THE REGISTRATION OF EARTHQUAKES AT THE BERKELEY STATION

AND

AT THE LICK OBSERVATORY STATION

FROM

April 1, 1927, to September 30, 1927

BY

PERRY BYERLY

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CONTENTS

Symbols and Notations

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

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

   In general a bar over two letters denoting types of waves indicates refraction. The subscript $_c$ denotes the boundary at about 2900 km. depth between the metallic core and the middle shell which surrounds it. Thus:
   $\overline{S_cP_cS}$ — Waves which have penetrated the core, having been transverse before entering and after leaving the core, and longitudinal within the core.
   $\overline{P_cP_c}$ $\overline{P_cP}$ — Waves refracted at the core boundary into the core, reflected once at this boundary while within the core and again refracted out of the core, having remained longitudinal on all branches of the path.
   G — Long waves at beginning of surface phase. Velocity about $4.4\frac{\text{km.}}{\text{sec.}}$
   L (undae longae) — Long waves preceding M. Velocity about $3.8\frac{\text{km.}}{\text{sec.}}$
   M (undae maximae) — Shorter and more regular waves of large amplitude in the surface phase.
   M_n — Greatest motion in the surface phase.
   C (coda) — Tail or end portion.
   F (finis) — End of discernible movement.

   For local earthquakes a special notation is used:
   $\overline{P}$ — The longitudinal wave which has traveled its whole path in the surface layer or crust of the earth.
   $\overline{S}$ — The transverse wave which has traveled its whole path in the surface layer of the earth.

   In general R_i denotes reflection once at the lower (inferior) surface of the earth's crust. R_{i2} denotes reflection twice at this surface. R_s indicates reflection at the upper (superior) surface of the crust, i.e., the surface of the earth. Thus, e.g.:
   $R_{i2}\overline{P}_2\overline{S}_2$ — A wave in the earth's crust which has been reflected twice at the lower surface, having been longitudinal on two branches of its path and transverse on two branches.

3. *Nature of the Motion*—
   i (impetus) — Sudden beginning of the motion.
   e (emersio) — Gradual beginning of the motion.
   T (period) — Time of one complete oscillation.
   A — Amplitude of the earth motion, measured from the median line in microns ($\mu=\frac{1}{1000}$mm.), + toward the north, east, or zenith, − toward the south, west, or nadir.
   A_E — E–W component of A.
   A_N — N–S component of A.
   A_Z — Vertical component of A.

4. *Time*—
   O (origin) — Time of shock at point of origin.

THE BERKELEY STATION

CONSTANTS

Latitude and longitude of the center of the seismographic room:

$\varphi=37^\circ\ 52'\ 15\overset{s}{.}9$ N. Lat.
$\lambda 122^\circ\ 15'\ 36\overset{s}{.}6$ W. from Greenwich.

Time. All determinations are reduced to Greenwich mean civil time.

Altitude, 85.4 meters (280 feet) above mean sea level.

Constants of the Seismographs

Date	Apparatus	Component	V	T_0	ϵ	$\frac{r}{T_0^2}$
1927 June 2	Bosch-Omori 100 kg.	E	44	11.9	5	0.0022
	"	N	44	12.3	4	0.0028
	Wiechert 80 kg.	Z	41	5.4	3	0.0065
July 22	B.-O. 100 kg.	E	42	11.8	5	0.0023
	"	N	45	12.0	4	0.0028
	W. 80 kg.	Z	38	5.4	3	0.0059

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
1	Apr. 12	Iv	iP_{ENZ}	23 24 16	<1	2			Slight in Santa Cruz, California.
			e_E	23 24 29	3.5	∓ 4			
			iS_{ENZ}	23 24 31	2_E	5			
					2.5_Z				
			i_{ENZ}	23 24 32	$<1_E$	5			
					1_N				
					$2\ 5_Z$				
			e_Z	23 24 59	3			+ 2	Regular sinusoidal group.
								− 2	
			F_Z	23 27±					
2	Apr. 14	Iu	eP_Z	6 35 59	3			− 1	Destructive in Santiago, Chile. Felt for 1,000 miles along coast and in Western Argentina.
			eP_E	6 36 00					
			i_Z	6 36 04	6			− 12	
								+ 16	
			e_{EN}	6 36 08					
			e_{EZ}	6 36 36	3_E	− 3		+ 9	
					5_Z	+ 1		− 6	
			i_Z	6 36 48	5			+ 12	
								− 2	
			e_{EN}	6 36 48	6_E	− 6	+ 1		
					4_N	+ 2	− 1		
			ePR_{1E}	6 39 50					
			ePR_{1Z}	6 40 04	6			− 4	
								+ 6	
			ePR_{3Z}?	6 44 16	7			− 1	
								+ 2	
			eS_E?	6 46 33	9	− 4			
			e_Z	6 47 01	16			+ 20	
								− 49	
			e_E	6 47 02	6			+ 1	
								− 1	
			eS_{EN}	6 47 06	12_E	− 4	+ 2		
					18_N	+ 6	− 2		
			eS_Z	6 47 07	18			− 63	
								+ 38	
			e_Z	6 47 16	7			− 1	
								+ 2	
			F	7 41±					

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
3	Apr. 16	Iu	eP_{ENZ}?	8 22 47					Barely perceptible.
			eP_Z	8 22 50	3			+ 2	
			e_E	8 23 06					
			eS_E	8 27 45					Phases difficult to distinguish.
			e_E	8 28.5±					
			e_E	8 28 47	14	< 3			
			e_N	8 28 53					
			e_Z	8 32.3±					
			e_N	8 32.5±					
			e_E	8 32.6±					
			e_E	8 34.3±	13	< 2			
			e_Z	8 34.9±	23	< 43			
			e_Z	8 36.3±	9	+ 10			
						− 10			
			e_E	9 36.6					May be second earthquake superposed on coda of first.
			e_Z	9 37 05					
			e_Z	9 42.4±					
			F_Z	10 16±					
4	Apr. 18	Id	$i\overline{P}_N$	7 53 34					Barely perceptible.
			$i\overline{S}_{EN}$	7 53 36	< 1	6			
			i_E	7 53 37					
			F	7 53 41					
5	May 9	Iv	eP_Z	20 12 36	6			+ 1	
								− 1	
			eS_E	20 18 14	6	<+1			
						<−1			
			eS_Z	20 18.7±					
			eL_E	20 23.0±	36	− 10			
						+ 10			
			F	20 31±					Not recorded on N.
6	May 22	Iu	eP_Z	22 46 08					Barely perceptible.
			e_Z	22 46 13	2			− 3	
								0	
			e_E	22 46 13					Barely perceptible.
			e_Z	22 46 18	5			− 6	
								+ 3	Very destructive in Kansu, China.
			e_E	22 46 22					
			e_{NZ}	22 46 23	5_Z			− 9	Barely perceptible on N.
								+ 0	
			ePR_{1EZ}	22 49 56	3.5_Z	+ 2		+ 2	
					5_E	− 2		− 2	

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
6	May 9 (contd.)	Iu	ePR_{1N}	22 50 00	5				Barely perceptible.
			eS_{EZ}?	22 56.8					
			eS_N	22 56 51	10		+ 1		
							− 4		
			eS_E	22 56 53	10	+ 13			
			e_E	22 58 37	22	+ 17			
						− 34			
			e_Z	22 58 38	20			− 96	
								+ 96	
			e_E	23 03 17	47	+100			
						−100			
			e_Z	23 03 37	27			− 60	
								+ 30	
			e_N	23 03 43	30	+ 12			
						− 12			
			eG_Z	23 07.5±				− 87	
								+ 87	
			eG_E	23 07.7±	30	+ 60			
						− 60			
			eG_N	23 07.8±	20		+ 7		
							− 7		
			eL_N	23 17.5±	38	+ 64			
						− 64			
			eL_{EZ}	23 19.0±	48	−410		−1700	
						+410		+1700	
			e_Z	23 22.9±	30			−284	
								+284	
			e_E	23 23.5±	18	− 26			
						+ 26			
			M_{1E}	23 29.3±	19	250			
			F	1 15±					
7	May 28	Id	$i\overline{P}_{ENZ}$	17 37 55	< 1	2	5	+ 4	See note at end of this bulletin.
			i_{ENZ}	17 37 58	< 1	12	11	+ 8	
								− 8	
			$i\overline{S}_{ENZ}$	17 38 05	1_{EN}	− 23	+ 18	+ 15	
					2_Z	+ 23	− 18	− 24	
			i_{EN}	17 38 06	< 1	+ 32	+ 40		
							− 54		
			i_E	17 38 09		+ 12			Not clear on N or Z.
			i_Z	17 38 16	3			+ 8	
								− 8	
			F	17 41.5±					

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
8	June 3	Iu	eP_Z	7 26 29	7			− 1	
								+ 1	
			eP_E	7 27.0±					Barely perceptible.
			e_Z	7 31 26	3			− 2	
								+ 2	
			e_Z	7 36 47	8				
			eS_N	7 37 05	4		+ 4		
							− 4		
			eS_E	7 37 08	8	− 13			
						+ 13			
			e_Z	7 37.8±	7			+ 2	
								− 2	
			e_N	7 37 54	4		− 2		
							+ 6		
			e_E	7 37.9±	8	− 14			
						+ 14			
			e_E	7 38.6	6	+ 4			
						− 8			
			e_E	7 40 09	12	+ 6			
						− 6			
			e_Z	7 40 11	10			− 19	
								+ 16	
			e_Z	7 40.3±	21			− 88	
								+ 88	
			e_E	7 41 43	20	− 60			
						+ 70			
			e_E	7 45.9±	32	+ 60			
						−100			
			e_E	7 49.7±					
			e_E	7 53.5±	30	− 20			
						+ 20			
			e_Z	7 53.6±	40			−130	
								+130	
			e_E	7 56.4±	40	+ 5			
						− 5			
			e_E	7 56.7±	36	+ 80			
						− 80			
			e_E	8 01.1±	37	− 42			
						+ 42			
			e_Z	8 01.5±	47			+400	
								−500	
			e_Z	8 05.4±	31			− 79	
								+ 79	

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
8	June 3 (contd.)	Iu	e_E	8 09 42	21	− 24 + 24			
			e_Z	8 09 45	21			− 35 + 35	
			e_Z	8 12.7±	18				
			e_E	8 21.5±	17	− 6 + 6			
			e_Z	8 23.3	19				
			F	9 08					
9	July 14	Iu	e_E	12 40.4	8	+<1 −<1			
			e_Z	13 01.3	7			− 2 + 2	
			e_E	13 03.4	8	+3.5 −1			
			M_E	13 04.7	13	−9			
			e_N	13 04.7	10		+ 1 − 1		
10	July 28	Ir	eP_{EZ}	16 24 06	3	+ 2 − 2		− 2 + 4	U. S. C. & G. S places epicenter at 56° N − 159° W.
			eL_E	16 31.8	22	− 4 + 4			
			eL_Z	16 31.9	22			− 44 + 44	
			F	16 44.8					
11	Aug. 1	Ir	eP_Z	18 54 05	3			− 2 + 2	
			e_Z	19 06.1	13			− 12 + 12	Barely perceptible.
			F	19 28.7					Earthquake not recorded on horizontal.
12	Aug. 4	Iv	eP_E	12 25 24	2	+ 2			About R-F 6 in Los Angeles, California. Felt from Ventura to points about 60 miles southeast of Los Angeles.
			eP_N	12 25 22	1		−<2		
			eP_Z	12 25 23	2			−<2	
			e_E	12 26 13	4	− 2			
			e_N	12 26 27	1		+ 2		
			i_Z	12 26 14	2			+ 4	

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
12	Aug. 4 (contd.)	Iv	e_E	12 26 42	2	+ 4			
			e_N	12 26 43	3		− 6		
			e_E	12 26 56	4	− 4			
			$eL?_Z$	12 28 16	8			− 4	
			F	12 33±					
13	Aug. 5	Iu	eP_Z	21 24 17	2			+ 2 − 2	
			e_E	21 31 24	8	− 50			
			e_Z	21 32 45	7			− 7 +<7	
			e_E	21 33 36	12	+ 2 − 7			
			eL_{EN}	21 43.0	24_{EN}	− 9 + 9	+ 7 − 7		
			e_Z	21 45.6	14			− 15 + 15	
			M_Z	21 47.6	10			− 21	
			F	22 37±					
14	Aug. 6	Ir	eP_Z	0 20 08	3			− 2 +<2	
			eL_Z	0 28.0	24			+ 52 − 52	
			eL_E	0 28.1	21	− 6 + 6			
			F	0 43±					
15	Aug. 10	Iu	iP_{EZ}	1 44 02	3_E 3_Z	− 4 + 2		+ 6 − 6	
			eS_{EZ}	1 51 00	16_E 13_Z	+ 7 − 11		+ 13 − 26	
			e_E	1 58.6	45	− 33 + 33			V=3.8 km./sec.
			e_Z	2 00.4	21			+ 40 − 40	
			e_E	2 01.4	23	− 16 + 16			
			e_Z	2 03.4	8			+ 4 − 4	
			F	2 45±					

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
16	Aug. 10	Iu	eZ	11 54 18	10			+ 7	Not recorded on N.S.
								− 7	
			eE	12 00 47	16	− 6			
						+ 2			
			eE	12 03 19	18	+ 5			
						− 10			
			eZ	12 08 19	10			+ 7	
								− 7	
			eE	12 09 31	21	− 76			
						+ 76			
			M1Z	12 32.0	20			−112	
			M2Z	12 39.0	17			− 71	
			F	13 24±					
17	Aug. 10	Iv	iPZ	12 11 41	3			+ 4	Intensity about VI R-F in Eureka, California. Superposed on surface waves of previous quake.
								− 2	
			ePE	12 11 41	3	− 15			
			ePN	12 11 45	2		+ 25		
			iSNZ	12 12 57	6N		+ 15	+ 12	
					3Z			− 10	
			iZ	12 13 16	4			− 12	
								+ 12	
18	Aug. 18	Iu	ePE	19 19 34	4	<+2			
						<−2			
			ePZ	19 19 35	5			+ 1	
								<−1	
			eZ	19 43 13	8				
			eZ	19 46.1	9			<−5	
								<+5	
			eSZ?	19 49 00	11			<−9	
								<+9	
			eSE?	19 49 04	13	− 5			
						+ 2			
			eZ	19 51 27	12			+ 11	
								− 11	
			eE	19 51 36	11	− 2			
						+ 2			
			eE	19 59 25	12	− 4			
						+ 2			
			eGE	20 01 31	12	+ 2			V=4.1 km./sec.
						− 4			
			eGN	20 01 53	9		<+1		
							<−1		

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h m s	s	μ	μ	μ	
18	Aug. 18 (contd.)	Iu	eGZ?	20 02 19	9			− 5	
								<+5	
			eLE	20 04.0	18	+ 10			
						− 10			
			eLZ	20 04.2	22			− 44	
								+ 44	
			eLN	20 04 16	10		+ 1		
							<−1		
			iZ	20 04 47	9				Short wave superposed on longer one.
			F	22 03					
19	Aug. 20	Iu	ePZ	0 03 17	7			+ 29	
								− 86	
			ePE	0 03 18	8	<−21			
						+ 21			
			ePR1E?	0 05 11	10	+ 21			
						− 21			
			ePR1Z?	0 05 16	9			+ 5	
								− 11	
			ePR2Z	0 06 05	8			+ 4	
								− 4	
			ePR2E	0 06 11	7	<+22			
						<−22			
			eE	0 07 39	10	+ 21			
						0			
			eZ	0 08 10	8			− 4	
								+ 4	
			eSE	0 10 28	19	+ 5			
						− 17			
			eSZ	0 10.6	14			<−15	
								<+15	
			eSR1E?	0 14 08	17	− 9			
						+ 13			
			eGE?	0 17.0	35	+ 19			V=4.0 km./sec.
						− 38			
			eLE	0 19.6	32	− 62			
						+ 77			
			eLZ	0 19.8	32			+ 90	
								−180	
			iE	0 20 59	15	+ 3			
						− 6			
			iZ	0 20 57	16			− 21	
								+ 21	
			F	1 18					

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Remarks
	1927			h m s	s	μ	μ	μ	
20	Aug. 20	Iv	$e\overline{P}_E$	20 06 55	7	<+2			See note at end of this bulletin.
						− 2			
			$e\overline{P}_Z$	20 06 55	2			− 2	
								<+2	
			e_Z	20 07 10	3			+ 2	
								− 2	
			e_N	20 07 11	3		+ 2		
			e_E	20 07 14	3	+ 2			
						<−2			
			e_Z	20 07 25	8			+ 4	
								− 4	
			eS_E	20 07 27	9	+ 2			
						− 4			
			eS_N	20 07 27	3		<−2		
							+ 2		
			i_Z	20 07 54	6			− 6	
								+ 8	
			i_N	20 07 58	4		− 4		
							+ 4		
			i_E	20 08 00	6	− 11			
						+ 11			
			i_Z	20 08 11	3			+ 7	
								− 14	
			i_N	20 08 13	3		− 4		
							+ 4		
			i_E	20 08 17	5	+ 24			
						− 4			
			i_{NE}	20 08 27	4_N	− 24	− 8		
					8_E	+ 10			
			F	20 19±					
21	Sept. 11	Iu	eP_Z?	22 29 19	3			<+2	Microseisms obscure record.
								<−2	
			e_Z	22 33 08	6			<+2	Destructive in the Crimea.
								<−2	
			e_E	22 41 21	5	<+2			Macelwane's epicenter at 33° E 45.5° N.
						<−2			
			e_Z	22 42 10	5			<−1.6	
								<+1.6	
			e_Z	22 51 32	7			<−2.8	
								<+2.8	
			e_E	22 51 59	18	<+4			
						<−4			

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
21	Sept. 11 (contd.)	Iu	eL_E	23 01 54	36				V=3.4 km./sec.
			M_{1E}	23 03 42	28	+ 24			
						− 36			
			M_{2E}	23 14 55	16	+ 7			
						− 7			
			M_{1Z}	23 15 10	13			+ 13	
								− 13	
			F	23 52					
22	Sept. 17	IIv	$i\overline{P}_{EZ}$	2 07 53	3_Z	− 4		+ 5	
					4_E	+ 4		− 7	
			i_{NE}	2 07 55	2	+ 4	+ 2		
					4_E	− 6	− 2		
			i_{ZN}	2 07 56	3_Z		+ 4	− 8	
					2_N			+ 4	
			i_Z	2 07 59	4			+ 7	Destructive in Owens Valley, California. Intensity about R-F 7 at Bishop, California. See note at end of this bulletin.
			i_{NE}	2 08 02	2_N	+ 7	+ 4		
					4_E	− 9	− 4		
			i_N	2 08 05	2		− 2		
							+ 7		
			i_{EZ}	2 08 06	3_E	+ 16		− 22	
					2_Z	− 14			
			i_N	2 08 12	2		− 9		A single sharp impulse.
			i_{EZ}	2 08 13	3_E	+ 14		− 14	
					5_Z	− 12		+ 8	
			i_N	2 08 21	2		+ 13		
			i_E	2 08 23	5	− 13			
						+ 6			
			i_N	2 08 27	2		+ 9		
							− 9		
			i_Z	2 08 30	5			+ 10	
								− 10	
			i_E	2 08 31	2	− 14			
						+ 14			
			$i\overline{S}_E$	2 08 40	3	+ 34			Not very prominent.
						− 46			
			$i\overline{S}_N$	2 08 43	3		− 32		
							+ 36		
			$i\overline{S}_Z$?	2 08 47	2			− 28	
								+ 24	
			iM_E	2 09 10	8	+ 74			
						− 68			
			iM_Z	2 09 25	7			+ 70	
								− 42	
			F	2 26±					

THE LICK OBSERVATORY STATION

CONSTANTS

Constants of the Station

Latitude and longitude of the center of the seismographic room:

$\varphi = 37° 20' 24''.5$ N. Lat.
$\lambda = 121° 38' 34''$ W. from Greenwich.

Time. All determinations are reduced to Greenwich mean civil time.

Altitude, 1281.7 meters (4202.25 feet above mean sea level.

Constants of the Seismographs

Date	Apparatus	Component	V	T_0	ϵ	$\frac{r}{T_0^2}$
Mar. 30	Wiechert	E	93	9.2	5	0.0030
	160 Kg. H.	N	88	7.2	6	0.0005
	80 Kg. Vertical	Z	52	3.2	7	0.0008
Dec. 23 1927	160 Kg. H.	E	97	9.6	4	0.0038
		N	98	8.4	4	0.0082
	80 Kg. V.	Z	48	3.2	7	0.0011

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
1	Apr. 12	Id	$i\overline{P}_{ENZ}$	23 24 04	0.6	+ 2			
						− 3			
			R_1P_Z?	23 24 06	0.6			− 12	
			$R_{i2}\overline{P}_Z$?	23 24 07	0.6			− 15	
			$R_1\overline{PS}$?	23 24 10	0.6	+ 25			
						− 2			
			$i\overline{S}_{ENZ}$	23 24 12	1	+ 17			
						− 14			
			iL_E	23 24 18	3.6	− 5			
						+ 5			
			F_N	23 28±					
2	Apr. 14	Iu	eP_{NZ}	6 36 00					Barely perceptible on N. Felt 1,000 miles along the coast of Chile and in Western Argentina. Destructive in Santiago, Chile and Mendoza, Argentina.
			iP_{ENZ}	6 36 02	2	+0.5	− 1	− 2	
						−0.5	−0.5	− 1	
			eS_N?	6 46.4±	8?		− 2		
							+ 2		
			eS_E	6 46 26	8	− 4			
						+ 1			
			e_E	6 47 00	20	− 14			
						+ 14			
			e_N	6 47 01	20	+ 16			
						− 33			
			F	7 20±					
3	Apr. 27	Id	$e\overline{P}_{ENZ}$	3 12 09					Barely perceptible.
			eS_E	3 12 14					
			eS_N	3 12 16					
			e_Z	3 12 19					
			F	3 13±					
4	Apr. 30	Id	$e\overline{P}_Z$?	22 03 18					Barely perceptible.
			$e\overline{P}_{EN}$	22 03 19					
			$e\overline{S}_Z$	22 03 29	2			− 1	
								+ 1	
			$e\overline{S}_{EN}$	22 03 29	1	− 2	+ 1		
						+ 1	− 1		
			eL_E?	22 03 35	5	− 9			
						+ 9			
			eL_N	22 03 36	5		+ 1		
							− 1		
			eL_Z	22 03 39				− 2	
								+ 2	
			F	22 06±					Lost in microseisms.

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
5	May 22	Iu	eP_{NZ}	22 46 21	3		−0.2	− 2	
							+0.2	+ 2	
			eS_N?	22 56 48	10		+ 2		
							− 6		
			iS_N	22 57 39	7		+ 57		
			ePS_N	22 58 53	22		+ 20		
							− 30		
			eSR_{1N}	23 04 26	28		+370		
							−270		
			e_N	23 08 03	25		+ 80		
							− 65		
			e_N	23 16.6±	25		− 25		
							+ 25		
			e_N	23 17 53	28		+150		
							−220		
			eL_N	23 19.5±	43		+360		
							−600		
			e_N	23 25.9±	39		+360		
							−430		
			eM_N	23 31 33	15		+ 70		
							−110		
			M_Z	23 32.0	15		+125		
							−170		
			M_{1N}	23 32.2	15		+220		
							−175		
			F	16 32±					
6	May 28	Id	$i\overline{P}_{ENZ}$	17 37 42	4_N		−130	+130	Pen thrown off on E-W.
					2_Z				
			$i\overline{S}_{NZ}$	17 37 47	1_{NZ}		+210	+460	
			i_Z	17 37 53	1			+ 8	
7	June 3	Iu	eP_N	7 26 32	4		<+1		
							<−1		
			iS_N	7 37 02	5		+ 2		
							− 3		
			i_N	7 37 52	6		+ 3		Not recorded on E or Z.
			i_N	7 39 03	5		− 4		
							+ 2		
			iG_N	7 56 49	45		+220		
							−220		
			F	8 10±					

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
8	June 23	Id	$i\overline{P}_{ENZ}$	23 52 55					
			$i\overline{S}_{ENZ}$	23 52 59					
			eL_{EN}	23 53.1	1	− 9	+ 4		
			F	23 55±					
9	June 30	Id	$e\overline{P}_N$	0 35 40	1		+ 1		Not recorded on Z.
			$i\overline{S}_N$	0 35 43	1		− 2		
			i_N	0 35 45	1		− 2		Defective record on E-W.
			i_N	0 35 46	1		+ 2		
			iL_N	0 35 50	9		+ 4		
			i_N	0 35 58	2		− 2		
			F	0 37±					
10	July 14	I?	eP_E	13 01 34	3	+<1			
						−<1			
			$eP?_E$	13 01 36	5	−<1			
						+<1			
			e_N	13 02 22	2		+ 1		
							− 1		
			e_E	13 02 30	2	− 1			
						+ 1			
			eS_E?	13 03 14	6	+ 1			
						− 1			
			$iS?_N$	13 03 17	3		+ 1		
							− 1		
			$eL?_E$	13 04 00	10	− 1			
						+ 1			
			$eL?_N$	13 04 01	12		+ 6		
							<−2		
			eM_N	13 04 40	8		− 1		
							+ 2		
			iM_E	13 04 57	8	− 3			Possibly began earlier.
						+ 2			
			M_{1E}	13 05 13	13	− 10			
						+ 3			
			M_{1N}	13 05 50	10		+ 10		
							− 4		
			F	13 18±					

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
11	July 15	Id	$i\overline{P}_{ENZ}$	22 10 09	1	+ 1	− 1	− 1	
						− 1	+ 2	+ 3	
			i_E	22 10 11	1	+ 1			
			i_{NZ}	22 10 12	1		− 2	+ 1	
								− 1	
			i_{NE}	22 10 14	1	+ 1	− 1		
						− 1			
			i_Z	22 10 15	1			− 1	
								+ 3	
			i_Z	22 10 18	1			+ 1	
								− 1	
			i_{NE}	22 10 19	6	+ 2	+ 1		
							− 1		
			$i\overline{S}_E$	22 10 20	1.8	− 43			
						+ 7			
			$i\overline{S}_{NZ}$	22 10 21	1		− 46	− 13	
							+ 53	+ 13	
			i_Z	22 10 34	1			+ 8	
								− 3	
			i_{EN}	22 10 35	2	+ 10	+ 3		
						− 4	− 3		
			F	22 15±					
12	July 24	Id	$i\overline{P}_{ENZ}$	16 36 34	< 1_{EN}	<+1	<−1	− 1	Direction of first motion on E-W & N-S doubtful.
					1_Z	<−1	<+1	+ 3	
			i_{ENZ}	16 36 36	1	− 1	+ 1	− 1	
						+ 1	− 2	+ 1	
			i_{ENZ}	16 36 39	1_{NZ}	<−1	+ 1	− 3	
					< 1_E	<+1	− 2	+ 1	
			$i\overline{S}_{ENZ}$	16 36 45	1	− 6	+ 3	− 3	
						+ 4	− 6	+ 3	
			i_{ENZ}	16 36 47	0 7_E	− 1	+ 8	− 1	
					1_N	+ 4	− 1	+ 1	
					1_Z				
			i_Z	16 36 54	1.7			+ 3	
								− 3	
			i_{EN}	16 36 58	3_E	+ 6		+ 6	
					2_N	− 4		− 3	
			F	16−40±					

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
13	July 26	Id	$i\overline{P}_{ENZ}$	11 52 48	4_{EZ}	− 1	− 1	<+2	Line of rest displaced on E-W.
					2_N	0	+ 1	<−2	
			i_{EZ}	11 52 49	6_E	<+1		− 1	
					1_Z	− 1		+ 1	
			i_{EZ}	11 52 57	1	+ 1		+ 1	
						− 1		<−1	
			i_N	11 53 03	.6		− 2		
							+ 1		
			$i\overline{S}_{ENZ}$	11 53 04	1_{EZ}	− 4	+ 5	+ 1	
					6_N	+ 6	− 3	− 1	
			i_N	11 53 11	1		− 4		
							+ 5		
			i_Z	11 53 12	1			+ 1	
								− 1	
			F	12−00±					
14	July 28	Iu	iP_{NE}	16 24 15	3	+ 1	− 2		Possibly began one second earlier.
			$iPR_1?_{EN}$	16 25 07	4_E	+ 1	+<1		Not recorded on Z.
					3_N	− 1	− 1		
			iS_N	16 29 03	7		<+1		
			iS_E	16 29 04	8	<−1			See Berkeley Bulletin.
						<+1			
			eL_N	16 31.9	40		<+35		
							<−35		
			eL_E	16 32.2	24	− 7			
						+ 14			
			iM_E	16 34 32	12	− 6			
						+ 5			
			iM_N	16 34 38	6		+ 2		
							− 1		
			F	17 00±					
15	Aug. 4	Iv	iP_N	12 24 56	2		<−1		See Berkeley Bulletin.
							<+1		
			i_N	12 25 00	.6		<−1		East component out of order.
							<+1		
			i_N	12 25 11	2		− 1		Not recorded on Z.
							+ 1		
			i_N	12 25 21	2		− 1		
							+ 2		
			i_N	12 25 40	3		− 1		
							+ 2		

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Remarks
	1927			h. m. s.	s.	μ	μ	μ	
15	Aug. 15 (contd.)	Iv	$i\bar{S}_N$	12 25 57	3		− 2 + 2		Possibly began earlier.
			iM_{1N}	12 26 07	2		+ 10 − 10		Maximum amplitude on record.
			F	12 33±					
16	Sept. 17	IIv	iP_E	22 07 47	4	− 8 + 36			Bishop earthquake. See note at end of this Bulletin. Vertical component not running.
			iP_N	22 07 48	.2		− 1 + 4		
			iS_E	22 08 21	2_E 3_N	− 32 + 26	+ 60 −160		May have begun earlier.
			F	22 18.1±					

The California Earthquake of May 28, 1927

The intensity of this earthquake at various towns has been rated on the Rossi-Forel scale according to reports sent to the Berkeley station in answer to questionnaires. The results are listed below:

San Jose, 6; San Bruno, 5?; Aptos, 4; Campbell, 4; Irvington, 4; Mare Island, 4; Mission San Jose, 4; Niles, 4; Palo Alto, 4; San Francisco, 4; San Lorenzo, 4; San Mateo, 4; Livermore, 3; Mountain View, 3; Oakland, 2–3; Saratoga, 3; Hayward, 2–3; Berkeley, 2; Morgan Hill, 1?.

The earthquake was reported not felt at:

Angel Island, Bethany, Carmel, Concord, Crows Landing, Gilroy, Hollister, Napa, Newman, Sargent, Santa Cruz, Watsonville.

The above, together with the instrumental data, led to a location of epicenter in the district east of San Jose in the neighborhood of Evergreen. The depth of focus was very probably less than 10 kilometers. The time of occurrence was set at 9h 37m 42s A.M., P.S.T.

A thorough study of this earthquake will appear in the "Bulletin of the Seismological Society of America" for September, 1927.

The California Earthquake of August 20, 1927

This earthquake attained an intensity of 8, Rossi-Forel scale, in the region about Humboldt Bay where considerable damage was done. But the region in which it was felt was comparatively small. The intensities at various towns are rated below on the Rossi-Forel scale. The data were obtained from answers to questionnaires sent out by the Berkeley Station, and also to those sent out by the U. S. C. and G. S. The latter were kindly loaned by the Survey.

Arcata, 8; Eureka, 8; Ferndale, 8; Fortuna, 8; Waddington, 6; Fieldbrook, 5; Hoopa, 5; Table Bluff Light House, 4–6; Cape Town, 4; Dyerville, 4; Kneeland, 4; Trinidad, 4; Garberville, 3–4; Smith River, 3–4; Denny, 3; Orick, 3; Crescent City, 1–2; Fort Seward, 1–2; Mendocino, 1–2; Punto Gorda Light House, 1–2; Westport, 1–2.

The earthquake was reported not felt at:

Alderpoint, Big Bar, Dunsmuir, Fort Bragg, Fort Jones, Gold Beach (Oregon), Harris, McArthur, Montague, Montgomery, Peanut, Red Bluff, Somes Bar, Weaverville, Yreka.

From the above information together with the instrumental data the epicenter was placed at sea about 60 km. west of Arcata. The time of occurrence was set at 12h 05m 44s P.M., P.S.T. The possible error of this location is fairly large.

A thorough study of this earthquake will appear in an early number of the Bulletin of the Seismological Society of America.

The California Earthquake of September 17, 1927

This earthquake attained a maximum intensity of about 7 Rossi-Forel scale, at Bishop in the Owens Valley.

It was felt at least as far east as Tonopah, Nevada (R.F. IV), as far south as Bakersfield, as far west as Fresno, and as far north as Mono Lake.

The investigation of this earthquake is not yet complete. But preliminary review indicates that the epicenter was somewhat to the north of Bishop.

When completed the study of this earthquake will appear in the Bulletin of the Seismological Society of America.