

EARTHQUAKES IN NORTHERN CALIFORNIA

AND

THE REGISTRATION OF EARTHQUAKES

AT

BERKELEY—MOUNT HAMILTON—PALO ALTO

SAN FRANCISCO—FERNDALE—FRESNO

FROM

October 1, 1936, to December 31, 1936

BY

PERRY BYERLY

AND

JAMES T. WILSON

BULLETIN OF THE SEISMOGRAPHIC STATIONS

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CONTENTS

	Page
EARTHQUAKES IN NORTHERN CALIFORNIA	137
THE REGISTRATION OF EARTHQUAKES	142
Symbols and Notations Employed	143
BERKELEY	145
Constants	145
Tabulation of Shocks	146
MOUNT HAMILTON	159
Constants	159
Tabulation of Shocks	160
PALO ALTO	166
Constants	166
Tabulation of Shocks	167
SAN FRANCISCO	176
Constants	176
Tabulation of Shocks	177
FERNDALE	181
Constants	181
Tabulation of Shocks	182
FRESNO	184
Constants	184
Tabulation of Shocks	185

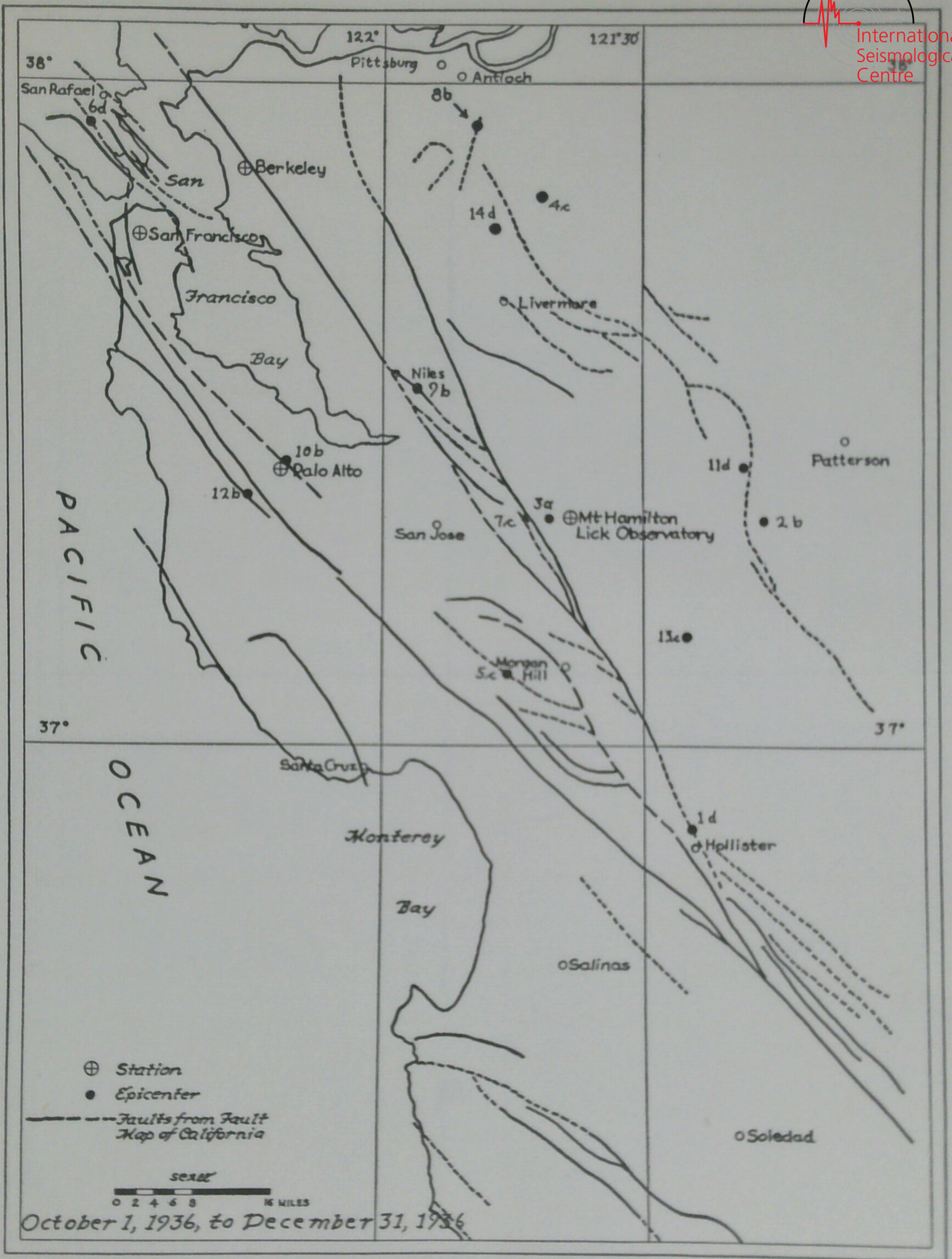
EARTHQUAKE INTENSITY SCALE

Criteria of the Modified Mercalli Scale which were used to rate the intensities of the earthquakes registered were:

Intensity

- II Felt by a few people only. Duration or direction not appreciable.
 - III Duration or direction appreciable.
 - IV Rattling of doors and windows; swinging of suspended objects.
 - V Disturbance of movable objects; plaster cracked.
 - VI Overthrow of movable objects; cracking of chimneys and other brickwork.
 - VII Fall of some chimneys; some damage to buildings.
-

Epicenters located in the following list are plotted on the accompanying map. A number and a letter are given beside each epicenter. The number is that assigned to the earthquake in the list. Only those earthquakes are given numbers for which epicenters were located. The letter represents the excellence with which the epicenter has been located, a indicating excellent, b good, c fair, d poor.



Map showing epicenters, October 1, 1936, to December 31, 1936.

EARTHQUAKES IN NORTHERN CALIFORNIA

(All intensities are given on the Modified Mercalli Scale)

1936 -- PACIFIC STANDARD TIME

- October 2, 0h 38m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto; not reported felt; epicenter about 1 mile north of Hollister. See map, epicenter no. 1.
- October 3, 8h 41m, a.m. Recorded at Ferndale only; not reported felt; epicenter about 25 miles from Ferndale.
- October 3, 11h 00m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco, Fresno; not reported felt; epicenter about 11 miles southwest of Patterson. See map, epicenter no. 2.
- October 3, 11h 02m, a.m. Recorded at Mount Hamilton and Palo Alto only; not reported felt; probably aftershock of previous earthquake.
- October 4, 11h 34m, a.m. Recorded at Berkeley only; not reported felt; focus about 3 miles from the University campus.
- October 5, 12h 22m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto; not reported felt; epicenter about 2 miles west of Lick Observatory; depth of focus about 6 miles. See map, epicenter no. 3.
- October 7, 11h 00m, a.m. Recorded at Berkeley only; not reported felt; focus about 5 miles from the University campus. (Blast?)
- October 9, 5h 25m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco, Ferndale, Fresno; not reported felt; epicenter 140 miles west of Ferndale.
- October 12, 10h 11m, p.m. Recorded at Berkeley only; not reported felt; focus about 9 miles from the University campus.
- October 13, 2h 13m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; not reported felt; epicenter about 12 miles north of Livermore. See map, epicenter no. 4.
- October 16, 6h 09m, p.m. Recorded at Berkeley only; not reported felt; focus about 9 miles from the University campus. (Blast?)
- October 21, 1h 01m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; not reported felt; epicenter about 7 miles west of Morgan Hill. See map, epicenter no. 5.
- October 21, 2h 51m, p.m. Recorded at Berkeley only; not reported felt; focus about 13 miles from the University campus.
- October 24, 8h 26m, p.m. Recorded at Berkeley only; not reported felt; focus about 13 miles from the University campus.



1936

- October 25, 8h 40m, a.m. Recorded at Palo Alto only; not reported felt; focus about 7 miles from the Palo Alto station.
- October 27, 2h 08m, p.m. Recorded at Berkeley only; not reported felt; focus about 8 miles from the University campus.
- October 27, 2h 19m, p.m. Recorded at Palo Alto only; not reported felt; focus about 10 miles from the Palo Alto station.
- October 31, 2h 48m, p.m. Recorded at Berkeley, San Francisco; not reported felt; epicenter about 3 miles south of San Rafael. See map, epicenter no. 6.
- October 31, 5h 15m, p.m. Recorded at Berkeley only; not reported felt; focus about 10 miles from the University campus.
- November 3, 2h 36m, p.m. Recorded at Berkeley only; not reported felt; focus about 8 miles from the University campus.
- November 3, 2h 38m, p.m. Recorded at Berkeley only; not reported felt; focus about 3 miles from the University campus.
- November 5, 9h 51m, a.m. Recorded at Mount Hamilton only; not reported felt; focus about 4 miles from Lick Observatory.
- November 5, 9h 51m, a.m. Recorded at Palo Alto only; not reported felt; focus about 4 miles from Palo Alto station.
- November 5, 3h 14m, p.m. Recorded at Palo Alto only; not reported felt; focus about 6 miles from the Palo Alto station.
- November 7, 8h 00m, a.m. Recorded at Berkeley and poorly at San Francisco; not reported felt; epicenter about 15 miles from the University campus, in San Mateo or Marin County.
- November 7, 8h 31m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; not reported felt; focus about 5 miles west of Lick Observatory. See map, epicenter no. 7.
- November 10, 6h 25m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco, Fresno; IV at Pittsburg and Antioch; epicenter about six miles south of Antioch. See map, epicenter no. 8.
- November 12, 0h 13m, a.m. Recorded at Berkeley, Palo Alto, San Francisco; not reported felt; epicenter same as that of shock of November 10. See map, epicenter no. 8 (rating C).
- November 13, 11h 08m, a.m. Recorded at Palo Alto only; not reported felt; focus about 8 miles from the Palo Alto station.
- November 14, 5h 34m, p.m. Recorded at Ferndale only; not reported felt; epicenter about 90 miles from Ferndale.



1936

- November 16, 11h 11m, a.m. Recorded at Mount Hamilton only; not reported felt; focus about 5 miles from Lick Observatory.
- November 17, 11h 01m, a.m. Recorded at Palo Alto only; not reported felt; focus about 6 miles from the Palo Alto station.
- November 18, 8h 59m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, Ferndale, Fresno; not reported felt; epicenter about 72 miles west of Ferndale, off the coast of Humboldt County.
- November 20, 9h 08m, a.m. Recorded at Palo Alto only; not reported felt; record peculiar; focus within 9 miles of the Palo Alto station.
- November 20, 3h 45m, p.m. Recorded at Palo Alto only; not reported felt; record peculiar; focus within 20 miles of the Palo Alto station.
- November 21, 3h 39m, p.m. Recorded at Berkeley, Mount Hamilton, Palo Alto; not reported felt; epicenter about 8 miles north of Livermore. See map, epicenter no. 14 (d).
- November 22, 7h 54m, p.m. Recorded at Berkeley, San Francisco, Ferndale; felt slightly in Ferndale and Fortuna; epicenter about 60 miles from Ferndale.
- November 23, 7h 53m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; III at Centerville, II at Sunol; epicenter about 6 miles southeast of Niles. See map, epicenter no. 9.
- November 23, 10h 40m, a.m. Recorded at Palo Alto only; not reported felt; focus about 10 miles from the Palo Alto station.
- November 23, 3h 56m, p.m. Recorded at Palo Alto only; not reported felt; focus within 25 miles of the Palo Alto station. (Interval uncertain)
- November 24, 4h 34m, a.m. Recorded at Berkeley, Palo Alto, Mount Hamilton; not reported felt; focus about 8 miles under the Palo Alto station. See map, epicenter no. 10.
- November 25, 11h 47m, p.m. Recorded at Berkeley, Palo Alto, Mount Hamilton, San Francisco; not reported felt; epicenter about 10 miles west of Patterson. See map, epicenter no. 11.
- November 26, 1h 34m, a.m. Recorded at Berkeley only; not reported felt; focus about 4 miles from the University campus.
- December 1, 2h 20m, p.m. Recorded at Berkeley only; not reported felt; focus about 12 miles from the University campus.
- December 2, 10h 24m, a.m. Recorded at Palo Alto only; not reported felt; focus about 8 miles from the Palo Alto station.



1936

- December 2, 11h 13m, a.m. Recorded at Berkeley only; not reported felt; focus about 4 miles from the University campus.
- December 2, 1h 47m, p.m. Recorded at Palo Alto only; not reported felt; focus about 5 miles from the Palo Alto station.
- December 3, 11h 00m, p.m. Recorded at Palo Alto only; not reported felt; focus about 7 miles from the Palo Alto station.
- December 4, 7h 24m, a.m. Recorded at Berkeley and San Francisco only; not reported felt; an epicenter in Marin County is indicated, but discrepancies in time forbid a more accurate location.
- December 4, 7h 51m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; IV at Mountain View; epicenter about 5 miles southwest of the Palo Alto station. See map, epicenter no. 12. (b)
- December 4, 8h 14m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; III at Mountain View; aftershock of previous earthquake. See map, epicenter No. 12.
- December 4, 12h 48m, p.m. Recorded at Palo Alto only; not reported felt; probably aftershock of earthquake at 7h 51m, a.m.
- December 5, 11h 33m, a.m. Recorded at Berkeley only; not reported felt; focus about 3 miles from the University campus.
- December 7, 10h 28m, a.m. Recorded at Palo Alto only; not reported felt; focus about 8 miles from the Palo Alto station.
- December 8, 12h 06m, p.m. Recorded at Berkeley only; not reported felt; focus about 4 miles from the University campus.
- December 8, 1h 53m, p.m. Recorded at Palo Alto only; not reported felt; focus about 25 miles from the Palo Alto station.
- December 9, 1h 24m, a.m. Recorded at Berkeley only; not reported felt; epicenter about 18 miles from the University campus (probably northeast).
- December 9, 2h 07m, p.m. Recorded at Berkeley only; not reported felt; focus about 15 miles from the University campus.
- December 11, 1h 34m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco; not reported felt; epicenter about 5 miles northeast of Gilroy Hot Springs. See map, epicenter no. 13. (c)
- December 15, 9h 37m, a.m. Recorded at Berkeley only; not reported felt; epicenter about 15 miles from the University campus.
- December 16, 3h 51m, a.m. Recorded at Berkeley and Palo Alto; not reported felt; epicenter probably same as that of shock of December 4, 7h 51m, a.m. See map, epicenter no. 12.



1936

December 17, 2h 44m, p.m. Recorded at Berkeley only; not reported felt; focus about 3 miles from the University campus.

December 19, 9h 28m, a.m. Recorded at Palo Alto only; not reported felt; focus about 10 miles from the Palo Alto station.

December 22, 7h 58m, a.m. Recorded at Palo Alto only; not reported felt; focus about 12 miles from the Palo Alto station.

December 23, 9h 17m, a.m. Recorded at Mount Hamilton and Fresno; not reported felt; epicenter near Parkfield.

December 25, 8h 05m, a.m. Recorded at Berkeley, Mount Hamilton, Palo Alto, San Francisco, Fresno. Intensities:

V Lake Almanor

IV Caribou, Chester, Las Plumas, Manzanita Lake, Meadow Valley, Mineral, Taylorsville, Westwood

Not felt at Belden, Hat Creek, Quincy, Paynes Creek, Susanville; epicenter near Lake Almanor.

December 26, 6h 01m, a.m. Recorded at Berkeley and San Francisco; not reported felt; focus within 4 miles of the University campus.

December 29, 11h 39m, a.m. Recorded at Ferndale only; felt by a few in Ferndale; epicenter about 20 miles from Ferndale, probable north or south.

THE REGISTRATION OF EARTHQUAKES



SYMBOLS AND NOTATIONS EMPLOYED

1. Character of the Earthquake--

	I. Perceptible.	II. Moderately strong.	III. Strong.
d (terrae motus domesticus)	Local shock (origin less than 100 kilometers distant).		
v (terrae motus vicinus)	Near shock (origin from 100 to 1,000 kilometers distant).		
r (terrae motus remotus)	Distant shock (origin from 1,000 to 5,000 kilometers distant).		
u (terrae motus ultimus)	Very distant shock or teleseism (origin more than 5,000 kilometers distant).		

2. Phases of the Seismogram--

P (undae primae)	Normal first phase, or first preliminary tremors (longitudinal).
P'	First preliminary tremors which have penetrated the core of the earth.
PR _n	Waves n times reflected at the earth's surface.
S (undae secundae)	Second phase, or second preliminary tremors (transverse).
SR _n	Waves n times reflected at the earth's surface.
PS	Waves changed from longitudinal to transverse oscillation or vice versa through reflection at the earth's surface.
PPS	Waves twice reflected at the earth's surface, having been longitudinal on two branches of the path and transverse on one branch.

In general a bar over two letters denoting types of waves indicates refraction. The subscript _c denotes the boundary at about 2900 km. depth between the core and the middle shell which surrounds it. Thus:

$\overline{S_c P_c S}$	Waves which have penetrated the core, having been transverse before entering and after leaving the core, and longitudinal within the core.
$\overline{P_c P_c} \overline{P_c P}$	Waves refracted at the core boundary into the core, reflected once at this boundary while within the core and again refracted out of the core, having remained longitudinal on all branches of the path.
L (undae longae)	Long waves of surface phase preceding M.
M (undae maximae)	Shorter and more regular waves of large amplitude in the surface phase.
M _n	Greatest motion in the surface phase.
C (coda)	Tail or end portion.
F (finis)	End of discernible movement.

For local earthquakes a special notation is used:

\overline{P}	The longitudinal wave which has traveled its whole path in the surface layer or crust of the earth.
\overline{S}	The transverse wave which has traveled its whole path in the surface layer of the earth.
P*	The longitudinal wave which has traveled the horizontal portion of its path in the intermediate layer.
S*	The corresponding transverse wave.

3. Nature of the Motion--

i (impetus)	Sudden beginning of the motion.
e (emersio)	Gradual beginning of the motion.
T (period)	Time of one complete oscillation.
A	Trace amplitude measured from the media line, + earth motion toward east, north, or zenith, - toward west, south, or nadir.
A_E	E-W component of A.
A_N	N-S component of A.
A_Z	Vertical component of A.

4. Time--

O (origin)	Time of shock at point of origin.
------------	-----------------------------------



BERKELEY

THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude of the center of the seismographic room:

$\phi = 37^{\circ} 52' 15''$ N. Lat.
 $\lambda = 122^{\circ} 15' 36''$ W. from Greenwich

Time.--All determinations are reduced to Universal Time.

Altitude.--85 meters (279 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V		T ₀	ε	$\frac{r}{T_0^2}$	
		K	T			A ₁ (cm)	l (cm)
Bosch-Omori 100 kg.	E	45		16	10		0.001
	N	45		12	10		0.001
Wiechert 80 kg.	Z	44		4	5		0.005
Wood-Anderson	E	3,000		0.9	15		
	N	3,000		0.9	15		
Galitzin	E	126	12	12.0	0	115	11.27
	N	125	12	12.1	0	115	11.16
	Z	121	12	11.8	0	115	14.94
Benioff	Z	V		Coupled Period		ε	
		100,000 (ca)		0.7		5	

The letter G before a reading designates that the seismogram was from the Galitzin instrument; W, Wiechert; B, Bosch-Omori; A, Wood-Anderson; H, Benioff.



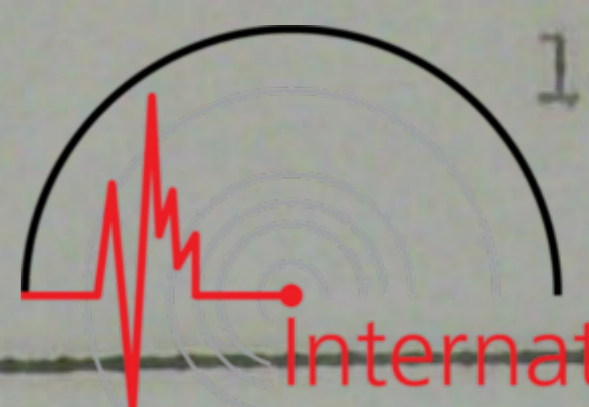
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No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						AE mm.	AN mm.	AZ mm.	
				h. m. s.	s.				
1	Oct. 2	I	ePz	H	6 10 20				
			ePEN	A	6 10 23				
			ePEZ	G	6 10 23				
			eN	G	6 12 01				
			eE	G	6 12 04				
			eZ	G	6 12 09				
			iN	G	6 13 05				
			F		6 27				
2	Oct. 2	Iv	eZ	H	8 38 49				See discussion, p. 137
			F		8 40				
3	Oct. 3	Id	ePz	H	18 59 55.5				See discussion, p. 137
			iPN	A	18 59 55.9				
			iPz	H	18 59 56.4				
			eSEN	A	19 00 09.4				
			iSE	A	19 00 10.9				
			iSN	A	19 00 11.1				
			F		19 02				
4	Oct.3-4	I	eZ	G	22 15 07				
			eE	G	22 15 11				
			eN	G	22 15 13				
			eN	G	22 18 19				
			iEZ	G	22 18 23				
			F		0 30				
5	Oct. 4	I	iPz	H	19 33 35.1				See discussion, p. 137
			iS _Z	A	19 33 35.3				
			iSEN	H	19 33 36.0				
			F		19 35				
6	Oct. 5	I	iPz	G	0 06 15				
			iE	G	0 06 23				
			iz	H	0 06 23				
			iEN	A	0 06 24				
			eN	G	0 06 25				
			eZ	G	0 15 19				
			iEN	G	0 16 35				
			eN	B	0 16 37				
			eE	B	0 16 50				
			F		2 00				
7	Oct. 5	Iu	iPz	G	9 58 35				U.S.C.&G.S. epicenter: 1° N, 127° E
			ePE	G	9 58 37				
			iz	H	10 02 39				
			eN	G	10 02 45				
			iEN	A	10 02 52				
			iz	G	10 02 54				



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No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks	
						A _E	A _N	A _Z		
						mm.	mm.	mm.		
1936										
7	Oct. 5 (Contd)	Iu	i _E	G	10 02 55					
			e _E	B	10 02 57					
			e _E	B	10 09 08					
			e _E	B	10 12 13					
			e _{NZ} F	G	10 32 47					
					11 40					
8	Oct. 5	Id	eP _Z	H	20 22 38.0				See discussion, p. 137	
			eP _N	A	20 22 38.5					
			iS _Z	H	20 22 48.0					
			eS _{EN}	A	20 22 49.0					
			F		20 24					
9	Oct. 6	I	eP _Z	H	12 32 19				N.W. of Tinemaha (Pasadena) Five shocks reported felt in Bishop on this date.	
			F		12 34					
10	Oct. 6	I	iP _Z	H	12 33 56				Sierra, N.W. of Tine- maha (Pasadena)	
			iP _{EN}	A	12 33 57					
			F		12 37					
11	Oct. 7	I	iP _Z	H	3 01 56				Sierra, N.W. of Tine- maha (Pasadena)	
			iP _E	A	3 01 57					
			F		3 04					
12	Oct. 7	I	eP _Z	H	15 02 26				About 150 Km. North of Tinemaha (Pasadena)	
			eP _E	A	15 02 27					
			e _E	A	15 03 09					
			e _N	A	15 03 10					
			F		15 05					
13	Oct. 7	I	iP _Z	H	19 00 10.5				See discussion, p. 137	
			iP _{EN}	A	19 00 10.5					
			i _Z	H	19 00 21.7					
			F		19 01					
14	Oct. 10	I	e		1 04				Trace of distant shock	
			F		1 22					
15	Oct. 10	I	eP _Z	G	1 26 24					
			eP _Z	W	1 26 24					
			iP _{EN}	A	1 26 25					
			eP _Z	H	1 26 25					
			i _{EN}	A	1 26 29					
			e _N	G	1 26 30					
			e _E	B	1 26 31					
			e _N	B	1 26 32					



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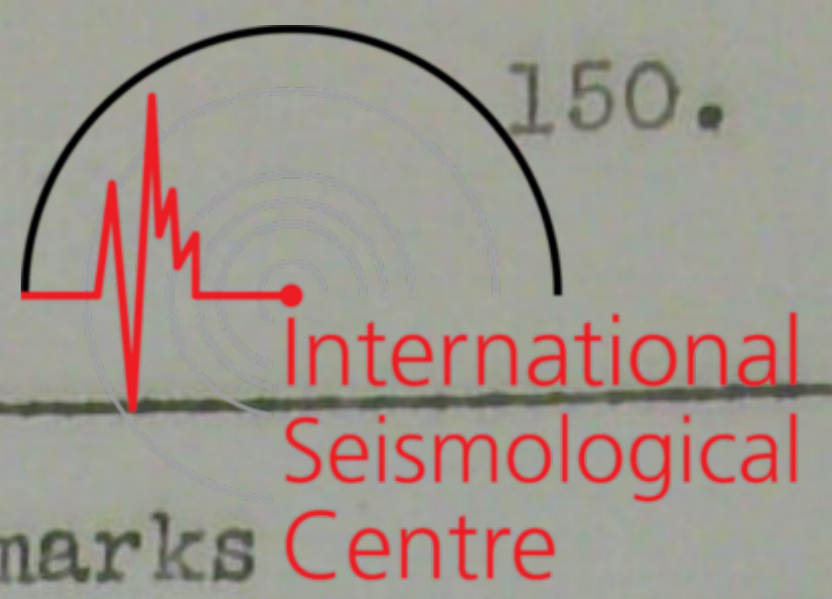
No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E	A _N	A _Z	
1936						mm.	mm.	mm.	
						h. m. s.	s.		
15	Oct. 10 (Contd)	I	eZ	G	1 26 34				
			eN	G	1 26 36				
			eE	B	1 26 38				
			eN	B	1 26 41				
			F		2 00				
16	Oct. 10	I	eP _N	A	18 50 31				N.W. of Bishop (Pasadena)
			eE	A	18 50 47				
			F		18 54				
17	Oct. 13	Id	iP _Z	H	4 10 52.6				See discussion, p. 137
			iS _E	A	4 10 54.0				
			iS _Z	H	4 10 54.0				
			F		4 12				
18	Oct. 13	Id	iP _Z	H	10 12 57.1				See discussion, p. 137
			eP _E	A	10 12 57.6				
			eN	A	10 12 58.1				
			iS _{EN}	A	10 13 02.6				
			iS _Z	H	10 13 02.6				
			F		10 14				
19	Oct. 13	I	eP _N	A	12 29 07.1				
			eP _E	A	12 29 10.1				
			F		12 33				
20	Oct. 16	I	e		12 22				Trace of distant shock
			F		13 30				
21	Oct. 17	Id	iP _Z	H	2 09 30.7				See discussion, p. 137
			iS _Z	H	2 09 32.7				
			eS _N	A	2 09 32.7				
			F		2 11				
22	Oct. 18	I	eP _Z	H	9 17 08				
			eN	A	9 17 12				
			eE	A	9 17 17				
			F		9 21				
23	Oct. 19	I	eE	G	12 29 26				
			eN	G	12 29 36				
			eN	G	12 30 51				
			eE	G	12 32 36				
			F		14 00				
24	Oct. 21	I	eP _Z	H	15 04 58				
			eEN	A	15 05 05				
			F		15 09				



BERKELEY

International
Seismological
Centre

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E	A _N	A _Z	
1936						mm.	mm.	mm.	
				h. m. s.	s.				
25	Oct. 21	Id	iP _Z	H	21 00 58				See discussion, p. 137
			eP _{EN}	A	21 00 58				
			e _{EN}	A	21 01 09				
			F		21 03				
26	Oct. 21	I	iP _Z	H	22 50 59.1				See discussion, p. 137
			eS _E	A	22 51 02.0				
			iS _Z	H	22 51 02.2				
			F		22 52				
27	Oct. 23	I	e	0 26				Trace of distant shock	
28	Oct. 23	IIr	eP _Z	H	6 30 22				U.S.C.&G.S. epicenter: 61°1 N, 149°2 W
			eP _{EN}	A	6 30 23				
			eP _Z	G	6 30 24				
			iN _Z	G	6 30 28				
			e _{EN}	B	6 30 33				
			e _Z	W	6 30 33				
			eS _{EN}	A	6 35 22				
			eS _Z	G	6 35 22				
			eS _N	G	6 35 24				
			e _{EN}	B	6 35 26				
			F		10 00				
29	Oct. 25	Id	iP _Z	H	4 25 56.8				See discussion, p. 137
			iS _Z	H	4 25 59.9				
			eS _{EN}	A	4 26 00.0				
			F		4 28				
30	Oct. 25	I	iP _Z	H	15 41 58.4				
			eP _{EN}	A	15 41 59.0				
			F		15 46				
31	Oct. 26	I	eP _Z	H	12 35 10				
			eP _{EN}	A	12 35 12				
			e _{EN}	A	12 36 05				
			F		12 39				
32	Oct. 27	I	eP _Z	H	22 07 46				See discussion, p. 138
			e _N	A	22 07 48				
			iS _Z	H	22 07 49				
			F		22 09				
33	Oct. 29	I	eP _Z	G	6 01 37				
			eP _Z	H	6 01 38				
			eP _{EN}	A	6 01 39				
			e _{EN}	G	6 08 40				
			F		7 30				



BERKELEY

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E mm.	A _N mm.	A _Z mm.	
	1936			h. m. s.	s.				
34	Oct. 29	Iu	eP _Z eP _{EN} e _F e _{ENZ}	H 18 51 18 A 18 51 18 G 18 51 24 20 30					
35	Oct. 31	Id	eP _Z iS _Z eS _{EN} F	H 22 48 16 H 22 48 20 A 22 48 20 22 50					See discussion, p. 138
36	Nov. 1	I	iP _Z iS _Z F	H 1 15 19 H 1 15 22 1 18					See discussion, p. 138
37	Nov. 2	I	eP _{NZ} eP _E e _E e _N e _E e _{ENZ} e _N F	G 15 07 52 G 15 07 54 B 15 07 57 B 15 08 00 B 15 16 01 G 15 16 02 B 15 16 04 18 00					
38	Nov. 2	IIu	eP _N e _Z e _Z e _{EN} e _E i _{ENZ} e _E e _N eS _N e _Z e _E e _E i _E i _N e _N F	G 20 57 12 H 20 57 16 G 20 57 18 A 20 57 20 G 20 57 20 G 20 57 30 B 20 57 34 B 20 57 38 G 21 06 16 G 21 06 22 G 21 06 24 B 21 06 33 G 21 06 34 G 21 06 36 B 21 06 36 23 45					U.S.C.&G.S. epicenter: 37°5 N, 142° E
39	Nov. 3	Id	iP _Z e _E iS _Z F	H 22 35 45.9 A 22 35 46.2 H 22 35 48.4 22 36.5					See discussion, p. 138
40	Nov. 3	Id	iP _Z iS _Z F	H 22 37 39.4 H 22 37 40.3 22 39					See discussion, p. 138

BERKELEY

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E mm.	A _N mm.	A _Z mm.	
	1936			h. m. s.	s.				
41	Nov. 5	I	eP _Z	H 20 48 20					
			eP _{EN}	A 20 48 21					
			eP _{NZ}	G 20 48 22					
			eP _E	G 20 48 23					
			e _Z	G 20 49 48					
			e _E	G 20 49 52					
			e _E	G 20 50 16					
			e _N	G 20 50 18					
			e _Z	G 20 50 26					
			e _{EN}	G 20 50 58					
			F	21 15					
42	Nov. 7	I	eP _Z	H 13 12 27					Near Benton (Pasadena)
			eP _{EN}	A 13 12 27					
			e _{EN}	A 13 13 00					
			F	13 15					
43	Nov. 7	Id	iP _Z	H 16 00 28.6					See discussion, p. 138
			iS _Z	H 16 00 32.8					
			F	16 01					
44	Nov. 8	I	iP _Z	H 4 31 28.1					See discussion, p. 138
			eS _N	A 4 31 38.7					
			iS _Z	H 4 31 40.2					
			F	4 34					
45	Nov. 11	Id	iP _Z	H 2 24 53.2					See discussion, p. 138
			eP _E	A 2 24 53.2					
			eP _N	A 2 24 53.5					
			e _E	B 2 24 56.5					
			e _N	B 2 24 57.0					
			iS _E	B 2 24 58.3					
			iS _N	B 2 24 58.4					
			iS _E	A 2 24 58.5					
			iS _N	A 2 24 58.5					
			F	2 28					
46	Nov. 12	I	eP _Z	H 2 27 49					
			eP _{EN}	A 2 27 49					
			F	2 32					
47	Nov. 12	I	e _E	G 4 40 43					
			e _Z	G 4 41 03					
			F	4 57					
48	Nov. 12	I	iP _Z	H 8 12 37.9					See discussion, p. 138
			eP _{EN}	A 8 12 38.1					
			i _Z	H 8 12 41.6					
			i _Z	H 8 12 43.1					
			i _{EN}	A 8 12 43.1					
			F	8 13.5					



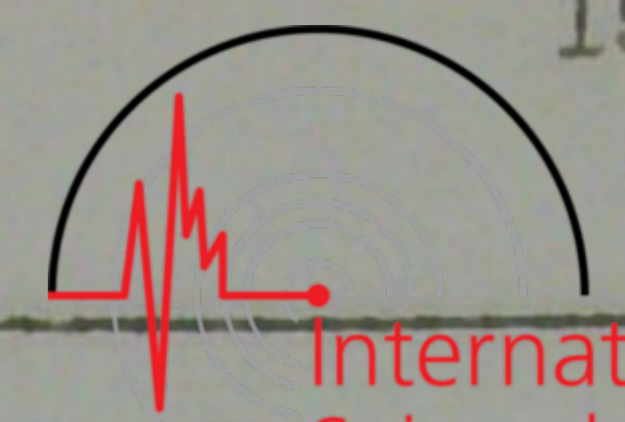
BERKELEY

No.	Date	Char-acter	Phase	Time			Period	Amplitude			Remarks	
				U.T.				A _E	A _N	A _Z		
				h.	m.	s.	s.	mm.	mm.	mm.		
	1936											
49	Nov. 12	I	ePz	H	8	40	47					
			eE	A	8	40	49					
			F		8	44.5						
50	Nov. 12	I	ePz	H	20	15	05					
			ePEN	A	20	15	06					
			F		20	18						
51	Nov. 13	IIu	ePz	H	12	40	33				U.S.C.&G.S. epicenter: 57° N, 163° E	
			ePEN	A	12	40	34					
			iENZ	G	12	40	37	8	-5	+6		-7
			eN	B	12	40	37					
			eE	B	12	40	38					
			eE	B	12	47	44					
			eSE	G	12	47	58					
			eSN	G	12	48	00					
			eE	A	12	48	04					
			eN	B	12	48	04					
			eN	B	12	53	31					
			eE	B	12	53	34					
			F		15	30						
52	Nov. 15	I	eZ	H	22	01	26					
			eEN	A	22	01	26					
			iz	G	22	01	37					
			iz	G	22	03	16					
			eZ	G	22	04	12					
			eN	G	22	10	40					
			eZ	G	22	10	42					
			eE	G	22	10	43					
			eE	G	22	36	22					
			F		23	45						
53	Nov. 18	Iv	iPz	H	16	59	51.5				See discussion, p.139	
			eE	G	17	00	20					
			iN	A	17	00	36.5					
			iE	A	17	00	37.0					
			eZ	G	17	01	06					
			F		17	11						
54	Nov. 18	I	ePz	H	18	03	07				IV at Atascadero, Lompoc, Pozo, San Luis Obispo, Santa Margarita, Santa Maria, Surf	
			ePE	A	18	03	08					
			ePN	A	18	03	09					
			eN	G	18	03	40					
			eZ	G	18	03	58					
			eEN	G	18	04	08					
			eE	G	18	04	30					
			iNZ	G	18	04	43					
			F		18	14						



BERKELEY

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks								
						A _E mm.	A _N mm.	A _Z mm.									
				h. m. s.	s.												
55	1936 Nov. 19	IIr	iP _Z	G	21 17 27				U.S.C.&G.S. epicenter: 14° N, 91° W								
			eP _E	B	21 17 28												
			eP _Z	W	21 17 28												
			eP _Z	H	21 17 29												
			eP _{EN}	A	21 17 30												
			i _{EN}	G	21 17 31												
			e _N	B	21 17 31												
			eS _E	A	21 23 13												
			eS _N	A	21 23 14												
			eS _{EN}	B	21 23 16												
			e _Z	W	21 23 19												
			i _{ENZ}	G	21 23 19												
			F		23 00												
56	Nov. 21	Id	iP _Z	H	23 38 55.4				See discussion, p. 139								
			e _E	A	23 38 56.7												
			e _N	A	23 39 00.1												
			iS _N	A	23 39 01.8												
			F		23 40												
57	Nov. 22	I	eP _Z	H	2 16 00				Off Point Arguello (Pasadena)								
			e _E	A	2 16 13												
			e _N	A	2 16 18												
			F		2 20												
58	Nov. 22	IIr	eP _Z	H	18 26 26	6	-3	+4	+3	U.S.C.&G.S. epicenter: 14°5 N, 90°5 W							
			iP _{ENZ}	G	18 26 27												
			eP _{EN}	B	18 26 27												
			eP _E	A	18 26 27												
			eP _N	A	18 26 28												
			e _E	B	18 32 05												
			e _{EN}	A	18 32 07												
			iS _E	G	18 32 14												
			iS _N	G	18 32 15												
			eS _{EN}	B	18 32 16												
			iS _Z	G	18 32 17												
			F		19 45												
			59	Nov. 23	Iv						iP _Z	H	3 54 19				See discussion, p. 139
											i _Z	H	3 54 44				
F		3 57															
60	Nov. 23	Id	iP _Z	H	15 53 07.8				See discussion, p. 139								
			eP _E	A	15 53 08.1												
			eP _N	A	15 53 08.3												
			i _Z	H	15 53 12.8												
			iS _E	A	15 53 14.3												
			iS _N	A	15 53 14.5												
			F		15 55												



BERKELEY

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E	A _N	A _Z	
				h. m. s.	s.	mm.	mm.	mm.	
61	Nov. 24	Id	ePz	H	12 34 00				See discussion, p. 139
			eSz	H	12 34 07				
			iSz	H	12 34 08				
			eS _{EN}	A	12 34 08				
			F		12 35				
62	Nov. 26	I	e	G	2 26				Trace of distant shock
			F		3 30				
63	Nov. 26	Id	iPz	H	7 47 27.6				See discussion, p. 139
			iSz	H	7 47 41.5				
			e _N	A	7 47 42.3				
			e _E	A	7 47 42.6				
			F		7 49				
64	Nov. 26	I	iPz	H	8 44 27				
			eP _{EN}	A	8 44 28				
			epPz	H	8 46 26				
			epP _{EN}	A	8 46 27				
			F		8 49				
65	Nov. 26	I	iPz	H	9 33 34				
			iz	H	9 33 35				
			e _{EN}	A	9 33 37				
			F		9 34				
66	Nov. 27	I	e	G	2 28				Trace of distant shock
			F		3 10				
67	Nov. 29	I	e _E	G	6 42 58				
			e _Z	G	6 43 18				
			F		7 30				
68	Nov. 29	I	e	G	9 02				Trace of distant shock
			F		10 10				
69	Nov. 29	I	ePz	H	15 06 56				
			eP _{EN}	A	15 06 57				
			F		15 09				
70	Dec. 1	I	e _E	G	0 10 49				
			e _{EZ}	G	0 13 56				
			e _E	G	0 20 09				
			F		1 45				



BERKELEY

No.	Date	Char-acter	Phase	Time			Period	Amplitude			Remarks
				U.T.				A _E	A _N	A _Z	
				h.	m.	s.	s.	mm.	mm.	mm.	
	1936										
71	Dec. 1	I	iPz	G	6	21	21				
			iPz	H	6	21	23				
			eP _{EN}	A	6	21	23				
			eE	G	6	31	17				
			iZ	G	6	31	25				
			iE	G	6	32	19				
			iZ	G	6	32	21				
			F		7	15					
72	Dec. 1	Id	iPz	H	22	20	56.5				See discussion, p. 139
			eP _{EN}	A	22	20	57.0				
			eS _N	A	22	20	59.8				
			iS _Z	A	22	20	59.9				
			F		22	22					
73	Dec. 2	Id	iPz	H	19	13	05.3				See discussion, p. 140
			iS _Z	H	19	13	06.3				
			F		19	14					
74	Dec. 4	Id	ePz	H	15	24	18.5				See discussion, p. 140
			eS _{EN}	A	15	24	22.0				
			iS _Z	H	15	24	22.3				
			F		15	25					
75	Dec. 4	Id	iPz	H	15	51	06.9				See discussion, p. 140
			eP _{EN}	A	15	51	07.0				
			iS _{EN}	A	15	51	14.5				
			iS _N	A	15	51	15.5				
			F		15	54					
76	Dec. 4	Id	iPz	H	16	13	52				See discussion, p. 140
			eP _{EN}	A	16	13	52				
			eS _{EN}	A	16	14	00				
			F		16	16					
77	Dec. 5	Id	iPz	H	19	33	21				See discussion, p. 140
			eP _{EN}	A	19	33	21				
			iS _Z	H	19	33	22				
			F		19	34					
78	Dec. 5	I	e	G	19	45					Trace of distant shock
79	Dec. 8	Id	ePz	H	20	06	07				See discussion, p. 140
			iP _{EN}	A	20	06	07				
			iS _Z	H	20	06	08				
			F		20	07					



BERKELEY

No.	Date	Char-acter	Phase	Time			Period	Amplitude			Remarks
				U.T.				A _E	A _N	A _Z	
				h.	m.	s.	s.	mm.	mm.	mm.	
	1936										
80	Dec. 9	Id	eP _Z	H	9	24	25				See discussion, p. 140
			eP _E	A	9	24	25				
			e _N	A	9	24	26				
			iS _Z	H	9	24	31				
			iS _{EN}	A	9	24	31				
			F		9	26					
81	Dec. 9	Id	eP _Z	H	22	06	43.5				See discussion, p. 140
			e _{EN}	A	22	06	45.5				
			iS _Z	H	22	06	47.0				
			F		22	08					
82	Dec. 11	I	iP _Z	H	9	34	45				See discussion, p. 140
			eP _{EN}	A	9	34	45				
			eS _{EN}	A	9	34	58				
			iS _Z	H	9	34	59				
			F		9	36					
83	Dec. 13	I	eP _Z	H	21	43	19				
			eP _N	A	21	43	19				
			eP _E	A	21	43	20				
			F		21	46					
84	Dec. 15	Id	eP _Z	H	17	36	38				See discussion, p. 140
			iS _Z	H	17	36	42				
			eS _{EN}	A	17	36	42				
			F		17	38					
85	Dec. 16	Id	eP _Z	H	11	51	31.5				See discussion, p. 140
			e _{EN}	A	11	51	33.5				
			eS _E	A	11	51	38.5				
			eS _N	A	11	51	38.8				
			iS _Z	H	11	51	39.0				
			F		11	53					
86	Dec. 17	I	iP _Z	H	22	44	07.4				See discussion, p. 141
			iS _Z	H	22	44	08.4				
			F		22	45					
87	Dec. 20	Ir	e	G	3	00					U.S.C.&G.S. epicenter: 13°4 N, 88°8 W Beginning obscured by microseisms.
			F		4	00					
88	Dec. 20	I	e	G	13	50					Trace of distant shock
			F		14	20					



BERKELEY

No.	Date	Char-acter	Phase	Time			Period	Amplitude			Remarks
				U.T.				A _E	A _N	A _Z	
				h.	m.	s.	s.	mm.	mm.	mm.	
89	Dec. 21	IIr	ePN	B	19	07	07	8	+11	+13	U.S.C.&G.S. epicenter: 53°1 N, 132°2 W
			ePz	W	19	07	08				
			ePz	H	19	07	09				
			ePN	A	19	07	09				
			iPENZ	G	19	07	09				
			ez	W	19	07	13				
			eE	B	19	08	11				
			eE	B	19	10	07				
			eSEN	A	19	10	14				
			eSE	G	19	10	17				
			eSN	B	19	10	17				
			eN	G	19	10	19				
90	Dec. 21	IIr	ePz	H	19	31	43				U.S.C.&G.S. epicenter: 53° N, 132° W
			ePN	A	19	31	43				
			ePz	W	19	31	43				
			ePE	A	19	31	44				
			ez	G	19	31	47				
			eEN	G	19	31	49				
			eEN	B	19	31	49				
			eSEN	A	19	34	54				
			eSN	B	19	34	55				
			eE	B	19	35	08				
			ez	W	19	35	11				
			ez	G	19	35	12				
			F		21	30					
			91	Dec. 25	Iv	iPz	H				
ePEN	A	16				06	02				
eSEN	A	16				06	33				
iSEN	G	16				06	33				
F		16				11					
92	Dec. 25	I	eEN	G	20	13	56				
			F		21	30					
93	Dec. 26	Id	iPz	H	14	00	33.4				See discussion, p. 141
			iPEN	A	14	00	33.4				
			iSEN	A	14	00	34.0				
			F		14	03					
94	Dec. 26-27	I	eE	G	23	05	09				
			eN	G	23	05	13				
			eN	G	23	15	27				
			eE	G	23	15	28				
			F		1	45					
95	Dec. 29	I	e	G	14	17				Trace of distant shock	
			F		14	30					



BERKELEY

No.	Date	Char-acter	Phase	Time U.T.	Period	Amplitude			Remarks
						A _E mm.	A _N mm.	A _Z mm.	
	1936			h. m. s.	s.				
96	Dec. 29	I	e _E	G 15 00 44					
			e _Z	W 15 01 06					
			e _E	B 15 01 32					
			e _N	B 15 01 38					
			e _E	G 15 10 56					
			e _E	B 15 10 56					
			e _N	B 15 10 58					
			e _N	G 15 11 16					
			F	18 00					

MOUNT HAMILTON

 THE LICK OBSERVATORY STATION, UNIVERSITY OF CALIFORNIA
 MOUNT HAMILTON, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude of the center of the seismographic room:

$$\varphi = 37^{\circ} 20' 24.5'' \text{ N Lat.}$$

$$\lambda = 121^{\circ} 38' 34'' \text{ W from Greenwich}$$

Time.--All determinations are reduced to Universal Time.

Altitude.--1281.7 meters (4205 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	e
Wood-Anderson	E	3000	1	15
	N	3000	1	15



MOUNT HAMILTON

No.	Date	Char-acter	Phase	TIME			Remarks
				U.T.			
				h.	m.	s.	
	1936						
1	Oct. 2	I	ePEN F	6	10	34 6 13	
2	Oct. 2	Id	ePEN eSEN F	8	38	38 46 8 40.5	See discussion, p. 137
3	Oct. 3	Id	iPN iPE iSEN F	18	59	43.1 43.2 47.7 19 01	See discussion, p. 137
4	Oct. 3	Id	ePN eSE eSN F	19	01	53.6 58.3 58.6 19 03	See discussion, p. 137
5	Oct. 5	I	ePN ePE F	0	06	14 44 0 14	
6	Oct. 5	Id	iPEN iSE F	20	22	25.1 26.6 20 25	See discussion, p. 137
7	Oct. 5	Iv	ePEN F	22	51	04 22 55	Pasadena places epicenter near Wheeler Ridge, Kern County
8	Oct. 6	I	ePE ePN eEN F	12	32	12 13 50 12 38	Sierra, N.W. of Tinemaha (Pasadena) Five shocks reported felt in Bishop on this date
9	Oct. 7	Iv	ePEN eSEN F	3	01	50.0 26.2 3 05	Sierra, N.W. of Tinemaha (Pasadena)
10	Oct. 7	Iv	ePN ePE eSN eSE F	15	02	21 22 58 59 15 06	About 150 Km. N. of Tinemaha (Pasadena)
11	Oct. 10	I	ePEN F	1	26	35 2 00	

MOUNT HAMILTON

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
	1936			h.	m.	s.	
12	Oct. 10	I	ePEN F	18	51	25	N.W. of Bishop (Pasadena)
13	Oct. 10	I	ePEN F	19	08	29	N.W. of Bishop (Pasadena)
14	Oct. 13	Id	ePEN iSEN iEN F	10	12	58	See discussion, p. 137
				10	13	04	
				10	13	05.5	
				10	14		
15	Oct. 14	I	ePE ePN F	12	29	01	
				12	29	09	
				12	32		
16	Oct. 16	I	ePN eE F	15	31	24	Near Casmalia (Pasadena)
				15	31	33	
				15	36		
17	Oct. 21	I	ePN ePE F	15	04	51	
				15	05	02	
				15	09		
18	Oct. 21	Id	iPEN iSEN F	21	00	47.8	See discussion, p. 137
				21	00	52.2	
				21	02		
19	Oct. 23	IIr	ePN ePE F	6	30	29	U.S.C. & G.S. epicenter: 61°1 N, 149°2 W
				6	30	40	
				8	00		
20	Oct. 25	I	ePEN F	15	42	03	
				15	45		
21	Oct. 26	I	ePEN F	12	35	14	
				12	39		
22	Nov. 1	I	ePN eE F	15	11	29	Off Point Arguello (Pasadena)
				15	11	33	
				15	15		
23	Nov. 2	I	ePN eE F	15	07	58	
				15	08	03	
				15	50		
24	Nov. 2	Iu	ePN ePE eSE eSN F	20	57	22	U.S.C. & G.S. epicenter: 37°5 N, 142° E
				20	57	23	
				21	06	40	
				21	06	41	
				22	51		



MOUNT HAMILTON

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
25	Nov. 5	I	ePN	14	28	39	
			eE	14	28	46	
			F	14	31		
26	Nov. 5	Id	iPEN	17	51	04.1	See discussion, p. 138
			iSEN	17	51	05.5	
			F	17	52		
27	Nov. 5	I	ePN	20	48	30	
			ePE	20	48	31	
			F	21	05		
28	Nov. 7	Iv	iPE	13	12	22.1	Near Benton (Pasadena)
			iPN	13	12	22.5	
			eN	13	12	48.0	
			eE	13	12	48.5	
			F	13	15		
29	Nov. 8	Id	iPEN	4	31	17.4	See discussion, p. 138
			iSEN	4	31	19.4	
			F	4	32		
30	Nov. 11	Id	ePN	2	24	58.9	See discussion, p. 138
			ePE	2	24	59.1	
			iPE	2	24	59.9	
			iPN	2	25	00.3	
			iSN	2	25	10.6	
			iSE	2	25	10.8	
			F	2	27		
31	Nov. 12	I	ePE	2	27	52	
			ePN	2	27	53	
			F	2	32		
32	Nov. 13	Iu	ePEN	12	40	41	U.S.C. & G.S. epicenter: 57° N, 163° E
			eSN	12	48	02	
			eSE	12	48	04	
			eSc ^{SE}	12	50	40	
			F	14	45		
33	Nov. 16	Id	iPN	19	11	25.4	See discussion, p. 139
			ePE	19	11	25.5	
			iSEN	19	11	27.4	
			F	19	13		
34	Nov. 18	I	eN	8	56	55	Local ?
			eE	8	57	06	
			eN	8	57	06.5	
			F	8	58		

MOUNT HAMILTON

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
	1936			h. m. s.	
35	Nov. 18	Iv	ePN	17 00 00.4	See discussion, p. 139
			ePE	17 00 01.4	
			iE	17 00 54.9	
			iE	17 00 56.1	
			F	18 36	
36	Nov. 18	I	ePEN	18 02 59.2	IV at Atascadero, Lompoc, Pozo, San Luis Obispo, Santa Margarita, Santa Maria, Surf
			eN	18 03 15.5	
			eE	18 03 55.2	
			eE	18 04 23.0	
			F	18 16	
37	Nov. 19	Ir	ePE	21 17 22	U.S.C. & G.S. epicenter: 14° N, 91° W
			ePN	21 17 23	
			eSN	21 23 07	
			eSE	21 23 09	
			F	22 06	
38	Nov. 21	I	eSN	23 39 05	See discussion, p. 139
			eN	23 39 13	
			F	23 40	
39	Nov. 22	I	ePN	2 16 50	Off Point Arguello (Pasadena)
			eE	2 17 00	
			F	2 21	
40	Nov. 22	Ir	ePN	18 26 21	U.S.C. & G.S. epicenter: 14°5 N, 90°5 W
			ePE	18 26 23	
			eSN	18 32 03	
			eSE	18 32 07	
			F	19 06	
41	Nov. 23	Id	iPN	15 53 04.2	See discussion, p. 139
			iN	15 53 07.6	
			iN	15 53 09.0	
			F	15 56	
42	Nov. 24	Id	eE	12 34 02.5	See discussion, p. 139
			iSEN	12 34 07.4	
			F	12 35	
43	Nov. 26	Id	ePE	7 47 16.9	See discussion, p. 139
			ePN	7 47 17.2	
			iSEN	7 47 21.1	
			F	7 48	
44	Nov. 26	I	ePE	8 44 28	
			ePN	8 44 29	
			epPN	8 46 26	
			epPE	8 46 27	
			F	8 51	

MOUNT HAMILTON

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
45	Dec. 1	I	e ^{EN} F	6 21 25 6 24	
46	Dec. 4	Id	e ^{PE} i ^{PN} i ^{SN} e ^E i ^N i ^N F	15 51 06.4 15 51 06.5 15 51 12.1 15 51 12.7 15 51 12.8 15 51 13.2 15 55	See discussion, p. 140
47	Dec. 4	Id	i ^{PEN} i ^{SN} i ^{SE} F	16 13 51.7 16 13 58.0 16 13 58.2 16 17	See discussion, p. 140
48	Dec. 11	Id	i ^{PN} e ^{PE} i ^{SN} i ^{SE} F	9 34 30.5 9 34 30.8 9 34 34.7 9 34 35.1 9 35	See discussion, p. 140
49	Dec. 21	Ir	e ^{PEN} F	2 50 46 3 38	U.S.C. & G.S. epicenter: 13°4 N, 88°8 W
50	Dec. 21	Ir	e ^{PEN} e ^{SN} e ^{SE}	19 07 16.5 19 10 18.5 19 10 26.5	U.S.C. & G.S. epicenter: 53.1 N, 132.2 W F lost in next shock
51	Dec. 21	I	e ^{PEN} e ^{SN} e ^{SE} F	19 31 50 19 35 18 19 35 19 21 00	U.S.C. & G.S. epicenter: 53° N, 132° W
52	Dec. 23	Iv	e ^N e ^E e ^N e ^{EN} F	17 17 34 17 17 44 17 17 48 17 18 02 17 19	See discussion, p. 141
53	Dec. 25	Iv	e ^{PN} e ^{PE} i ^{EN} F	16 06 08.8 16 06 09.8 16 06 47.6 16 10	See discussion, p. 141



MOUNT HAMILTON

No.	Date	Char-acter	Phase	Time U.T.	Remarks
	1936			h. m. s.	
54	Dec. 25	I	eP _N eE F	20 01 14 20 01 27 20 37	
55	Dec. 29	I	eE eN F	15 01 12 15 01 15 16 09	



PALO ALTO

THE BRANNER STATION, STANFORD UNIVERSITY
PALO ALTO, CALIFORNIA

CONSTANTS

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Latitude and longitude of the seismographic station:

ϕ = 37° 25' N Lat.

λ = 122° 11' W from Greenwich

Time.--All determinations are reduced to Universal Time.

Altitude.-- 83 meters (272 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	ϵ
Wood-Anderson	E	3000	1	15
	N	3000	1	15

PALO ALTO



No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
1	Oct. 2	I	eE eN F	6	10	29 32 25	
2	Oct. 2	Id	ePEN iSN F	8	38	46 59 42	See discussion, p. 137
3	Oct. 3	I	iPEN eSE eSN iSE iSN F	18	59	52.0 00.1 00.6 02.2 02.4 02	See discussion, p. 137
4	Oct. 3	Id	ePE eN iSEN F	19	02	02.5 03 13 04	See discussion, p. 137
5	Oct. 5	I	eEN F	0	06	15 00	
6	Oct. 5	Id	iE iN iE iSE iN F	20	22	32.1 33.1 37.8 39.6 42.6 24	See discussion, p. 137
7	Oct. 5	I	eE eN F	22	51	28 07 53	Pasadena places epicenter near Wheeler Ridge, Kern County
8	Oct. 6	I	eN eE F	12	32	19 25 45	Sierra, N.W. of Tinemaha (Pasadena) Five shocks reported felt in Bishop on this date
9	Oct. 6	I	ePN eE iN iE F	12	33	53.3 54.3 31.5 32.3 40	Sierra, N.W. of Tinemaha (Pasadena)
10	Oct. 7	I	eEN eN eE eE F	3	01	55 04 05 31 10	Sierra, N.W. of Tinemaha (Pasadena)

PALO ALTO



No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
11	Oct. 7	I	eE eN eN iE F	15	02	27 33 07 08 10	About 150 Km. North of Tinemaha (Pasadena)
12	Oct. 10	I	iPE iPN iN eE iEN iN F	1	26	29.1 29.7 12 20 22 30.1 44	
13	Oct. 10	I	ePN ePE eEN iN iN F	18	50	28 30 38 55 06 08	N.W. of Bishop (Pasadena)
14	Oct. 10	I	eE eN eEN F	19	08	28 29 11 14	N.W. of Bishop (Pasadena)
15	Oct. 10	I	eN eE eEN F	20	11	06 12 42 14	N.W. of Bishop (Pasadena)
16	Oct. 13	Id	ePEN eSE eE eN F	10	12	59.5 05.8 06.6 06.7 15	See discussion, p. 137
17	Oct. 13	I	eE eN eEN F	12	29	14 16 54 33	
18	Oct. 16	I	eE eN F	15	31	38 39 36	Near Casmalia (Pasadena)



PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
19	Oct. 18	I	eN	9 17 15	
			eE	9 17 18	
			eE	9 17 47	
			eN	9 17 58	
			F	9 24	
20	Oct. 19	I	eEN	14 14 13	
			eEN	14 14 28	
			F	14 19	
21	Oct. 21	I	ePE	15 05 04	
			ePN	15 05 05	
			eE	15 05 08	
			eN	15 05 12	
			eE	15 05 31	
			eN	15 05 33	
			F	15 19	
22	Oct. 21	Id	ePE	21 00 51.0	See discussion, p. 137
			ePN	21 00 51.3	
			eE	21 00 56.0	
			iSN	21 00 58.1	
			F	21 14	
23	Oct. 21	I	eE	23 18 29	Sierra, West of Tinemaha (Pasadena)
			eN	23 18 35	
			eE	23 18 56	
			eN	23 19 08	
			F	23 29	
24	Oct. 23	Ir	ePE	6 30 27.0	U.S.C. & G.S. epicenter: 61°1 N, 149°2 W
			eN	6 30 31.0	
			iN	6 31 06.8	
			iE	6 31 12.0	
			iN	6 31 22.3	
			iE	6 31 26.3	
			iE	6 31 48.5	
			iN	6 31 48.9	
			iN	6 31 57.5	
F	7 45				
25	Oct. 25	I	ePE	15 42 00.2	
			ePN	15 42 00.6	
			iE	15 42 11.6	
			iE	15 42 21.4	
			eE	15 42 30.1	
			eN	15 42 32.6	
			iE	15 42 41.0	
			iN	15 42 41.4	
			eE	15 43 02.6	
F	15 54				

PALO ALTO

International
Seismological
Centre

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
26	Oct. 25	Id	ePN	16	40	12.0	See discussion, p. 138
			iPE	16	40	12.2	
			iSE	16	40	13.7	
			iSN	16	40	13.8	
			F	16	44		
27	Oct. 26	I	eE	12	35	20	
			eN	12	35	21	
			eE	12	35	58	
			eEN	12	36	08	
			iE	12	36	17	
			iEF	12	36	25	
			F	12	44		
28	Oct. 27	Id	ePN	22	19	15.0	See discussion, p. 138
			iE	22	19	16.4	
			iSN	22	19	17.2	
			eSE	22	19	17.8	
			F	22	24		
29	Oct. 29	I	eN	6	01	35	
			eE	6	01	37	
			eE	6	02	47	
			eE	6	03	38	
			eNF	6	03	47	
			F	6	09		
30	Oct. 29	Iu	ePE	18	51	18	U.S.C. & G.S. epicenter: 12° N, 146° E
			ePN	18	51	19	
			iE	18	51	38	
			iE	18	51	52	
			eE	18	52	14	
			eE	18	52	23	
			iE	18	52	55	
			eSEN	19	01	51	
			eE	19	02	09	
			eN	19	02	18	
			eE	19	02	28	
			eN	19	03	27	
			eEF	19	03	29	
			F	20	24		
			31	Oct. 29	I	eE	
eN	22	36				50	
eE	22	37				36	
eN	22	57				22	
eNF	22	57				37	
F	22	59					



PALO ALTO

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
32	Nov. 1	I	ePEN F	15	11	48 15 14	Off Point Arguello (Pasadena)
33	Nov. 2	I	ePEN F	15	07	54 15 14	
34	Nov. 2	Ir	ePEN eEN iEN F	20	57	17 18 23 21 30	U.S.C. & G.S. epicenter: 37°5 N, 142° E
35	Nov. 5	I	ePEN F	14	28	47 14 30	
36	Nov. 5	I	iPE iSEN F	17	50	39.1 40.4 17 53	See discussion, p. 138
37	Nov. 5	I	ePEN F	20	48	26 20 50	
38	Nov. 5	Id	ePEN eSEN F	23	13	35 37 23 15	See discussion, p. 138
39	Nov. 7	Iv	ePEN eSEN F	13	12	29 00 13 15	Near Benton (Pasadena)
40	Nov. 8	Id	ePE ePN eSE eSN F	4	31	22.4 22.5 28.4 28.7 4 33	See discussion, p. 138
41	Nov. 11	Id	ePEN iE iSN F	2	24	58.3 06.7 07.9 2 27	See discussion, p. 138
42	Nov. 12	I	ePEN F	2	27	48 2 31	
43	Nov. 12	Id	ePEN eSN eSE F	8	12	44.0 52.6 53.5 8 14	See discussion, p. 138



PALO ALTO

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
44	Nov. 12	I	e ^P EN F	8	40	50	
				8	43		
45	Nov. 12	I	e ^P EN F	20	15	09	
				20	19		
46	Nov. 13	IIu	e ^P EN F	12	40	32	U.S.C. & G.S. epicenter: 57° N, 163° E
				14	00		
47	Nov. 13	Id	e ^P EN e ^S E F	19	07	50.1	See discussion, p. 138
				19	07	52.6	
				19	09		
48	Nov. 17	I	e ^P EN e ^S E F	19	01	09	See discussion, p. 139
				19	01	11	
				19	02		
49	Nov. 18	I	e ^E EN e ^E F	8	57	01.0	Local ?
				8	57	15.3	
				8	59		
50	Nov. 18	Iv	e ^P EN e ^S EN F	16	59	57	See discussion, p. 139
				17	00	49	
				17	05		
51	Nov. 18	II	e ^P EN F	18	02	59	IV at Atascadero, Lompoc, Pozo, San Luis Obispo, Santa Margarita, Santa Maria, Surf
				18	14		
52	Nov. 19	IIr	e ^P EN e ^S EN F	21	17	27	U.S.C. & G.S. epicenter: 14° N, 91° W
				21	23	11	
				22	00		
53	Nov. 20	Id	e ^P EN i ^S EN F	17	08	35	See discussion, p. 139
				17	08	37	
				17	10		
54	Nov. 20	I	e ^P EN i ^N i ^N F	23	44	44	See discussion, p. 139
				23	44	47	
				23	44	49.5	
				23	46		
55	Nov. 21	I	e ^S E i ^N F	23	39	05.4	See discussion, p. 139
				23	39	15	
				23	40		



PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
	1936			h. m. s.	
56	Nov. 22	Iv	e ^P _{EN} e ^S _{EN} F	2 16 51 2 17 44.5 2 21	Off Point Arguello (Pasadena)
57	Nov. 22	IIr	e ^P _{EN} F	18 26 23 19 00	U.S.C. & G.S. epicenter: 14°5 N, 90°5 W
58	Nov. 23	I	e ^E e ^N F	3 54 54 3 55 12 3 57	See discussion, p. 139
59	Nov. 23	Id	i ^P _{EN} i ^S _{EN} F	15 53 04.4 15 53 08.2 15 56	See discussion, p. 139
60	Nov. 23	I	e ^P _E i ^S _{EN} F	18 39 58.5 18 40 01.6 18 41	See discussion, p. 139
61	Nov. 23	Id	e ^P _{EN} e ^S _N e ^S _N F	23 56 33 23 56 35.5 23 56 36 23 58	See discussion, p. 139
62	Nov. 24	Id	i ^P _E i ^P _N i ^S _{EN} F	12 33 53.3 12 33 53.5 12 33 55.1 12 35	See discussion, p. 139
63	Nov. 26	I	e ^E e ^N e ^S _E i ^S _{EN} e ^N F	7 47 25.1 7 47 30.2 7 47 32.8 7 47 33.3 7 47 38.7 7 49	See discussion, p. 139
64	Nov. 26	Id	e ^P _{EN} F	8 44 28 8 49	
65	Nov. 29	I	e ^P _{EN} F	5 55 57 5 59	Ventura County (Pasadena)
66	Dec. 1	I	e ^P _{EN} F	6 21 23 6 23	
67	Dec. 2	Id	e ^P _{EN} i ^S _{EN} F	18 24 21.5 18 24 23.9 18 26	See discussion, p. 139

PALO ALTO



No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
68	Dec. 2	Id	eP _N	21 47 50.5	See discussion, p. 140
			eP _E	21 47 50.7	
			iS _E	21 47 52.6	
			iS _N	21 47 52.7	
			F	21 49	
69	Dec. 4	Id	iP _{EN}	6 59 42.0	See discussion, p. 140
			iS _{EN}	6 59 44.3	
			F	7 01	
70	Dec. 4	Id	iP _{EN}	15 50 59.4	See discussion, p. 140
			iS _N	15 51 01.4	
			F	15 54	
71	Dec. 4	I	eP _{EN}	16 13 45.0	See discussion, p. 140
			F	16 16	
72	Dec. 4	Id	eP _{EN}	20 47 40	See discussion, p. 140
			iS _{EN}	20 47 42	
			F	20 49	
73	Dec. 7	Id	eP _E	18 28 06	See discussion, p. 140
			eS _N	18 28 08.5	
			eS _E	18 28 09	
			F	18 29	
74	Dec. 8	Id	eP _{EN}	21 52 59	See discussion, p. 140
			eS _N	21 53 05	
			F	21 54	
75	Dec. 11	Id	eP _{EN}	9 34 38.5	See discussion, p. 140
			i _E	9 34 46.5	
			i _E	9 34 48.4	
			iS _N	9 34 49.0	
			i _E	9 34 49.2	
			F	9 36	
76	Dec. 16	Id	eP _{EN}	11 51 23.8	See discussion, p. 140
			iS _{EN}	11 51 25.6	
			F	11 53	
77	Dec. 19	Id	eP _{EN}	17 28 15	See discussion, p. 141
			iS _E	17 28 18	
			iS _N	17 28 19	
			F	17 29	
78	Dec. 21	IIr	eP _{EN}	19 07 14.9	U.S.C. & G.S. epicenter: 53°1 N, 132°2 W F lost in next shock

PALO ALTO



No.	Date	Char- acter	Phase	Time			Remarks
				U.T.			
	1936			h.	m.	s.	
79	Dec. 21	IIr	eP _{EN}	19	31	53	U.S.C. & G.S. epicenter: 53° N, 132° W
			eS _{EN}	19	35	20	
			F	21	00		
80	Dec. 22	Id	eP _E	15	57	53.5	See discussion, p. 141
			eP _N	15	57	54	
			iS _{EN}	15	57	57	
81	Dec. 25	I	eP _E	16	06	08.5	See discussion, p. 141
			eP _N	16	06	09	
			eS _E	16	06	43	
			eS _N	16	06	44	
			F	16	09		

SAN FRANCISCO

THE SAN FRANCISCO STATION, UNIVERSITY OF SAN FRANCISCO
SAN FRANCISCO, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude of the seismographic station:

$\phi = 37^{\circ} 46'$ N. Lat.

$\lambda = 122^{\circ} 27'$ W. from Greenwich

Time.--All determinations are reduced to Universal Time.

Altitude.-- 100 meters (328 feet) above mean sea level.

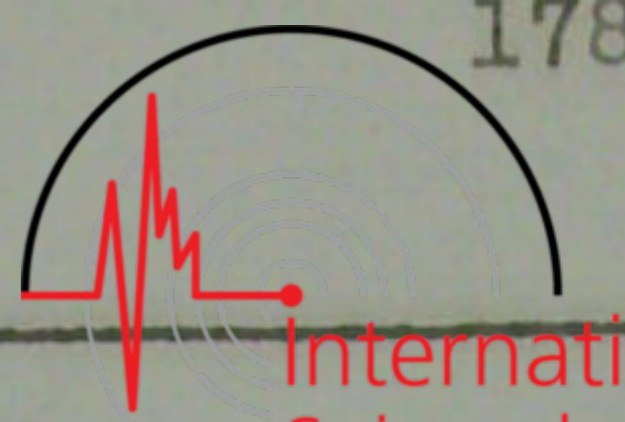
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Apparatus	Component	V	T_0	ϵ
Wood-Anderson	E 15° S	1500	1	15
	N	3000	1	15



SAN FRANCISCO

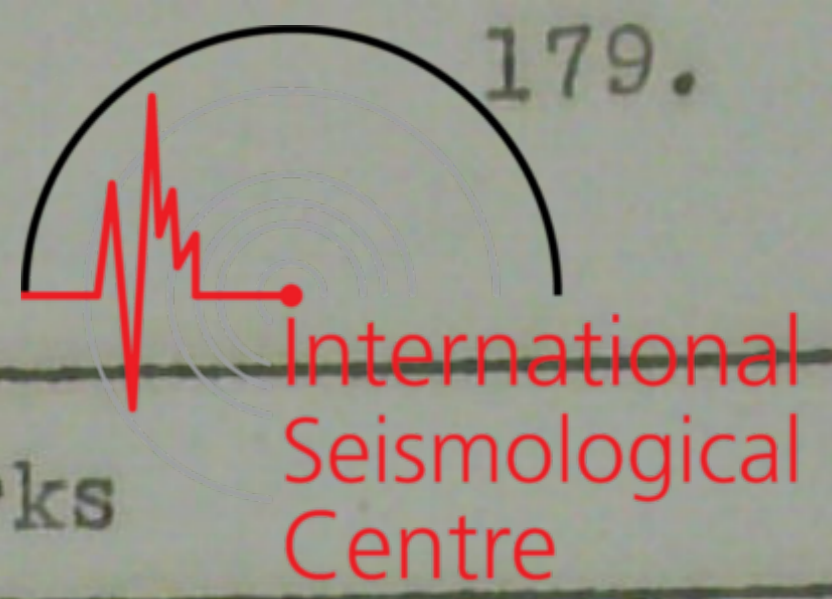
No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
1	Oct. 2	I	eP _{EN} F	6 10 24 6 12	
2	Oct. 3	I	eP _{EN} i _N i _E F	18 59 54.0 18 59 59.1 19 00 13.5 19 03	See discussion, p. 137
3	Oct. 7	I	eP _{EN} F	3 01 56 3 05	Sierra, N.W. of Tinemaha (Pasadena) Five shocks reported felt in Bishop on this date
4	Oct. 7	I	eP _{EN} F	15 02 18 15 05	About 150 Km. North of Tinemaha (Pasadena)
5	Oct. 10	I	iP _{EN} F	1 26 23.8 1 45	
6	Oct. 10	I	eP _{EN} F	18 50 33 18 54	N.W. of Bishop (Pasadena)
7	Oct. 13	Id	eP _N F	10 13 01.6 10 14	See discussion, p. 137
8	Oct. 21	I	e _{EN} i _{EN} F	15 05 10 15 05 54 15 07	
9	Oct. 21	I	iP _{EN} iS _{EN} F	21 00 57.8 21 01 08.6 21 02	See discussion, p. 137
10	Oct. 23	Ir	e _{EN} eS _{EN} F	6 30 03 6 35 00 7 45	U.S.C. & G.S. epicenter: 61°1 N, 149°2 W
11	Oct. 26	I	e _E e _N F	12 36 07 12 36 08 12 37	
12	Oct. 31	Id	eP _N e _E iS _N F	22 48 14.8 22 48 16.6 22 48 17.6 22 49	See discussion, p. 137
13	Nov. 2	Ir	e _{EN} F	20 57 06 22 00	U.S.C. & G.S. epicenter: 37°5 N, 142° E



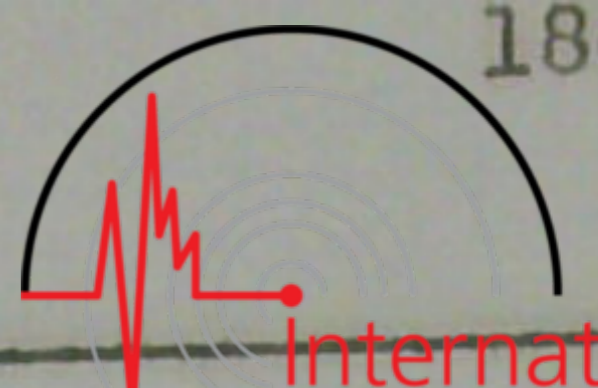
SAN FRANCISCO

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
14	Nov. 7	Iv	e _N e _E e _{EN} F	13	12	43 03 09 14	Near Benton (Pasadena)
15	Nov. 7	Id	e _{PN} e _N i _E i _{SN} F	16	00	26.0 26.8 28.0 29.2 01	See discussion, p. 138
16	Nov. 8	Id	e _N e _E i _{SN} F	4	31	28.2 37.0 38.3 33	See discussion, p. 138
17	Nov. 11	Id	e _{PEN} i _{SE} i _{SN} i _N F	2	24	56.2 02.4 02.5 05.4 29	See discussion, p. 138
18	Nov. 12	Id	i _{PN} i _{SN} e _E F	8	12	41.0 48.0 48.5 13.5	See discussion, p. 138
19	Nov. 12	I	e _N e _E F	20	15	06 09 17	
20	Nov. 12	I	e _N e _N e _E F	22	35	15.5 25 26 36	
21	Nov. 13	Iu	e _{PEN} e _{PR₂N} e _{SN} e _{SE} F	12	40	35 41 55 03 00	U.S.C. & G.S. epicenter: 57° N, 163° E
22	Nov. 18	I	i _{PN} e _{PE} i _{SN} e _E i _N F	16	59	51.7 52.0 32.3 36.0 36.4 06	See discussion, p. 139

SAN FRANCISCO



No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
23	Nov. 18	Iv	e _N e _E e _N F	18	02	55	IV at Atascadero, Lompoc, Pozo, San Luis Obispo, Santa Margarita, Santa Maria, Surf
				18	03	32	
				18	03	33	
				18	12		
24	Nov. 19	Ir	e _{PN} e _E e _{SN} e _E F	21	17	20	U.S.C. & G.S. epicenter: 14° N, 91° W
				21	17	25	
				21	23	14	
				21	23	45	
				22	00		
25	Nov. 22	Ir	e _{PN} e _E e _{SN} F	18	26	23	U.S.C. & G.S. epicenter: 14°5 N, 90°5 W
				18	26	25	
				18	32	18	
				19	16		
26	Nov. 23	I	e _N e _E F	3	54	39	See discussion, p. 139
				3	54	50	
				3	57		
27	Nov. 23	Id	i _{PEN} e _E i _N i _{SN} i _{SE} F	15	53	07.9	See discussion, p. 139
				15	53	08.9	
				15	53	09.0	
				15	53	14.3	
				15	53	14.4	
				15	57		
28	Nov. 26	Id	e _N e _{SE} i _{SN} F	7	47	29.5	See discussion, p. 139
				7	47	43.5	
				7	47	43.6	
				7	48	30	
29	Nov. 26	Id	e _{PEN} F	8	44	27	
				9	04		
30	Dec. 4	Id	e _{PN} e _{SE} i _{SN} F	15	24	15.4	See discussion, p. 140
				15	24	17.4	
				15	24	17.5	
				15	25		
31	Dec. 4	Id	i _{PN} i _N i _{SEN} F	15	51	04.0	See discussion, p. 140
				15	51	06.9	
				15	51	10.7	
				15	57		
32	Dec. 4	Id	e _{PN} e _{SEN} F	16	13	49	See discussion, p. 140
				16	13	56	
				16	16		



SAN FRANCISCO

No.	Date	Char- acter	Phase	Time	Remarks
				U.T.	
	1936			h. m. s.	
33	Dec. 11	Id	e _N	9 34 47	See discussion, p. 140
			e _{SEN}	9 35 01	
			F	9 36	
34	Dec. 21	IIr	e _{PEN}	19 07 12	U.S.C. & G.S. epicenter: 53°1 N, 132°2 W F lost in next shock
35	Dec. 21	IIr	e _{PEN}	19 31 41.6	U.S.C. & G.S. epicenter: 53° N, 132° W
			F	21 00	
36	Dec. 25	Iv	e _{PEN}	16 06±	S-P = 42 See discussion, p. 141
			F	16 10	
37	Dec. 26	Id	i _{PE}	14 01±	See discussion, p. 141
			F	14 02	



FERNDALE

THE FERNDAL STATION
FERNDAL, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude of the center of the seismographic
station:

$$\begin{aligned}\varphi &= 40^{\circ} 34' \text{ N. Lat.} \\ \lambda &= 124^{\circ} 16' \text{ W. from Greenwich}\end{aligned}$$

Time.--All determinations are reduced to Universal Time.

Altitude.-- 17 meters (55 feet) above mean sea level.

The seismographs are Bosch-Omori 25 km. horizontal pendulums.
They are oriented to record N-S and E-W motion. The station is
operated by Mr. Joseph Bognuda, of Ferndale, in cooperation with the
University of California.



FERNDALE

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
1	Oct. 3	Id	ePN	16 41 27	See discussion, p. 137
			iSEN	16 41 33	
			iE	16 41 38	
			F	16 44	
2	Oct. 10	I	eE	1 05 01	
			eN	1 05 08	
			eN	1 06 05	
			eE	1 06 54	
			F	1 25	
3	Oct. 10	I	ePE	1 25 52	
			ePN	1 25 53	
			eE	1 26 09	
			eE	1 26 11	
			eSN	1 26 18	
			eN	1 27 44	
			F	1 55	
4	Oct. 23	Ir	ePE	6 30 13	U.S.C. & G.S. epicenter: 61°1 N, 149°2 W
			ePN	6 30 19	
			eN	6 34 43	
			eN	6 34 58	
			eSE	6 35 07	
			eE	6 36 40	
			F	7 30	
5	Nov. 5	I	eE	20 48 35	
			eN	20 48 36	
			F	21 10	
6	Nov. 13	Ir	ePE	12 40 26	U.S.C. & G.S. epicenter: 57° N, 163° E
			eN	12 40 36	
			eSN	12 47 15	
			eSE	12 47 16	
			F	13 50	
7	Nov. 15	Iv	ePE	1 34 22	See discussion, p. 138
			ePN	1 34 23	
			eSEN	1 34 37	
			iSEN	1 34 38	
			F	1 37	
8	Nov. 18	Id	ePEN	16 59 10	See discussion, p. 138
			iSE	16 59 21	
			lSN	16 59 24	
			F	17 10	

FERNDALE

No.	Date	Char-acter	Phase	Time			Remarks	
				U.T.				
				h.	m.	s.		
	1936							
9	Nov. 19	Ir	eP _N	21	17	57	U.S.C. & G.S. epicenter: 14° N, 91° W	
			eP _E	21	17	58		
			eS _E	21	23	38		
			eS _N	21	23	59		
			F	22	00			
10	Nov. 23	Id	eP _{EN}	3	53	43	See discussion, p. 139	
			iS _N	3	53	51		
			iS _E	3	53	53		
			F	4	00			
11	Dec. 21	Ir	eE	19	06	35	U.S.C. & G.S. epicenter: 53°1 N, 132°2 W	
			eN	19	06	40		
			eE	19	07	14		
			eE	19	08	12		
			eN	19	08	30		F lost in next shock
			eE	19	09	16		
			eE	19	10	10		
12	Dec. 21	Ir	eN	19	31	32	U.S.C. & G.S. epicenter: 53° N, 132° W	
			eE	19	31	35		
			eE	19	32	42		
			eN	19	34	10		
			eN	19	35	35		
			F	22	00			
13	Dec. 29	Id	eP _N	19	38	48	See discussion, p. 141	
			eS _E	19	38	52		
			iS _{EN}	19	38	53		
			F	19	40			

FRESNO

THE FRESNO STATION, FRESNO STATE COLLEGE
 FRESNO, CALIFORNIA



CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude of the seismographic station:

$$\varphi = 36^{\circ} 44'.5 \text{ N.}$$

$$\lambda = 119^{\circ} 47' \text{ W.}$$

Time.--All determinations are reduced to Universal Time.

Altitude.-- 88.4 meters (290 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T_0	ϵ
Wood-Anderson	N	3000	0.9	15

FRESNO

International
Seismological
Centre

No.	Date	Char-acter	Phase	Time	Remarks
				U.T.	
				h. m. s.	
	1936				
1	Oct. 3	Iv	eP _N eS _N F	19 00 04.5 19 00 20.5 19 03	See discussion, p. 137
2	Oct. 5	I	e _N F	0 06 18 0 20	Trace of distant shock
3	Oct. 5	Iu	e _N e _N F	9 58 46 10 03 13 10 30	U.S.C. & G.S. epicenter: 1° N, 127° E
4	Oct. 5	Iv	eP _N iP _N eS _N iS _N F	22 50 50.4 22 50 51.2 22 51 12.3 22 51 13.4 22 55	Pasadena places epicenter near Wheeler Ridge, Kern County
5	Oct. 6	Iv	eP _N iP _N iS _N	12 31 52.1 12 31 53.4 12 32 08.0	F lost in next shock N.W. of Tinemaha (Pasadena) Five shocks reported felt in Bishop on this date
6	Oct. 6	Iv	iP _N iS _N F	12 33 29.8 12 33 44.8 12 39	N.W. of Tinemaha (Pasadena)
7	Oct. 6	Iv	eP _N F	12 46 38.7 12 48	N.W. of Tinemaha (Pasadena)
8	Oct. 6	Iv	eP _N iS _N F	12 53 14.5 12 53 29.4 12 55	N.W. of Tinemaha (Pasadena)
9	Oct. 7	Iv	eP _N iS _N F	3 01 29.3 3 01 44.8 3 06	N.W. of Tinemaha (Pasadena)
10	Oct. 7				Shock at about 15:02 Record disturbed by passing trains
11	Oct. 10	I	e _N F	1 26 59.0 1 43	
12	Oct. 12	Iv	e _N e _N F	13 58 02.0 13 59 05.2 14 00	N.W. of Bishop (Pasadena)

FRESNO



No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
				h.	m.	s.	
	1936						
13	Oct. 12	Iv	e _N e _N F	17	09	20.0 23.6	N.W. of Bishop (Pasadena)
				17	14		
14	Oct. 13	Iv	e _N i _N F	12	28	54.9 59.3	
				12	32		
15	Oct. 16	Iv	e _N i _N F	15	31	17.2 56.2	Near Casmalia (Pasadena)
				15	45		
16	Oct. 17	I	e _{P_N} F	20	06	39.4	
				20	09		
17	Oct. 18	I	e _{P_N} F	9	17	35.1	
				9	21		
18	Oct. 19	Id	e _N F	4	09	52.4	Sierra, West of Tinemaha (Pasadena)
				4	11		
19	Oct. 21	I	e _{P_N} F	15	04	46	
				15	09		
20	Oct. 21	Iv	e _{P_N} i _{S_N} F	23	18	07 21	Sierra West of Tinemaha (Pasadena)
				23	21		
21	Oct. 23	IIr	e _{P_N} F	6	30	39	U.S.C. & G.S. epicenter: 61°1' N, 149°2' W
				8	00		
22	Oct. 25	I	e _{P_N} F	15	42	13	
				15	47		
23	Oct. 26	Iv	e _{P_N} i _{P_N} i _{S_N} F	12	34	56.6 57.8 26.5	
				12	39		
24	Oct. 29	II	e _{P_N} F	5	46	18	
				5	56		
25	Oct. 29	IIu	e _{P_N} F	18	51	20	12° N, 146° E (Manila)
				19	30		
26	Oct. 29	Iv	e _{P_N} i _{S_N} F	22	36	31.9 50.6	
				22	41		



FRESNO

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
	1936			h.	m.	s.	
27	Oct. 30	I	eP _N F	13	32	54 13 36	
28	Nov. 1	Iv	eP _N iS _N F	15	11	26 15 12 07 15 16	
29	Nov. 2	I	eP _N F	15	08	11 15 30	
30	Nov. 2	Iu	eP _N F	20	57	36 22 00	U.S.C. & G.S. epicenter: 37°5 N, 142° E
31	Nov. 5	I	e _N F	20	48	52 20 53	
32	Nov. 7	Iv	eP _N iP _N iS _N F	13	12	04.5 13 12 05.4 13 12 19.3 13 16	Near Benton (Pasadena)
33	Nov. 11	I	eP _N i _N F	2	25	24 2 26 03 2 28	See discussion, p.138
34	Nov. 11	I	eP _N F	12	11	06.6 12 13	
35	Nov. 12	I	e _N F	2	28	02 2 33	
36	Nov. 12	I	e _N F	20	15	22 20 20	
37	Nov. 13	IIu	e _N F	12	40	55 14 00	
38	Nov. 15	I	e _N F	22	01	32 22 10	
39	Nov. 18	Iv	eP _N F	17	00	23.6 17 10	See discussion, p.139
40	Nov. 18	IIv	eP _N iP _N iS _N iS _N F	18	02	53.0 18 02 57.9 18 03 02.3 18 03 05.0 18 15	IV at Atascadero, Lompoc, Pozo, San Luis Obispo, Santa Margarita, Santa Maria, Surf



FRESNO

No.	Date	Char-acter	Phase	Time			Remarks
				U.T.			
	1936			h.	m.	s.	
41	Nov. 19	IIr	iP _N	21	17	10	U.S.C. & G.S. epicenter: 14° N, 91° W
			eP _c P _N	21	19	48	
			eS _N	21	22	27	
			F	21	45		
42	Nov. 22	I	eP _N	2	16	45.9	Off Point Arguello (Pasadena)
			iS _N	2	17	06.9	
			F	2	22		
43	Nov. 22	I	e _N	18	26	07.7	U.S.C. & G.S. epicenter: 14°5 N, 90°5 W
			F	19	00		
44	Nov. 25	Iv	eP _N	19	19	44.6	Near Haiwee (Pasadena)
			e _N	19	20	05.1	
			F	19	22		
45	Nov. 26	I	eP _N	8	44	33	
			F	9	00		
46	Nov. 29	Iv	eP _N	5	55	17.5	Ventura County (Pasadena)
			iP _N	5	55	27.7	
			iS _N	5	55	42.7	
			F	6	01		
47	Dec. 11	I	e _N	20	16	04	
			F	20	19		
48	Dec. 13	I	e _N	21	43	30	
			F	21	48		
49	Dec. 21	IIr	e _N	19	07	29	F lost in next shock U.S.C. & G.S. epicenter: 53°1 N, 132°2 W
50	Dec. 21	IIr	e _N	19	32	07	U.S.C. & G.S. epicenter: 53° N, 132° W
			F	20	18		
51	Dec. 23	Iv	eP _N	17	17	15.5	See discussion, p. 141
			iP _N	17	17	16.0	
			iS _N	17	17	30.5	
			F	17	23		
52	Dec. 25	Iv	eP _N	16	06	24.3	See discussion, p. 141
			iP _N	16	06	27.4	
			i _N	16	07	18.8	
			i _N	16	07	26.3	
			F	16	12		
53	Dec. 29	I	e _N	15	01	08	
			F	15	30		