





Matsushiro Seismological Observatory, Japan

Seismological Bulletin

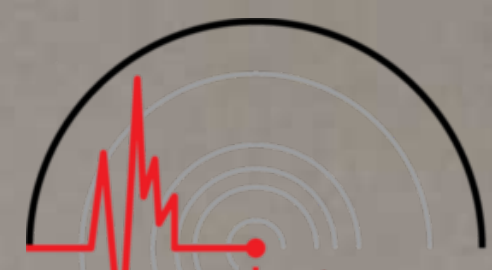
Latitude 36° 32' 30" N  
Longitude 138° 12' 32" E  
Elevation 440 M

Instrumental Constants

Instruments	Comp.	Period (sec)		Damping ratio		Magnification
Benioff Seismograph (Short Period)	N	T <sub>1</sub> = 1.0	T <sub>2</sub> = 0.23	h <sub>1</sub> = 0.63	h <sub>2</sub> = 1.7	103,000 (max)
	E	T <sub>1</sub> = 1.0	T <sub>2</sub> = 0.22	h <sub>1</sub> = 0.70	h <sub>2</sub> = 1.6	106,000 (max)
	Z	T <sub>1</sub> = 1.0	T <sub>2</sub> = 0.21	h <sub>1</sub> = 0.72	h <sub>2</sub> = 1.2	131,000 (max)
Benioff Seismograph (Long Period)	N	T <sub>1</sub> = 1.0	T <sub>2</sub> = 70	h <sub>1</sub> = 0.63	h <sub>2</sub> = 5.9	7,330 (max)
	E	T <sub>1</sub> = 1.0	T <sub>2</sub> = 62	h <sub>1</sub> = 0.70	h <sub>2</sub> = 5.6	9,640 (max)
	Z	T <sub>1</sub> = 1.0	T <sub>2</sub> = 64	h <sub>1</sub> = 0.72	h <sub>2</sub> = 7.3	7,590 (max)
Short Period Seismograph	Z	T <sub>1</sub> = 1.0	T <sub>2</sub> = 2.32	h <sub>1</sub> = 1.4	h <sub>2</sub> = 1.2	32,000 (max)
Galitzin Seismograph	N	T <sub>1</sub> = 15	T <sub>2</sub> = 100	h <sub>1</sub> = 1	h <sub>2</sub> = 1.2	1,350 (max)
	E	T <sub>1</sub> = 15	T <sub>2</sub> = 100	h <sub>1</sub> = 1	h <sub>2</sub> = 1.1	1,640 (max)
	Z	T <sub>1</sub> = 7.5	T <sub>2</sub> = 100	h <sub>1</sub> = 0.76	h <sub>2</sub> = 0.57	860 (max)
Wood-Anderson Seismograph	N	0.3		0.3		1,050
	E	0.3		0.3		1,200
1000 kg Long Period Seismograph	N	33.0		0.60		100
	E	30.0		0.62		100



September, 1964



International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
1.	iP S P; C	Z NE	00 00 20.6 28				
1.	P e	Z E	01 25 01 29 19				
1.	iP S P; C	Z NE	10 47 26.5 50	1.	P i i i	EZ N N E Z	17 30 24 24.4 31 09 14 25
1.	iP i	Z NEZ	11 43 22.4 24.6	1.	P i i S	Z NEZ N EZ	21 04 43 44.4 05 08 09
1.	iP i ePP ePPP S eScS eLq eLr eLr P; E, C	EZ N E E NE N E E N	13 30 06.7 06.9 31 47 32 17 35 11 40 08 42 18 44 51 53	1.	e iP i S P; S, C	E NZ NZ NE	21 23 00 21 51 32.4 32 55
				1.	eP eS eL	Z E NE	22 25 32 29 48 31 20
				1.	eP S	Z NEZ	23 42 15 19
				2.	e	E	02 33 40
				2.	iP i i i i i P; E, C	EZ NEZ NE Z NZ Z	09 32 21.3 23.5 24.9 26.4 50 54
							35.4 N., 135.0 E. West of Shiga Pref. Japan, h: 10 km ca. JMA
1.	P i P; D	Z N	14 24 45.4 49	2.	iP S P; N	N NE	14 26 23.4 48
1.	P i i i i i	Z N E E Z E	15 26 40 41 27 04.5 15.0 16 26.0	2.	P	Z	18 31 20
1.	P	Z	15 54 50				7.8 N., 73.3 W. Northern Colombia, h: 112 km ca. H= 18 12 22.9 USCGS
1.	iP i S P; D	Z NE NEZ	16 24 19.2 19.4 39	2.	P i	Z NZ	19 31 42 32 11
1.	P	Z	16 57 49	2.	iP S P; C	Z NEZ	21 07 29.6 39
1.	P	NZ	17 00 16				
1.	iP PcP S eL eL eL P; N, E, D	NEZ Z E N E E	17 24 05.4 26 15.4 30 04 33 43 34 13 37 30				

(cont.) -1-

International Seismological Centre  
Tokyo, Japan

Seismological Bulletin

Latitude  
Longitude  
Elevation

Instrumental Constants

Station	Period (sec)	Comp.	Damping ratio
1	0.1	Z	0.1
1	0.2	Z	0.1
1	0.3	Z	0.1
1	0.4	Z	0.1
1	0.5	Z	0.1
1	0.6	Z	0.1
1	0.7	Z	0.1
1	0.8	Z	0.1
1	0.9	Z	0.1
1	1.0	Z	0.1
1	1.1	Z	0.1
1	1.2	Z	0.1
1	1.3	Z	0.1
1	1.4	Z	0.1
1	1.5	Z	0.1
1	1.6	Z	0.1
1	1.7	Z	0.1
1	1.8	Z	0.1
1	1.9	Z	0.1
1	2.0	Z	0.1
1	2.1	Z	0.1
1	2.2	Z	0.1
1	2.3	Z	0.1
1	2.4	Z	0.1
1	2.5	Z	0.1
1	2.6	Z	0.1
1	2.7	Z	0.1
1	2.8	Z	0.1
1	2.9	Z	0.1
1	3.0	Z	0.1
1	3.1	Z	0.1
1	3.2	Z	0.1
1	3.3	Z	0.1
1	3.4	Z	0.1
1	3.5	Z	0.1
1	3.6	Z	0.1
1	3.7	Z	0.1
1	3.8	Z	0.1
1	3.9	Z	0.1
1	4.0	Z	0.1
1	4.1	Z	0.1
1	4.2	Z	0.1
1	4.3	Z	0.1
1	4.4	Z	0.1
1	4.5	Z	0.1
1	4.6	Z	0.1
1	4.7	Z	0.1
1	4.8	Z	0.1
1	4.9	Z	0.1
1	5.0	Z	0.1
1	5.1	Z	0.1
1	5.2	Z	0.1
1	5.3	Z	0.1
1	5.4	Z	0.1
1	5.5	Z	0.1
1	5.6	Z	0.1
1	5.7	Z	0.1
1	5.8	Z	0.1
1	5.9	Z	0.1
1	6.0	Z	0.1
1	6.1	Z	0.1
1	6.2	Z	0.1
1	6.3	Z	0.1
1	6.4	Z	0.1
1	6.5	Z	0.1
1	6.6	Z	0.1
1	6.7	Z	0.1
1	6.8	Z	0.1
1	6.9	Z	0.1
1	7.0	Z	0.1
1	7.1	Z	0.1
1	7.2	Z	0.1
1	7.3	Z	0.1
1	7.4	Z	0.1
1	7.5	Z	0.1
1	7.6	Z	0.1
1	7.7	Z	0.1
1	7.8	Z	0.1
1	7.9	Z	0.1
1	8.0	Z	0.1
1	8.1	Z	0.1
1	8.2	Z	0.1
1	8.3	Z	0.1
1	8.4	Z	0.1
1	8.5	Z	0.1
1	8.6	Z	0.1
1	8.7	Z	0.1
1	8.8	Z	0.1
1	8.9	Z	0.1
1	9.0	Z	0.1
1	9.1	Z	0.1
1	9.2	Z	0.1
1	9.3	Z	0.1
1	9.4	Z	0.1
1	9.5	Z	0.1
1	9.6	Z	0.1
1	9.7	Z	0.1
1	9.8	Z	0.1
1	9.9	Z	0.1
1	10.0	Z	0.1



September, 1964



International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
2.	iP S P: N, W, C	NEZ NE	21 13 44.7 14 05		P: D 17.9 S., 178.0 W. Fiji Is. region. h: 567 km ca. H= 12 57 22.3		USCGS
2.	eP i	Z NZ	21 33 31 35	3.	P S	Z NEZ	15 37 00 27
2.	P	Z	21 42 38	3.	P i P: C	Z N	16 05 12.0 51
			18.6 S., 169.4 E. New Hebrides Is. h: 218 km ca. H= 21 32 39.6				USCGS
3.	P	Z	02 10 26.5	3.	iP P: N, D	NZ	16 53 15.5
			12.2 N., 87.0 W. Near coast of Nicaragua. h: 108 km ca. H= 01 55 32				USCGS
3.	P i	Z EZ	03 11 29 50	3.	P eL eL eL	Z E E N	17 03 58 26 42 30 25 35
3.	P i	N Z	04 56 09 10		Mag. 5-5½ (Mat.) 15.2 S., 173.5 W. Tonga Is. h: 33 km ca. H= 16 53 55.4		USCGS
3.	eL	E	06 07 46	3.	P	Z	17 23 30.5
			50.5 N., 129.5 W. Vancouver I. region. h: 29 km ca. H= 05 31 15.0				USCGS
3.	P	Z	08 31 01	3.	iP iS P: N, C	NZ Z	17 23 35.1 24 07.4
			53.2 N., 162.4 E. Off east coast of Kamchatka. h: 33 km ca. H= 08 25 47				USCGS
3.	PKP1 PKF2 ePPP e	Z Z E E	10 26 50 27 10.3 34 18 46.5	3.	eP i i S P: C	Z N N NEZ	18 36 40 48 19 53 28.6 29.5 58 54 06
			30.9 S., 68.4 W. San Juan Province, Argentina. h: 113 km ca. H= 10 06 55.9				USCGS
3.	P	Z	10 32 47	3.	P e PS	Z E E	21 27 47 34 45 33 55
			10.4 S., 160.5 E. Solomon Is. h: 57 km ca. H= 10 23 47.8				USCGS
3.	iP	Z	11 34 25.4	3.	e e	E E	21 57 33 22 00 36
			28.4 S., 177.1 W. Kermadec Is. h: 312 km ca. H= 11 23 03				USCGS
3.	iP i	Z E	13 07 26.7 28.3	3.	iP i P: D	Z NE	22 27 10 10.5
							USCGS
							6.4 S., 128.5 E. Banda Sea. h: 218 km ca. H= 22 19 23.1

(cont.)



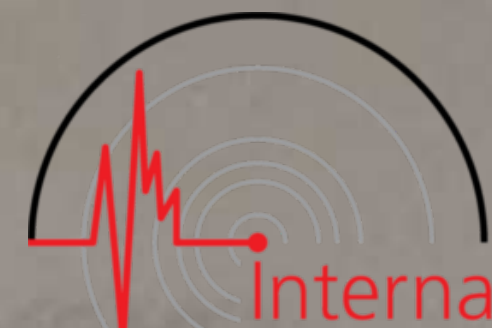
September, 1964



International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
3.	P e	NEZ L	22 34 36 38 23	4.	PKP Z	28.5 S., 70.3 W. Central Chile. h: 44 km ca. H= 09 03 00.6	09 23 13 USCGS
3.	eP S?	Z NZ	23 46 19 43	4.	iP S	NEZ E	09 26 22.8 33
4.	iP P: D	Z	00 16 44.6	4.	iP i esSS e	Z E E E	09 56 38.9 39 10 21 00 33.0
4.	PKP e e e eL eL	Z NZ E N N E	03 47 54 50 30 42 51 28 04 13 08 13	4.	P Z	18.3 S., 69.0 W. Northern Chile. h: 101 km ca. H= 09 36 58.7	USCGS
4.	eP eS eL	Z E E	03 51 00 04 00 17 13 30	4.	P Z	24.2 N., 108.6 W. Gulf of California. h: 33 km ca. H= 09 50 06.6	USCGS
4.	P S	NZ NE	04 06 24 49	4.	iP i ePP PcP e i eS i L e eL	NZ E N Z NE Z NE N E E N	10 41 50.5 51.5 43 32 52 47 28 42 54 48 40 50 19 51 50 52 00
4.	P i	NZ NE	04 46 29 48	4.	P Z	4.0 S., 131.4 E. West New Guinea region. h: 33 km ca. H= 10 34 13.1	USCGS
4.	P S	NEZ NE	05 51 26 49	4.	P Z	17.6 S., 168.6 E. New Hebrides Is. h: 33 km ca. H= 11 39 24.0	USCGS
4.	P i i	NEZ N N	07 23 23 24.7 39	4.	iP S	NEZ EZ	13 51 02.5 36
4.	iP P: S, D	NZ	08 17 29.0	4.	P i	NZ E	14 13 24 35
4.	iP i P: S, E, C	NEZ NZ	09 17 10.0 19.0				





International  
Seismological  
Centre

September , 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
4.	iP Z P NE P: D		15 01 02.0		i S i Lq Lr Lr	Z E E E Z N	03 05 23 08 12 46 12 00 16 00 30
							Mag. 6 $\frac{1}{2}$ -6 $\frac{1}{2}$ (Mat.) 5.8 S., 154.0 E. Solomon Is. h: 69 km ca. H= 14 50 34 USCGS
4.	iP eL P: C	Z E	16 18 30.5 27 55				
							Mag. 5 (Mat.) 4.0 S., 131.5 E. West New Guinea region. h: 37 km ca. H= 16 10 53.0 USCGS
4.	P PcP eL	NEZ Z E	17 18 06 20 09 27 43				
							Mag. 5-5 $\frac{1}{2}$ (Mat.) 3.9 S., 131.5 E. West New Guinea. h: 33 km ca. H= 17 10 28.4 USCGS
4.	eP i	Z EZ	18 46 11 17				
4.	P P: N, D	NZ	23 00 56.7				
5.	iP P: D	Z	00 19 09.8				
5.	iP i P: D	Z N	00 44 50.0 50.5				
5.	eP i	Z N	01 04 40 05 17				
5.	P	Z	02 28 31				
							32.2 S., 179.5 E. South of Kermadec Is. h: 397 km ca. H= 02 17 14.4 USCGS
5.	iPKP1 i P: C	Z Z	02 29 15.0 29				
							24.4 S., 68.2 W. Chile-Argentina border region. h: 64 km ca. H= 02 09 21.4 USCGS
5.	P i PcP	Z N Z	03 01 57 58 03 53				
							(cont.)
5.	eP i	Z E	04 07 42 08 25				
5.	iP Z P NE i P: C	E	04 34 13.4 35 24				
5.	P i e eL P: C	Z Z E E	07 54 13.5 40 58 00 08 03 18				
5.	P S	Z NE	13 01 51 52				
5.	e e eSS	N E N	13 03 38 07 55 08 14				
							0.6 N., 25.9 W. Central Mid- Atlantic Ridge. h: 33 km ca. H= 12 27 22.2 USCGS
5.	eP	NZ	13 14 42				
5.	eP i	Z E	13 20 27 33				
5.	P S	NZ NE	13 26 27 54				
5.	e	N	13 34 28				
5.	iPKP1 iPKP2 P: D	Z Z	15 24 52.0 25 22				
							19.2 S., 69.3 W. Northern Chile. h: 103 km ca. H= 15 05 10.9 USCGS
5.	P i i i P: D	Z NZ N N	16 40 46.5 51.5 41 10 22				







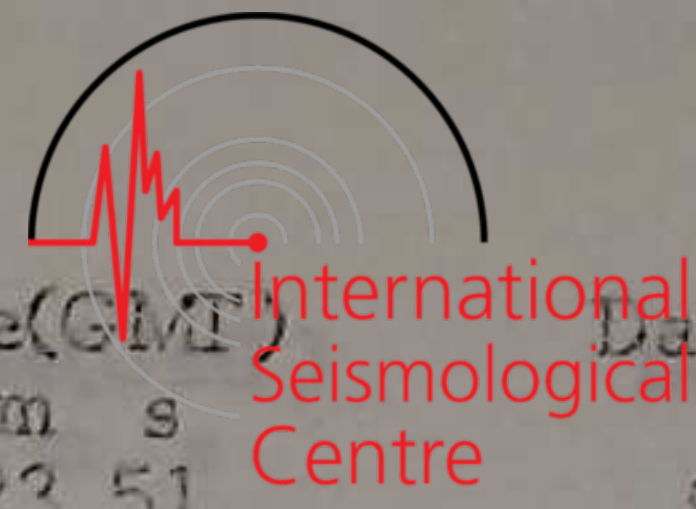
September , 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
6.	P	Z	18 46 35.5		i	N	03 31 21.5
	i	E	41		S	N	49
	i	Z	47 18		P: C		
	i	N	22				
	eS	E	51 06	7.	P	Z	03 43 42
	e	N	14		i	E	45
	e	N	18 51 27		i	NZ	48
	L	E	52 23		eS	NE	47 48
	L	N	52		eL	E	50 22
	P: C						19.9 N., 122.2 E. Philippine Is. region, h: 28 km ca. H= 03 28 50.4 USCGS
	Mag. 5 $\frac{1}{2}$ -6 (Mat.)						
	10.0 N., 140.2 E.						
	West Caroline Is.						
	h: 33 km ca.						
	H= 18 41 01.8	USCGS					
6.	iP	Z	19 06 13.7	7.	P	Z	03 57 54
	PcP	Z	07 32		i	NEZ	55
	i	Z	11 22		i	N	58 18
	P: C				eS?	E	04 01 05
	7.1 N., 93.7 E.				eL?	E	02 25
	Nicobar Is. region.						48.6 N., 153.9 E. Kurile Is. h: 100 km ca. H= 03 54 05.1 USCGS
	h: 46 km ca.						
	H= 18 57 20.4	USCGS					
6.	iP Z P N		20 42 03.4	7.	eP	EZ	04 47 19
	i	N	29		i	Z	41
	eL	E	52 38		e	Z	48 57
	P: C			7.	P	Z	07 30 28.5
	4.7 S., 144.8 E.				P: D		
	Near north coast of New Guinea.			7.	eP	Z	07 50 47
	h: 76 km ca.				e	E	08 08 39
	H= 20 34 22.2	USCGS					58.3 N., 152.0 W. Kodiak I. region. h: 33 km ca. H= 07 42 02.3 USCGS
6.	e	E	21 34 50	7.	iP	Z	11 01 37.0
	eSS	E	41 00		iS	Z	58.8
	eL	E	57 13		P: D		
	eL	N	59 21	7.	P	NZ	11 12 19
	Mag. 5 $\frac{1}{2}$ (Mat.)				i	N	47.5
	6.0 S., 107.1 W.			7.	P	Z	11 36 48
	Northern Easter I.						4.1 S., 151.7 E. New Britain region. h: 246 km ca H= 11 29 17.6 USCGS
	Cordillera.						
	h: 33 km ca.						
	H= 21 05 48	USCGS		7.	eP	Z	11 39 09
7.	iP	Z	00 09 44.2		eS	E	48 46
	P: D				eL	N	59 19
7.	iP	NZ	00 13 39.1		eLr	E	12 02 24
	S	NE	14 05.4		eL	N	06 24
	i	Z	08				15.7 N., 53.3 E. Arabian Sea. h: 33 km ca. H= 11 27 15 USCGS
	P: N, C						
7.	eP	Z	01 38 51				
	i	Z	39 30				
7.	iP	Z	03 31 20.8				
	i	E	21.0				
			(cont.)				



September, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
7.	P	Z	14 23 51	8.	iP	Z	08 07 31.0
	i	E	24 45 36		P: D		
7.	iP	Z	15 17 40.1	8.	iP	Z	08 48 12.5
	P: D				P: C		
7.	P	Z	15 22 14	8.	iP	Z	09 35 21.8
	10.1 S., 161.1 E.				i	NEZ	22.9
	Solomon Is.				i	Z	31.6
	h: 33 km ca.				i	E	37 13
	H= 15 13 14.1		USCGS		S	E	39
					P: C		
					45.6 N., 149.9 E.		
					Kurile Is.		
					h: 141 km ca.		
					H= 09 32 26.8		USCGS
7.	iP	Z	17 24 10.8				
	i	Z	35.5				
	P: C						
7.	iP	Z	19 00 57.5	8.	iP	Z	10 40 59.6
	iS	NEZ	01 15.7		iS	NEZ	41 13.8
	P: C				P: D		
7.	iP	NEZ	21 26 10.8	8.	eL?	E	10 49 43
	S	NEZ	12.8		2.7 S., 127.7 E.		
					Ceram Sea.		
					h: 33 km ca.		
					H= 10 26 25		USCGS
8.	iP	Z	00 37 12.4				
	P: D						
8.	e	N	02 04 57	8.	P	N	10 51 12
					i	Z	13
8.	P	NZ	02 17 57				
	S	NLZ	18 24	8.	P	Z	11 26 50
8.	P	Z	02 21 15		17.4 S., 173.5 W.		
					Tonga Is.		
					h: 33 km ca.		
					H= 11 15 35		USCGS
8.	eP	Z	02 51 53				
	60.1 N., 146.9 W.			8.	iP	NZ	11 39 51.0
	Southern Alaska.				S	NE	40 13
	h: 34 km ca.				P: S, C		
	H= 02 43 17		USCGS				
8.	e	N	03 34 38	8.	e	Z	12 41 27
	e	N	40 55		eL	E	49 17
	eL	N	57 00				
8.	P	Z	06 28 45	8.	iP	NZ	13 41 53.6
	i	NEZ	47.5		eS	E	43 23
	S	NE	29 06		i	E	24
					L	N	52
					L	E	44 00
8.	iP Z P N		06 57 03.2		P: S, D		
	S	NE	26		Mag. 5.2 (Mat.)		
	P: C				29.6 N., 142.0 E.		
					South of Honshu, Japan.		
					h: 77 km ca.		
					H= 13 40 03.5		USCGS
8.	eP	E	08 00 50				
	e	NZ	52	8.	eP?	Z	13 49 00
	pP	NE	01 15				
	e	E	06 19	8.	P	E	13 53 23
	e	NE	08 21		24.1 S., 177.6 W.		
	5.8 N., 126.1 E.				South of Fiji Is.		
	Mindanao, P.I.						
	h: 177 km ca.						
	H= 07 54 57.9		USCGS				

(cont.)



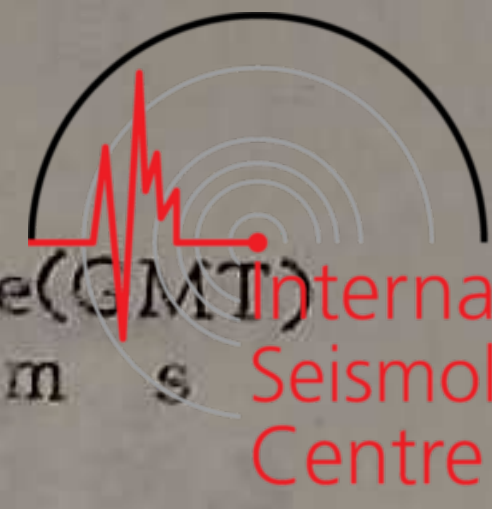








September, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
			17.4 S., 179.9 W. Fiji Is. region. h: 561 km ca. H= 15 19 22.3				Auckland Is. region. h: 33 km ca. H= 00 21 06.7
			USCGS				USCGS
12.	iP	NZ	15 52 04.5	13.	P	Z	03 09 42
	i	E	05.4		e	E	50
	S	E	31		S	N	10 03
	S	N	32				
			P: S, C	13.	iP	EZ	03 13 50.9
12.	eP	Z	18 31 12		i	N	51.7
	eS	N	36 07		S	N	14 25
	eL	E	37 00ca.		i	E	27
			P: E, D				
			9.1 N., 137.9 E. West Caroline Is. h: 33 km ca. H= 18 25 30.7	13.	iP Z P NE		04 55 17.0
			USCGS		P: D		
12.	iP	NEZ	20 28 48.9				6.3 S., 127.8 E. Banda Sea. h: 373 km ca. H= 04 47 45.4
	i	NE	58.2				USCGS
	e	E	29 25	13.	iP	NEZ	09 46 08.0
	eL	NE	32.1		i	N	18
			P: N, E, D		S	E	31
			45.4 N., 140.7 E. Kurile Is. h: 53 km ca. H= 20 25 53.5		i	EZ	45
			USCGS		i	E	55
12.	eP	N	22 19 49				P: S, W, C
	i	NZ	52.4				Mag. 5.1 (Mat.)
	i	NEZ	54				38.1 N., 139.1 E. Off coast of Niigata Pref., Japan. h: 10 km ca.
	i	Z	23 24				JMA
	S	NE	30 18	13.	iP Z P N		11 13 33.1
	i	N	26		S	NEZ	57
	i	E	38				P: C
	SS	E	36 12	13.	P	NZ	11 14 59.6
	SS	N	31	13.	iP	NZ	12 02 35.0
	Lq	E	43 23		S	E	58
	Lr	N	47 46		S	NZ	59
	eLr	Z	49 17				P: N, D
			Mag. 7-7½ (Mat.)	13.	e	N	16 44 18
			49.1 S., 164.2 E. Auckland Is. region. h: 33 km ca. H= 22 07 03.2		e	E	45 22
			USCGS	13.	P	NZ	16 59 36
12.	P	Z	22 28 59		i	NEZ	39
12.	P	Z	22 29 31				50.3 N., 153.0 E. Kurile Is. h: 249 km ca. H= 16 55 48
	i	NE	49				USCGS
13.	eP?	Z	00 17 07	13.	P	Z	17 50 36.4
13.	iP	Z	00 33 56.0		i	E	37.3
	i	E	58.9		i	Z	37.5
			P: C		i	N	37.8
			49.3 S., 163.7 E.		eS	N	51 13
			(cont.)		eS	E	14



September, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
13.	iP i S P: W, C	EZ N NEZ	20 22 06.5 06.8 30			South of Java, h: 127 km ca. H= 12 56 32.2	USCGS
13.	P e	Z Z	22 39 17 28	14.	eL	E	14 24 49
			54.4 N., 163.7 W. Unimak I. region. h: 33 km ca. H= 22 31 22			15.0 N., 93.2 W. Near coast of Chiapas, Mexico. h: 64 km ca. H= 13 33 33.7	USCGS
13.	P i S S	NZ NEZ NZ E	22 54 28 29.0 56 57	14.	P eL eL	Z Z E N	15 32 10 34 02 56.1 57.2
						Mag. 5½-5¼ (Mat.) 28.0 N., 55.8 E. Southern Iran. h: 33 km ca. H= 15 21 09.0	USCGS
14.	eP e	Z Z	00 05 49 58	14.	eL	E	16 38 07
						15.5 N., 90.8 W. Guatemala. h: 38 km ca. H= 15 45 22.2	USCGS
14.	iP S P: N, E, D	NEZ N	00 35 23.2 36	14.	iP iS iS	NEZ N Z	18 38 15.9 31.9 32.2
						P: S, E, D	
14.	iP i e ePP e	NEZ NE NE	03 10 58.6 11 20	14.	P i S	EZ N N	20 20 22 42 52
14.	P S	NZ NEZ	03 59 59 04 00 23	14.	P? i	Z N	20 32 40 33 29
14.	P i e ePP e	Z N Z E	10 26 11.3 13.1 29 27 58 35 33	14.	iP i i S i e L eL	Z NE E E N N EZ	20 43 26.2 26.4 45 27 48 46 04 05 41 47 04
						56.7 N., 157.4 W. Alaska Peninsula, h: 61 km ca. H= 10 17 46.6	USCGS
14.	iP i eS P: N, D	NZ E E	12 27 29.0 29.7 29 21	14.	iP Z P N S P: D	Z E	12 54 38.0 55 02
						44.7 N., 146.4 E. Kurile Is. h: 149 km ca. H= 12 25 04.4	USCGS
14.	iP S P: D	Z E	12 54 38.0 55 02	14.	P i i e	EZ Z Z N	21 31 19 32.7 40 57
						45.2 N., 150.3 E. Kurile Is. h: 33 km ca. H= 20 40 26.5	USCGS
14.	iP e e	NEZ E E	13 05 30.3 06 43 15 10	14.	P i i e	EZ Z Z N	23 08 54 (cont.)
						9.5 S., 111.8 E.	(cont.)



September, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
	i	N	23 08 57.6	15.	iP	NEZ	10 26 15.6
	i	E	58.1		S	N	27
	e	Z	09 18		P: S, W, C		
	eS	E	31	15.	eP	Z	10 31 51
	e	N	34		S	NE	32 13
14.	eP	Z	23 58 28	15.	iP	Z	12 28 56.3
	i	NZ	53		i	NZ	57.6
	eL	N	00 01 43		i	N	30 39
	eL	E	48		P: C		
	44.8 N., 147.8 E. Kurile Is. h: 33 km ca. H= 23 55 49.8			15.	P	EZ	12 55 21
	USCGS				eS	E	13 04 33
15.	eP?	N	00 15 47		i	N	37
	S	E	16 11		eLq	E	12 27
					eLq	N	13 11
15.	iP	Z	02 39 25.8		eLr	E	16 26
	i	NE	47		eLr	N	49
	P: D				eLr	Z	17 30
					Mag. 5½ (Mat.) 16.0 S., 172.9 W. Samoa Is. region. h: 33 km ca. H= 12 44 12.2		
					USCGS		
15.	iP	Z	04 34 55.6	15.	iP	NEZ	13 36 36.4
	i	N	56.5		iS E S N		56.0
	i	E	57.0		P: S, E, D		
	S	NE	35 20	15.	iP	NEZ	15 38 20.5
	i	NE	41		PcP	Z	39 43
	P: C				PP	EZ	40 16
15.	iP	Z	05 45 06.0		iScP	Z	43 30.5
	i	NE	06.4		S	N	45 21
	e	Z	26		e	E	35
	pP	Z	46 40		e	E	48 43
	ePcP	Z	47 20		SS	N	49 19
	i	Z	37		i	Z	24
	S	E	50 58		eL	N	51 20
	L	N	53 47		L	Z	52 42
	L	E	51		L	E	54 32
	eL	Z	55 52		P: N, E, C		
	P: C				Mag. 6½-7 (Mat.) 8.9 N., 93.1 E. Nicobar Is. region. h: 37 km ca. H= 15 29 32.2		
	Mag. 5½ (Mat.) 0.1 S., 124.6 E. Molucca Sea. h: 33 km ca. H= 05 37 45.4				USCGS		
				15.	P	Z	05 56 44
15.	P	Z	05 56 44	15.	iP	NZ	05 56 48.9
					i	E	49.4
15.	iP	NZ	05 56 48.9		S	E	57 13
	i	E	49.4		P: N, D		
	S	E	57 13	15.	P	Z	06 26 21
	P: N, D				e	N	44
15.	P	Z	06 26 21	15.	P	Z	08 53 43.3
	e	N	44		e	E	54 01
15.	P	Z	08 53 43.3	15.	iP	NEZ	18 48 41.3
	e	E	54 01		i	N	58.9
15.	P	NZ	09 45 01		P: N, E, D		
					48.6 N., 154.0 E.		



September , 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
		Kurile Is. h: 33 km ca. H= 18 44 49		16.	P	Z	03 39 44 51.6 N., 173.8 W. Andreanof Is., Aleutian Is. h: 45 km ca. H= 03 32 34
15.	iP	Z	20 44 13.4				
	i	Z	53.2				
	P:	C		16.	iP	Z	05 20 50.3
15.	iP	NZ	20 59 10.5		i	N	59.0
	i	E	20		i	Z	30 38.6
	P:	S, C			i	N	42.1
15.	ePKP	Z	21 20 31		i	Z	48.6
	eSS	E	43 18		P:	C	
		58.7 S., 66.5 W. Drake Passage. h: 33 km ca. H= 21 00 31.7				5.9 S., 152.0 E. New Britain region. h: 29 km ca. H= 05 20 46.1	
15.	eP	Z	22 04 53	16.	P	Z	05 34 31
					eS	E	38 34
16.	P	Z	01 35 06		eL	E	40 19
	i	Z	07.3	16.	iP	NEZ	06 33 07.1
	e	Z	54		eS?	E	40
	PcP	Z	36 32		e	N	43
	i	Z	43		P:	S, W, C	
	ScP	Z	40 25	16.	eP	Z	10 01 12
	S	NE	42 05		i	Z	34
	ScS	N	44 54	16.	P	Z	10 33 43
	ScS	E	55	16.	P	EZ	14 14 15
	e	Z	45 54		i	NE	20.7
	e	NE	46 13	16.	P	EZ	14 14 15
	eL	N	49 06		i	NE	20.7
	eL	E	37	16.	iP	Z	14 20 08.6
	eL	Z	50 27		i	N	11.0
		Mag. 6-6½ (Mat.) 10.9 N., 93.1 E. Andaman Is. region. h: 47 km ca. H= 01 26 26.9			i	NE	14
					P:	D	
16.	iP	EZ	01 59 40.4	16.	iP	EZ	14 42 37.6
	i	N	40.7		iS	NE	43.1
	S	NE	02 07 05		P:	E, C	
	ScS	NE	09 31	16.	iP	EZ	14 49 38.8
	eL	E	13 47		i	N	41.5
	eL	N	51		S	NEZ	44.1
	eL	Z	17 48		P:	E, D	
		P: E, D Mag. 6½ (Mat.) 60.0 N., 147.1 W. Gulf of Alaska. h: 29 km ca. H= 01 50 33.9		16.	P	EZ	15 07 07
					i	N	09.8
16.	eP	NE	03 07 58		iS	NEZ	12.8
	i	NEZ	08 21	16.	iP	NZ	15 14 49.1
16.	iP	Z	03 23 42.3		i	E	49.3
	i	NE	42.9		e	Z	17 26
	S	NEZ	24 05		P:	N, D	
	P:	D				43.7 N., 141.2 E. Hokkaido, Japan. h: 166 km ca. H= 15 13 01.5	





September , 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
16.	iP i i P: D	Z E N	15 24 31.6 32.0 34.3	16.	eP? e e e	Z Z N NE	22 34 27 49 35 10 27
16.	iP i eS P: W, D	EZ N NE	15 42 19.3 19.5 41	16.	iP eL eL P: N, D	NZ E N	22 42 56.8 50 53 51 50
				56.3 N., 162.8 E. Near east coast of Kamchatka. h: 29 km ca. H= 22 37 26.5 USCGS			
16.	iP iS P: D	Z NEZ	15 46 16.7 19.2	16.	eLq eLr	E E	23 25 37 34 33
				22.9 N., 45.1 W. North Atlantic Ridge. h: 33 km ca. H= 22 23 36.3 USCGS			
16.	P? i	NEZ NZ	16 46 54 47 13	17.	P i i e	Z NEZ EZ E	03 42 23 31 42 48 15
16.	iP P: C	Z	17 32 15.5	17.	iP iS P: N, C	NZ NEZ	03 54 10.0 33.0
16.	iP EZ, P S i P: E, C	N N E	17 50 57.3 51 02.5 02.8	17.	iP e S e eL P: N, C	NZ E NE N E	05 53 45.0 06 00 22 30 43 01 08
				41.6 N., 139.3 E. Hokkaido. Japan. h: 33 km ca. H= 19 26 25 USCGS			
16.	P i i S	Z Z NZ NE	20 02 40.8 45.3 49.0 03 11	17.	iP i e eL eL P: W, C	EZ N E E E	07 11 23.6 24.0 21 44 31 42 37 14
				16.1 S., 176.5 W. Fiji Is. region. h: 352 km ca. H= 20 47 16.0 USCGS			
16.	P iS iS	NEZ EZ N	21 43 18 47.1 47.7	17.	iPKP i pPKP P: D	Z NE Z	08 00 40.0 40.5 01 09
				15.6 S., 72.9 W. Southern Peru. h: 118 km ca. H= 07 41 13.9 USCGS			
16.	eP	Z	22 31 25				
				59.6 N., 146.7 W. Gulf of Alaska. h: 33 km ca. H= 22 22 18 USCGS			





September, 1964

International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
17.	iP iS P: N, E, D	NEZ NE S Z	10 18 03.7 27.6				
						Eastern Mediterranean Sea. h: 13 km ca. H= 00 08 42.6	USCGS
17.	P S	NEZ NE	11 43 57 44 19	18.	iP P: C	Z	00 51 04.5
17.	iP e i eS e P: N, E, D	NEZ N EZ E N	12 26 15.4 25 28.0 44 47	18.	P eS S i	Z E NZ E	03 34 18.8 43 44 53
17.	P i i	Z Z Z	15 15 04 39 45.9	18.	iP i e P: C	Z N Z	04 03 38.0 38.2 04 28
		12.8 S., 168.9 E. Santa Cruz Is. region. h: 622 km ca. H= 15 06 13.8	USCGS	18.	eP S i	Z E NZ	04 42 03 29 30
17.	iP eS S P: N, E, D	NEZ E N	15 17 32.4 49 50	18.	P i eS i	Z E N E	05 07 21 32 11 31 39
17.	iP i i P: D	Z NE N	15 25 57.5 57.6 26 12	18.	P	NEZ	05 13 56
17.	eL P: N, E, D	E	15 43 24	13.	P S i	NZ E NE	06 44 02 23 31
		44.5 N., 31.3 W. North Atlantic Ridge. h: 24 km ca. H= 15 02 00.9	USCGS	18.	iP eL P: C	Z E	10 35 40.0 51 08
						19.4 N., 155.3 W. Hawaii region. h: 10 km ca. H= 10 25 28.1	USCGS
17.	iP iS P: N, E, D	EZ NE	19 43 42.1 44.5	18.	iP i i S i P: D	Z N E NE E	11 31 24.6 24.8 25.0 48 57
17.	iP i i S P: C	Z E N NE	20 41 27.5 27.8 28.2 53	18.	iP P: S, W, C	NEZ	12 28 48.6
18.	iP S P: N, E, D	NEZ NE	00 04 54.7 05 21			51.4 N., 179.9 W. Andreanof Is., Aleutian Is. h: 33 km ca. H= 12 22 13.3	USCGS
18.	P S eL eL eL Mag. 5 1/2 - 5 3/4 (Mt.) 35.4 N., 28.8 E.	Z E E N Z	00 21 11 31 29 43.0 51.3 01 00 29	18.	P	Z	13 15 12
						5.0 S., 103.4 E. Southern Sumatra. h: 35 km ca. H= 11 06 00.2	USCGS











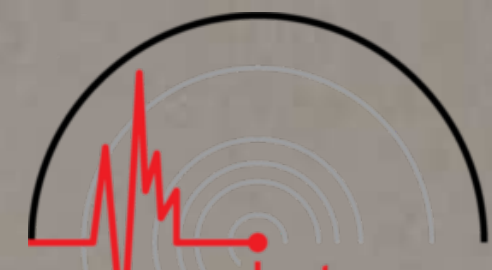
September , 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
		P: S, W, D 2.1 S., 128.3 E. Ceram Sea. h: 36 km ca. H= 08 30 54.4			e	Z	19 38 22
					e	E	40 28
						12.1 N., 142.0 E. South of Mariana Is. h: 33 km ca. H= 19 29 25.2	USCGS
21.	P		10 56 03	21.	iP	Z	20 14 47.5
	e	NE	04		S	N	15 17.4
	i	NEZ	28		i	E	17.8
	e	E	40				P: D
21.	P	NZ	11 42 16.4	21.	iP	NEZ	20 45 39.3
	i	NEZ	39		S	E	57
	e	NE	52				P: S, E, D
21.	iP	NEZ	12 11 22.4				36.2 N., 139.3 E. Saitama Pref., Japan. h: 10 km ca.
	e	NEZ	56				JMA
	iS	Z	12 05				
		P: N, E, D		21.	P	Z	22 06 05
21.	P	EZ	14 26 29		i	NZ	11.5
	eS	N	50		e	E	11 13
21.	eP	EZ	14 36 29				48.0 N., 152.7 E. Kurile Is. h: 31 km ca. H= 22 02 25
		36.2 S., 100.2 W. Southern Pacific Ocean. h: 33 km ca. H= 14 17 54.4	USCGS	21.	eP	Z	22 09 26
					i	E	28
21.	iP	EZ	15 29 07.5	21.	P	EZ	23 26 57
		P: E, D			e	N	27 43
21.	P	NEZ	16 33 20				20.2 S., 177.8 W. Fiji Is. region. h: 511 km ca. H= 23 16 35.8
	eL	E	37 42				USCGS
	eL	E	38 32	22.	iP	NEZ	09 09 57.0
		48.0 N., 152.9 E. Kurile Is. h: 5 km ca. H= 16 29 36	USCGS		e	NE	11 50
					e	N	12 31
21.	P	Z	17 07 25				P: S, W, C
		19.9 S., 178.5 W. Fiji Is. region. h: 512 km ca. H= 16 57 36	USCGS				43.7 N., 147.7 E. Kurile Is. h: 33 km ca. H= 09 07 32.8
21.	iP	NZ	18 22 11.7	22.	iPKP	Z	09 25 00
		P: N, C					23.9 S., 70.7 W. Near coast of northern Chile. h: 33 km ca. H= 09 05 06.4
		30.1 S., 179.5 W. Kermadec Is. h: 319 km ca. H= 18 10 51.6	USCGS				USCGS
21.	iP	N	19 23 55.1	22.	iP	Z	11 20 05.3
	S	N	24 37.5				P: C
	e	EZ	40	22.	P	Z	11 37 26
		P: D			e	N	53
21.	P	NZ	19 34 45				



September, 1964



International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
22.	iP e P: E, D	EZ N	13	36	53.8 37 31	23.	P S	Z N	19	59	02 23.5
22.	iP S P: S, W, D	NEZ NE	13	41	44.1 42 26	24.	eP S i	NEZ NE Z	05	39	02 38 45.5
22.	P S	NEZ NZ	13	25	41 26 33	24.	P S	NZ NE	11	14	16 41.5
22.	iP S P: S, E, D 36.1 N., 140.1 E. Near Mt. Tsukuba, Japan. h: 85 km ca.	NEZ NEZ	22	26	41.0 58	24.	P i	N N	11	55	26 49.5
22.	P eS P: D	Z NE	23	07	22.6 58	24.	eP iS?	Z N	12	58	55 59 21
23.	eP	Z	00	09	35	24.	iP S P: C 43.5 N., 127.5 W. Off coast of Oregon. h: 14 km ca. H= 13 59 36.8	Z N	14	38	36.0 41 40 USCGS
23.	iP S P: N, D	NZ Z	01	07	59.5 08 31	24.	iP S P: C 20.7 N., 144.6 E. Mariana Is. h: 146 km ca. H= 14 34 48.0	Z N	14	38	36.0 41 40 USCGS
23.	iP i eS L e P: C Mag. 6½-6½ (Mat.) 53.6 N., 163.9 W. Unimak I. region. h: 29 km ca. H= 04 59 47.4	Z NE E E Z	05	07	46.4 46.8 13 50 17 35 21 40	24.	iP e P: D	Z NE	14	55	48.9 56 15
23.	iP P: D 53.7 N., 163.6 W. Unimak I. region. h: 13 km ca. H= 06 18 57.4	Z	06	26	59.2	24.	iP i P: S, W, C 40.3 N., 141.6 E. Near east coast of Honshu, Japan. h: 104 km ca. H= 17 59 53.4	NEZ E	18	01	02.0 37 USCGS
23.	iP i P: D	Z N	07	08	30.2 41.5	24.	iP S P: S, D	NZ NE	19	09	43.3 54
23.	P S i	Z NE Z	07	14	50 15 14 15	24.	iP S P: C	EZ NE	22	25	30.0 58
23.	P S i	Z NE Z	07	14	50 15 14 15	24.	P eS	Z E	23	18	57 19 22
23.	P S i	NZ NE Z	17	24	30	24.	iP P: D 51.5 N., 177.1 W. Andreanof Is., Aleutian Is. (cont.)	Z	23	44	14.0

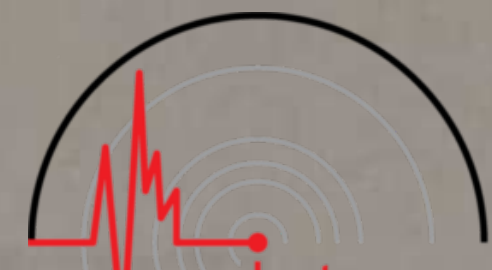




September , 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
			h: 49 km ca. H= 23 37 23.5	26.	iP	EZ	00 41 17.0
			USCGS		i	N	18.0
					S	N	51
25.	e	N	05 30 33		i	N	53
					P: E, D		
25.	e	Z	08 23 33	26.	iP	Z	00 54 38.5
25.	P	NEZ	08 27 35		i	NE	39.5
	S	Z	59		S	N	01 01 43
25.	eP	Z	14 50 41		eLq	N	05 08
			18.9 N., 145.7 E.		L	E	10 28
			Mariana Is.		L	N	34
			h: 151 km ca.		Lr	NZ	15 30
			H= 14 46 32		P: C		
			USCGS		Mag. 6 (Mat.)		
25.	iP	Z	15 48 32.1		30.1 N., 80.7 E.		
	S	E	53 36		Tibet-India border region.		
	eL	N	55 21		h: 50 km ca.		
	P: D				H= 00 46 02.8		
	50.3 N., 176.6 E.			26.	P	Z	03 49 48.5
	Rat Is., Aleutian Is.				i	E	49.2
	h: 30 km ca.				e	N	59 15
	H= 15 42 17.9				eL	E	04 07 43
	USCGS				eL	N	45
25.	iP	Z	17 32 43.2		L	E	12 35
	e	E	48.2		Mag. 5 1/2 (Mat.)		
	e	E	50 05		17.7 S., 173.3 W.		
	P: D				Tonga Is.		
	53.6 N., 163.9 W.				h: 33 km ca.		
	Unimak I. region.				H= 03 33 32.7		
	h: 33 km ca.				USCGS		
	H= 17 24 44.9			26.	e	N	05 08 58
	USCGS			26.	iP	Z	05 16 33.5
25.	iP	Z	17 50 27.9		i	NE	33.7
	i	N	28.2		P: D		
	eS	N	52 06	26.	iP	NEZ	07 48 37.3
	P: D				i	Z	49.5
25.	e	N	18 52 20		P: N, E, C		
25.	iP	Z	20 35 50.0	26.	P	NEZ	08 43 00
	P: C				S	NE	22.5
	3.8 S., 139.0 E.			26.	iP	Z	12 05 47.7
	West New Guinea.				S	NE	48.7
	h: 171 km ca.				P: C		
	H= 20 28 33.5			26.	eP	Z	12 35 08
	USCGS				e	N	38 37
25.	iP	Z	21 30 33.3		L	E	39 26
	i	N	33.8	26.	iP	NEZ	12 50 55.1
	S	NE	39.5		i	N	51 05
	P: C				P: S, W, C		
25.	iP	Z	23 38 59.6	26.	iP	EZ	13 43 10.4
	P: D				S	NE	16.7
	30.7 S., 179.9 W.				P: W, D		
	Kermadec Is.						
	h: 424 km ca.						
	H= 23 27 49.7						
	USCGS						





International  
Seismological  
Centre

September, 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
26.	iP S P: D	EZ NE	13 48 48.9 55	26.	iP iS P: S, C	NEZ NEZ	19 19 30.5 37.0
26.	iP S	EZ NE	13 57 37.0 43	26.	iP S P: E	NEZ NE	19 22 16.4 22.7
26.	iP S	Z NE	14 00 55.3 01 01.3	26.	eS?	E	19 23 10
26.	iP S P: C	EZ NEZ	14 03 56.2 04 02.5	26.	P S	NEZ NE	19 24 59 25 05.5
26.	iP S P: W	EZ NE	14 08 17.4 23.9	26.	iP S P: S	NZ NE	19 32 14.9 21
26.	eP S	Z NEZ	14 39 51 40 15	26.	iP S	NEZ N	19 41 56.0 42 02
26.	P S	Z NE	15 21 36.9 43.2	26.	iP S	EZ NE	19 43 02.0 08.3
26.	iP S	Z NE	15 33 21.5 28.0	26.	iP S	NEZ NE	19 45 11.3 17.5
26.	iP S P: N, E, C	NEZ NE	15 44 09.7 16	26.	iP S	EZ NE	19 49 08.5 15.0
26.	iP S P: N, E	NE NE	16 03 58.5 04 04.6	26.	iP S P: E	NEZ NE	19 50 13.5 20.0
26.	iP i e	E Z E	16 10 39.0 45 11 00	26.	iP S	NEZ N	19 52 00.3 06.5
26.	iP S P: E	NEZ N	16 13 17.0 23.5	26.	P i P: N, E, D	NEZ N	20 09 04.0 10 12.7
26.	iP S P: E, D	EZ NE	16 31 02.7 08.9	26.	iP S P: N, E, C	NEZ NE	20 21 45.2 52
26.	iP S P: N	NZ NE	16 31 47.5 53.8	26.	iP S	Z Z	20 23 37.5 43.5
26.	P S	Z NEZ	17 46 04 10	26.	P S	NEZ N	20 26 22 28
26.	iP iS P: N, E	NEZ NEZ	17 56 41.2 47.5	26.	P S	EZ NE	20 34 55 35 01.5
26.	eP	EZ	18 30 18	26.	iP iS	N Z	20 36 34.5 41



September, 1964



Date	Phase	Comp.	Time(GMT)	Date	Phase	Comp.	Time(GMT)	
			h m s				h m s	
26.	iP S P: E,D	EZ NE	20 38 12.7 19.0	26.	iP S	Z NE	21 52 39.2 45.5	
26.	iP S	Z NE	20 39 13.0 19.5	26.	P S	Z NE	21 53 34 40.5	
26.	iP S	EZ NE	20 45 21.0 27.3	26.	P S	Z NE	21 55 52 59	
26.	iP S	Z NE	20 47 07.5 14	26.	iP iS	NEZ NEZ	22 04 05.5 12	
26.	i	NEZ	20 48 32.0	26.	iP S	Z NE	22 16 11.8 18.1	
26.	iP S	Z NE	20 50 38.0 44.6	26.	iP S	Z NE	22 23 38.0 44.5	
26.	iP S P: W	EZ NE	20 52 48.5 54.7	26.	P S	Z NE	22 26 12 18.3	
26.	P S	Z N	20 55 32 38.5	26.	eP eS e eLq eLr	Z E N E N	23 03 13 10 05 38 13 17 17 10	
26.	eP S	Z NE	20 59 22 28	Mag. 5½-5¾ (Mat.) 4.9 S., 153.5 E. New Ireland region. h: 34 km ca. H= 22 55 14.8				USCGS
26.	iP S	EZ Z	21 01 48.0 54	26.	P S	Z NE	23 22 00 06.4	
26.	iP iS	Z N	21 03 39.6 46.4	26.	eP S	Z Z	23 25 59 26 05	
26.	P S	Z NE	21 03 55 04 01	26.	iP S P: C	Z NEZ	23 34 01 07	
26.	iP S	EZ NE	21 19 25.2 31.5	26.	iP i S P: C	Z NE Z	23 38 03.5 03.7 10.5	
26.	iP S	Z	21 23 31	26.	P S	Z NE	23 39 14 20	
26.	P S	Z Z	21 23 32 38	26.	P S	Z NE	23 42 05 11.5	
26.	e eS	Z NE	21 25 33 39	26.	P S P: D	Z NE	23 45 05.5 11.8	
26.	iP S P: N,E,C	NEZ NEZ	21 34 39.0 46	26.	iP S	EZ NE	23 55 20.5 27	
26.	S	Z	21 35 43					
26.	iP S	Z NE	21 45 22.5 28.5					
26.	iP eS	Z NE	21 50 57.8 51 04					









September, 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
27.	e	N	08 59 31	27.	iP S	NEZ E	16 45 10.5 16.3
27.	P S	Z E	09 06 12 17.5	27.	iP S	NEZ NE	16 54 21.2 27.5
27.	e	N	09 31 07	27.	P e e e	Z N N N	21 34 28.5 35 05 36 06 40 29
27.	P eS eLq eLr	Z N N N	10 00 27.5 05 45 08 44 11 51	27.	P e e e	Z N N N	21 51 10 22 09 39.7 22 18
			2,3 N., 126.7 E. Molucca Passage. h: 100 km ca. H= 09 53 36.6	USCGS			
27.	iP S P: E	NEZ N	10 48 17.7 24.0	27.	P e P: C	Z N	22 01 40.2
				USCGS			5.5 S., 151.6 E. New Britain region. h: 50 km ca.
27.	iP Z P N S	Z	10 48 48.5 55	27.	PKP i i	Z	23 18 11.5
				USCGS			21.4 S., 68.7 W. Chile-Bolivia border. h: 132 km ca. H= 22 58 29.2
27.	P i i	NZ Z Z	10 49 22.5 46.5 59	27.	iP S P: E	EZ NEZ	14 53 23.7 29.8
27.	iP S	Z NE	12 12 26.6 33.0	27.	eP S i	Z E Z	15 10 05 30 32
27.	e	N	13 42 44	27.	eP S i	Z E Z	15 33 22
27.	e	N	13 46 15				11.3 S., 116.6 E. South of Sumbawa I. h: 33 km ca. H= 15 24 17.2
27.	iP S P: E	EZ NEZ	14 53 23.7 29.8	USCGS			
27.	eP S i	Z E Z	15 10 05 30 32	27.	eP S i	Z E Z	15 33 22
27.	eP S i	Z E Z	15 33 22				11.3 S., 116.6 E. South of Sumbawa I. h: 33 km ca. H= 15 24 17.2
27.	iP S eSS eLq Lr P: C	Z NE N E N	15 59 44.6 16 06 54 10 06 47 14 14	27.	iP S e e e	Z NE NE N N E	04 06 00 07 18 04 47 51.9
			Mag. 6-6½ (Mat.) 56.6 N., 152.0 W. Kodiak I. region. h: 27 km ca. H= 15 50 54.7	USCGS			
							1.2 S., 24.1 W. Central Mid-Atlantic Ridge. h: 37 km ca. H= 05 04 55.5
				USCGS			









International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
29.	eP S	E L	03 43 38 43.5	29.	iP i i S i	Z NE Z N EZ	13 43 31.0 31.1 43 03 22 24
29.	P S	Z Z	03 48 48 54.5				
29.	iP S P: E	EZ NE	03 50 21.5 28.0				
29.	eP S	Z EZ	03 51 13 20				
29.	P S	Z E	03 54 31 37.4	29.	P i	NEZ Z	13 52 40 53 25
29.	iP S	EZ NE	03 55 22.5 29.0	29.	iP i S SS SSS Lq Lr Lr	Z NE E E E N Z Z	14 11 39.5 39.8 21 03 26 00 23 21 30 30 32 17 33 50
29.	iP S P: C	Z E	03 56 24.5 31.3				
29.	iP S P: C	Z	05 41 50.2				
			18.1 S., 175.4 W. Tonga Is. h: 197 km ca. H= 05 30 59.5				USCGS
29.	e iS?	Z NE	06 48 24 49.0				
29.	eP	N	08 16 15	29.	iP S P: E	EZ NEZ	15 10 33.7 40.0
29.	P S	Z E	08 43 26 32.6	29.	P i	Z Z	15 24 13 25 13
29.	eP	NEZ	09 10 56	29.	P S	Z EZ	15 43 36 41.8
29.	eP	NEZ	09 13 00				
29.	iP S P: C	EZ NEZ	10 25 17.1 23.5	29.	eL eL	E E	16 17 38 25 49
29.	eP	EZ	11 31 55	29.	iP i i P: C	Z Z E	17 31 30.5 38.1 38.4
29.	iP S P: E, C	NEZ NE	11 33 14.9 21.4	29.	P iS	E NE	19 24 21.5 27.9
29.	P i eS? e	EZ N N Z	12 13 16.5 18.0 37 39	29.	iP iS P: N	NE Z	20 44 44.5 51.0
29.	P e i	Z E Z	13 01 02 52 54.5	29.	P S	EZ NE	21 03 53 04 04.5



September, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
29.	iP S P: N, E, C	NEZ NE C	21 06 58.1 07 04.5	30.	eP e e	Z N E	17 40 31 57 41 15
29.	iP S P: D	NEZ Z	21 07 31.5 38	30.	P S P: S, E, D	NEZ E	19 14 31.5 51
29.	P S	NEZ NE	21 08 43 51	35.6 N., 139.3 E. Near south coast of Honshu, Japan. h: 79 km ca. H= 19 14 08.0 USCGS			
29.	P S	EZ NE	21 09 10 16	30.	iP Z P N e i P: D	N E	20 04 43.5 05 47 47.5
29.	iP S P: E, D	Z NEZ E	21 11 01.5 08	30.	eP S	Z NEZ	20 36 18 58.4 N., 151.3 W. Kodiak I. region. h: 17 km ca. H= 20 27 24.1 USCGS
29.	iP i e e P: N, E, C	NEZ N E N C	21 47 22.0 22.5 49 00 03	30.	eP S	Z NEZ	23 00 52 54.5
29.	iP S P: C	Z NEZ	22 01 30.4 37.1	30.	eP S	Z NEZ	23 30 14 21.6
30.	P i	Z Z	01 38 53.5 54.6	30.	iP i	Z NE	23 31 06.4 31.0
30.	P	Z	04 35 34.5	30.	iP i S P: C	Z NEZ Z	23 36 54.6 54.9 37 01.5
30.	i P Z P NE	NEZ	06 20 08	25.4 N., 151.3 W. Near south coast of Honshu, Japan. h: 79 km ca. H= 19 14 08.0 USCGS			
30.	iP Z P NE 0.5 N., 126.6 E. Molucca Passage. h: 77 km ca. H= 06 25 54.2 USCGS		06 32 58.8	30.	iP Z P N e i P: D	N E	20 04 43.5 05 47 47.5
30.	P eS P: C	Z E	08 40 34.0 52	30.	eP S	Z NEZ	23 36 54.6 54.9 37 01.5
30.	iP i eL P: C	Z E N NEZ	09 00 25.1 27.5 17 27	58.4 N., 151.3 W. Mineo Takehana h: 17 km ca. H= 20 27 24.1 USCGS			
30.	P i	Z Z	10 39 59.5 40 16	30.	eP S	Z NEZ	23 36 54.6 54.9 37 01.5
30.	e	N	11 08 45	30.	iP S P: C	Z NEZ Z	23 36 54.6 54.9 37 01.5
30.	iP S i	Z EZ N	15 04 24.5 30.5 30.7	30.	eP S	Z NEZ	23 36 54.6 54.9 37 01.5















October, 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
			42.6 N., 142.6 E. Hokkaido, Japan region. h: 33 km ca. H= 03 35 08.4				
			USCGS				
5.	i e S	Z E N	03 51 01.5 03 25 28	5.	iP e	Z N	22 15 03 47
5.	iP Z, P E i eS P: W, C	Z N	05 40 20.5 33 36	6.	P S	EZ Z	00 14 34 57
5.	iP i S P: D	NZ E N	06 15 46.6 47.0 16 11	6.	iP i i iS eLr eLr P: D	Z E N NE E Z	06 16 45.7 46.5 46.8 21 09 25 22 26 08
5.	eP eLq Lr Lr	Z E E N	08 41 24 59 22 09 01 48 03 11				
			Mag. 5-5½ (Mat.) 16.7 S., 173.7 W. Tonga Is. h: 33 km ca. H= 08 30 15.7				
			USCGS				
5.	iP P: C	Z	13 22 50.0	6.	ePKP e SS SS G L Lr	Z E E N NE E N	07 37 15 40 38 57 19 25 08 12 33 15 39 20 22
			22.3 S., 171.6 E. Loyalty Is. region. h: 145 km ca. H= 13 12 15.5				
			USCGS				
5.	P i eL eL	Z N N E	14 10 23 26 30 48 32 19				
5.	iP iS P: N	NZ NE	14 33 40.9 34 03.5	6.	eP i iS	Z N E	10 10 51 54 11 15.5
5.	iP i P: W, C	EZ N	15 17 05.2 05.5	6.	P i i e	NZ E N Z	10 17 35 37 18 25 37
5.	iP S i P: S, E, D	NEZ Z N	22 10 55.5 11 25 29	6.	iP i i iS i i P: C	Z N E E N E	10 52 14.1 14.3 14.5 37.2 37.8 58
			36.0 N., 141.2 E. Near east coast Honshu, Japan. h: 62 km ca. H= 22 10 16.5				
			USCGS	6.	iP	NEZ	10 58 30.5



October, 1964

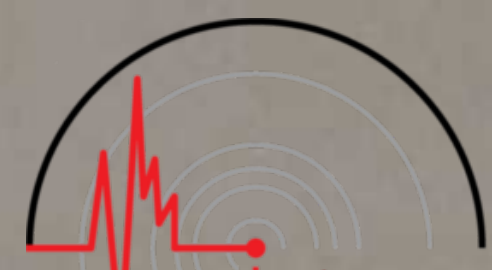


Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
	i	Z	10 58 35.8	6.	P	NEZ	19 32 36
	i	N	37.8		S	E	53
	iS	E	54.2		i	N	33 03
	i	Z	55.0				
	i	N	55.4	6.	iP	Z	19 34 58.0
	P: S, W, C				i	N	35 02
6	iP	Z	14 42 07.4		i	E	03
	i	NE	08		P: C		
	P: D			6.	eP	Z	19 35 11
	40.2 N., 28.1 E.				e	EZ	15
	Turkey.				e	N	17
	h: 10 km ca.			6.	iP EZ, P N		20 28 12.5
	H= 14 29 55.6	USCGS			i	Z	45
6.	iP	NZ	14 43 30.5		i	N	29 11
	i	E	31.0		P: W, D		
	i	N	55		29.3 N., 80.3 E.		
	S	N	53 38		Nepal-India border region.		
	i	E	48		h: 27 km ca.		
	Lq	E	15 04 49		H= 20 19 34.1	USCGS	
	eLr	Z	10 26	6.	P	Z	20 41 23
	eLr	N	36		i	E	24.5
	i	E	16 36		i	Z	28
	i	N	17 18		i	E	30
	i	Z	19 38		S	E	42 36
	P: N, D				i	E	48
	Mag. 7½ (Mat.)			6.	iP Z, P N		21 40 51.3
	40.3 N., 28.2 E.				i	Z	56
	Turkey.				i	NE	57
	h: 10 km ca.				S	E	42 08
	H= 14 31 13.2	USCGS			i	E	14
6.	iP	Z	15 27 32.7	6.	iP	NEZ	22 43 17.8
	i	Z	40		S	Z	35
	i	NE	40.5		i	NE	37
	P: C				P: S, E, D		
6.	P	Z	17 00 41	7.	iP	Z	00 30 05.6
	i	EZ	45		i	NE	10.5
	i	EZ	49		iS	E	28.0
6.	eP	EZ	17 27 01		i	NZ	30
	i	N	02.5		P: C		
6.	P	NZ	18 36 06	7.	eP?	Z	00 56 01
	i	E	12		i	Z	04
	70.9 N., 5.7 W.				i	Z	05.0
	Jan mayen I. region.				i	Z	07.2
	h: 33 km ca.				e	N	32
	H= 18 24 57.0	USCGS			i	Z	35
					i	N	53
6.	iP	Z	19 22 14.5	7.	eP	Z	04 00 24
	i	E	15.5		e	Z	29
	i	N	15.9		6.8 S., 155.2 E.		
	P: C				Solomon Is.		
	16.1 S., 168.6 E.				h: 70 km ca.		
	New Hebrides Is.				H= 03 52 11.3	USCGS	
	h: 21 km ca.						
	H= 19 12 12.0	USCGS					









International  
Seismological  
Centre

October, 1964

Date	Phase	Comp.	Time(GMT)			Date	Phase	Comp.	Time(GMT)		
			h	m	s				h	m	s
9.	iP	EZ	08	06	37.0		S	E	20	11	42
	i	N			38.0		Lq	N			14 42
	iS	N			52.5		eL	E			15 07
	P: W, C						P: C				
9.	iP	N	08	14	53.1		Mag. 5 $\frac{1}{2}$ -5 $\frac{1}{2}$ (Mat.)				
	S	N			15 26		57.0 N., 151.0 W.				
	P: N						Kodiak I. region.				
							h: 17 km ca.				
							H= 19 55 34.7 USCGS				
9.	iP	Z	08	35	09.5	9.	P	Z	20	47	10
	i	NF			09.8	9.	eP	Z	21	45	17
	i	E			31.2		S	NE			54 43
	P: D				32.0		Lq	E	22	03	00
9.	iP	Z	08	52	39.4		Lr	E			06 25
	i	N			40.9		eLr	Z			40
	S	N			55		eLr	N			44
	P: C						Mag. 5 $\frac{1}{2}$ -5 $\frac{3}{2}$ (Mat.)				
							16.2 S., 171.9 W.				
							Samoa Is. region.				
							h: 33 km ca.				
							H= 21 34 09.2 USCGS				
9.	iP	Z	10	33	50.4		P	Z	02	45	51
	i	NEZ			50.7		S	N			46 36
	S	N			34 10		i	E			36.5
	P: N, C						i	Z			37.0
							Mag. 5 $\frac{1}{2}$ -5 $\frac{3}{2}$ (Mat.)				
							18.4 N., 138.8 E.				
							Bonin Is. region.				
							h: 520 km ca.				
							H= 12 43 04.5 USCGS				
9.	iP	EZ	14	06	44.8	10.	P	Z	02	45	51
	iS	Z			54.1		S	N			46 36
	P: N, E, C						i	E			36.5
							i	Z			37.0
9.	iP	Z	14	12	09.2	10.	iP	Z	03	51	55.0
	P: C						i	E			55.3
							S	N			52 27
							P: C				
9.	iP	Z	14	32	10.5	10.	iP	NEZ	06	29	01.5
	i	NE			10.8		i	E			14
	iS	NE			16.5		i	N			15
	P: D						i	N			21
							P: S, E, D				
9.	P	Z	16	49	31	10.	iP	NEZ	13	18	56.9
	e	E			50 46		i	Z			19 39
							i	NZ			46.8
							i	E			48.0
							P: N, C				
9.	P	Z	16	54	05	10.	eP	EZ	17	28	03
	i	N			05.2		i	E			05
							i	N			09
							i	E			19
							S	NE			29 12
9.	ePKP	Z	19	45	30	10.	iP	Z	19	47	55.8
	epPKP	Z			46 12		i	NE			56.6
							S	NE			55 24
							eL	E	20	01	42
							P: C				
							60.4 N., 146.1 W.				
							Southern Alaska.				
							h: 44 km ca.				
							H= 19 38 47.7 USCGS				
9.	iP	Z	20	04	22.4						
	i	N			29.7						



October , 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
10.	iP	Z	20 15 47.8	11.	iP Z, P N		11 20 10.8
	i	E	49		i	E	11.5
	S	NE	23 15		S	N	28 03
	e	E	25 45		Lr	E	37 10
	eLq	N	29 02		P: C		
	eLq	E	46		Mag. 5½-5¾ (Mat.)		
	P: C				13.6 S., 166.6 E.		
	Mag. 5½-5¾ (Mat.)				New Hebrides Is.		
	60.5 N., 145.4 W.				h: 68 km ca.		
	Southern Alaska.				H= 11 10 33.6		USCGS
	h: 31 km ca.						
	H= 20 06 39.8		USCGS				
11.	iP	NEZ	00 02 46.8	11.	iP	NEZ	14 29 20.0
	S	E	03 14		i	Z	27.5
	P: S, E, D				eS	N	54
					P: S, E, D		
11.	P	NEZ	00 23 16	11.	iPKP	NEZ	14 38 55.6
					eL	N	15 30 00ca.
					PKP: W, C		
					Mag. 5¾-6 (Mat.)		
					17.9 S., 71.5 W.		
					Near coast of Peru,		
					h: 35 km ca.		
					H= 14 19 11.5		USCGS
11.	P	EZ	00 24 48	11.	P	NZ	16 35 06
	i	N	53.1		S	E	29
					i	N	31
					i	E	32
11.	P	Z	03 06 41	11.	iP	Z	21 22 35.2
	i	NEZ	43.6		i	NZ	36.0
					PP	Z	24 10
					S	E	28 25
					L	NE	31 34
					L	Z	34 25
					P: D		
					Mag. 6.4 (Mat.)		
					0.6 S., 121.7 E.		
					Northern Celebes.		
					h: 33 km ca.		
					H= 21 15 03.9		USCGS
11.	iP	NEZ	05 55 31.0	11.	P	Z	22 25 03
	i	E	53		eS	Z	09.5
	i	N	55.0				
	P: N, E						
11.	iP	Z	09 19 13.6	11.	iP	Z	22 46 13.2
	S	E	48.6		iS	NEZ	29.3
	i	Z	22 42				
	P: C						
11.	iP	Z	10 16 46.0	11.	P	Z	23 39 38
	S	N	24 56		pP	Z	57
	L	N	31 20				
	P: C				6.0 N., 126.7 E.		
	Mag. 5¾-6 (Mat.)				Mindanao, P.I.		
	19.1 N., 156.6 W.				h: 121 km ca.		
	Hawaii region.				H= 23 33 23.9		USCGS
	h: 33 km ca.						
	H= 10 06 44.9		USCGS				
11.	iP	NZ	10 28 48.0	12.	P	Z	01 55 23.5
	sP	Z	29 20.0		i	N	40
	P: S, D				i	E	42.0
	6.3 S., 145.7 E.				eS	E	56 25
	New Guinea.						
	h: 138 km ca.						
	H= 10 21 01.1		USCGS				





October, 1964

Date	Phase	Comp.	Time(GMT) h m s
12.	P eS	NEZ E	05 02 54 03 15
12.	iP iS P: E, D	EZ NE	11 18 06.0 26.6
12.	iP i PP Lq Lr Lr	NEZ Z Z E E N	15 43 43.0 50 04 51 21 55 10 15 56 09 57 24 57 44
		P: N, E, C Mag. 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (Mat.) 3.0 N., 126.7 E. Talaud Is. h: 59 km ca. H= 15 42 54.7	USCGS
12.	eP	Z	15 52 15
12.	I I r Lr2 Lr2	NE E E Z N	22 26 22 33 30 50 11 52 44 53 45
		Mag. 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (Mat.) 31.3 S., 110.8 W. Easter I. region. h: 25 km ca. H= 21 55 33.2	USCGS
12.	P iS	Z E	23 49 39 50 01.4
13.	P i i S	Z Z Z NEZ	01 51 40 41.5 50.2 52 05.6
13.	iP eL P: C	Z N	02 23 51.4 26 52
		44.4 N., 151.6 E. Kurile Is. region. h: 33 km ca. H= 02 20 49.3	USCGS
13.	iP eS P: S, E, D	NEZ NEZ	02 36 50.5 37 20
13.	P iS	Z NE	04 04 31 57.5
13.	P	Z	05 38 46
		1.9 N., 126.5 E.	(cont.)

Date	Phase	Comp.	Time(GMT) h m s
		Molucca Passage. h: 16 km ca. H= 05 31 43	USCGS
13.	iP S L L L	NEZ E E Z N	10 46 38.0 52 30 55 56 58 40 59 05
		P: S, E, D Mag. 6 (Mat.) 3.3 S., 149.9 E. Bismarck Sea. h: 59 km ca. H= 10 38 59.3	USCGS
13.	iP i i	Z Z E	11 33 10.0 33.6 43
		P: C	
13.	P	Z	13 26 16
13.	iP i i	NEZ E E	15 05 34.4 53 06 27
		P: N, E, C	
13.	P	Z	18 22 57
		22.1 S., 170.5 E. Loyalty Is. region. h: 41 km ca. H= 18 12 14.5	USCGS
13.	P	Z	19 56 38
13.	P pP	Z Z	23 11 33 12 06.0
		35.8 N., 71.1 E. West Pakistan. h: 120 km ca. H= 23 02 26	USCGS
13.	eP	Z	23 31 04
14.	iP S P: N, E, D	NEZ E	01 10 33.5 55.5
14.	iP S P: C	Z E	01 39 13.8 40
14.	iP i i i i eS	Z Z Z Z Z E	03 06 03.5 04 04.3 06.6 42.5 50
			(cont.)





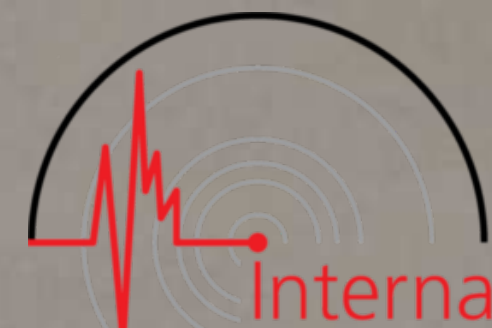


October, 1964



Date	Phase	Comp.	Time(GMT) h m s	Phase	Comp.	Time(GMT) h m s
		Kurile Is. h: 44 km ca. H= 01 36 43.9		16.	eP Z	08 25 53 44.6 N., 149.6 E. Kurile Is. h: 33 km ca. H= 08 23 00.6
			USCGS			
16.	P	Z	06 26 41	16.	eP Z	08 31 25
		<del>23.6 S., 177.6 W.</del> South of Fiji Is. h: 178 km ca. H= 06 15 31.5		16.	P EZ	08 36 13 30 34.6
			USCGS			
16.	iP	Z	07 01 57.5			
		P: D				44.2 N., 149.4 E. Kurile Is. h: 33 km ca. H= 08 33 29.8
						USCGS
16.	P	NEZ	07 02 23			
	S	Z	04 37			
	L	N	05 08			
	L	E	10			
	L	Z	06 24	16.	eP Z	08 40 35
		Mag. 5.8 (Mat.) 44.3 N., 149.5 E. Kurile Is. h: 33 km ca. H= 06 59 38.6				44.3 N., 150.1 E. Kurile Is. region. h: 33 km ca. H= 08 37 34.8
			USCGS			USCGS
16.	P	EZ	07 24 27			
		44.2 N., 149.4 E. Kurile Is. h: 33 km ca. H= 07 21 42.7				16.
			USCGS			P NEZ
						08 50 07
						45.0 N., 149.3 E. Kurile Is. h: 33 km ca. H= 08 47 27.3
						USCGS
16.	P	Z	07 31 12	16.	eP Z	09 01 23
		44.3 N., 149.5 E. Kurile Is. h: 52 km ca. H= 07 28 28.3				i Z
			USCGS			49.0
16.	P	Z	07 40 04	16.	P	NEZ
		44.5 N., 149.6 E. Kurile Is. h: 33 km ca. H= 07 37 19.6				09 20 59
			USCGS			i Z
						21 19
						e N
						23 51
						i Z
						24 09
						L Z
						25 07
						Mag. 5.8 (Mat.) 44.5 N., 149.1 E. Kurile Is. h: 33 km ca. H= 09 18 16.6
						USCGS
16.	P	Z	07 54 19	16.	eP Z	09 28 49
		44.5 N., 149.6 E. Kurile Is. h: 33 km ca. H= 07 51 36.7				
			USCGS			
				16.	iP	NZ
						09 57 13.5
						i E
						32.0
						S N
						59 17
						P: S, C
						44.1 N., 149.3 E. Kurile Is. h: 33 km ca. H= 09 54 30.9
						USCGS
16.	P	Z	08 15 08.3			
	i	Z	09.6			
16.	P	NEZ	08 21 10			
	i	Z	23			
	S	Z	23 20			
	L	Z	24 33	16.	P	NEZ
		Mag. 5.8 (Mat.) 44.6 N., 149.4 E. Kurile Is. h: 33 km ca. H= 08 18 28.3				10 53 41
			USCGS			44.4 N., 149.5 E. Kurile Is. h: 35 km ca. H= 10 50 59.1
						USCGS





International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
16.	iP Z, P NE i E e E r		11 01 16.3 24.0 03 32				
						44.4 N., 140.5 E. Kurile Is. h: 33 km ca. H= 13 29 30.6	USCGS
16.	iP Z, P NE i E e E r		11 27 24.8 38.6 39.3	16.	iP NZ S NE P: S, W, C		14 42 36.9 43 00
						44.1 N., 149.5 E. Kurile Is. h: 25 km ca. H= 10 58 30.6	USCGS
16.	iP Z i Z i N P: C		11 27 24.8 38.6 39.3	16.	P Z i Z i E i E		15 55 16.5 31 57 27 41
						44.6 N., 149.5 E. Kurile Is. h: 33 km ca. H= 11 24 41.5	USCGS
16.	iP NEZ i E eS N P: S, W, C		12 06 47.5 07 04.5 08 54	16.	eP Z eS NE		18 19 39 20 45
						44.6 N., 149.5 E. Kurile Is. h: 33 km ca. H= 12 04 05.3	USCGS
16.	iP Z, P NE P: C		12 21 38.2	16.	iP NEZ i E i E eS N P: S, E, D		18 36 57.8 37 12.8
						44.6 N., 149.5 E. Kurile Is. h: 33 km ca. H= 12 18 54.4	USCGS
16.	P NZ i E i E eS N L E		12 40 07 08.3 20.5 42 11 34	16.	iP Z, P NE i N eS NE		19 19 58.2 19 08 40
						44.3 N., 149.4 E. Kurile Is. h: 33 km ca. H= 12 37 26.8	USCGS
16.	eP Z		13 03 20	16.	P Z 44.1 N., 149.1 E. Kurile Is. h: 33 km ca. H= 23 42 45.3		23 45 40
							USCGS
16.	iP NEZ S E L E P: C		13 23 59.9 24 27 48	17.	iP NEZ S E P: N, W, C Mag. 5.3 (Mat.) 32.5 N., 140.3 E. South of Honshu, Japan. h: 86 km ca. H= 00 59 34.5		01 00 40.7 01 33
							USCGS
16.	iP NZ i E P: N, D		13 32 15.6 16.3	17.	iP Z PP Z eS E L E P: C Mag. 5.4 (Mat.) 7.0 S., 155.8 E. Solomon Is. h: 58 km ca. H= 01 38 36.0		01 46 57.5 48 44 53 50 57 30
							USCGS



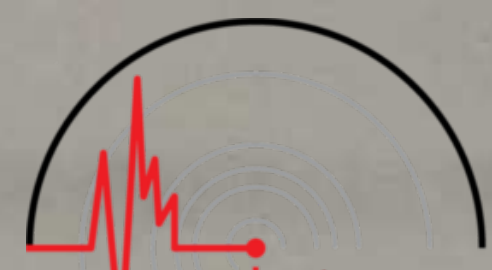


October , 1964

Date	Phase	Comp.	Time(GMT)	Date	Phase	Comp.	Time(GMT)
			h m s				h m s
17.	P eL	Z N	02 09 14 30 40 ca.				
						35.0 N., 25.4 E. Crete. h: 33 km ca. H= 09 50 29.5	USCGS
17.	iP Z, P NE i S P: D	Z Z Z	02 30 00.0 15 55	17.	eP eL	Z E	10 16 50 20 18
						44.5 N., 149.9 E. Kurile Is. h: 33 km ca. H= 10 14 02.7	USCGS
17.	P i PPP eS L Mag. 5 1/2 (Mat.) 0.7 N., 119.3 E. Northern Celebes. h: 62 km ca. H= 03 17 28.1	NEZ Z Z E E	03 24 55 25 04 27 04 31 08 33 47	17.	iP i S P: C	NEZ NEZ S, E	10 22 01.3 30
							USCGS
17.	iP i i e e L P: S, E Mag. 5 1/2 (Mat.) 22.3 S., 171.5 E. Loyalty Is. region. h: 116 km ca. H= 05 55 54.4	NEZ E Z E E E	06 06 32.6 35.8 47.5 15 14 22 40 27 22	17.	P i	Z NZ	12 02 27 38.4 03 14.5
							USCGS
17.	iP P: N, W, D 42.4 N., 131.0 E. Eastern Russia-northeastern China border. h: 513 km ca. H= 06 34 50	NEZ	06 36 48.6	17.	P i	Z Z	12 03 12.0 14.0 47
							USCGS
17.	P i	Z Z	06 48 01 16.0	17.	P i	Z Z	12 07 30.6 35.8 N., 141.3 E. Near east coast of Honshu, Japan. h: 45 km ca. H= 12 07 30.6
							USCGS
17.	iP P: N, W, D 42.4 N., 131.0 E. Eastern Russia-northeastern China border. h: 513 km ca. H= 06 34 50	NEZ	06 36 48.6	17.	P i	Z Z	13 31 10 23.0
							USCGS
17.	P i	Z Z	06 48 01 16.0	17.	P i	Z Z	13 47 05 41.5
							USCGS
17.	eP i	Z N	07 48 19 52.0	17.	iP pP P: S, D	Z Z	15 09 11.0 38.5
							USCGS
17.	P eL	Z E	10 03 07 20 17 (cont.)	17.	P i	Z N	15 01 14.0 7.1 S., 129.4 E. Banda Sea. h: 117 km ca. H= 15 01 14.0
							USCGS
17.	P eL	Z E	10 03 07 20 17 (cont.)	17.	P e	EZ NEZ	17 02 29.8 18 33 06 41 26
							USCGS
17.	P eL	Z E	10 03 07 20 17 (cont.)	17.	P eS	Z E	03 45 54 46 07
							USCGS



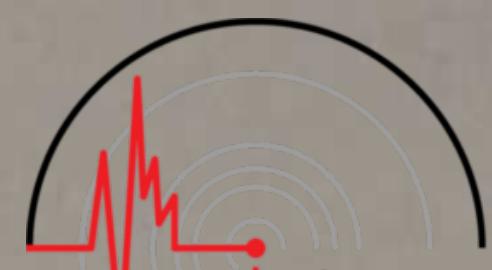
October, 1964



International  
Seismological  
Centre

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
18.	iP Z, P NE		06 19 22.0		i	N	20 18 31.5
	eS E		21 44		i	Z	32.2
	L E		22 53				
	P: D			18.	P	NEZ	20 19 56
	Mag. 5½ (Mat.)			13.	iP	Z	21 53 50.5
	44.4 N., 149.7 E.				P: D		
	Kurile Is.			18.	iP	Z	22 02 06.5
	h: 33 km ca.				eS E		07 12
	H= 06 16 35.2	USCGS			L E		03 38
13.	eP Z		09 18 00				
	S E		27 39				
	SS E		32 20				
	SSS E		36 36				
	L E		40 30				
	Mag. 6-6½ (Mat.)						
	2.9 N., 65.7 E.						
	Carlsberg Ridge.						
	h: 33 km ca.						
	H= 09 06 26.0	USCGS					
13.	iP Z		12 39 52.5				
	i NEZ		53.0				
	i NE		53.3				
	i Z		54.0				
	PP Z		41 23.0				
	i Z		40.0				
	SPP Z		42 37.0				
	i Z		44 24				
	iS NEZ		45 53.0				
	i N		47 53				
	L N		48 40				
	L E		49 08				
	P: D						
	Mag. 6½-6¾ (Mat.)						
	7.0 S., 124.0 E.						
	Banda Sea.						
	h: 574 km ca.						
	H= 12 32 24.1	USCGS					
18.	P Z		13 10 38				
13.	iP Z		14 49 43.3				
	P: D						
13.	iP Z		14 54 35.0				
	eS E		55 34				
	P: D						
18.	P NZ		15 04 38				
	S E		05 02				
13.	P NEZ		15 30 43				
18.	iP Z		17 25 32.3				
	i Z		37.0				
	i Z		55.5				
	P: D						
18.	eP NZ		20 13 18				





International  
Seismological  
Centre

October, 1964

Date	Phase	Comp.	Time(GMT) h m s.	Date	Phase	Comp.	Time(GMT) h m s.
19,	iP i P: D	Z Z	16 38 46.6 40 02.5	20.	iP S P: S, W, C	NEZ NEZ	19 02 36.5 03 00
59.7 N., 148.7 W. Kenai Peninsula, Alaska, h: 53 km ca, H= 16 29 49.1				USCGS			
19,	iP i i P: N, E, C	NEZ N E	16 58 45.5 59 08.5 09.5	20.	P S i	Z Z E	23 07 54 08 19 21
19,	iP i eS P: C	Z NE N	17 03 00.5 01.5 31	20.	eP 3.0 S., 128.6 E. Ceram. h: 33 km ca. H= 23 13 00.4	Z	23 20 36
				USCGS			
19,	iP eS P: C	Z E	17 21 58.3 22 45	21.	iP e S i P: C	Z NE NZ E	02 15 32.9 34 17 06 09
				30.0 N., 141.2 E. South of Honshu, Japan. h: 33 km ca. H= 02 13 49			
				USCGS			
19,	iP iS P: S, C	NZ NEZ	19 58 59.0 59 05.0	21.	iP Z, P NE S i P: S, W, C	NZ E	03 39 52.9 40 24 25
19,	P i eS L L	NEZ Z E E N	21 41 12 25.0 43 34 44 10 15	21.	iP eL e P: D	Z E N	07 50 25.2 08 15 57 24 18
44.2 N., 149.3 E. Kurile Is. h: 33 km ca. H= 21 3' 28.8				USCGS			
19,	P i eS i	Z E N E	22 21 05 24 22 02 06.5	21.	iP Z, P NE S i P: E, D	NEZ	08 19 08.5 11.5 40
20,	eP S	Z E	00 12 35 13 01.5	21.	iP EZ, P N i S P: E, D	NE NEZ	10 22 49.2 23 13
20,	P i i	Z E N	00 37 42 42.7 38 33	21.	iP Z, P NE i i e e P: S, W, C	NE NE E N N	13 40 07.8 19 35 14 14 31 17 05
20,	P eS	Z Z	02 45 20 44	21.	iP Z, P N P: C		13 56 28.5
20,	P eS	Z E	03 44 33 55				
20,	eP	Z	08 07 38				
20,	iP NZ, P E iS P: S, D	E E	08 16 16.6 40.4				



October, 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
21.	iP i P: D	Z N	15 24 46.6 50.5		i i P: N, E, D	E E	03 04 12 20
21.	P iS i i	N NE E N	16 12 05.5 11 30.5 48.0 13 13				49.4 N., 138.7 E. Eastern Sea of Japan. h: 33 km ca. H= 03 02 16.7 USCGS
21.	iP NZ, P i i iS P: S	PE E Z EZ	20 14 11.1 12.5 17 26.5	22.	iP iS P: D	Z E	04 09 07.2 41.5
21.	P i S i P: C	Z N N L	20 17 41.0 43 18 08.5 14	22.	eL eL	E N	07 08 09 29
21.	iP i iS i P: C	Z E NE E	20 52 30.0 31 55.0 53 05.4				38.9 N., 75.8 E. Southern Sinkiang Province, China. h: 120 km ca. H= 06 41 33 USCGS
21.	eP eL	Z E	21 03 00 28 54	22.	iP Z, P P: C	PE	07 57 12.0
			15.1 S., 173.0 W. Tonga Is. h: 33 km ca. H= 20 56 59 USCGS	22.	iP i S i i	EZ N N E Z	09 55 15.7 16.0 43 44 46
21.	iP i PP S i SS L L iL P: E, C Mag. 6 $\frac{1}{2}$ -7 (Mat.) 28.1 N., 93.3 E. India-China border region. h: 37 km ca. H= 23 09 18.8 USCGS	EZ N Z N N N E Z Z	23 16 34.5 39.0 18 06.9 22 20 25 25 17 28 25 30 20 33 43				P: E, D Mag. 5.2 (Mat.) 36.7 N., 141.1 E. Near east coast of Honshu, Japan. h: 40 km ca. H= 09 54 36.9 USCGS
22.	iP eS i P: D	Z NE NE	02 50 06.9 30 46	22.	iP S P: D	Z N	10 27 36.4 28 03
22.	iP i S i P: S, W, C	NEZ N E NZ	03 03 15.5 39 57	22.	iP i S i P: S, W, C	NEZ Z E NZ	12 23 39.0 24 01 12 31 10.9 22 33 34
			(cont.)	22.	eP i eS L L	Z E NE E N	12 40 47 50 43 18 55 45 12



October, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
			23.6 N., 142.7 E. Volcano Is. region. h: 86 km ca. H= 12 37 45.8 USCGS	22.	P e e eL	Z EZ E N	19 21 22 31 23 28 58
22.	iP S P: N, D	NZ, PE E	12 57 16.2 38.0	22.	P S i	Z N EZ	20 24 44 25 07 08
22.	iP i S i P: C	Z Z NE E	13 00 22.5 34 45 01 09	22.	iP eS P: N, E, D	NEZ E	20 44 53.5 46 41
22.	P S P: D	Z NE	13 10 17.0 40	22.	P	NZ	22-02 11
22.	iP iS P: S, C	NZ, PE E	14 16 18.0 32.4	23.	ePKP1 PKP2 PP PPP i SKKS? SKKS? PS SS SS PSPS i Lq Lr	Z Z Z Z Z N E Z E N E Z	02 14 53 15 15 16 14 19 00 21 10 24 06 15 26 30 32 30 33 08 33 42 40 50 05 56 18
22.	iP iS i	EZ, PN E E	15 34 38.4 35 01 24				
22.	iP i S i P: N, W, D	NZ, PE E NE	15 57 19.5 36 42				
22.	iP i S i P: S, C	NZ N Z NE	16 34 27.2 29 58 35 00	23.	e eS? L L	E N E N	07 05 42 07 12 09 26 15 33
22.	P S P: S, C	NEZ EZ, eS N	16 51 17 49				
22.	iP i S i P: C	Z, PNE NEZ N E	17 43 48.0 59 44 14 15				
22.	P e	Z E	18 26 22 33 55	23.	iP S	Z N	07 19 20.0 54.0
22.	P i S	Z E NE	18 28 57.5 29 24 26.5	23.	iP i eS i P: S, W, C	NEZ E N E	09 10 36.5 43 11 20 27
22.	iP i i iS P: N, D	NZ E E E	19 12 22.2 24.0 31 58.6	23.	P i i	Z N E	09 50 51 53 51 23

Mag. 7-7½ (Mat.)  
19.8 N., 56.0 W.  
North Atlantic Ocean,  
h: 31 km ca.  
H= 01 56 03.2  
USCGS

2.7 S., 142.1 E.  
Near north coast of New  
Guinea,  
h: 33 km ca.  
H= 06 53 25.1  
USCGS

(cont.)

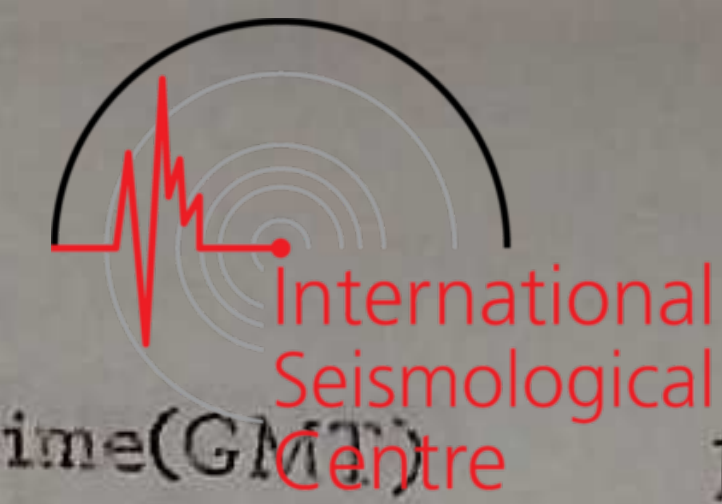


October, 1964

Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
		Kermadec Is. h: 68 km ca. H= 09 39 06.2		23.	eP e	Z Z	22 58 05 59 50
23.	eP i i eS i L	Z NEZ EZ E N E	11 11 12 14.0 25.0 14 20 43 16 48	24.	P S L L	NEZ E NE Z	00 42 53 44 59 45 40 47 11
		45.2 N., 152.0 E. Kurile Is. h: 33 km ca. H= 11 03 03.1					Mag. 4 $\frac{1}{2}$ -5 (Mat.) 44.2 N., 149.3 E. Kurile Is. h: 33 km ca. H= 00 40 09.4
23.	iP i	EZ Z	13 53 09.4 14	24.	iP S i	NEZ E E	01 13 26.0 45 14 13
		P: W, D					P: S, E, C
23.	P i iS	NEZ N NE	15 15 36.0 40.6 16 01.5	24.	iP i S	EZ, P N E E	04 43 52.3 56 44 14.5
		P: N, E					P: D
23.	iP i iS	NZ, P N E E	15 22 49.0 50.5 23 14.1	24.	iP eL eL	Z E N	07 00 09.0 12 11 13 24
		P: N, C					P: D 38.3 N., 71.0 E. Afghanistan-USSR border region. h: 57 km ca. H= 06 51 01.9
23.	P	EZ	18 24 03.2				USCGS
23.	P i i iS	Z NZ EZ N E	18 44 27 29 32 35 57.5	24.	P i eS L eL L	Z Z N E N N	08 50 34 51 06 53 54 54 24 33 57 31
23.	P S i	EZ N E	19 54 01 47 49				24.8 N., 122.1 E. Taiwan region. h: 63 km ca. H= 08 46 25.0
							USCGS
23.	iP i i S L L	Z, P E NE E E E Z	21 08 51.5 52.5 09 10 10 37 48 11 54	24.	iP i i S	EZ N N N	11 33 10.5 11.0 16.6 55
		P: D					P: W, C
		Mag. 5.6 (Mat.) 44.0 N., 147.5 E. Kurile Is. h: 45 km ca. H= 21 06 24.2		24.	P S	Z E	11 38 00 43
							USCGS
23.	P i i iS i	NEZ N N E Z	21 41 26.0 29 51.5 52.1 52.5	24.	P	Z	13 51 39
		P: S, W, D					55.8 N., 160.4 E. Kamchatka. h: 33 km ca. H= 13 46 19.1
							USCGS



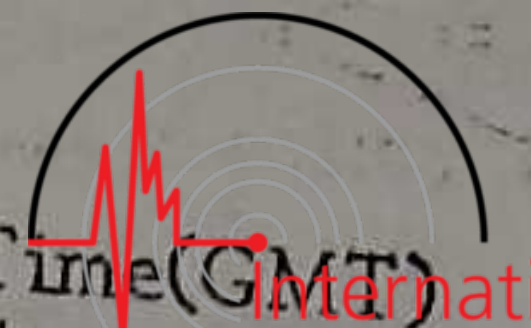
October, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
24.	iP S P: S, E	NEZ E	14 04 24.0 30	25.	P Z	Z	06 47 58
24.	iP S P: N, E, D	NEZ NEZ	14 29 08.0 13.8	25.	P Z	Z	08 09 21 73.5 N., 53.7 E. Novaya Zemlya. h: 0 km ca. H= 07 59 58.8 USCGS
24.	P eL	Z E	18 44 27 53 28	25.	iP P: C	Z	09 22 53.0
			66.0 N., 145.5 E. Eastern Siberia. h: 33 km ca. H= 18 38 25.7 USCGS	25.	P i	Z E	09 29 12 30 33
24.	iP Z, P S P: N, W, D	NE NE	19 30 49.8 31 21	25.	eL eL	E N	10 33 09 35 25 15.3 S., 173.3 W. Tonga Is. h: 33 km ca. H= 10 01 48 USCGS
24.	iP S P: S, E, D	NEZ NE	20 13 46.3 14 20	25.	iP eS P: N, D	NEZ Z	10 46 39.1 47 49
24.	P i	Z NE	21 45 49 50	25.	iP e eS esSP P: N, W, C	NEZ Z E E	12 19 07.7 19 27 33 31 22 21.7 S., 179.2 W. Fiji Is. region. h: 534 km ca. H= 12 08 46.9 USCGS
24.	P i	Z Z	21 59 42 43.2	25.	iP EZ, P i S i i P: W, D	N N EZ N E	15 43 23.5 24.9 52.0 52.4 44 15
24.	iP S P: C	Z E	23 34 37.0 35 04	25.	P i	Z Z	23 05 17 24 38.7 N., 70.8 E. Afghanistan-USSR border region. h: 33 km ca. H= 22 56 08 USCGS
25.	P i eS	E EZ NE	01 07 13 15 50	25.	P i S i i P: D	NEZ E E	03 16 24 36 48
25.	iP S P: E, D	NEZ E	02 10 30.9 11 23	25.	iP S P: S, E, C	NEZ NEZ	02 58 47.4 53.0
			34.0 N., 136.6 E. Southern Honshu, Japan. h: 393 km ca. H= 02 09 29 USCGS	25.	iP i S P: D	EZ E E	05 16 54.9 17 01 18.0
25.	iP S P: S, E, C	NEZ NEZ	02 58 47.4 53.0	25.	PKP Z	Z	06 44 46 Ecuador. h: 160 km ca. H= 06 25 48.6 USCGS
25.	iP i S P: D	EZ E E	05 16 54.9 17 01 18.0	26.	P i S	NEZ E NE	03 16 24 36 48
25.	PKP Z	Z	06 44 46 Ecuador. h: 160 km ca. H= 06 25 48.6 USCGS	26.	iP S P: S, E, D	NEZ NE	04 24 52.9 25 07



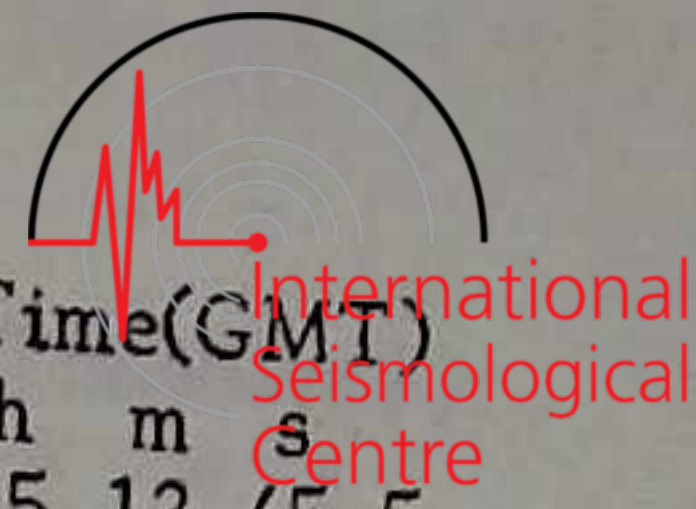
October, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
26.	P i i	NEZ Z NE	12 21 45 22 10 12		eS P: C	E	02 11 31
26.	P	Z	14 14 58	27.	iP Z, P eS L	NE E E	02 45 24.5 49 37 51 46
26.	iP i PcP S i i i Lr P: C	Z NE Z N E Z E Z	14 29 54.4 55 32 22 35 12 27 36 05 37 44 38 14 40 20		18.9 N., 120.9 E. Luzon P. I. h: 56 km ca. H= 02 40 20.9		USCGS
			Mag. 5½-5½ (Mat.) 2.2 N., 126.8 E. Molucca Passage. h: 48 km ca. H= 14 22 57.8				
26.	P	Z	14 41 38	27.	P i i i eS i P: C	Z N NZ N E E	09 35 11.7 14 20 38 47 59
			56.8 N., 152.3 W. Kodiak Is. region. h: 33 km ca. H= 14 32 49.3				USCGS
26.	iP iS i P: N, D	NZ NE E	15 18 16.9 39.5 52	27.	P i i i S	Z E Z N E	09 39 55 40 07 11 29 42
26.	P e eL	Z E N	20 11 53 15 54 18 19	27.	P i	Z N	10 45 00 23
			24.0 N., 123.4 E. Southwestern Ryukyu Is. h: 33 km ca. H= 20 07 43				USCGS
26.	iP i S P: W, C	EZ N N	21 30 12.4 13 56	27.	iP i iS P: S, D	NZ E NE	14 19 26.4 28.6 48.0
			37.1 N., 141.9 E. Near east coast of Honshu, Japan. h: 55 km ca. H= 21 29 26				USCGS
26.	iP eS P: W, C	NZ N	22 06 41.0 08 10	27.	iP i S i i P: S, W, C	NEZ NEZ NE Z E	15 10 15.4 22 43 46 11 03
			38.6 N., 139.5 E. Near north coast of Honshu, Japan. h: 20 km ca.				JMA
27.	iP Z, P S P: C	E E	00 45 28.5 46 23	27.	P	Z	15 13 40.4 (cont.)
27.	iP	Z	02 09 34.5 (cont.)				



October, 1964



Date	Phase	Comp.	Time(GMT) h m s	Date	Phase	Comp.	Time(GMT) h m s
	i	Z	15 13 45.5	27.	P	NE	21 07 06.5
	i	E	14 07		S	NEZ	15.6
	S	NEZ	09.0		P: N		
	P: C						

27.	iP NZ, P E		15 23 43.7
	i	Z	49.4
	i	N	24 09.0
	S	NE	12.6
	P: S, C		

27.	P	Z	15 31 53
	i	NE	54.5
	S	NE	32 20

27.	iP	NEZ	16 51 28.8
	iS	NEZ	52 02.5
	P: N, E, C		

27.	iP	NEZ	17 09 37.9
	i	NEZ	40.0
	iS	E	10 05.0
	i	N	07
	P: S, W, C		
			38.6 N., 139.5 E.
			Near north coast of Honshu, Japan.
			h: 20 km ca. JMA

27.	P	NZ	18 31 42
	i	NZ	46
	S	E	32 04
	i	NE	15

27.	eP	Z	18 44 28
-----	----	---	----------

27.	P	Z	19 10 44
		NEZ	46.0
		Z	50.8
		N	51.0
		Z	11 28
		NE	34

27.	P	Z	19 30 33
-----	---	---	----------

27.	iP Z, P N		20 12 08.0
	eSS	E	18 46
	L	E	26 45
	L	E	30 17
	L	N	36
	P: C		
			27.6 S., 176.8 W.
			Kermadec Is.
			h: 168 km ca.
			H= 20 00 35 USCGS

27.	iP Z, P NE		20 47 03.0
	i	N	20.0
	P: S, E, D		

27.	P	Z	21 37 29
	SKS	N	47 56
	S	E	48 27
	eSS	E	53 49
	eSSS	E	56 55
	L	E	22 00 50

Mag. 5 $\frac{1}{2}$ -6 (Mat.)  
45.6 S., 96.1 E.  
Southeast Indian Rise.  
h: 33 km ca.  
H= 21 24 31.2 USCGS

27.	P	Z	22 56 13
	e	N	23 07 31
	eL	E	16 21

28.	PKP1	Z	00 42 19
	PKP2	Z	37
			29.6 S., 70.7 W.
			Central Chile.
			h: 45 km ca.
			H= 00 22 07.3 USCGS

28.	P	Z	02 15 26
-----	---	---	----------

28.	eP	Z	02 37 44
	i	Z	38 15
			51.1 N., 157.8 E.
			Near east coast of Kamchatka.
			h: 31 km ca.
			H= 02 33 09 USCGS

28.	P	Z	05 59 41
	ePP	Z	06 02 06
	e	E	15.0
	eL	N	17.5
			16.6 S., 177.2 W.
			Fiji Is. region.
			h: 33 km ca.
			H= 05 48 45.4 USCGS

28.	eP	Z	08 12 25
-----	----	---	----------

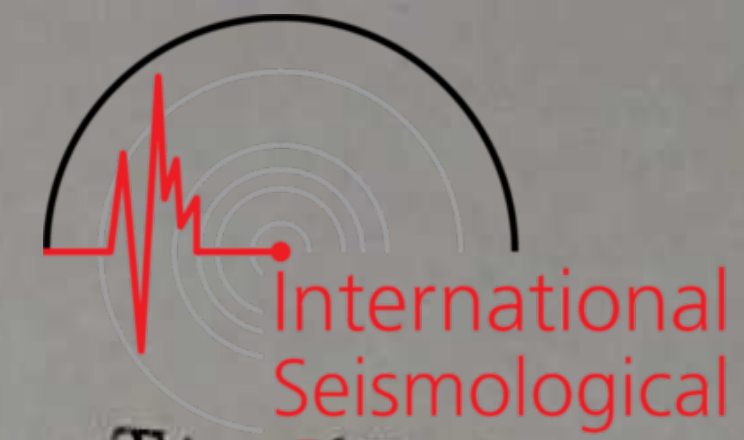
28.	P	Z	11 53 04
	i	NZ	09
	S	NE	30.5

28.	P	Z	12 32 17.7
	i	NE	18.4
	S	N	53.4
	P: D		

28.	P	NEZ	18 59 26
	L	E	19 04 38
			44.3 N., 149.3 E.
			Kurile Is.
			h: 19 km ca.
			H= 18 56 40.5 USCGS



October, 1964



Date Phase Comp Time(GMT)

Date	Phase	Comp.	Time(GMT)
			h m s
28.	P	Z	19 44 20
	pP	Z	52
	sP	E	45 09
36.1 N., 71.3 E. Afghanistan-USSR border region. h: 130 km ca. H= 19 35 15.8 USCGS			
28.	P	Z	23 44 18
	i	E	19.0
	eS	E	48
29.	P	Z	01 22 25
52.7 N., 168.7 W. Fox Is. h: 33 km ca. H= 01 14 51.0 USCGS			
29.	iP	Z	04 04 22.4
	eS	N	59
P: C			
29.	iP Z, P N	NEZ	04 55 26.8
	S		37
P: C			
29.	eP	Z	05 56 41
	i	NEZ	45
	eS	E	52
29.	eP	Z	07 01 26
13.4 S., 166.6 E. New Hebrides Is. h: 43 km ca. H= 06 51 46 USCGS			
29.	P	Z	09 24 52
	i	Z	25 03
29.	P	Z	12 03 00
	S	NE	27
29.	P	EZ	14 03 24.5
P: W, C			
29.	iP	EZ	16 02 21.0
	i	N	21.2
	i	N	37.6
P: E, D			
29.	P	Z	19 20 17
17.8 S., 168.1 E. New Hebrides Is. h: 33 km ca. H= 19 09 59 USCGS			
29.	iP EZ, P N		21 35 15.8
	i	E	23

(cont.)

Date Phase Comp Time(GMT)

Date	Phase	Comp.	Time(GMT)
			h m s
	i	E	21 35 32.5
	S	E	36 14
P: W, C			
30.	P	NZ	01 59 36
	S	E	38
30.	eP	Z	03 06 06
12.1 S., 65.7 E. Mid-Indian Rise. h: 28 km ca. H= 02 53 40.8 USCGS			
30.	P	NZ	10 26 22.2
	i	E	24
	e	N	27 30
P: D			
30.	iP NZ, P E	NEZ	10 34 37.0
	iS		48.5
P: N, D			
30.	P	Z	13 04 36.3
	i	Z	48
30.	P	Z	14 00 04
	S	E	11.5
30.	iP	Z	17 22 02.5
	e	Z	23 41
	eS	E	29 13
	eSS	N	32 43
	L	E	33 08
	L	N	37 38
P: C Mag. 5 1/4 - 5 1/2 (Mat.) 56.6 N., 152.2 W. Kodiak Is. region. h: 33 km ca. H= 17 13 13.8 USCGS			
30.	iP	NEZ	18 23 11.7
	S	N	37.8
	i	EZ	39.0
P: S, W, D			
30.	iP	NEZ	19 35 26.0
	i	E	48
	S	E	36 07
P: N, E, D 37.8 N., 141.9 E. Near Honshu, Japan. h: 40 km ca. JMA			
30.	iP	Z	19 53 54.5
	i	Z	58
	i	N	55 26
	e	E	51



