	i	Z			34 03
P:D 51.5 N., 170.1 W. Fox Is., Aleutian Is. h:92 km ca. H=19 26 30.9 USCGS					
18.	iP	NEZ	21	43	17.5
	S	N			30
P:S,E,D					
19.	iP	EZ	00	51	05.7
	i	Z			15
	i	EZ			31
	i	E			40
P:S,W,C					
19.	P	Z	03	45	13.4
	PP	E			46 17
	S	NE			49 49
	sS	Z			50 13
	L	N			51 25
	L	Z			27
	L	E			29
P:D Mag. 5 3/4 - 6 (Mat.) 15.6 N., 120.0 E. Luzon I., P. I. h:97 km ca. H=03 39 40.9 USCGS					
19.	iP	NEZ	05	16	43.2
	i	Z			52
	i	Z			17 05
	i	E			09
P:N,E,C					



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Date	Phase	Comp.	Time(GMT)		
			h	m	s
19.	PKP	Z	19	20	25
	eSKKS	E		29	05
	ePS	N		33	15
	eSS	E		38	57
	eSSS	E		49	55
	eL	E		53	48
	eL	N		55	05
	L	E	20	02	53
	L	Z		03	45

Mag. 6.1 (Mat.)
6.9 N., 77.5 W.
Colombia - Panama border.
h:66 km ca.
H=19 01 25.4 USCGS

19.	iP	NZ	21	25	01.3
	i	E			02.2
	S?	Z			03
					P:S,C

19.	P	EZ	21	49	37
	i	Z			40
	i	E			42.7
					P:E,D

19.	eP	Z	23	22	30
	i	N			35
	i	E			38

19.	P	NEZ	23	34	05 ca.
	i	E			35 28
	e	E			32
	e	N			59

20.	P	EZ	03	17	00
	i	Z			02.4
					36.9 S., 177.2 E.
					Off north coast of North Island, New Zealand.
					h:91 km ca.
					H=03 04 53.0 USCGS

20.	P	Z	03	47	20
	i	Z			28.7
	eS	E			57 13
	eL	E	04	06	27
	eL	E			07 33
					28.2 S., 177.9 W.
					Kermadec Is.
					h:47 km ca.
					H=03 35 34.6 USCGS

20.	iP	NEZ	08	26	03.3
	S	Z			23
					P:N,D

20.	iP	Z	09	45	00.1
					P:S,D

Date	Phase	Comp.	Time(GMT)		
			h	m	s
20.	iP	Z	09	48	53.7
	i	NE			55
	S	E			53 03
	L	E			54 57
					P:C

20.	iP	Z,P NE	10	33	34.1
	eS	E			37 39
	eL	E			39 39
					P:C
					52.3 N., 160.4 E.
					Off southeast coast of Kamchatka.
					h:30 km ca.
					H=10 28 35.9 USCGS

20.	iP	Z	17	26	04.6
	i	NE			05
	S	NEZ			28.9

20.	iP	Z	19	24	29.1
	i	NE			29.4
	S	NEZ			56.6
					P:C

20.	iP	NEZ	22	00	32.8
	S	NEZ			39
					P:N,E,D

21.	P	NEZ	02	11	23
	eS	NE			13 04

21.	iP	NEZ	02	56	58.2
					P:N,W,C
					8.1 S., 149.4 E.
					Eastern New Guinea.
					h:115 km ca.
					H=02 48 44.5 USCGS

21.	P	NEZ	04	04	08
	i	E			25
	i	E			35
	i	Z			39
					P:C

21.	eP	Z	07	36	47
	i	EZ			57
					27.9 S., 177.8 W.
					Kermadec Is.
					h:249 km ca.
					H=07 25 26.5 USCGS

21.	eP	NEZ	09	54	29
	i	NZ			37
	e	E			56 18
	e	N			57 45

21.	P	Z	10	46	21
	i	NZ			22.1

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
	i	Z	10	46	47
	e	E			53 17
	L	E			56 15
	L	E			58 58

53.4 N., 166.1 W.
Fox Is., Aleutian Is.
h:38 km ca.
H=10 38 31.0 USCGS

21.	iP	Z,P E	14	23	48.1
	i	N			49.6
	e	E			24 10
					P:D

21.	iP	EZ,P N	16	11	42.1
	i	Z			53.1
	i	Z			12 21
	e	NE			38
	S	NE			14 29
	i	E			35
	i	E			15 34
	ScP	Z			19 47
					P:N,E,C
					26.5 N., 124.8 E.
					East China Sea.
					h:207 km ca.
					H=16 08 14.7 USCGS

21.	P	Z	16	50	18
	i	Z			36
	S	N			51 42
	i	Z			43
	L	NE			52 05

21.	iP	Z	22	23	43.6
					P:D

22.	iP	NE	00	19	03.1
					P:S,W,C

22.	iP	Z	02	13	34.4
					P:N,E,D

22.	eP	Z	09	19	53
	PP	Z			24 11
	ePPP	E			26 47
	PS	EZ			33 43
	SS	E			39 52
	SSS	E			43 09
	i	E			59
	i	E			48 41
	L	N			45
	L	E			52 34
	L	N			57 54
	L	E			58 22

Mag. 7 (Mat.)
3.3 S., 29.3 E.
Belgian Congo.
h:28 km ca.
H=09 05 36.8 USCGS

Date	Phase	Comp.	Time(GMT)		
			h	m	s
22.	iP	NEZ	15	16	32.1
	S	NE			56
					P:S,W,C

22.	e	E	15	46	05 ca.
	eL	N			47 35

22.	iP	Z	17	05	08.4
					P:D

22.	P	EZ	21	32	15
	i	E			18.8
	eS	NE			41

22.	iP	EZ,P N	22	54	36.1
	PcP	Z			56 40.8
	eS	E			23 00 53
					P:E,D
					51.5 N., 168.8 W.
					Fox Is., Aleutian Is.
					h:33 km ca.
					H=22 47 00.6 USCGS

23.	iP	NEZ	01	28	11.6
					P:N,C
					13.3 S., 166.5 E.
					New Hebrides Is.
					h:322 km ca.
					H=01 18 58.6 USCGS

23.	iP	Z,P NE	03	56	26.3
	S	N			57 15
					P:D

23.	P	Z	05	27	15
	i	Z			20.6
	sP	N			48.6
	eL	E			39.7
					27.6 N., 96.2 E.
					India.
					h:81 km ca.
					H=05 20 26.6 USCGS

23.	iP	Z,P NE	17	56	25.7
	S	NE			58 45
					P:S,C

23.	P	Z	21	28	03
	i	NEZ			16.5
					5.6 S., 147.3 E.
					Near coast of New Guinea.
					h:60 km ca.
					H=21 19 56.2 USCGS

23.	iP	Z	23	13	56.8
	i	Z			57.5
	i	NE			58.7
	S	N			23 31
	ScS	E			24 14
	eSS?	E			28 31
	eSSS	N			31 43

Date	Phase	Comp.	Time(GMT)		
continued			h	m	s
	L	E	23	34	10
	L	N			15
	PKKS	Z	37	13	
	i	Z			42.5
	P:C Mag. 5 $\frac{1}{2}$ (Mat.) 22.2 S., 174.8 W. Tonga Is. h:39 km ca. H=23 02 24.3				
	USCGS				
24.	iP	Z,P E	00	42	26.0
	eS	N		43	17
	e	E			19
	i	E			35.7
	P:W,C				
24.	P	Z	01	54	41
	i	E			43
24.	P	EZ	06	15	59
	S	E			16 20.6
24.	P	Z	06	18	27
	i	Z			28.8
	i	E			29.3
	S	N			52
24.	P	EZ	06	42	29
	S	E			52
24.	P	Z	07	09	48.5
	S	NE			10 15.5
24.	eP	Z	09	24	35
	eS	E			32 00
	eL	E			40 25
	11.0 S., 163.2 E. Solomon Is. h:36 km ca. H=09 15 11.4				
	USCGS				
24.	iP	Z,P E	12	57	14.0
	S	NE			36
	P:C				
24.	iP	NEZ	14	01	05.1
	L	E			47 25 ca.
	L	N			45 ca.
	P:N,C 12.4 S., 166.7 E. Santa Cruz Is. h:39 km ca. H=13 51 32.2				
	USCGS				
24.	iP	NEZ	14	03	10.8
	i	NE			22
	S	NE			34.3
	P:S,E,D				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
24.	iP	NEZ	15	29	01.5
	S	NE			25
	P:E,D				
24.	P	EZ	16	08	02.3
	S	N			26
24.	iP	NEZ	16	25	25.0
	S	E			26 23.0
	i	Z			29.0
	i	Z			49.0
	P:S,W,D				
24.	iP	NEZ	23	29	35.1
	P:N,E,D				
25.	iP	NEZ	00	55	23.0
	S	N			39
	i	E			41.3
	P:N,E,C				
25.	iP	Z	03	26	26.1
	S	E			29.6
	P:C				
25.	P	Z	07	14	18.4
	i	N			15 00
	i	E			02
	eL	E			45.5
	eL	Z			47 05
25.	P	Z	13	12	39
	eL	E			19.9
	eL	N			20.6
25.	iP	Z,P N	15	50	34.1
	i	E			34.4
	e	N	16	00	28
	e	N			08 35
	L	E			12 05
	L	N			12.5
	P:C 17.3 S., 173.4 W. Tonga Is. region. h:132 km ca. H=15 39 27.4				
	USCGS				
25.	iP	Z	17	34	36.1
	i	N			36.6
	i	E			56
	P:C 19.5 N., 145.6 E. Mariana Is. h:95 km ca. H=17 30 18.4				
	USCGS				
25.	P	Z	17	37	57
	i	NE			38 00.1
	e	E			05

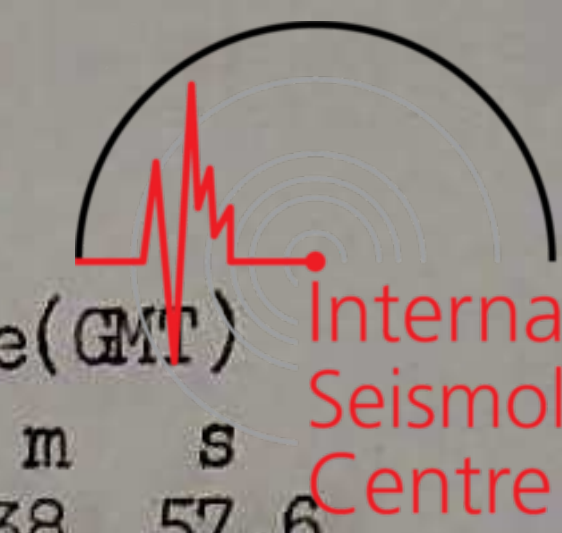
Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
25.	iP	NEZ	20	00	17.8	26.	iP	NZ	18	53	20.8
	S	E			37		i	E			21.4
	i	E			46.9		i	Z			54 23
	P:S,E,D						S	E			26
							i	Z			41
25.	iP	NEZ	23	28	06.4		P:S,C 39.9 N., 142.5 E. Near E coast of NE Honshu, Japan. h:40 km ca. H=18 52 08				
	i	E			13.4		J.M.A.				
	iS?	N			29 09.1						
	i	E			11.6						
	P:N,W,C										
26.	iP	Z,P E	08	54	24.8	26.	iP	NEZ	21	26	30.1
	i	N			25.6		e	E			27 37
	i	NZ			37.1		e	E			28 21
	eS	E			58 33		P:N,E,C				
	L	E			59 39						
	L	N			45						
	P:C 52.0 N., 159.8 E. Off southeast coast of Kamchatka. h:23 km ca. H=08 49 31.3						USCGS				
26.	iP	NEZ	11	38	02.1	27.	iP	NEZ	00	36	30.6
	i	Z			38.1		P	Z	04	04	57
	e	NZ			39 15		S	E			05 18
	i	E			25		27. iP Z,P N i Z P:D 04 16 13.6 15.6				
	i	E			35						
	i	N			37						
	i	Z			51						
	P:S,W,D Mag. 5.6 (J.M.A.) 32 $\frac{1}{2}$ N., 132 E. Near E coast of Kyushu, Japan. h:20 km ca. H=11 36 25						J.M.A.				
26.	iP	EZ	15	20	42.3		27. iP NZ i Z eS E eL E L E P:N,E,D 51.5 N., 177.8 E. Rat Is., Aleutian Is. h:102 km ca. H=05 51 26.9				
	i	Z			52.1		USCGS				
	i	Z			22 03						
	S	NE			26 40						
	L	N			29 51						
	L	E			59						
	i	N			32 00						
	L	Z			31						
	P:W,C 51.6 N., 172.2 W. Fox Is., Aleutian Is. h:44 km ca. H=15 13 25.8						USCGS				
26.	iPKP	1 EZ	17	17	43.4	27.	iP	Z,P NE	07	34	26
	i	N			44.1		P:D				
	pPKP	Z			18 14						
	sP	Z			27						
	P:E,D 15.9 S., 72.9 W. Southern Peru. h:115 km ca. H=16 58 13.9						USCGS				
							27. P Z i N 08 35 02 12				
							27. iP EZ,P N S Z P:W,D 10 32 21.4 32.0				



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Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
27.	iP	NE	16 08 25.0	continued			
	e	E	10 39	i	E	11 25 47	
	e	N	49	L	E	27 12	
	L	N	11 23	i	Z	29 45	
	L	E	25	ScP	Z	30 15	
	P:S,W			ScS	Z	33 49	
				P:S,E,D			
27.	iP	NEZ	18 18 27.8	Mag. 6 1/2 (Mat.)			
	S	N	47.7	18.9 N., 144.7 E.			
	P:E,D			Mariana Is.			
				h:469 km ca.			
				H=11 18 52.9			
				USCGS			
27.	P	EZ	18 40 50	29.	P	Z	12 13 49
	S	N	44 56	i	E	50.5	
	L	N	46 52	i	N	54.0	
	L	E	59	i	E	14 00	
				eS	E	15 27	
				14.4 N., 145.8 E.			
				Mariana Is.			
				h:109 km ca.			
				H=18 35 52.2			
				USCGS			
28.	iP	NEZ	03 54 50.8	29.	iP EZ,P N		15 35 04.5
	P:S,W,C			P:W,C			
28.	e	E	05 46 53	29.	P	NEZ	17 43 22
	e	E	47 12	eS	N		44 10
	eL	E	49 39	29.	e	N	19 42.1
	eL	Z	51 00	e	E		45.6
				eL	E		53.7
				14.9 N., 90.3 W.			
				Guatemala.			
				h:56 km ca.			
				H=18 54 23.0			
				USCGS			
28.	P	Z	21 53 27	30.	iP	NEZ	01 19 22.5
	e	E	22 25 13	iS	N		20 05.0
29.	P	EZ	04 22 27.4	i	Z		06.5
	eS	NE	23 06	i	Z		24.5
				P:S,E,D			
29.	iPKP	Z	06 47 37.5	30.	eP	Z	02 23 51
	i	E	38.4	i	N		59.2
	i	N	39.4	26.9 N., 127.6 E.			
	pPKP	EZ	48 12.9	Ryukyu Is.			
	P:C			h:100 km ca.			
				H=02 20 47.6			
				USCGS			
29.	iP	EZ	08 53 57.0	30.	P	Z	03 45 12
	eS	E	54 33	i	NE		21
	P:W,C			30.	iP EZ,P N		06 10 55.5
				S	N		11 08
				P:E,D			
29.	iP	NEZ	10 17 56.6	30.	e	E	07 01.8
	eS?	E	18 16	eL	E		07 57
	P:N,E,D			49.2 N., 129.7 W.			
				Vancouver I. region.			
				h:55 km ca.			
				H=06 35 08.9			
				USCGS			
29.	iP	NEZ	11 22 37.5				
	iS	NEZ	25 43.0				
				(cont.)			

October Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
1.	iP	NE	03 08 20.5	2.	eP	NZ	00 05 24
	i	EZ	49.2	i	E		25
				10.5 S., 161.2 E. Solomon Is.			
				h:148 km ca.			
				H=23 56 32.3			
				USCGS			
1.	iP	Z	05 43 10.3	2.	iP	NEZ	02 38 56.7
	i	NE	10.7	eS	NE		39 27
	P:C			P:S,E,D			
				36.3 N., 141.1 E.			
				Off E coast of Ibaraki Pref.,			
				central Honshu, Japan.			
				h:30 km ca.			
				H=02 38 18			
				J.M.A.			
1.	iP	NZ	06 33 13.7	2.	iP	EZ	06 27 07.5
	i	EZ	14.7	P:W,C			
	i	Z	34 04				
	eS	Z	38 02				
				6.1 N., 124.5 E. Mindanao, P.I.			
				h:544 km ca.			
				H=06 27 28.6			
				USCGS			
1.	P	EZ	07 51 34.7	2.	eSS	NE	12 34 50
	eS	N	58	e	E		39 59
	i	Z	52 10.9	eL	E		51 03
				eL	E		13 01 10
				Mag. 6 (Mat.)			
				38.7 S., 91.5 W.			
				Pacific Ocean, SE of Easter I.			
				h:84 km ca.			
				H=11 53 44.1			
				USCGS			
1.	P	Z	12 25 29.2	2.	eP	N	16 39 10
	eS	NE	26 24	e	EZ		13
	i	NZ	25.3	e	NE		42
				eL	N		50 58
				3.1 N., 127.7 E.			
				Molucca Passage.			
				h:31 km ca.			
				H=16 32 06.1			
				USCGS			
1.	eP	Z	16 18 08	2.	iP	Z	18 15 56.2
	i	E	10.2	i	E		16 14.7
	i	Z	12.0	i	N		16.2
	i	NEZ	19	eS	E		22 20
	ePPP	NE	19 46	eL	N		26 39
	iPPP	Z	47	eL	E		28 54
	S	NE	24 02	P:C			
	eL	N	26 32	18.6 N., 94.9 E. Burma.			
	eL	E	45	h:104 km ca.			
	eL	Z	29 15	H=18 08 12.4			
	L	N	34	USCGS			
				Mag. 6 (Mat.)			
				52.2 N., 172.6 W. Fox Is.			
				h:41 km ca.			
				H=16 10 56.9			
				USCGS			
1.	P	Z	18 43 25.2	2.	eL?	E	20 30 40
	i	NE	29	eL	N		47 23
				eL	E		34
1.	iP Z, P E		19 12 30.2	2.	eP	E	22 21 17
	i	N	31.2	eS	NEZ		50
	e	N	13 13				
	P:C						
				3.			
				iP			
				i			
				Z			
				E			
				00 59 03.3			
				03.7			
				(cont.)			



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Date	Phase	Comp.	Time(GMT)
continued			h m s
	eL	N	01 19 40
	eL	E	55
	P:C		
			29.8 N., 68.2 E.
			West Pakistan.
			h:36 km ca.
			H=00 49 11.8
			USCGS
3.	iP	NEZ	02 34 00.5
	i	NEZ	15
	eS	N	28
	P:S,E,D		
			36.4 N., 140.8 E.
			Off E coast of Ibaraki Pref.,
			central Honshu, Japan.
			h:40 km ca.
			H=02 33 26
			J.M.A.
3.	PKP	Z	05 30 36
	i	Z	43.4
	i	E	47.0
	i	E	55.4
			38.7 S., 75.3 W.
			Near coast of southern Chile.
			h:43 km ca.
			H=05 10 37.3
			USCGS
3.	eL	E	06 32 00
3.	P E, eP	NZ	10 16 00
	eS	Z	17
	e	NE	18
3.	iP	Z	10 19 38.8
	i	N	39.6
	i	E	40.8
	iPcP	Z	21 46.8
	i	N	52
	i	Z	22 30.1
	L	N	28 15
	P:D		
			3.3 S., 137.8 E.
			Western New Guinea.
			h:29 km ca.
			H=10 12 07.8
			USCGS
3.	iP Z, P E		10 35 11.2
	i	FZ	33.7
	i	N	39
	P:E,D		
3.	iP	Z	17 19 07.0
	i	N	07.3
	i	E	08.9
	e	N	34
	pPP	Z	20 57.3
	e	NE	29 15
	eL	N	33.6
	P:C		
			(cont.)

Date	Phase	Comp.	Time(GMT)
continued			h m s
			8.1 S., 152.8 E.
			D'Entrecasteaux Is.
			h:100 km ca.
			H=17 10 56.2
			USCGS
3.	iP	NEZ	20 00 04.9
	S	N	07 36
	e	N	49
	eL	E	11 46
	eL	N	52
	P:N,C		
			5.7 S., 103.0 E.
			Off coast of Sumatra.
			h:51 km ca.
			H=19 50 48.8
			USCGS
4.	eP	Z	00 51 54
	i	E	54.2
	i	EZ	52 14
	i	N	18
	e	Z	30
4.	P	EZ	05 48 27
	i	Z	34.7
	e	E	42
	eS	E	49 28
	e	N	30
	e	Z	36
4.	eP	NZ	09 59 40
	iPP	Z	10 01 19.9
	S	E	06 11
	e	N	26
	SS	N	09 19
	SS	E	26
			7.5 S., 155.3 E. Solomon Is.
			h:134 km ca.
			H=09 51 16.1
			USCGS
4.	iP	NEZ	10 46 15.2
	iS	NEZ	39
	P:S,W,D		
			36.3 N., 137.7 E.
			NW Part of Nagano Pref.,
			central Honshu, Japan.
			h:220 km ca.
			H=10 45 45
			J.M.A.
4.	iP	EZ	13 30 04.6
	i	N	05
	S	NEZ	19
	P:E,D		
4.	iP	NEZ	19 05 08.8
	iS	NEZ	10.0
	P:N,E,D		
4.	iP	EZ	23 52 17.5
	P:W,C		

Date	Phase	Comp.	Time(GMT)
continued			h m s
5.	P	Z	00 38 57.6
	i	E	58.4
	i	N	59
	eL	E	43 57
			38.3 S., 74.9 W.
			Near coast of southern
			Chile.
			h:53 km ca.
			H=16 16 37.6
			USCGS
5.	eP ?	E	03 53 49
	e	Z	54 16
	i	N	27
5.	iP	Z	05 47 10.3
	e	EZ	36
	eS	N	41
	e	Z	45
	P:C		
			5.7 S., 103.0 E.
			Off coast of Sumatra.
			h:167 km ca.
			H=16 45 09.1
			USCGS
5.	iP	Z	08 10 32.2
	i	NE	33.0
	iS	NEZ	49.0
	P:D		
5.	P	Z	12 13 52
	i	E	58.2
	i	Z	14 02.5
5.	iP	EZ	14 42 10.8
	i	Z	26.1
	e	N	40
	P:E,D		
6.	P	Z	08 37 02.2
	eS ?	NE	39 09
6.	iP	EZ	08 54 33.7
	i	NEZ	34.2
	S	N	55 02
	i	EZ	04
	P:E,D		
			36.7 N., 141.0 E.
			Off E coast of Ibaraki Pref.,
			central Honshu, Japan.
			h:40 km ca. H=08 53 53
			J.M.A.
6.	P	Z	16 24 50
	e	NE	55
	e	E	25 16
	e	Z	26 16
	eS	NE	29 35
	eL	E	32 38
	eL	N	46
			52.2 N., 107.2 E.
			Lake Baikal region.
			h:46 km ca.
			H=16 19 15.4
			USCGS
6.	PKP	EZ	16 36 33
	i	N	37
	i	Z	46
	eL	E	17 27 46
			(cont.)
			- 17 -

Date	Phase	Comp.	Time(GMT)
continued			h m s
6.	iP	EZ	16 54 12.0
	P:W,D		
			5.7 S., 103.0 E.
			Off coast of Sumatra.
			h:167 km ca.
			H=16 45 09.1
			USCGS
6.	iP	Z	18 06 39.8
	i	E	40.7
	S	Z	07 57.7
	e	E	08 01
	P:C		
6.	iP	EZ	19 16 14.3
	e	N	34
	iS ?	E	39.5
	i	N	55
	P:W,C		
6.	P	Z	20 08 15
	e	N	48
	e	E	52
	e	E	30 45
	L	N	33 34
	eL	E	43 13
	eL	N	23
			Mag. 5 1/2 - 5 3/4 (Mat.)
			58.2 N., 31.6 W.
			North Atlantic Ocean.
			h:63 km ca.
			H=19 55 42.2
			USCGS
7.	iP	EZ	05 03 12.7
	eS	N	38
	e	E	40
	P:W,D		
7.	P	Z	06 36 22.7
	eS	NEZ	44
	i	Z	47.7
7.	iP Z, P NE		15 26 39.3
	i	NZ	40
	PP	Z	28 25
	ePPP	NZ	29 10
	i	Z	32 11
	S	NE	33 07
	i	Z	12
	eL	N	36 25
	eL	Z	51
	eL	E	37 20
			(cont.)



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Date	Phase	Comp.	Time(GMT)		
continued			h	m	s
	P:C				
	Mag. 7 (Mat.) 7.4 S., 130.7 E. Banda Sea. h:45 km ca. H=15 18 30.8 USCGS				
7.	iP	Z	17	49	34.2
	iS	Z			49.6
	P:D				
7.	e	E	20	51	25
	eL	N		54	14
	eL	E			24
	eL	Z			48
8.	eP	NZ	02	47	21
	e	E		48	00
	e	E		53	24
8.	iP	Z	05	54	57.7
	i	NE			58.0
	i	NEZ			58.6
	iS E, S N				
	i	NZ	06	02	40
	i	Z		05	22
	ScS	NE	06	37	
	i	Z			44
	P:D				
	Mag. 7 1/4 - 7 1/2 (Mat.) 40.0 N., 130.0 E. Sea of Japan. h:650 km ca. H=05 53 04 J.M.A.				
8.	eP	Z	12	00	34
	e	N		08	20
	e	E			43
8.	iP	Z, P N	12	12	54.2
	i	E			54.6
	i	N	13	32.9	
	i	Z			36.2
	e	Z			48
	e	N	14	12	
	P:C				
8.	iP	Z	15	18	00.1
	S	NE			22
	P:C				
8.	eL	E	18	11	36
	eL	N			46
8.	eP	Z	18	14	43
	e	E			56
	S ?	N	15	00	
8.	iP	EZ	20	48	56.0
	i	N			57.7

(cont.) - 18 -

Date	Phase	Comp.	Time(GMT)		
continued			h	m	s
	ePcP	Z	20	50	13
	e	NZ			17
	PcS	Z		54	14
	eS	E		55	59
	e	Z		56	02
	e	N			05
	eSS	E		59	47
	eSS	N	21	00	14
	eL	N		02	52
	eL	E		04	14
	eL	Z		05	42
	P:E,C				
	Mag. 6 1/4 (Mat.) 7.9 N., 92.9 E. Nicobar Is. h:84 km ca. H=20 40 06.6 USCGS				
9.	iP	NZ	01	42	20.5
	i	E			20.8
	i	E			48.2
	e	N			53
	P:S,D				
9.	iP	NEZ	04	31	36.4
	iS	NEZ			39.2
	P:S,W,C				
9.	P	Z	04	57	29.7
	i	N			32.1
	i	E			33.3
9.	iP	NZ	07	11	07.0
	iS	NZ			09.7
	P:S				
9.	iP	NEZ	09	01	53.5
	S	E		02	51
	i	N			52
	P:S,W,C				
	Mag. 6.9 (Mat.) 40.8 N., 141.3 E. E part of Aomori Pref., NE Honshu, Japan. h:100 km ca. H=09 00 38 J.M.A.				
9.	eP	NZ	09	14	10
9.	P	NZ	10	00	18.7
	iS	NZ		01	00.4
9.	iP	NEZ	10	02	15.0
	e	N		03	05
	e	Z			11
	P:N,W,C				
	15.1 S., 174.0 W. Samoa Is. region. h:129 km ca. H=09 51 19.1 USCGS				

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
9.	e	NE	10	16	58	10.	iP	NEZ	11	18	22.6
	e	Z		17	34		S	NEZ			41.6
							P:N,W,C				
9.	iP	NE, P Z	12	57	38.2	10.	eP	Z	11	42.4	
	i	NZ			58.9						
							P:S,W				
9.	iP	NEZ	13	09	18.5	10.	P	NEZ	16	19	39
	iS	NE		10	51		i	EZ			46.0
	e	N		12	05		i	E		22	01.6
	e	Z			43		S	N			34
	e	E			59		i	NZ			46.8
							eL	E		23	38
							P:N,E,C				
							P:N,W,D				
							40.2 N., 129.9 E. Sea of Japan. h:510 km ca. H=13 07 16.6 USCGS				
9.	iP	EZ	13	37	08.7	10.	iP	Z	19	05	55.7
	P:E,C						P:D				
9.	iP	NEZ	17	47	47.4	10.	P 1	Z	20	37	53.8
	i	Z		48	05		iP 2	NEZ			55.1
	e	Z			45		eS	NEZ			39 20
	e	E		49	08	10.	iP	EZ	21	53	46.7
	i	N			11		i	N			47.1
	i	E			17		e	E			54 15
							P:E,C				
							P:S,W,C				
							39.4 N., 143.2 E. Off E coast of NE Honshu, Japan. h:0 km ca. H=17 46 28 J.M.A.				
9.	iP	EZ	17	58	55.2	11.	P	NEZ	03	23	38.6
	i	N			55.5		S	N			24 28.6
	iS	E		59	52		P:N,E,D				
							P:S,E,D				
							12.5 S., 166.4 E. Santa Cruz Is. region. h:25 km ca. H=04 46 00.6 USCGS				
							P:E,D				
							40.8 N., 141.4 E. E part of Aomori Pref., NE Honshu, Japan. h:100 km ca. H=17 57 41 J.M.A.				
9.	P	NZ, P E	21	44	35	11.	P	NEZ	07	19	39.2
	i	Z		46	02.9		i	Z			40.9
	e	N			33		i	N			52
	e	E		48	43		S	E		20	10
							i	Z			42
							P:N,E,D				
							36.7 N., 141.6 E. Off E coast of Ibaraki Pref., central Honshu, Japan. h:40 km ca. H=07 19 02 J.M.A.				
10.	iP	EZ	00	26	36.7	11.	P	Z	08	17	59
	e	NE		27	35		Mag. 5 1/2 (Pas.) 38.1 N., 107.6 W. Western Colorado. h:49 km ca. H=08 05 30.5 USCGS				
	i	Z			40.3						
							P:W,C				
10.	eP	Z	07	20	39						
	i	Z			46						
	eS	NE		21	05						
	e	Z			15						

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
11.	P	NEZ	14	40	19.2	12.	iP	NEZ	14	20	06.5
	S	N			25.0		i	N			13
	i	N	41	28			i	N			26
	P:N,W,D		P:S,W,C								
11.	P	NEZ	15	07	06.2	12.	P	EZ	14	22	10
	S	NZ			12.0		i	E			15
	i	N			23		i	EZ			26
	P:N,W,D		P:E,D								
11.	iP	Z	18	39	06.0	12.	P	NZ	18	37	30.2
	eL	NE	19	01	55		i	NZ			46
	P:D		i E 48								
	16.1 S., 67.1 E.		i Z 39 17								
	Mascarene Is. region.		esSS ? E 47 40								
	h:100 km ca.		P:N,C								
	H=18 26 36.6		6.1 S., 148.6 E.								
	USCGS		New Britain region.								
11.	P	NEZ	20	16	01		iP	NZ	21	39	36.5
	i	N			09.1		iS	NEZ			49.0
	i	Z			17		P:C				
	S	Z			47		H=18 29 35.1 USCGS				
12.	iP	NEZ	00	23	17.1	13.	P	NEZ	06	28	00.0
	i	NEZ			18.4		i	N			01.0
	S	NEZ	24	14			i	N			27
	i	Z			25		P:E,C				
	i	N			33		H=11 33 14.0 USCGS				
	i	E			58		H=12 16 30.5 USCGS				
	P:S,W,C		40.8 N., 141.6 E.								
	Off E coast of Aomori Pref.,		Near W coast of Ehime Pref.,								
	NE Honshu, Japan.		Shikoku, Japan.								
	h:60 km ca.		H=12 55 16 J.M.A.								
	H=00 22 03		J.M.A.								
12.	iP	NEZ	07	39	51.0	13.	iP	Z	12	56	39.0
	S	NEZ			40 02		i	E			57 13
	P:S,W,C		i N 13.6								
			S NE 58 09								
12.	P	NEZ	07	46	07.2		P:C				
	S	N			18		33.6 N., 132.3 E.				
	P:S,W,C		Near W coast of Ehime Pref.,								
			Shikoku, Japan.								
			H=12 55 16 J.M.A.								
12.	eP	Z	09	22	25	13.	iP	NEZ	14	57	50.5
	eS ?	N			31 35		i	Z			15 00 11
	e	E			39 26		i	Z			54
	L	E			42 59		i	Z			01 21
	L	N			43 28		iS	E			02 08
	L	Z			44 47		i	NZ			12
	15.1 S., 173.2 W.		eL N 03 47								
	Samoa Is. region.		L Z 05 15								
	h:25 km ca.		P:S,W,C								
	H=09 11 16.4		Mag. 6 1/2 - 6 3/4 (Mat.)								
	USCGS		54.8 N., 161.2 E Kamchatka.								
12.	P	Z	10	44	55.6		h:35 km ca.				
	i	NZ			57		H=14 52 34.7 USCGS				
	S	NE			45 21						

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
13.	P	Z	15	08	56	14.	P	NZ	15	35	22
	P:D						eL	E			42.8
			P:C								
13.	P	Z	16	50	04.0		4.8 N., 125.5 E.				
	i	E			10		Near south coast of Mindanao, P.I.				
	eS	E			53 16		h:36 km ca.				
	i	N			21		H=15 28 39.0 USCGS				
	i	Z			30						
	P:D		20.7 N., 144.8 E.								
			Mariana Is. region.								
			h:25 km ca.								
			H=16 45 56.2 USCGS								
13.	P	Z	18	48	06	14.	ePKP	Z	18	08	36
			3.8 S., 152.4 E.								
			New Ireland region.								
			h:213 km ca.								
			H=18 40 30.3 USCGS								
14.	P	Z	01	04	05	14.	iP	NEZ	21	26	26.5
	e	E			40		S	NE			32 19
			10.1 S., 125.3 E.								
			Near coast of Leyte, P.I.								
			h:17 km ca.								
			H=00 58 05.0 USCGS								
14.	P	NEZ	06	30	26.0		L	E			34 55
	i	N			34		L	NE			35 24
	i	N			44		ScS ?	NE			36 35
	eS	N			31 13		L	N			39 43
	P:E,C		L E 40 23								
			P:S,W,C								
			Mag. 6 3/4 (Mat.)								
			51.7 N., 172.1 W. Fox Is.								
			h:50 km ca.								
			H=21 19 11.4 USCGS								
14.	P	Z	11	40	59	15.	eP	Z	03	02	49
	P:D		52.1 N., 166.1 W. Fox Is.								
			h:64 km ca.								
			H=11 33 14.0 USCGS								
14.	P	Z	12	25	30		eL	E			20.8
	i	N			35		11.0 S., 162.5 E. Solomon Is.				
			region.								
			h:139 km ca.								
			H=02 53 42.5 USCGS								
14.	P	NEZ	13	21	52.8	15.	iP	NZ,P E	12	20	03.1
	i	Z			22 29		P:S,D				
	P:S,C		7.7 S., 157.5 E. Solomon Is.								
			h:366 km ca.								
			H=12 12 03.0 USCGS								
14.	eP	Z	15	28	10	16.	P	Z	03	20	48.1
	i	N			35		i	NE			49.1
	eS	N			30 35		i	Z			21 01
			S NE 22 03								
			P:D								

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
16.	P	NEZ	06	32	28.3	18.	iP NZ, P E		00	21	35.7
	eS	E		33	33		i	Z			40.6
	i	N		45			S	N		22	11
	P:S,W,C						P:N,D				
	40.2 N., 142.5 E. Off E coast of Iwate Pref., NE Honshu, Japan. h:30 km ca. H=06 31 07 J.M.A.					18.	P	Z	00	29	16.2
							i	NE			16.9
							i	Z			18
							ePP	E	30	54	
							PcP	Z	31	26	
16.	iP EZ, P N	NE	08	27	33.2		S	E	35	18	
	S			48			Lq	E	38	30	
	P:W,D						Lr	E	40	19	
							Lr	E	47	28	
16.	P	NZ	19	24	41		P:C				
	52.4 N., 153.4 E. Kurile Is. h:324 km ca. H=19 20 39.6 USCGS						Mag. 5 $\frac{1}{2}$ (Mat.) 52.5 N., 170.2 W. Fox Is. h:33 km ca. H=00 21 47.2 USCGS				
17.	iP EZ, P N		03	47	48.4	18.	P	Z	11	03	55
	e	E		48	25		18.7 S., 173.3 W. Tonga Is. region. h:90 km ca. H=10 52 36.6 USCGS				
	e	E		49	27						
	P:W,C										
17.	iP	NEZ	06	13	39.4	18.	iP	NEZ	11	41	56.8
	i	E			50		i	Z		42	09
	e	E		14	41		S	N			20
	eS ?	N			55		i	Z			22
	P:S,W,C						P:S,E,D				
17.	PKP	Z	16	04	35	18.	P	NEZ	16	38	15
	esPS or esSP	E		18	13		i	Z			17
	esSS	E		24	01		S	N			39
	4.8 N., 78.4 W. Off coast of Colombia. h:83 km ca. H=15 45 36.9 USCGS										
17.	P	NEZ	18	38	28.7	18.	iP	NEZ	17	24	40.8
	i	N			30.2		i	N			43
	S	NE			55		i	E			51
	P:S,D						i	N			53.5
							S	NE	25	04	
							P:N,W,C				
17.	P	Z	22	43	51	19.	P	Z	01	13	47.2
	18.8 S., 177.6 W. Fiji Is. region. h:491 km ca. H=22 33 32.3 USCGS						i	N			48.7
							i	E			56.2
							S	N	14	11	
17.	eL	E	23	08	08.5	19.	P	Z	02	28	28
	Mag. 5 $\frac{1}{2}$ - 5 $\frac{3}{4}$ (Mat.) 14.6 N., 92.8 W. Mexico - Guatemala border. H=22 15 32.0 USCGS						i	NEZ			28.4
							S	N			52
							i	E			57
							i	Z	29	31	
18.	P	NEZ	00	11	26		36.1 N., 140.2 E. Ibaraki Pref., central Honshu, Japan. h:70 km ca. H=02 27 57 J.M.A.				
	25.3 S., 178.4 E. South of Fiji Is. h:636 km ca. H=00 00 56.7 USCGS										

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
19.	P	NEZ	02	36	41	19.	i	E	08	04	53
	i	E			51		i	N			56
	S	N		37	05		P:S,D				
19.	eP	NEZ	06	33	16	22.	iP	NZ	00	28	49.0
	i	Z			24		S	Z		29	19
	eL	E		39	1		i	N			22
							P:N,C				
19.	iP	Z	07	19	28.7	22.	P	Z	08	30	57.9
	P:D						i	NE			58.2
	20.0 S., 179.9 W. Fiji Is. region. h:608 km ca. H=07 09 12.7 USCGS						i	Z		31	11.2
							i	Z			12.7
							pP	Z			16
							i	E		33	38
							PPP	Z			49
19.	P	NEZ	09	20	04		PcS	Z		36	06
	iS	NEZ			12		PcS	N			08
19.	P	NEZ	15	30	11.5		e	E		38	03
	i	Z			26		S	NEZ			11
	S	N			37		i	N		39	37
	P:N,E,D						e	E		41	44
20.	P	NEZ	11	15	18.7		SS	N		42	00
	eL	E		31	55		eL	Z			44
	P:S,D						eL	E		43	04
	Mag. 6 $\frac{1}{4}$ (Pas.) 11.0 S., 164.9 E. Santa Cruz Is. region. h:40 km ca. H=11 05 58.3 USCGS						L	N			53
							eL	Z		44	48
							L	Z		45	59
							P:D				
							Mag. 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Mat.) 10.3 S., 161.2 E. Solomon Is. region. h:93 km ca. H=08 22 00.9 USCGS				
20.	P	NEZ	11	18	03.6	22.	iP NZ, P E		09	45	57.6
	eS	N			29		iS	NEZ		46	13.8
	P:N,D						P:S,E,D				
20.	P	NEZ	23	42	52.5	22.	iP Z, P NE		14	33	43.7
	i	E		43	00		iS	NE		34	04.7
	S	E		44	51		P:C				
	P:N,E,D						P:C				
	45.3 N., 147.0 E. Kurile Is. region. h:25 km ca. H=23 40 08.2 USCGS					22.	iP	EZ	15	33	08.3
							i	Z			19.9
							S	N		34	00
							i	Z			23
							P:E,C				
21.	P	Z	02	08	51	22.	iP	EZ	19	56	47.3
	i	Z		10	11		i	E			57
							S	E			20
							e	Z			21
							e	E			32
							i	Z			43
							i	E			45
							P:E,D				
21.	iP	NZ	08	03	36.2						
	i	E			36.8						
	S ?	E		04	48						
	(cont.)						(cont.)				

Date Phase Comp. Time(GMT)
continued
36.4 N., 141.8 E.
Off E coast of Ibaraki Pref.,
Honshu, Japan.
h:20 km ca.
H=19 56 00 J.M.A.

22. iP Z 21 00 03.7
S NE 27
P:C

22. eP ? Z 22 30 17
4.6 S., 144.3 E.
Near coast of New Guinea.
h:170 km ca.
H=22 22 19.8 USCGS

23. iP Z 01 52 41.0
i N 42.2
e N 52
S ? N 53 06
P:C

23. iP NZ, P E 02 22 03.3
S NZ 11.2

23. iP NZ 04 38 34.7
i E 34.9
i N 56
i Z 59.5
i E 39 00.5
P:N,D

23. iP NZ, P E 06 41 41.0
iS E 41.7
P:N,W,C

23. iP Z 10 26 08.7
i NE 09.1
S NE 58
P:D

23. P Z 11 48 30
i Z 43

23. iP Z 13 15 09.3
iS NEZ 25.2
P:C

23. eP ? Z 13 36 27
i E 30.0
i N 30.9
i EZ 38.2
i N 38.4

23. P Z 16 16 25
eS NEZ 47

Date Phase Comp. Time(GMT)
23. iP NZ 19 21 56.7
i N 22 45.2
P:S,D

23. iP Z, P E 21 21 37.0
i Z 44.2
P:E,C

23. iP Z 22 55 37.7
i NEZ 38.0
i Z 46.7
S EZ 56 31
P:D

24. iP NZ 00 44 55.5
i N 45 02.0
P:S,C

24. iP NEZ 00 51 01.2
iS N 22.2
P:S,E,D

24. iP NZ 05 21 46.6
i E 47.9

pP Z 22 14
PcP ? Z 34
e E 29 48
eL E 36 12
P:N,C
15.0 S., 167.4 E.
New Hebrides Is. region.
h:145 km ca.
H=05 12 04.4 USCGS

24. eP Z 05 55 56
36.3 N., 70.7 E.
Hindu Kush region.
h:277 km ca.
H=05 47 03.5 USCGS

24. P NEZ 09 14 17
P:D

24. P Z 14 32 44
i NEZ 44.2

24. iP NEZ 14 55 26.0
i N 56 05.
e Z 29
e N 36
P:N,E,D

24. iP NEZ 15 02 10.2
i N 33.2
i EZ 34.2
i NE 47
i N 56
P:S,W,C

Date Phase Comp. Time(GMT)
24. P NZ 17 17 13
S E 24 00
e E 26 41
Lq E 28 41
eLr NZ 30 27
Mag. 5 3/4 (Mat.)
6.0 S., 150.0 E.
New Britain region.
h:122 km ca.
H=17 09 14.4 USCGS

24. iP NEZ 17 29 37.6
e Z 30 42
e Z 31 10
P:S,W,C

25. P EZ 01 17 41
P:W,C
20.0 S., 174.6 W.
Tonga Is. region.
h:64 km ca.
H=01 06 20.6 USCGS

25. iP NZ 11 09 09.8
i E 11.0
P:S,C

25. iP NZ, P E 14 01 28.7
S NE 37
P:S,W,C

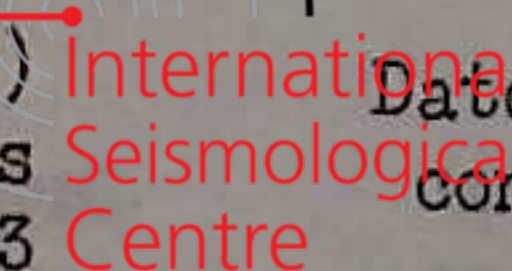
25. iP NEZ 15 16 12.3
iS Z 14.5
P:N,W,D

25. iP NEZ 16 21 02.0
iS EZ 04.2
P:N,W,D

25. iP Z 17 54 16.6
i Z 26.0
i E 41
i N 44.7
i Z 55 01
P:C

25. iP NZ, P E 18 28 40.2
i E 49.5
S ? E 30 01.1
e Z 05
i E 06.0
P:N,D
41.6 N., 142.8 N.
Near Hokkaido, Japan.
h:60 km ca. J.M.A.

25. eP NEZ 18 36 32
18.1 S., 167.8 E.
New Hebrides Is. region.
(cont.)



Date Phase Comp. Time(GMT)
continued
h:100 km ca.
H=18 26 27.1 USCGS

25. iP EZ 19 10 37.9
i N 38.6
e N 11 17
P:E,D

25. P Z 19 34 09.4
i N 32.7
P:D

25. eP ? Z 22 12 29
19.3 S., 175.8 W.
Tonga Is. region.
h:254 km ca.
H=22 01 33.8 USCGS

26. P Z 01 52 58
i N 53 10
eS E 57 08
L E 59 25
52.4 N., 160.1 E.
Near coast of Kamchatka.
h:53 km ca.
H=01 48 04.1 USCGS

26. P Z 02 13 54.6
i N 56.9
i N 14 06
P:C

26. P Z 04 34 40
S N 35 01

26. iP KP Z 16 56 07.3
i Z 12.3
i Z 16
iPKP:C
23.6 S., 70.2 W.
Near coast of Chile.
h:50 km ca.
H=16 36 14.9 USCGS

26. P NZ 19 59 28.1
2.0 S., 125.9 E.
Spice Is. region.
H=19 51 59.4 USCGS

27. PKP Z 00 36 38
i Z 45.3
i Z 54.1
23.7 S., 70.2 W.
Near coast of Chile.
h:39 kmca.
H=00 16 44.2 USCGS

27. iP KP Z 00 46 05
i Z 07
(cont.)

Date	Phase	Comp.	Time(GMT)		
continued			h	m	s
i	Z		00	46	15
23.2 S., 69.7 W. Near coast of Chile. h:19 km ca. H=00 26 06.0 USCGS					
27.	iP	Z	03	28	03.8
	i	Z			06.2
	i	Z			15.5
	i	E			54
	i	Z	29	02	
	i	N			03
	i	E			04
P:C					
27.	P	NZ	04	34	59.4
	e	Z			36 23
	S	E			48
	i	N			49
	i	N			54
26.9 N., 140.1 E. Bonin Is. region. h:500 km ca. H=04 32 44.5 USCGS					
27.	eP	Z	10	56	55
	e	Z			57 16
	i	E	11	01	22
16.3 N., 121.3 E. Luzon, P.I. h:54 km ca. H=10 51 35.8 USCGS					
27.	eP	Z	14	56	06
	i	N			11
6.2 S., 104.0 E. Near south coast of Sumatra. h:168 km ca. H=14 46 58.1 USCGS					
27.	iP	NEZ	22	38	30.3
	i	E			39 51
P:S,E,D 15.2 S., 175.0 W. Samoa Is. region. h:253 km ca. H=22 27 55.1 USCGS					
28.	iP	Z	03	18	59.0
	i	E			59.4
	i	N			59.6
	i	E	19	13	
	i	N			14.2
P:D					
28.	iP Z, P N		04	29	53.8
	i	Z			30 03
	i	N			04
	S	E	39	07	
(cont.)					

Date	Phase	Comp.	Time(GMT)		
continued			h	m	s
	SSS	E	04	46	58
	i	E			47 43
P:S,C Mag. 5 3/4 - 6 (Mat.) 71.3 N., 8.6 W. Jan Mayen I. h:48 km ca. H=04 18 41.9 USCGS					
28.	eP	Z	07	57	58
	SSS	E	08	14	8
71.3 N., 8.4 W. Jan Mayen I. h:61 km ca. H=07 46 38.5 USCGS					
28.	eP ?	Z	11	20	23
2.1 N., 124.0 E. Celebes Sea. h:25 km ca. H=11 12 58.8 USCGS					
28.	P	Z	13	05	08
5.7 S., 146.4 E. Near coast of New Guinea. h:55 km ca. H=12 57 13.2 USCGS					
28.	iP	NEZ	13	22	51.8
	i	Z			23 13
	i	E			24 45
	iS	EZ			26 33
	i	E			39
	i	N	27	21	
	L	Z	28	50	
	L	E			55
	iScP	Z	30	22	8
	iScS ?	E	34	04	8
P:N,E,D Mag. 7 - 7 1/4 (Mat.) 52.0 N., 157.4 E. Kamchatka. h:96 km ca. H=13 18 14.3 USCGS					
28.	iP	EZ	15	01	55.3
	i	N			55.5
	i	EZ			59.1
	iS	NE	02	13	3
P:D					
28.	iP	NEZ	18	27	47.3
	S	NE	28	28	
P:N,W,D					
28.	iP	Z	22	10	17.3
	i	E			18.4
	i	N			19.2
	i	N			29.8
	S	N	11	00	3
	i	N			02.7
	P:C	Z			04

Date	Phase	Comp.	Time(GMT)		
			h	m	s
28.	iP	Z	22	29	02.3
	i	NE			02.8
	i	N			17
	i	Z			22.4
	i	Z			25.0
	P:D	Z			38
28.	iP EZ, P N		22	30	10.9
	i	Z			11.3
	S	EZ			49
P:S,E,D Mag. 5 1/2 (Mat.) 34.6 N., 141.7 E. S off central Honshu, Japan. h:40 km ca. H=22 29 18 J.M.A.					
28.	iP	Z	22	48	40.3
	i	NE			40.9
	S	N	49	17	
P:C					
28.	P	Z	23	13	14
	i	E			14.5
	i	N			31
	i	Z			35
	i	N			40
	S ?	NE			45
	i	NE			54
	i	N	14	00	
29.	P	EZ	00	03	52
	i	N			04 03
	i	E			09
	i	N			15
	i	N			19
29.	eL	E	01	54	58
Mag. 5 - 5 1/4 (Mat.) 25.5 N., 67.6 E. West Pakistan. h:23 km ca. H=01 25 35.5 USCGS					
29.	iP	Z	04	33	59.3
	i	E			59.6
	i	N			34 00.3
	i	N			16
	S	N			37
P:C					
29.	iP	NEZ	06	22	09.6
	eS	N			47
P:N,W,C					
29.	P	Z	08	00	10.6
	i	N			10.9
	i	E			41.5
P:C					

Date	Phase	Comp.	Time(GMT)		
			h	m	s
29.	P ?	Z	08	11	53
	i	E			54.8
	i	Z			55.3
	i	N			57.0
	i	NEZ	12	04	0
29.	iP Z, P E		08	30	52.4
	i	N			52.8
	e	E			31. 17
	S	N			22
P:C					
29.	P	EZ	09	43	36.0
	i	Z			44 08
	i	E			12.1
29.	P	Z	09	48	47
	pP	Z			49 12
	epP	N			13
	S	NE			57 52
	eG ?	NE	10	05	43
	Lr	E			09 23
	Lr	NZ			45
Mag. 5 3/4 (Mat.) 15.8 S., 172.9 W. Samoa Is. region. h:99 km ca. H=09 37 41.6 USCGS					
29.	P	Z	13	41	44.8
	e	Z			42 13
29.	eP ?	Z	14	08	44
	i	Z			51.8
	i	E			52.9
29.	eP	Z	16	19	05
	i	E			06.4
	e	EZ			39
	e	N			58
29.	P	EZ	17	17	51
29.	P	Z	21	28	13
	S ?	E			36
	i	N			40.2
29.	P	Z	21	49	58
	i	Z			50 04.4
	i	N			14
	eS	E			54 14
	e	N			20
	eL	E			55 19
12.0 N., 140.9 E. Mariana Is. region. h:25 km ca. H=21 44 37.2 USCGS					



Date	Phase	Comp.	Time(GMT)		
			h	m	s
29.	eP	Z	23	02	48
	e	E			52
	iS	NZ	03	18.6	
29.	iP	Z	23	46	28.0
	i	NEZ			29.4
	eL	E	52	25	
	P:C				

49.8 N., 156.0 E.
Near southern coast of Kamchatka.
h:61 km ca.
H=23 42 16.4 USCGS

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
30.	i	Z	16	04	13
	i	Z			26
	L	E	06	52	
	ScS	E	08	23	
	eL	NZ	11	52	
30.	eL	E	12	02	
	Mag. 5 3/4 (Mat.)				
	1.0 S., 127.0 E.				
	Spice Is. h:32 km ca. H=15 50 50.4 USCGS				

30.	P	EZ	06	11	47.4
	S	N	12	24.4	

30.	iP	NZ	16	20	58.4
	i	E			58.7

P:S,C
51.2 N., 157.0 E.
Near south coast of Kamchatka.
h:42 km ca.
H=16 16 22.9 USCGS

30.	iP	Z, P	07	19	15.4
	iS	N			29.2
	i	EZ			29.6
	P:E,C				

30.	PKP	Z	18	56	29
	i	Z			36

23.3 S., 70.4 W.
Near coast of Chile.
h:25 km ca.
H=18 36 34.3 USCGS

30.	iPKP	Z	12	34	27.5
	i	N			28
	i	Z			33
	i	E			35.5
	i	Z			40.5
	i	Z	35	38	
	PP	Z	38	11	
	i	IZ			21
	SKKS	L	45	02	
	e	Z	47	41	
	e	L	48	19	
	esSP	Z	51	29	
	e	E	53	13	
	esSS	E	58	30	
	eG	E	13	15	40
L E, eL Z					
PKP:C					

Mag. 6 3/4 (Mat.)
23.3 S., 70.3 W.
Near coast of Chile.
h:76 km ca.
H=12 14 36.1 USCGS

30.	P	Z	21	06	22
	i	NEZ			22.6
	i	N			36
	S ?	N			46.3
30.	i	EZ			47.8

30.	iPKP 1	Z	21	52	35.1
	i	EZ			42.3
	iPKP 2	Z			54.8
	isPKP	Z	53	09.1	
	ipPKP 2	Z			21.1
30.	PP	Z	56	27	
	ePSKS	E	22	06	41
	esSS	E	17	00	
	eSSS	E	21	28	
	eG ?	E	34		
	eLr	E	44.3		
	P:C				

Mag. 5 3/4 (Mat.)
22.8 S., 68.0 W.
Chile - Bolivia border.
h:60 km ca.
H=21 32 47.7 USCGS

30.	P	NZ	15	58	14
	i	NZ			20.4
	ePcP	N	16	00	26
	iS	E	04	07	

23.3 S., 70.6 W.
Near coast of Chile.
h:65 km ca.
H=13 11 51.2 USCGS

30.	P	NZ	22	04	03
	i	NZ			56.4 N., 167.2 W. Pribilof Is.
	ePcP	N	h:64 km ca.		
	iS	E	H=21 56 19.5		

USCGS

30.	iP	EZ	23	45	00.5
	S	NE			24
	P:E,D				

31.	iP	NEZ	13	12	38.2
	iS	NEZ			41.5
	P:N,E,D				

31.	P	NEZ	20	53	25
	i	NZ			26.1
	i	E			27.5
	S	N	55	43	
	L	L	56	30	
	25.3 N., 141.3 E. South of Bonin Is. h:25 km ca. H=20 50 29.9 USCGS				

31.	iP	Z	23	47	26.1
	i	Z			29
	i	NZ	49	34.3	
	P:D				

31.	P	NZ	23	49	37.4
	i	Z			46
	eS	E	53	58	
	eL	E	56	26	
	54.7 N., 131.8 E. Near east coast of Kamchatka. h:60 km ca. H=23 44 18.9 USCGS				
	USCGS				

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Director