

Bulletin of the Seismographic Stations

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EARTHQUAKES IN NORTHERN CALIFORNIA
AND
THE REGISTRATION OF EARTHQUAKES
AT
BERKELEY—MOUNT HAMILTON—PALO ALTO
SAN FRANCISCO—FERNDALE—FRESNO

From January 1, 1944, to March 31, 1944

BY
CHARLES HERRICK
AND
CAROLYN H. PENDERY

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1950

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BERKELEY AND LOS ANGELES,

CALIFORNIA

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EARTHQUAKE INTENSITY SCALE

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Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information on the

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epicenter has been located, a indicating excellent, b good, c fair, d poor.

EARTHQUAKE INTENSITY SCALE

EARTHQUAKES IN NORTHERN CALIFORNIA

Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information on the effects of the quake is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

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.

Felt as far north as _____ as far east as San Ramon.
Maximum intensity of VI was reported at San Leandro.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood-Anderson amplitudes, using the nomogram by Nordquist, "Bulletin of the Seismological Society of America," 32: 164.

Felt widely in the Northern Bay area and as far north as San Rafael. Maximum intensity of V reported from Aptos.

Latitude and longitude are given for each epicenter in the following list. Only those earthquakes are given 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.

EARTHQUAKES IN NORTHERN CALIFORNIA

1944 - Pacific Standard Time

<u>No.</u>	<u>Date</u>	<u>Origin Time</u>	<u>Richter Magnitude</u>	<u>Latitude North</u>	<u>Longitude West</u>	<u>Quality</u>
1	Jan. 12	07-02-40	5.1	40°3	124°9	d
		V at Cape Mendocino, Eureka and Ferndale; IV at Cummings, Upper Mattole and Westport.				
2	15	18-20-29	5.1	40°3	125°1	d
		V at Upper Mattole; IV at Ferndale.				
3	19	16-29-10	2.6	37° 41'	121° 46'	b
4	25	04-26-51	2.4	37° 16'	121° 43'	b
5	27	15-11-06	3.2	37° 23'	121° 40'	b
		Felt in San Jose. Depth of focus about 10 km.				
6	Feb. 2	03-05-38	3.6	36° 52'	120° 54'	c
7	5	01-24-32	3.2	36° 39'	121° 08'	c
8	15	12-15-31	2.0	37° 37'	122° 01'	b
9	16	20-33-40	3.1	37° 49'	122° 03'	b
		Felt as far north as Richmond and as far east as San Ramon. Maximum intensity of VI was reported at San Leandro.				
10	21	05-00-11	3.8	36° 10'	120° 56'	c
11	Mar. 5	11-37-09	2.6	37° 24'	121° 42'	b
		Depth about 10 km.				
12	6	13-32-16	3.4	36° 24'	121° 15'	c
13	13	06-43-15	3.9	37° 27'	121° 46'	b
14	15	00-14-45	3.9	36° 50'	121° 37'	c
		Felt widely in the Monterey Bay area and as far north as San Rafael. Maximum intensity of V reported from Aptos.				
15	18	05-46-22	3.0	36° 59'	121° 28'	d

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).

THE REGISTRATION OF EARTHQUAKES

2. Nature of the Motion —

- i (impetus) Sudden beginning of the motion.
- g (gradualis) Gradual beginning of the motion.

... ..

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BERKELEY, CALIFORNIA

SYMBOLS AND NOTATIONS EMPLOYED

CONSTANTS OF THE STATION

1. Character of the Earthquake --

Latitude and Longitude

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. Nature of the Motion --

- i (impetus) Sudden beginning of the motion.
- e (emersio) Gradual beginning of the motion.

	Component	γ	τ_0	ϵ	$\frac{r}{T}$		
Galitzin	E	3000	0.9	10	0.001		
	N	3000	0.9	10	0.001		
	Z			5	0.005		
Wohlfarth	E			15			
	N			15			
	Z						
		K	T	T_1	μ^2	A_1 (cm)	l (cm)
Galitzin	E	112	12	11.8	0.00	115	11.3
	N	122	12	12.1	0.03	119	11.2
	Z	109	12	11.9	0.01	131	11.9
			V	Coupled Period			ϵ
Benioff	Z			0.7			5

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

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Latitude and Longitude:

$$\phi = 37^{\circ} 52' 3'' \text{ N.}$$

$$\lambda = 122^{\circ} 15' 6'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

Altitude -- 81 meters (266 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	ε	$\frac{r}{T_0^2}$		
Bosch-Omori 100 kg. ..	E	45	12	10	0.001		
	N	45	12	10	0.001		
Wiechert 80 kg.	Z	44	4	5	0.005		
	E	3000	0.9	15			
Wood-Anderson	N	3000	0.9	15			
		K	T	T ₁	μ ²	A ₁ (cm)	l (cm)
Galitzin	E	112	12	11.8	0.00	115	11.3
	N	122	12	12.4	0.03	119	11.2
	Z	109	12	11.9	0.01	131	14.9
			V	Coupled Period		ε	
Benioff	Z			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.

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Remarks
				h. m.	s.	
	1944					
1	Jan. 2	Id	iPZ iSNE F	H 12 20 A 12 22	39.7 44.7	Approx. 40 km. North of San Francisco.
2	Jan. 3	Id	iPNEZ iSNE F	AH 03 34 A 03 35	24.8 25.8	
3	Jan. 4	Iv	iPZ F	H 12 45 12 47	41.5	San Benito County
4	Jan. 5	Iu	iPZ iPE iSKSZ eZ F	G 21 33 G G 43 54 G 22 12 26 23 20	42 47 54 26	Pasadena: Very roughly 3°S 100°E h = 60 km
5	Jan. 7	Iu	iPZ iPE iE F	G 03 06 G G 00 13 08 04 04	32 33 08	Pasadena: 4.5°S 142°E h = 120 km. See list, p. 5
6	Jan. 10	Ir	ePNE iPZ eSN iZ eLE F	A 20 15 G 03 10 A 20 44 G 03 22 03 A 23 11 20 36	46 48 44 03 11	U.S.C.G.S.: 18.1°N 100.6°W. Tacubaya: 16°44'N 100°41'W. Pasadena: h = 90 km. Aftershock of Jan. 20, 1944 at 00 29 G.C.T.
7	Jan. 10	Ir	ePNE F	A 20 39 21 06	17	Aftershock See list, p. 5
8	Jan. 11	Iv	ePN eE eN eSN F	A 04 55 A 12 27 A A 23 10 05 00	15.6 30.6 39.5 45	About 12 km from Mineral See list, p. 5
9	Jan. 11	Iv	ePN eE F	A 05 53 A 05 57	18.6 31.6	Mineral aftershock
10	Jan. 12	Iv	iZ iPE iPNEZ iNE iSE iSN iSZ F	G 15 03 G AH 10 A A 04 08.3 A H 15 22	16 27 29.7 54.8 08.3 09.5 10.3	See list, p. 5 U.S.C.G.S.: 11°N 31°E
	Feb. 1	Iu	iPE F	H 05 27 05 30	20.0	Pasadena: Roughly 41°N 142°E h = 80 km?

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
11	Jan. 16	Iu	iPNEZ iPPZ eSE eSN iSZ eZ F	GAH 00 02 07.0 G 05 31 A 12 30 A 32 G 51.0 G 30 29 02 11	U.S.C.G.S.: 31.5°S 68°W
	Feb. 3	Ir	eSE eSN iSZ eZ F	A 12 30 A 32 G 51.0 G 30 29 02 11	U.S.C.G.S.: 59.3°N 138.0°W
12	Jan. 16	IIv	iPZ iPNE iPZ ePE iSE iSEZ iZ iZ iE F	H 02 26 20.5 A 21.0 G 24.0 G 27 A 58.5 AH 27 00.2 G 27 G 28 A 44.9 02 39	See list, p. 5
	Feb. 5	Iv	iSE iSEZ iZ iZ iE F	A 58.5 AH 27 00.2 G 27 G 28 A 44.9 02 39	See list, p. 5
	Feb. 15	Id	iE F	A 44.9 02 39	See list, p. 5
13	Jan. 20	Id	iPNZ eSNE F	AH 00 29 18.9 A 27.0 00 30	See list, p. 5
	Feb. 17	IIId	F	00 30	See list, p. 5
14	Jan. 20	Iu	iPZ ePNE F	H 03 10 30.6 A 33 03 13	Apia: 15.1°S 173.5°W Pasadena: h = 90 km.
15	Jan. 24	Id	iPZ iZ F	H 20 13 36.3 H 42.7 20 14	Aftershock of Jan. 20, 1944 at 00 29 G.C.T. Pasadena: roughly 17°N 104°W
16	Jan. 25	Id	iPZ iZ F	H 12 27 06.0 H 18.5 12 27.5	See list, p. 5
17	Jan. 27	IIId	iPZ ePN ePE iSNE F	H 23 10 19.6 A 20.3 A 20.7 A 29.9 23 13	See list, p. 5
	Feb. 21	Iv	F	23 13	See list, p. 5
18	Feb. 1	IIIu	iPZ iPZ iPE iPPEZ iSKSEZ eLN eLE eLZ F	H 03 36 15.8 G 32 G 42 G 40 32 G 47 56 A 04 07.5 A 07.6 H 17 08 08	U.S.C.G.S.: 13.7°S 70.6°W U.S.C.G.S.: 41°N 31°E
	Mar. 3	Id	eLN eLE eLZ F	A 04 07.5 A 07.6 H 17 08 08	U.S.C.G.S.: 13.7°S 70.6°W
	Mar. 5	Id	F	08 08	See list, p. 5
19	Feb. 1	Iu	iPZ F	H 05 27 20.0 05 30	Pasadena: Roughly 41°N 142°E h = 80 km?

BERKELEY

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
				h, m, s.	
20	1944 Feb. 2	Iv	iPZ F	H 11 06 05.0 11 07	See list, p. 5
21	Feb. 3	Ir	iPEZ iPZ ePN ePE iSE eSZ iLZ eLN F	GH 12 20 18.1 G 19 A 20 A 21 A 24 52 H 25 04 G 30 21 A 41 13 45	U.S.C.G.S.: 59.3°N 138.0°W
22	Feb. 5	Iv	ePZ F	H 09 24 58.5 09 26	See list, p. 5
23	Feb. 15	Id	iPZ iSE iSN F	H 20 15 37.8 A 42.3 A 43.0 20 17	See list, p. 5
24	Feb. 17	IIId	iPE iPNEZ iZ iSE iSNE iSZ F	G 04 33 42 AH 44.4 G 45 G 46 A 47.3 G 48 04 36	Aftershock of Mar. 6, 1943 See list, p. 5
25	Feb. 21	Ir	iPZ iSE iSZ iE eLZ F	G 11 34 07 G 38 32 G 47 G 42 33 G 43 21 12 03	Pasadena: Roughly 17°N 104°W
26	Feb. 21	Iv	iPZ iSE F	H 13 00 34.4 A 50.9 13 03	See list, p. 5
27	Feb. 29	Iu	iPZ ePNE eSE eSN F	H 03 52 57.0 A 58 A 04 01 59 A 02 01 04 05	U.S.C.G.S.: 13.7°S 70.6°W h = 200 km. Pasadena: 46°N 83.5°E
28	Mar. 3	Id	iPZ iSNE F	H 06 16 46.5 A 49.6 06 18	
29	Mar. 5	Id	iPZ F	H 19 37 22.3 19 38	See list, p. 5

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No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
30	Mar. 6	IIV	iPNE iPZ iPZ iE eSN iSN iSZ iSE eSE F	G 20 11 05 G 12 H 17.2 G 12 42 A 56 G 13 57 G 13 01 G 05 A 06 21 31	Pasadena: 44°N 128.5°W
31	Mar. 6	Iv	iE iN iZ F	G 21 08 34 G 39 G 53 23 34	Aftershock
32	Mar. 6	Iv	iPZ eSNE F	H 21 32 43.5 A 33 10 21 35	See list, p. 5
33	Mar. 6	Iv	iPN iPZ iPE iN iE F	G 22 55 05 G 06 G 09 G 56 08 G 46 23 11	Aftershock of Mar. 6, 1943 at 20 11 G.C.T.? San Benito County
34	Mar. 6	Iv	iPE iPZ iPN iN iE iZ F	G 23 18 25 G 30 G 33 G 20 25 G 35 G 46 00 03	Aftershock
35	Mar. 9	Iv	iPN iPE iPZ iE iZ F	G 16 26 18 G 20 G 26 G 28 02 G 29 10 16 59	See list, p. 5
36	Mar. 9	Iu	iPZ iPN ePE iPFZ iSEZ iSN eLZ F	G 22 26 24 G 37 G 53 G 30 11 G 36 59 G 37 03 G 51 44 00 59	Pasadena; 46°N 83.5°E
37	Mar. 10	Id	iPZ eSN iNZ F	H 00 20 44.5 A 46 AH 47.1 00 21	

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No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
38	Mar. 11	Id	iPZ ePNE iSNE F	H 06 45 02.1 A 03 A 09 12.9 06 46	U.S.C.G.S.: 7°S 126°E Pasadena: 8.5°S 123.5°E h = 220 km.
39	Mar. 13	Id	iPNZ iSE iSN F	AH 14 43 26.5 A 34.2 A 11 35.1 14 47	See list, p. 5 Pasadena: Roughly 5°S 135°E
40	Mar. 13	Id	iPZ iSNE F	H 21 44 58.5 A 59.4 21 46	U.S.C.G.S.: 3°S 81°W
41	Mar. 14	Id	iPNEZ iSE iSN F	AH 01 27 06.0 A 11.5 A 11.9 01 28	
42	Mar. 14	IIId	iPZ iSE iSNZ F	H 04 37 45.7 A 48.7 AH 49.3 04 39	
43	Mar. 14	Iv	iPZ F	H 23 11 03.2 23 12	San Benito County
44	Mar. 15	IIv	ePNZ iPEZ iPZ iPN iZ iE iSNE iSN iZ iZ F	AH 08 15 05.1 AH 05.9 G 07 G 08 H 08.4 G 10 GA 21.0 G 23 H 23.5 G 26 08 19	See list, p. 5
45	Mar. 18	Iv	iPZ F	H 13 46 41.3 13 47	See list, p. 5
46	Mar. 21	Id	iPZ iSNE F	H 18 58 09.2 A 10.2 18 59	
47	Mar. 21	Id	iPZ ePNE eSN F	H 22 42 14.0 A 14.3 A 22 22 43	

MT. HAMILTON

Date	Char-acter	Phase	Time	Remarks
MOUNT HAMILTON				
1941 THE LICK OBSERVATORY STATION, UNIVERSITY OF CALIFORNIA				
MOUNT HAMILTON, CALIFORNIA				
Jan. 2	Id	ePNS LSE eSN	04 30 35.5 21 12 00 14 00	Approx. 140 km. north of San Francisco
Jan. 3	Id	ePNS LSE F	08 02 32.5 08 02 08 22	
Jan. 4	Iv	ePNS LSE eSN	12 45 32 33.1 12.4	San Benito County

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Latitude and longitude:

$$\phi = 37^{\circ} 20' 14'' \text{ N.}$$

$$\lambda = 121^{\circ} 38' 16'' \text{ W.}$$

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	ε
Wood-Anderson	E	3000	1	15
	N	3000	1	15

9	Jan. 10	Ir	ePNS eNS F	20 39 11 18 22 21 00	Aftershock
10	Jan. 11	Iv	ePN ePS eSN eSE F	08 55 16 18 51.5 51.5 05 00	About 12 km. from Mineral
11	Jan. 11	Iv	ePNS eNS F	05 53 17 51 05 57	Mineral aftershock
12	Jan. 12	Iv	ePNS LSE eNS F	15 01 40.5 02 28.0 05.1 15 19	See list, p. 5

MT. HAMILTON

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
1	Jan. 2	Id	ePE iSE eSN F	04 20 55 ca 21 12 ca 14 ca 04 22	Approx. 40 km, north of San Francisco
2	Jan. 3	Id	ePNE iSNE F	08 00 50.6 52.5 08 02	See list, p. 5
3	Jan. 4	Iv	ePNE iPNE eSN iSE F	12 45 32 33.1 44.4 46.4 12 48	San Benito County
4	Jan. 4	Id	ePNE iSNE F	17 42 42 44.8 17 47	See list, p. 5
5	Jan. 8	Id	ePN iSN F	17 47 44.5 46.1 17 49	Aplia: 15.1°N 173.5°W Pasadena: h = 30 km.
6	Jan. 9	Id	ePNE iSNE F	07 18 40.7 42.5 07 20	
7	Jan. 10	Iv	ePNE eSNE F	14 44 37 45 15.0 14 28	
8	Jan. 10	Ir	ePNE eLE eLN eNE F	20 15 42.7 23.5 20 23.6 24 54 20 39	U.S.G.G.S.: 18.1°N 100.6°W Tacubaya: 16°44'N 100°41'W See list, p. 5
9	Jan. 10	Ir	ePNE eNE F	20 39 11 48 22 21 00	Aftershock Foreshock
10	Jan. 11	Iv	ePN ePE eSN eSE F	04 55 16 18 23 10 51.5 54.5 05 00	About 12 km, from Mineral Foreshock
11	Jan. 11	Iv	ePE eSE F	05 53 17 23 12 54 05 57	Mineral aftershock
12	Jan. 12	Iv	ePNE iSE eNE F	15 03 40.5 10 04 28.0 05.1 15 19	See list, p. 5

MT. HAMILTON

No.	Date	Character	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
13	Jan. 16	Iu	ePNE eN eE eSE eSN F	00 02 03 13.0 13.6 12 25 28 00 17	U.S.C.G.S.: 31.5°S 68°W
	Feb. 1	Iu	eSE eSN F	03 12 25 28 00 17	U.S.C.G.S.: 31°S 68°W
14	Jan. 16	Iv	ePNE iE eSE iE iE eN eNE F	02 26 30.5 45.8 27 13 34.6 50.1 56 28 06 02 29	See list, p. 5
	Feb. 2	Iv	eSE iE iE eN eNE F	11 27 13 34.6 50.1 56 28 06 02 29	See list, p. 5
	Feb. 3	Ir	eSE iE iE eN eNE F	02 29 35 35 35 35 35 35	U.S.C.G.S.: 59.3°N 138.0°W
15	Jan. 20	Id	iPNE iSNE F	00 29 17.2 22.5 00 31	See list, p. 5
16	Jan. 20	Iu	eNE F	03 10 32 03 13	Apia: 15.1°S 173.5°W Pasadena: h = 90 km.
17	Jan. 20	Id	ePN eSNE F	11 04 07 18.7 11 06	Aftershock
18	Jan. 20	Id	ePN eSNE F	11 05 53 06 03.0 11 07	Aftershock
19	Jan. 24	Id	ePNE iSNE F	20 13 32.7 37.6 20 14	Aftershock of Jan. 20, 1944 at 00 29 G.C.T.
20	Jan. 25	IIId	iPNE iSE F	12 26 52.9 53.9 12 29	See list, p. 5
21	Jan. 27	Id	ePNE iSNE F	23 09 30 41.7 23 10	Foreshock
22	Jan. 27	Id	iN iSNE F	23 10 05.3 06.7 23 11	Foreshock
23	Jan. 27	IIId	iPNE F	23 10 08.4 23 12.5	See list, p. 5
24	Jan. 30	Iv	ePNE eSNE F	10 19 25 59.3 10 21	See list, p. 5

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
25	Feb. 1	Id	iPNE iSNE F	01 08 27.5 29.6 01 10	
26	Feb. 1	Iu	ePNE ePPN eE eLNE F	03 36 30 40 43 53 04 07.8 04 46	U.S.C.G.S.: 41°N 31°E
27	Feb. 2	Id	ePNE iNE iSNE F	11 05 53.2 54.5 06 04.4 11 08	See list, p. 5
28	Feb. 3	Ir	ePN eLN eLE F	12 20 25 30.7 31.7 12 39	U.S.C.G.S.: 59.3°N 138.0°W
29	Feb. 5	Id	ePNE ePNE iSNE F	09 24 47.2 47.7 59.2 09 27	See list, p. 5
30	Feb. 5	Id	ePN iSNE F	10 18 00.9 12.7 10 20	Aftershock
31	Feb. 5	Id	ePNE eSE F	13 43 36 48.1 13 45	Aftershock
32	Feb. 5	Id	ePNE eSNE F	14 04 05 17.1 14 06	Aftershock
33	Feb. 9	Id	iPNE iSNE F	04 15 20.9 22.9 04 16	See list, p. 5
34	Feb. 11	Id	ePNE eSNE F	01 37 40 51.1 01 39	Aftershock of Mar. 6, 1944
35	Feb. 15	Id	ePE iSNE F	20 15 39.2 44.7 20 16.5	See list, p. 5 Aftershock
36	Feb. 17	Id	ePNE iSNE F	04 33 52.4 34 02.1 04 36	See list, p. 5

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
37	Feb. 21	Id	iSNE F	07 20 14.8 07 21	
38	Feb. 21	Ir	eN eE F	11 34 00 02 11 36	Pasadena: Roughly 17°N 104°W
39	Feb. 21	IIId	iPNE iN iE iE iSNE F	13 00 23.2 24.7 25.2 30.0 32.2 13 03	See list, p. 5
40	Feb. 21	Id	ePNE eSNE F	13 58 36 47.6 14 00	San Benito County
41	Feb. 29	Iu	ePNE iPNE eSNE F	03 52 53.7 55.6 04 01 54 04 03	U.S.C.G.S.: 13.7°S 70.6°W See list, h = 200 km.
42	Mar. 3	Iv	ePNE iSN iSE F	20 23 05.3 18.7 19.6 20 24	See list, p. 5
43	Mar. 5	IIId	iPNE iSE F	19 37 11.8 13.5 19 38	See list, p. 5
44	Mar. 6	Iv	ePNE eSN eSE F	20 11 19 13 13 18 20 27	Pasadena: 44°N 128.5°W
45	Mar. 6	Iv	ePNE iPNE iSN iSE F	21 32 34.7 35.9 47.9 48.6 21 35	See list, p. 5
46	Mar. 6	Iv	ePNE F	23 03 43 23 19	Aftershock of Mar. 6, 1944 at 20 11 G.C.T.
47	Mar. 7	Iv	ePNE F	06 11 24 06 21	Aftershock
48	Mar. 7	Iv	eNE F	08 24.7 08 36	Aftershock
49	Mar. 10	Id	iPE iSE F	13 27 15.8 17.9 13 28	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks									
	1944													
50	Mar. 11	IIId	iPE F	06 44 49.5 06 46										
51	Mar. 11	Id	iPE iSE F	06 58 08.3 09.8 06 59										
52	Mar. 13	IIId	iPNE iSNE F	14 43 17.7 19.8 14 45	See list, p. 5									
53	Mar. 13	Id	iPNE iSNE F	13 56 39.3 41.0 13 57										
54	Mar. 14	Id	ePNE iSNE F	23 10 50.0 57.1 23 12	San Benito County									
55	Mar. 15	IIId	ePNE iPNE iSE F	08 14 55.0 55.3 15 02.1 08 19	See list, p. 5									
56	Mar. 18	Id	iPNE iSNE iE F	13 46 29.9 35.7 36.5 13 47	See list, p. 5									
57	Mar. 29	Iv	ePN iSNE F	05 00 50 01 05.2 05 01.5										
58	Mar. 29	Id	ePNE eSN F	21 43 48 55.9 21 46	<table border="1" data-bbox="934 1226 1305 1430"> <thead> <tr> <th>T</th> <th>T₀</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>3000</td> <td>1</td> <td>15</td> </tr> <tr> <td>3000</td> <td>1</td> <td>15</td> </tr> </tbody> </table>	T	T ₀	E	3000	1	15	3000	1	15
T	T ₀	E												
3000	1	15												
3000	1	15												

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
					PALO ALTO THE BRANNER STATION, STANFORD UNIVERSITY PALO ALTO, CALIFORNIA
	Jan. 2			12 22	San Francisco
	Jan. 6	IV	17M	12 45 35	San Benito County
	Jan. 10	Ir	17E	20 15 50.0	U.S.G.G.S.: 18°1'N 100.6°W
				20 38	Tachygra: 16°41'N 100°41'W
	Jan. 10	Ir	17E	20 39 16.3	Aftershock

CONSTANTS
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Latitude and longitude:

$$\phi = 37^{\circ} 25' 11'' \text{ N.}$$

$$\lambda = 122^{\circ} 10' 18'' \text{ W.}$$

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

10	Jan. 16	IV	17M	02 26 27.4	See list, p. 5
			17E	27 10	
			17E	02 29 18.5	See list, p. 5
			17E	02 30 5	

PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
1	Jan. 2	Id	ePNE iSE eSN F	12 20 43 ca 53 ca 54 ca 12 22	Approx. 40 km. north of San Francisco
2	Jan. 4	Iv	iPNE iSNE F	12 28 59.1 12 45 35 ca 52 ca 12 48	See list, p. 5 San Benito County
3	Jan. 10	Ir	iPE iPN F	20 15 50.6 55.8 20 38	U.S.C.G.S.: 18.1°N 100.6°W Tacubaya: 16°44'N 100°41'W
4	Jan. 10	Ir	iPE iPN F	20 39 16.3 16.8 20 56	Aftershock
5	Jan. 11	Iv	ePE ePN eN F	04 55 17.5 21.0 54 04 58	About 12 km. from Mineral
6	Jan. 11	Iv	ePNE eSNE F	05 53 27 53 05 56	Mineral aftershock
7	Jan. 12	IIv	iPNE eSNE F	15 03 36.5 04 22 15 18	See list, p. 5 Aftershock
8	Jan. 13	Id	iPE iPN iE iN F	20 50 13.3 13.8 13 44 14.3 15.9 20 51	Aftershock
9	Jan. 16	Iu	ePN ePE eSE eSN F	00 02 06 07 12 28 36 00 16	U.S.C.G.S.: 31.5°S 68°W
10	Jan. 16	IIv	iPNE iPE iSN eNE iN iE F	02 26 27.4 33.5 27 10 04 33 40.5 51.2 04 36 51.7 02 39	See list, p. 5 See list, p. 5 See list, p. 5
11	Jan. 20	Id	ePE ePN iSNE F	00 29 18.5 19.0 24.3 00 30.5	See list, p. 5

PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
12	Jan. 24	Id	iPNE iSNE F	20 13 33.0 37.9 20 14.5	Aftershock of Jan. 20, 1944 at 00 29 G.C.T.
13	Jan. 25	Iv	iPNE iNE F	12 26 59.1 27 09.1 12 28	See list, p. 5
14	Jan. 27	IIId	iPNE iSN F	23 10 14.4 20.7 23 12	See list, p. 5
15	Feb. 2	Iv	ePNE eSE F	11 05 59.5 06 19 11 07	See list, p. 5
16	Feb. 4	Id	iPE iPN iSE iSN F	23 07 12.7 13.3 16.0 16.4 23 08	Aftershock See list, p. 5
17	Feb. 5	Iv	iPNE iSE iSN F	09 24 53.0 25 08.7 09.9 09 26	See list, p. 5
18	Feb. 5	Iv	iPNE iSE iSN F	10 18 06.8 22.6 23.0 10 19	Aftershock
19	Feb. 5	Iv	iPNE iSNE F	13 44 41.5 57.6 13 45	Aftershock
20	Feb. 5	Iv	iPN iPE iSNE F	14 04 10.5 11.5 26.8 14 05	Aftershock
21	Feb. 15	Id	iPE iSE F	20 15 36.1 39.8 20 17	See list, p. 5
22	Feb. 17	IIId	iPNE iSNE F	04 33 49.1 54.0 04 36	See list, p. 5
23	Feb. 20	Id	iPN iPE iSN iSE F	20 55 37.8 38.2 40.7 41.5 20 57	

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
24	Feb. 21	Iv	iPNE iN iSNE F	13 00	31.7 36.8 46.0		See list, p. 5
25	Mar. 3	Id	iPNE iSNE F	00 51 00 52	23.3 26.6		
26	Mar. 5	Iv	iPNE F	19 37 19 39	17.0		See list, p. 5
27	Mar. 6	Ir	ePNE eLN eLE F	20 11 13 38 20 27	18.8 41		Pasadena: 44°N 128.5°W Five small aftershocks were recorded.
28	Mar. 6	Ir	iPNE F	21 08 21 15	03.9		Aftershock
29	Mar. 6	Iv	iPNE iSN F	21 32 21 36	40.7 59.5		See list, p. 5
30	Mar. 11	Id	iPN iPE iSN iSE F	04 15 04 16.5	54.1 54.5 57.3 57.7		
31	Mar. 11	Iv	iPNE F	06 44 06 46	56.7		
32	Mar. 13	Id	iPNE F	14 43 14 44	21.8		See list, p. 5
33	Mar. 14	Id	ePNE eSNE F	23 10 23 12	56.5 09.5		San Benito County
34	Mar. 15	IIId	iPNE iSNE F	08 14 08 19	59.8 10		See list, p. 5
35	Mar. 18	Id	iPNE iSE iSN F	13 46 13 47	36.3 46.8 47.6		See list, p. 5

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time	Remarks
-----	------	------------	-------	------	---------

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

1	Jan. 9	Iv	1902	12 21	W.S. 0.0.0. 10.1°W 100.6°W Machaya: 16°42'N 100°41'W
2	Jan. 10	Iv	1902	20 27 57	

CONSTANTS

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Latitude and longitude:

$$\phi = 37^{\circ} 46.4' \text{ N.}$$

$$\lambda = 122^{\circ} 27.2' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

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

CONSTANTS OF THE SEISMOGRAPHS

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 (U.T.)	Remarks
	1944			h, m, s.	
1	Jan. 2	Id	iPN iPE iSNE F	12 20 42.5 ca 42.8 ca 45.0 ca 12 21	Approx. 40 km, north of San Francisco
2	Jan. 10	Ir	ePN ePE eE F	20 15 57 16 17 25 25 20 37	U.S.C.G.S.: 18.1°N 100.6°W Tacubaya: 16°44'N 100°41'W
3	Jan. 10	Ir	ePE eE F	20 39 19 49 01 20 56	Aftershock
4	Jan. 12	Iv	ePN iPE iSE F	15 03 28 ca 29.5 ca 04 05.1 ca 15 15	See list, p. 5
5	Jan. 16	Iv	iPNE iSE iE F	02 26 20 ca 47 ca 27 15 ca 02 37	See list, p. 5
6	Jan. 27	Id		23 10 ca	See list, p. 5 S-P = 10.5 sec.
7	Feb. 17	Id	iPNE F	04 33 55 ca 04 34	See list, p. 5
8	Feb. 21	Iv		13 00 ca	See list, p. 5 S-P = 16.4 sec.
9	Mar. 15	IIv		08 15 ca	See list, p. 5 S-P = 16 sec.
10	Mar. 24	Id		18 46	S-P = 2.4 sec.

The station is operated by Mr. Joseph Egnuda, of Ferrisale,
in cooperation with the University of California.

No.	Date	Character	Phase	Time (U.T.)	Remarks
	1904		FERNDALE		
1	Jan. 10	Ir	THE FERNDALE STATION FERNDALE, CALIFORNIA		U.S.C.G.S.: 10.1°N 100.6°W Tacubaya: 16°14'N, 100°21'W
				18 27 24	
				19 20 18	
2	Jan. 10	Ir	e18	20 13.5	Surface waves of aftershock
			e18	20 42.0	
			e18	21 30 00	
			F	21 05	
3	Jan. 12	Tid	e18	15 02 51.5	See list, p. 5
			e18	57	

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\phi = 40^{\circ} 34' N,$$

$$\lambda = 124^{\circ} 16' W.$$

Time -- All determinations are reduced to Universal Time.

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

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	ε
Bosch-Omori 25 kg.	E	12	11	5
	N	12	8	6

The station is operated by Mr. Joseph Bognuda, of Ferndale, in cooperation with the University of California.

10	Jan. 24	Id	e18	16 13 05	
			F	16 14	
11	Feb. 1	Iu	e18	03 17 16	U.S.C.G.S.: 41°N 31°E
			e18	04 06 32	
			e1N	07 08	
			F	05 01	
12	Feb. 3	Ir	e18	12 24 23	U.S.C.G.S.: 59.3°N 136.0°W
			F	12 39	

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
1	Jan. 10	Ir	eLN eLE iE F	20 25 04 06 27 24 20 46	U.S.C.G.S.: 18.1°N 100.6°W Tacubaya: 16°44'N, 100°41'W
2	Jan. 10	Ir	eLE eLN iE F	20 48.5 49.0 20 51 01 21 05	Surface waves of aftershock Pasadena: 34°N 120.5°W
3	Jan. 12	IIId	iPE iE iSE iE F	15 02 51.5 57 59.9 03 29 15 18	See list, p. 5 Aftershock
4	Jan. 14	Id	iPE iSNE F	03 43 38 41 03 45	Felt at Ferndale
5	Jan. 15	Id	iPE iSE F	04 23 41 45 04 25	Aftershock
6	Jan. 16	Iu	eSN eSE eE F	00 12 47 50 55 00 59	U.S.C.G.S.: 31.5°S 68°W Aftershock
7	Jan. 16	IIId	iPNE iSE iSN F	02 25 43 53 54 02 40	See list, p. 5 Aftershock
8	Jan. 23	Id	ePN iSNE F	23 23 12 19 23 24	
9	Jan. 23	Id	iPN iSNE F	23 28 30 37 23 30	
10	Jan. 24	Id	iSNE F	16 43 05 16 44	
11	Feb. 1	Iu	eNE eLE eLN F	03 47 46 04 06 32 07 08 05 01	U.S.C.G.S.: 41°N 31°E
12	Feb. 3	Ir	eSE F	12 24 23 12 39	U.S.C.G.S.: 59.3°N 138.0°W

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
13	Feb. 29	Iv	iE iN F	21 39 53 40 03 21 47	
14	Mar. 6	Iv	ePNE F	12 06 00 12 15	Foreshock
15	Mar. 6	Iv	ePNE eSN eSE F	20 10 36 11 32 41 20 33	Pasadena: 44°N 128.5°W
16	Mar. 6	Iv	ePN ePE F	21 08 20 36 21 22	Aftershock
17	Mar. 6	Iv	ePN ePE F	22 53 36 49 23 08	Aftershock
18	Mar. 6	Iv	ePNE eSNE F	23 18 16 19 10 23 58	Aftershock
19	Mar. 7	Iv	ePN ePE F	06 10 48 11 05 06 29	Aftershock
20	Mar. 7	Iv	ePE ePN F	06 46 32 42 07 03	Aftershock
21	Mar. 7	Iv	ePNE F	08 23 04 08 52	Aftershock
22	Mar. 9	Iv	ePN ePE eSE F	16 25 00 03 26 27 16 40	
23	Mar. 29	Id	iPE iPN F	13 10 07 08 13 11	

No.	Date	Char-acter	Time	Remarks
FRESNO				
1	Jan. 4			THE FRESNO STATION, FRESNO STATE COLLEGE FRESNO, CALIFORNIA
2	Jan. 7	III	1PM 13M F	
3	Jan. 10	IV	4PM 13M F	

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\phi = 36^{\circ} 46'11'' \text{ N.}$$

$$\lambda = 119^{\circ} 47'18'' \text{ W.}$$

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

10	Jan. 16	IV	4PM 13M F	03 26 53.7 28 28.7 02 45	See list, p. 5
11	Jan. 29	IV	4PM 13M F	03 26 49.2 27 05.7 03 28	
12	Feb. 1	IV	4PM 4M 4PM 4M F	03 36 28 51 40 28 47 14 04 11 04 15	U.S.G.C.S.: 41°N 31°E
13	Feb. 2	IV	4PM 4M 13M F	11 05 57 06 06.0 08.5 11 09	See list, p. 5

FRESNO

No.	Date	Character	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
1	Jan. 4	Id	ePN iSN F	12 45 34.2 47.3 12 49	San Benito County
2	Jan. 7	IIId	iPN iSN F	00 02 36.0 41.7 00 03	
3	Jan. 10	Iv	ePN eSN F	14 44 55 45 41 14 47	
4	Jan. 10	Ir	ePN F	20 15 29 20 38	U.S.C.G.S.: 18.1°N 100.6°W Tacubaya: 16°44'N 100°41'W
5	Jan. 10	Ir	ePN ePPN eN F	20 38 59 39 20 47 32 21 03	Aftershock
6	Jan. 11	Iv	ePN eSN F	04 55 42 56 21 05 02	About 12 km. from Mineral
7	Jan. 11	Iv	iPN iSN F	05 53 34.4 54 23.3 05 57	Mineral aftershock
8	Jan. 13	Id	iPN iSN F	00 30 59.8 31 00.3 00 32	
9	Jan. 16	Iu	ePN F	00 01 56 00 19	U.S.C.G.S.: 31.5°S 68°W
10	Jan. 16	Iv	ePN iN F	02 26 53.7 28 28.7 02 45	See list, p. 5
11	Jan. 29	Iv	iPN iSN F	03 26 49.2 27 05.7 03 28	
12	Feb. 1	Iu	ePN eN ePPN eSKSN eLN F	03 36 28 21 36 51 40 28 47 14 04 11 04 45	U.S.C.G.S.: 41°N 31°E
13	Feb. 2	Id	ePN eSN iSN F	11 05 57 06 06.0 08.6 11 09	See list, p. 5

FRESNO

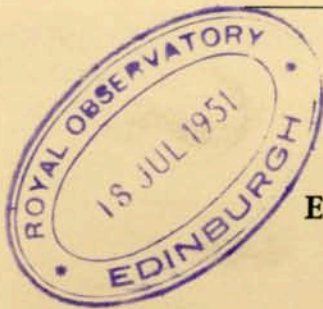
No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
14	Feb. 3	Ir	ePN eN F	12 20 31 39 12 44	U.S.C.G.S.: 59.3°N 138.0°W
15	Feb. 5	Iv	iPN iSN F	09 24 52.5 25 07.3 09 29	See list, p. 5
16	Feb. 21	Ir	ePN F	11 33 45 12 02	Pasadena: Roughly 17°N 104°W
17	Feb. 21	Iv	ePN iSN eN eN F	13 00 34.0 45.4 01 04 34 13 05	See list, p. 5
18	Feb. 25	Id	iPN iSN F	14 15 22.3 26.3 14 16	
19	Feb. 28	Iv	iPN iSN F	10 47 05.3 21.1 10 49	Pasadena: 37°34'N 118°44'W
20	Feb. 29	Iu	iPN F	03 52 42.2 03 59	U.S.C.G.S.: 13.7°S 70.6°W h = 200 km.
21	Mar. 2	Id	iPN iSN F	12 51 33.5 35.0 12 52	
22	Mar. 3	Id	iN iN iN F	20 23 02.4 09.9 17.3 20 25	
23	Mar. 6	Iv	ePN eLN F	20 11 40 15 54 20 32	Pasadena 44°N 128.5°W Two small aftershocks: Mar. 6, 1944 - 21 08 G.C.T. Mar. 7, 1944 - 06 11 G.C.T.
24	Mar. 6	Id	iPN iSN F	21 32 42.3 54.6 21 36	See list, p. 5
25	Mar. 8	Iv	iPN iSN F	21 48 50.5 49 05.1 21 50	

FRESNO

No.	Date	Char-acter	Phase	Time (U.T.) h. m. s.	Remarks
	1944				
26	Mar. 9	Iu	ePN ePPN eSN F	22 26 36 30 25 37 06 22 47	Pasadena: 46°N 83.5°E
27	Mar. 13	Iv	eSN F	14 44 04.6 14 46	See list, p. 5
28	Mar. 14	Iv	ePN iSN F	23 10 35.0 11 22.0 23 13	San Benito County
29	Mar. 15	IIv	ePN iPN iPN iSN eKN eAN F	08 15 11 13.1 14.6 31.4 17 13 33 08 23	See list, p. 5

Bulletin of the Seismographic Stations

Volume 14, No. 2, pp. 34-77



EARTHQUAKES IN NORTHERN CALIFORNIA
AND
THE REGISTRATION OF EARTHQUAKES
AT
BERKELEY—MOUNT HAMILTON—PALO ALTO
SAN FRANCISCO—FERNDAL—FRESNO

From April 1, 1944, to June 30, 1944

BY
CHARLES HERRICK
AND
CAROLYN H. PENDERY

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1950

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EARTHQUAKE INTENSITY SCALE

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Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information is available.

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Latitudes and longitudes are given for each epicenter in the following list of earthquakes are given 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.

EARTHQUAKE INTENSITY SCALE

1944 - Pacific Standard Time

Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information on the effects of the quake is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

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.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood-Anderson amplitudes, using the nomogram by Nordquist, "Bulletin of the Seismological Society of America," 32: 164.

Latitude and longitude are given for each epicenter in the following list. Only those earthquakes are given 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.

EARTHQUAKES IN NORTHERN CALIFORNIA

1944 - Pacific Standard Time

<u>No.</u>	<u>Date</u>	<u>Origin Time</u>	<u>Richter Magnitude</u>	<u>Latitude North</u>	<u>Longitude West</u>	<u>Quality</u>
1	April 2	12-58-42	2.6	37° 43'	121° 42'	b
2	6	19-48-55	2.3	37° 17'	122° 12'	c
		Depth about 10 km.				
3	20	05-33-27	2.1	37° 45'	122° 37'	c
		Probably a blast				
4	25	05-40-10	2.3	37.7°	122.1°	d
		III at San Leandro				
5	May 2	20-05-37	2.5	37° 19'	121° 49'	b
		II at San Jose				
6	4	12-04-27	3.3	37° 38'	122° 01'	b
		III at Hayward				
7	5	14-07-37	2.1	37° 32'	122° 37'	c
		Probably a blast				
8	12	12-29-30	3.0	36° 39'	121° 16'	c
9	15	16-43 33	3.9	37.0°	121.0°	d
		II at Los Banos				
10	21	15-37-17	2.3	37° 10'	122° 14'	b
11	June 3	15-03-56	2.0	37° 13'	122° 09'	c
12	7	04-35-38	4.0	36° 35'	121° 17'	b
13	9	23-01-29	2.4	36° 45'	121° 31'	c
14	11	08-17-42	3.3	36° 53'	121° 13'	c
		V at Hollister, II at Tres Pinos				
15	15	14-05-35	2.4	37.7°	122.6°	d
		Probably a blast				
16	20	20-51-30	2.0	37° 53'	122° 37'	b
		Probably a blast				
17	21	21-01-41	2.6	37° 52'	122° 40'	b
18	26	08-22-07	2.7	37° 28'	121° 42'	b
19	30	21-28-34	2.8	37° 11'	122° 18'	b

SYMBOLS AND NOTATIONS EMPLOYED

I. 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 viciniae)		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).	
w (terrae motus universalis)		Very distant shock or teleseism (origin more than 5,000 kilometers distant).	

THE REGISTRATION OF EARTHQUAKES

2. Nature of the Motion --

i (impetiva)	Sudden beginning of the motion.
g (gradualis)	Gradual beginning of the motion.

BERKELEY

THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

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. Nature of the Motion --

		τ	τ_0	ϵ	$\frac{\tau}{\tau_0}$		
i (impetus)					0.001		
e (emersio)					0.001		
Wood-Anderson	E	3000	0.9	15	0.005		
	H	3000	0.9	15			
		K	F	τ_1	μ^2	A_1 (cm)	l (cm)
Galitsain	E	112	12	11.8	0.00	115	11.3
	H	122	12	12.4	0.03	119	11.3
	Z	109	12	11.9	0.01	131	11.3
			V	Coupled Period		ϵ	
Burloff	Z			0.7		5	

The letter G before a reading designates that the seismogram was from the Galitsain instrument; W, Wiechert; B, Bosch-Coxri; A, Wood-Anderson; R, Burloff.

BERKELEY

Date	Character	Phase	Time (U.T.)	Trace section	Remarks
1901					
April 2	Id				THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA BERKELEY, CALIFORNIA
April 2	Id				CONSTANTS CONSTANTS OF THE STATION
April 5	Id				CONSTANTS OF THE SEISMOGRAPHS

Latitude and Longitude:
 $\phi = 37^{\circ} 52' 13''$ N.
 $\lambda = 122^{\circ} 15' 16''$ W.

Time -- All determinations are reduced to Universal Time.

Altitude -- 81 meters (266 feet) above mean sea level.

Apparatus	Component	V		T_0	ϵ	$\frac{r}{T_0^2}$	
		K	T			T_1	μ^2
Bosch-Omori 100 kg. ..	E	45		12	10		0.001
	N	45		12	10		0.001
	Z	44		4	5		0.005
Wiechert 80 kg.	E	3000		0.9	15		
	N	3000		0.9	15		
Galitzin	E	112	12	11.8	0.00	115	11.3
	N	122	12	12.4	0.03	119	11.2
	Z	109	12	11.9	0.01	131	14.9
Benioff	Z	V		Coupled Period		ϵ	
				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.

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	April 2	Iu	eE eZ eN F	G 04 G 11 G 04 53	46.9 47.0 47.2 50.8	18 18		See list, p. 38
2	April 2	Id	ePN eSN F	A 20 A 21 00	58 51.0 58.5			See list, p. 38
3	April 3	Iv	ePN eN F	A 02 34 A 02 35	09.1 52.5			Pasadena: 34.5°N, 121.4°W Magnitude 4.0
4	April 3	Iu	eLZ eLE eLN F	G 18 G G 19 14	24.3 24.9 25.0	11 12		Near Apia 22°S, 177.5°W h = 370 km.
5	April 5	Id	ePNZ iSN F	AH 01 15 A 01 16	16.4 18.4			
6	April 7	Id	ePZ ePN iSNZ F	H 03 48 A AH 03 48.5	06.3 08.5 14.6			See list, p. 38
7	April 7	I	iPZ ePN iZ F	H 13 40 A H 14 12	31.0 31.5 22.7			Pasadena: 1°S, 135°E
8	April 13	Iv	ePE ePNZ eSNE eN F	A 13 52 AH A A 14 03	10.5 12.3 10.5 10.5	20 10		Off coast of Oregon
9	April 14	Iv	ePZ ePN F	H 12 37 A 12 40	12.9 15.1	26 20 20		Monterey County
10	April 19	Iu	ePZ eSZ eSE eSN eLE eLN eLZ F	G 22 42 G G G G G 23 01 G 00 27	51 33 34 39 31 49 31	17 21		Pasadena: Atlantic? Pasadena: 1°S, 134.5°E h = 50 km?

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m. s.	s.			
	1944							
11	April 20	Id	iPZ F	H 13 33 13 34	33.7			See list, p. 38
12	April 21	Id	iPZ	H 22 00	50.8	15 16		Blast?
13	April 21	Id	iPZ F	H 22 05 22 09	54.4			Blast?
14	April 22	Iu	eLE eLN eLZ F	G 04 06 G G 04 37	29.6 39.6 50.6	14 23 18		Pasadena: Southeast Pacific?
15	April 23	Iu	iPZ ipPZ epPE eSE eSN eSZ F	G 11 09 G 10 38 G G 18 40 G G 11 27	14 38 41 40 43 45	20 18 17 15		Pasadena: 22°S, 177.5°W h = 370 km.
16	April 25	Id	ePN iPZ iPE iSNE F	A 13 40 H A A 13 42	13.7 14.0 14.7 16.7			See list, p. 38
17	April 26	IIu	iPZ iPE iZ iN ePSZ iPSE iPPSN iPPSZ iE eZ iN eLE eLZ eLN F	G 02 08 G G G G G G G G G G G G G 04 04	08 12 18 57.5 20.8 22 14 20 57 58 02 40.1 41.4 43.6	20 10 26 20 20		Pasadena: 1°S, 135°E
18	April 27	IIu	iZ iE iPPZ iPPE iE iZ iE iZ	G 14 56 G G G G G G G G G G G	02 14 55 57 48 51 29 40	11		Pasadena: 1°S, 134.5°E h = 50 km?

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
18	April 27 (Cont'd.)	IIu	iE iZ iE eLN eLZ F	G G G G G	15 04 46 05 18 23 19 23 07 17 37			Pasadena: Felt strongly in Columbia	
19	April 27	IIu	iPZ iZ eLZ F	G G G	19 24 25.2 26 23.2 30 20 31	26		Aftershock 22°S, 179°E h = 520 km.	
20	May 3	Id	iP̄EZ eP̄N iS̄EZ eSN F	AH A AH A	04 05 49.4 49.8 58.6 59.5 04 08			See list, p. 38 Pasadena: Near Apia	
21	May 4	Iu	eLE eLZ eE eZ F	G G G G	07 23.3 24.3 38.4 38.5 08 07	20 18 17 15		Pasadena: New Hebrides	
22	May 4	IIId	iP̄N iP̄EZ iS̄Z iS̄NE F	A AH H A	20 04 33.6 34.2 37.7 39.0 20 07			See list, p. 38 Pasadena: Solomon Islands? New Britain?	
23	May 5	Id	iPZ F	H	22 07 46.1 22 09			See list, p. 38	
24	May 6	IIu	iZ iE iN iE iZ iN iE iN iZ eLN eLE eLZ iE iN F	G G G G G G G G G G G G G G	00 24 36.4 47.4 56.4 29 17.4 20.4 24.4 33 41.4 44.4 47.4 43.8 45.1 45.4 49.7 49.7 01 25		c	U.S.C.G.S.: 22.4°N, 44.8°W J.S.A.: 1.5°S, 152.0°E Aftershock of May 19, 00 hr.	
25	May 7	Ir	eLZ eLE F	G G	15 24.5 25.2 15 40	11		Pasadena: Aleutian Islands?	

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No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
26	May 9	Iu	iNE eLE eLN eE eZ F	G 14 G G G G 15	47 53.5 59.2 59.4 05.3 20	15 32 24 29 19	d	Pasadena: Felt strongly in Colombia	
27	May 14	Iu	iPZ ipPZ eSN eSE iZ iNE F	G 09 G G G G G 09	02 58.0 05 02.0 12 12.5 24.5 13 26.5 17 09 21		d	Pasadena: 22°S, 179°E h = 610 km. J.S.A.: 1.5°S, 151.0°E Wellington: 3.5°S, 155.5°E	
28	May 14	Iu	iPEZ iPN eNZ eNZ eE eLE eLN eZ F	G 11 G G G G G G G G 11	05 42.5 43.5 06 28.5 14 51.5 54.5 24.6 24.8 38 37.5 56	17 19 17	d	Pasadena: Near Apia See list, p. 38	
29	May 15	Iu	iPZ iE iSNZ iE eLZ eLE F	G 19 G G G G G 21	31 35.7 41 38.7 42 26.7 48 27.7 59.1 59.4 05	24 30	c	Pasadena: Solomon Islands? New Britain? J.S.A.: 21.5°S, 179°E h = 600 km.	
30	May 16	Id	iPZ iPN ePE iZ iE iN eSN eSE F	H 00 A A H A A A A A 00	43 55.9 58.1 59.0 44 00.5 01.4 02.5 10.0 11.0 47			See list, p. 38	
31	May 18	Iu	ePE iPZ iE iZ iPPN iSE iSN iSZ iE	G 04 G G G G G G G G G 18	56 08.5 09.5 59 30.5 53.5 05 00 27.5 06 36.5 38.5 40.5 30.1		c	J.S.A.: 1.5°S, 151.0°E Foreshock of May 19, 00 hr.	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944						s.		
31	May 18 (Cont'd.)	Iu	iN	G	05	19	43.5		Pasadena: Southeast Pacific?
			iE	G	21	54.5			
			iN	G	22	05.5			
			eZ	G		55.5			
			iN	G	23	24.5	19		
			eLE	G	23	2	28		
			eLZ	G	24	09.5	26		
			eLN	G		40.5	18		
			F		06	37			
32	May 19	IIu	iPZ	G	00	32	10.0		J.S.A.: 1.5°S, 151.0°E Wellington: 3.5°S, 155.5°E
			iPE	G			10.5		
			iE	G	33	04.5			
			iZ	G	37	24.5			
			iSZ	G	42	23.0	15		
			iE!	G		37.5	15		
			eLNE	G	59	00.5	28		
			eLZ	G		15.5	28		
			F		03	33			
33	May 21	Id	iPZ	H	23	37	31.1		See list, p. 38
			iZ	H			41.1		
			F		23	38			
34	May 23	Ir	eZ	G	10	56.1	19	Pasadena: Eastern Aleutians?	
			eE	G		56.2	18		
			eN	G		56.3	11		
			F		11	17			
35	May 25	Iu	ePE	A	01	17	43.0		U.S.C.G.S.: 21.5°S, 179°W h = 600 km.
			ePN	A			43.7		
			iPZ	H			43.9		
			epPE	A	21	25	57.7		
			epPZ	H			58.2		
			eSNEZ	AH		27			
			F		01	50			
36	May 25	Id	iPZ	H	10	05	43.4		Pasadena: Solomon Islands?
			ePE	A			45.4		
			iSNE	A	00	22	46.8		
			F		10	07			
37	May 25	Iu	ePZ	H	13	11	01		U.S.C.G.S.: 3°S, 152°E
			ePN	A			05		
			ePE	A			06		
			eSE	A	21	25			
			eSN	A	05		28.5		
			eSZ	H			35		
			eLE	A			37.8		
			F		14	50			

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No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
38	May 29	Tu	iNZ iE iN eE eZ iN F	G 02 59 05 G 08 G 03 07 41 G 08 G 16 14 G 30 04 02		19 09	d	Pasadena: Southeast Pacific?	
39	May 29	Id	iPZ F	H 20 22 53.5 20 23				Aftershock Magnitude 3.6	
40	May 29	Id	iPZ F	H 22 16 41.2 22 18					
41	May 31	Id	iPZ ePNE iSNE F	H 23 40 52.6 A 52.8 A 53.6 23 41				Aftershock	
42	June 2	Id	iPNEZ iSNE F	AH 02 19 11.7 A 12.6 02 20				Aftershock	
43	June 3	Tu	iPZ iSZ iSE iSN F	G 04 21 47 G 31 02 G 21 10 G 12 04 39			c	Pasadena: Region of Guam. Depth about 400 km.	
44	June 3	Id	iPZ F	H 22 40 34.2 22 41					
45	June 4	Id	iPZ ePNE iSNE F	H 21 25 21.8 A 22.1 A 22.9 21 26					
46	June 6	Id	iPZ iSZ F	H 00 20 59.1 H 21 02.9 00 22					
47	June 6	Tu	iPE iPZ iLE iLZ iLN F	G 03 57 11 G 11.5 G 04 24.8 G 25.5 G 27.2 05 11		20 11 32 31 23	d	Pasadena: Solomon Islands?	
56	June 10	Tu	iPZ ePNE iSNE F	H 23 14 31.9 A 55.1 A 56.1 23 15				See list, p. 18	
57	June 10	Tu	iPZ ePNE iSNE F	H 23 14 31.9 A 55.1 A 56.1 23 15					

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No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
48	June 7	Iv	iPZ ePN ePE eSN eSE F	H 12 36	04.1 06.9 09.1 23.0 24.0			See list, p. 38	
49	June 7	Iv	iPZ ePN ePE eSN eSE F	H 12 38	51.4 54.2 56.5 39 10.9 11.4			Aftershock Magnitude 3.6	
50	June 7	Iv	iPZ iZ F	H 12 49	53.9 50 25.3 12 52			Aftershock	
51	June 8	Iv	iPZ F	H 08 56	50.0 08 57.5			Aftershock $33^{\circ}58'N, 116^{\circ}45'W$	
52	June 8	Id	ePZ iSZ F	H 21 46	08.8 09.8 21 46.4			Aftershock $33^{\circ}58'N, 116^{\circ}45'W$	
53	June 8	Id	iPZ iSZ F	H 21 46	31.3 33.8 21 47				
54	June 9	Id	iPNEZ iSNE F	AH 20 17	40.1 41.2 20 18				
55	June 9	IIu	iPZ iE iZ iE eN iE iZ eLE eLZ eLN F	G 20 47	19.5 58 36 21 00 24 28 30 05 35.5 36 17.0 17.2 17.3 22 27		d		
56	June 10	Iv	iPZ ePN F	H 07 01	52.5 58.2 07 02			See list, p. 38	
57	June 10	Id	iPZ ePNE eSNE F	H 23 14	54.9 55.1 56.1 23 15				

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No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
58	June 11	Id	iPZ ePN ePE	H 16 18 A 18 04 A	05.3 07.3 09.8			See list, p. 38	
67	June 15	Id	eSE F	A 19 21 A 16 21	16.6 19.1			See list, p. 38	
59	June 11	Iu	iPN iSN	G 19 27 G 34	50 59.5			Pasadena: East of Galapagos Islands	
58	June 16	Id	iSE iSZ eLE eLZ	G 00 35 G 00 10 G 00 43 G 00 43	02.5 10.0 43.1 43.6		22 23		
69	June 16	Id	eLN F	G 00 20 G 00 20	43.8 47.8		22		
60	June 11	Id	iPZ F	H 19 51 H 19 53	55.3 59.1			U.S.G.S.: 19°N, 105°W	
61	June 12	Iv	iPZ iPZ iSN F	H 10 47 G 47 G 49 A 10 56	01.2 1.5 25.5 12.1		c	Pasadena: 33°58'N, 116°45'W	
62	June 12	IIv	iPZ ePE ePN iPN iPEZ	H 11 18 A 04 A 05 G 23 12 G 23 12	02.7 19.0 21.1 22.5 26.5		c	Pasadena: 33°58'N, 116°45'W	
71	June 18	Ir	iSN iSN iSEZ eSE eN	A 22 19 G 19 25 G 21 28 A 22 30 A 00 59	22.1 25 28.5 34.7 59.5	17 26 12		Pasadena: Mexico	
72	June 19	Iv	eE F	A 00 11 H 11 37	01.0 13.5			Pasadena: 33°52'N, 118°13'W	
63	June 13	Iv	iPZ iZ iNEZ eN iZ iNE F	H 08 28 G 29 G 28 A 06 G 30 G 07 G 08 38	26.4 14.5 28.5 33.2 00.5 04.5 28.5		c	Pasadena: 34°40'N, 120°30'W	
64	June 13	Iv	ePZ iPZ F	H 11 08 H 00 11 H 11 11	19.9 29.4 11.1	10 08 08		Pasadena: 34°30'N, 120°30'W	
73	June 18	Iv	iPZ	H 03 07	24.5			Afterstock	
65	June 14	Id	iPZ iSNE F eL F	H 20 57 A 20 58 A 20 58 H 03 12	37.1 38.3 33.3 33.0				

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No.	Date	Char-acter	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
66	June 15	I	iPZ F	H 18 01 44.8 18 04			
67	June 15	Id	iPNEZ eE eN F	AH 22 05 40.0 A 49.1 A 52.9 22 08			See list, p. 38
68	June 16	Id	ePNEZ eSNE F	AH 00 04 05 A 06 00 06			U.S.C.G.S.: 21.5°N, 109.8°W h = 50 km.
69	June 16	Id	iPZ iSZ F	H 00 41 54.0 H 57.8 00 42			
70	June 16	Ir	iPEZ iPNE ePN iN iE eSE eSN iSNE eLNE eN F	AH 21 56 49.1 G 49.5 A 51.1 G 58 49.5 G 50.5 A 22 01 12.1 A 18.6 G 19.5 A 04.5 A 05.6 23 42		d	U.S.C.G.S.: 19°N, 105°W
71	June 18	Ir	eE eN eZ F	G 22 19.3 G 19.4 G 21.7 22 30	17 26 12		Pasadena: Mexico See list, p. 38
72	June 19	Iv	ePN ePZ ePE eN eZ eE iE iZ iN iE iN iZ F	A 00 05 10.5 H 13.5 A 17.0 A 49.1 G 07 51.5 G 54.5 G 06 33.5 G 49.5 G 07 05.5 G 28.5 G 36.5 G 46.5 00 14			Pasadena: 33°52'N, 118°13'W Near Hollister Near Hollister
73	June 19	Iv	ePZ ePN ePE eN eZ F	H 03 07 24.5 A 44.0 A 55.0 A 08 23.3 H 33.0 03 12			Aftershock

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No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
74	June 19	Id	ePN ePZ eSNE F	A H A 22 02	22 01 52.9 53.4 54.8			Pasadena: Central America?	
75	June 21	Id	iPNEZ iSNZ eE F	AH AH A 04 52	04 51 34.9 39.0 42.6			See list, p. 38	
76	June 21	IIu	iPE iN iE iN iZ iSE iN iZ eLE eLN eLZ F	G G G G G G G G G G G 13 52	11 11 09 16.5 43 12 00 01 21 38 45 53 34.5 34.8 38.2			U.S.C.G.S.: 21.5°S, 169.8°E h = 50 km. Pasadena: Roughly 35°N, 30°E	
77	June 21	Id	iPZ F	H 18 34 18 35	11.6			Wellington: 21.5°S, 169.5°E h = 100-110 km.	
78	June 22	Id	iPNZ ePE eSNE F	AH A A 00 56	00 56 07.2 07.7 08.8				
79	June 22	Id	iPNEZ iSNZ eSN eSE F	AH AH A A 05 03	05 01 47.4 52.0 54.5 55.5			See list, p. 38	
80	June 24	Iv	iPZ iSZ F	H H 07 14 07 15.5	00.1 19.5			Near Hollister	
81	June 24	Iv	iPZ F	H 07 22 07 23.5	37.3			U.S.C.G.S.: 1°S, 25°W Near Hollister	
82	June 24	Id	iPZ ePN eSNE F	H A A 22 55	22 54 55.9 56.2 57.0				

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No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
87	June 25	Id	iPZ iZ iZ F	H 18 34 H H 36 18 38	48.3 52.3 33.3			Probably a blast
88	June 25	Iv	iPZ F	H 19 29 19 31	21.3			
89	June 26	Id	iPZ F	H 16 22 16 22.5	19.4			See list, p. 38
90	June 28	Ir	iPZ iE iZ iN iE eLN eLE eLZ F	G 05 38 G 40 G 41 G 44 G 46 G 48.0 G 48.9 G 50.8 06 25	44.5 07.5 42.5 23.5 11.5		d	Foreshock
91	June 28	IIIr	iPNEZ iPN iZ iN eNE iZ iZ iN iZ iN iNZ eLNE iZ eZ F	GAH 08 05 G G G A H G G G G G A G G 12 22	46.3 47.5 52.5 09.5 11.2 20.7 49.5 53.5 13.5 18.0 07.5 16.3 51.5 19.1		9 10	c U.S.C.G.S.: 14.6°N, 92.6°W
92	June 30	Id	iPZ F	H 21 28 21 30.5	47.2			See list, p. 38

Mt. Hamilton

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks	
MOUNT HAMILTON						
THE LICK OBSERVATORY STATION, UNIVERSITY OF CALIFORNIA						
MOUNT HAMILTON, CALIFORNIA						
1	April 2	Id	1000 P	20 59	See list, p. 38	
2	April 3	Iv	ePH 100 ePH 100 100 P	02 33 50.9 55.9 34 34.0 35.7 02 35	Pasadena: 34.5°N, 121.1°W Magnitude 4.0	
3	April 6	Id	1PNE 1PS 1N	04.6 13.1 13.5		
CONSTANTS OF THE STATION						
Latitude and longitude:						
4	April 7	Id	$\phi = 37^{\circ} 20' 14''$ N. $\lambda = 121^{\circ} 38' 16''$ W.	03.7 09.9	See list, p. 38	
Time -- All determinations are reduced to Universal Time.						
Altitude -- 1281.7 meters (4205 feet) above mean sea level.						
6	April 10	Id	ePNE P	05 18 15.1 05 39		
CONSTANTS OF THE SEISMOGRAPHS						
7	Apparatus		Component	V	T ₀	ϵ
	Wood-Anderson		E	3000	1	15
			N	3000	1	15
8	April 14	Iv	ePNE 100 P	12 37 03.6 10.2 12 38	Santerey County	
9	April 14	Id	1PNE ePNE P	00 31 50.4 32 02.1 00 33		
10	April 16	Id	1PNE ePNE P	07 34 19.8 21.9 07 35		
11	April 20	Id	ePH ePS 100 100 P	02 04 03.6 04.0 16.9 17.6 02 05		

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
1	April 2	Id	ePNE iSNE F	20	58	49.3 54.8	See list, p. 38
				20	59		
2	April 3	Iv	ePN ePE ePN iSN iSE F	02	33	50.9 55.4 55.9 34.0 35.7	Pasadena: 34.5°N, 121.4°W Magnitude 4.0
	April 28	Id	F	02	35		
3	April 6	Id	iPNE iPE iNE iN F	04	12	04.6 11.1 12.7 13.5	
	May 3	Id	F	04	13		See list, p. 38
4	April 7	Id	ePN iSNE F	03	48	03.7 09.9	See list, p. 38
	May 4	Id	F	03	48		See list, p. 38
5	April 7	Id	iPNE iSNE F	00	11	19.7 21.7	
	May 5	Id	F	00	12		See list, p. 38
6	April 10	Id	ePNE iSNE F	05	38	45.1 46.6	See list, p. 38
				05	39		
7	April 13	Iv	ePN ePE eSE eSN F	13	52	34.5 40.7 28.2 32.1	Off the Coast of Oregon
	May 14	Id	F	14	00		Apia: 15.6°S, 175.1°W
8	April 14	Iv	ePNE iSE F	12	37	03.6 18.2	Monterey County
				12	38		
9	April 14	Id	iPNE eSNE F	00	31	50.4 02.1	
	May 15	Id	F	00	33		See list, p. 38
10	April 16	Id	iPNE eSNE F	07	34	19.8 21.9	
	May 21	Id	F	07	35		See list, p. 38
11	April 20	Id	ePN ePE iSE iSN F	02	04	03.6 04.0 16.9 17.6	
				02	05		

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Remarks
				h.	m. s.	
	1944					
12	April 20	Id	ePN ePE F	13 33 13 35	43.5 44.6	See list, p. 38
13	April 25	Id	ePNE eSE eSN F	13 40 13 42	22.0 31.5 33.0	See list, p. 38
14	April 28	Id	iPN iPE iSN iSE F	15 18 15 19	04.5 05.9 07.8 09.4	
15	May 3	Id	iPN F	04 05 04 07	39.0	See list, p. 38
16	May 4	Id	iPN iSN F	20 04 20 07	35.7 42.5	See list, p. 38 Aftershock Magnitude 3.6
17	May 5	Id	ePN F	22 07 22 09	53.5	See list, p. 38
18	May 12	Id	ePN ePE eSNE iSNE iE F	20 29 20 30 20 31 20 32	45.0 45.5 56.2 57.1 58.5	See list, p. 38 Aftershock
19	May 14	Iu	ePNE F	11 04 11 06	41.4	Apia: 15.6°S, 175.1°W Paradenas: 37°32'N, 118°40'W
20	May 15	Id	iPNE iSE iSN F	00 34 00 35	41.8 50.2 51.6	Foreshock
21	May 16	IIId	iPN iSNE iE F	00 43 00 46	45.8 54.8 59.2	See list, p. 38 Paradenas: 37°32'N, 118°40'W
22	May 21	Id	ePN eSE iSN F	23 37 23 38	27.0 33.4 34.0	See list, p. 38

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
23	May 23	Id	iPNE iSNE F	06 18	15.6 17.3		
24	June 3	Id	ePN	23 04	06.0	See list, p. 38	
	June 10	Id	eSE eSN F	07 01	10.3 11.5	See list, p. 38	
25	June 6	Id	ePN	02 23	43.6		
	June 10	Iv	ePE iSNE F	11 13	44.1 45.2	Pasadena: 33°50'N, 116°45'W	
26	June 7	IIId	iPNE iSNE iNE F	12 35	53.9 05.3 13.9	See list, p. 38	
	June 11	Id		12 36		See list, p. 38	
27	June 7	Id	iPN ePE iSNE iNE iN F	12 38	41.4 42.0 52.9 57.4 00.1	Aftershock Magnitude 3.6	
	June 12	Iv		12 39			
28	June 7	Id	ePNE iSNE iN F	12 49	51.9 03.0 09.5	Aftershock	
				12 50			
29	June 8	Iv	ePE ePN iE iN iSN iSE F	01 12	35.2 36.8 05.9 06.7 12.2 13.0	Pasadena: 37°32'N, 118°40'W	
	June 13	Iv		08 28		Pasadena: 34°40'N, 120°30'W	
30	June 8	Iv	ePN ePE iSN iSE F	01 32	54.1 54.5 27.8 29.1	Pasadena: 37°32'N, 118°40'W	
				01 33			
31	June 8	Id	ePN ePE iSNE iN iE F	08 55	38.4 39.6 49.6 50.0 50.4	Aftershock	
				08 57			

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
53	June 24	Id	iPNE iSN iSE F	07	22	25.2 33.5 33.8	Near Hollister
				07	28		
54	June 25	Id	ePN iSN F	16	39	22.4 24.5	
				16	40		
55	June 26	Id	ePN iSN iN F	16	22	09.8 10.4 18.7	See list, p. 38
				16	23		
56	June 28	Ir	ePNE eLINE F	08	05	43.4 15 18.5	U.S.C.G.S.: 14.6°N, 92.6°W
				09	42		
57	June 30	Id	ePN iN F	21	28	44.3 49.0	See list, p. 38
				21	30		

Latitude and Longitude — All determinations are reduced to Universal Time.
 Altitude — 81 meters (272 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	τ_0	ϵ
Wood-Anderson	E	300	1	15
	N	300	1	15

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
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PALO ALTO

THE BRANNER STATION, STANFORD UNIVERSITY
PALO ALTO, CALIFORNIA

1	April 2	IV	1P	00 58 51.1	See list, p. 38
			1S	59 02.3	
			1H	01.7	
			F	21 00	
2	April 3	IV	1P	02 33 50.9	Paradise: 34.5°N, 121.4°W Magnitude 4.0
			1S	56.3	
			1H	58.6	
			1M	59.2	
			1S	59.4	
			F	02 37	

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\phi = 37^{\circ} 25' 11'' \text{ N.}$$

$$\lambda = 122^{\circ} 10' 18'' \text{ W.}$$

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

7	April 15	IV	1PNE	00 31 55.1	
			1SE	32 09.5	
			1SN	12.3	
			F	00 33	
8	April 19	IV	1PNE	15 17 09.7	
			1SE	13.2	
			1SN	13.7	
			F	15 18	
9	April 20	IV	1PNE	02 04 06.6	
			1SE	21.4	
			1SN	29.8	
			F	02 05	

PALO AITO

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
1	April 2	Id	ePNE eSN eSE iE iN F	20	58	51.4 55.0 56.0 01.3 01.7	See list, p. 38
2	April 3	Iv	ePN iE iN eSE iSN F	02	33	50.9 59.8 02.6 32.1 35.4	Pasadena: 34.5°N, 121.4°W Magnitude 4.0
3	April 7	Id	iPNE iSNE iE iN F	03	47	59.2 01.4 15.6 19.1	See list, p. 38
4	April 13	Iv	ePNE eSN iSN iE iN eLNE F	13	52	25.6 22.6 30.5 56.3 02.2 55.0	Off Coast of Oregon U.S.G.S.: 1°8, 131°E h = 50 km. ca.
5	April 14	Iv	ePN ePE iSNE iN F	00	05	51.9 52.7 08.8 11.1	
6	April 14	Iv	ePN iPE iSN F	12	37	07.7 08.6 22.2	Monterey County See list, p. 38
7	April 15	Iv	iPNE iSE iSN F	00	31	56.1 09.5 12.3	
8	April 19	IIId	iPNE iSE iSN F	15	17	09.7 13.2 13.7	
9	April 20	Iv	ePNE iSE iSN F	02	04	06.6 24.4 29.8	

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
10	April 20	Id	ePE ePN F	13	33	34.2 36.5	See list, p. 38
11	April 21	IIId	iPN iPE iSNE F	22	39	36.0 36.5 37.8	
12	April 24	Id	iPNE iNE iSN F	22	00	01.9 03.3 04.1	See list, p. 38
13	April 25	Id	ePN ePE iN iSN iSE F	13	40	17.9 18.9 19.6 23.1 23.6	See list, p. 38
14	April 27	Id	ePNE iSNE F	15	18	06.3 10.8	
15	April 27	Iu	eLE F	15	28.3		U.S.C.G.S.: 1°S, 131°E h = 50 km. ca.
16	April 29	IIId	iPNE iSNE F	20	34	57.2 00.5	See list, p. 38
17	May 2	Id	ePNE iNE iSN F	22	32	41.0 42.4 43.2	
18	May 3	Id	iPN iPE iE eSN eSE F	04	05	44.3 44.7 47.3 47.9 50.2	See list, p. 38
19	May 3	Id	ePNE iNE iSN iSE F	22	10	31.6 32.7 33.7 34.5	See list, p. 38

PALO AJITO

No.	Date	Char-acter	Phase	Time (U.T.)		Remarks
				h.	m. s.	
	1944					
20	May 4	IId	iPNE iPE iSN iSE F	20 04	32.7 35.2 36.4 38.0	See list, p. 38
21	May 4	Id	iPNE iSNE F	21 22	20.1 21.2	
22	May 5	Id	iE iN F	22 07	45.0 45.7	See list, p. 38
23	May 12	Iv	ePN ePE iSNE F	20 29	50.0 50.7 30 04.7	See list, p. 38
24	May 13	Id	iPNE iE iN iSNE F	16 46	27.2 28.2 28.6 29.3	
25	May 16	Iv	ePNE iSN iSE F	00 34	49.0 35 03.0 04.0	Foreshock
26	May 16	IIv	iPNE iN iE iE iSN iSE F	00 43	52.9 57.0 58.0 44 04.7 18 06.6 07.9	See list, p. 38
27	May 18	IId	iPNE iSN iSE F	17 46	32.8 34.8 35.6	
28	May 20	Id	ePNE iSNE F	16 06	54.0 57.4	
29	May 21	IId	iPNE iSNE F	23 37	22.0 25.5	See list, p. 38

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
30	May 22	Id	ePE ePN iSE iSN F	18 56 09.8 10.8 12.3 13.6 18 57	Aftershock
31	May 23	Id	iPNE iN iE iSN iSE F	15 38 49.0 50.1 50.5 51.3 51.8 15 39	See list, p. 38
32	May 25	Iu	iPN iPE iE iN iN iE iE iSNE iNE eLN eLE F	01 17 43.6 44.7 18 36.8 47.9 19 44.9 58.9 20 51.0 26 59.6 27 02.6 30 49.4 53.4 01 33	U.S.C.G.S.: 21.5°S, 179°W h = 600 km.
33	May 25	Iu	eSN eSE iN eE eLNE eLE F	13 21 26.5 27.5 59.1 27.3 34.3 37 35.0 14 37	U.S.C.G.S.: 3°S, 152°E
34	May 25	Id	iPNE iSNE F	18 19 49.2 51.2 18 20	
35	May 29	Id	eN F	20 22 58.4 20 23	See list, p. 38
36	June 2	Id	ePNE iNE iSNE F	18 18 09.0 10.6 11.3 18 19	Coordinates: 33°58'N, 116°40'W
37	June 3	Id	ePNE iSNE iE iN F	23 04 00.1 02.9 06.9 07.6 23 05	See list, p. 38

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
38	June 5	Id	iPNE iSN iSE F	16	08	11.5 12.1 13.4	See list, p. 38
39	June 7	IIv	iPN iPE iE iSNE F	12	35	58.7 59.2 36 02.5 14.0	See list, p. 38 $33^{\circ}58'N, 116^{\circ}45'W$
40	June 7	IIv	iPNE iSNE F	12	38	47.0 39 02.4	Aftershock Magnitude 3.6
41	June 7	Iv	ePNE iSE iSN F	12	49	57.2 50 11.2 12.8	Aftershock $33^{\circ}58'N, 116^{\circ}45'W$
42	June 8	Iv	eN eE F	01	12	42.5 48.5	Pasadena: $37^{\circ}32'N, 118^{\circ}40'W$
43	June 8	Iv	ePNE iSE iSN F	08	56	43.3 59.3 57 01.1	Aftershock
52	June 13	Iv	F	08	58	21.2 21.8	Pasadena: $34^{\circ}40'N, 120^{\circ}30'W$
44	June 8	Id	iPNE iE iSN iSE F	18	55	38.4 39.7 40.6 41.5	
45	June 9	Iv	eN eE F	10	22	40.0 41.0	Pasadena: $34^{\circ}40'N, 120^{\circ}30'W$
46	June 10	Iv	ePE ePN iSNE F	07	01	46.0 46.5 57.2	See list, p. 38
54	June 13	Iv	F	07	03	26.8 26.8	Pasadena: $34^{\circ}30'N, 120^{\circ}30'W$
47	June 10	Iv	ePN ePE eSE eSN F	11	13	44 46 14 54 56	Pasadena: $33^{\circ}58'N, 116^{\circ}48'W$
48	June 10	Id	ePNE iSNE F	22	05	23.9 27.3	
				22	06		

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
49	June 11	Iv	ePNE iNE iSNE F	16 18 00.4 01.7 13.1 16 19 30.0	See list, p. 38
50	June 12	Iv	ePE ePN eSE eSN eE iN iN iE F	10 46 59.1 47 02.1 48 09.0 09.5 35.5 32 07 35.8 59.2 49 02.7 10 51	Pasadena: 33°58'N, 116°45'W Pasadena: Region of Japan
51	June 12	IIv	ePE ePN iE iN iE iSN iSE iN iE iNE F	11 18 00.0 05.0 57 22.1 22 01 23.5 03 29.8 19 11.9 13.8 22 24 31.3 37.3 16 20 00.2 11 25 00.1	Pasadena: 33°58'N, 116°45'W
52	June 13	Iv	ePE iPN iN iE iSNE iN iE F	08 28 21.2 21.8 18 59 32.0 32.6 54.4 29 20.8 21.8 08 32	Pasadena: 34°40'N, 120°30'W
53	June 13	Iv	ePNE eN iE iE F	08 50 40 51 19.5 20.0 33.6 08 52	Pasadena: 34°40'N, 120°30'W
54	June 13	Iv	ePNE iE iN iE iSN iSE iN iE F	11 08 15.2 26.8 28.2 03 07 51.7 09 03.1 05.7 10.5 18.9 11 11	Pasadena: 34°30'N, 120°30'W Aftershock

PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
55	June 15	Id	ePN ePE eN	22 05 42.0 04 52 45.5 55.5	See list, p. 38
63	June 21	Id	eE iSE eSN iN eE iN eE	11 11 58.0 06 06.0 21 08.5 31.8 32.0 46.6 51.5	U.S.C.G.S.: 21.5°N, 159.8°E
54	June 22	Id	F	22 07 52.7	See list, p. 38
56	June 16	Iu	ePNE F	04 28 56.6 04 30	Pasadena: Region of Japan
57	June 16	Ir	ePE iPN iE iSNE eN eLE	21 56 47.9 48.9 57 22.2 22 01 17.6 02 25.4 04 26	U.S.C.G.S.: 19°N, 105°W
66	June 24	Iv	eLN F	22 24 33.5 41.6	Near Hollister
58	June 17	Id	iPNE iNE iSNE F	16 25 00.5 02.1 03.1 16 26	
67	June 26	Id	ePN ePE eN	18 59 17.6 18.1 18.6	See list, p. 38
59	June 17	IIId	iPNE iE iN iSN iSE F	18 59 17.6 18.1 18.6 20.8 21.4 19 00	
60	June 19	Iv	ePE ePN iSE iN iN iN iE F	00 04 54.0 55.5 05 33.9 49.7 55.1 06 05.7 22.6 00 10	Pasadena: 33°52'N, 118°13'W U.S.C.G.S.: 34.6°N, 92.6°W
61	June 19	Iv	ePNE iE iN	03 07 19.0 08 19.5 27.9	Aftershock
70	June 30	IIId	iE iN F	21 28 45.6 46.1 03 11	See list, p. 38

PALO ALTO

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
62	June 21	Id	ePNE F	04 51 40.5 04 52	See list, p. 38
63	June 21	Iu	ePE iPN iSE eLE eLN F	11 11 13.1 17.4 21 33.3 39.4 41.4 12 19	U.S.C.G.S.: 21.5°S, 169.8°E
64	June 22	Id	ePNE iNE iNE F	05 01 52.7 02 03.5 06.9 05 03	See list, p. 38
65	June 24	Id	ePNE iN eE iNE F	07 13 52.5 14 02.6 03.0 32.2 07 15	Near Hollister
66	June 24	Iv	ePNE iE iNE iSN iSE F	07 22 31.5 41.6 43.6 44.1 45.1 07 23	Near Hollister
67	June 26	Id	ePN ePE iSNE F	16 22 18.0 19.0 21.0 16 23	See list, p. 38
68	June 27	Id	iPNE iSNE F	18 41 46.0 47.3 18 42	
69	June 28	Ir	ePE ePN iN eSN eSE eLN eLE eN eE F	08 05 45.5 46.5 07 29.5 11 14.0 18.0 15 04.5 28.0 21 18.0 55.0 08 53	U.S.C.G.S.: 14.6°N, 92.6°W
70	June 30	IIId	iPNE iSNE F	21 28 38.8 42.7 21 30	See list, p. 38

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
1	April 5	Id		20 35 ca	S-P = 2.5 sec.
2	April 25	Id		13 43 ca	See list, p. 38 S-P = 3.7 sec.
3	April 27	Id		07 35 ca	S-P = 1.7 sec.
4	May 4	Id		20 04 35 ca	See list, p. 38 S-P = 5.7 sec.
5	May 16	Iv		00 43 57 ca	S-P = 17 sec. ca.
6	May 25	Iu	ePNE eN	01 17 43.5 20 57.5	U.S.C.G.S.: 21.5°S, 179°W h = 600 km.
14	June 15	Id	eE eSN eSE eNE eN F	22 21 01.5 26 59 27 01 28 03 31 49 01 32	See list, p. 38
7	May 25	Iu	eSE eSN eLNE F	13 21 26.5 27.5 22 37.9 14 28.5	U.S.C.G.S.: 3°S, 152°E
8	June 7	Iv	ePN ePE iSNE F	12 36 05.0 22 20 05.5 25.2 12 38	See list, p. 38
9	June 7	Iv	eNE iPE iSE eSN iE iN F	12 38 53.5 04 56.1 39 13.3 05 01 13.7 21.1 24.4 12 40	Aftershock Magnitude 3.6
10	June 12	Iv	ePE eN eSE eSN F	10 47 07 05 03 31 50.2 07 33 51.2 10 50	Pasadena: 33°58'N, 116°45'W Near Hollister
11	June 12	Iv	ePE ePN iNE iE iN F	11 18 19.4 07 15 20.9 30.1 19 49.6 53.9 11 23	Pasadena: 33°58'N, 116°45'W

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time	Remarks
				(U.T.)	
	1944			h. m. s.	
12	June 13	Iv	ePN ePE iE iN iNE eE iN F	08 28 35.5 37.0 44.4 46.0 49.6 29 21.5 22.3 08 31	Pasadena: 34°40'N, 120°30'W
13	June 14	IIId	iPNE iSNE iNE F	16 49 29.2 31.6 32.9 16 50	
14	June 15	Id	iPNE iNE iN iNE F	22 05 37.2 42.1 56.4 58.3 22 07	See list, p. 38
15	June 16	Ir	ePNE eN iE eSE eSN eLE eLN F	21 56 52.5 57 00.8 07.9 22 01 26 28 04 24 40 22 20	U.S.C.G.S.: 19°N, 105°W
16	June 21	IIId	iPNE iSNE iN F	04 51 33.1 35.4 39.2 04 52.5	See list, p. 38
17	June 22	Id	iPE iE iE iE iE iE F	05 01 43.4 44.8 47.6 02 00.4 19.1 33.8 05 03.5	See list, p. 38
18	June 24	Iv	ePE ePN iSE iSN F	07 13 56.5 57.5 14 04.8 06.0 07 15.0	Near Hollister

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
19	June 28	Ir	ePE	08 05 32.3	U.S.C.G.S.: 14.6°N, 92.6°W
			ePN	34.3	
			eNE	46.8	
			eSNE	11 08.3	
			eLN	13 48.3	
			eLE	52.3	
			F	08 33	

CONSTANTS

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Latitude and Longitude

$$\phi = 40^{\circ} 36' N.$$

$$\lambda = 122^{\circ} 16' W.$$

Time — All determinations are reduced to Universal Time.

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

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	τ	T_0	C
Bosch-Centri 25 kg.	2	12	12	5
	8	12	8	6

The station is operated by Mr. Joseph Snyden, of Fermale, in cooperation with the University of California.

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.)			Remarks
				h.	m.	s.	
	1944						
1	April 13	Id	ePNE iSNE iNE F	13	51	46 59 17 08	Off Coast of Oregon
2	April 14	Id	iPNE iSN ISE F	00	22	12 14 16 23	
3	April 27	I	eE eN eNE eE eN F	15	04	50 35 04 27 34 21	
4	May 18	Id	eE eN eE F	00	42	36 41 03 47	
5	May 20	Id	eE eE eN F	21	41	05 09 10 42	
6	May 25	Iu	ePNE eSE eSN F	01	17	45 03 06 52	U.S.C.G.S.: 21.5°S, 170°W h = 600 km.
7	May 25	Iu	ePN ePE eSE eSN eE eLNE eLNE eN F	13	11	02 06 23 30 17 36.8 41.5 07 47	U.S.C.G.S.: 3°S, 152°E
8	June 16	Ir	eSE eSN eLNE eN F	22	02	05 16 01 14 56	U.S.C.G.S.: 19°N, 105°W
9	June 28	Ir	ePNE eSN eSE eLE F	08	06	04 30 40 41 56	U.S.C.G.S.: 14.6°N, 92.6°W

No.	Date	Observer	Name	Address	Remarks
	1904		FRESNO		
1	May 12		THE FRESNO STATION, FRESNO STATE COLLEGE FRESNO, CALIFORNIA		
2	May 14	D.		11 05 41 W. 36 46 N.	119° 47' W. 36° 46' N.

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\begin{aligned} \phi &= 36^{\circ} 46' 11 \text{ N.} \\ \lambda &= 119^{\circ} 47' 18 \text{ W.} \end{aligned}$$

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

No.	Date	Char- acter	Phase	Time (U.T.)	Remarks
	1944			h. m. s.	
1	May 12	Id	iSN F	20 30 07.4 20 31	See list, p. 38
2	May 14	Iu	ePN	11 05 48 ca	Apia: 15.6°S, 175.1°W

Bulletin of the Seismographic Stations

Volume 14, No. 3, pp. 78-138



EARTHQUAKES IN NORTHERN CALIFORNIA
AND
THE REGISTRATION OF EARTHQUAKES
AT
BERKELEY—MOUNT HAMILTON—PALO ALTO
SAN FRANCISCO—FERNDALE—FRESNO—MINERAL

From July 1, 1944, to September 30, 1944

BY
CHARLES HERRICK
AND
CAROLYN H. PENDERY

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1950

UNIVERSITY OF CALIFORNIA PRESS
BULLETIN OF THE SEISMOGRAPHIC STATIONS

CALIFORNIA

CATHERINE UNIVERSITY PRESS
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LONDON, ENGLAND

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EARTHQUAKES IN NORTHERN CALIFORNIA

1944 - Pacific Standard Time

<u>No.</u>	<u>Date</u>	<u>Origin Time</u>	<u>Richter Magnitude</u>	<u>Latitude North</u>	<u>Longitude West</u>	<u>Quality</u>
1	July 8	18-47-50	4.2	40°8	124°8	d
2	12	07-24-30	4.7	40°4	126°6	d
3	13	17-22-25	2.3	38°5	122°3	d
4	13	17-34-57	3.0	36°8	121°2	d
5	14	22-14-13	2.6	37° 04'	121° 34'	c
6	17	13-46-15	3.4	37° 02'	121° 32'	b
IV at San Martin.						
7	22	18-26-27	2.7	37° 05'	121° 30'	b
Depth about 5 km.						
8	29	03-37-15	4.5	40°3	125°8	d
9	Aug. 1	10-48-03	3.0	37° 10'	122° 10'	b
10	7	16-37-39	2.7	38° 33'	122° 02'	c
11	26	10-34-49	3.1	37° 26'	121° 44'	b
II at Santa Clara.						
12	29	10-52-10	3.3	40°3	121°3	d
II at Chester.						
13	29	22-32-28	3.6	40°3	121°3	d
Aftershock.						
14	Sept. 1	14-56-53	2.4	37°2	122°2	d
15	16	09-35-25	2.5	37° 25'	121° 39'	b
16	18	15-03-28	2.5	37° 11'	122° 13'	c
17	20	20-20-33	1.1	37° 51'	122° 36'	c
18	20	23-21-32	2.8	37° 44'	122° 12'	c
19	21	12-43-04	2.9	37° 56'	122° 53'	b
Probably an underwater blast.						
20	28	09-08-40	3.1	36°8	121°5	c
Depth about 10 km.						

SYMBOLS AND NOTATIONS EMPLOYED

 1. Character of the Shock THE REGISTRATION OF EARTHQUAKES

I. Perceptible. II. Moderately Strong. III. Strong

d (terrae motus domesticae)	Local shock (origin less than 100 kilometers distant),
v (terrae motus vicinae)	Near shock (origin from 100 to 1,000 kilometers distant),
r (terrae motus remotae)	Distant shock (origin from 1,000 to 5,000 kilometers distant),
u (terrae motus ultimae)	Very distant shock or teleseism (origin more than 5,000 kilometers distant).

 2. Nature of the Motion --

i (impetus)	Sudden beginning of the motion.
e (emersio)	Gradual beginning of the motion.

BERKELEY

THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and Longitude:

$$\phi = 37^{\circ} 52'13'' \text{ N.}$$

$$\lambda = 122^{\circ} 15'16'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

Altitude -- 81 meters (266 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V		T ₀	ε	r	
						T ₀	2
Bosch-Omori 100 kg. . .	E	45		12	10	0.001	
	N	45		12	10	0.001	
Wiechert 80 kg.	Z	44		4	5	0.005	
Wood-Anderson	E	3000		0.9	15		
	N	3000		0.9	15		
		K	T	T ₁	μ ²	A ₁ (cm)	l (cm)
Galitzin	E	112	12	11.8	0.00	115	11.3
	N	122	12	12.4	0.03	119	11.2
	Z	109	12	11.9	0.01	131	14.9
		V		Coupled Period		ε	
Benioff	Z			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.

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944					s.		
1	July 1	Id	iPZ iSZ F	H 18 01 H 18 03	34.5 39.3		d	
2	July 3	Iu	eNE eZ F	G 00 29 G 00 49	32 39			
3	July 3	Iv	iPZ iNE iZ iSE iSN iZ iZ F	H 05 39 A H A 40 A H H 41 05 44	29.4 35.5 45.2 21.6 23.0 27.1 20.1	c	Wellington: 30°S, 177°W Pasadena: 35°21'N, 117°52'W	
4	July 4	Id	iPZ iE iZ iN F	H 00 19 A H A 00 21	46.3 48.7 49.2 51.4			
5	July 4	Iv	eNE eNE F	G 10 05 G 10 22	33 06			
6	July 6	Id	iPZ iN iZ eE iZ F	H 18 10 A H A H 18 11	22.8 23.7 27.6 31.0 32.1		Millbrae Blast See list, p. 82	
7	July 7	Id	iPZ iSNEZ iZ F	H 00 05 AH H 00 06	29.5 30.7 32.4		Near Cro. Iowa	
8	July 9	Id	eE eN eN F	A 01 49 A A 01 52	12 18 54			
9	July 9	Id	iPEZ iSEZ iZ F	AH 01 51 AH H 01 52	10.5 11.8 14.0		U.S.G.O.S.: 34.7°N, 114.4°W	

BERKELEY

No.	Date	Char-acter	Phase	Time		Period	Trace motion	Remarks
				(U.T.)				
	1944			h.	m.	s.	s.	
10	July 10	Iu	iPZ iSNEZ eLE eLN eN F	G 13 G G G G 14	37 45 55 56 08 14	03.0 24.0 40.5 01.0 15.5 12		
11	July 10	Iu	iPZ iSZ eSN eN eZ eEZ iN eZ eE F	G 16 G G G G G G G G 16	00 10 49.6 25 26 27 32 33 33 16	21.6 48.6 49.6 43 43 01 41.1 48 03 52		Wellington: 30°S, 177°W
12	July 11	Iu?	eN eZ eE F	G 19 G G 19	23 26 29 52	09 07 41.5 52		
13	July 11	Iu?	eE	G 23	11	06		
14	July 12	Iu?	eN F	G 08 08	45 52	46 52		
15	July 12	Iu?	eE F	G 12 12	40 57	49 57		
16	July 12	Iv	iPZ iSZ iSZ F	H 15 H H 15	25 26 25.1 27	33.8 24.2 25.1 27		See list, p. 82
17	July 12	Id	iPZ eN iZ iZ eE eZ eN F	H 18 A H H A H A 18	28 26.2 29.0 32.2 41.5 43.4 44.5 30	24.2 26.2 29.0 32.2 41.5 43.4 44.5 30		Near Oro Loma
18	July 12	Iv	ePN iPE ePZ eN eN iN	H 19 G G G A A	32 34.0 35.5 41.5 33 33	32.2 34.0 35.5 41.5 16.4 33.2		U.S.C.G.S.: 44.7°N, 114.4°W See list, p. 82 Surface waves.

BERKELEY

No.	Date	Char-acter	Phase	Time	Period	Trace motion	Remarks
				(U.T.)			
				h. m. s.	s.		
	1944						
18	July 12 (Cont'd.)	Iv	iE	G 19 33	37.0		
			iZ	G	37.5		
			iN	G 34	10.0		
			iE	G	18.0		
			iSZ	G	32.0		
			eSE	G	35.0		
			eSN	G	37.5		
			eSE	A 11 24	39.5		
			eSN	A	45.5		
			iEZ	G 35	37.5		
			iN	G	38.5		
			eNZ	G 41	45.0		
			eE	G	45.5		
		Iv	F	19 52			See list, p. 82
19	July 13	Id	iPZ	H 02 13	17.6		
			iSNEZ	AH	18.7		
			F	02 14			
20	July 13	Iu	ePE	G 11 06	46.5		
			ePN	G	47.5		
			eE	G 12	03.0		
			eN	G 17	03.0		
			iE	G 18	53.5		
			eE	G 20	18.5		
			iE	G	40.5		
			iN	G	43.0		
			eZ	G	43.5		
			F	11 55			
21	July 14	Iu?	iPZ	G 00 27	05.5		
			eE	G 37	27		
			eN	G	45		
			F	01 38			
22	July 14	Id	iPZ	H 01 22	37.9	d	See list, p. 82
			iZ	H	39.8		
			iSN	A	47.0		
			iSE	A	47.9		
			eSZ	H	48.3		
			F	01 24			
23	July 14	Id	iPNZ	AH 21 39	02.3		
			iSNEZ	AH	03.3		Surface waves
			F	21 40			
24	July 14	Iv	iPZ	H 22 14	31.8		See list, p. 82
			F	22 15			Surface waves
25	July 16	Iu?	eE	G 00 24.2			Surface waves.
			F	00 37			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
26	July 16	Iu	iPE ePN eSE	G 10 32	27.0 27.5 41 45			Pasadena: Roughly 25°S, 177°W. h = 450 km.	
	July 20	IIId	eE eE F	G 20 45 G 20 46 10 57	46 46				
27	July 17	Iu	eN iZ iE eE F	G 11 24 G 27 03.0 G 29 51.5 G 37.2 12 47	45 45 45 45				
28	July 17	Iv	iPZ iZ iZ iE iE iSEZ F	H 21 46 H H A A AH 21 48	35.0 36.2 40.3 41.4 48.3 49.1			See list, p. 82	
29	July 18	IIId	iPEZ iPN iSN iSZ iZ eN iE iE iN eZ eZ eZ F	AG 05 18 G G G G G A 19 A G G G G 05 23	52.6 53.0 56.0 56.5 58.5 59.5 04.0 23.9 31.0 33.5 51.0 39.0			Port Chicago Blast	
30	July 19	IIu	ePNE ePZ eSZ eNE eNE MN F	G 10 32 G 33 05 G 42 43 A 48 A 54 G 56 21 13.5	59 59 43 43 43 21			U.S.C.G.S.: 33°N, 138°E	
31	July 19	Iu	eE eE eN F	G 17 55 G 18 16 G 18 18.2 18 37	14 45 45			Surface waves	
32	July 19	Iu	eE F	G 23 49.5 00 19	49.5 19			Surface waves	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
33	July 20	Iu	eE F	G 02	36.2 53			Surface waves
34	July 20	IIId	iPNEZ iN F	AH 20 A	35 29.9 35.4 20 37			
35	July 20	I	iZ eE eE F	G 20 G G	43 22.5 28 51.7 21 23			
36	July 21	Id	iPZ iSNZ eE iZ eN F	H 00 AH A H A	48 01.4 06.7 08.8 10.3 16.8 00 49			See list, p. 82 Millbrae Blast
37	July 21	IIr	iPE ePZ ePNZ eE eN iZ iSN eSE eSZ eN eZ eE F	G 12 G GH A A H G G G A H A A	26 26.0 26.5 29.9 35.4 40.6 27 30.0 54.5 55.5 59.5 28 29.9 23 35 32.9 41.0 12 53		c	Pasadena: 44°N, 128°W Millbrae Blast
38	July 21	Id	iPZ iSZ F	H 23 H	38 53.4 58.5 23 40			Millbrae Blast
39	July 22	Id	ePN iPZ iSNEZ F	A 00 H AH A	28 58.5 59.3 29 08.8 00 30		d	
40	July 22	Iu	eE F	G 09	43 09.3 58 14.7			Surface waves
41	July 22	Iu	eE F	G 12	44.5 21.0 13 03			Surface waves
42	July 22	Iu	eE F	G 23	23.3 21.0 23 28			Surface waves

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
43	July 22	Id	iPZ	H 23 38	45.3			Millbrae Blast
			iZ	H	46.9			
			iSNZ	AH	50.4			
			iZ	H	52.5			
			F	23 40				
44	July 22	Id	iPNZ	AH 23 41	51.3		c	
			iZ	H	58.2			
			eSN	A	59.4			
			F	23 42				
45	July 23	Id	iPZ	H 02 26	45.4		c	See list, p. 82
			eSN	A	58.8			
			iZ	H	59.8			
			F	02 28				
46	July 24	Iu?	eZ	G 07 43	07			
			eEZ	G	53 12			
			F	08 53				
47	July 24	Id	iPNZ	AH 10 46	20.6			Millbrae Blast
			iZ	H	23.3			
			iSN	A	28.0			
			eE	A	28.4			
			iZ	H	28.9			
			iN	A 12 20	35.5			
			iE	A	36.0			
			F	10 48				
48	July 24	Id	iPZ	H 23 35	29.8			Millbrae Blast
			eN	A	32.9			
			iSZ	H	34.9			
			eSE	A	35.4			
			F	23 36				
49	July 26	Id	iPZ	H 00 29	08.9		c	
			iZ	H 11 30	11.8			
			eN	A	17.3			
			iSNEZ	AH	19.2			
			iZ	H	26.4			
			F	00 30				
50	July 26	Id	iPNE	A 20 57	09.3			
			iZ	H	14.3			
			iZ	H	21.0			
			eN	A	28.0			
			F	20 58				

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
51	July 27	Ir	ePN	G	00	10 57			
			iPNEZ	GAH		59.2	c	U.S.C.G.S.: 54.5°N, 166.5°W	
			iE	A	11	12.0			
			iZ	H		16.6			
			iN	A		19.6			
			iE	A		33.1			
			iPcPZ	H	13	39.9			
			eSNE	GA	16	17.3		Surface waves	
			eSNZ	AH		19			
			eLN	A	17	08.9			
			eLZ	H		16.3		High frequency	
			eLEZ	G	18	51			
			eLN	G	19	21			
			eScSEZ	AH	21	16			
			eScSN	A		18.5			
			eE	A		45			
			eE	A		59			
			eN	A		22.6		Felt at Heaverville	
			F		02	06			
52	July 27	Id	iPZ	H	00	30 57.3			
			iSZ	H		59.9			
			eSN	A	31	00.4			
			F		00	32			
53	July 27	Id	iPZ	H	12	20 45.2			
			iSNZ	AH		49.2			
			F		12	21			
54	July 28	Id	iPNE	A	19	56 46.2			
			iNZ	AH		51.3		Surface waves	
			iNZ	AH		54.4			
			iZ	H		58.1			
			iN	A		59.2		Surface waves	
			F		19	58			
55	July 29	Iv	iPNZ	AH	11	38 11.3		See list, p. 82	
			eEZ	AG		17			
			iZ	H		19.5			
			eN	A		19.9			
			eE	A		21.1			
			eN	G		24			
			eE	G		25			
			eSN	A		59.0			
			eE	A	39	00.5			
			eE	G		17			
			eNZ	G		20.5			
			eN	G		29.5			
			iE	G		34.0			
			iN	G	40	08.5			
			iE	G		11.0			
			F		11	55			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
56	July 29	Id	iPNEZ iSNZ iZ eE eN F	AH 20 58 AH 17 30 H A 22 47 A 21 00	28.3 33.5 35.3 35.9 42.7			Surface waves	
57	July 29	Iu?	eE F	G 23 05 23 23				Surface waves	
58	July 30	Id	iPNZ eN eZ eE iNE F	AH 00 06 A H A A 00 07	35.0 38.8 39.7 40.7 49.2			Millbrae Blast	
59	July 30	Iv	iPZ iZ eN eN iZ eE eE eE eN iZ eN F	H 03 43 H A 01 03 A H G 44 A A A A H A 03 58	31.5 36.0 39.7 43.2 51.0 06.5 12.8 13.5 22.1 43.0		c	Felt at Weaverville	
60	July 31	Iu?	eE F	G 17 59.5 18 33				Surface waves	
61	July 31	Iu?	eE F	G 21 53 22 08				Surface waves	
62	Aug. 1	Id	iPZ eN iSEZ eN F	H 02 14 A AH 19 50 A 02 15	34.2 36.0 37.0 38.5		c	Paradise, Southwest Pacific	
63	Aug. 2	Iu	ePE eLE eLN F	G 17 59 23 G 18 21 05 G 18 52					
64	Aug. 3	Id	iPNZ iZ eN eE iSNEZ F	AH 00 40 H A A AH 00 41	32.3 34.6 36.9 39.6 42.2				

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
65	Aug. 3	Iu?	eE F	G 17	00.5 17 18			Surface waves
66	Aug. 3	Id	ePE iPNZ iZ iNZ eN eN F	AH H AH H A A	22 49 42.9 43.4 44.9 45.9 47.4 49.3 51.2			Pasadena: New Hebrides?
					22 50			Pasadena: Alaska
67	Aug. 4	Iv	eE eN F	G 16 G 16	38 02 42 48			Mexico
68	Aug. 5	Iu	iPZ eLN eLE F	G 01 G G 17	34 06.5 52 13 59 01 03			Pasadena: South America
69	Aug. 5	Iu?	eE eE F	G 12 G 13 13	53 38.5 28 11.5 13 48			
70	Aug. 5	Id	iPZ iZ iSZ eN iZ iN F	H 17 H H A H A 17	38 04.5 06.0 09.9 39 14.7 39 15.7 19 19.9 39	c		Millbrae Elast
71	Aug. 6	Iu	eLE F	G 17 17	12.5 36			Pasadena: Southwest Pacific?
72	Aug. 6	Iu	eE eLE F	G 18 G 19 19	42 07.0 01 01 58			Pasadena: Southwest Pacific
73	Aug. 7	Iv	ePZ iPZ ePN eN eEZ iSNZ eN iE F	H 01 H A G G AH G G 15	19 46.0 47.2 27 49.5 20 14.0 14.5 45 23.3 05 03 57.0 01 24 58.0 15.9			Surface waves Pershing County, Nevada

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
74	Aug. 7	Ilu	ePZ eSNE eINE eMN F	G 03 36 41 G 45 55 G 54 25 G 59 47 04 40				U.S.C.G.S: 16.9°S, 71.5°W	
75	Aug. 7	Iu	eN eE eE F	G 13 04 23 G 05 02 G 21 02 13 48				Pasadena: New Hebrides?	
76	Aug. 7	Iu	ePN F	G 13 50 59 14 05				Pasadena: Alaska	
77	Aug. 7	Ir	eSN eLE eLZ eLN F	G 18 58 15 G 19 01 55 G 00 02 11 G 20 80 ca				Mexico	
78	Aug. 7	Id	iPZ iSZ iZ F	H 23 56 46.1 H 47.2 H 50.1 23 57					
79	Aug. 8	Id	iPZ iZ iZ iSNEZ F	H 00 37 52.6 H 08 25 55.4 H 57.6 AH 38 02.3 00 39		c		See list, p. 82 Pasadena: 50°N, 132°W	
80	Aug. 8	Iu	eZ eE eE F	G 08 51 12 G 11 16 G 57 26 09 30 ca				Pasadena: Near 5°S, 145°E Pasadena: 60°W, 155°W h = 100 km.	
81	Aug. 8	Iu?	eE F	G 16 19 03 16 28				Surface waves Pasadena: Philippines?	
82	Aug. 9	Iu?	eE F	G 00 13 03 00 53				Surface waves	
83	Aug. 9	Iu?	eE F	G 04 27.7 04 38				Phillipine Islands	
84	Aug. 9	Iu?	eE F	G 04 45 05 03				Surface waves	
85	Aug. 9	Id	iPZ iSNZ F	H 22 07 14.2 AH 15.9 22 08			d		

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
86	Aug. 10	Ir	ePNZ ePNEZ eE eZ eN eSEZ eSN eSE eSN eLNE F	G GAH A H A G G A A A A	01 56 16 18 31 32 35 59 06 11 18 12 20 12 29 02 01.1 02 18			U.S.C.G.S.: 51.4°N, 130.5°W h = 110 km.	
87	Aug. 10	Id	iPZ F	H	19 37 09.6 19 38				
88	Aug. 11	Id	iPZ iSZ F	H	00 32 53.9 56.1 00 34			U.S.C.G.S.: 35°N, 137°E h = 200 km.	
89	Aug. 12	Id	iPZ iSZ F	H	22 35 06.5 10 22 36				
90	Aug. 13	Id	iPZ iSNE F	H A	00 58 31.1 40.8 00 59			Pasadena: South America	
91	Aug. 13	IIr	ePZ ePEZ eSEZ eLZ F	H G G G	08 25 33.3 44 28 26 29 38 08 36			Pasadena: 50°N, 132°W	
92	Aug. 14	IIr	ePN ePZ ipPZ eSN F	G H H G	11 13 19 21 22 07 40.5 18 05 11 30		d? d	Pasadena: 60°N, 155°W h = 100 km.	
93	Aug. 14	Iu	eE eE eLE F	G G G	14 45 55 54 50 15 06 24 15 38			Pasadena: Philippines?	
94	Aug. 15	Id	iPZ iZ F	H	00 22 03.1 09.2 00 23			Millbrae Blast Pasadena: Near Apia	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
95	Aug. 15	Iu	ePZ	H 12 00	07.2		d	Pasadena: 13°N, 146°E h = 110 km.
			ipNEZ	G	08			
			ipPZ	H	36.1		d	
			ipPNEZ	G	37			
			iSKSNE	G	10 20			
			iSNZ	G	30			
			isSNE	G	11 18			
			F		12 13.1			
96	Aug. 16	Id	ipZ	H 22 44	00.1		c	
			isZ	H	05.2			
			F		22 45			
97	Aug. 18	IIu	ePZ	H 10 44	33.3		d	U.S.C.G.S.: 35°N, 137°E h = 200 km.
			ipNZ	GH	34.0		d	
			eE	A	45			
			ipPZ	H	45 06.8			
			ipPZ	G	14			
			iPPN	G	48 03			
			iSE	G	53 47			
			isSN	G	54 45			
			eLN	G	11 04 19			
			F		12 18			
98	Aug. 18	Iu	iSN	G 19 44	02.0			Pasadena: South America
			eSE	G	03			
			eLE	G	58.2			
			eLN	G	58.4			
			F		20 38			
99	Aug. 18	Id	ipZ	H 20 50	05.5			
			F		20 51			
100	Aug. 18	Iu	eE	G 21 40	2			
			eE	G 22 07	2			
			F		22 12			
101	Aug. 18	Iu	eE	G 22 32	4			
			eE	G	58 57			
			F		23 02			
102	Aug. 19	Id	ipZ	H 08 38	54.0			
			isNE	A	56.1			
			F		08 40			
103	Aug. 20	Iu	eN	G 18 54	55.5			Pasadena: Near Apia
			eN	G 19 08	5			
			F		19 33			
104	Aug. 20	Iu	eN	G 21 31	42			
			eN	G 22 06	2			
			F		22 28			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
105	Aug. 21	Id	iPNZ	AH	00	22 33.9		c	241.1 18°N, 196°W h = 150 km ca.
			iZ	H		34.1			
			iZ	H		36.8			
			iN	A		39.9			
			iZ	H		42.1			
			iSN	A	13	23 43.2			
			iSEZ	AH		43.8			
115	Aug. 25	Iu	iE	A	15	47 46.1			Aftershock?
			iZ	H	15	58 48.1			
			iN	A		53.4			
112	Aug. 26	Iu	F		00	23			Minor?
106	Aug. 21	Iu	eLE	G	11	32 39			
			eLN	G	00	56			
			eN	G		38 05			
117	Aug. 26	Iu	F	AH	11	52			See list, p. 82
107	Aug. 21	Iu	eE	G	20	38 16			
			eLE	G	21	00 46			
			F		21	23			Aftershock
108	Aug. 21	Id	iPNZ	AH	23	03 22.6			
			iZ	H		23.6			
119	Aug. 27	Iu	iSNEZ	AH		25.0			
			F		23	04			
109	Aug. 22	Iu	eN	G	21	52 50.5			
			F		22	03			
110	Aug. 24	Iu	iPE	G	16	17 18.5			
			iPN	G		19.5			
120	Aug. 26	Iu	eE	G	10	20.1			
			eN	G		29.1			
			F		16	38			
111	Aug. 24	IIR	ePZ	G	23	44 29			U.S.C.G.S.: 15.0°N, 93.0°W h = 100 km.
			epPZ	G		49			
121	Aug. 25	Ir	eSN	G	18	49 49			See list, p. 82
			esSZ	G		50 23			
			eGE	G		54.2			
			eLEZ	G		55.0			
			F		00	23			
112	Aug. 25	Id	iPZ	H	00	58 56.8			
			F		00	59.5			
113	Aug. 25	Iu	eLE	G	03	46.8			
			F	H	03	58			
					21	56			
123	Aug. 29	Iu	iPZ	H	23	44 44.6			
				H		48.4			
					23	46			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
114	Aug. 25	Iu	ePZ	H 12	36	19		c	Apia: 18°S, 176°W h = 250 km. ca.
			epPZ	H	37	14		c	
			ipPZ	G		14.5			
			eNE	G	45	38			
			eSE	G	46	36			
			F		13	23			
115	Aug. 25	Iu	eE	G 15	43.1				Aftershock?
			F		15	58			
116	Aug. 26	Id	iPZ	H 00	35	33.8		c	Blast? See list, p. 82
			iSZ	H		43.4			
			iSNE	A		43.7			
			F		00	36			
117	Aug. 26	Id	iPNZ	AH 18	35	01.2		c	See list, p. 82 General shock
			iSN	A		10.3			
			iSE	A		10.8			
			F		18	36			
118	Aug. 26	Id	iPZ	H 18	37	43.4			Aftershock
			F		18	38			
119	Aug. 27	Iu	iPN	G 18	53	29.5			See list, p. 82 See list, p. 82
			ePE	G		30			
			eZ	G	54	17			
			eN	G		26			
			eE	G		33			
			eNE	G	55	23			
			F		19	23			
120	Aug. 28	Iu	eE	G 10	37	54.0			Residuals near 50°S, 170°W
			eN	G	38	27			
			eLN	G	52	11			
			eLE	G		33			
			F		11	23			
121	Aug. 29	Iv	iPZ	H 18	52	48.3		c	See list, p. 82
			eSE	G	53	16			
			eSN	A		17.5			
			eSNZ	AG		18			
			eSE	A		19			
			eN	A	54	02.5			
			eN	G		16			
			F		18	58			
122	Aug. 29	Id	iPZ	H 21	54	40.8		d	Residuals: Japan
			iSZ	H		45			
			F		21	56			
123	Aug. 29	Id	iPZ	H 23	44	44.6		d	Millbrae Blast
			iSZ	H		48.4			
			F		23	46			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
124	Aug. 30	Id	iPZ F	H 00 22 00 23	29.6		d	
125	Aug. 30	Iu	ePZ eSE eNZ eN eGE eGZ eGN F	G 01 26 G 37 04 G 38 28 G 48 06 G 52 02 G 15 16 G 54	42			
126	Aug. 30	Iv	iPZ iSZ F	H 06 33 H 41.5 06 34.5	08.8	.5	c	See list, p. 82
127	Aug. 30	Iv	iPZ iSZ F	H 07 04 H 05 13.1 07 07	40.8	.7	c	Mineral Shock Wellington 42.5°S, 174°E h = 100 km.
128	Aug. 30	Id	iPZ eSN F	H 20 58 A 48.7 20 59	44			
129	Aug. 31	Id	iPZ iSZ F	H 01 36 H 18.7 01 38	15.4		c	See list, p. 82
130	Sept. 1	Id	iPZ iZ F	H 22 57 H 08.9 22 58	07.9		c d	See list, p. 82 Pasadena: 1°N, 127°E
131	Sept. 2	Id	iPZ F	H 00 28 00 29	57.9		c	
132	Sept. 3	IIu	eN eZ eE eE eN eZ eLE eN eLZ F	G 19 26 G 29 13 G 36 00 G 42 26 G 35 G 42 G 49 25 G 54 48 G 56 21 08.5	42			Pasadena: Near 58°S, 120°W
133	Sept. 5	Iu	iPZ F	H 01 18 01 19	44.7		d	Pasadena: Japan
134	Sept. 5	Id	iPZ F	H 02 18 02 20	50.4		c	Millbrae Blast

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
135	Sept. 5	Iir	eLE eLN F	G 04 58 12 G 59 06 05 07				U.S.C.G.S.: 45°01'N, 74°44'W
136	Sept. 5	Iu	eE eLZ F	G 15 49 G 16 07 16 08				Pasadena: Southwest Pacific
137	Sept. 5	Iu	eZ eZ F	G 16 11 48 G 27 10 16 38				Pasadena: 37°31'N, 118°44'W
138	Sept. 5	Iv	iPZ iZ iZ F	H 23 46 00.3 H 02.8 H 22.7 23 47		d d		San Benito County
139	Sept. 6	Iu	iPZ eE eE eLE F	G 06 05 04.5 G 16 G 00 15 24.5 G 32.5 06 59				Wellington: 22.5°S, 172°E h = 100 km. Pasadena: 34.7°N, 120.2°W
140	Sept. 8	Iv	iPZ eSNE F	H 18 55 23.6 A 47.1 18 57		c		
141	Sept. 10	Id	iPZ F	H 00 29 49.4 00 30				
142	Sept. 11	IIu	ePEZ eZ eP'Z ePPN ePPEZ ePPZ ePPN eZ iSE iN iPKKPZ iE eN eZ F	GH 09 59 39 H 49.3 H 10 00 50 G 04 00 G 02 H 12 G 27 35 28 H 06 45 G 10 44 G 11 52 H 15 29.5 G 18 38 G 29 20 G 33 38 11 18		d d c d		Pasadena: 1°N, 127°E See list, p. 82
143	Sept. 11	Iv	ePNZ eN eN eN F	AH 17 54 32 A 40.6 A 23 44 48.6 A 55 00 17 57				

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
144	Sept. 12	Id	iPZ eEZ eE eE eE F	H 02 G G 03 G G G	41 18.8 43 01.5 03 03 16 27 24 01 03 39	18.8 01.5 03 27 01 39	c		
145	Sept. 12	Id	iPZ iSN F	H 13 A A	14 20.1 21.4 13 16	20.1 21.4 16	d	Pasadena: 35.8°N, 120.0°W	
146	Sept. 14	Iv	iPZ iZ F	H 02 H A	03 07.4 14.9 02 05	07.4 14.9 05		Pasadena: 37°34'N, 118°44'W	
147	Sept. 14	Iu	iPE eE F	G 06 G 07 H	19 51.5 02 35 08 39	51.5 35 39	c		
148	Sept. 16	Iv	iPZ eZ iSN iSZ eE eE eN eLZ eLE eLN F	H 02 G A H A G G H A A A	46 09.4 46.5 47 09.0 22 09.4 27 11.9 31 16.5 31 30.5 13 49 17 39.5 50 36.5 02 59	09.4 46.5 09.0 09.4 11.9 16.5 30.5 17 39.5 36.5 59	c	Pasadena: 34.7°N, 120.2°W	
149	Sept. 16	Iv	iPZ iSZ eSN F	H 11 H A A	52 03.0 18.8 19.2 11 53	03.0 18.8 19.2 53	d		
150	Sept. 16	Id	iPZ eN iZ eN eSN iSEZ F	H 17 A H A A AH H	35 38.8 40.0 23 29 47.9 48.0 04 20 49.3 49.7 17 37	38.8 40.0 47.9 48.0 49.3 49.7 37		See list, p. 82	
151	Sept. 16	Id	iPZ iZ F	H 21 H A	13 36.0 38.8 21 14	36.0 38.8 14		See list, p. 82	
152	Sept. 16	Id	iPNZ iSNE iE F	AH 23 A A A	04 22.7 23.6 24.5 23 05	22.7 23.6 24.5 05			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
153	Sept.17	Id	iPZ iSZ F	H H 20	45 36.0 45.1 47		d	IV at Sureka and Scotia
154	Sept.17	Iu	eLE F	G 00	23 54.2 14			Pasadena: Southwest Pacific IV at Sureka and Scotia
155	Sept.18	Iv	iPZ iZ eN eN eSE iSZ eN iZ F	H H A A A H A H 01	01 30 37.3 45.5 31 00.5 04.5 20 43 16.8 19.2 24.5 20 14 30.5 32		d	Pasadena: 35.8°N, 120.0°W See list, p. 82
156	Sept.18	Id	iPZ eN iSZ F	H A H 22	42 54.9 56.3 43 00.2 44		c	Pasadena: Year April U.S.G.O.S.: 53.5°N, 160.7°E
157	Sept.19	Iu	eE eLE iLZ iLE F	G G G G 13	22 57.5 26 31 51 38 34 54			
158	Sept.19	Id	iPNEZ iE iN iNE iZ iZ F	AH A A A H H 23	45 36.0 38.5 43 40 39.0 40.8 16 13 47.6 28 54.7 23 47			Pasadena: Southwest Pacific
159	Sept.20	Id	iPZ iSNEZ F	H AH 23	28 25.5 26.8 29			
160	Sept.21	Id	iPZ eN iSZ eSNE F	H A H A 04	20 38.2 39.3 21 42.1 22 42.8 21			See list, p. 82 San Benito County
161	Sept.21	IIId	ePN iPEZ iSNE iZ iN F	A AH A H A 07	21 35.2 35.6 37.2 42.4 42.9 07 23			Pasadena: Kamohaka? See list, p. 82 San Benito County

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
162	Sept.21	Iv	iPZ eN eE F	H 17 19 A A 17 24	20.9 42 45		c	IV at Eureka and Scotia	
163	Sept.21	Iv	eSNE eN eE eNE F	A 17 19 A 20 A A 17 24	49.0 05.0 08.0 37.0			IV at Eureka and Scotia	
164	Sept.21	Id	iPNEZ eSN eSE F	AH 20 43 A A 20 44	14.7 22.0 24			See list, p. 82	
165	Sept.23	Iu	ePZ eZ F	H 03 22 H 03 24	31.0 47		c c	Pasadena: Near Apia	
166	Sept.23	Iu	ePZ iPNZ ePE iZ ePPZ eSN eSE ePSN eGNE eLN F	H 12 22 AH G H H A A G A G 13 40	37.9 41.8 43 48.0 24 39 30 22 24 31 41 36.8 39.1		d	U.S.C.G.S.: 53.5°N, 160.7°E	
167	Sept.23	Iu	eZ eSN eN eLN F	G 16 13 G G G 17 09	53 24 23 37 55 43 05			Pasadena: Southwest Pacific	
							12 20		
168	Sept.23	Id	iPZ F	H 19 30 19 31	41.4				
169	Sept.24	Id	iPZ iZ F	H 10 20 H 10 22	58.1 00.8			San Benito County	
170	Sept.24	Iu	ePZ eE F	H 11 05 G 11 54	05.8 13.2		c	Pasadena: Kamchatka?	
171	Sept.25	Iv	iPZ eSNEZ F	H 07 44 AH 07 46	53.7 11.8		c	San Benito County	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
172	Sept.27	Iu	ePPNZ eScPcSE eSN eLE F	G 16 43 07 G 50 43 G 51 14 G 17 07 39 18 19				J.S.A.: 39°N, 74°E
173	Sept.28	Id	iPZ iSZ F	H 00 48 48.6 H 52.6 00 49				Millbrae Blast
174	Sept.28	Iv	iP _{n10} Z eSE eSN iSZ F	H 17 09 01.0 A 19.6 A 20.0 H 20.5 17 11				See list, p. 82
175	Sept.28	Id	iPZ iSZ F	H 21 05 29.3 H 33.3 21 06				San Mateo County
176	Sept.30	Iv	iPZ iSZ eNZ F	H 19 23 47.7 H 53.1 AH 24 03 19 25	.8			Millbrae Blast

Apparatus	Component	V	T	E
Woodward	E	3000	1	15
	N	3000	1	15

MT. HAMILTON
MOUNT HAMILTON

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

1	July 3	IV	47N	05 37 19.0	Passadena: 35° 01' N, 117° 32' W
			13	51.8	
			18	40 13.0	
			F	05 48	
2	July 6	II	47N	11 10 21.0	Millbrae Blast
			F	18 12	

3	July 9	IV	47N	03 55 22.0	Passadena: 37° 30' N, 116° 35' W
			15N	51.6	
			18		
			F	01 58	

CONSTANTS

CONSTANTS OF THE STATION

Latitude and Longitude:

$$\phi = 37^{\circ} 20' 14'' \text{ N.}$$

$$\lambda = 121^{\circ} 38' 16'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time

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

6	July 12	II	17N	10 28 11.4	Dear Cro Long
			12N	22.7	
			F		

CONSTANTS OF THE SEISMOGRAPHS

7	July 22	IV	47N	19 32 34.1	U.S.C.G.S.: 44.7° N, 124.8° W
			15N	31.1	
			18	31.2	
			F	15.7	
			F	20 50	

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

9	July 14	IV	47N	01 22 51	See list, p. 82
			48N	23 06.0	
			F	01 31	

10	July 25	II	47N	01 35 09.4	See list, p. 82
			15N	18.5	
			15W	21.2	
			F	01 38	

11	July 11	II	17N	22 14 18.9	See list, p. 82
			12N	23.0	
			F	22 15	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	July 3	Iv	ePN iN iN F	05 39 51.8 40 13.0 05 48	19.6 51.8 13.0			Pasadena: 35°21'N, 117°52'W
2	July 6	Id	ePN F	18 10 18 12	32			Millbrae Blast
3	July 9	Iv	ePN iSN iN F	01 55 51.6 58.5 01 58	22.0 51.6 58.5			Pasadena: 37°30'N, 118°35'W
4	July 9	Iv	ePN eSN F	02 48 49 43.6 02 55	55.0 43.6			See list, p. 82
5	July 12	Iv	iPN iN iN iN F	15 25 53.9 26 41.0 51.4 15 27.5	42.8 53.9 41.0 51.4			See list, p. 82
6	July 12	Id	iPN iSN F	18 28 22.7 18 30	11.4 22.7			Near Oro Loma U.S.C.G.S.: 33°N, 138°E
7	July 12	Iv	ePN eSN iLN eN F	19 32 34 31.1 35 02.2 35.7 19 49	34.1 31.1 02.2 35.7			U.S.C.G.S.: 44.7°N, 114.4°W
8	July 12	Id	iPN iSN F	20 14 15.0 20 15	13.1 15.0			
9	July 14	Iv	ePN eSN F	01 22 23 06.0 01 31	51 06.0			See list, p. 82
10	July 14	Id	ePN iSN iSN F	01 35 18.5 21.2 01 38	09.4 18.5 21.2			See list, p. 82
11	July 14	Id	iPN iSN F	22 14 18.9 23.0 22 15	18.9 23.0			See list, p. 82

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
12	July 15	Id	ePN iSN F	00 13 14 00 15	59.8 04.0			Aftershock
13	July 17	IIId	iPN iSN F	21 46 21 21 49	21.5 25.5			See list, p. 82
14	July 18	Id	ePN iPN iS _{7.7} N iSN iS _a N iN iN iN eKN eAN F	05 19 09 46 09 47 23 31 23 20 21 38 05 25	02.0 02.3 04.0 05.6 08.9 16.9 25.6 31.9 54		Port Chicago Blast Millbrae Blast	
15	July 18	Id	iPN iSN F	20 35 20 36	34.2 36.7			
16	July 19	Iu	eLN F	10 54 11 39	4.2			U.S.C.G.S.: 33°N, 138°E U.S.C.G.S.: 30.5°N, 106.5°W
17	July 19	Id	ePN iSN F	15 27 15 28	25.7 30.7			
18	July 19	Id	ePN iSN iN F	17 19 20 17 21	59.5 02.1 08.0			See list, p. 82
19	July 20	Iv	ePN iSN F	14 17 18 14 20	38.5 07.3			
20	July 21	Id	ePN eN eN F	00 48 03 07 00 48.5	10.5 14.0 21.0			Millbrae Blast See list, p. 82
21	July 21	Ir	eN eSN F	12 26 12 43	39.3 28.5			Pasadena: 44°N, 128°W
22	July 21	Id	eN eN F	23 39 23 40	05 13.5			Millbrae Blast

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
23	July 22	Id	eN eN eN F	23 38 39 41	58.7 04.6 08.4			Millbrae Blast	
24	July 23	Id	iPN iSN F	02 26 27	32.7 36.9			See list, p. 82	
25	July 24	Id	iPN iN F	09 46 47	16.8 21.7			Millbrae Blast	
26	July 24	Id	iPN iSN F	23 31 32	32.7 35.0			Parading County, Nevada	
27	July 24	Id	ePN eN F	23 35 37	38.0 50.0			Millbrae Blast	
28	July 24	Id	ePN iSN F	23 45 46	37.5 39.8			See list, p. 82	
29	July 27	Ir	iPNE ePcPE ePcPN eSN eSE eLNE eScSE eScSN F	00 11 13 16 17 21 01	05.5 39.9 41.9 29.4 31.9 18.9 20.9 21.7			U.S.C.G.S.: 54.5°N, 166.5°W	
30	July 29	Iv	ePNE eSN eSE F	11 38 39 43	21.8 15.0 16.5			See list, p. 82	
31	July 30	Iv	ePNE F	03 43 47	40.3			Felt at Weaverville	
32	Aug. 2	Id	ePNE iSNE F	18 48 49	12.1 18.8			See list, p. 82	
33	Aug. 3	Id	ePN ePE iSNE F	14 02 50 15	41.8 42.3 44.0				

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944						s		
34	Aug. 3	Id	iSNE F	14 56	26.5				
				14 57					
35	Aug. 4	Id	ePN ePE iSNE F	06 02	28.1				
					29.4				
					37.8				
				06 04					
36	Aug. 4	Iv	iSNE F	09 55	30.9				
				09 56					
37	Aug. 5	Iv	ePE iSNE F	12 52	24.7				
					50.6				
				12 55					
38	Aug. 7	Iv	ePN ePE eE iN iSNE iN iE F	01 19	47.6			Pershing County, Nevada	
					51.8				
				00 20	28.5				
					29.1				
					30.7				
					51.1				
					51.6				
				01 23					
39	Aug. 8	Iv	ePN ePE eE iSNE F	00 38	03			See list, p. 82	
					07				
					15.5				
					18.1				
				00 39					
40	Aug. 9	Iv	ePE ePN iSNE F	14 02	05.3			Afternoon of Aug. 16, 1944	
					05.8			10 36 OCT	
					55.9				
				14 06					
41	Aug. 10	Ir	ePN ePE eSNE F	01 56	25.7			U.S.C.G.S.: 51.4°N, 130.5°W	
					28.2				
					46.0				
				03 00					
42	Aug. 11	Iv	ePE ePN iSNE F	08 26	21.3			Afternoon of Aug. 26, 1944	
					22.3			10 36 OCT	
					12.6				
				08 30					
43	Aug. 15	Id	ePNE iSNE F	09 00	11			See list, p. 82	
					14.7				
				09 01					
44	Aug. 16	Iv	eSNE F	04 50	29.6			Mineral Spock	
				04 51					

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
45	Aug. 18	Iu	ePNE F	10 44 10 49	39.2			U.S.C.G.S.: 35°N, 137°E h = 200 km.	
46	Aug. 20	IIId	iPNE iSNE F	07 52 07 53	07.4 09.4		c		
47	Aug. 24	Ir	ePE eE eSE F	23 44 44.5 50.3 00 03	26.3			U.S.C.G.S.: 15.0°N, 93.0°W h = 100 km.	
48	Aug. 26	Iv	eE eN eE eN eE F	00 36 34.0 43 46.5 47.0 00 37.5	33			Blast? San Benito County	
49	Aug. 26	IIId	iPNE F	18 34 18 38	51.2			See list, p. 82	
50	Aug. 26	IIId	iPNE iSE F	18 37 18 38	32.8 34.7	.4		Aftershock	
51	Aug. 26	Id	iPNE iSNE F	18 41 10.1 18 42	08.4				
52	Aug. 27	Id	iPNE iSE F	04 15 49.5 04 16	46.7			Aftershock of Aug. 26, 1944, 18 34 GCT	
53	Aug. 28	Id	ePNE iSNE F	19 23 29.0 19 24	27.0			Aftershock of Aug. 26, 1944, 18 34 GCT	
54	Aug. 29	Iv	ePN ePNE eSNE F	18 52 55.9 53 33.4 18 57	49.0			See list, p. 82	
55	Aug. 30	Iv	ePNE eSE F	06 33 54.7 06 37	17.2			See list, p. 82	
56	Aug. 30	Iv	ePNE eSE F	07 04 05 26.3 07 08	48.4			Mineral Shock	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
57	Aug. 31	Id	ePNE eN eE eSNE F	01 36	17.5 20.1 21.0 24.5			See list, p. 82	
58	Sept. 1	Id	ePE eE eE F	22 57	06.0 12.8 13.8			See list, p. 82	
59	Sept. 2	Id	ePE iSE F	09 22	33.3 40.7			Fore shock	
60	Sept. 5	Id	ePN eE iN eSE eSN F	23 45	48.3 49.5 50.1 59.5 00.0			San Benito County Aftershock	
61	Sept. 7	Id	ePN ePE iSNE F	14 12	27.8 28.1 40.5			Pasadena: 35.8°N, 120°W	
62	Sept. 8	Id	eSNE F	03 22	02.6				
63	Sept. 9	Id	ePNE iSNE F	03 21	12.7 14.7			See list, p. 82	
64	Sept. 11	Iv	ePN eN iN F	17 54	45.4 08.9 38.9			See list, p. 82	
65	Sept. 12	Iv	eN iN F	02 41	35.1 57.5			IV at Bureau and Scotia	
66	Sept. 14	Iv	ePN iSN eN F	02 03	03.7 33.6 53.6			Pasadena: 37°34'N, 118°44'W	
67	Sept. 14	Id	ePN ePE iSN F	15 31	01.2 02.0 11.7				

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
68	Sept.16	Iv	ePN ePE iSE iN F	02 46	22.1 23.6 28.4 30.1			Pasadena: 34.7°N, 120.2°W	
69	Sept.16	Id	iPNE iSNE F	16 46 16 47	25.6 28.4	.5	1.8, NE	Foreshock San Benito County	
70	Sept.16	IIId	iPNE iSNE F	16 58 16 59	34.8 36.4			Foreshock	
71	Sept.16	IIId	iPN iSN F	17 35 17 37	27.7 29.1	.4		See list, p. 82	
72	Sept.16	Id	ePNE eSNE F	17 37 17 48	45 46.7			Aftershock	
73	Sept.18	Iv	ePN ePE iN iE iN F	01 30 07 47	28.8 29.3 51.5 53.3 54.0	.4 .3		Pasadena: 35.8°N, 120°W San Benito County	
74	Sept.18	Id	ePNE eSNE iNE F	23 03 23 05	39.6 46.4 51.6	.4		See list, p. 82	
75	Sept.21	Id	ePNE eNE F	04 20 04 21	45.0 49.0	.6 .3		See list, p. 82	
76	Sept.21	Iv	ePN eN eN eE eN F	17 19 21 00 20 02.3 19 31 17 25	31.7 49.0 02.3 15.8 16.8			IV at Eureka and Scotia	
77	Sept.21	Iv	ePN eSN F	20 43 20 45	26 47			See list, p. 82	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
78	Sept. 23	Iu	ePE ePN eSNE eGE eGN F	12 22	47.4 47.9 30 31.9 35.8 36.7			U.S.C.G.S.: 53.5°N, 160.7°E	
79	Sept. 24	Iv	ePNE iSNE F	10 20 21 00.4 10 23	48.8 00.4	.5	1.8, NE	San Benito County	
80	Sept. 24	Id	iSNE F	10 34 10 35	35.0				
81	Sept. 24	Id	ePN iSNE F	22 59 23 00	23.0 31.3				
82	Sept. 25	Id	ePN iSE iSN F	01 45 01 46	13.3 26.1 26.5				
83	Sept. 25	Id	iPNE iSNE F	07 44 07 47	42.0 50.2	.4 .3		San Benito County	
84	Sept. 28	Id	eN eE eN F	00 49 00 50	05 12.0 12.5			Millbrae Blast	
85	Sept. 28	Id	iPNE eNE iSN iSE F	17 08 17 11	50.3 52.3 57.8 58.3	.4 .6 .3 .3		See list, p. 82	
86	Sept. 28	Id	eNE F	21 05 21 06	43			San Mateo County	
87	Sept. 30	Id	eNE eNE F	19 24 19 25	01 06			Millbrae Blast	

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	July 3	Iv	iPN ePE iE iN F	05 39 40	28.0 29.0 48.5 54.2			Pasadena: 35°21'N, 117°52'W
2	July 6	Id	iPNE eNE iNE F	18 10 11	23.3 30.0 32.8			Millbrae Blast See list, p. 82
3	July 9	Iv	ePN ePE F	01 55 56	26.8 29.8			Pasadena: 37°30'N, 118°35'W
4	July 9	Iv	ePE ePN eE iN F	02 48 49 50 51	53.5 56.5 04.8 06.4			See list, p. 82 Port Chicago Blast
5	July 12	Iv	iPE iPN iSNE iN F	15 25 26 27	38.6 39.4 32.8 37.8			See list, p. 82
6	July 12	IIv	iPNE iSNE F	18 28 29	17.3 33.7			Near Oro Loma U.S.C.G.S.: 33°N, 120°W
7	July 12	Iv	ePE ePN eLN eLE F	19 32 33 35 43	14 30 20.5 28			U.S.C.G.S.: 44.7°N, 114.4°W
8	July 13	Id	iPNE iSNE F	21 47 49	52 53.4			
9	July 13	Id	iPNE iSNE F	23 04 05	00.2 03			
10	July 14	Id	ePE ePN eSNE F	01 22 24	46.5 47 59.5			See list, p. 82
11	July 14	Iv	ePNE iSN iSE F	01 35 36	15.7 29.7 30.5			See list, p. 82

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
12	July 14	Id	e \bar{P} NE i \bar{S} NE F	22	14	25.7 35.5			See list, p. 82
13	July 14	Id	ePN ePE iSNE F	23	09	24 24.5 27.5			
14	July 17	IIId	iPN iPE iN eE iSNE F	21	46	28.5 29.4 32.4 33.0 35.0			See list, p. 82 Millbrae Blast
15	July 18	IIv	ePNE iPNE iE iN iSaE iSaN iE iN eE iN eE F	05	19	01.3 01.6 07.4 08.2 19.3 20.0 23.3 42.3 44.0 58.0 58.5			Port Chicago Blast Millbrae Blast
16	July 19	Iu	eNE F	10	40.0				U.S.C.G.S.: 33°N, 138°E
17	July 19	Id?	ePNE iNE iN iE F	17	20	08.2 21.0 27.4 27.9			U.S.C.G.S.: 54.5°N, 156.5°W
18	July 20	Id	iPE iPN iE iN iE F	20	36	31 32 36.4 39.2 41.1			See list, p. 82
19	July 21	Id	iPNE iN iNE F	00	48	02.6 10.3 11.9			Millbrae Blast

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
20	July 21	Id	ePNE iNE F	23 38 39 23 40	54.2 00.9			Millbrae Blast
21	July 22	Id	ePE ePN iSE iSN F	18 12 18 13	32.5 32.9 34.9 35.4			Felt at Weaverville
22	July 22	Id	ePE ePN eN iNE F	23 38 18 50 23 25	46.5 47 53.0 55.6			Millbrae Blast
23	July 23	Id	ePNE iSNE F	02 26 02 27	40.0 49.7			See list, p. 82
24	July 24	Id	ePE ePNE iNE F	10 46 10 48	19.4 20.8 28.0			Millbrae Blast
25	July 24	Id	ePE iPN iE iN	23 35 01 23	31.0 31.6 37.2 38.1			Perishing County, Nevada Millbrae Blast
26	July 27	Ir	iPE iPN ePcPNE	00 11 00 05 13	02.5 03 28.3			U.S.C.G.S.: 54.5°N, 156.5°W
27	July 29	Iv	eSNE eLNE eScSE eScSN F	00 16 00 21 01 02	23.0 19.7 09.2 20.0			See list, p. 82
28	July 29	Id	iPE iPN iSN iSE F	11 38 11 39 11 44 19 58 20 00	17.0 08.5 10.0 28.2 29.3 36.5 38			See list, p. 82 U.S.C.G.S.: 51.4°N, 130.5°W

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
29	July 30	Id	iPNE iN F	00 06 42 00 18	35.5 42 07			Millbrae Blast
30	July 30	Iv	ePNE iSE iSN F	03 43 44 03 49	40 23.9 25			Felt at Weaverville
31	Aug. 2	IIId	iPNE iSE iSE F	18 48 27 18 50	07.7 10.8 11.3			See list, p. 82, 132°W
32	Aug. 3	Id	iPNE iN iE F	23 31 00 39 23 33	37.9 41.9 44.4			
33	Aug. 5	Id	ePNE eE eN F	17 38 39 17 40	06.1 12.6 14.8			Millbrae Blast
34	Aug. 7	Iv	ePNE iSE	01 19 20	53.3 29.8			Pershing County, Nevada
	Aug. 15	Id	iSN F	00 22 01 23	33.1 04.1			Millbrae Blast
35	Aug. 7	Id	ePNE iE	00 04	13.9 20.9			
	Aug. 16	Id	iN F	22 44 00 05	26.4 07.6			
36	Aug. 8	Iv	ePNE eSNE F	00 38 00 40	00.9 15.5			See list, p. 82
	Aug. 18	Id	F	00 40	37			U.S.C.G.S.: 35°N, 137°E h = 200 km.
37	Aug. 8	Id	ePN ePE iN iE F	23 31 11.9 19.2 21.2 23 32	11 11.9 19.2 21.2			
38	Aug. 10	Ir	ePE ePN iN	01 56 20 06	30 32 48.0			U.S.C.G.S.: 51.4°N, 130.5°W
	Aug. 24	Id	iSE iSN F	21 59 02 58	25.7 26.9			

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
39	Aug. 10	Iv	ePE ePN iSNE F	10	46	49 50.2 47 07 10 48			
40	Aug. 12	Id	ePNE iSNE F	23	31	30.7 36.5 23 32			
41	Aug. 13	Ir	ePNE eE eN F	08	26	27 27 25 38.5 08 31		Elast? U.S.C.G.S.: 50°N, 132°W	
42	Aug. 13	Id	iSNE F	00	58	23.6 00 59			
43	Aug. 13	IIId	iPE iPN iSNE F	19	06	18.6 19.0 21 19 07		See list, p. 82	
44	Aug. 14	Id	ePNE eSNE F	23	04	06.0 09.5 23 05			
45	Aug. 15	Id	ePE iPN iNE F	00	22	03.5 04.4 10.9 00 24		Millbrae Blast See list, p. 82	
46	Aug. 16	Id	ePNE iSNE MN F	22	44	00.7 07.6 14.0 22 45	1.3mm	See list, p. 82	
47	Aug. 18	Iu	iPNE iN iE eN	10	44	37 38.6 39.1 52.0		U.S.C.G.S.: 35°N, 137°E h = 200 km.	
48	Aug. 18	Id	ePNE iSNE F	20	05	06.9 15.0 20 06		Mineral Shock See list, p. 82	
49	Aug. 24	Id	ePNE iSNE F	21	36	06.5 15.2 21 37		Millbrae Blast	

PALO ALTO

No.	Date	Character	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
50	Aug. 25	Id	ePNE iSNE F	00 58 26 34.4 01 00			
51	Aug. 25	Id	ePNE iSNE F	23 15 12 18.9 23 16			
52	Aug. 26	Iv	ePN iSNE F	00 35 41 56.4 00 37			San Benito County Blast?
53	Aug. 26	IIId	iPNE iSNE F	17 26 28.4 30.6 17 28			
54	Aug. 26	IIId	iPNE iSNE F	18 34 56.6 35 02.3 18 37			See list, p. 82
55	Aug. 26	IIId	iPNE iSNE F	23 05 31.9 35.1 23 07			
56	Aug. 29	Id	ePNE iSE iSN F	00 17 36.9 43.3 43.7 00 19			
57	Aug. 29	Iv	ePNE eSNE eSNE F	18 52 55.5 53 28.5 33.0 18 56			See list, p. 82
58	Aug. 30	Iv	ePNE eN eE eSNE F	06 33 16.0 46.5 50.0 54.5 06 36			See list, p. 82
59	Aug. 30	Iv	ePNE eSN F	07 04 49 05 18.6 07 06			Mineral Shock
60	Sept. 1	IIId	iPN iPE iSNE F	22 56 58.2 57 00.0 03.6 22 59			See list, p. 82
61	Sept. 5	Id	iPNE iNE F	02 18 51.9 58.5 02 20			Millbrae Blast

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
62	Sept. 5	Ir	eNE F	04 58 26 05 02				U.S.C.G.S.: 45°01'N, 74°44'W	
63	Sept. 5	Id	ePNE iSNE	23 25 16.7 19.8					
	Sept. 21	Iv	F	23 26		.2		Iv at Baraka and Scotia	
64	Sept. 5	Iv	ePNE iSE F	23 45 54.4 46 07.0 23 47		.6 .6		San Benito County	
65	Sept. 7	Iv	iPNE iSE iSN F	14 12 32.5 48.6 51.5 14 15		1 2 3.2 3 1.5			
66	Sept. 11	Iv	eE eE	17 54 42 55 02.6					
	Sept. 21	Iv	iE F	17 57 23.6 17 57		.2 1.5		See list, p. 82	
67	Sept. 14	Iv	eNE eN eE	02 03 10 20 21		1.2	1.5m	Pasadena: 34°34'N, 118°44'W	
	Sept. 23	Id	eNE F	12 22 42 02 50				U.S.C.G.S.: 53.5°N, 160.7°W	
68	Sept. 16	Iv	eE eN F	02 47 20 22 02 49				Pasadena: 34.7°N, 120.2°W	
69	Sept. 16	Id	ePNE iSNE F	17 35 33.6 39.5 17 37		.4		See list, p. 82	
70	Sept. 18	Iv	ePN iN iSE iSN F	01 30 32.8 58.4 31 02.0 03.3 01 33		.5		Pasadena: 35.8°N, 120.0°W	
	Sept. 27	Id	F	01 33					
71	Sept. 18	Id	iPNE iSNE	22 42 56.3 43 02.3					
	Sept. 28	Id	F	22 45				Millbrae Blast	
72	Sept. 18	Id	iPNE iSNE F	23 03 33.6 37.4 23 06		.3 .4		See list, p. 82	
73	Sept. 19	IIId	iPNE iSNE F	19 02 33.4 34.2 19 03					

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
4	Sept. 21	Id	ePNE eSE iSN F	07 21 07 22	41.5 46.0 46.4			See list, p. 82
5	Sept. 21	Iv	ePNE eNE eN eN iE	17 19 21 05 21 20	26.5 43 48 54 55 05 06.3	.2 .6 .6 1 1		Iv at Eureka and Scotia San Mateo County
	Sept. 23	Id	eNE iE iN iNE F	23 05 23 07 23 07 21 01.7 17 24	09.5 36.1 46.1 01.7	2 3.2 3 1.5		Millbrae Blast
6	Sept. 21	Iv	ePNE eSE eNE MNE F	20 43 20 45 20 45	19.6 32.0 37.5 44.5	.2 1.5 1.2	1.5mm	See list, p. 82
7	Sept. 23	Iu	ePNE eN eSN eSE eGNE F	12 22 23 27 21 30 31 36.5 13 16	50 27 26 31 36.5			U.S.C.G.S.: 53.5°N, 160.7°E
8	Sept. 24	Iv	iPNE iSNE F	10 20 21 09.1 10 23	53.8 09.1			San Benito County
9	Sept. 25	Iv	iPNE iSNE F	07 44 45 07 46	47.7 00.8	.5		San Benito County
10	Sept. 27	Id	ePE iSE F	19 00 01 19 02	58.8 01.3			
11	Sept. 28	Id	ePE ePN iNE iNE iN eE F	00 48 49 49 49 07 00 56	47.9 49.4 53.6 00.6 05.9 07	.5 .7 .7		Millbrae Blast

PAILO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
32	Sept. 28	Id	ePE ePN iSE iSN MNE F	17 08 56.2 57.0 09 07.4 08.7 18 17 10	.4	1.6mm	See list, p. 82
33	Sept. 28	Id	ePNE iN iE F	21 05 30.8 37.9 39.0 21 07			San Mateo County
34	Sept. 29	IIId	iPNE iSNE F	23 05 37.9 41.4 23 07			
35	Sept. 30	Id	ePNE iN iE iNE iN F	19 23 47.5 48.2 48.6 56.4 24 04.0 19 25	1.2 .7		Millbrae Blast
36	Sept. 30	IIId	iPNE iNE iSNE F	21 11 19.1 20.0 21.1 21 13			

Apparatus	Component	V	I ₀	E
Wood-Anderson	I 15"	1500	1	15
		3000	1	15



SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944			h.	m. s.	s.		
1	July 3	Iv	ePE F	05 39 33	ca			Pasadena: 35°21'N, 117°52'W
2	July 6	Id	ePE iE F	18 10 20.7 24.3				Millbrae Blast
3	July 12	Id	ePE eE iSE F	15 25 32.8 37.4 26 20.8 15 27				See list, p. 82
4	July 12	Iv	ePE eSE F	18 28 24 ca 45.5 18 30				Near Cro Loma
5	July 12	Iv	ePE eLN eLE F	19 33 03 ca 35 27 34 19 43				U.S.C.G.S.: 44.7°N, 114.4°W
6	July 14	Id	ePE eSE F	01 22 44.5 52.5 01 24				See list, p. 82
7	July 18	Id	iPE iE iE F	05 18 57.1 59.4 19 12.2 05 22				Port Chicago Blast
8	July 23	Id		10 47 ca				S-P = 3.3 sec. S-P = 9 sec.
9	July 24	Id	ePE iSE F	23 35 31.3 32.0 23 37				Millbrae Blast
10	July 27	Iu	ePNE eScSNE eLNE F	00 11 00 21 18 23.4 00 30 ca				U.S.C.G.S.: 54.5°N, 166.5°W S-P = 21 sec.
11	July 29	Iv	ePNE eSN eSE F	11 38 11 53.5 55 11 43				See list, p. 82
12	July 30	Id	eE eE eE F	00 06 34.8 36.8 39.8 00 07				Millbrae Blast
13	Aug. 5	Id	eE eSE F	17 38 03.0 04.0 17 39				Millbrae Blast

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
14	Aug. 7	Iv	ePE iE	01 19	51.4 28.2			Pershing County, Nevada
34	Sept. 21	IId	F	09 22	ca	.25		See list, p. 82
15	Aug. 7	Id	iSE F	22 27	02.1 27.5			U.S.C.G.S.: 53.5°N, 160.7°E
16	Aug. 8	Id	ePE iSE F	00 37 38	56.8 07.4			See list, p. 82 S-P = 17.5 ca. San Benito County
17	Aug. 15	Id	eE eE F	00 21 22	59.5 03.5	ca ca		Millbrae Blast Millbrae Blast See list, p. 82
18	Aug. 18	Iu		10 50	ca			U.S.C.G.S.: 35°N, 137°E San Jacinto h = 200 km
19	Aug. 18	Id		20 55	ca			Millbrae Blast
20	Aug. 21	Id		00 33	ca			
21	Aug. 26	Id		18 35	ca			S-P = 10 sec. See list, p. 82
22	Aug. 29	Iv	ePE eSN eSE F	18 52 53	48 18	ca ca 20 ca		See list, p. 82
23	Aug. 31	Id		01 36	ca		d	S-P = 3.3 sec. See list, p. 82
24	Sept. 5	Id		02 18	ca			S-P = 3.2 sec. ca Millbrae Blast
25	Sept. 5	Id		23 46	ca			San Benito County
26	Sept. 7	Iv		14 12	ca			S-P? = 21 sec.
27	Sept. 11	Id		17 55	ca			
28	Sept. 14	Iv		02 03	ca			Pasadena: 37°34'N, 118°44'W
29	Sept. 16	Iv		03 56	ca			Pasadena: 34.7°N, 120.2°W
30	Sept. 20	Id		00 57	ca			S-P = 3.1 sec.
31	Sept. 21	IId	iPE iSE	04 20.5 23.0	ca ca	.2 .4		S-P = 2.3 sec. See list, p. 82
32	Sept. 21	Id	iPE	07 31	ca			S-P = 2.9 sec. See list, p. 82

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
33	Sept. 21	Iv		17 31 ca			IV at Eureka and Scotia
34	Sept. 21	IIId	iPE ME	20 43 ca	.25	2 mm	See list, p. 82
35	Sept. 23	Iu		12 22.5 ca			U.S.C.G.S.: 53.5°N, 160.7°E
36	Sept. 24	Iv		10 33 ca			San Benito County
37	Sept. 25	Iv		07 45 ca			S-P = 17.5 ca. San Benito County
38	Sept. 28	Id		00 48 ca			Millbrae Blast
39	Sept. 28	Iv		17 09 ca			See list, p. 82
40	Sept. 28	Id		21 05 ca			San Mateo County
41	Sept. 30	Id		19 23 ca			Millbrae Blast

Altitude — 7 meters (55 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPH

Apparatus	Component	V	T ₀	E
Bloch-Mori 25 kg.	V	12	11	5
	H	18	8	6

The station is operated by Mr. Joseph Maguire, of Ferndale, in cooperation with the University of California.

FERNDALE

No.	Date	Time	Phase	Time	Remarks														
FERNDALE																			
1	July 7	Id	13ME 13NE F	14 26															
2	July 9	Id	13ME 13NE 13E 13N 13E F	02 45 00 02 47 07 02 49 09 02 51 21 02 53 22 02 54 54	See list, p. 82														
CONSTANTS																			
3	July 12	Id	13ME 13NE F	01 58 12 01 59 59															
CONSTANTS OF THE STATION																			
Latitude and Longitude:																			
4	July 12	Id	13ME 13NE F		$\phi = 40^{\circ} 34' N.$ $\lambda = 124^{\circ} 16' W.$ See list, p. 82														
Time -- All determinations are reduced to Universal Time.																			
5	July 12	Id	13ME 13NE F		U.S.C.G.S.: 124.7°W, 111.4°W														
Altitude -- 17 meters (55 feet) above mean sea level.																			
6	July 15	Id	13ME																
CONSTANTS OF THE SEISMOGRAPHS																			
7	July 15	Id	13ME	23 30															
8	July 19		Apparatus	Component	V T ₀ E														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Apparatus</th> <th style="width: 15%;">Component</th> <th style="width: 10%;">V</th> <th style="width: 10%;">T₀</th> <th style="width: 15%;">E</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Bosch-Omori 25 kg.</td> <td>E</td> <td>12</td> <td>11</td> <td>5</td> </tr> <tr> <td>N</td> <td>12</td> <td>8</td> <td>6</td> </tr> </tbody> </table>						Apparatus	Component	V	T ₀	E	Bosch-Omori 25 kg.	E	12	11	5	N	12	8	6
Apparatus	Component	V	T ₀	E															
Bosch-Omori 25 kg.	E	12	11	5															
	N	12	8	6															
9	July 21	Id	13ME 13NE F	12 35 48 12 30 15 12 51 51	Pasadena: 121°N, 128°W														
10	July 27	Id	13ME 13NE 13E F	00 10 56 00 15 32 00 18 00 01 52 52	U.S.C.G.S.: 54.5°N, 156.5°W														
11	July 29	Id	13ME 13NE F	11 37 36 11 55 55 11 51 51	See list, p. 82														
12	July 29	Id	13ME F	12 55 43 12 56 56															

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	July 7	Id	iPNE iSNE F	14 23 03 05 14 24				
2	July 9	Id	iPNE iSN iSE iN iE F	02 48 00 07 09 21 22 02 54			See list, p. 82	
3	July 12	Id	iSN iSE F	01 58 42 43 01 59				Pasadena: 50°N, 132°W
4	July 12	Iv	ePE iSNE F	15 25 03 24 15 31				See list, p. 82
5	July 12	Iv	ePE ePN eSE eSN F	19 32 28 35 34 06 07 19 53				U.S.C.G.S.: 44.7°N, 114.4°W
6	July 15	Id	eNE	23 23				
7	July 15	Id	eNE	23 24				
8	July 19	Iu	eSNE eN eE eN eE eN F	10 42 27 51 51 52 38 55 13 46 11 02 59 12 47				U.S.C.G.S.: 33°N, 138°E
9	July 21	Ir	ePNE iSNE eNE F	12 25 48 28 12 30 45 12 51				Pasadena: 44°N, 128°W
10	July 27	Ir	ePNE eNE eINE F	00 10 56 15 32 18 00 01 52				U.S.C.G.S.: 54.5°N, 156.5°W
11	July 29	Iv	ePNE iSNE F	11 37 38 55 11 51				See list, p. 82
12	July 29	Id	iSNE F	12 55 43 12 56				

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
13	July 30	Iv	ePE ePNE iSNE F	03 43 04	42 00 46	53 ca ca ca		Felt at Weaverville	
14	Aug. 10	Ir	ePNE eSNE eNE iNE F	01 58 59 02 03	55 54 30 00 46	37		U.S.C.G.S.: 51.4°N, 130.5°W	
15	Aug. 13	Ir	eN eE F	08 08	28 52	53 56		Pasadena: 50°N, 132°W	
16	Aug. 27	I	ePE eN eE eN eNE F	18 18 18 18 18	52 53 55 30 57 35	20 03 25 30 20			
17	Sept. 5	Ir	eE F	04 05	58 06	21		U.S.C.G.S.: 45°01'N, 74°44'W	
18	Sept. 11	Iv	ePNE iSE iSN F	17 17	54 59 01 57	32			
19	Sept. 12	Id	ePME iSNE F	02 02	40 44	42 51			

FRESNO

THE FRESNO STATION, FRESNO STATE COLLEGE
FRESNO, CALIFORNIA

No.	Date	Char-acter	Time	Period	Phase	Remarks
1	Aug. 10	IV	08 25 10.1			U.S.G.S.: 51.1°N, 120.5°W
2	Aug. 13	IV	08 25 09.2			Woodruff: 50°N, 112°W
3	Aug. 23	IV	15 28 32.9			U.S.G.S.: 53.5°N, 160.7°E

CONSTANTS

CONSTANTS OF THE STATION

Latitude and Longitude:

$$\phi = 36^{\circ} 46' 11'' \text{ N.}$$

$$\lambda = 119^{\circ} 47' 18'' \text{ W.}$$

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	ξ
Wood-Anderson	N	3000	0.9	15

FRESNO

No.	Date	Char-acter	Phase	Time (U.T.)		Trace motion	Remarks
				h. m. s.	s.		
	1944						
1	Aug. 10	Ir	ePN eSN F	01 57 48.3 02 00 21.6 02 31			U.S.C.G.S.: 51.4°N, 130.5°W
2	Aug. 13	Iv	ePN iN F	08 25 40.1 26 09.2 08 29			Pasadena: 50°N, 132°W
3	Aug. 23	Iu	ePN ePPPN eSN eGN eLN F	12 22 32.9 25 31.9 30 34.1 36.6 41.6 14 02			U.S.C.G.S.: 53.5°N, 160.7°E

Latitude and longitude

32° 40' N
121° 31' W

Time - All observations are reduced to Universal Time.

Altitude - 1455 meters (4788 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPH

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

No.	Date	Time	Phase	Time (G.P.)	Period	Amplitude															
MINERAL																					
1	July 3	14	175	12 30																	
			F	05 12.5																	
2	July 5	14	175	11 11 36.1																	
			F	11 12																	
3	July 7	14	175	22 11 26.4																	
			F	22 15																	
4	July 7	14	175	22 30 16.5																	
			175	10.9																	
			1E																		
			F	22 31																	
CONSTANTS																					
CONSTANTS OF THE STATION																					
5	July 9	14	175	22 12 28																	
			175	28																	
			F	22 31																	
Latitude and longitude:																					
				$\phi = 40^{\circ} 21' N.$																	
				$\lambda = 121^{\circ} 35' W.$																	
6	July 12	14	175	22 31 28																	
			F	22 31																	
Time --- All determinations are reduced to Universal Time.																					
Altitude - 1495 meters (4906 feet) above mean sea level.																					
7	July 12	14	175	22 31 28																	
			F	22 31																	
CONSTANTS OF THE SEISMOGRAPHS																					
8	July 13	14	175	22 16 37.0																	
			F	22 16																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Apparatus</th> <th style="width: 15%;">Component</th> <th style="width: 10%;">V</th> <th style="width: 10%;">T₀</th> <th style="width: 10%;">ε</th> </tr> </thead> <tbody> <tr> <td>Wood-Anderson</td> <td>E</td> <td>3000</td> <td>1</td> <td>15</td> </tr> <tr> <td></td> <td>N</td> <td>3000</td> <td>1</td> <td>15</td> </tr> </tbody> </table>							Apparatus	Component	V	T ₀	ε	Wood-Anderson	E	3000	1	15		N	3000	1	15
Apparatus	Component	V	T ₀	ε																	
Wood-Anderson	E	3000	1	15																	
	N	3000	1	15																	
9	July 17	14	175	02 38 27.0																	
			F	02 38																	
10	July 17	14	175	22 52 12.0																	
			F	22 52.5																	
11	July 18	14	175	05 19 16.0																	
			175	57																	
			F	05 22																	
12	July 27	14	175	00 10 16.5																	
			175	15 58																	
			175	20.0																	
			F	00 25.5																	
13	July 27	14	175	06 30 50.5																	
			175	57.9																	
			F	06 31.5																	

MINERAL

No.	Date	Char-acter	Phase	Time	Period	Trace motion	Remarks
				(U.T.)			
				h. m. s.	s.		
1	July 3	Iv	ePE eE eE F	05 39 59 40 52 41 30 05 42.5			Pasadena: 35°21'N, 117°52'W
2	July 5	Id	iPE F	14 11 36.1 14 12			
3	July 7	Id	iPE F	22 14 26.4 22 15			See list, p. 82
4	July 7	Id	ePE iPE iE F	22 30 40.5 40.9 43.9 22 31			Felt at Heaverville S-P = 2.5 sec. ca.
5	July 9	Iv	ePE iPE iSE F	02 48 28 29 58 02 50.5			See list, p. 82
6	July 12	Iv	ePE iSE F	15 25 30 26 14.7 15 27			See list, p. 82
7	July 12	Iv	ePE iE F	19 31 54 32 16.5 19 37			U.S.C.G.S.: 44.7°N, 114.4°W
8	July 13	Id	iPE F	22 45 37.0 22 46			
9	July 17	Id	ePE iSE F	02 36 27.0 36.5 02 37.5			
10	July 17	IIId	iPE F	22 51 47.1 22 52.5			Washington County, Nevada
11	July 18	Iv	ePE eSE F	05 19 18.0 57 05 22			Port Chicago Blast
12	July 27	Ir	ePE eSE eE F	00 10 49.5 15 58 20.0 00 25.5			U.S.C.G.S.: 54.5°N, 130.5°W 166.5°W
13	July 27	Id	iPE iSE F	06 30 50.5 57.9 06 31.5			

MINERAL

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
14	July 28	Id	iPE F	14 13 14 14	33.3			
15	July 29	IIId	iPE iSE F	02 31 02 33	48.2 55.7			
16	July 29	Iv	iPE iSE F	11 38 11 40	11.1 51.5			See list, p. 82
17	July 30	IIId	iPE F	03 43 03 46	02.5	ca		Felt at Weaverville S-P = 8.5 sec. ca.
18	Aug. 2	Id	iPE iSE F	19 09 19 09.5	11.5 13.7			Eight small shocks between August 19, 1944, 1912 OCT and Aug. 30, 1944, 1830 OCT.
19	Aug. 2	Id	iPE iSE F	20 48 20 48.5	00.0 02.7			See list, p. 82
20	Aug. 2	Id	iPE iSE F	21 22 21 23	15.4 22.9			Mineral shock
21	Aug. 3	IIId	iPE iSE F	01 11 01 12	11.1 13.4			Six small shocks between Aug. 29, 1944, 1730 OCT and Aug. 30, 1944, 1500 OCT
22	Aug. 3	Id	iPE iSE F	01 12 01 13	22.6 25.1			Five small shocks between Aug. 30, 1944, 1600 OCT and Aug. 31, 1944, 1500 OCT
23	Aug. 4	Id	iPE F	13 42 13 43	28.1			
24	Aug. 7	IIv	iPE iE iE iSE F	01 19 01 22	27.3 29.5 35.6 50.6			Pershing County, Nevada
25	Aug. 10	Ir	ePE eSE F	01 55 02 12	50.5 59.5			U.S.C.G.S.: 51.4°N, 130.5°W
26	Aug. 14	Id	ePE eSE F	02 36 02 37.5	52.7 55.4			
27	Aug. 14	Iv	ePE eSE F	09 15 09 17	05 28			

MINERAL

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944						s.		
28	Aug. 18	Iu	eP?E F	10 44 10 47	30.5		c	U.S.C.G.S.: 35°N, 137°E h = 200 km	
29	Aug. 27	IIId	iPE iSE F	22 08 22 09	54.1 58.9				
30	Aug. 29	IIId	iPE ME F	18 52 18 53	14.2 18	.7	d 53 mm	See list, p. 82 The first large shock of a series near Mineral. Aftershock, Id, Aug. 29, 1944, 1858 GCT. S-P = 3.0 sec.	
31	Aug. 29	IIId	iPE iSE F	19 11 19 12	32.4 35.5		d	Eight small shocks between August 29, 1944, 1912 GCT and Aug. 30, 1944, 0630 GCT.	
32	Aug. 30	IIId	iPE ME F	06 32 06 34.5	32.2 47	.7	d 49 mm	See list, p. 82	
33	Aug. 30	IIId	iPE ME F	07 04 07 04.5	03.9 12	.6	d 50 mm	Mineral shock	
34	Aug. 30	IIId	iPE iSE F	06 32 06 33.5	47.8 50.8		d	Six small quakes between Aug. 30, 1944, 0732 GCT and Aug. 30, 1944, 1500 GCT	
35	Aug. 30	IIId	iPE iSE F	16 01 16 02.5	40.8 43.7		d	Five small quakes between Aug. 30, 1944, 1601 GCT and Aug. 31, 1944, 1500 GCT	
36	Aug. 31	IIId	iPE iSE F	19 20 19 22.0	38.5 42.0		d		
37	Sept. 1	IIId	iPE F	05 29 05 30.0	10.6		d		
38	Sept. 1	Id	iPE iSE F	08 11 08 11.5	19.9 22.9		d		
39	Sept. 9	IIId	iPE iSE F	00 28 00 29	18.4 24.4		d		

MINERAL

No.	Date	Char-acter	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
40	Sept. 10	IIId	iPE iSE F	20 59 43.5 47.4 21 01			Small shock at 1544 GCT, Sept. 8, 1944.
41	Sept. 10	Id	iPE iSE F	18 33 11.3 14.3 18 34			
42	Sept. 21	IIv	iPE	18 19 ca			IV at Eureka and Scotia S-P = 22.0 sec.

Bulletin of the Seismographic Stations

Volume 14, No. 4, pp. 139-188



EARTHQUAKES IN NORTHERN CALIFORNIA
AND
THE REGISTRATION OF EARTHQUAKES
AT
BERKELEY—MOUNT HAMILTON—PALO ALTO
SAN FRANCISCO—FERNDAL—FRESNO—MINERAL

From October 1, 1944, to December 31, 1944

BY
CHARLES E. HERRICK
AND
CAROLYN H. PENDERY

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1951

BULLETIN OF THE SEISMOGRAPHIC STATIONS

BERKELEY AND LOS ANGELES,

CALIFORNIA

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MADE IN THE UNITED STATES OF AMERICA

Issued April 16, 1951

EARTHQUAKE INTENSITY SCALE CONTENTS

Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information on the direct or indirect effects is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

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EARTHQUAKE INTENSITY SCALE

Intensities are given by Roman numerals in the list of California earthquakes on the following page, when sufficient information on the effects of the quake is available. Criteria of the Modified Mercalli Scale which are used to rate the intensity are:

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.

Felt as far north as San Rafael, as far east as Brentwood and as far south as San Leandro. Maximum intensity of IV reported from Berkeley, Oakland and San Leandro.

EARTHQUAKE MAGNITUDE SCALE

Richter magnitudes given in the list of epicenters on the next page are found from the Wood-Anderson amplitudes, using the nomogram by Nordquist, "Bulletin of the Seismological Society of America," 32: 164.

Latitude and longitude are given for each epicenter in the following list. Only those earthquakes are given 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.

EARTHQUAKES IN NORTHERN CALIFORNIA

1944 - Pacific Standard Time

No.	Date	Origin Time	Richter Magnitude	Latitude North	Longitude West	Quality
1	Oct. 6	06-28-25	2.9	36° 47'	121° 27'	c
2	23	12-46-32	2.7	37° 36'	122° 42'	c
Probably a blast.						
3	26	14-50-30	2.6	37° 11'	121° 14'	b
4	30	13-14-15	2.1	37° 2'	121° 8'	d
5	Nov. 1	21-00-34	3.7	36° 8'	121° 0'	d
6	4	10-33-41	3.5	36° 6'	121° 1'	d
7	8	23-02-16	3.6	36° 6'	121° 3'	d
8	10	00-06-42	3.2	40° 36'	121° 10'	c
IV at Redding						
9	14	22-52-26	3.1	36° 53'	121° 43'	c
Depth about 10 km.						
10	16	10-04-49	3.2	37° 46'	122° 09'	b
Felt as far north as San Rafael, as far east as Brentwood and as far south as Ben Lomond. Maximum intensity of IV reported from Berkeley, Oakland and San Leandro.						
11	18	15-01-17	2.7	37° 11'	122° 12'	c
12	19	23-29-57	3.3	36° 46'	121° 38'	c
Depth about 8 km.						
13	22	21-20-15	3.1	36° 38'	121° 02'	c
Depth about 10 km.						
14	25	19-41-09	2.6	37° 25'	121° 42'	a
15	25	19-44-43	3.2	37° 25'	121° 42'	a
16	Dec. 8	09-24-45	1.7	37° 46'	122° 06'	c
17	15	12-08-54	3.6	36° 34'	121° 27'	c
18	16	11-01-30	3.0	38° 12'	122° 02'	c
19	19	03-44-16	2.1	36° 57'	121° 36'	c
20	19	14-17-49	2.5	37° 22'	121° 48'	b

SYMBOLS AND NOTATIONS EMPLOYED

1. Character of the Earthquake --

	I. Perceptible	II. Moderately Strong	III. Strong
d (terrae motus domestica)		Local shock (origin less than 100 kilometers distant).	
v (terrae motus vicina)		Near shock (origin from 100 to 1,000 kilometers distant).	
r (terrae motus remota)		Distant shock (origin from 1,000 to 5,000 kilometers distant).	
u (terrae motus altima)		Very distant shock or teleseism (origin more than 5,000 kilometers distant).	

THE REGISTRATION OF EARTHQUAKES

2. Nature of the Motion --

i (impetus)	Sudden beginning of the motion.
g (gradatio)	Gradual beginning of the motion.

BERKELEY
 THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA
 BERKELEY, CALIFORNIA

SYMBOLS AND NOTATIONS EMPLOYED

CONSTANTS OF THE STATION

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. Nature of the Motion --

Apparatus	Component	V	T ₀	ξ	
Bosc i (impetus) kg. ..	H	3000	12	10	
			12	10	
Wood-Anderson e (emersio)	H	3000	0.9	5	
			0.9	15	
Galitsin	E	112	12	11.5	
				122	11.2
				109	14.9
Benioff	Z	V	Coupled Period	0.7	
				ξ	

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

BERKELEY

THE BERKELEY STATION, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and Longitude:

$$\phi = 37^{\circ} 52' 13'' \text{ N.}$$

$$\lambda = 122^{\circ} 15' 16'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

Altitude -- 81 meters (266 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V		T ₀	ξ			
		K	T		T ₁	μ ²	A ₁ (cm)	l (cm)
Bosch-Omori 100 kg. ..	E	45		12				10
	N	45		12				10
Wiechert 80 kg.	Z	44		4				5
Wood-Anderson	E	3000		0.9				15
	N	3000		0.9				15
Galitzin	E	112	12	11.8	0.00	115	11.3	
	N	122	12	12.4	0.03	119	11.2	
	Z	109	12	11.9	0.01	131	14.9	
Benioff	Z	V		Coupled Period			ξ	
				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.

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m.	s.			
	1944							
1	Oct. 1	Id	iPZ iSZ F	H 21 32	49.3 52.8			
2	Oct. 1	Id	iPZ iSZ F	H 22 09	21.7 49.8			
3	Oct. 2	Iv	eN F	A 17 28	50.2			
4	Oct. 2	Iu	ePZ iPZ epPN epPN	G 20 40	48 51.4 06 06.8			U.S.C.G.S.: 14.5°N, 90.1°W h = 100 km.
	Oct. 7	Id	eSZ eGE eLE	G 17 49	53 52 10			
5	Oct. 3	Id	iPZ iSZ F	H 00 22	34.3 44.1			
6	Oct. 3	Id	iPZ iZ F	H 20 48	21.3 22.6			
7	Oct. 4	Id	iPZ F	H 00 18	05.2			
8	Oct. 4	Id	iPZ F	H 00 45	16.7			
9	Oct. 5	Iu	iPZ ePE ePNZ ipPN iPPZ iSZ eSE	G 17 41	02 02.9 03.3 45 50.6 29 51.2			Pasadena: 22.5°S, 172°E h = 120 km.
	Oct. 11	Iu	eGZ eLZ F	G 18 05	9 08.6 54			
10	Oct. 5	Iv	ePNE iN iNE F	18 22	10.2 19.0 33.2			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
11	Oct. 16	Id	ePNEZ iSNE F	00	20	01.7 02.9 21		Surface waves	
12	Oct. 6	Iu	ePPZ eSSN eGE	G 02	52	24 24 19.1		Pasadena: Southwest Pacific U.S.C.G.S.: 39°N, 27°E	
	Oct. 17	Iv	eLN F	G 23	23.0	03 59			
13	Oct. 16	Iv	iPZ ePN iSNZ	H 14	28	47.5 49.7 29 06.2	c	See list, p. 143	
	Oct. 19	Id	iE F	A 14	11	30	c	Near Santa Rosa	
14	Oct. 7	Id	iPZ F	H 17	48	49.0 17 51			
15	Oct. 7	Id	iPZ F	H 17	51	28.2 17 53		Pasadena: 38.5°N, 118.3°W	
16	Oct. 7	Iu	ePE ePZ eE eLE eLZ F	G 19	14	24 48 24 31.0 32.7 19 44	d	Pasadena: Southwest Pacific Colusa County	
17	Oct. 11	Iu	iPNZ ePNE eSN eSE eLEZ eLN F	AH 09	56	24.5 26 05 36 17 12 17 26 10 54	c	J.S.A.: 15°S, 173.5°W h = 80 km.	
	Oct. 23	Id	eSE eLEZ eLN F	G 20	17	12 26 54	c	See list, p. 143 Blast?	
18	Oct. 11	I	iPZ iZ eNE F	H 16	44	14.9 19.7 28.3 16 50		U.S.C.G.S.: 5°N, 80.0°W	
19	Oct. 14	Iu	eNE F	G 16	56.2	17 10		Pasadena: Southwest Pacific	
20	Oct. 14	Iv	iPZ iZ iZ iZ F	H 20	27	37.2 42.2 43.6 50.4 20 29	c	Millbrae Blast? Pasadena: Near 35°N, 80°E	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m. s.	s.			
	1944							
21	Oct. 14	Iu	eE F	G 21 03.8 21 40				Surface waves
22	Oct. 14	Iu	eE eZ F	G 22 41.4 G 23 42.2 23 25				Pasadena: Southwest Pacific See list, p. 143
23	Oct. 17	Iv	iPZ F	H 23 44 25.0 23 46				
24	Oct. 17	Iv	iPZ F	H 23 44 25.0 23 46				
25	Oct. 19	Id	iPZ eEZ eN eE F	H 09 05 44.2 AH 55.4 A 55.7 A 57.7 09 07		c		Near Santa Rosa Pasadena: 36°20'N, 120°05'W See list, p. 143
26	Oct. 20	Iv	ePZ eNE F	H 01 13 00.9 A 41.6 01 16				Pasadena: 38.5°N, 118.3°W
27	Oct. 21	Iv	iPZ eSNE F	H 18 19 02.6 A 20.5 18 22		d		Colusa County See list, p. 143
28	Oct. 22	Iu	iPZ eN iZ F	H 18 58 58.9 A 59 17.7 H 19 17.9 19 00		c		
29	Oct. 23	Id	iPZ eSNE F	H 20 46 41.2 A 47.4 20 48		c		See list, p. 143 Blast?
30	Oct. 23	IIu	ePZ eSNE eSNE eGZ eLNE eLN F	H 23 49 34.9 G 57 07 A 09.9 G 00 03 45 G 00 07.0 A 07 03 00 40				U.S.C.G.S.: 5°N, 80.0°W
31	Oct. 28	Iv	iPZ eSNZ eNE F	H 19 53 17.0 AH 38.5 A 45.8 19 55				See list, p. 143
32	Oct. 29	Iu	eE eLE F	G 01 01.6 G 14.0 01 40				Pasadena: Near 35°N, 80°E

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
33	Nov. 1	Id	iPZ iSNZ F	H AH 04	22 12.3 23	02.3			
34	Nov. 2	Iv	eP*NZ iZ eSE iSN eE F	AH H A A A 05	01 07.6 24.5 25.2 38.2 05	02.3	c	See list, p. 143	
35	Nov. 2	Id	iPZ F	H 18	15 16	42.6			
36	Nov. 4	Id	ePZ F	H 08	12 14	40.5		Pasadena: 36°20'N, 120°05'W	
37	Nov. 4	Iv	iPZ eSN eSE F	H A A 18	34 28.9 32.0 35	10.1	c	See list, p. 143	
38	Nov. 6	Iv	iPZ eSN F	H A 01	14 11.3 16	27.7			
39	Nov. 9	Iv	iPZ iZ eSNE eN eN F	H H A A A 07	02 46.0 03 02.5 07.0 11.0 05	44.1	c	See list, p. 143	
40	Nov. 10	Id	iPZ F	H 20	30 31	37.9			
41	Nov. 10	Id	iPZ F	H 20	36 38	24.0		See list, p. 143	
42	Nov. 10	Id	iPZ F	H 21	21 53	22.3		See list, p. 143	
43	Nov. 14	Iu	eLNZ eLE F	G G 01	03.1 05.2 02	02.0		See list, p. 143	
44	Nov. 15	Iv	iP _{NO} Z eN eNE iZ F	H A A H 06	52 57.0 54 01.7 06	44.7		See list, p. 143	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
45	Nov. 15	IIu	eZ	G	21	04	04		U.S.C.G.S.: 4°N, 128°E
			eE	G	12	58	08		
			eZ	H			16.8		
	Nov. 24	IIu	eZ	G	05	05	10		U.S.C.G.S.: 20°S, 171°E
			ePPE	G			42		h = 170 km. ca.
			eZ	G	06	53			
			eSKSNE	A	11	31	8		
			iSKSNE	G			35		
			iN	G	12	55			
			iE	G	13	15			
			eZ	G	14	06			
			eLZ	G			33.6		
			eLNE	G			34.6		
			F		23	15			
46	Nov. 16	IIu	ePEZ	G	12	23	25	c	U.S.C.G.S.: 12°S, 166°E
			ePZ	H	06	15	26.0		
			iZ	G		24	07		
	Nov. 26	Id	eE	G	03	14		d	See list, p. 143
			iPPEZ	G		26	15		
			iPPN	G	03	13	26		
			iE	G		29	00		
	Nov. 28	Id	iZ	G	03	11		d	See list, p. 143
			iN	G		18			
			iE	G		15	34		See list, p. 143
			eSN	A	03	33	34		
			eSN	G		34	03		
	Nov. 29	Id	eSN	G	19	03	04	c	Presidentes Near 20°S, 171°E
			iSEZ	G			07.2		Aftershock of Nov. 24, 1944,
			eSE	A	04	08			0501 UT.
			iN	G		06	42		
			eN	A		19	06		
			eMNE	G			54.0		
			F		15	39			
47	Nov. 16	IIId	iPNEZ	AH	18	04	52.0		See list, p. 143
			iSN	A	06	12	54.1		
			iSE	A			54.5		
	Nov. 30	Id	F		18	07			
48	Nov. 18	Id	iPZ	H	23	01	28.8	c	See list, p. 143
	Nov. 30	Id	F		23	03			
49	Nov. 20	Iv	iPZ	H	07	30	17.9		See list, p. 143
			iNZ	AH			19.9		
	Nov. 4	Id	iSN	A			35.7	d	
			F		07	33			
50	Nov. 23	Iv	iPZ	H	05	20	41.4		See list, p. 143
			eN	A		21	15.9		Surface waves
			F		05	27			

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
51	Nov. 23	Iv	iPZ F	H 12 56 12 58	08.1			Aftershock
52	Nov. 24	IIu	iPNEZ ePNEZ iPZ iPZ isPZ iZ eZ iZ eSKSN eSKSNE	AH 05 01 G 57 28 H 02 07.3 G 55 12 H 05 08 26.6 H 07 03 26.6 H 07 50.8 H 02 04 44.6 A 02 11.5 G 11 34	27.6	c c	U.S.C.G.S.: 20°S, 171°E h = 170 km. ca.	
	Dec. 8	Iu	eZ eZ eZ F	G 07 13 10 G 14 58 G 08 31 30 06 16				Pasadena: 22°S, 170°E h = 100 km
53	Nov. 26	Id	iPZ iSNZ F	H 03 41 AH 03 43	22.2 32.7		d	See list, p. 143
54	Nov. 26	Id	iPNZ iPE	AH 03 44 A 56.1	55.6			See list, p. 143
	Dec. 8	Id	iSNE F	A 17 45 AH 03 48	04.8		d	See list, p. 143
55	Nov. 29	Iu	iPZ iPZ eZ ePPZ eZ iZ F	G 19 03 H 15 48.2 G 15 04 50 G 06 56 G 15 58 G 16 13 19 40	37	c	Pasadena: Near 20°S, 171°E Aftershock of Nov. 24, 1944, 0501 UT. Blast of Hercules Powder Company at Pinola	
56	Nov. 30	Id	iPZ F	H 06 41 06 42	40.6			Pasadena: 26°S, 65°E
57	Nov. 30	Id	iPZ F	H 07 24 07 26	48.7			
58	Nov. 30	Id	iPZ iSN F	H 07 50 A 15.7 07 52	10.7		c	U.S.C.G.S.: 18°S, 167°E
59	Dec. 4	Iu	iPZ F	H 19 46 19 51	55.7		d	
60	Dec. 5	Ir	eLE F	G 14 14 15 10	49.5			J.S.A.: 25°N, 110°W Surface waves

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
61	Dec. 7	IIIu	iPZ ePNZ ePE iPNEZ eSNE iSZ eLZ eLNE F	G AH A G A G H A A	04 47 42.0 43.5 48.0 55.0 57 40.0 51.0 55.0 05 08.6 07 36		c	U.S.C.G.S.: 33°N, 137°E	
62	Dec. 8	Iu	eLNE F	G	01 49.2 02 10			Near Apia	
63	Dec. 8	Iu	eNE eLNE F	G G G	07 41 24 57.3 08 25			Pasadena: 22°S, 170°E h = 100 km	
64	Dec. 8	Iu	eE eE eN eE eLNE F	G G G G G G	13 12 08 23 03 56 24 50 39.4 14 30				
65	Dec. 8	Id	iPZ iSNEZ F	H AH H	17 24 48.6 50.5 17 25		d	See list, p. 143	
66	Dec. 9	Id	iPZ F	H H	15 21 37.1 15 22			S-P = 3.5 sec. Δ = 12 miles Blast of Hercules Powder Company at Pinole	
67	Dec. 10	Iu	eP'Z ePPN eZ eN eLNZ eMNE F	G G G G G G G	05 31 38 36 17 39 45 41 03 06 44.0 07 03.0 07 23			Pasadena: 26°S, 65°E	
68	Dec. 10	IIu	iPZ iPZ ePNE eSNE eE eZ eN eLNEZ F	G H A AG G G G G G	16 37 36 38.0 38.5 48 01.0 49 59 57 18 17 00 17 04 19 18 10		c c	U.S.C.G.S.: 18°S, 167°E	

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
69	Dec. 10	Iu	eZ eN F	H 16 57 A 17 00	18.5 19.0			Aftershock
70	Dec. 12	Ir	ePZ ePNEZ ePcPZ ePPZ eE eSNE iSNE eLZ eMNEZ F	G 04 25 AH G 26 43 G G 30 39 A 31 15.6 A 19 G 36.7 G 40.7 06 17	03 04.6 43 59 39 15.6 19 36.7 40.7	d	U.S.C.G.S.: 51.5°N, 179°E	
71	Dec. 13	Id	iPZ F	H 23 22 23 24	28.7			
72	Dec. 14	Id	iPZ iSZ F	H 18 23 H 18 24	42.1 43.3			
73	Dec. 15	Iv	iPZ iZ iZ F	H 20 09 H H 20 10.5	20.9 39.9 42.7	c	See list, p. 143	
74	Dec. 16	Id	iPNZ iSNE F	AH 19 01 A 19 03	37.5 42.8			See list, p. 143
75	Dec. 17	Id	iPZ eN eN F	H 02 20 A A 02 20	00.3 00.6 05.6			
76	Dec. 19	Iv	iPZ eSZ F	H 11 44 H 11 45	35.6 50.5			See list, p. 143
77	Dec. 19	Iu	eE eN eE F	G 14 46.3 G G 15 45	47.1 57.6			
78	Dec. 20	Iu	eN eE eINE eLZ F	G 21 08 00 G G G 21 55	14 10 23.7 24.1			Pasadenar 36°24'N, 117°55'W

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
79	Dec. 21	Iv	ePNE	G	05	20	13		Oregon
			eN	G			40		
			eN	A	07	21	03		
			eZ	G			07		
87	Dec. 25	Id	iSN	G	06	57	17.9		
			iSE	G	06	57	19		
			eNEZ	G			46		
88	Dec. 26	Id	eN	A	02	22	20.5		
			iZ	G			46		
			eN	A	02	29	33.5		
			F		05		40		
89	Dec. 27	Id	iPZ	H	07	28	51.3		
80	Dec. 21	Iu	iP?Z	G	20	25	15		Pasadena: Kermadec Islands?
			iSNEZ	G			43		
90	Dec. 27	Id	eSSE	G	15	41	59		Pasadena: 43°N, 152°W h = 50 km.
			eNE	G			33		
			eN	G			45		
			eLNEZ	G			52.2		
			eMN	G	16		57.9		
			F		21		30		
81	Dec. 21	Iu	eN	G	22	43	16		Pasadena: Kermadec Islands?
91	Dec. 28	Id	iSN	G	01	50	40		
			iSE	G	01	57	44		
			eN	G	23	04	40		
92	Dec. 28	Id	eLNE	G	20	06	14		
			eMNEZ	G	23		13.1	15	
			F		23		40		
82	Dec. 22	Iu	iN	G	05	47	55		
			eZ	G			47		
93	Dec. 29	Iu	eSN	G	23	58	19		
			eLEZ	G	06		14.5		
			eME	G			18.9		
94	Dec. 30	Id	F		06		40		
83	Dec. 22	Iu	iPZ	GH	22	43	50.0	c	J.S.A.: 25°S, 70°W Pasadena: h = 150 km.
			iZ	H	22	44	04.0		
			eSE	G			53 48		
			iLE	G	23	10	00.5		
			eNEZ	G			34.5		
			F		23		50		
84	Dec. 22	Id	iPZ	H	22	08	53.0		
			F		23		10		
85	Dec. 23	Iv	iPNZ	AH	08	17	23.7		Pasadena: 36°24'N, 117°55'W
			iSN	A			18 12.5		
			iN	A	02	13	21.2		
			eSNEZ	G			24		
			iN	A			25.6		
			F		08		23		

BERKELEY

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
86	Dec. 24	Iv	iPZ eSN F	H 07 26 A 27 25.2 07 30	42.5 25.2			Aftershock	
87	Dec. 25	Id	iPZ F	H 06 57 06 58	47.9				
88	Dec. 26	Id	iPZ iSZ F	H 02 53 H 02 54	17.5 22.6				
89	Dec. 27	Id	iPZ F	H 07 34 07 36	51.3				
90	Dec. 27	Iu	e?Z iPZ eSKSNZ iE eE eLZ F	G 15 38 G 15 42 G 15 48 G 15 49 A 16 07 G 16 10 16 40	12 42 24 16 16 0 0			Pasadena: 6.5°S, 152°E h = 90 km.	
91	Dec. 28	Id	iPZ F	H 01 16 01 17	40.7				
92	Dec. 28	Id	iPZ F	H 20 03 20 04	05.9				
93	Dec. 29	Id	iPZ F	H 21 23 21 24	27.6				
94	Dec. 29	Iu	eLZ F	G 23 13 00 08	13.1				
95	Dec. 30	Iv	iPZ F	H 20 42 20 44	54.2		c		
96	Dec. 30	Iv	ePE eNEZ eE eE eE F	A 22 04 G 22 56 A 22 05 A 22 07 A 22 08 23 14	51 56 00.5 40 52			Pasadena: Oregon Coast	
97	Dec. 30	Id	iPZ iSZ F	H 23 32 H 23 33	15.0 17.0				
98	Dec. 31	I	eLE eLN eZ F	22 13 14 32 16 10 23 00	38 32 10				

MOUNT HAMILTON

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

No.	Date	Time	Phase	Time	Remarks
1	Oct. 2	Ir	ePNE eH F	17 28 19.2 29 28.1 17 31	U.S.G.-S.S.: 14.5°N, 90.1°W h = 100 km.
2	Oct. 2	Iu	ePNE eH F	20 40 56.1 11 26.0 20 46	J.S.A.: 13.5°N, 112.7°E h = 100 km.
3	Oct. 4	Ia	eSHE F	22 18 18.1 22 39	Parasubook

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Latitude and longitude:

$$\phi = 37^{\circ} 20' 11'' \text{ N.}$$

$$\lambda = 121^{\circ} 38' 16'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

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

No.	Date	Time	Phase	Time	Remarks
7	Oct. 5	Iu	eH eH eSHE eS	17 41 03.9 08.3 16 11.3	Parasubook: 22.5°S, 172°E h = 120 km.

CONSTANTS OF THE SEISMOGRAPHS

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

No.	Date	Time	Phase	Time	Remarks
9	Oct. 6	Iu	eH eH F	03 18 24.8 03 36	Surface waves
10	Oct. 6	Ia	ePNE eH eH eH F	14 28 35.7 37.5 43.7 46.3 14 29	See list, p. 143
11	Oct. 8	Ia	ePNE eSHE F	09 03 11.7 25.3 09 06	
12	Oct. 12	Ia	eH eH eH F	21 57 18.3 22.8 34.1 21 58	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m. s.	s.			
	1944							
1	Oct. 2	Ir	ePNE eN F	17 28 29 31	49.9 24.1			U.S.C.G.S.: 14.5°N, 90.1°W h = 100 km.
2	Oct. 2	Iu	ePNE eNE F	20 40 41 46	56.3 26.8			J.S.A.: 43.5°N, 141.7°E h = 100 km.
3	Oct. 4	Id	eSNE F	22 38 39	48.2			Foreshock County?
4	Oct. 5	IIId	iPNE iSNE iE iN F	00 42 03 08 09 13	02.3 03.6 11.9 12.2			Pasadena: New Hebrides?
5	Oct. 5	Id	iNE F	00 56 57	08.3			Aftershock Near Santa Rosa
6	Oct. 5	Id	iNE F	17 40 41	02.5			
7	Oct. 5	Iu	ePE iPN eNE eSNE eE eN F	17 41 51 18 18	03.9 04.3 16.9 32.9 11.2 13.6			Pasadena: 22.5°S, 172°E h = 120 km.
8	Oct. 5	Iv	eNE F	18 21 22	53			Pasadena: 38.5°N, 118.3°W
9	Oct. 6	Iu	eE eN F	03 23 24 36	02.8 02.8			U.S.C.G.S.: 39°N, 27°E Surface waves Colusa County
10	Oct. 6	Id	iPNE iE iSE iN F	14 28 29 31 32 39	35.7 37.5 43.7 46.3			See list, p. 143 See list, p. 143 Elast?
11	Oct. 8	Id	iPNE iSNE F	09 03 04	14.7 15.3			Aftershock of a quake at 2349 UT, Oct. 23, 1944
12	Oct. 12	Id	eN eE eNE F	21 57 58 58 58	18.3 22.8 34.1			

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
13	Oct. 13	Id	ePNE iSN iSE F	00	02	08.8 15.4 15.8			
14	Oct. 13	Id	iPN iSN F	23	04	17.1 19.2		See list, p. 143	
15	Oct. 14	Iv	ePNE eSE iSN F	21	49	23.1 34.9 36.4		San Benito County?	
16	Oct. 14	Iu	eE eE eLE F	02	43	46 00.7 05.1		Pasadena: New Hebrides?	
17	Oct. 19	Iv	ePE ePN eE eN F	09	06	01.5 02.0 15.5 16.0		Near Santa Rosa	
18	Oct. 19	Id	iSNE iN eE F	23	59	15.5 17.1 17.6		See list, p. 143	
19	Oct. 20	Iv	ePN ePE eN eE iNE F	01	12	48.5 59.5 31.3 33.0 35.3		Pasadena: 38.5°N, 118.3°W	
20	Oct. 21	Iv	ePE eE eE F	18	19	15 19.5 31.0		Colusa County	
21	Oct. 23	Id	ePNE eN eE F	20	46	50 59.0 00.5		See list, p. 143 Blast?	
22	Oct. 24	Iu	ePE ePN eSE eSN F	00	37	05.6 07.0 44.6 44.9		Aftershock of a quake at 2349 UT, Oct. 23, 1944	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
23	Oct. 25	Id	ePE ePNE iSE iN F	16 24	12.5 14.5 17.5 19.5			
				16 25				See list, p. 143
24	Oct. 26	Id	ePE ePN eSE F	22 50	35.0 35.5 43.0			See list, p. 143
				22 51				
25	Oct. 27	Id	iPNE iSNE F	11 18	07.2 19.1			
				11 19				Longitude: 36°20'W, 120°05'W
26	Oct. 28	Id	ePN iSNE F	12 21	32.5 34.3			
				12 22				
27	Oct. 28	Iv	ePN iSN iSE F	19 53	36.5 58 59			Longitude: 36°20'W, 120°05'W
				19 54				
28	Oct. 30	Id	iPNE iSNE F	21 14	18.3 20.8			See list, p. 143
				21 15				See list, p. 143
29	Oct. 30	Iv	ePNE eNE eE iN iN F	23 29	21.5 26.5 45.5 46.1 57.8			aftershock
				23 31				
30	Oct. 31	Id	ePN ePE eSN eSE F	08 20	51.1 52.2 58.8 59.2			See list, p. 143
				08 22				
31	Oct. 31	Id	ePE eN iSNE F	09 20	26.5 29.3 37.0			
				09 22				
32	Oct. 31	Id	iPNE iSNE iNE F	21 51	21.7 23.1 25.7			See list, p. 143
				21 52				See list, p. 143

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
33	Nov. 1	Id	iPNE iSNE F	04 22 04 23	03.4 05.1			
34	Nov. 2	Id	ePNE iPNE iSNE iE iNE iE iN F	05 00 21 05 22 05 01 00 11 33 23 13 05 03	47.8 48.4 59.1 00.8 02.1 08.0 08.7		See list, p. 143 U.S.C.G.S.: 1°N, 128°E	
35	Nov. 4	Iv	ePNE eNE eSNE iNE F	08 12 12 23 13 01 08 15	26.5 35.7 46.0 01.6		Pasadena: 36°20'N, 120°05'W U.S.C.G.S.: 12°S, 166°E	
36	Nov. 4	Iv	ePNE eE eE eE iN F	08 12 13 29 13 38 13 38 13 52 08 14	34.0 29.5 33.5 38.5 39.1		Pasadena: 36°20'N, 120°05'W	
37	Nov. 4	Id	ePNE iSE iSN iNE F	18 33 18 34 18 34 18 35	58.1 09.8 10.3 15.1		See list, p. 143 See list, p. 143	
38	Nov. 4	Id	ePN eE iSE iSN F	20 04 00 33 00 31 00 31 20 05	21.5 26.0 33.8 34.3		Aftershock Pasadena: 37°19'N, 118°23'W	
39	Nov. 9	Id	iPNE iNE eN iE iSNE F	07 02 15 43 15 45 15 45 07 04	32.0 32.6 42.0 42.8 43.7		See list, p. 143 See list, p. 143 See list, p. 143	
40	Nov. 13	Id	ePNE iSNE F	06 42 06 43	04.5 06.0		See list, p. 143	
41	Nov. 15	Id	iPNE iSNE F	06 52 06 54	35.0 41.4		See list, p. 143	

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
42	Nov. 15	Id	ePE iSN iSE F	13 56	17.7 50.1 50.5			See list, p. 113
43	Nov. 15	Iu	ePPN eE eSKSNE	21 05	21 33 37			U.S.C.G.S.: 4°N, 128°E
53	Nov. 23	Id	eLE F	12 33	33.9 13			Aftershock
44	Nov. 15	Id	eN eE F	21 21	00 05.5			U.S.C.G.S.: 20°S, 171°E p = 170 km. ca.
45	Nov. 16	Iu	ePN ePE eE eN eSN eSE eE eE eLN eLE F	12 23	43.5 45.5 58.5 03.5 54.0 10.0 04.0 44.0 52 26.5			U.S.C.G.S.: 12°S, 166°E
46	Nov. 16	Id	iPNE iN iSE eSN F	18 05	01.0 05.4 10.2 10.6			See list, p. 143 Foreshock Foreshock Foreshock
47	Nov. 17	Iv	iPN iPE iSN iSE F	00 33	30.6 31.3 02.9 04.3			Pasadena: 37°19'N, 118°23'W Foreshock See list, p. 113 Foreshock
48	Nov. 18	Id	iPNE iSNE F	15 43	57.5 58.8			See list, p. 113
49	Nov. 18	Id	eE eSE F	23 01	26.0 33.1			See list, p. 143 Aftershock
50	Nov. 20	Id	iPNE iSNE F	07 30	07.9 15.9			Aftershock See list, p. 143
51	Nov. 21	Id	iSNE F	14 09	37.5 10			Aftershock

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m.	s.			
	1944							
52	Nov. 23	Id	ePN	05 20	32.8			See list, p. 143
			ePE		33.3			
			iSE		45.3			Aftershock
			iSN		46.5			
			iE		53.1			
			iN		53.9			
			F	05 22				
53	Nov. 23	Id	iPNE	12 55	56.1			Aftershock
			iSNE		56 07.3			
			F	12 58				
54	Nov. 24	Iu	iPNE	05 01	34.1			U.S.C.G.S.: 20°S, 171°E h = 170 km. ca.
			iNE		41.1			
			eN	03 03.2				
			ePPE	04 54.1				
			eSKSNE	11 37.0				
			eE	12 39.5				
			eN		49.0			
			eE	13 42				
			eN		48.1			
			F	05 22				
55	Nov. 26	Id		02 56				Foreshock 20°S, 171°E
56	Nov. 26	Id		03 15				Aftershock of Nov. 24, 1944 Foreshock
57	Nov. 26	Id		03 25				Foreshock 34.7°N, 120°25'W
58	Nov. 26	Id		03 36				Foreshock
59	Nov. 26	IIId	iPNE	03 38	10.7			Foreshock
			iSNE		12.3			
			F	03 39				Coordinates 35.8°N, 120.0°W
60	Nov. 26	Id		03 40				Foreshock
61	Nov. 26	IIId	iPN	03 41	11.2			See list, p. 143
			iSNE		12.8			Foreshock 15°S, 146°E
			F	03 42				
62	Nov. 26	IIId	iPN	03 44	44.9			See list, p. 143
			F	03 47				
63	Nov. 26	Id		03 46				Aftershock
64	Nov. 26	IIId	iPNE	03 51	53.9			Aftershock
			iSN		55.4			
			F	03 53				
65	Nov. 26	IIId	iPNE	04 00	07.2			Aftershock
			iSNE		08.8			
			F	04 01				

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
66	Nov. 26	Id		04	03			Aftershock
67	Nov. 26	Id		05	41			Aftershock
68	Nov. 26	Iu	ePNE	07	54 56.0			
			eN	17	55 06.5			See list, p. 143
			eN	17	57 00.0			
			eN	08	11 08.5			
			F	08	12			U.S.C.G.S.: 18°N, 167°E
69	Nov. 27	Iv	ePNE	23	36 46			
			eE	17	05 48			
			eN	17	11 49			
			iSN		37 37.3			
			iSE	18	57 39.3			Aftershock
			F	23	39			
70	Nov. 29	Iv	ePN	03	02 56.4			U.S.C.G.S.: 51.5°N, 179°E
			eE		03 00.3			
			eSE		09.5			
			eSN		09.9			
			F	03	04			
71	Nov. 29	Iu	ePNE	19	03 48.2			Pasadena: 20°S, 171°E
			F	19	05			Aftershock of Nov. 24, 1944 at 0501 UT.
72	Nov. 30	Iv	ePN	18	54 03.5			Pasadena: 34°43'N, 120°25'W
			ePE		05.1			
			eSN	13	23 59.2			
			iSE		55 03.2			
			F	18	57			
73	Dec. 2	Iv	ePN	15	09 42.2			Pasadena: 35.8°N, 120.0°W
			iSN		10 04.5			
			F	15	11			See list, p. 143
74	Dec. 4	Iu	ePN	20	46 58.1			U.S.C.G.S.: Approximately 15°N, 146°E
			eSN		57 17.9			
			F	20	58			
75	Dec. 4	Id	ePN	22	57 47.1			Aftershock Southeast of Pescadero.
			iSN		56.5			
			F	22	59			
76	Dec. 7	Iu	ePN	04	47 47			U.S.C.G.S.: 33°N, 137°E
			eN		59			
			eSN		57 48.5			
			eN	05	01 32			
			eN		02 45			
			eGN		08 29			
			F	08	03			

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
77	Dec. 8	Iv	eN eSN eN F	09 22 08 28.4 34.7				Pasadena: 38.4°N, 117.4°W
78	Dec. 8	Id	eN F	17 25 08.5 17 25.5				See list, p. 143 See list, p. 143
79	Dec. 10	Iu	ePNE eSE eSN eLNE F	16 37 40.5 48 02.5 04.0 17 05 25.5 17 31				U.S.C.G.S.: 18°S, 167°E
80	Dec. 10	Iu	ePNE F	16 57 21.5 16 58				Aftershock
81	Dec. 12	Iu	ePNE eSN eSE eN eE eNE eMN F	04 25 09.7 31 18 22 05 34 53.5 58.0 22 39.2 39.6 06 10				U.S.C.G.S.: 51.5°N, 179°E U.S.A.: 25°S, 70°W h = 150 km.
82	Dec. 12	Iu	ePNE F	10 37 12.0 10 38				Pasadena: 36°24'N, 117°55'W
83	Dec. 13	Iv	ePE ePN iSE iSN F	13 23 48.1 49.6 24 10.1 11.2 13 25				
84	Dec. 15	Id	iPNE iN iSNE F	20 09 08.9 17.5 27 20.4 20 11				See list, p. 143
85	Dec. 15	Id	iPNE iSE iSN F	23 14 14.1 07 29 25.6 26.1 23 16				Aftershock
86	Dec. 16	Id	eN eNE eN F	19 01 44 48.0 54.5 19 02.5				See list, p. 143 S?

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m.	s.			
	1944							
87	Dec. 19	Id	ePN ePE eSE eSN F	11 44	24.0 25.0 29.7 30.1			See list, p. 143
88	Dec. 19	IIId	iPN iSN F	22 17	50.3 52.0			See list, p. 143
89	Dec. 20	Id	ePE ePN iSNE F	01 55	02.3 03.1 04.3			
90	Dec. 21	Iv	ePN ePE eSNE eLN eLE F	05 20	21.5 23.5 31.5 22.5 22.7			Oregon: Oregon Coast
91	Dec. 22	Iu	ePNE iNE F	22 43 44	49.0 02.5			J.S.A.: 25°S, 70°W h = 150 km.
92	Dec. 23	IIv	iPNE iE iN iNE iSE iSN iE F	08 17	15.6 21.1 22.3 50.7 18 01.3 01.8 13.1			Pasadena: 36°24'N, 117°55'W
93	Dec. 24	Iv	ePN ePE iN iSE iSN iE F	07 26	36.3 37.8 09.3 10.4 12.3 18.6			Aftershock
94	Dec. 25	Iv	ePNE eSNE F	09 27	16.0 28 03.0			

MT. HAMILTON

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h. m. s.	s.			
	1944							
95	Dec. 27	Iu	ePN	15 38	52.0			Pasadena: 6.5°S, 152°E h = 90 km.
			ePE		53.5			
			eN	14 02	02.5			
			eE		26.0			
			eSNE	14 19	19.5			
			eLN	16 11	11.0			
			eLE		11.2			
			F	16 34				
96	Dec. 28	Iv	ePE	07 21	04.0			
			ePN		05.0			
			eSE		35.0			
			eSN		36.0			
			F	07 22				
97	Dec. 30	Iv	ePNE	22 05	04.0			Pasadena: Oregon Coast
			eSNE	06 52	52.5			
			eLE		07.5			
			eLN		07.6			
			F	23 32				

Time — All determinations are reduced to Universal Time.
 Altitude — 103 meters (337 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPH

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

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	Oct. 3	Id	ePN iPE eSE iSN	22 18	06.0 06.5 13.0 13.8			
12	Oct. 12	IIId	eE iN F	23 02	22.0 23.5			
2	Oct. 4	Id	ePN ePE eSNE F	01 57	02 03 14.0			
13	Oct. 14	Id		01 58				Millbrae Blast?
3	Oct. 5	Id	iPNE iSN eSE F	16 30	32.6 34.8 35.0			
14	Oct. 14	Iv		16 31				San Benito County?
4	Oct. 5	Iu	iPNE eSE eSN F	17 41	03.6 29.0 29.5			Pasadena: 22.5°S, 172°E h = 120 km.
15	Oct. 17	Id		17 55				
5	Oct. 5	Iv	iPNE eE iN iSNE ePNE F	18 22	05.3 11.5 12.5 19.2 33			
16	Oct. 18	Id		18 23				Near Santa Rosa
6	Oct. 6	Id	ePN iPE eSNE	14 28	41.5 42.0 52.5			See list, p. 143
17	Oct. 20	Iv	iE iN F	01 13	54.8 55.4			Pasadena: 38.5°N, 118.3°W
7	Oct. 10	IIId	iPNE iSNE F	17 53	16.9 17.6			
18	Oct. 21	Iv		17 55				Colusa County
8	Oct. 10	Iv	eNE eN F	18 34	55 06			
19	Oct. 23	Id		18 36				See list, p. 143 Blast?
9	Oct. 11	Iu	ePNE eNE eNE F	09 56	25 35 50.0			J.S.A.: 15.0°S, 173.5°W h = 80 km.
20	Oct. 23	Id		09 58				
10	Oct. 11	Id	ePNE iSNE F	16 44	16.0 24.0			U.S.G.S.: 5°N, 80.0°W
				16 46				

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
11	Oct. 11	Id	ePNE eSN F	23 39	01 08			
12	Oct. 12	IIId	iPNE iSNE eMNE F	23 02	03.8 07.4 11			See list, p. 143
13	Oct. 14	Id	ePNE iNE iNE eNE F	20 27	38.0 44.4 48.6 52.5			Millbrae Blast?
14	Oct. 14	Iv	ePNE eSNE F	21 49	37.5 53.0			San Benito County? Pasadena: 33°58'N, 116°45'W
15	Oct. 17	Id	iPNE eE iN F	18 02	32.0 39.0 39.5			Millbrae Blast?
16	Oct. 18	Id	iPNE iSN F	18 04	54.7 55.7			
17	Oct. 19	Iv	ePN eSNE eE F	09 05	53.5 06 09.5 10.5			Near Santa Rosa
18	Oct. 20	Iv	ePNE eSE eSN F	01 13	11 43.5 44.0			Pasadena: 38.5°N, 118.3°W
19	Oct. 21	Iv	ePE eNE iNE F	18 19	07.0 10.0 11.1			Colusa County See list, p. 143
20	Oct. 23	Id	iPNE iSNE eN iE F	20 46	41.8 48.4 49.1 50.1			See list, p. 143 Blast? See list, p. 143
21	Oct. 23	Iu	ePE iN eSE eSN F	23 49	32.5 38.9 57 14 35.0			U.S.C.G.S.: 5°N, 80.0°W

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
22	Oct. 25	Id	ePNE iSNE iN eE F	21 26	22 23.3 24.3 25.0			
23	Oct. 26	IId	iPNE iSNE F	22 50	29.6 33.0 55.0			See list, p. 143
24	Oct. 27	Id	ePE iPN eE iN F	18 33	08.5 09.1 14.5 17.1			See list, p. 143
25	Oct. 28	Iv	eE F	18 32	54 22			Pasadena: 33°58'N, 116°45'W U.S.G.C.S.: 47, 126°E
26	Oct. 28	Iv	eE F	19 53	38			U.S.G.C.S.: 17°S, 166°E
27	Oct. 28	IId	iPNE iSN eSE iN F	21 27	24.3 25.1 25.7 26.3			See list, p. 143
28	Oct. 30	Id	ePN iSN F	21 14	22 27.4 15			See list, p. 143
29	Oct. 30	IIv	ePNE eN eE eN iE F	23 29	25.0 28.5 28.8 55.0 55.6			
30	Nov. 2	Iv	iPNE iE iSNE iE iN F	05 00	54.1 01 06.7 09.9 10.9 11.7			See list, p. 143
31	Nov. 4	Iv	ePNE iSN eSE iN F	18 34	02.8 18.1 18.5 19.8			See list, p. 143
	Nov. 21	Iv	iSNE F	11 09	12.0			

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
32	Nov. 5	Id	ePN iPE eSN iSE F	12 45	42.0 43.2 44.0 44.5			See list, p. 143
33	Nov. 9	Iv	ePN ePE eE F	07 02	40.0 40.5 55.8			See list, p. 143
34	Nov. 15	Id	ePNE eE eE eN F	06 52	38.8 43.5 50.0 50.5			See list, p. 143
35	Nov. 15	Iu	eSKSNE F	21 11 21 15	22			U.S.C.G.S.: 4°N, 128°E
36	Nov. 16	Iu	ePNE eGE eLNE F	12 23	38 ca 48 58 ca 51.0 ca			U.S.C.G.S.: 12°S, 166°E See list, p. 143
37	Nov. 16	IIId	iPN ePNE eNE iSNE F	18 04	56.4 56.8 58.2 05 01.9			See list, p. 143
38	Nov. 17	IIId	iPNE iN iE iN iE F	21 55	30.1 30.9 31.4 32.1 33.0			See list, p. 143
39	Nov. 18	Id	iPE iPN eSNE F	00 05	14.6 15.0 20.9			See list, p. 143
40	Nov. 18	IIId	iPNE iSNE F	23 01	21.5 24.9			See list, p. 143 Southeast of Pescadero
41	Nov. 20	Id	ePNE iSNE F	07 30	12.0 24.2			See list, p. 143
42	Nov. 21	Id	iSNE F	14 09	42.7 14 10			See list, p. 143

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944					s.		
43	Nov. 23	Iv	iPNE iSNE F	05 20 05 22	37.8 54.8			See list, p. 143
44	Nov. 23	Iv	ePNE eSE eSN F	12 56 12 57	01.9 17.5 19.0			Aftershock
45	Nov. 24	Iu	iPNE epPNE eE F	05 01 02 05 05 07	29.4 03.3 59.5			U.S.C.G.S.: 20°S, 171°E h = 170 km. ca.
46	Nov. 26	Id	ePE iPN eN eE F	03 38 03 39	16.0 16.7 20.0 21.5			Foreshock See list, p. 143
47	Nov. 26	Id	ePNE eSNE F	03 41 03 42	17.4 22.5			Foreshock See list, p. 143
48	Nov. 26	IIId	iPNE eNE iSNE eMNE F	03 44 03 47	50.6 54.1 56.3 04		7	See list, p. 143
49	Nov. 26	Id	eN F	07 54 07 57	54.9 06.0			U.S.C.G.S.: 51.5°N, 179°E
50	Nov. 30	Iv	ePN ePE	18 54	17 21			Pasadena: 34°43'N, 120°25'W
51	Dec. 2	Iv	ePNE eN eE F	15 09 15 11	44 00 09 28.1			Pasadena: 35.8°N, 120.0°W
52	Dec. 4	IIId	iPNE iSNE	22 57	44.3 44.8			Southeast of Pescadero
53	Dec. 5	IIId	F iSNE	22 59	20.5 35.1			Aftershock
53	Dec. 5	IIId	iPNE eE	22 09	16.6 18			See list, p. 143
53	Dec. 5	Id	iSNE F	19 01 19 02	18.6 54.5			See list, p. 143

PALO ALTO

No.	Date	Character	Phase	Time (U.T.)	Period	Trace motion	Remarks
	1944			h. m. s.	s.		
54	Dec. 5	Id	ePNE F	03 11 43.5 03 13			
55	Dec. 7	IIu	iPNE iN	04 47 58.8 48 12.1			U.S.C.G.S.: 33°N, 137°E
56	Dec. 18	Id	iE eSE eSN iE iN	18 56 12.5 57 35.0 38.5 05 02 48.8 54.8			
57	Dec. 19	Id	eGN eGE eLN F	11 08 03 18.5 11 54 07 07			See list, p. 143
58	Dec. 8	Id	ePE ePN eSNE F	17 24 54 55 22 19 58.5 17 26			See list, p. 143
59	Dec. 21	Iv	eSE F	05 21 32.0 06 52 10.4 06 53			Oregon
57	Dec. 10	Id	iSNE F	06 52 10.4 06 53			
58	Dec. 10	Iu	ePN ePE eSN	16 37 38 05 39.0 48 00.0			U.S.C.G.S.: 18°S, 167°E
59	Dec. 23	Iv	eSE F	08 17 01.0 17 30			Paradise: 36°24'N, 117°55'W S-P = 50 sec. ca.
59	Dec. 12	Iu	ePE ePN eE eSNE F	04 25 04 15 27 06.0 31 21.5 05 00			U.S.C.G.S.: 51.5°N, 179°E
60	Dec. 13	Iv	eE eE F	13 24 09 21 13 26			
61	Dec. 15	Iv	ePN iPNE eNE iE iSNE F	20 09 13.2 13.7 22.9 28.1 28.9 20 11			See list, p. 143
62	Dec. 15	Iv	iPNE iSNE F	23 14 20.5 35.1 23 16			Aftershock
63	Dec. 16	Id	iPE iSE F	19 01 45.5 54.5 19 02			See list, p. 143

PALO ALTO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
64	Dec. 16	Id	iPNE iSN eSE F	23 00	09.6 10.5 11.0			
				23 01				
65	Dec. 18	Id	iPNE iE iSNE F	18 56	31.9 32.5 35.6			
				18 57				
66	Dec. 19	Id	ePN ePE eSNE F	11 44	29.5 31 38.0			See list, p. 143
				11 46				
67	Dec. 19	Id	ePNE eSNE F	22 17	55.0 02.5			See list, p. 143
				22 19				
68	Dec. 21	Iv	eSE eSN eE eE eN F	05 21	22.0 25 43.5 27 29			Oregon
				05 49				
69	Dec. 23	Iv	ePNE	08 17	20 ca			Pasadena: 36°24'N, 117°55'W S-P = 50 sec. ca.
70	Dec. 30	Iu	ePE ePN eN eE eE eN F	22 05	14 19.5 07.7 08 12 15 26 36			Pasadena: Oregon Coast
				23 03				

SAN FRANCISCO

No.	Date	Mag.	Phase	Time	Track	Remarks
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THE SAN FRANCISCO STATION, UNIVERSITY OF SAN FRANCISCO
 SAN FRANCISCO, CALIFORNIA

1	Oct. 5	IV	e	18 24 ca		Passenger 22.5°S, 172°E h = 170 km.
2	Oct. 5	IV	e	18 24 ca		S-P = 14.6 sec.
3	Oct. 6	IV	e	14 29 ca		S-P = 17.2 sec.
4	Oct. 8	Id	e	02 12 ca		
5	Oct. 11	Id	e	23 12 ca		

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\phi = 37^{\circ} 46' 14'' \text{ N.}$$

$$\lambda = 122^{\circ} 27' 12'' \text{ W.}$$

Time -- All determinations are reduced to Universal Time.

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

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	ε
Wood-Anderson	E 15° S	1500	1	15
	N	3000	1	15

11	Nov. 22	Id	ePK	18 01 13.7		
			eSE	17.0		
			ISE	17.7		
			F	18 02		
15	Nov. 23	IV	ePK	05 20 21.0		See list, p. 143
			eE	21 08.5		
			IE	08.4		
			F	08 22		
16	Nov. 24	Id	eE	05 01 ca		U.S.C.G.S.: 20°S, 171°W h = 170 km. ca.
			F	05 02.5		
17	Nov. 25	Id	IE	18 00 39.2		
			F	18 01		

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
1	Oct. 5	Iu	eP	17	41	ca		Pasadena: 22.5°S, 172°E h = 120 km.	
2	Oct. 5	Iv	e	18	24	ca		S-P = 14.6 sec.	
3	Oct. 6	Iv	e	14	29	ca		S-P = 17.2 sec.	
4	Oct. 8	Id	e	02	12	ca			
5	Oct. 11	Id	e	23	42	ca			
6	Oct. 14	Id	e	20	27.5	ca		Millbrae Blast?	
7	Oct. 16	Id	e	18	07	ca			
8	Oct. 19	Id	e	09	09	ca		Near Santa Rosa	
9	Oct. 20	Iv	e	01	13	ca		Pasadena: 38.5°N, 118.3°W	
10	Oct. 21	Id	ePE F	18 19 18 20	04.8			Colusa County	
11	Oct. 23	Id	iPE eE iSE F	20 46 20 51 20 51 20 48	38.5 41.7 44.2			See list, p. 143 Blast?	
12	Oct. 24	Id	ePE eSE F	23 43 23 43 23 44	17.8 20.6			U.S.C.G.S.: 51.5°N, 179°E	
13	Nov. 22	Id	ePE iE iE F	14 23 14 23 14 24 14 24	28.7 31.9 42.7			See list, p. 143	
14	Nov. 22	Id	ePE eSE iSE F	18 01 18 15 18 15 18 02	13.7 17.0 17.7			Aftercheck	
15	Nov. 23	Iv	ePE eE iE F	05 20 05 21 05 19 06 22	51.0 04.5 09.4			See list, p. 143	
16	Nov. 24	Iu	eE F	05 01 05 02.5	ca			U.S.C.G.S.: 20°S, 171°E h = 170 km. ca.	
17	Nov. 25	Id	iE F	18 00 18 01	39.2			Oregon	

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
18	Nov. 26	IIId	iPE iSE eME F	03 44	56.5 06.5 09			See list, p. 143	
19	Nov. 30	Id	ePE iSE F	07 25	55.5 59.3			Afterstock	
20	Nov. 30	Id	ePE iSE F	07 50	09.7 17.0				
21	Dec. 4	Id	eE F	23 58	31.7 00 00			Passadena Oregon Coast	
22	Dec. 7	Iu	ePE F	04 48	00 ca 06 13 ca			U.S.C.G.S.: 33°N, 137°E	
23	Dec. 8	Id	ePE iSE F	17 24	50.4 54.2			See list, p. 143	
24	Dec. 9	Id	eE F	15 21	21 ca 15 24			Pinole Blast	
25	Dec. 12	Iu	ePE F	04 25	10.2 04 52			U.S.C.G.S.: 51.5°N, 179°E	
26	Dec. 12	Id	iPNE iSNE F	20 14	12.3 13.7				
27	Dec. 15	Iv	ePE eSE F	20 09	21.0 38.0			See list, p. 143	
28	Dec. 15	Id	ePE eE F	23 15	31.5 47.0			Afterstock	
29	Dec. 16	Id	ePE iSE F	19 01	40.4 47.9			See list, p. 143	
30	Dec. 19	Iv	iSE F	11 44	50.8 11 45			See list, p. 143	
31	Dec. 20	Id	iSE F	22 14	41.4 22 15				
32	Dec. 21	Iv	eE F	05 21	12.2 05 22			Oregon	

SAN FRANCISCO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
33	Dec. 22	Id	iE F	20 09	00.1 20 10			
34	Dec. 23	Iv	ePE F	08 17	25.2 08 21			Pasadena: 36°24'N, 117°55'W
35	Dec. 24	Iv	eE F	07 26	47.5 07 29			Aftershock
36	Dec. 30	Iv	ePE eE F	18 17	11.7 45.7 18 19			
37	Dec. 30	Iv	eE eE F	22 05	02.5 43.0 22 38			Pasadena: Oregon Coast

Apparatus	Component	V	T ₀	ε
Bosch-Gorzi 5 kg.	E	12	11	5
	N	12	8	5

The station is operated by Mr. Joseph Reynolds, of Ferndale, in cooperation with the University of California.

FERNDALE

1 Oct. 22 Id 1PHE 15HE
 THE FERNDAL STATION
 FERNDAL, CALIFORNIA

2 Oct. 23 Id eSN 23 57 50.5
 00 10 U.S.G.C.S.: 5°N, 120°W

3 Nov. 13 Id ePU 20 11 12.2
 15H 14.5
 F 20 12

CONSTANTS

4 Nov. 15 Id eN 12 34 U.S.G.C.S.: 12°S, 166°W

CONSTANTS OF THE STATION

Latitude and longitude:

$\phi = 40^{\circ} 34' N.$
 $\lambda = 124^{\circ} 16' W.$

Time -- All determinations are reduced to Universal Time.

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

CONSTANTS OF THE SEISMOGRAPHS

Apparatus	Component	V	T ₀	ξ
Bosch-Omori 25 kg.	E	12	11	5
	N	12	8	6

The station is operated by Mr. Joseph Bognuda, of Ferndale,
 in cooperation with the University of California.

10 Dec. 14 Id ePE 19 25 05.7
 13E 12.6
 F 19 27

11 Dec. 21 Id ePES 05 20 00
 eSN 27.5
 eSE 30.0
 eS 21 20.0
 F 05 24

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
1	Oct. 22	Id	iPNE iSNE F	16 13	27.6 35.1			
2	Oct. 23	Id	eSN F	23 57 00 10	50.5			U.S.C.G.S.: 5°N, 80.0°W
3	Nov. 13	Id	ePN iSN F	20 11 20 12	12.2 14.6			
4	Nov. 16	Iu	eN F	12 34 13 34	ca			U.S.C.G.S.: 12°S, 166°E
5	Nov. 16	IIId	iPN iPE iSN iSE F	23 55	21.0 21.7 28.4 29.0			IV at Ferndale
6	Dec. 4	Id	eN eN F	18 01 18 02	14.5 37.0			
7	Dec. 7	IIu	ePN ePE eSNE eN F	04 47 05 11 07 34	20 36 22 00			U.S.C.G.S.: 33°N, 137°E
8	Dec. 10	Iu	ePN eSN eLN F	16 37 17 04 17 36	44 04 5 36			U.S.C.G.S.: 18°S, 167°E
9	Dec. 12	Iu	ePE eSE eSN eLE F	04 24 30 04 38 05 50	46 40 44 7 50			U.S.C.G.S.: 51.5°N, 179°E
10	Dec. 14	Id	ePE iSE F	19 26 19 27	06.7 12.6			
11	Dec. 21	Iv	ePNE eSN eSE eE F	05 20 21 05 34	00 27.5 30.0 20.0			Oregon

FERNDALE

No.	Date	Char-acter	Phase	Time (U.T.)		Trace motion	Remarks
				h. m. s.	s.		
	1944						
12	Dec. 30	Iv	ePN ePE eSE eSN F	22 05 00 16 06 34.0 35.0 23 01			Pasadena: Oregon Coast

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude

$\phi = 36^{\circ} 41' N$
 $\lambda = 115^{\circ} 47' W$

Time -- All observations are reduced to Universal Time.

Altitude -- 30.2 meters (290 feet) above mean sea level.

CONSTANTS OF THE SEISMOGRAPH

Apparatus	Component	V	T ₀	E
Wood-Anderson		3000	0.9	15

FRESNO

THE FRESNO STATION, FRESNO STATE COLLEGE
FRESNO, CALIFORNIA

CONSTANTS

CONSTANTS OF THE STATION

Latitude and longitude:

$$\begin{aligned} \phi &= 36^{\circ} 46.11 \text{ N.} \\ \lambda &= 119^{\circ} 47.18 \text{ W.} \end{aligned}$$

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	ξ
Wood-Anderson	N	3000	0.9	15

FRESNO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
1	Oct. 5	Iu	ePN epPN eN ePPN eSN F	17	41	19 43 13 56 52 55			Pasadena: 22.5°S, 172°E h = 120 km.
2	Oct. 11	Iu	ePN eN F	09	56	32 47 58			J.S.A.: 15°S, 173.5°W h = 80 km.
3	Oct. 23	Iu	eSN eLN F	23	56	36 09.2 18			U.S.C.G.S.: .5°S, 80.0°W
4	Oct. 28	Iv	eN eSN F	18	31	24 09 35			Aftershock Pasadena: 33°58'N, 116°45'W U.S.C.G.S.: 30°S, 171°E h = 170 km. ca.
5	Oct. 30	Iv	ePN iSN eKN eAN F	23	29	19 38 46 41 34			
6	Nov. 2	Iv	ePN eN eSN eAN F	05	00	53 02 07 10 05			See list, p. 143
7	Nov. 4	IIId	iPN iN iSN	08	12	13.0 17 21.0			Pasadena: 36°20'N, 120°05'W
8	Nov. 4	Iv	eN iSN eKN eAN F	09	16	31.0 31 57 14 37			U.S.C.G.S.: 33°N, 137°E See list, p. 143
9	Nov. 9	Iv	iSN	07	02	55.0			See list, p. 143
10	Nov. 15	Iu	eSKSN eN eN F	21	11	46 06 58 24			U.S.C.G.S.: 4°N, 128°E
20	Dec. 10	Iu	F	21	22	24			Aftershock

FRESNO

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
11	Nov. 16	Iu	ePN eN eN eLN F	12	24	01 44 31 53.4 22			U.S.C.G.S.: 12°S, 166°E
12	Nov. 17	IIv	iPN iMN F	00	33	11 36 36			Pasadena: 37°19'N, 118°23'W
13	Nov. 23	Iv	iSN eN F	05	20	49.5 08 24			See list, p. 143
14	Nov. 23	Iv	iSN F	12	56	19.2 57			Aftershock
15	Nov. 24	Iu	ePN epPN ePPN eN eSKSN eN F	05	01	35 15 55 31 57 53 19			U.S.C.G.S.: 20°S, 171°E h = 170 km. ca.
16	Dec. 5	Ir	ePN eN eN F	14	44	48 03 11 54			J.S.A.: 25°N, 110°W
17	Dec. 5	Ir	eN eN F	17	12	49 32 26			J.S.A.: 25°N, 110°W
18	Dec. 7	IIu	ePN iN iN eSN eN eN F	04	47	57.0 34 06 07 17 07.1 16			U.S.C.G.S.: 33°N, 137°E
19	Dec. 10	Iu	ePN eN eN eSKSN eSN F	16	37	42 57 18 39 07 12			U.S.C.G.S.: 18°S, 167°E
20	Dec. 10	Iu	ePN F	16	57	24 00			Aftershock

FRESNO

No.	Date	Char-acter	Phase	Time (U.T.)		Period	Trace motion	Remarks
				h.	m. s.			
	1944							
21	Dec. 12	Iu	ePN eN eN eN eN F	04 26 26 49.0 27 55 33 08 38.2 05 12				U.S.C.G.S.: 51.5°N, 179°E
22	Dec. 15	Iv	iSN eKN eAN F	20 09 34.5 10 59 11 34 20 13				See list, p. 143
23	Dec. 21	Iv	eN eN F	05 22 20 23 24 04 34				Oregon
24	Dec. 23	IIv	iPN iMN F	08 16 52 17 11 08 26				Pasadena: 36°24'N, 117°55'W
25	Dec. 24	IIv	iPN iSN F	07 26 13 30 07 29				Aftershock
26	Dec. 30	Iv	ePN eN eN F	22 05 28.0 58 10 27 22 36				Pasadena: Oregon Coast

No.	Date	Char-acter	Phase	Time										
	1944			MINERAL										
1	Nov. 7	IIIa	eFE 1SE F	THE MINERAL STATION MINERAL, CALIFORNIA 17 32.5										
2	Nov. 10	IIIa	eFE 1SE F	25 26 32.5 07 30.0 08 25										
3	Dec. 17	IIIa	eFE 1SE F	16 23 26.7 27 2										
				CONSTANTS										
4	Dec. 17	IIIa	eFE F	CONSTANTS OF THE STATION 16 24.0										
				Latitude and longitude:										
5	Dec. 17	IIIa	eFE F	16 24 07.3 $\phi = 40^{\circ} 21' N.$ $\lambda = 121^{\circ} 35' W.$										
6	Dec. 17	IIIa	eFE F	16 24 13.8 Time -- All determinations are reduced to Universal Time.										
7	Dec.			Altitude -- 1495 meters (4906 feet) above mean sea level.										
8	Dec. 19	IIIa	eFE 1SE F	03 09 37.0 CONSTANTS OF THE SEISMOGRAPHS 03 10										
9	Dec. 19			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Apparatus</th> <th style="width: 15%;">Component</th> <th style="width: 10%;">V</th> <th style="width: 10%;">T₀</th> <th style="width: 15%;">ε</th> </tr> </thead> <tbody> <tr> <td>Wood-Anderson</td> <td>E</td> <td>3000</td> <td>1</td> <td>15</td> </tr> </tbody> </table>	Apparatus	Component	V	T ₀	ε	Wood-Anderson	E	3000	1	15
Apparatus	Component	V	T ₀	ε										
Wood-Anderson	E	3000	1	15										
11	Dec. 23	IIIa	eFE 1FE 1SE eFE F	08 17 42 50.8 58.1 18 52.6 19 01 08 21										
				Pasadena 36°24'N, 117°55'W										
12	Dec. 30	IIIa	eFE 1SE F	18 16 30.5 ca 33 ca 18 18										
13	Dec. 30	IIIa	eFE 1SE 1E F	18 36 09.2 ca 12.3 ca 13.2 ca 18 37										

MINERAL

No.	Date	Char-acter	Phase	Time (U.T.)			Period	Trace motion	Remarks
				h.	m.	s.			
	1944								
1	Nov. 7	IIId	ePE iSE F	17	21	56.0 59.0 17 22.5			Small quake Nov. 9, 1944, at 0538 UT.
2	Nov. 10	Id	iPE iSE F	08	06	52.5 07 00.0 08 08			See list, p. 143 Small quakes on Nov. 13, 1944, at 05 32.9 UT and at 05 56.8 UT.
3	Dec. 17	IIId	iPE iSE F	16	23	26.7 31.7			Runs into next shock
4	Dec. 17	IIId	iSE F	16	23	47.5 16 24.0			
5	Dec. 17	Id	iSE F	16	24	07.3 16 24.2			
6	Dec. 17	IIId	iSE F	16	24	13.8 16 24.7			
7	Dec. 17	Id	iE F	16	24	55.6 16 25.2			
8	Dec. 19	IIId	iPE iSE F	03	09	37.0 38.8 03 10			
9	Dec. 19	IIId	iPE iSE F	12	40	27.4 28.4 12 41			
10	Dec. 22	IIId	iPE F	18	08	37.1 18 09.3			
11	Dec. 23	IIv	ePE iPE iE iSE eME F	08	17	42 50.8 58.4 18 51.6 19 01 08 21			Pasadena: 36°24'N, 117°55'W
12	Dec. 30	IIId	iPE iSE F	18	16	30.5 ca 33 ca 18 18			
13	Dec. 30	IIId	iPE iSE iE F	18	36	09.2 ca 12.3 ca 13.2 ca 18 37			