CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA

SEISMOLOGICAL LABORATORY BULLETIN

1957

(Pasadena and Auxiliary Stations)

California Institute of Technology

Seismological Laboratory

Bulletin

1939 – 1957

STATIONS, 1957

Station	Lat. N.	Long. W.	h	Symbol	Ground
Pasadena	34° 08.9'	118° 10.3'	295m	P, PX	Granitic rock
Mt. Wilson	34 13.4	118 03.5	1730	MW	Granitic rock
Riverside	33 59.6	117 22.5	260	R	Granitic rock
Palomar	33 21.2	116 51.7	1690	Pr	Granitic rock
Barrett	32 40.8	116 40.3	520	Bt	Granitic rock
Santa Barbara	34 26.5	119 42.8	90	SB	Alluvial with boulders
Woody	35 42.0	118 50.8	490	W	Granitic rock
Isabella	35 38.6	118 28.6	760	Is	Granitic rock
China Lake	35 49.0	117 35.8	766	CL	Granitic with intrusions
Haiwee	36 08.2	117 56.8	1150	H	Tuff
Tinemaha	37 03.3	118 13.7	1195	T	Basalt
Big Bear	34 14.3	116 54.8	2060	BB	
Dalton	34 10.2	117 48.6	523	D	Granitic rock
Fort Tejon	34 52.4	118 53.6	990	FT	
King Ranch	35 19.6	119 44.7	680	Kg	
Palos Verdes	33 45.5	118 21.4	340	PV	Miocene shales
Hayfield	33 42.4	115 38.2	440	Hf	
El Centro	32 47.9	115 32.9	-15	EC	Alluvium

All measurement and interpretation of seismograms is done at the central station, to which all communications should be addressed, as follows: Seismological Laboratory, 220 North San Rafael Avenue, Pasadena 2, California.

Components are indicated as N, E, Z; where no such letter appears the reading is for Z alone.

Instruments for 1957 were as follows:

Short-period Benioff Z	All stations except Hf and EC
Short-period Wood-Anderson N, E	P, R, SB, H, T
Short-period Wood-Anderson, one component	Bt, W, Is
Short-period Benioff N, E	P, Pr, Bt; Hf N only
Long-period Benioff N, E, Z	P, R, Bt, T; PV Z only
Strong-motion (low magnification) N, E, Z	P, R, SB, Is, H, EC
Other special and experimental instruments	P, Pr

PX = long-period instruments, Pasadena. c = compression, d = dilatation. When surface waves are not reported for Pasadena they are not found or are small. A and T are maximum amplitude (microns) and period (seconds) for the indicated phases and components, where H = combined N and E.

Starting with 1957 all longitudinal waves through the core are indicated by P'. The symbol P" is no longer used.

All times are G.C.T. Times are not reported for SB, H, BB, FT, PV or EC unless of special interest, or when other readings are defective. Times are normally given for only one of P, MW, D.

Earthquakes in Southern California are reported only if of magnitude 5 or over, unless of special interest.

Magnitudes for local earthquakes, and magnitudes given for teleseisms without designation or lettered M, are on the previous system; magnitudes lettered m are on Professor Gutenberg's scale. For large magnitudes approximately M-m = 0.37 (M - 6.76).

Pasadena and auxiliary stations, 1957 January 1 - March 15 No. 1

Date	Sta.	Phase	h	m	s
January					
1	P	iPNEZ	01	06	32c
		i		07	07
	R	iP		06	35c
	Hf	iPN			43
		iN		07	23
	Pr	iP		06	40c
		i		07	16
	Bt	iP		06	45c
		e		07	20
		i		09	02
	Kg	iP		06	20c
		ipP			45
	W	iP!			21c
		ipP!			46
		i			57
		i		08	29
		e		11	02
	Is	iP		06	22c
		ipP			45
		i			58
		i		08	31
	CL	iP		06	26c
		ipP			51
		e		08	36
	T	iP		06	26c
		ipP			55
		i		07	01
	USCGS: $53\frac{1}{2}$ N 159 E				
	00:56:40, 150 km				
1	P	eP	03	32	34
		i			53
	R	eP			36
	Hf	ePN			49
	Pr	eP			36
		ipP			45
	Bt	eP			41
		epP			51
	W	iP			12c
		ipP			21
	Is	eP			10
		epP			22
	CL	eP			19
		epP			29
	USCGS: $54\frac{1}{2}$ N 164 W				
	03:25:05				
1	R	e	06	20	38
	Pr	e			31
	Bt	e			30
	W	e			58
	Is	e			55
	Mexico				
1	R	eP	06	25	07
	Pr	iP			07c
	Bt	eP			06
	W	iP			08c
	Is	iP			08c
1	P	iP	10	58	21c
	R	eP			24
	Hf	ePN			29
	Pr	iP			23c
	Bt	iP			22c
	W	iP!			23c
	Is	iP			23c
	CL	iP			27c
	South Pacific?				
January					
1	Pr	eP	12	49	27
	Bt	eP			31
	W	iP			28
		i			49
	Is	eP			28
	CL	eP			33
		e			40
2	P	eP	00	47	00
	PX	iSNE		53	05
		eGNE		56.1	
			A		T
		PZ	1		2
		PH	$1\frac{1}{2}$		4
		SH	6		8
		MH	70		18
	R	eP	00	47	05
		i			12
		iSE		53	16
	Hf	ePN		47	18
		iN			33
	Pr	iP			10
		i			16
		i			25
	Bt	iP			16
		i			23
		iSNE		53	36
	Kg	eP		46	46
		i			55
	W	iP!			48
		eS		52	44
	Is	iP		46	49
	CL	eP			55
	T	ePNZ			45
		eSN		52	44
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$				
	USCGS: 53 N $168\frac{1}{2}$ W				
	00:39:22				
	The first of a numerous swarm of shocks. The smaller of these, recorded only at a few stations, are here omitted.				
2	P	eP	02	23	15
	R	eP			19
	Pr	eP			25
	Bt	eP			23
	Kg	eP			00
	W	iP		22	58c
		i		23	02
	Is	iP		22	57
		i		23	04
	CL	e			08
	T	eP		22	54
	BCIS: Fox Islands				
	02:15:30				
2	P	eP	02	25	13
	PX	iSE		31	18
		iGN		34.4	
			A		T
		PZ	$3\frac{1}{2}$		4
		PH	2		4
		SH	8		8
		MH	110		18
	R	eP	02	25	18
		i			26
		eSE		31	30

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
2	Hf	ePN	02	25	30
		iN			42
	Pr	iP			25
		i			36
		i			55
	Bt	eP			29
		i			40
	Kg	eP		24	59
		i		25	10
	W	iP!			02
	Is	eP			04
		e			13
	CL	eP			08
		i			17
	T	eP		24	58
		i		25	14
	Magnitude $6\frac{3}{4}$				
	USCGS: $52\frac{1}{2}$ N 168 W				
	02:17:35				
2	P	eP	03	20	29c
			A		T
		PH	$2\frac{1}{2}$		3
		MH	180		18
	R	eP	03	20	34c
		i			44
		i		21	02
	Hf	ePN		20	45
		iN			53
		iN		21	18
	Pr	iP		20	40c
		i			47
		i		21	08
	Bt	iP		20	40c
		i			52
	Kg	eP			15c
		i			22
	W	iP			15c
		i!			18c
	Is	iP			17c
		i!			25c
	CL	eP			23c
	T	iPNEZ			14c
		i			23
	Magnitude $6\frac{3}{4}$				
	USCGS: 53 N 168 W				
	03:12:52				
2	P	iP	03	38	09c
	R	iP			15c
	Hf	iPN			25
	Pr	iP			21c
	Bt	iP			26c
	Kg	iP		37	56c
	W	iP			59c
	Is	iP			59c
	CL	iP		38	03c
	T	iP		37	54c
	USCGS: $52\frac{1}{2}$ N $168\frac{1}{2}$ W				
	03:30:34				
2	P	iP	03	48	44
		i			58
	R	iP			50
	Hf	ePN		49	01

Date	Sta.	Phase	h	m	s
January		(continued)			
2	Pr	iP	03	48	56
		i		49	10
	Bt	iP			01
		i			15
	Kg	iP		48	31
		i			44
	W	iP!			33
	Is	iP			34
		i			46
	CL	iP			38
		i			52
	T	iP			30
		i			44
		i			52
	USCGS: $52\frac{1}{2}$ N $168\frac{1}{2}$ W				
	03:41:08				
	A smaller shock precedes this by about 12 seconds.				
2	P	eP	03	56	22
		i			26
	PX	eSN	04	02	43
			A		T
		PH	3		$2\frac{1}{2}$
		MH	220		18
	R	iP	03	56	27c
		i			39
		iSE	04	02	53
	Hf	iPN	03	56	39
	Pr	iP			34
		i			37
	Bt	eP			40
		i			43c
		i			52
	Kg	eP			08
		i			11c
	W	iP!			12c
	Is	iP			10
		i!			14c
	CL	iP			19
	T	iPNEZ			08
		i!			11c
	Pasadena: $52\frac{1}{2}$ N 168 W				
	03:48:47				
	Magnitude: m=6.9 (M=7.0)				
	USCGS: 53 N 168 W				
	03:48:44				
2	P	e(P)	04	08	15
		e			23
	R	e(P)			19
	Pr	e(P)			26
	Kg	e(P)			01
	W	i(P)			03
	Is	i(P)			06
	CL	e(P)			09
	BCIS: Fox Islands				
	04:00:38				
2	P	iP	04	11	08
	R	eP			14
	Hf	ePN			27
	Pr	eP			18
		i			21
	Bt	iP			22

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
2	Kg	eP	04	10	55
	W	iP			56
	Is	iP			57
	CL	eP		11	04
	T	iP		10	52
	USCGS: $52\frac{1}{2}$ N 169 W				
	04:03:26				
2	P	iPNEZ	10	57	07
	PX	iSE	11	03	14
		eG			06.3
			A		T
		PZ	1		3
		PH	1		3
		SH	7		14
		MH	35		18
	R	eP	10	57	13
		i			18
	Hf	ePN			24
		iN			28
	Pr	iP			19c
		i			24
		i			41
	Bt	iP			24
		i			28
		iSE	11	03	42
	Kg	eP	10	56	54
		i			59
	W	iP!			56
	Is	iP			57c
		i		57	02
	CL	eP			02
		i			07
	T	iPNEZ		56	51c
		i			57
		iSE	11	02	46
	Magnitude $6\frac{1}{2}$				
	USCGS: $52\frac{1}{2}$ N 168 W				
	10:49:32				
2	P	eP	12	54	43
		i			49
	R	eP			48
	Hf	ePN		55	04
	Pr	iP		54	55
		i		55	00
		i			10
	Bt	eP		54	59
		i		55	05
		i			14
	Kg	eP		54	29
		e			35
	W	iP			31
	Is	iP			32
	CL	eP			36
		i			43
	T	eP			27
		i			34
		i			43
	USCGS: 53 N 168 W				
	12:47:07				
2	P	e	14	24	13
	R	e			20
	Pr	e			20
	Bt	e			24

Date	Sta.	Phase	h	m	s
January		(continued)			
2	W	iP	14	23	57
		i		24	07
	Is	iP		23	57
	USCGS: $52\frac{1}{2}$ N $168\frac{1}{2}$ W				
	14:16:32				
2	P	eP	17	59	32
		i			44
		i			49
	PX	eGN	18		08.7
	R	eP	17	59	39
	Hf	ePN			56
	Pr	iP			44
	Bt	eP			49
	Kg	eP			18
		e			30
	W	iP			20
	Is	iP			21
	CL	e			29
	USCGS: 53 N 168 W				
	17:51:56				
2	P	eP	20	42	03
	R	eP			06
	Pr	iP			04
	W	iP			05c
	Is	iP			06
2	D	e	21	11	27
	Pr	eP			23
		epP			35
	Bt	e			28
	W	iP			00
		ipP			12
	Is	iP			02
		ipP			13
3	P	ePNEZ	00	48	38
		i			50
		e		50	47
	PX	iSN		55	00
		iGN			57.6
		eRZ			59.5
	R	ePEZ		48	42
		i			55
		iE		49	08
		e		50	58
	Hf	ePN		48	54
		iN		49	08
	Pr	iP		48	49d
		i		49	02
	Bt	eP		48	53
		i		49	05
	Kg	eP		48	25d
		i			37
	W	iP			25d
	Is	iP			28d
		i			40
	T	iPNEZ			23d
		i			37
	USCGS: 53 N 168 W				
	00:41:02				
3	P	eP	02	30	00
	R	e			09
	Pr	eP		29	55
		e		30	06
	Bt	e			07

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
3	W	iP	02	30	03
		i			11
	Is	eP			02
	T	eP			13
	USCGS: Fiji Islands				
	02:18:03				
3	P	eP	02	53	15
		epP			44
	R	iP			13
		ipP			41
	Hf	ePN			01
		epPN			34
	Pr	eP			07
		epP			36
	Bt	iP			04
		ipP			33
	Kg	eP			27
		epP			56
	W	iP			24
		ipP			53
	Is	iP			22
		ipP			51
	T	eP			28
		epP			57
	USCGS: 20 S 69 W				
	02:42:00, 100 km				
3	Bt	e	09	05	34
	Is	iP			17
	T	eP			18
	JMA: 37°05' N 141° E				
	08:53:30, 80 km				
3	P	iPNEZ!	12	59	42c
		ipP	13	01	46
		isP		02	41
		iPP		03	02
	PX	iSNEZ!		09	00
		isSN		12	36
		iN		13.0	
		iN		15.3	
		iGN		22.0	
	P	iSKPP'		28	44
			A		T
		PZ	12		4
		PH	4		4
		PPH	1		1½
		SH	15		6
	R	iPNEZ!	12	59	45c
		i	13	00	03
		ipP		01	56
		iPP		03	02
		iSE		09	06
		eP'P'		25	49
		eSKPP'		28	37
		e			52
	Hf	iPN!	12	59	51
		eSN	13	09	14
		eSKPP'N		28	43
	Pr	iP!	12	59	48c
		i	13	00	11
		ipP		01	55
		iPP		03	04
		iS		09	17
		iSKPP'		28	42
		i			51

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
3	Bt	iPNZ!	12	59	51c
		i	13	00	22
		ipP		01	56
		isP		02	58
		iPP		03	15
		iSNEZ		09	20
		isSNE		12	56
		eSKPP'		28	39
		e			49
	Kg	iP!	12	59	35c
		ipP	13	01	38
		isP		02	38
		iPP			49
		eS		08	43
		eSKPP'		28	35
	Is	iP!	12	59	34c
		ipP	13	01	38
		ePP		02	45
		eS		08	46
		eP'P'		25	07
		eSKPP'		28	33
	Pasadena: 44 N 130½ E				
	12:48:27, 590 km				
	Magnitude m = 6.9, M = 7.0				
	JMA: 43½ N 131½ E				
	12:48:35, 600 km				
3	P	iPNEZ	13	54	44c
		epP		56	48
		esP		58	04
		eSKPP'	14	24	10
	R	iP	13	54	48c
		eSKPP'	14	24	08
	Hf	iPN	13	54	54
	Pr	iP			51c
		esP		58	07
		eSKPP'	14	24	03
	Bt	iP	13	54	55c
		e		56	14
		epP			59
		esP		58	14
		eSKPP'	14	24	00
	Kg	iP	13	54	37c
		epP		56	40
		esP		57	52
	Is	iP		54	37c
		epP		56	42
		esP		57	48
		iSKPP'	14	24	17
	USCGS: 44 N 130 E				
	13:43:29, 600 km				
4	P	iP	12	44	38
		ipP			54
	R	eP			35
		ipP			49
	Hf	ePN			36
	Pr	eP			27
		ipP			43
	Bt	eP			22
		epP			38
	Kg	eP			51
		epP		45	06
	W	i		44	50
		ipP		45	02

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
4	Ts	eP	12	44	46
		ipP		45	00
	USCGS: 7 N 78 W				
	12:36:10				
4	D	eP	13	50	51
		epP		51	13
	R	iP		50	52
		ipP		51	15
	Pr	iP		50	54
		ipP		51	17
	Bt	eP		50	53
		epP		51	17
	W	iP		50	49
		ipP		51	12
	Is	eP		50	48
		epP		51	12
	USCGS: Solomon Islands				
	13:38:00, 100 km				
5	W	iP	01	24	13
		ipP			22
	USCGS: 44½ N 149½ E				
	01:12:16				
5	W	iP	12	44	23
	T	iP			12
	USCGS: Andreanof Islands				
	12:36:14				
5	R	eP	17	22	42
	Hf	ePN			52
	Pr	iP			50
	Bt	iP			54
	Kg	eP			25
	W	iP!			24
		i			30
	T	iP			23
	USCGS: 54 N 165 W				
	17:15:15				
6	MW	i	01	50	38
	W	iP			12
		ipP			37
	T	eP			12
	USCGS: 26 N 126 E				
	01:36:58				
6	W	iP	05	26	29
		ipP			48
	T	eP			32
		epP			49
	JMA: 41.9 N 142.1 E				
	05:15:03, 100 km				
6	P	iP	20	55	14
	R	iP			10
	Pr	iP			08
	Bt	iP			07
	Kg	eP			15
		e			27
	W	iP			18
7	MW	e(P)	02	35	16
		e			37
	R	e(P)			14
		e			20
	W	eP			04
		i			14
	T	eP			05
	BCIS: 47 N 153 E				
	02:24:31				

Date	Sta.	Phase	h	m	s
January					
7	MW	eP	05	32	16
	Pr	iP			27
	W	iP			04
	T	eP		31	59
7	P	eP	19	05	18
	Bt	eP			11
	W	iP			16
	CL	eP			19
	T	eP			17
8	P	eP'	01	39	44
		ePP		41	22
	R	eP'		39	44
	W	eP'			34
		ePP		41	38
		e		42	02
		e			56
	USCGS: Sumatra foreshock				
	01:20:15				
8	P	eP'	05	41	45
		ePP		44	16
	R	eP'		41	54
		ePP		44	18
	W	eP'		41	42
		ePP		43	57
		e		45	04
	CL	eP'		41	43
	T	eP'			25
		e		42	36
		e		45	06
	USCGS: 2 S 99 E				
	05:22:26				
8	P	iP	10	23	22
		epP		24	01
	R	eP		23	23
		epP		24	03
	Pr	iP		23	23
		ipP		24	03
	Bt	eP		23	20
	Kg	epP		24	04
	W	iP		23	23
		ipP		24	03
	CL	eP		23	29
		epP		24	09
	T	eP		23	35
		epP		24	15
	BCIS: Tonga region				
	10:11.4, 150 km				
8	P	eP	17	37	13
		i			24
		i			30
	R	eP			18
		i			35
	Hf	ePN			34
	Pr	eP			26
		i			32
	Bt	eP			30
		e			36
		e			46
	Kg	eP			00
		e			12
	W	iP			01
		i			11
	CL	e			11

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
8	T	eP	17	36	59
		i		37	16
	USCGS: 52½ N 168 W				
	17:29:36				
8	MW	eP	18	11	53
	Bt	eP			57
	W	iP			41
		i			51
	CL	e			58
	T	eP			48
8	MW	eP	20	22	22
	R	eP			28
		e			43
	Bt	e			53
	W	iP			08
		i			18
	CL	eP			05
	T	eP			05
	BCIS: Fox Islands,				
	Aleutian Islands				
	20:14:46				
8	P	e	20	45	23
	R	e			16
	Hf	eN			07
	Bt	e			03
	Kg	e			41
	W	e			41
	CL	e			35
	T	e			50
9	P	iP	01	48	07
	R	eP			11
	Hf	ePN			22
	Pr	iP			17
	Bt	iP			21
	Kg	eP		47	54
	W	iP			55c
		i			59
	CL	eP		48	02
	T	eP		47	53
	USCGS: 54 N 169 E				
	01:38:50				
9	P	eP	06	29	11
	R	eP			14
	Bt	e			20
	W	iP			09
	CL	e			23
	T	e			22
	USCGS: New Britain				
	06:15:37				
9	P	iPNEZ	08	00	29d
		i			41
		e		03	21
	PX	iSNE		06	31
		eGNE			09.5
		iRZ			22.3
			A		T
		PZ	¼		2
		PH	¼		1½
		SH	10		19
		MH	20		17
	R	iP	08	00	34d
		i			46
		iSE		06	41

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
9	Hf	ePN	08	00	44
		iN			55
	Pr	iP			39d
		i			51
	Bt	iPNZ			45d
		i			57
		eSNZ		07	02
	Kg	iP		00	14d
		i			26
	W	iP!			16d
	CL	iP			23d
		i			35
	T	iP			14d
		i			25
		eSZ		06	28
	Magnitude 6½				
	USCGS: 53 N 167½ W				
	07:52:56				
9	P	eP	09	31	49
	Pr	eP			56
	W	eP			59
	T	eP		32	08
	USCGS: 5 N 83 W				
	09:23:40				
9	P	eP	10	39	53
	R	eP			56
	Hf	ePN			59
	Bt	eP		40	03
		e			15
	W	iP!		39	45
		i			55
	CL	e			57
	JMA: 35.4 N 141.5 E				
	10:27:47, 40 km				
10	P	e	06	14	15
	R	e			19
	Pr	i			20
	W	iP			14
		i			18
	CL	e			19
	T	e			19
	USCGS: 14 S 175½ W				
	06:02:33				
10	P	e	08	22	41
	R	e			46
	Kg	e			41
	CL	e			45
	BCIS: Samoa region				
	08:11.0				
10	P	iPNEZ	13	59	16d
		i			36
	R	iP			13d
		ipP			33
	Hf	ePN			05
	Bt	iP			04d
		e			19
		ipP			24
	Kg	iP			25
		ipP			46
		e	14	00	15
	W	iP	13	59	24
		ipP			45

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
10	CL	iP	13	59	22
		ipP			42
	T	iP			27d
		ipP			48
	USCGS: Central Chile				
	13:47:26, 100 km				
11	P	iP	23	45	05
	R	iP			08
	Hf	ePN			15
	Pr	iP			12
	Bt	iP			15
	Kg	eP			02
	W	iP			01
		e		48	34
	Is	iP		45	01
	CL	iP			03
	T	iP		44	59
	USCGS: 27 N 127½ E				
	23:31:50				
12	MW	eP	12	21	15
	Pr	eP			23
	Bt	eP			24
	W	iP			08
		i			17
	Is	eP			09
	CL	eP			13
	USCGS: South of Honshu, Japan				
	12:09:00				
13	Is	iP	11	47	50
	USCGS: 38½ N 71 E				
	11:38:15				
13	W	iP	12	25	13
	USCGS: 16½ N 146½ E				
	12:12:37				
13	MW	iP	12	32	06
	R	iP			10
	Hf	iPN			18
	Bt	iP			16
	W	iP		31	58
		i		32	03
		i			12
	Is	iP			00
	CL	eP			04
	T	eP			00
	JMA: 33 N 142¾ E				
	12:20:05, 160 km				
13	P	e(P)	13	37	08
		iSN		38	16
	W	eP		36	33
		iS		37	23
	Is	eP		36	34
		iS		37	27
	H	i(P)		36	30
	T	iP			13
		iSEZ			45
	USCGS: 39½ N 118 W				
	19:35:33				
14	P	eP	00	41	27
	PX	eLZ	01	09.0	
	R	eP	00	41	30
	Hf	ePN			38
	Pr	iP			32
	Bt	eP			31
		e			40

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
14	Kg	iP	00	41	28
	W	iP			27
		i			47
	Is	eP			29
	CL	eP			33
	T	eP			35
	BCIS: 11 S 163 E				
	00:28:40				
14	P	iPNZ	05	47	07
	R	eP			04
		e			20
	Hf	ePN		46	55
	Pr	eP		47	00
		e			16
	Bt	eP		46	55
		e		47	04
	W	iP			16
	Is	iP			13
		i			23
	CL	iP			12
	T	iP			20
	USCGS: 20 S 69 W				
	05:36:03, 200 km				
14	P	iP	10	00	08
	R	eP			11
	Hf	ePN			18
	Pr	iP			11
	Bt	eP			09
	Kg	eP			09
	W	iP			10
		epP		02	12
	Is	iP		00	11
		epP		02	14
	CL	iP		00	15
		epP		02	19
	T	eP		00	17
	USCGS: 18½ S 178 W				
	09:49:10, 600 km				
14	R	eP	12	57	48
	W	eP			53
	Is	eP			53
	CL	eP			49
14	P	iPNEZ	14	31	35c
		epP		33	45
	PX	iSKSN		41	00
		isSN		44.7	
			A		T
		PZ	¾		1¼
	R	iP	14	31	37c
		epP		33	44
	Hf	ePN		31	42
		epPN		33	51
	Pr	iP		31	38c
		ipP		33	38
	Bt	iP		31	35c
		epP		33	50
	Kg	eP		31	34
		epP		33	50
	W	iP		31	36c
		i		32	48
		ipP		33	45
	Is	iP		31	38c
		ipP		33	46

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
14	CL	iP	14	31	43c
		epP		33	53
	T	iP		31	43c
		epP		33	53
	USCGS: 22 S 179 W				
	14:20:17, 600 km				
14	MW	eP	20	34	27
	Bt	eP			13
	W	eP			31
	Is	eP			31
	CL	eP			29
	T	eP			37
14	MW	e	23	06	09
	R	e(P)		04	57
		e		06	11
	Pr	e			12
	Bt	e(P)		04	53
	W	e(P)		05	15
		e			54
		i		06	09
	CL	e(P)		05	20
		e		06	00
		i			17
	BCIS: South Pacific				
	Data insufficient. See				
	also next entry.				
14	MW	eP	23	09	42
	R	eP			44
	Pr	eP			43
	W	iP			43
	CL	eP			50
	Part of preceding?				
15	P	iP	04	18	26
		epP			39
		isP			49
	PX	eSN		26	03
		iGN		32.8	
	R	eP		18	23
		epP			37
		isP			44
	Hf	ePN			15
		epPN			28
	Pr	iP			18
	Bt	iP			13
		ipP			28
	Kg	e			42
	W	iP			37
		ipP			52
		i		19	14
	Is	iP		18	35
		i			39
		ipP			51
		i		19	12
	CL	eP		18	33
		ipP			47
	T	eP			40
		ipP			55
	USCGS: 2 S 76½ E				
	04:09:15, 100 km				
15	P	eP	09	07	18
	Hf	eN			27
	W	iP			05
		i			08
		i			16

Date	Sta.	Phase	h	m	s
January		(continued)			
15	Ts	iP	09	07	08
	CL	e			19
	BCIS: Fox Islands				
	Aleutian Islands				
	08:59:40				
15	R	eP	12	03	28
	Pr	iP			22
	Bt	eP			21
	Kg	eP			52
	W	iP			46
	Is	iP			45
	CL	eP			40
	T	eP			52
	USCGS: Michoacan, Mexico				
	11:58:40				
15	P	eP	14	37	28
	R	eP			21
	Pr	e			30
	Bt	e			42
	W	iP			29
	Is	iP			33
	CL	iP			36
15	W	eP	20	39	57
	USCGS: 6½ N 127 E				
	20:21:45, 100 km				
15	P	iP	21	47	39
	PX	eGN		54.8	
	R	eP		47	31
	Hf	ePN			26
	Pr	iP			28
	Bt	eP			30
		ePcP		50	05
	Kg	eP		47	53
	W	iP			49
		iPcP		50	01
		i			04
	Is	iP		47	46
		ePcP		50	02
	T	eP		47	51
		ePcP		50	04
	USCGS: 11 N 86½ W				
	21:40:26				
15	P	iP	23	06	18d
	R	iP			14d
	Pr	iP			12d
	Bt	iP			07d
	W	iP			26d
	Is	iP			25d
	CL	iP			23d
	T	iP			29d
	USCGS: Southern Catamarca				
	Province, Argentina				
	22:54:05				
16	P	eP'	12	04	06
	PX	eLN		28.0	
	Pr	eP'		04	02
	Bt	eP'		03	51
		e		04	15
	Kg	eP'		03	40
	W	iP'			44
	Is	iP'			51
	CL	eP'			36
	T	eP'			34
	BCIS: 10 S 67¾ E				
	11:43:27				

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January					
16	Pr	eP	19	35	28
	Kg	eP			30
	W	iP			26
	Is	iP			28
	CL	eP			25
16	P	iP	20	48	13d
		ipP			32
	Pr	iP			16d
		i			50
	Bt	eP			14
		epP			33
	Kg	eP			12
	W	iP			16d
		i			20
		ipP			36
	Is	iP			18d
		i			27
		ipP			38
	CL	iP			21d
		i			35
	T	iP			23d
	USCGS: Tonga region				
	20:36:07				
16	W	iP	22	30	50
		i			57
	Is	iP			51
		e			58
	CL	i		31	02
	T	iP		30	53
		i		31	00
17	P	iPNEZ!	22	38	35c
	R	iP			38c
		epP		39	41
		iPP		41	53
	Hf	iPN		38	43
		iN		39	02
		epPN			40
	Pr	iP		38	42c
		i			49
		i		39	02
		iPP		42	01
	Kg	iP		38	27c
		ePP		41	37
	W	iP		38	27c
		ipP		39	49
		iPP		41	38
	Is	iP		38	28c
		i			49
		iPP		41	39
	CL	iP		38	32c
		i		39	02
		iPP		41	44
	T	iP		38	26c
		epP		39	33
		ePP		41	35
	JMA: 30 N 137.8 E				
	22:26:49, 360 km				
17	P	iP	20	02	57
	Kg	eP			47
	W	iP			47
	Is	iP			49
	CL	iP			53
	T	eP			45

Date	Sta.	Phase	h	m	s
January					
18	P	eP	05	46	00
	R	eP			04
		e			56
	W	iP		45	57
	Is	eP			59
	CL	eP		46	03
	T	eP			00
	BCIS: New Britain region				
	05:32.8				
18	Kg	eP	06	11	03
	W	iP			00
		i			07
	Is	eP			01
	CL	eP		10	59
	T	iP		11	04
		i			11
18	P	eP	11	58	39
		e		59	19
	R	eP		58	42
	W	iP			37
	T	eP			40
18	R	eP	12	25	10
	Pr	eP			10
	Bt	eP			08
	W	iP			09
	Is	iP			11
	CL	eP			15
18	P	eP	13	17	35
	R	iP			33
		i			56
	Pr	eP			29
		i			36
	Bt	iP			23
	Kg	eP			58
	W	iP			59
		i		18	20
	Is	iP		17	52
		i		18	00
	CL	eP		17	50
	T	eP		18	01
	Tacubaya: 17°32' N 101°58' W				
	13:12:44				
19	P	iP	05	27	46d
		i		28	13
		epP		30	03
	PX	eZ		31	01
		iSN		37	03
		iSPZ			56
		isSN		40	54
		eGN		48.9	
		i(SKPP')		58	49
			A		T
		PZ	0.4		1
		PH	¼		1
		SH	2½		7
	R	iP	05	27	49d
		i		28	13
		epP		30	00
		e		31	02
		eSNZ		37	12
	Hf	iPN		27	53d
		iN		28	17
		epPN		30	03
		eSN		37	19

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January					
19	Pr	iP	05	27	50d
		epP		30	02
		eS		37	12
	Bt	iP		27	48d
		i		28	03
		epP		30	00
		eS		37	10
	Kg	iP		27	45d
	W	iP			48d
		i		28	16
		ipP		30	01
	Is	iP		27	50d
		epP		29	59
		ePP		31	06
		eS		37	08
	CL	iP		27	53d
		i		28	01
		epP		30	06
		eS		37	15
	T	iPNEZ		27	55d
		i		28	03
		epP		30	10
		e		31	13
		eS		37	20
	Magnitude 6½				
	USCGS: 21½ S 179 W				
	05:16:37, 650 km				
20	P	eP	11	11	50
		e			56
	R	eP			53
	Hf	ePN		12	01
	Pr	eP		11	58
	Bt	eP		12	00
		e			05
	W	iP		11	42
		i			48
	Is	e			49
	CL	eP			48
		e			53
	T	eP			43
	USCGS: About 300 miles off south coast of Honshu, Japan.				
	10:59:35				
20	P	eP	14	05	45
	R	eP			47
	Hf	ePN			51
	Bt	eP			52
		e		06	02
	W	eP		05	36
		e		09	04
	CL	eP		05	41
		e			47
	T	eP			35
		e			45
	JMA: 28 N 130½ E				
	13:52:33				
20	P	iP	18	19	46
	R	e(P)			58
	W	iP		20	06
	Is	eP			13
21	P	eP	10	13	09
		i			26
		i			34

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
21	D	eP	10	13	07
		i			24
		i			32
	Bt	eP		12	59
		i		13	16
		i			24
	Kg	e			30
		i			38
	Is	iP			16
		i			33
		i			41
	CL	iP			15
		i			32
		i			39
	T	eP			22
		i			39
		i			46
	USCGS: 23 S 70½ W				
	10:01:46, 100 km				
21	D	iP	13	10	40
		ipP		11	12
	Bt	iP		10	29
		ipP		11	04
	Kg	eP		10	52
	Is	iP			48
		ipP		11	21
	CL	eP		10	46
		epP		11	19
	T	iP		10	53
		ipP		11	26
	USCGS: 23½ S 70½ W				
	12:59:20, 150 km				
22	Pr	iP	05	48	04
	Is	eP		47	55
	CL	eP			59
		e		48	11
	T	eP			02
	BCIS: Tonga region				
	05:36:03				
22	PX	eLN	12	18.7	
	D	eP'	11	38	00
	R	eP'		37	52
	Pr	eP'			48
		i			59
	Is	eP'			53
	CL	eP'		38	02
	T	eP'		37	55
	BCIS: 4½ S 28½ E				
	11:18:27				
22	P	iP	12	44	34
	PX	iGN	13	06.6	
		eRZ		10.5	
	R	eP	12	44	34
		i			40
	Hf	ePN			43
	Pr	iP			38
		i			43
	Is	iP			35
		ePP		48	05
	CL	eP		44	37
		ePP		48	11
	T	eP		44	41
	USCGS: 11 S 166½ E				
	12:31:54				

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January					
23	P	eP	17	40	36
	Is	eP			35
	CL	eP			34
	USCGS: 37 N 22½ E				
	17:26:51				
23					
	P	eP	17	52	21
		e			30
	R	eP			24
		e			31
	Hf	eN			34
	Pr	eP			16
		e			30
	Bt	eP			15
		e			31
	Kg	eP			29
	Is	eP			20
		i			31
	CL	eP			27
		e			38
	T	eP			29
		e			33
	USCGS: 22 S 175 W				
	17:40:19				
24	P	iP	01	24	42
		ipP		25	14
		i			33
	R	iP		24	44
		ipP		25	16
		ePP		28	37
		ePPP		30	26
		eSE		35	13
	Hf	eN		24	52
	Pr	iP		24	47
		epP		25	22
		e		26	08
		ePP		28	40
	Bt	eP		24	48
		epP		25	24
		ePP		28	48
		e		29	23
	Kg	eP		24	38
		epP		25	06
	Is	eP		24	40
		epP		25	15
		ePP		28	28
		e			50
	CL	eP		24	45
		epP		25	21
		ePP		28	44
	T	eP		24	42
		epP		25	18
		e			59
	USCGS: 6 S 147 E				
	01:11:11, 100 km				
24	P	iP	02	17	13d
	R	iP			16d
	Hf	iPN			21
	Pr	iP			18d
		i			52
	Bt	iP			20d
	Kg	iP			06d
	Is	iP			07d
		e			39

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
24	CL	iP	02	17	12d
		e			45
	T	iP			08d
		i			14
		e			40
	USCGS: Marianas				
	02:04:40				
24	P	ePNZ	07	26	44
	PX	iPcP		27	27
		iSN		34	59
		iE		36	29
		eLNZ		46.8	
	P	eP'P'		56	14
				A	T
		PZ		0.4	2
		SH		1	4
		MH		4	20
	R	eP	07	26	38
		e			45
		iSN		34	53
		eP'P'		56	15
	Hf	ePN		26	28
		iN			40
	Pr	eP			34
		i			40
		i		27	44
		eP'P'		56	18
	Bt	eP		26	29
		e			38
		eP'P'		56	18
	Kg	eP		26	55
		e		27	03
		eP'P'		56	16
	Is	iP		26	49
	CL	eP			48
		e			55
		eP'P'		56	10
	T	eP		26	52
		i		27	04
		eP'P'		56	07
		e			18
	Magnitude 6¼				
	USCGS: 12½ S 78 W				
	07:16:29				
24	P	iP	15	02	27
	PX	eLN		04.6	
	R	eP		02	14
		e		06	04
	Hf	ePN		02	00
		iN		04	58
	Pr	iP		02	06
		e		05	43
	Bt	eP		01	58
		e		04	04
	Kg	eP		02	51
		e		03	13
	Is	eP		02	42
		i			44
		e		06	45
	CL	eP		02	42
		e		06	19
	T	eP		02	56
		i		03	00
		e		06	35
	USCGS: 25½ N 109½ W				
	14:59:37				

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January					
24	CL	e(P')	16	09	58
		i		10	09
		e		12	14
	BCIS: 1½ N 96¾ E				
	15:49:24				
24	P	eP	16	33	29
	PX	eLNE		35	27
	R	eP		33	23
	Hf	ePN			08
	Pr	iP			14
		i			26
		e		35	28
	Bt	eP		33	04
	Kg	eP			50
		i		34	08
	Is	iP		33	47
	CL	eP			43
	T	eP		34	01
	USCGS: 25½ N 110 W				
	16:30:45				
24	P	iPNEZ	17	02	41
	PX	eLNE			05.2
	R	eP		02	31
	Hf	ePN			14
	Pr	eP			20
		e		05	14
	Bt	eP		02	11
		i			16
	Kg	eP			56
		i		03	05
	Is	iP		02	45
		i			59
	CL	eP			52
		e		06	34
	T	eP		03	09
		i			15
		i			36
	USCGS: 25½ N 109½ W				
	16:59:50				
24	PX	eL		20	00.9
	R	eP		19	37 14
		e			29
	Pr	eP			14
	Kg	eP			11
		e			44
	CL	eP			12
		i			22
	T	e			22
	USCGS: 20 S 176½ W				
	19:25:16				
24	P	iPNEZ!	22	55	19.6d
		iSE			42.9
	R	iPNEZ!			09.6c
		iSE			24.1
	Hf	iPN!			04.0c
	Pr	iP!		54	57.1c
	Bt	iP!			57.7d
	EC	ePN		55	06.3
		iSN			16.5
	Magnitude 4.6				
	Pasadena: 33°08' N 116°25' W				
	20:54:49				
	V at points in the mountainous area of San Diego County. Felt to distances of about 100 km west and northwest.				

Date	Sta.	Phase	h	m	s
January					
25	P	iPNEZ!	03	45	10d
	PX	iSNE		51	46
		iGN			55.1
		eRZ			57.4
				A	T
		PZ		1½	1½
		PH		1	1
		SH		1	4
		MH		13	20
	R	iP	03	45	13d
		iPP		46	50
		eSNE		51	53
	Hf	iPN		45	23d
	Pr	iP!			21d
		i			35
		i			46
		iPP		47	00
	Bt	iP!		45	24d
		iPP		46	54
		eSZ		52	14
	Kg	iP		44	57d
		i		45	18
	CL	iP!			03d
		i			30
		iPP		46	45
	T	iPNEZ!		44	55d
		iPPNEZ		46	43
		iSN		51	25
	Magnitude 6½				
	USCGS: 51½ N 177 W				
	03:36:47				
25	P	iP	17	10	28
	R	iP			32
	Bt	eP			30
	Kg	eP			19
	CL	iP			12
		e			24
	T	eP			03
		e			24
	USCGS: 49½ N 156 E				
	16:59:48				
25	P	iP	18	54	12
	R	iP			14
	Pr	iP			15
	Bt	eP			11
	Kg	eP			11
	W	iP			13
	CL	iP			14
	BCIS: Tonga region				
	18:41.4				
25	D	eP	23	36	16
	CL	eP			06
	T	eP		35	59
	USCGS: 100 miles off north-east coast of Greenland				
	23:26:08				
26	D	eP	01	19	36
		e		20	00
	R	eP		19	38
		e			42
	Hf	iPN			50
	Pr	iP			50
	W	iP			14
	CL	eP			17
		e			23

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
26	T	eP	01	19	13
		e			26
	USCGS: 48½ N 122 W				
	01:16:06				
26	D	iP	10	06	16
	R	iP			15
	Hf	ePN			10
	Bt	iP			08
	W	iP			29
	CL	iP			24
		e			38
	BCIS: Province of Mendoza, Argentina				
	09:54:28				
28	W	iP	05	36	28
	CL	eP			30
	USCGS: 27 N 130½ E				
	05:23:25				
28	P	iPNZ	08	27	46d
		i		28	02
	PX	iSN		37	10
		iGN			46.5
		eRZ			48.8
			A		T
		PZ	0.3		1
		PH	¼		1
		MH	11		20
	R	iP	08	27	49
		eSE		37	18
	Hf	ePN		27	58
	Pr	iP			49
		i		28	10
	W	iP!		27	49
	CL	iP			54d
		e		28	43
		ePP		30	29
	T	eP		27	56d
	Magnitude 6½				
	USCGS: 15½ S 173 W				
	08:16:19				
28	P	iP	11	27	36c
	R	eP			39
	Pr	iP			39
	W	iP			38c
	CL	iP			39c
	T	iP			45
28	P	iP	18	36	57d
		epP		37	27
	R	iP		36	53d
		ipP		37	25
	Hf	ePN		36	48
	Bt	iP			45d
		ipP		37	15
	Kg	iP			07d
	W	iP			05d
		ipP			35
	CL	iP			01d
		epP			32
	T	iP			08d
		ipP			38
	USCGS: 22½ S 71½ W				
	18:25:27				
28	P	eP	23	29	21
	R	eP			24

(continued)

Date	Sta.	Phase	h	m	s
January		(continued)			
28	Pr	eP	23	29	26
	W	eP			07
		i			22
	CL	eP			12
	USCGS: 49 N 156 E				
	23:18:51				
29	P	iP	00	06	56
		i		07	02
		ePcP		09	15
	R	eP		06	49
		e			56
	Hf	ePN			37
		eN			44
	Pr	iP			44
		i			50
		ePcP		08	48
	Bt	eP		06	40
	W	eP		07	06
		i			13
		ePcP		09	19
	CL	eP		06	59
		i		07	05
	T	eP			14
	USCGS: 12 N 86½ W				
	23 :59:46				
29	Pr	iP	03	27	48
	W	iP			47
	CL	eP			54
	T	eP			57
29	PX	eLZ	16		20.4
	W	iP	15	58	19
	CL	eP			23
	T	eP			28
	USCGS: 16 S 176 W				
	15:46:35				
29	P	iPEZ!	21	20	50.4
		iSE		21	30.4
	Kg	iP!		20	26.9
	FT	iP			38.5
		iS		21	15.0
	W	iP!		20	33.9
	SB	iP			32.9
	H	iP			47.5
		iSNE		21	34.2
	T	iPEZ		20	47.8
		iSNE		21	41.1
	Magnitude 4.9				
	Pasadena: 35.8 N 121.8 W				
	21:19:59				
	Off the coast of San Luis Obispo County. V along the coast from Cambria to Big Sur.				
30	D	eP	09	57	39
	W	eP			36
		i			41
	CL	eP			39
		i			47
	T	eP			44
		i			49
		e		58	57
	USCGS: 15 S 173 W				
	09:46:05				
30	D	eP	12	15	01
	R	eP			04

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
January		(continued)			
30	W	iP	12	14	47
	CL	eP			49
USCGS: 65 N 134 W					
12:08:27					
30	P	iP	15	40	51
	PX	eLZ	16	06.8	
			A		T
		PZ	0.2		$1\frac{1}{2}$
		MH	$3\frac{1}{2}$		20
	R	eP	15	40	51
	Hf	ePN		41	03
	Bt	iP		40	56
		e		41	02
		e			14
	Kg	eP		40	49
		e		41	01
	W	iP		40	53
		i		41	05
	CL	iP		40	57
		e		41	11
	T	iP		41	00
Magnitude 6 - $6\frac{1}{4}$					
USCGS: $20\frac{1}{2}$ S 174 W					
15:29:00					
30	P	eP	17	06	14
	Hf	eN			33
	Kg	eP			04
		e			29
	W	iP			02
	CL	iP			07
	T	eP			10
		e			26
BCIS: 15 S $172\frac{3}{4}$ W					
16:54:39					
31	P	iP	00	58	28d
		ipP			58
	Hf	ePN			08
	Pr	iP			19d
		ipP			57
	Bt	iP			16d
	Kg	iP			38d
	W	iP			36d
		i			59
		ipP		59	05
	CL	iP		58	32d
		ipP		59	08
	T	iP		58	39
USCGS: 22 S 66 W					
00:47:00, 150 km					
31	D	eP	15	45	36
	Bt	eP			46
	Kg	eP			24
	W	iP			26
	CL	eP			31
	T	eP			23
BCIS: $47\frac{1}{2}$ N 153 E					
15:34:53					
31	P	eP	20	27	52
	Pr	eP			58
	W	eP			53
	T	eP		28	01
February					
1	P	iP	07	52	41.1d
		iSE		53	01.3

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
1	MW	iP	07	52	40.7d
	D	iP!			37.6c
	R	iPNEZ			30.6c
		iSN			41.5
	Hf	iPN!			26.1c
	Pr	iP!			28.8d
	Bt	iPNZ!			38.1d
		iSN			55.7
	PV	iP			44.5
	EC	e(P)N			41.9
		e(S)N			53.5
	BB	iP!			25.0c
	W	iP!			57.2
Magnitude 4.6					
Pasadena: 33.58 N 116.20 W					
07:52:15					
V at Desert Hot Springs, Indio, Joshua Tree, Thousand Palms, Twenty-nine Palms.					
IV at Hemet, Palm Springs, Thermal, Yucca Valley.					
1	P	eP	11	47	15
	Pr	iP			04
	Bt	eP			00
	Kg	eP			31
	W	iP			27
USCGS: About 150 miles off El Salvador					
11:40:48					
1	R	eP	22	43	32
	Hf	ePN			42
	Pr	iP			37
	Bt	eP			41
	W	iP			18d
		i			30
		i			56
	CL	eP			24
		e			41
	T	eP			16
		e			31
BCIS: 48.5 N 155 E					
22:32:57					
1	D	eP	23	35	31
	R	iP			29
	Pr	iP			26
	Bt	iP			22
	W	iP			41
	CL	eP			37
2	P	eP	01	20	51
	R	eP			55
	Hf	ePN		21	04
	Pr	eP			01
		e			37
	Bt	eP			04
	W	iP		20	42c
	CL	iP			48
	T	eP			34
BCIS: Kurile Islands					
01:10.4					
2	D	eP	11	36	11
	R	iP			10
	Pr	eP			05
	Bt	iP			02
	W	iP			21

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
2	CL	eP	11	36	17
	T	eP			23
BCIS: North of Chile					
11:24.8					
2	P	eP	11	58	28
		e			40
		e			49
	PX	eZ	12	09	29
		iZ		10	58
		eREZ		26.4	
			A		T
		MH	3		20
		MZ	$2\frac{1}{2}$		20
	R	eP	11	58	33
		e			52
	Hf	ePN			43
		eN		59	01
	Pr	eP		58	32
		i			52
	Bt	eP			28
		e			53
	Kg	eP			28
	W	iP			31
		i			51
	CL	eP			37
		i			58
		e		59	16
	T	eP		58	37
		e			59
USCGS: $21\frac{1}{2}$ S 170 E					
11:45:35					
2	Pr	eP	12	07	47
		e		08	10
	Bt	eP		07	54
	W	iP			22
		i			35
	CL	eP			27
		e			41
	T	eP			24
		e			36
JMA: 36.55 N 141 E					
11:55:35, 50 km					
3	P	eP	10	43	18
	R	eP			18
	W	iP			04
	CL	eP			09
	T	eP			05
USCGS: Kamchatka foreshock					
10:33:09					
3	P	iP	17	11	52
		i			59
	R	iP			53
		i		12	03
		e			45
	Hf	ePN			04
	Pr	eP			00
	Bt	eP			05
	W	iP		11	41
	CL	eP			46
	T	iP			38
		i			45
USCGS: $53\frac{1}{2}$ N 159 E					
17:01:47					

Date	Sta.	Phase	h	m	s
February					
3	P	iPNZ	17	34	53
		iNEZ!			56
		e		38	02
		ePP			38
	PX	iSNE		43	05
		eSSN		47	07
		eRZ		51.4	
	P	eP'P'	18	03	54
			A		T
		PZ	$\frac{1}{2}$		1
		PH	$\frac{1}{2}$		$1\frac{1}{2}$
		PPZ	$\frac{1}{4}$		2
		SH	$1\frac{1}{4}$		6
		MH	6		20
	R	iP	17	34	57c
		i			59
		iSNZ		43	08
		eSSNEZ		47	08
		eP'P'	18	04	31
	Hf	iPN	17	35	08
	Pr	eP			02
		i!			05
		i			12
		eP'P'	18	04	39
	Bt	eP	17	35	06
		i			09
		i			15
		e		36	20
		ePP		38	43
		eP'P'	18	04	31
	W	iP	17	34	42
		i		35	39
		i		36	53
		eP'P'	18	04	38
	CL	iP	17	34	48
		i			51
		i			56
		e		37	02
		eS		42	55
		e		43	12
		eP'P'	18	04	33
	T	iP	17	34	40
		i			43
		ePP		38	12
		iSN		42	39
		eP'P'	18	04	37
Magnitude $6\frac{1}{2}$-$6\frac{3}{4}$					
USCGS: $53\frac{1}{2}$ N 159 E					
17:24:50					
3	P	eP	18	06	57
	R	eP		07	00
	Pr	eP			06
	Bt	eP			16
	W	iP		06	48
	CL	eP			52
	T	eP			43
BCIS: Kamchatka aftershock					
17:56:55					
3	P	iP	21	21	56
		i		22	06
	R	eP			00
		e			12

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
3	Pr	iP	21	22	05
	Bt	iP			10
		e			26
	W	iP		21	47
		i		23	50
	CL	iP		21	52
		e		24	05
	T	iP		21	43
	USCGS: 53½ N 159 E				
	21:11:53				
3	P	iP	21	27	38
		e			49
	R	eP			42
	Pr	iP			48
		e		28	05
	Bt	iP		27	53
	W	iP			28d
	CL	iP			35
	T	iP			25
		e			37
	USCGS: 53½ N 159 E				
	21:19:35				
3	P	iPNEZ	23	08	26
	PX	iSNZ		16	46
		iRZ		26.6	
	P	eP'P'		37	19
		e			59
	R	iP		08	31c
		i		09	06
		e		12	11
	Hf	ePN		08	41
		eN		12	30
	Pr	iP		08	36
	Bt	iP			40c
		e		11	02
		eP'P'		37	54
		e		38	06
	CL	iP		08	21c
		i			27
	T	iP			13c
		e		11	00
	USCGS: 53½ N 159 E				
	22:58:24				
4	P	iPEZ	09	09	24
		i			38
	PX	eLNZ		20.5	
	R	iP		09	19
		i			51
	Hf	ePN			08
	Pr	iP			12
		i			28
	Bt	eP			10
		e			22
	W	iP			33
	CL	eP			28
	T	iP			39
	USCGS: 10 N 84 W				
	09:01:52				
4	P	iPEZ	10	38	30
		i			43
	PX	eLZ		53.4	
	R	eP		38	34
		e			47

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
4	Hf	ePN	10	38	47
	Pr	eP			39
	Bt	eP			44
		e		39	08
	W	iP		38	22
	CL	iP			27
	T	iP			18
	BCIS: 52 N 160 E				
	10:28:30				
4	P	e	16	45	53
	Pr	e			49
	Bt	e			43
	W	e		46	20
	CL	e			17
4	D	e	20	24	47
	R	e		25	02
	Pr	e		24	56
		e		25	08
	Bt	e			01
		e			12
	W	iP		24	33c
		i			44
	CL	e			43
	T	eP			32
		e			41
5	P	iP	04	13	22
		epP		14	21
	R	iP		13	25
		ipP		14	24
	Hf	ePN		13	33
		epPN		14	36
	Pr	iP		13	25
		ipP		14	24
	Bt	iP		13	24
		epP		14	23
	W	iP		13	26
		ipP		14	24
	CL	eP		13	32
		epP		14	30
	T	eP		13	33
		epP		14	33
	USCGS: 18 S 176½ W				
	04:02:05, 300 km				
5	Pr	iP	04	38	08
		i			25
	W	eP			32
	CL	eP			26
		e			42
	T	eP			36
		e			53
	BCIS: Coast of Guatemala				
	04:32.1				
5	P	iPEZ	05	01	48
		i			54
		e		02	13
	PX	eS		10	38
		eGN		17.5	
		eRE		20.7	
	P	eP'P'		30	59
			A		T
		PZ	¼		2½
		PH	0.1		1
		MH	3½		20

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
5	R	iP	05	01	43
		i			50
		e		05	30
		eP'P'		31	01
	Hf	ePN		01	36
		iN			43
	Pr	iP			43
		i			50
		iPcP		02	30
		ePP		04	38
		ePPP		05	39
		eP'P'		30	52
		e		31	02
	Bt	eP		01	42
		i			49
		iPcP		02	30
		e		03	26
		eP'P'		30	58
	W	iP		01	41
	CL	eP			43
		i			49
		eP'P'		30	46
	T	eP		01	45
		i			52
	Magnitude 6				
	USCGS: 25½ N 45½ W				
	04:51:20				
5	P	iP	08	03	23d
	R	iP			20d
		e		04	07
	Pr	eP		03	15
	Bt	iP			12d
	W	iP			31d
		i			44
	CL	iP			28d
	T	iP			35d
	BCIS: North of Chile				
	07:51.9				
5	P	iP	16	10	03
	R	iP			05
		epP			24
	Hf	ePN			16
		epPN			37
	Pr	iP			07
		i			15
		i			33
	Bt	iP			06
		i			13
		e			36
	W	iP			01
		i			08
		ipP			20
	CL	iP			08c
		i			15
		ipP			27
	T	iP			08
		e			14
		epP			28
	USCGS: 11 S 166 E				
	15:57:27				
5	P	iP	16	41	16c
	R	iP			18c
		ipP			47

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
5	Hf	ePN	16	41	26
		epPN			54
	Pr	iP			19c
		ipP			48
	Bt	iP			18c
		epP			47
	W	iP			16c
	CL	iP			23c
		e			30
		epP			51
	T	iP			23c
		epP			52
	USCGS: 18 S 168 E				
	16:28:36, 100 km				
6	W	eP	05	45	30
	CL	eP			40
	BCIS: Samoa Islands				
	05:34.0				
6	P	eP	12	49	02
	PX	eLZ	13	01.9	
	R	eP	12	48	58
	Hf	ePN			47
	Pr	iP			51
	Bt	eP			46
	W	e		49	20
	Is	e			21
	CL	eP			10
	T	e			27
	USCGS: Galapagos Islands				
	foreshock				
	12:41:16				
6	P	ePNEZ	13	14	00
	PX	iSN		20	17
		eRZ		26.4	
			A		T
		PZ	0.3		2
		PH	0.4		3
		SH	1½		10
		MZ	2½		20
	R	eP	13	13	52
		eS		20	07
	Hf	ePN		13	42
	Pr	eP			46
		i			55
	Bt	eP			40
		e			47
		e(S)Z		20	19
	W	iP		14	09
	Is	eP			08
	CL	eP			05
	T	eP			15
	Magnitude 6				
	USCGS: 2 N 91 W				
	13:06:13				
6	P	eP	13	15	16
	PX	eS		21	38
			A		T
		PZ	0.3		2
		SH	1		10
	R	eP	13	15	09
		eSN		21	25
	Hf	ePN		15	08
	Pr	iP			10

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
6	Bt	iP	13	15	04
	W	iP			33
	Is	eP			36
	CL	iP			28
	T	iP			34
	Magnitude 6				
	USCGS: 2 N 91 W				
	13:07:30				
6	P	iP	13	16	25
	PX	iSN		22	46
			A		T
		PZ	0.2		2
		SH	$\frac{3}{4}$		10
	R	iP	13	16	19
		eSN		22	33
	Hf	ePN		16	14
	Pr	eP			13
	Bt	eP			08
	W	eP			41
	Is	eP			35
	CL	iP			31
	T	eP			42
	Magnitude $5\frac{3}{4}$				
	Galapagos Islands				
6	P	eP	20	47	47
		iEZ			53
	PX	eLZ	21	20.6	
	R	iP	20	47	56
	Pr	eP			54
		i		48	00
	Bt	eP		47	55
		i		48	02
		e			36
	W	iP		47	39
		i			44
	Is	eP			40
		i			46
	CL	eP			42
		i			49
	T	eP			35
		i			42
	USCGS: 50 N $105\frac{1}{2}$ E				
	20:34:55				
7	D	e	03	27	52
	Pr	eP			39
		i			48
	Bt	eP			41
	W	eP			59
	Is	e		28	08
	CL	e			00
	T	e			25
7	P	iPNEZ	09	14	47c
		ipP			57
	PX	eLN		40.0	
	R	iP		14	43c
		ipP			56
	Pr	iP			40c
		ipP			52
	Bt	iP			36c
		ipP			48
	W	iP			56c
		ipP		15	07
	Is	iP		14	55
		ipP		15	06

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
7	CL	iP	09	14	53c
		ipP		15	05
	T	iP		14	59c
		ipP		15	11
	USCGS: Cordoba Province,				
	Argentina				
	09:02:23				
7	P	eP	16	25	19
		e			39
	PX	eSN		31	54
		eGN		35.2	
	R	e		25	32
	Pr	eP			24
		i			40
	Bt	eP			30
		e			44
		e		26	24
	W	eP		24	55
		i		25	09
		i			15
	Is	i			20
	CL	eP			13
		e			35
		e			49
	T	i			22
	USCGS: $52\frac{1}{2}$ N 175 W				
	16:17:09, 60 km				
7	P	eP	18	18	33
	R	eP			36
	Hf	ePN			48
		eN		19	00
	Pr	iP		18	46
		i		19	05
	Bt	eP		18	54
	W	iP			12
	Is	iP			17
		i			27
	CL	iP			16
	T	eP			00
		i			07
	USCGS: 50 N 130 W				
	18:14:19				
7	P	iP	21	53	28d
	R	iP			32d
	Hf	iPN			39
	Pr	iP			36d
	Bt	iP			38d
	W	iP			22d
		i			25
		e		55	11
	Is	iP		53	24
	CL	iP			28d
	T	iP			22d
	BCIS: Sea of Japan				
	21:42.2				
8	D	eP	00	28	35
	R	eP			30
	Pr	iP			25
	Bt	eP			19
	W	eP			37
	CL	eP			41
8	R	eP	10	23	46
		e			55

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
8	W	eP	10	23	41
		epP			56
	CL	e		24	00
	T	eP		23	35
		e		24	56
9	P	e(P)	02	07	08
	PX	eRZ		39.3	
	R	e(P)		07	05
	W	e(P)			03
	USCGS: $1\frac{1}{2}$ S $137\frac{1}{2}$ E				
	01:53:05				
9	PX	eRZ	06	47.9	
	W	eP		12	37
		ePP		17	21
		e			25
	USCGS: $10\frac{1}{2}$ N $126\frac{1}{2}$ E				
	05:59:04, 60 km				
9	D	eP	06	29	06
	R	eP			05
	Bt	iP			00
	W	iP			12
9	P	eP	07	31	16
	PX	eRZ		44.9	
	R	eP		31	10
	Hf	ePN			02
	Bt	eP			01
	W	iP			26
		i			34
	CL	eP			22
	T	eP			35
	USCGS: $7\frac{1}{2}$ N 83 W				
	07:23:18				
9	P	iP	08	20	37
	R	iP			41
	Hf	eN			50
	Bt	eP			45
	W	iP			33
		i			38
	CL	eP			39
	T	eP			35
	USCGS: $11\frac{1}{2}$ N $138\frac{1}{2}$ E				
	08:07:15				
9	P	iP	13	42	04
		ipP			39
		ePP		45	35
	PX	iSKSNEZ		52	18
		iSN			46
		iPSNZ		53	38
		eGNEZ	14	05.5	
		eREZ		09.3	
			A		T
		PZ	$\frac{1}{4}$		$1\frac{1}{2}$
		PH	0.1		$1\frac{1}{2}$
		SKSH	3		8
		SH	2		10
	R	iP	13	42	04
		ipP			42
		i			57
		eSKSNEZ		52	25
		iSNE			51
		ePSNE		53	43
		eRZ	14	09.4	

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
9	Hf	iPN	13	42	12
		eN		46	06
		eSKSN		52	06
		e(S)N			32
	Pr	iP		42	03
		ipP			42
		e		44	58
	Bt	iP		42	02
		ipP			37
		ePP		45	31
		e		52	10
	W	iP		42	05
		i			34
		i			54
		eSKS		52	17
		eS			54
	CL	eP		42	10
		ipP			48
		i		43	00
		eS		53	06
	T	iP		42	14
		epP			48
		eSKSNEZ		52	35
		iSNE		53	07
	Magnitude $6\frac{1}{4}$				
	Wellington: 33.8 S 179.5 W				
	13:29:20, h = 135 km				
	USCGS: 34 S 180				
	13:29:18, 150 km				
9	P	eP	16	40	26
	PX	eGNE		42.4	
	R	eP		40	36
	Hf	ePN			52
	Pr	eP			47
	Bt	iP			56
	W	iP		40	05
	CL	eP			17
	T	eP			03
	USCGS: $41\frac{1}{2}$ N 126 W				
	16:38:10				
	Maximum deflection on torsion				
	seismograms at Pasadena				
	0.2 mm N-S, 0.3 mm E-W				
	Berkeley: M = 4.7				
9	P	ePNEZ	17	40	47
	PX	iRZ		43.0	
	R	eP		40	57
	Hf	ePN		41	11
	Pr	eP			04
	Bt	eP			15
	W	iP		40	24
	CL	eP			34
	T	iP			22
	USCGS: 41 N 127 W				
	17:38:22				
9	P	ePNEZ	18	07	46
		e			53
	PX	iRZ		30.5	
	R	eP		07	49
		i			57
	Hf	ePN			56
		iN		08	06

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
9	Pr	iP	18	07	47
		i			54
	Bt	eP			48
		i			58
	W	iP			48
		i			54
		i		08	06
	CL	iP		07	54
		i		08	01
		i			06
	T	iP		07	56
	USCGS: 19 S 174 W				
	17:56:00				
10	P	ePEZ	05	58	52
		iNZ		59	02
	PX	iSZ	06	07.9	
		eSSZ		12.9	
		eRZ		19.5	
			A		T
		PZ	0.05		1
		MH	3		20
	R	eP	05	58	49
		e			59
	Hf	ePN			42
	Pr	eP			49
		i			59
	Bt	eP			51
		e		59	00
	W	iP		58	52
	CL	eP			46
	T	eP			45
	Magnitude $5\frac{3}{4}$				
	BCIS: 36 N 34.5 W				
	05:48:00				
10	P	ePNZ	22	46	26
		i		48	41
		eNZ		50	18
		ePP			47
	PX	iSKSE		57	05
		iE			34
		iPSZ		59	50
	P	ePKKP	23	02	27
	PX	eGN		16.2	
		iREZ		20.3	
			A		T
		PPZ	$\frac{1}{2}$		3
		PPH	$\frac{1}{2}$		4
		MH	17		20
		MZ	12		20
	R	eP	22	46	33
		e		49	49
		ePP		50	50
		iSKSE		57	10
		ePSEZ		59	58
		iPKKP	23	02	24
	Hf	ePN	22	46	41
		eN		49	52
		ePPN		51	04
		ePKKPN	23	02	19
	Pr	e	22	49	57
		ePP		50	55
		iPKKP	23	02	23
		i			43

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
10	Bt	eP	22	46	36
		e		49	47
		ePP		50	48
		iPKKP	23	02	19
	W	eP	22	46	22
		iPP		50	36
		ePKKP	23	02	13
		i			32
	Is	eP	22	46	25
		e		49	46
		ePP		50	41
		ePKKP	23	02	15
		e			32
	CL	eP	22	46	24
		e		49	30
		ePP		50	41
		ePKKP	23	02	11
		i			27
	T	eP	22	46	27
		e		49	50
		ePP		50	42
		eSKSE		57	05
		ePKKP	23	02	21
		e			35
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$				
	Seismograms overlap those				
	of the next				
	USCGS: 10 N 126 E				
	22:32:15				
10	P	eP	23	05	17
		iPPEZ		09	08
	PX	iSKSE		15	11
		iNE			42
		iPSE		18	28
	P	ePKKP		21	04
	PX	eGN		34.6	
		iREZ		38.8	
			A		T
		PPZ	$\frac{1}{2}$		3
	R	eP	23	05	18
		ePP		09	20
		e		15	46
		iPSEZ		18	38
		iPKKP		20	59
	Hf	ePN		05	31
		ePPN		09	27
		ePKKPN		20	55
	Pr	iP		05	20
		ePP		09	23
		iPKKP		20	59
	Bt	eP		05	18
		e		09	59
		iPSZ		18	50
		iPKKP		20	56
	W	eP		05	11
		ePP		09	17
		i		11	02
		ePKKP		20	58
		i		21	10
	Is	eP		05	09
		ePP		09	09
		i		11	09
		ePKKP		20	55
		i		21	08

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
10	CL	eP	23	05	10
		e		08	35
		e		09	30
		ePKKP		20	52
		e		21	04
	T	eP		05	12
		ePP		09	15
		e		10	11
		e		11	41
		iSKSNE		15	40
		ePKKP		20	55
		e		21	11
	Magnitude $6\frac{3}{4}$				
	BCIS: $10\frac{1}{4}$ N 126 E				
	22:50:53				
11	P	eP	01	29	00
		ePP		33	22
	PX	eSKSE		39	34
		ePSEZ		42	22
	P	ePKKP		44	47
	PX	eGN		57.5	
		eRZ	02	02.8	
			A		T
		PPZ	0.15		3
		MH	$8\frac{3}{4}$		20
	R	eP	01	29	07
		ePP		33	15
		eSKSE		39	40
		ePSEZ		42	32
		e(PKKP)		44	39
	Hf	ePPN		33	28
	Pr	eP		29	15
		ePP		33	34
		e		34	00
		iPKKP		44	21
	Bt	eP		29	16
		ePP		33	20
		eSKS		39	54
		ePS		42	28
		ePKKP		44	35
	W	eP		28	49
		i		29	01
		e		32	08
		ePP		33	01
		ePKKP		44	43
		i			58
	Is	eP		28	54
		e		29	01
		ePP		33	07
		ePKKP		44	45
		e		45	00
	CL	eP		28	58
		e		32	15
		ePP		33	13
		ePKKP		44	45
	T	eP		28	52
		ePP		33	11
	Magnitude $6\frac{1}{2}$				
	USCGS: 10 N 126 E				
	01:14:44				
11	R	e	04	01	59
	Pr	e		02	06

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
11	Bt	e	04	02	06
	W	e			25
	USCGS: 10 N 126 E				
	03:44:33				
11	Pr	e	04	14	40
	W	e			49
	Is	e			51
11	W	e	12	15	45
	USCGS: 10 N $126\frac{1}{2}$ E				
	11:57:16				
11	P	ePP	14	44	52
	PX	iPSZ		53	18
		eGZ	15	10.0	
		eRZ		13.8	
			A		T
		MZ	7		20
	R	eP	14	39	59
		e(PP)		44	28
	Pr	e		43	42
		e		44	28
		e			43
	W	eP		39	46
		ePP		43	59
	Is	eP		40	12
		ePP		44	03
	CL	ePP			07
	T	e		43	05
		ePP		44	17
	Magnitude $6\frac{1}{4}$				
	USCGS: 10 N 126 E				
	14:25:38				
11	MW	eP	16	33	31
		e			37
	R	eP			36
		e			46
		e			52
	Pr	eP			43
		e			49
		e			54
	Bt	eP			47
		e			57
		e		34	04
	W	iP		33	19c
		i			25
		i			30
	Is	iP			20
		i			27
		i			32
	CL	eP			25
		e			32
		e			37
	T	eP			15
		e			23
	BCIS: Aleutians?				
11	W	ePP	19	15	16
	USCGS: 10 N $126\frac{1}{2}$ E				
	18:56:50				
12	P	iP	01	23	49c
	R	iP			52c
		e		24	26
	Hf	ePN		23	57

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Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
February	(continued)				
12	Pr	iP	01	23	53c
		i		24	29
	Bt	iP		23	53c
	W	iP			48c
	Is	iP			50c
	CL	iP			55c
	T	iP			54c
	Southwest Pacific?				
12	P	eP	05	21	51
		ipP		22	14
	R	iP		21	54
		ipP		22	17
	Pr	iP		21	56
		ipP		22	19
	Bt	eP		21	55
		i		22	19
	W	eP		21	51
		ipP		22	14
	Is	eP		21	54
		ipP		22	18
	CL	eP		21	55
		ipP		22	20
	T	eP		21	54
		epP		22	19
12	P	eP	09	03	22
	PX	eRZ			22.3
	R	eP		03	25
	Hf	ePN			38
	Pr	eP			31
	Bt	eP			36
	W	iP			13
		i			38
	Is	eP			14
		e			30
	CL	eP			01
		e			13
	T	e			38
	USCGS: 48½ N 155 E				
	08:52:48				
12	P	iPEZ	12	30	11
	R	iP			15
		e			34
	Hf	ePN			22
	Pr	iP			20
	Bt	eP			24
	W	iP		29	46
		ipP		30	01
	Is	iP		29	47
		ipP		30	02
	CL	eP		29	51
		epP		30	05
	T	eP		29	43
		epP			58
	Aleutians?				
12	W	eP	17	32	40
	USCGS: Mindanao aftershock				
	17:14:10				
12	Pr	iP	21	26	39
	W	iP			37
	CL	eP			41
	USCGS: Mindanao aftershock				
	21:06:56				

Date	Sta.	Phase	h	m	s
February					
12	Pr	iP	23	39	00
		e			26
	Bt	eP			04
	W	iP			37
		i			48
	CL	eP			43
	T	eP			34
13	P	ePP	00	48	23
	PX	eRZ	01	17.5	
	Pr	eP	00	44	06
		ePP		48	29
	Bt	ePP			24
	W	eP		43	55
		e		47	19
		ePP		48	15
	CL	ePP			12
		e			37
	T	ePP			12
	USCGS: 10 N 126½ E				
	00:29:48				
13	MW	eP	05	07	58
	Pr	iP			53
	Bt	eP			49
	W	iP		08	06
	CL	eP			03
	T	eP			11
13	P	iPNEZ	12	49	35c
		epP		50	37
		ePP		53	01
	R	iP		49	38c
	Hf	iPN			46
	Pr	iP			40c
		ipP		50	41
		ePP		53	05
	Bt	iP		49	38c
		i		50	09
		ePP		53	05
	W	iP		49	37c
		ipP		50	38
		ePP		53	02
	CL	iP		49	42c
		epP		50	44
		e		51	40
		ePP		53	11
	T	iP		49	43c
		i			49
		epP		50	41
		ePP		53	19
	USCGS: 18 S 169 E				
	12:37:14, 200 km				
13	P	eP	14	51	55
	Hf	eN		52	07
	Pr	eP			04
		e			23
	Bt	eP			08
		e			19
	W	iP		51	46d
		i			56
	CL	eP			52
		e		52	02
		e			35

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
February	(continued)				
13	T	eP	14	51	44
		e			54
		e		52	20
	BCIS: 48.5 N 157.5 E				
	14:41:34				
14	W	e	23	18	00
	CL	e			11
	USCGS: 20 N 120 E				
	23:01:19				
15	P	iPNZ	07	43	49
	PX	eLZ			58.2
	R	iP		43	45c
		e			55
	Hf	ePN			37
	Pr	iP			40c
		i			50
	Bt	iP			37c
		i			46
	W	iP!			57c
		i		44	19
		i		45	04
	CL	iP		43	53c
	T	e		44	22
	USCGS: 14 S 71 W				
	07:33:10, 100 km				
15	R	eP	18	50	43
		e			56
	W	iP			35
		i			43
	CL	eP			41
		e			53
	T	eP			30
		e			37
15	P	eP	19	02	48
	W	iP			42
	CL	eP			48
		e		03	01
	T	eP		02	45
	USCGS: 13½ N 141½ E				
	18:49:43				
16	PX	eGN	03	25.0	
		eRZ		28.4	
	R	eP		00	06
	Pr	eP			07
	Bt	eP			04
	W	e			10
	CL	eP			07
		e			18
	T	eP			05
		e			19
	BCIS: New Britain				
16	P	eP'	14	30	38
	R	eP'			39
		e		31	00
		ePP		33	06
	Pr	eP'		30	41
		e			50
		ePP		33	08
	Bt	eP'		30	41
		e			58
		ePP		33	09
	W	iP'		30	36
		e		32	41
		ePP		33	02

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
16	CL	eP'	14	30	38
		e		32	48
		ePP		33	06
	T	eP'		30	36
	USCGS: 5½ S 110 E				
	14:12:30, 550 km				
16	Pr	e	22	58	33
		e			39
		e			46
	Bt	e			43
		e			51
	W	eP			09
		i			16
		i			24
	Is	e			24
		e			38
	CL	e			19
	T	e		57	56
		e		58	14
	USCGS: Near Islands				
	22:49:28, 100 km				
17	Pr	eP	04	03	40
	W	eP			41
	Is	eP			42
	CL	eP			47
	T	eP			50
	USCGS: Near east coast of Luzon				
	03:46:38				
17	P	eP	04	46	04
	R	eP			03
	Pr	eP			10
	Bt	eP			14
	W	iP		45	48
	Is	iP			52
	CL	eP			55
	T	eP			46
	BCIS: 56½ N 162 E				
	04:36:16				
17	P	eP	11	27	42
	R	eP			46
		e		29	46
	Pr	iP		27	45
		e		29	45
	Bt	eP		27	42
	W	iP			43
		i		29	47
	Is	iP		27	45
		e		29	49
	CL	eP		27	47
17	P	iPNEZ	15	52	23c
		i			52
		iPPE		53	19
		iPcP		55	48
	PX	iSN		57	07
		e(G)N			59.0
		e(R)	16	01	04
			A		T
		PZ	0.4		1½
		PH	¼		1½
		PPZ	¼		2
		SH	2½		8
		MH	7		20

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
17	R	iP	15	52	17c
		i			40
		iPP		53	06
		iPcP		55	45
		iS		57	02
		e	16	00	35
	Pr	iP	15	52	10c
		i			56
		iPcP		55	44
		eS		56	57
		e	16	00	25
	Bt	iP	15	52	05c
		i			48
		iPP		53	00
		e(PcP)		55	52
		eS		57	02
		e	16	00	03
	W	iP	15	52	35c
		i			54
		iPP		53	29
		i		54	50
		iPcP		55	50
		e	16	01	24
		e		02	12
	Is	iP	15	52	33c
		i			49
		ePP		54	03
		iPcP		55	51
		e	16	00	09
	CL	iP	15	52	30c
		i			38
		iPP		53	57
		ePcP		55	49
		e	16	01	11
	T	iPNEZ	15	52	40c
		i			48
		ePcP		55	52
		e	16	01	37
	Magnitude $5\frac{3}{4}$ - 6				
	USCGS· 16 N $96\frac{1}{2}$ W				
	15:46:45, 60 km				
17	Pr	iP	20	26	15
	Bt	eP			20
	W	iP		25	53
	Is	iP			54
	CL	eP			58
18	P	e	00	29	25
	R	e			44
	Bt	e			43
	W	iP			16
		ipP			29
	Is	e			33
	CL	e			22
	USCGS: 45 N 152 E				
	00:18:34, 60 km				
18	P	iP	00	46	30
		ePcP		47	33
	R	iP		46	32
		ePcP		47	29
	Pr	eP		46	26
		ePcP		47	24
	Bt	iP		46	24
		ePcP		47	20
	W	iP		46	43
		iPcP		47	41

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
18	Is	iP	00	46	42
		iPcP		47	40
	CL	eP		46	41
		ePcP		47	39
	T	eP		46	47
	BCIS: Sucre region, Bolivia				
	00:35.7, 250 km				
18	P	iP	02	50	19
		e			45
	R	eP			19
		e			47
	Pr	iP			20
	Bt	eP			22
	W	iP			17
	Is	eP			17
	CL	eP			18
	T	eP			19
18	P	eP	07	32	09
		e			19
	PX	eSNZ		41	27
		eGN		50	19
		eRZ		53	07
	R	eP		32	01
	Pr	eP			05
		i			25
	Bt	eP			09
	W	eP			03
		i			19
	Is	eP			04
	CL	eP			09
	T	e			27
	BCIS: $14\frac{3}{4}$ S $170\frac{3}{4}$ W				
	07:20:41				
18	P	iP	14	59	58d
		iNEZ	15	00	05
	PX	iSZ		08	43
		iGN		15	39
		eRZ			19.6
	P	eP'P'		29	10
			A		T
		PZ	0.3		$1\frac{1}{2}$
		MH	7		20
	R	iP	14	59	53d
		i			59
		eP'P'	15	29	10
	Pr	eP	14	59	52d
		i			59
	Bt	eP			53
		i			58
	W	iP			58d
		i	15	00	05
		eP'P'		29	08
	Is	iP	14	59	58d
		i	15	00	05
		eP'P'		29	09
	CL	eP	14	59	52d
		e			59
		eP'P'	15	28	57
	T	eP	14	59	56
		e	15	00	09
	Magnitude $6\frac{1}{4}$ - $6\frac{1}{2}$				
	USCGS: $25\frac{1}{2}$ N $45\frac{1}{2}$ W				
	14:49:30				
18	P	iP'	16	21	39
	R	iP'			38

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
18	Pr	eP'	16	21	34
		e			44
	Bt	eP'			34
	W	iP'			49
	Is	eP'			40
	CL	eP'			41
	T	eP'			45
	BCIS: Sandwich Islands,				
	South Atlantic				
	16:02.7				
18	P	iPNEZ	23	59	49c
		ipPNEZ	24	00	09
		isP			17
	PX	eSNZ		07	59
	P	eP'P'		29	28
			A		T
		PZ	$\frac{1}{2}$		$1\frac{1}{2}$
		PH	0.2		1
	R	iP	23	59	45c
		ipP	24	00	04
		isP			13
		eP'P'		29	28
	Pr	iP	23	59	40
		ipP			58
		isP	24	00	07
	Bt	iP	23	59	37
		ipP			54
		isP	24	00	04
	W	iP	23	59	59
		ipP	24	00	16
		i			21
		i			54
		eP'P'		29	19
	Is	i		00	04
		ipP			16
	CL	iP	23	59	54
		ipP	24	00	13
		isP			23
		eP'P'		29	11
	T	iP	24	00	02c
		ipP			21
		isP			31
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$				
	USCGS: $11\frac{1}{2}$ S 78 W				
	23:49:52, 100 km				
19	PX	eSNZ	08	11.0	
		eLZ		41.6	
	W	e	07	58	08
		e	08	01	43
	Is	e	07	57	39
		e	08	01	44
	CL	e			39
	BCIS: 36.5 N $21\frac{3}{4}$ E				
	07:43:56				
19	P	iP	17	22	00
	R	eP		21	57
	Pr	iP			53
	Bt	iP			48d
	W	iP		22	07d
	Is	iP			06d
	CL	eP			04d
	T	iP			11
	BCIS: Argentina - Bolivia -				
	Chile region				
	17:10.4				

Date	Sta.	Phase	h	m	s
February					
19	P	iPNZ	20	08	35d
		i			49
	R	iP			38
		e		09	11
	Pr	iP		08	44d
	Bt	eP			43
	W	iP			23c
		i			33
	Is	iP			24
		i			34
	CL	iP			28
	T	iP			20
		i			29
	USCGS: 56 N 164 E				
	19:58:55				
20	Is	e	04	54	20
		e			34
	CL	e			16
	T	e			14
	BCIS: 36.4 N 9 E				
	04:40:59				
20	P	iPNZ	05	28	03d
		ipP			32
		isP			44
	R	iP		27	58d
		ipP		28	27
		isP			40
	Pr	iP		27	54d
	Bt	iP			51d
		ipP		28	19
		isP			32
	W	iP			11d
		ipP			39
		isP			53
	Is	iP			09d
		ipP			38
		isP			51
	CL	iP			06d
		epP			35
		esP			49
	T	iP			15d
		epP			44
		esP			57
	USCGS: 16 S 72 W				
	05:17:18, 100 km				
20	P	eP	08	14	12d
	R	iP			09d
	Pr	eP			04
	Bt	iP			01
	W	iP			20d
	Is	iP			19d
		e		15	08
	CL	eP		14	17d
	T	iP			25d
	BCIS: Coast of northern Chile				
	08:02.9				
20	P	iP	13	09	40
		ipP		10	01
	R	iP		09	43
		ipP		10	04
	Pr	iP		09	49
		ipP		10	09
	Bt	iP		09	53

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
20	W	iP	13	09	29c
		ipP			49
	Is	iP			30
		ipP			51
	CL	iP			35c
		ipP			55
	T	iP			26
		ipP			46
	USCGS: 53½ N 160 E				
	12:59:44, 60 km				
20	P	eP'	22	17	28
		iP'			39
		i			47
		iSKP		20	59
			A		T
		P'Z	¼		1
	R	iP'	22	17	41
		e			59
		e		18	11
		e?		19	57
		ePP		20	12
		iSKP		21	01
		eSKKP?		30	01
		e			30
	Pr	eP'?		17	30
		eP'			42
		i			52
		i		18	02
		ePP		20	19
		eSKP		21	04
		eSKKP		30	07
		e			30
		i		31	56
	Bt	eP'		17	31
		iP'			42
		i		17	52
		e		18	01
		i			24
		ePP		20	33
		eSKP		21	06
		e			25
		e			55
	W	eP'		17	25
		iP'			34
		i			41
		i			50
		i			54
		i		18	06
		e		19	47
		i			51
		eiPP			56
		iSKP		20	52
		e		21	29
		e(SKKP)		30	30
	Is	eP'		17	35
		eP'			46
		e		18	33
		ePP		19	54
		e		20	07
		iSKP			54
		e		21	19

(continued)

Date	Sta.	Phase	h	m	s
February		(continued)			
20	T	iP'	22	17	36
		i			57
		e		18	05
		e			24
		iSKP		20	52
		e(SKKP)		30	32
	Seismograms examined and correlated with exceptional attention				
	USCGS: 2 N 97 E				
	21:58:23				
21	P	iP	03	07	16
	R	eP			18
	Pr	iP			20
	W	iP			17
	Is	eP			20
	T	eP			26
21	P	iPNEZ	14	37	49c
		i		38	07
		ipP			12
		i			19
		i			51
		iE		39	26
		iPPNEZ			33
		iScP		43	23
	PX	iSNE		44	01
		esSN			39
		iSSN		47	11
		iScSNE			41
		i(sScS)NE		48	22
		e(R)		49.7	
			A		T
		PZ	¾		1
		PH	½		1
		SH	2		3
	R	iPNEZ	14	37	54c
		ipPEZ		38	20
		e(PcP)		39	43
		iScP		43	24
		iSEZ		44	07
		iScSEZ		47	43
	Pr	iP!		38	01c
		i			14
		ipP			25
		i		39	01
		i			23
		i(sPP)		40	17
		eScP		43	28
		eS		44	25
		e(ScS)		47	39
	Bt	iP		38	06c
		ipP			31
		esP			42
		iPcP		39	48
		iScP		43	30
		iSNZ		44	29
		iScSNZ		47	53
	PV	iP		37	51c
	W	iP!		37	37c
		ipP		38	01
		i			40
		iScP		43	15

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
February		(continued)			
21	Is	iP	14	37	39c
		ipP		38	05
		iPP		39	23
		iScP		43	17
		eS			45
		e(ScS)		47	39
	T	iPNEZ		37	35c
		ipP		38	00
		iScPNEZ		43	16
		iSNEZ			34
		e(sScP)			59
		e		47	00
		iScSNE			30
		iN			58
	Magnitude 6¾				
	USCGS: 53 N 171 W				
	14:30:06, 100 km				
21	P	iP	15	07	56
	R	iP		08	00
	Pr	iP		07	59
	W	iP			56
	Is	iP			58
	T	iP		08	02
	BCIS: New Hebrides region				
	14:55.0				
21	P	iP	19	48	49
		i			53
	R	iP			51
		i			55
		e		49	07
	Pr	iP		48	50c
	Bt	eP			49
		e			53
		e		49	05
	W	iP		48	52c
		i			56
		i		49	08
	Is	iP		48	52c
		i			56
		i		49	05
	CL	iP		48	56c
		i		49	00
		i			12
	T	eP		48	57
		i		49	02
	USCGS: 31 S 178 W				
	19:36:05				
	Wellington: 30½ S 178½ W				
	19:36:24				
21	P	eP	20	15	22
		e			37
	R	eP			20
	Pr	eP			04
	Bt	e			10
	W	iP			33
		i			46
	Is	iP			31
		i			45
	CL	eP			29
	T	eP			37
	BCIS: 15¾ S 75¾ W				
	20:04:47				

Date	Sta.	Phase	h	m	s
February					
21	MW	e	23	54	44
	Is	iP			15
		i			20
	BCIS: Insufficient data				
22	P	iP	08	25	34
	R	iP			35
	Pr	iP			36c
	Bt	iP			34c
	W	iP			35c
	Is	iP			37c
	CL	iP			41c
	T	iP			42c
	BCIS: Kermadec Islands region				
22	P	eP	12	24	48
		e		25	01
	R	eP		24	54
		e		25	03
	Pr	iP			02
	Bt	eP			05
		e			15
	W	iP		24	40
	Is	eP			42
		e			52
	CL	eP			45
		e			55
	T	eP			38
		e			55
	BCIS: Rat Islands, Aleutians				
	12:16.4				
22	P	e	17	23	32
	PX	e(S)N			32.9
		e(R)N			40.6
	R	e		23	21
		e			34
	Hf	eN		23	30
	Pr	e			26
		e			41
	Bt	e			30
	W	iP			04
	Is	eP			04
		e			16
		e			24
	CL	eP			08
		e			21
		e			28
	T	eP			05
		e			21
	USCGS: 49 N 156 E				
	17:12:49				
23	P	e	03	45	29
	MW	e			19
	R	e			23
	Hf	eN			42
	Pr	e			33
	Bt	e			25
		e			41
	Is	e			19
	CL	e			11
	T	e			17
	USCGS: Kurile Islands foreshock				
	03:34:46				

Date	Sta.	Phase	h m s
February			
23	P	eP	05 08 16
	R	eP	20
	Hf	ePN	28
		eN	37
	Pr	eP	27
	Bt	eP	28
		e	36
	Is	eP	08
	CL	eP	05
		i	11
	T	eP	03
		i	24
	USCGS: 49 N 156 E		
	04:57:46		
23	P	eP	05 11 56
	R	eP	55
	Is	eP	52
	CL	eP	46
	USCGS: Kurile Islands aftershock		
	05:01:27		
23	Pr	eP	05 29 49
	Bt	eP	46
	Is	iP	30 20
	CL	eP	12
23	P	iPNZ	13 20 45
	PX	eLN	23.9
	R	eP	20 53
	Hf	iPN	21 04
	Pr	iP	03
		i	13
	Bt	iP	10
		i	19
	Is	iP	20 29
	CL	iP	32
		i	42
	T	eP	15
	USCGS: 49 N 129 W		
	13:16:51		
23	R	eP	19 07 54
	Hf	ePN	08 02
	Bt	eP	07 58
	W	iP	48
		i	08 01
	Is	eP	07 47
		e	08 09
	CL	iP	07 51
		e	08 04
	T	iP	07 49
		e	08 03
	USCGS: 12 N 141 E		
	18:54:37		
23	P	eP	20 39 56
		i	40 13
		iPP	43 55
	PX	ePSZ	52 48
		iSSSZ	21 02 18
		eGN	07.5
		eRZ	12.5
			A T
		PZ	2 4
		MH	50 20

(continued)

Date	Sta.	Phase	h m s
February		(continued)	
23	R	eP	20 39 56
		i	40 01
		e	43 13
		ePP	51
		eSKSN	50 32
	Hf	iPN	40 08
		ePPN	44 04
		eSKSN	50 40
	Pr	iP	40 02
		i	04
		i	19
		iPP	44 16
	Bt	iP	40 05
		i	07
		i	17
		i	30
		iPP	44 05
	W	iP	39 48c
		iPP	43 48
	Is	iP	39 47
		i	53
		i	40 13
		iPP	43 37
	CL	iP	39 49
		i	55
		e	42 22
		e	44 13
	T	eP	39 45
		i	40 25
		ePP	43 37
		eSKSE	50 18
	Pasadena: 24½ N 121 E		
	20:26:11, m = 7.1 M = 7.3		
	JMA: 23 N 122 E		
	20:26:08		
26	Hf	ePN	02 28 55
	Pr	iP	51
	W	iP	51
	Is	iP	51
	CL	eP	56
	T	eP	57
26	Hf	eN	04 29 49
	W	iP	30 17
	Is	iP	18
	CL	iP	21
	T	iP	23
26	Hf	iPN	06 20 31
	W	iP	19 58
	Is	e	20 09
	CL	eP	13
		e	48
	T	eP	07
	USCGS: 52½ N 161 E		
	06:10:22		
27	W	iP	15 14 59
	Is	eP	15 04
	T	eP	14 59
	USCGS: 24 N 121½ E		
	15:01:22		
27	Hf	ePN	16 20 48
		eN	21 04
	R	eP	20 39
		i	53

(continued)

Date	Sta.	Phase	h m s
February		(continued)	
27	Pr	eP	16 20 41
		e	54
		e	21 08
	W	iP	20 37
		i	50
	Is	eP	38
		e	51
	CL	iP	37
		i	55
	T	eP	43
		e	51
	USCGS: 11½ S 167 E		
	16:07:58		
28	R	eP	07 46 54
	Hf	ePN	57
		eN	47 23
	W	iP	08
	Is	eP	06
	CL	iP	03
	T	iP	12
28	W	iP	09 29 06
	Is	eP	09
	T	e	05
28	P	iP	11 10 16
		i	25
		i	37
	PX	eSN	17 35
		eSSN	21.0
		eGN	22.0
		eRZ	23.6
	R	eP	10 26
	Hf	ePN	34
	Pr	iP	31
	Bt	eP	36
		i	44
	W	iP	09
		i	26
	Is	eP	11
	CL	eP	16
		i	20
	T	eP	07
		i	10
	USCGS: 51½ N 180		
	11:01:45		
28	R	eP	15 52 48
		e	53 44
	Hf	ePN	52 38
	Pr	iP	42
		ipP	53 14
		i	30
	W	e	46
		i	55 59
	Is	iP	53 04
		epP	35
		i	55 57
	CL	iP	52 59
		ipP	53 31
		e	47
	T	iP	10
		ipP	42
	BCIS: Coast of Guatemala		
	15:46.9, 150 km		

Date	Sta.	Phase	h m s
February			
28	R	eP'	23 51 41
		e	59
	Pr	eP'	46
	Is	eP'	42
		e	52 06
	T	eP'	51 42
		e	58
	BCIS: 33 S 58½ E		
	23:31:22		
March			
1	D	eP	02 20 49
		e	57
	R	eP	46
		i	53
	Pr	eP	40
		i	49
	Bt	eP	33
		i	42
	W	eP	21 03
		i	15
	CL	eP	00
		i	07
		e	23 20
		e	29 50
	T	eP	21 10
		e	17
		e	23 43
	USCGS: Near coast of Oaxaca		
	02:15:12		
1	D	e(P)	07 35 00
	W	e(P)	03
	CL	e(P)	09
	T	e(P)	15
1	D	eP	14 15 42
		e	48
	R	eP	40
	W	eP	51
	CL	eP	50
	T	eP	57
1	P	iP	23 33 27c
	R	iP	29
	Hf	iPN	37
	Bt	iP	39
		e	34 07
	W	iP	33 16c
		i	39
		i	49
		e	34 07
	Is	iP	33 17c
		i	42
		e	34 11
	CL	iP	33 21c
		e	44
		e	34 10
	T	iP	33 13c
		i	41
		e	34 09
	BCIS: Coast of Kamchatka		
	23 :23:23		
2	P	iPNEZ	00 35 03
		i	37
		ePPNEZ	36 37

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h m s
March		(continued)	
2	PX	iSNE	00 41 02
		eRZ	46.2
			A T
		PZ	10 7
		PH	6 6
		PPZ	2 4
		PPH	4 6
		SH	6 7
		MH	80 20
		MZ	20 20
	R	iP	00 34 56d
		iPPEZ	36 30
		iSE	40 52
	Hf	iPN	34 44
		iPPN	36 24
		eSN	40 40
	Bt	iP	34 50d
		i	35 36
		iPP	36 27
		i	39 32
	W	iP	35 10d
		i	31
		i	36 28
		iPP	37 13
	Is	iP	35 08d
		i	44
		iPP	37 14
		eS	41 12
	CL	eP	35 02d
		i	36 32
		e(PP)	37 04
	T	iP	35 10d
		e(PP)	37 30
		eSNE	41 16
	Magnitude $6\frac{3}{4}$		
	BCIS: $18\frac{1}{2}$ N 78 W		
	00:27:33		
2	P	iP	08 23 47
		ipP	54
	PX	iSZ	34 59
		iPSZ	36 04
		eRZ	53.9
	R	iP	23 50
		ipP	57
		e	27 03
	Hf	ePN	23 57
		ipPN	24 08
		eN	27 51
	Bt	eP	23 53
		ipP	59
	W	iP	44c
		ipP	51
		e	26 43
	Is	iP	23 45
		ipP	53
		e	27 34
		e	42
		eS	34 33
	CL	iP	23 50
		ipP	55
		e	27 40
	T	iP	23 49
		ipP	56
		e	27 27
		eSNE	34 20

(continued)

Date	Sta.	Phase	h m s
March		(continued)	
2	USCGS: 6 S 151 E		
	08:10:24		
3	P	ePNZ	03 24 33
		e	54
	PX	iSZ	29 11
		iREZ	32.0
			A T
		PZ	0.1 1
		MH	10 20
	R	eP	03 24 28
		i	32
	Hf	ePN	21
	Pr	eP	19
	Bt	eP	16
		e	33
	W	eP	46
		i	25 01
		e	28 26
	T	iP	24 55
		e	25 26
	Magnitude $5\frac{3}{4}$		
	USCGS: 8 N 103 W		
	03:18:23		
3	PX	eL	21 32.0
	W	iP	02 42
		i	03 10
	USCGS: $9\frac{1}{2}$ S 154 E		
	20:49:30, 100 km		
4	R	iP	05 54 30
		i	34
	W	iP	12
	Is	iP	13
		i	39
	T	eP	05
	USCGS: South central Alaska		
	05:47:30		
5	P	iPEZ	12 35 11
		iNZ	21
	PX	iPPZ	37 39
		iPPPZ	39 23
		iSN	43 56
		iGN	53.7
		iRNZ	55.8
			A T
		PZ	$\frac{1}{4}$ $1\frac{1}{2}$
		PH	$\frac{1}{4}$ $1\frac{1}{2}$
		MH	20 20
		MZ	15 20
	R	eP	12 35 07
		i	16
	Hf	ePN	34 58
	Pr	iP	35 08
		i	19
	Bt	iP	07
		i	16
		ePP	37 19
		e	38 03
	W	iP	35 10d
		i	16
		ePP	37 32
		e	38 37
		e	39 04
		eP'P'	13 04 11
	Is	iP	12 35 08d
		i	14

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h m s
March		(continued)	
5	Is	ePP	12 37 23
		eP'P'	13 04 09
	T	iPNEZ	12 35 04d
		i	13
		ePP	37 24
		eSE	43 40
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$		
	BCIS: $32\frac{3}{4}$ N $39\frac{1}{2}$ W		
	12:24:35		
5	PX	eSN	19 27.5
		eRZ	43.0
	R	iP	16 13
		i	28
	Hf	iPN	23
		eN	47
	Pr	iP	15
		i	50
	Bt	iP	05
		e	32
	W	iP	10
		i	41
	Is	iP	12
		i	43
	T	eP	16
	USCGS: 14 S $167\frac{1}{2}$ E		
	19:03:30		
6	P	eP	03 45 45
	D	eP	48
		e	46 08
	R	e	04
		e	20
	Hf	ePN	45 32
	Pr	eP	38
		e	59
	Bt	e	55
	T	eP	46 06
	USCGS: Off coast of Chiapas, Mexico		
	03:39:45		
6	P	iP	11 37 16
		e	27
	PX	eRZ	56.5
	R	iP	37 19
		e	37
	Hf	iPN	29
		iN	44
	Pr	iP	25
		i	43
	Bt	iP	28
		i	51
	T	iP	04
		i	32
		i	46
	USCGS: 49 N 155 E		
	11:26:44		
7	P	iPNEZ	10 58 31d
	R	iP	33d
	Pr	iP	34d
	Bt	iP	32
	W	iP	28d
		ipP	11 00 31
	Is	iP	10 58 35d
		epP	11 00 34
	T	iP	10 58 40

(continued)

Date	Sta.	Phase	h m s
March		(continued)	
7	USCGS: 19 S $178\frac{1}{2}$ W		
	10:47:25, 550 km		
7	D	iP	19 18 43
	R	eP	49
	Bt	iP	37
	W	iP	19 01
	Is	iP	01
	CL	eP	18 58
7	PX	eL	22 24.0
	W	e	05 25
	Is	e	37
	CL	e	32
	USCGS: Arctic Ocean north of Spitzbergen		
	21:55:42		
8	D	eP	10 56 39
	R	eP	36
	Hf	ePN	29
	Pr	iP	30
	Bt	iP	24
		e	44
	Is	eP	55
	CL	eP	51
8	P	e	12 31 59
		ePP I	32 35
		iP II	34 54
		iPPNEZ II	38 46
	PX	eSKSZ I	39 24
		ePPPN II	40 53
		iSKSZ II	45 39
		iSSNZ I	47 47
		iSSSN I	50 31
		iSSZ II	53 15
		iGN I	57.0
		iRZ I	13 00.4
		eRZ II	05.6
			A T
		PZ	$1\frac{1}{2}$ 4
		MH	20 20
	R	eP I	12 28 00
		ePP I	32 23
		eP II	34 53
		ePP II	38 50
		eSKS I	39 28
		eR I	13 00.4
	Hf	ePN I	12 28 07
		ePPN I	32 27
		ePN II	34 52
		e(PP)N II	38 35
	Pr	eP I	28 00
		e	31 46
		iP II	34 53
		e II	35 19
		ePP II	38 37
		i II	59
	Bt	eP I	28 00
		e	31 54
		e	32 43
		iP II	34 56
		i	39 00
	W	iP I	27 54
		i	31 36
		iPP I	32 19
		iP II	34 48
		iPP II	38 39

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h m s
March		(continued)	
8	Is	iP I	12 27 53
		i	31 31
		ePP I	32 15
		iP II	34 48
		iPP II	38 40
	CL	eP I	27 51
		e	31 30
		ePP I	32 26
		eP II	34 47
		e	36 02
		ePP II	38 45
	T	eP II	34 45
		e	36 05
		ePP II	38 35
	Magnitude: I $6\frac{1}{2}$		
	II $6\frac{1}{4}$		
	Two successive earthquakes		
	BCIS: I 39.5 N 22.8 E		
	12:14:14		
	II 39.5 N 22.8 E		
	12:21:14		
8	P	iP	16 46 40d
	R	iP	42d
		epP	48 47
	Hf	iPN	46 48
	Pr	iP	42d
		epP	48 46
	Bt	iP	46 41d
	W	iP	42d
		ipP	48 43
	Is	iP	46 43d
		epP	48 45
	CL	iP	46 47d
		epP	48 49
	T	eP	46 49
	USCGS: 23 S 179 E		
	16:35:11, 600 km		
8	P	eP	22 35 42
	R	eP	45
	Hf	eN	36 07
	Pr	iP	35 45
	Bt	eP	43
	W	iP	43
	Is	iP	45
	CL	eP	48
	T	eP	51
8	PX	eZ	24 01.7
		eN	06.2
		eZ	14.3
	Bt	e	23 52 52
	W	e	35
	Is	eP	48 45
		e	52 29
	CL	e(P)	48 35
		e	49 07
		e	52 23
	BCIS: 39.5 N 22.8 E		
	23:35:11		
9	R	e	02 38 56
	Pr	e	44
	Bt	e	42
	W	e	39 04
	Is	e	03
	CL	e	38 57

Date	Sta.	Phase	h m s
March			
9	P	eP	14 13 32
		e	14 08
	PX	eL	23.2
	R	eP	13 58
	Hf	ePN	14 04
		eN	13
	Pr	eP	13 58
		e	14 19
	Bt	e	16
	W	iP	13 39
		i	51
	Is	eP	42
	CL	eP	45
	T	eP	33
	USCGS: 65 N 149 W		
	14:06:52		
9	P	iPNEZ	14 30 38c
		i	31 02
		iPcPE	42
	PX	iPPZ	32.7
		iSNE	37 30
		iSSN	41.0
			A T
		PZ	15 4
		PH	17 6
		SH	800 22
		MH	100 15
	R	eP	14 30 45
		i	31 10
		iPcP	50
	Hf	ePN	30 57
	Pr	eP	49
		i	31 04
	Bt	eP	30 54
	W	iP!	26
		eSE	37 12
	Is	iP	30 30
		i	53
	CL	eP	32
		i	31 00
	T	iP	30 25
		i	43
		i	31 13
	Pasadena: $51\frac{1}{4}$ N $176\frac{1}{2}$ W		
	14:22:28		
	Magnitude: m = 7.7, M = $8\frac{1}{4}$		
	USCGS: 51.3 N 175.8 W		
	14:22:27.5		
9	R	ePNE	15 17 51
	W	ePE	34
	Is	ePN	39
	T	ePNE	36
	BCIS: Andreanof Islands,		
	Aleutians		
	15:10:12		
9	P	ePNE	15 50 11
	R	iPNEZ	11
	Hf	iN	30
	Bt	iP	21
	W	iPE	02
	Is	iPN	06
	T	iPNZ	49 53
		i	50 03
	USCGS: $50\frac{1}{2}$ N 177 W		
	15:41:50		

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h m s
March			
9	P	iPNEZ	16 40 48
		i	41 01
	Pr	iP	40 59
	Bt	iP	41 04
	W	eP	40 38
		e	50
	Is	iP	40
	CL	iP	44
		i	57
	T	iPNEZ	35
		iNZ	48
	USCGS: 51 N 176 W		
	16:32:30		
9	P	iP	16 53 32
	R	iP	36
		i	50
	Hf	iPN	47
	Pr	iP	41
	Bt	iP	47
	Is	iP	22
	CL	iP	26
	T	iP	17
	USCGS: $51\frac{1}{2}$ N 174 W		
	16:45:26		
9	P	iP	17 18 13
		i	25
		i	31
	R	iP	17
		i	29
		i	35
	Hf	iPN	27
	Pr	iP	24
		i	36
		i	42
	Bt	iP	29
		i	41
		i	48
	W	eE	14
	Is	iP	03
		i	16
		i	23
	CL	iP	08
		i	21
	T	iP	17 58
		i	18 08
		i	18
	USCGS: $51\frac{1}{2}$ N $172\frac{1}{2}$ W		
	17:10:13		
9	P	eP	17 51 24
	R	eP	29
		e	39
	Hf	ePN	45
	Pr	eP	36
		i	47
	Bt	eP	39
		e	52
	Is	eP	15
	CL	eP	19
		e	29
		i	37
	T	eP	10
		i	25
	BCIS: Andreanof Islands		
	17:43.4		

Date	Sta.	Phase	h m s
March			
9	P	eP	18 00 23
	R	eP	28
	Pr	iP	33
	Bt	eP	39
	Is	iP	14
	CL	iP	18
	T	iP	09
	BCIS: Andreanof Islands,		
	Aleutians		
	17:52.0		
9	P	iPNEZ	18 04 47
	R	iP	41
	Hf	ePN	05 01
	Pr	iP	04 58
		i	05 03
		i	17
	Bt	iP	03
		i	11
		i	18
	W	ePE	04 35
	Is	iP	37
		i	44
	CL	iP	40
		i	59
	T	iP	31
		i	42
	BCIS: $53\frac{3}{4}$ N 165 W		
	17:57:25		
9	P	iPNEZ	18 29 45
		i	54
	R	eP	49
		i	59
	Hf	ePN	30 09
	Pr	iP	29 53
		i	30 06
	Bt	iP	00
		i	10
	Is	iP	29 35
		i	45
	CL	eP	36
		i	49
	T	eP	27
		i	40
	BCIS: Andreanof Islands,		
	Aleutians		
	18:21.7		
9	P	eP	19 21 12
		i	18
		i	35
	R	eP	16
	Hf	iPN	40
	Pr	eP	23
		i	39
		i	47
	Bt	iP	35
		i	45
		i	52
	Is	iP	09
		i	26
	CL	eP	06
		i	29
	T	iP	03
		i	19
	BCIS: 53 N 169 W		
	19:13:33		

Date	Sta.	Phase	h	m	s
March					
9	P	eP	19	42	29
	R	eP			34
	Hf	ePN			51
	Pr	eP			39
		i			48
	Bt	eP			48
		e			53
	Is	eP			20
	CL	eP			24
	T	eP			15
	BCIS: 53 N 172½ W				
	19:34:54				
9	P	eP	19	45	34
		i			47
	R	iP			38
		i			46
		i			52
	Hf	ePN			53
		eN		46	03
	Pr	iP		45	45
		i			59
	Bt	iP			50
		i		46	04
	W	eE		45	37
	Is	iP			25
		i			39
	CL	iP			29
		i			43
	T	iP			19
		i			33
	USCGS: 51 N 173 W				
	19:37:31				
9	P	iP	20	08	45d
		i		09	04
		i		10	42
	R	iP		08	51d
		i		10	43
	Hf	iPN		09	01
	Pr	iP		08	57d
	Bt	iP		09	01d
		e		10	46
	Is	iP		08	32d
	CL	iP			39d
	T	iP			31d
	USCGS: 51½ N 170½ W				
	20:00:56				
9	P	ePNEZ	20	14	51
	R	eP			55
	Hf	ePN		15	06
	Pr	iP			02
	Bt	iP			05
	Is	iP		14	42
	CL	iP			45
	T	iPNEZ			37
	BCIS: 51½ N 171 W				
	20:07:01				
9	P	eP	20	29	47
		iNEZ			54
		i		30	01
	R	eP		29	52
		i			58
		i		30	08
	Hf	ePN			02

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
9	Pr	iP	20	29	58
		i		30	05
	Bt	iP			03
		i			09
		i			18
	W	eE		29	43
		eE			52
	CL	iP			41
		i			48
		i			54
	T	eP			31
		i			40
	USCGS: 52 N 169½ W				
	20:22:02				
9	P	iP	20	39	52
		i		40	03
	R	e		39	48
		e			58
	Hf	eN		40	11
		eN			27
	Pr	eP		39	51
		e		40	04
	Bt	eP		39	54
		e		40	09
	Is	eP		39	42
	CL	eP			46
	T	eP			36
	BCIS: Fox Islands, Aleutian Islands				
	20:32.1				
9	P	eP	20	41	42
	R	eP			43
	Pr	eP			50
		i		42	01
	Bt	iP		41	53
	W	eE			28
	Is	iP			29
	CL	eP			33
	T	iPNEZ			25
	BCIS: 51½ N 178½ W				
	20:33:12				
9	P	iP	20	47	04
		i			20
	PX	iSE		53	08
		iGN			56.2
				A	T
		PZ		½	1
		PH		1.7	4
		SH		25	20
		MH		150	20
	R	iP	20	47	08
		i			15
		i			26
		iSE!		53	19
	Hf	ePN		47	18
		iN			34
	Pr	iP			10
		i			29
	Bt	iP			15
		i			35
		i		49	10
		e(S)Z		53	33
	W	eE		46	59

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
9	Is	eP	20	46	54
		i		47	01
		i			10
	CL	eP		46	54
		i		47	04
		i			14
	T	iP		46	49
		i		47	01
		i			08
		iSE		52	41
		iG			55.8
	Magnitude 6¾ - 7				
	USCGS: 52½ N 169½ W				
	20:39:15				
9	P	ePNEZ	22	04	00
		i			07
		i			12
	R	eP			04
		i			17
	Hf	ePN			21
		eN			32
	Pr	iP			11
		i			24
	Bt	eP			15
		i			27
	W	eE		03	50
		eE		04	00
	Is	eP		03	50
		i		04	03
	CL	eP		03	53
		i		04	05
	T	iPNEZ		03	45
		i			57
	USCGS: 53 N 168 W				
	21:56:24				
9	P	iP	22	30	59
	R	iP			55
	Pr	iP			58
	Bt	iP			45
	Is	eP		31	06
	CL	eP			02
	T	eP			09
	BCIS: 19 S 64 W				
	22:19:17				
9	P	eP	23	07	19
	R	eP			22
	Hf	ePN			38
	Pr	iP			29
	Bt	eP			34
	Is	eP			10
	CL	eP			13
	T	eP			05
	USCGS: 51½ N 171 W				
	22:59:26				
9	P	iP	23	15	23
	R	iP			25
	Pr	eP			30
	Bt	iP			36
	Is	eP			01
		i			12
	CL	eP			03
	T	eP		14	56
		i		15	05
	BCIS: Aleutians				

Date	Sta.	Phase	h	m	s
March					
9	P	eP	23	28	58
		i		29	06
		i			27
	R	eP		28	57
		e		29	04
		i			11
	Hf	ePN			14
		eN			20
	Pr	iP			05
		i			17
		i			39
	Bt	eP			08
		i			21
		i			43
	Is	eP		28	44
		i			58
	CL	eP			48
		i		29	01
	T	eP		28	40
		i			50
	BCIS: 52¾ N 174¾ W				
	23:20:58				
9	P	iPNEZ	23	38	00
		i			06
	R	eP			02
	Hf	ePN			18
	Pr	iP			10
		i			18
	Bt	iP			15
	Is	iP		37	48
		i			57
	CL	eP			51
		i		38	00
	T	eP		37	43
		i			55
10	P	i	00	19	46
	R	i			51
	Pr	i			41
	Bt	i			45
	W	eE			10
	Is	eP			09
		i			21
	CL	eP			12
		e			23
	T	eP			05
		e			17
		e			32
	BCIS: 52¾ N 173¾ W				
	00:11:29				
10	D	eP	00	33	44
	R	iP			49
	Pr	iP			56
	Bt	iP		34	01
	Is	iP		33	35
	CL	iP			39
	T	iP			29
	BCIS: Aleutians				
	00:26.4				
10	D	eP	00	48	46
	R	eP			52
	Bt	e		49	10
	Is	eP		48	39
		e			46

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	CL	eP	00	48	38
		e			52
	T	eP			28
		e			39
	BCIS: Aleutians				
	00:40.7				
10	D	eP	01	24	42
	R	iP			44d
	Pr	iP			53d
	Bt	iP			56d
	W	eE			40
	Is	iP			31d
	CL	iP			34d
	T	iP			25
	BCIS: 53½ N 177¼ W				
	01:17:00				
10	P	iP	01	51	48c
	R	iP			52c
		e		52	12
	Hf	iPN			03
		eN			22
	Pr	iP!		51	59c
		i		52	03
		i			16
	Bt	iP			03c
		e			20
	Is	iP		51	38c
	CL	iP			42c
	T	iPNEZ			35c
	BCIS: Andreanof Islands, Aleutians				
	01:43.5				
10	R	eP	02	43	41
	Pr	iP			51c
	Bt	iP			54
	Is	eP			14
		i			29
	CL	eP			18
		e			30
	T	eP			08
		e			24
10	P	iPEZ	03	14	17
		i			33
	PX	eS		20	44
			A		T
		PZ	½		1½
		SH	4		5
		MH	70		20
	R	ePEZ	03	14	21
		i!			37
		i			46
		iSE		20	51
	Hf	ePN		14	33
		iN			49
	Pr	iP			29
		i			42
		i		15	21
	Bt	iP		14	32
		i			49
		i(S)Z		21	08
	W	eE		14	08
		eE			22
	Is	eP			07
		i			16
		i			25
		i		16	20

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	CL	eP	03	14	05
		i			27
		i		15	24
	T	eP		14	02
		i			11
		i			59
		iSNEZ		20	24
	Magnitude 6½ - 6¾				
	USCGS: 52 N 176 W				
	03:06:02				
10	P	iP	03	17	18
	R	iP			24
	Hf	iPN			33
	Pr	iP			29
	Bt	iP			30
	Is	iP			08
	CL	iP			02
	T	iP			03
	USCGS: 51½ N 174 W				
	03:08:55				
10	P	iPNEZ	04	44	53
		i			57
		i		45	14
	R	eP		44	51
		i		45	26
	Pr	iP		44	59
		i		45	05
		i			24
		i			34
	Bt	eP			07
		i			41
	Is	eP		44	39
		i		45	12
	CL	eP		44	42
		e			47
		i		45	16
	T	eP		44	37
		i			54
	BCIS: Aleutians				
	04:37.2				
10	P	iP	04	48	52
	R	iP			56
		e		49	10
	Hf	ePN			04
	Pr	iP			04
		i			16
	Bt	iP			07
		i			23
	Is	iP		48	42
	CL	iP			46
	T	iP			37
	USCGS: 52 N 170 W				
	04:41:04				
10	P	iP	05	41	33
		i			45
	R	eP			38
		e			49
	Hf	ePN			57
	Pr	eP			41
		i			55
	Bt	eP			48
		i		42	01
	Is	eP		41	21
		i			34
	CL	eP			25
		i			40

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	T	eP	05	41	17
		i			31
	USCGS: 52 N 174 W				
	05:33:27				
10	D	eP	05	49	44
	R	eP			43
	Pr	i			53
	Bt	e			58
	Is	eP			24
		e			31
	CL	eP			35
	T	eP			19
		e			24
10	P	iP	06	28	24
	R	iP			29
		i			41
	Hf	ePN			40
	Pr	iP			37
		i			49
	Bt	iP			40
		i			53
	Is	iP			15
		i			27
	CL	iP			19
		i			32
	T	iP			10
		i			22
		i			35
	BCIS: 53 N 172¼ W				
	06:20:53				
10	P	iP	06	31	29
	R	iP			34
		i			47
		i			55
	Hf	ePN			45
		eN		32	08
	Pr	iP		31	41
		i			54
		i		32	03
	Bt	iP		31	45
	Is	iP			19
	CL	iP			25
		i			37
	T	iP			15
	BCIS: 51¼ N 177 W				
	06:23:44				
10	P	iPNZ	07	31	33d
		i			44
		i			50
	R	iP			37d
		i			50
	Hf	ePN			49
		eN		32	01
	Pr	iP		31	45d
		i			56
	Bt	iP			47d
		i		32	00
	Is	iP		31	24d
		i			34
	CL	iP			27d
		e			39
	T	iP			19d
		i			31

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	USCGS: 52 N 176 W				
	07:23:18				
10	P	iP	07	39	09
		i			44
	R	iP			14
	Hf	ePN			24
		eN			39
	Pr	iP			20
		i			32
	Bt	eP			25
	Is	iP		38	59
	CL	iP		39	02
	T	iP		38	54
	USCGS: 53 N 168 W				
	07:31:36				
10	P	iP	10	21	38
		i			57
	R	iP			43
	Pr	eP			41
		i			50
	Bt	iP			44
		i			54
	Is	iP			20
		i			29
	CL	iP			25
		i			33
	T	iP			17
		i			25
10	D	eP	10	45	00
		i			09
	R	eP			01
		i			08
	Pr	iP			09
		i			20
	Bt	eP			10
		e			25
	Is	eP		44	47
		i			58
	CL	iP			52
		i		45	04
	T	iP		44	43
10	P	iP	11	28	36
		i			41
	PX	iSNE		34	47
		eGEZ		38.1	
		eRZ		40.5	
	R	eP		28	40
		i			46
		i			51
		eSE		34	53
	Hf	iPN		28	55
	Pr	iP		28	47
		i			54
		i		31	11
	Bt	iP		28	51
		i			56
		i		31	03
		eSZ		35	19
	W	eE		28	30
	Is	iP			26
		i			50
	CL	eP			30
		i			38

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
10	T	eP	11	28	21
		i			32
	USCGS: 52 N 171 W				
	11:20:45				
10	P	eP	12	20	45
		i		21	10
		iNEZ			21
	R	eP		20	50
		i		21	26
	Pr	iP		20	57
		i		21	22
		i			32
	Bt	iP			01
		i			26
		i			36
	Is	eP		20	26
		i			36
		i		21	02
		i			12
	CL	eP		20	31
		i			40
		i		21	06
		i			16
	T	eP		20	18
		i			31
		i			57
		i		21	08
	USCGS: Andreanof Islands, Aleutians				
	12:12:13				
	(Possibly two shocks)				
10	P	eP	12	43	55
		i		44	21
	R	iP		43	58
	Hf	iN		44	13
	Pr	iP			07
		i			30
	Bt	iP			10
	W	eE		43	48
	Is	iP			45
		i			50
	CL	iP			50
	T	iP			40
	USCGS: 51 N 171 W				
	12:36:04				
10	P	iP	12	53	52
		i		54	10
	R	iP		53	57
		i		54	12
	Pr	iP			03
		i			18
	Bt	iP			06
		i			21
	Is	iP		53	43
		i			58
	CL	iP			47
		i		54	05
	T	iP		53	37
	USCGS: 51 N 177 W				
	12:45:31				
10	P	iP	13	18	48
		i		19	00
	R	eP		18	55
		e		19	13

Date	Sta.	Phase	h	m	s
March		(continued)			
10	Pr	iP	13	19	00
		i			23
	Bt	iP			02
	Is	eP		18	41
	CL	eP			42
	T	eP			35
		i			40
		i			53
	USCGS: $51\frac{1}{2}$ N 180				
	13:10:13				
10	Pr	iP	13	28	21
	Bt	iP			25
	Is	eP			01
	CL	eP			04
	T	eP		27	57
10	P	iP	13	37	01
		i			09
	R	eP			04
	Pr	iP			10
		i			23
	Bt	eP			12
	Is	iP		36	49
	CL	eP			53
	T	iP			44
	USCGS: $51\frac{1}{2}$ N 179 W				
	13:28:30				
10	P	eP	15	33	08
	R	eP			03
		i			18
	Hf	iPN			16
		iN			31
	Pr	iP			12
		i			24
	Bt	iP			14
		i			28
	Is	iP		32	51
		i		33	05
	CL	eP		32	56
	T	iP			47
10	P	iP	15	34	23
		i		35	00
	PX	iSNEZ		40	46
		eSSNZ		44.2	
			A		T
		PZ	$2\frac{1}{4}$		4
		SH	8		$8\frac{1}{2}$
		MH	70		20
		MZ	30		22
	R	iP	15	34	28
		i			40
		iSEZ		40	56
	Hf	iPN		34	38
	Pr	iP			34
		i			48
		i		35	13
		iS		41	10
	Bt	iP		34	39
		i			52
		i		35	10
		ePP		36	24
		iSNZ		41	16
	W	ePE		34	25
		eSE		40	24

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
10	Is	iP	15	34	14
		i			21
		i			27
		eSNZ		40	30
	CL	iP		34	18
		i			24
		eS		40	32
	T	iPNEZ		34	09
		iSE		40	20
	Magnitude $6\frac{3}{4}$				
	USCGS: 52 N 173 W				
	15:26:23				
10	P	eP	15	53	22
	R	eP			26
	Pr	iP			34
		i			56
	Is	iP			14
	CL	eP			16
	T	iP			10
10	P	eP	16	45	49
	R	eP			54
	Hf	eN		46	15
	Pr	iP			00
	Bt	iP			03
		i			15
	W	iP		45	37d
		i			49
	Is	iP			38
	CL	eP			42
	T	iP			34
		i			45
	USCGS: $51\frac{1}{2}$ N $173\frac{1}{2}$ W				
	16:37:45				
10	P	iPNEZ	16	47	49
		i		48	01
		i			19
	R	iP		47	54
		i		48	06
		i			14
	Hf	ePN			05
		iN			16
		iN			24
	Pr	iP		47	59
		i		48	13
		i			18
		i			33
	Bt	eP			02
		i			14
	W	iP		47	35d
		i			46
	Is	eP			37
		i			40
		i			46
		i			51
	CL	iP			42
		i			54
	T	iP			33
		i			36
		i			47
		i			57
	BCIS: Aleutians				
	16:39.8				
10	P	eP	17	53	55
	R	eP		54	00

Date	Sta.	Phase	h	m	s
March		(continued)			
10	Pr	iP	17	54	08
		i			24
	Bt	eP			11
	W	iP		53	37
		i			44
		i			54
	Is	eP			47
	CL	eP			47
	T	eP			38
	BCIS: Aleutians				
	17:45.8				
10	P	eP	18	00	14
	R	eP			21
	Pr	eP			23
	Bt	eP			30
	W	iP			04
		i			13
	Is	eP			06
	CL	eP			09
	T	eP	17	59	57
10	D	eP	18	10	36
		e			47
	R	eP			39
	Pr	iP			47
	Bt	iP			52
	W	iP			23c
		i			30
	Is	eP			25
	CL	eP			28
	T	iP			19
10	P	eP	18	23	17
		e			32
	R	eP			21
	Hf	ePN			16
	Pr	i			30
	Bt	eP			22
	W	eP			39
		e			49
	Is	eP			37
		e			49
	CL	eP			34
		i			45
	T	eP			42
		e			54
	BCIS: $6\frac{3}{4}$ S $83\frac{3}{4}$ W				
	18:14:00				
10	P	eP	19	26	53
	PX	eLN			38.5
	R	eP		26	56
	Hf	ePN		27	10
	Pr	iP			05
	Bt	iP			07
	W	iP		26	41
		i			54
	Is	iP			43
	CL	e		27	02
		i			15
	T	iP		26	36
		i			49
	USCGS: 51 N 177 W				
	19:18:30				
10	P	iP	19	48	56
		i		49	07
		i			10

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	R	iP	19	49	01
		i			14
	Hf	iPN			12
		iN			25
	Pr	iP			07
		i			19
		i			29
	Bt	iP			11
		i			25
	W	iP		48	44
		i			58
	Is	iP			47
		i		49	02
		i			14
	CL	iP		48	52
		i		49	07
	T	iPNEZ		48	41
		i			56
	USCGS: 52 N 173 W				
	19:40:55				
10	P	eP	20	41	16
	R	eP			17
	Pr	eP			24
	Bt	eP			32
	W	iP		40	59
	Is	eP		41	03
	CL	eP			06
	T	eP		40	57
	BCIS: 55 N 165 W				
	20:34:00				
10	D	eP	21	04	30
	R	eP			33
	Pr	iP			41
	Bt	iP			45
	W	iP			17
		i			28
	Is	eP			21
	CL	eP			23
	T	iP			14
	BCIS: 54 N 167 W				
	20:57:04				
10	D	eP	21	17	38
	R	eP			44
	Hf	ePN			56
	Pr	iP			53
	Bt	iP			58
	W	iP			29d
	Is	iP			32
	CL	iP			34d
	T	iP			25
	BCIS: Unimak Island region				
	21:10.4				
10	P	iP	23	45	01
	R	iP			06
	Pr	iP			13d
		i			26
	Bt	iP			15
	W	iP		44	49d
		i		45	03
		i			14
	Is	iP		44	53d
		i		45	06
	CL	iP		44	57d
		i		45	11

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
10	T	iP	23	44	47d
		i		45	01
	BCIS: 51½ N 176 W				
	23:36:45				
11	P	i	00	04	31
		e			44
	R	eP			29
		i			34
		i			45
	Hf	ePN			40
		eN			55
	Pr	eP			38
		i			45
	Bt	eP			43
		e			58
	W	iP			14
		i			19
		i			32
	Is	eP			16
		i			23
	CL	eP			20
	T	eP			10
	USCGS: 53 N 169 W				
	23:56:50				
11	P	iP	00	15	48
		i		16	00
	R	iP		15	52
		i		16	05
	Hf	ePN			01
		eN			18
	Pr	iP			00
		i			13
	Bt	iP			04
		i			16
	W	iP		15	36d
		i			49
	Is	iP			39d
		i			51
	CL	iP			43d
		i			55
	T	iP			33d
		i			41
	USCGS: 52 N 174 W				
	00:08:07				
11	P	iP	01	58	58
	R	eP		59	00
		e			16
	Hf	ePN			12
	Pr	iP			09
		i			22
	Bt	eP			12
		e			26
	W	iP		58	29
		i			44
		i			57
	Is	eP			31
		e			47
	CL	eP			35
		e			52
	T	eP			27
		e			42
	USCGS: 50½ N 170 W				
	01:50:55				

Date	Sta.	Phase	h	m	s
March					
11	P	iP	02	52	38
	R	iP			42
	Hf	ePN			52
	Pr	iP			51
		i		53	09
	Bt	iP		52	54
	W	iP			26
		i			34
	Is	iP			29
	CL	iP			33
	T	iP			23
	BCIS: Aleutians				
	02:45.1				
11	P	iPEZ	03	21	03d
		i			13
	PX	iScPN		26	49
		eSN		28	07
		eLZ		31.5	
			A		T
		PZ	3		4
		PH	2		4
		SH	60		20
		MH	100		14
	R	iP	03	21	06d
		iSE		28	08
		iZ			31
	Hf	ePN		21	16
		eSN		28	26
	Pr	iP		21	14d
		i			24
	Bt	iP			17
		i			29
		eSN		28	25
	W	iPNZ!		20	51d
		eSZ		27	57
	Is	iP		20	53d
		i		21	03
		i		22	45
	CL	iP		20	57d
		i		21	08
		i		22	44
	T	iP		20	49d
		i		21	03
		i(S)Z		27	56
	Magnitude 6¾				
	USCGS: 51 N 177 W				
	03:12:41				
11	P	eP	03	30	13
		i			43
	R	eP			21
		i			46
	Hf	ePN			37
	Pr	iP			29
		i			55
	Bt	eP			32
		i		31	08
	W	iP		30	05
		i			15
	Is	iP			07
		i			19
	CL	iP			12
		i			24
	T	iP			03
		i			15

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
11	BCIS: Aleutians				
	03:21:56				
11	P	iP	03	43	20c
		i			32
	R	iP			24
	Hf	ePN			37
	Pr	iP			32
		i			43
	Bt	iP			35c
	W	iP			08
		i			20
	Is	iP			11c
		i			22
	CL	iP			15
		i			27
	T	iP			06
		i			18
	USCGS: 51½ N 177 W				
	03:35:00				
11	D	eP	04	03	42
		e			52
	R	eP			46
		i		04	05
	Hf	eN		03	58
	Pr	iP			55
		i		04	14
	Bt	iP		03	57
	W	iP			31
		i			42
	Is	iP			33
		i			54
	CL	iP			39
		i			50
		i			59
	T	iP			29
		i			41
	USCGS: 50½ N 177 W				
	03:55:27				
11	P	iP	04	13	32c
		i			46
	R	iP			36
	Hf	ePN			47
	Pr	iP			45
		i			58
	Bt	iP			47
		i		14	01
	W	iP		13	19
		i			34
	Is	iP			23
	CL	iP			28
	T	iP			19
	USCGS: 51 N 177 W				
	04:05:09				
11	P	eP	06	50	22
	R	iP			29
	Hf	ePN			38
	Pr	iP			35
	Bt	iP			39
	W	iP			12
	Is	iP			13
	CL	iP			18
	T	iP			08
	USCGS: 51½ N 168 W				
	06:42:49				

Pasadena and auxiliary stations, 1957

No. 1

Date	Sta.	Phase	h	m	s
March					
11	D	eP	06	59	48
	R	iP			44
	Pr	iP			52
	Bt	iP			55
	W	iP			29
	Is	iP			31
	CL	iP			35
	T	iP			25
	USCGS: 51½ N 170½ W				
	06:51:56				
11	P	iPNEZ	07	16	20c
	R	iP			25c
	Hf	iPN			34
	Pr	iP			32c
		i			54
	Bt	iP			36c
	W	iP			09c
		i			15
		i			26
	Is	iP			13
	CL	iP			16c
	T	iPNEZ			06c
	USCGS: 51 N 177 W				
	07:08:00				
11	P	eP	07	47	34
	R	iP			41
	Hf	eN		48	08
	Pr	iP		47	45
	Bt	eP			50
	W	iP			24
	Is	eP			24
	CL	iP			29
	T	iP			19
	USCGS: 51½ N .178½ W				
	07:39:05				
11	P	iP	08	35	26
	R	iP			29
		i			40
	Hf	ePN			40
	Pr	iP			36
		i			48
	Bt	eP			40
		i			52
	W	iP			13
		i			22
	Is	iP			15
		i			26
	CL	iP			19
		i			30
	T	iP			07
		i			20
	Aleutians				
11	P	iP	08	44	49
	R	eP			54
	Pr	iP		45	02
	Bt	iP			06
	W	iP		44	38
	Is	eP			41
	CL	iP			45
	T	iP			33
	USCGS: 53 N 168 W				
	08:37:15				
11	P	iP	08	51	19
	R	iP			25

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
11	Pr	iP	08	51	32
		i			44
	Bt	iP			35
	W	iP			03
	Is	iP			05
		i			11
	CL	eP			09
		i			15
	T	eP		50	59
		i		51	06
	USCGS: 50½ N 178 W				
	08:42:48				
11	D	eP	08	55	11
	R	eP			08
	Pr	iP			15
	Bt	iP			19
	W	iP		54	52
	Is	iP			54
	CL	iP			58
	T	eP			48
11	P	iPNEZ	10	06	30
		iNZ			44
	PX	iSNEZ		12	32
		iGN		15.7	
		iRZ		17.5	
			A		T
		PZ	9		5
		PH	2		4
		SH	18		10
		MH	100		18
	R	eP	10	06	31
		i			44
		iSE		13	03
	Hf	ePN		06	38
		iN			53
		eSN		13	01
	Pr	eP		06	38
		i			52
	Bt	eP			39
		i			49
		i		07	00
		iSZ		13	08
	W	iP		06	14
		eSE		12	16
	Is	eP		06	16
		i			29
	CL	iP			21
		i			35
	T	ePNEZ			12
		i			19
		iSNEZ		12	10
	Pasadena: 52¼ N 169¼ W				
	09:58:46				
	Magnitude: m = 6.9 M = 7.0				
	USCGS: 53 N 164½ W				
	09:58:42				
11	P	i	10	26	47
	D	iP			40
		i			48
	R	e			53
	Pr	iP			43
	Bt	iP			47
		i		27	04
	W	iP		26	20

(continued)

Pasadena and auxiliary stations, 1957

No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
11	Is	eP	10	26	18
		i			28
	CL	iP			26
		i			43
	T	eP			15
11	P	iP'	12	28	28
	R	eP'			29
	Pr	eP'			32
	Bt	eP'			32
	W	iP'			24
	Is	e(P')			30
	CL	eP'			25
		e			53
	T	e		29	29
	BCIS: 1¼ N 97¼ E				
	12:09:10				
11	D	eP	13	10	50
	R	eP			54
	Pr	iP		11	01
	Bt	iP			04
	W	iP		10	37
	Is	iP			39
	CL	eP			44
	T	eP			36
11	D	eP	14	21	27
	R	eP			31
	Pr	iP			39
	Bt	iP			43
	W	iP			16
		i			32
	Is	iP			18
		i			27
	CL	iP			23
	T	eP			13
		i			23
11	P	eP	15	03	47
		i			53
		i		04	20
		i			38
	PX	iPP		05	47
		iSNEZ		10	33
		iGNZ		14.3	
		iR		16.9	
			A		T
		PZ	14		8
		PH	0.3		1
		SH	12		5
		MH	100		18
	R	iP	15	03	51c
		iSE		10	41
	Hf	ePN		04	02
		iN			13
		iSN		10	57
	Pr	iP		03	58c
		i		04	31
		i		05	04
		iS		10	55
	Bt	eP		04	01
		i			04
		i			16
		iS		11	03
	W	iP		03	35c
		iSEZ		10	13
	Is	iP		03	37c
		i			40
		i			48
		eS		10	16

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
11	CL	iP	15	03	41c
		i			44
		i			50
		eS		10	19
	T	iPNEZ		03	33c
		i			36
		i			48
		eSNE		10	10
	Pasadena: 51½ N 178½ W				
	14:55:21				
	Magnitude: m = 7.0, M = 7.2				
	USCGS: 51½ N 178½ W				
	14:55:19				
11	Bt	eP	15	09	26
		i			36
	W	iP			12
		i			21
	Is	iP			13
	CL	eP			16
	T	eP			13
		i			23
11	P	iPEZ	15	44	25
		iNEZ			34
	PX	iSNE		51	13
			A		T
		PZ	0.3		1
		PH	0.2		1
		SH	0.6		2
	R	iP	15	44	28
	Hf	ePN			39
	Pr	iP			36
	Bt	iP			39
	W	iP!			12
		iS		50	50
	Is	iP		44	14
		eS		50	56
	CL	iP		44	20
		e(S)		50	55
	T	iP		44	10
		eSE		50	47
	Magnitude 6½				
	USCGS: 51 N 179 W				
	15:35:50				
11	W	iP	19	06	29
	T	e			38
	USCGS: Andreanof Islands				
	18:58:16				
11	P	iP	20	03	36
	R	eP			42
	Pr	iP			48
	Bt	iP			53
	W	iP			24
		i			32
	CL	eP			27
	T	iP			22
		i			33
	BCIS: 53½ N 168 W				
	19:56:01				
11	P	iP	20	17	26
	D	iP			23d
	R	iP			22d
	Hf	iPN			10
	Pr	iP			20d
	Bt	iP			15d
	W	iP			34d
	CL	iP			30d
	T	iP			38d

Pasadena and auxiliary stations, 1957 — No. 1

Date March	Sta.	Phase	h	m	s
11	P	iP	20	46	55
		i		47	09
	R	e(P)		46	59
		e		47	10
	Pr	iP			07
		i			19
	Bt	iP			10
		i			22
	W	iP		46	43
		i			56
	CL	iP			50
		i		47	02
	T	iP		46	41
		i			52
	BCIS: Andreanof Islands, Aleutians 20:38.5				
11	P	iP	23	40	07
	R	iP			11
	Hf	i(P)N			15
	Pr	iP			19
		i			31
	Bt	iP			23
		e			35
	W	iP!		39	54d
		i!		40	39
	Is	iP		39	57d
	CL	iP		40	01d
	T	iP		39	51d
		i		40	36
	USCGS: 52 N 173 W 23:32:03				
12	P	e(P)	00	25	46
	R	eP			43
	Pr	eP			50
	W	iP			30c
	Is	iP			30
		i			39
	CL	eP			31
	T	eP			24
		e			33
	USCGS: 53 N 168 W 00:18:00				
12	P	iPNEZ	00	41	29
		iNEZ			48
	R	iP			31
	Hf	iPN			38
	Pr	iP			32
	Bt	iP			31
	W	iP			30
	Is	eP			32
	CL	eP			36
	USCGS: 19 S 175½ W 00:29:50, 100 km				
12	P	iPNEZ	00	43	20
		i			30
	R	iP			25
	Pr	iP			32
	Bt	iP			37
	W	iP			07
	Is	iP			10
	CL	iP			13
	T	iP			02
		i			12
	BCIS: Unimak Islands region, Aleutians 00:36:00				

Date March	Sta.	Phase	h	m	s
12	P	eP	01	10	43
		e		11	26
	R	eP		10	47
		e		11	33
	Hf	eN		11	06
	Pr	iP		10	52
		i		11	08
		i			23
	Bt	eP		10	59
		i		11	10
	W	iP		10	30
		i			39
		i			44
	Is	iP		10	34
	CL	eP			37
	T	eP			29
		e			41
	USCGS: 52 N 174½ W 01:02:33				
12	P	eP	01	12	19
	R	eP			26
	Pr	iP			35
	Bt	eP			36
	W	iP			10
	Is	iP			14
	CL	iP			17
	BCIS: 51 N 172 W 01:04:24				
12	D	eP	01	54	38
		i			54
	R	eP			37
	Hf	eN			44
	Pr	iP			46
	Bt	eP			50
	W	iP			22
		i			38
	Is	eP			24
	CL	eP			28
	T	eP			20
	USCGS: 52 N 173 W 01:46:35				
12	D	e(P)	02	30	50
	R	eP			50
	Hf	eN		31	29
	Pr	eP		30	57
	Bt	eP			57
	W	iP			33
	Is	iP			38
	CL	e(P)			45
	T	eP			36
	USCGS: 53 N 170½ W 02:22:57				
12	P	eP	03	56	29
	R	eP			32
	Hf	ePN			46
	Pr	iP			41
	Bt	eP			45
	W	iP			17
		i			29
	Is	iP			20
	CL	eP			24
	T	iP			15
		i			27
	BCIS: 52 N 177 W 03:48:12				

Pasadena and auxiliary stations, 1957 — No. 1

Date March	Sta.	Phase	h	m	s
12	P	eP	04	56	48
		e		57	05
	R	eP		56	51
	Hf	ePN		57	03
		eN			17
	Pr	iP			00d
	Bt	iP			05d
	W	iP		56	35
		i			43
	Is	iP			37d
	CL	iP			41d
	T	iP			30d
		e			40
		e			55
	BCIS: 55 N 164 W 04:49:30				
12	P	i	05	20	02
	D	eP		19	50
		e			57
	R	e(P)			49
	Hf	eN		20	03
	Pr	iP			00
	Bt	eP			05
		i			16
	W	iP		19	34
		i			42
	Is	eP			38
	CL	eP			37
		e			53
	T	eP			31
	USCGS: 52½ N 169 W 05:12:08				
12	P	iP	06	10	07d
		i			19
	R	iP			10d
		i			22
	Hf	ePN			22
		eN			35
	Pr	iP			20
		i			31
	Bt	iP			23d
		i			35
	W	iP		09	54d
		i			59
	Is	iP			58d
		e		10	09
	CL	iP		09	59d
		e		10	12
	T	iP		09	50d
	USCGS: Fox Islands, Aleutians 06:02:47				
12	P	eP	07	36	51
		i			54
		i		37	06
	PX	iSNEZ		43	17
			A		T
		PZ	1¼		2
		SH	2		5
	R	eP	07	36	55
		i			58
		i		37	11
		i			30
		iSE		43	23

(continued)

Date March	Sta.	Phase (continued)	h	m	s
12	Hf	ePN	07	37	04
		iN			21
		eSN		43	46
	Pr	iP		37	01
		i			06
		i			13
		i		39	24
		eS		43	40
	Bt	iP		37	05
		i			10
		i			18
		e		39	05
		eS		43	48
	W	iP		36	37d
		i!			41
	Is	iP			40
		i			44
		i			54
		eS		42	59
	CL	eP		36	42
		i			46
		i		37	00
		e		39	19
		eS		43	10
	T	eP		36	33
		i			40
		i			43
		i			48
		eSE		43	01
	Magnitude 6½ USCGS: 51½ N 173½ W 07:28:46				
12	P	iPNEZ	07	47	43
		i			51
		i		48	21
		i		49	19
	PX	iSN		54	29
			A		T
		PZ	½		2
		SH	2		4
	R	iP	07	47	46
		i		48	01
	Hf	ePN		47	58
	Pr	iP			54
		i		48	30
	Bt	iP		47	59
		i		48	12
	W	iP		47	31
	Is	iP			34
		i			46
	CL	iP			37
		i			49
		i		48	02
	T	iP		47	29
		i			42
		i		49	14
	Magnitude 6½ USCGS: 52 N 178 W 07:39:17				
12	P	iPNEZ	08	11	38
		i			49
		i		12	01
		e		13	15
	R	iP		11	42
		i		13	28

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Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
12	Hf	ePN	08	11	55
		eN		13	25
	Pr	iP		11	50
		i		12	13
	Bt	iP		11	55
		i		13	22
	W	iP		11	26
		i		13	04
	Is	iP		11	29
		e		13	19
	CL	iP		11	31
		i			43
		i		13	12
		i			24
	T	iP		11	24
		e		13	07
	USCGS: 51 N 178 W				
	08:03:11				
12	P	iP	08	16	13
	R	iP			16
	Hf	ePN			28
	Pr	iP			25d
		i			36
	Bt	iP			30d
	W	iP			01d
	Is	iP			04d
		i			14
	CL	iP			00d
	T	iP		15	57
12	P	iP	08	48	27d
		e			43
	R	iP			31
	Hf	ePN			42
	Pr	iP			39d
	Bt	iP			44d
	W	iP			14d
		i			22
	Is	iP			17
	CL	iP			19d
	T	iP			11
12	P	e	08	55	18
	D	eP		54	49
		i		55	01
	R	eP		54	57
		i		55	04
	Hf	eN			14
	Pr	eP		54	58
		i		55	11
	Bt	eP			02
		i			14
	W	iP		54	34
		i			46
		i		55	19
	Is	iP		54	38
		i			50
		i		55	22
	CL	eP		54	41
		i			52
		i		55	25
	T	eP		54	32
		i			44
		i		55	15
	BCIS: Andreanof Islands,				
	Aleutians				
	08:46.8				

Date	Sta.	Phase	h	m	s
March					
12	P	eP	10	46	28
		e			45
		i			52
	R	eP			40
		i			57
	Hf	ePN		47	07
	Pr	eP		46	47
		i		47	03
	Bt	eP		46	52
		i		47	08
	W	iP		46	24
		i			39
	Is	eP			27
		i			42
	CL	eP			30
		i			45
	T	iP			21
		i			27
		i			36
	USCGS: 51½ N 174½ W				
	10:38:30				
12	P	e	10	48	37
	R	e			24
	Pr	iP			22
		i			35
	Bt	iP			27
		i			40
	W	iP		47	58
		i		48	13
	Is	iP			02
		i			13
	CL	iP			04
	T	iP			09
12	P	iPNEZ	11	53	12
		i			16
		i			21
		i		54	06
		iPP		55	01
	PX	iSNE	12	00	05
			A		T
		PZ	9		4
		SH	90		20
	R	iP	11	53	16
		i			26
		iSE	12	00	14
	Hf	ePN	11	53	26
		iN			36
		iSN	12	00	35
	Pr	iP	11	53	23
		i			31
		iS	12	00	36
	Bt	iP	11	53	27
		i			37
		iSZ	12	00	39
	W	iP!	11	53	00
		eSE		59	50
	Is	iP		53	02
		i			10
		eSN		59	58
	CL	iP		53	05
		i			10
		i			56
		iPP		54	55

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
12	T	iP	11	52	57
		i		53	06
		iPP		54	55
		iSE		59	46
	Pasadena: 51½ N 177 W				
	11:44:53				
	Magnitude: m = 7.1, M = 7.3				
	USCGS: 51 N 177 W				
	11:44:50				
12	P	iP	12	11	24
	R	iP			29
	Pr	iP			37
	Bt	iP			40
	W	iP			13
	Is	iP			15
	CL	iP			18
	T	iP			10
	BCIS: 51 N 177 W				
	12:03:01				
12	P	iP	12	53	50
		i		54	09
	R	iP		53	55
	Hf	ePN		54	06
	Pr	iP			03
		i			14
	Bt	iP			07
		i			24
	W	iP		53	38
	Is	iP			41
		i			59
	CL	iP			44
		i		54	12
	T	eP		53	35
		i			41
		i			55
	USCGS: 53 N 168½ W				
	12:46:12				
12	P	iP	14	40	44
	R	eP			47
	Hf	ePN			49
	Pr	iP			48
		i			56
	Bt	eP			51
	W	iP			23
		i			30
		i			37
	Is	iP			26
		i			34
	CL	eP			30
		e			38
	T	iP			21
		i			29
	BCIS: 52½ N 178½ W				
	14:32:16				
12	D	e	15	29	01
	R	e			01
	Hf	eN			08
	Pr	i			05
		i			09
	Bt	e			10
	W	i		28	40
		i			45
	Is	i			48
		i			57

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
12	CL	e	15	28	45
		e			51
	T	e			37
12	P	eP	16	11	02
		i			10
		i			19
	R	eP			03
		e			13
	Hf	ePN			24
	Pr	iP			10
		i			22
	Bt	iP			14
		i			26
	W	iP		10	46
		i			59
	Is	iP			47
		i		11	00
	CL	eP		10	52
		i		11	05
	T	eP		10	44
		e			56
	BCIS: Andreanof Islands,				
	Aleutians				
	16:03.0				
12	P	iP	16	44	48
		i		45	16
	R	iP		44	49
		i		45	17
	Hf	ePN		44	57
		eN		45	24
	Pr	iP		44	53
		i		45	21
	Bt	iP		44	52
		e		45	21
	W	iP		44	48
		i		45	16
		i		48	10
	Is	iP		44	50
		i		45	17
		i		48	12
	CL	iP		44	53
		i		45	21
		e		48	16
	T	iP		44	53
		i		45	21
	USCGS: 14½ S 168 E				
	16:32:05				
12	D	e	16	57	14
	R	e			32
	Hf	eN		58	14
	Bt	e		57	29
		e		58	10
	W	iP		57	02
		i			18
	Is	eP			04
	CL	eP			08
		e			41
	BCIS: Aleutians				
	16:48.9				
12	P	i	17	08	43
		ePP		10	29
	D	eP		08	34
		e			45
	R	eP			35
		e			44

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
12	Hf	ePN	17	08	56
		eN		09	19
	Pr	eP		08	44
		i			56
	Bt	eP			48
		e		09	00
		ePP		10	39
	W	iP		08	21
		i			27
		i			33
		iPP		10	26
	Is	eP		08	23
		i			35
		iPP		10	26
	CL	eP		08	28
		i			39
		ePP		10	15
		e			30
	T	eP		08	18
		i			31
		ePP		10	25
	USCGS: 51½ N 175 W 17:00:21				
12	P	iP	17	32	54
	R	iP			57
	Hf	ePN		33	02
	Pr	iP		32	58d
	Bt	eP			55
	W	iP			56d
	Is	iP			58d
	CL	iP		33	02d
	T	iP			04d
	USCGS: 21½ S 179 W 17:21:47, 700 km				
12	P	e	18	33	52
	R	e(P)			47
		e			56
	Hf	eN		34	06
	Pr	e(P)		33	55
		i		34	03
	Bt	e(P)		33	58
	W	iP			31
		i			39
	Is	eP			34
		e			42
	CL	eP			39
		e			45
	USCGS: 51 N 178 W 18:25:18				
12	P	iPNEZ!	18	39	47c
	R	iP			49c
	Hf	iPN			57
	Pr	iP!			51c
	Bt	iP			49c
	W	iP!			49c
	Is	iP			51c
	CL	iP			54c
	T	iP			55c
	USCGS: 18 S 178½ W 18:28:50, 650 km				
12	P	iPNEZ!	19	22	19d
		ipP		23	45
	R	iP!		22	21d
		epP		23	48

Date	Sta.	Phase	h	m	s
March		(continued)			
12	Hf	iPN	19	22	28
	Pr	iP!			22d
	Bt	iP			21d
		i			30
	W	iP!			20d
		i		23	09
		ipP			47
	Is	iP		22	23d
		i			34
		i			41
		ipP		23	48
	CL	iP		22	25d
		ipP		23	53
	T	iP		22	28d
	USCGS: 16 S 176½ W 19:11:16, 400 km				
12	P	iP	20	00	26
	R	eP			29
	Pr	iP			39
	Bt	iP			42
	W	iP			14
		i			26
	Is	iP			16
	CL	iP			18
	T	iP			10
12	P	iPNEZ	20	07	52d
		e		08	03
	R	iP		07	58d
	Hf	iPN		08	08
		eN			23
	Pr	iP!			03d
	Bt	iP			09d
	W	iP!		07	39d
	Is	iP			43d
		i			53
	CL	iP			45d
	T	iP			35d
	USCGS: 54 N 165 W 20:00:30				
12	P	iP	20	14	53
		e		15	00
	R	iP		14	56
	Hf	eN		15	08
		eN			24
	Pr	iP			05
	Bt	iP			10
	W	iP		14	40
		i			52
	Is	iP			43
	CL	iP			46
	T	iP			37
	USCGS: 54 N 165 W 20:07:31				
12	P	eP	20	47	08
	R	iP			12
	Hf	iN			34
	Pr	iP			21
	Bt	i			26
	W	iP		46	56
		i		47	08
	Is	iP		46	59
	CL	iP		47	02
	T	iP		46	52d

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
March					
12	P	iPNEZ	21	31	52
		iNEZ		32	08
	R	iP		31	46
		i		32	01
	Hf	eN		31	54
	Pr	iP			42
		i			56
	Bt	eP			37
	W	iP		32	02
	Is	iP			01
		i			14
	CL	iP		31	56
		i		32	11
	T	eP			05
		e			18
	USCGS: 1½ S 79½ W 21:23:04				
12	P	iP	22	35	23
		e			39
	R	iP			27
	Pr	iP			35
	Bt	iP			39
	W	iP			12
	Is	iP			13
	CL	eP			18
	T	iP			09
		i			27
	BCIS: 52¾ N 172¾ W 22:27:23				
12	P	iPNEZ	23	53	30
		i			40
		i			59
	R	eP			32
		i			46
	Hf	iPN			56
	Pr	iP			40
		i			44
		i			53
	Bt	eP			43
		i			56
	W	iP			15
		i			28
	Is	iP			19
		i			32
	CL	eP			23
		i			36
	T	iP			14
		i			27
	USCGS: 52 N 174 W 23:45:25				
13	P	eP	01	27	39
		ipP		28	08
		i			23
	R	iP		27	36
		ipP		28	04
	Hf	eN		27	58
	Pr	ipP		28	01
	Bt	iP		27	29
		ipP			58
	W	iP			47
		ipP		28	16
	Is	iP		27	47
		ipP		28	16
	CL	eP		27	46
		ipP		28	14

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
13	T	iP	01	27	51
	BCIS: Argentina, Chile, Bolivia, border region 01:16.3				
13	P	iPNEZ	02	56	12d
		i			28
	PX	iSN	03	02	29
		iGN			06.0
		eRZ			07.6
	R	iP	02	56	16d
		i(PcP)		58	09
		iS	03	02	38
	Hf	iPN	02	56	27
	Pr	iP			23d
		i			38
		i		57	20
	Bt	iP		56	29d
		i			43
		i		57	18
	W	iP		56	00d
		i			13
		i(PcP)		58	03
		eS	03	02	08
	Is	iP	02	56	04d
		i			18
		i(PcP)		58	06
		eS	03	02	14
	CL	iP	02	56	06d
		i			21
		i(PcP)		58	06
	T	iP		55	58d
		i		56	06
		i			14
		i(PcP)		58	02
	USCGS: 52 N 171½ W 02:48:20				
13	P	e	03	15	43
		e			55
	Pr	e			22
	Bt	e			23
	W	e		14	50
	Is	e		15	17
	CL	e			06
	T	e			21
	BCIS: 53 N 168½ W 03:07:17				
13	P	iP	03	41	06d
		iNEZ			19
		i		42	53
		iPcP		43	05
	R	eP		41	11
		i			24
	Hf	eN			34
	Pr	iP			18d
		i			32
		iPcP		43	10
	Bt	iP		41	23
		i			40
	W	iP		40	55d
		i		41	08
		iPcP		42	57
	Is	iP		40	58d
		i		41	20
	CL	eP			01d
		e			14
		ePcP		43	04
		e			11

(continued)

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
13	T	iP	03	40	53
		i		41	04
		ePcP		42	59
USCGS: 52 N 175 W					
03:32:58					
13	P	iP	07	30	19
		ipP			28
	R	eP			22
		epP			31
	Hf	ePN			33
	Pr	iP			30
		ipP			39
	Bt	eP			35
	W	iP			06
		ipP			16
	Is	iP			10
		ipP			19
	CL	iP			13
		ipP			23
	T	eP			03
		epP			14
USCGS: 52 N 178 W					
07:21:54					
13	D	eP	08	58	17
		e			24
	R	eP			18
		e			32
	Hf	eN			31
	Pr	iP			26
		i			38
	Bt	iP			31
	W	iP			01c
		i			23
	Is	iP			04c
		i			18
	CL	eP			09
		e			22
	T	eP			00
		i			13
13	P	iP	09	17	21
		i			33
		i			44
	R	iP			26
		i			37
	Hf	ePN			36
	Pr	iP			32
		i			44
	Bt	iP			38
		i			49
	W	iP			09
		i			20
	Is	iP			12
		i			24
	CL	eP			16
		e			26
	T	eP			06
		e			18
USCGS: 52½ N 170 W					
09:09:34					
13	W	iP	09	22	59
	Is	eP		23	00
	CL	eP			04
	T	eP		22	58
Wellington: 38.7 S 175.6 E					
09:11:30					

Date	Sta.	Phase	h	m	s
March					
13	P	iP	11	46	11
		i			19
	R	iP			15
	Hf	ePN			25
	Pr	iP			19
		i			22
		i			33
	Bt	iP			27
	W	iP			00
		i			09
	Is	iP			02
		i			11
	CL	iP			06
		i			19
		i			25
	T	iP		45	57d
USCGS: 51 N 177 W					
11:37:49					
13	P	eP	12	06	02
	R	eP			03
	Hf	ePN			18
	Pr	iP			12
		i			23
	Bt	eP			14
		i			29
	W	iP		05	46
		i			58
	Is	eP			49
		i		06	04
	CL	eP		05	51
		e			47
		e		06	07
	T	eP		05	42
		i			46
USCGS: 52 N 173 W					
11:57:58					
13	P	eP	12	50	59
		i		51	11
		i			27
	R	eP		50	58
	Pr	eP		51	04
		i			12
	Bt	e			09
	W	iP		50	42
		i			49
	Is	eP			45
		i			54
	CL	e			51
	T	eP			39
		e			48
USCGS: 51½ N 177 W					
12:42:35					
13	P	iP	13	07	54
		i		08	09
	R	eP		07	59
	Hf	ePN		08	12
	Pr	iP			06
	Bt	iP			12
	W	iP		07	42
	Is	iP			43
	CL	iP			49
		i		08	02
	T	eP		07	38
BCIS: Fox Islands, Aleutians					
13:00.4					

Pasadena and auxiliary stations, 1957 No. 1

Date	Sta.	Phase	h	m	s
March					
13	P	iPNEZ	15	50	35c
		i			46
		i		51	02
		i			31
		iPcP			54
		iPP		52	31
		iScP		56	21
	PX	iSNE		57	20
		i		58	00
		iSS	16	01	04
		iGN		01.6	
		iRZ		02.8	
			A		T
		PZ	2		3
		SH	4		4
	R	iP	15	50	39c
		i			48
		iS		57	28
	Hf	iPN		50	50
		iN			54
		iN		51	17
		eSN		57	45
	Pr	iP		50	43c
		i			57
		iS		57	43
	Bt	iP		50	50c
		i		51	17
		i		52	00
		e		56	11
		iScP			23
		eS		57	46
		e(G)	16	01.6	
	W	iPEZ!	15	50	24c
		iSEZ		57	00
	Is	iP!		50	26c
		iS		57	02
	CL	iP		50	30c
		i			40
		iPP		52	16
		iScP		56	02
		eS		57	06
	T	iPNEZ		50	21c
		iScP		55	58
		iSNEZ		56	55
	Magnitude 6¾				
	USCGS: 51½ N 179 W				
	15:42:05				
13	P	eP	17	51	58
		i		52	21
	R	eP			01
	Pr	eP			00
	Bt	e(P)			09
	W	iP			40
		i			58
	Is	iP			43
	CL	eP			46
	USCGS: 51 N 175 W				
	17:43:40				
13	P	eP	19	04	18
	W	iP		03	54
	Is	eP			56
	CL	eP		04	01
	T	eP		03	53
	USCGS: 52½ N 168 W				
	18:56:33				

Date	Sta.	Phase	h	m	s
March					
13	P	iPNEZ	20	06	48c
		i			57
		i		09	00
	PX	iS		12	39
		iL		16.4	
	R	iP		06	53c
	Hf	iPN		07	03
	Pr	iP		06	59c
		i		07	15
	Bt	iP			04c
		i			11
	W	iP!		06	35c
	Is	iP			38c
		i			54
	CL	iP			42c
	T	iP			31c
		i			48
USCGS: 54 N 166 W					
19:59:23					
14	R	e	00	44	20
	W	iP		43	53
	Is	eP			57
	CL	eP		44	01
	T	eP		43	53
		e		44	03
USCGS: 51 N 178 W					
00:35:38					
14	P	eP	02	00	05
	R	eP			05
		i			09
	Pr	eP			11
	Bt	eP			21
	Kg	eP		01 59	57
	W	iP			43
		i			50
	CL	eP			53
	T	eP			41
		e			50
USCGS: 52½ N 169 W					
01:52:16					
14	P	iP	02	54	09
		i			30
	R	eP			13
	Pr	iP			21
		i			33
	Bt	iP			26
		i			37
	Kg	eP		53	55
	W	iP			57
	CL	iP		54	02
	T	iP		53	52
		i		54	04
USCGS: 53½ N 163½ W					
02:46:55					
14	PX	eLN	08	25.0	
	D	eP		21	41
	R	eP			40
	Kg	e		22	14
		e			36
	W	iP			07
		i			19
	Is	eP			01
		e			12
	CL	eP		21	58

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date March	Sta.	Phase (continued)	h	m	s
14	T	eP	08	22	18
	BCIS: Revillagigedo Island region 08:17.6				
14	P	iPNEZ	10	42	21d
		e			38
	R	iP			25d
	Pr	iP			32d
	Bt	iP			36d
	Kg	iP			07d
	W	iP			09d
	Is	iP			11d
	CL	iP			14d
	T	iP			06d
	USCGS: Fox Islands, 10:34:33				
14	P	iPNEZ	12	36	54d
		i		37	11
	R	iP		36	59d
	Pr	iP		37	07d
	Bt	iP			11d
	Kg	iP		36	40d
	W	iP			42
	Is	iP			45d
		i			57
	CL	iP			49d
	T	iP			40d
	USCGS: 53 N $166\frac{1}{2}$ W 12:29:32				
14	P	iPNEZ	13	01	27d
		i			39
	R	iP			29d
		i			41
	Pr	iP			32
		i			44
	Bt	iP			32
	Kg	eP			22
	W	iP			24d
	Is	iP			26d
	CL	iP			30d
	T	iP			28d
	Aleutians				
14	P	iPNEZ	14	56	03c
		i			18
		i			30
		i			58
	PX	iSN	15	02	39
		eGN			06.0
			A		T
		PZ	5		$2\frac{1}{2}$
		PH	4		2
		SH	17		15
		MH	100		12
	R	iP	14	56	09d!
		i			21
		i			28
	Pr	iP			15c
		i			33
	Bt	iPNZ			19c
		i			32
		i			39
		i(S)Z	15	02	38
		iR			07.3
	Kg	iP	14	55	50c
		i		56	09

(continued)

Date March	Sta.	Phase (continued)	h	m	s
14	Kg	iP	14	55	50c
		i		56	09
	W	iPEZ!		55	52c
	Is	iPNZ			55c
	CL	iP			59c
		i!		56	13
	T	iPNEZ		55	51c
		i		56	05
	Pasadena: 51 N 177 W 14:47:44				
	Magnitude: m = 7.0, M = 7.2				
14	P	iP	15	59	22d
		i			32
	R	iP			26d
		i			36
	Pr	iP			33d
		i			43
	Bt	iP			37d
		i			49
	Kg	iP			09d
		i			21
	W	iP!			10d
	Is	iP			13d
		i			22
	CL	iP			16d
		i			27
	T	iP			14
		i			29
	USCGS: 51 N $177\frac{1}{2}$ W 15:51:00				
14	P	iP	16	10	05
	Pr	eP			10
	Bt	eP			16
	Kg	e		09	58
	W	iP			47
		i			56
	Is	iP			50
		i		10	03
	CL	eP		09	53
		e		10	05
	T	iP		09	40
	BCIS: $51\frac{1}{4}$ N $176\frac{1}{4}$ W 16:01:37				
14	P	iPNEZ	17	14	47
		i			57
		i		15	08
	R	eP		14	53
		i		15	01
	Pr	iP		14	59
		i		15	09
		i			20
	Bt	eP			04
		i			13
	Kg	eP		14	31
		i			43
	W	iP			35
	Is	eP			39
		i			48
	CL	eP			43
		i			52
	T	eP			34
		i			44
	USCGS: 51 N 178 W 17:06:21				

Pasadena and auxiliary stations, 1957 — No.

Date March	Sta.	Phase	h	m	s
14	P	iPNZ	17	56	55
	R	eP		57	07
	Pr	iP			09
	Bt	eP			13
	W	iP		56	43
		i			49
	Is	eP			46
	CL	eP			51
	T	eP			40
	BCIS: 55 N $163\frac{1}{2}$ W 17:49:38				
14	P	iP	19	29	34
	R	iP			42
	Pr	e			58
	Bt	eP			43
	Kg	eP			11
	W	iP			13
		i			24
	Is	iP			18
	CL	eP			26
	T	eP			26
14	P	ePNEZ	22	26	40
	PX	eLN			37.1
	R	eP		26	38
		e			48
	Hf	ePN			55
	Pr	eP			48
	Bt	eP			52
	Kg	eP			30
	W	iP			24
		i			34
		i			40
	Is	eP			26
		i			35
	CL	eP			32
		i			40
	T	eP			21
		i			30
	USCGS: $51\frac{1}{2}$ N 176 W 22:18:23				
15	P	iPNEZ	02	59	39
		i			45
		i			56
		i	03	00	07
	PX	iSNE		05	39
		i(SS)NEZ			08.7
		iLN			09.5
			A		T
		PZ	$2\frac{1}{2}$		4
		PH	1		2
		SH	2		3
	R	iP	02	59	44
	Hf	iPN			56
	Pr	iP			51
		i	03	00	06
		eS		05	44
	Bt	iP	02	59	56
		i	03	00	02
		i			13
	Kg	eP	02	59	26
		i			31
	W	iP			26
	Is	eP			28
		i			31
		i			50
		eS	03	05	23

(continued)

Date March	Sta.	Phase (continued)	h	m	s
15	CL	iP	02	59	34
		eS	03	05	26
	T	eP	02	59	24
		eS	03	05	14
	Magnitude $6\frac{3}{4}$				
	USCGS: 53 N 167 W 02:52:08				
15	P	iP	04	21	13
		i			23
	R	eP			17
		e			22
	Hf	ePN			28
	Pr	iP			23
		i			28
	Bt	eP			29
		i			39
	Kg	eP			00
		e			10
		e			21
	W	iP			01
		i			06
	Is	eP			03
		i			12
	CL	eP			05
		i			17
	T	eP		20	59
		i		21	09
		i			18
	USCGS: 51 N 176 W 04:12:56				
15	P	iP	04	33	12
	R	eP			16
		e			35
	Hf	ePN			28
	Pr	iP			24
	Bt	iP			29
		e			40
	Kg	eP		32	58
	W	iP		33	00
		i			12
	Is	iP			02
	CL	eP			05
	T	eP		32	56
	BCIS: 53 N $166\frac{1}{2}$ W 04:25:45				
15	P	eP	05	16	21
		e			29
	R	eP			20
		i			34
	Pr	iP			27
		i			40
	Bt	eP			32
	W	iP			05
	Is	eP			07
		e			18
	CL	eP			11
	T	eP			03
		i			15
	BCIS: $52\frac{1}{2}$ N 176 W 05:08.0				
15	P	iPNEZ	12	05	26d
		i			44
		ePcP		07	04
		e			18
	PX	iGN			16.1

(continued)

Pasadena and auxiliary stations, 1957 — No. 1

Date	Sta.	Phase	h	m	s
March		(continued)			
15	R	iP	12	05	29d
		e			45
	Hf	ePN			41
	Pr	iP			38d
		i			54
	Bt	iP			42d
		i		06	01
		ePcP		07	15
	Kg	eP		05	13
	W	iP			15d
		i			34
	Is	iP			17d
		i			37
	CL	iP			22d
		i			41
	T	iP			13d
		ePcP		07	03
		e			13
	USCGS: 51 N 173 W 11:57:28				
15	D	eP	16	38	12
		e			25
	R	eP			08
		e			20
	Hf	ePN			18
	Pr	eP			15
		i			27
		i			35
	Bt	iP			22
		i			31
	W	iP		37	52
		i		38	04
	Is	eP		37	55
		e		38	05
	CL	eP		37	59
		e		38	10
	T	eP		37	49
	BCIS: Aleutians 16:29.9				
15	P	iP	16	45	29d
		ipP			46
	R	iP			35d
	Hf	ePN			45
	Pr	iP			41d
	Bt	iP			46d
	Kg	eP			17
	W	iP			17d
		ipP			33
	Is	iP			19d
		ipP			35
	CL	iP			23d
	T	iP			13d
	USCGS: 53 N 167 W 16:38:02				
March					
15	P	e(P)	22	21	58
	PX	eLZ			34.8
	D	eP		21	55
		e		22	01
	R	eP		21	52
		e		22	01
	Hf	eN			22
	Pr	eP		21	58
		i		22	11
	Bt	eP			04
		i			14
	Kg	eP		21	36
	W	iP			35
	CL	eP			41
		i			52
	T	eP			33
		e			40
		e			45
	USCGS: 51½ N 177 W 22:13:25				

C. F. Richter
Violet M. Taylor
March 20, 1960

Pasadena and auxiliary stations, 1957 March 16 - May 2 No. 2

Date	Sta.	Phase	h m s
March			
16	P	iP	00 46 47
		ipP	56
	R	iP	51
		epP	47 00
	Hf	ePN	00
	Pr	iP	46 58
	Bt	i	47 07
	W	iP	46 23
		i	28
	Is	iP	30
	CL	eP	28
	T	e	16
16	P	eP	02 21 33
		e	45
	PX	eSZ	28.0
		eLNZ	31.6
	R	eP	21 37
		e	49
	Hf	ePN	22 04
	Pr	eP	21 46
		e	57
	Bt	eP	50
		e	22 02
	W	iP	21 21
	CL	eP	30
		e	41
	T	eP	21
		e	32
	USCGS: 51½ N 175 W		
	02:13:23		
16	P	eP	02 42 39
		i	43 00
	PX	iSNE	49 32
		iGNZ	52.7
		iREZ	56.0
			A T
		PZ	2 4
		SH	150 30
	R	eP	02 42 42
		i	55
		i	43 02
		iSE	49 36
	Hf	ePN	42 57
		iN	43 05
		iN	11
		eSN	49 55
	Pr	iP	42 41
		i	46
		iS	49 51
	Bt	eP	42 45
		iNZ	43 00
		i	15
		iSZ	50 00
	Kg	eP	42 29
		i	38
	W	iP	28
	Is	iP	34
		i	39
		eS	49 10
	CL	eP	42 35
		i	39
		i	53
		eS	49 25

(continued)

Date	Sta.	Phase	h m s
March		(continued)	
16	T	eP	02 42 26
		i	30
		i	39
		iSE	49 05
	Pasadena: 51½ N 178¾ W		
	02:34:12		
	Magnitude m = 7.0, M = 7.2		
	USCGS: 52 N 179 W		
	02:34:12		
16	P	i	03 42 18
	D	eP	04
		i	12
		i	23
	R	eP	07
		e	16
		e	22
	Hf	ePN	19
	Pr	eP	12
		e	24
	Bt	eP	19
		e	31
	W	iP	41 49
	Is	i	42 05
	CL	eP	41 58
		e	42 10
	T	eP	41 50
		i	42 01
	USCGS: 52 N 174 W		
	03:33:57		
16	D	eP	06 16 07
		i	14
	R	iP	04
		e	22
	Hf	ePN	20
	Pr	iP	16
	Bt	iP	22
	W	iP	15 54
		i	16 04
	CL	iP	01
		i	14
	T	iP	15 51
16	P	eP	09 38 54
		i	39 06
	R	eP	38 57
		i	39 10
	Pr	iP	05
		i	17
	Bt	eP	10
		i	22
	Kg	eP	38 40
	W	iP	42
		i	51
	CL	eP	48
		e	39 01
	T	eP	38 41
		i	53
	USCGS: 51 N 177 W		
	09:30:36		
16	PX	eLN	13 10.3
		eRZ	13.8
	D	e	12 53 54
	R	e(P)	45
		e	52

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
16	Pr	e(P)	12	53	46
		e			57
	W	e(P)		54	03
	CL	e(P)		53	55
	T	e(P)			55
	BCIS: 20 N 75 W				
	12:46:09				
16	D	e	14	19	43
	R	eP			26
		e			54
		e		20	09
	Hf	eN		19	51
	Pr	eP			33
	Bt	eP			38
		e			58
	CL	eP			18
	T	eP			09
		e			17
		e			29
	BCIS: $51\frac{3}{4}$ N 179 W				
	14:10:54				
16	PX	eLN	15	49.4	
		eRZ		51.5	
	D	eP		38	38
	R	eP			37
		i			46
	Pr	iP			35
		i			46
	Bt	eP			41
		e			51
	Kg	e			19
	W	iP			14
	CL	eP			19
		i			30
	T	eP			11
		i			21
	BCIS: 53 N 177 W				
	15:30:12				
17	D	e	01	55	44
		e			50
	R	iP			41
	Pr	iP			48
	Bt	iP			56
	W	iP			19
	T	eP			19
		e			39
	USCGS: 51 N 180				
	01:46:50				
17	D	e(P)	02	57	15
		e			25
	R	eP			06
		i			19
	Pr	iP			14
		i			27
	Bt	eP			18
		i			30
	W	iP		56	52
		i		57	05
	T	iP		56	39
		i			51
	USCGS: 51 N $178\frac{1}{2}$ W				
	02:46:36				

Date	Sta.	Phase	h	m	s
March					
17	D	e	07	12	28
	Pr	iP			29
		i			36
		i			46
	Kg	eP			05
	W	iP			06
		i			14
		i			23
	T	eP			03
	USCGS: $52\frac{1}{2}$ N 169 W				
	07:04:40				
17	P	iPNEZ	08	02	24
	PX	iSNZ		09	15
		eLNZ		13.1	
	R	eP		02	29
		i			38
	Hf	ePN			39
	Pr	iP			34
		i			44
	Bt	iP			39
		i			49
	Kg	eP			18
	W	iP!			13
		i			22
	Is	iP			15
	T	iP			09
	USCGS: 51 N 179 W				
	07:53:51				
17	P	eP	11	38	03
		i			15
	R	eP			08
		e			18
		i			28
	Hf	eN			30
	Pr	iP			15
		e			26
	Bt	eP			19
		e			36
	Kg	eP			02
	W	iP		37	51
		i		38	03
	T	e(P)		37	42
		e			47
	USCGS: $53\frac{1}{2}$ N $167\frac{1}{2}$ W				
	11:30:33				
17	P	iPNEZ	15	19	14
		i			30
	PX	eSNZ		25	24
		eGN		28.3	
	R	iP		19	18
		e			27
	Hf	ePN			28
	Pr	iP			25
		i			35
	Bt	eP			30
		i			40
	W	iP			01
		i			05
		i			14
	T	iP		18	59
		i		19	09
		i			15
	USCGS: 53 N $167\frac{1}{2}$ W				
	15:11:42				

Date	Sta.	Phase	h	m	s
March					
17	P	iPNEZ	16	24	39d
		i			49
	PX	iSN		30	43
		eRZ		34.5	
	R	iP		24	49d
		e			56
	Hf	ePN			54
	Pr	iP			50d
		i			58
	Kg	iP			24d
	W	iP			26d
		i			38
	Is	iP			31d
	USCGS: $52\frac{1}{2}$ N 166 W				
	16:17:13				
17	D	eP	17	07	33
		i			39
	R	eP			35
	Pr	iP			41
	Bt	iP			45
	W	iP			19c
		i			33
	T	iP			17c
17	D	e	18	37	19
		e			23
	R	eP			06
		e			15
	Pr	eP			11
		e			21
	Bt	eP			26
	W	iP		36	43
		e			50
	CL	eP			37
	T	eP			42
	BCIS: 54 N 169 W				
	18:29:20				
17	D	eP	18	41	12
	R	e(P)			08
		e			14
		e			18
	Pr	eP			14
	Bt	e			30
	W	eP		40	45
	CL	eP			48
	T	eP			46
		e			59
	BCIS: Aleutians				
	18:33:23				
17	P	iP	18	46	20
	R	iP			25
	Pr	iP			24
		i			32
	Bt	iP			36
	W	iP		45	57
		i		46	07
	CL	eP			02
		i			13
	T	eP		45	53
		i		46	05
17	P	eP	19	00	25
	PX	i(L)Z		04	10
	R	iP		00	10
		i			15

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
17	Hf	ePN	19	18	55
	W	i(P)		19	38
	CL	eP			28
		i			33
	T	eP			38
		e			47
	Mexico				
17	P	iPNZ	22	52	07
		iNEZ			11
		i			19
	PX	iSNZ		58	05
		iGN	23	00.4	
		iScSNEZ		02	16
			A		T
		PZ	$\frac{1}{2}$		2
		PH	$\frac{1}{4}$		1
		SH	7		11
	R	iP	22	52	12
		iSE		58	08
	Hf	ePN		52	22
		eSN		58	14
	Pr	iP		52	19c
		i			30
		i			47
		iPcP		54	11
		i			27
		eS		58	09
	Bt	iP		52	24c
		i			35
		iPcP		54	29
		eS		58	15
	Kg	iP		51	56
		ePcP		54	16
		eS		58	02
	W	iP		51	55c
		iPcP		53	55
		iS		58	01
	Is	iP		51	59
	CL	iP		52	02
		i			11
		eS		57	55
	T	iP		51	51c
		i		52	10
		iSEZ		57	58
		iScSE	23	02	06
	Magnitude $6\frac{1}{2}$				
	USCGS: 54 N 166 W				
	22:44:44				
17	P	eP	23	42	26
	R	eP			31
		epP			41
	Pr	iP			36
		ipP			48
	Bt	eP			43
		epP			53
	W	iP			14
		ipP			25
	CL	eP			19
		epP			28
		e			37
	T	iP			09
18	P	iP	00	20	43
		epP			57
		i		21	11

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March		(continued)			
18	PX	eGN	00	31.2	
	R	eP		20	47
	Hf	ePN			59
	Pr	iP			53c
		ipP		21	07
	Bt	iP		20	58c
		epP		21	12
	Kg	eP		20	41
	W	iP			31c
		ipP			44
		i			54
	CL	eP			38
		e			55
	T	iP			30
		ipP			42
	USCGS: 51 N 179$\frac{1}{2}$ W				
	00:12:10				
18	P	eP	02	32	32
	R	eP			31
	Hf	ePN			45
	Pr	eP			40
	Bt	eP			45
	W	iP			16
	CL	eP			23
	T	iP			13
		i			28
	USCGS: 52$\frac{1}{2}$ N 171 W				
	02:24:39				
18	P	iP	02	33	17
		ipP			30
		eScP		39	10
	PX	iSN		40.0	
		eGN		42.9	
		iRZ		43.7	
	R	iP		33	21c
		eScP		39	01
		iS			36
	Hf	ePN		33	32
		eSN		40	00
	Pr	iP		33	28c
		ipP			40
		i		34	19
		eScP		39	05
		eS			55
	Bt	iP		33	32c
		ipP			46
		eScP		39	08
		eS		40	03
		eR		43.7	
	Kg	iP		33	03
		i			10
	W	iP			04c
		i			35
		iScP		38	52
	Is	iP		33	08
		ipP			23
	CL	iP			10
		ipP			24
		iScP		38	58
	T	iP		33	02c
		ipP			16
		eScP		38	53
		eSE		39	06
	BCIS: 52$\frac{1}{2}$ N 171 W				
	02:25:25				

Date	Sta.	Phase	h	m	s
March					
18	P	ePNZ	05	17	05
		i			12
	PX	iSNZ		23	59
		iGNZ		27	39
		eRZ		29.6	
	R	eP		17	07
		e			16
	Hf	ePN			21
	Pr	iP			15
		i			24
		i			40
	Bt	iP			19
		i			28
	Kg	eP		16	53
	W	eP			50
		i			53
		i			59
	CL	eP		17	00
	T	eP		16	50
		e			57
		i		17	16
	USCGS: 51$\frac{1}{2}$ N 179 W				
	05:08:34				
18	P	iPNEZ	07	58	23d
	PX	eLN	08	08.5	
	R	iP	07	58	27d
		e			41
		e			50
	Hf	ePN			38
	Pr	iP			34d
		i			47
	Bt	iP			39d
		e			53
	Kg	iP			09d
	W	iP			10d
	CL	iP			16d
		ePcP	08	00	27
	T	iP	07	58	08d
		iPcP	08	00	24
	BCIS: 54 N 167 W				
	07:50:50				
18	D	eP	11	10	11
	R	eP			15
	Pr	iP			23d
		e			30
	Bt	eP			28
	W	iP		09	57d
		i		10	07
	CL	eP			06
		e			13
	T	eP		09	57
18	P	iPNE!	18	56	43.6
		iPZ!			44.2c
		iSE			55.9
	R	iPNEZ!			54.3c
		iSN		57	17.6
	PV	iP!		56	43.7c
	Pr	iP!		57	02.5c
	Bt	iP!			08.7c
	Kg	iP!		56	51.7c
	W	iP!			54.4c
		iSE		57	14.7
	Is	iP!		56	56.4c
		iSN		57	17.7
	FT	iP!		56	42.5d

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March		(continued)			
18	SB	iPNZ	18	56	37.6
		iS			45.2
	CL	iP!		57	03.9d
	T	eP			16.7
		i			18.4
		iSNE			59.6
	Magnitude 4.7				
	Pasadena: 34°06'N 119°10'W				
	18:56:28				
	VI at Oxnard, Port Hueneme, Saticoy and Ventura. V at Point Mugu, Somis and Santa Paula. Felt as far as Chatsworth and Santa Barbara.				
18	P	iP	19	41	34
	R	eP			39
	Hf	e(P)N			45
	Pr	iP			38
	Bt	eP			35
	W	iP			34
		epP		43	11
	CL	eP		41	41
		epP		43	18
	T	eP		41	45
		e(pP)		43	41
	USCGS: 20 S 178 W				
	19:30:16, 450 km				
18	D	eP	20	12	21
		epP			32
	R	eP			29
		epP			42
	Pr	iP			31
		ipP			43
	Bt	iP			35
		epP			47
	W	iP			09
	CL	eP			14
	T	iP			05
	USCGS: 52 N 180				
	20:03:47				
18	P	iPNEZ	21	27	32
		i		28	04
	PX	iSN		38	39
		iPSZ		40.0	
		iGN		52.6	
		iRZ		56.6	
			A		T
		PZ	$\frac{1}{4}$		1
	R	iP	21	27	36
	Hf	iPN			43
	Pr	iP			37
		i			48
	Bt	iP			39
	Kg	eP			28
	W	iP			29
	CL	iP			35
	T	iP			34
	Magnitude 6$\frac{3}{4}$				
	BCIS: 6 S 152 E				
	21:14:16				
19	P	iPNZ	00	52	53
	R	iP			56
	Hf	ePN		53	03
	Pr	iP		52	59

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
19	W	iP	00	52	50
	CL	eP			56
	T	eP			55
19	P	e(P)	03	43	39
	R	e(P)			31
		e			36
	Hf	e(P)N			20
	Pr	e(P)			24
		e			31
	W	e(P)			59
	CL	e(P)			52
	T	e(P)		44	17
	Mexico?				
19	P	iP	03	47	52
		e		48	21
	R	eP		47	51
		i			57
	Hf	ePN		48	07
	Pr	iP		47	59
		i		48	07
	Bt	eP			02
		i			05
	Kg	eP		47	37
	W	iP			35
	CL	eP			41
		i			43
	T	eP			33
		i			36
	USCGS: 52 N 175$\frac{1}{2}$ W				
	03:39:35				
19	D	eP	03	53	20
	R	eP			20
	W	eP			11
	CL	eP			15
	T	eP			11
19	D	eP	08	20	19
	R	eP			24
	Pr	eP			31
	Bt	eP			35
	Kg	eP			21
	W	iP			07
		i			18
	CL	eP			12
	T	eP			05
	USCGS: 52 N 169 W				
	08:12:40				
19	P	eP	08	21	44
		i			53
		i		22	10
	PX	eSN		28.0	
		eGN		32.4	
	R	eP		21	50
		i			58
		i		22	07
	Hf	ePN			08
	Pr	iP		21	55
		i		22	05
		i			22
	Bt	eP		21	59
		i		22	09
	Kg	eP		21	30
		i			39
		i			47
	W	iP!			29

(continued)

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h m s
March		(continued)	
19	Is	iP	08 21 34
	CL	iP	37
		i	46
	T	eP	29
		i	38
	USCGS: 53 N 168 W		
	08:14:10		
19	P	iP	11 37 10
		iNEZ	19
		i	40 02
	PX	iSN	43 35
		iGN	47.1
		iRZ	48.6
	R	eP	37 12
		i	26
	Hf	iPN	36
		iN	38 18
	Pr	iP	37 21
		i	34
	Bt	iP	24
		i	37
		i	46
	Kg	eP	36 56
	W	iP	58c
	Is	iP	37 01
		i	09
	CL	iP	04
		e	20
	T	iP	36 56
		i	37 07
	USCGS: 51½ N 176½ W		
	11:28:50		
19	P	iPEZ	12 59 03d
		i	10
		i	29
		i	13 01 28
	PX	iSNZ	05 42
		iGN	09.0
			A T
		PZ	2¼ 2
		PH	2 2
		SH	18¾ 15
	R	iP	12 59 08d
		i	15
		eSE	13 05.7
	Hf	ePN	12 59 17
		iN	26
		eSN	13 05 44
	Pr	iP	12 59 15d
		i	23
		i	42
	Bt	iP	18d
		i	27
		i	44
	Kg	iP	58 50d
		i	56
	W	iP!	52d
	Is	iP	54d
	CL	iP	57d
		i	59 14
		i	25
		i	13 01 17

(continued)

Date	Sta.	Phase	h m s
March		(continued)	
19	T	iP	12 58 49d
		i	58
		i	59 05
		i	13 01 13
		iSE	05 27
	Magnitude 6¾		
	USCGS: 51½ N 175 W		
	12:50:51		
19	P	iP	15 55 21
	R	iP	26
		i	36
	Hf	iPN	36
	Pr	iP	33
		i	38
	Bt	iP	37
		i	41
	Kg	eP	08
	W	iP	08
	Is	i(P)	15
	CL	iP	16
	T	iP	07
	USCGS: 52 N 172½ W		
	15:47:24		
19	P	iP	17 12 25
		i	13 18
	PX	eLN	22.0
	R	eP	12 21
	Hf	eN	39
	Pr	iP	30
		i	39
	Bt	eP	32
	W	iP	01
	CL	eP	08
		i	21
	T	eP	00
	USCGS: 52½ N 171 W		
	17:04:25		
19	P	iP	23 45 26
		e	51
	R	iP	23
	Hf	ePN	13
	Pr	iP	21
	Bt	iP	16
	W	eP	33
	CL	eP	32
	T	eP	38
20	P	eP	00 08 40
		e	51
		e	09 03
	PX	eLN	19.6
	R	iP	08 54d
		i	09 07
	Hf	ePN	06
	Pr	iP	02
		i	15
		i	57
	Bt	iP	07d
		i	17
		i	25
	Kg	eP	37
	W	iP	38d
		i	53

(continued)

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h m s
March		(continued)	
19	CL	iP	00 09 44d
		i	58
	T	iP	36d
		i	49
	USCGS: 52 N 173 W		
	00:00:51		
20	P	eP	00 27 15
		e	34
		e	47
	R	eP	22
		e	39
	Pr	eP	29
	Bt	eP	31
	W	iP	04
	CL	eP	12
		e	58
	T	eP	02
	BCIS: 52 N 176 W		
	00:19.0		
20	P	eP	00 29 37
		e	30 03
		e	19
	R	eP	07
		e	13
		i	26
	Hf	ePN	15
	Pr	iP	14
	Bt	eP	16
		e	31
	Kg	eP	29 43
	W	iP	48
	CL	eP	59
	T	eP	47
		e	30 02
	USCGS: 53 N 169 W		
	00:22:25		
20	PX	eGN	03 01.3
		eRZ	01.9
	D	eP	02 51 11
		e	15
	R	eP	05
		e	22
	Pr	iP	12
	Bt	iP	17
	W	iP	50 49
	CL	eP	56
		e	51 18
	T	eP	50 47
	BCIS: 52 N 173½ W		
	02:43:06		
20	P	eP	03 33 12
	PX	eGN	43.3
	R	eP	33 17
	Hf	eN	57
	Pr	iP	25
	Bt	eP	28
	Kg	eP	08
	W	iP	00
	CL	eP	07
	T	eP	00
		e	12
	USCGS: 51½ N 175½ W		
	03:25:00		

Date	Sta.	Phase	h m s
March			
20	P	iPNEZ	11 09 38c
		i	42
		i	10 01
		ePP	11 24
	PX	iSN	16 05
		iGN	20.3
		eRZ	22.0
	R	iP	09 43c
	Hf	iPN	55
	Pr	iP	50c
		i	10 07
	Bt	iP	09 55c
		i	10 15
	Kg	iP	09 26c
		i	43
	W	iP	27c
		i	39
	CL	iP	34c
		i	47
	T	iP	26c
	USCGS: 52 N 172 W		
	11:01:42		
20	P	iP	18 45 41
	R	eP	44
	Pr	iP	46
	Bt	eP	45
	W	iP	43c
	CL	eP	49
	T	eP	50
20	P	eP	20 36 11
		e	35
	PX	eGN	46.6
	R	eP	36 14
		e	34
	Pr	eP	23
		i	37
	Bt	eP	26
		i	38
	Kg	eP	06
	W	iP	35 59
		i	36 13
	CL	eP	06
	T	eP	35 56
	USCGS: 51½ N 174½ W		
	20:28:03		
21	PX	eSZ	04 43 31
		eGN	47.6
	D	eP	37 07
		e	20
	R	eP	14
		e	25
	Pr	iP	17
		i	30
	Bt	eP	22
		e	33
	Kg	eP	36 54
		e	37 05
	W	iP	36 53
	CL	eP	37 01
		e	04
		i	13
	T	eP	36 51
		e	54
		i	37 04
	USCGS: 52 N 173 W		
	04:29:02		

Date	Sta.	Phase	h	m	s
March					
21	P	iP	08	50	59d
	PX	iSNZ		56	15
		iGN			58.3
	R	iP		50	52d
	Hf	iPN			42
	Pr	iP			49d
	Bt	iP			43d
	Kg	iP		51	15d
	W	iP			10
	CL	iP			05d
	T	iP			17d
		e			30

USCGS: 14½ N 93 W
08:44:46

Date	Sta.	Phase	h	m	s
21	P	ePEZ	12	39	22
		i			43
	PX	eSN		45	48
		eGN			49.2
	R	eP		39	27
		i			36
		i			42
	Hf	ePN			37
	Pr	iP			28
		e			34
	Bt	iP			39
	Kg	e(P)			08
	CL	iP			17
	T	iP			09

USCGS: 52 N 171 W
12:31:30

Date	Sta.	Phase	h	m	s
21	P	iP	13	51	24c
	R	iP			26c
	Pr	iP			29c
	Bt	iP			36
	Kg	eP			23
	CL	iP			32c
	T	iP			35c
		e		52	00

BCIS: Fiji Island region

Date	Sta.	Phase	h	m	s
21	P	iP	15	54	29
		i			39
	R	eP			34
	Pr	iP			40
	Bt	eP			44
	W	iP			18
		i			38
	CL	eP			24
	T	eP			14

USCGS: 51 N 175 W
15:46:16

Date	Sta.	Phase	h	m	s
21	P	iP	17	47	41
		i			51
	PX	iSN		54	11
		iGN			58.1
	R	eP		47	43
	Hf	eN			58
	Pr	eP			44
		i			51
	Bt	eP			54
	W	iP			21
		i			42
	CL	eP			28
		e			37
	T	eP			19

USCGS: 51½ N 177 W
17:39:12

Date	Sta.	Phase	h	m	s
March					
22	W	iP	01	24	15
		ipP			30
	Is	iP			16
	T	e			24
		e			31
22	P	iP	09	44	24
		i			30
	PX	eLN			55.0
	Pr	iP		44	33
		i			42
	Bt	iP			37
		i			46
	W	iP			10
	Is	iP			12
		i			22
	T	iP			07
		i			17

BCIS: 52 N 173 W
09:36.4

Date	Sta.	Phase	h	m	s
22	P	e	10	45	05
		e			30
	Pr	e		44	43
	Bt	e			56
	Is	e			40
		e			54
	T	e		45	00
22	P	e(P)	12	10	00
		e			16
	Hf	ePN		09	32
	Pr	iP			38
	Bt	iP			30
	Is	iP		10	04
	T	eP			14

Mexico

Date	Sta.	Phase	h	m	s
22	P	iPNZ	14	28	33
		iPcP		31	03
	PX	iSNZ		34	02
		iEZ			29
		iGNE			37.3
		iRZ			38.8
				A	T
		PZ		1½	4
		PH		1	2
		SH		50	10
	R	iPNEZ	14	28	37
		iSNE		34	38
	Hf	iPN		28	48
		iN		29	06
		iSN		34	53
	Pr	iP		28	44
		i			57
		i		29	39
		iS		34	52
	Bt	iP		28	49
		i		29	02
		i		34	35
		iS			59
	W	iP		28	19
	Is	iP			22
		i			34
		eS		34	12
		e			50

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
22	T	eP	14	28	15
		i			20
		i			30
		iS		33	56
		iNEZ		34	03
		i			25
		iGE			36.7

Pasadena: 53¾ N 165¾ W
14:21:07
Magnitude m=6.9 M=7.0
USCGS: 54 N 166 W
14:21:06

Date	Sta.	Phase	h	m	s
22	P	iP	14	40	38
		ipP			51
	Hf	iPN			54
		ipP		41	06
	Pr	iP		40	49
		ipP		41	03
	Bt	iP		40	54
		ipP		41	07
	Is	iP		40	27
	T	iP			23
		ipP			35

USCGS: 54 N 165½ W
14:33:13

Date	Sta.	Phase	h	m	s
22	P	eP	17	17	39
		ipP			52
	PX	iGN			27.5
		iRZ			28.1
	Hf	iN		18	06
	Pr	iP		17	52
		ipP		18	04
	Bt	iP		17	56
		ipP!		18	08
		i			25
	W	iP			27
		ipP!			39
	Is	iP			30
		ipP!			42
		e		19	06
	CL	iP		17	35
		ipP			47
	T	iP			27
		ipP			38

USCGS: 52½ N 171 W
17:09:51

Date	Sta.	Phase	h	m	s
22	P	iP	19	45	35.6
		i!			59.2
		iSNE		46	32.0
	SB	iP		45	19.2
	Kg	iP			11.3
	W	iP!			14.7
	Is	iP			19.6
	CL	iP			28.6
	H	iP			25.1
	T	iP			17.5

Magnitude 5.3
Berkeley 37°40' N 122°29' W
19:44:21
USCGS: 37.9 N 122.6 W
19:44:22
Main shock of a Series. Epicenter just outside San Francisco city limits to southwest. Much minor damage. Maximum intensity VII

Date	Sta.	Phase	h	m	s
March					
22	P	e(P)	23	15	44
	Kg	eP			25.5
	W	iP!			29.6
	Is	eP			32.7
	CL	eP			43.7
	H	iP			41.1
	T	eP			30.5

Magnitude 4.5
Berkeley 37°39' N 122°27' W, 23:14:35, aftershock

Date	Sta.	Phase	h	m	s
23	P	i(P)	00	28	11.7
	Kg	e(P)		27	42.6
	W	iP			48.5
	Is	iP			53.2
	CL	e(P)		28	04.8
	H	i(P)			00.5
	T	iP		27	52.0

San Francisco aftershock

Date	Sta.	Phase	h	m	s
23	D	e(P)	01	00	26
		e			38
	R	e(P)			24
		e			40
	Pr	e(P)			33
	Bt	e(P)			45
		e			57
	Kg	e			18
	W	iP	00	59	59
		i!	01	00	08
	Is	eP			00
		i			17
	CL	e(P)			09
		e			15
	T	eP	00	59	56
		e	01	00	03

BCIS: 52 N 175 W, 00:52:00

Date	Sta.	Phase	h	m	s
23	P	e	04	00	06
	R	eP	03	59	44
		i	04	00	00
		i			09
	Hf	iPN	03	59	46
	Pr	eP			38
		i			54
	Kg	e	04	00	20
	W	e	03	59	58
		i	04	00	16
	Is	e			15
		e			26
	CL	e	03	59	59
		i	04	00	11
	T	e			24

USCGS: Near coast of Chiapas, Mexico 03:53:55

Date	Sta.	Phase	h	m	s
23	P	iPNEZ	05	27	00
		ipP!			43
		e		30	13
		eP'NEZ		31	00
		ePPNZ			32
		epPP		32	14
	PX	ePPPZ		34	00
		eSKSNE		37	26
		iNE		38	23
		iSNE		39	03
		isSNZ			40.3
		iPSZ		40	55
	P	ePKKPZ		42	09

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h m s
March		(continued)	
23	PX	iSSN	05 46 56
		isSSNZ	47 36
		iG1N	57.4
		iR1Z	06 03.0
		iG2N	57.0
		iR2Z	07 10.9
			A T
		PZ	0.2 1½
		PPZ	1½ 5
		PPH	1¼ 5
		MH	10 20
		MZ	10 20
	R	iP	05 27 03
		i	09
		epP	49
		eP'	31 03
		ePP	39
		iSKSE	37 31
		i	38 27
		ePS	40 53
		ePKKP	42 10
	Hf	ePN	27 12
		iP'N	31 07
		iPPN	51
		iPPPN	34 04
		eSKSN	37 39
	Pr	eP	27 06
		ipP	52
		e	30 22
		eP'	31 04
		iPP	31
		iPPP	34 03
		ePKKP	42 11
	Bt	eP	27 10
		i	17
		eP'	30 59
		ePP	31 28
		ePPP	33 57
		e	41 05
		ePKKP	42 11
	Kg	eP	26 55
		e	30 07
		e	25
		eP'	58
		iPP	31 25
	W	iP	26 57
		iP'	30 59
		iPP	31 28
		iPKKP	42 07
	Is	iP	26 58
		ipP	27 39
		e	30 15
		eP'	57
		iPP	31 31
		iPKKP	42 20
	CL	eP	27 02
		e	30 09
		eP'	31 17
		iPP	36
		i	44
	T	eP	27 01
		iP'NZ	31 08
		iPPEZ	33
		i	38 23
		isS	40.1

(continued)

Date	Sta.	Phase	h m s
March		(continued)	
23	Pasadena: 5½ S 131 E		
	05:12:40, 150 km.		
	Magnitude: m=7.1 M=7.3		
	USCGS: 5½ S 131 E		
	h=100 km., 05:12:31		
23	D	eP	06 51 14
	R	eP	10
		e	26
	Hf	ePN	21
	Pr	iP	17
	Kg	eP	50 53
	W	iP	55
		i	51 05
		i	11
	Is	iP	50 56
		i	51 13
	CL	eP	01
		e	18
	T	eP	50 52
		e	51 00
		e	09
23	P	iP	09 00 26
	R	eP	30
	Pr	iP	39
	Bt	iP	44
	W	iP	14
	Is	iP	16
	CL	eP	21
	T	iP	10
23	P	eP	10 36 35
		e	45
	PX	eL	45.0
	R	eP	36 48
	Pr	iP	47
	Bt	iP	52
		i	59
	W	iP	23
	Is	eP	24
	CL	eP	29
		e	43
	T	eP	21
		i	33
	BCIS: 52½ N 165½ W		
	10:29:10		
23	P	eP	13 32 42
		e	51
		e	33 12
	PX	eLN	43.0
	R	eP	32 52
		e	33 16
	Hf	ePN	06
	Pr	iP	03
		i	16
		i	25
	Bt	eP	06
		i	19
	Kg	eP	39
	W	iP	39
		i	53
	Is	iP	41
		i	54
	CL	iP	39
		i	52
		i	33 01
	T	iP	32 38
		i	51
		i	33 00

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h m s
March		(continued)	
23	USCGS: 51½ N 179 W		
	13:24:33		
23	P	iP	13 48 27d
	R	iP	32
	Hf	ePN	42
	Pr	iP	39d
		i	56
	Bt	iP	43d
	Kg	iP	16d
	W	iP	16d
	Is	iP	18d
	CL	iP	22d
	T	iP	15d
		i	27
	USCGS: 51 N 179½ W		
	13:39:53		
23	P	eP	22 15 53
		e	16 03
	R	eP	15 53
	Pr	iP	16 05
		i	16
	Bt	eP	09
		e	21
	Kg	eP	15 39
	W	iP	41
	Is	eP	42
		e	57
	CL	eP	46
		e	57
	T	eP	37
24	P	eP	04 45 19
	PX	e(G)N	57.4
	R	eP	45 24
	Pr	iP	31c
	Bt	iP	35c
		e	59
	W	iP	09c
		i	23
	Is	eP	10
		e	17
	CL	eP	15
	T	eP	07
	USCGS: 51½ N 175½ E		
	04:36:22		
24	PX	e(SS)N	07 12.9
		e(G)N	23.9
		e(R)NZ	29.8
	BCIS: 63 S 165 E		
	06:37.7		
24	P	eP	07 37 52
	R	eP	54
		e	38 10
	Hf	ePN	06
	Pr	iP	02
		i	12
	Bt	eP	05
		i	12
		i	20
	Kg	eP	37 38
	W	iP	39
	Is	iP	41
		i	51
		i	59
	CL	eP	45
	T	iP	36
	USCGS: 51 N 179½ W		
	07:29:15		

Date	Sta.	Phase	h m s
March			
24	P	iPNEZ	08 26 46c
	PX	iGN	29 44
		iRNZ	30 21
			A T
		PZ	6 3
		PH	3 3
	R	iP	08 26 49c
		i!	53
	Hf	iPN	27 00
	Pr	iP	26 59c
		i	27 20
	Bt	iP	09c
		i	33
	Kg	iP	26 27c
	W	iP	26c
		i	43
	Is	iP	29c
		i	34
		i	27 02
	CL	iP	26 34c
	T	ePNZ	15c
		i	19
		iNZ	22
		e(R)Z	29.7
	Magnitude 6¼		
	USCGS: 51 N 130 W		
	08:22:23		
24	P	ePEZ	11 13 53
		iNZ	14 00
	PX	iSN	20 27
		iLNZ	23.2
	R	eP	13 58
		i	14 04
	Hf	ePN	15
	Pr	iP	04
		i	11
	Bt	iP	15
		i	20
	Kg	iP	13 46
	W	iP	39
		i	46
		i	55
	Is	eP	44
		i	50
	CL	eP	49
		i	55
	T	eP	37
		i	44
	USCGS: 52½ N 169½ W		
	11:06:10		
24	P	iPNEZ	11 44 43c
		i	51
		i	57
	PX	iSNE	51 01
		iGN	54.4
		iRZ	56.4
	R	iP	44 47c
	Hf	iPN	58
	Pr	iP	55c
		i	45 03
	Bt	iP	44 59c
	Kg	iP	30c
	W	iP	30c
	Is	iP	33c
	CL	iP	38c
		i	46

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date March	Sta.	Phase	h	m	s
		(continued)			
24	T	iP	11	44	29c
		i			36
	USCGS: 52½ N 171½ W				
	11:36:50				
24	P	eP	11	50	22
		e			30
	R	eP			25
	Hf	ePN			35
	Pr	eP			30
	Bt	eP			32
	Kg	eP			17
	W	eP			16
	Is	eP			18
	CL	eP			21
	T	eP			17
24	P	e(P)	12	09	26
		e			31
	R	e(P)			30
	Hf	e(P)N			49
	Pr	e(P)			45
	Bt	e(P)			45
	Kg	e(P)			15
	W	i(P)			08
	Is	e(P)			11
		e			16
	CL	e(P)			14
	T	e(P)		08	58
		e		09	06
24	P	eP	13	59	07
	PX	eLNZ	14	01.5	
	R	eP	13	59	06
	Pr	eP		58	55
		i		59	10
	Bt	iP		58	47
		e		59	14
		i			27
	Kg	e(P)			40
	W	eP			32
		i			44
	Is	eP			30
	CL	eP			28
	T	eP			45
	BCIS: 26 N 111 W				
	13:56.6				
24	P	eP	14	02	18
		e			29
	R	eP			32
	Pr	i			41
	Bt	e			44
	W	iP			15
	Is	eP			17
	CL	eP			22
	T	eP			13
	USCGS: 51 N 179½ W				
	13:53:53				
24	P	eP	16	40	00
		e			19
	PX	eLN		49.8	
	R	eP		40	15
	Pr	eP			23
		e			39
	Bt	eP			27
		i			38
		i			44

(continued)

Date March	Sta.	Phase	h	m	s
		(continued)			
24	Kg	eP	16	39	59
	W	eP			59
	Is	eP		40	09
	CL	eP			05
	T	eP		39	55
	USCGS: 52½ N 169½ W				
	16:32:28				
24	D	eP	19	20	46
	Pr	eP			57
	Bt	eP		21	01
	W	iP		20	33
	Is	eP			36
	CL	eP			39
	T	iP			29
		e			39
	Aleutians				
24	P	eP	21	11	26
	R	iP			30
	Pr	iP			38d
	Bt	eP			42
		e			56
	W	iP			15d
		i			27
	Is	iP			17d
	CL	eP			21
	T	iP			13d
		e			25
25	P	eP	00	01	32
		i			39
		i			51
	R	eP			31
		i			38
		i			49
	Hf	ePN			41
	Pr	eP			31
		i			36
		i			46
	Bt	i			34
		i			43
	Kg	eP			29
	W	iP			32
		i			40
		i			57
	Is	eP			33
		e			41
		i			56
	CL	eP			32
		e			40
		e			53
	T	eP			34
		e			43
		i			59
25	P	iPEZ	00	47	00
		i			10
	PX	eLN		56.0	
	R	eP		47	03
	Hf	ePN			16
	Pr	iP			10
	Bt	iP			14
	Kg	eP		46	45
	W	iP			45
	Is	eP			49
	CL	eP			51
	T	eP			42
	USCGS: 53 N 167 W				
	00:39:29				

Pasadena and auxiliary stations, 1957 No. 2

Date March	Sta.	Phase	h	m	s
25	P	ePNEZ	01	12	04
		e			14
		iPcP		13	55
	PX	eL		25.0	
	R	eP		12	10
		iPcP		13	58
	Pr	iP		12	27c
		iPcP		14	02
		eScP		17	50
	Bt	iP		12	29c
		iPcP		14	03
		eScP		17	50
	Kg	eP		12	03
		ePcP		13	52
	W	iP		12	03c
		i			16
		iPcP		13	49
		iScP		17	35
		i			59
	Is	iP		12	05
		iPcP		13	51
		eScP		17	33
		e			43
	CL	iP		12	09c
		iPcP		13	54
		eScP		17	40
		e		18	04
	T	iP		12	00
		i			13
		i			22
		iPcP		13	50
		iScP		17	38
	USCGS: 52 N 176 W				
	01:03:59				
25	P	iPNEZ	02	35	06
		iPP		37	52
	PX	eSZ		40.9	
		eLZ		44.7	
	R	iP		34	59
		iPP		37	51
	Pr	iP		34	55
		i		35	15
	Bt	iP		34	48d
	Kg	iP		35	22
		i			34
	W	iP			18d
		iPP		37	56
	Is	iP		35	15d
		i		37	55
	CL	iP		35	10
		ePP		37	53
	T	iP		35	21d
		i			34
		ePP		37	57
	USCGS: 13½ N 91 W				
	02:28:36				
25	P	eP	05	44	40
	PX	eLZ		53.5	
	R	e		44	56
	Pr	eP			52
	Bt	eP			56
		e		45	05
	W	iP		44	27
		i			42

(continued)

Date March	Sta.	Phase	h	m	s
		(continued)			
25	Is	eP	05	44	29
		e			52
	CL	eP			33
	T	eP			25
		e			35
	USCGS: 54 N 163½ W				
	05:37:25				
25	P	iP	08	32	17
	R	iP			21
	Pr	iP			29
	Bt	iP			32c
	W	iP			07c
		i			24
	Is	iP			08c
	CL	eP			10
	T	iP			03c
25	P	eP	10	16	34
	R	eP			39
	Pr	eP			47
	W	iP			23
	Is	eP			25
	CL	eP			28
	T	eP			21
25	P	e(P)	10	32	00
	PX	eS		39.0	
		eGN		42.0	
		eRZ		44.0	
	R	e		32	18
	Pr	e(P)		31	59
		i		32	16
	Bt	eP			20
		e			28
	Kg	eP		31	44
	W	iP			46
		i			59
	Is	eP			48
		e		32	04
	CL	eP		31	49
	T	iP			49
	Aleutians				
25	P	iPNEZ	14	20	58d
		ipPNEZ		21	09
		i			49
	PX	eS		26	39
		eGN		29.5	
		eRZ		31.5	
	R	iP		21	03
		i			14
	Hf	eN		22	41
	Pr	iP		21	10d
		i			21
	Bt	iP			14d
		i			24
	Kg	iP		20	44d
		i			56
	W	iP			45d
	Is	iP			48d
		e			57
	CL	iP			49d
		i			59
	T	iP			43d
		i			52
		i		21	02
	USCGS: 54 N 165½ W				
	14:13:33				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March					
25	P	e	18	05	33
	PX	eGN			15.6
		eRZ			20.5
	R	e		05	46
	Pr	eP			22
	Bt	e			34
	W	eP		04	53
	Is	eP		05	08
	CL	eP			08
	T	eP			01
		e			10
25	P	iPNEZ	18	29	40
	PX	eGN			32.9
		eRZ			33.8
	R	eP		29	30
		i			33
		i			38
	Hf	ePN			22
	Pr	iP			24d
		i			39
	Bt	iP			14d
	Kg	eP		30	02
	W	iP			01
	Is	eP		29	59
		e		30	19
	CL	iP		29	57
		i		30	14
	T	iP			11
	BCIS: 20 N 109¾ W				
	18:25.8				
25	P	eP	21	25	51
		i		26	23
	PX	iSKSN		36	31
		eSKKSZ		37	47
		iSKKPNZ		43	39
		eSSSZ		51	35
		eRZ	22	04.4	
	W	i(P)	21	25	07
	CL	e(P)			07
	T	e(P)			09
		e			48
	BCIS: 60 S 27¾ W				
	21:06:12				
26	P	iPNZ	01	34	44
		iNZ		35	00
	PX	iGN			37.8
	R	eP		34	36
		i			40
	Hf	ePN			25
		iN			32
	Pr	eP			26
		i			30
	Bt	iP			18
		i			49
	Kg	eP		35	05
	W	iP			05
	CL	eP			00
	T	iP			16
	BCIS: Revillagigedo Islands region				
	01:30.9				

Date	Sta.	Phase	h	m	s
March					
26	P	iPEZ	02	17	38
		iNZ			46
	PX	iSN		23	39
		iGN			26.5
		iRZ			28.2
	R	iP		17	43
		i			54
	Hf	ePN			54
	Pr	iP			50d
		i			58
		i		18	07
	Bt	iP		17	54d
		i		18	02
		i			12
	W	iP		17	25d
	Is	iP			27d
	CL	iP			31d
	T	iP			22d
		i			36
	USCGS: 54 N 165½ W				
	02:10:15				
26	P	eP	02	56	27
	PX	eGN			06.7
	R	eP		56	33
		e			47
	Pr	eP			29
	Bt	eP			38
	Kg	eP			16
	W	iP			03
		i			16
	Is	iP			04
		e			17
	CL	eP			08
	T	eP		55	59
		e		56	14
	USCGS: 51 N 177½ W				
	02:47:50				
26	P	eP	03	02	40
	PX	eR			13.5
	R	eP		02	45
	Hf	ePN			55
	Pr	iP			52
	Bt	eP			56
		e		03	08
	Kg	eP		02	26
	W	iP			29d
	Is	eP			30
	CL	eP			35
	T	eP			24
		e			34
		i			57
	BCIS: Aleutians, 02:54.8				
26	P	eP	03	12	42
	PX	eGN			22.0
	R	eP		12	50
	Hf	ePN		13	16
	Pr	iP		12	56
	Bt	eP		13	00
		i			29
	Kg	e(P)		12	26

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March		(continued)			
26	W	iP	03	12	33
		i			46
	Is	iP			34
		i			51
		i		13	04
	CL	eP		12	39
	T	eP			29
		i		13	04
	USCGS: 51½ N 170 W				
	03:04:55				
26	P	eP	06	02	28
		e			39
	R	iP			33
		i			44
	Hf	ePN			43
	Pr	iP			41
		i			52
	Bt	iP			44
		i			56
	W	iP			17
		i			26
	Is	eP			16
		e			24
	CL	eP			22
		i			33
	T	iP			12
		i			23
	Aleutians				
26	P	iPEZ	16	10	27d
		iNZ			45
	PX	eGN			22.1
	R	iP		10	31d
		i			44
		i			51
	Hf	iPN			40
		iN			59
	Pr	iP			40d
		i			49
		i			58
	Bt	iP			42d
		i		11	00
	Kg	iP		10	15d
		i			35
	W	iP			16d
		i			28
		i			36
	Is	iP			17d
		i			28
		i			37
	CL	iP			22d
		i			34
		i			41
	T	iP			13(c)
		i			32
	USCGS: 50½ N 180				
	16:01:53				
26	P	eP	18	25	21
	PX	eLZ			38.5
	R	eP		25	25
	Hf	ePN			35
	Pr	iP			33
	Bt	eP			36
	Kg	eP			10

(continued)

Date	Sta.	Phase	h	m	s
March		(continued)			
26	W	iP	18	25	10
	Is	eP			11
	CL	eP			15
	T	iP			06
	USCGS: 51 N 179½ W				
	18:16:47				
26	P	e	22	55	01
		e			06
	R	e(P)		54	58
		e		55	05
	Pr	e			03
	Bt	eP		54	49
	Kg	e		55	06
	W	iP			10
		i			17
	Is	eP			09
	CL	eP			05
	T	iP			14
	BCIS: 23 S 65 W, 22:43.2				
27	P	eP	04	21	49
	PX	eGN			31.4
	R	eP		21	53
		e		22	01
	Pr	eP		21	50
		e		22	02
	Bt	eP		21	57
		e		22	06
	W	iP		21	26
	Is	e			40
		e			49
	CL	e			44
	T	eP			22
		e			27
		e			32
	USCGS: 52½ N 170 W				
	04:13:52				
27	PX	eLN	05	10.7	
	R	eP	04	58	52
	Pr	eP			58
	Bt	eP		59	02
	Kg	e		58	47
	W	iP			26
		i			39
	Is	iP			38
		i			53
	CL	eP			43
		e			54
	T	eP			33
		e			52
	Aleutians				
27	P	eP	07	43	49
		epP		44	32
	R	eP		43	52
		e		44	04
		epP			35
		e			40
	Hf	ePN			00
	Pr	iP		43	52
		epP		44	40
	Kg	e			01
	W	iP		43	53
		ipP		44	33

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March		(continued)			
27	Is	iP	07	43	53
		i		44	12
		ipP			33
	CL	eP		43	58
		epP		44	38
	T	eP			00
		epP			39
	USCGS: 22 S 177 W				
	07:31:56, 150 km.				
27	P	eP	13	13	29
		epP			53
	R	eP			32
		epP			57
		esP		14	07
	Pr	eP		13	34
		epP		14	00
		esP			10
	Bt	e			12
		e			18
	W	iP		13	27
	Is	eP			30
	CL	eP			35
		e(pP)			55
		esP		14	05
	T	eP		13	31
		e		14	14
	USCGS: 5 S 153½ E				
	13:00:27, 100 km.				
27	D	eP	16	53	55
	R	eP			56
	Pr	eP		54	05
	W	iP		53	40
		i			52
		i		54	05
	Is	iP			43
	CL	iP			46
	BCIS: 53½ N 163½ W				
	16:46:35				
28	D	eP	01	23	36
		e			44
	R	eP			44
	Pr	iP			50
	Bt	eP			53
	Kg	e			57
	W	iP			14
		i			28
	CL	e(P)			34
	T	iP			24
		i			33
	USCGS: 51½ N 174½ W				
	01:15:20				
28	D	eP	04	05	42
	W	iP			43
		i		06	15
	CL	eP		05	48
		e		06	28
	T	iP		05	49
		i		06	22
		i			28
	BCIS: Samoa Islands region				
	03:54.3				

Date	Sta.	Phase	h	m	s
March					
28	D	eP	05	08	23
	R	iP			26
		e			42
	Pr	iP			33
	Bt	iP			37
	W	iP			10
	CL	iP			16
	T	iP			07
	Aleutians				
28	PX	eLZ	13	08.8	
	D	eP	12	59	24
	R	e(P)			29
	Hf	ePN			47
	Pr	eP			28
	Kg	eP			08
	CL	eP			11
	T	eP		58	59
		e		59	05
	BCIS: 55 N 166¼ W				
	12:51:45				
28	D	eP	14	30	00
	Pr	iP			04
	Bt	eP			08
	CL	eP		29	38
	T	eP			32
		e			38
		e			46
	BCIS: Aleutians, 14:21.5				
28	R	eP	18	37	36
	Pr	iP			42
	Bt	iP			45
		i			59
	W	iP			20
		i			33
	CL	eP			26
	T	iP			18
28	D	eP	19	43	29
	Pr	iP			39
	Bt	iP			43
	W	iP			03
		i			15
	CL	eP			22
	T	iP			13
28	P	ePEZ	20	03	44
	R	eP			50
	Pr	iP			56
		i		04	03
		i			11
	Bt	eP			00
		i			07
		i			16
	Kg	eP		03	38
	W	iP			33
		i			41
		i			50
	CL	eP			40
	T	eP			30
	USCGS: Andreanof Is.				
	19:55:31				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
March					
28	P	eP	20	16	12
	PX	eSN		22	27
		iGN		25.6	
		eRZ		26.5	
	R	eP		16	16
		e			29
	Hf	ePN			30
	Pr	eP			18
		i			28
		i			36
	Bt	eP			28
		i			41
	Kg	eP		15	58
	W	iP		16	00
		i			12
	CL	eP			07
		e			19
	T	eP		15	57
		e		16	01
		e			10
	USCGS: 51 N 171½ W				
	20:08:20				
28	W	eP	22	31	14
	T	eP			12
	BCIS: 39½ N 22¾ E				
	22:26:00				
29	P	iPNEZ	05	18	01
		iNEZ			09
		i			55
	PX	e(PP)Z		19	32
		eSNEZ		23	59
		iGNEZ		27.0	
		iRZ		28.7	
			A		T
		PZ	1½		2
		SH	12		10
	R	iP	05	18	04c
		i			13
		i(PP)		19	48
		iSEZ		24	08
		iGNEZ		27.1	
		eRZ		28.7	
	Hf	ePN		18	23
		eSN		24	28
	Pr	iP		18	11c
		i!			20
		eS		24	22
	Bt	eP		18	16
		i			27
		iSE		24	30
	Kg	eP		17	47
		i			56
	W	iP!			48c
	CL	eP			53c
		i		18	02
		eS		23	51
	T	iP		17	43c
		i			54
		iSNEZ		23	35
	Magnitude 6¾				
	USCGS: 53½ N 167 W				
	05:10:28				

Date	Sta.	Phase	h	m	s
March					
29	P	eP	07	33	30
		e			36
	R	eP			34
		i			40
		e			56
		e		34	06
	Hf	ePN		33	44
	Pr	iP			41c
		i			47
		i		34	03
		i			14
		i			35
	Bt	eP		33	46
		i			53
		i			57
		i		34	07
	Kg	eP		33	17
	W	iP			17c
	CL	eP			24
		i			35
	T	eP			14
		i			21
		i			26
		i			39
		i			44
	USCGS: 53½ N 167 W				
	07:25:58				
29	P	eP	08	23	34
		epP			46
	R	eP			38
		epP			50
	Hf	ePN			50
	Pr	iP			46d
		ipP			57
	Bt	iP			50d
		ipP		24	02
	Kg	eP		23	21
	W	iP			22d
		ipP			34
	CL	eP			29
		epP			40
	T	iP			20d
		ipP			31
	USCGS: 53 N 167 W				
	08:16:03				
29	P	iP	18	50	20
	R	iP			26
	W	iP			29
	CL	eP			30
	T	iP			31
	BCIS: 57¼ S 28¾ W				
	18:31:36				
29	P	iP	19	07	48
	R	eP			53
	Pr	iP		08	00
	Bt	iP			05
	Kg	eP		07	37
	W	iP			37
	CL	eP			45
	T	iP			37

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h m s
March 29	P	iPNEZ	22 57 33c
		i	50
	PX	iSNE	23 03 27
		iGN	06.5
		A	T
	PZ	½	2
	PH	½	2
	SH	5	16
	R	eP	22 57 31
		i	37
		eSE	23 03.5
	Hf	ePN	22 57 51
	Pr	iP	40c
		i	46
		i	57
	Bt	eP	41
		i	47
		i	58 01
	Kg	iP	57 19
	W	iP!	15c
	CL	eP	22
		i	28
	T	iP	12
		i	19
		i	44
		eSNZ	23 03.1
	Magnitude 6 - 6¼		
	USCGS: 53 N 169 W		
	22:49:51		
30	P	iP	00 51 13
		i	23
	PX	eSN	58 21
		iGN	01 01 47
	R	iP	00 51 18
		i	25
	Pr	iP	23
	Bt	iP	29
	Kg	eP	03
	W	iP	02
	CL	iP	09
	T	iP	00
		i	04
		i	14
	USCGS: 51½N 179½W, 00:42:40		
30	P	eP	01 59 07
	PX	eSN	02 06.0
		iGN	10.6
		iRZ	12.5
	R	eP	01 59 10
	Bt	iP	22
	Kg	e	06
	W	iP	58 54
		iPcP	02 00 59
	CL	eP	01 59 07
		ePcP	02 00 43
		eScP	04 39
	T	iP	01 58 52
		ePcP	02 00 37
		eScP	04 33
	USCGS: 51½ N 178 W		
	01:50:39		

Date	Sta.	Phase	h m s
March 30	P	iPNEZ	06 45 37
		i	56
		i	46 36
	PX	iSN	52 31
		iGN	56.0
		i(R)Z	58.9
	R	iP	45 41
		i	45
	Hf	iPN	51
	Pr	iP	48
		i	46 07
	Bt	iP	45 52
		i	57
		i	46 10
	Kg	iP	45 25
	W	iP	26
	CL	iP	32
		i	37
	T	iP	23
		i	28
	USCGS: 51 N 180		
	06:37:00		
30	P	iPNEZ	09 25 12
		iPP	27 09
	PX	eSN	31 44
		iGN	35.1
		iRZ	37.7
	R	eP	25 15
	Hf	ePN	26
		eN	39
	Pr	iP	23
	Bt	eP	25
	Kg	eP	24 59
	W	iP	25 00
		i	12
		i	42
	CL	eP	06
		i	22
		iPP	26 54
	T	eP	24 57
		i	25 13
	USCGS: 52 N 175 W		
	09:17:00		
30	R	eP	09 30 51
	Hf	ePN	53
	Pr	iP	50
	Bt	eP	52
		e	31 07
	Kg	eP	30 50
	W	iP	38
		i	52
	CL	eP	41
		i	55
	T	eP	37
		i	50
31	P	iP	02 25 58
		iNEZ	26 07
	PX	iGN	28.4
		iR	29.1
	R	eP	26 05
		e	13

(continued)

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase (continued)	h m s
March 31	Hf	ePN	02 26 22
	Pr	eP	16
	Bt	eP	24
		e	39
	W	iP	25 37
	CL	eP	47
	T	eP	29
		e	43
	USCGS: 43½ N 127½ W		
	02:23:05		
31	P	iPNZ	02 33 56d
		ipP	34 25
		isP	39
	R	iP	33 53d
		ipP	34 21
		isP	36
	Hf	iPN	33 44
		ipPN	34 15
	Pr	iP	33 49d
		ipP	34 18
		isP	32
	Bt	iP	33 44d
		i	34 03
		ipP	13
		isP	27
	W	iP	05d
		ipP	35
	CL	iP	00d
		i	15
		ipP	30
		isP	42
	T	iP	08d
		ipP	36
	BCIS: 22 S 67¾ W		
	02:22:33, 100 km		
31	P	eP	10 16 57
		iNEZ	17 04
	PX	iSZ	23 45
		eGN	26.9
		iRZ	30.0
	R	eP	17 01
		i	09
	Hf	ePN	14
	Pr	eP	05
		i	15
	Bt	eP	09
		i	19
	W	iP	16 44
		i	47
		i	17 02
	CL	eP	16 50
		i	17 00
	T	iP	16 41
		i	50
	BCIS: 51½ N 178 W		
	10:08:25		
31	P	iP	17 33 04d
		i	13
	R	eP	07d
		e	24
	Hf	iPN	15
	Pr	iP	13d

(continued)

Date	Sta.	Phase (continued)	h m s
March 31	Bt	iP	17 33 17d
	Kg	iP	32 53d
	W	iP	53d
		i	33 00
		i	26
	CL	iP	32 59d
	T	iP	50d
	USCGS: 54 N 158 E		
	17:22:55		
April 1	W	iP	03 05 28
	BCIS: Data insufficient		
	Aleutians?		
1	PX	eL	08 20.9
	W	iP	07 51 45
		i	52 04
	USCGS: 11½ N 126 E		
	07:30:27, 60 km		
1	W	iP	11 16 55c
		i	17 08
	BCIS: 52¾ N 167½ W		
	11:09:29		
1	P	iP	11 43 30
		iPcP	45 22
	PX	iS	50.0
		iGN	53.4
		iRZ	55.6
	R	iP	43 35
		i	49
		iPcP	45 22
	Hf	ePN	43 47
		iN	59
	Pr	iP	41
		i	57
	Bt	iP	45
		i	44 00
	Kg	iP	43 16
		ePcP	45 18
	W	iP	43 19c
		i	32
		iPcP	45 16
	CL	eP	43 24
		i	26
		iPcP	45 19
	T	iP	43 18
		i(PcP)	45 17
	USCGS: 51 N 173 W		
	11:35:30		
1	W	iP	15 04 45
	BCIS: Insufficent data.		
1	W	iP	19 12 54
	USCGS: 51½ N 178½ W		
	19:04:41		
1	P	iP	20 07 01d
	R	iP	06 58d
	Hf	ePN	53
	Pr	iP	44c
	Bt	iP	51c
	W	iP	07 09d
	CL	eP	05
	Dilatation followed by sharp compression		
	BCIS: 21 S 71 W		
	19:55:44		

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
1	R	eP	20	53	58
	W	iP		54	07
2	P	iP	00	47	43
		i			55
	PX	eLNE		58.2	
	R	iP		47	46
		i			59
	Hf	ePN			58
	Pr	iP			53
		i		48	06
		i			15
		i			25
		iPP		49	47
	Bt	i(P)		47	59
	W	iP			31
		i			44
	CL	iP			38
		i			51
		iPP		49	33
	T	iP		47	30
		i			41
	USCGS: 51 N 173 W				
	00:39:42				
2	W	iP	02	54	21
	CL	iP			29
	BCIS: Probably New Hebrides,				
	data insufficient				
2	P	iP	04	23	19.5d
		iSN			46.5
	R	iPEZ!			08.4c
		iSE			24.2
	Hf	iPN!		22	52.1
	Pr	iP!		23	02.0d
	Bt	iP!			07.6d
		iSN			24.6
	EC	eP			07.4
		iS!			20.3
	BB	iP!			04.2c
		iS!			20.0
	Magnitude 4.1				
	Pasadena: 33°42' N 115°56' W				
	04:22:47				
2	P	iP	08	44	52
	R	iP			54
	Bt	iP		45	00
	W	iP		44	44
		i			59
	CL	iP			51
	USCGS: 30 N 137 E				
	08:33:10, 550 km				
	JMA: 30 N 137¾ E				
	08:33:10, 500 km				
2	P	iP	09	02	57
	R	iP		03	01
	Bt	iP			06
	W	iP		02	50
	CL	eP			57
	BCIS: off south coast of				
	Honshu, Japan, 08:51.6				

Date	Sta.	Phase	h	m	s
April					
2	R	e(P)	11	59	47
	W	iP			30
		i			40
	USCGS: 51 N 173 W				
	11:51:42				
2	P	iPEZ	20	24	57
		iNZ		25	16
	PX	i(S)Z		31	59
		iGN		35.0	
		iRZ		36.6	
	R	iP		25	02
		i			35
	Hf	iPN			13
		iN			30
	Bt	iP			12
		i			55
	Kg	eP		24	44
	W	iP			46
		i			59
	CL	iP			52
		i		25	06
		i		26	47
	T	iP		24	45
	USCGS: 51½ N 173 W				
	20:16:57				
2	D	eP	20	47	07
	Bt	iP			20
	W	iP		46	53c
	CL	eP		47	00c
	USCGS: 51 N 173½ W				
	20:39:04				
2	P	iP	21	35	54
	PX	eGN		46	29
	R	iP		35	59
		i		36	12
		i			21
	Bt	iP			10d
		i			23
	Kg	iP		35	42
	W	iP			43d
		i		36	00
	CL	iP		35	50d
		i		36	02
	T	iP		35	42
		i			58
	BCIS: 51 N 173 W				
	21:27:54				
3	D	eP	06	55	00
	R	eP			00
	Bt	iP		54	51
	W	iP		55	10
	CL	eP			08
	BCIS: 06:44:00				
	Northern Chile				
3	R	iP	08	06	40
	Pr	iP			48
	Bt	eP			51
	W	iP			23
		i			32
	CL	eP			29

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
3	D	eP	16	58	00
	W	iP		57	46
		i			58
	CL	eP		58	03
	BCIS: 51 N 179 W				
	16:49:30				
3	P	eP	17	22	26
	Pr	eP			35
		e			43
	W	iP			25
	CL	eP			22
	BCIS: off the coast of Peru				
	17:11:05				
3	D	eP	22	23	58
	Bt	eP			57
		e		24	23
	CL	eP		23	48
	BCIS: 22:16.4				
	Fox Islands, Aleutians				
3	P	eP	23	17	36
	R	eP			41
		e		18	00
		e			06
	Pr	iP		17	48
	W	iP			25
		i			41
	CL	iP			31
	BCIS: 52 N 176½ W				
	23:09:18				
4	P	iPNEZ!	00	19	44d
		i		20	11
	PX	iSN		23	33
		iGNZ		27.9	
		iRZ		29.0	
	R	iP!		19	37d
		i		20	08
	Hf	iPN!		19	58d
		iN		20	18
	Pr	iP!		19	55
		i		20	05
		i			31
	Bt	iP!			00d
	Kg	iP		19	31d
	CL	iP!			36d
		i			55
		i		20	12
	T	iP		19	25
	BCIS: 58 N 155½ W				
	00:12:52				
4	P	iPNEZ	00	25	54
	R	iP			55
	Pr	iP			59
	Bt	iP		26	02
	Kg	eP		25	48
	W	iP			48
	CL	iP			51
4	D	eP	00	58	32
		e			43
	R	eP			43
	Pr	eP			46
	Bt	eP			52

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
4	W	iP	00	58	12
	CL	eP			16
	T	eP			19
	USCGS: 53 N 168 W				
	00:50:47				
4	D	eP	01	37	08
		e			15
	R	eP			10
	Pr	iP			18
	Bt	iP			22
	CL	eP			01
	USCGS: 53 N 166 W				
	01:29:42				
4	D	eP	02	25	05
	R	eP			06
	Pr	iP			13
		i			24
	Bt	eP			17
	W	iP		24	51
	CL	eP			57
	T	iP			50
	BCIS: Andreanof Islands,				
	Aleutians				
	02:16.5				
4	D	eP	05	14	55
	Pr	eP		15	03
	Bt	eP			07
	W	iP		14	42
	CL	eP			48
	BCIS: Andreanof Islands,				
	Aleutians				
	05:06.5				
4	P	iPNEZ	07	02	53
	PX	eLN		19.4	
	R	iP		02	57
		e		03	07
	Hf	ePN			05
	Pr	iP			02
	Bt	eP			05
	Kg	eP		02	43
	W	iP			43
	CL	iP			49
	USCGS: 48 N 155 E				
	06:52:18				
4	P	iPNEZ	11	12	56d
		e		13	12
		i			20
		i			31
	PX	eLNZ		40.4	
	R	iP		12	53
		i		13	18
		i			28
	Hf	iPN		12	48
		eN		13	13
	Pr	iP		12	49d
		i		13	14
		i			25
		i			32
	Bt	iP		12	46d
		i		13	11

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
4	Kg	iP	11	13	05d
		i			30
	W	iP			06
	CL	iP			02d
		i			28
		e		16	14
	T	iP			10
		i			29
	BCIS: 35 S 68 W				
	11:00.7				
4	P	e(P)	14	51	43
	PX	eL	15	00.9	
	R	eP	14	51	34
		e			48
	Pr	eP			38
		i			54
	Bt	eP			47
	Kg	eP			35
		e			41
	CL	eP			25
		e			40
	T	eP			28
	USCGS: $52\frac{1}{2}$ N $170\frac{1}{2}$ W				
	14:43:49				
5	D	eP	00	06	23
	R	eP			28
	Pr	iP			21
		e			38
	Bt	e			50
	W	iP			00
		i		07	27
	CL	eP		06	12
	T	iP			00
5	P	iPEZ	02	57	37c
		iPP		59	14
		eScP	03	03	20
	PX	eSN			54
		eLZ		07.1	
			A		T
		PZ	2		3
		PH	$1\frac{1}{2}$		2
		SH	7		15
	R	iP	02	57	41c
		ePP		59	27
		iSNE	03	04	04
	Hf	iPN	02	57	52
		iPPN		59	14
	Pr	iP		57	47c
		i			58
		iPP		59	30
		iScP	03	03	24
	Bt	iP	02	57	51c
		i		58	06
		iPP		59	42
		eScP	03	03	24
		i(S)NE		04	26
	Kg	iP	02	57	23c
		iPP		58	57
	W	iP		57	23
		iPP		59	00
		eScP	03	03	11
		(continued)			
April		(continued)			
5	CL	iP	02	57	33c
		iPP		59	09
		iScP	03	03	17
	T	iP	02	57	23
		ePP		59	00
		eScP	03	03	12
	Magnitude $6\frac{1}{2}$				
	USCGS: 52 N $172\frac{1}{2}$ W				
	02:49:39				
5	P	iP	03	28	26
	R	eP			30
	Hf	ePN			42
	Pr	eP			35
	Bt	eP			40
	W	iP			10
		i			15
	CL	eP			20
	Aleutians?				
5	D	eP	03	59	49
	Pr	eP			55
	Bt	eP	04	00	00
	W	iP	03	59	31
		i			35
	CL	eP			40
	T	eP			32
5	D	eP	06	19	38
	R	eP			36
	Pr	eP			40
		i			48
	Bt	eP			51
	W	iP			20
		i			22
	CL	eP			26
	T	eP			18
5	D	eP	07	19	57
		e		20	05
	R	eP		19	59
	Pr	iP		20	07
	Bt	iP			11
	W	iP		19	44
	CL	eP			52
	BCIS: $51\frac{1}{2}$ N 177 W				
	07:16.6				
5	P	iPNEZ	07	42	42d
		ipPNEZ		43	03
		iPP		46	13
		ipPP			35
		isPP		47	06
		ePPP			51
	PX	iSKSNZ		52	55
		iSNZ		53	10
		iGNZ	08	05.0	
		iREZ		07.3	
			A		T
		PZ	0.4		1
		PH	$\frac{1}{4}$		1
		pPZ	2		3
		pPH	$1\frac{1}{2}$		3
		PPZ	1		4
	R	iPNEZ	07	42	41d
		ipPNEZ		43	04
		i			09
		iSNE		52	59
		(continued)			

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
5	Hf	iPN	07	42	49
		ipPN		43	13
	Pr	iP		42	43d
		ipP		43	05
		i			09
	Bt	iP		42	41d
		ipP		43	03
		i			07
		iPP		46	13
	Kg	iP		42	41d
		ipP		43	03
		i			07
	W	iP		42	43d
		ipP		43	06
		iPP		46	17
	CL	iP		42	49d
		ipP		43	12
		ePP		46	23
	T	iPNEZ		42	51
		ipP		43	15
		iPP		46	25
		iSZ		53	13
	All dilatations followed				
	by sharp compression				
	Magnitude $6\frac{3}{4}$				
	USCGS: $26\frac{1}{2}$ S 177 W				
	07:30:22, 100 km				
5	R	eP	15	15	19
		e			32
	Pr	eP			25
		e			33
	Bt	eP			28
		e			40
	CL	iP			12
		e			25
	T	e			06
	USCGS: 45 N 148 E				
	15:04:09				
5	P	iP	16	19	10c
	PX	eSNZ		25	00
		eGNZ		27.5	
		eRZ		30.0	
	R	iP		19	04c
	Pr	iP		18	55c
		i		19	13
		i			43
	Bt	eP		18	53c
	CL	iP		19	14c
		e			28
	T	iP			26
	USCGS: $12\frac{1}{2}$ N 88 W				
	16:12:20, 100 km				
5	P	iP	16	21	41
		i			54
	R	iP			38
		i			52
	Pr	iP			38
		i			53
	Bt	iP			35
		i			50
	CL	iP			43
		i			58
	T	iP			47
		i		22	01
April					
5	P	e(P)	16	44	50
		e		45	03
	PX	eRZ		57.9	
	Pr	eP		44	58
	Bt	eP		45	03
	CL	eP		44	41
	T	eP			33
	USCGS: $51\frac{1}{2}$ N $178\frac{1}{2}$ W				
	16:36:20				
5	P	eP	22	10	52
		e		11	12
	PX	eRZ		23.9	
	R	eP		10	55
		e		11	00
	Pr	eP			02
		i			13
	Bt	eP			06
	W	iP		10	38
		i			46
	Is	iP			41
		i			51
	CL	eP			47
	T	e			48
	BCIS: $51\frac{1}{4}$ N $176\frac{1}{2}$ W				
	22:02:29				
6	D	eP	02	12	06
		e			11
	R	eP			03
		e			11
	Pr	iP		11	58
	Bt	eP			56
	W	eP		12	18
	Is	eP			18
	CL	eP			12
	T	eP			23
6	P	eP	13	57	19
	R	eP			21
	Pr	eP			23
	W	eP			19
		i			21
	Is	eP			24
	CL	eP			24
		i			26
	T	eP			27
		e			31
	BCIS: Fiji Is. Region				
	13:44.5				
6	D	eP	18	11	17
	R	eP			23
	Pr	iP			30
	Bt	iP			35
	W	iP			07
	Is	iP			08
	CL	eP			13
	T	eP			03
6	P	iP	18	12	22
	PX	eL		21.8	
	R	iP		12	25
	Pr	iP			34
	Bt	iP			38
	W	iP!			10
	Is	iP			11
	CL	iP			16
	T	iP			06
	BCIS: Fox Is., Aleutians				
	18:03.8				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
6	PX	eR	23	46.5	
	W	eP		21	14
		i			17
	BCIS: South Kurile Is.				
	23:08.9				
7	P	e	04	33	01
		e			06
	W	iP		32	50
		i		33	01
	Is	eP			01
	CL	eP		32	55
		e		33	00
		i			05
	USCGS: East coast of				
	Kamchatka				
	04:23:16				
7	Bt	eP	06	27	30
	W	iP			06
		i			15
	Is	eP			06
	BCIS: Insufficient Data				
7	PX	eLN	07	52.5	
	W	iP		41	50
		i			56
		i		42	09
	Is	eP			00
	CL	e			16
	USCGS: 51½ N 175½ W				
	07:33:47				
7	P	eP	08	11	16
	PX	eLN		20.5	
	R	iP		11	19
		e			33
	Pr	iP			27
	Bt	iP			33
	W	iP			04
		i			12
	Is	iP			00
	CL	eP			10
	USCGS: 53 N 167 W				
	08:03:46				
7	P	eP	10	28	15
		e			29
	PX	iSKSNEZ		38.9	
		iSN		39.9	
		iPSNZ		41.7	
		iSSNZ		47.2	
		eGN		56.0	
		iREZ	11	00.8	
			A	T	
		PZ	0.1	1½	
		MH	5	20	
		MZ	5	20	
	R	eP	10	28	15
		e		32	29
		iSE		38	50
		iPSE		41.5	
	Pr	eP		28	13
		e		32	16
	W	eP		28	06
	Is	eP			11
	Magnitude 6 - 6¼				
	USCGS: 1 S 137½ E				
	10:14:08				

Date	Sta.	Phase	h	m	s
April					
7	Pr	iP	11	49	09
		i			18
	W	iP		48	39
		i			50
	Is	eP			33
		e			44
	BCIS: 54 N 168½ W				
	11:41:18				
7	W	iP	13	21	33
	Is	eP			36
	USCGS: Andreanof Islands				
	13:13:10				
7	PX	eLZ	23	00.8	
	Pr	eP	22	46	50
	W	eP			17
	BCIS: 54 N 171 W				
	22:37:57				
8	P	e	00	15	24
	PX	eLN		24.9	
	D	e(P)		14	57
	R	e(P)		15	04
	Pr	e(P)			11
	Bt	e(P)			14
	W	eP		14	35
	Is	eP			41
	CL	eP			42
	T	eP			28
	USCGS: 52 N 175½ W				
	00:06:37				
8	Pr	eP	00	17	41
	Bt	eP			44
	W	iP			20
	Is	iP			21
	CL	iP			28
	T	iP			17
8	D	eP	00	57	17
	R	e			28
	Pr	eP			19
	Bt	iP			24
	W	eP		56	57
	Is	eP			59
	CL	eP		57	04
		e			16
	T	eP		56	55
		e		57	06
	BCIS: Andreanof Islands,				
	Aleutians				
	00:48:27				
8	Pr	iP	01	21	02
	Bt	iP			06
	W	iP		20	40
		i			47
	Is	eP			43
	CL	iP			47
		e		21	02
	T	eP		20	37
	USCGS: 50½ N 179 E				
	01:12:10				
8	Pr	eP	02	25	36
		i			51
	W	iP			15
	CL	eP			23
	T	eP			13
	BCIS: Andreanof Is. Aleutians				
	02:16:43				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
8	Pr	eP	03	35	45
	W	eP			11
		e			25
	Is	eP			28
	CL	eP			32
8	D	eP	09	27	18
	Pr	iP			26
	Bt	eP			30
	W	iP			04
	Is	iP			05
	T	eP			00
	BCIS: Data insufficient				
8	D	e	11	08	49
	R	e			49
	Pr	eP			50
	Bt	eP			54
	W	iP			26
	Is	eP			28
	CL	eP			26
	T	eP			22
	USCGS: 51½ N 178½ W				
	11:02:12				
8	D	eP	12	57	06
	R	iP			02
	Pr	iP			08
	Bt	iP			12
		i			22
	W	iP		56	45c
		i			54
	Is	iP			47
	CL	eP			51
	T	eP			40
	BCIS: Aleutians				
	12:49.0				
8	P	eP	14	21	18
	PX	eLN		31.5	
	Pr	eP		21	17
	Bt	eP			21
	W	eP		20	49
		i			54
		i		21	01
	Is	eP		20	55
	CL	eP		21	00
	T	eP		20	52
		e			59
	Aleutians				
8	P	eP	16	42	05
	PX	eLN		52.0	
	R	e		42	08
	Bt	eP			20
	W	iP		41	52
		i		42	17
	Is	iP		41	55
	CL	iP			59
	T	eP			49
	BCIS: 53¾ N 171 W				
	16:34:17				
8	P	iPNEZ	20	26	01
		i			16
		i			51
		iPP		27	57

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
8	PX	iSNE	20	32	22
		iGNZ		35.9	
		eLNE		39.5	
			A	T	
		PZ	1½	3	
		PH	1¼	3	
		SH	1½	6	
		MH	5	20	
	R	iP	20	25	56
		i		26	08
		iSE		32	10
	Hf	ePN		25	43
	Pr	iP			50c
	Bt	eP			44c
		eSNE		31	53
	Kg	iP		26	15c
		i			31
	W	iP!			11c
		i			41
		iPP		28	01
	Is	iP		26	09c
		i			20
		iPP		28	01
	CL	iP		26	04c
	T	iP			14c
		i			22
		iSNZ		32	47
	Magnitude 6½				
	USCGS: 8½ N 83 W				
	20:18:09				
8	P	e	20	51	46
	R	e			51
	Pr	eP			39
		e			59
	Bt	eP			42
		e		52	02
	W	iP		51	17
		i			36
	Is	iP			19
		i			38
	CL	eP			21
		e			42
	T	eP			15
		e			35
	USCGS: Andreanof Islands,				
	Aleutians				
	20:43:10				
8	D	eP	23	34	23
	Pr	eP			34
	W	iP			12
		i			24
	Is	eP			14
	CL	eP			17
	T	eP			09
	BCIS: Andreanof Islands,				
	Aleutians				
	23:25.7				
9	P	iPNEZ	00	36	22c
		iNEZ!			24c
		ipP		38	05
		isP			48
		iPP		39	39

(continued)

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
9	PX	iSNEZ	00	46	07
		e(PS)NE		48	05
		eSSN		51	51
		iSSSZ		55	32
		iGNZ		58	36
		eSKPP'	01	05	08
			A		T
		PZ	$2\frac{1}{2}$		$1\frac{1}{2}$
		PH	$1\frac{1}{2}$		$1\frac{1}{2}$
		SH	2		3
	R	iP	00	36	23c
		iNEZ!			25c
		ipP		38	07
		iPP		39	45
		iSNE		46	03
		iPSNE		48	02
		eSKPP'	01	05	17
	Hf	iPN	00	36	31
		iN			33
		ipPN		38	17
		iPPN		39	55
		eSN		46	17
	Pr	iP		36	28c
		i!			30c
		ipP		38	12
		iPP		39	49
		iS		46	22
		eSKPP'	01	05	21
	Bt	iP	00	36	30c
		i			32c
		epP		38	14
		ePP		39	57
		eSNE		46	13
		iPSE		48	21
		eSKPP'	01	05	16
	Kg	iP	00	36	14c
		i			17c
		eS		45	56
		e(SKPP')	01	05	31
	W	iP!	00	36	15c
		i!			17c
		ipP		37	57
		iPP		39	34
		iS		45	53
		eSKPP'	01	05	17
	Is	iP	00	36	16c
		i!			18c
		ipP		38	05
		iPP		39	32
		eS		45	55
		eSKPP'	01	05	20
	CL	iP	00	36	19c
		i!			21c
		epP		38	01
		iPP		39	39
		e(S)		45	48
		eSKPP'	01	05	21
	T	iP	00	36	14c
		i!			16c
		ipP		37	50
		isP		38	17
		iPP		39	37
		iSNEZ		45	52
		eSKPP'	01	05	23

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
9	Magnitude $6\frac{3}{4}$				
	JMA: $30\frac{3}{4}$ N $138\frac{3}{4}$ E				
	00:24:44, 450 km				
9	P	iP	02	29	34d
		i			41
	PX	eGN			51.0
		eRZ			54.9
	R	iP		29	36d
		i			44
	Hf	iPN			44
	Pr	iP			40d
		i			48
	Bt	iP			42d
	Kg	iP			25d
		i			34
	W	iP			28d
		i			36
	Is	iP			29d
		i			37
	CL	iP			33d
		i			41
	T	iP			28d
		i			35
	USCGS: $22\frac{1}{2}$ N $144\frac{1}{2}$ E				
	02:17:06				
9	P	e(P)	03	31	36
	R	e(P)			48
		e		32	00
	Pr	eP		31	56
	Bt	eP		32	00
		e			12
	W	iP		31	32
		i			45
	Is	iP			34
		e			46
	CL	eP			38
		e			52
	T	eP			30
		e			43
		e			52
	BCIS: 51 N 171 W				
	03:23.8				
9	PX	eLNZ		07	56.3
	D	e(P)		47	17
		e			33
	Pr	e(P)			18
	Bt	eP			25
		e			41
	W	iP		46	57
		i		47	11
	Is	eP			00
	CL	eP			03
		e			18
	T	eP		46	54
		e		47	07
	USCGS: 53 N 167 W				
	07:39:40				
9	P	eP	10	07	55
		epP		08	05
	R	eP		07	58
		epP		08	09
	Pr	iP			05
		ipP			17

(continued)

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
9	Bt	eP	10	08	08
		epP			20
	W	iP		07	42
		ipP			54
		i		08	03
		i			10
	Is	iP		07	46
		ipP			56
	CL	eP			49
		epP		08	00
	T	eP		07	41
		epP			49
	BCIS: $51\frac{3}{4}$ N $177\frac{1}{2}$ W				
	09:59:28				
9	P	iPNEZ	10	47	12c
	R	iP			14c
		e			38
	Hf	ePN			22
	Pr	iP			19
	Bt	iP			21
	Kg	iP			05c
	W	iP			05c
	Is	iP			06c
	CL	iP			10c
		e			17
	T	iP			06c
	JMA: $30\frac{3}{4}$ N $138\frac{1}{2}$ E				
	10:35:35, 450 km				
9	P	ePNZ	11	10	41
		i			58
	PX	iSN		17	38
		iGN		21.1	
		iRZ		23.6	
	R	eP		10	45
		i			53
	Hf	eP			56
		i		11	10
	Pr	iP		10	51
	Bt	eP			54
		i		11	12
	Kg	eP		10	28
		e		12	27
	W	iP!		10	29
	Is	iP			31
	CL	eP			34
		i			39
		i			44
		i		12	35
	T	eP		10	28
		i			51
	USCGS: $51\frac{1}{2}$ N $178\frac{1}{2}$ W				
	11:02:09				
9	Pr	iP	13	42	20
	Bt	eP			27
	W	iP		41	58
		i		42	07
	Is	eP		41	57
		i		42	00
	CL	eP			04
	T	iP		41	57

Date	Sta.	Phase	h	m	s
April					
9	P	e(P)	14	20	12
	R	e			16
	Pr	iP			21
	Bt	iP			26
	W	iP!			00c
	Is	iP			03
	CL	iP			06
	T	eP		19	59
	BCIS: $51\frac{3}{4}$ N 178 W				
	14:11:44				
9	P	eP	14	37	26
	R	eP			30
	Pr	iP			37
	Bt	eP			41
	W	iP			14
	Is	iP			17
	CL	iP			21d
	T	iP			13
	BCIS: Aftershock of preceding				
	14:28:59				
9	P	eP	17	48	45
	PX	eL			59.5
	R	iP		48	48
		i			55
	Pr	iP			55
		i		49	02
	Bt	iP		48	59
	Kg	eP			31
		e			39
	W	iP			34
		i			39
	Is	iP			36
	CL	iP			39
		i			46
	T	iP			32
	USCGS: $51\frac{1}{2}$ N $179\frac{1}{2}$ W				
	17:40:13				
9	P	eP	20	31	36d
		iLNZ			41.3
	R	iP		31	40d
	Pr	iP			37d
		i		32	02
		i			15
	Bt	iP		31	52d
		i		32	09
		i			23
	Kg	eP		31	21
		e			38
	W	iP			24d
		i			35
		i			57
	Is	eP			26
		i			42
	CL	iP			30
		i			46
	T	eP			22
	USCGS: $52\frac{1}{2}$ N 169 W				
	20:23:56				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
9	P	e	22	42	16
	Pr	e			34
	W	eP			03
	CL	eP			13
		e			19
	T	e			03
	USCGS: 51 N 177½ W				
	22:33:54				
9	P	eP	22	58	08
	R	eP			11
		i			26
	Pr	iP			18
	Bt	eP			21
	Kg	eP		57	53
	W	iP			55
		i		58	03
	Is	eP		57	58
	CL	iP		58	01
	T	iP		57	53
	USCGS: 51½ N 177 W				
	22:49:47				
10	Pr	eP	00	35	25
	W	iP			03
	Is	eP			06
	CL	eP			09
	T	eP			01
	BCIS: 51½ N 179 W				
	00:26.8				
10	P	iPNEZ	03	32	55
	PX	iSN		39	24
		iLNZ			42.1
	R	iP		33	00c
		e			06
		e			14
	Hf	ePN			09
	Pr	iP			06c
		i			12
		e			17
	Bt	eP			11c
		e			18
		i			23
		i		35	08
	Kg	eP		32	41
		e			54
	W	iP			43c
		i			54
		i		35	06
	Is	iP		32	43
		i			59
	CL	iP			49c
		i		33	03
		i		34	58
	T	iP		32	39
		i			54
		e		34	56
	USCGS: 53 N 168 W				
	03:25:20				
10	P	iPNEZ	05	17	43d
	PX	iSNZ		22	16
		iGN			23.7
		iR			24.9
			A		T
		PZ	7		3
		PH	6		5
		SH	12		8
		MH	40		10

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
10	R	iP	05	17	36d
		iSNE		22	15
	Hf	iPN		17	26
		iSN		21	59
	Pr	iP		17	31d
	Bt	iPNEZ			26d
		iSNEZ		21	58
	Kg	iP		17	59d
	W	iP!			56d
		i(PcP)		21	13
		eS		23	09
	Is	iP		17	53d
		i(PcP)		21	12
	CL	iP		17	50d
	T	iPNEZ		18	02d
		i(PcP)		21	13
		iSN		22	50
	Magnitude 6¾				
	USCGS: 15½ N 98 W				
	05:12:08				
10	D	eP	07	34	24
		e(PcP)		37	24
	R	eP		34	25
		e(PcP)		37	15
	Pr	eP		34	14
	W	eP			40
		i(PcP)		37	22
	Is	eP		34	36
		e(PcP)		37	26
	CL	eP		34	31
		e(PcP)		37	20
	T	eP		34	43
	USCGS: 14 N 91½ W				
	07:28:03				
10	P	iP	09	17	39d
		e			58
		e		18	07
	R	iP		17	43d
	Hf	ePN			56
	Pr	iP			49d
		i		18	15
	Bt	iP		17	54d
	Kg	eP			26
	W	iP			36
	Is	iP			29
	CL	iP			33d
		i			50
	T	iPNEZ			26d
		i			38
		i		19	13
	USCGS: 51 N 177 W				
	09:09:18				
10	P	iPNEZ!	11	36	34d
	PX	iSNEZ		41	53
		iL			43.1
			A		T
		PZ	15		9
		PH	10		14
		SH	30		12
		MH	200		18
		MZ	200		18
	R	iPNEZ	11	36	38d
		iSNE		42	01
	Pr	iP		36	45d

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
10	Bt	iPNEZ	11	36	51d
		iSNE		42	28
	Kg	eP		36	21
	W	iP			19
	Is	eP			21
	CL	iP			24
	T	ePNEZ			15
	Magnitude 7				
	USCGS: 56 N 154 W				
	11:29:58				
10	P	i(pP)	12	09	28
	R	eP			08
		i(pP)			32
	Pr	iP			16
		i(pP)			40
	Bt	iP			21
		i(pP)			45
	W	iP		08	49
		i(pP)!		09	14
	Is	iP		08	51
		i(pP)		09	17
	CL	iP		08	55
		i(pP)		09	20
	T	i(pP)			10
	Two shocks?				
10	P	eP	13	01	44
	R	iP			48
	Pr	iP			55
	Bt	iP		02	00
	W	iP			30
	Is	iP			31
	CL	iP			34
	T	eP			24
	BCIS: Kodiak Island region				
	12:55:05				
10	P	eP	13	28	33
	R	eP			35
		e			49
		e		29	03
	Pr	iP		28	37
		i			54
	Bt	iP			46
		i		29	03
		iPcP		30	20
	Kg	eP		28	24
		e			43
	W	iP			21
		i			33
		i			40
		iPcP		30	09
		i		34	19
	Is	iP		28	23
		iPcP		30	09
		e		34	19
	CL	eP		28	27
		e			40
		iPcP		30	12
		eScP		33	57
		e		34	22
	T	eP		28	18
		e			31
		i			37
		iPcP		30	08
		eScP		33	53
		e		34	17
	USCGS: 51½ N 176½ W				
	13:20:14				

Date	Sta.	Phase	h	m	s
April					
10	P	eP	13	50	01
	R	iP			04
		e			32
	Pr	iP			13
	Bt	iP			17
	W	iP		49	47
	Is	iP			50
	CL	iP			53
	T	eP			43
10	P	eP	13	55	10
	R	eP			13
		e			17
		e			35
	Hf	eN			26
	Pr	eP			12
		e			19
	Bt	eP			16
		e			38
	Kg	e			14
		e			31
	W	eP			11
		i			18
	Is	eP			12
		i			20
	CL	eP			14
		i			23
		i			39
	T	eP			22
		e			42
	USCGS: 15 S 173 W				
	13:43:43				
	Felt at Apia				
10	W	i(P)	14	02	12
		i			23
	Is	iP			14
		e			24
		e			32
	CL	e?			14
		e(P)			18
		e			29
	T	e(P)			10
10	W	iP	15	58	51
		i		59	20
	T	e			18
10	R	iP	17	45	14
	Pr	iP			23
	Bt	eP			27
	W	iP		44	57
	Is	iP			59
	CL	eP		45	02
10	D	eP?	23	14	55
	Pr	eP?			45
	CL	eP		15	03
	T	eP			15
	BCIS: near coast of				
	Guatemala, 23:09.0				
11	W	iP	00	02	13
		i			16
	CL	eP			20
		i			22
	T	eP			10

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
11	W	iP	00	06	50
		i			58
	Is	iP			51
		i			58
	CL	eP			56
	T	eP			47
		e			55
11	Pr	iP	00	35	27
	W	iP			03
	CL	iP			09
11	P	eP	01	21	48
		e		22	02
	PX	iSNZ			30.2
		eGN			39.6
		iR			42.7
	R	eP		21	43
	Pr	eP			43
	W	iP			42
	Is	iP			44
	CL	eP			48
		e			52
	T	eP			48
	BCIS: southwest of Samoa				
	01:10.3				
	compare 06^h following				
11	P	e	01	53	53
	R	e		54	00
	Pr	e			05
	W	eP		53	27
		i			43
	Is	e(P)			36
		i			47
	CL	e			38
	T	e			31
	BCIS: Fox Is., 01:45:55				
11	P	eP	06	55	54
		e		56	02
	PX	iSN	07	05	20
		eGN			13.9
		iRZ			16.9
	R	e		55	46
		e			54
	W	eP			53
	Is	eP			55
	CL	eP		56	03
	Samoa region. Similar to				
	01^h preceding.				
	BCIS: $15\frac{1}{4}$ S $172\frac{1}{4}$ W				
	06:44:29				
11	W	eP	07	04	21
	Is	eP			23
	CL	eP			29
	Small. Near Samoa.				
11	P	eP	07	06	13
	R	iP			16
	Pr	iP			24
	W	iP		05	58
	CL	iP		06	04
	BCIS: Kodiak Island region				
	06:59.5				

Date	Sta.	Phase	h	m	s
April					
11	P	eP	10	16	08
		e			17
	R	eP			11
	Pr	iP			19
	Bt	iP			23
	W	iP		15	55
		i		16	05
	Is	iP		15	57
	CL	iP		16	01
	T	iP		15	51
	BCIS: $52\frac{3}{4}$ N 165 W				
	10:08:47				
11	R	eP	10	25	47
	Pr	eP			50
	W	eP			49
	Is	iP			52
	CL	eP			54
	BCIS: Samoa region				
	10:14.4				
11	R	eP	10	46	46
	Pr	eP			43
	W	eP			32
		i			39
	Is	iP			42
	CL	eP			41
11	W	e	14	33	38
	CL	e			48
	BCIS: 5 S 154 E, 100 km				
	14:20.3				
11	R	e	16	19	56
		e		20	20
	Pr	e		19	56
		i		20	16
	W	iP		19	37d
		i			53
	Is	iP			39
		i			50
	CL	eP			44
		e		20	11
	USCGS: $52\frac{1}{2}$ N $169\frac{1}{2}$ W				
	16:12:08				
11	P	ePNZ	17	48	21
	PX	iLN			57.6
	R	eP		48	18
		i			52
	Pr	eP			26
		e			32
		i			42
	Kg	eP			01
		e			07
		e			17
	W	iP			02
		i			17
	Is	iP			04d
		i			10
		i			20
	CL	eP			08
		e			13
		i			24
	T	eP			04
	USCGS: 52 N $168\frac{1}{2}$ W				
	17:40:37				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
12	P	iPZ	04	26	14
	PX	eSN			32.5
		eLNZ			36.6
	R	eP		26	17
		e			31
	Hf	ePN			29
	Pr	iP			24d
		e			32
	Bt	iP			28d
	Kg	eP			02
	W	iP			02d
	Is	iP			04
	CL	iP			07d
		i			17
	T	iP			00
		e			08
	USCGS: $51\frac{1}{2}$ N $178\frac{1}{2}$ W				
	04:17:45				
12	W	iP	05	46	05
	BCIS: Alaska Peninsula				
	05:40.0				
12	P	e	06	57	49
	R	eP			32
		e			47
	Pr	iP			38
	Bt	iP			43
	W	iP			15
	Is	iP			19
	CL	iP			22
	T	iP			14
	USCGS: $51\frac{1}{2}$ N 176 W				
	06:49:11				
12	P	e(P)	11	00	06
	PX	eLN			10.3
	R	eP		00	02
	Pr	eP			08
	W	iP	10	59	39
	Is	iP			47
	CL	eP			52
	T	eP			22
12	W	iP	11	42	48
	CL	iP			56
	BCIS: Aleutians				
	11:34.3				
12	P	eP	13	11	55
	R	eP			57
	Pr	eP		12	02
	Bt	eP			07
	W	iP			34
		i			41
	Is	eP			38
		i			43
	CL	eP			42
		e			51
	T	eP			33
	USCGS: Andreanof Is.				
	13:03:45				
12	P	e(P)	14	34	53
	Pr	e(P)			52
	W	iP			45
	Is	iP			50
	CL	iP			52
	T	iP			42
	BCIS: Andreanof Is.				
	14:26.5				

Date	Sta.	Phase	h	m	s
April					
12	W	iP	21	06	39
		e			52
	Is	iP			41
	CL	iP			46
	T	eP			37
	BCIS: Aleutians, 20:58.9				
13	P	e?	02	40	19
		e(P)			28
	PX	e(S)NZ			43.9
	R	eP		40	37
	Pr	eP			41
		i			47
	W	eP			03
	Is	eP			07
		i			13
	CL	eP			10
13	P	eP	03	47	50
	PX	e(S)N			50.6
		iNZ		51	00
		e(R)			52.6
			A		T
		PZ	$\frac{1}{4}$		$1\frac{1}{4}$
		PH	$\frac{1}{4}$		$1\frac{1}{2}$
	D	eP	03	47	49
		i			54
	R	eP			56
	Hf	ePN		48	06
	Pr	iP			05d
	Bt	iP			13
		i			20
	W	iP		47	28d
		i			39
	Is	iPNZ			31d
		i			37
	CL	iP			34d
	T	iP			18
		e			50.0
		iLNZ			51.7
	Off Vancouver Island				
	USCGS: $48\frac{1}{2}$ N 128 W				
	03:44:00				
13	PX	iLN	05	30	14
	D	eP		21	17
	R	eP			21
	Pr	eP			23
	Bt	eP			27
	W	iP		20	58
		i		21	04
		i			09
		i			16
	Is	iP			00
	CL	eP			03
		e			08
	T	eP		20	55
	USCGS: $52\frac{1}{2}$ N $168\frac{1}{2}$ W				
	05:13:32				
13	PX	eGN	07		14.0
		eR			18.5
	D	ePKKP		00	08
	R	e	06	48	57
	W	e		46	57
		e		47	41
		e		48	45
		ePKKP	07	00	14

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
13	Is	ePKKP	07	00	16
	CL	e	06	48	39
	USCGS: 6½ N 126½ E				
	06:30:08				
13	PX	iLN	08	17.0	
	D	e		07	11
	R	e		06	59
		e		07	23
	Pr	i			14
	Bt	e			35
	W	iP		06	45
		i			57
	Is	eP			48
		i		07	00
	CL	eP		06	55
		e		07	08
	T	i		06	45
	USCGS: 52½ N 168 W				
	07:59:23				
13	P	ePP	10	29	20
		e			38
	PX	eSKSN		35.5	
		iPPSNZ		39.0	
		eSSN		44.2	
		iSSSNZ		49.0	
		iGN		54.7	
		iRZ		59.4	
			A		T
		MH	½		20
	R	e	10	29	55
	W	ePP		28	58
		iPKKP		40	53
	Is	ePP		28	59
		iPKKP		40	51
	Magnitude 6±				
	BCIS: 5¼ N 126¼ E				
	10:10:55, 100 km				
13	P	iP	11	57	24
	R	iP			26
	Pr	iP			27
	W	iP!			24
	Is	iP!			27
	CL	eP			29
13	P	iP	15	50	48d
		epP		51	14
		esP			24
	PX	iSNE		59	57
	R	iP		50	44d
		ipP		51	10
		isP			15
	Hf	ePN		50	36
	Pr	iP			39d
	Bt	iP			34d
		epP		51	03
	Kg	iP		50	59d
		epP		51	24
	W	iP		50	56d
		ipP		51	22
	Is	iP!		50	55d
		ipP		51	21
		isP			32
	CL	iP		50	51d
		epP		51	22

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
13	T	iP	15	51	01
		ipP			26
		isP			38
	USCGS: 19 S 69½ W				
	15:39:43, 150 km				
13	P	iP	16	29	39
	R	iP			41
	Kg	eP			29
	W	iP			30c
	Is	iP			32
	CL	iP			35
	JMA: 42.3 N 141.3 E				
	16:18:11, 120 km				
13	P	e(P)	16	43	13
	PX	i(S)N		49	27
		e		52.7	
		iR		54	22
	R	eP		43	08
	Pr	e(P)			03
	Bt	e?		42	56
	Kg	e		43	26
	W	e?			25
		i			35
	Is	eP			25
		i			35
	CL	e			24
		e			33
	Unlocated. Distance 40°?				
13	D	eP'	22	10	54
		e		11	04
	R	iP'		10	55
		i		11	05
	Pr	eP'		10	54
		e		11	04
	Kg	e			09
	W	iP'		10	57
		i?		13	57
	Is	iP'		10	59
		i		11	08
	CL	e			03
	BCIS: 30¼ S 27 E				
	21:51:03				
14	P	ePNZ	01	06	01
		e			24
	PX	iLN		08.5	
	R	eP		05	52
		e		08	30
	Hf	e(S)N			20
	Bt	iP		05	33
		e			46
		e		07	46
	Kg	eP		06	24
	W	iP			20
		i			26
		i			35
	Is	iP			18
	CL	eP			16
	T	eP			33
	BCIS: Gulf of California				
	01:03.8				

Date	Sta.	Phase	h	m	s
April					
14	P	ePP	07	31	12
	PX	iSKSNZ		37	20
		iSP		40	50
	P	ePKKP		41	25
	PX	iSSN		47.0	
		eGE	08	01.4	
		iR		07.0	
			A		T
		MH	5		20
	R	ePP	07	31	20
		iSP		40	54
		ePKKP		41	23
		e(SKKP)		44	29
	Pr	e		31	08
		ePP			22
		iPKKP		41	29
		eSKKP		45	22
	Bt	e		30	38
		ePKKP		41	25
	W	ePP		30	45
		ePKKP		41	29
	Is	e		30	32
		e			57
		ePKKP		41	28
		i			39
		iSKKP		45	33
	CL	ePP		30	37
		ePKKP		41	34
		e			43
	T	ePP		30	30
		eSP		40	17
		iPKKP		41	47
		eSKKP		45	41
	Magnitude 6¼ - 6½				
	USCGS: 31 N 84½ E				
	07:11:50				
14	D	eP	08	32	48
	R	eP			45
	W	eP			57
	Is	e		33	00
	CL	eP		32	55
	USCGS: 20 N 73 W				
	08:24:51				
14	W	eP	09	12	02
14	P	eP	09	37	12
	R	eP			14
	W	iP			09
	Is	iP			11
	CL	eP			19
	BCIS: near 5½ S 150 E				
	09:23:44				
14	P	iPNEZ	12	45	04d
	R	iP			07d
	Hf	ePN			15
	Pr	iP			10
	Bt	eP			10
	Kg	eP		44	59
	W	iP!		45	02d
	Is	iP			04d
	CL	iP			12
	T	iP			05
	Deep?				
	USCGS: 4½ N 150 E, 12:32:39				
	550 km., BCIS: 12:31.7				

Date	Sta.	Phase	h	m	s
April					
14	P	eP	19	29	25
		iPNEZ!			28d
		i			48
		i		30	32
	PX	eSN		38	39
		iSNEZ!			48
		eScSNE		39	32
		eGN		46.8	
		iRNEZ		50.0	
	P	eP'P'		57	24
			A		T
		PZ	11		4
		PH	6		5
		SH	20		7
		MH	400		20
		MZ	480		20
	D	eP	19	29	27
		i!			29d
	R	eP			26c
		iPNEZ!			28d
		i			40
		i			52
		iSNEZ		38	52
		iScSE		39	28
		iRNEZ		50.4	
		eP'P'		57	19
	Hf	ePN		29	35
		iN			37
		eS		39	05
	Pr	eP		29	28c
		i!			30d
		eP'P'		57	19
	Bt	iPNEZ		29	27d
		iSEZ		38	52
		eP'P'		57	05
		e			31
	SB	iPNEZ		29	19
		eSNE		38	19
	Kg	eP		29	23
		iP!			25d
		eP'P'		57	08
	W	iP		29	27d?
		i!			29d
		eS		38	54
		eP'P'		52	12
	Is	eP		29	29
		i!			29
		iP'P'		57	12
	CL	eP		29	32
		i!			34d
		i			47
	T	eP		29	34
		iPNEZ!			36d
		i		30	50
		iSNEZ		39	09
	Magnitudes, according to				
	Professor Gutenberg: m 7.2,				
	M 7.5. Near Samoa				
	USCGS: 15½ S 173 W, 19:17:57				
	BCIS: 15 S 173¼ W, 19:18:00				

Note on the earthquake of 1957 April 16, 04h

This is one of the best recorded large deep-focus earthquakes. Waves penetrating the core and the deep levels of the mantle were well registered at many stations, including those of the Pasadena group. The late Professor Gutenberg used the seismograms for special research. His results chiefly appear in the following publications, most of which include partial reproductions of seismograms.

"The 'boundary' of the earth's core." Trans. Am. Geophys. Union 38, 1957, 750-753.

"Wave velocities in the earth's core." Bull. Seism. Soc. Am. 48, 1958, 301-314.

"Caustics produced by waves through the earth's core." Geophys. Journ. 1, 1958, 238-248.

"Earthquake waves reflected at the inside of the core boundary." Journal of Geophysical Research 64, 1959, 1503-1508.

"The shadow of the earth's core." Journ. Geophys. Res. 65, 1960, 1013-1020.

"PKIKP and pseudo-PKIKP phases at distances of less than 140°." Geophys. Journ. 3, 1960, 250-257.

"Waves reflected at the 'surface' of the earth: P'P'P'P'." Bull. Seism. Soc. Am. 50, 1960, 71-79.

Discussion will also be found in the book by Gutenberg, "Physics of the Earth's Interior." Seismograms are shown on page 110.

One of the Pasadena seismograms is also reproduced in C.F. Richter, "Elementary Seismology," p. 310.

Date	Sta.	Phase	h	m	s
April					
16	P	iP	10	30	03
	W	iP			04
	Is	iP			07
	CL	eP			13
	BCIS: Samoa, 10:18:34				
16	P	e?	17	39	54
	W	iP			38
		i			42
	Is	iP			41
	CL	eP			44
	T	iP			46
		e			56
	BCIS: Tonga Is., 17:27.8				
16	P	e?	18	00	16
		i			29
	PX	e(S)		05	26
		eL			11.3
	R	i(P)		00	45
	Bt	iP			46
	Kg	i			17
	W	iP			07
		i			16
		i!			19
	Is	iP			09
		i			30
	CL	eP			13
		e			24
	T	eP?			04
		i			16
	BCIS: 52 N 166½ W 17:52:44				
16	P	iP	18	28	42d
		e		29	09
		e			32
	R	iP		28	38d
		e			59

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
16	Pr	iP	18	28	34d
	Bt	iP!			30d
	Kg	iP			53
	W	iP!			51d
		i		29	42
	Is	iP		28	49d
		i		29	29
		i			43
	CL	iP		28	46d
		e		29	40
	T	iP			53d
	USCGS: Southern Bolivia 18:17:05				
17	PX	eL		04	51.3
	R	iP		42	27
		i			34
	Pr	iP			34
	Bt	iP			40
		i			47
	W	iP			10
		i			17
	Is	iP			12
		i			21
	CL	eP			14
		i			22
	USCGS: 56 N 154 W 04:35:47				
17	P	iPNEZ	08	19	38d
		ipP		20	20
	PX	iSN			29.4
		eL			35.3
	R	iP		19	40d
		ipP		20	23
	Hf	ePN		19	44
		epPN		20	30

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
17	Pr	iP	08	19	39d
		ipP		20	24
	Bt	eP		19	37
		epP		20	22
	Kg	eP		19	36
		epP		20	19
	W	iP!		19	39d
		ipP		20	21
	Is	iP!			42d
		ipP		20	25
	CL	iP		19	45d
		ipP		20	28
	T	iPNEZ		19	47d
		ipP		20	28
	USCGS: 20 S 176 W 08:07:58, 200 km				
17	P	eP	09	35	44
		eNEZ			59
	PX	eS			41.8
		iLNZ			45.5
	R	iP		35	48
		i		36	05
		e		38	41
	Hf	eN		36	17
	Pr	iP		35	53
		i		36	11
	Bt	iP		35	59
		i		36	15
	Kg	eP		35	30
		e			46
	W	iP			32d
		i			47
	Is	iP			35d
	CL	eP			37
		e			53
	T	iPNEZ			29d
		i			44
	USCGS: 52½ N 171 W 09:27:54				
17	Bt	iP	12	27	29
	W	iP			02
		i			07
		i			17
	Is	eP			04
		e			17
	CL	eP			07
	BCIS: Fox Is., 12:19.4				
17	P	ePEZ	13	32	35
	PX	eSNEZ		38	46
		eLNZ			41.8
			A		T
		PZ	½		3
		SH	¾		4
	R	eP	13	32	41
	Hf	ePN			58
	Pr	eP			49
	Bt	eP			54
	Kg	eP			22
	W	iP			24
		i			28
		i			40
	Is	eP			27

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
17	CL	eP	13	32	31
		i			38
	T	eP			23
		i			27
	USCGS: 52½ N 169 W 13:24:58				
17	P	e(P)	15	14	48
	PX	eLN			23.2
	R	eP		14	48
	Hf	eN		15	09
	Kg	e		14	32
	W	iP			27
		i			39
		i			46
	Is	eP			33
		i			42
	CL	eP			35
		i			46
	T	i			35
	USCGS: 54 N 164 W 15:07:24				
17	P	iPNEZ	18	15	42c
		ePcP		18	40
	PX	iSNZ		21	00
	P	eScP		22	48
	PX	iGN			23.0
			A		T
		PZ	1		4
		PH	¾		4
	R	iP	18	15	35c
		i			46
	Pr	iP			30c
	Bt	iP			25c
		i			35
	Kg	iP			58
	W	iP			53c
		e		16	03
		iPcP		18	43
		eScP		22	38
	Is	iP		15	51c
		iPcP		18	43
	T	iPNEZ		15	59c
	USCGS: 14½ N 92 W 18:09:26				
18	P	ePEZ	00	24	11
	PX	iSNZ		30	32
		iLN			33.9
	R	iP		24	11
	Pr	iP			19d
		i			36
	Bt	iP			23d
		e			38
	W	iP		23	56
		i		24	12
	Is	iP		23	58
		i		24	14
	T	eP		23	52
		e		24	03
	USCGS: 52 N 171 W 00:16:17				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
18	Bt	e(P)	05	12	48
	W	iP			29
		i			45
	Is	i			47
	BCIS: 52 N 171 W				
	05:04:51				
18	W	iP	05	35	24
		i			39
	Is	iP			27
		i			41
18	P	eP	07	08	21
		i(pP)			35
	PX	iSN		15	12
		eLN		18.0	
	R	eP		08	24
		i(pP)			39
	Pr	iP			31
		i(pP)			45
	Bt	eP			35
		i(pP)			49
	W	iP			08
		i(pP)			21
	Is	iP			10
		i(pP)			25
		i		09	57
	T	iP		08	06
		i(pP)			18
	USCGS: 52 N $176\frac{1}{2}$ W				
	07:00:03				
18	W	i?	13	28	58
		i!		29	09
	Is	i			11
18	PX	eL	16	49.6	
	W	iP		36	31
		i			54
	Is	i			43
	BCIS: Andreanof Is.				
	16:28.4				
18	PX	eL	22	52.6	
	R	e		25	29
	Bt	e			40
	W	eP			19
	Is	eP			25
	CL	e(P)			25
	USCGS: 31 N 142 E				
	22:13:10				
19	W	iP	07	11	56
		i		12	02
	Is	e			05
	CL	e			00
		e			08
	T	e		11	59
	BCIS: region of Unimak,				
	Aleutians; 07:04.8				
19	W	iP	07	33	54
		i		34	06
	Is	eP		33	56
	CL	eP			59
		e		34	03
19	R	iP	08	39	37
	Bt	eP			29
	W	iP			47
	Is	iP			49
	CL	eP			45
	BCIS: Bolivia-Chile,				
	08:28.3				

Date	Sta.	Phase	h	m	s
April					
19	R	eP	08	52	47
	Bt	eP			50
	W	iP			44
	Is	eP			46
	CL	eP			49
	USCGS: $6\frac{1}{2}$ S $155\frac{1}{2}$ E				
	08:39:37				
19	P	iPNEZ!	15	52	30d
		i(pP)!			47
			A		T
		PZ	1		1
	R	iPNEZ!	15	52	33d
		iPcP		54	36
	Hf	iPN		52	45d
		ipP			59
	Pr	iP!			40
		i			59
	Bt	iPNEZ!			45d
		i		53	03
		iPcP		54	40
	Kg	iP		52	15d
	W	iPEZ!			17d
		i			31
		i		53	04
		iPcP		54	29
	Is	iP!		52	23d
		i		53	00
	CL	iP		52	24d
		iPcP		54	33
	T	iPNEZ!		52	16d
		i			20
		i			40
		iPcP		54	30
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$				
	Depth 70 km?				
	USCGS: $51\frac{1}{2}$ N $168\frac{1}{2}$ W				
	15:44:23				
19	P	iPNEZ!	22	26	56d
		i(sP)		27	15
		iPP		28	23
		iPcP		29	04
	PX	iSNE		32	55
		iGNE		35.7	
			A		T
		PZ	15		4
		PH	7		4
		SH	20		7
	R	iPNEZ!	22	27	00d
		i(pP)!			10
		i(sP)			19
		iPcP		29	07
		iSNE		33	01
	BB	iP!		27	02d
	Hf	iPN!			11d
		iN			23
		iN			35
		eSN		33	01
	Pr	iP!		27	08d
	Bt	iPNEZ!			11d
		i			24
		i			40
		i		28	07
		iPcP!		29	12
		iSNE		33	25

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
19	Kg	iP!	22	26	41d
		i			54
		iPcP		29	01
	W	iP!		26	43d
		iPcP		29	00
		iSEZ		32	33
	CL	iP!		26	49d
		i		27	01
		i			08
		i			19
		iPcP		29	06c
	T	iPNEZ		26	40d
		iNZ			59
		iPcP		29	01
		iSNEZ		32	28
	Magnitudes, according to				
	Gutenberg: m=7.0, M=7.1				
	Depth 50 km?				
	USCGS: 52 N $166\frac{1}{2}$ W				
	22:19:26				
19	W	iP	22	59	32
	CL	e			52
20	P	iP	00	22	05
	R	iP			07
	Hf	ePN			14
	Pr	iP			04
	Bt	iP			08
	Kg	eP			00
	W	iP			03
	CL	iP			09
		i			17
	T	eP			06
	USCGS: Solomon Is.				
	00:09:10				
20	W	iP	01	48	10
	CL	iP			20
20	W	iP	02	05	59
20	W	iP	05	17	58
	CL	eP		18	00
	T	eP		17	57
20	P	eP	07	01	10
	PX	iN		13	10
		iRNZ		29.5	
	R	eP		01	03
	Pr	iP			11
		i			20
	Kg	eP			15
	W	eP			15
		e			20
	CL	eP			18
	USCGS: $54\frac{1}{2}$ S $131\frac{1}{2}$ W				
	06:48:04				
20	W	iP	08	51	53
		i		52	08
	BCIS: Andreanof Is.				
	08:44.0				
20	R	eP	11	02	26
	Bt	iP			39
	W	iP!			10c
	CL	eP			16
	T	eP			07
20	R	iP	11	06	46
	Pr	iP			54
	Bt	iP		07	00
	W	iP		06	29d
	CL	eP			35

Date	Sta.	Phase	h	m	s
April					
20	P	eP	12	44	17
		i			27
		i			42
	PX	iPP		48.0	
		iN		55	56
		i		57	10
		iSSNZ	13	02	32
		eSSS		05.3	
		iGN		10.1	
		iR		15.1	
	R	iP	12	44	19
	Kg	eP			10
	W	eP			11
	CL	eP			15
	Magnitude 6.6, according to				
	Uppsala				
	USCGS: 6 S $147\frac{1}{2}$ E				
	12:30:37				
20	R	eP	14	19	52
	Pr	iP			57
	Bt	iP		20	01
	W	iP		19	32
		i			48
	CL	eP			42
	T	iP			31
	BCIS: $51\frac{1}{4}$ N $171\frac{1}{4}$ W				
	14:11:45				
20	R	eP	18	01	58
	Bt	iP		02	09
	Kg	eP		01	38
	W	iP			41
		i			49
	CL	eP			48
	T	iP			38
	USCGS: 52 N 168 W				
	17:54:20				
20	P	iP	18	14	47
	R	iP			51
	Pr	iP			59
	Bt	iP		15	03
	Kg	iP		14	32
	W	iP			34d
		i			45
	CL	iP			41d
		i			53
	T	iP			31
	BCIS: 53 N 166 W				
	18:07:18				
20	R	e	18	20	34
	W	iP			20
		i			31
	CL	e			56
	Same epicenter as preceding				
	18:13:03				
20	R	eP	20	02	51
	Kg	eP			32
	W	iP			34
		i			46
	CL	eP			40
	T	eP			31
	USCGS: 51 N 177 W				
	19:54:24				

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April					
20	Kg	e	21	50	56
		e		51	18
	W	iP		50	59
		e		51	25
		i			31
	CL	eP			06
		e			16
		e?			36
	BCIS: Tonga region 21:39.4				
20	R	eP	22	35	48
	W	iP			31
	CL	eP			38
	T	eP			28
	Aleutians				
21	P	iP	00	26	45
	R	iP			46
	Pr	iP			47
	W	iP			46c
	CL	iP			51c
	T	eP			53
	Deep? BCIS: Fiji region 00:14.5				
21	W	eP	01	04	54
		i		05	12
	CL	eP			05
21	W	e(P)	13	43	24
		i		44	03
	T	i?		43	45
	BCIS: 50½ N 174½ W 13:35:22				
21	P	ePNEZ	21	21	25c
		iNEZ			32
		iPP		23	34
		i		24	55
	PX	iSNZ		28	32
		iLN		31.6	
		iR		32.7	
			A		T
		PZ	1		2
		PH	1		4
		MH	30		20
		MZ	17		20
	R	eP	21	21	19
		iNEZ			26
		i			57
		iPP		23	18
		iSE		28.8	
	Hf	ePN		21	07
		iN			10
	Pr	iP		21	14
		i!			21
		i			50
		iPP		23	20
	Kg	eP		21	36
		i			44c
		i			51
	W	iP			32c
		i			39
		i		22	52
		i		26	58
	CL	eP		21	25
		i			32
		i			59

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
21	T	eP	21	21	33
		i			39
		i		22	23
		iSN		29	01
	Magnitude 6½ - 6¾				
	USCGS: 7 N 72 W, 21:12:26				
21	R	e	23	26	38
	Pr	e(P)			22
		i			34
	Bt	i			48
	W	iP		25	59
		i		26	12
		i			20
	CL	eP			04
		e			17
		e			23
		e(PcP)		27	50
		e		28	04
	T	eP		25	58
		i		26	11
	Depth 50 km?				
	USCGS: 52 N 176 W 23:17:52				
22	W	iP	01	57	31
	CL	eP			36
	USCGS: 30½ N 84½ E 01:42:15				
22	P	eP	13	52	11
		e			41
	R	iP			08
		e			32
	Hf	eN			06
	Pr	iP			02
	Kg	eP		51	54
	W	iP		52	20
		i			50
		iPcP!		53	35
	CL	eP			14
	T	iP			22
		i			31
		i			47
	USCGS: 7 N 72 W, 13:43:14				
22	W	iP	15	31	14
	CL	eP			20
	BCIS: Aleutians, 15:23.5				
22	R	eP	15	46	15
	Hf	ePN			02
	Pr	iP			09
	Kg	eP			32
		e			39
	W	iP			27
		iPcP!		47	41
	CL	eP		46	21
		e			28
	T	iP			28
		e			36
	USCGS: 7 N 72 W, 15:37:20				
23	PX	eL		12	10.2
	R	eP	11	45	12
		e			21
	W	eP			26
		e			33
		e			42
	CL	eP			29

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
23	T	eP	11	45	36
	BCIS: Argentina-Chile 11:33:22				
	Foreshock of next				
23	P	ePZ	22	10	32
		eNEZ			38
	PX	iSN		20	06
		eSSS		29.0	
		eGN		31.1	
		iR		35.5	
	R	eP		10	26
		i			35
	Pr	eP			20
		i			27
		i			48
	Bt	eP			19
		i			25
	Kg	eP			39
		i			47
	W	eP			38
		i			46
	CL	eP			34
		i			44
		i			54
	T	eP			41
		i			51
	USCGS: 27 S 68 W 21:58:35				
23	Pr	iP	23	14	44
	W	iP			23
	CL	eP			29
	BCIS: Andreanof Is. 23:06.3				
24	Kg	e	02	22	27
	W	iP'		19	07
		i		22	29
		i			46
	CL	eP'		19	09
		e?		22	02
		e			34
	BCIS: 5 S 102 E 01:59:45				
24	W	iP	05	11	35
24	W	iP	05	33	04
24	R	iP	10	58	28
	Pr	iP			27
	W	iP			28d
	CL	iP			34d
	T	iP			37
	Southwest Pacific				
24	W	e	16	54	01
	BCIS: 4½ S 112 E 16:35.3				
24	W	eP	17	14	26
	CL	eP			32
24	W	iP	17	28	56
	CL	eP			59
	BCIS: near S. coast of Hokkaido, 17:17.5				
24	P	eP	19	24	09
		e(PP)		27	30
	PX	iPP		28	27
		iSKSNE		34	46
		iPS		37	28
		i		38	40

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
24	P	ePKKP	19	40	25
		iGN		52.9	
			A		T
		PPZ	1½		8
		MH	30		20
	R	eP	19	24	14
		ePP		28	24
		ePKKP		40	04
		i			34
	Pr	eP		24	05
		ePP		28	28
		iPKKP		40	28
	Bt	eP		24	11
		iPP		28	37
		iSKSNE		34	53
		iPKKP		40	22
	W	eP		24	03
		i			09
		i			26
		ePP		27	59
		e		28	41
		ePKKP		40	08
		i			31
	CL	eP		24	02
		i			09
		e		28	12
		ePKKP		40	10
		e			33
	T	eP		23	58
		ePKKP		40	45
	Magnitude 6¾				
	BCIS: 36.3 N 29.1 E 19:10:16				
25	P	iP	02	39	37
		i			55
		e		43	15
	PX	iPPNZ			56
		iSKSN		50	14
		ePS		53	20
		i		54.4	
	P	ePKKP		55	36
		e			52
	PX	e		59.9	
		iGN	03	08.8	
		eR		14.2	
			A		T
		PPZ	¾		4
		MH	50		20
	R	eP	02	39	36
		e		42	48
		iPP		43	49
		iSKSN		50	13
		ePKKP		55	48
		e		56	08
		e	03	03	36
	Pr	iP	02	39	38c
		e		43	36
		iPP			57
		i		44	24
		ePKKP		56	33
		e		57	08
	Bt	eP		39	39
		ePP		43	53
		iSKSNE		50	19
		ePKKP		55	50

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
25	Kg	eP	02	39	35
	W	iP			32c
		iPP		43	38
		i		44	40
		iPKKP		55	25
		i			55
		e	03	03	55
	CL	eP	02	39	30c
		e		43	35
		ePKKP		55	39
		e		56	13
		e	03	03	55
	T	iP	02	39	26
		iPP		43	30
		ePKKP		55	58

Magnitudes, by Professor Gutenberg: m=7.0, M=7.1
BCIS: 36.5 N 28.9 E
02:25:36

Date	Sta.	Phase	h	m	s
25	P	eP	07	22	43
	W	iP			34
		i			39
	CL	eP			37

USCGS: 45 N 100 E
07:09:20

Date	Sta.	Phase	h	m	s
25	P	iPNEZ	07	23	18
		i			25
		i			31
	PX	iSN		29	46
		iLN		32.9	
	R	iP		23	23
		i			34
	Pr	iP			29d
		i			35
		i			43
	Bt	iP			34
		i			41
		i			45
	Kg	eP			04
		e			11
		i			17
		e		25	17
	W	iP!		23	06d
		i			16
		i			23
		i(ScP)		28	48
	CL	iP		23	13
		i			18
		i			25
		i(ScP)		28	54
	T	iP		23	04
		i			13
		i			22

USCGS: 52 N 173½ W
07:15:15

Date	Sta.	Phase	h	m	s
25	P	eP	08	23	03
	R	eP			06
	Pr	iP			13
		i			25
	Bt	iP			19
		i			31
	W	iP		22	50
		i		23	12
	CL	iP		22	58

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
25	T	iP	08	22	47

BCIS: 52 N 173½ W
08:14.9

Date	Sta.	Phase	h	m	s
25	R	e	10	33	14
		e			35
	Pr	e			15
		i			37
	Bt	e			14
	W	eP		30	38
		e		33	10
		e			33
	CL	e			16
		e			23

USCGS: 4½ S 134 E, 10:16:18

Date	Sta.	Phase	h	m	s
25	P	e	11	24	40
	PX	eLN			51.0
	R	e		24	41
		e		25	17
		iPKKP		35	41
	Bt	e		24	37
	W	i			38
		i		25	01
		ePKKP		35	46
		i			58
	CL	e		24	40
		e		25	19
		iPKKP		35	54
	T	ePKKP			59

USCGS: 1½ N 126 E
11:06:02

Date	Sta.	Phase	h	m	s
25	P	ipPNZ	13	31	16
	PX	eLN			56.4
	R	iP		30	58
		ipP		31	12
	Pr	eP		30	54
		ipP		31	08
	Bt	eP		30	50
		ipP		31	05
	Kg	eP			11
		ipP			25
	W	iP			08
		ipP			23
	CL	eP			07
		ipP			21
	T	eP			14
		ipP			23

Depth 50 km
BCIS: 29 S 69 W, 13:18:10

Date	Sta.	Phase	h	m	s
25	P	iPNEZ	14	14	22
	PX	eLN			22.4
	R	iP		14	26
	Pr	iP			31
	Bt	iP			39
	Kg	eP			04
	W	iP			06c
		i		19	02
	CL	eP		14	11
		i		19	06
	T	eP		13	58

USCGS: 60½ N 145 W
14:07:58

Date	Sta.	Phase	h	m	s
April					
25	P	eP	17	53	44
		e			52
	PX	iSNZ	18	00	36
		i		04	22
		iL		07	30
	R	eP	17	53	58
	Pr	eP		54	00
		i			14
	Bt	iP			06
	Kg	e(P)		53	37
	W	iP			39
		i			42
		eS	18	00	22
	CL	eP	17	53	46
	T	eP			37
		eSN	18	00	17

USCGS: 51½ N 180, 17:45:14

Date	Sta.	Phase	h	m	s
25	P	iPNEZ!	21	58	15.2
		i!			19.8
		iSNE			50.7
	MW	iP			14.8
	R	iP			05.1
		iNEZ!			05.8d
		iSE			26.7
	BB	eP			03.3
		i!			05.2c
	Pr	iP!		57	56.1
	Bt	iP			54.4
		iSN		58	06.1
	EC	ePN		57	47.0
	Kg	eP		58	39.3
		i			45.8
		i			49.9
	W	iP!			33.2c
		i!			41.2
		iSE		59	33.7
	Is	iP		58	29.4
		iSN		59	25.4
	CL	eP		58	26.1
		i			28.1c
		i!			36.4
	T	e(P)			47.4
		i		59	02.4
		iSE			58.9
		iSN	22	00	02.2

Magnitude (revised) 5.2
33°11' N 115°51' W
21:57:39
Intensity VI at Boulevard, Brawley, Calipatria, Niland, Westmorland.
Felt as far as San Diego, Indio, Blythe, Yuma.
Preceded by small fore-shocks, and followed by a swarm including one nearly equal shock (see next entry) At Hayfield timing was deficient, but many of the smaller shocks recorded there with S-P near 7.5 sec.

Date	Sta.	Phase	h	m	s
April					
25	P	iPNZ	22	24	52.6
		iSNE		25	21.8
	MW	iP		24	44.4
		i!			44.9
	R	ePN			38.0
		iSE			55.3
	BB	iP!			36.3
	Pr	eP			30.9
		i			33.7
	Bt	iPN			27.5
		iN!			28.5
	EC	ePE			20.1
		iN			21.3
	Kg	iP			19.8
	W	e(P)E			15.0
		iSE		26	06.8
	T	i!		25	36.4
		iSN		26	31.4

Magnitude 5.1 (revised)
33°11' N 115°51' W
22:24:12
Felt over the same area as the preceding. Readings for P difficult because of motion due to earlier small shocks. Aftershocks numerous; the swarm included 20 shocks of magnitude 3.0 or over.

Date	Sta.	Phase	h	m	s
26	P	iP	03	05	00.0
		iSN			29.5
	R	eP		04	47.8
		iSEZ		05	09.9
	Pr	iP		04	36.6
	Bt	iP			35.8
		iS			48.6

Magnitude 3.8
Aftershock, Imperial Valley

Date	Sta.	Phase	h	m	s
26	P	iP	03	08	58.5
		iS		09	44.6
	W	iP		08	35.1
		iSE			58.5
	Is	iP!			34.9
		iSN			57.5
	CL	iP			32.3
		i!			33.6
		iS!			47.8
	H	iP			27.0
		i!			28.3
		iSNE			42.5
	T	iPNEZ!			11.3
		iSNE			13.4

Magnitude 3.8
37°07' N 118°05' W
03:08:09
Felt at Tinemaha, Laws (Calif.), and Dyer (Nevada)

Date	Sta.	Phase	h	m	s
26	R	e	04	40	52
		e		41	12
	Pr	i		40	59
	W	iP			22
		e			42

(continued)

Date	Sta.	Phase	h	m	s
April		(continued)			
26	Is	e(P)	04	40	28
		i			43
		i			52
	CL	e			45
		e		41	07
	T	eP			37
		e			48
BCIS: 51½ N 173 W 04:32:28					
26	PX	eSKSN	06	57.9	
		eLNZ	07	15.4	
	Is	eP		47	35
		ePP		51	56
BCIS: 36.3 N 29.1 E 06:33:43					
26	P	eP	10	29	48
	PX	eN		35.0	
		iLN		37.6	
	R	iP		29	51
	Pr	iP			53
	Bt	iP		30	04
		e			18
	W	iP		29	33c
	Is	iP			34
	CL	iP			38c
		e			36
	T	eP			24
USCGS: 60 N 147 W 10:23:17					
26	Pr	e	11	35	03
	W	iP			38
	Is	iP			41
	CL	eP			46
	T	eP			37
26	Pr	i	11	41	45
	W	iP			13
		i			21
	Is	iP			15
		i			23
26	R	e	11	46	49
	Pr	eP			57
	Bt	e		47	01
	W	iP		46	33
		i			41
	Is	iP			35
	CL	eP			41
	T	eP			31
26	P	iPNEZ	15	19	34c
	PX	eSN		28.9	
		eGN		34.0	
		iR		40.5	
				A	T
		PZ		½	1½
	R	iPNEZ	15	19	36c
	Pr	iP			42
	Bt	iP			45c
		e		20	01
	Kg	iP		19	24c
	W	iP!			24c
		i!			45
	Is	iP!			27c
		i			52
		(continued)			

Date	Sta.	Phase	h	m	s
April		(continued)			
26	CL	iP!	15	19	21c
		i			56
	T	iP			23c
JMA: 44 N 148 E 15:08:29, 60 km					
27	PX	e(PS)	00	40.2	
		eR	01	03.4	
	R	e	00	29	28
	Pr	i(SKKP)		42	09
		i			22
	Bt	e(SKKP)		41	58
		e		42	15
	W	e?		29	13
		e			24
		iPKKP		39	24
		i(SKKP)		41	48
		i		42	01
	Is	e		28	33
		e		29	26
		ePKKP		39	15
		e			24
		i(SKKP)		41	50
		i		42	03
	CL	e		28	39
		e		29	17
		ePKKP		39	20
		e(SKKP)		41	53
		e		42	07
	T	e(SKKP)		41	59
Readings noted as (SKKP) may refer to another shock					
USCGS: 0 121½ E, 00:09:47 60 km					
27	P	iP	02	46	48
	PX	eGN		55.9	
	R	iP		46	53
	Pr	iP			59d
	Bt	iP		47	04
		i			17
	Kg	eP		46	34
		e			47
	Is	iP			39d
		i			52
	CL	iP			43d
		e			57
	T	eP			33
USCGS: 53 N 166 W 02:39:24					
27	R	e(P)	04	31	33
		e			47
	Pr	e			31
	Bt	e?			27
		e			39
	Kg	e			47
	Is	iP			46
	CL	eP			43
		e			55
	T	eP			50
USCGS: Near coast of central Chile, 04:19:20					
27	R	eP	06	03	42
	Is	iP			42
	CL	eP			46
	T	eP			52
BCIS: Fiji region, 05:51.5					

Date	Sta.	Phase	h	m	s
April					
27	P	iP	11	43	16d
		ipP			33
	PX	eGN	12	07.0	
		iR		10.8	
	R	iP	11	43	09d
		ipP			26
	Pr	iP			19
		ipP			37
		i		44	01
	Bt	iP		43	18
		epP			34
	Kg	eP			14
	W	iP			16d
		ipP			33
	Is	iP			19d
		ipP			36
	CL	iP			22d
		epP			40
	T	iP			22d
		epP			41
USCGS: 20 S 170 E 11:30:33, 100 km					
27	Pr	eP	12	03	20
	Is	eP			43
	CL	eP			38
	T	eP			49
Mexico?					
27	P	iP	12	57	24
	PX	eLN	13	07.4	
	R	eP	12	57	29
		e			48
	Pr	i			35
	Bt	iP			39
	W	iP			03
	Is	eP			06
		i			15
	CL	eP			11
		i			20
	T	eP			01
		i			09
USCGS: Andreanof Is. 12:48:45					
27	P	eP	22	00	10
		e			24
	PX	eL		12.5	
	Pr	iP		00	21
	Kg	e	21	59	55
	W	eP			46
		i			56
	Is	eP			51
	CL	eP	22	00	05
	T	e	21	59	56
BCIS: 52 N 174½ W 21:51:50					
28	Is	iP	00	10	41
		i			51
	CL	iP			46
		e			55
	T	eP			36
		e			46
USCGS: New Britain region 00:00:15					

Date	Sta.	Phase	h	m	s
April					
28	PX	eP	01	38.0	
		e		42	13
		iPP			22
		iSKSN		48	40
		iSN		49	49
		iSP		51	40
		iPPS		52	48
	P	iPKKP		53	48
	PX	eSSN		56.9	
		iSSN		57	24
		eSSSNZ	02	01.1	
		iGN		07.2	
		iR		12.2	
				A	T
		MH		3	20
		MZ		2½	20
	R	eP	01	38	03
		e		41	48
		ePP		42	27
		ePKKP		53	44
	Pr	ePP		42	19
		iPKKP		53	41
	Kg	ePP		42	13
		ePKKP		54	06
	W	eP		37	54
		e		41	23
		e(PP)		42	03
		iPP			31
		iPKKP		53	52
		i		54	03
		eSKKP		57	48
	Is	eP		37	55
		e		42	01
		i(PP)			16
		iPKKP		53	52
		i		54	03
		eSKKP		57	44
	CL	eP		37	58
		e		41	45
		ePP		42	23
		ePKKP		53	49
		eSKKP		57	43
	T	ePP		42	10
		ePKKP		53	52
Magnitude 6¼					
USCGS: 7 N 127 E 01:23:40					
28	P	iP	10	49	44
		ipP		50	04
	PX	iS	11	00	50
		iSP		01	52
		eSS		06.5	
		eGN		13.8	
		eR		18.8	
	R	iP	10	49	47
		ipP		50	07
	Pr	iP		49	49
		ipP		50	09
	Bt	eP		49	49
		epP		50	08
	Kg	eP		49	40
		epP			59
		(continued)			

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
28	W	eP	10	49	42
		i			46
	Is	iP			43
		i			47
	CL	eP			47
		ipP		50	07
	T	iP		49	48
	USCGS: 6 S 155 E				
	10:36:41, 60 km				
28	P	iP	14	48	52
	R	eP			53
	W	iP			54d
	Is	iP			55d
	CL	iP			58
	T	eP		49	01
	Near Apia				
28	P	eP	14	56	35
		iNEZ			44
	PX	iSNZ	15	02	40
		iGN		05.8	
	R	eP	14	56	38
		i			48
		i			54
	Pr	eP			44
		i			51
		i			54
	Bt	eP			49
		i		57	00
		i			05
	Kg	e		56	20
		e			29
	W	eP			20
		i			25
		i			34
		e	15	02	16
	Is	iP	14	56	23
		i			30
		i			50
	CL	eP			26
		i			37
		e	15	02	15
	T	eP	14	56	18
	USCGS: 52½ N 168½ W				
	14:48:52				
28	P	eEZ	20	12	13
		i			38
	PX	e		22.6	
		iLN		25	20
	R	eP		12	14
		e			23
	Pr	eP			18
		i			24
		e			40
	Bt	e			31
		i			48
	W	eP		11	54
		i			59
		i		12	08
	Is	eP?		11	57
		i		12	03
		i			06
	CL	eP			01
		e			10
		i			23
	T	eP			01
		e			09
		e			16
	USCGS: 50½ N 178 W				
	20:03:42				

Date	Sta.	Phase	h	m	s
April					
28	R	eP	22	17	23
	Pr	iP			24
	Is	iP			26
	CL	iP			28
	T	eP			31
28	Is	iP	23	46	34
	CL	eP			28
	T	eP			28
	USCGS: 52 N 166 W				
	23:39:14				
29	P	e	04	37	45
	PX	iSN		43	56
		iLN		47.0	
	R	e(P)		37	41
		e			47
	Pr	eP			56
		i		38	02
		e			08
		i			17
	Bt	eP			00
		i			15
		i			23
	W	iP		37	30
	Is	eP			33
		i			35
		i			58
	CL	eP			39
		i			55
	T	eP			27
		i			45
	USCGS: 52½ N 168½ W				
	04:30:04				
29	Is	eP	04	44	42
		i			45
	T	e			37
	USCGS: 52½ N 169 W				
	04:37:12				
29	P	iP	09	33	29
		e			44
	R	iP			31c
		e			37
		e(pP)			45
	Pr	iP			36c
		e			45
	Bt	iP			40c
		e			48
		i(pP)			56
	Is	iP			19c
	CL	iP			24c
		e(pP)			40
	T	iP			18c
	JMA: 43¾ N 148 E				
	09:22:25, 60 km.				
29	P	iP	10	23	14d
		e(pP)		24	16
		e			29
		e			43
	R	iP		23	11d
		e			31
	Pr	iP			06d
	Bt	iP			03d
	W	iP		23	21
		i(pP)		24	21
	Is	iP!		23	21d
		i(pP)		24	22
		i(sP)			58
	CL	iP		23	18d

(continued)

Pasadena and auxiliary stations, 1957 No. 2

Date	Sta.	Phase	h	m	s
April		(continued)			
29	T	iP	10	23	26d
	USCGS: 22 S 66 W				
	10:11:53, 200 km				
29	R	e	11	10	12
		e			22
		e			29
	Pr	iP			05
		e			19
	Bt	e			02
		e			16
	W	e			31
		e			37
	Is	e			29
	CL	e			31
	Mexico				
29	P	iP'	21	15	20
	PX	ePP		17	40
	P	iSKPNEZ		18	50
	PX	eSS		35	48
		eL		57.6	
	R	eP'		15	19
		eSKP		18	43
	Kg	eP'		15	17
	W	eP'			12
		i			16
		ePP		17	32
	Is	iP'		15	18
		e		18	02
	CL	eP'		15	19
		e		17	30
		eSKP		18	41
	T	eP'		15	18
	USCGS: 9 S 107 E				
	20:55:57				
30	P	eP	09	47	46
	PX	iSN		49.0	
	Pr	eP		47	16
		i			33
		iS		48	21
	Bt	eP		47	05
		i			16
		iS			57
	Gulf of California?				
30	R	eP	13	56	26
	Pr	iP			33
	Bt	eP			36
	W	iP			10
		i		57	33
	Is	iP		56	12
	CL	eP			17
	T	eP			09
	BCIS: Aleutians, 13:47.8				
30	PX	eLN	15	36.9	
	Pr	e?		27	28
		e			41
	W	iP			04
		i			17
		i			24
	Is	i			19
	CL	eP			23
	T	eP			15
		e			29
	BCIS: Aleutians, 15:19.8				

Date	Sta.	Phase	h	m	s
May					
1	P	e	05	30	39
	Pr	iP			40
	W	iP			16
	Is	iP			18
1	PX	eLN	15	08.6	
	Pr	eP	14	58	07
	Bt	eP			08
	W	iP		57	45c
		i		58	00
	Is	iP		57	45
	T	e			57
	Data insufficient (BCIS)				
1	P	eP	23	35	59
		i(pP)		36	12
		eScP		41	41
		e			49
	PX	eSNE		42	14
		eGN		45.5	
		eR		46.5	
	R	eP		36	04
		i(pP)			17
		eScP		41	45
		eSE		42	19
	Pr	iP		36	09
		i(pP)			22
		e			34
		eScP		41	46
	Bt	eP		36	13
		i			19
		i			24
		i(pP)			28
		eScP		41	48
	Kg	eP		35	46
		e(pP)			58
		e		36	09
		eScP		41	35
	W	iP	23	35	46d
		i(pP)		36	00
		i			26
		i(PcP)		37	13
		iScP		41	37
	Is	iP		35	48
		i(pP)		36	02
		iScP		41	37
	T	eP		35	44
		i(pP)			56
		iScP		41	35
		eS			50
	Depth 50 km?				
	USCGS: 52½ N 171 W				
	23:28:09				
2	P	eP	02	03	16
	PX	eLZ		28	38
	R	eP		03	18
		e			45
	Pr	e			21
	Bt	e			59
	W	eP			14
		e			41
		e			54
	Is	eP			25
	USCGS: 4½ S 153 E				
	01:50:09, 60 km				

Pasadena and auxiliary stations, 1957 — No. 2

Date	Sta.	Phase	h	m	s
May 2	P	iP	02	29	44
		i(pP)			58
	R	eP			48
		i			57
		e		30	02
	Pr	iP		29	55c
		i		30	06
		i			09
	Bt	iP		29	59c
		i(pP)		30	13
	Kg	eP		29	43
	W	iP			31c
		i(pP)			44
	Is	iP			33c
		i(pP)			47
		e		31	49
	T	iP		29	28c
		i(pP)			42
	USCGS: 54 N 166 W				
	02:22:18				
2	P	iPNEZ!	04	04	00c
		i			08
		i			18
		i			23
	PX	iPPNZ		05	48
		iSNZ		10	40
		i(SS)N		14.2	
		eRNZ		16.9	
			A		T
		PZ	$1\frac{1}{2}$		2
	R	iP	04	03	59c
		i		04	17
		ePP		06	00
	Hf	iP		03	58
	Pr	iP		04	02c
	Bt	iP			07c
		iPP		06	00
		eSNE		11	14
	Kg	iP		03	54
		ePP		05	35
	W	iP!		03	49c
		i		04	14
		i			26
		iPP		05	30
	Is	iP!		03	49c
	T	iP			38
		iPP		05	28
	Magnitude $6\frac{1}{4}$				
	USCGS: 72 N $67\frac{1}{2}$ W				
	03:55:34				
2	P	eP	10	47	19
		e		48	43
	PX	eSKSN		57	54
		ePSEZ		58	16
		iPPSN		59	20
		iSSN	11	03	48
		eGNE		10.9	
		eR		14.6	
	R	eP	10	47	18
		e(SKS)		57	57
	Hf	eP		47	26
	Pr	eP			15

(continued)

Date	Sta.	Phase	h	m	s
		(continued)			
May 2	Bt	eP	10	47	11
	Kg	eP			24
	W	eP			26
	Is	eP			26
		i			42
	T	e?			36
		e			49
	USCGS: $56\frac{1}{2}$ S 123 W				
	10:34:14				
2	P	iPEZ	11	36	56
	PX	iLN		46	00
			A		T
		PZ	$\frac{1}{4}$		3
	R	e?	11	36	53
		e(P)			59
		i		37	17
	Pr	eP			03
	Bt	eP			07
	Kg	eP		36	40
		i		37	01
	W	iP		36	40
		i			47
	Is	iP			43
		i		37	01
	T	eP		36	37
	Magnitude 6.3 (Uppsala)				
	USCGS: $52\frac{1}{2}$ N 169 W				
	11:29:13				
2	P	ePEZ	11	46	35
		i			58
	PX	iSE		52	40
		iLN		55	48
			A		T
		PZ	$\frac{1}{2}$		3
	R	eP	11	46	38
		i			44
		i			54
	Hf	e(P)			49
	Pr	eP			43
		i			52
		i		47	01
	Bt	eP		46	49
		i			55
		i		47	05
	Kg	eP		46	21
		i			27
		i			44
	W	iP			19
		i			23
	Is	iP			24
		i			38
	T	eP			20
		i			36
	Magnitude 6.4 (Uppsala)				
	USCGS: $52\frac{1}{2}$ N 169 W				
	11:38:52				

C. F. Richter
Violet M. Taylor
November 18, 1960

Date	Sta.	Phase	h	m	s
May 2	P	eP	12	42	39
	R	eP			45
	Pr	iP			51
		e		43	02
	Bt	iP		42	56
	Kg	iP			26
	W	iP			27d
		i			40
	Is	iP			28
		i			40
	T	iP			25
	BCIS: region of Unimak (Aleutians), 12:35.5				
2	P	e	14	01	55
		e		02	02
	Pr	e			03
	Kg	e		01	49
	W	iP			37
	Is	eP			40
		i			45
	T	eP?			37
		i			44
	USCGS: 51 N 176½ W 13:53:27				
2	Is	iP	20	23	55
	CL	iP			54
2	P	iP'NEZ!	21	54	16d
		ipP'		56	56
		iSKSNE	22	00	21
		iNE		01	48
	PX	iSP		04	11
		i		09	12
			A		T
		P'Z	1		1
	R	iP'	21	54	17d
		ipP'		56	57
		iSKSE	22	00	23
		iPKKP		04	23
		eSP			47
	Pr	iP'	21	54	16d
	Bt	iP'			18d
		e		55	58
		ipP'		56	59
		iPKKP	22	04	19
	Kg	iP'	21	54	14d
		i			45
		iPKKP	22	04	35
	Is	iP'!	21	54	14d
		i			28
		ipP'		56	55
		iPKKP!	22	04	25
		i		08	22
	CL	iP'	21	54	15d
		ipP'		56	56
		ePKKP	22	04	24
	T	iP'	21	54	15d
		i			50
		ipP'		56	55
		iPKKP	22	04	29
	USCGS: 7½ S 120 E 21:36:25, 600 km				

Date	Sta.	Phase	h	m	s
May 3	R	eP	01	07	09
	Pr	iP			15
		ipP			27
	Bt	eP			20
	W	iP		06	53d
		ipP!		07	05
	Is	iP		06	55
		ipP		07	07
	CL	eP		06	59
		epP		07	11
	T	iP		06	50
		ipP		07	01
	Aleutians				
3	PX	i(S)N	02	21	55
		iLNZ			30.2
3	Pr	iP	06	12	16
	Is	iP		11	55
	CL	eP		12	00
	T	eP		11	58
	BCIS: Aleutians, 06:04.5				
3	P	iPNEZ	07	19	04d
	PX	eSN			26.0
		eR			34.0
	R	iP		19	08
		i			19
	Pr	iP!			14(c)
		i			26
	Bt	iP			18
	W	iP		18	53
	Is	iP			54
		i		19	06
	CL	iP		18	59d
	T	iP			50(c)
		i		19	00
	Small dilatations followed by larger compressions.				
	USCGS: 51 N 179½ E 07:10:25				
3	P	eP	12	26	26
	PX	eSN			35.4
		eGN			42.8
		iRNZ			45.9
	R	eP		26	24
		e			40
	Pr	eP			20
	Bt	eP			16
	Is	iP			35
	CL	eP			37
	T	eP			45
		e		27	01
	BCIS: 28 S 113 W 12:16.0				
3	Pr	eP	14	03	56
	Bt	eP		04	02
	W	iP		03	32
	Is	eP			35
		e			45
	CL	eP			39
	T	eP			30
	BCIS: region of Unimak, Aleutians, 13:56.5				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h m s
May			
3	P	iP	16 23 41
		i	49
	R	eP	46
		e	57
	Pr	iP	53
		i	59
	Bt	iP	56
		i	24 04
	Kg	eP	23 30
	Is	iP	32
	CL	iP	37
		i	44
	T	iP	29
		i	37
	BCIS: 51 N 179½ W 16:15:06		
3	Pr	eP	21 53 12
	Is	eP	52 51
	CL	eP	54
	T	eP	45
	BCIS: Andreanof Is. 21:44.4		
4	P	eP	10 19 56
	PX	ePP	24 13
		ePSN	34.4
		e	34 08
		iSSN	39 15
		eGN	48.3
		iREZ	53 16
		A	T
		PZ	0.1 2½
		MH	10 20
	R	eP	10 19 59
		ePP	24 19
	Bt	ePP	25
	Is	eP	19 54
		ePP	24 13
	CL	eP	19 57
	T	eP	57
	Magnitude 6½ USCGS: 3½ S 137 E 10:05:45		
4	P	e	11 30 39
	R	eP	25
		e	48
	Pr	iP	31
	Bt	eP	36
	Is	iP	11
		i	56
	CL	eP	15
	USCGS: 52½ N 166½ W 11:22:53		
4	Is	iP	11 45 09
	BCIS: 52½ N 166 W 11:37:18		
4	R	eP	22 18 39
	Pr	iP	38
	W	iP	39d
		i(pP)	19 12
	Is	iP	18 39d
	CL	eP	45
	Pacific		

Date	Sta.	Phase	h m s
May			
4	R	e	23 40 07
	W	eP	39 32
		i	42
	Is	e	38
		e	51
	BCIS: Fox Is., 23:31.7		
5	W	eP	00 48 40
	CL	eP	47
	BCIS: near east coast of New Guinea, 00:35.2		
6	P	eP	11 26 16
		e	21
		i	28
	R	eP	20d
		i	35
	Pr	iP	27d
		i	41
	Bt	iP	31d
	Kg	eP	02
		e	09
		e	16
	W	iP	04d
		i	17
	Is	iP	07
		i	14
		i	21
	T	eP	00
	USCGS: 52 N 173 W 11:18:15		
6	P	iP	11 27 49c
		i	56
		i	28 03
	PX	eS	34 18
		eR	37.9
	R	iP	27 53c
		i	28 00
		i	07
	Pr	iP	01c
		i	14
	Bt	iP	04c
		i	10
		i	17
	Kg	iP	27 35c
		i	43
		i	49
	W	iP!	38c
		i	51
	Is	iP!	40c
		i	53
	T	iP	34c
		i	42
		i	48
	USCGS: 52 N 173 W 11:19:47		
6	P	iP	11 48 53
	R	eP	56
	Pr	eP	56
		epP	49 56
	Bt	eP	48 52
	W	iP	55c
		ipP	49 55
	Is	iP	48 56c
		ipP	49 56

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h m s
May		(continued)	
6	T	eP	11 49 03
		e	09
		epP	50 04
	USCGS: 17½ S 176 W 11:37:33, 250 km		
6	W	iP	22 57 02c
	CL	iP	07
7	PX	iS	01 33 30
		iR	40.3
	R	eP	26 41
	Pr	eP	37
	W	eP	59
	Is	eP	55
	CL	eP	53
	USCGS: 1 N 85½ W, 01:18:28		
7	P	iPNEZ	05 45 09
		i	18
	PX	iSN	52 07
		eN	54.8
		iSSN	55.9
		eLN	59.0
		A	T
		PZ	¼ 1
	R	iP	05 45 23
	Pr	iP	20c
		i	31
	Bt	iP	24c
		i	35
	Kg	iP	44 58
	W	iP!	58d
	Is	iP	45 00d
		i	11
	CL	eP	04d
		i	12
	USCGS: 51½ N 179½ E 05:36:32		
7	Pr	iP	08 15 07
	Bt	eP	11
	W	iP	14 45c
	Is	iP	44
7	PX	eN	09 24.2
		eGN	27.7
	R	iP	17 44
	Pr	iP	50d
	Bt	iP	54
	Kg	eP	25
	W	iP	27d
		i	40
	Is	iP	30
		i	42
	CL	eP	34
	USCGS: 51½ N 170 W 09:09:53		
7	Pr	iP	22 04 05
	CL	e	21
	BCIS: near coast of Guatemala, 21:57.5		
7	R	e	22 31 31
	Pr	eP	33
	Bt	eP	35
	W	iP	18
		i	31
	CL	e(P)	24
		e	36
	USCGS: 30 N 137½ E 22:19:03		

Date	Sta.	Phase	h m s
May			
8	Pr	iP	16 53 20
	Bt	eP	25
	W	iP!	52 56c
		i	53 08
	Is	iP	52 58
	CL	eP	53 02
	Aleutians?		
8	Pr	eP	18 15 19
	Bt	eP	31
	W	iP	14 57
	Is	iP	15 00
	CL	eP	03
	T	eP	14 54
	BCIS: Andreanof Is. 18:06.9		
8	W	iP	19 20 09
	CL	eP	14
	JMA: 43 N 146 E 19:09:04, 40 km		
8	P	eP	20 01 50
	PX	eSNZ	04 03
	R	eP	01 39
	Pr	eP	30
	Bt	eP	22
	W	eP	02 07
	BCIS: 28 N 112 W, 19:59.2		
8	P	eP	20 21 12
	PX	eSN	30.5
		eGNE	40 33
	R	eP	21 14
	Pr	eP	16
	Bt	eP	13
	W	eP	12
	Is	iP	14
	CL	eP	19
	T	eP	04
	Shallow? USCGS: 15½ S 179 E, 20:09:53, 400 km		
9	P	iP	10 10 24
		e	41
	R	eP	28
	Pr	iP	26c
	Bt	e(P)	25
	W	iP!	26c
	Is	iP	26c
	CL	iP	31c
	Southwest Pacific?		
9	P	eP	10 53 53
		e	54 39
	R	eP	53 58
	Pr	iP	54 04
	Bt	eP	08
	W	iP	53 42
		i	56
	Is	iP	43
		i	58
	CL	iP	49
		e	55 33
	West Pacific?		
9	P	e	17 49 39
	Pr	iP	27
	Bt	eP	30
	W	iP	04
		i	10
		i	25
	CL	iP	06
	BCIS: 53 N 170 W, 17:41:35		

Pasadena and auxiliary stations, 1957 — No. 3

Date	Sta.	Phase	h m s
May 9	W	iP	21 06 35c
		i	48
	Is	iP	37
	CL	eP	46
	T	eP	33
10	R	iP	00 44 26
	W	iP	30
	Is	iP	31
	CL	eP	30
10	PX	eL	16 30.8
	W	iP	25 22
	Is	iP	23
	CL	eP	27
	T	eP	29
10	PX	eL	16 45.9
	W	iP	36 34
BCIS: south of Kermadec Is. 16:24.7			
10	W	iP	19 14 06
BCIS: Andreanof Is. 19:05.7			
11	Bt	iP	00 49 08
	W	iP	48 50
		i	49 07
	Is	eP	48 52
	CL	eP	55
	T	e(P)	49
Aleutians?			
11	W	iP	00 50 40
	Is	eP	42
	CL	eP	46
	T	e(P)	36
11	W	iP	07 14 49d
		i	15 00
	Is	iP	14 51
		i	15 03
	CL	eP	14 56
		e	15 07
	T	eP	14 46
		e	59
BCIS: 51 N 176 W 07:06:41			
11	P	iP	07 38 53
	PX	eSNE	45.7
		eNZ	49.5
		eRNZ	51.7
	R	iP	38 58
	Pr	iP	39 04
		i	40 59
	Bt	eP	39 07
	W	iP	38 41
	Is	iP	43d
		e	40 28
	CL	iP	38 47d
	T	eP	38
USCGS: 51½ N 178½ W 07:30:22			
11	P	i(P)	15 06 47
	Pr	e(P)	46
	W	iP	18
		i	29
		i	36
	Is	e	23
		i	37

(continued)

Date	Sta.	Phase (continued)	h m s
May 11	CL	eP	15 06 24
		e	29
		i	41
	T	e	22
		i	32
USCGS: 52½ N 160 E 14:56:30			
11	PX	eL	23 40.8
	R	e	13 11
	W	iP	09
		i	20
	Is	iP	12
		i	27
	CL	eP	15
Pacific			
12	W	eP	01 29 01
		i(pP)	22
	Is	i(pP)	23
	CL	eP	14
	T	i(pP)	28
BCIS: Fiji region 01:17:24			
12	P	iP'	05 06 40
	PX	iPPNZ	08 08
		iSKSN	13 48
		iN	15 15
		iSPNZ	18 04
		iSSNE!	25 16
		iRNZ	46.2
			A T
		P'Z	0.3 1½
		MH	1½ 20
	R	iP'	05 06 37
	Bt	eP'	38
	W	iP'	43d
		iPKKP	16 37
		iSKKP	20 38
	Is	iP'	06 42d
		ePP	08 37
	CL	iP'	06 41d
		e	08 15
		ePKKP	16 41
		eSKKP	20 32
	T	eP'	06 44
		iPP	08 24
Magnitude 5¾±			
USCGS: 60½ S 26 W 04:47:44			
12	P	eP	06 59 41
	PX	eLN	07 18.0
	Bt	eP	06 59 45
	W	iP	22
	Is	eP	28
	T	eP	19
		e	25
USCGS: 53 N 142 E 06:48:27			
12	P	e(P)	11 41 19
	R	e(P)	22
		e	35
	Pr	e(P)	22
	W	eP	18
		i	21

(continued)

Pasadena and auxiliary stations, 1957 — No. 3

Date	Sta.	Phase (continued)	h m s
May 12	Is	eP	11 41 20
		i	24
	CL	e	27
	T	eP	26
		i	29
Near Apia			
12	P	iP'	11 48 23
		i	36
		i	44
	PX	eNEZ	50.6
		iPP	51 04
		iSKP	48
		iSKPNE	52
		eZ	12 04.8
		eN	07.9
		i(G)N	25.5
		i(R)	35.7
			A T
		MH	3 20
	R	eP'	11 48 24
		eSKP	51 49
	Pr	eP'	48 27
	Kg	eP'	20
	W	iP'	20
		ePP	50 29
		iSKP	51 49
	Is	eP'	48 21
		iPP	51 45
	CL	eP'	48 22
		ePP	51 49
	T	eP'	48 18
		ePP	51 43
Magnitude 6¼ (Moskva)			
USCGS: 8½ S 107½ E 11:29:07			
12	W	iP'	13 13 43
	Is	iP'	41
	CL	eP'	43
BCIS: South Atlantic 12:54:45			
12	R	eP	22 10 46
	W	iP	46c
	Is	iP	47c
	CL	eP	52
Southwest Pacific			
12	P	iP	23 40 57
	R	eP	58
	Pr	eP	41 00
	W	iP	40 59c
	Is	iP	41 02
	CL	eP	05
BCIS: 15 S 172 W 23:29:36			
13	P	iP	02 32 19
	R	iP	21
	Pr	iP	27
	Bt	iP	29c
	Kg	iP	11c
	W	iP!	10c
		iPP	35 10
	Is	iP	32 11c
	CL	iP	16c
	T	iP	08
USCGS: 44 N 135½ E 02:20:55, 300 km			

Date	Sta.	Phase	h m s
May 13	P	iP	11 28 56
	R	iP	57
	Pr	iP	59c
	Bt	eP	57
	W	iP	55c
	Is	iP	57c
	CL	iP	29 00c
Southwest Pacific			
13	P	iP	15 31 20
	R	iP	20
	Pr	iP	26
	Bt	iP	27
	W	iP	11
		e	32 40
		e(PP)	34 21
	Is	iP	31 12
	CL	eP	17
		e(PP)	34 31
JMA: 32.5 N 137.8 E 15:19:38, 400 km			
13	R	iP	17 04 40
	Pr	iP	48
	Bt	eP	51
	W	iP	24
	Is	eP	27
	CL	eP	30
13	Pr	e(P)	19 22 53
	Bt	e(P)	23 07
	W	eP	27
		i	37
		i	47
	Is	i	39
		i	49
	CL	e	54
BCIS: Aleutians, 19:14.5			
14	Pr	iP	02 09 12
	W	iP	10c
		i	10 52
	Is	iP	09 13c
		i	10 56
	CL	iP	09 16c
	T	eP	13
14	MW	iP	05 28 22
	Pr	iP	33c
	Bt	iP	36c
	W	iP	10c
	Is	iP	12c
	CL	iP	15c
	T	iP	06c
BCIS: 53 N 173 E 05:19.2			
14	W	iP	18 31 21
		i	32
	Is	eP	23
	CL	e	35
	T	e	38
BCIS: Aleutians, 18:23.3			
14	PX	eLN	19 02.3
	D	eP	18 51 35
		e	41
	R	eP	39
		e	53
	Kg	eP	33

(continued)

Date	Sta.	Phase	h	m	s
May		(continued)			
14	W	iP	18	51	22
		i			31
		i			34
	Is	iP			23
		i			36
	CL	eP			27
		i			40
	T	eP			17
		i			31
	BCIS: 51½ N 173 W 18:43:28				
15	P	e	02	17	17
		i			30
	PX	e(S)N		21	30
		e(G)N		22.3	
	D	eP		17	07
		i			26
	R	eP		16	44
		e		17	07
		i			26
	Pr	iP		16	40
		i		17	05
		i			17
	Bt	e		16	58
		i		17	11
	W	eP			02
		i			30
	Is	iP		16	59
		i		17	24
		i			38
	CL	eP		16	56
		e		17	21
		i			36
	T	iP			05
		e			30
		i			44
	USCGS: 17½ N 93½ W 02:11:05, 100 km				
15	W	iP	10	40	01
	Is	iP			02c
	CL	eP			06
	T	e			14
		e			40
16	Pr	iP	03	24	00
	Bt	eP			04
	W	iP			34
		i			43
	Is	iP			39
	CL	eP			41
	T	eP			35
	BCIS: 51 N 179½ W 03:15:11				
16	W	iP	03	47	08
	Is	iP			09
		e			23
	CL	eP			13
		e			31
	T	eP			14
16	D	eP	06	52	50
		e		53	01
	W	iP			00
	Is	iP		52	59
	CL	eP			56
	BCIS: 21 S 69½ W 06:41:33				
May 16	D	eP	08	22	20
	Pr	iP			23
		e			42
	Bt	e			31
	W	iP			00
		i			06
	Is	iP			02
	CL	eP			06
	BCIS: 51½ N 175 W 08:14:00				
16	P	e	09	33	07
	R	e			06
		e			12
	Pr	e			29
	W	iP		32	37
		i			42
	Is	iP			45
	CL	eP			45
		e			57
16	P	iPNZ	15	06	30d
		epP		07	17
	R	iP		06	27d
		ipP		07	01
		i			11
	Pr	iP		06	23d
	Bt	iP			19d
		ipP			56
	Kg	iP			41d
	W	iP			37
	Is	iP			37d
		ipP		07	11
		i			24
		e		08	19
	CL	iP		06	34d
		epP		07	08
	T	iP		06	42d
	USCGS: 28 S 66 W 14:54:33, 100 km				
17	P	iPNZ	02	53	46
	R	iP			49
	Pr	iP			49c
	Bt	iP			50
	Kg	eP			44
	W	iP			48
	Is	iP			50
	CL	iP			54
	T	iP			55c
	USCGS: 18 S 176½ W 02:42:02, 60 km				
17	W	iP	12	13	20
	Is	iP			22
	CL	eP			27
	BCIS: Aleutians, 12:05.3				
17	P	iPNEZ	20	47	10
		i			29
	PX	eGNE		50.7	
		iR		51.7	
	R	eP		47	05
		e			25
	Hf	eP		46	51
	Pr	eP			53
		i		47	06
		i			18
	Bt	eP		46	41

(continued)

Date	Sta.	Phase	h	m	s
May		(continued)			
17	Kg	e	20	47	49
	W	eP			28
		i			35
	Is	eP			24
		i			35
		i			50
	CL	eP			24
		e			48
	T	e			41
	BCIS: 17¼ N 108¼ W 20:42:44				
17	Pr	e	23	39	57
	W	e			17
		e			31
	CL	e			37
		e			44
	T	e			25
	BCIS: Aleutians, 23:31.5				
18	R	e	02	47	49
		e			59
	Pr	e			55
	W	iP			23
		i			30
		i			37
	Is	eP			35
	CL	eP			31
		e			48
		e			57
	T	eP			25
		e			35
	BCIS: 51 N 175 W 02:39:19				
18	P	iPNEZ	05	31	54d
	PX	eSN		38	16
		iGN		41.4	
			A		T
		PZ	½		1½
	R	iP	05	32	04d
		i			31
		e		33	55
	Hf	iP			10
	Pr	iP!		32	06d
		i			32
	Bt	iPNZ			09d
		i		33	53
	Kg	iP		31	41d
		i			56
		e		33	47
	W	eP		31	39
		iP!			41d
		i			54
		i		32	04
		i			26
		i		33	44
	Is	iP!		31	44d
		i		32	02
	CL	iP		31	49d
		i		32	05
		i		33	43
	T	iP		31	40d
	USCGS: 51 N 171 W 05:24:01				
18	W	iP	16	29	21
	CL	iP			27
	BCIS: 64 N 144 E 16:21:21				
May 19	D	iP	05	29	52
	R	eP			51
		e		30	04
	W	iP			03
		i			20
	Is	iP			02
		i			20
	CL	eP		29	59
		e		30	16
	T	eP			09
		e			22
	BCIS: 13¾ S 76¾ N 05:19:32				
19	P	iPNEZ	07	25	03
		i			11
	PX	iSN		31	36
		iN		34	48
		iLNZ		36	44
	R	iP		24	59
		i		25	05
	Hf	eP		24	56
	Pr	iP			55
		i			59
	Bt	eP			47
		i			53
	W	eP		25	16
		i		27	19
	Is	iP		25	16
		i			22
		i		27	20
	CL	eP		25	08
		i			17
	T	eP			18
		e			26
	USCGS: 800± miles W of Galapagos Is., 07:17:20				
19	W	iP	17	04	12
		i			23
	Is	eP			23
	CL	e			29
		e			43
	T	e(P)			19
	BCIS: Aleutians, 16:57.2				
19	W	iP!	20	52	22c
	Is	iP			23
	CL	eP			28
	T	iP			23
19	W	iP	20	58	26
		i			40
	Is	iP			27
		e			43
	CL	eP			29
		e			45
	T	eP			27
		e			41
	USCGS: 25 N 125½ E 20:45:03				
19	W	iP	21	01	36
		i			49
	Is	eP			39
		i			44
	CL	eP			42
	T	eP			33
	Uppsala: Aleutians				

Pasadena and auxiliary stations, 1957 — No. 3

Date	Sta.	Phase	h	m	s
May					
19	P	iPEZ	21	07	30
	PX	iLNZ			17.7
	R	eP		07	25
	Pr	iP			20
	Bt	eP			17
	Kg	e			46
	W	eP			41
		iPcP		10	00
	Is	iP		07	39
		i			54
		iPcP		10	00
	CL	eP		07	34
		ePcP		09	59
	T	e(P)		07	48
		ePcP		10	12
	USCGS: 12 N 87 W				
	21:00:36, 100 km				
19	D	eP	22	50	45
	W	iP			55
	Is	iP			53
	CL	eP			50
	T	iP			59
		i		51	16
	USCGS: 8 S 74 W				
	22:41:03, 200 km				
20	P	eP	01	59	31
		iNEZ			40
	PX	iSN	02	06	28
		iGN			10.2
		iRNZ			12.0
	R	eP	01	59	35
		e			43
	Hf	eP			46
	Pr	iP			42
		i			51
	Bt	eP			45
		e			54
	Kg	eP			18
		e			27
	W	iP			18
		i			27
		i			38
	Is	iP			21
		i			29
		i			36
	CL	eP			26
		i			34
	T	eP			18
		i			26
		eSE	02	06	26
	USCGS: 51 N 180				
	01:50:54				
20	D	e	03	49	48
	W	iP			45
		i			53
		i			59
		i		50	03
	Is	eP		49	48
	CL	e			52
		e		50	08
	T	e		49	59
	USCGS: 53½ S 167 W				
	03:42:26				

Date	Sta.	Phase	h	m	s
May					
20	D	eP	06	45	56
	Pr	iP			48
	Is	eP		46	07
	CL	eP			02
	T	e			25
	USCGS: off coast of Costa Rica, 06:38:30				
20	D	eP	14	48	43
		e			53
	R	eP			41
		e			51
	W	iP			53
	Is	iP			53
	CL	e			51
		e			59
	BCIS: 22½ S 70¾ W				
	14:37:14				
21	P	iPNEZ!	01	24	24d
		ipPNZ			50
		isPNZ		25	08
		i			21
		iPP		27	38
		isPP		28	22
	PX	iSNEZ		34	34
		ipS			58
		isSNEZ		35	20
		iSSN		40	14
		iSSS			43.7
		iGN		46	20
		iR		49	54
	P	eSKPP'		53	38
			A		T
		PZ	4		3
		PH	2		2½
		SH	10		6
	R	iPNEZ!	01	24	27d
		ipP			55
		iSNEZ		34	39
		eP'P'		50	45
		eSKPP'		53	30
	Pr	iP		24	30d
		ipP			56
		isP		25	13
	Bt	iPNZ		24	32d
		ipP			57
		isP		25	15
		iPP		27	50
	Kg	iP		24	16d
		ipP			42
		i(sP)		25	05
		iPP		27	26
		eS		34	23
		eSKPP'		53	59
	W	iP!		24	18d
		ipP			45
		i		25	30
		iS		34	26
		i		35	13
		eP'P'		50	40
		iSKPP'		53	56

(continued)

Pasadena and auxiliary stations, 1957 — No. 3

Date	Sta.	Phase	h	m	s
May		(continued)			
21	Is	iP!	01	24	20d
		ipP			45
		i		25	04
		i			30
		iPP		27	32
		i		29	01
		iS		34	28
		eP'P'		50	39
		eSKPP'		53	50
		i			57
	CL	iP!		24	24d
		ipP!			51
		i		25	03
		iPP		27	38
		eS		34	44
		eSKPP'		53	55
	T	iPNEZ!		24	19d
		ipP			46
		isP		25	09
		iSNEZ		34	29
	Magnitudes by Professor Gutenberg: m = 6.9, M = 7.0				
	USCGS: 21½ N 144 E				
	01:11:58, 100 km				
21	W	iP	08	01	02
	Is	iP			04
	CL	eP			08
	T	eP			00
	BCIS: Aleutians, 07:53.0				
21	D	eP	09	22	56
		e		23	10
	R	e			22
	W	iP		22	41
		i			55
	Is	iP			44
	CL	eP			47
	T	eP			40
	BCIS: Aleutians, 09:15.5				
21	P	eP	11	48	03
	PX	eGN	12		08.3
		eR			11.6
	R	eP	11	48	12
	Bt	eP			15
		i			27
	Kg	e			08
	W	iP		47	56
		i		48	06
	Is	iP		47	59
		i		48	10
	CL	eP			02
		e			13
	T	eP		47	56
		e		48	10
	JMA: 36.3 N 141.5 E				
	11:36:08				
21	P	iP	15	09	15
	PX	eR			19.8
	R	iP		09	19
	Pr	iP			26
	Bt	iP			31
	Is	iP			05c
	CL	iP			07c
	T	iP		08	59c
	The compressions are followed by larger dilatations.				
	BCIS: 55 N 164 W, 15:01:53				

Date	Sta.	Phase	h	m	s
May					
21	W	iP	16	24	42
	Is	iP			43
	CL	eP			46
	T	iP			38
	Aleutians				
21	D	iP	17	22	22
	R	iP			25
	Pr	iP			32
	Bt	iP			39
	W	iP			08
	Is	iP			10
	CL	iP			12
	T	eP			03
21	PX	iLN	19		28.1
	D	eP		18	21
	W	eP		17	40
		i			58
		i		18	10
	Is	iP		17	39
	BCIS: 51¾ N 169 W				
	19:10:08				
22	P	iP	13	38	05
		iNEZ!			08
	PX	iE		39	13
		iSNE		44	35
		iN			52
		iLNZ		48	22
			A		T
		PZ	1		1¼
		PH	½		1½
		SH	¼		15
	R	iP	13	38	10
		i			14
		i			25
		i			52
		iS		44	57
	Pr	iP		38	14
		i!			19
	Bt	iP			19
		i!			23
		i		39	53
		eSE		45	08
	Kg	iP		37	52
		i			57
	W	iP			53
		i!			54
	Is	iP!			55
	CL	iP		38	00d
		i			03
		i			30
		i		39	48
	T	eP		37	51
		iNEZ			54
		i		38	14
		i			29
		iS		44	28
		eScSE		47	54
	Magnitude 6½				
	USCGS: 50 N 177 W				
	13:29:44				
22	W	iP	18	38	45
	Is	iP			57
	CL	eP			59
	T	iP		39	02
	USCGS: 77 N 5 E, 18:32:35				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
May					
23	P	iP	20	48	58c
	Pr	iP		49	00c
	W	iP!			00c
	Is	iP			00c
	CL	iP			05c
	T	eP			06
24	P	iPNEZ!	02	46	32d
		ipP			46
		isP			56
		i		47	18
		iPP		48	26
		iScP		51	45
	PX	iSNE		53	35
		iScSNE!		56	18
		isScSNE			44
		iGN		58.9	
		eR	03	01.7	
			A		T
		PZ	3		3
		PH	1		2
		SH	3		4
		MH	10		20
	R	eP	02	46	26d
		iSNE		53	24
	Pr	iP!		46	22d
		ipP			42
		isP			54
		i		47	10
		iPP		48	19
		eScP		51	40
	Kg	iP		46	45d
		ipP			58
		i		47	18
	W	iP			41d
		ipP			55
		isP		47	02
		i			14
		i			57
		iScP		51	49
	Is	iP		46	39d
		ipP			51
		isP			59
		i		47	15
		i		48	00
		iScP		51	48
	CL	iP		46	35d
		ipP			50
		iPP		48	35
		e		50	09
		eScP		51	45
	T	iPNEZ		46	43d
		ipP			51
		i		47	17
		iSNE		53	55
		iScSNE		56	30
	Magnitude $6\frac{3}{4}$				
	USCGS: 3 N $76\frac{1}{2}$ W				
	02:37:37				
24	P	iPNEZ	03	44	06d
		i			23
	PX	iSNEZ		50	12
		iL		53.3	
			A		T
		PZ	0.2		$1\frac{1}{2}$
		PH	0.1		1
		SH	$1\frac{1}{2}$		4
		MZ	10		20

(continued)

Date	Sta.	Phase	h	m	s
May		(continued)			
24	R	ePNE	03	44	10
		eSE		50	11
	Pr	iP		44	18d
		i			30
		i			45
	Kg	iP		43	52d
		i		44	05
	W	iP		43	54d
		i		44	01
		i			24
		iPP		45	38
		eS		49	53
	Is	iP		43	56d
		i		44	10
		i			27
		i		46	39
		eS		49	50
	CL	iP		44	00d
		eS		49	55
	T	iP		43	50d
		i		44	01
		eS		49	44
	Magnitude 6				
	USCGS: 53 N $167\frac{1}{2}$ W				
	03:36:33				
24	Pr	i	07	07	30
	W	eP		06	51
		i		07	01
	Is	e			00
	CL	e			05
	JMA: 36.2 N 141.9 E				
	06:54:59				
24	P	iP	10	20	10
		e			33
	Pr	eP			22
		e			39
	Kg	e			16
		e			28
	W	iP			05
		i			15
		i			32
	Is	iP			06
	CL	iP			11
	T	iP			06
	USCGS: 17 N 146 E				
	10:07:40, 100 km				
24	P	eP	13	00	42
	Pr	e			49
		e		01	03
	W	iP		00	45
	Is	iP			45
	CL	eP			50
	T	eP			50
	USCGS: 15 S $173\frac{1}{2}$ W				
	12:49:14				
24	Pr	eP	15	28	10
		e			25
	W	iP		27	46
	Is	eP			48
	CL	eP			51
	T	eP			48
	Aleutians				
24	W	iP	17	23	13
	Is	eP			15
	CL	eP			18
	BCIS: off east coast of				
	Honshu, Japan, 17:12.0				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
May					
24	W	eP	18	23	56
	CL	eP			51
	BCIS: Iran?				
24	R	eP	22	08	03
	Pr	iP			03
	W	iP			03
	Is	iP			04
	CL	eP			07
	T	eP			09
25	W	iP	00	40	41
		i			48
	BCIS: $53\frac{1}{4}$ N $159\frac{3}{4}$ E				
	00:30:41				
25	D	eP	05	53	16
	R	eP			21
	W	eP			09
	Is	iP			09
	T	eP			00
	BCIS: southwest of				
	Spitzbergen, 05:42:36				
25	R	e	08	20	23
	Pr	eP			15
		e			30
	W	iP		19	54
		i		20	09
		i			55
	Is	iP		19	55
	CL	eP			59
		e		20	03
	T	eP		19	52
	BCIS: 51 N $179\frac{1}{2}$ W				
	08:11:28				
25	Pr	eP	09	50	18
	W	iP			18
	Is	iP			19
	CL	eP			17
25	P	iP	14	35	36
	PX	eSN		45.5	
	D	iP		35	34c
	R	iP			32
		i			45
	Pr	eP			28
	W	iP			43c
		i			56
	Is	iP			41c
		i		36	02
	CL	eP		35	41
	T	eP			46c
		e			56
	USCGS: $25\frac{1}{2}$ S 65 W				
	14:23:37				
25	P	e	19	10	03
	R	eP		09	51
		e		10	03
	Bt	eP		09	59
	W	eP			55
		i		10	06
	Is	eP		09	54
		i		10	06
	CL	eP		09	58
		e		10	05
	T	e			09
	BCIS: Sandwich Islands				
	south Atlantic, 18:50:42				

Date	Sta.	Phase	h	m	s
May					
25	P	iP	23	01	00
		ipP			28
	R	iP		00	56d
		epP		01	23
	Hf	eP		00	48
		epP		01	15
	Pr	eP		00	52
	Bt	iP			48d
		ipP		01	15
	Kg	eP		00	59
	W	iP		01	08d
		ipP			35
	Is	iP			07d
		ipP			34
	CL	eP			04d
		epP			31
	T	eP			12
		epP			40
	BCIS: 22 S 69 W				
	22:49:36, 100 km				
26	PX	eSNZ	04	30.9	
		eGN		34.1	
	R	e(P)		24	16
	Pr	e			59
		e		25	18
	W	eP		24	25
		i			47
	CL	e			34
	T	e			38
	BCIS: $52\frac{1}{2}$ N $169\frac{1}{2}$ W				
	04:16:52				
26	P	iPNZ	06	47	22d
		eP'		50	43
		ePPNEZ		51	33
	PX	i(PPP)N		54	17
		iSKS		57	50
		iPS!	07	00	28
	P	ePKKPEZ		03	44
	PX	iSSNZ		05	26
		i		11	48
		iGNE		15.2	
			A		T
		PZ	0.3		2
		PPZ	5		9
		PPH	3		9
		MH	70		20
	R	eP	06	47	21
		i			28
		ePP		51	35
		i(S)E		59	04
	Hf	eP		47	19
		e		51	01
	Pr	eP		47	23
		e		49	15
		ePP		51	39
		ePKKP	07	03	39
	Bt	eP	06	47	27
		e		50	24
		ePP		51	42
		iNE		57	11
		i(SKS)E		58.3	
		ePKKP	07	03	37
	Kg	eP	06	47	28
		e		50	31

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h m s
May		(continued)	
26	W	eP	06 47 11
		ePP	51 15
		i	52 11
		ePKKP	07 03 43
	Is	eP	06 47 15
		i	23
	CL	eP	15
		e	24
		ePP	51 11
		ePKKP	07 03 50
	T	eP	06 47 15
		ePP	51 14
	Magnitudes and epicenter according to Professor Gutenberg: m=7.0 M=7.1		
	40½ N 30¾ E, 06:33:32		
	BCIS: 40.7 N 31.2 E		
	06:33:30		
26	P	eP	09 46 38
	R	eP	38
	Pr	eP	39
	W	eP	35
		i	42
	Is	iP	36
	CL	eP	42
	T	eP	40
	USCGS: 41 N 31 E		
	09:36:33		
26	P	eP	16 00 05.2
		iNEZ	09.3
		iSNE	34.7
	D	iP	02.0c
		i!	04.4
	R	iPNEZ!	15 59 56.3c
		iNE!	58.0
		iSN!	16 00 15.2
	BB	iP!	15 59 55.5
	Hf	iP!	44.4
	Pr	iP!	46.8c
	EC	eP	44.1
		iP	47.6
		iS	52.5
	W	iP	16 00 25.0d
		i	27.4
	Is	iP	21.6
		i	27.6
		iSN	01 12.8
	CL	iP	00 18.1
		i	25.2
	T	iP	35.4
	(Barrett: timing deficient; S-P = 9.9 sec.)		
	Magnitude 5.0		
	33°12' N 116°01' W		
	15:59:33		
	Felt generally in Imperial Valley (Westmorland IV, Calipatria V) and as far as San Diego and Desert Center.		
27	W	iP	17 01 07
	Is	iP	07
	CL	eP	10
	BCIS: Aleutians, 16:53.5		

Date	Sta.	Phase	h m s
May			
27	P	i	11 03 33
	PX	eSN	10 24
		eRNZ	17.2
	D	eP	03 29
		i	36
	R	eP	25
		i	34
	Pr	iP	21c
		i	29
	W	iP	41
		i	49
	Is	iP	39
		i	47
	CL	eP	37
	T	e	46
		e	52
	USCGS: 4 N 83 W, 10:55:16		
27	PX	iPSN	11 28.5
		eSSN	33.6
	USCGS: 40½ N 31 E		
	11:01:26		
27	Pr	e	13 26 14
	W	e	25 44
		i	53
		i(P)	58
		i	26 08
	Is	iP	25 55
	CL	eP	56
	T	e	55
	USCGS: 51½ N 177½ W		
	13:17:37		
27	PX	iLN	20 16.0
	Pr	eP	05 54
		i	06 10
		i	18
	W	eP	05 32
		i	44
	Is	eP	34
		e	06 41
	CL	eP	39
	USCGS: 52 N 170½ W		
	19:57:56		
28	PX	eR	00 51.8
	R	eP	30 32
		e	58
	Pr	iP	32
	W	iP	32
		i	44
		i	58
	Is	iP	35d
		i	46
	CL	eP	39
	T	eP	40
	USCGS: Samoa, 00:19:10		
28	PX	iLN	01 37.0
	D	eP	27 10
	R	eP	12
	Pr	iP	19
		i	29
	W	iP	26 51
		i	27 02
	Is	iP	26 53
		i	59

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h m s
May		(continued)	
28	CL	eP	01 26 57
		e	27 03
	T	eP	26 48
		i	55
		i	27 04
	USCGS: 53 N 169 W		
	01:19:26		
28	Pr	eP	01 33 19
	W	iP	32 51
	Is	iP	53
	CL	eP	33 04
	Same epicenter as preceding		
	01:25:26		
28	Pr	eP	03 50 52
	W	iP	52
		epP	51 43
	Is	iP	50 54
		epP	51 45
	CL	eP	50 58
		epP	51 51
	T	eP	01
	Pacific; depth 200± km		
28	Pr	i(P)	06 04 52
	W	iP	47d
		i	05 01
		i	12
		i	20
	Is	iP	04 49
		e	05 21
	CL	eP	04 52
	These readings are too early for P of the next.		
28	PX	ePSNZ	06 20 22
		eSSNZ	26.4
	R	e	11 14
	Pr	e	10 45
		e	11 37
	W	e	10 07
		e	41
	Is	e	48
		e	11 19
	CL	e	10 38
	USCGS: 25½ N 95 E		
	05:51:30		
	Shillong: 25.5 N 94.2 E		
	05:51:45		
28	P	iPNEZ	23 31 51c
		epP	32 56
	R	iP	31 52c
		epP	32 55
	Hf	eP	00
	Pr	iP	31 53c
		epP	32 56
		i	35 19
	Kg	eP	31 47
	W	iP	50
		ipP	32 53
		i	35 13
	Is	iP	31 52c
		ipP	32 53
		i	35 16
	CL	iP	31 56c
		epP	32 58

Date	Sta.	Phase	h m s
May		(continued)	
28	T	eP	23 31 56c
		e	32 27
		epP	58
	USCGS: 15 S 168 E		
	23:19:39, 300 km		
29	D	iP	01 22 14
	R	iP	12
	Hf	eP	05
	W	iP	25d
		i(pP)	47
	Is	iP	23d
		i(pP)	47
	CL	eP	21
		e(pP)	44
	T	eP	28
	Depth 90 km?		
	BCIS: 18 S 71½ W, 01:11:10		
29	PX	eR	03 04.5
	Is	e(P)	02 43 01
	CL	e(P)	07
29	P	eP	07 34 48
	PX	iSNZ	41 56
		iSSN	45 30
		iNZ	46.8
		eRNZ	47.9
	R	eP	34 47
	Hf	eP	54
	Pr	eP	42
		i	52
	Kg	e(P)	35 01
	W	eP	02
		i	09
	Is	eP	00
		i	08
	CL	eP	01
	T	e	23
	BCIS: 14 S 112 W		
	07:26:07		
29	D	e(P)	07 50 10
	R	eP	03
		e	09
	Pr	eP	49 58
	W	e(P)	50 19
	Is	e(P)	19
	CL	eP	18
		e	24
	T	e	33
29	Hf	iP'	08 09 49
		e	10 04
	W	eP'	09 42
		i	49
		i	10 01
	CL	eP'	09 45
		i	10 04
	BCIS: 4½ S 121½ E		
	07:51:22		
29	W	iP	10 20 34
	Is	eP	25
		e	33
	CL	eP	36
	USCGS: 31 N 142 E		
	10:08:27		

(continued)

Date	Sta.	Phase	h m s
May			
29	Hf	eP	21 43 02
	W	iP	42 45
		i	43 18
	Is	iP	42 48
	CL	iP	51
	T	eP	47
		e	43 20
	Aleutians? Too early for earthquake in Greece at 21:33.2		
29	W	iP	22 30 05
	Is	eP	08
	CL	eP	11
	JMA: 42.4 N 139.7 E 22:18:37		
30	P	eP	00 29 45
	PX	eR	56.0
	R	iP	30 50
		eSN	40 35
	Hf	eP	30 55
	Pr	iP	49
	Kg	iP	46
	W	iP	48
		i	31 14
	Is	iP	30 50
	CL	iP	57
	T	eP	59
		iSN	40 53
	USCGS: 20 S 175 W 00:18:52		
30	P	eP	08 50 35
	R	eP	36
	Pr	eP?	34
	W	iP	35
		i	51
	Is	iP	36
	CL	eP	40
30	W	eP	10 49 24
		i	31
		iS!	50 21
	Is	i	49 30
		iS	50 23
	CL	eP	49 21
		e	30
		eS	50 21
	T	eP	49 02
		i	09
		iSNEZ	40
	Nevada?		
30	D	e	17 29 50
	R	eP	34
		i	48
	Hf	e(P)	12
		e	21
	Pr	iP	25
		i	36
	W	eP	51
		i	30 05
	Is	eP	29 51
		i	30 05
	CL	eP	29 46
		e	30 01
	Mexico		
30	W	iP	18 09 31
		i	53
	CL	e	40
	BCIS: Aleutians, 18:02.1		

Date	Sta.	Phase	h m s
May			
30	R	eP?	18 28 52
	Pr	eP	50
		e	29 09
	W	iP	28 46
	South Pacific		
30	PX	e(P)	19 52 52
		iSN	20 02 36
		eLN	12.6
	R	eP	19 52 52
		i	56
	Hf	e	57
	Pr	iP	51
	Kg	eP	46
	W	iP	51
	Is	iP	53
		i	53 26
	CL	eP	02
	BCIS: Aftershock of 00h (20 S 175 W), 19:40:58		
30	R	iP	20 01 10
		i	21
	Hf	iP	17
	Kg	eP	00 57
	W	iP	57c
		i	01 01
	Is	iP	00 59
	CL	iP	01 02c
		e	13
	T	eP	00 56
	JMA: 41.2 N 142.6 E 19:49:30, 50 km		
30	P	iP	21 09 33
	R	iP	36
	Hf	iP	40
	Pr	iP	35c
		ipP	11 43
	W	iP	09 35c
		ipP	11 40
		e(sP)	12 44
	Is	iP	09 36c
		ipP	11 43
	CL	iP	09 40c
		epP	11 46
	USCGS: 22 S 179 W 20:58:15, 600 km		
30	P	e(P)	21 35 24
	Pr	e	28
	W	eP	34 57
		i	35 03
		i	14
	Is	i	13
	CL	e	22
	T	e(P)	02
		e	09
		e	18
	BCIS: north of Fox Is. 21:27.9		
30	W	iP	21 38 46
	CL	eP	52
30	P	eP	23 09 14
	R	eP	13
	Pr	eP	13
	W	iP	13
	Is	iP	14
		i	25
	CL	eP	18
	BCIS: Aftershock of 00h (20 S 175 W), 22:57:16		

Date	Sta.	Phase	h m s
May			
31	R	e	01 15 16
	Pr	e	10
	W	e	21
	Is	i	21
	CL	e	17
	Atlantic. BCIS: 01:03.9		
31	P	iPNEZ!	02 27 45d
		i	50
		e	29 35
		ipP	45
		esP	30 47
	PX	iSNE	37 06
		iE	16
		eN	41.1
		i(SSS)N	46 34
		i(G)N	50.1
		A	T
	PZ	¾	1
	PH	½	1
	SH	2	2½
	(Surface waves very small)		
	R	iPEZ	02 27 40d
		i	52
		ipP	29 42
		isP	31 09
		iSNE	36 59
		iPKKP	46 21
	Pr	iP	27 37d
		i	44
		ipP	29 39
		e	30 02
		eS	36 53
		ePKKP	46 14
	Bt	iP!	27 35d
		ipP	29 35
	Kg	iP	27 53d
		ipP	29 56
		eS	37 22
		iPKKP	46 17
	W	iP!	27 51d
		ipP	29 53
		eS	37 18
		iPKKP!	46 16
	Is	iP!	27 50d
		i	28 08
		ipP	29 52
		i	31 18
		eS	37 18
	CL	iP	27 48d
		i	28 04
		ipP	29 50
		eS	37 11
		iPKKP	46 18
		epP'P'	56 38
	T	iPNEZ	27 55d
		ipP	29 57
		iSNE	37 26
	From body waves m=6½, M=6¼. USCGS: 27½ N 63 W 02:16:27, 600 km		
31	P	eP	03 17 39
	PX	eSN	23 48
		eLN	26.0
	R	e(P)	17 49

(continued)

Date	Sta.	Phase	h m s
May		(continued)	
31	Hf	e	03 17 59
	Pr	e?	43
		e(P)	48
		i	56
	Kg	e	26
	W	iP	20
		i	32
	Is	eP	27
		i	34
	CL	e	32
		e	38
	T	eP?	14
		e	22
		e	29
	USCGS: 54 N 163½ W 03:10:18		
31	P	eP	07 52 21
	PX	i(S)N	56 15
		iLN	57 16
	R	i	52 12
	Hf	e(P)	00
	Bt	eP	02
		i	13
	Kg	e	38
	W	iP	34
	Is	iP	32
		e	40
		i	55
	CL	eP	29
	T	e	45
	BCIS: near coast of Colima, 07:47.9		
31	R	e	16 27 55
	Pr	e?	37
		i	48
	Is	eP	20
		i	48
	CL	eP	22
	USCGS: 53 N 169 W 16:19:39		
31	D	iP	17 02 51
	R	iP	50
	Is	iP	03 00
31	R	eP	20 16 23
	Pr	eP	22
	Is	eP	13
		i	25
	CL	eP	19
31	P	iPNEZ	22 06 30d
	PX	iSN	13 38
		iGN	19.2
		iR	22.4
	D	iP	06 27d
		i	49
	R	iP	24d
		i	43
		i	59
	Hf	iP	13d
	Pr	iP	19d
	Kg	iP	43d
		i	58
	Is	iP!	37d
		i	51
		i	58

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
May		(continued)			
31	CL	iP	22	06	32
	USCGS: $3\frac{1}{2}$ N 77 W				
	21:57:46, 100 km				
31	P	iP	22	25	40d
	PX	eR		39.6	
	R	iP		25	44d
		i		26	03
		i			14
		i			38
	Hf	eP		25	54
	Pr	iP!			51d
		i		26	03
		i			10
	Kg	eP		25	27
	Is	iP!			31d
		i			38
		i			44
		i			49
	CL	iP			35d
		i			46
		eScP		31	03
	USCGS: 51 N $179\frac{1}{2}$ W				
	22:17:10				
June					
1	D	eP	01	29	26
	R	eP			24
	Pr	e(P)			27
	Kg	e(P)			06
	Is	iP			06
	CL	eP			09
	BCIS: $57\frac{1}{2}$ N $137\frac{1}{2}$ W				
	01:23:31				
1	D	iP	08	00	10
	R	iP			09
	Hf	iP			08
	Pr	eP			02
	Is	iP			18
	CL	eP			15
	BCIS: off north coast of				
	Chile, 07:49.0				
1	P	iP	16	10	29
		e			36
		i			48
	PX	eRNZ		19.6	
	R	iP		10	31
	Pr	iP			39d
	Kg	eP			15
	W	iP			10
		e(ScP)		16	45
	Is	iP		10	16d
		i			25
	CL	iP			18d
		e			28
		e(ScP)		16	50
	USCGS: $59\frac{1}{2}$ N $150\frac{1}{2}$ W				
	16:03:52				
1	P	ePNEZ	19	43	05
	PX	iSNZ		43.5	
		eR		55.7	
		i(L)N		57.3	
	R	eP		43	00
	Hf	eP		42	49
	Pr	e(P)			50
		i			54
	Kg	eP		43	19

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
1	W	iP	19	43	15
	Is	iP			13
	CL	eP			11
	T	ePE			25
	USCGS: 1 N 91 W, 19:35:08				
1	PX	eR	22	49.2	
	D	eP		36	38
		e			51
		e		37	02
	R	eP		36	38
		e			56
	Pr	eP			46
		i		37	03
	W	iP			24
		i			40
	Is	iP		36	26
		i			42
		i		37	07
	CL	eP		36	31
		e			46
		iPcP		38	16
	BCIS: $51\frac{1}{2}$ N $175\frac{1}{2}$ W				
	22:28:20				
2	W	e	05	48	30
	Is	e			14
		e			30
	BCIS: mid-Atlantic				
	05:35.7				
2	P	iP	10	04	37
	R	iP			38
	Hf	iP			45
	Pr	iP			39d
	W	iP			38d
	Is	iP			40d
	CL	iP			45d
	BCIS: near 24 S 179 W				
	09:52.3				
2	P	e	21	32	02
	R	e			05
	W	iP			34
		i			45
		i			50
	Is	i			51
	CL	eP			40
	BCIS: $52\frac{1}{2}$ N 160 E				
	21:21:45				
2	PX	iLNZ	24	00	43
	R	eP	23	58	33
		i(S)	24	00	30
	Pr	eP	23	58	31
		i(S)	24	00	10
	Is	e(P)	23	59	01
		iS	24	00	22
	CL	eP	23	58	55
		eS	24	01	31
	BCIS: 29 N 112 W, 23:56:15				
4	P	eP	00	47	57
	PX	iN		56	38
	Pr	i		48	10
	Is	i(P)		47	46
		i			57
	CL	eP			51
		e		48	00
	USCGS: 54 N 165 W				
	00:40:35				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June					
4	P	iPNEZ	11	27	26c
		ePP		30	45
	PX	i(SKS)		37	48
		e(S)N		38	43
		eR		53	16
	R	iPNEZ		27	29c
		e			55
	Pr	iP			31c
	Kg	iP			22c
	Is	iP!			26c
		i			35
		iPP		30	33
	CL	iP		27	31c
		e		28	00
		ePP		30	50
	USCGS: $10\frac{1}{2}$ S $166\frac{1}{2}$ E				
	11:14:50				
4	P	iPNEZ!	17	16	08c
		ipPNEZ		18	11
		isPNEZ		19	12
	PX	eSNZ		25	16
		iScSNE			29
		isSN		28.9	
		iNZ		37.0	
			A		T
		PZ	$\frac{3}{4}$		1
		PH	$\frac{1}{2}$		1
		SH	1		3
	R	iPEZ!	17	16	10c
		ipP		18	14
		isP		19	15
		iSE		25	19
		iE			29
	Pr	iP!		16	12c
		i			32
		ipP		17	14
		isP		19	15
	Kg	iP		16	05c
		i			20
		ipP		18	08
	Is	iP!		16	11c
		ipP		18	14
		isP		19	16
	CL	iP		16	16c
		ipP		18	19
		esP		19	19
	Magnitude $6\frac{1}{4}$-$6\frac{1}{2}$				
	USCGS: $17\frac{1}{2}$ S 178 W				
	17:05:02, 550 km				
4	Pr	eP	20	10	37
	Kg	eP			36
	Is	iP			37
	CL	eP			42
	USCGS: $18\frac{1}{2}$ S 176 W				
	19:59:10, 250 km				
4	P	iP'	20	37	23
		i			36
		iSKPNEZ		40	42
		i			53
	R	iP'		37	21
		i			37
		ePP		39	37
		iSKP		40	45
		i			55

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
4	Pr	eP'	20	37	24
		e			38
		ePP		39	49
		iSKP		40	49
		i			58
	Kg	e		37	32
		iSKP		40	36
	Is	iP'		37	20
		i			34
		iPP		39	32
		iSKP		40	37
		i			47
		i		41	03
	CL	iP'		37	20
		e			35
		ePP		39	38
		e			50
		iSKP		40	41
	BCIS: $2\frac{1}{2}$ S $101\frac{1}{2}$ E				
	20:18:05				
4	R	eP	22	45	58
	Pr	eP			58
		e		46	13
	Is	eP		45	53
		i			58
	CL	eP			58
	BCIS: 16 S 173 W				
	22:34:24				
5	P	eP	07	26	26
	PX	iSNZ		34	40
		eSSN		38	40
		iGN		40	24
	R	eP		26	22
		i			31
	Pr	eP			25
	Kg	e(P)			33
	Is	iP			19
	CL	eP			16
	USCGS: $52\frac{1}{2}$ N 35 W				
	07:16:17				
5	P	eP	08	33	37
	PX	eRNZ		43.0	
	R	eP		33	38
		e		35	04
	Pr	iP		33	49
	Kg	eP			23
	Is	eP			20
		i			33
		i		34	44
	CL	eP		33	25
		i			27
	USCGS: Southern Alaska				
	08:26:53				
5	Is	e(P)	09	17	02
	USCGS: 53 N 167 W				
	09:09:40				
5	P	eP	12	15	38
	Pr	iP			49
	Is	iP			27
	CL	eP			39

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June 5	P	iPNZ	14	07	34d
		i			44
	PX	iSNZ		15	44
		eSSN		19	24
		eGN		21.6	
		eR		24.5	
	R	iP		07	37d
	Pr	iP			43d
		i		08	00
	Kg	iP		07	22d
	Is	iP!			23d
	CL	iP			28d
	USCGS: 53 N $162\frac{1}{2}$ E 13:57:42				
5	PX	e	22	29.7	
		ePP		33.2	
		iSS		49.5	
		eSSS		53.8	
		eLNZ	23	07.4	
	BCIS: 36 S 16 W, 22:12:55				
6	P	eP	03	38	49
	PX	eSNZ		45	36
		eLNZ		49.3	
	R	eP		38	52
		e		39	01
		ePcP		40	26
	Pr	iP		38	59
	Kg	eP			44
	Is	iP			39
		e		40	37
	CL	eP		38	43
		i			53
	USCGS: 52 N 178 W 03:30:22				
6	P	eP	05	46	20
		i			35
	PX	eSNZ		52	37
		eLNZ		56.0	
	R	iP		46	25c
		i			41
	Pr	iP			32c
		i			48
		i		45	01
	Kg	eP			07
		i			23
	Is	iP			11c
		i			23
	CL	iP			15
		i			31
		e(ScP)		52	00
	USCGS: 52 N $171\frac{1}{2}$ W 05:38:27				
6	Pr	iP	06	04	04
	Is	iP			20
	CL	iP			14
6	Pr	e	06	22	51
	Is	e			30
	CL	e			33
	BCIS: Andreanof Is., 06:14.9				
6	PX	eLN	13	59.9	
	R	e		49	30
	Pr	e			35
	Is	iP			14
	CL	eP			21
	BCIS: 52 N $174\frac{1}{2}$ W, 13:41:30				

Date	Sta.	Phase	h	m	s
June 6	PX	ePP	20	08	54
		iSP		18	04
		eR		39	30
	CL	ePP		08	41
	USCGS: 3 N $126\frac{1}{2}$ E, 19:49:47 Kiruna; magnitude 6.1				
7	PX	e	03	05.4	
		e		08.0	
	Pr	iP	02	55	20
		i			28
	Is	iP		54	59
		i		55	08
		i		57	09
	CL	eP		55	04
	USCGS: $51\frac{1}{2}$ N 179 W 02:46:40				
7	P	iP	21	04	34
	R	iP			30c
	Hf	iP			41
	Pr	iP			36c
	Is	iP			36c
	CL	iP			41c
	BCIS: $19\frac{1}{2}$ S 180, 20:52:24				
7	P	eP	22	51	09
	R	iP			04
	Pr	iP			11
		i			22
	Is	iP			49
	CL	iP			53
8	PX	eR	04	06.9	
	USCGS: 3 S $147\frac{1}{2}$ E 03:23:33				
8	R	eP	04	07	00
	Pr	iP			01
	Is	iP			00
	CL	iP			03
	BCIS: New Hebrides 03:54:00				
8	PX	eGN	06	46.5	
		eR		50.2	
	R	iP		21	08
		i			14
	Pr	iP			11
		i			17
	Kg	eP			07
	Is	eP			07
	CL	eP			08
		e			14
	USCGS: $2\frac{1}{2}$ S 150 E 06:07:47				
8	P	iP	17	23	36
	PX	eSNZ		33.6	
		eGN		42.7	
		eR		45.3	
	Hf	eP		23	46
	Pr	iP			39d
	Kg	iP			34d
	Is	iP			40d
	CL	iP			45d
	USCGS: $16\frac{1}{2}$ S $173\frac{1}{2}$ W 17:12:03				
8	R	e(P)	22	27	16
	Is	i(P)			16
	CL	eP			18
	BCIS: foreshock of next 22:14:20				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June 8	PX	eP	22	39.2	
		e(S)		51	40
		e(R)	23	06.4	
	R	eP	22	39	13
		e			23
	Kg	e			07
	Is	iP			13
		i			23
	CL	iP			16
	USCGS: $19\frac{1}{2}$ S 168 E 22:26:17				
9	R	eP	01	21	21
	Kg	eP?			43
		e			53
	Is	eP			38
		i			43
	CL	eP			34
		e			40
	Mexico				
9	Pr	e	20	59	15
	Is	e		58	57
	CL	i		59	02
	BCIS: 55 N $167\frac{1}{2}$ W 20:51:33				
9	P	eP	23	49	14
	R	eP			15
		e			27
		e			37
	Pr	i			39
	Is	iP			13
	CL	eP			17
		e			39
	Pacific				
10	MW	eP	00	54	39
	R	iP			41
		e			52
	Is	iP			41
	CL	eP			45
	BCIS: Tonga region 00:42.8				
10	PX	eP	01	15.9	
	P	iP'NEZ		18	58
		i		19	30
		iPP		20	25
		i			33
		i			41
		iSKP		22	19
	PX	iSKSNE		25	47
		iNE		27	20
	P	e?		28	38
		iPKKP			53
	PX	e		29	14
		iSP		30	16
	P	eSKKP		32	43
	PX	iSSN		37.0	
		iN		40.1	
		iGN		50.8	
		eR		58.0	
				A	T
		P'Z		0.2	$\frac{3}{4}$
		PPZ		$\frac{1}{2}$	$2\frac{1}{2}$
		PPH		0.3	2
		MH		6	20
		MZ		5	20

(continued)

Date	Sta.	Phase	h	m	s
June 10		(continued)			
	R	eP'	01	18	59
		i		19	29
		iPP		20	37
		eSKP		22	21
		iSKSE		25	50
		iPKKP		28	50
	Hf	ePP		20	56
		eSKP		22	27
	Pr	eP'		18	59
		ePP		20	32
		eSKP		22	20
		iPKKP		28	50
	Kg	eP'		18	53
		e		19	24
		ePP		20	21
		e		21	16
		eSKP		22	16
		ePKKP		28	57
		eSKKP		32	43
		e		36	28
	Is	iP'		18	55
		i		19	26
		iPP		20	24
		iSKP		22	19
		iPKKP!		28	53
		i		29	36
		e		32	31
		iSKKP			47
		e		36	21
	CL	eP'		18	58
		e		19	33
		iPP		20	34
		ePKKP		28	54
	Magnitude $6\frac{3}{4}$ USCGS: 9 S 117 E 00:59:54				
10	R	eP	01	40	35
	Pr	iP			42
	Is	eP			20
	CL	eP			25
	BCIS: Andreanof Is. 01:32.1				
10	MW	eP	02	39	23
		e			31
	R	e			34
	Pr	i			42
	Is	i(P)			22
	CL	e?			10
		i(P)			29
	USCGS: $51\frac{1}{2}$ N 176 W 02:31:00				
10	P	iPNEZ!	03	25	57c
		iSNE		36	34
	PX	iSSN		42	40
		eGN		49.2	
				A	T
		PZ		$1\frac{1}{2}$	1
		PH		$1\frac{1}{4}$	1
		(Surface waves small)			
	R	iPNEZ	03	26	00c
		i			15
		i			20
		ePP		29	32
		e(PKKP)		43	32

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June		(continued)			
10	Hf	iP	03	26	08
	Pr	iP			02c
		i			24
		iPP		29	39
	Bt	iP		26	06c
	Kg	iP		25	49c
	Is	iP!			52c
		i		26	13
		i(PKKP)		43	36
	CL	iP		25	57c
		e(PKKP)		43	36
	Depth 50 km? Magnitude $6\frac{3}{4}$				
	USCGS: 13 N $143\frac{1}{2}$ E				
	03:13:11				
10	P	iP	06	16	58
	R	iP		17	01
	Pr	iP			01
	Kg	eP		16	58
	Is	iP		17	00
	CL	eP			04
	BCIS: 19 S $169\frac{1}{2}$ E				
	06:04:10				
10	R	eP	17	51	36
	Pr	iP			44
		i			56
	Kg	eP			19
	W	iP			21
		i			28
	CL	eP			27
		e			39
	Aleutians?				
11	P	eP	04	11	54
	PX	eSN			17.9
		iGN			20.6
	R	eP		11	58
		e		12	11
	Hf	eP			09
	Pr	iP			06
	Kg	eP		11	40
	W	iP			40c
		i			49
		i		12	44
		e(ScP)		18	15
	Is	eP		11	43
	CL	eP			47
	USCGS: 54 N 165 W				
	04:04:33				
11	Pr	e(P)	04	49	47
	W	eP			20
		i			26
		i			36
	Is	eP?			28
		i			38
	CL	e?			27
	BCIS: 52 N 176 W				
	04:41:18				
11	P	iP	07	11	47c
	R	iP			51c
		i		12	06
	Hf	iP		11	59
	Pr	iP			56c
	Kg	iP			35

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
11	W	iP!	07	11	36c
		i		12	04
	Is	iP		11	37c
	CL	iP			42c
	USCGS: near SE coast of Kamchatka, 07:01:39				
11	P	iPNEZ	15	02	20c
		i(pP)			34
		isP			43
	PX	iPPNZ		05	57
		iSNEZ		12	48
		iPSN			14.3
		eSSN			18.0
		eSSSN			21.5
		iGN			24.3
		iRNZ			28.0
			A		T
		PZ	2		3
		PH	1		4
		SH	20		20
		MH	20		26
	R	iPNEZ	15	02	21c
		ipP			38
		isP			44
		iPP		06	03
		eSNEZ		12	44
		eP'P'		28	29
	Hf	eP		02	28c
		ipP			45
		isP			50
	Pr	iP			21c
		ipP			36
		isP			44
	Kg	iP			19c
		ipP			37
		ePP		05	46
		eP'P'		28	31
	W	i(P)		02	18
		iPEZ!			22c
		i			35
		isP			45
		iPKKP		20	24
		iP'P'		28	30
	Is	e(P)		02	19
		iP!			23c
		isP!			44
		iPKKP		20	22
		iP'P'		28	29
	CL	e(P)		02	23
		iP			27c
		ipP			44
		ePKKP		20	20
		eP'P'		28	29
	Depth 60 km				
	Magnitudes: m=6.8, M=7.0				
	USCGS: 30 S 178 W				
	14:49:47, 100 km				
	Earliest readings at W, Is, CL represent small clear phases, possibly P of another earthquake.				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June					
11	P	eP	16	59	29
		iSNE	17	00	30
	Kg	eP	16	59	08
		iS	17	00	04
	W	eP	16	58	54
		i			59
		iSEZ		59	42
	CL	eP		58	54
		i			59
		eS		59	42
	Magnitude 4.2, Nevada				
11	PX	eP	19	03	30
		iPPEZ		07	50
		eSKSE		13	57
		iSKSNE		14	10
		iN			14.6
		iN			15.6
		eGN			31.9
		eR			36.5
			A		T
		PPZ	$\frac{3}{4}$		5
		MH	12		20
		MZ	10		20
	R	eP	19	03	35
		e		06	50
		iPP		07	46
	Pr	eP		03	39
		iPP		07	59
	Kg	eP		03	26
	W	iP			24
		i			36
		i		06	38
		iPP		07	30
		iPKKP		19	43
		e(P'P')		27	30
	Is	eP		03	27
		iPP		07	37
		i		08	19
		e		14	03
		e(PKKP)		19	23
		iPKKP			44
		i(P'P')		27	29
	CL	eP		03	30
	Magnitude $6\frac{3}{4}$				
	USCGS: 18 N $120\frac{1}{2}$ E				
	18:49:24				
11	Pr	iP	19	23	53
	W	iP			51
	Is	iP			52
	CL	iP			57
	Not a phase of the preceding.				
11	P	ePNZ	24	02	13
		iNZ			28
	PX	eSNZ		08	50
		eR			11.9
			A		T
		PZ	$\frac{1}{2}$		4
		SH	$\frac{1}{2}$		2
		MH	10		20
	R	eP	24	02	16
		i			28
		eSNE		08	56

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
11	Pr	iP	24	02	24
		i			39
		i			52
	Bt	eP			27
		iSE		09	16
	Kg	e		02	03
		i			12
	W	iP			00
		i			07
	Is	iP			02
		i			09
		i			18
	CL	eP			06
		i			22
		i			39
	Magnitude 6.1 (Uppsala)				
	USCGS: 52 N 176 W				
	23:53:57				
	First of a series of shocks from about the same epicenter. 15±, mostly small, recorded between 00h and 08h. Only the larger included here				
11	R	i	24	07	40
	Pr	i			42
		i			55
	Bt	e			41
		i			55
	Kg	e		08	01
	W	iP		07	14
		i			23
	Is	eP			17
		i			25
	CL	e			20
		i			39
	USCGS: 51 N 177 W				
	23:59:09				
12	Pr	i	00	12	10
	W	i		11	46
		i			56
	Is	i			57
	Probably same epicenter, 00:03:50±				
12	MW	eP	01	38	51
		i		39	02
	R	e			09
	Pr	eP			06
		i			22
		i			34
	Bt	e(P)			08
	W	iP		38	35
		i			43
	Is	i			46
	CL	e			49
	USCGS: $52\frac{1}{2}$ N $175\frac{1}{2}$ W				
	01:30:36				
12	W	eP	02	40	00
		i			11
	CL	e			17
	Aleutians				
12	W	eP	02	42	15
		i			22
	Aleutians				

Pasadena and auxiliary stations, 1957 No. 3

Date June	Sta.	Phase	h	m	s
12	PX	eLNZ	07	47.2	
	Pr	eP		36	55
		i		37	02
	Bt	e			02
	W	eP		36	31
		i			42
	Is	i			43
	CL	e			42
	Aleutians				
12	PX	e(S)N	08	05.7	
		eLN		11.0	
	R	i(P)	07	59	35
	Bt	eP			22
	Kg	e(P)			45
	W	e	08	00	07
	Is	i(P)	07	59	51
	CL	e			50
		e			56
12	P	iPNEZ	08	40	13c
	PX	iSN		49	58
		eNE		50	06
		eSSN		55.0	
		eLN	09	02.1	
			A		T
		PZ	0.2		1½
		PH	0.2		1½
		SH	1		4
		MH	3		20
	R	iP	08	40	15c
		i(pP)			30
		i(sP)			39
	Hf	iP			24c
		i(pP)			37
	Pr	iP			21c
		i(pP)			34
	Bt	iP			23
		e(pP)			38
	Kg	iP			03c
		i(pP)			18
	W	i(P)		39	59
		iP!		40	04c
		i(sP)			30
		iPP		42	44
	Is	iP!		40	05c
		i(sP)			30
		iPP		42	45
	CL	iP		40	09c
	Magnitude 6¼				
	JMA: 41.1 N 142.9 E				
	08:28:35, 40 km				
12	D	iP	10	12	43c
		ipP			54
	R	iP			39d
		ipP			50
	Hf	eP			30
		epP			42
	Pr	iP			34
		ipP			46
	Bt	eP			29
		epP			41
	Kg	eP			54
		epP		13	07
	W	iP		12	52c
		ipP		13	04
		(continued)			

Date June	Sta.	Phase (continued)	h	m	s
12	Is	iP	10	12	51c
		ipP		13	02
	CL	eP		12	48
		epP		13	00
	Depth 40 km				
	USCGS: 11 S 78 W, 10:02:37				
12	R	eP	10	35	20
	Pr	iP			21
	Bt	eP			19
	W	iP			19
	Is	iP			21
	CL	eP			25
13	D	eP	04	17	57
	R	eP		18	02
	Pr	iP			08
	Bt	eP			12
	Is	iP		17	47
		e			59
	CL	eP			51
	BCIS: Andreanof Is.				
	04:09.5				
13	P	iP	10	48	49c
		i			55
		i		49	02
		i			18
		i			34
	PX	iSNEZ		55.2	
		iScSNE		58	48
		iR	11	01.5	
			A		T
		PZ	2		4
		PH	2		4
		SH	100		28
		MH	170		20
	R	iP	10	48	54c
		i		49	00
		i			08
	Hf	eP			04
		i			18
		iScP		54	33
		e			55
	Pr	iP		49	00c
		i			19
		i		54	52
	Bt	iP		49	04c
		i			08
		i			21
		i		50	11
		iScP		54	33
		i			54
		iSEZ		55	51
	Kg	eP		48	36
		i			47
		iScP		54	19
		i			39
	Is	eP		48	40
		i			47
		i		55	07
		i			27
	CL	eP		48	44c
		i			55
		iScP		54	24
		i			44
		i		55	03
	Magnitude 7				
	USCGS: 51½ N 175 W				
	10:40:38				

Pasadena and auxiliary stations, 1957 No. 3

Date June	Sta.	Phase	h	m	s
13	P	e	11	20	15
	R	e		19	40
		e		20	14
	Hf	e?		19	56
		e		20	11
	Pr	e			16
	Bt	e?		19	20
		e		20	11
	Kg	e		21	01
	Is	e		20	17
	CL	e			15
13	P	iP'	20	40	36
		iSKP		43	43
	R	eP'		40	36
		iSKP		43	44
	Hf	iSKP			51
	Pr	iSKP			49
		e		44	01
	Bt	iSKP		43	50
		e		44	02
	Kg	iSKP		43	37
	Is	iSKP			39
	CL	eP'		40	35
		iSKP		43	42
	USCGS: 3 S 101 E				
	20:21:42, 150 km				
13	P	iP	21	19	23
	R	eP			21
	Hf	iP			25
	Pr	iP			25
		e			55
	Bt	iP			24
	Is	iP!			27c
	CL	iP			31
	BCIS: Fiji region, 21:07.3				
13	P	iP'	21	45	58
	R	iP'			59
	Bt	iP'		46	01
	CL	eP'		45	59
	USCGS: ½ N 123½ E				
	21:27:18				
14	P	iP	05	55	23
	R	iP			25
	Pr	iP			26
	Bt	iP			25
	Kg	iP			24
	Is	iP			26
	CL	iP			29
	BCIS: 16½ S 168½ E				
	05:42:38				
14	MW	e	06	05	55
		e		06	09
	R	e		05	58
	Pr	e			57
		i		06	13
	Bt	e			01
	Is	i(P)		05	37
	CL	e(P)			41
14	P	iPNEZ	06	32	35
		i			50
		iPcP		33	04
		iN			20
		iE		34	11
		iSNE		39	11
		iScSNEZ		42	29
		(continued)			

Date June	Sta.	Phase (continued)	h	m	s
14	PX	iR	06	44.8	
			A		T
		PZ	0.2		1½
		SH	½		4
		MH	8		20
	R	iP	06	32	40d
		i			56
		iPcP		33	26
		eSNE		39	09
		iScSNE		42	31
	Hf	iP		32	50
		iScP		38	12
	Pr	iP		32	46d
		i		33	01
		i			12
		i			30
		eS		39	31
	Bt	iP		32	50d
		i		33	06
		iSNE		39	37
	Kg	eP		32	23
		e			39
	Is	iP			26d
		i			36
		i			51
		i		33	18
		iScP		37	59
	CL	iP		32	30d
		iScP		38	01
	Magnitude 6 - 6¼				
	USCGS: 52 N 175½ W				
	06:24:20				
14	R	eP	18	06	29
	Pr	iP			29
	W	iP			27
	Is	iP			29
	CL	eP			33
	Pacific				
15	P	iP'	01	04	29
		iPP		10	00
	PX	ePcPP'		13	04
		eSKKS		17	19
		ePPS		24.2	
		eNZ		30	34
		iSSNZ		31	53
		eSSSZ		38.3	
		eRNZ	02	07.3	
			A		T
		PPZ	0.6		4
		MH	7		20
		MZ	5		20
	R	eP'	01	04	29
		iPP		09	57
	Hf	eP'		04	28
	Pr	iP'			28
		ePP		09	53
	Bt	iP'		04	28
	Kg	eP'			30
	Is	iP'			30
		i		06	05
		iPP		10	01
	CL	iP'		04	30
		iPP		10	03
	Pasadena distant 176°				
	Magnitude 6 - 6¼				
	USCGS: 34 S 56 E, 00:44:15				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June					
15	P	eP	18	26	18
		iNZ			24
	PX	iSNZ		32	28
		iLNE		35.8	
			A		T
	MH		3		20
	R	ePZ	18	26	16
		e			28
		iSE		32	35
	Hf	eP		26	25
	Pr	iP			21d
		i			34
	Bt	iP			26d
		i			41
		iSE		32	55
	Kg	eP		25	57
	W	iP!			59d
		i		26	11
		iScP		31	47
	Is	iP		26	01d
		i			12
		i			36
		eScP		31	48
	CL	iP		26	05d
		iScP		31	51
	Magnitude 6				
	USCGS: 52 N 171 W				
	18:18:20				
16	Pr	e	02	25	38
	Is	iP			11
	USCGS: 53 N 169 W				
	02:17:23				
16	PX	eLN	08	40.3	
	R	e(P)		37	08
		e			11
	Is	eP			39
		i			50
16	Pr	iP	12	14	57
	Is	iP			58
17	P	iPNEZ	06	28	12d
	PX	eSNZ		37	32
		eGN		46.4	
		eR		48.9	
	R	iP		28	14
	Hf	eP			26
		i			32
	Pr	iP			14d
		i			36
	Kg	iP			10
	Is	iP			15d
	CL	iP			19d
	USCGS: 15 S $173\frac{1}{2}$ W				
	06:16:44				
17	D	e	07	40	48
		e			58
	R	e			42
		e		41	01
	Pr	e		40	59
	Is	eP			24
		i			36
	CL	e			35
	USCGS: 52 N $174\frac{1}{2}$ W				
	07:32:25				

Date	Sta.	Phase	h	m	s
June					
17	P	eP	16	13	47
	W	iP			43
	Is	iP			44
	CL	eP			48
	BCIS: Kurile Islands				
	16:03.0				
17	Pr	iP	18	59	40
		e	19	00	02
	W	iP	18	59	16
	Is	iP			18
	CL	eP			23
	Aleutians				
18	P	iP'	02	31	17
		ePP		32	48
	PX	ePS		42	38
		iSS		49.9	
		eR	03	07.0	
	R	eP'	02	31	13
	Hf	eP'			15
	Pr	e			20
	Is	eP'			12
		ePP		32	41
	CL	eP'		31	10
		e			15
		e		32	31
		ePP			41
	Magnitude 6±				
	USCGS: $14\frac{1}{2}$ N 96 E				
	02:12:12				
18	P	iP	05	56	56
		e		57	15
	R	iP			00
		e			17
	Is	iP		56	48
	CL	iP			54
	JMA: 41.6 N 143.0 E				
	05:45:25, 80 km				
18	R	e(P')	11	37	27
	Pr	e(P')			22
	Is	e(P')		36	59
	CL	e(P')			59
	USCGS: 18 N $120\frac{1}{2}$ E				
	11:18:53, 60 km				
18	P	ePP	15	08	58
	PX	iSKSN		14	22
		iPS		18	44
		iSSN		25.7	
		eGN		39.5	
		eR		50.0	
	R	ePP		08	59
	Pr	eP'		07	26
		e		08	22
		ePP		09	03
	Is	eP'		07	17
		ePP		08	49
	CL	eP'		07	19
		ePP		08	50
	Magnitude $6\frac{1}{2}$±				
	USCGS: 14 N 96 E, 14:48:17				
18	Is	iP	17	50	52
	CL	eP			53
	BCIS: South of Honshu, Japan				
	17:38.4				

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June					
18	P	eP	18	09	11
		i			19
		i			27
		ePP		12	41
	PX	iSKS		19	24
		eSN			56
		ePSNZ		20	15
		iPPS		21	18
		eSSN		25.0	
		iGN		33.0	
		iRNEZ		37.4	
			A		T
	PZ		0.2		$1\frac{1}{2}$
	SH		$\frac{1}{4}$		3
	MH		7		20
	R	eP	18	09	13
		i			28
		ePP		12	46
	Hf	ePP			55
	Pr	iP		09	14
		i			26
		e		12	04
		ePP			52
	Kg	eP		09	10
		e			25
		e			52
	Is	iP			12
		i			23
		i			37
	CL	eP			15
		i			30
		i			58
	Magnitude $6\frac{1}{4}$				
	USCGS: 25 S 170 E				
	17:56:03				
18	Pr	eP	20	55	08
	W	eP			03
	Is	eP			07
	CL	eP			11
18	P	iP	21	31	56
	Pr	iP		32	08
	W	iP		31	46
		i			53
		i		32	00
	Is	iP		31	47
	CL	eP			52
	BCIS: 51 N 180, 21:23:20				
19	P	eP	01	41	58
		i		42	04
		i			08
	PX	ePP		45	00
		iSNZ		52	04
		iSSN		57	20
		eGN	02	02.9	
		eRNZ		05.7	
			A		T
	PZ		$\frac{1}{4}$		$1\frac{1}{4}$
	PH		0.2		1
	SH		0.6		4
	MH		8		20
	R	iP	01	42	01
		i			10
		eSN		52	06

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
19	Pr	iP	01	42	01d
		i			06
		i			11
	Kg	eP		41	59
		i		42	08
	W	iP			02d
		i			07
		i			11
	Is	iP			03d
		i			08
		i			13
	CL	eP			07d
		i			16
	Magnitude $6\frac{1}{4}$-$6\frac{1}{2}$				
	USCGS: 24 S $175\frac{1}{2}$ W				
	01:29:48				
19	P	iP	03	05	58d
	R	eP		06	00
	Pr	iP			01d
	W	iP!			00d
	Is	iP!			02d
	CL	iP			05d
	USCGS: Fiji Islands				
	02:55:03, 600 km				
19	P	eP	05	30	16
	R	eP			19
	Pr	iP			26
	W	iP			05
		i			09
	Is	iP			06
	CL	eP			11
	USCGS: 51 N 179 E				
	05:21:37				
19	P	iPNEZ	08	13	42
		i			47
		ePP		16	39
	PX	iSE		23	48
		iPSN		24	10
		iPPSNEZ		24	30
		eSSE		28.6	
		iSSSN		32.3	
		iGN		34.0	
		iRNZ!		37.4	
			A		T
	PZ		0.2		1
	PH		0.15		1
	SH		$1\frac{1}{4}$		4
	MH		25		20
	MZ		20		20
	R	iP	08	13	42
		ePP		16	42
		eSN		23	52
		ePSN		24	16
	Pr	eP		13	42
		i			45
		i			50
		ePP		16	47
	Kg	eP		13	38
		e			49
	W	iP			41
		ePP		16	31
	Is	iP		13	43
		i			55

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June		(continued)			
19	CL	eP	08	13	47
		i			59
	T	eP			48
		i		14	01
		eSN		24	03
	Magnitude $6\frac{1}{2}$				
	USCGS: $16\frac{1}{2}$ S $176\frac{1}{2}$ E				
	08:01:30				
19	P	eP	18	17	57
	PX	eL		30.8	
	R	e		18	16
	Pr	eP			08
	W	iP		17	46
		i			52
	Is	iP			47
		i		18	02
	CL	eP		17	51
	T	eP			43
		e			51
	BCIS: $51\frac{1}{2}$ N $176\frac{1}{2}$ W				
	18:09:41				
19	Pr	eP	22	09	50
	W	iP		10	08
	Is	iP			06
	CL	eP			06
19	W	iP	23	39	22
		i			45
	Is	iP			23
		i			47
	CL	eP			26
		e			50
	BCIS: 62 N 157 W				
	22:32.2				
20	P	iPNEZ!	01	19	01d
	PX	eSEZ		29	10
		ePSE		30.1	
		eGN		40.6	
				A	T
		PZ		1	2
		PH		$\frac{3}{4}$	$1\frac{1}{2}$
		SH		0.8	8
	R	iPNEZ!	01	19	03d
		e		22	21
		eS		29	12
	Pr	iP!		19	08d
		i		22	26
	W	iP!		18	56d
		i		22	08
	Is	iP!		18	56d
		i		19	06
		i		22	10
	CL	iP!		19	01d
	T	iPNEZ!		18	57d
		i		19	01
		eSN		29	11
	Magnitude 6±				
	P is abnormally large at these stations				
	USCGS: 20 N $145\frac{1}{2}$ E				
	01:06:25				
20	D	eP	06	47	16
	R	iP			14
	W	iP			27
	Is	iP			25
	CL	eP			23
	T	eP			30
	BCIS: near coast of central Chile, 06:35:30				

Date	Sta.	Phase	h	m	s
June					
20	R	eP	13	45	01
	Pr	eP		44	58
	W	eP		45	10
	Is	eP			12
		e			27
	BCIS: Data insufficient				
21	P	iPEZ	00	42	24.4
		iS		43	18.2
	Kg	iP		42	05.5d
		iS			35.1
	W	iP!			00.6d
		iSE			26.8
	Is	iP!			02.4d
		iSN			30.2
	CL	iP			05.8
		i!			08.0
		iS			39.8
	T	iPNEZ!		41	46.5c
		iSNE		42	02.0
	Magnitude 4.6				
	38 N 119 W, 00:41.4				
	Sierra Nevada west of Mono Lake. Felt in Yosemite Valley and vicinity.				
21	P	eP	18	48	35
	PX	eS		57	20
		eLN	19	05.2	
	R	eP	18	48	37
		e			58
	Hf	eP			49
		e		49	01
	Pr	i			02
	Kg	eP		48	38
	W	iP			26
		i			40
	Is	eP			28
	CL	eP			31
		e			46
	T	eP			26
		e			37
	USCGS: 48 N 155 E				
	18:38:03				
22	W	iP	02	26	56
	Is	iP			58
	T	iP			54
	BCIS: Fox Islands, Aleutians, 02:19.3				
22	P	iPNEZ	06	25	05d
		ipP			26
		isPNEZ			35
		iPcP		28	14
		i		29	09
	PX	iSNE			52
		eGN		31.5	
		iR		33.6	
	P	iScSNE		35	30
		iE		36	14
				A	T
		PZ		3	4
		PH		2	3
		SH		3	4
		MH		80	30
		MH		40	20
		MZ		25	18

(continued)

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June		(continued)			
22	R	iPNEZ	06	24	58d
		ipP		25	28
		isP			51
		iSNE		29	38
	Pr	iP		24	53d
		i!			55
		ipP		25	21
	Kg	iP			21
	W	iP			17d
		i			28
		iPcP!		28	18
		i			39
	Is	iP		25	16d
		i			35
		iPcP!		28	18
		i		29	01
		i		31	57
	CL	iP		25	10d
	T	iPNEZ			22d
		ipP			44
		i		26	06
		iSNE		30	23
	Depth 100 km				
	Magnitude m=$6\frac{1}{2}$, M=$6\frac{1}{4}$				
	USCGS: 16 N 94 W				
	06:19:06, 80 km				
22	D	eP	19	33	16
	R	eP			14
		e			21
	Hf	e(P)			05
	Pr	i(P)			13
	W	iP			20
		i			28
	Is	i(P)			19
	CL	eP			16
	USCGS: 16 N $45\frac{1}{2}$ W				
	19:22:22				
23	P	eP	00	04	25
		e		08	25
	PX	iPP			50
		iPSEZ		17.9	
		iSSNEZ		23.5	
		iGN		33.0	
		iR		37.0	
				A	T
		PZ		1	4
		PPZ		$1\frac{1}{2}$	3
		MH		200	38
		MH		100	20
		MZ		200	40
	R	eP	00	04	29
		e			37
		iPP		08	50
		ePKKP		20	41
	Pr	eP		04	36
		ePP		08	53
		iPKKP		20	44
	Kg	eP		04	18
		ePP		08	40
		ePKKP		20	39
	W	eP		04	24
		i			29
		e		08	25
		iPP			44
		ePKKP		20	30
		i			51

(continued)

Date	Sta.	Phase	h	m	s
June		(continued)			
23	T	eP	00	04	28
		ePP		08	50
	Magnitudes, by Professor Gutenberg: m=7.1, M=7.3				
	USCGS: $1\frac{1}{2}$ S 137 E, 23:50:23				
23	R	iP	02	52	54
	Pr	iP		53	01
		i			20
	W	iP			37
		i			57
	BCIS: Aleutians, 02:45.2				
23	P	iPNEZ	03	32	47
	PX	eSNE		37	34
		eL		40.7	
	R	iP		32	50
	Pr	iP			58
	Kg	eP			33
	W	iP			31c
		iPcP		36	08
	T	ePNEZ		32	25
	Magnitude 6.0 (Kiruna); $5\frac{1}{2}$ - $5\frac{3}{4}$ (Berkeley)				
	USCGS: $58\frac{1}{2}$ N 137 W				
	03:27:02				
23	R	iP	03	43	47
	Pr	iP			47
	W	iP			45
		i(pP)		45	39
	Deep. BCIS: Fiji region				
	03:31.9				
23	P	eP	03	49	46
	PX	iSN		59	08
		eGN	04	07.4	
		eR		10.7	
	R	eP	03	49	51
		e		50	10
		e			22
	Pr	eP		49	51
		i		50	09
	Kg	eP		49	55
	W	eP			50
		i		50	08
	USCGS: 14 S $173\frac{1}{2}$ W				
	03:38:25				
23	P	iP	13	19	36
	R	iP			39
		e			46
	Hf	iP			50
	Pr	eP			42
		e		20	04
	Kg	eP		19	31
	W	iP			30c
	BCIS: Marianas region, 13:07.3				
23	W	iP	17	02	51
24	W	eP	00	15	51
24	R	e	02	35	06
	W	iP			05
		i			13
	CL	eP			10
		e			18
	T	e(P)			08
	Aleutians?				
24	Pr	iP	09	27	08
	W	iP			08
	Is	iP			09
	CI	eP			12
	Pacific				

Date	Sta.	Phase	h m s
June 24	P	iPNEZ	09 55 45
		epP	56 01
		e	18
	PX	iSN	10 00 32
		eGN	02.7
		eR	04.3
	R	iP	09 55 40
		epP	57
		i	56 05
	Pr	iP	55 33d
		ipP	50
		i	56 03
	W	iP	55 57d
		i	56 13
	Is	iP	55 53d
		ipP	56 09
	CL	iP	55 50d
	T	iP	56 01d
	Depth 80± km		
	USCGS: 16 N 94 W		
	09:49:47		
24	P	eP	11 14 50
	PX	eL	42.6
	R	eP	14 45
	Pr	iP	43
	W	eP	53
	Is	iP	54
	CL	eP	54
	BCIS: 55½ S 127½ W		
	11:01:50		
25	P	eP'	10 30 24
	PX	eSS	49 30
		eR	11 09.2
	R	eP'	30 26
	Pr	eP'	25
	W	iP'	20
		i	28
	Is	iP'	22
		i	30
	CL	eP'	23
		e	31
	T	e	24
	USCGS: 10 N 94 E		
	10:11:07		
25	W	e	16 25 14
		i	26 05
		i	31
	Is	e	05
		e	34
	CL	e	11
		e	40
	BCIS: 2½ S 101½ E		
	16:03:38		
26	P	iP'	03 07 20
		i	28
	PX	iPP	10 56
		eSSN	29.6
		eR	56.7
	R	iP'	07 21
		i	29
	Pr	iP	23
		i	31
	Bt	iP	25
		i	32

(continued)

Date	Sta.	Phase	h m s
June 26	W	iP'	03 07 14
		i	22
		i	10 18
	T	iP'	07 13
	USCGS: 7½ S 85½ E, 02:47:36		
26	W	iP	12 51 40
	BCIS: Andreanof Is., 12:43.7		
26	Pr	iP	15 34 13
	W	iP	12
26	W	iP	16 56 11
	USCGS: Andreanof Is.		
	16:48:12		
26	W	iP	18 08 27
26	Bt	eP	20 00 31
	Pr	iP	29
	W	iP	03
	T	iP	02
27	P	iPNEZ	00 21 34d
		i	42
		i	51
	PX	iPPNEZ	24 35
		iSE	31 34
		iSSSNZ	40.5
		iGE	42.8
	P	eP'P'	48 34
			A T
		PZ	25 7
		PH	20 10
		PPZ	12 9
		SH	30 10
		MH	200 20
		MZ	180 19
	D	iP	00 21 35d
	R	iPNEZ	36d
		i	43
		i	53
		iSE	31 40
		eP'P'	48 28
	Hf	eP	21 42d
	Pr	iP	41d
		i	58
		i	22 56
		iPP	24 49
		i	25 01
		eP'P'	48 25
	Bt	iPNEZ	21 36d
		iSE	31 54
	Is	iP!	21 23
	T	iPNEZ	21 21d
		i	29
		i	40
		iPP	24 14
		iSNE	31 12
	Magnitudes, by Professor		
	Gutenberg: m=7.5, M=7.9		
	Moskva: 56½ N 117 E		
	00:09:30		
27	D	e	07 16 38
	R	e	48
		e	17 11
	Pr	eP	16 44
	Bt	eP	50
	Is	eP	22
		e	37

(continued)

Date	Sta.	Phase (continued)	h m s
June 27	T	eP	07 16 23
		e	33
	BCIS: 52 N 176 W		
	07:08:16		
27	R	eP	13 02 51
	Pr	eP	54
	Is	iP	03 09
	USCGS: 22 S 171 E		
	12:49:51		
27	D	iP	14 18 47
		i	19 17
		i	29
	R	eP	18 46
	Pr	iP	41
	Bt	iP	37
		i	19 07
	Is	iP	18 55
	T	eP	19 00
27	Bt	eP	14 40 31
		i	48
	Is	iP	07
		i	24
	BCIS: Aleutians, 14:32.1		
28	PX	eLN	05 15.9
	D	e	06 09
		e	16
	R	e	06
		e	15
	Hf	e	18
		i	35
	Pr	eP	09
		i	22
	Bt	e	16
		i	23
	Is	eP	05 52
		i	59
	CL	eP	52
	T	i	44
	BCIS: 52¼ N 171½ W		
	04:58:06		
28	P	iPNEZ	11 32 22.4d
		eSN	37.4
	R	iP	28.3
	SB	iPNEZ	23.5
		iSE	39.0
	Is	iP!	09
	CL	iP!	17c
		iS!	31
	T	iPNEZ	32.3d
		i	40.3
		iSNEZ	56.2
	35° 10' N 118° 40' W		
	11:32:03, Magnitude 4.1		
	Intensity V M.M. at Tehachapi		
28	D	eP	12 27 43
	Pr	iP	52
		i	28. 03
	Bt	iP	27 53
	Is	iP	30
	CL	iP	34
	T	eP	25
	BCIS: Aleutians, 12:19.4		

Date	Sta.	Phase	h m s
June 28	PX	eR	19 34.4
	R	eP	05 48
	Is	eP	45
	CL	eP	47
	BCIS: 22 S 171 E, 18:52:43		
29	P	iP	00 23 18
	D	iP	17d
		ipP	50
	R	iP	14d
		ipP	47
	Hf	iP	06d
		ipP	38
	Pr	iP	11
	Bt	iP	06d
		ipP	39
	Is	iP	26d
		ipP	59
	CL	iP	22d
		ipP	55
	T	iP	30d
		i	38
		epP	24 03
	Depth 130 km		
	BCIS: 30½ S 68½ W, 00:11.3		
29	P	iP	04 10 14
	PX	eRNZ	36.3
	R	iP	10 09c
	Hf	iP	02
	Pr	iP	08
	Bt	iP	03c
	Is	iP	23c
	CL	iP	20c
	T	iP	26c
	USCGS: 32½ S 72½ W		
	03:58:06		
29	P	eP	07 55 40
		i	44
	PX	iS	08 01 43
		iGN	04 42
	R	iP	07 55 49d
		iPcP	57 59
		iSE	08 01 53
	Pr	iP	07 55 56d
		i	59
		i	56 13
		iPcP	58 02
	Bt	iP	56 00d
		i	03
		iPcP	58 00
		iSE	08 02 15
	Is	iP!	07 55 35d
		i	44
		i	52
		i	56 18
		iS	08 01 27
	CL	iP	07 55 39d
		i	43
		eS	08 01 34
	T	iP	07 55 26d
		iNEZ	29
		iPcP	56 46
		iSNEZ	08 01 19
	Magnitude 6.3 (Uppsala)		
	USCGS: 51½ N 166 W		
	07:48:18		

Pasadena and auxiliary stations, 1957 No. 3

Date	Sta.	Phase	h	m	s
June					
29	D	e	10	16	38
	R	e			23
29	PX	eSNZ	11	04.9	
		eNZ		08.6	
		eGN		09.5	
		iR		11.2	
	D	eP	10	58	20
		i			31
	R	e(P)			14
		i			23
	Hf	e			32
	Pr	iP			20
		i			30
	Bt	iP			23
		i			33
	Is	iP		57	59c
		i		58	09
		i			19
	CL	iP			05c
		i			06
		i			14
	T	iP		57	51
		i			55
		i		58	00
	USCGS: 51½ N 178 W, 10:49:42				

Date	Sta.	Phase	h	m	s
June					
29	P	eP	22	45	55
	PX	e		54.0	
		eR	23	15.8	
	R	eP		45	58
	Hf	eP		46	05
	Pr	iP			05d
	Bt	iP			07d
	Is	iP		45	50d
	CL	iP			51d
		ePP		49	22
	T	iP		45	42
	USCGS: 56 N 116½ E				
	22:33:52				
30	D	eP	00	59	10
	Hf	eP			22
	Pr	eP			18
	Bt	eP			21
	Is	iP		58	58
	Aleutians?				

SUPPLEMENTARY NOTE: INSTRUMENTATION

Information as to stations and instruments for 1957, given on page 2 (issue No. 1) applies throughout the year, except as follows:

May 17 - Hayfield; short-period Benioff N replaced by Z.
June 6 - Palomar; long-period Benioff Z began routine recording.

July 13 - New Donnelley Laboratory occupied, located a few hundred meters from the former Seismological Laboratory, now termed the Kresge Laboratory. Mailing address unchanged. Most of the recording instruments remain in operation at Kresge. Press-Ewing type long-period seismographs, previously recording experimentally at Kresge, set up for routine recording at Donnelley, September 27 and thereafter.
July 24 - New station:
San Nicolas: 33° 14.9' N 119° 31.4' W, 275 meters.

Data for all stations will be repeated in the following issue (No. 4).

C. F. Richter
Violet M. Taylor
December 28, 1960

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA

SEISMOLOGICAL LABORATORY

BULLETIN

1957

(Part II, beginning July 1)

(Pasadena and Auxiliary Stations)

CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA.

SEISMOLOGICAL LABORATORY BULLETIN.

1957			
Pt II	31	7	61

STATIONS, 1957
(July-December)

Station	Lat. N.	Long. W.	h	Symbol	Ground
Pasadena	34° 08.9'	118° 10.3'	295m	P,PX	Granitic rock
Mt. Wilson	34 13.4	118 03.5	1730	MW	Granitic rock
Riverside	33 59.6	117 22.5	260	R	Granitic rock
Palomar	33 21.2	116 51.7	1690	Pr	Granitic rock
Barrett	32 40.8	116 40.3	520	Bt	Granitic rock
Santa Barbara	34 26.5	119 42.8	90	SB	Alluvial with boulders
Woody	35 42.0	118 50.8	490	W	Granitic rock
Isabella	35 39.8	118 28.4	835	Is	Granitic rock
China Lake	35 49.0	117 35.8	766	CL	Granitic with intrusions
Haiwee	36 08.2	117 56.8	1150	H	Tuff
Tinemaha	37 03.3	118 13.7	1195	T	Basalt
Big Bear	34 14.3	116 54.8	2060	BB	
Dalton	34 10.2	117 48.6	523	D	Granitic rock
Fort Tejon	34 52.4	118 53.6	990	FT	
King Ranch	35 19.6	119 44.7	680	Kg	
Palos Verdes	33 45.5	118 21.4	340	PV	Miocene shales
Hayfield	33 42.4	115 38.2	440	Hf	
El Centro	32 47.9	115 32.9	-15	EC	Alluvium
San Nicolas	33 14.9	119 31.4	275	SN	

All measurement and interpretation of seismograms is done at the central station, to which all communications should be addressed, as follows: Seismological Laboratory, 220 North San Rafael Avenue, Pasadena, California

The mailing address remains unchanged, although the principal office and part of the staff are now located (since July 13, 1957) in the Donnelley Laboratory, a few hundred meters from the former Seismological Laboratory, now known as the Kresge Laboratory. Most of the recording instruments remain in the vaults at Kresge. Press-Ewing type instruments (T_0 =30, T_g = 90) have been in routine operation at Donnelley since September 27, 1957; similar instruments previously were operated experimentally at Kresge.

The Isabella station was moved to the new location listed above, on February 5, 1957. The station on San Nicolas Island began operation July 24, 1957. At Hayfield, the short-period Benioff N was replaced by Z on May 17; a corresponding long-period Z recorded July 16-29, and permanently from September 17.

Excepting special and experimental installations, instruments regularly operated July-December 1957 were as follows:

Short-period Benioff Z	All stations except EC
Short-period Wood-Anderson N, E	P, R, SB, H, T
Short-period Wood-Anderson, one component	Bt, W, Is, SN
Short-period Benioff N, E	P, Bt
Long-period Benioff N, E, Z	P, R, Bt, T
Long-period Benioff, Z only	PV, SN, Hf
Long-period Press-Ewing	P (Donnelley)
Strong-motion (low magnification) N, E, Z	P, R, SB, Is, H, EC

In the bulletin columns components are indicated as N, E, Z or in combination; where no such letter appears the reading is for Z alone.

PX = long-period instruments, Pasadena (either Kresge or Donnelley)
c = compression, d = dilatation

When surface waves are not reported for Pasadena they are not found or are very small.

All times are G.C.T. Times are not reported for SB, H, BB, FT, PV, EC, or SN unless of special interest, or when recording at other stations is defective. Times are normally given for only one of P, MW, D.

Magnitudes given for local earthquakes are based on the Southern California instrumental scale (Richter, 1935), using the trace amplitudes on the Wood-Anderson seismograms. For teleseisms, M refers to the earlier scale for shallow earthquakes, based on surface waves; magnitudes m are on Gutenberg's scale, based primarily on body waves. For large magnitudes approximately M-m = 0.37 (M-6.76)

For large shocks magnitudes m, M are occasionally given as determined by the late Professor Gutenberg. These are generally based on both body and surface waves, using the above linear relation.

Sources from which epicenters and origin times are most frequently quoted are: U.S. Coast and Geodetic Survey (Washington); Bureau Central Internationale Seismologique (Strasbourg); Japan Meteorological Agency (Tokyo) Determinations not otherwise credited are as made at Pasadena.

General information, previously given only together with the first issue for each calendar year, is repeated here because this is the first issue of our final bulletin for the I.G.Y. period. Attempt will be made to continued the reporting on as nearly complete a basis as seems likely to be useful, omitting minor and uncertain data. For teleseisms, inclusion is determined principally by reference to BCIS bulletins. Small recordings of events not reported by other stations are passed over, or are represented by a few selected times only. Detailed interpretations of later phases are usually given only for Pasadena; readings likely to represent S, pP, PKKP, P'P', and sometimes PcP etc., are reported for the auxiliary stations in greater or less detail according to circumstances.

Earthquakes in Southern California and adjacent areas of magnitude 4.5 or over are included; however, times are often given only for the nearer stations or those with clearly recorded P. Smaller shocks are sometimes noted when of special interest, or when readings from other stations have been listed by BCIS. Investigators interested in still smaller local earthquakes are referred to our bulletin on local shocks (Pasadena and auxiliary stations), which attempts to give at least approximate epicenter, origin time and magnitude for all shocks in Southern California of magnitude 3.0 or over, but does not report the recorded arrival times and amplitudes on which these results are based.

C. F. Richter
Violet M. Taylor
May 11, 1961

Pasadena and auxiliary stations, 1957 July 1 - October 4 No. 4

Date	Sta.	Phase	h	m	s
July					
1	D	eP	02	34	29
	R	eP			29
		e(pP)			53
	Pr	iP			31
		e(pP)			54
	Is	iP			33
		i(pP)			56
	CL	iP			35
		e(pP)			58
	USCGS: 22 S 176 W				
	02:22:26, 60 km				
1	Is	iP	04	01	06
	CL	iP			08
1	PX	eR	13	55.0	
	Mid-Atlantic				
1	Bt	e?	16	27	20
		e			37
	Is	iP		26	51
	CL	eP			56
		e		27	16
	BCIS: 56 N 162½E, 16:17:16				
1	P	e	19	48	58
		i(P')		49	24
	PX	iPP		50	04
		i		52	08
		i			44
		iNZ		59.7	
		i	20	00.8	
		iN		05.7	
		iN		10.8	
		iLN		17.0	
	R	e	19	49	02
		iPP		50	09
		e(PKKP)	20	00	16
	Pr	e	19	49	04
		ePP		50	02
		e(PKKP)		59	51
	Bt	e		49	04
		iPP		50	14
	Is	iPP		49	46
		ePKKP		59	43
	CL	eP		45	26
		e			30
		e		46	12
		e		48	15
		e		49	17
		ePP			44
		ePKKP		59	54
	T	e	19	48	45
		i			36
		iPP		50	05
		i		52	30
	Data at these stations not adequate for magnitude.				
	Uppsala: magnitude 6.7, depth 80 km				
	USCGS: 25 N 94 E, 19:30:16				
	Moskva: 19:30:23, 100 km				
2	R	eP	00	07	06
	Is	iP			10
	CL	eP			07
2	PX	iP	00	56	53
		e	01	00.8	
	P	ePP		01	24
		(continued)			

Date	Sta.	Phase	h	m	s
July		(continued)			
2	PX	iPP	00	01	27
		i		03	55
		iSKS		07.6	
		iSPNZ!		10	50
		eN		11.9	
	P	iPKKP		12	50
	PX	iSS		16.9	
				A	T
		PZ		1¼	10
		PPZ		6	10
		PPH		5	11
		MH		40	20
		MZ		30	20
	R	eP	00	56	53
		e	01	00	57
		e		01	09
		iPP			25
		iSPNZ		10	51
		i		11	59
	Hf	ePP		01	30
		ePKKP		11	58
	Pr	e		00	25
		iPP		01	32
		iPKKP		11	56
	Bt	i		00	58
		iPP		01	34
		iPKKP		11	54
	Is	iPP		01	18
		iPKKP		12	06
		i(P'P')		19	57
	CL	eP	00	56	48
		e	01	00	06
		i			52
		ePKKP		12	05
	T	iP	00	56	43
		e	01	01	33
	Magnitudes, by Professor Gutenberg: m=7.0, M=7.0				
	BCIS: 36.1 N 52.3 E				
	00:42:24				
2	P	eP'	07	51	38
		i			44
	R	eP'			37
		e			43
	Bt	eP'			39
		e			45
	Is	e			35
	BCIS: Indian Ocean, 07:31.6				
2	PX	iR	14	05.5	
	Is	e	13	54	14
2	Pr	iP	20	02	02
	Is	iP		01	42
	CL	iP			55
2	PX	iR	21	47.3	
	R	e		35	32
	Is	e			56
2	D	iP	22	03	57
	R	iP			54
	Bt	eP			44
	Is	iP		04	07
	CL	eP			03
	T	eP			11
	USCGS: 24½ S 70½ W				
	21:52:20				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July					
2	D	e	22	35	19
		e			25
	R	eP			20
		epP			35
	Pr	iP			27
		ipP			42
		e			52
	Bt	iP			24
		ipP			43
	Is	iP			08c
		ipP			22
	CL	eP			11c
		e			25
	T	iP			02
	Depth 60± km				
	BCIS: 51½ N 171½ W				
	22:27:23				
3	P	e	01	57	49
		i		58	03
	PX	eSNZ	02	06	08
		eR		15	44
	R	e	01	58	00
	Pr	i			13
	Is	iP		57	38
	CL	eP			39
		e			57
	USCGS: 52 N 159 E				
	01:47:00				
	Moskva: 51 N 160 E				
	01:47:36				
3	PX	eLNZ	05	42.0	
	D	eP?		22	11
	R	e			08
	Pr	e			08
	Bt	e?		21	57
	Is	iP		22	22
	CL	eP			16
3	P	iPNEZ	06	14	08c
		epP		16	04
		i		17	25
		i			37
	PX	iSNZ		23	48
		eN		27.0	
		eN		35.8	
	R	iP		14	10c
		ipP		16	08
		i		17	28
		e			35
	Pr	iP		14	11c
		epP		16	01
		i			08
		i		17	27
	Bt	iP		14	06c
		epP		16	00
	Is	iP!		14	12
		ipP		16	07
		i			10
	CL	iP			14c
		epP		16	09
		i			13
	T	iPNEZ		14	17c
		eSN		24	02
	USCGS: 24 S 180				
	06:02:37, 550 km				

Date	Sta.	Phase	h	m	s
July					
3	D	eP	08	35	55
	R	eP			56
	Pr	iP			58
	Bt	iP			56
	Is	iP		36	00
	CL	eP			03
	T	iP			03
	Southwest Pacific				
3	PX	eLN	09	20.0	
	R	e		14	55
	Is	eP			45
	CL	eP			47
	T	eP			34
	USCGS: 58 N 137 W				
	09:09:14				
3	PX	iLNZ	09	39.4	
	D	eP		26	29
	R	eP			27
	Pr	iP			23
	Bt	eP			20
	Is	eP			39
	CL	eP			37
3	P	iPNEZ	12	33	10d
	PX	iPP		35	08
		iSN		39	54
		iLN		43	32
				A	T
		PZ		½	2
		PH		¼	1½
		SH		2	13
		MH		5	20
		MZ		5	20
	R	iP	12	33	13d
		i			33
	Pr	eP			18
		i			21
	Bt	eP			22
		i			25
		i			37
	Is	iP		32	59d
		i		33	02d
		i			15
	CL	eP			03
		i			06
		e		34	42
		e			55
	T	eP		32	54
		iNEZ			57
		i		34	40
		i			56
	Magnitude 6 - 6¼				
	USCGS: 50½ N 179 W				
	12:24:37				
3	D	e	15	20	12
	Pr	iP			14
	Is	iP		19	54
		e		20	04
		e			12
		i			20
	CL	eP		19	59
		e		20	24
	T	eP		19	48
	USCGS: 50 N 179½ W				
	15:11:30				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
July 3	P	iP	17 11 47
	PX	iLN	21.5
	D	iP	11 48
		i	55
	R	iP	50
	Pr	iP	58d
	Bt	iP	12 03d
	Is	iP	11 35d
		i	43
	CL	iP	41d
	T	iP	31
		i	40
	USCGS: 54 N 164 W 17:04:26		
4	P	iP'	08 48 08
	PX	e(PP)	50 10
	P	i(SKP)	51 29
		iNZ	36
		i	55
		e	53 59
	PX	eN	09 01.9
		eSSN	08.9
		e	11.3
		e(R)	30.9
	R	iP'	08 48 07
		e	50 33
		i(SKP)	51 30
		i	59
	Pr	eP'	48 10
		i	51 34
	Bt	iP'	48 11
		i(SKP)	51 36
	Is	iP'	48 04
		i	51 21
		i(SKP)	29
		i	48
	T	iP'	48 07
		i(SKP)	51 24
		e	46
	USCGS: 4 S 102 E 08:29:01, 100 km Reading 08:51:21 at Isabella may refer to another shock, as suggested by BCIS		
4	P	eP	09 58 19
		e	26
		e	33
	Is	iP	13
		i	20
	BCIS: Kermadec Is. 09:45.5		
4	P	eP	12 43 42
	PX	eSN	53.9
		eSS	59.5
		iGN	13 05 40
	R	eP	12 43 45
		e	56
		e	44 27
	Pr	eP	43 49
	Bt	iP	52
	JMA: 32.9 N 137.1 E 12:31:17, 40 km		

Date	Sta.	Phase	h m s
July 4	P	iP	14 24 55
	R	iP	56
	Pr	iP	25 06
	Bt	eP	03
	Is	iP	24 52
	USCGS: 5 S 152 E, 14:11:36		
4	P	iPNEZ	19 32 07
	R	iP	08d
	Pr	iP	13d
	Bt	iP	15d
	Is	iP	03d
		e	40
	CL	iP	07d
	T	iPNEZ	02d
	USCGS: 20 N 146 E 19:19:45, 150 km		
4	P	eP	22 26 20
		iSEZ	27 15
	R	eP	26 01
		i	32
		iSNE	27 08
	Pr	eP	25 50
		i	26 10
	Bt	iPNZ	25 43
		i	52
		iSN	26 20
	CL	eP	26±
		e	36
		i	59
	T	eP	27 00
		i	22
		iSE	29 10
	Magnitude M=4.8 (on local earthquake basis) Largest of a numerous swarm, with a few preceding and many following recorded shocks. USCGS: 32 N 113 W, 22:25:13 (Report that this shock was felt at San Diego probably is due to misunderstanding)		
4	Bt	iS	22 29 01
	This reading represents a shock nearly equal to the preceding, about 150 sec. later; phases too obscured for reading times at these stations.		
4	P	eP	23 28 22
		i	31
		iS	29 18
	R	eP	28 05
		i	24
	Pr	eP	27 56
	Bt	eP	48
		i	55
	Magnitude M=4.6 USCGS: 31 N 114 W, 23:21:12		
4	P	e(P)	24 00 41
		e(S)	01 36
	Bt	iP	00 04
		eSN	41
	Magnitude 4.4 Also near 32 N 114 W BCIS: 23:59:36		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
July 5	P	eP	00 58 59
		i	59 10
		iSEZ	54
	R	eP	58 44
		i	53
		i	59 02
		iSE	38
	Pr	eP	58 33
		i	47
	Bt	iP	26
		i	29
		iSN	59 03
	CL	eP	13
		i	37
	T	eP	35
	Magnitude 4.7 USCGS: 32 N 114 W 00:58:00		
5	D	eP	10 46 35
	Pr	iP	37
	CL	eP	41
	Is	iP	38
	Pacific		
5	D	eP	12 24 18
	Pr	eP	25
	Is	iP	07
	CL	eP	09
	T	iP	00
	BCIS: 51½ N 177½ W 12:15:45		
5	P	eP	12 46 32
		e	43
	PX	iSNZ	57 06
		eSSN	13 02.7
		eSSS	06 16
		eGN	08.8
		eR	12.3
	R	iP	12 46 33
		i	49
	Pr	iP	33
		i(pP)	44
		i	49
	Bt	eP	31
		e(pP)	41
	Is	iP	36c
		i(pP)	47
		i	52
	CL	iP	39c
		i(pP)	50
		i	55
	T	iP	40
		i(pP)	49
		i	56
	Depth 50 km± USCGS: 28½ S 179 W 12:33:56		
5	PX	e(L)N	16 20
	Is	e	15 51 46
	BCIS: 1½ S 26½ E 15:32:07		
7	PX	iLNZ	01 37.0
	D	e	34 26
	Pr	e	17
	Bt	e(P)	00
		e	36 21

(continued)

Date	Sta.	Phase	h m s
July 7		(continued)	
	Is	i(P)	01 34 50
	CL	e(P)	39
	T	e(P)	57
	BCIS: southern Gulf of California, 01:31.0		
7	PX	eP	15 48 56
		i	16 00 30
		eL	15 20
	R	eP	15 49 22
	Pr	eP?	07
	Bt	e?	48 49
	Is	i	49 30
	BCIS: 13½ S 165½ E 15:36:15		
7	P	iPNEZ	16 24 22c
		i	38
	PX	iPP	28 06
		eSN	35 24
		eSSNZ	41.5
		eSSS	45.0
		iGN	48 40
		iREZ	52.6
			A T
		PZ	¼ 1
		PH	¼ 1
		MH	5 20
	R	iP	16 24 24c
	Pr	iP	27c
	Bt	iP	27c
		e	43
	Is	iP	23c
		i	39
		iPKKP	41 50
		iP'P'	49 58
	CL	iP	24 26c
	T	iP	25c
	Magnitude 6¾ USCGS: 6½ S 156 E 16:11:15		
8	D	i(P)	03 50 48
	R	e	51 11
	Pr	e(P)	14
		e	30
	Is	iP	01
	CL	eP	50 55
		e	51 30
8	P	iPNEZ	15 36 45c
		e	37 01
		ePcP	39 39
	PX	iSN	41 49
		iLN	44 30
	P	iScSNE	47 12
			A T
		PZ	¼ 1½
	R	iPEZ	15 36 39c
		e	37 02
		iPcP	40 36
		iScP	43 12
	Hf	iP	36 28c
	Pr	iP	34c
	Bt	iP	30c

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date July	Sta.	Phase (continued)	h m s
8	Is	iP	15 36 58c
		i	37 19
		iPcP	39 40
		iScP	43 18
		e	47 50
	CL	iP	36 50c
		i	37 32
		iPcP	39 41
		iScP	43 17
		e	46 59
	T	iPNEZ	37 01c
		iPcPNEZ	39 43
		iScP	43 12
		iScSNE	47 21
	Magnitude 6 (Berkeley)		
	USCGS: $14\frac{1}{2}$ N 91 W		
	15:30:33, 150 km		
9	Pr	iP	06 04 05
		i	16
	Bt	eP	11
		e	21
	Is	iP	03 44
	CL	eP	59
	T	eP	50
	BCIS: Fox Is., 05:56.4		
9	PX	eRNZ	07 35.4
	D	iP	07 07d
		e	30
	R	iP	04d
		e	27
	Hf	eP	06 54
	Pr	eP	59
		e	07 36
	Bt	eP	06 55
		e	07 35
	Is	iP	19d
	CL	eP	13d
		e	41
	T	iP	22
		i	50
	BCIS: Ecuador-Peru, 06:57.7		
9	P	eP'NZ	10 17 23
		e	36
	PX	ePPNZ	19 40
		eSKP	20 45
		iPKSNEZ	52
	P	e	21 05
	PX	iSP	29.9
		eLN	37.6
		eRNZ	11 00.3
	R	eP'	10 17 22
		i	36
		e	18 40
		ePP	19 44
		iSKPEZ	20 45
		e	21 05
		e	22 09
	Hf	eP'	17 29
		e	42
		eSKP	20 52
		e	21 12

(continued)

Date July	Sta.	Phase (continued)	h m s
9	Pr	eP'	10 17 24
		e	38
		ePP	19 42
		e	55
		iSKP	20 48
		e	21 04
	Bt	iP'	17 29
		i	41
		iPP	19 54
		iSKP	21 12
	Is	iP'	17 21
		iPP	19 38
		iSKP	20 43
		i	21 02
	CL	eP'	17 23
		e	36
		ePP	19 39
		iSKP	20 45
		e	21 02
	T	iP'	17 22
		i	34
		ePP	19 48
		iSKP	20 42
		e	21 04
	Magnitude 6.1 (Uppsala)		
	Professor Gutenberg		
	determined $m=6\frac{1}{4}$, M=6		
	$6\frac{1}{4}$ S 104 E, 09:58:09, 50 km		
9	PX	eR	18 18.4
	R	e(P)	08 17
	Pr	e(P)	18
	Is	iP	07 56
		e	08 16
	CL	iP	01
		e	21
		iPcP	10 17
	T	e	08 10
	BCIS: 53 N 164 W, 18:00:42		
10	D	iP	00 39 32
	R	iP	29
	Pr	e(P)	24
	W	iP	40
	Is	iP	37
	CL	eP	37
	South America?		
10	PX	eP	04 50 40
		e	56 24
		eSN	57 12
		eGN	59.9
		eR	05 02.2
	R	eP	04 50 41
		e	59
	Pr	eP	43
		e	58
	Bt	eP	49
	W	iP	20
		i	36
	Is	iP	24
	CL	eP	27
	T	e(P)	25
	BCIS: 51 N 169 W, 04:46:43		

Pasadena and auxiliary stations, 1957 — No. 4

Date July	Sta.	Phase	h m s
10	P	iPNEZ	09 12 04c
		iPP	13 58
	PX	iSN	18 26
		iSSN	22.0
		eGN	23.1
		eR	25.1
			A T
		PZ	4 6
		PH	2 4
		PPZ	3 6
		PPH	2 4
		SH	30 16
		MH	60 25
		MZ	30 26
	R	iP	09 11 58c
		i	13 38
		iPP	43
		iSNEZ	18 20
	Hf	iP	11 47c
	Pr	iP	52c
		iPP	13 39
		eS	18 09
		eR	24.6
	Bt	iP	11 48c
		iSNE	18 06
		eSSN	21.5
		eR	24.6
	W	iP	12 13c
		iPP	14 09
	Is	iP	12 12c
		i	13 15
		iPP	14 00
		eS	18 46
	CL	iP	12 08c
		i	37
		eS	18 44
	T	iP	12 18c
		iPP	14 15
		iSNE	18 54
		eSSN	22.3
		eR	25.3
	Magnitude $6\frac{1}{2}$ - $6\frac{3}{4}$		
	USCGS: 8 N $82\frac{1}{2}$ W		
	09:04:08		
10	D	iP	09 25 34
	R	iP	31
	Pr	eP	26
	Bt	iP	23
	W	iP	42
	Is	iP	43
	CL	eP	40
	T	iP	47
	BCIS: $22\frac{1}{2}$ S 69 W		
	09:14:00		
10	D	e	18 08 40
	Pr	e	55
	Bt	eP?	35
	W	iP	46
	CL	eP	09 03
10	D	eP	23 29 01
	Pr	eP	28 56
	W	eP	29
	BCIS: Aleutians, 23:21.0		

Date July	Sta.	Phase	h m s
11	W	iP	00 33 25
		i	27
		i	40
	Is	iP	27
		i	29
	T	eP	22
11	D	e	08 22 44
	R	eP	25
		e	37
	Pr	eP	29
	Bt	eP	33
		e	47
	W	iP	11
		i	23
	Is	iP	14
	CL	eP	19
		e	30
	JMA: $43\frac{1}{2}$ N 147 E		
	08:11:11, 40 km		
12	Pr	iP	00 27 02
	Bt	eP	01
	Is	iP	02
	CL	eP	07
12	PX	eR	09 00.4
	D	eP	08 51 33
	Pr	iP	36
	Bt	iP	40
	Is	iP	14
	CL	eP	19
	BCIS: Fox Islands,		
	Aleutians, 08:43.7		
12	PX	eLN	11 36.0
	D	eP	32 00
	R	eP	04
	Pr	eP	13
	Is	iP	31 42
	CL	eP	45
	T	eP	32
	Aleutians?		
12	Pr	e	16 13 31
	Bt	e	39
	W	e	12 53
	Is	e	56
	CL	e	13 04
	T	e	02
12	PX	eR	21 40.3
	D	e	09 45
	Pr	e	50
	Bt	e	50
	W	e	43
	Is	e	46
	CL	e	47
	USCGS: 3 S $148\frac{1}{2}$ E		
	20:56:18		
12	PX	eR	22:41.8
	USCGS: 3 S $148\frac{1}{2}$ E		
	21:58:45		
13	P	iP	01 07 11
		i	43
	PX	iS	13.0
		eGN	16.2
		eR	18.5
	R	eP	07 17
		eSN	13 23

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
13	Pr	iP	01	07	23
		i			48
	Bt	iP			28
		i			40
	W	iP			00d
		i			24
	Is	iP			02d
		i			14
		i		08	48
	CL	eP		07	06
		e			33
	T	eP		06	58
		eS		12	57
	USCGS: 52 N 169½ W				
	00:59:28				
13	D	eP	01	55	59
	R	eP		56	03
		e			31
	Pr	eP			10
		e			18
	Bt	eP			14
		e			22
	W	iP		55	47
		i			59
	Is	iP			50
		i		56	17
	CL	eP		55	53
		e		56	00
	T	e		55	59
		e		56	21
	USCGS: 52½ N 169½ W				
	01:48:18				
13	P	iP	09	18	49
	Pr	eP			43
	Bt	eP			37
	W	eP		19	01
	CL	eP			02
13	P	eP	09	43	31
		e			39
	PX	eSNZ		52	47
		eGN	10	01.3	
		eRNZ		04.9	
	R	eP	09	43	34
		e		44	11
	Pr	eP		43	34
	Bt	eP			33
		e			47
	W	iP			34
		i			51
	CL	eP			38
		e			50
	T	eP			41
	USCGS: 15 S 173 W				
	09:32:05				
13	P	eP	14	10	08
		e			19
	PX	iS		19	30
		eGN		28.2	
		iRNZ		31.6	
	R	eP		10	08
		e			30
	Pr	eP			10
	Bt	eP			12
	W	iP			10
	CL	eP			14
	USCGS: 14½ S 173½ W				
	13:58:45				

Date	Sta.	Phase	h	m	s
July					
14	P	eP	02	37	46
		epP			56
	PX	eSNZ		46	35
		eL		54	
	R	eP		37	49
		ipP		38	00
	Pr	eP		37	55
		ipP		38	05
	Bt	eP		37	58
		ipP		38	09
	W	iP		37	37c
		ipP			48
	CL	iP			42c
		i			53
	T	eP			35
		epP			46
	JMA: 46 N 151 E				
	02:27:05, 80 km				
14	P	iPNEZ!	06	36	06d
		ipP!			56
		iPP		39	19
	PX	iSNEZ		46	10
		iPS		47	05
		iGNE		57.9	
	P	eP'P'	07	02	27
			A		T
		PZ	2½		1¼
		PH	2		1¼
		SH	12		7
	R	iPNEZ!	06	36	09d
		ipP			59
		iPP		39	23
		iSNEZ		46	15
		iP'P'	07	02	32
	Hf	iP	06	36	13d
		epP		37	04
	Pr	iP!		36	08d
		ipP			59
		i		37	19
		eS		46	15
		eP'P'	07	02	18
		e			30
	W	iPEZ!	06	36	09d
		ipP			56
		i		37	41
		i		40	12
		eSEZ		46	23
		iP'P'	07	02	32
	CL	iP!	06	36	14d
		ipP		37	05
		eS		46	28
		eP'P'	07	02	30
		epP'P'		03	24
	T	iPNEZ	06	36	16d
		ipP		37	02
		iPP		39	35
		iSEZ		46	23
		iNZ			35
		eP'P'	07	02	32
	Magnitudes, by Professor Gutenberg: m=7.0, M=7.1				
14	P	iPNEZ	08	23	23c
		i			42

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
14	PX	ePP	08	26	38
		iSNEZ		33	48
		iSSN		38.6	
		eSSSN		42.5	
		iGN		45.5	
		eR		48.9	
			A		T
		PZ	1½		4
		PH	1		4
		SH	10		14
		MH	30		20
		MZ	15		20
	R	iP	08	23	27c
		i			41
		iSNE		33	52
	Hf	iP		23	33c
		i			50
	Pr	iP			26c
		i			44
	Bt	iP			25c
		i			43
		eSNE		33	53
	W	iP!		23	28c
		i			46
	CL	iP			33c
		i			51
		eP'P'		49	32
	T	iPNEZ		23	35c
		i			55
	Depth 60 km?				
	USCGS: 30 S 177 W				
	08:10:45				
14	P	e	09	28	50
		e		29	15
	D	e			18
		e			38
	R	e			12
		i			22
		e			40
	Pr	e			19
	Bt	e			20
		i			26
	W	iP			06
		i			15
	CL	eP			12
		i			20
	T	e			12
	USCGS: 12½ N 144 E				
	09:16:12				
14	P	eP	09	54	17
		e			33
	R	eP			20
		i			34
		i		55	13
	Hf	iP		54	25
	Pr	iP			19
		i			28
		i			35
	Bt	eP			18
		e			27
		e			34
	W	iP			19
		i			28
		i			35

(continued)

Date	Sta.	Phase	h	m	s
July		(continued)			
14	CL	eP	09	54	26
		e			34
		e			40
	T	eP			27
		i			42
	USCGS: 20 S 174½ W				
	09:42:27				
15	D	eP	12	34	33
	Hf	eP			31
	Pr	eP			35
	Bt	eP			38
	W	i(P)			18
	CL	eP			22
15	W	iP	22	55	41
	CL	iP			47
	Aleutians?				
15	P	iPNEZ	23	25	56
		iSNEZ		27	36
	R	iP		26	03
	Pr	iP			14
	Bt	iP			22
	W	iP		25	33
	CL	eP			48
	T	eP			30
	Coast of northern California				
	Berkeley: Magnitude 4-4¼				
	Obscures any recording of shock in Pakistan in the same hour				
16	W	iP	04	34	27
	CL	eP			32
	BCIS: near 29 S 178 W				
	04:21.7				
16	Pr	iP	05	48	30
	W	iP!			06c
	CL	iP			13
	T	eP			04
16	PX	eR	19	41.1	
	D	eP		31	00
		e			06
		i			20
	R	eP			02
		i			13
	Pr	iP			10
		i			22
	Bt	iP			15
		i			26
	W	iP			45
		i!			57
	CL	iP			52
		i		32	04
	T	iP		31	43
		i			55
	Depth 50 km?				
	USCGS: 54½ N 164 W				
	19:23:42				
16	W	iP	20	26	42
		i			54
	CL	eP			48
		e		27	00
	Aleutians?				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
July 17	PX	eLNZ	05 49.3
	D	iP	24 36
		e	41
		i	50d
		i	58
	R	iP	33
		i	48d
		i	56
	Hf	eP	25
		i	40
		i	47
	Pr	i	44
		i	51
	Bt	iP	26
		i	40d
		i	46
	W	iP	45
		e	52
		i!	25 00d
		i	05
	CL	eP	24 43
		i	57d
		i	25 04
	T	eP	24 50
		i	25 05d
		i	12

USCGS: 24½ S 69 W, 05:12:53
The large phase indicated as dilatation may be P of a second shock from the same source; or it may be pP, indicating depth near 50 km

Date	Sta.	Phase	h m s
17	PX	eLNZ	07 06.9
	W	iP	06 45 49
17	PX	eLN	09 11.2
	D	e	01 56
		e	02 09
	R	e	01
	Pr	eP	09
		e	17
	Bt	eP	02
		e	13
	W	i(P)	01 41
		i	46
		i	56
		i	02 08
	CL	eP	01 53
	T	eP	43
		e	52

USCGS: 53 N 170 W
08:54:13

Date	Sta.	Phase	h m s
17	P	iPNEZ	11 22 45
		i(sP)NEZ	23 16
		iNE	39
		iN	24 08
	PX	iPP	26 00
		iSNZ	33 02
		iPSNE	34 00
		isSP	30
		iN	35.0
		iSSNZ	38 40
		iSSS	42 20
		iGN	44 52
		iRNZ	48.6
		eG2N	13 05.4

(continued)

Date	Sta.	Phase	h m s
July 17	PX	(continued)	
			A T
		PH	0.2 1½
		SH	2 5
		MH	10 20
	D	iP	11 22 46c
		i	23 17
	R	iP	22 47c
		i	23 17
		iPKKP	40 55
	Hf	iP	22 54c
		i	23 25
		eP'P'	48 59
	Pr	iP	22 49c
		i	23 20
		iPKKP	40 54
	Bt	iPNEZ	22 48c
		iNEZ	23 20
		i	33
		eSE	33 04
		iPKKP	40 55
		iP'P'	49 00
		i	44
	W	iP!	22 44c
		i!	23 15
		iPKKP	40 57
	CL	iP	22 50c
		i	23 21c
		ePKKP	40 55
		eP'P'	48 55
	T	iPNEZ	22 49c
		i	23 20
		e	24 31
		iP'P'	49 05

Depth 120± km
Magnitude 6½
USCGS: 11 S 167 E
11:10:10
Moskva: 11:10:20, 100 km

Date	Sta.	Phase	h m s
17	D	e?	17 35 48
	R	e(P)	43
	Pr	eP	49
	W	iP	26c
	CL	eP	32
	T	eP	23

Aleutians?

Date	Sta.	Phase	h m s
18	PX	iLN	01 32 40
	D	eP	22 40
		i	48
	R	e	37
	Hf	e	56
	Pr	eP	44
		i	51
	Bt	eP	48
		i	55
	CL	eP	26
		e	34
	T	iP	23

USCGS: 53 N 169 W
01:14:52

Date	Sta.	Phase	h m s
18	PX	iLN	01 37 48
	D	e?	27 35
		e	48
	R	e	39
	Pr	e	43
	Bt	e	48
	CL	e	28
	T	eP	24

USCGS: 53 N 170 W, 01:19:52

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
July 18	D	iP	03 53 48
		e	54 02
	R	iP	53 44
	Hf	iP	31
	Pr	eP	38
	Bt	eP	31
		i	34
	CL	eP	54 00
		e	09
	T	eP	13
		i	21

BCIS: 17½ N 101½ W
03:48:56

Date	Sta.	Phase	h m s
18	D	iP	09 25 29
	R	eP	28
	Pr	iP	24
	Bt	iP	17
	CL	eP	41
18	P	iPNEZ	12 18 28(c)
	R	iP	31(c)
	Hf	iP	39(c)
		epP	20 12
	Pr	iP	18 36(c)
	Bt	iP	38(c)
	CL	iP	26(c)
	T	iPNEZ	22(c)
		e	20 02

The indicated initial large compressions are preceded by smaller motion of uncertain character.
Magnitude 6.1 (Uppsala)
USCGS: 30 N 139 E
12:06:39, 400 km

Date	Sta.	Phase	h m s
18	P	iP	15 26 23
	R	iP	17
		e	27 01
		e	28 31
	Hf	e	26 23
		e	31
		e	28 11
	Pr	eP	26 21
	Bt	eP	25
		e	28 57
	W	eP	26 14
		i	40
		i	28 24
	CL	eP	26 02
		e	20
	T	eP	10
		i	21
		i	27 57

USCGS: 40 N 110½ W
15:24:20

Date	Sta.	Phase	h m s
	PX	eL	12 17.0
	D	eP	12 06 04
	R	iP	08
	Pr	iP	15
		i	26
	Bt	iP	19
		i	30
	W	iP	05 52
	T	iP	47
		i	06 01

USCGS: 54 N 166 W
11:58:39

Date	Sta.	Phase	h m s
July 19	PX	iN	13 26.0
		i	28.5
		iRNZ	48.0
	D	e	16 10
		e	19
	Pr	e	16
	Bt	e	19
	Kg	eP	15 34
	W	iP	33
		i	57
	T	eP	17

USCGS: 25 N 122½ E
13:02:05

Date	Sta.	Phase	h m s
20	PX	e	10 55.2
		eN	11 09.2
	D	eP'	10 15 35
		e	39
		i	47
	R	eP'	35
		i	38
		i	46
	Hf	i	36
		e	40
	Pr	eP'	32
		i	46
	Bt	eP'	32
		i	37
		i	46
	Kg	e	34
	W	e	39
	T	e	36

Johannesburg: 20°40' S
33°10' E, 09:55:29
BCIS: 21½ S 33½ E, 09:55:37

Date	Sta.	Phase	h m s
20	PX	iGN	11 38.9
		eRNZ	41.8
	R	iP	23 13
		e	29
	Hf	iP	21
		e	37
	Pr	iP	18
		e	26
		e	35
	Bt	iP	22
	Kg	iP	22 59
	W	iP	59c
	T	iP	57

USCGS: 50½ N 156 E
11:12:53, 60 km

Date	Sta.	Phase	h m s
20	PX	i	14 19 50
		eSN	29 20
		eGN	37.2
		eR	41.2
	D	eP	19 40
		i	49
	R	iP	42
		e	55
	Hf	iP	51
		e	20 02
	Pr	eP	19 48
		e	58
	Bt	iP	51
		e	20 02

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
20	W	iP	14	19	31c
	T	iP			29
		i			40
	JMA: $42\frac{3}{4}$ N $145\frac{3}{4}$ E				
	14:08:14, 100 km				
20	P	iPNEZ	15	50	37
		e			52
	PX	eSNZ	16	00	56
		iR		12.9	
	D	iP	15	50	38c
		i			52
	R	iPNEZ			40c
		i			53
	Hf	iP			46c
	Pr	iP			40c
		i			52
	Bt	iP			38c
	W	iP!			40c
		i			53
	T	iPNEZ			47c
	USCGS: $19\frac{1}{2}$ S 174 W				
	15:38:47				
20	PX	iN	19	53.0	
	D	e		42	49
	Pr	e			41
	W	iP			16
		i			28
	CL	e(P)			24
	USCGS: 52 N $170\frac{1}{2}$ W				
	19:34:20				
21	P	eP	00	35	04
	PX	iR		59.7	
	R	iP		34	58
	Hf	iP			54
	Pr	iP			57
	Bt	iP			53
	W	iP		35	13
		i			29
	CL	iP			09
	T	iP			17
	USCGS: Argentina-Northern				
	Chile, 00:23:05				
21	P	ePEZ	06	10	25
	PX	iSNEZ		15	35
		iLN		18	24
			A		T
		PH	$\frac{1}{2}$		3
		SH	$\frac{3}{4}$		4
		MH	13		20
	D	eP	06	10	21
		eScP		17	07
	R	eP		10	17
		eSN		15	18
		eScP		17	05
	Hf	eP		10	06
		i			20
		eScP		17	03
	Pr	iP		10	12
	Br	eP			06
	W	eP			35
		iPcP		13	22
		iScP		17	12

(continued)

Date	Sta.	Phase	h	m	s
July		(continued)			
21	CL	eP	06	10	28c
		i			50
		iPcP		13	20
	T	iPNEZ		10	38c
		i		11	01
		ePcP		13	24
	Magnitude $5\frac{3}{4}$-6 (Berkeley)				
	USCGS: $14\frac{1}{2}$ N 92 W				
	06:04:11, 100 km				
21	D	eP	07	13	22
	R	eP			23
		i			57
	Hf	eP			30
		e		14	04
	Pr	eP		13	27
		i			55
	W	iP			17
		i			43
	CL	eP			22
	USCGS: $4\frac{1}{2}$ S 153 E, 07:00:10				
21	R	eP	13	28	58
	Pr	iP			58
	W	iP			58
	CL	iP		29	03
	Tonga region				
21	P	eP	19	49	20
	PX	e	20	00.9	
		eL		13.4	
	D	iP	19	49	20
	R	iP			20d
	Hf	eP			28
	Pr	iP			22d
	Bt	eP			18
	Kg	iP			20
	W	iP			22d
		i			34
	CL	iP			27d
		i			39
	T	iPNEZ			31
		i			41
		i			50
	USCGS: 28 S 175 W				
	19:37:10, 150 km				
21	W	i(P)	19	53	04
		i			17
		i			27
	These sharp phases appear to refer to one or more separate shocks. Compare 06h, July 22, following.				
22	P	iPNEZ	06	29	51
		e		30	08
	PX	eSKS		39	52
		iSN		40	21
		i			43
		i(PPS)		41	36
		eSSN		45	47
		iSSS		49.9	
		iGN		52.7	
		iRNZ		56.8	
			A		T
		PH	$\frac{1}{4}$		1
		SH	$\frac{1}{2}$		5
		MH	4		20

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
22	D	iP	06	29	52c
		i		30	06
		i			13
	R	iP		29	52c
		i		30	04
		i			13
		eSNE		40	16
	Hf	iP		29	58c
		e		30	08
		e			18
	Pr	iP		29	52c
		i		30	03
		i			13
	Bt	iP		29	50c
		i		30	01
		i			10
	Kg	iP		29	51
		e		30	02
		i			11
	W	e(P)		29	51
		iP!			53c
		i		30	01
		i			10
	T	iPNEZ			00c
		i			13
		iNEZ			20
	Magnitude 6±				
	Depth 40± km				
	USCGS: $33\frac{1}{2}$ S 178 W				
	06:16:52				
22	D	i	06	34	48
	R	iP			48
		i		35	00
		i			10
	Hf	iP		34	54
		i		35	16
	Pr	eP		34	48
		i		35	00
		i			09
	Bt	eP		34	47
		e		35	07
	W	iP		34	51c
		i		35	00
		i			09
	T	eP		34	57
	Depth 40± km				
	USCGS: 34 S $177\frac{1}{2}$ W				
	06:21:50				
22	P	eP	10	28	22
	R	iP			24
	Hf	iP			31c
	Pr	iP			28c
	Bt	iP			30c
		e(pP)		29	53
	Kg	iP		28	13c
	W	iP			08c
		e(pP)		29	34
	T	iP		28	13c
	JMA: 34.4 N 136.3 E				
	10:16:37, 350 km				
22	PX	iSN	14	11	16
	D	iP		05	12
		i			21
	R	iP			16d
		i			31

(continued)

Date	Sta.	Phase	h	m	s
July		(continued)			
22	Pr	iP	14	05	22d
	Bt	iP			27d
	Kg	eP		04	57
	W	iP			57d
		i		05	05
	T	iP		04	56d
		i		05	03
	USCGS: 53 N 167 W, 13:57:41				
22	W	eP	14	16	20
	BCIS: $53\frac{3}{4}$ N 164 W, 14:09:10				
23	P	iPEZ	00	53	30
		iN		55	25
	PX	iSNEZ	01	00	14
		eLN		02.8	
		iR		03	34
			A		T
		SH	$\frac{3}{4}$		3
		MH	30		18
	D	eP	00	53	32
		i			42
		i			49
	R	eP			35
		i			42
		eS	01	00	20
	Hf	eP	00	53	44
		i			56
		e		54	04
		i(PcP)		55	03
	Pr	iP		53	42c
		i			49
	Bt	eP			46c
		iSE	01	01	41
	Kg	eP	00	53	17
	W	iP			19c
		i			38
	CL	iP			23c
		i			31
		i			40
	T	eP			17
		i			23
		i			30
	Magnitude $6\frac{1}{4}$-$6\frac{1}{2}$				
	USCGS: 52 N 177 W, 00:45:12				
23	D	e	03	59	04
	R	e			05
	Pr	e			05
		e			10
	W	i		58	26
		i			38
	CL	e			32
		e			47
	T	e			44
	BCIS: 52 N 177 W, 03:49.9				
23	D	e	04	11	37
	R	e			56
	Pr	i			45
	Bt	i			50
		i		12	02
	W	iP		11	21
		i			55
		i		12	11
	CL	eP		11	28
	T	eP			20
		e			47
	USCGS: 04:03:57				
	BCIS: 51 N $172\frac{1}{2}$ W				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July					
23	D	i	05	08	03
	R	e			03
	Pr	iP			07
		i			19
	W	iP			43
		i			54
	CL	iP			48
23	P	ePNEZ	06	33	38
	PX	iS		44	36
		eN		45	32
		eGN		57.0	
		eRNZ	07	00.8	
	D	eP	06	33	37
	R	eP			38
	Hf	eP			44
	Pr	eP			39
	Bt	eP			38
	Kg	eP			33
	W	iP			36
		i		34	39
	CL	eP		33	44
	T	eP			44
	USCGS: $20\frac{1}{2}$ S 170 E				
	06:20:43				
23	D	eP	13	41	55
		e		42	11
		epP		43	48
	R	eP		42	00
		epP		43	51
	Pr	iP		41	58
		epP		43	47
	Bt	eP		41	55
	W	iP			56
		ipP		43	46
	CL	eP		42	03
		epP		43	43
	Depth 500 km				
	USCGS: 25 S 180				
	13:30:17, 600 km				
24	P	eP	02	09	28
		iNEZ			31c
		ipPNEZ			41
	PX	iSNEZ		19	22
		iSSN		24	32
		iGNE		30.4	
		iRNZ		34.7	
			A		T
		PZ	0.7		2
		PH	0.5		2
		SH	1		3
		MH	5		20
	R	eP	02	09	25
		ipP			37
		iSNEZ		19	15
	Hf	eP		09	19
		ipP			31
	Pr	eP			22
		epP			34
	Bt	iP			17
		ipP			33
	Kg	eP			38
		i			42
	Is	iP			35
		i			38
		ipP			48
		i			51

(continued)

Date	Sta.	Phase	h	m	s
July		(continued)			
24	CL	eP	02	09	33
		epP			46
	T	iPNEZ			41
		ipP			57
		iSN		19	44
	Depth 40 km				
	Magnitude 6.3 (Uppsala)				
	USCGS: 30 S $70\frac{1}{2}$ W, 01:57:25				
24	R	eP	06	18	32
	Hf	eP			37
	Pr	iP			32
	Bt	iP			42
	Is	iP			35
	CL	eP			38
	Wellington: 35.95 S 179.4 W				
	06:05:34.5, magnitude 5.2				
24	P	eP	10	09	44
		i			52
	PX	eSNZ		20	32
		eSSN		26.2	
		eGN		32	32
		eRNZ		36.0	
	R	eP		09	42
		i			55
	Hf	eP			51
		e		10	01
	Pr	i		09	53
	Bt	e			56
	Kg	eP			44
		e			49
	Is	eP			44
		i			52
		i			55
	CL	eP			48
		i			59
	T	eP			46
		e			57
	USCGS: 18 S $169\frac{1}{2}$ E				
	09:56:57				
24	P	iPNEZ	10	59	34c
	PX	eSN	11	09.5	
	R	iP	10	59	30c
	Hf	iP			23
	Pr	iP			26c
	Bt	iP			23
	Kg	iP			43
	Is	iP			40c
	CL	iP			38c
	T	iPNEZ			45c
	USCGS: 27 S 66 W				
	10:47:44, 150 km				
24	P	eP	11	15	15
		ePP		18	34
	PX	iSN		26	00
		iSSN		31.7	
		iGN		38.0	
		iR		41.6	
			A		T
		PZ	$\frac{1}{4}$		$1\frac{1}{2}$
		PH	0.2		$1\frac{1}{2}$
		MH	7		20
	R	eP	11	15	17
		i			21
		eSN		26	03
	Pr	eP		15	19
	Bt	eP			22

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
24	Kg	eP	11	15	12
	Is	iP			17
	CL	eP			21
	T	ePNEZ			22
	Magnitude $6\frac{1}{2}$				
	USCGS: 20 S 169 E				
	11:02:30				
24	Is	iP	15	08	20
	CL	iP			22
	Northeast of New Zealand				
	BCIS: 14:55.2				
24	W	iP	18	34	10
	Is	iP			11
	CL	eP			17
	Wellington: 34 S $177\frac{3}{4}$ W				
	18:21:18, magnitude $5\frac{1}{4}$				
25	P	iPNZ	01	09	36
	R	iP			37c
	Hf	iP			49c
	Pr	iP			46c
	Bt	iP			49
	Kg	iP			24c
	W	iP!			26c
		i(pP)			52
		i(sP)		10	04
	Is	iP		09	27c
		i			58
	CL	iP			29c
	T	iP			23
	No S or surface waves.				
	Depth 100 km?				
	BCIS: $51\frac{1}{4}$ N $158\frac{3}{4}$ E				
	00:59:22				
25	PX	eN	03	44.0	
	D	e		33	04
	R	e			03
		e			14
		e			20
	Pr	e			12
		e			38
	Bt	e			24
		e			41
	W	iP		32	49
	Is	e(P)		33	00
	CL	e		32	54
	T	e		33	02
	USCGS: 52 N 177 W				
	03:24:40				
25	P	eP	07	50	45
		i		51	02
		i			09
	PX	iSN		57	08
		iLN	08	00	24
			A		T
		PZ	$\frac{1}{4}$		$1\frac{1}{2}$
		MH	10		20
	R	eP	07	50	48
	Hf	eP		51	00
	Pr	eP		50	57
		i		51	14
	Bt	eP		50	58
	Kg	eP			31
		i			53
	W	iP			33
		i			56

(continued)

Date	Sta.	Phase	h	m	s
July		(continued)			
25	Is	iP	07	50	35d
		i			58
	CL	eP			41
	T	eP			32
		i			42
		i			47
		i(PcP)		52	04
	Magnitude $6\frac{1}{4}$ (Berkeley)				
	USCGS: 51 N 177 W				
	07:42:25				
25	P	iP	08	14	53
	R	iP			55
	Hf	iP		15	02
	Pr	iP		14	55
	Bt	iP			54
	W	iP!			55
	Is	iP!			56
	CL	iP			59
	New Zealand-Tonga region.				
	Probably deep				
	BCIS: 08:03.1				
25	W	iP	11	17	48
	Is	iP			49
25	P	isP	18	43	35
	PX	eR	19	06.4	
	R	esP	18	43	38
	Hf	eP			27
		esP			47
	Pr	eP			24
		isP			43
	Bt	isP			45
	Kg	isP			25
	W	iP			07
		isP			27
	Is	isP			27
	CL	eP			11
		esP			31
	T	isP			25
	sP much larger than P.				
	JMA: 41.6 N 142.1 E				
	18:31:40, 80 km				
26	PX	e(R)	00	59.8	
	D	e(P)		47	53
		e		48	02
	R	iP		47	55
	Pr	iP		48	06
	Bt	iP			09
	Is	iP		47	43
	CL	eP			48
	T	eP			39
	USCGS: 53 N $171\frac{1}{2}$ W				
	00:40:02				
26	P	eP	04	52	44
	PX	iLN		54	52
	R	eP			54
	W	eP		52	24
		eS		54	04
	Is	iP		52	28
		i(S)		54	14
		i			26
	T	e		52	56
		e(S)E		54	02
	BCIS: off Oregon, 04:50.0				

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h m s
July			
26	P	eP	07 02 53
	PX	iSKSN	13 22
		iGN	26.8
		eREZ	30.6
	R	eP	02 45
	Hf	eP	55
	Pr	eP	48
	W	eP	37
	Is	eP	48
	Wellington: 35.8 S 179.1 W		
	06:49:42, magnitude 5.4		
27	PX	eLN	07 03.4
	D	iP	06 55 19
	R	iP	15
		iPcP	58 09
	Hf	eP	55 04
	Pr	iP	10
		i	32
		iPcP	58 10
	Bt	eP	55 02
		iPcP	58 09
	Is	iP	55 31
		iPcP	58 16
	T	iP	55 39
	USCGS: $14\frac{1}{2}$ N $91\frac{1}{2}$ W		
	06:49:00		
27	Pr	iP	07 11 22
	Bt	iP	27
	Is	iP	01
	T	iP	10 52
27	D	i(P)	09 05 32
	Bt	i(P)	21
	Is	e(P)	44
		e	46
	CL	e	41
	Possibly part of next		
27	D	iP	09 08 50
	R	iP	46
	Pr	eP	37
		e	09 02
	Bt	eP	08 33
	Is	iP	09 06
	CL	eP	02
		e	13
	T	eP	09
27	P	eP	14 57 16
	R	eP	18
	Hf	eP	25
	Pr	iP	18
	Bt	eP	18
	Kg	eP	15
	Is	iP	21
	CL	eP	24
	T	eP	20
	USCGS: 20 S $174\frac{1}{2}$ W		
	14:45:28		
27	P	iP	18 56 32
		i	41
	R	iP	34
		e	44
		i	49
	Hf	eP	41
	Pr	eP	36

(continued)

Date	Sta.	Phase	h m s
July		(continued)	
27	Bt	eP	18 56 36
	Kg	iP	24
	W	iP	28d
		i	38
		i	44
	Is	iP	30
		i	41
		i	46
	T	iP	27
	USCGS: $6\frac{1}{2}$ S $151\frac{1}{2}$ E		
	18:43:01		
27	P	eP	21 07 57
		ipP	08 08
		isP	13
	R	eP	02
	Pr	iP	08
		ipP	19
	Bt	eP	12
		ipP	22
		isP	29
	Kg	eP	07 43
	W	iP	46d
		ipP	57
		isP	08 02
	Is	eP	07 48
		ipP	59
		isP	08 04
	T	iP	07 46
	Depth 50 km		
	USCGS: $51\frac{1}{2}$ N 180, 20:59:21		
28	PX	eR	02 10.5
	R	eP	01 43 38
		e	59
	Hf	eP	44
		e	44 05
	Pr	eP	43 40
		e	44 00
	Bt	eP	43 40
	W	eP	36
		i	57
		i	44 02
	Is	eP	43 36
		e	52
		i	57
	USCGS: 15 S $167\frac{1}{2}$ E		
	01:30:52		
28	D	iP	03 04 01
	R	iP	03 59
	Hf	eP	58
	Pr	iP	57
	Bt	iP	53
	Kg	eP	04 07
	W	iP	07
	Is	iP	08
	T	eP	13
	Pacific		
28	PX	e(G)N	06 04.7
		eR	07.5
	W	iP	05 45 53
	Is	iP	57
28	P	iPNEZ!	08 45 23c
		iNE	43
	PX	iSNE	49 32
		iS	58
		iR	52.0

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h m s
July		(continued)	
28	P	e(Lg)E	08 53 42
			A T
		PZ	24 $3\frac{1}{2}$
		PH	20 3
		SH	150 30
		MH	1300 20
	D	iP	08 45 23c
	R	iPNEZ	17c
		i!	19c
		iSN	49 38
	Hf	iP	45 04c
		i!	07c
		iS	49 33
		i	51 09
		i	52 11
	Pr	iP	45 10c
		i!	13
	Bt	iP	03c
		i!	04d
		iSN	49 16
	SN	iP	45 26c
		i	29
	Kg	eP	37
		i	41c
	W	iP!	37c
		eSE	50 12
	Is	iP	45 33c
		i!	35c
		eSN	50 13
	T	iP	45 42c
		i!	44c
		i(Lg)NE	54 08
	Magnitudes, by Professor		
	Gutenberg: m=7.5, M=7.9		
	Destructive in Guerrero.		
	Damage to weak tall		
	structures in Mexico City.		
	USCGS: 17 N 99 W		
	08:40:04		
28	P	i	09 23 26
	D	eP	19
		e	25
	R	eP	13
		i	20
	Hf	eP	02
		e	08
	Pr	iP	09
		i	13
	Bt	eP	00
		i	07
	Kg	eP	35
		e	41
	W	iP	32
	Is	iP	32
		i	37
	T	i	42
	Aftershock, Mexico		
28	P	iP	10 03 51
	R	eP	45
		i	50
	Hf	eP	31
		i	37
	Pr	iP	40
		i	47

(continued)

Date	Sta.	Phase	h m s
July		(continued)	
28	Bt	eP	10 03 31
		i	37
	Kg	iP	04 06
	W	eP	03
		i	05
	Is	iP	03
	T	eP	10
	Aftershock, Mexico		
	USCGS: 17 N 99 W, 09:58:30		
28	D	e	10 24 33
	R	eP	26
	Hf	eP	14
	Pr	eP	21
		i	27
	Bt	e	17
	Kg	eP	50
	W	iP	47
	Is	iP	44
		i	50
	T	iP	54
	BCIS: aftershock, Mexico		
	10:19:18		
28	R	e(P)	10 28 12
	Hf	e(P)	07
	Pr	i(P)	12
	Bt	e(P)	06
	Is	iP	22
		i	37
28	R	eP	11 40 41
	Hf	eP	32
	Pr	iP	35
	W	eP	41 00
		i	06
	Is	iP	00
	Aftershock, Mexico		
	BCIS: 11:35.5		
28	Hf	eP	12 05 35
	Pr	eP	38
	Bt	eP	34
	Kg	eP	06 14
	Is	iP	03
	Aftershock, Mexico		
28	R	iP	12 30 40
		e	31 47
	W	iP	07
		e	32 06
	Is	e	00
28	P	iP	13 39 36c
	PX	iSN	44 08
	R	iP	39 29c
		i	40
	Hf	iP	17c
		i	19
		i	28
		e(Rg)	46 19
	Pr	iP	39 23c
	Bt	eP	16
	Kg	iP	53c
	W	iP!	48c
		i	40 52
		iPcP	43 19
	Is	iP!	39 47c
		i	56
		iPcP	43 19

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
28	T	iP	13	39	55c
		iLg		48	19
	Aftershock, Mexico				
	Readings given for PcP may				
	refer to another shock.				
	USCGS: 17½ N 99 W				
	13:34:20				
28	D	eP	14	39	21
	R	eP			16
		i			25
	Hf	iP			05
		i			13
	Pr	iP			11
		i			18
	Bt	eP			04
	Kg	eP			40
		e			47
	W	iP			36
		i			42
	Is	iP			33
	T	eP			42
	Aftershock, Mexico				
	BCIS: 14:34.2				
28	R	iP	22	39	23
	Pr	iP			19
	Is	iP			35
28	R	e	23	42	35
	Pr	eP			32
	W	iP		43	01
	Is	iP		42	54
29	P	eP	00	16	41
	PX	iSNZ		21	14
		iLN		23.5	
	R	eP		16	38
		i			44
	Hf	eP			26
		i			33
	Pr	iP			33
		i			43
	Bt	eP			26
		e			34
	Kg	eP		17	03
		e			10
	W	iP		16	59
		i		17	09
	Is	iP		16	54
		i			56
	T	iP		17	02
	USCGS: 17 N 99 W				
	00:11:20				
29	R	i(P)	00	19	26
	Hf	e(P)			14
	Pr	e(P)			25
	Bt	e(P)			03
	Kg	e(P)			49
	W	i(P)			45
	Is	i(P)			43
	Aftershock, Mexico?				
	Part of preceding?				
29	W	iP	01	48	32
29	D	eP	09	24	16
	R	e?			18
		i			24
	W	iP			16
		(continued)			

Date	Sta.	Phase	h	m	s
July		(continued)			
29	Is	iP	09	24	17
		i			24
	BCIS: 18½ S 176½ E				
	09:11:51				
29	R	eP	10	10	14
	Hf	eP			16
	Pr	eP			11
	W	iP			14
	Is	iP			13
	Wellington: 34 S 178 W				
	09:57:13, magnitude 5.4				
29	P	eP	11	43	49
	PX	iLN		52	42
	R	eP		43	41
		e			56
	Hf	eP			31
	Pr	iP			36
	Bt	iP			31
	Kg	eP		44	05
	W	iP			03
	Is	iP			00
	Mexico				
29	D	eP	13	09	05
	Pr	e			25
	Bt	e			38
	W	iP		08	44
		i			51
	Is	iP			44
	USCGS: 51½ N 178 W				
	13:00:29				
29	R	eP	13	42	40
	Hf	eP			46
	Pr	eP			40
	W	iP			38
	Is	iP			40
	BCIS: Fiji region, 13:30.3				
29	W	iP	14	35	09
		i			21
		i			28
	Aleutians?				
29	P	eP	16	46	57
		iLNZ	17	00.5	
	R	eP	16	46	51
	Hf	eP			50
	Bt	eP			43
	W	eP		47	09
	Is	eP			09
	CL	eP			11
	T	eP			18
	Eastern Pacific?				
29	P	iPNEZ!	17	26	48c
	PX	iSNEZ		36	12
		iSSNEZ		40.8	
		eGNE		46.0	
		iRNZ		50	20
	P	eP'P'		54	25
			A		T
		PZ	4½		5
		PH	2		5
		SH	4		6
		MH	20		20
	R	iPNEZ	17	26	44c
		iSEZ		36	04
		eP'P'		54	37
		(continued)			

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
July		(continued)			
29	Hf	iP	17	26	37c
		i			55
		i		27	10
		eS		35	54
	Pr	iP		26	39
		iS		36	01
		eP'P'		54	27
	Bt	iP		26	36c
		i			54
		iSEZ		35	51
	Kg	iP		26	58c
	W	eP			56
		i!			58
		eP'P'		54	33
	Is	iP		26	54c
		i!			56
		iS		36	28
		i		37	08
		eP'P'		54	33
	CL	iP		26	53c
		eP'P'		54	30
	T	eP		26	59
		iNEZ!		27	01
		iSNE		36	40
	Magnitudes, by Professor				
	Gutenberg: m=6.9, M=7.0				
	USCGS: 23½ S 71½ W				
	17:15:14				
30	P	eP	11	27	52
	R	eP			55
	Hf	iP		28	04
	Pr	iP			00
	W	iP		27	35
		i			53
	Is	iP			49
	CL	iP			49
		i			57
	T	e(P)			49
	Japan?				
30	D	iP	23	27	36
		e			50
	R	iP			33
	W	iP			45
		i			59
	CL	eP			42
	BCIS: northern Chile				
	23:16.2				
August					
1	D	eP	01	18	12
	R	iP			08
		i			17
	Pr	eP			04
		e			11
	Bt	eP		17	57
		e		18	05
	Kg	eP			32
		e			38
	W	iP			31
	Is	iP			29
	T	eP			35
	USCGS: 17 N 99 W				
	01:12:53				
1	D	iP	12	57	22
	R	iP			19
		ipP			56
		(continued)			

Date	Sta.	Phase	h	m	s
August		(continued)			
1	Hf	iP	12	57	11
		epP			47
	Bt	iP			11
	W	iP			32d
		i			38
		ipP		58	08
	Is	iP		57	29d
		ipP		58	03
	BCIS: 18 S 70 W				
	12:46:23, 150 km				
1	P	i	16	26	47
	PX	eSN		32.9	
		eLN		35.5	
	D	eP		26	41
		i			57
	R	i			53
	Hf	eP?			51
		i		27	03
	Pr	eP		26	47
		i			58
	Bt	eP			52
		i		27	04
	Kg	i		26	34
		e		27	05
	W	iP		26	25
		i			34
		i			23
	Is	eP			25
		i			36
		i			45
	CL	eP			29
		i			42
	T	eP			24
		i			34
	USCGS: 52 N 170 W				
	16:18:48				
1	P	eP	17	10	10
		i			28
	R	eP			14
		i			31
	Hf	eP			18
		i			36
	Pr	eP			13
		i			30
	Bt	i			29
	Kg	e			28
	W	iP			15c
		i			24
		i			32
	Is	iP			15c
		e			26
		i			32
	CL	iP			18
		e			29
		i			36
	T	eP			22
		i			39
	USCGS: 30 S 177½ W				
	16:57:30				
1	R	iP	18	05	02
	Hf	iP			08
	Pr	iP			05
	Bt	iP			07
	W	iP		04	51
		i			51
	JMA: 29.8 N 139.8 E				
	17:53:14, 400 km				

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
August					
1	P	eP	22	19	18
	PX	iSNZ			24.0
		eGN			25.7
		eR			27.0
	R	iP		19	13
		i			21
	Hf	iP			01c
		i			09
	Pr	iP			06c
	Bt	iP			01c
	Kg	iP			34
	Is	iP			42c
	USCGS: 16 N 97 W				
	22:13:40				
2	PX	eLN		02	50.8
	R	eP		25	51
	Pr	eP			51
	Bt	eP			49
	Is	iP			54
	Wellington: 38.3 S 177.9 E				
	02:12:28, magnitude 5.2				
2	P	eP	12	29	54
	PX	eSN			37.7
		eLN			41.4
	Pr	e(P)		30	05
	Kg	e		29	43
	Is	eP			36
		i			48
	T	e			44
	USCGS: 52 N 175 W				
	12:21:37				
3	R	i	03	59	07
	W	iP			00
		i			14
		i			22
	Is	iP			04
	CL	eP			06
		e			19
	T	eP			00
		i			08
3	P	iPNEZ!	08	26	25.0d
		i			29.1
		iSN		27	07.3
	R	iP		26	17.8
		iNEZ			20.1
		iSNEZ			51.7
	Hf	iP			10.5
	Bt	iPNEZ!		25	56.9d
		iSN		26	12.0
	W	iP			47.4
		iS		27	58.3
	Magnitude 4.5				
	Baja California, probably				
	near 32.5 N 116.0 W				
	08:25.6				
3	PX	iSN	08	38	50
		eGN			49.4
		eR			53.8
	Initial phases obscured.				
	USCGS: 28 S 176½ E				
	08:15:45				
3	P	iP	10	31	30
		epP			47
	R	iP			33
		epP			52

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
3	Hf	iP	10	31	43
		ipP		32	02
	Bt	iP		31	43
		ipP		32	02
	Kg	iP			19
		epP			38
	W	iP			21c
		ipP			39
	Is	iP			23
		ipP			41
	CL	iP			27c
		ipP			46
	T	iP			19
	Depth 70 km				
	USCGS: 50 N 157 E				
	10:21:10				
3	R	eP	11	54	13
	Hf	iP			22
	W	iP			06
	Is	iP			07
	CL	iP			09
	T	iP			07
	USCGS: 21 N 145 E				
	11:41:41				
3	P	iP	11	57	24
	R	iP			27
	Hf	iP			42
	Kg	eP			17
	W	iP			19
	Is	iP			21
	CL	iP			24
	T	iP			20
	USCGS: 21 N 145 E				
	11:44:55				
3	D	eP	16	54	45
	R	eP			46
	Hf	eP			57
	Bt	iP			59
	Kg	eP			27
	W	iP			30d
		i			39
	Is	iP			31
	CL	iP			34d
	T	iP			27
	Aleutians?				
3	D	eP	23	52	50
		e		53	09
	R	eP		52	46
		e			53
4	PX	i	00	59	55
		iSSN	01	10	30
		iGN			19.3
		iR			23.5
	USCGS: 3½ S 145 E				
	00:39:12				
4	P	iPNEZ	06	11	54c
		i		12	07
	PX	iSNE		16	18
		eGN			17.8
	P	eLgNZ		20	20
	PX	iR			21.0
				A	T
		PZ		2½	3
		PH		1½	3
		SH		3	7
		MH		12	10

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
4	R	iPEZ	06	11	38c
		i			56
		i		12	01
		iSN		16	21
	Hf	iP		11	36c
		i			43
		i			49
	Bt	iP			35c
		i			43
		i			48
	Kg	eP		12	10
	W	iP			07c
		i			16
	Is	iP			06c
	T	iP			14c
		iSN		17	16
		iLgN		21	06
	Magnitude 6¼				
	USCGS: 17 N 100 W				
	06:06:36				
4	PX	eR		10	50.4
	R	eP'	09	45	01
		e			08
	Bt	e			25
	W	iP2'		46	22
	Is	eP'		45	08
		iP2'		46	23
		i			33
		ePP		50	17
	BCIS: 40½ S 54½ E				
	09:24:24				
4	P	eP	11	33	44
		i			48
	PX	iSNZ		38	20
		iLN			39.5
	R	eP		33	37
		i			44
	Hf	iP			26
		i			33
	Bt	eP			25
		i			30
	Kg	eP		34	00
	W	iP		33	56
	Is	iP			56
		i		34	03
	T	eP			05
	USCGS: 17 N 99½ W				
	11:28:24				
4	P	eP	14	18	43
	R	eP			38
		i			45
	Hf	eP			27
	Bt	eP			22
	Kg	eP		19	01
		i			07
	W	iP		18	55
		i		19	08
	Is	iP		18	57
		i		19	02
	T	eP		19	03
		i			08
	Mexico. BCIS: 14:13:28				

Date	Sta.	Phase	h	m	s
August					
4	P	iP	14	21	34c
		i			42
	PX	iSN		25	47
		iL			27.2
	P	eLg		30	10
				A	T
		PZ		2	3
		PH		2	3
		SH		4	9
	R	iP	14	21	10c
		i			17
	Hf	iP			17c
		i			24
		i(Lg)		28	25
	Bt	iP		21	16c
		i			23
	Kg	eP			53
	W	iP			47
		i			50
		i			54
	Is	iP			45c
		i			51
		i		25	22
	T	eP		21	55
		i		22	01
	Magnitude 6¼. Mexico				
	USCGS: 17 N 99½ W				
	14:16:18				
4	Bt	eP	14	30	25
		i			29
	Hf	i			26
	W	i			57
	Mexico				
4	P	eP'	21	28	57
		i		29	08
		iP2'			33
	PX	iPP		33	05
		i		34	33
		iSKSP		43	22
		iSSN		53	00
		i			58
		iSSSNZ			59.3
		iLN	22		10.2
	R	eP'		28	58
		e		29	04
		i			12
	Bt	eP'			02
		i			09
		i			25
	Kg	eP'			08
	W	eP'		28	53
		e		29	06
		i			30
		ePP		33	22
	Is	i		29	04
		ePP		33	17
		e		34	29
	T	eP'		29	07
		e			19
	Magnitude 6?				
	USCGS: 45 S 35 E				
	21:08:51				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
5	P	eP	04	42	08
	PX	iSN		52	07
		eGN	05	02.6	
	R	eP	04	42	00
	Hf	eP			16
	Kg	eP			02
	Is	iP			01
	T	eP			10
		e			18
	BCIS: 24½ S 176 W				
	04:29:47				
5	P	iP	08	00	35
	PX	eRNZ		21.9	
	R	eP		00	38
	Hf	iP			45
	Is	iP			39
	T	iP			46
	BCIS: 15 S 173½ W				
	07:49:13				
5	P	iP	13	10	03
	PX	iSN		19.9	
		eN		28.5	
		iRNZ		31.5	
	R	eP		10	10
		i			21
	Hf	eP			10
		e			17
	Is	eP			04
		i			20
	Samoa region				
	BCIS: 12:57.7				
5	Is	iP	14	11	27
5	P	iP	17	40	31
		iPcP		43	51
	PX	iSNZ		45	20
		eGN		47.4	
		iR		48.4	
	R	iP		40	27
		i			43
		iPcP			56
	Hf	iP			15
		i			30
		ePcP		43	46
	Bt	iP		40	15
	Kg	iP			47
	W	eP			44
		iPcP		43	55
	Is	iP		40	42
		i		41	15
		iPcP		43	54
		e		44	17
	T	eP		40	50
	USCGS: 16 N 96 W				
	17:34:54, 100 km				
5	PX	eR	22	13.8	
	R	eP	21	43	16
		e			39
		e		44	50
	Bt	e(P)		43	19
	Kg	e(P)			16
		e			36
	W	iP			17
		(continued)			

Date	Sta.	Phase	h	m	s
August		(continued)			
5	W	i	21	43	30
		i			38
	Is	iP			18
		i			31
		i			39
	CL	eP			20
		e			42
	Wellington: 32½ S 179½ W				
	21:30:30, magnitude 5.4				
6	W	iP	00	13	43
		i			50
	CL	eP			48
		e			54
	USCGS: 52½ N 160½ E				
	00:03:54				
6	Is	iP	03	12	32
	CL	e(P)			26
	Mexico				
6	R	eP	08	46	37
	W	iP			16c
		i			26
	Is	iP			18
6	W	iP	23	55	38
	CL	eP			42
	USCGS: Andreanof Is.				
	23:47:30				
7	P	iP	03	14	17
	R	iP			20
	Hf	iP			25
	Bt	iP			18
	W	iP			19c
	Is	iP			21
	CL	iP			24
	T	iP			26
	Southwest Pacific				
7	D	eP	04	49	29
	R	eP			28
		e			38
	Hf	eP			32
	W	iP			25
		i			37
	Is	iP			27
	T	eP			34
	BCIS: 19 S 170 E				
	04:36:22				
7	W	iP	06	02	12
		i			23
	USCGS: near the coast of				
	Kamchatka, 05:49:43				
7	D	e	08	58	55
	R	i(P)			50
	Hf	iP			42
	Bt	i(P)			42
	Kg	iP		59	06
	W	iP			07
	CL	eP			03
	BCIS: 5 S 81 W, 08:49.4				
7	R	e(P)	15	54	18
	Bt	e(P)			17
	W	iP			36
	Is	iP			35
	CL	eP			31
	USCGS: northern Peru				
	15:44:47				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
7	R	e	16	00	07
	W	iP			03
	Is	iP			03
7	Is	eP	19	05	19
		i			26
	CL	eP			22
	BCIS: Kermadec region				
	18:52.8				
7	P	iP	19	51	54d
	R	iP			57d
	Hf	iP		52	02d
	Bt	iP		51	56d
	Kg	iP			53
	Is	iP!			59d
		epP		53	56
	CL	iP		52	02d
		epP		54	00
	T	iP		52	03d
	USCGS: 19½ S 178 W				
	19:40:46, 550 km				
7	R	i	22	21	07
	Hf	eP		20	46
		e			54
	Is	iP		21	18
		i			27
	CL	eP			13
		e			21
	Mexico				
8	P	iPNEZ	04	48	19
	PX	iLN		51	28
		i			43
		iL		52	28
	R	eP		48	13
		i			17
	Hf	iP			01
		i			06
		i			16
	Bt	iP		47	54d
		i		48	02
	Kg	iP			41d
		i			50
	W	iP			40d
	Is	iP			37d
	CL	iP			36d
	T	iPNEZ			51d
	USCGS: 19 N 109 W				
	04:44:20				
8	R	e	15	04	41
	W	eP			40
	Is	iP			41
	T	eP			48
	BCIS: Tonga region				
	14:53.4				
8	W	iP	15	38	31
	Is	iP			35
	BCIS: Aleutians, 15:30.8				
8	P	e(P)	22	46	39
	PX	e		50.0	
		e	23	02	03
		eSS		06.9	
		iR		23.3	
	R	i(P)	22	46	38
		(continued)			

Date	Sta.	Phase	h	m	s
August		(continued)			
8	Hf	eP	22	46	18
		i			24
	Bt	eP			10
	Kg	eP			59
	W	iP			57
	Is	iP			55
	CL	iP			53
	T	eP		47	09
	USCGS: 7½ S 13 W, 22:33:02				
9	R	e	01	15	21
	Bt	i			37
	W	iP			01
		i			11
		i			18
	Is	eP			03
		e			13
	CL	eP			04
		e			14
	BCIS: Andreanof Is.				
	01:07.0				
9	PX	iP	02	43	27
		ePP		47	24
		i			43
		iSN		55	19
		iPS		56.7	
		iSSN	03	02	38
		iN		07	30
		iGN		11.5	
		iR		16.5	
			A		T
		PPZ	0.6		4
		MH	3		20
		MZ	6		20
	R	ePP	02	47	49
		ePKKP		59	35
	Hf	eP		43	35
		ePP		47	48
		ePKKP		59	12
	Bt	ePP		47	56
		iPKKP		59	31
	Kg	eP		43	25
	W	iP			20
		i			27
		e		44	08
		e		46	42
		e		47	34
		ePKKP		59	20
		i			42
	Is	i		47	37
		iPKKP		59	21
		i			41
	CL	eP		43	28
		e		47	42
		ePKKP		59	18
	T	eP		43	21
		ePP		47	43
	Magnitude 6.2 (Uppsala)				
	USCGS: 2 S 137 E, 02:29:34				
9	W	eP	07	50	53
		i		51	00
	BCIS: 52¼ N 175¾ W				
	07:42:50				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
9	P	eP	11	10	30
	R	eP			35
		e(pP)		11	05
	W	iP		10	21d
		i			44
		i(pP)			51
	Is	eP			24
		e(pP)			52
	CL	eP			27d
		e(pP)			57
	T	eP			20
		e(pP)			50
	Readings given as pP may refer to sP.				
	USCGS: 46 N 151 E				
	10:59:46, 100 km				
9	W	iP	19	56	11
	Is	iP			13
	CL	iP			16
	BCIS: Kermadec region				
	19:43.2				
10	R	iP	00	12	28
		ipP			38
	Hf	iP			35
		ipP			45
	Bt	iP			36
		ipP			47
	Kg	iP			12
		ipP			22
	W	iP			13d
		ipP			22
		i			32
	Is	iP			15
		ipP			26
	CL	iP			19d
		ipP			30
	Depth 40± km				
	JMA: 44½ N 151½ E				
	00:01:39, 80 km				
10	P	iP	02	29	55
	R	iP			57c
		epP		31	57
		e		32	08
	Hf	iP			03c
	Bt	iP		29	57c
	Kg	eP			54
	W	iP			56c
		ipP		32	03
	Is	iP		29	59c
		ipP		32	05
	CL	iP		30	03c
		e		32	08
	T	iPNEZ		30	04c
	USCGS: 21½ S 179½ W				
	02:18:38, 600 km				
10	PX	eP	04	07	18
		iSN		16	48
		iGN			25.8
		eR			28.9
	R	eP		07	21
	Hf	eP			28
		e			39

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
10	Bt	e?	04	07	15
		e			21
	W	iP			22
		i			32
	Is	eP			24
		i			34
	CL	eP			29
		e			41
	T	eP			30
	USCGS: 17 S 172 W				
	03:55:46				
10	Hf	eP	04	31	45
	W	eP		32	13
	CL	eP			08
	BCIS: off Guatemala				
	04:25.8				
10	R	eP	07	11	55
	W	iP			58
	Is	iP			59
10	R	iP	09	55	02
	Hf	eP			08
	Bt	eP			00
	W	iP			00
	Is	iP			02
	CL	iP			07
	BCIS: 15 S 173½ W				
	09:43:34				
10	W	iP	18	19	02
		i			17
	CL	eP			08
		e			24
	BCIS: 51½ N 176 W				
	18:10:57				
10	W	i	19	30	48
	USCGS: 3½ N 124½ E				
	19:12:47, 300 km				
11	P	iP	05	26	04
	PX	eSN		36	28
		eLN			52.0
	R	iP		26	08c
		ePP		29	51
		e		30	00
	Hf	iP		26	11c
		ePP		29	57
		e		30	06
	Bt	iP		26	05c
	W	iP			07c
		ePP		29	48
		i			58
	Is	iP		26	08c
		iPP		30	00
	CL	eP		26	12
		ePP		29	56
		e		30	10
	T	iPP			09
	Wellington: 39 S 176 E				
	05:12:54, magnitude 5.8				
	BCIS: 39 S 177 E, 05:12:43				
11	R	iP	08	12	15
	W	iP			12
	JMA: 34.2 N 140.3 E				
	08:00:15				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
11	P	eP	13	53	06
		e			21
	PX	iSN	14	03	36
		eLN			16.3
	R	eP	13	53	11
	W	iP			03
		i			14
	Is	iP			05
	CL	eP			09
	T	e(P)			11
	USCGS: 31½ S 177½ W				
	13:40:18				
11	W	eP	16	59	54
	CL	eP			49
	T	eP	17	00	09
	BCIS: 14 N 91½ W				
	16:53:20				
11	P	eP	21	50	48
		iNZ			56
		iNEZ		51	02
	PX	iSN	22	01	32
		iSSN		07	21
		eGN			13.6
		eREZ			17.1
			A		T
		PZ	¾		3
		PH	1		4
		MH	10		20
		MZ	5		20
	R	eP	21	51	00c
		iSE	22	01	45
	Hf	eP	21	50	59
	Bt	eP			55
		iSE	22	01	32
	Kg	eP	21	50	39
	W	iP			48
		i			53
		i			56
	Is	iP			51c
		i			56
	CL	eP			54c
	T	eP			55
		iSN	22	01	52
	Magnitude 6¾				
	USCGS: 17½ S 169 E				
	21:38:05				
11	W	iP	22	14	14
	Is	iP			18
	CL	iP			20
	Samoa region				
12	PX	eN	07		25.7
		eSSN			42.9
		eSSSN			46.9
		eGN			53.1
	USCGS: 6 N 124½ E				
	07:08:38				
12	P	iP	08	08	03
	PX	iSN		16	10
	R	eP		08	11
	Hf	iP			16
	Bt	eP			16
	Kg	eP		07	50

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
12	W	iP	08	07	51d
		i		08	02
	Is	iP		07	54
	CL	iP			58
	T	iP			50
	USCGS: 52½ N 160½ E				
	07:58:05				
12	W	iP	08	28	54
		i		29	06
	CL	eP			00
		e			12
	JMA: 44.0 N 147.5 E				
	08:18:00				
12	W	iP	10	20	43
12	P	iP	10	36	17
	R	eP			24
	Bt	eP			19
	W	iP			18d
	Is	iP			22
	CL	eP			25
	T	eP			27
	USCGS: 16½ S 176 W				
	10:24:40				
12	P	iPNEZ	11	31	24c
	R	iP			32c
	Hf	iP			35c
	Bt	iP			34c
	Kg	iP			15c
	W	iP!			16c
	Is	iP			19c
	CL	iP			21c
	T	iP			16c
13	Is	eP	01	14	45
	CL	eP			48
	BCIS: Mid-Atlantic Ridge				
	01:02.3				
13	PX	eLN	01		45.4
	R	eP		23	08
	Hf	eP		22	46
	Bt	eP			50
	Is	eP			52
		i			58
	CL	eP			48
		e			53
	BCIS: Mid-Atlantic Ridge				
	01:10.0				
13	Bt	e	03	33	55
	Is	eP			26
		e			36
	CL	eP			21
		e			31
	Mexico				
13	P	iPNEZ	12	06	37
		i			50
		e		07	00
	PX	iSN		12	00
		iN		14	32
		iRNZ			16.3
	R	iP		06	46
		i		07	00
	Hf	iP		06	49
		e		07	03

(continued)

Pasadena and auxiliary stations, 1957

Date	Sta.	Phase	h	m	s
August		(continued)			
13	Bt	iP	12	06	54
		e		07	08
	Is	iP		06	25d
		i			38
		iPcP		09	17
	CL	iP		06	27d
		i			40
		iPcP		09	18
	T	iP		06	16
		e			30
	Depth 60 km?				
	USCGS: 61 N 148 W				
	12:00:03				
13	PX	eLN	14	40	30
	Is	iP		38	12
		i(S)		39	53
	T	e?		38	52
		eS		39	44
	USCGS: 43 N 125 W				
	14:36:15				
14	Bt	e	09	28	42
	W	iP			16
		i			28
	Is	eP			17
	CL	eP			23
	T	eP			15
		e			27
	USCGS: Rat Islands,				
	Aleutians, 09:19:54				
14	R	eP	09	41	12
	Hf	eP			09
	W	eP		40	42
	Is	iP		41	02
	CL	eP			07
14	W	iP	09	42	52
		i			59
		i		43	07
	Is	iP		42	53
	CL	eP			59
		e		43	17
	T	eP		42	51
	BCIS: Rat Is., Aleutians				
	09:34:30				
14	D	eP	13	53	02
		e			21
	R	eP			07
	Hf	eP		52	51
	Pr	eP		53	06
	Bt	eP		52	50
	W	eP		53	10
	Is	iP			09
		e			38
	CL	eP			07
	South America?				
14	D	eP	16	19	47
	R	eP			49
	Bt	e		20	01
	W	iP		19	33c
	Is	iP			35
	CL	eP			40

No. 4

Date	Sta.	Phase	h	m	s
August					
14	P	eP	18	38	32
		epP		39	21
		esP			36
	R	eP		38	38
		epP		39	29
	Hf	eP		38	41
		epP		39	31
	Pr	iP		38	36
		epP		39	26
	W	iP		38	36c
		ipP		39	29
	Is	iP		38	37c
		i			46
		epP		39	28
		esP			41
	CL	iP		38	41c
		epP		39	30
		esP			47
	T	eP		38	43
		epP		39	36
	USCGS: 21 S $176\frac{1}{2}$ W				
	18:26:52, 200 km				
14	P	iP	19	27	47
		iS		28	27
	R	iP		27	41
		iS		28	17
	Hf	iP		27	29
		i			33
		iS		28	06
	Pr	iP		27	27
		iS			54
	Bt	iP!			18d
		iSN			36
	Magnitude 4.3				
	BCIS: Baja California				
	19:26.8				
14	W	iP	20	05	06
		i		06	00
	Is	iP		05	07
		i		06	00
		e			27
	CL	eP		05	11
		e		06	06
	T	e		05	54
14	Hf	eP	20	58	55
	W	iP			49
	Is	iP			50
	CL	eP			54
	T	eP			57
15	P	iPNEZ	08	40	53c
		i		41	09
		ePP		42	45
	PX	eSN		47	20
		eScS		50.8	
		eN		53.4	
	R	iP		40	51c
		i		41	06
		iPP		42	46
	Hf	iP		40	36c
		iPP		42	38

(continued)

Pasadena and auxiliary stations, 1957

Date	Sta.	Phase	h	m	s
August		(continued)			
15	Pr	iP	08	40	42c
		i		41	01
		iPP		42	40
	Bt	iP		40	39c
		e		41	07
		iPP		43	39
	Kg	iP		41	08c
	W	iP		41	02c
		i			17
		iPP		42	49
	Is	iP		41	00c
		i			11
		i			17
		iPP		42	49
		e		43	29
	CL	iP		40	56c
		i		41	12
		ePP		42	47
	T	iP		41	05
		e			12
		ePP		42	52
	USCGS: 10 N 80 W				
	08:32:56				
15	Hf	eP	12	08	36
		e		09	04
	W	eP		08	41
		e			49
	Is	iP			41
	CL	eP			40
15	Pr	eP	13	06	14
	Bt	eP			18
	W	eP			31
		e			44
	Is	eP			30
		e			43
15	P	iPNEZ	20	57	30
		ipP		59	18
	PX	e	21	06	38
		iSNEZ		07	40
		iSP		08	52
		isSP		12	06
		iSSN		14.0	
		e		30.5	
		e		41.7	
			A		T
	PZ		0.2		1
	SH		1		6
	R	iP	20	57	35
		ipP		59	25
	Hf	iP		57	41
		epP		59	32
	Pr	iP		57	36
		epP		59	25
	Bt	iP		57	36
		epP		59	24
	Kg	e		57	45
	W	iP			29
		i			39
		ipP		59	22
	Is	iP		57	30
		epP		59	19
	CL	iP		57	33
		epP		59	23

(continued)

No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
15	T	eP	20	57	32
		epP		59	25
	USCGS: $4\frac{1}{2}$ S 155 E				
	20:45:20, 500 km				
16	P	eP	03	39	12
		i			40
	PX	eSKS		50	00
		ePS		51	16
		eGN	04	04.8	
		eREZ		07.7	
	R	e	03	39	44
		e		40	27
		e		41	05
	Hf	eP		39	15
		e			50
	Pr	e			45
	Bt	eP			14
		e			45
	W	eP			38
		e			55
	Is	eP			38
	CL	eP			42
		e		40	10
	T	eP		39	42
	USCGS: 5 S 154 E, 03:26:05				
16	P	eP	07	57	29
	Hf	eP			38
	Pr	iP			33
	W	iP			32
	Is	iP			32
	CL	eP			36
16	R	eP	11	14	18
	Hf	eP			23
	Pr	eP			16
	W	eP			16
	Is	iP			15
	CL	eP			19
16	R	eP	11	28	06
	Hf	eP		27	43
	Pr	eP			46
	Bt	eP			37
	W	eP		28	26
	Is	iP			23
	CL	eP			17
16	P	eP	12	10	31
		e			48
	PX	ePP		14	24
		eSKSNZ		21	12
		iPS		22	28
		eSS		27	30
		eScSScS		34.1	
		eGN		36.0	
		eR		38.5	
	R	e		10	54
		ePP		14	39
	Hf	e		10	46
		e			57
	Pr	e			53
	Bt	e			39
		e			55
	W	eP			22
		e			44

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
16	Is	eP	12	10	26
		e			46
		e		11	20
		e		14	04
	CL	eP		10	28
		e			50
	T	e			52
	USCGS: 5 S 155 E 11:57:16				
16	R	e(P)	15	01	59
	Hf	eP		02	16
	Pr	eP			11
	W	iP			12
	Is	iP			12
	CL	eP			15
	USCGS: New Britain after-shock, 14:48:19				
16	Hf	e	18	41	37
	Pr	e			33
	W	e			50
	Is	e(P)			47
	CL	e(P)			47
	T	e			57
	Southeast Pacific BCIS: 18:29.6				
16	P	iP	21	06	49
	R	iP			55
	Pr	iP			57
	Bt	iP			58
	W	iP			44
	Is	iP			45
	CL	iP			49d
	T	iP			45
	USCGS: $24\frac{1}{2}$ N 143 E 20:54:20				
16	P	ePNZ	23	37	39
		iNEZ			41c
		i			48
	PX	iNZ		39	34
		iSNEZ		42	28
		iLNZ		43	52
			A		T
		PZ	$\frac{3}{4}$		$1\frac{1}{2}$
		PH	1		2
		SH	7		5
		MH	150		14
		MZ	120		18
	R	iP	23	37	38
		iSN		42	24
	Hf	eP		37	28
	Pr	eP			27
	Bt	eP			20
	Kg	eP			57
	W	iP			54
	Is	iP			52
	CL	eP			47
	T	eP		38	04
	Magnitude 6.7± USCGS: $10\frac{1}{2}$ N 104 W 23:31:55				
17	Pr	eP	02	08	28
	W	eP			51
	Is	eP			49
	CL	eP			47

Date	Sta.	Phase	h	m	s
August					
17	W	e	02	35	57
	CL	e		36	03
17	P	iP	04	31	31
	Pr	iP			30
	Bt	eP			30
	W	iP			28
		i			33
	Is	iP			29
	CL	iP			33
	T	eP			34
	Southwest Pacific				
17	W	eP	04	50	16
	Is	iP			11
	CL	eP			12
17	W	iP	08	56	55
		i		57	11
	BCIS: Aleutians, 08:49.5				
17	P	iPNEZ	12	51	44c
		e(sP)		52	07
	PX	eLN	13	13.5	
		eR		16.7	
	Hf	iP	12	51	56c
	Pr	iP			52c
	Bt	iP			54c
	Kg	iP			37c
		i			58
	W	iP			38c
	Is	iP			39c
		i(sP)		52	04
	CL	iP		51	43c
		i(sP)		52	07
	T	iP			39c
	JMA: $29\frac{3}{4}$ N $142\frac{1}{2}$ E 12:39:30, 60 km				
17	PX	e	18	55	32
		iR	19	07	28
	W	iP	18	44	54
		i		45	00
		i			12
	Is	iP		44	56
	CL	iP		45	02
	Pacific				
18	P	eP	06	47	32
	PX	eSKSN		57.9	
		iSN		58	40
	R	eP		47	28
	Hf	eP			26
	Bt	eP			21
	W	e			38
	CL	e			35
	USCGS: 57 S $142\frac{1}{2}$ W 06:34:16				
18	PX	e(P)	08	51.9	
		e		54.2	
		i(PS)N	09	03	00
		iSSN		07	49
		iGN		20	20
		e		22.7	
		iRNEZ		24.8	
	USCGS: 12 N 124 E, 08:36:57 Strasbourg: magnitude $6\frac{3}{4}$				
18	P	eP	10	48	55
	PX	eGN		56	30
	R	e		49	09

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
18	Hf	eP	10	49	12
		i			18
	Bt	eP			03
		i			06
	W	eP		48	53
		i		49	11
	CL	eP			03
		i			09
	T	eP			04
	USCGS: 21 N 156 W 10:41:54				
18	P	iPNEZ	21	16	05c
	PX	iSN		20	41
		iGN		25.7	
			A		T
		PZ	$\frac{1}{2}$		2
	R	iP	21	16	01c
	Hf	iP		15	46
	Pr	iP			52d
	Bt	iP			46d
	Kg	eP		16	25
	W	eP			16
	CL	iP			12
	T	iP			23
	USCGS: $16\frac{1}{2}$ N 99 W 21:10:42				
18	P	iPNEZ	21	17	48
		i			58
	PX	iSN		22	44
	R	iP		17	45
		i			56
	Hf	iP			30
	Pr	iP			35
		i			45
	Bt	iP			32
		i			39
	Kg	iP		18	06
	W	iP		17	59
	CL	iP			54
		i		18	04
	T	iP			03
	Mexico. Overlaps the preceding.				
18	P	iP	21	20	48
	R	iP			48
		i			58
	Hf	iP			41
	Bt	iP			42
	W	iP			49
	CL	iP			49
	T	iP			51
		e		21	02
	Pacific. Involved in the preceding shocks.				
18	P	iPNEZ	21	52	51c
		ipPNEZ!		53	06
		iSEZ	22	01	08
		isSN			21
	PX	iSSEZ		05	24
		iGN		08	41
		iR		11.0	

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
18	P	eP'P'	22	22	04
			A		T
		PZ	$\frac{1}{2}$		2
		PH	$\frac{1}{2}$		3
		MH	12		20
		MZ	12		20
	R	iP	21	52	59c
		ipP		53	13
		i			31
		eP'P'	22	22	00
	Hf	iP	21	53	04c
		ipP			19
		i			40
	Pr	iP			01c
		ipP			17
		ePP		55	36
		eP'P'	22	21	58
	Bt	iP	21	53	05c
		ipP			20
		iPP		55	41
		iSE	22	01	39
	Kg	iP	21	52	43c
		ipP			58
		isP		53	08
		e			48
	W	iP!		52	41c
		ipP!			56
		iPP		55	13
		eP'P'	22	22	51
		e		23	07
	CL	iP	21	52	47c
		ipP		53	02
		eP'P'	22	21	49
		e		22	09
	T	iP	21	52	40c
		ipP			54
		iSEZ	22	00	51
	Depth 50 km Magnitude $6\frac{1}{2}$ USCGS: 50 N 157 E, 21:42:30				
19	R	eP	00	24	32
	Pr	eP			32
	W	iP			32
	CL	eP			32
	T	eP			39
	USCGS: $4\frac{1}{2}$ S 153 E, 00:11:13				
19	R	eP	02	54	26
	Pr	eP			24
	Bt	eP			25
	W	iP			17
	CL	eP			23
	T	eP			21
	USCGS: New Britain, 02:41:14				
19	Pr	eP	05	39	15
	W	iP		38	51
	T	eP		39	02
	BCIS: Andreanof Is., 05:30.9				
19	Pr	e	06	18	24
	Bt	eP			23
	W	iP		17	54
	CL	eP		18	08
	T	eP			03
	USCGS: $52\frac{1}{2}$ N 169 W 06:10:28				

Date	Sta.	Phase	h	m	s
August					
19	R	eP	10	58	46
	Hf	eP			51
	Pr	e(P)			51
	W	eP			24
		i			51
	South of Samoa				
	BCIS: 10:46.9				
19	P	iPEZ	11	47	32c
	PX	ePP		51	01
		iSN		58	25
		iGN	12	10.9	
		iR		14.3	
			A		T
		MH	3		20
	R	eP	11	47	37c
	Hf	eP			40
	Pr	iP			37c
	Bt	iP			36
	Kg	eP.			31
	W	iP			30c
	CL	iP			37c
	T	eP			34
	Magnitude $5\frac{3}{4}$-6				
	USCGS: 10 S 161 E				
	11:34:36				
19	P	iPNEZ	21	39	44d
	PX	eSN		45.5	
		iN		49.7	
		iLN		50	05
	R	iP		39	50d
		ePcP		41	44
	Hf	iP		39	59d
		iPcP		41	47
	Bt	iP		39	59d
		iPcP		41	46
	Kg	eP		39	30
		iPcP		41	35
	W	iP		39	32d
		i			47
	Is	iP			33d
	CL	iP			39d
		iPcP		41	39
	T	iP		39	30d
		iPcP		41	35
	USCGS: $51\frac{1}{2}$ N 171 W				
	21:31:55				
20	PX	eSKSN	05	11	39
		iPSN		13	09
		iRNZ		29.5	
	R	eP		01	09
	Bt	eP			03
	W	eP			14
	Is	eP			12
	CL	eP			13
	BCIS: 56 S 130 W				
	04:48:06				
20	P	eP	06	40	02c
		e			17
	PX	iPP		43	34
		eSKS		50	04
		iSNZ			59
		eSSN		56.3	
		eGN	07	03.5	
		iR		06.8	
			A		T
		MH	8		20

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
20	R	eP	06	40	07c
	Hf	eP			16
	Bt	eP			09
	W	eP			01
	Is	eP			03
		i			18
	CL	iP			06c
		e			23
	T	eP			05c
	Magnitude $6\frac{1}{4}$				
	USCGS: 10 S 161 E				
	06:27:07				
20	P	iPNEZ	12	14	49c
	PX	iPP		18	17
		eSKS		24	53
		iSN		25	29
		iSSNZ		31.0	
		iSSS		35.0	
		iGN		38.3	
		iR		41.5	
			A		T
		PZ	$\frac{1}{4}$		$1\frac{1}{2}$
		MH	20		20
		MZ	20		20
	R	eP	12	14	52
	Bt	eP			53
		i		15	03
	Kg	iP		14	56
	W	iP			47
		i			51
		i		15	01
	Is	eP		14	48
		i			54
		i		15	01
	CL	eP		14	52
		i		15	05
	T	iP			07c
	Magnitude $6\frac{1}{2}$				
	USCGS: 10 S 161 E				
	12:01:54				
20	Is	eP	17	03	00
		e			07
20	P	iPEZ	22	25	07
		ipP			21
		iPcP		26	56
		ipPcP		27	12
	PX	eGN		35.1	
		eR		36.6	
	R	iP		25	14c
		ipP			28
		iPcP		27	02
		ipPcP			17
	Bt	iP		25	23c
		ipP			37
		ePcP		27	04
		epPcP			19
	W	iP		24	55c
		ipP		25	07
		iPcP		26	51
		ipPcP		27	07
	Is	iP		24	57c
		ipP		25	11
		isP			19
		iPcP		26	50
		ipPcP		27	07

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
20	CL	iP	22	25	02c
		ipP			16
		iPcP		26	55
		ipPcP		27	10
	T	iP		24	53c
		ipP		25	07
		iPcP		26	51
		ipPcP		27	06
	Depth 60 km				
	USCGS: 52 N 173 W				
	22:17:05				
20	W	eP	22	45	02
	CL	eP			07
	USCGS: $50\frac{1}{2}$ N $96\frac{1}{2}$ E				
	22:32:06				
20	P	eP	23	09	17
	R	eP			10
	Bt	eP			06
	W	eP			06
	Is	iP			08
		i			25
	CL	iP			13
		e			22
	T	eP			15
	BCIS: 17 S 174 W				
	22:57:30				
21	P	eP	11	58	48
		e		59	06
	PX	eGN	12	08	01
		iScSN			45
	R	eP	11	58	55
	Bt	eP		59	04
	W	iP		58	35
		i			46
	Is	iP			37
		i			49
	CL	e			49
	T	eP			33
		e			40
	USCGS: $52\frac{1}{2}$ N 168 W				
	11:51:12				
21	D	eP	15	07	23
	R	eP			20
	W	eP			30
	Is	eP			30
	CL	eP			27
21	P	iP	15	45	14
		e			24
	PX	eGN	16	03.0	
		eR		06.6	
	R	iP	15	45	18d
		ipP			39
	Bt	iP			24d
		epP			45
	Kg	iP			03d
	W	iP			03d
		ipP			25
	Is	iP			04d
	CL	iP			09d
	T	iP			02d
		epP			23
	Depth 80 km				
	JMA: 44.3 N 147.0 E				
	15:34:04, 100 km				

Date	Sta.	Phase	h	m	s
August					
21	PX	eLNZ	18	11.4	
	R	eP	17	50	06
	Bt	eP			04
	Kg	eP			02
	W	iP			03d
		e			17
		i			23
	Is	iP			05d
		i			19
		e			25
	CL	eP			10d
	T	eP			12
	USCGS: 15 S $173\frac{1}{2}$ W				
	17:38:38				
21	Is	iP	18	33	55
	CL	eP		34	00
	T	eP		33	50
21	P	iPNEZ	19	38	56
		i		39	19
		ePcP		40	51
	PX	eGN		48.5	
		iScSN		49.2	
		eR		50.3	
	R	iP		39	02
		iPcP		40	56
	Bt	iP		39	11
		ePcP		40	59
	Kg	iP		38	43
		ePcP		40	47
	CL	iP		38	50
		iPcP		40	50
	T	iP		38	41
		iPcP		40	47
	USCGS: $51\frac{1}{2}$ N 171 W				
	19:31:08				
22	P	eP	01	14	03
	R	eP			03
	Hf	iP			10
		i			16
	Bt	eP			09
	Kg	eP		13	59
	CL	iP			58
		i		14	08
	T	iP		13	55
	BCIS: $20\frac{1}{2}$ N. $146\frac{1}{2}$ E				
	01:01.4				
22	R	eP	03	49	58
	Hf	eP		50	04
	Bt	eP			05
	Kg	eP		49	49
	CL	eP			34
		e			52
	T	eP			29
		e			46
	JMA: 41.5 N 142.2 E				
	03:38:02				
22	P	eP'	08	13	45
	PX	eSN		21	57
		ePS		23	49
		eSSN		29.9	
		eSSSN		33.3	
		eGN		40.3	
		eR		47.0	

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
22	R	e	08	14	11
		e			24
	Bt	eP'		13	49
	CL	iP'			45
		i		14	16
	T	e			00
	USCGS: 1 N 126 E				
	07:55:06				
22	P	e	12	57	20
	R	e			26
	Bt	e			19
	Kg	e			18
	CL	e(P)		55	31
		e		57	15
	T	e(P)		55	32
		e		57	11
	BCIS: probably off Oregon				
22	P	eP	16	56	20
		e			50
		ePP		59	41
	PX	eS	17	06	57
		iPSN		07	41
		eGN		19.3	
		eR		23.2	
	R	eP	16	56	25
		e			55
	Bt	eP			22
		e			55
	Kg	eP			16
		e			48
	W	iP			19c
		i			52
		i		57	08
		iPP		59	46
	CL	eP		56	25c
		e			56
		ePP		59	49
	T	iP			26c
		e			58
	USCGS: 15 S 168 E				
	16:43:35				
22	Pr	e	18	14	05
	Bt	e			11
	W	e(P)		13	37
	CL	e			56
	T	e			50
22	Pr	eP	18	20	22
	Bt	eP			1[illegible]
	W	iP		19	44
		i		20	22
	CL	e			12
	T	e		19	51
	Aleutians?				
22	R	e	18	47	15
	Pr	eP			07
		e			15
	W	eP			01
	CL	e			07
	T	e			12
		e			18

Date	Sta.	Phase	h	m	s
August					
23	P	ePNZ	02	13	15
	PX	iPP		17	12
		eSKSE		23	31
		iSNZ		24	07
		iPS		25	13
		iSS		30.3	
		iGN		38.0	
		iR		41.4	
			A		T
		PZ	0.3		2
		SH	$1\frac{1}{2}$		9
		MH	10		20
	R	eP	02	13	16
		i			23
		i			34
	Hf	iP			26
		i			40
	Bt	eP			18
		e			35
	Kg	eP			11
		i			36
	W	eP			11
		i			14
		i			28
		iPP		17	14
	Is	eP		13	14
		i			39
		ePP		17	17
	CL	eP		13	18
		e			40
		ePP		17	21
	T	eP		13	17
		e			41
	Magnitude $6\frac{1}{2}$				
	USCGS: 6 S $154\frac{1}{2}$ E				
	02:00:09, 60 km				
23	P	eP	11	56	18
	Kg	eP			12
	W	iP			08
	Is	iP			12
	CL	eP			14
	T	eP			10
	USCGS: 24 N 122 E				
	11:42:34				
23	P	eP	13	46	50
		epP		47	14
		e			34
	R	eP		46	55
		ipP		47	18
	Pr	eP		46	56
		ipP		47	20
	Bt	eP		46	56
		epP		47	20
	W	eP		46	47
		epP		47	11
	Is	eP		46	50
		epP		47	13
	CL	eP		46	53
		epP		47	17
	T	eP		46	53
	USCGS: 6 S 154 E				
	13:33:51, 100 km				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
23	P	ePNEZ	15	16	25
	PX	eGN		19.7	
		eR		20.3	
	R	eP		16	21
		e			27
	Pr	eP			07
		e			19
		i			22
	Bt	eP		15	57
	Kg	eP		16	42
	W	eP			42
	Is	eP			39
	CL	eP			38
	T	eP			54
	USCGS: Revilla Gigedo Is.				
	15:12:24				
23	W	iP	17	33	50
	Is	eP			51
	CL	iP			55
	T	eP			47
	USCGS: Near east coast				
	of Kamchatka, 17:24:20				
23	PX	eL	20	50.5	
	D	eP		24	12
	Hf	eP			25
	Kg	e		25	04
	W	eP		23	54
		i		24	10
		i			23
		i			32
	CL	eP		23	59
	T	e		24	19
	Wellington: 30.5 S 176.9 W				
	20:11:22				
23	P	eP'	23	10	07
	D	iP		06	44
		e(pP)		07	03
		eP'		10	12
	R	eP		06	43
		e		07	01
		eP'		10	09
		ePP		12	07
	Hf	eP		06	35
		eP'		10	11
		ePP		12	13
	Pr	ePP			12
	Bt	iP		06	34
		i(pP)			54
		eP'		10	09
		ePP		12	13
	Kg	eP'		10	04
	W	iP		06	53
		i(pP)		07	13
		iP'		10	03
		ePP		11	56
	Is	iP		06	52
		i		07	11
		i			19
		eP'		10	05
	CL	eP		06	50
		eP'		10	07
		ePP		12	00
	T	e(P)		06	57
		eP'		10	05
	USCGS: 7 S 112 E				
	22:51:10, 100 km				

Date	Sta.	Phase	h	m	s
August					
24	PX	eS	01	26.1	
		eL		36.7	
	W	eP		13	54
	Is	iP			56
	CL	eP			59
	BCIS: $19\frac{1}{2}$ S 175 W				
	01:01:58				
25	D	eP	10	14	23
	R	eP			18
	Bt	eP			28
	Is	e(P)		13	50
		e		14	04
	CL	eP			08
	T	eP			00
	BCIS: $52\frac{1}{2}$ N $176\frac{1}{2}$ E				
	10:05:22				
25	D	eP	15	14	47
	R	iP			45
	Is	iP			50
	CL	eP			49
	T	eP			51
25	P	eP'	21	30	59
	R	e		31	18
	W	iP'		30	56
	CL	eP'		31	00
	T	eP'		30	57
	USCGS: 10 S 111 E				
	21:11:45				
26	P	eP	07	02	04
	PX	eSNZ		08	47
		eGN		13.6	
		eR		15.0	
	R	iP		02	07d
		iPcP		03	44
	Hf	iP		02	17d
		ePcP		03	44
	Bt	iP		02	18d
		ePcP		03	50
	W	iP		01	52d
		i(pP)		02	02
		i			15
		iPcP		03	37
	Is	iP		01	54d
		i(pP)		02	06
		i			20
		ePcP		03	36
	CL	iP		01	59d
		iPcP		03	41
	T	iP		01	49d
		i(pP)		02	03
		iPcP		03	37
	Depth 50 km				
	USCGS: 51 N 177 W				
	06:53:43				
26	P	iPNEZ!	11	40	31c
		iPcP			58
	PX	iPPPNZ		45	05
		iSNEZ		50	03
		iPS			45
		iSSN		54.9	
		iSSSEZ		58.3	
		iGN	12	00.2	
		iRZ		02.5	
		(continued)			

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August		(continued)			
26	P	eP'P'	12	08	10
			A		T
		PZ	$3\frac{1}{4}$		4
		PH	4		4
		SH	$4\frac{1}{2}$		16
		MH	14		20
		MZ	9		20
	D	iP!	11	40	30c
	R	iP			27c
	Hf	iP			19c
		i			47
	Bt	iP			20c
		eSE		49	47
	Kg	iP		40	42c
		i		41	02
		i			26
	W	iP!		40	39c
		i		41	04
		iPP		43	05
	Is	iP!		40	37c
		i		41	06
		iPP		43	11
		eP'P'	12	08	10
	CL	iP	11	40	35c
		i		41	03
		iPP		42	41
		eP'P'	12	08	01
	T	iP	11	40	41c
	Magnitude $6\frac{1}{2}$				
	USCGS: 19 S 63 W				
	11:28:50				
26	P	iP	11	42	15
	D	iP			19
	R	iP			17
	Bt	iP			08
		i			16
	W	iP			26
		i			42
	Is	iP			25
	CL	iP			25
	Involved in the preceding; possibly an aftershock				
26	P	eP	14	07	46
		eSNE		14	51
	PX	iSNEZ!		15	02
		iL		24.0	
			A		T
		PZ	0.02		$\frac{3}{4}$
		SH	14		16
		SZ	$\frac{3}{4}$		4
		MH	15		20
		MZ	10		20
	R	eP	14	07	41
		i			47
	Hf	iP			31
	Bt	eP			31
		i			38
		i			50
	Kg	eP			58
	W	iP			56
		i		08	06
	Is	iP		07	54d
		i		08	05

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
26	CL	iP	14	07	51d
		i			57
	T	eP		08	00
		i			09
	Magnitude $6\frac{1}{4}$				
	USCGS: 2 S 81 W, 13:58:48				
26	P	iP	18	33	57
		i		34	04
	R	iP		33	53
		i			59
	Hf	eP			46
	Pr	eP			52
	Bt	eP			46
	W	iP		34	00
	Is	iP			04
	CL	eP			03
	T	eP			08
	USCGS: 19 S 63 W, 18:22:18				
26	Hf	eP	19	04	45
	Pr	iP			56
	Bt	iP			59
	W	iP			32
	Is	iP			34
	CL	eP			40
	T	eP			30
	Aleutians?				
26	P	eP	20	06	36
		e			55
	PX	iS		17	29
		i		18	37
		eSS		23	41
		eR		34.9	
	R	eP		06	36
		e		07	01
	Hf	eP		06	44
		e		07	12
	Pr	eP		06	42
		e		07	06
	Bt	eP		06	38
		e		07	07
	W	eP		06	31
		e		07	07
	CL	eP		06	39
	T	eP			35
	USCGS: $5\frac{1}{2}$ S 154 E 19:53:33, 100 km				
27	R	e	02	52	26
	Hf	e			32
	Pr	e			22
	W	e			24
	Is	e			25
	CL	e			31
27	Pr	eP	14	48	15
	Bt	eP			19
	W	iP			04
	Is	eP			06
	CL	eP			10
	T	iP			05
27	P	eP	16	02	44
	W	iP			46
		i			57
	Is	iP			46
		i			57
	CL	eP			44
	T	eP			49

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
August					
27	P	e	17	50	50
	PX	eL		54	13
	R	e		50	53
	Pr	e		51	06
	Kg	e		50	24
	W	eP			24
		i			27
	CL	eP			30
		i			41
	T	e			15
27	PX	iL	20	50.1	
	D	eP		45	47
		e			54
		i		46	14
	R	eP		45	48
	Hf	e(P)		46	04
	Pr	eP			00
	Bt	eP		45	50
	Kg	e			24
	W	eP			13
		i			21
	Is	eP			17
		i			27
	CL	e			25
	T	eP			09
27	P	iP	21	08	02c
	R	iP			03c
	Hf	iP			10c
	Pr	iP!			06c
	Bt	iP			02c
	Kg	iP		07	58c
	W	iP!		08	04c
		epP		10	16
	Is	iP!		08	07c
		epP		10	13
	CL	iP		08	09c
		epP		10	23
	T	iP		08	10
	USCGS: $25\frac{1}{2}$ S 178 E 20:56:29, 650 km				
28	P	iPNZ	08	31	39d
	PX	eSN		43	17
		eGN		53.3	
		eR		56.4	
	R	iP		31	41d
	Hf	iP			47d
	Pr	eP			46
	Bt	eP			39d
	Kg	eP			39d
	W	iP			42d
		i			56
	Is	iP			44d
	CL	iP			47d
	T	eP			44
	USCGS: $28\frac{1}{2}$ S 175 W 08:19:10				
28	P	iP	13	49	03
	R	iP			06
	Pr	eP			11
	Bt	eP			10
	Kg	eP		48	54
	W	iP			56
		i		49	56
		i		50	06

(continued)

Date	Sta.	Phase	h	m	s
August		(continued)			
28	Is	iP	13	48	59
		e		50	02
	CL	iP		49	03
		e		50	06
	T	iP		48	58
		i		50	01
28	R	eP	13	56	41
	W	iP			34
	Is	eP			35
	CL	eP			39
	T	iP			35
28	W	eP	20	12	26
	Is	eP			29
		i			34
	CL	eP			31
	T	eP			28
		i			34
	BCIS: 21 N 145 E, 20:00.0				
28	P	iP	23	29	48
	R	eP			45
		i			51
	Pr	e			52
	Bt	eP			50
		e			56
	Kg	eP			38
	W	iP			35
		e			42
	Is	iP			37
		e			43
	CL	iP			40
		i			47
	T	eP			36
		i			44
	BCIS: Mariana Islands 23:17.2				
28	P	iP	23	33	51
		e		34	07
	R	iP		33	48
		i		34	06
	Pr	eP		33	46
	Bt	iP			40
		i			56
	Kg	eP		34	01
	W	iP		33	59
		i		34	06
	Is	iP		33	59
		i		34	11
	CL	iP		33	55
		i		34	13
	T	eP			04
	USCGS: $21\frac{1}{2}$ S 69 W 23:22:22				
28	P	iP	23	34	56
	PX	iSN		45.3	
		iGN		57.5	
		eR	24	00.0	
	R	iP	23	34	59
	Pr	eP		35	04
	Bt	eP			05
	Kg	eP		34	49
	W	iP			50
	Is	iP			52
	CL	iP			55
	T	iP			52
	USCGS: 21 N 145 E, 23:22:21				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
August			
28	R	eP	24 02 25
	W	iP	21
		e	29
	Is	eP	23
	CL	eP	27
		e	35
	T	eP	24
	Foreshock of next?		
28	P	iP	24 02 49
		i	56
	R	iP	52
		e	03 17
	Pr	eP	02 57
		i	03 04
	Bt	eP	02 58
		i	03 05
		i	10
	Kg	eP	02 42
		i	49
		e	59
	W	iP	42
		i	50
	Is	iP	45
		i	52
	CL	iP	48
		i	55
	T	iP	46
		i	53
	USCGS: 21 N 145 E		
	23:50:15		
29	P	eP	01 10 22
		iNZ	29
	R	eP	24
		i	32
	Pr	eP	31
		i	38
	Bt	eP	30
		i	38
	W	iP	17
		i	24
	Is	iP	18
		i	25
	CL	iP	21
		i	28
	T	iP	17
		i	25
	USCGS: 21 N 145 E		
	00:57:45		
29	R	e(P)	02 28 06
		e	17
	W	iP	27 46
		i	59
	Is	iP	52
	CL	eP	52
		e	57
	T	eP	48
	BCIS: 21 N 145 E, 02:15.3		
29	W	iP	03 49 49
	Is	iP	50
	CL	i(P)	53
	T	iP	50
29	W	iP	07 12 19
	Is	eP	19
	CL	eP	24
	T	eP	21

Date	Sta.	Phase	h m s
August			
29	R	eP	07 41 27
	W	iP	19
	Is	eP	22
	CL	eP	23
	T	eP	16
	BCIS: 21 N 145 E, 07:28.8		
29	P	iPNEZ	12 59 04
		ipP	36
	R	iP	00
		ipP	31
	Pr	iP	00
		ipP	31
	Bt	iP	58 54
		ipP	59 25
	Kg	eP	59 15
		epP	43
	W	iP	13d
		ipP	44
		isP	13 00 09
	Is	iP	12 59 11d
		ipP	42
	CL	eP	09
		epP	40
	T	iP	17d
		ipP	48
	BCIS: 32½ S 69 W		
	12:47:06, 150 km		
29	Pr	eP	14 14 17
	W	iP	15
	Is	iP	15
	CL	eP	22
	T	eP	22
	BCIS: 400 km south of Fiji Islands, 14:02:40, 600 km		
29	Kg	eP	16 52 46
	W	iP	48
		i	56
	Is	iP	49
		i	57
		e	53 27
	CL	eP	52 53
		e	53 01
		e	28
	T	eP	52 49
		e	57
	USCGS: Marianas, 16:40:22		
29	W	iP	19 12 41
		i	48
	T	eP	45
	BCIS: Marianas, 18:59:58		
30	PX	eRNZ	04 34.9
	R	eP	03 16
	Pr	eP	06
	Bt	iP	07
	W	eP	10
	Is	eP	13
		i	24
	CL	eP	17
	T	eP	19
	BCIS: 28 S 176¾ W		
	03:50:38		
30	W	iP	15 50 12
		i	18
	T	iP	14
		i	20

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
August			
30	PX	eL	17 13.5
	W	iP	05 29
		i	41
	Is	i	44
	CL	eP	34
		e	47
	USCGS: 37½ N 141 E		
	16:53:47, 60 km		
	JMA: 37.4 N 141.5 E		
	16:53:46, 30 km		
30	Is	e	20 57 47
	CL	eP	45
		e	53
	T	iP	41
	USCGS: Marianas, 20:45:18		
30	Is	e	21 23 57
	CL	eP	54
		e	24 01
	T	eP	23 50
		e	57
31	P	eP	12 14 20
	R	eP	20
	Pr	eP	24
	Bt	eP	26
	Kg	e	10
	Is	e	11
	CL	eP	05
		e	13
	T	eP	07
	USCGS: 49 N 100 E		
	12:01:00		
September			
1	R	eP	05 05 09
	Kg	eP	34
	W	eP	30
	Is	eP	29
		e	37
	CL	eP	25
		e	32
	T	eP	38
		e	46
	Mexico		
1	W	iP	20 41 48
	CL	eP	53
1	W	iP	23 07 54
	CL	eP	08 10
	T	eP	07 50
	BCIS: 54¼ N 170¼ W		
	23:00:13		
1	P	iPNEZ	24 12 28d
		i	33
		i	42
	PX	iSNZ	22 57
		iN	35.4
		i	38.0
		iR	41.5
	R	iP	12 30d
	Pr	iP	35d
	Bt	iP	37d
	Kg	iP	21d
	W	iP	23d
	Is	iP	24d
	CL	iP	28d
	T	iP	24d
	USCGS: 18 N 147½ E		
	23:59:54		

Date	Sta.	Phase	h m s
September			
2	W	eP	00 39 41
	CL	eP	49
	USCGS: 18 N 147 E		
	00:27:26, 100 km		
2	Pr	iP	03 49 44
	W	iP	19c
	Is	eP	22
	CL	eP	25
	T	eP	15
2	PX	eSNZ	06 01 29
		e	07.0
		e	10 45
		eGN	13.7
		iRZ	17.3
	R	eP	05 51 01
	Pr	eP	09
	W	eP	50 59
	Is	iP	51 01
		i	10
		i	16
	CL	eP	05
	BCIS: 19 S 174 E		
	05:38.3		
2	P	iP	07 10 47
	R	eP	46
	Pr	iP	52
	Bt	iP	58
	W	iP	36
	Is	iP	37c
	CL	eP	36
	T	eP	28
	BCIS: 70 N 4 W, 07:02.3		
2	P	iPNEZ	09 57 54d
	PX	iN	10 04 17
		e	05 19
		iSN	07 17
		iGN	16.5
		iR	19.2
			A T
		PZ	0.2 2
		SH	4 5
		MH	3 20
		MZ	3 20
	R	iP	09 57 57d
	Pr	iP	58d
	Bt	iP	57d
	Kg	eP	53
	W	iP	57
	Is	iP	59
	CL	eP	58 02
	T	iP	04d
	Clear initial dilatations on records of long-period instruments; others appear as compressions.		
	Magnitude 6-6¼ (Berkeley)		
	USCGS: 15 S 173½ W		
	09:46:30		
2	P	iPNEZ	14 27 47d
		i	28 14
	PX	iSNZ	33 49
		iLN	36.9
	R	iP	27 50d

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
September		(continued)			
2	Pr	iP	14	27	59d
		i!		28	02
	Bt	iP			03d
		i			06
		i			14
	Kg	iP		27	33
	W	iP!			35d
		i!			37
		i!			46
	Is	iP!			37d
	CL	iP			40d
	T	iPNEZ			31d
	USCGS: 51½ N 168 W 14:20:13				
2	D	e	18	12	32
	R	iP			32
	Pr	iP			39
	Bt	iP			46
		i			57
	W	iP			17
		i			28
	Is	iP			18
	CL	eP			22
	T	iP			13
	Aleutians				
2	P	eP	18	16	38
	R	eP			41
	Pr	eP			44
	Bt	eP			48
	Kg	eP			30
	W	iP			33
		i			43
	Is	eP			34
	CL	eP			37
	T	iP			32
	BCIS: 20 N 145 E 18:04:00				
2	P	eP	18	31	45
	Bt	e			54
	Kg	eP			48
	W	iP			40
	Is	iP			41
	CL	iP			44
	T	iP			39
	BCIS: northern Kuriles 18:23.5 See also next				
2	W	iP	18	34	40d
	CL	eP			37
	T	eP			33
	Same region as preceding. Identified by some stations as pP				
2	P	eP	18	36	52
	W	iP			49d
	Is	iP			49
	CL	iP			52
	T	iP			49
	Same region as preceding. No clear later phase recorded.				
2	R	e	19	03	11
	Pr	e			19
	Bt	e			21

Date	Sta.	Phase	h	m	s
September		(continued)			
2	W	iP	19	03	01
		i			07
	Is	eP			01
		e			07
	CL	eP			05
		e			12
	T	eP			00
		i			06
2	R	iP	19	36	01
	Pr	iP			05
	Bt	eP			09
	W	iP		35	56d
	Is	iP			56
	CL	iP			59d
	T	iP			54
	Aleutians?				
2	P	iP	20	31	38
	PX	eL			59.5
	R	iP		31	39c
	Pr	iP			41
	Bt	iP			44
	Kg	eP			34
	W	iP			38c
	Is	iP			38c
	CL	iP			41c
	T	eP			41
	BCIS: Solomon Islands region, 20:18.7				
2	PX	ePS	21		55.2
		eNZ			56.9
	D	ePP		46	16
	R	e·		45	53
		iPP		46	20
	Pr	ePP			24
	W	e		45	57
		ePP		46	07
	Is	e		45	51
		ePP		46	06
		e		47	16
	CL	e		45	55
		e		46	56
	T	e		45	50
	USCGS: 37 N 71 E 21:27:36, 200 km				
2	R	eP	23	31	25
	Pr	iP			35
	Bt	iP			42
	W	iP			14c
	Is	iP			14
	CL	eP			18
	T	iP			09
3	P	eP	06	19	17
	PX	eR			44.6
	R	iP		19	18
	Hf	iP			26
	Pr	iP			21
	Bt	iP			22
	Kg	eP			12
	W	iP			17d
	Is	iP			18d
	CL	iP			21d
	T	eP			22
	USCGS: 12 S 167 E 06:06:42				

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
September					
3	D	eP	07	57	21
	R	iP			26
	Pr	eP			31
	Bt	iP			38
	Kg	eP			08
	W	iP			08
	Is	iP			10
		i			19
	CL	eP			16
	T	eP			06
	USCGS: 53 N 167 W 07:49:52				
3	R	iP	14	40	32
	Pr	iP			37
	Bt	iP			31
	Kg	iP			24
	W	iP			26
	Is	iP			26
	CL	iP			30d
	T	iP			26d
	USCGS: Marianas region 14:28:12				
3	P	iP	14	51	40
	R	iP			42
		epP		53	51
	Pr	iP		51	42
		epP		53	53
	Bt	eP		51	36
	Is	iP			43
		ipP		53	50
	CL	iP		51	47
		epP		53	54
	T	iP		51	48
		epP		53	58
	USCGS: 21½ S 179½ E 14:40:24, 600 km				
3	P	iP	16	40	59
	PX	e		41	30
		iL			42.9
	Pr	eP		41	21
	Kg	e		40	49
	W	iP			37
	Is	iP			41
		i(S)		42	23
	CL	eP		40	55
	T	eP			35
		eS		42	09
		iSN			15
4	P	eP	01	43	59
	PX	e			55.6
		eR	02		09.5
	R	eP		43	57
	Pr	eP		44	02
		i			07
	Kg	eP		43	56
	W	iP			57
	Is	iP		44	00
	CL	eP			03
	T	iP			07
	USCGS: 12 S 167½ E 01:31:23				

Date	Sta.	Phase	h	m	s
September					
4	P	e	04	33	16
	Pr	iP			06
	W	iP		32	46
	Is	iP			45
	CL	eP			56
	T	eP			40
	USCGS: Fox Is., 04:25:05				
4	Pr	iP	04	46	15
	W	iP		45	53c
		i		46	04
	Is	iP		45	52
	CL	eP			58
	T	eP			48
	At 05 03.7, Pasadena records L(?)Z, possibly a phase of the next shock				
4	PX	e	05		11.8
		e			18.9
		e			24.7
		eL			47.6
	R	e	04	54	38
	Pr	e			17
	W	e		53	57
		e		54	26
	CL	e			31
	T	e			41
	BCIS: 42½ S 88½ E, 04:33:52				
4	P	iP	05	01	05
	R	iP			10
	W	iP		00	44
	Is	iP			46
	CL	eP		01	00
	T	iP		00	41
		e(S)		02	34
4	W	iP	13	06	49
		i			56
	CL	eP			56
		e		07	03
	T	eP		06	51
		e			59
4	Pr	e	20	11	30
	W	eP		10	55
		e		11	03
		i			12
	Is	eP			04
		i			13
	CL	e			08
		e			18
	T	e			09
	BCIS: 52½ N 169½ W 20:03:23				
4	Pr	e	21	20	25
	W	eP			33
		i			41
	CL	eP			29
		e			36
	T	eP			23
4	PX	iLNZ	22		55.6
5	D	eP	01	33	10
		ipP			44
	R	eP			10
		epP			46

(continued)

Date	Sta.	Phase	h	m	s
September		(continued)			
5	Pr	e	01	33	42
	Is	iP			22
		ipP			58
	CL	eP			20
		epP			56
	T	eP			28
		epP		34	03
	Depth 150 km				
	South America				
5	R	eP	04	08	50
	Pr	iP			57
	Is	iP			34
		i			47
	CL	iP			39
		i			52
	T	eP			28
	USCGS: 55½ N 159 W				
	04:01:09				
5	D	eP	04	15	27
		e			36
	R	e			28
		i			34
	Hf	i			25
	Pr	iP			27
		i			32
		i			33
	Is	iP			30
		i			33
		i			38
	CL	e			26
	T	e			35
	BCIS: 22½ N 45 W				
	04:04.9				
5	Is	eP	07	35	07
	CL	eP			12
	T	eP			03
		e			23
	USCGS: 53½ N 160½ E				
	07:25.9				
5	D	iP'	07	37	13
	R	iP'			13
	Hf	eP'			10
	Is	iP'			15
	South Africa				
5	D	eP'	07	42	09
	R	eP'			09
	Hf	eP'			09
	Is	iP'			10
	T	eP'			10
	South Africa				
5	CL	eP	13	26	59
	T	eP			54
5	P	iP'	14	13	05
	R	eP'			05
	Hf	eP'			12
	Is	iP'			02
	CL	eP'			04
	BCIS: 7¼ S 107 E				
	13:50:33				
5	P	iPNEZ	19	09	58d
	R	iP			54d
	Hf	iP			46
	Pr	iP			48d
	Kg	iP		10	08d

(continued)

Date	Sta.	Phase	h	m	s
September		(continued)			
5	Is	iP	19	10	05d
		i			51
		e		11	12
	CL	iP		10	01d
	T	iP			09d
	USCGS: 20 S 67 W				
	18:57:42, 150 km				
5	Pr	eP	20	07	12
	Is	eP		06	51
		e		07	10
	CL	eP		06	57
	T	eP			47
6	P	iPNEZ	00	29	09
		ipP			34
		isPEZ			45
	D	iP			07d
		ipP			33
		isP			45
		i		30	13
		ePP		31	31
	R	iP		29	05d
		ipP			31
		isP			42
	Hf	iP		28	57d
		ipP		29	24
		isP			34
	Pr	iP		28	59
		isP		29	37
	Kg	iP			20d
		ipP			46
		isP			57
	Is	iP			16d
		ipP			42
		isP			54
		i		30	13
	CL	iP		29	12d
		isP			49
		i		30	09
		ePP		31	53
	T	iP		29	20d
		ipP			46
	USCGS: 20 S 68 W				
	00:17:55, 100 km				
6	P	eP	00	34	31
	R	iP			23
	Hf	eP			21
	Kg	iP?			20
	Is	iP			39
	CL	eP			35
	Aftershock of preceding?				
	Kg appears too early				
6	P	iP	00	35	47
	R	iP			51
	Hf	e(P)			51
		i			57
	Pr	iP			50
	Kg	eP			46
	Is	iP			51
	CL	iP			51
	T	iP			56
	Pacific? Very distant?				

Date	Sta.	Phase	h	m	s
September					
6	P	ipP	01	28	16
	R	eP		27	26
		ipP		28	16
	Hf	iP		27	35
		ipP		28	27
	Kg	iP		27	17
		ipP		28	09
	Is	ipP			15
	CL	iP		27	23
		ipP		28	15
	T	iP		27	20
		ipP		28	11
	Depth 220 km				
	BCIS: 18 N 146 E				
6	P	iP	05	02	59
		iNEZ		03	13
	PX	iSN		09	45
		iN		13	31
		iLN		14.2	
	R	eP		03	03
		i			17
	Hf	eP			14
	Pr	iP			08
		i			22
	Kg	eP		02	45
		i		03	01
	Is	iP		02	50d
		i		03	03
		iPcP		04	35
	CL	iP		02	53d
		i		03	08
		ePcP		04	34
	T	iP		02	45
		e			58
		i		03	21
		ePcP		04	32
	Depth 50 km?				
	USCGS: 51 N 177 W				
	04:54:37				
7	R	iP	01	19	21
	Hf	iP			08
	Pr	iP			15
	Kg	iP			37
	Is	iP			31
		i		20	50
	CL	iP		19	26
	T	iP			34
	USCGS: 8½ N 72 W				
	01:10:32				
7	P	iP	06	58	56
		ipP		59	11
	PX	eSNZ	07	07	29
		eN		11.5	
		eGN		14.5	
		eR		17.2	
	P	eP'P'		28	05
			A		T
		PZ	¼		3
	R	eP	06	59	02
		ipP			16
		eP'P'		28	05
	Pr	eP		59	05
		ipP			20

(continued)

Date	Sta.	Phase	h	m	s
September		(continued)			
7	Kg	iP	06	58	45
		ipP		59	00
	Is	iP		58	48
		ipP		59	03
		i	07	01	15
		eP'P'		28	00
	CL	iP	06	58	53
		ipP		59	06
		eP'P'	07	28	04
	T	iP	06	58	45
		ipP			59
	Depth 60 km				
	USCGS: 50 N 156 E, 06:48:36				
7	P	iPNEZ	10	15	14
	PX	iPPNZ		17	11
		iSNEZ		21	59
			A		T
		PZ	0.4		2
		SH	1½		3
		MH	8		20
	R	iPNEZ	10	15	20d
		iSNEZ		22	08
	Hf	iP		15	27
		eScP		20	55
	Pr	iP		15	23d
		eS		22	21
	Kg	iP		15	00
	Is	iP			04d
		eScP		20	42
		eS		21	42
	CL	iP		15	07d
		iScP		20	45
		eS		21	48
	T	iPNEZ		15	00d
		iScP		20	42
		iSNZ		21	36
	Magnitude 6				
	USCGS: 51½ N 178½ W				
	10:06:47				
7	P	iPNEZ	15	16	57
		isP		17	38
	D	iP		16	55d
		ipP		17	23
		isP			35
	R	iP		16	57d
		ipP		17	25
		isP			37
	Hf	iP		16	46d
		isP		17	25
	Is	iP			04d
		ipP			31
		isP			44
	CL	iP			02
		epP			28
		esP			42
	T	iP			09
		epP			37
		esP			49
	BCIS: 23 S 68 W				
	15:05:26, 100 km				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
8	D	eP	10 27 44
		i	57
	R	eP	47
	Hf	eP	56
	Pr	eP	48
		i	53
	W	iP	26
		i	31
		i	37
	Is	eP	27
	CL	eP	32
	USCGS: 52 N 171 W		
	10:19:48		
8	P	iP	13 32 04
	R	eP	07
	Hf	eP	13
	Pr	eP	15
	W	eP	03
	Is	eP	02
	CL	eP	06
	USCGS: 5 S 152 E		
	13:18:55, 60 km		
9	P	eP'	00 33 24
		i	31
	PX	iSKS	39 39
		iSKSP	47.2
		iSSNZ	56.3
		iGN	01 15.1
		iREZ	22.9
			A T
		MH	4 20
	R	eP'	00 33 23
		i	39
	Pr	eP'	23
		i	27
		i	32
	Kg	e	25
	Is	eP'	20
		i	28
	CL	eP'	23
		e	30
	T	eP'	24
		i	37
	USCGS: 48 S 100 E		
	00:13:30		
	BCIS: $47\frac{3}{4}$ S 101 E		
	00:13:31		
9	D	eP	05 05 36
	R	iP	39
		e	06 05
	Hf	iP	05 45
		e	06 09
	Pr	iP	05 40
		e	06 03
	Is	eP	05 37
		e	06 03
	CL	iP	05 40
		e	06 07
	BCIS: $9\frac{1}{2}$ S $161\frac{3}{4}$ E		
	04:52:44		

Date	Sta.	Phase	h m s
September			
9	P	ePNEZ	09 12 14
		iNZ	26
	PX	iSNZ	21 53
		iGNE	31.0
		eR	33.7
	R	eP	12 16
		e	28
	Hf	iP	24
		i	28
		e	34
	Pr	iP	17
		i	28
	Kg	eP	11
		e	22
	W	iP	14
	Is	iP	17
		i	28
	CL	iP	22
		i	32
	T	eP	23
	Depth 40 km?		
	USCGS: 15 S $176\frac{1}{2}$ W		
	09:00:33		
9	D	eP	13 46 22
	R	eP	23
	Hf	e?	26
	Pr	iP	44
	Is	iP	24
	CL	eP	25
9	R	eP	17 37 35
		i	42
	Hf	iP	25
	Pr	eP	29
		i	35
	Kg	eP	38 00
		e	06
	W	iP	37 57
	Is	iP	55
		i	59
	CL	eP	48
		i	51
	Mexico		
9	R	eP	18 52 15
	Pr	iP	19
	W	iP	00
	Is	iP	00
	CL	iP	04
10	Pr	e(P)	14 51 00
		i	12
	CL	eP	24
	USCGS: $1\frac{1}{2}$ S 80 W		
	14:43:05, 400 km		
	(So large a depth appears improbable)		
10	D	iP	20 09 36
	R	iP	34
	Pr	iP	33
	Kg	eP	44
	Bt	iP	36
	BCIS: $1\frac{3}{4}$ N $31\frac{3}{4}$ W		
	19:56:33		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
11	D	eP	07 45 00
		e	24
	R	eP	44 55
	W	iP	45 10
		e	38
	Is	iP	09
		e	37
	CL	eP	06
	T	eP	14
11	P	iPNEZ	13 52 50
	D	eP	51
		epP	55 05
	R	eP	52 52
	Hf	iP	59
	Pr	iP	53d
		epP	55 06
	Bt	eP	52 48
	Kg	eP	49
	W	iP	52d
	Is	iP	54d
		ipP	54 46
	CL	iP	52 58d
	T	eP	59
	USCGS: 19 S 178 W		
	13:41:44, 500 km		
11	D	e	19 55 19
	Pr	e	21
	W	iP	54 45
		i	51
		i	57
	Is	eP	47
	T	e	50
	Aleutians?		
11	P	iPEZ	23 33 33c
		ipPNZ	43
	PX	eS	42 57
		e	53.0
		i(R)	54.6
	R	iP	33 36c
		i	44
	Hf	iP	43c
		i	52
	Pr	iP	36c
		i	45
	Kg	iP	32
		i	46
	W	iP	36c
		ipP!	46
	Is	iP	37c
		ipP!	47
	CL	iP	41c
		ipP	50
	T	iP	44c
		ipP	53
	Depth 40 km		
	USCGS: 16 S 172 W		
	23:22:09		

Date	Sta.	Phase	h m s
September			
12	P	iPNEZ!	00 34 47c
	PX	i(sP)	35 13
		iSNEZ	40 14
		iGN	42 09
		iR	44 51
			A T
		PZ	2 $1\frac{1}{2}$
		PH	5 $1\frac{1}{2}$
		PH	$1\frac{1}{2}$ 3
		SH	4 8
		MH	20 20
	D	iP!	00 34 45c
		i(pP)	56
		iPP	35 55
	R	iPNEZ!	34 41c
		i	54
		iSNE	39 57
	Hf	iP	34 29c
		i(pP)	37
		i	35 22
	Pr	iP!	34 36c
		i(pP)	45
		iPP	35 40
	Kg	iP	02c
		i	21
		i	36 21
	W	iP!	34 57c
		iPP	35 54
		i	36 17
		iPcP	37 45
		i	38 00
	Is	iP!	34 54c
	CL	iP!	48c
		i(pP)	35 00
	T	iP	34 58c
		i(pP)	35 10
		i	36 22
		iSN	40 34
	Magnitude $6-6\frac{1}{4}$		
	Depth 50 km±		
	USCGS: $17\frac{1}{2}$ N 85 W, 00:28:02		
12	D	eP	01 33 36
	W	iP	34
	CL	iP	38
	T	eP	34
	USCGS: 21 N 145 E, 01:21:06		
12	P	ePNEZ	04 06 52
	PX	eSNZ	11 41
		eGN	13.0
		eR	14.3
	R	iP	06 48
	Hf	eP	34
	Pr	iP	39
		i	45
	Kg	eP	07 08
	W	iP	05
	Is	iP	01
		i	05
	CL	eP	06 58
		i	07 00
	T	eP	11
	USCGS: $15\frac{1}{2}$ N $98\frac{1}{2}$ W		
	04:01:24, 60 km		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
12	P	eP	09 05 51
	R	eP	46
	Hf	eP	47
	Pr	e	43
	W	e	49
	Is	iP	46
	CL	eP	46
	T	e	47
12	R	eP	13 07 22
	Pr	eP	21
	W	iP	19
	Is	eP	13
		i	20
	CL	eP	15
		e	21
13	P	iP	12 55 19d
	Hf	iP	09d
	Pr	iP	12d
	Kg	iP	30d
	W	iP	28
	Is	iP	25d
	CL	iP	23d
	T	eP	31
	BCIS: 25 S 70 W, 12:43:40		
13	PX	eL	17 05.5
	D	eP	16 36 17
	Pr	eP	22
	W	iP	24
	Is	iP	24
	T	eP	27
13	D	iP	18 15 20d
	R	eP	18
	Hf	eP	10
	Pr	eP	13
	Bt	eP	09
	Kg	eP	34
	W	iP	36d
	Is	iP	29
	CL	eP	27
13	W	iP	19 38 04
	Is	iP	05
	CL	eP	09
	T	eP	10
14	PX	eGN	13 26.5
		eR	31.9
	Is	e	12 56 45
	BCIS: 500 km northeast of Macquarie Islands 12:36.8		
14	P	eP	17 15 47
		e	56
	PX	iPcP	16 58
		ePP	17 54
		iSNZ	22 57
		iLNZ	31.5
	R	eP	15 40
		ePcP	17 00
	Hf	eP	15 29
	Pr	eP	35
	Kg	eP	55
	W	e	55
	Is	eP	52
	CL	eP	51
	T	eP	55
	USCGS: 1½ S 80½ W, 17:06:49		

Date	Sta.	Phase	h m s
September			
14	D	eP	23 25 36
	R	eP	34
	Pr	eP	31
	W	iP	44
	According to Trinidad: 16.2 N 60.6 W, 23:16:22		
15	P	iP'NEZ	04 41 11
		i	21
		ipP'	42 28
		iSKP	44 05
		eSKKP	54 18
	PX	eN	05 02 13
	R	iP'	04 41 11
		iSKP	44 04
		eSKKP	54 05
	Hf	iP'	41 15
		epP'	42 28
		iSKP!	44 09
		e	45 59
	Pr	iP'	41 13
		epP'	42 26
		iSKP	44 07
		eSKKP	53 54
	Bt	iP'	41 13
		iSKP	44 07
		e	46 20
	Kg	iP'	41 09
		eSKP	43 58
	W	iP'	41 07
		i	21
		iSKP	43 57
		iSKKP	54 06
		i	26
	Is	iP'	41 08
		iSKP	43 59
		e(PKKP)	50 05
		iSKKP	54 20
	T	iP'	41 10
		iSKP	44 00
	USCGS: 5½ S 108 E 04:22:34, 300 km		
15	P	eP	18 55 18
		ipP	45
	PX	iSKS?	19 05 29
		e(pS)	07 20
		eSS	12 29
		eGN	20.7
		eR	23.5
	R	eP	18 55 19
		epP	44
	Hf	eP	26
		epP	53
	Pr	eP	22
		epP	47
	Bt	epP	38
	Kg	epP	37
	W	iP	14
		ipP	44
	CL	epP	43
	T	eP	19
		epP	46
	USCGS: 6 S 153½ E 18:42:20, 150 km		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
15	D	iP	21 35 13
	Hf	eP	00
	Pr	iP	07
	Kg	iP	26
	W	iP	21
	CL	eP	13
	West Indies?		
15	P	i(P)	22 15 35
		i	46
	PX	e(S)	22 21
		iLN	26 19
	R	eP	15 34
		e	38
		i	51
	Pr	eP	40
		i	45
		i	54
		i	57
	Bt	eP	53
		i	16 04
		i	12
	Kg	eP	15 15
		e	45
	W	iP	18
		i	23
		i	47
	Is	eP	19
		i	24
	CL	eP	24
		e	29
	T	eP	00
		e	28
	More than one earthquake? USCGS: 51 N 174½ W 22:07:21		
16	Kg	iP	00 19 32
	W	iP	34
	CL	eP	40
	JMA: 35 N 140.5 E 07:00:40, 80 km		
16	P	iP	01 44 47
	R	eP	50
	Pr	iP	55
	Bt	eP	45 00
	Kg	eP	44 40
	W	iP	35
	Is	iP	37
	CL	eP	47
	T	eP	29
	USCGS: 82 N 120 E 01:34:36		
16	P	eP	02 03 35
		i	50
		iSN	04 30
	R	eP	03 25
		i	38
		i!	43
		iS	04 20
	Hf	iP	03 10
		i!	19
	Pr	iP	14
		i	20
		i	26

(continued)

Date	Sta.	Phase	h m s
September		(continued)	
16	Bt	iPNZ!	02 03 08d
		iN	18
		iN	34
		i(S)N	42
	W	iP	55
		i	04 18
		i(S)	05 08
	Magnitude 4.6 Probably Gulf of California		
16	W	iP	09 14 17
		i(pP)	15 47
	CL	eP	14 23
		e(pP)	15 51
	T	e(pP)	45
	Depth 400 km? or two shocks USCGS: 54 N 158½ E, 09:04:23		
16	W	iP	09 31 50
	CL	iP	55
	BCIS: Kamchatka, 09:21:55		
16	W	iP	09 45 56
	CL	iP	46 02
	Kamchatka?		
16	P	eP	15 14 12
		iNEZ	31
		iSN	15 34
	R	eP	14 05
		i	17
		iSNZ	15 18
	Hf	eP	13 51
		e	14 08
	Pr	eP	13 52
		i	14 09
		i(S)	50
		i!	55
	Bt	iP	13 41
		i	56
		iSNZ!	14 38
	W	eP	35
		i	46
		iS	16 27
	Magnitude 4.8 Probably Gulf of California Foreshock 12 minutes earlier. Many aftershocks, the largest about 15:21, 15:47, 15:59, 21:27		
16	Pr	iP	19 59 59
	Bt	iP	20 00 02
		i	13
	W	iP	36
		i	46
	Is	eP	37
	CL	eP	40
	BCIS: Region of Unimak, Aleutians, 19:52.3		
17	W	iP	18 56 20c
	Is	iP	20
	CL	iP	25
	T	iP	21
	JMA: 30 N 139½ E 18:44:44, 450 km		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
18	PX	eS	01 17.5
		eR	27.5
	R	e	09 21
	Kg	eP	06
	W	iP	06
		e	18
	Is	iP	08
	CL	eP	11
	USCGS: 53 N 160 E 00:59:20		
18	D	e	05 50 33
	R	e	30
	Pr	e	24
	Kg	e	58
	W	e	52
	Is	e	53
	CL	e	45
	Mexico		
18	PX	iLNZ	18 32.6
	D	eP	22 48
		e	23 08
	R	eP	22 50
	Pr	eP	56
	Kg	eP	37
	W	iP	35
		i	45
	CL	e(P)	40
		e	45
	T	eP	31
		e	43
	USCGS: 52½ N 168 W 18:15:10		
18	D	eP	23 10 45
	R	eP	51
	Pr	eP	47
	W	iP	19
		i	26
		i	41
	Is	eP	19
		e	26
	CL	e	31
	T	eP	19
	BCIS: 52 N 175 W, 23:02.3		
19	P	eP	01 05 47
	R	eP	50
	Pr	iP	52
	Kg	eP	47
	W	iP	51d
		i	06 07
	Is	iP	05 52d
		i	06 12
	CL	eP	05 56
	T	eP	58
		e	06 18
	BCIS: 15 S 173½ W 00:54:24		
19	P	ePEZ	13 49 40
		i	49
	PX	eSNZ	55.7
		eSSN	58.8
		iGNE	59.4
		eScSN	59.7
		eR	14 01.4

(continued)

Date	Sta.	Phase	h m s
September		(continued)	
19	R	eP	13 49 44
		i	54
	Pr	iP	49
		i	50 00
	Kg	eP	49 27
		e	36
	W	iP	26
		i	36
		i	45
	Is	iP	28
		i	39
	CL	eP	32
		e	43
	T	eP	24
		e	34
	USCGS: 52 N 168 W, 13:42:06		
19	P	eP	14 11 27
	R	iP	28
	Pr	iP	26c
	W	iP	27
	Is	iP	27c
	CL	iP	32c
	BCIS: Tonga Islands, 13:58.7		
19	P	eP	17 00 55
	D	iP	52.9
	R	eP	52
	Pr	iP	01 00.5
	Kg	iP	00 55
	W	iP	43.4
	Is	iP	41
	CL	iP	31.0
	T	iP	30.1
		i(S)E	52.7
	Underground nuclear test "Rainier" 37°11'45" N 116°12'11" W 16:59:59.5 (as given by National Academy of Sciences)		
19	W	iP	17 13 35
		ipP	14 26
	Is	iP	13 37
		ipP	14 25
	CL	eP	13 41
		epP	14 32
	USCGS: 19 S 176 W 17:02:02, 200 km		
19	PX	e(L)EZ	18 00.9
	USCGS: 79½ N 3 E, 17:29:02		
20	P	eP	06 38 27
	PX	eN	07 00 21
	R	iP	06 38 27
	Pr	iP	31
	Kg	eP	20
	W	iP	17
	Is	iP	17d
	CL	eP	15
	Arctic		
20	D	iP	07 06 42
		e	54
	R	eP	39
		e	55
	Pr	iP	36
	Kg	iP	55

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September		(continued)	
20	W	iP	07 06 50
	Is	iP	48
	CL	eP	42
	BCIS: 14 N 62 W, 06:57.2		
20	R	i(P)	07 15 18
	Pr	e	32
	W	iP	07
	Is	eP	14
	CL	eP	12
20	P	iP	08 36 11d
		e(pP)	41
	R	iP	15
	Pr	iP	20
	Kg	iP	00d
	W	iP	01
		i(pP)	29
	Is	iP	03d
		e(pP)	30
	CL	iP	07d
		e	22
		e(pP)	34
	Depth 110 km?		
	USCGS: 46 N 151½ E 08:25:19		
20	Pr	iP	13 59 24
	W	iP	00
	Is	eP	02
	CL	eP	05
20	P	iP	14 14 07c
	R	iP	08c
	Pr	iP	13c
	Kg	iP	13 58
	W	iP	50
	Is	iP	56c
	CL	iP	54c
20	P	eP	18 58 19
	R	eP	20
	Pr	eP	21
	W	iP	21
	Is	iP	22
		i	27
	CL	eP	26
	BCIS: 20½ S 174½ W 18:46:29		
20	P	e	19 14 08
	PX	e	21.0
	D	eP	13 58
		e	14 12
	R	e(P)	13 41
		i	53
		i	14 07
	Pr	e(P)	13 39
		i	49
	Kg	i	14 18
	W	iP	02
		i	12
		i	20
	Is	i(P)	12
		i	22
	CL	i(P)	08
		e	18
	Mexico		

Date	Sta.	Phase	h m s
September			
20	P	e	23 15 22
	PX	iLN	24.9
	R	e(P)	15 13
		e	17 05
	Pr	iP	15 20
		i	27
	Kg	e	00
	W	iP	14 56
	Is	eP	58
		i	15 02
		i	13
	CL	eP	02
	USCGS: 52 N 170½ W, 23:07:22		
21	Pr	iP	03 55 19
	W	iP	18
	Is	iP	20
	CL	eP	23
21	R	eP	06 08 36
	Pr	iP	33
	W	iP	33
	Is	iP	33
	CL	eP	37
	T	eP	37
21	R	eP	23 30 05
	Pr	eP	05
	W	iP	29 43
	Is	eP	45
	CL	eP	49
	T	eP	40
	Aleutians?		
22	R	e	23 44 29
	Pr	e	25
	W	iP	26
		e	40
	Is	e	42
	CL	e	30
23	P	eP	09 21 41
	R	iP	44
		i	52
	Pr	iP	50
		i	22 05
	Kg	e	21 28
	W	iP	29d
		i	43
	Is	iP	31
	CL	iP	50
		e	50
	USCGS: 52 N 177½ E, 09:12:55		
23	W	eP	16 52 57
		i	53 05
		i	15
	Is	e	14
	CL	e	16
23	D	eP	18 55 41
	R	eP	48
	W	iP	42
		i	48
	Is	iP	43
	CL	eP	48
	USCGS: 16 S 173 W, 18:44:10		
23	W	iP	19 59 25

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
24	PX	iSN	02 05 29
		eGN	14.5
		eR	17.6
	R	eP?	01 56 05
		e	14
	Pr	eP	06
		e	12
	W	eP	06
		i	14
	Is	iP	07
		i	14
	CL	eP	12
		e	19
	BCIS: 16 S 173 W 01:44:35		
24	PX	iPEZ	08 35 27
	P	eNEZ	38 49
		iPPNZ	40 01
	PX	eSKSNE	46 09
		iPSNZ	49.0
		iPPS	50 26
	P	ePKKP	51 04
	PX	iSSNZ	54.5
		iSSS	58.7
		iGN	09 04.9
		iRNZ	09.5
			A T
		PZ	10 24
		PPZ	24 26
		PPH	17 26
		GH	300 60
		MH	70 20
		MZ	60 20
	R	eP	08 35 28
		iPP	40 13
		iPKKP	51 00
		iGN	09 05.1
	Pr	eP	08 35.6
		ePP	39.9
		iPKKP	51 00
		i	10
	Kg	e(P)	35 22
		ePKKP	51 10
	W	eP	35 22
		i	29
		i	49
		e	38 47
		iPP	40 00
		i	46 13
		i	50 57
		iPKKP	51 05
		e(P'P')	59 23
	Is	eP	35 21
		i	48
		i	39 05
		iPP	40 02
		iPKKP	51 04
		i	38
		i(P'P')	59 01
	CL	eP	35 27
		e	38
		e	39 13
		ePKKP	51 03
		(continued)	

Date	Sta.	Phase	h m s
September		(continued)	
24	At P, R, etc., G wave exceptionally large and clear. USCGS: 5½ N 127 E, 08:21:05 Magnitudes, according to Dr. Gutenberg: m=7.3, M=7.6		
24	D	iP	09 20 07
		i	42
	R	iP	03
		i	32
	Pr	iP	00
	W	iP	16
	Is	iP	14
		i	47
	CL	eP	13
	Depth 110 km? Pacific; unrelated to the preceding		
24	Pr	e	14 07 34
	W	iP	22
		i	29
	Is	eP	23
	CL	eP	27
		e	34
25	W	eP	05 36 13
		e	42
	Is	e	23
	CL	e	13
25	P	eP	06 01 41
	PX	iSN	10 15
		eSSN	14 51
		iLN	17 09
			A T
		MH	7 20
	R	eP	06 01 36
	Pr	eP	35
	W	eP	29
		i	38
		i	45
	Is	eP	34
		i	45
	CL	eP	32
		e	48
	Magnitude 6-6¼ BCIS: 33 N 37½ W, 05:50:54		
25	R	e	06 32 24
	Pr	eP	37
	W	iP	16
		i	21
	Is	e	17
	CL	eP	20
		e	31
25	D	iP	07 45 49
	R	iP	46
	Pr	eP	43
	W	iP	58
	Is	iP	57
	CL	eP	53
	South America		
25	PX	eGN	10 18.1
		eR	21.9
	New Britain region		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h m s
September			
25	PX	eP	16 50 53
		ePP	55 29
		eN	17 04 45
		e	14 41
		iGN	20 49
	W	e(P)	16 51 04
		ePP	55 11
		ePKKP?	17 06 30
	Is	ePP	16 55 24
	Off Mindanao USCGS: 16:36:37		
25	R	iP	18 13 07
	Pr	iP	08
	W	iP	06
		i(pP)	14 04
	CL	iP	13 11
		e(pP)	14 07
	Depth 230 km? BCIS: 15 S 167 E, 18:00.4		
25	W	iP	20 36 59
25	W	iP	21 21 42
	CL	eP	48
25	PX	e	22 45.1
		e	23 05.9
	USCGS: 6 N 127½ E 22:17:00		
26	W	iP	06 26 53
	Is	iP	55
	CL	iP	27 01
26	P	iP	08 09 59
		i	10 07
	PX	eSN	14 57
		eGN	17.8
	R	iP	09 53
		e	11 06
	Pr	iP	09 47
		i	56
	Kg	iP	10 15
	W	iP	10
		i	21
		iPcP	13 06
	Is	iP	10 08
		i	15
		iPcP	13 07
	CL	iP	10 04
		e	13
	USCGS: Near the coast of Chiapas, Mexico, 08:03:50		
26	P	eP	13 41 21
		e	31
	PX	eGN	49 17
	R	eP	41 15
	Pr	iP	10
	Is	eP	30
		i	39
		iPcP	44 24
	CL	eP	41 27
	USCGS: 15 N 92½ W 13:35:22, 150 km		

Date	Sta.	Phase	h m s
September			
26	Pr	e	15 26 15
	W	iP	25 51
		i	26 10
	Is	iP	25 52
		i	26 12
	CL	eP	25 57
26	P	e	19 04 55
	PX	iPP	05 28
		e	12 39
		iGN	30.9
		eR	35.1
	D	e(PKKP)	16 42
	R	e	04 48
	W	eP	01 00
		e	04 37
		e	05 01
		i(PKKP)	16 48
	Is	e	05 15
	CL	e	04 35
		e	05 05
	USCGS: 6 N 126½ E 18:46:41		
26	W	iP	20 33 58
		i	34 10
	Is	iP	33 59
		e	34 07
	CL	eP	02
		e	14
	Wellington: 34 S 178½ W 20:21:12, magnitude 5.5		
27	D	e	00 32 03
	R	e	14
	Pr	e	11
	W	eP	31 46
	Is	e	53
	CL	e	59
	BCIS: 52½ N 175 W 00:23:49		
27	P	eP'	04 27 05
		ePP	38
		e(PPP)	30 47
	PX	eSKSN	33 55
		eSN	35 23
		eSSN	42.8
		iGN	54.8
		iR	59.1
			A T
		MH	4 20
		MZ	3 20
	R	eP	04 23 15
		eP'	27 04
		ePP	44
	Pr	e	27 20
		ePP	50
	Kg	e	15
	W	eP'	00
		e	28
		ePP	34
	Is	eP'	26 57
		ePP	27 35
	CL	eP'	02
		ePP	39
	Magnitude 6.1 (Strasbourg) USCGS: 1 S 127 E, 04:08:23		

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
September					
27	P	e	04	37	34
	D	eP'			11
		e		38	02
	R	eP'		37	13
		e			04
	Pr	eP'		37	19
		e		38	06
	Kg	e		37	41
	W	iP'		36	56
		i		37	22
	Is	iP'		36	59
		i		37	25
	CL	eP'			02
		e			59
	USCGS: 1 S $127\frac{1}{2}$ E 04:18:49				
	Interpretation slightly questionable. Seismograms differ markedly in appearance from those of the preceding shock. Possibly deeper.				
27	P	iP	05	07	36c
	R	iP			39c
	Pr	iP			45c
	Kg	iP			24c
	W	iP			23c
		i			59
		i		09	18
	Is	iP		07	25c
	CL	iP			27c
	USCGS: 64 N 178 E 04:58:52				
	Unusual epicenter				
27	Kg	e	05	50	33
	W	iP			22
		i			34
		i			40
	CL	e			40
		e			46
	JMA: $43\frac{1}{2}$ N 147 E 05:39:19, 60 km				
27	R	eP	05	55	55
		e		56	04
	W	iP		55	39
		i			46
	Is	iP			41
	CL	eP			45
	USCGS: 53 N 168 W 05:48:15				
27	P	e(P')	06	16	30
	PX	eN			43.5
		eR			49.0
	R	eP'		16	10
	Pr	eP'			14
	W	iP'		15	58
	Is	iP'		16	01
	CL	eP'			06
	USCGS: 1 S 127 E 05:56:50				

Date	Sta.	Phase	h	m	s
September					
27	P	e	11	24	53
	PX	eSN		30	49
		eGN		33	51
		iR			36.0
	R	i(P)		24	45
	Pr	eP			45
		e			56
	Kg	e			41
	W	iP			24
		i			32
		i			41
	Is	eP			31
	CL	e			37
		e			44
	USCGS: $52\frac{1}{2}$ N 169 W 11:16:52				
27	PX	eGN	12		02.8
		eR			04.5
	R	e(P)	11	53	20
		e			40
	Pr	eP			16
		i			35
	W	eP		52	53
		i		53	08
	Is	eP			03
	CL	e			06
	USCGS: $52\frac{1}{2}$ N $169\frac{1}{2}$ W 11:45:24				
27	CL	e(P)	12	55	19
27	P	iP	18	58	53c
	R	iP			55
	Pr	iP		59	00c
	Kg	iP		58	55c
	W	iP!			45c
		ipP	19	00	10
	Is	iP	18	58	47c
		ipP	19	00	07
	CL	iP	18	58	51c
		epP	19	00	14
	JMA: $33\frac{3}{4}$ N $136\frac{3}{4}$ E 18:47:21, 360 km				
28	P	iPNEZ!	00	39	13c
		ipP		40	51
		isP		41	38
		iPP		42	31
		isPP		44	47
	PX	iSNE		48	50
		iPSE		50	50
		esSPN			52.3
		iSSN			54.7
		iGN	01		01.5
		i(R)			02.5
	P	iSKPP'NZ		08	08
			A		T
		PZ	$1\frac{1}{2}$		1
		PH	1		1
		PPZ	0.1		1
		SH	$1\frac{1}{2}$		6
	R	iPNEZ!	00	39	14c
		isP		41	39
		ePP		42	24
		eSN		48	55
		eSKPP'	01	08	07

(continued)

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
September		(continued)			
28	Pr	iP!	00	39	18c
		i		41	13
		esP			38
		ePP		42	37
		i			42
		eSKPP'	01	08	13
	Kg	iP!	00	39	05c
		eSKPP'	01	08	18
	W	iP!	00	39	05c
		i			14
		i(pP)		40	37
		iPP		42	21
		eS		48	40
		eSKPP'	01	08	11
	Is	iP!	00	39	07c
		i		40	54
		iPP		42	21
		eSKPP'	01	08	09
	CL	iP!	00	39	10c
		i			23
		i			58
		iPP		41	58
		eS		48	46
		eSKPP'	01	08	06
	T	iPNEZ!	00	39	01c
		iPP		42	17
		eSKPP'	01	08	13
	Magnitude $6\frac{3}{4}$				
	USCGS: $30\frac{1}{2}$ N $137\frac{1}{2}$ E 00:27:31, 500 km				
	JMA: 31 N 138 E 00:27:33, 450 km				
28	PX	e(S)N	04		34.4
		eN			46.0
		eGN			55.5
		eR	05		03.8
	USCGS: 3 S $135\frac{1}{2}$ E 04:11:23				
28	P	iPNEZ	14	31	08d
	PX	ipP		33	09c
		isPNZ		34	07
		iSNZ		40	18
		i			44.2
		iNZ			48.1
	P	i(PKKP)		51	08
	PX	iGNE			52.2
	P	eP'P'		57	57
		epP'P'	15	00	23
		eP'P'P'		18	05
	PX	iG2N			35.0
			A		T
		PZ	14		4
		PH	4		4
		SH	100		12
	D	iP	14	31	09d
	PV	iP			07d
		ipP		33	09c
		iS		40	22
	R	iPNEZ		31	10d
		ipP		33	13c
		isP		34	16
		i		37	03
		iSNZ!		40	28
		iP'P'		58	18
		epP'P'	15	00	39
		eP'P'P'		18	18

(continued)

Date	Sta.	Phase	h	m	s
September		(continued)			
28	Pr	iP	14	31	10d
		ipP		33	13c
		isP		34	20
		ePKKP		40	29
		iS		49	57
		iP'P'		57	56
		epP'P'	15	00	23
		e(P'P'P')		18	08
	SN	iP	14	31	01(d)
		ipP		33	04
		iS		40	11
	Kg	iP		31	07d
		epP		33	09
		isP		34	15
		eP'P'		58	18
	W	iP!		31	10d
		ipP		33	15
		isP		34	19
		iSEZ		40	27
	Is	iP!		31	11d
		iS!		40	31
	CL	iP		31	15d
		ipP		33	18
		isP		34	28
		eS		40	34
		ePKKP		49	53
		epP'P'	15	00	20
	Clock out of order at Tinemaha.				
	According to Gutenberg: $20\frac{1}{4}$ S $178\frac{1}{2}$ W, 14:20:01, 600 km; m=7.2 M=7.5				
28	P	iP	14	55	13d
	R	iP			15d
		e		57	24
	Pr	iP		55	16d
	Kg	iP			11d
	W	iP			15d
	Is	iP			16d
		i		57	54
	CL	iP		55	20d
	USCGS: $20\frac{1}{2}$ S $178\frac{1}{2}$ W 14:44:02, 600 km				
28	P	iPNZ	21	05	35
		i			46
		iSE		06	24
	R	iP		05	45
		i			56
	Pr	eP			53
		i		06	04
		i(S)		07	06
	FT	iP		05	24
		i(S)		06	03
	SB	eP		05	19
		i			22
	Kg	eP			09
		i			11
		iS			51
	W	iPEZ			14.5
		iSEZ			41.5
	Is	iP			19
	CL	eP			26
	Seismograms peculiar, showing more long-period motion than usual. Possibly unusually shallow. Magnitude 4.2				

(continued)

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
September		(continued)			
28	USCGS: 36½ N 122 W				
	21:04:37; felt (IV) at				
	Big Sur and south of				
	Hollister.				
28	P	eP	21	15	29
		ipP		16	13
		i			17
		esP			36
	R	eP		15	32
		epP		16	15
		e			22
	Pr	e			24
	Kg	eP		15	21
		epP		16	05
		e			10
	W	iP		15	23
		ipP		16	08
		i			12
	Is	eP		15	26
		epP		16	10
		i			14
	CL	eP		15	28
		epP		16	13
		e			17
	USCGS: 17½ N 146 E				
	21:03:18, 200 km				
29	PX	eSN	02	31.6	
		ePPSN		36.5	
		eGN		52.5	
		eRNZ		57.3	
	USCGS: 64½ S 172½ W				
	02:08:55				
29	P	iP'	06	55	54
	R	eP'			56
	W	iP'			51
	Is	iP'			52
	USCGS: 0 124 E				
	06:37:33, 200 km				
29	P	iPNEZ	07	17	13d
		epP		19	24
	R	iP		17	16d
	Pr	iP			16d
		i			36
		ipP		19	27
	Kg	eP		17	12
	W	iP			15d
		i			20
		ipP		19	27
	Is	iP		17	16d
		ipP		19	27
	CL	iP		17	20d
		epP		19	32
	USCGS: 20 S 178 W				
	07:06:11, 650 km				
29	P	iPNEZ	08	24	57c
		ipP		27	02
		isP		28	01
	PX	iSEZ		34	26
		eSPE		35	36
		iN		38.3	
		iN		43.1	
		iGN		46.5	
			A		T
		PZ	2½		4
		SH	1½		3½
		(continued)			

Date	Sta.	Phase	h	m	s
September		(continued)			
29	R	iP	08	25	00c
		ipP		27	08
		iSN		34	32
		iN			48
	Pr	iP!		25	00c
		ipP		27	06
		i		28	26
		eS		34	30
	Kg	iP		24	57c
		epP		27	07
	W	iP!		24	59c
		ipP		27	08
		i(sP)		28	11
		eS		34	42
	Is	iP!		25	01c
		ipP		27	11
		eS		34	30
		eP'P'		53	32
	CL	iP		25	04c
		ipP		27	15
		eP'P'		53	33
	Magnitude 6¼				
	USCGS: 25 S 178½ E				
	08:12:22, 600 km				
29	D	e	08	51	14
	R	e			15
	W	i			16
	Is	e			16
	CL	e			09
29	P	eP	13	40	43
		e			54
	PX	eGN		56.2	
		eR		57.8	
	R	eP		40	48
		e		41	00
	Pr	eP		40	52
	Kg	eP			43
	W	iP			33
		i			42
	Is	iP			34
		i			49
	CL	eP			38
	USCGS: 53½ N 160 E				
	13:30:42				
29	P	iP	13	49	16d
	R	iP			17d
	Pr	iP			18d
	W	iP			21
	Is	iP			19
	CL	iP			22d
	BCIS: 22½ S 180, 13:37.0				
29	P	eP	14	07	13
	R	eP			19
	Pr	eP			24
	W	iP		06	58d
		i		07	11
	Is	eP			00
	CL	eP			03
	Alaska				
29	P	iP	18	58	09c
	R	iP			14
	Pr	iP			20c
	W	iP		57	57c
	Is	iP		58	01c
	CL	iP			04c
	BCIS: Fox Is., Aleutians				
	18:50:30				

Pasadena and auxiliary stations, 1957 — No. 4

Date	Sta.	Phase	h	m	s
September					
29	P	i(pP)	20	03	50
	D	eP			18
		i(pP)			47
	R	i(pP)			45
	W	eP			28
		i(pP)		04	00
		i			15
	Is	i(pP)		03	57
	CL	eP			22
		e(pP)			55
	Depth 120 km?				
	Possibly two shocks				
	USCGS: 13 S 77 W				
	19:53:30				
29	D	eP	22	08	24
	W	iP			25
	Is	iP			24
		e			33
	South America?				
29	D	eP	23	56	07
	R	eP			03
	W	iP			16
	Is	iP			15
	South America?				
30	P	iP	11	14	58
	PX	eLN		44	03
	R	iP		15	01
	Pr	iP			05
	Bt	eP			08
	Kg	eP		14	49
	W	iP			51d
	Is	iP			53
		e		15	05
	CL	iP		14	57
	USCGS: 29½ N 140 E				
	11:02:36				
30	D	eP	15	30	15
	W	iP			16
	Is	iP			15
	CL	eP			10
30	PX	eL	20	59.5	
	Pr	e(P)		34	13
	W	eP		33	50
		e		34	10
	Is	eP		33	53
	CL	eP			57
	USCGS: 24½ N 143 E				
	20:21:30				
October					
1	P	eP	07	25	29
	R	eP			32
	Pr	eP			34
	W	eP			24
	Is	iP			27
	CL	eP			32
	USCGS: 5½ S 155 E				
	07:12:26, 100 km				
1	P	iP	23	30	52
	Pr	eP			42
	W	iP		31	00d
	Is	iP		30	58d
	CL	eP			56
	T	eP		31	03
	USCGS: 7 S 74 W, 23:20:50				

Date	Sta.	Phase	h	m	s
October					
2	W	iP	06	09	35
2	P	iPEZ	12	37	33d
		iNEZ			37
	PX	iSNEZ		45	13
		iSS		49	09
		i(R)		55.2	
	P	eP'P'	13	07	53
			A		T
		PZ	2½		3½
		PH	1½		3½
		SH	1½		6
		MH	12		20
		MZ	5		20
	R	iP	12	37	27d
		i			32
		i		38	06
		eP'P'	13	07	54
	Pr	iP	12	37	24d
		i			29
		i			37
	W	iP			38d
		i			47
		i			52
		i		39	16
	Is	iP		37	36d
		i			41
		i		38	59
		eP'P'	13	07	52
	CL	eP	12	37	32d
		i			37
		eP'P'	13	07	47
	T	iP	12	37	37
		i			42
		iSN		45	30
	Magnitude 6½-6¾				
	USCGS: 11 N 63 W				
	12:27:55				
2	Pr	iP	18	57	07
	W	iP			09d
	Is	iP			09
	CL	eP			14
2	W	e(P')	21	02	31
	Is	e(P')			24
	BCIS: 54½ S 5 E, 20:42:56				
2	P	iP'	21	18	41
	PX	e(PP)		24	00
		e		48.7	
	R	eP'		18	41
		i			51
	Pr	eP'			42
	Kg	eP'			33
	W	eP'			30
	Is	eP'			34
	CL	eP'			35
	T	eP'			33
	USCGS: 6½ S 69½ E				
	20:58:39				
3	W	iP	01	45	54
	CL	eP		46	02
	T	eP		45	48
	JMA: 42.7 N 144.5 E				
	01:34:43, 60 km				

Pasadena and auxiliary stations, 1957 No. 4

Date	Sta.	Phase	h	m	s
October					
3	P	iPNEZ	06	48	50
	R	eP			45
	Pr	iP			40
	Kg	eP		49	01
	W	iP		48	55
	Is	iP			55
	CL	eP			48
	T	eP			55
	USCGS: $10\frac{1}{2}$ N $62\frac{1}{2}$ W				
	06:39:08				
3	Pr	e	13	56	36
	Is	iP			27
		i			39
	CL	eP			32
		e			42
	Unusual epicenter?				
	BCIS: 10 S 179 W				
	13:44:30				
3	W	iP	17	44	51d
		i		45	03
	CL	eP		44	57
	BCIS: Near south coast of Kamchatka, 17:34.7				
4	W	iP	01	31	37
		i			43
	Is	iP			35
	USCGS: $30\frac{1}{2}$ N 42 W				
	00:21:07				
4	P	iP	01	12	32d
	D	iP			33d
		epP		14	03
	R	iP		12	34
	Pr	iP			34d
		ipP		14	02
	Bt	eP		12	32
	Kg	eP			31
	W	iP			35d
		ipP		14	00
	Is	iP		12	36d
		ipP		14	04
	CL	iP		12	39d
		epP		14	04
	USCGS: $21\frac{1}{2}$ S 178 W				
	01:01:00, 400 km				
4	P	iPNEZ	05	35	41c
		ipP			55
		iPcP		36	37
	PX	iPP		37	57
		iSEZ		43	25
		iSSNE		47.2	
		iGN		49.7	
		iR		53.0	
				A	T
		PZ		$5\frac{1}{2}$	4
		PH		3	5
		SH		3	7
		MH		50	20
	R	iP	05	35	36c
		i			40
		eS		43	25
		eP'P'	06	05	53
		(continued)			

Date	Sta.	Phase	h	m	s
October		(continued)			
4	Pr	iP	05	35	32c
		i			35
		ePcP		36	28
		iPP		37	40
		eP'P'	06	05	50
	Bt	iP	05	35	29c
		i			34
		iSNE		43	10
	Kg	iP		35	52
		i			57
		ePP		37	57
		eP'P'	06	06	01
	W	iP	05	35	47c
		i			52
		iPcP		36	34
		i(PP)		38	09
	Is	iP		35	44c
		i			48
		iPcP		36	37
		iPP		37	58
		eP'P'	06	06	04
	CL	iP	05	35	40c
		i			45
		eP'P'	06	06	06
	T	iP	05	35	46c
		i			50
		iS		43	37
	Magnitude $6\frac{3}{4}$				
	USCGS: 11 N 63 W				
	05:26:09, 60 km				
4	P	iP	06	15	27
	R	eP			22
	Pr	iP			18c
	Bt	eP			16c
	Kg	eP			39
	W	iP			34c
	Is	iP			33
	CL	eP			26
	USCGS: 11 N $62\frac{1}{2}$ W				
	06:05:50				
4	Pr	e	06	27	19
	Bt	eP			07
	W	iP			32
	CL	eP			24
	USCGS: 11 N $62\frac{1}{2}$ W				
	06:17:45				
4	D	eP	08	28	29
	Pr	iP			32
	Is	iP			34
	CL	iP			37
	Wellington: North Island, New Zealand region				
	18:17:04				
4	Pr	iP	16	57	16
	Is	iP			18
	CL	iP			22
	Near Samoa				
4	P	eP	19	38	29
	R	eP			32
	Pr	e			50
	Bt	eP			48
	Kg	eP			12
	Is	iP			12
	T	iP			01