

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued.					
	iS	NEZ	17	31	41
	i	N		33	28
	SS	E		35	29
	Lq	E		36	49
	Lr E, eLr	Z		39	48
	L	N		40	13
	L	N		44	05
	P:N,W,C				
	Mag. 7 - 7 $\frac{1}{4}$ (Mat.)				
	10.9 S., 164.9 E.				
	Santa Cruz Is. h:25 km ca.				
	H=17 14 49.3 USCGS				
2.	P	EZ	17	38	33.6
	i	N			34.1
	i	N			57
	P:E,D				
2.	iP	EZ,P N	19	53	50.4
	P:V,D				
3.	P	Z	02	54	28
	e	NE			31
3.	P	NEZ	12	02	50
	i	NEZ		03	10
3.	eP	Z	17	41	25
3.	P	Z	22	21	54
	i	NE			56
4.	iP	NEZ	00	02	49.4
	iS	NEZ		03	22.3
	P:E,C				
4.	iP	NEZ	03	30	09.5
	S	EZ			31
	P:S,W,D				
4.	P	NEZ	10	08	36.4
	i	Z			41
	i	N			43
	S	NE			50
	P:D				
4.	iP	Z	11	50	25.9
	P:D				
4.	iP	NEZ	12	52	53.7
	S	NEZ		53	35
	P:S,W,D				
4.	iP	NEZ	13	03	04.3
	S	NEZ			17
	P:S,E,D				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
4.	iP	EZ,P N	13	56	16.0
	S	NEZ			39
4.	iP	Z	14	25	35.3
	i	NE			35.5
	P:C				
	1.1 S., 126.5 E.				
	Spice Is. region.				
	h:25 km ca.				
	H=14 18 08.1 USCGS				
4.	eP	EZ	14	56	46
	i	N			46.6
	S?	NE			57 20
4.	P	Z, eP NE	18	36	24
	i	Z			45
5.	eP	NEZ	00	53	32
	i	Z			56
	eS	NEZ			55 15
	L	E			56 16
	L	N			39
	30.5 N., 130.9 E.				
	Kyushu, Japan. h:74 km ca.				
	H=00 51 36.7 USCGS				
5.	eP	Z	01	39	49
	e	Z			40 52
	eS	NE			41 34
	i	Z			36
	i	NE			43
5.	P	Z	03	16	23.5
	i	NE			23.8
	i	N			46
	P:D				
5.	iP	NEZ	03	51	36.2
	i	Z			50
	i	Z			52 29
	i	E			39
	P:S,W,C				
5.	P	NEZ	06	04	01.9
	S	NZ			43
	i	E			45
5.	P	NEZ	20	33	28
	eSKS	E			43 52
	eSS?	E			50 31
	eSSS	E			53 55
	e	E			55 10
	eL	E			57 25
	L	E	21	06	40
	eL	N			07 38
	eL	Z			08 14
	(cont.)				

Date Phase Comp. Time(GMT)
h m s

continued.

39.2 N., 20.5 E.
Near coast of Greece.
h:49 km ca.
H=20 20 53.7 USCGS

6. iP Z 04 43 16.7
i NE 16.8
i Z 44 44
PcP Z 47 10
PcP E 13
S NE 21
i Z 24
iLq E 48 32
iLq N 48
iLr Z 49 41
Lr E 50 35
ScS? E 54 27
ScS? N 28
i NE 47

P:S,W,C
Mag. $6\frac{1}{2}$ - $6\frac{3}{4}$ (Mat.)
53.0 N., 159.8 E.
Near coast of Kamchatka.
h:32 km ca.
H=04 38 16.7 USCGS

6. P Z 04 50 44

6. eP NEZ 06 26 51.9
i N 27 02
i Z 05
i Z 35 30
i N 36 52
eL? N 48.1
eL Z 53 37
L E 55.1

Mag. $6\frac{1}{2}$ - $6\frac{3}{4}$ (Mat.)
31.0 S., 177.7 W.
Kermadec Is. region.
h:184 km ca.
H=06 15 05.7 USCGS

6. iP Z 11 32 10.9
i Z 30
i Z 42
i NE 49

6. P Z 21 44 01.2
i N 22
i E 32
P:S,E,D

6. iP NEZ 22 17 45.1
PcP Z 19 40
i E 23 51
(cont.)

Date Phase Comp. Time(GMT)
h m s

continued.

S NZ 22 23 57
eLq Z 26 39
Lq N 27 41
ScS E 52
Lr Z 29 53

P:S,W,C
Mag. $6\frac{1}{4}$ (Mat.)
52.7 N., 168.0 W.
Fox Is. h:42 km ca.
H=22 10 06.4 USCGS

7. iP NZ,P E 03 13 29.3
i N 14 00
i E 02
P:N,D

7. P EZ 07 49 11.7
i N 13
i NEZ 25
S NEZ 32

7. iP EZ 13 24 46.7
i N 47.2
i Z 56.4
i NE 25 20
i E 55
iS E 26 07
i Z 22
i E 43

P:W,D
32.3 N., 132.2 E.
Kyushu, Japan.
h:20 km ca. J.M.A.

7. eP Z 16 35 59
eS E 43 29
Lq E 49 05
L Z 54 55
eL N 55 15

10.7 S., 163.0 E.
Solomon Is. region.
h:25 km ca.
H=16 26 43.0 USCGS

8. eP Z 00 08 35
30.6 S., 177.5 W.
Kermadec Is. region.
h:25 km ca.
H=23 56 32.2 USCGS

8. eP Z 00 25 54
L E 37 49
41.1 N., 105.5 E.
China - Mongolia border.
h:51 km ca.
H=00 20 17.5 USCGS

Date Phase Comp. Time(GMT)
 h m s
 8. iP Z 05 25 04.7
 eS NE 27 34
 L EZ 28 35
 P:N,E,D
 45.2 N.,149.8 E.
 Kurile Is. h:25 km ca.
 H=05 22 09.4 USCGS

8. P Z 05 30 16
 i E 32 27
 S N 42
 L EZ 33 45
 45.2 N.,149.7 E.
 Kurile Is. h:25 km ca.
 H=05 27 21.7 USCGS

8. P NEZ 06 37 53.6
 S NEZ 38 09
 P:D

8. iP Z,P NE 08 48 17.2
 S? NE 40
 i Z 49
 P:S,W,C

8. e N 11 37 52
 31.1 S.,177.6 W.
 Kermadec Is. region.
 h:18 km ca.
 H=10 59 43.5 USCGS

8. iP Z 11 47 32.0
 P:D

8. iP NZ 12 36 26.2
 S NEZ 37 46
 P:N,D

8. iP Z 13 44 40.2
 i NE 40.7
 P:C
 56.0 N.,158.8 W.
 Alaska Peninsula.
 h:29 km ca.
 H=13 36 12.9 USCGS

8. iP Z,P N 16 44 10.3
 S N,eS E 45 28
 P:S,W,C

8. iP NEZ 18 21 19.7
 P:S,W,C

8. iP NEZ 20 39 55.7
 e N 40 28
 P:N,E,C

Date Phase Comp. Time(GMT)
 h m s
 9. ePKP Z 01 37 22
 i NE 24
 i E 56
 i NZ 59
 21.5 S.,67.5 W.
 Near Chile - Bolivia border.
 h:131 km ca.
 H=01 17 36.8 USCGS

9. PKP Z 03 37 46
 i NEZ 55
 e Z 41 30
 i Z 41
 PP? Z 50
 i Z 44 37
 SKKS N 48 33
 i Z 47
 SS E 04 01 48
 SSS E 06 25
 SSS Z 07 23
 Lq E 20.1
 Lr EZ 31 14
 Lr N 34.1
 Lr 2 Z 55 19
 Lr 2 E 31
 Lr 2 N 57 34
 Mag. 6 3/4 - 7 (Mat.)
 60.7 S.,24.8 W.
 Sandwich Is. h:37 km ca.
 H=03 17 58.5 USCGS

9. eP NEZ 08 30 57
 i NZ 31 07

9. P EZ 10 49 35.8
 i N 37
 PcP? E 52 56.7
 i E 53 51
 S NEZ 54 25
 i E 43
 i N 45
 i Z 48
 Lq N 56 25
 Lq E 38
 Lr EZ 59 29
 L N 11 00 05
 P:E,C
 Mag. 6 1/2 - 6 3/4 (Mat.)
 32.7 N.,103.4 E.
 Szechwan Province, China.
 h:47 km ca.
 H=10 43 43.1 USCGS

9. iP EZ,P N 13 06 38.1
 iS Z,S E 53.2
 P:S,E,D

Date Phase Comp. Time(GMT)
 h m s
 11. iP Z 16 06 33.2
 i NE 33.7
 e NZ 07 18
 e E 24
 P:D

11. iP Z 22 47 33.8
 i N 34.0
 i E 34.3
 P:D
 53.2 N., 159.6 E.
 Near east coast of Kamchatka.
 h:36 km ca.
 H=22 42 36.0 USCGS

12. iP Z 09 02 49.3
 i NE 49.5
 S NEZ 03 36
 P:D

12. P NEZ 10 25 25
 P:D

12. P NEZ 18 40 10
 i NZ 17.8
 eS NE 42 41
 47.1 N., 148.8 E.
 Kurile Is. h:174 km ca.
 H=18 37 14.5 USCGS

12. iP NZ 20 50 20.0
 i E 20.3
 iS NEZ 35.8
 P:S,D

13. iP NEZ 00 23 31.7
 i Z 37.3
 e EZ 47
 P:S,W,D

13. iP NZ 06 44 07.0
 i E 08.5
 i Z 08.8
 i Z 47.7
 i Z 45 20
 iPP N 31
 iS N 49 37
 S Z 38
 i E 43
 L NE 52 05
 P:N,C
 Mag. $5\frac{1}{2}$ - $5\frac{3}{4}$ (Mat.)
 1.4 N., 127.2 E.
 Molucca Passage.
 h:59 km ca.
 H=06 37 05.7 USCGS

Date Phase Comp. Time(GMT)
 h m s
 13. P Z 07 29 32.9
 P:C
 15.7 S., 71.7 W.
 Southern Peru. h:153 km ca.
 H=07 10 04.6 USCGS

13. iP Z 09 28 07.8
 i NE 08.0
 ePP N 29 40
 e Z 33 45
 S NE 34 08
 Lq N 36.7
 Lq E 36.9
 Lr NZ 39.3
 P:D
 Mag. $6\frac{3}{4}$ - 7 (Mat.)
 51.1 N., 168.8 W.
 Fox Is. h:65 km ca.
 H=09 20 36.8 USCGS

13. eP Z 10 02 36
 e NE 37
 e Z 03 33
 e E 04 05 ca.

13. iP EZ 12 11 48.6
 i N 49.3
 P:W,C

13. P Z 13 32 00.8
 51.1 N., 168.8 W.
 Fox Is. h:25 km ca.
 H=13 24 25.6 USCGS

13. P Z 13 35 42
 51.6 N., 168.1 W.
 Fox Is. h:50 km ca.
 H=13 28 11.5 USCGS

13. P Z 20 58 56.8
 e Z 59 17

13. eP Z 23 51 04
 e N 52 25

14. P NEZ 00 15 21

14. iP EZ,P N 00 46 47.9
 e E 47 09
 P:E,D

14. P E 02 09 17
 e EZ 27

14. P Z 16 03 13.8
 (cont.)

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
continued.						16.	P	EZ	23	07	10
	e	NE	16	03	17		e	Z		08	04
	e	N		15	47		e	E			43
	e	E		16	25		e	E	16	09	
		24.3 N., 96.2 E.					e	E	18	43	
		Burma.	h:58 km ca.								
		H=15 55 57.2	USCGS								
14.	P	Z	21	17	25						
	e	NE			27						
	eS	E		18	25						
15.	iP	Z	00	21	17.0						
	S	NE			53						
	i	Z			53.9						
	P:D										
15.	P	Z	05	13	19.9						
15.	eP	Z	06	48	12						
	i	N			28						
	i	Z			41						
	S	N			51						
	S	Z			52						
15.	e	E	07	01	59						
	e	E		08	37						
15.	iP	EZ	09	13	25.7						
	eS	Z		19	12						
	eLr	E		27	37						
	P:E,C										
		23.2 N., 94.3 E.									
		Near Burma - India border.									
		h:103 km ca.									
		H=09 05 59.1	USCGS								
15.	e	E	22	07	9						
		35.0 S., 178.4 E.									
		Off coast of North Is.,									
		New Zealand.	h:84 km ca.								
		H=21 40 14.4	USCGS								
16.	iP	Z	01	33	40.6						
	i	NE			41.1						
	P:D										
		23.7 S., 179.3 E.									
		South of Fiji Is. region.									
		h:552 km ca.									
		H=01 23 11.1	USCGS								
16.	iP	NEZ	01	53	41.6						
	S	NEZ		59	06						
	P:N,W,D										
16.	P	Z	16	35	50						
	P:C										
16.	P	EZ	23	07	10						
	e	Z		08	04						
	e	E			43						
	e	E	16	09							
	e	E	18	43							
		38.0 N., 89.5 E.									
		Sinkiang Province, China.									
		h:24 km ca.									
		H=22 59 47.6	USCGS								
17.	e	E	02	41	6						
		38.5 S., 73.6 W.									
		Near coast of Chile.									
		h:25 km ca.									
		H=01 28 39.6	USCGS								
17.	P	Z	04	20	03						
	e	E		30	33						
	e	E		48	26						
		30.8 S., 177.7 W.									
		Kermadec Is. region.									
		h:71 km ca.									
		H=04 08 03.1	USCGS								
17.	iP	NEZ	04	57	58.2						
	S	NEZ		58	04						
	P:N,E,C										
17.	P	NZ	05	33	40.9						
	eL?	E		42	43						
17.	PKP	Z	05	36	00						
		43.5 S., 74.4 W.									
		Near coast of Chile.									
		h:123 km ca.									
		H=05 16 10.3	USCGS								
17.	iP	NEZ	19	54	17.3						
	ePcP?	Z		56	25						
	S	E	20	00	15						
	L	E		03	20						
	P:N,E,D										
		Mag. $5\frac{1}{4}$ - $5\frac{1}{2}$ (Mat.)									
		52.3 N., 170.3 W.									
		Fox Is.	h:16 km ca.								
		H=19 46 46.2	USCGS								
17.	P	Z	20	06	45.6						
	i	NE			46.1						
	P:C										
17.	P	Z	22	17	55.3						
	i	E			55.4						
	e	EZ			55.6						
	e	NE	18	20							
	eS?	E	19	04							
	e	E			05						
	P:D										

Date Phase Comp. Time(GMT)
h m s

continued.

eSKSP Z 22 34 01
e Z 37 23
eSS NE 41 20
e Z 42 18
e Z 46 13
e NE 21
eLq or GN 57 50
eLr E 23 01 45
e EZ 03.1
e NZ 05.1

Mag. $7\frac{1}{4}$ - $7\frac{1}{2}$ (Mat.)

6.8 S., 80.7 W.

Near coast of Peru.

h:93 km ca.

H=22 01 59.9

USCGS

21. eP? Z 03 36 57
e E 44 27
e E 47 17

21. iP NZ 04 36 22.7
i E 23.7
i Z 34.7
isP Z 38 12.7
eS E 42 28
eL E 47 23

P:N,C

3.4 S., 152.3 E.

New Ireland region.

h:371 km ca.

H=04 29 04.7

USCGS

21. PKP 2 Z 04 41 25
6.2 S., 80.8 W.
Near coast of Peru.
h:25 km ca.
H=04 21 42.1

USCGS

21. iP NEZ 08 49 58.5
S? E 50 53.7
i N 55
P:N,E,C

21. iP NEZ 18 01 43.2
e E 03 03
P:N,E,D

21. iP NEZ 18 49 08.7
eS E 53 12
eL E 55 43
P:N,E,D

54.8 N., 159.7 E.

Near east coast of Kamchatka.

h:64 km ca.

H=18 44 04.9

USCGS

Date Phase Comp. Time(GMT)
h m s

21. iP NEZ 20 05 48.6
iS NEZ 55.7
P:N,E,D

22. iP Z 03 43 18.8
i NE 19
e Z 44 19
e E 45 15
eS N 52 45
eScS E 53 18
eScS? Z 33

eSSS or L

04 00 55

eLr E 04 41

eL Z 05 59

P:C

Mag. $5\frac{3}{4}$ - 6 (Mat.)

19.2 S., 173.1 W.

Tonga Is. region.

h:25 km ca.

H=03 31 54.3

USCGS

22. P Z 03 45 23.7
S NEZ 46 07.7
P:C

22. iP Z 03 56 44.0
P:C

19.7 S., 172.6 W.

Tonga Is. region.

h:70 km ca.

H=03 45 20.8

USCGS

22. iP NZ,P E 06 19 38.8
iS NEZ 58.7

22. eSKS E 06 46 53
e E 53 43
ePSPS? E 56 18
eL E 07 08 27
eL N 45
eL E 18 45
eL E 20 39

Mag. 6 (Mat.)

35.9 S., 52.3 E.

Indian Ocean, north Crozet.

h:21 km ca.

H=06 21 45.0

USCGS

22. iP NEZ 06 51 49.2
S? N 52 20
P:S,W,C

22. iP NEZ 07 14 14.2
S E 18 19
L E 20 39

(cont.)

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued.					
	P:S,C				
		53.0 N., 159.4 E.			
		Near east coast of Kamchatka.			
		h:28 km ca.			
		H=07 09 14.8			USCGS
22.	PKP 1	Z	12	48	41.2
	i	Z			48.7
	i	NE			53
	PKP 2 or				
	pPKP	NE	49	04	
	PKP 2 or				
	pPKP	Z			06.7
	sPKP	Z			14.2
	sPKP	E			15
	PP	E	52	25	
	PP	Z			37
	ePPP	E	55	57	
	ePSKS	E	13	03	12
	esPS or				
	sSP	E	06	10	
	esSS	E	12	25	
	e	E	17	29	
	eL	E	29	21	
	eL	E	38	35	
	eL	Z	40	23	
	P:C				
		Mag. 6 (Mat.)			
		40.0 S., 74.3 W.			
		Near coast of southern			
		Chile.			h:107 km ca.
		H=12 28 58.4			USCGS
22.	e	E	16	44	51
	e	E			48 53
22.	e	E	18	14	12
	eL	E			17 24
		7.3 N., 95.7 E.			
		Nicobar Is. region.			
		h:25 km ca.			
		H=17 51 36.5			USCGS
23.	iP	Z	01	32	28.7
	P:D				
		5.0 S., 153.3 E.			
		New Britain region.			
		h:79 km ca.			
		H=01 24 30.1			USCGS
23.	iP	NZ	04	18	55.2
	i	E			55.7
	PP	Z	20	33	
	esS	E	27	35	
	P:S,D				
		4.9 S., 153.8 E.			
		(cont.)			

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued.					
		New Britain region.			
		h:516 km ca.			
		H=04 11 34.7			USCGS
23.	P	Z	14	23	55.7
	i	N			58
	i	E			24 00
	i	N			11
	ePP	E			26 35
	e	Z			27 21
	S	E			33 21
	i	N			41
	ScS	E			34 25
	i	E			36 43
	L	N			43 19
	L	E			21
	L	Z			45 23
	L	E			47 33
	L	NZ			49
	P:C				
		Mag. 6 3/4 - 7 (Mat.)			
		24.2 S., 176.1 W.			
		South of Tonga Is. region.			
		h:28 km ca.			
		H=14 12 21.1			USCGS
23.	iP	NEZ	16	58	46.2
	sP	Z			59 20
	sP	N			22
	e	E	17	06	19
	P:S,E,D				
		4.6 N., 125.8 E.			
		Near Mindanao, P. I.			
		h:143 km ca.			
		H=16 52 12.9			USCGS
23.	P	NZ	18	08	13
	i	E			16
	i	Z			31
	eS	E			17 33
	eScS	E			18 22
	eSS	E			22 35
	eL	E			26 05
	L	E			30 52
	L	E			34 13
	Mag. 5 3/4 - 6 (Mat.)				
		24.0 S., 176.3 W.			
		South of Tonga Is. region.			
		h:51 km ca.			
		H=17 56 38.0			USCGS
23.	iP Z,P	NE	20	22	45.2
	P:D				
		24.1 S., 175.7 W.			
		South of Tonga Is. region.			
		h:25 km ca.			
		H=20 11 03.2			USCGS

Date	Phase	Comp.	Time(GMT)		
			h	m	s
26.	iP	NZ	17	16	34.1
	i	E			35.1
	S	NE	17	59	
	P:S,D				
26.	P	NZ	17	55	50
	S	NEZ			58.6
27.	iP	EZ	07	38	55.6
	i	N			57.6
	S	NE	39	10	
	P:W,C				
27.	iP	Z	12	09	03.9
	i	NE			04.1
	P:C				
	62.9 N., 150.9 W. Alaska. h:171 km ca. H=12 00 26.3 USCGS				
27.	iP	Z	13	18	03.1
	P:D				
	5.6 S., 146.4 E. Near coast of New Guinea. h:100 km ca. H=13 10 11.0 USCGS				
	27.	iP	NEZ	15	19
i		Z			18
S		NEZ	20	22	
i		EZ			23
P:N,E,D					
42.6 N., 143.6 E. Near coast of Hokkaido, Japan. h:80 km ca. J.M.A.					
27.	iP	Z	22	18	01.6
	e	E			36 55
	e	E			43 31
	P:D				
27.	iP	EZ	23	56	16.4
	i	NE			17
	P:W,D				
28.	iP	NEZ	21	29	02.3
	S	NEZ			05
	P:N,E,C				
28.	iP	NZ	22	26	45.6
	i	E			46
	i	E			57.6
	eS	E	28	15	
	P:S,D				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
28.	P	NZ	23	05	36.7
	i	E			38
	i	Z			51
	i	Z			56
	eS	E	06	45	
	i	Z			53
	e	E	07	01	
i	NZ			33	
29.	iP	NEZ	00	49	18.0
	S	EZ			21.1
	P:S,W				
29.	iP	N	00	55	37.1
	i	E			37.6
	S	NE			51
	P:N				
29.	iP	NEZ	06	16	37.3
	S	EZ			58.9
	P:N,W,D				
29.	PKP	Z	09	51	51
	i	NE			55
	i	Z			52 07
	ePP	E			55 35
	eSKSP	E	10	05	59
	eSS	E			15 59
	eSSS	E			20 21
	e	E			24 37
	eLr	E			42 31
	Mag. $6\frac{1}{4}$ - $6\frac{1}{2}$ (Mat.) 44.0 S., 74.9 W. Near coast of southern Chile. h:86 km ca. H=09 32 01.5 USCGS				
	29.	iP	Z	14	10
i		NE			13.3
i		NEZ			20.1
S		EZ	13	04	
i		EZ			43
P:C					
26.5 N., 126.1 E. Ryukyu Is. h:147 km ca. H=14 07 02.2 USCGS					
29.	iPKP	Z,PKP	19	36	37.6
	PKP:C				
	15.8 S., 73.3 W. Near coast of Peru. h:100 km ca. H=19 17 07.3 USCGS				
29.	iP	NEZ	23	22	31.3
	S	NE			34.7
	P:S,W,C				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
30.	iP	NZ	02	08	48.6
	i	E			49.6
	S	NEZ	10	15	
	P:N,D				
30.	e	E	07	05	41
30.	iP	NEZ	07	23	05 ca.
	i	N			21
	S	NE			33
	i	Z			35
30.	iP	NEZ	10	51	51.6
	i	E		52	26
	P:N,E				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
December	1. P	Z	05	44	37
	i	Z			41
	1. P	NEZ	08	19	01
	1. P	NEZ	09	46	28
		6.9 S., 128.9 E. Banda Sea. h:32 km ca. H=09 38 16.7			
		USCGS			
	1. iP	NZ	10	19	42.0
	i	E			42.2
	S	E		25	56
	L	E		30	16
		P:N,C 5.7 S., 145.9 E. Near coast of New Guinea. h:45 km ca. H=10 11 44.6			
		USCGS			
	1. iP	EZ	10	37	49.9
	i	N			50.0
		P:E,C			
	1. P	Z	10	52	09
	e	E	11	02	33
	e	E		06	58
	1. P	Z	11	49	34
	eS	E		55	37
	eL?	E	12	00	52
	1. iP	Z	19	55	33.6
	i	NE			34.3
	i	N			46
		P:C			
	1. P	Z	21	00	25.7
	S	E		09	08
	Lq	E		16	34
	eLr	Z		20	15
		Mag. 5 3/4 - 6 (Mat.) 48.8 N., 129.3 W. Off coast of Vancouver I. h:15 km ca. H=20 49 45.5			
		USCGS			
	1. eP	Z	22	00	15
		49.0 N., 129.3 W. Near coast of Vancouver I. h:60 km ca. H=21 49 37.2			
		USCGS			
	2. iP	Z	04	10	13.2
	i	N			15.4
	i	Z	11	36	
		P:D 52.6 N., 168.2 W. Fox Is., Aleutian Is. (cont.)			

Date	Phase	Comp.	Time(GMT)		
			h	m	s
	continued				
		h:70 km ca. H=04 02 42.0			
		USCGS			
	2. P	Z	04	45	41
		6.6 S., 152.5 E. New Britain region. h:33 km ca. H=04 37 28.2			
		USCGS			
	2. iP	NEZ	09	13	18.8
		P:E,C			
	2. iP	Z	09	30	32.6
	i	Z			38.2
	PKP 2	Z			47
	PP	Z		34	48
	PPP	Z		38	00
	i	E		41	30
	SS	N		54	04
	PSPS	E		55	34
	SSS	N		59	35 ca.
	eL	N	10	10	33
		Mag. 7 - 7 1/4 (Mat.) 24.5 S., 69.9 W. Near coast of Chile. h:37 km ca. H=09 10 41.0			
		USCGS			
	2. iP	Z	09	57	25.5
	PKP 1	E			
	i	NEZ			32.5
	PP	Z	10	01	16
	PSPS	E		21	39
		PKP:C 24.3 S., 69.8 W. Near coast of Chile. Mag. 6 3/4 (Pas.) h:64 km ca. H=09 37 38.6			
		USCGS			
	2. iP	NEZ	16	22	48.8
		P:N,E,D			
	2. iP	NEZ	17	28	07.2
	iS				15.5
		P:N,E,C			
	2. P	Z	17	46	20.9
	i	Z			31.4
	i	E			33.5
	e	E		49	16
	i	E			41
		25.7 N., 129.2 E. Ryukyu Is. h:81 km ca. H=17 43 18.2			
		USCGS			
	2. e	E	20	10	25 ca.
	2. P	Z	22	00	36.6

Date	Phase	Comp.	Time(GMT)		
			h	m	s
2.	PKP	Z	22	49	57
	24.2 S., 69.6 W. Northern Chile. h:45 km ca. H=22 29 59.8				
					USCGS
3.	iP	NEZ	01	20	03.8
	S	NE			18
	P:S,E,C				
3.	iP	NEZ	04	29	53.5
	S	E			34 38
	G	E			36 08
	eL	E			37 29
	ScS	Z			40 57
	P:S,E,C Mag. 7 (Mat.) 42.8 N., 104.5 E. Outer Mongolia. h:45 km ca. H=04 24 17.5				
					USCGS
3.	iP	EZ	07	14	31.8
	i	N			32.6
	PoP	Z			17 00
	ScP	Z			20 27.4
	eL	E			26 40
	P:E,D 52.5 N., 177.3 W. Andreanof Is., Aleutian Is. h:79 km ca. H=07 07 42.7				
					USCGS
3.	P	EZ	09	17	07.9
	PP	Z			44.6
	S	E			21 01
	L	E			27 59
	L	Z			28 57
	21.1 N., 121.1 E. Off south coast of Formosa. h:35 km ca. H=09 12 19.0				
					USCGS
3.	iP	NEZ	17	48	32.8
	S	NE			57
	P:S,E				
3.	P	NEZ	18	02	05.6
	i	EZ			09.1
	S	E			06 54
	L	E			09 49
	L	N			10 04
	Lr	Z			12 17
	43.1 N., 104.3 E. Outer Mongolia. h:25 km ca. H=17 56 28.0				
					USCGS
3.	eP	Z	20	32	45 ca.
	eS?	E			38 13
	(cont.)				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
	continued				
	L	E	20	40	42
	Lr	Z			46 42
	76.7 N., 131.1 E. Laptev Sea. h:28 km ca. H=20 21 01.3				
					USCGS
3.	P	Z	21	55	07.9
	4.2 S., 152.1 E. New Ireland region. h:40 km ca. H=21 47 11.6				
					USCGS
3.	iP	EZ	22	25	01.9
	i	N			50.5
	P:W				
4.	P	NEZ	11	28	36.6
	P:S,E				
4.	P	NZ	13	35	50.3
	i	E			50.6
	i	Z			36 31.8
	P:S,D 5.3 S., 148.8 E. New Britain region. h:43 km ca. H=13 27 48.5				
					USCGS
4.	P	Z	15	54	45.7
	1.1 N., 120.6 E. Northern Celebes. h:46 km ca. H=15 47 23.0				
					USCGS
4.	iP	Z	16	21	41.1
	i	NE			41.5
	i	EZ			22 29
	S	E			45
	i	Z			46
	P:C Mag. 5 (Mat.) 32.5 N., 141.6 E. Off coast of Honshu, Japan. h:106 km ca. H=16 20 36.1				
					USCGS
4.	P	NEZ	16	37	07.3
4.	P	NE	17	04	49.8
	i	E			51.0
5.	P	N	00	05	54.4
	P:S 21.2 S., 179.0 W. Fiji Is. region. h:633 km ca. H=23 55 39.3				
					USCGS

Date	Phase	Comp.	Time(GMT)		
			h	m	s
✓ 5.	P	Z	08	44	24
	i	E			24.9
	i	NEZ			27.7
	L	N	55	47	
	43.0 N., 104.3 E. Outer Mongolia. h:59 km ca. H=08 38 49.5				
	USCGS				
5.	P	E	11	39	35.6
	i	E			51.7
5.	iP	NE	17	55	00.8
	i	E			01.8
	e	E	18	01	57
	P:S,C 54.8 N., 161.2 E. Near east coast of Kamchatka. h:25 km ca. H=17 49 42.6				
	USCGS				
✓ 5.	iP	Z	18	12	46.2
	i	NE			46.7
	e	E	17	17	
	eL	E	19	49	
	P:C 54.3 N., 161.2 E. Near east coast of Kamchatka. h:25 km ca. H=18 07 26.7				
	USCGS				
5.	eP	Z	23	52	15
	43.2 N., 103.8 E. Outer Mongolia. h:61 km ca. H=23 46 29.8				
	USCGS				
6.	iP	Z	03	41	02.7
	eL	E			47 31
	eL	N			48
	L	E	48	31	
	P:C 42.9 N., 104.5 E. Outer Mongolia. h:55 km ca. H=03 35 30.6				
	USCGS				
6.	P	Z	04	05	25
	42.9 N., 104.1 E. Outer Mongolia. h:68 km ca. H=03 59 52.6				
	USCGS				
6.	iP	NE	06	12	34.5
	i	Z			47.7
	P:S				
6.	iP	NEZ	06	40	42.2
	i	Z			45.0
	P:S,C				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
✓ 6.	iPKP	Z	09	15	57.7
	i	NEZ			16 04.5
	e	E			40 48
	e	E			44 36
	Lr	E	10	06	33
	Lr	Z			35
	P:C Mag. $6\frac{1}{4}$ (Mat.) 8.5 N., 82.7 W. Near coast of Panama. h:116 km ca. H=08 56 16.5				
	USCGS				
6.	P	Z	11	11	23.2
	i	NE			23.5
	i	Z			34.0
6.	iP	Z	12	27	54.2
	i	NE			54.5
	P:D 20.5 S., 178.8 W. Fiji Is. region h:616 km ca. H=12 17 38.7				
	USCGS				
6.	e	E	18	31	14
	e	N			32 56
✓ 6.	P	NZ	21	43	21
	i	N			23.2
	eS?	N			49 35
	e	E			55 01
	e	E	22	05	00
	e	N			02
	eL	E			08 28
	eL	N			48
	Mag. $5\frac{1}{4}$ - $5\frac{1}{2}$ (Mat.) 2.6 S., 101.5 E. Sumatra. h:54 km ca. H=21 34 09.3				
	USCGS				
7.	P	E	02	56	04.7
	S	Z			30.1
7.	P	Z	03	07	58.3
	i	N			58.7
	i	E			08 02.0
	i	E			56
7.	iP	Z	03	40	51.0
	i	NE			51.1
	S	EZ			41 05
	i	Z			06
	P:D				
7.	P	NEZ	04	24	16.0
	P:N				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
7.	eP	Z	07	51	35
	62.5 N., 150.4 W. Alaska. h:64 km ca. H=07 42 42.5				
					USCGS
7.	P	Z	16	26	25.7
	i	N			27
	eS	N	32	24	
	e	E	35	23	
	e	N	38	37	
	eL	N	45	14	
	1.2 N., 121.8 E. Celebes Sea. h:40 km ca. H=16 19 09.2				
					USCGS
7.	iP NZ, P	E	17	18	19.2
	iS	E			36.2
	i	Z			37.0
	P:N,C				
7.	iP	NEZ	18	35	16.5
	S	Z			17.8
	P:S,E,D				
8.	iP Z, P	E	01	34	32.1
	i	N			32.7
	P:E,D 21.8 S., 179.4 W. Fiji Is. region. h:685 km ca. H=01 24 18.9				
					USCGS
8.	P	Z	05	41	18.9
8.	eP	Z	06	09	13
8.	eL	Z	10	17	52
	e	N		18	09 ca.
	e	E		20	56 ca.
	e	N		22	24 ca.
	e	E		23	24 ca.
	eL	E		27	09
	7.8 N., 127.2 E. Mindanao, P. I. h:25 km ca. H=10 00 59.7				
					USCGS
8.	ePKP	Z	11	40	09.0
	i	Z			21.8
	i	E			22.2
	i	N			23.2
	31.6 S., 68.9 W. San Juan Province, Argentina. h:140 km ca. H=11 20 07.8				
					USCGS
8.	eP	Z	14	44	42
	30.2 S., 178.2 W.				

(cont.)

Date	Phase	Comp.	Time(GMT)		
			h	m	s
	continued				
	Kermadec Is. region. h:70 km ca. H=14 32 45.8				
					USCGS
8.	e	E	15	49	41
8.	iP EZ, P	N	17	26	17.1
	i	N			26.7
	e	N	27	17	
	e	Z			22
	P:S,E,D				
8.	eP	Z	19	18	31
	9.8 N., 125.5 E. Leyte, P. I. h:77 km ca. H=19 12 11.0				
					USCGS
8.	eP	Z	21	44	29
	6.2 S., 129.6 E. Banda Sea. h:25 km ca. H=21 36 22.5				
					USCGS
9.	P	Z	00	47	27.4
	P:D 20.4 S., 176.2 W. Tonga Is. h:137 km ca. H=00 36 18.2				
					USCGS
9.	P	NEZ	01	34	03
9.	eP	Z	02	27	22
9.	iP NZ, P	E	07	07	10.5
	i	E			11.0
	i	N	08	40.9	
	P:N,E,D				
9.	P	Z	10	28	25
	i	E			25.7
	i	N			25.8
	i	NE	29	04.5	
9.	eP	Z	16	11	50
	i	NZ	12	43	
9.	iP	NZ	23	18	15.2
	S	EZ			30.3
	P:N,C				
10.	P	NEZ	03	48	53
	S	NEZ		49	14
10.	P	Z	06	04	47.7
	i	NE			48.2
10.	P	Z	06	33	12

Date	Phase	Comp.	Time(GMT)		
			h	m	s
✓ 11.	P	NEZ	19	02	56
	i	N		04	43
	S	NE		10	26
	i	N			43
	L	EZ		17	40
	L	N			50
	L	N		19	48
	Mag. 6 - 6 $\frac{1}{4}$ (Mat.)				
	15.7 S., 166.9 E.				
	New Hebrides Is. region.				
	h:133 km ca.				
	H=18 53 09.2 USCGS				
12.	P	Z	02	03	27.9
	i	Z		04	55
12.	e	N	04	36	48
	10.7 S., 164.8 E.				
	Santa Cruz Is. region.				
	h:198 km ca.				
	H=04 18 40.5 USCGS				
12.	P	Z	07	51	34
	i	N			37
	i	N			54
	S	EZ		52	03
12.	P	NZ	09	42	52
	i	E		43	00
	S	N			22
	i	E			27
	P:N				
12.	iP	NEZ	10	09	59.2
	S	NE		10	12.0
	P:N,E,D				
12.	eL	E	10	37	30
	28.8 S., 167.6 E.				
	Near Norfolk Is.				
	h:54 km ca.				
	H=10 04 02.0 USCGS				
12.	P	NE	11	30	02
	i	NZ		31	02
	e	E		35	11
✓ 13.	P	Z	07	49	18
	i	Z			22.2
	i	E			27
	i	NEZ			43
	S	N	08	00	11
	iScS	N			23
	i	EZ			36
	Lq	E		13	33
	L	E		15	03
	i	Z		20	25
	L	Z		29	41
	L	Z		42	19
	Mag. 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$ (Mat.)				
	(cont.)				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
	continued				
	52.1 S., 160.9 E.				
	Macquarie Is.				
	h:29 km ca.				
	H=07 36 13.8 USCGS				
13.	P	Z	08	48	46
	L	Z		09	01 12
✓ 13.	iP	EZ	10	07	40.3
	i	N			41
	i	NE			43
	i	Z		09	17
	S	E	10	09	23
	i	NE			47
	P:W,C				
	Mag. 5 $\frac{1}{2}$ (Mat.)				
	27.7 N., 142.4 E.				
	Bonin Is. region.				
	h:28 km ca.				
	H=10 05 24.3 USCGS				
✓ 14.	P	Z	01	06	43.2
	i	N			45.7
	S	E		14	18
	L	E		54	03
	P:D				
	Mag. 6 - 6 $\frac{1}{4}$ (Mat.)				
	10.8 S., 165.4 E.				
	Santa Cruz Is.				
	h:65 km ca.				
	H=00 57 25.0 USCGS				
14.	eP	Z	04	04	54
	e	N		07	29
	26.6 N., 130.3 E.				
	Ryukyu Is.				
	h:25 km ca.				
	H=04 02 02.1 USCGS				
14.	eL	E	04	54	13
14.	eL	E	05	30	17
14.	P	Z	14	36	24
	51.9 S., 160.7 E.				
	Macquarie Is. region.				
	h:77 km ca.				
	H=14 23 25.7 USCGS				
14.	P	EZ	14	53	16.6
	i	N			18
	eL	N	15	06	23
	eL	E		10	18
	P:C				
14.	e	N	22	10	58
✓ 14.	iP	NZ	23	58	15.9
	i	E			16.1
	i	Z			17.5
	(cont.)				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
continued					
L	E		19	10	30
L	N			11	19
Lr	N			14	17
Mag. $5\frac{1}{4}$ - $5\frac{1}{2}$ (Mat.)					
11.3 N., 141.2 E.					
Mariana Is.					
h:77 km ca.					
H=18 59 40.8 USCGS					
19.	P	NEZ	21	24	21.0
	S	NE			45.3
19.	P	Z	22	23	24
	e	E		26	20
	eS	N		31	03
	e	NE.			24
	L	E		36	42
	L	N		37	15
12.6 S., 166.8 E.					
Santa Cruz Is.					
h:66 km ca.					
H=22 13 58.8 USCGS					
19.	P	NEZ	22	45	55.3
	S	NE			59.4
P:N,W,C					
20.	eP	E	00	17	15
	S	E			19
20.	eP	Z	02	56	35
20.	e	E	05	21	35
20.	eP	E	06	08	42
	i	EZ			47
	i	N			49
25.1 N., 122.9 E.					
Near north coast of Formosa.					
h:60 km ca.					
H=06 04 33.6 USCGS					
20.	eP	Z	06	39	00
	e	Z		40	37
	e	Z		41	25
20.	eP	Z	07	13	55
20.	P	Z	11	52	18.4
	eL	E		12	36 15
21.1 S., 179.1 W.					
Fiji Is.					
h:662 km ca.					
H=11 42 04.9 USCGS					
20.	P	Z	22	51	31
	S	NE		52	11
21.	P	Z	10	08	25
	i	N			46.8
	i	NZ		10	14.7

Date	Phase	Comp.	Time(GMT)		
			h	m	s
21.	iP	NZ	14	48	35.2
	i	Z		49	05
	pP	E			48.2
	eS	NE		55	33
P:S					
61.6 N., 152.3 W.					
Alaska.					
Mag. $5\frac{3}{4}$ (Pas.)					
h:169 km ca.					
H=14 40 01.6 USCGS					
21.	eP	NZ	20	59	11
	i	E			13.2
	i	NZ			16.1
	i	Z			30.4
	eS	NE	21	03	30
	eL	E		04	48
	eL	N		05	28
11.2 N., 141.3 E.					
Mariana Is. region.					
h:72 km ca.					
H=20 53 51.8 USCGS					
21.	ePS	N	22	57	37
	eSS	N	23	02	36
	eL	E		13	41
	eL	N		19	51
62.5 S., 167.1 E.					
North of Balleny Is.					
h:29 km ca.					
H=22 29 54.9 USCGS					
21.	eP	EZ	23	01	18
	iS	NZ			53.9
22.	iP	Z	02	36	47.1
	i	N			47.6
P:D					
29.8 S., 179.6 W.					
Kermadec Is. region.					
h:379 km ca.					
H=02 25 29.3 USCGS					
22.	P	EZ	03	11	06
	i	Z		12	31.4
	ePP	Z		13	11
	eS	E		18	11
	e	N			14
	eSS	E		21	48
	eL	E		25	29
	L	N		26	33
Mag. $5\frac{3}{4}$ (Mat.)					
9.8 N., 94.2 E.					
Nicobar Is.					
h:60 km ca.					
H=03 02 29.2 USCGS					
22.	iP	Z	04	06	48.5
	i	E			49.1
	i	Z		07	14.6
(cont.)					

Date Phase Comp. Time(GMT)
 continued h m s
 P:D
 16.1 S., 72.9 W.
 Near coast of southern Peru.
 h:147 km ca.
 H=03 47 21.7 USCGS

22. eP EZ 06 43 25
 e N 35
 e S 53 18
 eLq E 07 04 36
 Lr N 09 24

Mag. 5 3/4 - 6 (Mat.)

30.8 S., 177.1 W.

Kermadec Is. region.

h:46 km ca.

H=06 31 21.5 USCGS

22. iP EZ 08 55 56.5
 i N 56.7
 S NE 56 01.0
 P:W,D

22. PKP Z 12 41 40
 i Z 54

30.5 S., 71.5 W.

Near coast of Chile.

h:110 km ca.

H=12 21 33.0 USCGS

22. eP NZ 14 24 09
 eS E 34 00
 eLq E 44 44
 eLr E 49 37

27.8 S., 176.1 W.

Kermadec Is. region.

h:60 km ca.

H=14 12 18.7 USCGS

22. iP Z 14 35 22.2
 i Z 35.5
 iPcP Z 37 23.0
 P:C

53.7 N., 168.1 W.

Fox Is., Aleutian Is.

h:57 km ca.

H=14 27 40.3 USCGS

22. eP Z 14 41 02

22. iP NZ 16 36 39.6
 i Z 53.8
 iS N 37 04.6
 i E 05
 P:S,C

22. iP NZ 21 10 26.1
 i E 26.3
 esP Z 13 13
 iScP Z 15 09.0
 iS NE 16 39

(cont.)

Date Phase Comp. Time(GMT)
 continued h m s
 ScS or
 sS NE 21 19 37

P:N,C

Mag. 6 - 6 1/2 (Mat.)

6.8 S., 155.3 E.

Solomon Is. region.

h:469 km ca.

H=21 02 41.1 USCGS

23. iP NEZ 09 50 49.0
 e Z 51 06
 PcP Z 59.9

P:N,E,C

3.3 S., 101.9 E.

Near coast of Sumatra.

h:134 km ca.

H=09 41 48.4 USCGS

23. iP Z 10 54 03.0
 e Z 14
 eL NE 11 00.9

P:C

8.2 N., 125.7 E.

Mindanao, P. I.

h:67 km ca.

H=10 47 57.9 USCGS

23. eP EZ 16 23 35
 i N 36.1

10.6 S., 164.3 E.

Santa Cruz Is.

h:82 km ca.

H=16 14 22.0 USCGS

23. iP NEZ 19 18 33.7
 P:S,E,D

27.8 S., 177.2 W.

Kermadec Is. region.

h:261 km ca.

H=19 07 06.1 USCGS

23. iP Z 19 35 22.1
 i NE 22.4
 i N 36 15.6
 i Z 37 09.0
 P:C

23. iP EZ 22 39 29.1
 i N 29.7
 e Z 39
 eS N 50
 P:W,C

24. iP EZ 00 36 09.4
 i N 09.9
 iS EZ 25.7
 i N 26.4
 P:E,D

Date	Phase	Comp.	Time(GMT)		
			h	m	s
24.	P eS P:C	NEZ NZ	03	50	01 10
24.	eP 17.6 S., 66.6 E. Indian Ocean. h:100 km ca. H=03 55 33.7	Z	04	08	09
24.	eP S	NZ N	08	46	57 16.3
24.	iP i eS P:D	Z N NE	09	03	08.7 08.9 49
24.	iP i P:S,W,D	NEZ E	15	38	29.9 10
24.	iP eS P:N,E,D	NEZ N	16	35	51.6 30
24.	eP 38.4 S., 143.6 E. Victoria, Australia. h:77 km ca. H=16 42 14.7	Z	16	53	54
25.	P i S i P:W	EZ N N E	03	39	20.7 21.4 42 45.2
25.	P eS? i i 29.0 N., 142.8 E. Bonin Is. h:25 km ca. H=05 21 03.1	Z E N NE	05	23	15 58 06 35
25.	eP i	NE,P Z E	08	17	27 21
25.	iP S P:N	NZ NEZ	14	13	00.2 20
25.	iP i P:N,D 54.6 N., 161.6 E. Near east coast of Kamchatka. h:37 km ca. H=20 27 34.1	NZ Z	20	32	52.3 18.5

Date	Phase	Comp.	Time(GMT)		
			h	m	s
25.	iP i P:S,D	NEZ Z	22	48	17.3 44.2
26.	iP S P:N,E,C Mag. $6\frac{1}{4}$ - $6\frac{1}{2}$ (Mat.) 33.8 N., 136.2 E. Near south coast of Honshu, Japan. h:109 km ca. H=01 44 48.7	NEZ N	01	45	31.3 06
26.	eP	Z	04	52	30
26.	PKP? eL eL	Z E N	05	00	40 20 05 ca.
26.	eP	Z	13	56	14
					49.4 S., 164.3 E. South of South Island, New Zealand. h:37 km ca. H=13 43 12.9
26.	iP i P:D	Z,P NE N	20	52	17.4 36.7
26.	iP i P:N,C	NZ E	22	47	02.3 02.7
26.	P iS	NEZ N	23	03	55 19
27.	P i eS?	Z NEZ N	05	18	40 42.0 25
27.	eP? i	EZ Z	08	47	27 34.6
27.	P eS eL	Z NE NE	10	46	47 56 05 ca.
					Mag. $5\frac{3}{4}$ (Mat.) 41.3 N., 124.9 W. Off coast of northern California. h:30 km ca. H=10 35 28.0
27.	P	Z	11	53	50
27.	eP i S e	N Z N E	12	55	57 59.7 17 18
27.	eP i eS	EZ N E	13	59	00 04.1 55

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				continued	h	m
27.	eP	NEZ	16	04	17		eL	N	11	46.1	
	eS	NEZ			34		eL	E		46	20
							eL	Z			48
27.	PKP 1	Z	18	29	09.1		Mag. 6 3/4 (Mat.)				
	i	N			09.9		44.8 S., 75.6 W.				
	ipPKP 2	Z			34		Near coast of southern Chile.				
	eSSS	E			57		h:30 km ca.				
	eL	E	19	11	25 ca.		H=10 36 40.0 USCGS				
	eL	N			44.1						
							29. eP Z 13 50 29				
							i N 30.7				
							eS E 56 48				
							eL N 14 00 17				
							eL E 22				
							5.5 S., 146.1 E.				
							Near south coast of				
							New Guinea.				
							h:57 km ca.				
							H=13 42 34.6 USCGS				
27.	iP	NEZ	21	44	44.6						
	S	NE			50.7						
	P:N,E										
27.	iP	NEZ	22	47	16.7						
	S	N			20.4						
	i	Z			20.6						
	P:N										
28.	iP	NEZ	04	32	09.9						
	P:S,W,C										
28.	iP	Z	19	54	02.5						
	i	N			02.7						
	P:D										
							29. iP Z,P NE 16 08 11.7				
							eS NE 39				
							P:C				
							29. P NZ 17 47 35				
							29. eL E 19 08 14				
							35.3 N., 22.6 E.				
							Near Crete, Mediterranean Sea.				
							h:54 km ca.				
							H=18 19 41.6 USCGS				
28.	iP	NZ	23	17	56.5						
	P:S,C										
29.	iP	Z	00	35	44.8						
	i	N			45.0						
	S	Z			36						
	i	NEZ			01.7						
	P:D				02.2						
29.	eP	NZ	06	13	22						
	e	E			25						
	eS	N			21						
	eL	N			31						
	eL	E			42						
							29. PKP Z 19 21 22.7				
							i Z 27.2				
							i N 27.6				
							eL NE 20 03 50				
							eL E 11 38				
							18.8 S., 69.4 W.				
							Northern Chile.				
							h:39 km ca.				
							H=19 01 38.1 USCGS				
29.	eP	NZ	09	45	58						
29.	ePKP	Z	10	56	34.						
	ePP	EZ	11	00	22						
	eSKSP	NE			10						
	eSS	N			20						
	G	E			38						
							30. iP Z 05 38 14.0				
							P:C				
							9.6 S., 121.0 E.				
							Sawoe Sea.				
							h:53 km ca.				
							H=05 29 28.6 USCGS				
							30. iP NEZ 06 23 28.7				
							i EZ 31.2				
							iS Z 40.0				
							i NE 41				
							P:N,E,D				

Date	Phase	Comp.	Time(GMT)		
			h	m	s
30.	iP S P:N,E,D	NEZ NEZ	09	46	05.0 26.2
30.	iPKP 1 i i iPKP 2 PKP:C	Z E N Z	11	23	22.0 22.7 26.0 48.6
	16.9 S., 70.0 W. Southern Peru. h:47 km ca. H=11 03 36.8 USCGS				
30.	iP E,P Z i iS P:E	Z N NE	14	45	29.5 32.5 42.8
30.	eP iS i	Z E NZ	15	35	04 07.9 08.5
30.	P S	NEZ NZ	16	37	42 55
30.	P i iS? i	Z NEZ Z E	18	25	36.5 38.7 58.2 59.2
30.	P S	EZ Z	19	11	06 15.8
30.	eP	Z	19	45	37
30.	iP iS P:S,E,D	NEZ NEZ	22	12	37.0 53.3
31.	iP i S P:C	Z NE NE	04	25	46.5 46.8 26 05
31.	iP i S P:D	Z NE NEZ	05	18	33.5 33.8 48.5
31.	iP EZ,P N S P:E,D	N NE	08	07	24.5 38
31.	iP S? P:N,E,D	NEZ N	15 16	58 00	39.0 12

Date	Phase	Comp.	Time(GMT)		
			h	m	s
31.	PKP i eSS eLq eLq eLr PKP:D	Z Z NE E N NEZ	18	28	02 15 52 43 ca. 19 11 20 39 18 32 ca.
	Mag. $6\frac{1}{4}$ (Mat.) 43.9 S., 75.0 W. Near coast of southern Chile. h:92 km ca. H=18 08 12.3 USCGS				
31.	P i P:W,D	EZ N	19	18	43 44.2
31.	eP epP	NZ NZ	20	07	13 39
	6.6 S., 129.1 E. Banda Sea. h:112 km ca. H=19 59 08.3 USCGS				

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Director