

THE REGISTRATION OF EARTHQUAKES  
AT THE BERKELEY STATION

AND

AT THE LICK OBSERVATORY STATION

FROM

October 1, 1925, to March 31, 1926

BY

PERRY BYERLY

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## 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<sub>n</sub> Waves n times reflected at the earth's surface.  
 S (undae secundae) Second phase, or second preliminary tremors (transverse).  
 SR<sub>n</sub> 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 <sub>c</sub> denotes the boundary at about 2900 km. depth between the metallic core and the middle shell which surrounds it. Thus:

$\overline{S_c P_c S}$  Waves which have penetrated the core, having been transverse before entering and after leaving the core, and longitudinal within the core.

$\overline{P_c P_c} \overline{P_c P_c}$  Waves refracted at the core boundary into the core, reflected once at this boundary while within the core and again refracted out of the core, having remained longitudinal on all branches of the path.

L (undae longae) Long waves at the beginning of the surface phase.  
 M (undae maximae) Shorter and more regular waves of large amplitude in the surface phase.

M<sub>n</sub> Greatest motion in the surface phase.

C (coda) Tail or end portion.

F (finis) End of discernible movement.

$\overline{P}$  For local earthquakes a special notation is used:  
 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<sub>1</sub> denotes reflection once at the lower (inferior) surface of the earth's crust. R<sub>12</sub> denotes reflection twice at this surface. R<sub>2</sub> indicates reflection at the upper (superior) surface of the crust, i.e., the surface of the earth. Thus, e.g.:

R<sub>12</sub> $\overline{P_2 S_2}$  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<sub>E</sub> E-W component of A.

A<sub>N</sub> N-S component of A.

A<sub>Z</sub> 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:

$$\varphi = 37^\circ 52' 15.9'' \text{ N. Lat.}$$

$$\lambda = 122^\circ 15' 36.6'' \text{ W. from Greenwich.}$$

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 <sub>0</sub>	$\epsilon$	$\frac{r}{T_0^2}$
1925						
Nov. 12	Bosch-Omori 100 kg.	E	50	12.8	4.8	0.0026
	"	N	50	12.9	5.5	0.0030
	Wiechert 80 kg.	Z	43	5.4	4.8	0.0051
Dec. 17	B.-O. 100 kg.	E	49	12.6	3.5	0.0026
	"	N	46	13.0	5.6	0.0028
		Changed	46	8.1	2.6	0.0019
1926						
Jan. 5	B.-O. 100 kg.	N	47	7.6	2.6	0.0022
	"	Changed	27	16.4	4.7	0.0015
	W. 80 kg.	Z	40	5.5	4.9	0.0041
Jan. 8	B.-O. 100 kg.	N	27	16.4	4.7	0.0015
		Changed	44	12.1	4.1	0.0023
Mar. 3	B.-O. 100 kg.	E	45	12.5	4.6	0.0026
	"	N	44	12.1	3.9	0.0021
	W. 80 kg.	Z	43	5.3	4.0	0.0036

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude			Remarks	
						A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
1	1925 Oct. 5	I	eP <sub>E</sub>	h. m. s. 4 16 39	s.	μ	μ	μ	No record on N. Reported from Nicaragua.	
			eZ	4 17 06						
			eS <sub>E</sub>	4 22 38						
			eL <sub>E</sub>	4 26 1						
			F	5 09±						
2	Oct. 9	I	e <sub>E</sub>	0 25	10	- 3			On E only. May not be seismic. Followed by longer waves.	
			e <sub>E</sub>	0 42 25						
			F	0 51±						
3	Oct. 12	I	eZ	6 05	4				Short wave train. May not be seismic. Begins with a compression. Groups of long waves. Long waves. Single long wave. Not recorded on N.	
			e <sub>E</sub>	7 21						
			eZ	7 29						
			e <sub>E</sub>	7 40						
			F	7 46						
4	Oct. 13	I	eP <sub>E</sub>	17 52 23	6	< -2			Epicenter in South Atlantic.	
			eP <sub>Z</sub>	17 52 23	9					
			i <sub>E</sub>	17 52 29	7					+ 4
			i <sub>E</sub>	17 58 08	10					± 2
			i <sub>E</sub>	18 01 56	9					- 2
			iS <sub>E</sub>	18 02 44	7					+ 5
			iS <sub>Z</sub>	18 02 44	8					- 7
			i <sub>E</sub>	18 02 48	8					+12
			iL <sub>E</sub>	18 16 38	38					-10
			iL <sub>Z</sub>	18 17 59	31					+37
			iM <sub>Z</sub>	18 20 11	17					
			i <sub>N</sub>	18 20 36	16					
			iM <sub>E</sub>	18 20 55	11					± 2
			F <sub>N</sub>	18 29±						
			F <sub>Z</sub>	19 09±						
F <sub>E</sub>	19 19±									
5	Oct. 19	I	eL <sub>EZ</sub>	10 50 34					No record on N.	
			F	11 07±						



BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude			Remarks
						A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
6	1925 Oct. 30	I	e <sub>E</sub>	h. m. s. 13 14 01	s.	μ	μ	μ	May be microseisms.
7	Oct. 30	Iu	e <sub>E</sub>	14 15 57					On E only. Record removed at 16h 03 m. Dilatation.
			eL <sub>E</sub>	15 22.7±					
8	Nov. 4	I	eP <sub>Z</sub>	0 04 29					
			iz	0 04 40					
			e <sub>E</sub>	0 04 50					
			e <sub>N</sub>	0 04 51					
			iz	0 04 54					
			i <sub>E</sub>	0 06 11					
			i <sub>E</sub>	0 07 05					
			F	0 15±					
9	Nov. 10	II	e <sub>E</sub>	14 24 43	29				Beginning lost in microseisms.
			e <sub>N</sub>	14 34 15					
			eL <sub>E</sub>	14 39 19					
			M <sub>iE</sub>	14 54 37					
			F						
10	Nov. 13	II	e <sub>N</sub>	12 38 15	18	+11			Lost in microseisms. Beginning of P lost in microseisms. Philippines.
			ePR <sub>iEN</sub>	12 39 07					
			iPR <sub>2E</sub>	12 41 27					
			iS <sub>N</sub>	12 45 57					
			iS <sub>E</sub>	12 46 15					
			L <sub>E</sub>	13 00 03					
			L <sub>N</sub>	13 01 03					
			i <sub>E</sub>	13 01 21					
			M <sub>iE</sub>	13 04 44					
			F	14 58					
11	Nov. 16	IIr	eP <sub>Z</sub>	12 00 09	6	+ 5			Rarefaction. Vertical pen against stop due to temperature changes. May be a wave earlier.  L? v = 4.5 km. per sec.  v = 4.1 km. per sec.  Epicenter probably off Southern Mexico. U. S. C. & G. S. give 18° N; 105° W. Lost in microseisms.
			iP <sub>N</sub>	12 00 10					
			eP <sub>E</sub>	12 00 11					
			iP <sub>Z</sub>	12 00 12					
			iS <sub>N</sub>	12 00 43					
			iS <sub>E</sub>	12 04 48					
			i <sub>E</sub>	12 05 18					
			iSR <sub>iN</sub>	12 06 10					
			iL <sub>N</sub>	12 06 32					
			iM <sub>E</sub>	12 07 10					
			M <sub>iE</sub>	12 07 46					
			iM <sub>N</sub>	12 09 37					
			M <sub>iN</sub>	12 09 57					
F	14 +								



BERKELEY STATION

No.	Date	Character	Phase	Time		Period	Amplitude			Remarks
				G.	M. C. T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
22	1926 Jan. 26	I	e <sub>Z</sub>	h. m. s.	s.	μ	μ	μ	Rarefaction.	
			e <sub>E</sub>	7 17 24	7			- 3		
			e <sub>E</sub>	7 18 4	18	+ 3				
			e <sub>E</sub>	7 28 1	10	+ 2				
			e <sub>E</sub>	7 46 3	24	+ 6				
			e <sub>Z</sub>	7 46.8	21			-35		
			e <sub>E</sub>	7 47 3	16	+ 3				
			e <sub>N</sub>	7 56.3	16		3			
			e <sub>Z</sub>	7 56.3	19			28		
23	Feb. 6	Id	i <sub>P<sub>E</sub></sub>	7 50 51	6	<+2			Very short period wave superposed on longer period and lost in microseisms. Long period appears earlier in E component.	
			i <sub>P<sub>N</sub></sub>	7 50 52						
			i <sub>N</sub>	7 51 03						
			i <sub>E</sub>	7 51 03						
			i <sub>N</sub>	7 51 05	7		± 2			
24	Feb. 7	Id?	e <sub>N</sub>	5 06 15	6		+ 2		May not be seismic. Numerous microseisms. Impossible to determine F accurately because of microseisms.	
			e <sub>E</sub>	5 06 19	6	+ 2				
			e <sub>Z</sub>	5 06 35	5			- 2		
			e <sub>Z</sub>	5 07 04	6			- 2		
			e <sub>N</sub>	5 07 06	4		+ 2			
			e <sub>E</sub>	5 07 07	7	<-2				
			e <sub>E</sub>	5 07 18	7	- 2				
25	Feb. 7	Id	e <sub>E</sub>	9 02 06	5	- 2			Much more marked on vertical component than on horizontals.	
			e <sub>N</sub>	9 02 06	6		<+2			
			e <sub>E</sub>	9 02 16	8	- 2				
			i <sub>Z</sub>	9 02 16	4			+ 2		
			i <sub>Z</sub>	9 02 23	4			- 4		
26	Feb. 8	IIr	e <sub>P<sub>E</sub></sub>	15 25 25	7	<≠2				
			e <sub>P<sub>Z</sub></sub>	15 25 25	4			<±2		
			e <sub>P<sub>N</sub></sub>	15 25 25	4		<≠2			
			e <sub>S<sub>N</sub></sub>	15 31 25	16		<±3			
			i <sub>S<sub>E</sub></sub>	15 31 34	20	-28				
			e <sub>S<sub>Z</sub></sub>	15 31 40	8	+46				
			e <sub>L<sub>N</sub></sub>	15 36 34	36			<-4		
								-149		
								+186		



BERKELEY STATION

No.	Date	Character	Phase	Time		Period	Amplitude			Remarks
				G.	M. C. T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
26	1926 Feb. 8 (Cont.)	IIr	e <sub>L<sub>E</sub></sub>	h. m. s.	s.	μ	μ	μ		
				15 36 36	39	-121				
			e <sub>L<sub>Z</sub></sub>	15 37 07	23	+283		<36		
			i <sub>E</sub>	15 37 15	37	≠450				
			i <sub>M<sub>E</sub></sub>	15 39 22	22	+142				
						-228				
			i <sub>M<sub>Z</sub></sub>	15 39 34	23			-284		
								+355		
			e <sub>M<sub>N</sub></sub>	15 40 37	20		-34			
							+39			
27	Feb. 9	Ir	i <sub>M<sub>E</sub></sub>	15 40 49	21	-153				
						+357				
			M <sub>I<sub>N</sub></sub>	15 41 30	20		-259			
							+269			
			M <sub>I<sub>Z</sub></sub>	15 41 37	20			≠360		
			F <sub>E<sub>N</sub>Z</sub>	17 26±						
28	Feb. 13	I	e <sub>P<sub>E</sub></sub>	0 36 00					Rarefaction, record faint.	
			e <sub>P<sub>Z</sub></sub>	0 36 00	2			- 2		
			e <sub>S<sub>E</sub></sub>	0 45 26	6	+ 2				
			e <sub>N</sub>	0 45 42	5		+ 4			
			i <sub>E</sub>	0 45 46	6	+ 6				
29	Feb. 15	II	F					Surface waves very faint. Lost in microseisms.		
			e <sub>Z</sub>	9 52	15				Beginning lost in very heavy microseisms. Lost in microseisms.	
			e <sub>E</sub>	9 52	20					
			e <sub>N</sub>	9 52	15					
29	Feb. 15	II	i <sub>P<sub>E</sub></sub>	3 07 22	5.5	+ 8				Nicaragua.
						-10				
			e <sub>P<sub>N</sub></sub>	3 07 22	4		- 2			
							+ 4			
			i <sub>P<sub>Z</sub></sub>	3 07 22	5			- 7		
								+12		
			e <sub>S<sub>Z</sub></sub>	3 13 22	10			<-7		
			e <sub>S<sub>E</sub></sub>	3 13 24	12	- 2				
						+ 9				
			e <sub>S<sub>N</sub></sub>	3 13 24	10		<+2			
e <sub>L<sub>E</sub></sub>	3 20 12	32	-65							
e <sub>L<sub>N</sub></sub>	3 21 16	24		≠ 8						
e <sub>L<sub>Z</sub></sub>	3 21 22	15			-18					
e <sub>M<sub>E</sub></sub>	3 23 57	19	+12							

BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.			Period	Amplitude			Remarks	
				h.	m.	s.		AE	AN	Az		
29	1926 Feb. 15 (Cont.)	II	M <sub>IE</sub>	3	24	16	18	-25 +14			Indistinct.	
			F <sub>N</sub>	4	20.8±							
			F <sub>E</sub>	4	21.2±							
30	Feb. 18	Iv	iP <sub>EN</sub>	18	19	12					Indistinct.	
			eP <sub>Z</sub>	18	19	12						
			eP <sub>Z</sub>	18	19	18						
			eP <sub>E</sub>	18	19	19	4					
			eP <sub>N</sub>	18	19	19	3					
			i <sub>E</sub>	18	19	27	2.5	-4				
			i <sub>Z</sub>	18	19	27	3			-5		
			i <sub>E</sub>	18	20	00	9	±2				
			i <sub>Z</sub>	18	20	04	9					
			iS <sub>E</sub>	18	20	12	3.5	-4				
			iS <sub>N</sub>	18	20	12	4					
									-6 +4			
			iS <sub>Z</sub>	18	20	12	4			-9		
			iS <sub>N</sub>	18	20	28			+14 -11			
			iS <sub>E</sub>	18	20	29	5	-2				
			iS <sub>Z</sub>	18	20	29	6			+9 -20		
			?L <sub>E</sub>	18	20	41	7	-15 +13				
L <sub>N</sub>	18	20	48	10.5		±8						
iL <sub>Z</sub>	18	20	46	9.5			-30					
iM <sub>N</sub>	18	20	59	8.5		+17 -20						
F <sub>ENZ</sub>	18	30.7±										
31	Mar. 17	IIr	eP <sub>E</sub>	12	03	35	6	-2			Epicenter Central America.	
			eP <sub>N</sub>	12	03	35	4		+2			
			eS <sub>E</sub>	12	08	07	7	+2				
			eS <sub>N</sub>	12	08	09	6		-2			
			eL <sub>E</sub>	12	15	45	31	-25 +50				
			eL <sub>N</sub>	12	15	52	26		±10			
			iM <sub>E</sub>	12	18	14	20	-23 +37				
			iM <sub>N</sub>	12	18	22	19		+9 -4			
			M <sub>IE</sub>	12	19	28	39	±430				
			M <sub>IN</sub>	12	19	53	20		±29			
			F <sub>EN</sub>	12	59.9±							



BERKELEY STATION

No.	Date	Character	Phase	Time G. M. C. T.			Period	Amplitude			Remarks	
				h.	m.	s.		AE	AN	Az		
32	1926 Mar. 18	Iu	e <sub>N</sub>	14	24	19	4		μ	μ	μ	
			e <sub>E</sub>	14	24	29	3	<-2		<+2		
			e <sub>E</sub>	14	25	36	4	<-2				
			e <sub>N</sub>	14	25	52	4			<+2		
			e <sub>N</sub>	14	30	58	4			<+2		
			e <sub>E</sub>	14	30	59	5	<-2				
			e <sub>E</sub>	14	39	24	9	-2				
			eL <sub>E</sub>	14	55	12	25	<-81				
			e <sub>E</sub>	14	57	25	22.5	-32 +13				
			?eL <sub>N</sub>	14	59	58	19			<+4		
			e <sub>N</sub>	15	05	20	25			±8		
			F <sub>N</sub>	15	19.9±							
F <sub>E</sub>	15	39.9±										
33	Mar. 22	I?	e <sub>E</sub>	19	09	54	8	<+2			Many microseisms preceding and following.	
			e <sub>E</sub>	19	11	50	20	<-5				
			e <sub>Z</sub>	19	12	53	6			<+2		
			e <sub>E</sub>	19	13	00	24	-7				
			e <sub>E</sub>	19	13	46	22	-6				
			e <sub>Z</sub>	19	14	08	24			<-4		
			e <sub>Z</sub>	19	14	46	28			-64		
F <sub>E</sub>	19	24	46									
34	Mar. 26	Id	eP <sub>Z</sub>	6	09	44	2			<-2		
			eP <sub>EN</sub>	6	09	45	2	<-2	<+2			
			eS <sub>E</sub>	6	09	56	2.5	<+2				
			eS <sub>N</sub>	6	09	56	3		+2			
			eS <sub>Z</sub>	6	09	56	2			±2		
			F <sub>ENZ</sub>	6	14.7±							
35	Mar. 27	I	eP <sub>N</sub>	11	01	39	4			<+2		
			eP <sub>Z</sub>	11	01	39	3			<-2		
			eP <sub>E</sub>	11	01	41	3	<+2				
			e <sub>E</sub>	11	01	57	3	<+2				
			e <sub>Z</sub>	11	02	01	3	±2				
			e <sub>Z</sub>	11	02	07	4.5			±2		
			e <sub>N</sub>	11	02	37	3			<+2		
			e <sub>Z</sub>	11	02	45	2.5					
			e <sub>E</sub>	11	12	04	7					
			eL <sub>N</sub>	11	12	22	12					
eL <sub>E</sub>	11	12	27	14								
F <sub>EN</sub>	12	06	37									

THE LICK OBSERVATORY STATION

CONSTANTS

CONSTANTS OF THE STATION.

Latitude and longitude of the center of the seismographic room:

$\phi = 37^\circ 20' 24.5''$  N. Lat.  
 $\lambda = 121^\circ 38' 34''$  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 <sub>0</sub>	$\epsilon$	$\frac{r}{T_0^2}$
1925 Nov. 9	Wiechert 160 Kg. H. Wiechert 80 Kg. V.	E	96	10.5	8.7	0.0019
		N	88	8.2	3.4	0.0092
		Z	63	3.1	8.2	0.0008
1926 Mar. 3	160 Kg. H.	E	84	10.1	2.3	0.0036
		N	91	7.6	2.8	0.0047



LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.	Period	Amplitude			Remarks
						A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
1	1925 Oct. 2	Id	iP <sub>EN</sub>	h. m. s. 0 37 33	s. < 1	$\mu$ 1	$\mu$ 1	$\mu$ 1	Almost swarm-type. Short period waves superposed on long period. Followed by swarm.
			i <sub>EN</sub>	0 37 37	< 1	1	1		
			i <sub>EN</sub>	0 37 41	< 1	3	3		
			F <sub>EN</sub>	0 37 55	.				
2	Oct. 5	I	i <sub>N</sub>	5 16 36	2.5	< -1			No trace on E or Z.  Wave interrupted by swarm-type earth- quake.
			i <sub>N</sub>	5 17 10	3	- 1			
			i <sub>N</sub>	5 18 46	4	+ 1			
3	Oct. 13	I	eP <sub>N</sub>	17 52 25	3	< $\neq$ 1			The E component was out of order so that no record was obtained; nothing on Z.
			i <sub>N</sub>	17 52 35	5	$\neq$ 3			
			e <sub>N</sub>	18 02 03	9	+ 2			
			e <sub>N</sub>	18 17 33	19	- 1			
			F <sub>N</sub>	18 56.8 $\pm$		-37		+42	
4	Oct. 17	Id	iP <sub>EN</sub>	23 26 47	< 1	- 1			Preceded and fol- lowed by micro- seisms; a l m o s t swarm-type.
			i <sub>EN</sub>	23 26 49	< 1		+ 1		
			i <sub>E</sub>	23 26 52	< 1				
			F <sub>EN</sub>	23 26 57					
5	Oct. 19	Id	iP <sub>EN</sub>	0 01 25	< 0.1	- 1			Almost swarm-type, followed by train of long period mi- croseisms.
			i <sub>E</sub>	0 01 28	< 0.1	- 1			
			i <sub>N</sub>	0 01 28	< 0.1		+ 1		
6	Oct. 23	Id	F <sub>EN</sub>	0 01 43					Very short period superposed on long period (10s) wave. Small local shock; just a trace on N.
			i <sub>E</sub>	0 23 52	2	- 1			
7	Nov. 4	Id	F <sub>E</sub>	0 23 58					No trace on E.  Z out of order.
			iP <sub>N</sub>	0 02 33	< 1		+ 1		
8	Nov. 4	Id	i <sub>N</sub>	0 02 43	< 1				
			i <sub>N</sub>	0 02 47	< 1				
			F <sub>N</sub>	0 03 13					
			iP <sub>N</sub>	0 04 33	< 1		+ 1		
			e <sub>N</sub>	0 04 35	2		< +1		
9	Nov. 4	Id	i <sub>N</sub>	0 05 11	3			+ 1	
			i <sub>N</sub>	0 06 09	4.5		+ 4		
			F <sub>N</sub>	0 12.7 $\pm$				- 5	





LICK OBSERVATORY STATION

No.	Date	Charac- ter	Phase	Time G. M. C. T.	Period	Amplitude			Remarks
						A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
16	1925 Dec. 11	IIr	iP <sub>Z</sub>	2 21 37	1			<+1?	See Berkeley Bulletin.
			iE <sub>Z</sub>	2 21 42	4	+ 2		- 3	
			iPR <sub>1E</sub>	2 22 35	5	- 1			
			iE	2 23 11	12	- 4			
			eS <sub>Z</sub>	2 27.1					
			iE	2 27 39	15	-16			
			iL <sub>E</sub>	2 29 58	15	+ 4			
			iM <sub>1E</sub>	2 30 44	21	+40			
						-60			
			iM <sub>2E</sub>	2 33 23	20	-216			
			eM <sub>Z</sub>	2 33 28	27			+120	
			iM <sub>N</sub>	2 33 44	18		+14		
			iM <sub>3E</sub>	2 36 57	13	+124			
17	1925 Dec. 19	I	eE	16 39 21	30	-17			Lost in microseisms.
			eE	16 43.2	22	+ 4			
			eN	16 43.2	21		+20		
			eZ	16 43.2	20			-66	
			F						
18	1925 Dec. 26	Id	iP <sub>E</sub>	00 28 20	< 1	- 1			Long period superimposed on short periods.
			iP <sub>NZ</sub>	00 28 20	1		+ 1	+ 3	
			iS <sub>N</sub>	0 28 21	1		+ 2		
			iS <sub>E</sub>	0 28 22	< 1	+ 2			
			iE	0 28 22	5	+ 3			
			iS <sub>Z</sub>	0 28 22	< 1			+ 6	
			iE	0 28 27	1	- 2			
			iN	0 28 28	< 1			- 4	
			iz	0 28 29					
			iE	0 28 31					
			iE	0 28 34					
			iN	0 28 35					
			iEN	0 28 38					
			F	0 30.5					
19	1926 Jan. 3	Id	iP <sub>EN</sub>	1 31 53	0.5	+2.5	-2.5		
			iS <sub>EN</sub>	1 31 54	1.2	+14	+14		
			F <sub>E</sub>	1 32.8		-11	-18		



LICK OBSERVATORY STATION

No.	Date	Charac- ter	Phase	Time G. M. C. T.	Period	Amplitude			Remarks
						A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>	
20	1926 Jan. 3	Id	iP <sub>Z</sub>	7 31 53	0.3			- 5	On Z only.
			iS <sub>Z</sub>	7 31 55	0.6			+ 8	
								- 5	
21	1926 Jan. 3	Id	F <sub>Z</sub>	7 32 53					
			eP <sub>Z</sub>	18 40 05	0.9			< -1	
			eP <sub>E</sub>	18 40 06	0.9	< -1			
			eP <sub>N</sub>	18 40 06	1.2		- 1	+ 2	
			eS <sub>EN</sub>	18 40 12	1.2	- 2	- 1	+ 2	
						+ 3	+ 2		
22	1926 Jan. 5	Id	F <sub>E</sub>	18 40.3					
			F <sub>Z</sub>	18 40.8					
			F <sub>N</sub>	18 41.1					
23	1926 Jan. 7	Id	eE	8 07.9	6	< 1			Later waves 23 s. period.
			F <sub>E</sub>	8 22.4					
24	1926 Jan. 25	IIIv	iP <sub>Z</sub>	5 53 16	1.1			< =1	Epicenter probably on Haywards Fault NW of Berkeley.
			iP <sub>E</sub>	5 53 17	1.1	= 1			
			iP <sub>N</sub>	5 53.4	1.1		- 3	< +1	
			iS <sub>EZ</sub>	5 53 30	1.2	+ 2	- 1	+ 2	
			iS <sub>N</sub>	5 53.6	1.2	- 3	- 2	+ 4	
			F <sub>EN</sub>	5 54.4					
25	1926 Jan. 26	I	eP <sub>E</sub>	0 49 09	6	< +1			Microseisms.
			eZ	0 49 14	4			-13	
			eN	0 49.6					
			iS <sub>E</sub>	0 59 47	14	+13			
			iS <sub>N</sub>	0 59 50					
			iL <sub>E</sub>	1 14 14	22	+ 4	- 9		
			eL <sub>N</sub>	1 14 35	19			-16	
			eZ	1 20.3	24			-670	
			eZ	1 21.7	20			=330	
			eZ	1 31.7	16			±105	
eZ	1 34.2	16			±126				
25	1926 Jan. 26	I	F <sub>NZ</sub>	1 49.6					Very faint long sinusoidal waves not recorded on N or Z.
			F <sub>E</sub>	3 15.6					
			eE	7 46.0	20	2			
			eE	7 49.4	18	1			
			F <sub>E</sub>	8 29.7					

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.			Period	Amplitude			Remarks		
				h.	m.	s.		AE	AN	Az			
26	1926 Feb. 6	Id	iP <sub>EN</sub>	7	50	40	0.4			+62	Possibly on Haywards Fault west of Lick Observatory.		
			iP <sub>Z</sub>	7	50	40							
			iS <sub>N</sub>	7	50	41							
			iS <sub>Z</sub>	7	50	42						4.2	-39
			F <sub>N</sub>	7	51.9								
			F <sub>Z</sub>	7	53.3								
			F <sub>E</sub>	7	53+								
					Lost in heavy microseisms.								
27	Feb. 7	Id	iP <sub>ENZ</sub>	7	49	59	< 1	+ 2	- 1	+ 3			
			iS <sub>E</sub>	7	50	02	< 1	- 3					
			iS <sub>NZ</sub>	7	50	02	1		- 2	+ 6			
			iEZ	7	50	04	< 1	+ 2		+ 3			
			i <sub>N</sub>	7	50	04	1		- 4				
			i <sub>E</sub>	7	50	05	1	- 2					
			i <sub>Z</sub>	7	50	06	1			+ 3			
			i <sub>N</sub>	7	50	08	1		- 2				
			F	7	51.4±								
28	Feb. 8	IIr	iP <sub>E</sub>	15	25	21	4	+ 1			See Berkeley Bulletin.		
			i <sub>E</sub>	15	25	26	15	+ 2					
			i <sub>E</sub>	15	27	07	18	- 14					
			iS <sub>E</sub>	15	31	26	15	- 8					
			iL <sub>E</sub>	15	36	23	32	- 104					
			iL <sub>N</sub>	15	36	33	35		+ 20				
			e <sub>Z</sub>	15	37.0								
			iM <sub>EN</sub>	15	38	55	22	+ 141	+ 58				
			iM <sub>Z</sub>	15	40	17	21			- 145			
			iM <sub>1N</sub>	15	41	19	20		+ 354				
			iM <sub>1E</sub>	15	41	36	18	- 548					
			iM <sub>1Z</sub>	15	43	55	16			- 252			
			iM <sub>2E</sub>	15	44	14	17	- 539					
			iM <sub>2N</sub>	15	44	28	16		+ 158				
F	16	11.9±											
29	Feb. 9	Ir	iEZ	0	35	58	2	< +1		< -2	Lost in microseisms.		
			i <sub>E</sub>	0	45	26	4	+ 2					
			i <sub>E</sub>	0	45	41	7	- 3					
			i <sub>Z</sub>	0	45	49							
			F	0	50.9+								
30	Feb. 13	I(r?)	e <sub>E</sub>	9	52.0		9				Beginning confused by very heavy microseisms. Lost in microseisms.		
			e <sub>N</sub>	9	52.0								
			e <sub>Z</sub>	9	54.1		9						
			F	10	12+								

LICK OBSERVATORY STATION

No.	Date	Character	Phase	Time G. M. C. T.			Period	Amplitude			Remarks
				h.	m.	s.		AE	AN	Az	
31	1926 Feb. 15	I(r?)	iP <sub>Z</sub>	3	07	17	4			- 3	Barely perceptible. Barely perceptible. Barely perceptible.
			eP <sub>N</sub>	3	07	19	5		< +1		
			i <sub>N</sub>	3	07	30	1		+ 1		
			e	3	20	3					
			e <sub>Z</sub>	3	21	0	8				
			e <sub>N</sub>	3	23	5	12				
			F	3	32.0±						
32	Mar. 1	Id	i <sub>E</sub>	0	37	04	0.1	< 1			May be series of swarm-type earthquakes.  Very frequent swarm-types.
			iP <sub>N</sub>	0	37	07	0.1		< 1		
			iP <sub>E</sub>	0	37	07.5	0.1	2			
			i <sub>N</sub>	0	37	08	0.1		2		
			i <sub>E</sub>	0	37	08.5	1.3	- 4			
								+ 5			
			i <sub>N</sub>	0	37	09	0.1		+ 2		
								- 1			
			i <sub>N</sub>	0	37	10	1.0		2.0		
			iM <sub>E</sub>	0	37	10	1.0	3			
33	Mar. 10	Id	iP <sub>N</sub>	22	31	35.5	0.4		± 3		
			iP <sub>E</sub>	22	31	36	0.4	+ 4			
								- 3			
			iS <sub>N</sub>	22	31	36	0.6		+ 3		
								- 2			
			iS <sub>E</sub>	22	31	37.5	0.6	+ 6			
								- 5			
			iM <sub>E</sub>	22	31	39	1.8	± 2			
F <sub>EN</sub>	22	32.2±									
34	Mar. 22	Ir	e <sub>E</sub>	19	11.7		20	- 2		Lost in microseisms.	
			M <sub>E</sub>	19	15.7		20	4			
			F <sub>E</sub>	19	28.7						
35	Mar. 26	Id	i <sub>EN</sub>	6	09	13	0.1	± 2	± 2	Swarm type beginning.	
			i <sub>E</sub>	6	09	19	2.4	± 1			
			i <sub>N</sub>	6	09	19	0.6		+ 1		
			iS <sub>N</sub>	6	09	27	1.8		+ 1		
			iS <sub>E</sub>	6	09	28	2.4	- 3			
			M <sub>N</sub>	6	09	31	1.2		- 4		
			M <sub>E</sub>	6	09	33	2.4	- 8			
			F <sub>N</sub>	6	10.0±						
F <sub>E</sub>	6	10.7±									