



CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA CALIFORNIA

SEISMOLOGICAL LABORATORY

BULLETIN

JANUARY - MARCH 1946

(PASADENA AND AUXILIARY STATIONS)

	Lat. N.	Long W.	h(m)	Symbol
Pasadena	34°08' .9	118°10' .3	295	P, PX
Mt. Wilson	34°13' .5	118 03' .4	1742	MW
Riverside	33 59 .6	117 22 .5	250	R
Palomar	33 21 .3	116 51 .6	1700	Pr
La Jolla	32 51 .8	117 15 .2	8	LJ
Santa Barbara	34 26 .5	119 42 .9	100	SB
Haiwee	36 08 .2	117 57 .9	1100	H
Tinemaha	37 05 .7	118 15 .5	1180	T

In the columns headed "Sta." P denotes readings for short-period instruments, and PX for long-period instruments, all at Pasadena

Readings for Tucson (Tu) are from original records lent by courtesy of the U. S. Coast and Geodetic Survey.

c = compression d = dilatation

When surface waves are not reported no such waves are found on the Seismograms at Pasadena

All times are G. C. T.

Under "Remarks," data headed A and T refer to the maximum amplitude in microns of computed earth displacement, and the corresponding period in seconds, of each indicated phase at Pasadena.

All stations except Palomar are equipped with a pair of horizontal-component Wood-Anderson torsion seismometer and a short-period Benioff vertical-component seismometer. Pasadena also has long-period Benioff seismometers, and other instruments of several types. Palomar has a three-component short-period Benioff seismometer unit.

All communications should be addressed to the central station, as follows:

Seismological Laboratory,
220 North San Rafael Avenue,
Pasadena 2, California

Date	Sta.	Phase	h	m	s	Remarks
Jan. 2	P	iPNEZ	15	25	09	Tu eP? 15 25 41
	MW	iPZ			11	ePP 29 37
	T	ePZ			10	
Jan. 3	P	ePZ	04	14	13	Tu e? 04 14 53
	MW	iPZ			14	iP 15 11
	R	ePZ			15	
	T	iPEZ		13	59	
Jan. 4	MW	ePZ	10	04	58	Tu iP 10 04 49
	R	iPZ			58	
		iZ		05	17	
		iZ			24	
Jan. 4	T	ePZ?			04	
	P	iPNEZ	19	51	11	Tu eP 19 50 16
	PX	eLNZ	20	03	09	i 21 38
	MW	iPZ	19	51	12	i 38
		iPcPZ		53	33	iPcP 53 16
	R	iPZ		51	06	Mexico
		iZ		53	31	
	Pr	iPNEZ		50	58	
		iZ		51	17	
		iZ			25	
		iPcPZ		53	30	
	T	iPNEZ		51	25	
		iPcPZ		53	38	
	Jan. 5	P	iPNZ	01	21	12
		ipPNEZ			54	ipP 58
		isPZ		22	19	iPcP 23 52
		iPcPZ		24	06	iScP 27 09
		ipPcPZ			57	
PX		eSN		26	02	USCGS: 15.5°N, 91°W, O=01:15.0
		e(ss)N		27	25	
P		iScPZ			28	
PX		iScSNE		31	23	
MW		iPZ		21	13	
		ipPNZ			53	
R		iPZ			07	
		ipPZ			50	
		iPcPZ		24	03	
		epPcPZ			58	
Pr		eScPZ		27	24	
		iPNEZ		21	02	
		ipPNEZ			44	
		iZ			50	
		isPZ		23	08	
		iZ			28	
		iPcPZ			57	
		iSN		25	45	
LJ		iScPZ		27	24	
	ePNEZ		21	04		
	epPNE			46		
SB	eZ		22	10		
H	ePNZ		21	22		
	ipPZ		22	04		
T	iPNEZ		21	28		
	epPNEZ		22	12		
	isPZ			34		
	iPcPZ		24	09		
	iScPZ		27	34		
	iScSNE		31	32		
Jan 5	T	iPZ	01	44	47	Tu iP 01 43 49 d
Jan 5	P	iPZ	03	08	35	Tu iP 03 09 01
	MW	iPZ			36	
	R	iPZ			37	
	Pr	iPZ			39	
	H	iPZ			43	
	T	iPZ			45	

Date	Sta.	Phase	h	m	s	Remarks
Jan. 5	P	iPZ	12	56	10	Tu iP 12 55 33
	MW	iPZ			09	
	R	iPZ			05	
		iZ			23	
		iZ			34	
	T	iPZ			22	
Jan. 5	P	iPEZ	15	18	59	Deep Tu iP 15 19 37
	MW	ipPEZ		19	19	ipP 58
		iPZ			00	
		ipPZ			20	
	R	iPZ			03	
	Pr	iPZ			09	
		ipPZ			30	
	T	iPNEZ		18	46	
		ipPZ		19	05	
Jan. 5	P	iPEZ	16	20	40	Tu iP 16 21 10
	MW	iPZ			41	c i 25 11
	R	iPZ			42	c Two shocks?
		iZ		24	27	
	Pr	iPZ			20	47
		iZ		21	09	
	H	iPZ		20	39	
	T	iPZ			37	c
		eZ		24	14	
Jan. 5	P	iPNEZ	20	10	03	Normal Tu iP 20 10 27
		ePPNE		13	19	i 46
	PX	eSKSNE		20	23	iPP 14 11
		iSEZ			27	ePKKP 27 48
		iPSZ		21	31	eP'P' 35 59
		iSSSN		29	43	
		eLNZ		32	47	USCGS: 16°S, 167°E, O=19:57.3
	MW	iPZ			10	03
	R	iPNEZ			05	
	Pr	iPEZ			08	
	LJ	ePNEZ			05	P A T
	SB	ePNZ			03	PP 3 5
	H	iPNZ			07	S 4 4
	T	iPEZ			08	L 8 8
		eSNE		20	49	L 5C 20
		iPKKPZ		28	03	Magnitude 7 to 7 1/4
		eP'P'Z		36	13	
Jan. 6	PX	eLZ	23	24	5	
Jan. 7	P	iPKKPZ	06	43	20	Tu e 06 32 54
	PX	eLZ	07	06	35	e 34 16
	MW	eZ	06	32	43	e 47 03
	R	eZ		33	19	Off Mindanao
		ePKKPZ		43	17	Roughly 7°N, 127°E, O=06:14:00
	T	eZ		32	40	
		ePKKPZ		43	24	
Jan. 7	PX	eLZ	15	56	0	Tu eP 15 54 29
	MW	iZ			53	03
		iZ			21	
	R	eZ?		52	48	
	H	ePZ			47	
	T	ePEZ			41	
		eSN		54	10	
Jan. 8	P	iPNEZ	18	54	54	Normal Tu iP 18 55 09
		iSNE		55	24	
	MW	iPZ		54	54	Felt widely in Southern Calif.
		iSNZ		55	23	
	R	iPNEZ!		54	45	c Palomar station being over-
		iSNE		55	05	hauled at time of the shock.
	LJ	iPNEZ		54	40	c 33.1°N, 116°W, O=18:54:20
		iSNZ			53	Magnitude 4.8

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
		(Continued)				
Jan. 8	SB	iPNZ		55	15	
		iSN		56	06	
	H	ePZ		55	17	
		iSN		56	06	
	T	ePNEZ		55	29	
		iSNE		56	42	
Jan. 9	P	iPZ	15	13	44	Tu iP 15 14 03
	R	iPZ			46	
	Pr	iPZ			47	d
Jan. 9	Pr	ePZ	21	28	51	Tu iP 21 28 31
Jan. 10	P	iPNEZ	23	53	02	Tu eP 23 53 34
	MW	iPNZ			05	
	R	ePZ			07	
	Pr	ePZ			09	
	SB	ePZ			01	
	H	ePNZ			03	
	T	ePEZ			04	
Jan. 11	P	iPNEZ!	01	44	41	c Deep! Tu iP 01 45 10 c
		ipPZ		46	45	i 27
		isPZ		47	55	i 35
	PX	iSNEZ		53	58	ipP 47 15
		esSE		57	36	i 48 24
		eSSE		59	31	i 38
		eLNZ	02	05	8	eS 54 40
	P	eP'P'Z		11	25	iPKKP 02 03 09
		eP'P'Z		13	25	i 05 48
		eSKPP'Z			40	eP'P' 11 02
		eP'P'Z		33	47	iSKPP' 13 30
	MW	iPNZ!	01	44	43	c eP'P'P' 34 24
		iNZ		45	06	A T
		ipPNZ		46	44	P 2 3
		isPNZ		47	56	S 10 3
		iSNZ		53	59	
		iNZ		54	44	45°N, 129°E, O=01:33:25, h=550km
		ePKKPZ	02	03	20	Magnitude 7 to 7 1/4
		eP'P'Z		11	20	
		epP'P'Z		13	25	
		eSKPP'Z			49	
		eP'P'P'Z		33	57	
	R	iPNEZ	01	44	45	c
		iZ		45	01	
		ipPZ		46	47	
		isPZ		47	58	
		iSNEZ		54	03	
		iPKKPZ	02	03	19	
		eP'P'Z		11	23	
		eSKPP'Z		13	53	
	Pr	iPNEZ!	01	44	49	c
		iZ		45	09	
		ipPZ		46	57	
		isPZ		48	03	
		iSNEZ		54	14	
		ePKKPZ	02	03	17	
		eP'P'Z		11	08	
		epP'P'Z		13	12	
		iSKPP'Z			44	
	LJ	iPNEZ	01	44	50	c
		epPZ		46	57	
		esPZ		48	10	
		iSE		54	14	
	SB	iPNZ		44	35	
		ipPNZ		46	43	
		iSNZ		53	49	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
(Continued)						
Jan. 11	H	iPNZ	01	44	36	c
		iNZ		45	08	
		ipPNZ		46	39	
		iSNZ		53	47	
	T	eSKPP:Z	02	14	02	
		iPNZ	01	44	32	c
		iSNE		53	38	
		ipP:PEZ	02	13	41	
		iSKPP:EZ		14	05	
Jan. 11	P	iPNEZ	18	47	22	Tu iP 18 46 21 c
	MW	iPNZ			21	
	R	iPNEZ			16	Felt at Coatzacoalcos (Veracruz),
	Pr	iPNEZ!			09	according to Tacubaya
		iEZ			22	
	LJ	iPNEZ			07	
Jan. 12	P	e(P)NEZ	03	23	12	Tu eP 03 21 47
	PX	eLEZ		28	26	i 22 14
	Pr	i(P)Z		23	04	
Jan. 12	PX	eLNZ	06	13	8	Tu eP 06 07 38
					52	
Jan. 12	P	iPNEZ	20	32	03	c Normal Tu iP 20 32 44
		iPPNEZ		33	20	
		eNE		58		USCGS: 59°N, 147.5°W, O=20:25.7
		iSNEZ		37	21	
		eZ		38	14	Felt at Cordova and strongly at
		iZ		29		Anchorage (Alaska)
		eLNE		39	20	P A T
	MW	iPNZ		32	01	PP 10 5
		iPPNZ		33	19	S 14 5
		eSN		37	26	L 60 20
	R	ePZ		32	18	
	Pr	iPNEZ		32	14	c
		iPPNE		33	29	Magnitude 7
		iSN		37	43	
	LJ	iPNEZ		32	17	
	SB	iPEZ		31	56	
	H	ePNZ			51	
		eN		33	01	
Jan. 13	T	ePNEZ		31	43	
	P	iPNEZ	16	32	07	Tu eP? 16 33 15
		iSNEZ			59	iS 35 39
	MW	iPNZ		06		Felt in Inyo and Mono Counties,
		eSN		54		Calif.
	R	iPNEZ		11		37.3°N, 118.7°W, O=16:31:15
		iSNEZ		33	11	Magnitude 4.7
	Pr	iPNEZ		32	21	
	LJ	ePNZ			38	
	SB	ePEZ			06	
		iSEZ			44	
	H	iPNZ!		31	40	d
		iSNZ		32	00	
	T	iPNEZ!		31	24	d
		iSNE			31	
Jan. 13	P	iPNEZ	17	13	05	Small shock felt in the Los
		iSNEZ!			10	Angeles area
Jan. 14	P	iPZ	07	00	30	Tu iP 07 01 07
	R	iPZ			39	
	Pr	iPZ			42	
	H	ePNZ			32	
Jan. 15	P	ePNEZ	05	48	56	Tu iP 05 49 41
	MW	ePZ			56	
	R	ePZ		49	00	
	Pr	iPEZ			06	
	H	ePZ		48	48	
	T	iPEZ			42	

Date	Sta	Phase	h	m	s	Remarks
Jan. 15	P	ePEZ	22	34	13	Tu iP 22 35 43
		eSEZ		35	55	
	MW	ePZ		34	14	
		eSZ		36	01	
	R	ePZ		34	21	
		iSZ		36	09	
	Pr	ePZ		34	34	
		iSNEZ		36	31	
	SB	ePEZ		34	04	
		eSEZ		35	32	
	H	ePNZ		34	00	
		eSNZ		35	40	
	T	iPNEZ		33	54	
		iSZ		35	20	
Jan. 16	P	ePZ	05	44	03	
	MW	iPZ			05	
	R	ePZ			11	
	Pr	ePZ			09	
Jan. 16	P	iPZ	07	39	03	Tu iP 07 38 26
	MW	iPZ			01	
		iZ			29	
	R	iPZ		38	59	d
		iZ		39	25	
	Pr	iPZ		38	54	
	H	ePZ		39	09	
	T	iPZ			14	
Jan. 16	P	ePZ	07	46	05	Tu eP 07 45 07
	MW	ePZ			01	Part of preceding shock?
	Pr	ePZ		45	50	
Jan. 16	MW	ePZ	15	02	17	Tu iP 15 02 37
Jan. 16	MW	iPZ	16	58	58	Tu eP 16 59 20
	R	ePZ			57	
Jan. 16	MW	ePZ	19	04	51	
	R	ePZ			53	
Jan. 17	P	iPEZ	02	37	24	Tu iP 02 37 49 c
	MW	iPZ			26	
	R	iPZ			27	
	Pr	iPZ			27	c
	SB	ePZ			20	
	H	iPZ			33	
	T	iPZ			34	
Jan. 17	P	iPNEZ	09	53	03	Deep Tu eP 09 53 33
		iPPNEZ			39	e 56 40
		iNE		57	28	
	PX	iSE	10	03	32	6°S 145E, O=C9:39:27, h=100 km.
		eLZ		20	16	Press reports violent shock at
	MW	iPNZ	09	53	04	Lae (New Guinea) night of Jan-
		ipPNZ			36	uary 17th Magnitude 7 to 7 1/4
	R	iPNZ			06	
		ipPNZ			36	P A T
	Pr	iPEZ			07	PP 1/2 1
		epPNZ			36	S 2 3
	LJ	ePNEZ			07	
	SB	ePEZ			00	
	H	ePZ			08	
	T	iPNEZ			00	
		epPZ			40	
		iZ			55	
Jan. 17	P	iPNEZ	10	58	53	Tu eP 10 59 22
		epPNEZ		59	12	
	MW	iPNZ		58	53	
		epPNZ		59	11	
	R	iPZ		58	56	
		ipPZ		59	15	
	Pr	iPNZ		58	58	
	LJ	ePZ			57	
	T	iPEZ			53	

Date	Sta	Phase	h	m	s	Remarks
Jan. 18	MW	ePZ	04	46	38	Tu iP 04 45 45
	R	ePZ			34	
	Pr	ePZ			24	
Jan. 18	P	iPNEZ	15	44	24	Deep Tu iP 15 44 50
		ipPNEZ		45	36	ipP 46 02
		iZ		47	10	eS 54 25
	MW	eSE		53	29	Near Samoa?
		iPNZ		44	25	h=300 km.
		ipPZ		45	37	
		iNZ			43	
		iZ		47	03	
		iZ			11	
		eZ		48	13	
		iZ			20	
	R	ePEZ		44	25	
		epPZ		45	38	
		iZ		47	18	
	Pr	iPNEZ		44	28	d
		ipPEZ		45	38	
		iSE		53	38	
	LJ	ePNEZ		44	26	
	SB	ePZ			20	
	H	iPNZ			32	
		epPNZ		45	43	
	T	iPEZ		44	32	
		ipPZ		45	45	
		eZ		47	24	
Jan. 18	P	iPNEZ	16	06	30	Tu eP 16 06 58
	MW	iPZ			31	d
	R	iPZ			33	d
	Pr	iPNEZ			35	d
	H	ePZ			35	
	T	iPZ			35	
Jan. 19	MW	ePZ	12	48	56	Tu iP 12 48 40
Jan. 19	P	iPZ	13	51	51	
		eZ		52	03	
	PX	eLZ	14	20		
	MW	iPZ	13	51	47	
		eZ		52	05	
	R	ePZ		51	54	
	Pr	ePZ			53	
		iZ		52	05	
Jan. 19	MW	iPZ	16	27	48	Tu iP 16 28 13
	R	iPZ			51	Felt at Apia
	Pr	iPZ			50	
	H	ePZ			56	
	T	iPZ			58	
Jan. 19	P	ePZ	22	40	29	Tu eP 22 40 17
	MW	ePZ			24	
	R	ePZ			19	
	Pr	ePZ			19	
Jan. 20	P	iPNZ	06	56	22	Tu iP 06 55 38 d
	MW	iPZ			25	d
	R	iPZ			19	d
	Pr	iPZ			14	
Jan. 20	P	ePNEZ	17	07	08	Normal Tu eP 17 07 32
		iZ		10	23	
	PX	eZ		19	21	
	MW	eLNE		29	5	15°S, 166°E, C=16:54.2
		ePNZ		07	06	
		iZ		10	33	
	R	ePEZ		07	08	
		iEZ			24	P A T
	Pr	iPZ		07	13	1 2
		iZ		10	12	
	T	iPEZ		07	16	

Date	Sta	Phase	h	m	s	Remarks
Jan. 20	PX	eLZ	19	25	7	Tu eP 19 09 24
	R	eZ		09	17	
Jan. 21	MW	iPZ	15	38	02	Tu iP 15 38 21
	R	iPZ			05	
	Pr	iPNEZ			04	
	H	iPZ			14	
Jan. 21	P	iPZ	18	20	08	Tu e(P) 18 20 10
	PX	eLZ		49	4	i 33
	MW	iPZ		20	09	
	R	ePZ		19	56	
		iZ		20	12	
	Pr	ePZ		19	56	
		iZ		20	11	
	T	iPNZ			15	
Jan. 21	P	iPZ	19	59	20	Tu iP 19 58 40
	MW	iPZ			19	
		iZ			55	
	R	iPZ			15	
	Pr	iPZ			12	
	T	iPZ			31	
Jan. 22	PX	eLZ	03	49	4	Tu eP 03 19 21
	MW	ePZ		19	09	
	R	ePZ			01	
	Pr	ePZ		18	59	
	T	ePEZ		19	04	
Jan. 22	R	ePZ	09	13	59	Tu iP 09 14 27
	Pr	ePZ		14	03	
Jan. 22	MW	ePZ	12	11	18	Tu iP 12 10 37
Jan. 23	P	iPNEZ	01	56	13	Tu iP 01 56 46
	MW	iPZ			14	c
	R	iPZ			15	
	Pr	iPNZ			20	c
	LJ	ePNEZ			20	
	SB	iPZ			07	
	H	iPZ			06	
	T	iPEZ			02	
Jan. 23	P	ePZ	06	32	06	Tu iP 06 31 25
	MW	iPZ			06	
Jan. 24	P	eZ	06	37	20	Normal Tu eP 06 38 41
	PX	eLZ	07	07	3	
	MW	ePZ	06	37	13	
	Pr	eZ			43	
Jan. 25	P	ePZ	02	06	26	
		eZ			56	
	MW	ePZ			26	
		eZ			59	
		iZ			07	13
	R	ePZ			06	27
		eZ			07	01
	Pr	iPZ			06	30
		eZ			07	06
	T	iPZ?			06	27
		iEZ				42
		eEZ				52
		iZ			07	03
Jan. 25	P	iPNEZ	04	38	00	Deep? Tu iP 04 37 13 c
		iZ			21	i 26
		iZ			43	i 43
	MW	iPZ		37	59	
		iZ		38	22	
		eZ			48	
		iZ			57	
	R	iPZ		37	54	
		iZ		38	17	
		iZ			53	
		iZ		40	04	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
Jan 25	Pr	iPNEZ	04	37	52	c
		iZ		38	14	
		iZ			53	
	LJ	ePZ		39	57	
		eZ		37	52	
	SB	iPZ		38	54	
	H	iPNZ			10	
	T	iPEZ			03	
		iZ		38	04	
		iEZ			12	
		eZ			23	
Jan 25	P	ePNEZ	17	44	33	Normal Tu iP 17 44 20
	PX	eLZ	18	19	59	
	MW	ePZ	17	44	29	Strong in Switzerland
	R	ePZ			31	Zurich gives 46°22' N, 7°31' E
	Pr	ePN			38	Strasbourg gives C=17 31:50
	T	ePE			21	
Jan 26	P	iPZ	02	00	40	Tu iP 02 01 C4
	MW	iPZ			41	e 02 03 09
		eZ			02	50
	Pr	iPZ			00	43
		iZ			02	52
Jan 26	P	iPNEZ	02	42	22	Tu eP 02 42 56
		iNEZ			34	i 02 43 07
	PX	eLZ	03	08	2	
	MW	iPZ	02	42	23	
		iNZ			35	
		eNZ			43	08
	R	iPZ			42	27
		iEZ			40	
	Pr	ePNEZ			31	
		iNEZ			44	
		eSN			52	49
	LJ	ePNEZ			42	31
	SB	ePZ				18
	H	ePZ				20
		iNZ				31
	T	iPZ				18
		iEZ				27
		iZ				56
Jan 26	P	iPNEZ	16	54	41	Tu iP 16 55 15 d
		iNEZ			55	13
	MW	iPNZ			54	43
		iZ			55	15
		iZ				20
	R	iPZ			54	46
	Pr	iPNE				51
	LJ	iPNEZ				48
	SB	iPZ				37
	H	iPNZ				41
	T	iPEZ				39
Jan 26	P	iPZ	18	26	55	Tu iP 18 27 43
	MW	iPNZ			56	
	Pr	iPNE			27	08
	H	iPNZ			26	46
	T	iPZ				39
Jan 27	P	ePNEZ	C1	24	43	Tu iP C1 25 21
	MW	iPZ			44	36
		eZ			25	00
	R	iPZ			24	48
	Pr	iPNE				52
	LJ	ePEZ				53
	SB	iPZ				36
	H	iPZ				37
	T	iPEZ				33

Date	Sta	Phase	h	m	s	Remarks
Jan 27	MW	iPZ	C7	54	37	Tu iP C7 55 22
		iZ			51	
Jan 27	P	iPNEZ	15	10	00	Tu eP 15 10 31
	MW	iPZ			00	
	R	iPZ			04	
	Pr	iPNZ			C7	
	H	iPZ			C9	57
	T	iPEZ				54
Jan 27	MW	ePZ	21	38	08	Tu iP 21 37 39
	Pr	iPZ			08	
		ePZ			14	
Jan 28	P	ePNEZ	12	52	41	Normal Tu iP 12 51 38
	PX	e(S)N			56	47
	MW	ePZ			52	40
	R	iPZ				34
	Pr	iPNEZ				23
		e(S)EZ			55	23
	H	ePZ			53	00
	T	ePNEZ				13
Jan 28	P	iPZ	15	12	37	Tu iP 15 13 11
	MW	iPZ				36
	R	iPZ				41
	Pr	iPNEZ				48
	H	iPZ				24
	T	iPEZ				16
Jan 28	P	ePZ	17	03	56	Tu iP 17 04 25
	MW	iPZ			58	Near Apia, which reports:
	Pr	iPZ			01	P 16 53 06
	H	iPZ			06	S 16 53 29
	T	iPZ			C9	
Jan 29	PX	eLZ	C6	36	8	Normal Tu eP C6 31 16
	MW	iPZ			33	C9
	R	ePZ			32	59
	Pr	iPZ			49	Many similar i(S) 33 31
	P	iPZ	19	C1	43	smaller shocks recorded at Tucson
		iPZ			C2	this date. (Deep) Tu iP 19 C2 14c
	MW	iPZ			C1	C1
		iPZ			C1	42
		iPZ			C2	CC
		eZ				C7
	R	eFZ			C1	46
	Pr	ePZ			O2	C2
		iPZ			C1	49
		iPZ			C2	O5
Feb 1	H	ePZ			O1	37
	P	iPNEZ	CC	54	25	Tu eP CO 53 34
	MW	iPZ				25
	R	ePZ				20
	Pr	iPEZ				13
Feb 1	P	iPZ	C5	24	12	Normal Tu iP C5 24 35
	PX	eLZ			52	4
	MW	iPZ			24	11
	R	ePZ				12
	Pr	ePZ				11
	H	ePZ				15
	T	iPEZ				16
		iZ				28
		iEZ				42
Feb 2	F	eZ	C6	14	54	Tu eP C6 14 12
	MW	iFZ			42	i 14 22
		iZ				54
	R	eFZ				36
		eZ				49
	Fr	eFZ				35
		iZ				46
	H	eFZ				46
	T	iPEZ				55
		iEZ			15	C6

Date	Sta	Phase	h	m	s	Remarks
Feb. 3	P	ePZ	02	42	28	Tu iP 02 42 50
	MW	ePZ			25	
	R	ePZ			26	
	Pr	ePNEZ			27	
Feb. 3	P	iPZ	10	03	58	Tu iP 10 04 19
	R	ePZ		04	00	
	Pr	iPZ			01	
	T	iPZ			05	
Feb. 3	R	ePZ	10	40	25	Tu eP 10 40 43
	Pr	iPZ			26	
		iZ			47	
Feb. 3	R	ePZ	11	21	21	Tu iP 11 20 42
Feb. 4	P	iPNEZ	03	52	52	Deep Tu iP! 03 53 37
		iPNEZ			53	
		iPcPNEZ			54	
		iScPZ			06	
		iSNEZ			20	
		iScSNE			22	
	MW	iPNZ	03	52	53	A T iScP 04 58 31
		iPNZ			53	
		iZ			54	
		iPcPZ			32	
		iScPNZ			58	
		iSNZ			59	
	R	iPEZ			52	
		iPPZ			53	
		iPcPZ			54	
		iScPZ			58	
		eSE			59	
	Pr	eScSE	04	02	35	
		iPNEZ	03	53	04	
		iPPNEZ			37	
		iE			53	
		iZ			54	
		iEZ			55	
		iScPZ			58	
		iSNEZ			59	
		iScSE	04	02	42	
	LJ	iPNEZ	03	53	04	
		iPPNZ			37	
	SB	eSNE			59	
		iPEZ			52	
		iPcPZ			54	
		eSE			59	
	H	iPNZ			52	
		ePPZ			53	
		iPcPNZ!			54	
		iNZ			55	
		iScPZ			58	
		eSNZ			59	
		eScSNZ	04	02	24	
	T	iPEZ	03	52	38	
		iPPNEZ			53	
		iNEZ			46	
		iPcPNEZ!			54	
		iEZ			55	
		iEZ			56	
		iScPEZ			57	
		iSNEZ			58	
		iScSNEZ	04	02	21	

Roughly 53°N, 175°W iPcP 5C
 O=C3:44.6, h=15C km. i 55 26
 pP 2 3
 ScS 5 3
 ScS 2 2

Date	Sta	Phase	h	m	s	Remarks
Feb. 4	P	iPZ	16	10	31	Tu iP 16 09 51
		iZ			11	
	MW	iPZ			10	
	R	iPZ			27	
	Pr	iPZ			22	
		iZ			35	
	H	ePZ			37	
	T	iPZ			43	
		iZ			11	
Feb. 5	R	iPZ	12	54	58	Tu iP 12 54 14
	T	iPZ			55	
Feb. 5	T	iPZ	18	41	C7	West Indies? Tu iP 18 41 17
Feb. 5	MW	iPZ	20	09	30	Tu eP 20 10 16
Feb. 6	MW	iPZ	10	56	15	Tu i 10 56 11
	R	ePZ			12	
	Pr	ePE			09	
	H	iPZ			22	
	T	ePEZ			27	
Feb. 6	MW	ePZ	23	34	32	Tu eP 23 33 47
	R	ePZ			33	
Feb. 7	P	iZ?	04	53	42	
	MW	ePZ			09	
	R	ePZ			12	
Feb. 8	MW	ePZ	23	16	56	
	T	iPEZ			43	
Feb. 9	P	iPNEZ	01	08	03	
	MW	iPZ			04	
		eZ			50	
	R	iPZ			07	
	H	ePZ			08	
	T	ePEZ			C4	
Feb. 10	P	iPZ	00	23	40	Tu iP 00 23 43
	R	iPZ			39	
	H	iPZ			27	
	T	iPZ			24	
Feb. 10	T	iPZ	19	25	18	Tu eP 19 24 04
Feb. 12	P	iPZ	02	56	37	Tu iP 02 56 23
	R	iPZ			30	
Feb. 12	P	ePNEZ	13	22	47	Destructive in Algeria Tu eP 13 23 03
	PX	eLZ			50	
	R	ePZ			22	
Feb. 13	MW	iPZ	04	07	C6	Tu iP 04 07 25
	R	iPZ			C6	
Feb. 13	MW	iPZ	20	43	54	Tu iP 20 44 17
	R	iPZ			58	
Feb. 14	P	ePZ	02	15	C1	Tu eP 02 15 13
		eZ			23	
		iNEZ			18	
	MW	ePZ			14	
		iNZ			18	
	R	ePZ			15	
		iZ			18	
	Pr	iE			20	
	LJ	ePNEZ			15	
		iNEZ			18	
	SB	eZ			11	
	H	ePZ			15	
		iNZ			18	
	T	iEZ			07	
Feb. 14	MW	ePZ	07	12	43	Tu iP 07 12 14
	R	ePZ			40	
Feb. 14	P	ePZ	07	30	54	
	MW	iPZ			34	
	R	iPZ			36	
	T	ePZ			44	

Very distant i 18 35
 i 19 07

Date	Sta	Phase	h	m	s	Remarks
Feb. 14	P	iPNEZ	12	C3	29	Tu iP 12 C3 15
		iNEZ			39	
		iNEZ		O4	12	
	MW	iPZ		O3	29	
		iZ			40	
	R	iPZ			28	
		iZ			37	
	Pr	ePE			30	
	LJ	ePNEZ			30	
	SB	ePZ			33	
	H	iPNZ			27	
	T	ePEZ			23	
Feb. 14	P	iPNEZ	17	C1	43	Tu iP 17 O1 C7
		iNEZ		C2	O9	27
		iNEZ			22	i 34
	MW	iPZ		C1	43	
		iZ		O2	C8	
		iZ			22	
	R	iPZ		C1	39	
		eZ		O2	C5	
		iZ			18	
	Pr	eE		O1	52	
	H	ePZ			50	
	T	ePNEZ			53	
		eZ		C2	21	
		iZ			33	
Feb. 15	P	iPNEZ	O3	21	O3	Normal Tu iP O3 21 53
	PX	iNZ			12	
		eSNE		24	15	Damage at Seattle, Washington
		eLN			41	
	MW	iPNZ		21	O3	USCGS: 47.3°N, 122.7°W, C=C3, 17.8
	R	iPEZ			O8	
		iEZ			16	Magnitude about 5 3/4
	Pr	iPEZ			18	
		iEZ			24	
	LJ	iPNEZ			23	
	H	iPEZ		2C	41	
	T	iPNZ			27	
		iNEZ			32	
Feb. 15	P	iSN		22	15	
	MW	ePZ?	10	55	43	
	R	iPZ			48	
	Pr	iPZ			51	
Feb. 15	P	iPEZ	16	CO	51	d Deep Tu iP 16 CO 17
		iPNEZ		O1	O4	35
	MW	iNEZ		CO	51	
		iPNZ		C1	O2	
		iNZ			44	
	R	iPEZ		CO	47	
	Pr	iPNZ			44	
	LJ	iPNEZ			43	
	SB	ePEZ			57	
	H	iPNZ			59	
	T	iPNEZ		C1	C2	
Feb. 15	P	iNEZ	16	C9	11	Tu iP 16 C9 C4 d
		iPNEZ			39	
	MW	iNZ			54	
	R	iPNZ			39	
	Pr	iPEZ			35	d
	H	iPEZ			31	d
	T	iPNZ			46	
		iPNEZ			5C	

Date	Sta	Phase	h	m	s	Remarks
Feb. 15	Pr	iPZ?	19	19	24	Tu iP 19 20 43
Feb. 16	P	iPNEZ	07	08	38	Tu iP 07 09 22 d
	PX	eLZ			26.3	
	MW	iPZ		08	40	
	R	iPZ			43	
	Pr	iPEZ			50	d
	T	iPEZ			25	
		iEZ			32	
		iEZ			43	
Feb. 16	P	iPNEZ	20	16	19	Tu iP 20 16 44
		iNEZ			25	Near Apia, which reports:
	PX	eLZ		37	1	iP 20 05 26
	MW	iPNZ		16	18	iS 05 43
		iNZ			25	
	Pr	ePZ			22	
		iZ			28	
Feb. 16	P	iPNEZ	21	35	32	Tu eP 21 35 58
	PX	eLZ		56	0	Near Apia, which reports:
	MW	ePZ		35	29	iP 21 24 29
	Pr	ePZ			33	iS 24 49
Feb. 16	P	iPNEZ	22	07	49	Tu iP 22 08 16
		iNEZ		08	05	Near Apia, which reports:
		iNEZ			17	iP 21 56 12
	PX	eLZ		28	9	iS 21 57 12
	MW	iPZ		07	50	
	Pr	iPEZ			53	
	H	ePN			52	
Feb. 17	P	iPZ	09	53	17	Tu eP 09 53 33
	MW	iPZ			17	
	Pr	iPZ			21	
	H	eZ			21	
	T	e(P)Z			16	
		iZ			22	
Feb. 17	Pr	iPZ	11	43	52	Tu iP 11 44 11
Feb. 17	P	ePZ	17	47	08	
	MW	ePZ			08	
	R	ePZ			02	
		eZ			16	
		iZ			23	
Feb. 18	P	eNEZ	00	29	59	Tu e 00 34 16
	MW	ePZ		28	48	
		iZ		29	58	
	R	ePZ		28	45	
		eZ		29	58	
	Pr	eZ		30	08	
	T	ePEZ?		28	50	
		eEZ		29	58	
Feb. 18	P	iPNEZ	17	36	14	Tu eP 17 37 15
	MW	ePZ			14	i 27
	R	ePZ			11	
	Pr	iPEZ			22	
	H	ePZ		35	44	
	T	iPNEZ			38	
Feb. 20	P	iPNEZ	03	40	28	Tu iP 03 41 08
		iNEZ			36	i 15
	PX	eLZ	04	28	2	
	MW	iPEZ	03	40	29	c
	R	ePZ			32	
	Pr	iPNEZ			38	c
	LJ	ePZ			37	
	T	iPNEZ			14	
Feb. 20	MW	ePZ	04	00	04	Tu eP C4 00 28
	R	eZ	03	59	13	e C3 05
	Pr	eZ			58	

Date	Sta.	Phase	h	m	s	Remarks
Feb. 20	MW	iPZ	09	40	31	Tu eP 09 39 41
	Pr	iPZ			20	
Feb. 20	MW	ePZ	18	00	01	Tu iP 18 00 12
	R	ePZ	17	59	59	
	Pr	iPZ	18	00	14	
	T	ePZ	17	59	39	
Feb. 21	MW	iPZ	15	16	53	
	R	ePZ			56	
	Pr	iPZ			56	
	T	ePZ		17	05	
Feb. 21	MW	eZ?	16	00	32	Tu e 16 01 08
		eZ?		01	13	
Feb. 21	P	ePZ	22	54	45	Normal Tu eP 22 54 11
		eSNEZ		56	12	i 25
	MW	iPZ		54	48	e(S) 55.4
		iSEZ		56	18	
	R	iPZ		54	38	
		iSEZ		55	37	Gulf of California
	LJ	ePNEZ		54	30	
		iSNEZ		55	33	
	Pr	iPNZ		54	32	
		iSN		55	34	
	T	eSE		57	35	
Feb. 22	MW	iPZ	12	35	58	Tu eP 12 36 02
		iZ		36	29	
	R	iPZ		35	55	
	T	iPZ		36	10	
		iZ		42		
Feb. 22	P	i(P)NEZ	14	48	49	Deep? Tu iP 14 49 08
	MW	iPZ		44		i 15
		iZ		49	05	i 30
	R	iPZ		48	45	i 49
		iZ		49	07	Near Apia, which reports:
	Pr	iPNEZ		48	45	iP 14 37 53
		iZ		49	07	iS 38 17
	T	iPZ		48	53	
		iZ		49	25	
Feb. 22	P	iPNEZ	17	30	37	Deep Tu iP 17 29 41 d
		ispNEZ		31	08	
	MW	ispZ		22		Felt in Chiapas, according to
		iPEZ		30	37	d Tacubaya
		ispZ		31	11	
	R	ispZ		30	24	
		iPZ		30	31	d
		ispZ		31	05	
	Pr	ispZ		30	21	
		iPNEZ		30	25	
		ispZ		31	00	
		ispZ		30	13	
	LJ	iPNEZ		30	25	
		ispZ		31	15	
		ispZ		30	46	
	SB	ePEZ		30	46	
	H	ePN		53		d
	T	iPNEZ		31	26	
		ispZ		31	26	
		ispZ		44		
Feb. 24	MW	iPZ	09	16	49	Tu iP 09 17 03
Feb. 24	P	ePZ	09	47	43	Tu eP 09 47 48
	MW	iPZ			43	
	R	ePZ			43	
	Pr	iZ		48	14	

Date	Sta.	Phase	h	m	s	Remarks
Feb 24	P	iPNEZ	13	48	16	Deep Tu iP 13 48 38 c
	MW	iPZ			18	epP 50 46
		ipPZ		50	24	
	R	iPZ		48	18	Tonga region
		epPZ		50	24	Depth about 600 km.
	Pr	iPNEZ		48	19	c
		ipPZ		50	29	
	T	iPNEZ		48	25	
		epPZ		50	33	
Feb. 24	R	eZ	23	52	23	Tu eP 23 51 44
	Pr	iZ			34	
Feb. 25	P	iPNEZ	01	58	53	Tu iP 01 58 42
		iZ		59	01	South Atlantic
		eNEZ		02	00	
	MW	ePZ		01	58	
		iZ		02	00	
	R	iPZ		01	58	
		iZ		59	00	
		eZ		02	00	
	Pr	eZ?		01	58	
	T	ePZ		01	58	
		eZ		02	00	
Feb. 25	R	ePZ	12	02	39	Tu iP 12 01 54
Feb. 25	R	iPZ	13	38	06	Tu eP 13 37 14
	Pr	iPZ			02	
Feb. 25	MW	eZ	17	42	37	Normal Tu iP 17 40 36
		eNZ		43	52	i 54
		e(P)Z		41	55	(S) 41 7
		eZ		43	24	
	Pr	i(S)NE			04	
Feb. 25	P	iPZ	20	10	15	Tu iP 20 10 51
	MW	iPZ			15	
	R	iPZ			19	
	T	ePZ			06	
Feb. 26	R	iPZ	05	44	02	Tu iP C5 44 16
	Pr	iPNZ			C2	North Island, New Zealand
Feb. 27	P	iPNEZ	06	17	01	Deep? Tu iP 06 16 27 c
		iNEZ			12	
		iZ			57	
		iZ		18	05	
	MW	iPNZ		17	02	South America
		eNZ		18	08	
	R	iPNZ		16	58	
		eZ		18	01	
	Pr	iPNEZ		16	53	
		eZ		17	58	
	H	ePN		17	11	
	T	iPNEZ			11	
		iNEZ		18	15	
Feb. 27	MW	iPZ	13	22	36	Tu eP 13 23 19
	Pr	iPZ			47	
	T	ePZ			20	
Feb. 27	P	iPZ	16	44	13	Tu iP 16 44 40c
	MW	iPNZ			14	c
	R	iPZ			16	
	Pr	iPNEZ			18	c
	LJ	ePNEZ			15	
	H	ePN			16	
	T	iPNEZ			16	
Feb. 28	P	eNEZ	02	41	21	Tu e 02 41 33
	PX	eZ		51	7	e 43 18
		eZ		03	14	9 East Indies
		eZ		02	41	21
	MW	eZ		42	18	
	R	eZ		42	18	
	Pr	eZ			32	
	T	eZ		41	23	

Date	Sta	Phase	h	m	s	Remarks
March 2	P	ePZ	07	55	37	Tu iP C7 56 17
	MW	iPZ			39	
	R	iPZ			42	
	Pr	iPNEZ			49	
	SB	ePZ			39	
	T	ePNEZ			20	
		iZ			47	
March 2	P	ePZ	13	02	09	
	MW	iPZ			09	
	R	ePZ			13	
	Pr	iPZ			17	
	T	ePZ		01	57	
March 2	P	iPZ	23	37	15	Tu iP 23 37 28
	MW	iPZ			16	
	R	ePZ			16	
	T	ePZ			13	
		eZ		38	00	
March 4	MW	ePZ?	23	55	46	Tu eP 23 55 36
March 6	P	ePNEZ	13	21	58	Tu iP 13 22 37
		iNEZ		22	06	i 44
		iNEZ			47	
	MW	iPZ			01	
		eZ			30	
		iZ			47	
	R	iPZ		21	59	
		iZ		22	11	
		iZ			39	
		iZ			50	
	Pr	iPNEZ			09	
		iZ			15	
		iZ			43	
		iZ			51	
	LJ	ePNEZ			10	
	H	ePN		21	56	
		eN		22	15	
	T	iPZ		21	49	
		iZ		22	19	
March 7	R	iPZ	05	38	21	
	Pr	iPZ			22	
March 7	P	iPNEZ	16	50	51	Tu e(P) 16 48 28
	MW	iPZ			52	iP 50 55
	R	iPZ			52	
	Pr	iPNEZ			52	
		iZ		54	26	
	LJ	ePNEZ		50	58	
	H	ePN			48	
	T	iPZ			45	
March 7	R	eZ?	20	59	08	Tu iP 20 58 28
		eZ			16	
March 8	P	eZ	02	28	31	Tu iP 02 29 10
	MW	ePZ			23	iPcP 32 49
		iZ			28	
		iPcPZ		32	24	
	R	ePZ		28	31	
	Pr	ePNEZ			36	
		iPcPZ		32	29	
	H	ePN		28	31	
	T	iPNZ			16	
		iPcPZ		32	34	
March 8	Pr	iPZ	05	38	59	Tu iP 05 39 03
	T	ePZ			50	
March 8	P	ePZ	18	42	15	Tu eP 18 42 31
		iZ			25	e 44 59
		ePZ			15	
	MW	ePZ			21	
	R	ePZ			14	
	T	iZ			23	

Date	Sta	Phase	h	m	s	Remarks
March 8	MW	ePZ	21	42	03	Tu eP 21 42 16
	R	ePZ			41	
March 9	MW	iPZ	06	31	33	
	R	ePZ			35	
March 9	P	iPEZ	16	28	20	c Kamchatka Tu eP 16 28 59
		eSE			36	iP:P: 58 07
	PX	eLZ			45	6
	P	iP:P:Z			58	18
	MW	iPEZ			28	20
	Pr	iPNEZ				24
		iZ				32
		iSNE			36	28
	LJ	ePNEZ			28	31
	H	ePN				13
	T	iPEZ				07
		iP:P:Z				20
March 9	MW	iPZ	21	32	14	Tu iP 21 32 59
	Pr	iPZ			26	
	T	iPZ			31	
March 9	P	eZ	22	00	15	Tu eP 21 59 12
	MW	eZ				i 22 12 49
	R	ePZ		21	59	
	Pr	ePZ			54	
		eNEZ		22	00	08
	T	eZ				08
		i(P)Z				20
		eZ			08	49
		iZ			12	33
March 11	P	ePZ	05	13	18	Tu eP 05 14 15
	MW	ePZ			18	i 26
	R	ePZ			22	
	Pr	iPZ			34	
		iZ			45	
	H	ePN				02
	T	iPZ		12	52	
		iZ			13	00
March 12	P	iPNZ	00	13	14	Tu eP 00 12 55
	PX	eLE			31	5
	MW	iPZ			13	14
		eZ				31
	R	iPZ				13
	Pr	iPNZ				09
		iZ				16
		iSE		22	16	
	H	ePN			13	30
	T	iPNEZ				29
March 12	PX	eLZ	03	24		Normal Iran
March 12	MW	iPZ	06	32	10	
	T	iPZ				09
March 12	Pr	iPZ	08	49	17	Tu iP 08 49 28
	T	iPZ			16	
March 13	MW	iPZ	00	05	48	Tu eP 00 06 12
		iZ			09	e 09 39
	R	iPZ		05	50	
		iZ		09	17	
	T	ePZ		05	52	
		iZ		09	24	
		iZ			36	
March 13	P	iPZ	07	32	05	Tu eP 07 31 35
	MW	iPZ			31	54
		iZ			32	05
	R	iPZ			31	50
		iZ			32	01
	Pr	ePZ			31	47
		iNZ				58
	H	ePZ		32	07	

(Continued)

Date	Sta	Phase	h	m	s	Remarks					
(Continued)											
March 13	T	iPZ	07	32	08						
		iZ			18						
		iZ			27						
March 13	PX	eLZ	09	38	3	Normal Tu	eP	08	59	46	
	MW	eZ	08	59	43						
	T	ePZ			46						
March 13	T	iP	19	33	03	Tu	iP	19	32	47	
March 15	P	iPNZ	03	15	35	Tu	iP	03	16	06	
	PX	eLZ		43			iPP		19	37	
	MW	iPZ		15	34						
	R	iPZ			36						
		iZ			52						
		eZ		18	47						
	Pr	iPEZ		15	41						
		iZ			55						
		iNE		16	05						
	H	ePZ		15	33						
		eN			50						
March 15	T	ePZ			43						
	P	iPZ	04	50	16	Tu	iP	04	50	54	
	MW	iPZ			16						
	R	iPZ			19						
	Pr	iPNZ			25						
	H	iPN			14						
	T	iPZ			10						
March 15	P	iEZ	07	58	36	Tu	eP	07	58	53	
	PX	eZ	08	10	10	Roughly 15°S	167°E	O=07	46	0	
		eLN		11	7						
	MW	iPZ	07	58	28						
		iZ			55						
	Pr	iPNEZ			33						
		iZ		59	09						
	T	iPZ			32						
March 15	T	iZ	08	15	59	(part of preceding?) Tu	i	08	16	17	
March 15	P	iPNEZ	13	21	30	Normal Tu	iP	13	22	42	
		iSN			50	Foreshock of 13:50					
	MW	iPZ			28	d Felt in Pasadena					
	R	iPNZ			33						
		iSN			54						
	Pr	iPNEZ			43	d					
	LJ	iPNZ			48						
	H	iPNZ			09	d					
	T	iPNEZ			26	d					
March 15	P	iPZ	13	48	12	Deep Tu	iP	13	47	32 d	
		iZ			44		i		48	10	
	MW	iPZ			12	Later phases covered by following					
		iZ			43	South America? large shock					
	R	iPZ			08	d					
		iZ			41						
	Pr	iPNEZ			04	d					
		iNZ			38						
March 15	T	ePNE			26						
	P	iPNEZ	13	50	04	d Normal Tu	iP	13	51	18	
		iSNE			30	35.7°N, 118.0°W, O=13:49:36					
	MW	iPZ			03	Felt to distances of about 350 km.					
	R	iPNZ			07	Intensity III-IV at Los Angeles					
		iSN			34	and Pasadena. At Pasadena,					
	Pr	iPNEZ			18	maximum ground amplitude about					
	LJ	ePNEZ			23	one mm., period two seconds.					
	H	iPNZ			45	Epical intensity about VIII					
	T	iPNEZ			02	(M.M.) Damage to Los Angeles					
						Aqueduct by boulders rolled down					
						on pipe line. Magnitude 6.2 to					
						6.4. One strong foreshock, as					
						noted. Aftershocks extremely					
						numerous. Only a few, large					
						enough to be recorded at distant					
						stations, are included in this					
						Bulletin.					

Date	Sta	Phase	h	m	s	Remarks					
March 15	P	iPNEZ	19	19	22	d Normal Tu	iP	19	20	35	
		iSNEZ			42						
	MW	iPEZ			21	d Aftershock of 13:50					
	R	iPNZ			25	Felt in Los Angeles					
	Pr	iPZ			33						
	LJ	ePNZ			40						
	SB	iPNEZ			26						
	H	iPZ			03						
	T	iPNEZ			20						
March 16	P	iPNEZ	09	46	47	Normal Tu	iP	09	47	59	
		iSNEZ			47						
	MW	iPEZ			46	d Aftershock.					
	R	iPNZ			49	Felt in Los Angeles					
	SB	iPZ			50	Recorded at temporary station at					
	T	iPNEZ			44	33°59.5'N, 118°25.7'W, with P at					
	Pr	iPZ		47	00	09:46:25. Recording lights out at					
March 16	MW	ePZ	11	18	15	Haiwee. Tu	iP	11	19	04	
	Pr	iPZ			28						
	T	iPZ			00						
March 16	P	ePZ	11	44	59		Tu	eP	11	45	42
	MW	eZ			45						
	T	ePZ			44						
March 16	P	iPZ	23	31	23		Tu	iP	23	30	47
	MW	iPZ			23						
	T	iPZ			05						
March 17	P	ePZ	14	47	00		Tu	iP	14	48	01
		iZ			12	Strong at Hawthorne, Nevada;					
		i(S)NEZ			48	V at Luning (USCGS)					
	MW	ePZ			47						
	R	iPZ			03						
	Pr	ePZ			13						
	T	iPNEZ			17						
March 18	P	iPNEZ	15	49	55	Normal Tu	iP	15	51	06	
		iSNEZ			50	Aftershock of March 15, 13 ^h					
	H	iPZ			49	d					
	T	iPNEZ			51						
		iSNE			50						
March 18	P	iPNEZ	15	51	10	Normal Tu	iP	15	52	21	
		iSNZ			29	Larger aftershock of March 15,					
	R	iPNE			14	13 ^h					
		iSNZ			36						
	H	iPZ			50						
	T	iPNE			51						
		iSNEZ			25						
March 19	Pr	ePZ	12	30	26	Tu	eP	12	30	44	
		eZ			32		e		12	32	44
March 20	P	iZ	04	42	41	Tu	eP	04	43	03	
	MW	ePZ			38						
	R	ePZ			42						
	T	iPZ			53						
March 20	P	iZ	05	18	50	Tu	eP	05	17	38	
	PX	eLZ			23.7		i			52	
	MW	iPZ			18		i		19	17	
	R	iPZ			29						
	T	ePZ			19						
March 20	P	iPZ	05	24	48	Tu	iP	05	25	12	
	MW	iPZ			48						
	R	iPZ			50						
	Pr	iPZ			51						
	T	iPZ			56						
March 22	MW	e(P)Z	12	51	41	Tu	eP	12	51	43	
	R	ePZ			27		e			49	
	T	ePZ			31						
March 23	P	iPZ	16	15	32						
	MW	iPZ			33						
		eZ			44						

(Continued)

Date	Sta	Phase	h	m	s	Remarks
(Continued)						
March 23	R	iPZ	16	15	35	
		eZ			46	
		eZ		16	00	
March 24	T	ePZ		15	48	
	P	ePZ	00	48	57	Tu iP 00 49 18
	MW	iPZ			58	
	R	iPZ			58	
March 24	T	ePZ			51	
	P	ePZ	05	27	26	Tu eP 05 28 C3
	MW	iPZ			26	30
		eZ		28	03	
		iPZ		27	51	
March 24	P	iZ		28	11	
	PX	ePZ	15	45	44	Normal Tu iP 15 46 08
	MW	eLEZ	16	13	4	Roughly 22°S, 170°E, O=15:33.0
		ePZ	15	45	45	
		iZ			59	
	R	iPZ			46	
	Pr	ePNE			47	
		eNE		46	01	
	H	ePN		45	57	
March 24	T	iPZ			50	
	P	iZ	21	26	22	Tu iP 21 25 31
	MW	ePZ			16	
		iZ			25	
	R	ePZ			13	
		iZ			20	
March 25	P	iPZ	08	55	27	Normal Tu iP 08 54 33
		iPcPZ			57	57 06
	PX	eLN	09	11	6	West Indies
	MW	iPZ	08	55	27	
		iPcPZ			57	25
	R	iPZ			55	21
		iPcPZ			57	23
March 25	T	iPNEZ			55	33
	P	iPZ	18	51	48	Tu eP 18 51 13
	MW	iPZ			49	
March 25	T	iPZ			50	
	P	iPNEZ	22	22	49	Normal Tu eP 22 21 55
	PX	eLN		30	8	
	MW	iPZ		22	49	
	R	ePZ			42	
	Pr	iPNE			37	
March 26	T	iPZ			57	
	P	iP"EZ	17	28	17	Normal? Tu eP" 17 28 20
		iZ		29	05	i 29 13
		iSKPNEZ		31	43	e 31 34
		iZ		32	06	Very distant i 32 04
		eZ		41	11	
	PX	eZ		42	8	A T
		e(L)Z	18	08		PP 2 5
	MW	eP"Z	17	28	17	
		iZ		31	44	
	Pr	eP"NEZ		28	22	
		eZ		30	46	
		iNZ		31	49	
		iZ		32	30	
	LJ	eP"Z		28	23	
		iZ		31	49	
	SB	iP"Z		28	18	
		iZ		31	41	
	T	eP"EZ		28	16	
		iEZ		31	36	
March 27	T	ePZ	02	45	43	Tu eP 02 46 27

Date	Sta	Phase	h	m	s	Remarks
March 27	P	ePZ	06	04	18	Tu iP 06 04 08
	MW	ePZ			15	
	Pr	ePZ			17	
	T	ePZ			22	
March 27	R	ePZ	19	01	09	Tu iP 19 00 26
March 28	T	ePZ			30	
	P	iPZ	17	54	16	Tu iP 17 54 28
	MW	iPZ			16	
March 29	R	iPZ			19	
	P	iPZ	05	50	41	Deep Tu iP 05 51 07
	MW	iPZ?			43	i 36
	R	iPZ			44	
		iZ		51	12	
	Pr	iPNEZ		50	46	
		iZ		51	13	
		iZ			53	
March 29	P	iPZ	07	26	30	Tu iP 07 25 40
	MW	iPZ			28	
	R	iPZ			23	
	Pr	iPZ			18	
March 29	LJ	ePZ			20	
	P	iPZ	07	35	00	Tu iP 07 34 16
		iZ			18	i 33
	PX	eSN		42	14	i 47
		eLN		47		Felt at Guayaquil, Ecuador
	MW	iPZ		35	01	
	R	iPZ		34	55	
	Pr	iPNZ			51	A T
		iZ		35	10	P 2 4
		i(S)E		41	58	
	LJ	ePNZ		34	52	
	T	iPZ		35	17	
March 29	R	ePZ?	20	15	59	Tu iP 20 15 13
	T	eZ?		16	11	
		eZ			24	
March 30	P	iPZ	00	11	17	Tu iP 00 10 29
	R	iPZ			17	
	Pr	iPZ			08	
		iZ			23	
March 30	P	iPZ	00	26	47	Tu iP 00 27 12
	R	iPZ			50	i 28
	Pr	iPZ			52	
	T	iPZ			57	
March 30	R	ePZ	17	31	24	Tu iP 17 30 43
	T	ePZ			44	
March 30	MW	ePZ?	22	05	20	Tu iP 22 05 51
	R	ePZ?			20	
	T	iPZ			09	
March 31	P	iPZ	07	13	25	Tu iP 07 13 18
	MW	iPZ			19	Very distant?
		iZ			24	
	R	iPZ			19	
		iZ			24	
	H	eZ			29	
	T	ePZ			24	
		iZ			44	
March 31	P	iPZ	07	31	20	Tu iP 07 31 43
	R	ePZ			22	Part of preceding?
	T	iPZ			28	

C. F. Richter

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CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA CALIFORNIA

SEISMOLOGICAL LABORATORY

BULLETIN

APRIL - JUNE 1946

(PASADENA AND AUXILIARY STATIONS)

Date	Sta.	Phase	h	m	s	Remarks					
April 1	MW	ePZ	06	15	52	Tu	eP	06	15	16	
	R	ePZ			43	Atlantic					
April 1	P	ePZ	10	59	58	Tu	eP	10	59	53	
	MW	iPZ			59		i	11	01	04	
		iZ	11	01	03	Southwest	Pacific				
	R	iPZ	10	59	58						
	Pr	iPN			53						
	H	iPNEZ	11	00	13						
	T	iPZ			19						
April 1	P	iPNEZ	12	36	07	d Normal	Tu	eP	12	36	54
		iZ			11		i		37	08	
		iZ			44						
	PX	iSE	41	52		U.S.C.G.S.	54°N. 164°W.	O=12:28	9		
		iLNE	44	6							
	MW	iPEZ	36	08							
		iZ			44						
	R	ePNZ	36	14							
		eSN	42	13							
	Pr	ePNEZ	36	19							
		eSE	42	11							
	LJ	ePZ	36	24			A	T			
		eSE	42	11		P	3	5			
	SB	ePZ	36	01		S	15	12			
		eZ			15	L	800	20			
		eSN	41	15							
	H	ePZ	35	59							
		iZ	36	13							
		eSNE	41	37							
	T	iPZ	35	50							
		iZ	36	06							
		eSNE	41	36							
April 1	P	iPZ	12	42	51	Tu	iP	12	43	31	
	MW	iPZ			51						
	R	iPZ			51						
	Pr	ePZ	43	05							
	H	iPNEZ	42	41							
	T	iPNEZ			34						
April 1	P	iPNEZ!	12	59	54	Tu	iP	13	00	40	d
	MW	iPNEZ!			54	d					
	R	iPZ			58	d	Aftershock				
	Pr	iPNEZ	13	00	06						
	LJ	iPEZ			07						
	SB	iPZ	12	59	44						
	H	iPZ			44						
	T	iPNEZ!			38	d					
April 1	P	iPNEZ!	13	03	01	d	Tu	iP!	13	03	47
	MW	iPZ!			02	d	Aftershock				
	R	iPNEZ!			06	d					
	Pr	iPNEZ			13						
		iSNE			09						
	LJ	iPEZ			03						
	SB	iPNEZ			02						
	H	iPZ			51						
		iSNEZ			08						
	T	iPNEZ			02						
		iSNEZ			08						
April 1	R	iPZ	13	29	32	Not an aftershock.	Tu	iP	13	29	45
April 1	P	iPZ!	13	35	02		Tu	iP	13	36	48
		iZ			13						
	MW	iPZ			02		Aftershock, Alaska	(Two shocks?)			
	R	iPZ			07						
		iZ			22						
	Pr	ePNE			05						
		iNEZ			14						

(Continued)

Date	Sta	Phase	h	m	s	Remarks
(continued)						
April 1	LJ	iPEZ	13	36	14	
		iZ			27	
	SB	iPZ		35	54	
		iZ		36	04	
	H	iPZ		35	52	
	T	iPEZ			46	
		iZ			58	
April 1	P	iPZ	13	41	44	Tu iP 13 42 31
	MW	iPZ			43	
	R	iPZ			48	
	Pr	iPZ			56	Aftershock
	LJ	iPEZ			57	
	SB	iPZ			35	
	H	iPZ			34	
	T	iPZ			27	
April 1	P	iPZ	13	47	46	Tu iP 13 48 33
	MW	iPZ			47	Aftershock
	R	iPZ			51	
	Pr	iPNEZ			58	
	LJ	ePZ			59	
	SB	iPZ			43	
	H	iPZ			36	
	T	iPZ			31	
April 1	P	iPZ	15	27	35	Aftershock Tu iP 15 28 22
	MW	iPZ			36	
	R	iPZ			40	
	Pr	iZ		28	17	Probably two shocks 36 seconds apart
		iPNEZ		27	47	
		iNZ		28	24	
	LJ	ePEZ		27	48	
	SB	iPZ		27	27	
	H	iPZ			25	
	T	iZ		28	01	
		iPZ		27	19	
April 1	P	iPZ	15	57	49	Tu eP 15 58 32
	MW	iPZ			50	Aftershock i 16 00 05
		iZ		59	20	Probably two shocks 1m 30 s apart
	R	iPNZ		57	53	
		iNZ		59	23	
	Pr	iNE			30	
	LJ	ePNE		58	02	
	SB	iPZ		57	40	
	H	iPNEZ			40	
	T	iPNEZ			33	
		iNZ		59	03	
April 1	P	iPZ	16	57	20	Aftershock Tu iP 16 58 07
	MW	iPZ			22	
	R	iPZ			25	
	Pr	iPNE			33	
	H	iPZ			08	
	T	iPZ			04	
April 1	P	iPZ	17	06	30	Tu iP 17 07 15
	MW	iPZ			31	i 09 06
	R	iPZ			34	
	Pr	iPNEZ			42	
	LJ	iPZ			42	
	H	iPZ			20	
	T	iPZ			12	
		iZ		08	42	
April 1	P	iPZ	19	04	49	Normal Tu iP 19 05 36
		iZ			58	i 42
		iPcPZ		07	29	i 07 29
	PX	iSNE		10	44	Largest aftershock i 11 23

(continued)

Date	Sta	Phase	h	m	s	Remarks
(continued)						
April 1	PX	iZ	19	10	53	
		eLN		13.2		
	MW	iPZ		04	51	P A T L 100 20
	R	iPZ			54	
		iPcPZ		07	12	Magnitude about 6 3/4
		iZ		11	03	
	Pr	iPNEZ		05	01	
		eSE		11	05	
	LJ	ePNE		05	03	
		eSN		11	07	
	SB	ePZ		04	47	
		iPcPZ		07	11	
	H	iPNZ		04	39	
	T	iPZ			33	
		iPcPZ		07	04	
		eSN		10	18	
		iZ			42	
April 2	P	iPZ	04	20	53	Aftershock Tu iP 04 21 40
	MW	iPZ			53	
	R	iPZ			58	
	LJ	ePNE		21	09	
	SB	ePZ		20	47	
	H	iPZ			43	
	T	iPZ			37	
April 2	P	iPZ	05	45	28	Aftershock Tu iP 05 46 14
	MW	iPZ			27	iPcP 48 06
	R	iPZ			33	
	LJ	ePNE			43	
	SB	iPZ			20	
	H	iPZ			17	
	T	iPZ			10	
		ePcPZ		47	43	
April 2	P	iPZ	06	04	20	Aftershock Tu iP 06 05 07
	MW	iPZ			20	iPcP 07 01
	R	iPZ			24	
	LJ	ePNE			37	
	SB	iPZ			12	
	H	ePZ			09	
	T	iPZ			03	
		iPcPZ		06	35	
April 2	P	iPZ	13	11	36	Aftershock Tu iP 13 12 22
	MW	iPZ			36	
	R	iPZ			40	
	LJ	ePNE			49	
	SB	ePZ			29	
	H	iPZ			25	
	T	iPZ			20	
April 2	MW	ePZ	13	55	29	Tu iP 13 56 25
	R	ePZ			46	Not an aftershock
	T	ePZ			06	
April 2	P	iPZ	14	34	42	Tu iP 14 35 28
	R	iPZ			45	Aftershock, Alaska
	H	iPZ			31	
	T	iPZ			25	
April 2	P	iPZ	16	37	41	Tu iP 16 38 27
	PX	eLNZ		47.2		Aftershock
	MW	iPZ		37	42	
	R	iPZ			45	
	LJ	ePNE			56	
	SB	ePZ			33	
	H	iPZ			31	
	T	iPZ			25	
		eZ		43	37	

Date	Sta	Phase	h	m	s	Remarks	
April 3	P	iPNEZ	03	31	58	Tu eP 03 32 10	
		iZ		33	42		34 59
		iZ		35	24		35 38
		iZ			41		58
	MW	iPZ		31	59	Very distant?	
		eZ		34	08		
		eZ		35	18		
		eZ			37		
	R	iPZ		32	01		
		eZ		35	20		
	H	ePZ		31	57		
		ePZ			55		
T	iZ		35	12			
	iPZ		04	05	02 Tu iP 04 05 28		
April 3	P	iPZ	04	05	02	Tu iP 04 05 28	
		iPZ		04			
		iPZ		06			
		iPZ		08			
April 3	P	iPNEZ	09	05	47	Normal Tu iP 09 06 35	
		eLNZ		14	3		iPcP 08 25
		iPZ		05	48		Aftershock, Alaska
		iPZ			53		
April 3	MW	iPZ		06	07		
		ePN		06	07		
		iPZ		05	38		
		iPZ			31		
April 4	P	ePZ	16	38	22	Tu eP 16 39 08	
		ePZ			25		
		ePNE			35		
		iPZ			05		
April 4	T	ePZ	20	15	01		
		iPZ		21	56	d Tu iP 21 33 43	
April 4	P	iPNEZ	21	32	56	d Aftershock, Alaska	
		eLZ		42	7		d
		iPZ		32	57		d
		iPZ		33	00		d
April 4	Pr	iPNEZ		07			
		ePNE			09		
		iPZ		32	46		
		iPNEZ			46		
April 4	SB	iPZ		39			
		iPNEZ			38		
		eSNEZ		21	11	18	Tu iP 21 07 48
		eZ		07	54	e 11 09	
April 5	P	iPZ	21	58	13	Deep Tu iP 21 58 44	
		iZ		42			i 59 17
		iPZ		14			Japan?
		iZ		40			
April 5	R	iPZ		16			
		ePNE			19		
		eE			50		
		ePN		21	06		
April 5	LJ	iPZ		04			
		iPZ			04		
		iZ			33		
		ePZ		03	25	Tu iP 03 26 00	
April 6	P	eZ	03	25	55	Tu iP 03 26 00	
		eZ		26	57		i 27 19
		eZ		30	46		i 31 07
		eZ		35	25		Very distant
	MW	ePZ		25	58		
		ePZ			58		
		ePN		26	01		
		ePZ		25	56		
	Pr	ePZ		25	55		
		ePZ			54		
		eZ		26	54		
		ePZ		25	55		
H	eZ		26	51			
	eZ			51			
	eZ		26	51			
	eZ		30	39			

Date	Sta	Phase	h	m	s	Remarks	
April 6	P	ePZ	04	59	46	Normal Tu iP 05 00 35	
		eSNE		05	05		37
		eLNEZ			08		3
		iPZ		04	59		48
	MW	iPZ		04	59	Alaska; aftershock of April 1, 12 ^h	
		iPZ			52		
		ePNE		05	00		01
		ePZ		04	59		48
	Pr	ePZ		05	00	06	
		ePZ		04	59	38	
		ePZ			31		
		eSN		05	05	08	
April 6	MW	ePZ		10	08	Tu eP 10 08 53	
		ePZ			10		
April 6	P	iPZ		14	04	Tu eP 14 04 48	
		ePZ			59	Very distant	
April 6	P	iPZ		14	05		
		ePNE			58		
		ePZ			02		
		iPZ		14	28	22	
April 6	MW	iPZ			24		
		iPZ			25		
		iPNE			28		
		iPZ			27		
April 7	P	iPNEZ			27		
		ePZ		03	49	13	Tu iP 03 48 04
		eZ			55	25	
		eZ		09	25	45	Tu iP 09 25 49
April 7	MW	iPZ		09	25		
		ePZ			44		
		iPZ			25		
		ePZ		10	07	55	Aftershock, Alaska Tu iP 10 08 44
April 7	MW	iPZ		10	07	39	From this point, small shocks from this source are included in the body of this report
		ePZ		10	14	41	Aftershock, Alaska
		ePNE			56		
		iPZ			32		
April 7	Pr	iPZ			25		
		iPZ			25		
		iPZ		14	36	16	Tu iP 14 37 03
		iZ			28		
April 7	MW	iPZ			16		
		iZ			16		
		iZ			28		
		iPZ			21		
April 7	R	iZ			34		
		iPNE			30		
		iPZ			07		
		iPZ			00		
April 7	Pr	iZ			13		
		iPZ		14	53	31	Alaska; aftershock of April 1, 12 ^h
		ePZ			39		
		ePZ			32		
April 7	P	iZ		23	00	15	Tu iP 23 00 54
		ePZ			08		
		ePZ			13		
		ePNE			20		
April 7	MW	iPZ		22	59	48	Aftershock, Alaska i 01 11
		iPZ			51		
		iPEZ			01		
		iNZ		23	00	01	
April 8	T	ePZ		09	03	08	
		ePZ		09	31	16	Tu iP 09 32 03
April 8	MW	ePZ		09	31	19	Aftershock, Alaska
		ePZ			06		
		iPZ			06		
		iPZ			00		

Date	Sta	Phase	h	m	s	Remarks
April 8	P	iPZ	15	24	22	Tu iP 15 25 08
	MW	iZ			31	Aftershock, Alaska i 18
	Pr	iPZ			22	
	H	iPNE			34	
	T	iPNEZ			11	
		iPNEZ			05	d
		iZ			19	
April 8	P	iPEZ	17	43	45	Tu iP 17 44 30
	PX	eLN		52	9	
	MW	iPZ		43	45	Aftershock, Alaska
	R	iPZ			49	
	Pr	iPNE			57	
	H	iPNEZ			33	
	T	iPZ			28	
April 9	T	ePZ	01	02	45	Tu iP 01 03 03
		iZ			03	
April 9	P	ePZ	02	44	13	Tu iP 02 44 32 c
	MW	iPZ			13	
	R	iPZ			15	
	Pr	iPNE			15	
	H	iPZ			20	
	T	iPZ			23	
April 9	P	iPZ	07	15	31	Tu iP 07 16 17
	MW	iPZ			30	Aftershock, Alaska
	R	iPZ			36	
	Pr	iPNE			42	
	H	ePZ			20	
	T	iPZ			13	
April 9	MW	ePZ	07	38	24	Tu iP 07 39 12
	R	ePZ			27	Aftershock, Alaska
	T	iPZ			08	
April 9	MW	iPZ	10	30	59	Tu iP 10 31 45
	R	ePZ			31	Aftershock, Alaska
	T	iPZ			30	
April 9	P	iZ	10	42	21	Tu iP 10 42 45
	MW	ePZ			10	58
		iZ			22	Japan?
	R	iPZ			14	
		iZ			25	
	Pr	iNE			32	
	SB	eZ			16	
	H	ePZ			03	
		iZ			15	
	T	ePZ			41	58
		iZ			42	11
		iZ			37	
April 9	T	iPZ	14	36	43	Tu iP 14 37 49
April 9	MW	iPZ	19	13	42	Tu iP 19 14 13
	T	iPZ			36	
April 9	MW	ePZ	20	07	59	Tu iP 20 08 45
	R	ePZ			08	
	Pr	iPNE			09	Alaska?
	H	iPZ			07	
	T	iPZ			41	
April 9	T	iPZ	20	47	44	Tu iP 20 48 47
		eZ			50	55
April 10	Pr	iPN	06	37	22	Tu eP 06 37 54
	T	ePZ			36	
April 10	T	iPZ	07	16	50	Tu iP 07 17 54
April 10	T	iPZ	17	14	36	Tu eP 17 16 24
April 10	MW	ePZ	21	30	24	Deep Tu eP 21 30 49
		eZ			55	
	R	ePZ			21	
		iZ			54	
	T	iPZ			56	
		eZ			31	22

Date	Sta	Phase	h	m	s	Remarks
April 10	P	ePZ	23	01	13	Tu iP 23 01 58
	MW	iPZ			11	
	R	iPZ			16	Aftershock, Alaska
	Pr	iPNE			23	
	T	ePZ			00	54
April 11	MW	eZ	01	53	55	Tu eP 01 54 32
	T	ePZ			27	42
		i			38	
April 11	PX	ePZ	02	06	17	Normal Tu eP 02 05 51
		ePPEZ			10	
		iNEZ			19	41
		eLN			34	
	MW	eZ			06	36
	R	eZ			40	
		ePPZ			10	28
	Pr	ePPE			17	
	T	eZ			06	38
April 11	P	ePZ	13	33	32	Tu eP 13 33 57
	PX	eLZ			59	7
	MW	ePZ			33	25
	R	iPZ			35	
	Pr	ePN			34	01
	T	ePE			33	42
April 11	P	ePZ	23	09	17	Tu eP 23 10 02
		iZ			26	11
	MW	ePZ			19	
		iZ			27	
	R	ePZ			20	
		eZ			29	
	Pr	iNE			39	
	T	iPZ			00	
		eZ			11	
April 12	MW	iPN	11	38	44	Tu iP 11 39 30
	R	ePZ			48	Aftershock, Alaska
	Pr	iPNE			55	
	T	iPZ			27	
April 12	P	iPZ	14	49	35	Tu iP 14 50 13
	MW	iPZ			36	
	R	iPZ			38	
	Pr	iPNE			45	
	H	ePZ			26	
	T	iPZ			20	
		iZ			28	
April 13	T	ePZ	01	36	46	Tu eP 01 37 56
April 13	MW	iPZ	05	26	26	Tu iP 05 27 13
	R	ePZ			30	
	Pr	ePN			39	
	T	iPZ			09	
April 13	P	ePZ	06	57	51	Tu eP 06 58 15
	PX	eLZ			07	4
	MW	iPZ			06	57
	R	iPZ			55	
	Pr	iPNEZ			56	
	H	ePZ			56	
	T	iPZ			57	
April 13	MW	ePZ	07	27	56	Tu eP 07 28 18
	R	ePZ			58	
	Pr	ePZ			58	
April 13	MW	iPZ	08	14	50	Tu eP 08 15 36
	R	ePZ			52	
	Pr	iPNZ			15	01
	H	iPZ			14	40
	T	iPZ			32	

Date	Sta.	Phase	h	m	s	Remarks
April 13	P	iPNEZ	19	09	15	Deep Tu iP 19 09 38
		iPcPZ			40	
		ipPZ		10	14	iPcPZ 10 04
	PX	iSN		18	36	ipP 40
	MW	esSN		20	32	
		iPEZ		09	17	
		iPcPZ			42	
	R	isPZ		10	16	
		iPZ		09	18	
		iPcPZ			43	
	Pr	ipPZ		10	19	
		iPZ		09	18	
		iZ			46	
		iZ		10	19	
	SB	ePZ		09	07	
	T	iPZ			34	
		iPcPZ		10	00	
		ipPZ			35	
April 14	MW	eSE	00	19	33	
	R	iPZ	00	09	37	Tu iP 00 10 24
	Pr	iPZ			42	
	H	iPZ			49	
	T	iPZ			27	
April 14	MW	iPZ	04	32	00	Tu eP 04 32 46
	R	ePZ			03	
	Pr	iPNEZ			11	
	H	ePZ		31	48	
	T	iPZ			43	
April 14	MW	ePZ	10	40	24	Tu iP 10 40 48
	R	ePZ			25	
	Pr	iPNEZ			25	
	T	ePZ			40	
April 14	R	ePZ	12	25	32	Tu iP 12 25 56
	T	iPZ			42	
April 15	P	ePZ	07	13	25	Tu iP 07 14 12
	MW	iPZ			26	
	R	ePZ			29	
	Pr	iPNZ			36	
	H	ePE			20	
	T	iPZ			08	
April 15	R	iPZ	09	37	02	Tu iP 09 37 36
	T	iPZ			36	
April 16	MW	ePZ	01	57	09	Tu eP 01 57 52
	R	ePZ			18	
	T	ePZ		56	51	
April 16	MW	ePZ	08	11	48	Tu iP 08 12 09
	R	ePZ			51	
	Pr	ePNZ			52	
April 16	P	iPZ	11	57	17	Tu iP 11 57 10
	MW	iPZ			17	Albania. BCSF: 41.0°N. 19.8°E.,
	R	ePZ			16	O=11:43:50
	Pr	ePZ			18	
	T	ePZ			07	
April 16	P	ePZ	13	49	30	Deep Tu iP 13 49 04
		ipPZ			46	ipP 23
	MW	ePZ			29	South America?
		ipPZ			46	
	R	ePZ			26	
		ipPZ			45	
	Pr	ePNEZ			22	
		ipPNZ			40	
		iNZ		50	00	
		e(S)N		59	11	
	T	ePZ		49	40	
		iZ			59	

Date	Sta.	Phase	h	m	s	Remarks
April 16	R	ePZ	15	27	00	Tu eP 15 27 30
		eZ			08	
	T	ePZ		26	51	
		iZ			58	
April 16	P	ePZ	19	22	23	
	MW	ePZ			24	
	Pr	ePZ			19	
	T	ePZ			10	
April 17	P	iPZ	11	23	42	Tu iP 11 24 05 c
	MW	iPZ			43	
	Pr	iPNZ			44	
	T	iPZ			52	
April 17	P	ePZ	14	14	38	Tu iP 14 15 04
	PX	eLNE		26	3	
	MW	iPZ		14	38	
	Pr	iPNZ			45	
	H	ePNE			23	
	T	ePZ			15	
April 17	P	ePZ	16	03	22	Tu iP 16 03 38
	MW	iPZ			25	North of New Zealand
	Pr	ePZ			19	
	T	ePZ			24	
April 17	T	iPZ	21	27	30	Tu eP 21 28 25
April 18	P	ePZ	03	46	32	Tu eP 03 47 08
	T	ePZ			03	
April 18	P	ePZ	07	14	04	Tu iP 07 14 30
	PX	eSE			24	
		eLZ			35.8	Southwest Pacific
	MW	iPZ			14	06
	Pr	iPNZ			08	
	H	ePNE			13	
	T	ePZ			17	
April 18	MW	ePZ	07	39	50	Tu iP 07 40 43
	Pr	ePNZ			40	
	T	ePZ			39	
April 18	P	iPZ	11	47	16	Tu iP 11 47 02 d
		iZ			25	
	MW	ePZ			36	Probably very distant.
		iZ			16	Indian Ocean?
	Pr	iPNZ			26	
		iNZ			14	
		iN			22	
		ePZ			27	
	LJ	ePZ			16	
	H	ePNE			15	
	T	ePZ			13	
		iEZ			19	
April 18	P	iEZ	18	03	30	Tu iP 18 04 12
	MW	ePZ			53	
	Pr	iPZ			53	
	T	iPNZ			55	
April 18	P	iPZ	20	01	05	Tu iP 20 02 27
	MW	iPZ			54	
	R	ePZ			55	
		ePZ			56	
	Pr	iZ			02	
	T	iPZ			01	
		iPZ			58	
April 19	Pr	iPNZ	09	43	05	Tu iP 09 43 41
		iNZ			22	
	T	ePZ			38	
April 19	MW	ePZ	12	11	35	Tu iP 12 12 22
	R	ePZ			37	
	Pr	ePNZ			45	
	T	ePZ			16	

Date	Sta.	Phase	h	m	s	Remarks
April 19	Pr	ePZ	14	55	44	Tu iP 14 56 19
	T	iPZ			15	
April 20	T	ePZ	22	22	12	Tu eP 22 22 22
April 21	T	iPZ	00	30	08	Tu iP 00 31 14
April 21	MW	eZ	02	45	56	
	T	iPZ			22	
April 21	T	iPZ	04	57	58	Tu iP 04 59 02
April 21	Pr	ePZ	11	22	47	Tu eP 11 23 25
	T	iPZ			21	
April 22	Pr	iPZ	03	30	36	Tu iP 03 31 17
	T	iPZ			09	
April 22	T	ePZ	06	40	25	Tu eP 06 40 37
April 22	P	ePZ	09	59	48	
	MW	ePZ			46	
	R	iPZ			48	
	Pr	iPZ			53	
	T	ePZ			48	
April 23	P	ePZ	01	02	39	Tu iP 01 03 04
	MW	iPZ			40	
	R	ePZ			43	
	Pr	ePZ			42	
	T	iPZ			52	
April 23	P	ePZ	05	14	59	Tu eP 05 15 03
	PX	eNE		33	4	
		e(L)N		46	5	
	MW	ePZ		14	56	Region of 51°S 140°E accord-
	R	ePZ			50	ing to Riverview
	Pr	ePZ			59	
	T	ePZ		15	00	
		iZ			12	
April 23	P	iPZ	10	51	20	(Deep) Tu iP 10 51 47
		iZ			31	i 52 03
		iZ			41	i 08
	PX	eLN	11	12	5	Region of Samoa
	MW	iPZ	10	51	21	Felt at Apia, which reports:
		eZ			32	iP 10 40 25
		iZ			40	iS 49
		iZ		54	02	
		iZ			12	
	R	ePZ		51	23	
		iZ			33	
		iZ			44	
	Pr	iPNZ			23	
		iNZ			43	
		iNZ			58	
	LJ	ePNEZ			21	
	SB	iPZ			17	
	H	ePNE			29	
	T	ePZ			30	
		iEZ			32	
		eZ			43	
April 23	P	ePZ	17	39	01	(Deep) Tu eP 17 39 50
	MW	ePZ			02	i 53
		iZ			13	i 40 02
	R	ePZ			07	i 09
	Pr	iPNZ			13	
		iZ			25	
		iZ			32	
	LJ	ePNEZ			15	
	T	ePZ		38	46	
		iZ			58	
		iZ		39	04	

Date	Sta.	Phase	h	m	s	Remarks
April 24	P	iPZ	03	56	53	Tu iP 03 56 00
	MW	iPZ			53	iPcP 58 58
		iPcPZ		59	16	
	R	iPZ		56	47	
		iPcPZ		59	14	
	Pr	iPNZ		56	42	
		iNZ			50	
		iPcPZ		59	14	
	T	ePZ		57	06	
		iPcPEZ		59	20	
April 24	MW	ePZ	11	27	26	Tu eP 11 26 53
	R	ePZ			24	
	Pr	ePZ			21	
	T	ePZ			32	
April 24	R	ePZ	12	46	27	Tu eP 12 45 57
	T	ePZ			31	
April 25	P	ePZ	00	58	41	Tu eP 00 59 13
		eZ			57	
	MW	iPZ			41	
		iZ			53	
		iZ		59	03	
	R	ePZ		58	45	
	Pr	iPZ			48	
	SB	iPZ			36	
	T	iPZ			33	
April 25	P	iPZ	01	20	05	Tu iP 01 20 49
	MW	iPZ			05	i 21 36
		eZ			51	i 44
	R	iPZ			09	
	Pr	iPNEZ			16	
	LJ	ePZ			16	
	H	ePNE		19	56	
	T	iPEZ			51	c
April 25	P	iPZ	21	51	49	Normal Tu e 21 54 08
		i(S)Z		52	40	
	SB	ePZ		51	31	Santa Clara reports:
	T	iPEZ		27	10	P 21 50 38
		iSEZ		52	10	S 45
April 26	MW	ePZ	02	43	04	Tu eP 02 43 36
	Pr	ePZ			01	i 48
	T	ePZ		42	37	
April 26	P	iPNEZ	08	19	20	Tu iP 08 19 53
		iZ			41	i 20 14
		iPPNEZ		21	22	
		iSNEZ		27	30	
	MW	iPZ		19	20	Japan?
		iZ			36	
		iPPZ		21	23	
		iZ			36	
	R	iPNZ		19	23	
		ePPZ		21	23	
		eSN		27	36	
	Pr	iPNZ		19	27	
		iZ		20	28	
		iPPZ		21	28	
		iZ		22	17	
		eSN		27	46	
	LJ	ePNEZ	08	19	30	
	SB	iPZ			15	
	H	iPNE			14	
		eSNE		27	18	
	T	iPEZ		19	10	
		iZ			35	
		eSN		27	09	

Date	Sta	Phase	h	m	s	Remarks
April 26	P	ePZ	14	46	18	Tu eP 14 46 50
	MW	ePZ			18	
	R	ePZ			26	
	Pr	ePZ			28	
	T	ePZ			13	
		iZ			18	
April 26	P	iPZ	19	49	57	Tu eP 19 50 18
	MW	ePZ			54	
	R	ePZ			53	
	Pr	ePZ			55	
April 27	P	ePZ	00	19	27	(Deep) Tu eP 00 20 11
		iEZ			39	14
		iZ			57	24
		eZ		20	34	
	MW	iPZ		19	28	
		iEZ			41	
	R	ePZ			31	
		iZ			44	
	Pr	ePZ			37	
		iNZ			50	
		iZ		20	14	
	LJ	eZ		19	52	
	SB	iZ			31	
	H	eNE			29	
	T	ePZ			12	
		iZ			24	
		iZ			40	
		iZ		21	14	
April 27	P	iZ	02	19	41	Normal Tu eP 02 20 27
		iSNE		20	37	
	MW	iPZ			32	Northeast of Tinemaha
		iZ			41	
		iSEZ		20	36	
	R	ePZ		19	35	
	H	ePN			04	
		iSN			33	
	T	iPZ		18	48	c
		i(S)Z		19	05	
April 27	MW	ePZ	12	38	50	Tu eP 12 39 33
	Pr	iPNZ			39	00
		iZ			12	
	T	ePZ		38	35	
April 27	Pr	ePZ	15	15	21	Tu eP 15 16 18
April 27	MW	iPZ	18	41	09	Tu eP 18 41 13
	R	ePZ			11	
	Pr	ePZ			10	
April 27	MW	ePZ	18	57	33	Tu iP 18 57 54
	R	ePZ			33	
	Pr	iPZ			36	
April 28	R	ePZ	03	32	50	Tu eP 03 33 45
	Pr	ePZ			55	
April 28	Pr	iPZ	03	45	47	Tu eP 03 46 35
April 28	P	iPZ	07	15	51	Tu iP 07 16 15
	MW	iPZ			51	
	R	iPZ			54	
	Pr	iPZ			55	c
	T	iPEZ			56	
April 28	MW	iPZ	20	53	31	Tu iP 20 53 50
April 29	MW	ePZ	13	48	30	Tu iP 13 49 16
	R	ePZ			34	
		iZ		49	18	
	Pr	iPZ		48	42	
April 30	P	ePZ	07	32	37	Normal
		eZ			33	
	PX	eLZ	08	03	3	
	MW	ePZ	07	32	37	

Date	Sta	Phase	h	m	s	Remarks
April 30	MW	ePZ	12	14	01	Tu eP 12 13 18
	R	ePZ			13	
	P	iPZ	17	29	12	Tu iP 17 29 33 c
May 1	MW	iPZ			12	c
	R	iPZ			14	c
	Pr	iPNEZ			14	c
	LJ	iPZ			11	
	H	ePNE			18	
	T	iPEZ			21	c
May 2	P	iPZ	01	27	21	Normal
		iSE		28	13	
	MW	iPZ		27	21	Felt at and near San Francisco
	R	iPNZ			22	
	Pr	iPNEZ			38	
	SB	iPNEZ			08	
		iSNE		28	07	
	H	ePNE		27	16	
		iSNE			25	
	T	iPZ			07	
		iSE			44	
May 2	P	ePZ	05	47	59	
	MW	iPZ			59	
	R	ePZ		48	04	
	Pr	iPNEZ			11	
	H	ePNE		47	50	
	T	iPEZ			44	
May 2	MW	iPZ	07	06	04	
	R	ePZ			13	
	Pr	iPNEZ			21	
	T	ePZ		05	52	
May 2	P	iPZ	09	30	44	
	MW	iPZ			44	
	R	iPZ			49	
	Pr	iPNEZ			56	
	T	iPZ			27	
May 3	P	ePZ	22	13	43	Tu eP 22 14 03
		iZ			55	i 15
		iZ		14	22	i 45
		iZ		17	27	
	MW	iPZ			13	43
		iZ			14	25
		iZ		17	28	
	R	iPZ		13	44	First of a series of shocks with overlapping seismograms, probably from the same source.
		iZ			57	
		iZ		14	27	
		iZ		17	29	
	Pr	iPNZ		13	46	
		iZ			58	
		iZ		14	26	
		eZ		17	29	
	SB	iZ		14	27	
		eZ		17	48	
	H	iE		14	33	
May 3	P	iPZ	22	34	04	
	MW	iPZ			04	
	R	iPZ			06	
	Pr	iPZ			09	
May 3	P	iPZ	22	36	51	Tu iP 22 37 24
		iZ			58	i 57
		iZ		37	37	i 41 38
		iZ		40	41	Largest shock of this series.
		eZ		41	21	USCGS: 9°S. 153° E., O = 22:23.4
		iNE		47	36	
	PX	iN		54	2	A T
		eLN	23	02	0	L 160 20
	MW	iPZ	22	36	53	
	R	ePZ			54	
	Pr	iPNZ			03	Magnitude about 7 1/4

Date	Sta.	Phase	h	m	s	Remarks
May 3	P	iPZ	23	00	41	Tu e 23 01 08
	MW	iPZ			41	
	R	ePZ			43	
	Pr	iPZ			45	
May 3	MW	iPZ	23	31	57	
	R	iPZ			54	
May 4	Pr	iPZ	05	02	53	Tu iP 05 03 27
May 5	MW	ePZ	08	29	23	Tu eP 08 29 40
	R	ePZ			24	
May 5	P	ePZ	09	09	24	Tu eP 09 09 45
	MW	ePZ			26	
	R	ePZ			25	
	Pr	ePZ			24	
May 6	MW	iPZ	03	30	56	Tu eP 03 30 03
	R	ePZ			51	
	Pr	ePNZ			45	
May 7	P	ePZ	04	54	31	Tu eP 04 55 54
	MW	ePZ			31	
	R	ePZ			40	
	Pr	ePNZ			49	
	H	ePN			18	
May 7	Pr	iPZ	12	52	29	Tu iP 12 53 05
May 8	PX	ePZ	05	36	24	Normal? Tu eP 05 39 39
		eP"Z		39	23	i 57
		eZ		31	31	USCGS: 1°S, 98°E ePP 42 32
		iP"Z		36	36	O=05:20.3 iSKP 43 27
		iZ		45	45	
		ePPNZ		41	48	
		iEZ		42	21	A T
		iSKPEZ			56	
		iNEZ		43	05	PP 2 3
		eSKSPN		52	0	SKP 7 5
		eSKKPZ		52	27	L 20 20
		ePPSN		53	7	
		eSSN	06	00	26	Magnitude about 7 1/4
		eN		04	04	
	MW	e(L)N		16		
		eP"Z	05	39	27	
		iZ			38	
		iPPZ		42	46	
		eSKKPZ		52	32	
	R	eP"Z		39	26	
		iZ			37	
	Pr	eP"Z		39	28	
		iP"NZ			39	
		ePPZ		42	04	
		eSKKPZ		52	26	
	LJ	eP"NEZ		39	41	
	SB	eP"Z			36	
		ePPZ		41	45	
		iSKPZ		42	54	
	H	eP"Z		39	36	
May 8	P	ePZ	09	59	02	Normal Tu eP 09 59 36
		iNEZ			07	
	PX	ePPEZ	10	03	08	New Britain? ePP 10 03 57
		iSNE		09	42	
		iE		12	04	
		eLN		26	1	P A T
	MW	ePZ	09	59	02	S 3/4 3
	R	ePZ			08	2 6
	Pr	ePNZ			16	
		ePPN	10	03	15	
		eSN		09	51	
	SB	eZ	09	59	02	
		ePPZ	10	03	04	
	T	ePZ	09	59	08	

Date	Sta.	Phase	h	m	s	Remarks
May 8	P	ePZ	12	58	06	Deep? Tu iP 12 58 33
	MW	iPZ			06	
		iZ			15	
		iZ			26	
		eZ			44	
	R	ePZ			08	
		eZ			30	
		eZ			53	
	Pr	ePZ			10	
	T	ePZ			11	
		eZ			31	
		eZ		59	00	
May 8	P	iPNZ	16	05	12	Deep? Tu iP 16 04 36
	MW	iPZ			13	
	R	iPZ			10	South America
		iZ			39	
	Pr	iPN			06	
	H	ePZ			19	
		iPZ			26	
		eZ			47	
May 8	Pr	iPNZ	18	05	06	Tu iP 18 06 40
May 8	P	ePZ	18	19	09	Tu eiP 18 18 42
	MW	iPZ			11	
	R	ePZ			08	
	H	ePZ			20	
	T	ePZ			23	
May 8	P	iPZ	19	25	55	Tu iP 19 26 43
		eZ			26	
		eZ			12	
	MW	iPZ			25	
		eZ			26	
		eZ			13	
	R	iPZ			00	
	Pr	iPNEZ			07	
		eZ			18	
		ePZ			25	
	H	iPZ			45	
	T	iPZ			39	
		eZ			46	
		eZ			53	
May 9	P	ePZ	00	32	29	Tu eP 00 32 11
	MW	ePZ			32	
	Pr	ePZ			26	
	T	ePZ			43	
May 9	P	ePZ	03	00	10	Tu iP 03 00 33
	MW	iPZ			11	
	R	ePZ			13	
May 9	Pr	iPZ	05	02	15	Tu iP 05 01 37
May 9	MW	ePZ	07	43	31	Tu iP 07 44 20
	Pr	ePZ			33	
		eZ			43	
	T	ePZ			22	
May 9	P	iPZ	15	43	48	
	MW	iPZ			48	
		iZ			45	
		iZ			23	
		iZ			35	
	R	ePZ			43	
		iZ			45	
		iZ			26	
		iZ			39	
	Pr	iPZ			43	
		eZ			52	
		eZ			27	
		eZ			40	
	H	ePZ			43	
	T	iPZ			48	
May 9	MW	iZ	19	01	11	Tu eP 19 00 23
	R	eZ			00	
		iZ			06	
	Pr	iPZ			00	
	T	iPZ			01	
		iZ			18	
		iZ			01	
		iZ			26	

Date	Sta.	Phase	h	m	s	Remarks
May 9	Pr	ePZ	19	34	37	Tu iP 19 35 32
	T	ePZ			25	
May 9	P	ePZ	22	39	10	Tu eP 22 39 39
	MW	ePZ			08	
	R	ePZ			12	
	Pr	eZ			07	
	T	ePZ		38	54	
May 9	P	iPNEZ	23	37	51	Tu iP 23 36 46
	PX	iNE		38	36	i 49
		iLNE		40	36	iS 39 36
		e(S)EZ		40	58	USCGS: 22°N, 108°W.
	MW	iPEZ		37	51	O=23:34.4
	R	ePNZ			44	
	Pr	iPNEZ			32	A T
	LJ	ePNEZ			38	P 2 3
	SB	iPNEZ		38	04	L 300 20
	H	iPNEZ			10	
	T	ePEZ			20	
May 9	P	iPZ	23	48	40	Tu iP 23 49 04
	MW	iPZ			40	
	R	iPZ			42	
	Pr	iPNZ			44	
	LJ	ePZ			42	
	SB	iPZ			35	
	H	ePZ			46	
	T	iPZ			46	
May 10	T	ePZ	11	12	51	Tu eP 11 14 08
May 10	R	ePZ	13	31	56	Tu eP 13 31 43
	Pr	ePZ			01	
	T	ePZ			31	
May 10	P	iPZ	23	43	43	Deep Tu iP 23 43 09 d
		eZ		44	07	i 33
	MW	iPZ		43	43	e 24 11 23
	R	iZ		44	06	South America?
		iPZ		43	39	d
	Pr	iPZ		44	03	
		eZ			53	
		iZ		44	01	
	T	iPZ		43	53	
May 11	P	iPZ	16	36	40	Tu iP 16 36 36 c
	MW	iPZ			40	
	R	iPZ			40	
	Pr	iPNEZ			42	BCIS: 68°N, 0° E.
	LJ	ePZ			47	O=16:25.2
	T	iPZ			24	Foreshock of 18 ^h following.
May 11	P	ePZ	17	28	48	Normal Tu iP 17 29 15
	PX	eLZ		49	7	i 29
	MW	iPZ		28	47	
	R	ePZ			49	Northeast Asia?
	Pr	iPNEZ			51	
	H	ePZ			24	
	T	ePZ			06	
May 11	P	iPNEZ	18	50	37	c Normal Tu iP 18 50 33
		eZ		51	42	e 19 18 35
		eZ		53	14	BCIS: 68°N, 0°E.
		eP'P'Z	19	18	41	O=18:39.1
		iZ			48	
	PX	eLZ		20	0	
	MW	iPZ	18	50	36	c
		iP'P'Z	19	18	48	
	R	iPZ	18	50	35	
		eP'P'Z	19	18	41	
		iZ			48	
		(continued)				

Date	Sta.	Phase	h	m	s	Remarks
		(Continued)				
May 11	Pr	iPNEZ	18	50	39	c
		eP'P'Z	19	18	42	
	SB	ePZ	18	50	39	
	H	ePNEZ			26	
	T	iPEZ			21	c
		eP'P'Z	19	18	52	
May 12	P	ePZ	04	40	56	Tu eP 04 41 09
		eZ		41	31	
	MW	ePZ		40	56	
	R	ePZ			58	
	Pr	ePZ		41	01	
	T	iPZ		40	56	
		iZ		41	29	
May 12	MW	iPZ	11	36	52	Tu eP 11 37 19
	R	ePZ			37	
	T	iPZ			05	
May 12	P	ePZ	13	31	20	Tu iP 13 30 52 d
	PX	eLZ		53	9	BCIS: 30°N, 22°W.
	MW	iPZ		31	18	O=13:20.1
	R	ePZ			16	
	Pr	iPNZ			17	
	H	ePZ			13	
	T	ePEZ			11	
May 12	MW	eZ	13	59	34	Tu e 13 59 34
	R	eZ			35	
	T	eZ			41	
May 12	Pr	iPZ	20	28	30	P'P' of preceding? Tu iP 20 28 57
		iZ		29	18	
	T	iPZ		28	05	
		iZ			50	
May 13	MW	ePZ	02	44	21	Tu iP 02 44 42
	R	ePZ			22	e 46 34
	Pr	ePZ			23	
	T	ePZ			29	
		eZ		46	22	
May 13	P	iPZ	06	30	13	Tu iP 06 31 01 d
	MW	iPZ			13	i 32 52
	R	ePZ			17	
	Pr	iPNZ			26	d
	H	iPZ			04	
	T	iPEZ		29	58	d
May 13	MW	ePZ	06	41	41	Tu eP 06 41 42
	R	ePZ			42	
	H	ePZ			31	
	T	ePZ			25	
May 13	MW	iPZ	13	45	48	Tu eP 13 46 08
	R	ePZ			47	
	Pr	eZ			53	
	T	ePZ			51	
May 14	P	iPNEZ	06	10	22	d Deep Tu iP 06 10 59 d
		iZ			50	i 11 08
		eScPZ		16	23	i 25
	MW	iPEZ		10	22	d iPcP 13 02
		iZ			50	iScP 16 39
		eScPZ		16	24	
	R	iPNZ		10	26	d
		iZ			42	
		iZ			53	
		eScPZ		16	24	
	Pr	iPNEZ		10	32	d
		iZ			42	
		iZ			53	
		eScPZ		16	28	
	LJ	ePZ		10	34	
	SB	iPZ			15	
		(continued)				

Date	Sta.	Phase	h	m	s	Remarks
May 14	H	(continued) iPNEZ	06	10	08	d
		iZ			35	
		ePcPZ		12	44	
		eScPZ		16	16	
	T	iPEZ		10	01	d
		iZ			16	
		iZ			29	
		ePcPZ		12	41	
		eScPZ		16	14	
May 15	MW	iPZ	08	09	46	Tu iP 08 10 32
		iZ		10	06	
	R	ePZ		09	48	
	Pr	iPNZ			57	d
	T	iPZ			27	
May 15	P	iPNEZ	22	16	19	c Normal Tu iP 22 15 22
		iN			30	
		iPPZ		17	16	USCGS: 16°N, 96°W, O=22:10.6
		iPcPZ		19	48	
	PX	eSN		20	55	
		eSNZ		21	11	
		iLN		23	03	
	MW	iPEZ		16	19	P A T 2 3
	R	iPNZ			12	L 70 20
	Pr	iPNEZ			06	
		eSN		20	47	
	LJ	ePZ		16	07	
	SB	ePZ			31	
	H	ePNEZ			29	
	T	ePEZ			37	
May 15	P	iPZ	22	24	45	
	MW	iPZ			47	
	R	iPZ			48	
	Pr	ePZ			50	
	H	ePZ			45	
	T	ePZ			44	
May 15	P	iPZ	22	30	01	Normal Tu iP 22 29 05
		iN			17	i 35 27
	PX	eSZ		34	50	P A T 2 3
		eLN		37	0	
	MW	iPEZ		30	02	Near 16°N, 96° W.
	R	iPZ		29	55	
	Pr	iPNEZ			49	
	LJ	ePZ			47	
	SB	ePZ		30	14	
	H	iPZ			11	
	T	ePZ			20	
May 16	P	iPZ	00	28	58	Tu iP 00 28 03
		iPcPZ		31	20	i 31 02
	MW	iPZ		28	58	
		ePcPZ		31	21	
	R	iPZ		28	51	
		iPcPZ		31	16	
	Pr	iPNEZ		28	46	
		iPcPNEZ		31	15	
	T	ePZ		29	11	
		iPcPZ		31	26	
May 16	P	iPNEZ	05	38	12	c Deep Tu iP 05 38 39 c
		iZ			34	
		eZ		41	00	
		eZ			36	P A T 1 1 1/2
	PX	eSN		48	55	
		eNE		49	13	
		eLEZ	06	05	4	Magnitude 7?
		(continued)				

Date	Sta.	Phase	h	m	s	Remarks
May 16		(continued)				
	MW	iPEZ	05	38	14	c
	R	iPNZ			15	cc
	Pr	iPNEZ			17	c
		iZ			23	
		iE		39	12	
	LJ	iPZ		38	16	
	SB	iPZ			08	
	H	iPNEZ			16	c
	T	iPEZ			17	c
May 17	P	iPZ	12	04	21	Tu iP 12 04 43
	MW	iPZ			22	
	R	ePZ			23	
	T	eZ			18	
May 18	P	iPZ	21	56	47	
	MW	ePZ			49	
	R	ePZ			50	
	T	ePZ			46	
May 19	P	iPNEZ	00	40	53	Tu iP 00 41 33 c
	PX	iSNE		48	40	i 41 41
		eLN		54	3	eP P O1 11 04
	MW	iPZ		40	54	BCIS: 58°N, 167½E, O=00:31:33
		iZ		41	02	
		eSE		48	39	A T
	R	iPZ		40	57	P 1/2 3
	Pr	iPNZ		41	08	S 1 1/2 4
		iSN		48	57	
	LJ	ePZ		41	11	
	SB	ePZ		40	48	
	H	ePZ			44	
	T	ePZ			40	
May 19	MW	eSE	09	48	12	
		ePZ			27	
	R	iZ			52	
		ePZ			28	
		iZ			54	
	T	ePZ			27	
		eZ			54	
May 19	P	e(P)Z	17	46	27	Deep Tu iP 17 46 48
		iZ		47	01	i 47 27
	MW	iPZ		46	22	Near Apia, which reports:
		eZ			50	iP 17 35 55
	R	ePZ			26	iS 36 30
		eZ		47	03	
	Pr	ePZ		46	26	
		eZ		47	01	
		iNZ			05	
	LJ	eZ			1	
	SB	eZ		46	57	
	H	eZ		47	10	
	T	ePZ		46	28	
		eZ		47	09	
May 19	P	iPZ	18	57	33	d d d d Tu iP 18 57 51 d
	MW	iPZ			34	
	R	iPZ			35	
	Pr	iPNEZ			36	
	LJ	ePZ			33	
	SB	ePZ			30	Near New Zealand
	H	iPZ		41	37	Wellington gives
	T	iPZ		42	37	37°S, 175°W, C=18:45.5, M=6-6½
May 19	MW	ePZ	21	39	38	d Tu iP 21 40 33
	Pr	ePZ			58	
	T	iPZ			29	

Date	Sta.	Phase	h	m	s	Remarks
May 20	R	ePZ	09	08	17	Tu eP 09 07 30
		iPcPZ		10	59	iPcPZ 10 45
	Pr	ePZ		08	12	
		ePcPZ		10	57	
	T	ePZ		08	38	
		iPcPZ		11	06	
		iZ		14	46	
May 20	MW	iPZ	13	59	03	Tu iP 13 59 14
	R	iPZ			03	
	T	iPZ			03	
May 20	P	ePZ	14	20	19	Normal
	PX	eLZ		29	0	
	MW	ePZ		20	20	
	R	ePZ			13	
	Pr	iPNZ			07	
	T	ePEZ			37	
May 20	Pr	iPZ	21	57	43	Tu iP 21 57 53
	T	ePZ?		56	45	
May 20	P	iPZ	22	04	04	Tu iP 22 04 27
	MW	iPZ			05	c
	R	ePZ			05	
	T	iPEZ			13	
May 21	P	iPZ	06	30	04	Tu eP 06 29 08
	MW	iPZ			03	
	R	iPZ		29	57	
	Pr	iPZ			52	
	T	iPZ		30	16	
May 21	P	ePZ	08	38	53	Tu eP 08 38 03
	MW	ePZ			56	e
	R	ePZ			49	Near Panama
	Pr	iPNZ			45	
	T	ePZ		39	08	
May 21	P	iPNEZ	09	26	16	Tu iP 09 25 27
	PX	iPPZ			27	i
		iSNE		33	54	eS 32 45
		iSSN		34	13	USCGS: 14.2 ON, 60.8 OW
		iScSN		36	01	O=09:16.6
		iScSN			26	
		eSSN		37	8	Damage on Martinique
		eLN		39	8	
	P	eP'P'Z		56	20	A T
	MW	iPEZ		26	15	c P 3 3
		iPPZ			26	SS 4 5
		eSE		33	54	L 20 20
		eP'P'Z		56	10	
	R	iPZ		26	09	c Magnitude about 7
		iPPZ			25	Depth about 50 km.
		iSN		33	46	
		eScSN		35	56	
		esScSN		36	21	
		eP'P'Z		56	06	
	LJ	ePNEZ		25	48	c
		eSE		33	43	
		eScSE		35	45	
	SB	iPZ		26	25	c
		iSE		34	15	
		eSNE		36	13	
	H	ePZ		26	17	
		eSE		33	58	
		eScSE		36	03	
	T	iPEZ		26	18	c
		iZ			36	
		eSE		33	56	
		iZ		51	21	
		iP'P'Z		55	48	

Date	Sta.	Phase	h	m	s	Remarks
May 21	MW	iPZ	12	33	37	Tu iP 12 34 02
	R	iPZ			38	
	Pr	iPZ			48	
	T	iPZ			41	
May 21	MW	iPZ	20	07	52	Tu eP 20 08 07
	Pr	ePZ			54	
	T	iPZ			59	
May 21	MW	iPZ	23	59	33	Tu iP 23 59 57
		iZ		24	00	i 24 00 08
May 22	P	ePZ	09	45	56	Tu eP 09 46 21
	MW	ePZ			58	
	R	ePZ			46	01
	Pr	ePNZ			01	
May 22	P	iPZ	13	56	09	Tu iP 13 56 33 d
	MW	iPZ			11	
	R	iPZ			12	d
	Pr	iPZ			13	d
	T	iPZ			19	
May 22	P	iPZ	14	25	27	
		iZ			56	
	MW	iPZ			27	
		iZ			57	
	R	iPZ			24	d
		iZ			53	
	T	iPZ			40	
		iZ		26	10	
May 23	P	eZ	01	42	07	Tu e 01 42 45
	PX	eLZ	02	10	5	
	MW	ePZ	01	41	46	
		iZ		42	09	
	R	ePZ		41	45	
		eZ		42	11	
	LJ	eZ		41	52	
	T	ePZ?			18	
		iZ		42	10	
May 23	P	iPZ	11	18	33	Tu e 11 19 05
	PX	eLZ		48	7	
	MW	iPZ		18	33	
		iZ			59	
		eZ		19	19	
	R	ePZ		18	37	
	T	iPZ			55	
		eZ		19	06	
		eZ			21	
May 23	P	iPZ	11	54	06	Deep Tu iP 11 54 27
	MW	iPZ			07	e 51
		epPZ		56	07	ipP 56 27
		esPZ		57	22	
	R	iPZ		54	09	Tonga region, h=550 km.
		epPZ		56	07	
		esPZ		57	26	
	H	iPZ		54	13	
	T	iPEZ			15	
		iPPZ			15	
		eEZ		12	03.6	
May 24	MW	iPZ	12	55	45	Tu iP 12 56 06
	R	iPZ			47	
	Pr	iPNEZ			48	For shock of May 24, 06h, see
	H	ePZ			51	Addenda.
	T	iPZ			53	
May 25	P	iPZ	01	47	11	Tu e 01 50 40
	MW	iPZ			10	i 55
		eZ		50	00	Two shocks?
		eZ			10	
	Pr	iPZ		47	16	
		eZ		50	05	
					19	

(continued)

Date	Sta.	Phase	h	m	s	Remarks
May 25	T	(continued) ePZ eZ iZ	01	47	12 39 50	
May 25	P MW SB H T	iPZ iPZ iPZ ePZ iPEZ	11	54	33 33 27 29 26	Tu iP 11 55 03 d e 58 42
May 26	MW Pr T	ePZ iPZ ePZ	13	29	05 17 49	Tu eP 13 29 52
May 26	MW R Pr T	ePZ ePZ ePZ ePZ	13	44	28 28 31 30	Tu eP 13 44 54 Near Apia, which reports: eP 13 33 37 iS 50
May 26	Pr T	iPZ ePZ	21	50	41 45 13	Tu iP 21 51 17 i 21
May 27	R	iZ iPZ	14	25	17 04	
May 28	Pr P R Pr T	iPZ ePZ ePZ ePZ ePZ	12	11	07 01 06 15	For shock of May 27, 08h, see Tu iP 12 10 54 Addenda For shock of May 28, 13h, see Addenda
May 29	MW R Pr T	ePZ eZ ePZ eZ iPZ	01	51	16 26 08 18 22 31	Tu eP 01 51 53
May 29	MW R Pr H T	iZ iPZ iPZ iPZ iPZ	18	02	13 14 14 15 20 22	Tu i 18 02 48
May 29	T	ePZ	23	25	10	
May 30	MW R Pr H T	iPZ ePZ iPZ iPZ iPZ	03	00	16 16 18 21 23	Tu iP 03 00 39
May 30	Pr T	ePZ ePZ	03	53	56 48	Tu iP 03 53 49 Switzerland
May 30	T	ePZ	08	52	52	
May 30	R	ePZ	22	23	33	
May 31	Pr T	iPZ eLZ	01	49	34 39	
May 31	PX MW R	ePZ ePZ ePZ	02	44	29 35 46	Tu eP 02 44 25
May 31	Pr T P PX MW R Pr T	ePZ ePZ ePZ iZ eLN eZ eZ ePZ eZ ePZ	03 04 03	31 02 30	08 38 11 23 08 38 11 23 08 37 46	Tu eP 03 26 53 e 31 12 Destructive in eastern Turkey region of 39°N, 42°E.

Date	Sta.	Phase	h	m	s	Remarks
May 31	MW	iPZ	06	21	55	
	R	eZ ePZ iZ		22 21 22	15 57 08	
June 1	Pr T MW	ePZ iPZ eZ		21 21 01	59 54 27	
June 1	R Pr P	eZ iPZ iPNEZ		20 29 09	27 39 46	Deep Tu eP 09 04 15
		iZ eZ iPEZ		04 03 03	12 32 47	
	MW	iZ iPNEZ		04 03	14 50	
	Pr	eZ ePZ iPEZ		04 03 03	17 47 46	
June 1	H T R	ePZ ePZ ePZ?		16 16 08	19 22 22	Tu eP 16 08 50 Tu eP 16 25 41
June 1	P MW R Pr T	ePZ ePZ ePZ eZ iPZ iZ		16 25 21 30 28 13 22	22 21 30 28 13 22	23.5°N, 123.5°E. (USSR Bulletin)
June 2	PX MW Pr	eLZ ePZ ePZ	01	55	0 38 50	Normal Tu e 01 27 19 Formosa
		eZ ePZ iPZ		26 22 08	48 29 01	23°N, 121°E. (USSR bulletin) Tu eP 08 04 25
June 2	T MW R	ePZ iPZ ePZ		05 04 05	01 57 14	
June 2	P MW Pr	ePZ ePZ ePZ	17	15	24 25 14	Tu eP 17 14 33 Near Panama, Balboa Heights re-
June 2	Pr T P R R Pr	ePZ ePZ ePZ ePZ ePZ ePZ		17 19 20 19 12 16 27	37 12 16 27 12 27	P 17 08 32 S 09 17 Tu iP 20 19 39
June 3	T	ePZ	07	01	12	Tu eP 07 00 59
June 3	P	ePZ	13	51	59	Tu iP 13 52 45
June 3	PX MW	eLN ePZ	14 13	01 51	37 59	i 53 03 Aleutian Islands.
	R	iZ ePZ		52 03	13 03	
	Pr	iZ iPNEZ iNEZ iNE eSNE		16 10 24 41 58	16 10 24 41 38	
	LJ H T	ePN ePZ ePZ		52 51 55	12 50 44	
June 3	MW	iZ iPZ		17 17	11 11	Tu e 17 21 43
June 3	R T	ePZ iPZ		13 04	13 04	27°N, 127°E. (USSR bulletin)
June 4	P	iPNEZ	04	56	13	Deep Tu iP 04 56 37 d
	MW	ePZ iPZ iPZ		58 56 58	19 13 19	Tonga region, i h= 600 kn, iP 58 45
	R	iPZ iPZ		56 58	16 22	d eS 05 06 07 eP'P' 25 37

(continued)

Date	Sta	Phase	h	m	s	Remarks
June 4	Pr	(continued)				
		iPNEZ	04	56	16	d
		ipPNEZ		58	23	
	LJ	iSN	05	05	27	
	SB	ePZ	04	56	13	
	T	iPZ		09	21	d
		ipPZ		58	32	
June 4	MW	iPZ	16	05	10	
	R	iPZ			13	
	Pr	iPZ			15	
	T	ePZ			12	
June 4	P	iPZ	17	14	58	Tu iP 17 15 35
	MW	iPZ			57	
	R	iPZ		15	01	
	Pr	iPNEZ			07	
	H	iPZ		14	44	
	T	iPZ			36	
June 5	P	ePZ	01	05	52	Tu eP 01 06 20
		eZ		06	17	
	PX	eLZ		35	00	
	MW	iPZ		05	53	
		iZ		06	18	
	R	ePZ		05	54	
	Pr	iPNEZ			57	
	T	ePZ			52	
June 5	P	iZ	13	27	11	Tu eP 13 27 36
	MW	iZ			12	53
	R	ePZ?			00	
		iZ			15	
	Pr	iZ			22	
	T	eZ			31	
June 5	Pr	iPZ	15	17	44	Tu iP 15 18 00
June 6	MW	iPZ	00	41	47	Tu iP 00 42 28 d
	R	ePZ			45	
	Pr	iPNEZ			53	
	H	ePZ			32	
	T	ePZ			24	
June 6	Pr	ePZ	05	23	58	Tu iP 05 24 33
	T	iPZ			30	
June 6	PX	eLZ	11	24		Normal Tu e 10 51 17
June 7	P	ePZ	04	18	51	Deep Tu iP 04 18 01
		iNEZ		19	01	d
		ipPZ			33	
		iNE			43	
		iEZ			48	
		iPcPZ	22	17		USCGS: 17°N, 94°W, O=04:13.3, depth slightly greater than 100 km.
	PX	ipPcPZ		23	23	
		eSNE		26	08	
	MW	iLN		19	01	
	R	iPZ		18	55	
		ipPZ		19	22	
		iZ			36	
		iPcPZ		22	13	
		eN		24	09	
		iZ		26	06	
		iZ		27	59	
	Pr	ePZ		18	46	
		iNEZ			49	
		ipPZ		19	09	
	LJ	ePZ		18	51	
	SB	ePNEZ		19	13	
	H	ePZ			10	
	T	iPZ			14	
		iZ		26	14	

Date	Sta	Phase	h	m	s	Remarks
June 7	P	ePZ	04	51	29	Tu eP 04 51 57
	MW	ePZ			30	
	R	ePZ			33	
	Pr	iPZ			37	
June 7	Pr	ePZ	06	09	31	Tu eP 06 08 53
	T	ePZ			59	
June 7	MW	iPZ	07	09	23	Tu iP 07 08 37
	R	iPZ			17	
	T	iPZ			35	
June 8	R	ePZ	23	31	01	Deep Tu iP 23 31 17
June 9	Pr	ePZ			01	Hindu Kush, h=200 km. (USSR bull etin)
	MW	ePZ	05	03	52	Tu eP 05 04 22
		eZ		04	12	
	T	ePZ		03	03	
		eZ			23	
June 9	T	eZ	05	34	55	Tu e 05 36 00
June 9	P	iPZ	07	03	19	Tu iP 07 04 07
	MW	ePZ			20	
	R	ePZ			25	
	Pr	iPNEZ			32	
		iZ			40	
	H	iPZ			08	
	T	iPZ			04	
June 9	P	ePZ	10	37	05	
	MW	iPZ			06	
	R	iPZ			09	
	Pr	ePZ			09	
	SB	ePZ			01	
	T	iPZ			07	
June 10	MW	iPZ	17	13	51	Tu iP 17 13 07
	R	iPZ			47	
	Pr	iPZ			41	
	T	iPZ			04	
June 10	R	ePZ	23	47	22	Tu eP 23 46 54
	T	ePZ			28	
June 11	R	iPZ	03	36	03	Tu eP 03 35 33
	T	iPZ			18	
June 11	P	ePZ	08	04	04	Tu eP 08 04 54
	MW	ePZ			04	57
	R	ePZ			09	
	Pr	ePZ			19	
June 11	T	ePZ	14	03	36	Tu eP 14 17 58
	P	ePZ		18	13	
	MW	ePZ			14	
	R	ePZ			12	
	Pr	iPZ			11	
	T	ePZ			20	
June 11	R	ePZ	18	17	28	Tu iP 18 16 43
	Pr	ePZ			24	
	T	iPZ			42	
June 12	T	ePZ	11	51	50	Tu eP 11 52 53
	Pr	ePZ		52	18	
June 12	P	iPZ	16	21	18	Normal Tu eP 16 21 51
	PX	eLNZ		49	4	e 25 40
	MW	ePZ			18	
	R	ePZ		21	18	
	Pr	iPZ			21	
	LJ	ePZ			25	
	SB	ePZ			23	
	H	ePZ			18	
	T	ePZ			15	
June 13	Pr	ePZ	05	14	18	Tu iP 05 14 42
	T	ePZ			20	
June 14	R	ePZ	01	11	43	Tu iP 01 12 00
	Pr	iPZ			41	
	T	iPZ			47	

Date	Sta	Phase	h	m	s	Remarks
June 14	MW	iPZ	05	30	30	Tu iP 05 31 17
	R	ePZ			34	
	Pr	iPZ			41	
	T	iPZ			13	
June 15	P	ePZ	18	43	59	Normal Tu e 18 48 02
		e(PP)Z			47	e 58 40
	PX	eLN	19	14	00	Magnitude 6 3/4 to 7.
	MW	ePZ	18	44	07	USSR: 00, 129°E.
	R	ePZ			00	
		eZ			58	
June 15	P	iPZ	19	47	29	Normal Tu eP 19 47 02
		iSNEZ			48	
	MW	iPZ			47	c Felt in San Diego County
	R	iPNEZ			23	c
		iSNEZ			46	32.6°N, 116.3°W
	LJ	iPNEZ			08	c O=19:46.9
		iSNEZ			22	Magnitude 4.8
	Pr	iPNEZ			11	c
June 16	Pr	iPZ	15	56	20	Tu eP 15 56 57
	T	ePZ			55	54 08
June 18	Pr	iPZ	03	17	25	Tu iP 03 17 44
	T	iPZ			31	
June 19	P	ePZ	00	34	02	Tu eP 00 33 45
	MW	ePZ			03	
	Pr	ePNEZ			01	
	LJ	ePZ			33	
	H	ePZ			34	
	T	ePEZ			09	
June 19	MW	ePZ	02	53	08	Tu eP 02 53 14
	T	eZ?			52	14
		e(P)Z			25	
June 19	P	ePZ	11	50	21	Tu eP 11 50 05
	MW	ePZ			22	
	Pr	ePZ			18	
	H	ePZ			26	
	T	ePZ			30	
June 19	MW	ePZ	12	04	48	Tu iP 12 05 24
	Pr	ePZ			45	
	T	ePZ			23	
June 19	T	ePZ	15	34	55	Tu eP 15 35 09
		eZ			35	53 05
June 20	Pr	ePZ	02	06	15	Tu iP 02 06 01
June 21	PX	eLZ	04	34	47	Swarm of these Tu iP 04 31 53
						recorded at Tucson, S? 33 45
June 21	P	ePZ	08	55	01	Tu eP 08 55 45
	MW	iPZ			02	
	Pr	iPNZ			13	
	LJ	ePZ			13	
	H	iPZ			54	53
	T	iPZ			48	
June 21	P	ePZ	09	24	46	Tu iP 09 24 46
	MW	ePZ			52	
	H	ePZ			35	
	T	eSZ			25	50
		ePZ			24	05
		eSNEZ			25	14
June 21	P	ePZ	12	32	22	Tu eP 12 32 48
	PX	eLZ			54	07
	MW	ePZ			32	22
	Pr	ePNE			31	56
	H	ePZ			32	29
	T	iPZ			29	
June 23	PX	eLNZ	04	25	5	Normal Tu eP 04 13 20
	MW	ePZ			13	50
June 23	MW	ePZ	07	13	07	Tu eP 07 13 02

Date	Sta	Phase	h	m	s	Remarks
June 23	P	ePZ	15	11	48	Tu eP 15 12 08
	MW	ePZ			49	
	Pr	ePNZ			50	
	H	ePZ			57	
	T	ePZ			00	
June 23	P	iPNEZ	17	17	13	d Normal Tu iP 17 18 02 d
	MW	iPNEZ			13	d Destructive on Vancouver Island
	R	iPZ			18	d Magnitude about 7
	Pr	iPNEZ			28	d USCGS: 49 9°N, 125.3°W.
	LJ	iPNEZ			32	d O=17:13:20
	SB	iPNEZ			06	d
	H	iPNEZ			16	d P 50 T 3 1/2
	T	iPNEZ			39	d L 1000 15
June 23	P	ePZ	20	38	22	Tu eP 20 38 53
	MW	ePZ			21	
	Pr	ePEZ			38	
	SB	ePZ			16	
	T	ePZ			19	
June 24	MW	iPZ	01	33	15	Tu iP 01 33 37
	Pr	iPZ			24	
June 24	P	ePEZ	12	28	08	Tu iP 12 27 17 d
	PX	e(L)EZ			31	04 38
	MW	ePZ			28	09
	Pr	ePNEZ			27	50
	SB	ePZ			28	32
	H	ePZ			27	
	T	iPZ			39	
June 24	P	iPNEZ	15	54	27	Deep Tu iP 15 53 34
		ipPZ			55	18 54 26
		esPZ			49	isP 57
		e(ScP)Z			58	11 i 00 08
	PX	e(S)N			59	21 USCGS: 14°N, 91°W.
		eLNE	16	00.7	00.7	O=15:48.0
		i(ScS)NE			01	00 JSA: 14 9°N, 89.7°W.
	MW	ePZ	15	54	27	O=15:48:16, h=200 km.
		ipPZ			55	19
		esPZ			51	
	Pr	iPNEZ			54	16 P A T
		ipPNEZ			55	07 1 3
		isPZ			41	
		eZ			56	39
		eZ	16	00	23	
		ePZ	15	54	26	
	LJ	epPZ			55	29
	H	iPNEZ			54	43
	T	epPNEZ			55	36
		eEZ			56	03
		iZ			57	13
		iZ	16	00	33	
June 24	MW	ePZ	17	21	10	Tu iP 17 20 44
	Pr	ePZ			11	
June 25	MW	iPZ	00	13	17	Deep Tu iP 00 13 30
	T	eZ			14	01 USCGS: 8°S, 126.5°E. e 14 17
		iZ			14	06 h=155 km.
June 25	MW	iPZ	08	54	14	Tu iP 08 54 34
	Pr	iPZ			23	
	T	iPZ			21	
June 25	P	iPNEZ	14	17	45	c Tu iP 14 17 18 c
		iZ			57	i 30
	PX	eLZ			45.7	
	MW	iPNEZ			17	47 c
	Pr	iPNEZ				40 c
		iZ			52	
	SB	ePZ			50	
	H	iPZ			54	
	T	iPEZ			18	04

Date	Sta.	Phase	h	m	s	Remarks
June 26	Pr	ePZ	04	18	56	
	T	ePZ		19	23	
June 26	MW	ePZ	04	42	13	Tu eP 04 42 58
	Pr	ePZ			22	
	T	ePZ		41	48	
June 26	P	ePZ	04	48	28	Tu iP 04 47 34
	MW	ePZ			29	
	Pr	ePZ			06	
	T	ePZ			57	
June 26	P	iPNEZ	07	59	55	c Deep Tu iP 07 59 01 d
		ipPZ	08	00	13	ipP 22
		esPZ			27	
		iPcPNEZ		02	48	
		iSNZ		05	01	
		iScPNEZ		06	35	
		iNEZ		07	03	USCGS 14°N, 91°W
	PX	eLNE		08	00	O=07:53.6
	MW	iScSNE		10	52	
		ipZ	07	59	56	c A T
		epPZ	08	00	13	P 1 3
		esPZ			28	SS 3 4
		iPcPZ		02	48	ScS 2 4
		eScPZ		06	25	
	R	epN	07	59	52	
	Pr	iPNZ			44	
		epPZ			59	
		iE	08	00	11	
		iPcPZ		02	46	
		iScSNE		10	18	
		eN			44	
	SB	epZ		00	06	
	H	iPNZ			15	
		iPcPNZ		03	03	
		eScPZ		06	40	
		eScSN		10	40	
	T	iPNEZ		00	12	c
		ipPZ			43	
		iPcPNEZ		02	55	
		iScSNE		10	33	
June 26	P	ePZ	12	52	29	Normal Tu eP 12 52 50
	PX	eLZ	13	21	40	
	MW	ePZ	12	52	28	Strong on South Island, New Zealand. Wellington gives: 43.2°S, 171.5°E, O=12:34.7, M=6
	Pr	ePZ			24	
	T	ePZ			48	
June 26	MW	ipZ	20	30	59	Tu iP 20 30 14
	Pr	ePZ			49	
June 26	T	ePZ	20	50	18	Tu eP 20 50 35
June 27	P	ePZ	21	52	17	Normal Tu iP 21 52 34
		iZ			34	
		eZ		55	51	
	PX	eLZ	22	18	19	
	MW	epZ	21	52	17	i 46
		eZ			29	i 53
		iZ			35	
	Pr	iPNZ			18	
		iNEZ			32	
		iZ			36	
		epZ			14	
June 28	PX	eLZ	08	00	29	South Island, New Zealand. (Tu iP
June 29	Pr	ipZ	09	51	13	Tu iP 09 51 31 (07 23 15
June 30	P	iPNZ	05	04	57	Deep Tu iP 05 03 58 d
		ipPNEZ		05	28	
		iZ		08	22	ipP 04 30
	MW	ipZ		04	57	d Mexico i 08 10
		ipPZ		05	28	
		eZ		08	20	

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
June 30		(Continued)				
	R	ipZ	05	04	52	
		ipPZ		05	23	
		iZ			43	
		iZ		08	21	
	Pr	iPNEZ		04	45	d
		ipPZ		05	13	
		iN		06	04	
		iZ		08	10	
	H	eN		16	25	
		epZ		05	07	
	T	epPZ			37	
		ePNZ			14	
		ipPZ			44	
		iZ		08	27	

No record at these stations from bomb test at Bikini at 22^h.

Addenda

May 24	P	eZ	06	45	56	
	MW	eZ		46	00	
	R	ePZ		34	05	Tu eP 06 34 07
		eZ			41	e 38 32
		iZ		45	59	e 45 48
	Pr	iZ			56	Two shocks?
	T	ePZ		34	25	
		iZ		46	06	
May 27	MW	ipZ	08	45	11	
		iZ			44	
	R	ipZ			05	Tu iP 08 44 17
	Pr	iPNEZ		44	59	i 32
		iNZ		45	12	
	H	epZ			20	
	T	iPEZ			22	
May 28	R	ipZ	13	50	40	
	Pr	ipZ			41	Tu iP 13 50 49
	T	ipZ			47	

C. F. Richter

October 4, 1946

Aftershock swarm, Alaskan-Aleutian earthquake

(Times are those recorded at Tinemaha. Most of these shocks are recorded at Pasadena or Mt. Wilson, about 17 seconds later, and at Tucson about 62 sec. later.)

April 1	12	35	50	April 1	18	03	53	April 2	05	34	13	April 4	00	52	28
		42	34			06	31			45	10			58	02
		46	41			13	32		06	04	03		03	46	56
		59	38			19	02			08	15		04	39	35
	13	02	45			19	43		08	41	50		07	22	11
		26	55			33	16		09	12	41		09	01	49
		29	34			36	32			58	45		10	29	32
		33	20			43	12			59	24			44	33
		34	37						11	32	59			48	06
		35	46						12	42	06		11	25	39
		39	57			57	03		13	11	20		12	18	47
		41	27		19	03	06			29	12		13	19	58
		43	58			04	33			39	02		16	38	05
		47	31			32	58			43	16		21	32	39
		53	22			35	29		14	34	25	April 5	01	29	08
	14	02	14			40	07		15	27	00		03	08	51
		06	32			47	51			29	51		04	47	43
		08	44			59	25		16	01	25		06	06	26
		13	24		20	10	47			22	06		07	02	42
		21	48			17	50			35	26			37	31
		23	19			39	42			37	25		08	13	03
		32	26			42	10			45	17			46	21
		33	11			44	54		18	31	20		09	33	42
		39	55			50	14			36	26		10	02	06
		51	37		21	28	41		19	38	34		11	27	22
		54	45			41	29		20	05	02		12	12	35
	15	19	12		22	23	02			09	58		16	08	58
		27	19			56	53			15	13		18	37	33
		27	56		23	15	28			24	04	April 6	05	00	35
		37	43			31	49		21	56	20		06	03	24
		42	54			37	04		22	44	25		10	14	13
		45	39			41	40		23	07	43		11	56	53
		57	33	April 2	00	17	33	April 3	02	00	36	April 7	20	25	37
		59	03			18	52		03	19	21		00	39	44
	16	02	29		01	05	24		04	08	14		02	30	44
		06	19			35	39			14	01		05	21	18
		10	02			52	41		05	13	42		07	24	03
		(15	30)		02	01	41			52	57			53	34
		27	29			22	41		06	14	29		08	11	10
		41	50			24	39			19	52		10	07	39
		47	26			46	26		07	22	24			14	25
		49	55		03	11	36			31	16		14	36	00
		53	34			29	13		08	47	03	April 8	22	59	51
		57	04			34	06		09	05	31		09	31	00
	17	03	08			56	34		11	17	14		15	24	05
		06	12			20	37		16	15	56		17	43	28
		09	20		04	56	27		17	55	11	April 9	03	58	51
		29	38			59	29		18	43	21		07	16	17
		43	07		05	00	33		19	16	19			38	08
	18	00	22			31	58		21	47	35		10	30	41

(From this point see main list.)



CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA CALIFORNIA

SEISMOLOGICAL LABORATORY

BULLETIN

JULY - SEPTEMBER 1946

(PASADENA AND AUXILIARY STATIONS)

Date	Sta.	Phase	h	m	s	Remarks
July 9	P	ePNEZ	01	20	13	Normal? Tu eP 01 20 36
		iZ			18	i 52
	PX	iZ			32	
		iSNE		30	07	
		ePSZ		31	02	
		eLZ		44		
	MW	ePNEZ		20	15	Tonga Islands
	R	ePEZ			16	Roughly 20°S. 175°W.,
	Pr	ePNZ			16	C=01:08.2
		iNEZ			25	
	LJ	iSNE		30	12	
	SB	ePZ		20	18	P A T
	H	ePZ			14	S 1 4
		ePNZ			23	2 6
		eSN		30	23	Magnitude about 6 3/4
	T	ePNZ		20	24	
		eSN		30	26	
July 9	Pr	iPZ	09	24	52	Tu iP 09 25 11
July 9	P	ePZ	10	11	36	Deep Tu iP 10 12 12
		eZ			55	i 31
	MW	ePZ			36	
		iZ			55	
	R	ePZ			38	
		iZ			58	
	Pr	ePNEZ			44	Japan?
		iZ		12	03	
	H	eZ			10	
		ePZ		11	29	
		e			43	
	T	ePZ			24	
		iZ			43	
July 9	P	iPZ	12	05	19	Tu iP 12 05 57
	MW	iPZ			20	c
	R	iPZ			22	c
	Pr	iPNEZ			29	c
	H	ePZ			12	Japan?
	T	iPNZ			08	
		iZ			43	
July 9	P	iPNEZ!	13	26	20	c Deep Tu iP! 13 26 44 c
		iZ			25	i 27 30
		iZ			35	iPP 30 25
		ePPZ		29	25	eP'P' 52 10
		iZ			44	
	PX	iSKE		36	30	
		eSN			47	
		eNE		37	26	
		eNE			43	
		eLN		49.1		P unusually large and sharp at
	P	eP'P'Z		52	19	all these stations.
	MW	iPNEZ!		26	21	c 19°S. 169°E
		ePPZ		29	35	O=13:13:50
		eP'P'Z		52	23	h=170 km.
		eZ		57	52	
	R	iPNZ!		26	22	c
		ePPZ		29	49	
		eN		36	36	
		eP'P'Z		52	19	
	Pr	iPNEZ!		26	24	c
		iZ			31	
		iPPZ		29	50	
		iSN		36	36	
		iN			56	
		eP'P'Z		52	21	

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
(Continued)						
July 9	SB	iPNZ		13	26	15 c
	H	iPEZ			26	c
		eSNE			36	35 P A T
		eP'P'Z			52	2C 5 3 1/2
	T	iPNZ!			26	27 c SKS 4 6
		iZ			45	S 3 5
		eSN			37	CC Magnitude about 7
July 9	P	iZ		23	59	48 Tu eP 24 CC C5
	PX	eLZ		24	26	
	MW	ePZ		23	59	44
July 10	MW	ePZ?		03	37	1C Tu iP C3 38 C7
July 10	P	ePZ		17	11	51 Tu iP 17 12 14
	MW	iPZ			51	
		iZ			59	
	R	ePZ			53	
		eZ			12	CC
July 11	P	ePZ		01	08	43 Tu eP C1 C8 58
	MW	ePZ			43	
	R	ePZ			43	
	Pr	ePNZ			49	
July 11	P	ePZ		01	19	C7 Tu eP C1 19 4C
	MW	ePZ			C8	
	R	ePZ			1C	Japan?
	Pr	iPNEZ			15	
July 11	P	iPNEZ		04	52	19 d Deep Tu iP! O4 51 23
		iPZ!			43	i 55 14
		iZ			53	12 USCGS: 17°N. 04°W., C=04:46.6
	PX	iNZ			2C	
		iZ			55	4C
		eLNZ			57.C	
		iEZ		05	01	21 Felt at Mexico City
	MW	iPNEZ		04	52	18 h = 13C km.
		ipPNZ			48	
	R	ePNZ			13	
		ipPNZ			42	P A T
	Pr	iPNEZ			C7	L 2 3
		ipPEZ			36	L 15C 15
		iNZ			45	Magnitude 7
	SB	ePZ			33	
		ipPZ			58	
	H	ePNEZ			29	
		ipPEZ			56	
	T	ePNE			37	
		eNE			53	04
July 11	P	ePZ		11	30	23
	MW	ePZ			21	
	R	ePZ			22	
July 12	P	iPZ		02	46	42 Tu iP C2 46 1C
	MW	iPZ			42	
	R	iPZ			38	
		iZ			47	23
	Pr	ePNEZ			46	35
July 12	MW	ePZ		05	17	22 Tu eP C5 16 22
	Pr	ePZ			02	Mexico
July 12	P	eZ		19	01	31 Normal Tu eP 19 01 43
	PX	eLZ			28	21
	MW	ePZ			01	2C
		iZ			33	
		iZ			04	46 Southwest Pacific
	R	ePZ			01	23

(Continued)

Date	Sta.	Phase	h	m	s	Remarks			
(Continued)									
July 12	Pr	iPZ	19	01	22				
		iZ			37				
July 12	P	eZ		02	07				
		iPNEZ	22	03	59	d	Deep	Tu	iP 22 04 44 d
		iNEZ		04	16				i(pP) 05 14
		eZ		05	33				i(sP) 32
		iScPZ		09	39				
		iSNEZ		10	03				
		iScSNE		13	55				
		esScSNEZ		14	37		53 1/2°N, 169°W.,		
	MW	iPNEZ		03	59	d	C=21:56:27		
		iZ		04	46				
		iScPZ		09	38				
		iSNEZ		10	03				
		eScSNE		13	53		h = 100 km. ±		
	R	iPNZ		04	03	d			
		iScPZ		09	41				
		eSNZ		10	12				
	Pr	iPNZ		04	10	d		A	T
		iZ		05	14		P	1	1 1/2
		eZ			54		S	3	3
		iSNE		10	24				
		iScSNE		14	04		Magnitude = 6 3/4		
		esScSN			50				
	SB	iPNEZ		03	50				
		eSNE		09	48				
	H	iPN		03	49				
		eSN		09	35				
July 12	P	iPNEZ	23	37	14		Tu	iP	23 36 22 c
		eZ		39	00			i	37 51
	PX	eLZ		51	1				
	MW	iPNEZ		37	13	c			
	R	iPZ		09	09	c			
	Pr	iPNEZ			03	c			
July 13	P	ePZ	01	52	11		Tu	eP	01 52 41
	MW	ePZ			14				
	R	ePZ			16				
	Pr	ePZ			19				
July 13	P	iZ	18	39	50				
	MW	ePZ			42				
		iZ			49				
	R	ePZ			44				
		iZ			52				
July 15	P	iPZ	09	15	35		Tu	iP	09 15 58
	MW	iPZ			34				
	Pr	iPZ			37				
	H	iPZ			40				
	T	iPZ			42				
July 15	Pr	iPZ	16	29	16		Tu	iP	16 29 36
	H	iPZ			21				
	T	iPZ			22				
July 15	P	iPZ	18	39	52		Tu	iP	18 39 00
		i((PcP)Z)			42			i	14
	MW	iPZ			39	c			
	R	iPZ			47				
		iZ			42				
	T	iPEZ			40	c			
		iZ			42				
		iZ			54				
July 16	P	iPNEZ	20	26	07	d	Deep	Tu	iP 20 25 34 d
		iZ			02				
	MW	iPEZ			07	d			
		iZ			01				
		iPNEZ			04	d	South America?		
		iZ			59				

(Continued)

Date	Sta.	Phase	h	m	s	Remarks			
(Continued)									
July 16	Pr	iPNEZ	20	26	01	d			
	LJ	ePNZ			25	58			
	SB	iPZ			26	15			
	H	iPEZ				15			
	T	iPEZ				18	d		
		iZ			27	13			
July 17	P	ePZ	05	12	39		Tu	iP	05 13 28
	MW	ePZ			40				
	R	ePZ			45				
	Pr	iPNEZ			52				
	H	iPZ			31				
	T	iPZ			22				
July 17	MW	ePZ	10	39	46		Tu	eP	10 38 56
	R	ePZ			52				
	Pr	ePZ			39				
	T	ePZ			40	10			
July 17	P	ePZ	13	45	54		Tu	eP	13 45 09
	MW	ePZ			56				
	R	ePZ			52				
	Pr	ePZ?			46	01			
	T	ePZ			22				
July 18	P	iPNEZ	06	11	05	d	Normal	Tu	iP 06 12 00
	PX	eLN			14	0			
		iLNEZ			14	33			
	MW	iPNEZ			11	06	d		
	R	iPNZ			11	11	d	USCGS: 50°N, 129°W.,	O=06:07.1
	Pr	iPNEZ			21				
	LJ	ePZ			23				
	SB	ePZ			10	58		P	A
	H	iPNEZ				48		L	100
	T	iPNEZ				34			12
July 18	MW	ePZ	06	54	42		Tu	eP	06 55 36
	R	ePZ			47				
	Pr	ePZ			49				Small aftershock
	H	ePZ			26				
	T	ePZ			13				
July 18	P	ePNEZ	07	20	33		Normal	Tu	iP 07 21 27
		iNEZ			38			i	34
	PX	eLN			23	0			
		eNE			23	8			
	MW	ePZ			20	35			USCGS: 50°N, 129°W.,
		iNEZ			39				O=07:16.5
	R	ePNZ			39				
	Pr	ePNEZ			48			P	A
	LJ	ePZ			52			L	100
	SB	ePNEZ			28				12
	H	ePNEZ			17				
	T	iPEZ			05				
July 18	P	ePZ	07	24	15		Tu	iP	07 25 09
		iNEZ			20			i	14
	PX	eLN			29	0			
	MW	iPZ			24	17			JSA: 50°N, 130°W.,
		iNEZ				21			O=07:21:10
	R	ePZ				19			Magnitude close to that of preced
	Pr	ePNEZ				30			ing
	LJ	ePZ				34			
	H	ePNEZ			23	56			
	T	iPEZ				47			
July 18	P	ePZ	07	34	38		Tu	iP	07 35 34
	MW	iPZ			43				
	R	iPZ			49				Small aftershock
	Pr	iPZ			57				
	H	ePZ			22				
	T	iPZ			09				

Date	Sta.	Phase	h	m	s	Remarks
July 18	P	ePZ	11	58	50	Tu iP 11 58 12 d
	MW	iPZ			50	d
	R	iPZ			45	
	Pr	ePZ			41	
	H	ePZ			57	
	T	iPZ		59	02	
July 18	P	iPNEZ	14	28	30	c Normal. Felt in and around the Mojave Desert. Maximum reported intensity VI. 34°32'N. 115°59'W. O=14:27:58
	MW	iSNEZ			56	c
	R	iPNEZ			29	c
	Pr	iPNZ			22	c
	LJ	iSNZ			38	
		iPNEZ			23	
		iNEZ			32	
		iPNEZ			34	d
		iSNEZ		29	00	
	SB	iPNEZ		28	47	c Magnitude about 5 3/4
		iSNE		29	38	
	H	iPNEZ		28	36	c
	T	iPEZ			48	c
		iSEZ		29	47	
July 18	P	iPZ	15	25	03	Tu iP 15 25 33
	MW	iPZ			02	
	R	iPZ			04	
	Pr	ePZ			07	
	H	ePZ			02	
	T	ePZ		24	58	
July 18	P	ePZ	16	10	20	Tu eP 16 11 13
	MW	ePZ			21	
	R	ePZ			26	
	Pr	ePNZ			35	
	H	ePZ			01	
	T	ePZ		09	49	
July 18	P	ePZ	23	49	12	
	MW	ePZ			35	
	R	ePZ			11	
	H	ePZ			19	
	T	ePZ			21	
		ePZ			13	
July 18	Pr	ePZ?	24	00	07	Tu eP 24 00 36
	T	ePZ		23	59	42
July 19	P	ePZ	21	27	57	Normal? Tu eP 21 28 30
	PX	iZ			28	07
		iSNE			37	49
		eLN			48.3	
	MW	ePZ			27	57
	R	ePZ			59	
	Pr	ePNEZ		28	06	Off Japan Roughly 35°N. 142°E. O=21:16.0
		iSNE		38	03	
	SB	ePZ		28	02	
	H	ePZ		27	52	
	T	ePEZ			49	
		iZ			59	
July 21	P	iPZ	19	33	46	Tu iP 19 34 07 c
	MW	iPZ			46	
	R	iPZ			46	
	Pr	iPNEZ			48	c
	T	ePZ			54	
July 22	MW	ePZ	10	25	12	Tu eP 10 25 33
	R	ePZ			15	
		eZ		26	49	
	Pr	iPNEZ		25	15	
		iZ		26	50	
	T	ePZ		25	10	

Date	Sta.	Phase	h	m	s	Remarks
Sept. 16	PX	eLZ	10	15		Tu eP 10 04 25
	MW	eZ		03	38	
		eZ			50	
	R	eZ			49	
	Pr	eZ			50	
		eZ		04	02	
	T	ePZ		03	22	
		iZ			38	
Sept. 16	PX	eLZ	12	35		Normal Tu eP 12 28 37
	MW	ePZ		29	52	i(S) 30 56
	R	ePZ			43	
	Pr	ePZ			38	
	T	ePZ		30	17	
Sept. 16	Pr	iPZ	13	31	29	Tu iP 13 32 23
	T	iPZ			00	
Sept. 17	P	ePZ	19	48	49	Tu eP 19 49 31
	MW	iPZ			49	
	R	ePZ			47	
		eZ			56	
	Pr	eZ		49	01	
Sept. 18	P	iPNEZ	02	14	23	Tu eP 02 13 25
	PX	eLNZ		25		
	MW	iPNEZ		14	22	
	R	iPZ			17	
	Pr	iPNEZ			11	
	LJ	ePNZ			07	USCGS: 16°N. 101°W. O=02:09.2
	SB	ePZ			36	
	H	ePNEZ			36	
	T	iPNEZ			44	
Sept. 18	MW	ePZ?	09	03	59	Tu iP 09 03 53
Sept. 19	R	ePZ	02	10	10	Tu eP 02 09 26
	T	ePZ			17	
Sept. 19	P	ePZ	07	05	18	Tu eP 07 04 27
	PX	eLZ		28	39	
	MW	ePZ		05	18	
	R	ePZ			13	
	Pr	iPZ			09	
	T	iPZ			22	
Sept. 20	R	iPZ	02	20	33	
	T	iPZ			25	
Sept. 20	MW	iZ	02	39	35	Tu eP 02 38 32
	R	ePZ			18	
	Pr	ePZ			15	
	T	iPZ			29	
		iZ			35	
Sept. 20	Pr	ePZ	05	29	28	Tu eP 05 30 05
Sept. 20	R	iPZ	05	58	21	Tu iP 05 59 04
	Pr	ePZ			34	
Sept. 20	T	ePZ	06	09	02	Tu eP 06 10 04
Sept. 20	Pr	ePZ	06	58	10	Tu eP 06 58 03
	T	ePZ		57	48	
		iZ		58	26	
Sept. 20	P	iPZ	12	03	51	Tu iP 12 04 37
	MW	iPZ			50	
	R	ePZ			54	
	Pr	iPNEZ		04	02	
	LJ	ePZ			03	
	H	ePZ		03	42	
	T	iPNEZ			34	
Sept. 20	T	ePZ	12	32	37	Tu eP 12 32 05
Sept. 20	P	ePZ	17	44	23	Tu eP 17 43 31
	PX	eLZ		18	07	38
	MW	ePZ		17	44	23
	R	ePZ			17	
	Pr	iPNEZ			14	
	SB	iPZ			33	
	H	ePE			25	
	T	iPNEZ			26	d

Date	Sta.	Phase	h	m	s	Remarks
Sept. 20	MW R T	ePZ ePZ ePZ?	18	39	07 06 14	Tu eP 18 39 20
Sept. 20	R Pr T	iZ ePZ iPZ iPZ	19	51	20 25 29 14	Tu iP 19 51 54 Tu iP 19 55 45
Sept. 20	T	iPZ	19	54	43	
Sept. 20	MW	eZ?	21	30	43	Tu eP 21 31 50
	R	eZ		31	37	
	Pr	eZ?		30	58	
Sept. 21	P	ePNEZ	21	40	19	Tu iP 21 40 46
		iZ			27	
		iZ			35	
	MW	ePZ			21	
		iZ			36	
	R	ePZ			24	
	Pr	ePNEZ			24	
	LJ	ePZ			24	
	H	ePZ			29	
	T	ePEZ			31	
		iZ			38	
Sept. 22	R	iPZ	03	02	18	Tu iP 03 01 48
		epPZ			43	
	Pr	ePZ			15	
	H	ePZ			28	
	T	iPZ			34	
		epPZ		03	00	
		isPZ			13	
		eZ		07	22	
Sept. 22	P	iPZ	03	51	39	Tu eP 03 52 04
	R	ePZ			42	
	Pr	iPZ			43	
Sept. 22	T	iPZ	06	15	48	Tu eP 06 14 37
	P	ePZ			11	
	R	ePZ			08	
	Pr	ePZ			04	
	H	ePZ			24	
	T	ePZ			25	
Sept. 22	P	iPZ	07	23	12	Tu iP 07 22 32
		iZ			45	
	R	ePZ			09	
	Pr	ePZ			04	
	H	iPZ			19	
	T	iPZ			25	
Sept. 22	P	iPZ	07	37	14	Tu eP 07 37 46
	R	ePZ			18	
	Pr	ePZ			20	
	H	iPZ			12	
	T	iPZ			11	
Sept. 22	P	ePZ	08	03	15	Deep Tu eP 08 04 03
		ipPZ			29	
	R	ePZ			22	
		epPZ			36	
	Pr	ePZ			27	
		ipPZ			37	
	H	ipPNEZ			22	
	T	ePEZ			03	
		ipPNEZ			18	
Sept. 22	R	iPZ	11	42	08	Tu iP 11 42 29
	Pr	iPZ			10	
		eZ			29	
	H	iPZ			15	
		eZ			33	

Date	Sta.	Phase	h	m	s	Remarks
July 27	P	iPNEZ	22	51	09	c Deep Tu iPNEZ 22 51 34 c
		epPZ			09	epPZ 22 53 36
	MW	iPNEZ			51	c
		ipPZ			53	
		esPZ			54	
	R	iPEZ			51	c Tonga region, depth about 550 km
		epPZ			53	
	Pr	iPNEZ			51	c
		ipPZ			53	
	LJ	iPZ			51	
	H	iPZ			51	
	T	iPEZ			51	c
		epPZ			53	
July 28	R	ePZ	05	47	16	Tu iP 05 47 30
		eZ			26	
	Pr	iPZ			17	
		iZ			32	
July 28	P	ePZ	08	08	08	Normal Tu eP 08 08 36
	PX	eLZ			21.6	
	MW	ePNZ			08	
	R	ePZ			10	
	Pr	ePZ			15	
	T	ePZ			07	
July 28	P	eZ	16	39	27	Normal Tu eP 16 38 50
		eLZ			17	
	MW	ePZ			16	
		eZ			39	
	Pr	ePZ			09	
		eZ			37	
		ePZ			00	
		eZ			04	
July 28	T	ePZ	22	28	28	Tu eP 22 29 30
	MW	ePZ			45	
	R	ePZ			50	
	Pr	ePZ			55	
	T	iPZ			34	
July 29	MW	ePZ	03	11	04	Tu eP 03 11 24
	Pr	iPZ			05	
	T	iPZ			13	
July 30	MW	ePZ	03	45	51	Tu eP 03 45 30
July 30	PX	eLN	18	51.9		Normal? Tu eP 18 44 07
	MW	ePZ			18	
	R	eZ			28	
	T	ePZ			36	
		ePZ			16	
July 31	P	ePZ	00	38	47	Tu eP 00 37 58
		iZ			58	
	PX	eLZ			58	
	MW	iPZ			38	
		eZ			42	
		ePZ			57	
	R	ePZ			40	
		iZ			39	
	Pr	ePZ			38	
		iZ			34	
		eZ			51	
		eZ			19	
		iZ			44	
	H	ePZ			38	
		iZ			39	
		ePZ			07	
July 31	PX	eLZ	13	52.7		Tu eP 13 28 37
Aug. 1	P	ePZ	01	24	00	Tu iP 01 24 22
	MW	ePZ			00	
		eZ			22	
		iPZ			02	
	R	iPEZ			23	
	T	ePZ			57	
Aug. 1	MW	ePZ	21	04	13	Tu eP 21 03 16
	R	ePZ			09	
	Pr	ePZ			04	
	T	ePZ			17	

Caribbean; foreshock of Aug. 4

Date	Sta.	Phase	h	m	s	Remarks
Aug. 2	P	ePZ	01	45	14	Tu eP 01 45 57
		eZ			23	i 46 09
	PX	eLZ		55	23	
	MW	ePZ		45	13	
	R	ePZ		21	21	USSR: 45°N 176°E
	Pr	ePZ			24	
	T	ePZ		44	54	
Aug. 2	P	iPNEZ!	19	30	30	d Tu iP 19 29 59 d
	PX	i(pP)Z			41	i 30 16
		eZ			54	i 31 23
		ePPZ		33	29	i 31 12
		iZ			43	i 32 48
		eZ		38	07	iPKKP 51 22
		iSNEZ		40	08	iP'P' 58 08
		iNEZ			37	Destructive in Northern Chile
		eZ		41	00	
		eSSNEZ		44.9		JSA.: 25.5°S, 71.1°W., C=19:19:01
		eZ		47.8		h=80 km.
		eLN		50		
		iMNZ		54.5		
	MW	iPNEZ		30	31	d USCG3: 27°S, 70°W., C=19:18.7
		iZ			58	
		eSNEZ		40	35	
		eZ		50	03	
		eP'P'Z		57	28	
	R	iPNEZ		30	27	d
		iZ			39	A T
		iZ		31	54	P 6 2 1/2
		eSNE		40	04	S 3 3
		eNE			30	L 200 28
	Pr	iPNEZ		30	25	d
		iZ			41	
		eSNE		39	52	
		iE		40	18	Surface waves of shorter period
	LJ	iPNEZ		30	23	d very small
		eN		40	21	Magnitude about 7 1/2
	SB	iPNEZ		30	38	d
		iZ			59	h = 50 km.
		iZ		31	09	
	H	iPNZ		30	38	d
		eSN		40	27	
	T	iPEZ		30	43	d
		eE		41	02	
Aug. 2	P	iPZ	19	55	48	Deep? Tu iP 19 55 15
	MW	iPZ			47	i 30
		iZ			56	02
	R	iPZ			55	44
		iZ			56	00
	Pr	iPZ			55	28
		iZ			43	
	SB	iPZ			52	Aftershock
	H	iPZ			55	
		eZ		56	10	
	T	iPZ			00	
		iZ			15	
Aug. 2	P	ePZ	23	24	09	Tu iP 23 23 59
	R	ePZ			09	
	Pr	ePZ		23	59	Southeast Pacific?
	T	ePZ		24	14	
Aug. 3	P	ePZ	07	56	01	Tu eP 07 56 25
	MW	iPZ			01	e 58 19
		eZ			09	
		eZ			17	
	R	ePZ			04	
	Pr	ePZ			04	
	T	ePZ			10	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 3	P	iPZ	13	18	11	Normal? Tu iP 13 18 43
		iZ			21	i 54
		iZ			39	i 19 05
	PX	eLZ		41	08	
	MW	iPZ		18	11	
		iZ			22	
	R	iPZ			14	USSR: 39°N 146°E
		eZ			23	BCIS: 37.6°N 141°E
	Pr	iPNEZ			18	O=13:06:20
		iNEZ			28	
		iZ			42	
	LJ	ePZ			17	
		iZ			30	
	SB	iPZ			05	
		iNZ			15	
	T	iPZ			01	
		iEZ			11	
Aug. 4	P	ePZ	02	50	55	
	MW	iPZ			55	
	R	ePZ			58	
Aug. 4	P	iPNEZ	15	37	05	Deep Tu iP 15 37 26 c
		epPZ			39	ipP 39 24
		iNEZ			40	
		iZ			33	
		iSE		46	40	
	MW	iPNEZ			37	c
		ipPZ			39	Tonga region, depth about 520 km
		iZ			40	
		iZ			34	
	R	iPZ			37	c
		iZ			31	
		epPZ			39	
		iZ			40	
	Pr	iPNEZ			37	c
		epPZ			39	
		iSNE			46	
	LJ	ePZ			37	
		eZ			28	
		epPZ			39	
	SB	iPZ			37	
		epPZ			38	
	T	iPEZ			37	
		ipPZ			39	
		iSEZ			46	
Aug. 4	PX	iPNEZ	17	59	33	c Normal Tu iP 17 58 40 c
		epPNE			18	01 27 Great earthquake, West Indies
		iSN			06	30 Aftershocks numerous. (For
		eGN			09	5 list Aug. 4-10 see page 90)
	MW	iPNEZ	17	59	32	c Magnitude 8.1
	R	iPEZ			26	USCGS: 19.3°N 69°W
	Pr	ePZ			22	O=17:51:07
		iNEZ			24	P 15 4
	LJ	epPNEZ			25	PP 40 5
	SB	iPNEZ			42	S 200 15
	H	ePNE			36	L 2500 18
	T	iPEZ			34	
Aug. 4	P	iPZ	18	12	19	Tu iP 18 11 27
	MW	iPNEZ			17	c
	R	iPZ			12	c Aftershock
	Pr	iPZ			03	
	LJ	ePNEZ			11	
	SB	iPNEZ			28	
	T	iPEZ			22	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 4	P	iPZ	18	42	12	Tu iP 18 41 18
	MW	iPZ			11	c
	R	iPZ			07	
	Pr	iPZ			02	Aftershock
	LJ	ePNEZ			04	
	SB	iPNEZ			22	
	H	ePNE			15	
	T	iPEZ			15	
Aug. 4	P	ePZ	21	01	48	Tu eP 21 00 56
	MW	iPNEZ			49	i 02 30
	R	iPZ			44	
		eZ		03	30	
	Pr	iPNEZ		01	37	
	LJ	ePNEZ			42	Aftershock
	SB	iPNEZ			59	
	H	ePNE			50	
	T	iPEZ			53	
Aug. 5	P	ePZ	04	15	50	Pacific
	MW	iPNZ			50	
	R	iPZ			53	
	Pr	iPEZ			51	
	T	ePZ			50	
Aug. 5	P	ePZ	06	10	14	
	MW	iPZ			14	
	Pr	ePZ			22	
Aug. 5	MW	ePZ	07	28	57	
	T	ePZ			56	
Aug. 5	P	ePZ	08	46	25	
	MW	iPZ			25	
	R	iPZ			27	
Aug. 5	P	iPZ	16	56	07	
	MW	iPZ			07	
	R	iPZ			09	
Aug. 5	P	eZ	19	13	45	Tu eP 19 13 30
	MW	iPZ			11	
	R	eZ			25	
	Pr	ePNEZ			08	
Aug. 5	P	iPZ	02	59	54	Tu eP 03 00 29
		iZ	03	00	03	
	PX	eLZ			27	11
	MW	iPZ	02	59	59	USSR: 14.5°S. 154.5°E.
	R	iPZ	03	00	01	BCIS: 11½°S. 165½°E.,
	Pr	ePNEZ			02	O=02:46.9
	LJ	ePZ			01	
	T	ePZ			02	
Aug. 6	P	ePZ	03	22	08	Tu iP 03 22 32
	MW	iPZ			09	
	R	iPZ			10	
	Pr	iPZ			07	c Pacific
	LJ	ePZ			09	
	T	iPZ			15	
Aug. 6	P	ePZ	13	24	23	Deep? Tu eP 13 23 45
		eZ			25	09
	R	iPZ			24	19
		eZ			25	05
	Pr	iPZ			24	20
Aug. 6	MW	ePZ	13	42	47	
Aug. 6	P	iPZ	14	10	51	Tu eP 14 11 16
	MW	iPNEZ			53	
	R	iPZ			55	Pacific
	Pr	iPNEZ			55	
		eZ			13	39
	LJ	iPNEZ			10	51
	SB	ePZ			11	49
	H	ePNE			11	02
	T	iPZ			02	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 7	T	ePEZ	06	20	19	
Aug. 7	P	ePZ	07	40	37	Tu eP 07 41 04
	R	iPZ			39	
	Pr	iPNEZ			41	c Pacific
	LJ	ePNEZ			38	
	T	iPEZ			41	
Aug. 7	P	iPZ	19	39	33	Tu iP 19 40 18
	R	iPNEZ			37	i 30
		iZ			49	
	Pr	iPNZ			43	
		iNZ			56	
		iSNE		46	19	Aleutian Islands?
	LJ	ePNEZ		39	44	
	SB	iPNEZ			35	
	H	ePNE			23	
	T	iPEZ			18	
		iZ			36	
Aug. 7	P	ePZ	20	11	32	Tu eP 20 12 11
	Pr	ePZ			31	
	R	iPZ			36	
Aug. 7	P	ePZ	20	40	46	Tu eP 20 41 31
	R	ePZ			50	
	Pr	iPZ			57	
	T	ePZ			32	
Aug. 7	R	ePZ	20	55	19	Tu iP 20 56 02
	T	ePEZ			00	
Aug. 8	T	ePEZ	01	13	36	
Aug. 8	T	ePZ	02	21	11	
Aug. 8	T	ePZ	03	06	16	
Aug. 8	P	ePNEZ	13	36	53	Normal Tu eP 13 35 59
	PX	eSNE			43	11
		eLNE			46	8
	MW	ePZ			36	48
		iEZ			54	
	R	ePZ			45	
	Pr	ePNZ			41	A T
		iEZ			46	P 4 3
		ePZ			44	PP 10 6
	LJ	ePZ			37	L 00 18
	SB	ePZ			37	02
	T	ePEZ			36	54
Aug. 8	P	iPNEZ	17	32	29	Tu iP 17 32 37
	MW	iPNEZ			28	
	R	iPNEZ			22	
	Pr	iPNEZ			20	West Indies; aftershock
	SB	iPNZ			38	
	LJ	ePNEZ			21	
	T	ePZ			39	
Aug. 8	R	iPZ	21	54	57	
	T	iPNEZ			02	
Aug. 8	R	iPZ	22	33	09	
	T	iPNEZ			34	
Aug. 8	R	ePZ	23	20	20	Tu eP 23 20 37
	T	ePEZ			24	
Aug. 9	T	iPZ	01	43	28	
Aug. 9	R	ePZ	04	21	02	
	T	iPNEZ			13	
		iZ			23	23
Aug. 9	Pr	ePZ	07	47	02	
	T	iPZ	07	46	44	
Aug. 9	P	iPZ	17	41	16	Tu iP 17 42 04
	MW	iPZ			16	
	R	iPZ			21	
	Pr	iPZ			28	d
	H	ePZ			36	
	T	iPNZ			59	
Aug. 9	R	ePZ	19	15	25	
	T	iPZ			34	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 9	P	iPNEZ	20	15	08	Tu iPZ 20 14 17
	MW	iPNEZ			07	
	R	iPZ			02	
	Pr	iPNEZ		14	59	c West Indies; aftershock
	LJ	ePZ		15	00	
	SB	iPNZ			18	
	H	iPNEZ			09	
	T	iPNEZ			10	
Aug. 10	MW	ePZ	13	43	58	Tu iP 13 44 43
	R	eZ		44	03	
	Pr	iPNZ			03	
		iZ			10	
Aug. 11	T	iPZ		43	43	
	P	ePZ	02	07	32	Normal Tu eP 02 08 05
	PX	eSKSE		18	03	
		eSNE			28	
		eGN		30.9		USCGS: 8°S 155°E. O=01:54.3.
		eLZ		35.0		
	MW	ePNZ		07	32	
	R	iPZ			35	A T
	Pr	ePZ			37	P 1 3
		iEZ			42	L 20 20
	LJ	ePZ			40	
	SB	ePZ			28	Magnitude about 6 3/4
	H	ePZ			36	
	T	ePNEZ			34	
Aug. 11	P	iPZ	03	49	25	Tu iP 03 48 33
	MW	iPZ			24	c
	R	iPZ			20	West Indies
	Pr	iPNEZ			17	
	T	iPNEZ			29	c
Aug. 11	T	ePZ	07	14	36	
Aug. 11	T	ePZ	07	44	30	
Aug. 11	Pr	ePZ	10	05	42	Tu eP 10 04 14
	T	ePZ			53	
Aug. 11	P	ePZ	13	21	08	Tu eP 13 20 26
	T	ePNEZ			17	West Indies
Aug. 11	MW	eZ?	13	39	57	
	R	iPZ			28	
	Pr	ePZ			24	
	T	ePNEZ			38	
Aug. 12	R	ePZ	02	47	31	West Indies
	T	ePZ			43	
Aug. 12	P	ePZ	07	08	26	Tu eP 07 08 50
	PX	eLZ			37	Pacific
	MW	iPZ		08	26	Near Apia, which reports:
	R	ePZ			26	
	Pr	iPNEZ			28	eP 06 57 38
	LJ	ePZ			24	iS 58 33
	H	iPEZ			34	
	T	iPNEZ			36	
Aug. 12	P	ePZ	09	40	09	Tu eP 09 39 17
	T	ePZ			13	West Indies
Aug. 12	R	ePZ	10	53	06	
	T	iPNEZ			15	
Aug. 12	MW	ePZ	15	47	27	Tu eP 15 46 46
		eZ			38	i 59
	T	iPZ			42	
		iZ			55	
Aug. 13	T	iPZ	01	46	01	
Aug. 13	MW	iPZ	05	02	23	Tu eP 05 03 00
	Pr	ePZ			30	
	T	ePZ			03	
Aug. 13	T	iPZ	08	42	43	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 13	P	iPZ	10	15	46	Deep Tu iP 10 16 13
	MW	iPZ			46	
		iZ			16	
	R	ePZ			15	Tonga region?
		eZ			16	
	Pr	iPZ			15	
		eZ			16	
	T	iPZ			15	
Aug. 13	Pr	iPZ	13	19	03	
	T	iPZ			18	
		iZ			19	
Aug. 13	R	iPZ	14	35	09	Tu eP 14 34 22
	T	iPZ			18	West Indies
Aug. 13	T	ePZ	23	18	19	Tu eP 23 19 23
Aug. 14	MW	ePZ	01	04	24	Tu eP 01 03 33
	T	iPNEZ			29	West Indies
Aug. 14	T	ePZ	04	24	19	Tu iP 04 24 33
Aug. 14	P	ePZ	09	52	19	(Deep) Tu eP 09 52 53
		iEZ			33	i 53 07
	MW	ePZ			19	
		iNEZ			33	
	R	iPZ			23	
		iZ			37	USSR: 32.5°N, 134°E.
	Pr	ePZ			28	BCIS: 37.5°N, 141.8°E.
		iNZ			44	O = 09:40:30
	LJ	eZ			43	
	SB	iNEZ			27	
	H	ePZ			16	
		iEZ			29	
	T	iPZ			10	
		iNEZ			23	
Aug. 14	MW	iPZ	10	07	33	Tu eP 10 06 44
	R	iPZ			29	West Indies?
	T	ePZ			37	
Aug. 14	R	ePZ	19	55	02	Tu eP 19 54 25
	Pr	ePZ			54	West Indies
	T	iPNEZ			55	
Aug. 15	P	iPZ	01	09	46	Deep Tu iP 01 09 14 d
		eZ			10	i 29
	MW	iPNEZ			09	d Andes?
		iZ			10	
	R	iPZ			09	d
		iZ			58	
		iZ			10	
	Pr	iPNZ			09	
		eZ			52	
	T	iPNEZ			59	
		iZ			10	
Aug. 15	P	iPEZ	15	36	56	Normal Tu eP 15 37 22
	PX	eE			47	
		eLN			16	
	MW	ePZ	15	36	56	USCGS: 22° S. 170°E. O=15:23.9
	R	ePZ			58	
	Pr	iPNEZ			37	
	SB	ePZ			36	
	H	ePZ			37	
	T	ePNEZ			03	
Aug. 15	P	iPNEZ	19	01	38	d Tu iP 19 02 44
		iSNE			59	eS 03 47
	MW	iPNEZ			37	c
		iSNEZ			57	
	R	iPNEZ			26	c
		iSN			38	
	Pr	iPNEZ			23	c
	LJ	iPNEZ			34	c
		iSN			50	
	H	iPZ			00	
		iSE			34	Magnitude 4.0

Date	Sta	Phase	h	m	s	Remarks
Aug. 15	PX Pr	eLZ eZ	20	33	20	Tu eP 19 45 17 USSR: 28°N, 65°E.
Aug. 15	P MW R Pr	ePZ iPZ iPZ ePZ	20	36	42 43 44 50	
Aug. 16	P PX MW R Pr	iPZ eLNZ iPZ iPZ iPNEZ	17	22	20 35.7 22 15 07	Tu eP 17 21 27 West Indies?
Aug. 16	MW R	iPZ iPZ	23	59	43 45	Tu iP 23 59 54
Aug. 17	P MW R Pr	iPZ ePZ ePZ ePZ	04	53	03 02 58 54	Tu eP 04 52 12 West Indies
Aug. 17	Pr	ePNE	09	53	07	
Aug. 17	Pr	iPZ	10	07	01	Tu iP 09 57 53 Iraq
Aug. 17	MW P R T	eZ iPNEZ iPZ ePNE	11	28	15 09 19	Tu iP 11 27 24 c West Indies
Aug. 17	P PX MW R Pr	eZ eLZ iZ eZ iZ	23	56	35 33 33 38	Tu eZ 23 56 39 Iraq USSR: 35.5°N, 45.5°E.
Aug. 18	MW R	eZ eZ	02	23	50 45	Tu e 02 23 03
Aug. 18	P	iPNEZ	06	59	26	d Deep Tu iP 06 59 58 d
		eZ			47	i 07 00 17
	MW	iZ			52	d USSR: 34.5° N, 141° E.
	R	iPNEZ			26	d BCIS: 37.6° N, 141.8° E.,
		iZ			54	d O = 06:47.7
	R	iPNZ			28	d
	Pr	eZ			56	d
		iPNEZ			32	d
		iZ			48	
	LJ	iPZ			33	
	SB	iPNEZ			23	
	H	iPNEZ			21	d
	T	ePNE			19	
Aug. 18	MW	ePZ	17	17	40	Tu eP 17 16 51
Aug. 19	PX MW	eLZ ePZ	04	34	11	Tu eP 04 10 20
	R	iZ			30	West Indies
		ePZ			26	
		iZ			39	
Aug. 19	P	iPZ	05	49	10	Tu iP 05 48 18
	PX	eLNZ	06	09		
	T	ePNE	05	49	14	West Indies
Aug. 20	P	iPZ	03	34	13	Tu eP 03 33 29
	PX	eLZ			48	
	MW	iPZ			34	
	R	ePZ			09	
	Pr	ePZ			33	
Aug. 20	P	iPZ	09	55	16	Tu iP 09 55 46
	PX	eLZ	10	24		
	MW	iPZ	09	55	18	
		iZ			31	USSR: 30° N, 127° E.
	R	iPZ			20	
	Pr	ePZ			26	
		iZ			39	
	LJ	ePZ			25	
	H	iPZ			12	
		iZ			26	

Date	Sta	Phase	h	m	s	Remarks
Aug. 20	P PX	iPNEZ eLZ	12	57	45	Tu eP 12 56 53 West Indies
	T	ePNE	12	57	50	
Aug. 20	P PX MW	iPZ eLZ iPZ	22	22	58	Normal? BCIS: 7°S, 150°E. O=22:09:42
	R	iPZ			22	c USSR: 8°S, 145°E.
	Pr	iPZ			23	
Aug. 21	R	ePZ	03	30	49	Tu iP 03 29 58
Aug. 21	MW	iPZ	03	47	06	Tu iP 03 47 44
	Pr	iPZ			13	
Aug. 21	P	iPZ	04	36	45	Tu eP 04 35 50
	MW	iPZ			45	
	R	iPZ			41	
	Pr	iPZ			40	
Aug. 21	P	iPZ	14	38	07	Tu iP 14 37 17
	MW	iPZ			06	
	R	iPZ			02	
	Pr	iPNEZ			02	
	SB	iPZ			18	
	H	ePZ			08	
	T	ePNE			12	
Aug. 21	P	iPNEZ	18	12	24	d Deep Tu iP 18 12 45
		iZ			49	i 13 09
	PX	iSNE			22	i 41
		iNE			23	09
	MW	eLNZ			36	3 24° S, 177° W, O = 18:00:18
		iPNZ			12	d h = 100 km.
		iZ			50	
	R	iPNEZ			26	d
		iZ			50	
	Pr	eSN			22	54 P A T
		iPNEZ			12	d S 7 1/4 8
		iNEZ			48	
		iSE			22	26 Magnitude 7
		eE			38	
	LJ	ePNEZ			12	21
	SB	iPEZ			22	22
		eSE			22	21
	H	iPNEZ			12	31
		iZ			56	
		eSNE			22	44
	T	ePNE			12	34
		eE			13	00
		eSNE			22	49
Aug. 21	MW	iPZ	19	07	46	Tu eP 19 06 55
	R	eZ			45	
	Pr	iPZ			38	West Indies
	T	ePNE			51	
Aug. 21	P	iPNEZ	19	26	05	d Tu iP 19 25 13
	PX	eScPZ			31	35
		iSEZ			32	49
		iScSE			36	34
		eLZ			39	3
	MW	iPZ			26	04 West Indies. Large aftershock of
	R	iPZ			25	59 Aug. 4.
		eN			35	56
	Pr	iPNEZ			26	01 P A T
		eSN			32	36 S 4 1/2 3
	LJ	ePNEZ			25	56 ScS 4 6
		eSNE			32	37 L 50 15
	SB	iPZ			26	16 18
		eSE			33	08
	H	iPNEZ			26	05 Magnitude 6 1/2 to 6 3/4
		eSE			32	51
	T	iPNE			26	09
		eSNE			32	58

Date	Sta.	Phase	h	m	s	Remarks
Aug. 21	P	iPZ	22	00	41	Tu eP 21 59 54
	T	ePNE			46	West Indies
Aug. 22	R	iPZ	01	25	59	Tu eP 01 25 14
	T	ePNE			09	West Indies
Aug. 22	P	epZ	16	44	06	Tu eP 16 44 02
		eLZ	17	11	0	
	MW	epZ	16	44	06	
	R	epZ			06	
	Pr	epZ			01	
Aug. 22	R	epZ	21	40	52	Tu eP 21 40 50
Aug. 24	P	iPNEZ	02	49	14	Tu eP 02 48 18
		iZ		50	37	i 51 22
	PX	eLN		58		
	R	iPZ		49	09	c
	Pr	iPNEZ			02	c
		iZ		50	46	
		iNZ		51	35	
		ePE		49	29	
Aug. 24	T	eZ	13	05	22	Tu eP 13 04 25
	P	epZ			09	West Indies
	Pr	ePE			21	
Aug. 24	P	iPNEZ	14	26	38	Tu eP 14 25 47
	PX	iSN		33	23	
	MW	iPNZ		26	38	c West Indies
	R	iPZ		26	33	
	Pr	iPEZ			30	
		eSN		33	09	
		ePNE		26	43	
		eSN		33	31	
Aug. 25	P	iPZ	15	44	19	Tu iP 15 44 42 c
	MW	iPZ			19	c
	Pr	iPNZ			21	c
	H	epZ			26	
	T	epNE			28	
Aug. 27	P	iPZ	07	22	53	Tu eP 07 22 23
		eZ		23	19	e 49
Aug. 28	P	iPNZ	01	51	58	Tu iP 01 52 17
	MW	epZ			59	
	R	epZ		52	00	
	Pr	iPNEZ			00	North of New Zealand
Aug. 28	P	iPZ	20	18	31	Tu eP 20 18 53
	PX	e(S)N		29	29	
		eLE		38		
	MW	epZ		18	33	
	R	epZ			34	
	Pr	epZ			33	
	LJ	epZ			35	
	SB	epZ			32	
	H	epNEZ			44	
	T	iPEZ			43	
Aug. 28	MW	epZ	22	34	38	Tu eP 22 33 48
	T	epZ			43	West Indies
Aug. 28	P	iPNEZ	22	39	30	c Deep Tu iP 22 38 59
		ipZ		41	30	epP 40 55
		eSPZ		42	49	eS 47 47
	PX	iSNEZ		48	47	eP'P' 23 06 31
		eN	23	01	32	e 08 40
	P	eP'P'Z		06	18	i 09 13
		iZ		08	50	
	MW	iPNEZ		39	30	c
		epZ		41	30	
		ispZ		42	39	Approximately 26°S, 63°W.
		iZ		48	46	
		eP'P'Z	23	06	15	Q=22:28:15, h=58Q.km.
		eZ		08	24	
		iZ			51	

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
(Continued)						
Aug. 28	R	ePNE	22	39	29	
		eSNE		48	41	
	Pr	iPNEZ		39	23	
		epZ		41	26	
		eSPZ		42	27	
		iSNE		48	33	
		eP'P'Z	23	06	03	
	LJ	iPNEZ	22	39	25	P A T
		epZ		41	25	2 2
		eSNE		48	31	S 10 5
	SB	iPNEZ		39	38	
		epZ		41	39	
		eSNE		48	56	
	H	iPNEZ		39	37	Magnitude 7 1/4
		epZ		41	39	
		eSNE		48	59	
	T	iPNEZ		39	41	
		epNEZ		41	44	
		eSNEZ		49	10	
		eP'P'Z	23	08	10	
Aug. 29	PX	eLZ	00	53		Normal Tu eP 00 21 17
	MW	eZ		20	59	e 30
	Pr	eZ			59	
	H	eZ			59	
Aug. 29	P	iPZ	04	07	26	Tu eP 04 08 06
	MW	iPZ			26	c
	R	iPZ			31	c
	Pr	iPNZ			37	
	LJ	epZ			40	
	H	epZ			13	
	T	epZ			06	
Aug. 29	P	epZ	06	42	48	Tu eP 06 42 57
	MW	epZ			48	
		eZ		45	04	
	Pr	ePEZ		42	52	
	LJ	epZ			53	
	T	epZ			09	
Aug. 29	P	epZ	23	08	15	Tu eP 23 08 40
	PX	eLEZ		35	6	
	MW	epZ		08	16	
	Pr	ePEZ			19	
	T	epZ			48	
Aug. 30	P	eZ	05	41	46	Tu iP 05 39 01
	PX	eLNE		42	0	i 16
	MW	eZ		42	07	i(S) 40 12
	R	eNE		41	55	
	Pr	epZ		40	03	
		iSNEZ		41	30	
		eNEZ		43	23	
Aug. 30	T	epZ	11	17	27	Normal Tu iP 11 17 50
		iSEZ			56	i 18 08
	MW	ePNEZ			26	iS 19 03
		iSNE			55	
	R	epN			14	
		iSNE			36	33°14' N, 115°42' W
	Pr	iPNEZ		05	c	Magnitude 4.6, O=11:16:45
	LJ	iPNEZ		10	c	Foreshock at 11:12
		iSNE		28		Aftershock at 21:48
	SB	epZ		48		
	T	ePNEZ		53		
		iSNEZ		18	32	

Date	Sta.	Phase	h	m	s	Remarks
Aug. 30	P	iPZ	20	28	59	Tu eP 20 29 17
	PX	eLZ	21	05	1	
	MW	ePZ	20	28	59	
	Pr	ePNEZ	29	01		
	T	ePZ		10		
Aug. 30	MW	iPZ	23	43	47	Tu iP 23 44 10
	Pr	iPZ		52		
	T	iPZ		57		
Aug. 30	P	iPZ	23	46	05	Tu iP 23 46 28
	MW	iPZ		04		
	R	ePZ		07		Part of preceding?
	Pr	iPNEZ		07		
	H	iPZ		11		
	T	iPNEZ		13		
Sept. 2	P	iPZ	13	07	25	Tu iP 13 06 51
	MW	iPZ		26		
	R	iPZ		22		
	T	iPZ		37		
Sept. 2	P	ePNZ	21	57	28	Deep Tu iP 21 56 31
		pPNZ		55		
		iZ		58	11	
	MW	ePNEZ		57	27	iP 57 05
		ipPNEZ		55		
		iNEZ		58	10	Strong at Jaltipan (Veracruz)
	R	ePZ		57	21	according to Tacubaya, which
		epPZ		52		gives: 17°24'N. 94°51'W.
		eZ		58	06	
	Pr	iPNEZ		57	15	
		ipPNEZ		42		
		iZ		59		
Sept. 3	P	ePNEZ	04	29	29	Tu eP 04 29 57
		iPZ		30	28	
	MW	iPZ		29	29	d
		eZ		30	28	
	R	iPZ		29	32	
		eZ		30	31	
	Pr	ePZ		29	34	
	T	iPZ		29		
Sept. 4	MW	ePZ	00	22	12	Tu eP 00 22 10
	R	ePZ		13		
	T	ePZ		10		
Sept. 4	P	iPZ	08	11	36	Tu iP 08 12 22 d
	MW	iPZ		35		d
	R	iPZ		41		
	Pr	iPNEZ		48		d
	H	iPNEZ		25		
	T	iPNEZ		19		d
Sept. 4	MW	iPZ	16	07	38	Tu iP 16 08 03
	Pr	iPZ		40		
	T	iPZ		47		
Sept. 5	Pr	ePZ	01	48	47	Tu iP 01 48 40
	MW	ePZ		46		
Sept. 5	Pr	ePZ	03	04	03	Tu eP 03 03 22
Sept. 5	T	iPZ	15	45	45	Tu eP 15 44 48
Sept. 6	PX	eLZ	22	30		Normal Tu eP 22 06 45
	MW	ePZ		07	36	
	R	ePZ		30		
	T	eZ		08	02	
Sept. 7	Pr	ePZ	05	14	39	Tu iP 05 14 54
Sept. 7	P	iPZ	08	10	54	Tu iP 08 11 33
	MW	iPZ		55		
	R	iPZ		58		
	Pr	iPZ		11	03	Kurile Islands
	H	ePZ		10	48	
	T	ePNE		44		

Date	Sta.	Phase	h	m	s	Remarks
Sept. 7	PX	eLZ	13	01		Normal Tu eP 12 34 24
	MW	ePZ	12	33	59	
	R	ePZ		34	02	Southwest Pacific
	Pr	ePZ		04		
Sept. 7	Pr	eZ	12	24	40	Tu eP 12 24 17
Sept. 8	MW	ePZ	11	46	16	Tu eP 11 45 31
Sept. 9	P	ePZ	10	50	20	Normal Tu eP 10 50 54
		ePPZ		54	28	ePP 54 57
	PX	eLNZ	11	23	0	
	MW	ePZ	10	50	18	
		ePPZ		54	18	USSR: 24°N. 121°E.
	R	ePZ		50	21	BCIS: 23°N. 121°E.,
		ePPZ		54	29	O=10:36:36
	Pr	ePZ		50	26	
		eNZ		54	29	
	H	ePZ		50	13	
	T	ePZ		12		
Sept. 9	MW	ePZ	17	39	34	Tu eP 17 39 21
	R	ePZ		31		Near Algiers
	T	ePZ		26		
Sept. 10	P	ePZ	00	30	54	Tu eP 00 30 33
	PX	eLZ		53	6	
	MW	ePZ		30	53	
	R	ePZ		51		
	Pr	ePNEZ		47		
	LJ	ePZ		46		
	SB	ePZ		31	04	
	T	ePZ		11		
Sept. 11	P	ePZ	02	11	45	Tu iP 02 12 13
	MW	ePZ		43		
	R	ePZ		46		
	Pr	ePZ		53		
	T	ePZ		23		
Sept. 11	R	ePZ	02	24	13	Tu eP 02 24 40
Sept. 11	R	ePZ	10	14	51	Africa 2°Tu eP 10 14 44
	T	ePZ		53		USSR 27°E.
Sept. 11	P	ePZ	12	36	15	Tu eP 12 36 46
	MW	ePZ		16		
	R	ePZ		17		
	Pr	ePZ		19		Pacific
	LJ	ePZ		20		
	T	ePZ		15		
Sept. 11	P	ePZ	13	13	56	Tu eP 13 14 22
	PX	eLZ		51	57	
	MW	ePZ		13	56	
	R	ePZ		57		
	Pr	ePZ		59		
	LJ	ePZ		14	00	
	T	ePZ		13	56	
Sept. 12	P	iPZ	14	08	57	Tu eP 14 09 25
	PX	eLNE		33	9	
	MW	ePZ		08	56	USSR: 5°S. 149°E.
	R	ePZ		59		BCIS: 5.5°S. 152.2°E.,
	Pr	iPNEZ		09	01	O=13:55.6
	H	ePZ		08	59	
	T	ePZ		58		
Sept. 12	P	ePZ	14	19	03	
	MW	iPZ		04		
	R	iPZ		08		
	Pr	iPNEZ		15		d
	LJ	ePZ		17		
	H	ePZ		18	55	

Date	Sta.	Phase	h	m	s	Remarks
Sept. 12	P	eZ	15	35.8		Normal Tu e 15 36 04
		eZ		36	42	ePKKP 46 30
	PX	iPPNEZ		42	49	First of two overlapping shocks
		eSKSNE		46	33	from the same source, three
	P	iPSNZ		46	33	minutes apart, the second larger.
	PX	iPKKPZ		52.7		
		eSSN		16	04.6	USCGS: 25.5°N. 89°E. O=15:16:9
	MW	eLN		15	32	06
		iPKKPZ		46	54	USSR: 24°N. 96°E.
	R	eZ		36	54	
		ePKKPZ		46	52	PP A T
	Pr	eZ		36	32	2 7
		iPKKPZ		46	46	
	H	eZ		15	36	21
	T	eZ			27	Magnitude about 7 1/2
		ePKKPZ		46	51	
	Sept. 12	PX	iZ		47	04
		eZ	15	39	14	Normal Tu iPP 15 40 16
		ePPNEZ		54		iPKKP 49 25
		iSKSN		45	54	
		ePSZ		49	38	Overlaps the preceding
P		iPKKPZ		49	39	
		iZ		50	01	
PX		eSSN		55.9		PP A T
MW		ePZ		35	10	L 12C 20
		iPKKPZ		49	39	
R		ePPZ		39	51	
		iPKKPZ		49	37	
Pr		ePPNEZ		39	49	Magnitude about 7 3/4
		ePKKPZ		49	35	
T		ePPZ		39	31	
		ePKKPZ		49	48	
Sept. 12		P	iPZ	17	47	50
	MW	iPZ		49		i 49 13
	R	iPZ		45		
	Pr	iPNEZ		40		West Indies
	LJ	ePZ		39		
	H	ePNEZ		51		
	T	iPNEZ		54		
		iNEZ		48	02	
	P	iPNEZ	18	52	55	Tu eP 18 53 23
	MW	iPZ		55		
Sept. 12	R	iPZ		57		
	Pr	iPNEZ		59		
	LJ	ePZ		58		
	H	ePZ		58		
	T	iPNEZ		55		
	PX	eLZ	05	27		Tu eP 05 03 53
	MW	ePZ	05	04	32	Atlantic?
Sept. 13	R	ePZ		25		
	T	iPZ		24		
	MW	iPZ	08	19	13	Tu iP 08 18 31
	R	iPZ		09		
	Pr	iPZ		03		
Sept. 13	P	iPZ		25		
		ePZ	16	00	22	Tu eP 16 00 37
		eZ		33		
	MW	ePZ		18		
		iZ		34		
	R	ePZ		19		
	Pr	ePZ		18		USSR: 10°N. 145°E.
		iNEZ		36		
	LJ	eZ		39		
	SB	eZ		28		
	H	eZ		38		
	T	ePZ		33		

Date	Sta.	Phase	h	m	s	Remarks
Sept. 13	P	ePZ	16	05	55	Normal Tu eP 16 04 37
	PX	eLN		07.9		i(S) 07 03
	MW	iPZ	16	05	55	
	R	iPZ		50		
	Pr	ePEZ		05	24	
	H	eZ		06	02	
	T	eZ		05	56	
	P	iPNEZ	19	09	13	c (Deep) Tu iP 19 09 52
		ipPZ		25		ipP 10 06
	PX	isPZ		42		eP'P' 38 30
Sept. 13		iSNE		17	25	
		iNE		55		
		eLN		24.2		
	P	eP'P'Z		38	46	
	MW	iPNEZ		09	14	c USSR: 53°N. 159°E.
		ipPZ		27		BCIS: 52 1/2°N. 158 1/2°E.,
		eSNE		17	24	O=18:59.1
		eP'P'Z		38	23	
	R	iPNEZ		09	17	
		eP'P'Z		38	16	
	Pr	iPNEZ		09	23	
		ipPZ		35		
		iE		48		
		iSNE		17	42	
		iE		18	09	
		eP'P'Z		38	40	
	LJ	ePNEZ		09	25	P A T
	eSE		17	42	S 1 1/2 3	
H	iPNEZ		09	06	L 40 20	
	eSNE		17	10		
T	iPNEZ		09	00	Magnitude about 6 3/4	
	ipPNEZ		10			
	eSNE		17	01		
	eN		25			
Sept. 13	P	eZ	19	46	39	Normal Tu eP 19 45 26
	PX	eLZ		49.8		i(S) 47 46
	MW	ePZ		46		
		iZ		39		
	R	ePZ		24		
	Pr	ePNZ		11		
		eE		49	43	
	LJ	ePZ		46	25	Mexico
	SB	ePZ		47		
	H	ePNEZ		49		
Sept. 13	T	iPNEZ		47	08	
	P	ePZ	20	09	26	Normal Tu eP 20 08 12
	PX	eLZ		12	15	e 11 45
	MW	ePZ		09	26	
	R	ePZ		11		
	Pr	ePZ		08	57	
	SB	ePZ		09	37	Mexico
	H	ePNEZ		35		
	T	iPNEZ		52		
		ePZ	20	23	01	Tu eP 20 21 47
Sept. 13		ePZ		26		
	MW	iPNEZ		48		
	P	iPZ	02	56	48	Mexico Tu iP 02 57 09 c
		iPZ		49		
	R	iPZ		49		
	Pr	iPNEZ		51		North of New Zealand
	LJ	ePZ		49		
	SB	ePZ		45		
	H	ePZ		56		
	T	ePZ		58		

Date	Sta.	Phase	h	m	s	Remarks					
Sept. 14	P	iPZ	05	19	31	Tu	iP	05	20	10	d
	MW	iPZ			32						d
	R	iPZ			34						
	Pr	iPZ			41						
	LJ	ePZ			40						Kurile Islands?
	H	ePZ			24						
	T	iPNEZ			18						d
Sept. 14	P	ePZ	06	19	17	Normal	Tu	eP	06	18	00
	PX	eLZ			22				e(S)	20	23
	MW	ePZ			19						
	R	ePZ			01						
	Pr	ePZ			18						Mexico
	H	ePZ			19						
	T	ePZ			40						
Sept. 14	MW	ePZ	19	41	03	Tu	eP	19	42	08	
	T	ePZ			08						
Sept. 14	PX	eLZ	20	43		Normal	Tu	e	20	08	40
	MW	eP"Z			07				e	17	58
		eZ			13				e	20	01
	R	eP"Z			06						
		eZ			08						
		e			14						
	Pr	eP"Z			06						
		eZ			08						
		eP"Z?			07						
	T	eZ			08						
Sept. 14	P	eZ	22	10	51	Tu	eP	22	11	13	
	MW	ePZ			44						
	R	ePZ			48						
	Pr	ePZ			47						
Sept. 15	MW	ePZ	03	35	15	Tu	eP	03	35	59	
	R	eZ			30						
	Pr	ePZ			17						
	T	ePZ			01						
Sept. 15	P	ePZ	05	30	00	Tu	eP	05	29	08	
	MW	ePZ			29						
	Pr	ePZ			48						
	T	ePZ			30						
Sept. 15	MW	ePZ	08	02	12	Near Panama	Tu	eP	08	02	33
	R	ePZ			11						
	T	ePZ			01						
Sept. 15	Pr	ePZ	10	00	01	Tu	eP	09	59	33	
	T	ePZ			30						
Sept. 15	P	ePZ	10	58	07						
		iZ			17						
	MW	ePZ			07						
	R	ePZ			10						Southwest Pacific
	Pr	ePZ			17						
	T	ePZ			10						
Sept. 15	T	ePZ	14	14	33	Tu	eP?	14	14	59	
Sept. 15	MW	eZ	16	08	52	Tu	e	16	00	05	
		ePKKPZ			23						
	R	eZ			08						
		iPKKPZ			23						
	Pr	ePKKPZ			44	Tibet	ePKKP	23	24		
	T	eZ			44	USSR: 34°N. 86°E.					
Sept. 15	P	ePZ	16	18	34	Tu	iP	16	17	43	
	MW	iPZ			36						
	R	ePZ			30						
	Pr	ePNZ			25						West Indies
	LJ	ePZ			29						
	T	ePNEZ			39						

Date	Sta.	Phase	h	m	s	Remarks					
July 23	P	iPNEZ	17	27	08	Tu	eP	17	27	35	
	PX	eLZ			54.4						
	MW	iPZ			27						
	R	iPZ			10						
	Pr	iPNEZ			12						New Hebrides
	LJ	ePZ			11						
	SB	ePZ			03						
	T	iPEZ			12						
July 23	P	ePZ	17	45	01	Tu	iP	17	45	49	d
	MW	ePZ			02						
	R	ePZ			06						
	Pr	iPNEZ			13						Aleutian Islands?
	LJ	ePZ			15						
	T	iPEZ			46						
July 24	P	ePZ	10	44	02	Tu	eP	10	43	06	
	MW	ePZ			42						
	R	ePZ			57						
	Pr	ePZ			55						
	T	ePZ			06						
July 24	P	iPEZ	11	13	08	Deep?	Tu	e(P)	11	13	37
		iNEZ			30				e	17	48
	PX	eLN			37.8						
	MW	iPNZ			13						
		iNEZ			33						
	R	iPZ			10						
		eZ			34						New Hebrides
	Pr	ePZ			12						
		iZ			37						
	LJ	ePZ			13						
	T	ePEZ			09						
July 24	PX	eLZ	20	00	0	Normal	Tu	iP	19	39	07
	R	ePZ	19	38	49						
	Pr	ePZ			45						Southwest Pacific
	T	ePZ			54						
July 24	MW	iPZ	21	46	28	Tu	iP	21	47	04	
	R	iPZ			31						Baker Day atomic bomb test, at Bikini
	Pr	iPZ			35						
	T	iPEZ			28						
July 25	Pr	e(P)Z	05	12	35	Tu	iP	05	12	02	
	T	eZ?			13						
July 25	P	iPNEZ	16	50	37	Normal	Tu	iP	16	51	22
		iZ			47						
	PX	eSNEZ			57						
		eLN			17						USCGS: 51°N, 179°W., O=16:42:1
	MW	iPNEZ			16						
	R	ePZ			42						
	Pr	iPNEZ			49						c
		iZ			51						
		eSNE			57						
		ePZ			50						
	LJ	ePNEZ			32						P A T 1 3 Magnitude 6 3/4
	SB	ePEZ			24						
July 26	MW	iPZ	02	21	30	Tu	iP?	02	20	09	
	Pr	ePZ			28						
	T	iPZ			36						
July 26	P	ePZ	04	21	22	Tu	eP	04	22	07	
	MW	ePZ			25						
	R	ePZ			32						
	Pr	iPNZ			33						
	T	ePZ			09						

Date	Sta.	Phase	h	m	s	Remarks						
July 26	P	iPNEZ	06	55	58	d	Deep	Tu	iP	06	55	22
		ipPZ		56	14				ipP		40	
	PX	esPZ			26				eP	07	24	08
		eZ		57	21							
		iZ			54							
		iSNE	07	05	17							
		iN			45		USCGS: 21.6°S. 70.0°W.,		O=06:44.7			
		iE		06	27							
		eLZ		19	2							
	MW	iPNEZ	06	55	59							
		ipPZ		56	14		JSA: 19.8°S., 70.0°W.,		O=06:44:53			
		eSNE	07	05	19				h=80 km.			
		eZ			44							
	R	iPNEZ	06	55	56							
		ipPZ		56	15							
		eZ		58	34		Pasadena: 18 1/2°S., 70 1/2°W.,		O=06:44:50			
		eSNE	07	05	09				h= 70 km.			
		eN			37							
	Pr	ePZ	06	55	49							
		iNEZ			51							
		ipPZ		56	09							
		iZ		58	26							
		eSNE	07	05	01							
		eSN			27							
	LJ	ePNE	06	55	50	P	A	T				
		eSNE	07	04	58	S	2	4				
		ePNEZ	06	56	04		4	6				
		ePNE			07		Magnitude 6 3/4 to 7					
		iPEZ			11							
		ipPE			30							
		eSE	07	05	34							
July 26	P	iPNEZ	22	44	25	Deep	Tu	iP	22	44	46	
		iZ			56				i	45	17	
	MW	iPNEZ			26				i		25	
		iZ			55							
	R	iPEZ			27		21°S. 170°E.,		O=22:31.9			
		iZ			56				h=100 km.			
	Pr	iPNEZ			27							
		iZ			56							
		ePEZ			25							
	LJ	ePZ			20							
	SB	ipNZ			32							
	H	iPEZ			32							
	T	iZ		45	04							
July 27	PX	eLZ	02	42		Normal	Tu	iP	02	33	22	
	Pr	e(P)Z	02	33	49							
July 27	PX	eLZ	06	03	5	Normal	Tu	iP	05	55	00	
	MW	ePZ	05	55	44							
	R	ePZ			35							
	Pr	ePZ			30							
	T	ePZ		56	05							
July 27	P	iPNEZ	21	55	17	c	Tu	iP	21	55	44	c
		iZ			29				i		55	
	MW	iPNEZ	21	55	19	c			i	56	11	
		iZ			31				i		37	
	R	iPNEZ			21	c						
		iZ			32							
	Pr	iPNEZ			23	c						
		iZ			34		New Hebrides					
		iN			38							
	LJ	ePNEZ			21							
		eZ			33							
		ePZ			19							
	SB	ePNE			23							
	H	iPEZ			21	c						
	T	iZ			34							
		iZ		56	14							

Date	Sta.	Phase	h	m	s	Remarks						
Sept. 22	Pr	ePZ	12	08	38		Tu	iP	12	09	13	
Sept. 22	P	ePZ	17	49	22		Tu	eP	17	48	23	
	R	ePZ			17							
	Pr	ePZ			02							
Sept. 22	P	iPZ	21	01	58		Tu	iP	21	02	19	
	R	ePZ			02							
	Pr	iPZ			01							
Sept. 23	PX	ePZ	22	06	14		Tu	eP	22	06	40	
		iZ			18							
		eLZ			33		New Hebrides					
		ePZ			06							
		eZ			36							
		ePZ			21							
Sept. 23	R	ePZ	23	43	28		Deep?	Tu	eP	23	43	58
	P	iPNEZ		47	16				e		46	10
	PX	ePPZ		53	51				i		48	15
		iSE		54	48				iPKKP	24	00	00
		iE		56	11							
		iEZ		57	10		USSR: 6°S. 144°E.,					
		iE		57	10							
		eLN	24	09	9							
	MW	iPNEZ	23	43	29		USCGS: 3°S. 144°E.,		O=23:29.8			
		eSE		53	59							
	R	iPNEZ		43	31		Pasadena: 6°S. 145°E.,		O=23:30.0, h=100 km.?			
		iZ		44	28				A	T		
		iZ			58				P	1 1/2	2	
		eSE		54	03				S	4	6	
		ePNE		43	33							
	PR	iSNE		54	01							
		ePZ		43	34		Magnitude 7 1/4					
		ePZ			22							
		ePZ			30							
Sept. 24	MW	ePZ	00	50	11		Tu	iP	00	49	15	
Sept. 24	P	iPZ	15	29	32		Tu	eP	15	28	35	
	MW	iPZ			34							
	R	iPZ			28							
	Pr	ePN			21							
	H	iPNEZ			47							
Sept. 24	P	eZ	18	21	24		Tu	eP	18	20	31	
	MW	eZ			21							
	R	ePZ			04							
		eZ			17							
	Pr	ePN			26							
Sept. 24	MW	ePZ	21	25	19		Tu	iP	21	24	40	
	R	iPZ			15							
Sept. 25	P	iPNEZ	10	13	57		Tu	iP	10	13	05	c
	PX	eLN			24							
	MW	iPZ			13							
	R	iPZ			52							
	Pr	iPNE			49		West Indies					
	LJ	ePZ			51		Aftershock of August 4					
	SB	ePZ			08		USCGS: O=10:05.5					
	H	ePNEZ			13							
Sept. 25	P	iPNEZ	15	06	17		Tu	iP	15	05	31	
	PX	eLZ			29				i		54	
	MW	iPNEZ			22				i	08	03	
	R	iPZ			17				i		17	
	Pr	iPNE			13							
	LJ	ePZ			15		West Indies					
	SB	iPZ			33							
	H	iPEZ			24							
Sept. 26	MW	ePZ	07	51	43		Tu	eP	07	52	10	
	R	ePZ			44							
	Pr	ePZ			48							
	T	ePZ			52							

Date	Sta.	Phase	h	m	s	Remarks		
Sept. 26	P	iPNEZ	11	04	48	Tu	iP	11 05 08 d
	PX	ipPZ		06	52		ipP	07 14
		esPZ		07	45		isP	08 46
		iSKSNE		14	19		i	25 30
		iSN			34		e	30 54
		eSSZ		32.1			e	33 15
	P	i(SKPP')Z		33	33			
	MW	iPNEZ		04	49			
		iZ		05	02			
		epPZ		06	56			
		eZ		08	12			
		eSKSZ		14	20			
		eSNE			51	P	A	T
		iZ		33	31	SKS	1 1/2	4
		iZ			49	S	3	6
	R	iPEZ		04	50		3	5
		epPZ		06	57			
		eZ		08	17			
		iSEZ		14	22			
		eZ		33	31			
		iZ			48			
	Pr	iPNEZ		04	51			
		epPE		06	54			
		iNZ			58			
		iSKSNEZ		14	25			
		iSNE			41			
		eZ		33	30			
	LJ	ePNEZ		04	48			
		epPZ		06	56			
		eSKSNE		14	21			
		eSNE			36			
	SB	iPNEZ		04	45			
		epPZ		06	50			
		eSE		14	12			
	H	iPNEZ		04	49			
		epPZ		07	03			
		eSNE		14	28			
		eN			49			
	T	iPZ		04	55			
		iPNE			58			
		eZ		05	57			
		iSNEZ		14	30			
		eN			51			
Sept. 26	P	ePZ	12	42		Tu	eP	12 43 35
	MW	ePZ			39			
	R	ePZ			43			
	Pr	ePZ			50			
	T	ePZ			08			
Sept. 26	T	ePZ	15	59	44	Tu	eP	15 58 35
Sept. 28	R	ePZ	03	18	06	Tu	eP	03 18 20
Sept. 28	P	iPNEZ	07	19	30	c	Normal	Tu iP 07 20 27
		iSNE			45			i 47
	R	iPNEZ!			18	c		i(S) 21 55
		iSEZ			25			
	Pr	iPNEZ!			21			
	LJ	iPNZ			30	d		Felt over a wide area. Maxi-
		iSNZ			44			mum intensity VI at Banning,
		iPNEZ			49	c		Cabazon, Cathedral City and
	SB	iPNEZ			49	c		Palm Springs.
	H	iPNEZ			48	c		33° 57' N, 116° 51' W.,
		iSNEZ		20	26			O=07:19:09.
	T	iPNE			02			Magnitude 5
		eSE			51			

Date	Sta.	Phase	h	m	s	Remarks		
Sept. 28	P	iPNEZ	12	04	34	Tu	eP	12 03 58
		eZ			58			
	R	iPZ			31			
		iZ			55			
	Pr	iPNZ			27			
	H	ePZ			43			
	T	ePE			45			
Sept. 28	P	iPNEZ	13	28	46	Tu	eP	13 28 16
	R	iPZ			44			
	Pr	iPNEZ			40	d		
	LJ	ePZ			39			
	SB	iPZ			54			
	H	ePZ			56			
	T	ePNE		29	01			
Sept. 28	P	iPZ	14	07	13	Tu	iP	14 06 39 d
	R	iPZ			10			
	Pr	ePZ			06			
	H	ePE			22			
	T	ePE			26			
Sept. 28	P	ePZ	19	44	23	Tu	iP"	19 48 31
		iP"Z			48			c 19 50
		iZ			14			ePKKP 58 43
	R	ePZ			44			c
		iP"Z			48			
	Pr	iP"Z			21			USSR: O° 124°E.
	H	iP"EZ			19			
	T	eP"E			19			
Sept. 29	P	iPZ	00	28	38	Tu	iP	00 29 15
		iZ			33			e 32 37
		iZ			42			e 33 04
	R	iPZ			28			i 17
		iZ!			33			
		iZ			36			
		iZ			48			Two shocks?
	Pr	iPZ			28			
		eZ			33			
Sept. 29	R	ePZ	01	44	03	Tu	eP	01 43 11
	Pr	iZ			09			
		ePZ			02			
		eZ			09			
		iZ			12			
Sept. 29	P	iPZ	03	15	03	Normal?	Tu	eP 03 15 35
		iZ			23			ePP 19 35
		iZ			47			iP'P' 40 30
	PX	iPPEZ			18			
		iSE			25			
		iSN			26			USCGS: 5°S 154°E C=03:02.0
		iLN			39.9			
	P	eP'P'Z			40			
	R	ePZ			15			
		iZ			09			P 2 5
		eSN			26			PP 6 4
		eP'P'Z			40			S 20 9
	Pr	iPZ			15			G 1500 40
		iZ			28			L 300 20
		iZ			35			
		iSNE			25			Magnitude 7 3/4
		iN			26			
		eP'P'Z			40			
		iZ			44			
	SB	ePZ	03	15	02			
		iSE			25			

(continued)

Date	Sta.	Phase	h	m	s	Remarks
(Continued)						
Sept. 29	H	ePNEZ	03	15	13	
		eSNEZ		26	58	
		eP'P'Z		40	47	
	T	ePE		15	06	
		eSNE		26	08	
Sept. 29	P	iPZ	C4	36	46	
	R	eZ			25	
		ePZ			41	
	Pr	ePZ			55	
Sept. 29	P	ePZ	C5	34	57	Tu eP C5 35 25
		iZ		35	C5	
	R	ePZ			00	
	Pr	ePZ			C2	
Sept. 29	R	ePZ	C8	20	26	Tu eP C8 19 20
		iZ		23	C9	37
	Pr	iPZ		20	20	
		eZ		23	10	
	T	ePNE		20	58	
Sept. 29	P	ePZ	C9	C1	45	Tu eP C9 C2 20
	R	ePZ			33	
		eZ			46	
	Pr	eZ			52	
	T	ePE			51	
Sept. 29	P	eZ	C9	22	50	Tu e C9 27 11
	PX	eLZ		51.8		
	R	ePZ		22	37	USSR: 4°S 151°E
		iZ		23	00	
	Pr	eZ			00	
	H	ePZ			10	
Sept. 29	R	iPZ	15	55	39	Tu iP 15 56 21
		iZ			51	33
	Pr	iPNEZ			45	
	LJ	iPZ			46	
	H	iPZ			24	
		iZ			36	
Sept. 29	P	ePZ	19	38	19	
	R	eZ			43	
		ePZ			22	
		eZ			46	
	Pr	ePZ			25	
		iZ			52	
	LJ	eZ			52	
Sept. 29	P	iPZ	20	57	31	Tu eP 20 57 56
		eZ			59	
	R	ePZ			33	
	Pr	iPZ			34	d
		iZ		58	C1	N.B. An earlier shock in this
		iZ			C8	hour, (USSR: 13°N. 50°E.)
	H	iPE		57	42	is recorded at Tucson with ePP
Sept. 30	P	iPNEZ	C1	C9	55	at 20:41:24.
		iPZ		10	15	Deep Tu iP C1 C9 18 d
		iSPEZ			26	
	PX	iSNEZ		18	20	
		eLZ		30	19	USCGS: 12.5°S 76°W, C=00.59.7
	P	eP'P'Z		39	03	Pasadena: 13°S. 76°W.
		eSKPP'		42	49	h = 70 km, magnitude 7
	R	iPNEZ		09	49	d
		iPZ		10	C9	
		eSE		18	11	

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
(Continued)						
Sept. 30	Pr	iPNEZ	01	09	46	d
		iPPEZ		10	07	
		iSPEZ			18	Damage along the coast of
		iZ		11	05	Southern Peru
		eP'P'Z		39	03	A T
		eZ		40	02	P 2 4
		eSKPP'Z		42	49	S 4 6
	LJ	ePNEZ		09	45	
	SB	ePZ		10	03	
	H	ePNEZ		10	03	
	T	iPNE			09	
		eSE		18	44	
Sept. 30	P	ePZ	11	49	21	Tu eP 11 48 31
		eLZ		12	25	
	Pr	ePZ		11	49	15 South Atlantic
		ePZ			14	
Sept. 30	Pr	iPZ	13	31	31	Tu iP 13 32 06
Sept. 30	Pr	ePZ	17	09	51	Tu iP 17 10 25

C. F. Richter
March 1, 1947

Addenda

July 5	MW	iPZ	20	08	28	Tu iP 20 07 58
	T	iPZ			41	
	Pr	ePZ			22	

West Indies shocks, August 4-10

(Epicenter near $10^{\circ}\text{N}.69^{\circ}\text{W}$. Unless marked T, for Tinemaha, times are those of P at Pasadena or Mt. Wilson. Most of these are recorded at Tucson, averaging 52 seconds earlier. Shocks probably from other sources in this period are included in the body of the Bulletin.)

August 4	17	59	33	August 8	01	24	48	T
	18	10	30		01	54	54	T
	18	12	17		03	49	12	T
	18	33	09		08	40	41	T
	18	36	49		13	36	48	
	18	42	12		14	15	29	T
	21	01	48		14	21	30	T
	21	30	44		14	37	02	
August 5	21	58	06		15	20	21	
	01	00	12		15	27	18	
	02	50	23		15	39	06	
	03	46	05		15	50	08	
	03	47	46		16	14	27	
	05	50	02		17	32	29	
	06	28	35		18	27	28	T
	07	17	41		20	30	18	T
	10	01	05		20	58	44	T
	12	16	13		22	53	04	T
	12	41	43	August 9	00	15	29	T
	13	19	31		00	51	03	
	14	11	28		03	30	50	
	15	15	42		03	52	34	
	15	32	03		04	42	51	T
	17	42	47		06	04	00	T
	20	17	17		08	34	04	
August 6	06	05	43		10	17	57	
	15	23	29		13	11	40	
	16	24	08		16	42	15	
	17	12	03		20	15	08	
August 7	06	25	49		21	01	43	
	08	05	47	August 10	02	18	51	
	18	34	49		07	07	04	
	19	29	49		09	08	41	
	21	35	33		11	54	10	
	22	23	37		14	17	58	T
					14	26	58	

Later shocks included in
main list



CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA CALIFORNIA

SEISMOLOGICAL LABORATORY

BULLETIN

OCTOBER — DECEMBER 1946

(PASADENA AND AUXILIARY STATIONS)

Date	Sta	Phase	h	m	s	Remarks
Oct. 1	P	iPZ	04	54	00	Deep Tu iP 04 54 21 c
	MW	iPZ			00	c
		epPZ		56	08	
	R	iPZ		54	01	epP 56 27
		epPZ		56	05	esP 57 21
	Pr	iPNEZ		54	03	c Tonga region
		epPZ		56	11	
		esPZ		57	15	
Oct. 1	P	ePZ	10	47	37	Tu eP 10 48 01
	PX	eLZ	11	13		
	MW	ePZ	10	47	37	
	R	ePZ		41		
		iZ		50	58	
	Pr	iPZ		47	41	
Oct. 2	P	iPNEZ	04	56	15	(Deep) Tu eP 04 56 52
		ipPNEZ			29	eP P 05 25 33
	PX	iSZ	05	04	16	
		iSE			25	
		eNEZ		08	3	
		eLNE		11	2	
	MW	iPZ	04	56	15	
		ipPZ			27	
		eSE	05	04	27	USCGS: 51° N. 157° E.
	R	ePZ	04	56	19	O = 04:45.9
		ipPZ			30	
		eSE	05	04	31	
	Pr	iPZ	04	56	25	A T
		ipPZ			37	P 1 2
		eSZ	05	04	41	
		eSE		46		S 4 6
	LJ	ePZ	04	56	26	
	SB	iPZ			21	
	H	iPZ			08	
		eSE	05	04	08	
	T	ePNE	04	56	05	
		eSE	05	04	04	
Oct. 2	P	iPZ	05	55	07	Tu iP 05 55 41
	MW	iPZ			06	e 57 21
	R	iPZ			09	
	Pr	iPZ			14	
		eZ		57	44	
	H	iPZ		54	59	
	T	iPNE			54	
Oct. 2	P	iPZ	06	53	23	c (Deep) Tu iP 06 54 01 c
		ipPZ			34	ipP 12
	PX	iSNEZ	07	01	34	eP P 07 22 40
		eLN		08	3	
		eLZ		10	8	
	MW	iPZ	06	53	23	c
		ipPZ			34	
		iZ			39	
		eSE	07	01	35	
	R	ePZ	06	53	26	USCGS: 51° N. 157° E.
		eZ			36	
		iZ			43	O = 06:43.3
	Pr	iPNEZ			32	c
		ipPZ			43	A T
		iZ			48	
		iSNE	07	01	53	P 1 1/2 3
		eE		02	16	
	LJ	ePNEZ	06	53	43	S 5 6
		eSE	07	01	52	
	SB	ePNEZ	06	53	26	
		eSE	07	01	21	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
						(Continued)
Oct. 2	H	ePNEZ	06	53	15	
		iZ			16	
		eSE	07	01	13	
	T	ePNE	06	53	10	
		eSNE	07	01	06	
Oct. 3	MW	ePZ	04	41	32	Tu eP 04 41 57
	R	ePZ			31	
	Pr	ePZ			38	
Oct. 3	PX	eLZ	07	35		Later shock (in Asia Minor?)
	MW	iPZ	06	53	02	not at these stations; Tucson
	R	ePZ		52	57	records iP 07 30 14
Oct. 3	PX	eZ	16	00	7	Tu eP 15 49 40
		eLZ		15	4	Pacific
	MW	eZ	15	49	32	BCIS: 23° S., 171 1/2° E.
	R	eZ			17	O = 15:36:42
	Pr	eZ			16	Shock in Asia Minor in same hour
		eZ			36	not recorded here.
Oct. 4	R	iPZ	03	50	07	Tu iP 03 50 31
	Pr	iPZ			08	
Oct. 4	P	iPPEZ	14	53	55	c Tu iP 14 53 03 c
	PX	iPPEZ			55	
		iScPZ			59	
		eLZ	15	04	7	Some seismograms at Pasadena lost
	MW	iPNEZ	14	53	53	c owing to drive failure.
		eSN	15	00	41	JSA: 19.2° N. 68.9° W.
	R	iPZ	14	53	50	c
		eSN	15	00	32	O = 14:45:35, h = 50 km.
	Pr	iPZ	14	53	44	c
		iNZ		54	02	A T
		iSNE	15	00	26	
	LJ	ePNEZ	14	53	48	P 3 3
	SB	iPZ		54	05	PP 4 3 1/2
		eSN	15	01	03	L 10 12
	H	ePE	14	53	55	
	T	ePNE		54	00	Magnitude 7
		iSN	15	00	52	
Oct. 5	MW	iPZ	17	58	54	Tu iP 17 58 21
	R	iPZ			52	
Oct. 6	Pr	iPZ	02	19	18	Tu iP 02 19 41
Oct. 7	P	epZ	07	05	08	Tu eP 07 05 21
	PX	eLZ		48	17	
	MW	iPZ		05	09	
	R	ePZ			09	
	Pr	ePZ			06	
	T	ePZ			09	
Oct. 8	P	iPNEZ	14	07	53	d Deep Tu iP 14 08 14 d
		epPZ		10	10	ipP 10 38
	PX	eSEZ		17	18	
		iNEZ		18	34	Pasadena: 25° S. 178° E.
	MW	iPZ	07	07	53	d
		epPZ		10	10	O = 13:56:25, h = 670 km.
		esPZ		11	21	
		eSNE		17	19	Magnitude 6 3/4
	R	iPZ	07	07	54	d
		epPZ		10	11	
		esPZ		11	22	
		eSE		17	20	A T
		eNEZ			40	
	Pr	iPNZ	07	05	55	d P 1/2 1
		epPZ		10	05	
		esPZ		11	16	SH 3/4 5
		eSE		17	23	
		iN			42	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
(Continued)						
Oct. 8	LJ	ePZ		07	53	
	H	iSN		17	36	
	T	eSN			40	
		iPNEZ		08	02	
Oct. 8	P	eSNE	23	17	00	Tu eP 23 16 05
	R	ePZ			20	
	Pr	iZ		16	53	
		iPZ			48	
		iZ			55	
Oct. 9	P	iZ	05	36	14	
		eZ			24	
		iZ			36	
	PX	eLZ	06	05	15	
	MW	iZ	05	36	25	
		iZ			37	
	R	ePZ		35	52	
		eZ		36	05	
		eZ			26	
	Pr	eZ			17	
Oct. 9	P	eZ	20	37	27	Tu iP 20 37 05
		ePZ			37	
		eZ			50	
	MW	ePZ			39	
		eZ			50	
	R	iPEZ			33	
		iZ			47	
	Pr	ePZ			29	
		iNEZ			33	
		iZ			45	
	LJ	ePZ			30	
	SB	ePZ			42	
	H	ePN			47	
	T	iPEZ			47	
Oct. 10	P	eZ	04	36	39	Tu eP 04 37 10
		eZ			56	
	PX	eLZ	05	06	24	
	MW	ePZ	04	36	15	
		iZ			39	
		iZ			59	
	R	ePZ			15	
		iZ		37	01	
	Pr	ePZ		36	22	
		eZ			53	
		eZ		37	03	
		eZ		36	42	
	LJ	eN			56	
Oct. 10	MW	iPZ	09	34	12	Tu eP 09 33 23
	R	ePZ			07	
	Pr	iPEZ			02	
Oct. 11	MW	iPZ	00	26	59	Tu eP 00 27 23
	R	ePZ		27	01	
	Pr	iPNZ			01	
Oct. 11	P	ePZ	01	25	07	Tu e(P) 01 25 50
	MW	ePZ			06	
	R	ePZ			12	
	Pr	ePNZ			13	
Oct. 11	P	ePZ	06	49	25	
		eZ			32	
	MW	ePZ			26	
	R	iPZ			27	
	Pr	ePZ			30	
		eZ			38	
		iZ			44	

Date	Sta	Phase	h	m	s	Remarks
Oct. 11	MW	iPZ	11	51	52	Tu iP 11 50 56
	R	iPZ			46	
	Pr	iPZ			40	
Oct. 11	MW	iPZ	16	58	17	Tu iP 16 58 37 c
	R	iPZ			19	
Oct. 12	P	iPZ	03	37	21	Tu eP 03 38 01
	MW	iPZ			21	
	R	ePZ			25	
	Pr	iPZ			31	
	T	iPZ			06	
Oct. 12	P	iPNEZ	19	00	01	c Deep Tu iP 19 00 27 c
		epPZ		02	03	
	MW	iPZ		00	03	c
		epPZ		02	03	
	R	iPZ		00	05	
	Pr	epPZ		02	06	Tonga region, h = 550 km.
		iPNEZ		00	05	c
		epPZ		02	04	
	H	ePE		00	12	
	T	iPEZ			11	c
		epPZ		02	09	
Oct. 13	PX	eLZ	00	39	1	Tu eP 00 11 30
	MW	ePZ	00	11	26	
	R	ePZ			38	
	Pr	ePZ			36	
Oct. 13	P	iPZ	00	57	43	Tu iP 00 57 29
	MW	iPZ			44	
	R	iPZ			41	
	Pr	ePZ			37	
Oct. 13	T	iPZ	03	02	28	
Oct. 13	MW	ePZ	03	09	44	Tu iP 03 11 20
Oct. 13	P	ePZ	14	08	43	Tu eP 14 09 35
	MW	ePZ			40	
	R	ePZ			41	
	Pr	ePZ			59	
	T	ePZ			13	
Oct. 13	P	iPNEZ	23	24	28	d Tu iP 23 23 54 d
		eZ		25	25	
	PX	iSNE		33	51	
		iE		34	19	
	MW	iPEZ		24	27	d
		eSE		33	50	
	R	iPNEZ		24	25	d BCIS: 24° S, 66° W,
	Pr	iPNEZ		21	21	d O = 23.13 O
		eSNE		33	37	h = 200 km.
	LJ	ePNZ		24	21	
		eN		34	11	
	SB	ePZ		24	34	
	H	ePNE			37	
	T	iPNEZ			41	d P 2 3
		eSE		34	14	S 1 1/2 5
Oct. 14	P	iPZ	04	57	20	Magnitude about 6 1/2
		iZ			30	Normal? Tu iP 04 57 36
	PX	eLNZ	05	23	6	i 49
	MW	iPZ	04	57	18	i 56
	R	iPZ			20	
	Pr	ePNZ			20	BCIS: 30 1/2° S, 177 1/2° W,
	LJ	ePZ			16	O = 04:44.7
	SB	ePZ			14	
	T	ePZ			29	
		iZ			43	

Date	Sta.	Phase	h	m	s	Remarks
Oct. 15	P	ePZ	06	51	45	Deep Tu eP 06 52 09
		isPZ		52	29	
		iPPZ		55	52	
	PX	eSN	07	03	01	
	MW	ePZ	06	51	45	ePP 56 36
		epPZ		52	17	
		isPZ			29	
	R	ePPZ		55	51	
		ePZ		51	48	
		epPZ		52	21	
		isPZ			31	
	Pr	ePPZ		55	54	
		iPNZ		51	49	Roughly 16° S. 168° E.
		epPNZ		52	21	
		ePPZ		55	52	O=06:39.2
		iSNE	07	03	08	h=120 km.
	LJ	ePZ	06	51	50	
		eSN	07	03	16	
	T	ePZ	06	51	51	
		epPZ		52	23	
		eSNE	07	03	25	
Oct. 15	P	ePZ	07	58	19	Tu eP 07 58 45
	PX	eLZ	08	22	11	
	MW	ePZ	07	58	18	Possibly near Apia, which reports
	R	ePZ			23	slight seismic activity at 07:51
	Pr	iPZ			25	
	LJ	ePZ			25	
	T	ePZ			26	
Oct. 15	P	iZ	08	05	36	Tu i 08 05 54
	MW	iZ			28	
		iZ			35	Part of the preceding?
	R	eZ			32	
	Pr	iZ			32	
	T	iZ			37	
Oct. 15	P	iPZ	12	18	19	Tu iP 12 18 43 d
	MW	iPZ			19	
	R	ePZ			22	Near Apia, which reports
	Pr	iPNEZ			23	P 12 08 04
	LJ	ePZ			19	S 51
	T	iPEZ			30	
Oct. 15	P	iZ	13	48	48	
	MW	ePZ			27	
		iZ			48	
		iZ			57	
	R	eZ			50	
	Pr	eZ			54	
	T	ePZ			29	
		eZ			50	
Oct. 15	P	ePZ	15	00	08	
		iZ			13	
		eZ			53	
		eZ	01	46		
	MW	ePZ	00	09		
		iZ			12	
	R	eZ			14	
	Pr	eNEZ			22	
		iZ			28	
	LJ	eZ			29	
	SB	eNE			12	
	H	eN	14	59	57	
	T	ePZ			44	

Date	Sta	Phase	h	m	s	Remarks
Oct. 15	P	iPZ	20	49	25	Tu iP 20 49 49 d
		eZ			39	
		iZ			49	
	MW	iPZ			26	
	R	iPZ			28	
		eZ			52	
	Pr	iPNEZ			29	d
	LJ	ePZ			28	
	T	iPNEZ			33	
		eZ			50	
		iZ			57	
Oct. 17	T	iPZ	06	14	22	Tu iP 06 15 14
Oct. 18	P	ePZ	00	57	18	Tu iP 00 57 05
	PX	eLZ	01	16	33	
	MW	ePZ	00	57	18	
	R	ePZ			15	
	T	ePZ			36	
Oct. 18	P	iPZ	20	51	37	Tu iP 20 51 23
	MW	iPZ			38	
	Pr	iPNEZ			36	
	LJ	ePZ			38	
	SB	ePZ			41	
	H	ePNE			35	
	T	ePNE			36	
Oct. 18	P	ePZ	22	35	54	Tu e 22 36 13
		eZ			03	
		ePZ			54	
Oct. 19	P	iPNEZ	14	29	47	Tu iP 14 30 28
	PX	eLZ			11	
	MW	iPNEZ			29	
	Pr	iPNEZ			58	d
	LJ	ePZ			08	
	SB	ePZ			40	
	H	ePNE			34	
	T	ePNE			26	
Oct. 20	MW	ePZ	00	04	16	Tu eP 00 05 02
	Pr	ePZ			07	
Oct. 21	P	ePZ	00	15	51	Deep Tu iP 00 16 16
		eZ			33	
		ePZ			52	
	MW	eZ			16	
		iZ			27	
		iZ			34	
	Pr	iPZ			15	Felt at Apia, which reports:
	H	iPZ			53	
	T	ePNE			58	
		ePNE			00	
Oct. 21	P	iPZ	06	57	30	Tu iP 06 56 53
	MW	iPZ			30	
	Pr	iPZ			21	
	T	iPZ			43	
Oct. 21	P	ePZ	13	53	01	Tu eP 13 52 07
	PX	eLZ	14	06	08	
	MW	ePZ	13	53	01	
	Pr	ePZ			52	
		iNEZ			52	
	LJ	ePNZ			48	
	SB	ePZ			53	
	H	ePZ			20	
	T	ePNEZ			09	
					14	

Date	Sta.	Phase	h	m	s	Remarks
Oct. 22	P	iPZ	10	12	34	c Deep Tu iP 10 12 59 c
	PX	ipPZ		13	23	ipP 13 53
		iPPZ		15	53	eS 23 15
		eSE		22	36	iPKKPZ 30 25
		eEZ		23	43	eP:P:Z 38 27
		eSSZ		28	11	
		eGN		34	8	
	MW	iPNEZ!		12	34	c Our times of pP give h=210 km.
		iZ		13	50	
		ipPNEZ		13	24	
		iZ		15	58	
		eSE		22	43	BCIS: 15° S, 167 1/2 E.
		iPKKPZ		30	38	
		eZ		39	22	O = 10:00.5
	R	ePNE		12	39	
	Pr	iPNZ		37	c	h = 150-200 km.
		ipPEZ		13	28	
	LJ	iSNE		22	49	A T
		ePNEZ		12	36	PZ 3 6
		epPNEZ		13	26	PH 1/2 2
	SB	eSE		22	45	pPZ 4 1/2 6
		ePZ		12	23	PPZ 1 4
	H	epPZ		13	16	SH 3 6
		ePNEZ		12	39	LH 4 36
		epPEZ		13	28	
	T	eSE		22	47	Magnitude 6.7
		iPNEZ		12	40	
		ipPNEZ		13	33	
		eSE		22	49	
		iZ		30	36	
		eZ		37	38	
		eZ		38	02	
Oct. 22	P	ePZ	11	42	23	
	T	ePZ		23	23	
Oct. 22	Pr	ePZ	13	52	26	Tu eP 13 52 45
Oct. 22	P	iPNEZ	17	39	45	Deep? Tu iP 17 40 06 d
		eZ		40	01	
	MW	iPZ		39	45	
		iZ		40	00	
	Pr	epPZ		43	12	BCIS: 18 1/2° S, 168 1/2° E.
		ePNEZ		39	49	
		iZ		40	02	O = 17:27:00
	LJ	ePZ		39	53	
	H	ePNEZ		49	49	
	T	iPNEZ		51	51	
Oct. 22	Pr	ePZ	18	01	02	Tu eP 18 00 40
Oct. 22	P	ePZ	21	23	41	Tu iP 21 22 50
	MW	ePZ		41	41	e 24 18
	Pr	iPNZ		30	30	
	T	ePZ		55	55	
Oct. 24	P	iPNEZ	08	49	18	c Deep Tu iF! 08 49 42 c
		ipPZ		51	16	ipP 51 41
	MW	iPNEZ!		49	18	c eS 59 12
		ipPZ		51	16	
		eZ		52	21	Tonga region, h = 550 km.
	Pr	iPNEZ!		49	21	c
		iZ		46	46	
		ipPNZ		51	19	
	LJ	iPNEZ		49	19	
	T	iPNEZ		26	26	
		ipPZ		51	28	

Date	Sta.	Phase	h	m	s	Remarks
Oct. 24	MW	ePZ	10	18	11	Tu iP 10 16 03
	Pr	ePZ		14	14	
Oct. 24	P	ePZ	18	43	48	
	MW	iPZ		48	48	
Oct. 25	Pr	ePZ	04	50	07	Tu eP 04 50 28
Oct. 25	MW	iPZ	11	10	19	Tu iP 11 09 45
Oct. 25	MW	ePZ	14	35	06	
	T	iPZ		34	59	
Oct. 25	MW	iPZ	15	52	15	Tu eP 15 51 40
	Pr	ePZ		08	08	
	T	iPZ		28	28	
Oct. 25	MW	ePZ	20	15	07	Tu eP 20 14 15
	Pr	iPNEZ		14	57	
	T	ePZ		15	24	
Oct. 25	P	iPNEZ	22	00	04	c Deep Tu iP 22 00 41 c
		iZ		11	11	ipP 01 17
		ipPZ		37	37	i 02 33
		iZ		01	25	eP:P 29 31
	PX	iSNE		07	59	i 30 08
		eLZ		18	18	
		eZ		29	32	
		iP:P:Z		48	48	
	MW	eZ		30	16	
		iPNEZ		00	04	c 51° N, 156° E.
		eZ		14	14	
		ipPZ		36	36	
		eP:P:Z		29	45	O = 21:50.2
		iZ		30	16	
	R	iPZ		00	08	h = 150 km.
		epPZ		43	43	
		eP:P:Z		29	46	
		iZ		30	15	A T
	Pr	iPNEZ	22	00	13	c pPZ 1/4 1
		iZ		22	22	SH 2 1/2 5
		ipPZ		45	45	P:P:Z 1 3
		iZ		01	34	
		iSNE		08	18	
		eE		40	40	
		eP:P:Z		29	37	
		iZ		30	17	
	LJ	ePNEZ		00	14	
		epPNZ		45	45	
	H	iPNEZ	21	59	56	c
		ipPNEZ		22	00	28
	T	iPNEZ	21	59	50	c
		ipPZ		22	00	22
		iZ		04	32	
		eSNE		07	35	
		eP:P:Z		29	50	
		eZ		30	25	
Oct. 26	P	eP ^u Z	00	39	47	Normal Tu eP ^u 00 39 36
		eZ		40	34	e 40 16
		eZ		50	44	ePKKP 50 36
		ePSNE		51	14	
		eNZ		57	30	
		eLN		01	15	9
	MW	eP ^u Z	00	39	47	Roughly 57° S, 27° W.
		eZ		40	49	O = 00:20.9
		ePKKPZ		50	01	
	R	eP ^u Z		39	43	A T
		eZ		40	48	PSH 7 15
	Pr	eP ^u Z		39	42	
		eZ		40	42	LH 20 20
		ePKKPZ		49	59	
	T	eP ^u Z		39	52	

Date	Sta.	Phase	h	m	s	Remarks
Oct. 26	P	ePZ	00	48	55	Tu iP 00 48 03 d
	MW	iPZ			55	
	R	ePZ			52	Superposed on the preceding
	Pr	iPNEZ			44	d
	T	iPZ		49	07	
Oct. 28	MW	ePZ	08	36	30	Tu eP 08 36 09
	Pr	iPZ			24	
Oct. 28	P	ePZ	11	30	56	Tu iP 11 30 24
	MW	ePZ			55	
	Pr	iPZ			48	
Oct. 28	P	iPNEZ	14	10	13	Tu iP 14 10 57 d
	MW	iPNEZ			13	
		iZ			26	
		iZ		11	29	
	Pr	iPNEZ		10	24	d
		eZ			36	
	LJ	ePNEZ			24	
	H	iPNEZ			05	
		iZ		11	30	
	T	ePE		10	00	
Oct. 29	MW	ePZ	00	02	25	Tu eP 00 02 02
	Pr	ePZ			21	
Oct. 29	P	ePZ	03	35	12	Tu eP 03 36 07
	MW	ePZ			13	
	R	ePZ			15	
	Pr	ePNEZ			26	
	SB	iPZ			04	
	H	ePZ		34	51	
	T	ePNE			44	
Oct. 29	MW	iPZ	11	52	12	Tu eP 11 52 51
	R	ePZ			20	
	Pr	ePZ			17	
	H	ePZ			06	
	T	ePEZ			58	
Oct. 30	Pr	iPZ	03	24	25	Tu iP 03 24 44
Oct. 30	P	iPZ	05	51	05	Tu iP 05 51 26
Oct. 30	P	iPNEZ	07	54	51	Tu iP 07 55 39 d
		iNEZ			01	
	PX	iSNE	08	00	43	
		eLN			4	
	MW	iPZ	07	54	52	
		eSNE	08	00	42	
	R	ePZ	07	54	56	
		eSNE	08	00	51	USCGS: 54°N. 164°W.,
	Pr	iPNEZ	07	54	56	O = 07:47.6
		iZ		55	16	
		iSNEZ	08	01	05	
		iNE		05	11	
	LJ	ePNEZ	07	55	05	PZ 5 T 5
		iSNE	08	01	08	PH 4 5
	SB	ePZ	07	54	45	SH 6 5
		eSNE	08	00	29	LH 100 20
	H	ePZ	07	54	43	Magnitude 6.9
		eSN	08	00	16	
	T	ePNE	07	54	36	
		eSNE	08	00	15	
Oct. 30	P	ePZ	09	35	45	Tu iP 09 36 07 c
	MW	iPZ			47	
	R	ePZ			48	
	Pr	iPZ			48	
	H	ePZ			55	

Date	Sta.	Phase	h	m	s	Remarks
Oct. 30	P	iPNEZ	14	23	06	Normal Tu iP 14 23 42
		iZ			14	
	MW	iPNEZ			07	
		iZ			14	
	R	ePZ			09	
		iZ			17	
	Pr	iPNEZ			17	Kamchatka?
		iZ			25	
		eSE		31	17	
		iSN			23	
	LJ	ePNEZ		23	15	
	H	ePNEZ		22	59	
	T	ePNE			51	
Oct. 30	MW	ePZ	15	27	28	Tu eP 15 27 41
	Pr	ePNEZ			30	
Oct. 31	P	ePZ	04	26	57	Tu iP 04 27 37
	MW	iPZ			59	
	R	ePZ		27	02	
	Pr	iPNEZ			08	
	H	ePZ		26	50	
	T	ePNE			43	
Oct. 31	P	iPZ	11	52	10	Tu iP 11 52 49
		iZ			21	
		eZ			26	
	MW	iPZ			10	
		iZ			28	
	R	ePZ			13	
	Pr	iPNZ			19	
Oct. 31	MW	iPZ	20	03	35	Tu iP 20 04 30
	R	iPZ			38	
	Pr	iPZ			46	
	T	iPNEZ			21	
Nov. 1	P	ePZ	11	22	28	Normal Tu iP 11 23 16
		iPNEZ			33	d
	PX	eSE		28	53	Magnitude 7.0
		iSNEZ		29	01	USCGS: 52°N. 174°W., O=11:14.4
		eGN		32	4	
	MW	iPZ		22	31	
	R	ePZ			32	A T
		eSNE			10	PZ 12 10
	Pr	iPNEZ		29	10	PH 6 12
		iZ		22	40	S 12 12
		iZ			46	L 200 20
		iNZ			58	
		eSE		29	21	Aftershocks numerous Times of
	LJ	ePZ		22	42	P for some of these at River-
		eSE		29	32	side were:
		ePZ		22	30	11:37:33, 11:50:49, 11:56:29,
	SB	eSE		28	44	12:18:23, 12:29:59, 13:25:20,
		ePNEZ		22	22	13:51:23, 15:40:32, 19:45:02
	H	eSE		28	44	
		ePNEZ		22	17	
	T	eSE		28	37	
Nov. 1	P	iPNEZ	20	22	19	Deep Tu iP 20 22 47
		iZ			36	
	PX	eLZ		50.7		
	MW	iPNEZ		22	21	c
	R	iPNEZ			46	c
	Pr	iPNEZ			24	c
		iZ			44	
	LJ	ePNEZ			23	
	SB	ePNEZ			15	
	H	iPNEZ			23	
		iPZ			44	
	T	iPNEZ			24	

Date	Sta.	Phase	h	m	s	Remarks
Nov. 1	MW	ePZ	20	34	15	Tu eP 20 35 00
Nov. 2	MW	ePZ	01	26	20	Tu iPZ 01 26 06
	R	ePZ			17	
	Pr	ePZ			14	
Nov. 2	Pr	iPZ	10	59	56	Tu iP 11 00 15
Nov. 2	PX	eLNZ	15	45	2	Normal Tu e 14 22 00
Nov. 2	PX	iPZ	18	42	35	Tu eP 18 42 42
		eP ^u Z		46	20	iPP 46 10
		iPPZ		47		iPKKP 58 21
		iPSN		56	08	i 46
	P	iPKKPZ		58	30	USCGS: 41°N 76°E
		iZ		59		O = 18:28.4
	PX	eSSNZ	19	01	6	USSR: 41.7°N 72.2E
		eLN		09	9	A T
	R	ePPZ	18	46	55	PZ 2 5
		iPKKPZ		58	28	PPZ 11 7
	Pr	ePPNZ		47	08	PPH 5 6
		ePSN		56	18	PSH 15 30
		iPKKPZ		58	26	L 180 18
	T	ePNE		42	49	Magnitude 7.6
		ePPN		46	33	
Nov. 3	Pr	ePZ	05	06	03	Tu eP 05 06 33
		eZ			12	i 46
Nov. 3	P	ePPZ	19	50	15	Normal Tu eP 19 45 50
	PX	eIZ	20	18	46	USCGS: 0°16'W
	MW	iPPZ	19	50	18	O = 19:32.5
	R	ePPZ			15	A T
	T	ePPEZ			18	PP 0.4 3
Nov. 3	P	iPZ	23	31	35	Tu iP 23 31 55 c
	MW	iPZ			35	
	R	iPZ			36	c
	Pr	iPZ			37	c
Nov. 4	MW	iPZ	14	18	38	
	R	iPZ			40	
	Pr	iPZ			42	
Nov. 4	P	ePZ	20	10	35	Tu iP 20 10 01
	MW	iPZ			35	
	R	ePZ			32	
	Pr	ePZ			31	
Nov. 4	P	ePZ	22	01	59	Normal Tu eP 22 02 05
		eP ^u Z		05	12	ePP 06 08
	PX	iPPNZ		06	22	iPKKP 17 30
		iZ			44	
		iZ	08	24		USCGS: 40°N 53°E O=21:47.6
		iZ		57		USSR: 40.5°N 55.0°E
		eZ		10	37	
		eSKSZ		13	00	A T
		iSZ		14	27	PZ 2 6
		iPSN		15	57	PPZ 13 6
		iPPSN		16	34	PPH 6 8
		iZ		50		LH 130 20
	P	iPKKPZ		17	32	
	PX	iSSZ		21	27	Magnitude 7.5
		eGN		31		
	MW	ePZ	22	02	00	
		eP ^u Z		04	43	
		eZ		05	13	
		iZ		08	57	
	R	iPKKPZ		17	32	
		ePZ		02	00	
		ePKKPZ		17	30	
	Pr	iPZ		02	02	
		eP ^u Z		05	12	
		iPKKPZ		15	31	

(Continued)

Date	Sta.	Phase	h	m	s	Remarks
Nov. 4	(Continued)					
	T	ePZ	22	01	49	
		eZ		05	21	
		eNE		12	51	
		ePKKPZ		17	43	
Nov. 5	P	iPNEZ	07	11	16	Deep? Tu iP 07 10 43
	MW	iPNEZ			16	i 11 03
	R	iPNEZ			13	
		eZ		12	10	
	Pr	iPEZ		11	09	
	LJ	ePNZ			09	South America
	SB	iPZ			22	
	T	iPNEZ			28	
Nov. 5	P	iPNEZ	22	52	03	d Tu iP 22 52 34 d
	MW	iPNEZ			03	d iPP 56 10
		iPPZ		55	20	
	R	iPNEZ		52	06	d
	Pr	iPEZ			09	d Japan?
	LJ	iPNEZ			09	
	SB	iPEZ		51	57	
	T	iPNEZ			58	d
Nov. 6	P	eZ	20	14	56	Tu e 20 14 58
		eZ		15	24	i 15 44
		iPKKPZ		25	57	iPKKP 25 46
	MW	eZ		14	52	USSR: 35°N 80°E
		iZ		15	25	BCIS: O=19:56.5
	R	iPKKPZ		25	56	
		iZ		14	53	
	Pr	eZ		15	24	
		eZ		14	55	
		eZ		15	17	
		iPKKPZ		25	54	
	T	eZ		14	54	
Nov. 7	Pr	ePZ?	09	53	37	Tu iP 09 53 20
		eZ			44	
Nov. 7	P	iPZ	14	00	52	Tu iP 14 01 13 c
	MW	iPZ			52	c
	R	iPZ			54	
	Pr	iPZ			55	c
	T	iPZ		01	02	
Nov. 7	P	eZ	16	12	30	Tu e 16 12 38
	MW	eZ			28	
	Pr	eZ			27	USSR: 41°50'N 72°18'E
Nov. 7	P	iPZ	18	14	24	BCIS: O = 18:06.0; aftershock
	MW	iPZ			24	of Aug. 4, 17 ^h
	R	iPEZ			19	Tu iP 18 13 33 c
	Pr	iPZ			16	(West Indies)
	LJ	ePZ			17	
	T	iPNEZ			29	
Nov. 7	MW	ePZ	21	40	45	Tu eP 21 40 37
	Pr	ePZ			53	Southeast Pacific?
Nov. 8	P	iPZ	00	35	00	Tu iP 00 35 20
	R	iPZ			02	
	Pr	iPZ			02	
Nov. 8	Pr	iPZ	05	29	13	Tu iP 05 28 31
Nov. 9	P	iPZ	21	51	53	Deep Tu eP 21 52 15
		ipPZ			52	epP 42
	MW	iPZ			51	
		ipPZ			52	
	R	ePZ			51	Near Apia, which reports:
		epPZ			52	P 21 41 17
	Pr	iPZ			51	
		epPZ			52	

Date	Sta.	Phase	h	m	s	Remarks		
(Continued)								
Nov. 12	R	iPZ	17	40	27	A	T	
		iZ		41	12	PZ	6	2
		eSNE		50	14	PH	5	5
	SB	ePNE		40	31	PPH	4	5
	T	iPNEZ			35	SH	15	10
		eZ		43	18	LH	90	20
		eSNE		50	33	Magnitude	7 1/2	
Nov. 13	P	iPZ	04	09	00	Tu	iP	04 09 21 d
	T	iPZ			12			
Nov. 14	P	ePZ	11	43	08	Normal	Tu	eP 11 42 15
	PX	eLZ	12	04	12			
	R	ePZ	11	43	02	Central America?		
	Pr	iPZ		42	59			
	T	iPNEZ		43	11			
Nov. 16	R	iPZ	01	01	06	Tu	iP	01 01 28
	T	iPZ			10			
Nov. 16	P	ePZ	12	02	27	Tu	iP	12 02 48
	PX	eLZ		39	7	i		03 07
	R	ePZ		02	30			
	Pr	iPEZ			29			
	SB	ePZ			32			
	T	iPZ			37			
		iZ			52			
Nov. 17	P	eP ^h Z	03	07	31	Deep	Tu	iP ^h 03 07 45
	R	eP ^h Z			33			11 10
		ePKKPZ		18	28			17 58
	Pr	iP ^h Z		07	35			19 31
		iZ		08	26	USSR: 7.5 ^o S., 130 ^o E.,	h = 120 km.	
		iPKKPZ		18	28			
		eP ^h Z		07	31	BCIS: O = 02:49.1		
Nov. 17	P	iZ	04	57	07	Tu	eP	04 55 53
	R	ePZ		56	38			56 07
	Pr	iPZ			33			
		iZ			51			
	T	ePZ			54			
Nov. 17	P	ePZ	13	15	07			
	R	ePZ			01			
	T	ePZ		14	58			
Nov. 17	P	eP ^h Z	22	43	54	Normal	Tu	eP ^h Z 22 43 38
		eZ		46	09			
	PX	eLZ		23	35	USSR: 7 ^o N, 53 ^o E.		
	R	eP ^h Z		22	43	BCIS: 12 ^o N, 56 1/2 ^o E.		
	Pr	eZ			34	O = 22:24.4		
		iP ^h Z			55			
		eP ^h Z			41			
Nov. 18	P	iPNEZ	02	51	48	Tu	iP ^h	02 52 10 c
		epPZ		53	55			54 18
	R	iPNEZ		51	50			c
		epPZ		53	55			
		esPZ		55	04			
	Pr	iPNZ		51	50	Tonga region		
		ipPZ		53	58	h = 600 km.		
		esPZ		55	01			
		eSE	03	01	19			
	LJ	ePNEZ	02	51	48			
	SB	iPZ			33			
	T	iPZ			56			c
		eSN	03	01	31			
Nov. 18	Pr	iPNEZ	07	53	32	Tu	eP	07 54 07
	T	ePZ		52	50			

Date	Sta.	Phase	h	m	s	Remarks		
Nov. 18	R	eZ	13	44	20	Tu	e	13 44 21
		eZ		45	12		e	45 36
		eZ		49	23		e	49 31
	Pr	iZ		44	22	Very distant?		
		iNZ		45	14	Associated with next?		
		iZ		49	35			
	T	eZ		45	17			
Nov. 18	P	eZ	13	57	11	Tu	e	13 57 13
		eZ	14	02	18		e	58 28
	PX	eLZ		43	02		e	14 02 18
	R	eZ	13	57	04			
		eZ		58	11	Very distant?		
		eZ	14	01	37	Aftershock of preceding?		
	Pr	eZ	13	57	08			
		iNZ		58	15			
		eZ	14	01	53			
Nov. 19	Pr	iPZ	01	35	40	Tu	eP	01 34 58
Nov. 19	Pr	ePZ	05	49	19	Tu	eP	05 49 48
Nov. 20	Pr	iPZ	01	54	55	Tu	eP	01 55 30
Nov. 20	Pr	iPZ	05	19	37	Tu	iP	05 18 54
		iZ			55		i	19 11
		ePZ	05	34	16	Tu	eP	05 33 31
	R	ePZ			10			
	Pr	iPNEZ			06			
Nov. 21	PX	eLZ	04	12		Tu	e	03 34 25
Nov. 22	P	ePNEZ	02	28	44	Tu	eP	02 27 45
	PX	eLZ		37	0		i	28 11
	Pr	iPNZ		28	33			
	SB	ePZ			55	Mexico		
	H	ePNE		29	01			
	T	ePNEZ			07			
Nov. 22	R	ePZ	09	37	25	Tu	ePZ	09 36 40
	Pr	iPZ			23			
	T	iPEZ			36			
Nov. 23	Pr	ePZ	01	53	24	Tu	iP	01 53 59
		iZ			51		i	54 25
	T	iPZ			00			
		iZ			25			
Nov. 23	Pr	iPZ	07	06	22	Tu	iP	07 06 45
	T	iPZ			29			
Nov. 23	P	iPZ	08	36	57	Tu	iP	08 37 43
		iZ		37	06		e	47
	R	ePZ			00		i	51
		iZ			11			
	Pr	iPNZ			08			
		iZ			13			
		iZ			18			
	LJ	ePZ			10			
	H	ePNE		36	50			
	T	iPNEZ			39			
		iEZ			49			
Nov. 23	P	ePZ	11	24	56	Tu	iP	11 25 18
	R	iPZ			58		e	27 34
	Pr	iPNZ			59			d
		iNZ			27			
		e(S)E			34			
	T	iPEZ			25			
Nov. 23	R	ePZ	17	03	45	Tu	eP	17 04 02
	Pr	iPZ			44			
Nov. 23	T	iPZ	20	05	19	Tu	iP	20 06 13
Nov. 24	P	iPNEZ	01	04	01	Tu	eP	01 05 18
	R	iPZ			08	Felt		at Eureka, California
	Pr	iPZ			31			
Nov. 24	R	ePZ	16	01	33	Tu	iP	16 01 55 c
	T	ePZ			39			

Date	Sta.	Phase	h	m	s	Remarks		
Nov. 25	P	ePZ	16	39	26	Deep		
	R	ePZ			34			
		iZ			47			
	Pr	iZ		40	01			
		iPNEZ		39	36			
		iZ			50			
		iZ			56			
	T	ePEZ			33			
		iZ			49			
Nov. 26	Pr	iPNEZ	12	10	23	Tu	iP	12 09 42
		iZ			31		i	49
	T	ePZ			21			
Nov. 27	Pr	eZ	02	41	21	Tu	e	02 41 52
Nov. 27	P	iPZ	02	51	37	Tu	iP	02 52 02
Nov. 27	Pr	iPZ			41			
Nov. 27	P	ePZ	09	24	57	Tu	iP	09 24 03 d
		eZ			25		i	09
	PX	eLZ			36			
	R	ePZ			24			
	Pr	iPNEZ			46			
	LJ	ePZ			44			
	T	ePZ			25			
Nov. 27	P	ePZ	15	07	11	Tu	eP	15 06 12
	PX	eLZ			15	Mexico		
	R	iPZ			07			
	Pr	iPNEZ			06			
	LJ	ePZ			58			
Nov. 28	R	ePZ	01	11	16	Tu	eP	01 10 18
Nov. 28	P	iPNEZ	16	02	45	Deep	Tu	iP! 16 03 10 c
		iZ			51		ipP	04 15
	PX	ipPZ			03		eS	12 50
		iZ			04		e	29 58
		ePPZ			05			
		iSNEZ			12	Pasadena: 18 1/2°S, 174°W		
		eLN			22.9	O = 15:51:35, h=290 km.		
	P	eZ			33			
	MW	ePNE			02	A T		
		eSNE			12	PZ 1 1		
	R	iPNEZ			02	PH 3/4 1		
		ipPZ			03	pPZ 1 1 1/2		
		eSNEZ			12	PPZ 1/4 1		
	Pr	iPNZ!			02	SH 3 5		
		ipPZ			03			
		iSNE			12	Magnitude about 6 3/4		
		eZ			30			
		eZ			33			
	LJ	iPNEZ			02			
		epPEZ			03			
	SB	iSNE			12	c.		
		iPNEZ			02			
		ipPZ			03			
	H	iSNEZ			11			
		ePNE			02			
		epPNE			03			
	T	eSN			12			
		ipZ!			02	c		
		iZ			04			
Nov. 29	P	iSNEZ	06	56	21	Tu	eP	06 56 48
	R	iPZ			12			
	Pr	iPZ			17			
		iZ			31			
	T	iPZ			16			

Date	Sta.	Phase	h	m	s	Remarks		
Nov. 29	P	iPZ	11	39	50	Tu	iP	11 40 37 c
	R	iPZ			54		i	53
	Pr	iPNEZ			40	c		
		iNZ			17			
		iSNE			46			
	LJ	ePZ			40			
	SB	iPZ			39			
		iZ			57			
	T	iPZ			36			
		iZ			52			
Nov. 29	P	ePZ	12	36	53	Tu	iP	12 37 30
	R	ePZ			53			
	Pr	iPZ			37	c		
	T	iPZ			36			
Nov. 29	R	ePZ	19	26	41	Tu	eP	19 26 40
	T	ePZ			24			
Nov. 30	P	iPNEZ	00	55	09	Deep	Tu	iP! 00 54 13 d
		eZ			58		ipP!	55 04
	R	iPZ			55		i	52
		epPZ			52			
		iZ			58			
		eZ			01			
	Pr	iPNZ			00	d		
		ipPNZ			54			
		iSNE			55			
		iSNE			01			
		iPZ			00			
	T	iPNEZ			55			
		ePNE			23			
Nov. 30	Pr	ePNE	17	19	29	Tu	iP	17 19 23
	T	ePZ			00			
Dec. 1	P	iPZ	11	41	47	Tu	iP	11 41 14 c
		iZ			42		i	26
		eP P'Z			12		e	07 29
	R	iPZ			11		e	09 23
		eZ			56			
		eP P'Z			12			
	Pr	epPN			11			
	SB	iPZ			41			
		iZ			42			
	T	iPZ			41	c		
		iZ			43			
Dec. 2	R	ePZ	14	46	11	Tu	eP	14 46 55
	Pr	ePZ			05			
Dec. 3	P	iPZ	07	06	15	Tu	eP	07 05 20
	Pr	iPNEZ			03	d		
		iZ			18			
		ePZ			30			
Dec. 3	P	iPZ	13	25	54	Tu	iP	13 25 18
	R	iPZ			51			
		eZ			26			
	Pr	iPZ			25			
	T	iPZ			26			
Dec. 3	R	ePZ	14	07	00	Tu	iP	14 07 16
	Pr	iPZ			00			
		iZ			16			
Dec. 3	T	iPZ	19	25	07	Tu	eP	19 25 43
Dec. 3	P	ePZ	22	59	58	Tu	eP	22 58 55
	Pr	ePZ			58			
	T	ePZ			44			
Dec. 4	Pr	iPZ	12	21	37	Tu	eP	12 22 10
Dec. 4	Pr	iPZ	12	57	25	Tu	eP	12 56 42
Dec. 4	P	eZ	21	59	00	Tu	e	21 58 38
		eZ			06			
		eZ			04	USSR: 35°50' N, 68°30' E.		
	R	eE			01	BCIS: O = 21:40.2		
	T	eZ			22			
Dec. 4	PX	eLE	23	48		Tu	e	23 05 40

Date	Sta.	Phase	h	m	s	Remarks
Dec. 5	P	ePZ	06	58	13	Tu e 06 59 12
	PX	eLZ	07	58	.8	e 07 02 44
	MW	ePZ	06	58	14	ePKKP 07 14 45
	R	iZ			41	
	Pr	eZ			17	USSR: 4.0°S, 147.5°E
		ePZ			19	BCIS: 4.7°S, 145.8°E
		iZ			59	O=06:44:37
		iZ	07	02	25	
	T	ePZ	06	58	22	
		eZ	07	02	29	
Dec. 5	PX	eLZ	10	42		Tu iP 09 00 24
Dec. 5	R	ePZ	10	19	38	Tu eP 10 19 01
	Pr	iPZ			33	
	T	ePZ			32	
Dec. 6	P	ePZ	08	32	34	Tu eP 08 32 21
	PX	eLZ			49.1	
	Pr	ePNZ			32	
	H	ePZ			24	
Dec. 7	Pr	iPZ	04	28	49	Tu iP 04 29 00
Dec. 7	P	ePZ	17	30	45	Deep Tu eP 17 31 13
	MW	iPZ			47	ipP 44
		ipPZ			31	
		eZ			33	
	R	iPZ	30	50		BCIS: 16°S, 169°E, O=17:18.2
	Pr	iPZ			51	
		ipPZ			31	
		iZ			37	
Dec. 7	P	iPZ	17	36	48	Deep Tu iP 17 37 27
		eLZ			37	i 42
					57.9	49
	PX	eLZ			36	Japan
	MW	iPZ			52	
	R	iPZ			58	
Dec. 8	P	iPNZ	12	18	47	Tu iP 12 18 19 d
	MW	iPZ			48	epP 42
		ipPZ			19	
	R	iPZ			18	d
		ipPZ			19	
	Pr	iPNEZ			18	d
		ipPZ			19	
Dec. 8	P	ePNZ	12	25	41	Tu iP 12 25 20
	MW	iPZ			42	i 28
	R	ePZ			38	
	Pr	iPNEZ			36	
	LJ	ePZ			33	
Dec. 9	P	iPZ	00	57	05	Tu iP 00 57 27 c
	MW	iPZ			07	i 35
	R	iPZ			11	i 59
	Pr	iPNEZ			09	c
Dec. 9	P	ePZ	08	38	34	Tu eP 08 38 20
	PX	eLZ			57.3	
	MW	ePZ			38	
	R	ePZ			30	
	Pr	iPNZ			28	
Dec. 10	P	ePZ	02	39	10	Tu eP 02 38 26
	MW	ePZ			11	
	R	ePZ			02	
	Pr	iPZ			01	
Dec. 10	P	ePNEZ	04	01	59	Normal Tu iP 04 00 53
	PX	eLNE			12	i(S) 02 53
	MW	ePZ			02	
	R	ePZ			01	
	Pr	iPNEZ			51	d Mexico
	SB	ePZ			13	
	H	ePN			20	

Date	Sta.	Phase	h	m	s	Remarks
Dec. 10	P	iPNEZ	07	34	21	Tu iP 07 34 53c
	MW	iPNEZ			21	c
	R	iPNZ			23	c USSR: 45°N, 138°E
	Pr	iPZ			29	c BCIS: 45 1/2°N, 140 1/2°E
	LJ	ePZ			29	
	SB	iPNEZ			15	O = 07:22.8
	H	ePN			15	
Dec. 10	P	iPNEZ	15	44	28	Normal Tu eP 15 43 53
	PX	eSNE			45	i 44 02
	R	ePZ			44	Large foreshock at 15:30
	Pr	ePZ			43	large aftershock at 17:32
	LJ	iPZ			44	Many others
Dec. 10	P	iPZ	16	44	25	Deep Tu iP 16 44 47
		iZ			47	ipP 46 55
		ipPZ			46	
	MW	iPZ			44	
	R	iPZ			27	
	Pr	ipPZ			46	Tonga region, h = 600 km.
		iPNEZ			44	
		ipPNZ			46	
		eSN			53	
	SB	iPZ			44	
	H	ePN			35	
		ePZ			46	
Dec. 10	P	ePZ	18	58	21	Tu iP 18 57 37
	R	iPZ			15	
Dec. 11	P	iPZ	10	03	40	Tu iP 10 03 12
	MW	iPZ			40	
	Pr	iPZ			33	
Dec. 11	Pr	ePZ	13	12	06	Montana Tu eP 13 12 23
Dec. 12	P	ePZ	23	52	22	Tu iP 23 52 02
	MW	ePZ			25	
	R	iPZ			21	
	Pr	iPZ			17	
Dec. 13	P	iPZ	10	29	03	Tu iP 10 28 09 d
	MW	iPZ			04	d
	R	iPZ			28	i 10 c
	Pr	iPNEZ			52	d
		iZ			29	
		iNZ			31	
	LJ	ePZ			28	
	SB	iPZ			29	
	H	iPZ			12	
	T	iPNEZ			18	
Dec. 13	P	ePZ	12	58	26	Tu eP 12 57 37
	MW	ePZ			21	i 44
	R	ePZ			16	
	Pr	ePNZ			10	South America
		iZ			16	
		eZ			13	
	T	ePZ			35	
Dec. 13	P	iPNEZ	13	54	05	Tu eP 13 55 20
	PX	eLZ			57.2	
	MW	iPZ			54	d
	R	iPZ			12	d
	Pr	iPNEZ			22	d
	SB	ePZ			53	
	H	ePZ			51	
	T	ePNEZ			42	
Dec. 15	P	eZ	00	42	25	Deep? Tu eP 00 42 31
	MW	iPZ			07	i 50
		eZ			26	
	R	ePZ			11	
		eZ			28	
	Pr	ePZ			05	Tonga region
		eZ			10	
		iZ			30	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
Dec. 15	T	ePZ	00	42	12	(Continued)
Dec. 15	MW	eZ	21	25	31	Tu eP 21 25 08
Dec. 15	Pr	ePZ	23	11	44	Tu iP 23 10 17
Dec. 15	MW	ePZ	23	11	10	
Dec. 15	R	ePZ			04	
Dec. 15	Pr	ePZ		10	57	
Dec. 16	P	ePZ	01	06	02	Tu eP 01 06 34
Dec. 16	MW	iPZ			03	
Dec. 16	R	ePZ			06	
Dec. 16	Pr	ePZ			11	
Dec. 16	H	ePZ			04	
Dec. 16	T	ePZ			01	
Dec. 16	MW	ePZ	11	27	05	Tu iP 11 26 03
Dec. 16	R	ePZ		26	56	
Dec. 16	Pr	iZ		27	09	
Dec. 16	T	ePZ		26	47	
Dec. 16	MW	ePZ		27	23	
Dec. 16	Pr	eZ	17	52	46	Tu e 17 52 05
Dec. 16	P	eZ			36	
Dec. 16	MW	ePNEZ	21	47	15	Tu iP 21 46 30
Dec. 16	R	eNEZ		49	12	
Dec. 16	Pr	iPZ		47	16	
Dec. 16	R	ePZ		47	11	
Dec. 16	Pr	eZ		49	10	
Dec. 16	LJ	iPNEZ		47	05	
Dec. 16	SB	ePZ			03	
Dec. 16	H	ePZ			24	
Dec. 16	T	ePEZ			27	
Dec. 17	MW	ePZ	05	44	12	Tu eP 05 43 30
Dec. 17	R	ePZ			04	
Dec. 17	Pr	ePZ	09	37	56	Tu eP 09 38 22
Dec. 17	MW	ePZ			59	
Dec. 17	P	ePZ	13	30	57	Tu eP 13 30 37
Dec. 17	MW	iPZ			54	
Dec. 17	R	iPZ			51	
Dec. 17	Pr	iPZ			45	
Dec. 17	P	iPNEZ	22	52	11	d Deep Tu iP 22 52 34
Dec. 17	P	iNEZ			15	
Dec. 17	PX	ipPZ		54	13	ipp 54 38
Dec. 17	MW	iSN	23	01	23	eS 23 02 10
Dec. 17	Pr	iSE			45	iPKKP 10 54
Dec. 17	MW	iPNEZ	22	52	12	d iP P 19 04
Dec. 17	R	ipPZ			16	
Dec. 17	P	iSNE	23	01	26	Pasadena: 22°S, 177°W
Dec. 17	Pr	iPNEZ	22	52	13	d O=22:41:06
Dec. 17	Pr	eSNE	23	01	18	h=580 km.
Dec. 17	Pr	iPNEZ	22	52	14	d
Dec. 17	LJ	ipPNZ			17	PZ 1/2 T 1/2
Dec. 17	SB	iSNEZ	23	01	30	pPZ 1/4 1
Dec. 17	H	iN			52	SH 1 3
Dec. 17	T	iPNEZ	22	52	12	Magnitude 6 1/2
Dec. 17	SB	epPNEZ			15	
Dec. 17	H	iSNE	23	01	24	
Dec. 17	T	iPZ	22	52	07	d
Dec. 17	H	epPZ			07	
Dec. 17	T	eSNEZ	23	01	15	
Dec. 17	T	iPNEZ	22	52	18	d
Dec. 17	T	ipPZ			24	
Dec. 17	T	iSNE	23	01	38	
Dec. 17	T	iPNEZ	22	52	20	
Dec. 17	T	ipPZ			25	
Dec. 17	T	eSNE	23	01	40	
Dec. 17	T	eN			50	

Date	Sta	Phase	h	m	s	Remarks
Dec. 18	P	iPNEZ	00	31	22	Tu iP 00 32 09
Dec. 18	MW	iZ			36	
Dec. 18	MW	iZ			34	
Dec. 18	R	iPZ			31	
Dec. 18	R	iZ			38	
Dec. 18	Pr	iPZ			27	USSR: 50° N, 169°W
Dec. 18	Pr	iZ			42	BCIS: 58° N, 154°W
Dec. 18	Pr	iPNEZ			34	d O=00:24.7
Dec. 18	SB	eZ	01	08	00	
Dec. 18	H	iPZ	00	31	15	
Dec. 18	T	iPNEZ			10	
Dec. 18	P	iPNEZ	01	41	16	Tu iP 01 40 31 d
Dec. 18	MW	iPZ			16	
Dec. 18	R	iPZ			12	
Dec. 18	P	iPNEZ	02	04	10	c Tu eP 02 04 37
Dec. 18	PX	iNEZ			20	e 48
Dec. 18	MW	eLZ			32.6	
Dec. 18	MW	iPZ			04	10 c
Dec. 18	R	iZ			20	20 c
Dec. 18	R	iPZ			13	c
Dec. 18	Pr	iZ			23	c
Dec. 18	Pr	iPNEZ			15	c
Dec. 18	LJ	iZ			26	
Dec. 18	SB	eNZ			07	43
Dec. 18	H	iPNEZ			04	13
Dec. 18	H	iPZ			04	04
Dec. 18	H	ePZ			13	13
Dec. 18	T	eZ			24	24
Dec. 18	T	iPNEZ			15	15
Dec. 18	P	iZ			24	24
Dec. 18	P	iPNEZ	14	22	25	c Tu eP 14 23 43
Dec. 18	PX	iSNEZ			24	00 c
Dec. 18	MW	eLNEZ			11	51
Dec. 18	MW	iPNEZ			22	25 c
Dec. 18	R	iSNEZ			24	04 c
Dec. 18	R	iPNEZ			22	32 c
Dec. 18	Pr	iPNEZ			42	c Felt strongly (V) at Eureka, California
Dec. 18	SB	iSNEZ			24	35 c
Dec. 18	SB	ePZ			22	12
Dec. 18	H	iNEZ			17	PH A T
Dec. 18	H	iSNEZ			23	33 SH 3/4 1
Dec. 18	H	ePZ			22	10 LH 5 20
Dec. 18	T	iZ			15	15
Dec. 18	Pr	ePZ			07	Magnitude 5
Dec. 18	Pr	i(S)NEZ			22	23 51
Dec. 19	P	iPNEZ	22	05	14	Tu e 22 05 26
Dec. 19	P	eZ	01	02	32	Tu e 01 02 52
Dec. 19	MW	eZ			37	
Dec. 19	R	ePZ			03	40
Dec. 19	R	ePZ			02	38
Dec. 19	Pr	ePZ			38	USSR: 7.5°S, 128.5°E
Dec. 19	Pr	eZ			03	32 BCIS: 7.3°S, 127.5°E
Dec. 19	P	eZ			38	O=00:44:08
Dec. 19	P	ePZ	03	10	46	Deep Tu eP 03 11 13
Dec. 19	P	e((pP)Z			11	03 iPP 15 24
Dec. 19	PX	eZ			09	
Dec. 19	PX	iPPZ			14	37
Dec. 19	PX	iSKSNE			21	18
Dec. 19	PX	e(S)NE			22	00
Dec. 19	PX	eLZ			42.7	

(Continued)

Date	Sta	Phase	h	m	s	Remarks
(Continued)						
Dec. 19	MW	iPZ	03	10	46	
		iZ		11	10	
		iZ			18	USSR: 25° N, 125° E,
		iPPZ		14	39	h = 120 km.
	R	eSKSNE		21	19	
		ePZ		10	48	BCIS: 25° N, 123° E,
	Pr	ePPZ		14	45	O = 02:57:22, h = 100 km.
		iPZ		10	52	
		iZ		11	18	
		ePPN		14	53	PPZ 1/4 T 1
		iSKSNE		21	27	SKSH 3 5
	LJ	eZ		10	52	
	H	ePZ			40	
		eSKSNE		21	12	
	T	iPNEZ		10	39	
		ePPZ		14	27	
		iSKSN		21	09	
Dec. 20	Pr	ePZ	08	46	25	Tu iP 08 46 01
Dec. 20	P	iPZ	19	31	35	Tu iP 19 32 05 c
	PX	ePPZ		34	51	i 33 15
		eZ		40	00	e 52 55
		e(S)N		41	08	e 54 58
		iSN		42	06	eP:P 58 01
		eSSN		47	11	
		iGN		53	08	USCGS: 33.3° N, 134° E,
	P	eP:PZ		58	07	O = 19:19:00
	MW	iPZ		31	35	BCIS: 33.5° N, 136.0° E,
		eSNE		41	49	O = 19:19:05
		eP:PZ		58	11	
	R	iPZ		31	39	
		eP:PZ		58	06	
	Pr	iPNEZ		31	42	
	LJ	ePZ			41	PZ 50 T 12
		eSNE		42	06	PH 8 4
	SB	iPZ		31	30	PPZ 10 3
	H	iPZ			30	PPH 8 4
		eSNE		41	29	SH 250 20
		eP:PZ		58	25	LH 600 20
	T	iPZ		31	27	Magnitude 8.2
		eSNE		41	39	
Dec. 20	P	ePZ	22	58	34	Tu eP 22 59 02
	MW	ePZ			33	Aftershock
	R	ePZ			36	
	Pr	ePZ			40	
	T	ePZ			22	
Dec. 20	MW	eZ	23	41	51	Tu iP 23 40 47
	R	eZ			45	iS 42 35
	Pr	eZ			34	
Dec. 21	MW	iPZ	00	39	09	Tu iP 00 38 36
	R	iPZ			06	
	Pr	ePZ			02	
	T	iPZ			22	
Dec. 21	Pr	iPZ	03	21	08	Tu iP 03 20 26
Dec. 21	P	ePZ	03	50	28	Tu eP 03 51 03
		iZ			43	i 18
	PX	eLZ	04	15	06	
	R	ePZ	03	50	32	
	Pr	iPZ			36	
		iZ			52	USSR: 41.5° N, 148.5° E.
	SB	ePZ			19	
	H	ePZ			21	
	T	ePZ			16	

Date	Sta	Phase	h	m	s	Remarks
Dec. 21	P	iPNEZ	04	25	27	
	Pr	iPZ			33	
	H	ePZ			10	
	T	ePZ		24	59	
Dec. 21	P	ePZ	04	56	16	Tu iP 04 55 23
	Pr	iPZ			18	
	T	ePZ			31	
Dec. 21	P	ePZ	05	24	34	Tu iP 05 24 57
	R	ePZ			37	
	Pr	iPNEZ			37	
	H	ePZ			38	
	T	ePZ			39	
Dec. 21	P	ePZ	07	39	42	
	R	ePZ			45	
		iZ			51	
	Pr	iPZ			49	
	H	ePZ			36	
	T	ePZ			35	
Dec. 21	R	ePZ	07	52	35	
	Pr	ePZ			36	
Dec. 21	P	ePZ	10	22	50	Tu iP 10 23 26
		eZ		23	02	
	R	ePZ		22	56	
	Pr	ePZ			59	
	SB	ePZ			44	
	H	ePZ			44	
	T	ePZ			39	
Dec. 21	P	ePEZ	10	29	55	Tu iP 10 30 32
		ipPZ		30	09	i 44
		isPZ			15	
	PX	eSNEZ		38	54	USCGS: 44° N, 148° E, O = 10:18.8
		iSNE		39	01	BCIS: 43° N, 148.3° E, O = 10:18.41
		eLN		46	08	USSR: 41.5° N, 145.0° E.
	MW	ePNE		29	57	
		eSNE		39	05	
	R	iPZ		30	01	PZ 8 T 15
		iZ			13	SH 15 14
		iZ		22		LH 130 20
	Pr	iPNEZ			04	Magnitude 7
		ipPZ			18	
		isPZ			24	Small aftershocks recorded
		eSE		39	17	with P at Palomar as follows:
		eSN			21	10:49:58, 10:57:56, 11:02:45,
	LJ	ePNEZ		30	05	12:18:56, 12:50:43, 12:55:33,
		eSE		39	12	13:07:31, 13:33:46
	SB	iPZ		29	50	
		eSNE		38	49	
	H	ePNEZ		29	50	
		eSNE		38	50	
	T	iPNEZ		29	45	
		iZ		30	03	
		iZ			12	
Dec. 21	P	ePZ	14	24	11	Tu eP 14 23 35
	R	ePZ			09	
	Pr	iPZ			01	
	T	ePZ			37	
Dec. 21	Pr	iPZ	15	00	26	Tu eP 14 59 42

Date	Sta.	Phase	h	m	s	Remarks
Dec. 21	P	iPZ	19	59	51	Tu iP 20 00 28
	PX	iSNE	20	09	00	
		eLZ		16	8	
	P	iP:P:Z		27	59	
	MW	ePNE	19	59	52	BCIS: 43 4° N, 148.3° E.
		eSNE	20	09	01	O=19:48:37
	R	iPZ	19	59	55	USSR: 47 0° N, 152.5° E.
		iSNE	20	09	25	
		iP:P:Z		27	57	A T
	Pr	iPNEZ		00	00	PH 1 3
		iSNEZ		09	16	SH 2 5
		iP:P:Z		27	56	
	LJ	ePZ		00	02	
		eSNE		09	16	Magnitude 6 3/4
	SB	iPZ	19	59	47	
		eP:P:Z	20	28	06	
	H	iPNEZ	19	59	44	
		eSNE	20	08	47	
	T	iPZ	19	59	41	
		eSNE	20	08	43	
		eP:P:Z		27	59	
Dec. 21	P	ePZ	20	05	15	
	R	iPZ			18	
	T	ePZ			05	
Dec. 21	P	ePZ	20	15	57	Tu iP 20 16 36
	R	iPZ		16	03	
	H	ePZ		15	53	
Dec. 21	P	iPZ	20	31	38	Tu iP 20 32 15
	R	iPZ			42	
	Pr	iPNEZ			47	
		iP:P:Z		59	41	
	LJ	ePNEZ		31	48	
	SB	iPZ			24	
	H	ePNEZ			32	
	T	iPZ			28	
Dec. 21	P	iPNEZ	23	23	25	d Deep? Tu iP 23 23 48 d
	MW	ePNE			26	
	R	iPNEZ			28	d
		eZ		26	34	
	Pr	iPNEZ		23	28	d
		iZ			49	
		iZ		25	00	Southwest Pacific
		iZ		26	36	
	LJ	iPNEZ		23	26	
	SB	iPZ			21	
	H	iPZ			32	d
	T	iPNEZ			35	d
Dec. 22	P	ePZ	02	37	43	d Deep Tu iP 02 38 02
		ePZ		38	01	ipP 20
	R	iPZ		37	45	
		ipPZ		38	03	
	Pr	iPNEZ		37	45	
		iZ			58	
		iZ		38	04	
	SB	iPZ		37	40	
	H	ePZ			49	
	T	iPZ			53	
		iZ		38	01	

Date	Sta	Phase	h	m	s	Remarks
Dec. 22	P	ePZ	03	07	34	Tu eP 03 08 09
	R	ePZ			35	
	Pr	ePZ			41	
	H	ePZ			24	
	T	iPZ			23	
Dec. 22	P	ePZ	13	35	37	Tu e 13 40 15
	MW	ePZ			37	
	R	iPZ			41	
	H	ePZ			25	
	T	ePZ			23	
Dec. 23	R	iPZ	01	27	25	Tu iP 01 27 58
	H	iPZ			12	
Dec. 23	P	iPZ	16	47	51	Tu iP 16 47 17
	R	iPZ			48	c
	T	iPZ		48	01	
Dec. 24	P	ePZ	01	39	59	Felt at San Jose, California
	H	ePZ			48	
		iSZ		40	34	
	T	ePZ		39	40	
		iSNEZ		40	18	
Dec. 24	P	ePZ	04	13	24	Tu e 04 18 03
		eZ			33	
	PX	eLZ		45	6	
	MW	ePZ		13	23	
	R	ePZ			28	
	Pr	ePZ			30	
		iZ			39	USSR: 2 0° S, 150.5° E
	H	ePZ			27	
	T	ePZ			30	
Dec. 24	P	ePZ	09	47	46	Tu eP 09 48 16
	MW	ePZ			45	
	R	ePZ			50	USSR: 32.5° N, 136° E.
	Pr	ePZ			53	
	T	ePZ			38	
Dec. 24	R	ePZ	15	13	01	Tu iP 15 13 38
	Pr	iPZ			03	i 49
		iZ			13	
	H	ePZ		12	41	
		eZ			53	
		iPZ			34	
Dec. 24	P	e(P)Z	16	48	32	Tu iP 16 49 08
	PX	eLZ	17	10	8	i 26
	Pr	eZ	16	48	48	
	H	eZ			34	
	T	e(P)Z			21	USSR: 40° N 147.5 E
		iZ			36	
Dec. 25	P	iPNEZ	06	21	24	Tu iP 06 22 10 d
	MW	iPZ			23	d
	R	iPZ			28	d
	Pr	iPNEZ			35	d
	LJ	ePZ			35	
	H	ePZ			15	
	T	iPNEZ			06	
Dec. 25	P	iPZ	10	27	13	Tu iP 10 26 39
	MW	iPZ			12	
	R	iPZ			10	
	Pr	iPZ			06	
	T	iPZ			23	

Date	Sta	Phase	h	m	s	Remarks
Dec. 25	P	iPNEZ	11	21	39	Tu iP 11 22 23 c
		iNEZ			44	
		iZ		22	01	
	MW	iSNEZ		28	30	
		iPNEZ		21	38	c
		iZ		23	27	
	R	iSNEZ		28	28	
		iPZ		21	44	c
		iZ			48	
	Pr	eSE		28	40	
		iPNEZ		21	49	c
		iZ		22	09	
	LJ	iSNEZ		28	50	
		iPNEZ		21	49	
	SB	eSNE		28	49	
	H	iPZ		21	30	
		ePZ		21	32	
	T	eSNE		28	44	
		iPNZ		21	34	
		iZ		23	03	
		iZ		26	53	
Dec. 26	P	eSNEZ		28	04	
	MW	iPZ	00	08	41	Tu iP 00 09 13
	R	iPZ			40	
	Pr	iPZ			44	
	H	iPZ			47	
	T	iPZ			39	
Dec. 26	R	iPEZ	04	00	38	Tu iP 03 59 41
	Pr	ePZ			47	
Dec. 26	P	iPZ	17	09	25	Tu eP 17 09 38
		iZ			37	
	PX	eLZ		52	8	USSR: 9° S, 121° E
	R	ePZ		09	25	
	Pr	iPZ			29	
	H	ePZ			26	
	T	ePZ			25	
		eZ			43	
		eZ		10	57	
Dec. 26	P	iPNEZ	19	45	39	Tu iP 19 44 53 c
		iZ			47	
		iZ			52	
	MW	iPZ			40	c
		iZ			49	
	R	iPZ			35	c
		iZ			44	
		iZ			48	
	Pr	iPNEZ			29	c
		iZ			38	
	LJ	ePNZ			28	
	H	iPZ			45	
	T	iPZ			52	
Dec 1 28	P	iPNEZ	01	06	30	Tu iP 01 05 38 c
	PX	eLZ		24	37	
	MW	iPNEZ		06	29	
	R	iPZ			25	c
	Pr	iPEZ			21	
		iNZ			29	
	SB	iPZ			39	
	H	ePZ			32	
	T	iPNEZ			34	c
		iZ			40	
		eSN		13	21	

Date	Sta	Phase	h	m	s	Remarks
Dec. 28	P	ePZ	10	20	30	Tu iP 10 21 05
	PX	eLZ		41	5	
	MW	ePZ		20	30	USSR: 39° N 146° E
	R	ePZ			33	
	Pr	iPZ			38	
	H	iPZ			39	
Dec. 29	P	ePZ	04	26	37	Tu iP 04 27 09
	MW	ePZ			36	
	R	ePZ			40	
	Pr	iPNZ			45	
	SB	iPZ			31	
	H	ePZ			31	
	T	iPZ			28	
Dec. 30	P	ePZ	04	22	06	Tu iP 04 21 35 c
	MW	iPZ			06	
	R	ePZ			02	
	Pr	iPNEZ			01	
	H	ePZ			00	
Dec. 30	P	iPZ	11	21	05	Tu iP 11 20 11
		eZ		23	51	
	Pr	iPNEZ		20	54	c
Dec. 31	P	iPNEZ	23	08	43	Deep Tu iP 23 08 09
		ePZ		09	11	
	MW	iPZ		08	45	South America?
		ipPZ		09	15	
	R	iPZ		08	39	d
		iZ			57	
		ipPZ		09	07	
	H	ePZ		08	51	
	T	iPNEZ			57	d
		iZ		09	11	
		ipPZ			22	

C. F. Richter
July 10, 1947

Appendix

Larger shocks of 1946

Epicenters, origin, times, depths and magnitudes revised by B.

				Lat.	Long.			Depth	Gutenberg Magnitude
Jan.	5	19	57	20	16 S		167 E	50 km	7.3
Jan.	11	01	33	29	44 N		129 1/2 E	580 km	7.2
Jan.	12	20	25	37	59 1/4 N	S	147 1/4 W	normal	7.2
Jan.	17	09	39	35	7 1/2 S		147 1/2 E	100 km	7.2
Jan.	20	16	54	21	17 1/2 S	S	167 1/2 E	normal	7.0
Apr.	1	12	28	54	52 3/4 N		163 1/2 W	normal	7.4
Apr.	11	01	52	20	1 S		14 1/2 W	normal	7.2
May	3	22	23	40	5 S		153 E	normal	7.4
May	8	05	20	22	O		99 1/2 E	normal	7.1
June	23	17	13	22	49 3/4 N		124 1/2 W	normal	7.3
July	9	13	13	50	19 S		169 E	170 km	7
July	11	04	46	42	17 N		94 1/2 W	130 km	7
Aug.	2	19	18	48	26 1/2 S		70 1/2 W	50 km	7 1/2
Aug.	4	17	51	05	19 1/4 N		69 W	normal	8.1
Aug.	8	13	28	28	19 1/2 N		69 1/2 W	normal	7.6
Aug.	21	18	00	18	24 S		177 W	100 km	7
Aug.	28	22	28	15	26 S		63 W	580 km	7.2
Sep.	12	15	17	15	23 1/2 N		96 E	normal	7 1/2
Sep.	12	15	20	20	23 1/2 N		96 E	normal	7 3/4
Sep.	23	23	30	00	6 S		145 E	100 km?	7.2
Sep.	26	10	53	15	25 S		179 E	600 km	7
Sep.	29	03	01	55	4 1/2 S	S	153 1/2 E	normal	7 3/4
Sep.	30	00	59	40	13 S		76 W	70 km	7
Oct.	4	14	45	26	18 3/4 N		68 1/2 W	50 km	7
Nov.	1	11	14	24	51 1/2 N	N	174 1/2 W	40 km	7.0
Nov.	2	18	28	25	41 1/2 N	N	72 1/2 E	normal	7.6
Nov.	4	21	47	47	39 3/4 N	N	54 1/2 E	normal	7.5
Nov.	10	17	42	53	8 1/2 S	S	77 1/2 W	normal	7 1/4
Nov.	12	17	28	41	20 S		173 1/2 W	normal	7 1/2
Dec.	20	19	19	05	32 1/2 N		134 1/2 E	normal	8.2
Dec.	21	10	18	49	44 N		149 E	normal	7.2