

NEW  
LABORATORY  
JAN 1963  
REMOVED,  
SURREY.

63 ✓

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
January 7, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

29	iP	10 52 18	Dec. 29	iP	18 35 59
	Compression from		29	eP?	21 36 48
	southeast		30	eP?	18 29 16
	iS!	11 01 34		e	33 24
	eSS	05.9		eS?	40 05
	e(G)	09 45		iR	57.4
	e(R)	15.3		$\Delta 91^\circ$	
	$\Delta 70^\circ$		31	e	08 10 17
	Magnitude 6 3/4		31	i(P)	20 52 55
	Surface waves			iL?	57.0
	relatively small				
29	eP \	15 00 18			
	eS	10 48			
	eL	23.3			
H	$\Delta 80^\circ \pm$				
	Magnitude 6 - 6 1/4				
		$\mu$ sec			
	PZ	0.2 1			
	MH	10 18			

PLEMENT: Times of P for additional shocks at China Lake

14	19 54 14
17	19 31 09, 20 28 33
19	05 24 49, 20 27 35
20	19 45 04
21	02 19 59
22	01 25 57, 01 41 43, 23 41 08 (pP? 32)
24	00 42 43, 03 54 34, 11 53 51, 17 53 07 (i 37)
26	01 24 34

PLEMENT: Times of P for additional shocks at Woody

17	17 48 53, 17 54 01, 18 07 13, 19 39 09, 19 58 22, 20 28 34, 20 44 26, 21 20 23, 21 39 04
18	05 44 28, 11 41 42, 20 58 39
21	12 43 49 (i 45 15), 14 48 03, 15 17 46 (i 57), 15 35 36 (pP 49), 20 34 33
22	07 23 37, 11 39 23 (pP 43, sP 55), 15 23 28 (pP 46, sP 57), 15 36 03, 15 42 26, 15 59 29
23	03 58 54, 10 55 33, 15 11 57, 19 45 54
25	01 13 43 (i 14 01), 13 38 57 (i 39 08), 13 57 57 (i 58 06)

Violet M. Taylor  
Seismological Laboratory

This book was donated to the ISC  
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British Geological Survey (BGS)

1963

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
January 11, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

Dec. 26	iP	09 10 26
29	eP	15 33 24
	epP	33

1963  
CONTINUATION:

Jan. 1	iP	04 14 06
Jan. 1	iP	12 30 22
	ipP	58
1	iP	14 00 35
1	iP	16 39 15
	ipP	46
1	i(P, PKP)	19 56 08
1	iP 2	23 45 55
	Dilatation from northwest	
	ipP	23 46 10
	isP	21
	iPP	47 30
	iS <sub>11</sub>	51 20
	isS	58
	iScP	52 03
	iG	53.8
	iR	55.1
	$\Delta 34^\circ$	
	Magnitude $6\frac{1}{2}$	
	$\mu$	sec
PZ	1	$1\frac{1}{2}$
PH	1	3
SH	6	8

Jan. 2	iP	01 23 27
	ePcP	24 32
	i	50
	iS	30 48
	iR	35.1
	$\Delta 49^\circ$	
2	iP	03 36 50
2	iP	10 00 50
2	eP?	16 08 39
3	iP	09 52 55
	Compression	
	ipP	09 53 10
	eG	10 18.5
	eR	22.0
4	eP?	12 29 45
	i	31 38
	eSKS?	40 00
	eS?	32
	eSS	45.6
	eG	53.5
	iR	58.0
	$\Delta 90^\circ$	
5	iP	00 39 20
5	iP	13 35 33
	i	49
	i	36 46
5	eS?	13 28 10
	eG	41.6
	iR	44.2
	$\Delta 90^\circ?$	
	Overlaps the next	

SUPPLEMENT: Times of P for additional shocks at China Lake

Dec. 29	18 26 44 (i 27 37), 18 32 27, 18 38 51, 19 53 21, 23 15 47
Dec. 30	02 10 27, 02 29 38, 07 18 20, 13 35 37, 16 01 34, 18 00 07, 22 19 54 (pP 20 15), 23 02 52
Dec. 31	05 22 13 (pP? 40), 12 21 07, 15 48 34 (pP 50), 19 53 02 (i 12), 20 52 26, 21 57 18 (pP 58 17), 23 49 27 (pP 40)
1963	
Jan. 1	04 19 07, 04 49 14, 07 15 24, 08 28 22
Jan. 2	00 33 55, 01 00 48, 06 50 28, 12 05 50, 15 04 14, 18 43 37, 21 47 45 (pP 58)
Jan. 3	04 58 43 (pP 59 14)

SUPPLEMENT: Times of P for additional shocks at Woody

Dec. 25	19 09 28 (i 42)
Dec. 26	05 35 57 (i 36 13), 06 22 12 (i 57)
Dec. 27	00 03 03 (i 18), 01 37 57, 01 49 31, 04 25 13 (pP 37, sP 44), 04 51 12, 11 25 45 (pP 26 17, sP 24), 14 15 33 (i 41, i 47)
Dec. 28	03 46 17 (i 29), 04 13 09, 14 54 07, 20 01 22 (pP? 38)
Dec. 31	09 17 32

Violet M. Taylor  
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KEW OBSERVATORY  
18 JAN 1963  
RICHARD SUR...

SEISMOLOGICAL LABORATORY  
 220 North San Rafael Ave.  
 Pasadena 2, California  
 January 18, 1963  
 PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



ADDITIONAL:

CONTINUATION:

Jan. 2	eP	18 23 32	Jan. 12	iP	03 49 08
				Compression	
Jan. 6	iP	06 26 24		ipP	03 50 34
	i	35	14	iP	11 32 47
6	eP	07 40 33		ePS	45.0
6	e	12 41 16		eSS	51.8
6	e	18 13 50		eG?	59.4
6	eP	20 05 44		eR	12 05.0
6	iP	21 31 23		$\Delta 100^\circ?$	
	i	35	15	iP	02 45 27
	i	44		i	40
7	iP	06 37 47		eS	56.1
7	eP?	12 02 50		eG	03 08.5
	e	06 53		eR	12.0
	eSKS?	13.6		$\Delta 88?$	
	i	17.0	15	eP	10 00 27
	eG	33.5	15	iP	19 37 45
	eR	39.5		Dilatation	
	$\Delta 110^\circ$			i	19 38 08
9	iP	02 15 02		i	39 52
9	iP	03 25 41	16	iP	03 26 58
	ipP	26 26	16	iP	05 53 26
10	e	05 22 50		i	40
	eL	28.0	16	iP	15 20 43
11	iP	12 25 03	18	iP	03 23 49
	iS	35 49		Compression	
	iSS	41 40			
	iG	48.4			
	$\Delta 89^\circ$				

SUPPLEMENT: Times of P for additional shocks at China Lake

Jan. 7 19 32 28

SUPPLEMENT: Times of P for additional shocks at Woody

Jan. 3 03 17 52 (i 18 02), 07 20 47 (e 59), 14 09 29 (pP 41)  
 17 38 26, 18 53 15  
 Jan. 4 00 36 55 (i 37 02), 05 54 41 (pP 52), 06 56 29 (pP 45),  
 09 02 31, 10 32 41, 13 47 48  
 Jan. 5 00 00 39 (pP 52), 07 15 51 (i 16 03), 11 15 02, 13 17 33,  
 14 50 37, 15 15 48, 17 53 00 (i 33), 18 22 37, 21 36 15  
 Jan. 6 04 43 49, 04 52 41, 08 15 56, 17 32 34, 18 10 24  
 (e 55, S? 13 20), 22 37 00, 22 42 58  
 Jan. 7 05 16 57, 08 55 46, 18 40 06  
 Jan. 8 10 45 08, 15 59 13 (pP 53), 19 46 57, 20 01 31, 20 46 35  
 Jan. 9 06 45 09, 07 12 13, 21 48 38, 22 26 40  
 Jan. 10 01 21 44, 17 23 56 (pP 24 28, sP 24 41), 19 07 21  
 (pP 32, sP 36)  
 Jan. 11 06 50 45, 14 43 11, 14 45 36, 15 14 13, 16 21 45,  
 17 17 58 (pP? 18 52)  
 Jan. 12 06 07 48, 11 48 27, 12 20 01  
 Jan. 13 04 27 53, 13 55 02, 17 32 29 (pP 59)  
 Jan. 14 06 49 28, 15 47 06, 18 46 20

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 Seismological Assistant

KEW  
 OBSERVATORY  
 24 JAN 1963  
 RICHMOND, D.C.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
January 30, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

CONTINUATION:

			Jan. 28						
Jan. 15	eP	01 42 39		iP		04 16 55			
				i		17 10			
Jan. 20	eP?	11 01 03		iP!		10 51 50			
20	eP	13 18 55		Compression					
	eG	20.8		(28) iP2		12 25 33			
	eR	21.6		i		38			
21	iP	04 27 50		ePP		29 24			
21	iP	14 53 38		eSKS		36 04			
	ipP	53		iS		44			
24	iP	09 47 16		iSS		38.0			
	Dilatation			eG		51.0			
	i	09 49 10		iR		54.5			
	i	38		Δ 96°					
24	iP	12 20 26		Magnitude 6½					
	i	42				μ	sec		
	i	57		PZ		0.1	1		
	eS?	29 44		PH		0.1	1		
	eG	39.7		PPZ		0.1	1		
	eR	41.4		SH		4	26		
25	iP	00 28 39		MH		12	30		
	epP	29 11		MZ		11	30		
25	iP	13 01 54		(28) iP2		13 07 54			
	ipP	02 40		i		08 05			
27	iP	01 20 04		i		59			
27	iP	03 01 30.4		iS		13 38			
	i	34.9		iScP		14 01			
	iS	02 16.9		iG		16.3			
	Δ 4°			iR		17.8			
	Magnitude 4 ¾			iScS		18 09			
27	iP?	11 54 15		Δ 36°					
	iP	34		Magnitude 6½					
27	iP	15 27 20				μ	sec		
	iL	30 11		PZ		0.3	1		
27	iP	18 59 34		PH		0.1	1		
	eL	19 28.3		SH		10	12		
28	iP	02 22 09		MH		150	20		
	Compression			MZ		125	20		
	ipP	02 22 45		28 iP		14 01 31			
				28 iP		16 34 58			
				i		35 14			

SUPPLEMENT: Times of P for additional shocks at China Lake  
Jan. 15 02 20 37, 17 50 52 (i 59), 19 56 34, 20 01 54 (e 04 37, iP? 42), 21 40 12, 22 37 54

SUPPLEMENT: Times of P for additional shocks at Woody  
Jan. 14 01 03 21, 02 15 10  
Jan. 16 06 54 50, 20 44 37, 21 27 40  
Jan. 17 04 02 17, 04 32 26, 19 40 57 (pP? 41 40), 20 54 19 (S? 58 05)  
Jan. 19 19 57 53, 21 57 09  
Jan. 20 00 30 29, 02 59 01, 03 27 59, 05 28 20, 09 04 03 (pP 16),  
19 24 56, 22 24 11 (S? 29 19)  
Jan. 21 04 35 01, 07 19 35 (i 49), 07 46 41, 18 47 24 (pP 48)  
Jan. 22 07 22 15, 15 39 12, 20 55 47, 21 47 51  
Jan. 23 04 49 42, 09 05 53, 14 51 40

KEW  
OBSERVATORY  
- 5 FEB 1963  
RICHMOND,  
SURREY.

Violet M. Taylor  
Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
February 7, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CORRECTION:

Jan. 28	IP	16 34 58	Jan. 30	IP	10 28 52
	i	35 14		iS	39 50
	should read:			iR	11 06.5
	IP	16 19 58		$\Delta 90^\circ$	
	i	20 14		Magnitude $6\frac{1}{2}$	

ADDITIONAL:

Jan. 27	Barrett:			PZ	$\mu$	sec
	IP	03 01 01.8		SH	0.3	$1\frac{1}{2}$
	iS	19.8		MH	8	10
	Hayfield:		31	MZ	10	20
	IP	03 01 11.3		eP?	10	20
	iS	41.4	31	i	05 14 28	46
	Palomar:			IP	05 19 58	
	IP	03 01 11.1	31	i	20 25	
	iS	40.4	31	IP	06 07 31	
	Riverside:		31	IP?	08 15 09	
	IP	03 01 23.8	Feb. 4	IP	01 30 29	
				i	54	
			4	IP	12 36 44	
			4	IP	23 31 32	

CONTINUATION:

Jan. (29)	IP <sup>2</sup>	09 31 29	4	IP	23 31 32	
	Dilatation			ipP	46	
	ipP	09 31 38		isP	52	
	iPcP	32 02		eR	50.0	
	eS	39 50	5	IP	05 16 28	
	iG	47.3	5	eP	07 34 33	
	eR	50.4		e(pP)	35 19	
	$\Delta 64^\circ$		5	IP	12 15 40	
	Depth 40 km			eR	26.0	
	Magnitude $6\frac{1}{4} - 6\frac{1}{2}$		5	IP	19 42 11	
		$\mu$		i	33	
		sec				
	PZ	0.3				
	PH	$\frac{1}{2}$				
	SH	1				
29	IP	20 44 49				
	i	45 10				

SUPPLEMENT: Times of P for additional shocks at China Lake

Jan. 24	03 02 01, 10 27 46, 20 26 38, 21 46 10
Jan. 25	00 12 02, 13 10 27
Jan. 26	19 23 31
Jan. 27	01 01 55, 02 39 09, 19 49 10, 20 05 06 (i 26)
Jan. 28	04 43 12, 07 58 51, 13 37 10, 17 17 36
Jan. 29	01 43 12, 07 47 41 (e 51 17), 08 13 02, 21 20 42

REVISION OF SUPPLEMENTAL WOODY READINGS AS FOLLOWS:

Jan. 22	07 22 15, 15 39 12, 20 55 40, 21 47 44
Jan. 23	04 49 33, 09 05 45, 14 51 31, 23 20 29

SUPPLEMENT: Continued - Times of P for additional shocks at Woody

Jan. 14	02 24 28 (pP 48)
Jan. 25	20 32 59 (i 33 13, i 24, i 35)
Jan. 26	10 01 37, 21 29 27 (i 30 46)
Jan. 30	04 46 46 (pP 55, i 47 06), 10 39 13
Jan. 31	03 16 33 (i 17 02), 11 34 20 (i 50), 19 19 34, 22 16 40
Feb. 1	09 01 52 (pP 02 09), 09 57 42

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
11 FEB 1963  
RICHMOND,  
SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
February 15, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)  
Feb. 13



CONTINUATION:  
eb. 5

iP2	20 51 47
i	55
i	52 23
iS1	21 02 03
iSS	07.4
iSSS	11.0
iG	14.5

2 Δ 87°  
Magnitude 6 1/4 - 6 1/2

	μ	sec
PZ	0.3	3
PH	0.3	3
SH	4	20
MH	14	20
MZ	10	20
iP	01 33 55	
iS	44 20	
eSS	49.6	
eSSS	53.0	
eG	56.0	

Δ 87°

	μ	sec
MH	5	19
6 iP	02 14 20	
5 iP	03 36 39	
6 iP	06 04 56	
Compression		
iP	07 09 38	
iS	16 16	
6 iP	18 26 40	
i	48	
6 iP	21 55 17	
7 iP	01 34 41	
12 iP	23 18 25	
Compression		
i	23 19 07	
e	20 29	
i	21 29	
13 eP?	00 29 10	
eL	37.8	

iP2	09 03 38
Compression	
iPP2	09 07 40
iSKS	14 15
iSKKS	38
iS1	15 04
iSS	21.3
iG	31.0
iR	37.5

2 Δ 97°  
Magnitude 7 1/4

	μ	sec
PZ	2	2
PH	0.3	2
PPZ	5	26
PPH	3 1/2	14
SH	13	10
MH	60	20
MZ	56	20
iP	18 26 46	
Compression		
iPcP	18 26 56	
ipP	27 13	
ipPcP	26	
iPP	30 12	
eS1	37 12	
i	38.7	
iSS	43.0	
iSSS	47.0	
iG	50.0	
iR	53.5	

2 Δ 85°  
Depth 100 km  
Magnitude 6 1/2

	μ	sec
PZ	2	3
SH	4 1/2	28
MH	30	20
MZ	30	20

SUPPLEMENT:

Times of P for additional shocks at Woody  
eb. 2 05 03 10, 12 00 03 (pP 24), 19 39 19 (i 41 40), 20 43 41,  
21 32 07 (i 34 50)  
eb. 3 01 59 32 (i 02 01 24), 04 29 36 (i 32 25), 09 58 07 (i 16),  
13 01 15 (i 31, i 02 30), 14 11 42  
eb. 4 00 29 29, 10 12 05 (i 12), 13 56 28 (i 58 02), 16 16 50  
(i 17 03), 21 07 33  
eb. 5 02 54 47, 03 19 34, 07 26 11, 14 15 52 (i 16 27)  
eb. 6 03 41 43, 10 33 53, 12 59 06 (i 26)  
eb. 7 03 41 40, 15 55 54, 17 20 38, 20 14 39, 22 58 36 (i 44)  
eb. 8 02 41 05 (i 15), 13 36 22

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
19 FEB 1963  
RICHMOND,  
SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
February 21, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

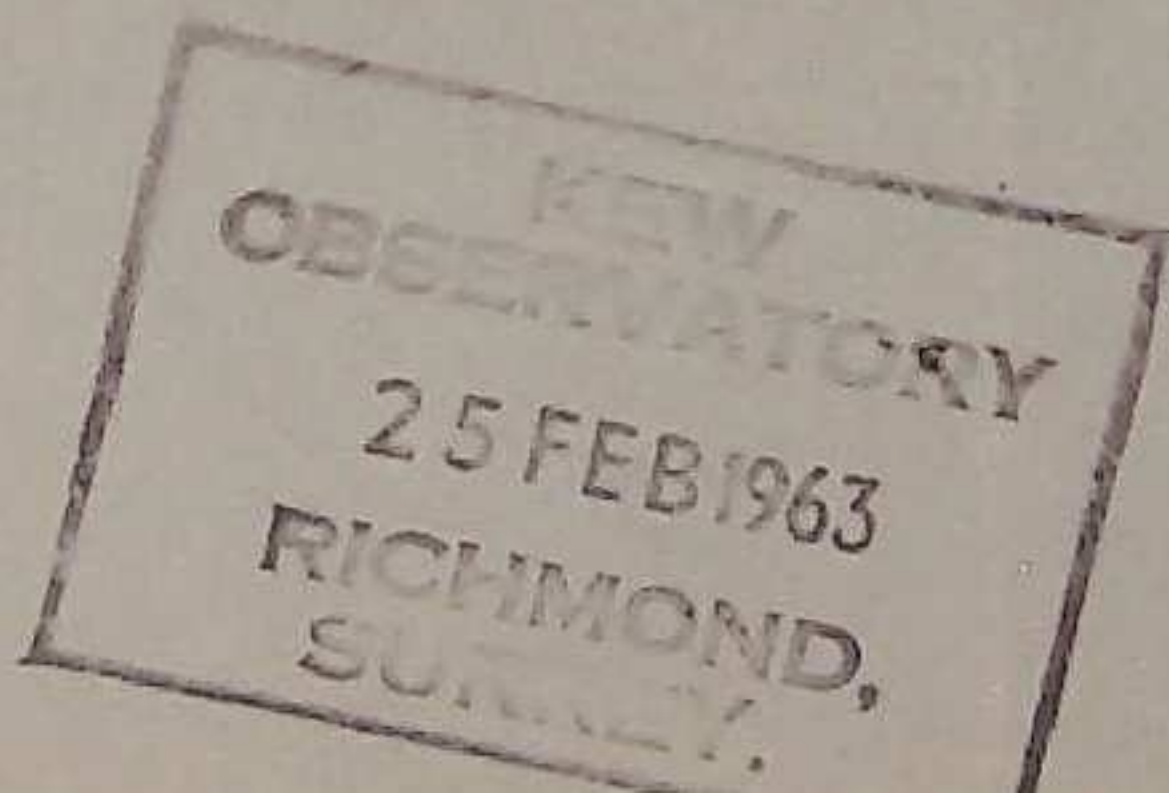
eb. 14	iP	07 14 14	Feb. 14	iP	22 21 27
14	eP	07 19 15		I	45
	iP'	23 00		iPP'	25 50
	iPP2	24 02		eSKS	32 00
ll	iPPP	26 24		ePS	34.3
	iSKS	29 38		eSS	40.7
	iPS	33.4		eG	49.4
	ePKKP	33 47		iR	53.2
	iSS	39.9		$\Delta 102^\circ$	
	iSSS	44.6		Magnitude $6\frac{1}{2}$	
	iG	51.5			
	iR	56.6			
2	e(G2)	08 47.2			
	$\Delta 116^\circ$				
	Magnitude $6\frac{1}{2}$				
		$\mu$ sec			
	PPZ	0.2 $1\frac{1}{2}$	18	PZ	0.1 $1\frac{1}{2}$
	PPH	0.2 $1\frac{1}{2}$	20	PPZ	0.2 2
	MH	$6\frac{1}{2}$ 20		MH	5 20
	MZ	5 20		MZ	4 20
14	eP?	08 40 20		iP	14 24 14
14	iP	12 22 06		iP	07 54 28
	eSKS	32 30			
	eS	50			
	eSS	38.0			
	eG	45.6			
	iR	51.0			
	Distance $90^\circ$				
		$\mu$ sec			
	PZ	$\frac{1}{4}$ $1\frac{1}{2}$			
	MH	4 20			

UPPLEMENT: Times of P for additional shocks at China Lake  
eb. 9 04 05 13, 08 08 17, 08 48 57 (pP 49 27), 16 15 57,  
17 08 00 (i 09), 17 19 36

UPPLEMENT: Times of P for additional shocks at Isabella  
eb. 10 21 46 48 (i 55)  
eb. 11 04 48 23  
eb. 12 00 45 41  
eb. 14 07 01 23, 14 19 58 (e 20 16), 15 42 57  
eb. 15 01 01 43, 07 06 38, 07 26 22, 09 35 07, 10 40 10

UPPLEMENT: Times of P for additional shocks at Woody  
eb. 5 17 55 53  
eb. 8 18 29 28, 22 40 54 (i 41 04)  
eb. 10 05 17 50 (i 18 05), 12 12 07  
eb. 11 07 27 20, 15 12 38, 21 23 06  
eb. 13 09 44 03, 19 15 36  
eb. 15 18 41 51, 20 30 11

Violet M. Taylor  
Seismological Assistant



63 ✓

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
February 28, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

eb. 16	iP	08 42 18
16	iP	11 04 15
	iSP	06 53
20	iP	14 40 48

CONTINUATION:

eb. 20	eP	17 20 17
	e	35
	iS	31 00
	iSS	36.7
	eSSS	40.2
	eG	43.0
	eR	47.8

	$\Delta 90^\circ$	
21	iP	13 27 56
21	iP	14 40 16
	eS	50 04
	eG	59.8
	eR	15 02.7

(22)	$\Delta 78^\circ$	
	iP	07 20 35
	ePP	23 01
	eS	28 52
	eG	35.4
	eR	39.0

	$\Delta 64^\circ$	
	MH	$\mu$ 3 sec 20
22	iP	08 09 56
	Compression	
23	iP	17 22 58
24	i	05 49 23
(24)	iP <sup>2</sup>	13 40 25
	ipP	50
	i(sP)	41 00
(1)	ipp	28

Feb. 24	iPcP!	13 43 18
	iS\	45 26
	iScP	46 52
	eL	48.5
	iScS	50 49
	Distance	31°
	Depth	120 km

		$\mu$	sec
	PZ	0.2	1
	PH	0.1	1
	SH	4	14
25	iP	08 20	26
	i		31
	e	21	06

25	iP	09 05	31
	i		42
(26)	iP! 2	20 27	31

Dilatation from southwest

	ipP	20 28	10
	i		36
16	ipP\	31	29
	ipPP	32	13
	ePPP	33	40
	iSKS	37	53
	i	38	23
	iS\		48

	iPS	20	40.0
	iSS		45.6
	iP'P'		52 07
	iG		54.7
	iSKPP'		54 52
	eR?		57.6
	iR		59.0

$\Delta 96^\circ$   
Depth 150 km  
Magnitude  $7\frac{1}{4}$  -  $7\frac{1}{2}$

		$\mu$	sec
	PZ	$1\frac{1}{2}$	1
	PH	$1\frac{1}{2}$	1
	PPZ	1	1
	SH	4	4
	MH	65	22

SUPPLEMENT: Times of P for additional shocks at Goldstone 35 18.0±N116 48.3W

eb. 20	06 57 19, 08 56 57, 12 40 24, 14 40 49 (i 41 40), 14 59 52
eb. 21	02 45 35, 08 01 04, 12 03 19
eb. 22	07 00 16, 08 06 01, 08 10 06 (pP 12 03), 09 28 52, 09 49 12 (pP 44), 11 18 18, 21 22 10
eb. 23	06 43 56, 07 15 26
eb. 24	04 10 05, 05 48 55 (pP 49 22), 13 18 58, 17 47 58
eb. 25	21 45 23, 22 45 17, 23 36 50

SUPPLEMENT: Times of P for additional shocks at Woody

eb. 16	03 04 34 (i 47, i 08 08), 04 47 12 (i 26), 11 04 13 (pP 05 50, sP 06 51), 11 14 12 (i 17, i 17 11), 12 25 53, 13 33 21, 18 05 41
eb. 17	02 45 10 (i 44), 03 55 59, 05 51 05, 16 05 51, 17 22 05, 19 38 03
eb. 18	01 35 14, 08 21 05, 15 04 15

Violet M. Taylor  
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KEW  
OBSERVATORY  
- 4 MAR 1963  
RICHMOND,  
SURREY.



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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
March 8, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Feb. 26	iP	21 42 53
27	iP	03 35 22
27	eP	04 43 24
	i	33
10	ePP	47 16
	i	54 18
	iS	55 00
	iSS	05 01.5
	eG	09.0
	eR	14.0
2	$\Delta 96^\circ$	
	Magnitude $6\frac{1}{4}$	
		$\mu$ sec
	PZ	0.1 1
	SH	4 28
	MH	53 20
	MZ	52 20
27	iP	11 11 14
	i	40
27	eP	20 41 34
Mar. 1	iP!	00 26 16.5
	iS	30.9
	Dilatation from northwest.	
	$\Delta 120$ km	
	Magnitude $4\frac{3}{4}$ - 5	
	Felt in Pasadena and generally in the Los Angeles area.	
1	Fort Tejon:	
	iP	00 26 00.9
	Woody:	
	iP	00 26 11.3
	iS	20.8
	King Ranch:	
	iP	00 26 11.6
	Isabella:	
	iP	00 26 13.4

Mar. 1	Santa Barbara:	
	iP	00 26 12.2
	iS	23.1
	Tinemaha:	
	iP	00 26 35.0
	iS	27 05.2
	Epicenter near	
	$34^\circ 55'N$	$119^\circ 00'W$
1	iP	10 57 39
	eS?	11 07 08
3	iP	17 42 20
4	i	07 51 53
	e	08 00 00
	eR	09.8
4	iP	15 52 09
	i	23
5	iP <sub>2</sub>	07 14 08
	Compression	
	ipP	07 14 25
	iPcP	15 21
	eS	21 36
	eSS	25.5
	eG	27.0
	eR	30.0
	$\Delta 52^\circ$	
	Depth 60 km	
		$\mu$ sec
	PZ	0.3 1
	PH	0.1 1
5	iP	09 23 18

**KEW OBSERVATORY**

**14 MAR 1963**

**RICHMOND, SURREY.**

SUPPLEMENT: Times of P for additional shocks at Goldstone

Feb. 25	17 24 37 (i 50), 18 47 41
Feb. 26	02 03 47, 23 35 46
Feb. 27	00 19 00, 07 45 49, 16 06 20
Feb. 28	01 17 36
Mar. 1	00 26 28.2, 04 50 39, 14 03 55 (pP 04 10)

SUPPLEMENT: Times of P for additional shocks at Woody

Mar. 2	08 56 19 (i 32), 09 36 27, 11 22 34 (i 47), 22 27 50
Mar. 3	02 19 35 (pP 20 06), 09 46 55, 17 35 21 (pP 39), 23 11 17 (pP 13 08, sP 13 55)
Mar. 4	05 20 30, 13 52 14, 18 42 35 (pP 47), 19 16 45

Violet M. Taylor  
Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

March 18, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)

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CONTINUATION:

Mar. 6	IP	18 05 40
7	IP2	05 32 12
	i	32
	IS1	40 40
	ISS	44.7
	IG	47.7
	IR	50.6
	Δ 63°	
	Magnitude 6 3/4	
		μ sec
	PZ	0.9 1 1/2
	PH	0.2 1
	SH	5 9
	MH	58 20
	MZ	28 20
7	IP	11 51 44
7	IP	12 29 13
	IPP	32 40
	IS	40 00
	IPS	41.0
10	ISS	45.8
	ISSS	49.4
	IG	52.6
	eR	57.6
	Δ 90°	
		μ sec
	MH	5 20
	MZ	4 20
7	IP	13 51 44
	i	55

Mar. 8	IP	02 57 14
	eS	03 08 00
	ePS	53
	eG	20.0
	eR	23.5
	Δ 86°	
	IP	03 45 53
	eL	04 12.7
10	IP	01 32 37
	i	46
	eS	38 00
	eG	40.0
	eR	41.4
	Δ 34°	
10	IP	03 07 18
10	IP	03 24 05
10	IP2	11 03 39
	i	54
	IS1	13 30
	eSS	18.8
	eG	24.5
	eR	29.0
	Δ 80°	
	Depth 60 km	
	Magnitude 6 - 6 1/4	
		μ sec
	PZ	0.4 1 1/4
	PH	0.1 1
	SH	1 1/2 10
	MH	1 20
	MZ	1 20
11	IP	09 13 33
	Compression	
11	IP	15 35 10

SUPPLEMENT: Times of P for additional shocks at Goldstone

Feb. 27	23 43 33
Mar. 1	19 26 59
Mar. 5	21 50 21
Mar. 6	07 05 45
Mar. 7	03 53 29, 23 56 02 (pP 19, sP 23)
Mar. 8	03 37 46, 14 11 37 (pP 12 25), 15 18 49, 18 39 23, 22 34 14
Mar. 9	03 00 58, 04 29 19, 06 55 56, 07 12 29, 22 55 14 (pP? 57 15)
Mar. 10	01 32 10, 01 32 25 (pP 45, PcP 35 20, ScP 38 30), 08 35 51, 09 51 26, 11 42 44, 12 02 10
Mar. 11	14 33 54
Mar. 12	08 15 44
Mar. 13	10 47 30

SUPPLEMENT: Times of P for additional shocks at Woody

Mar. 5	09 47 09, 13 19 29, 19 43 47
Mar. 6	04 06 02, 04 50 24 (i 39), 07 05 25 (i 34), 18 08 55, 20 03 16
Mar. 7	05 24 55 (i 25 17)

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
22 MAR 1963  
RICHMOND,  
SURREY.

B ✓

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
March 28, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Mar. 16  
8  
iP! 2 08 55 24  
iS! 09 04 03  
iSS 07.9  
eG 10.9  
iR 14.1  
iP'P' 24 10  
Δ 66°  
Magnitude 7

	μ	sec
PZ	3½	4
PN	0.2	1
SZ	25	22
MZ	35	20

Surface waves relatively small, probably due to scattering along path.

20  
iP 04 54 12  
ipP 56 47  
iS 05 03 22  
i 06.0

Δ 80°  
Depth 700 km

21  
eP? 04 12 09  
i 19  
24  
iP' 02 26 07  
i 16  
iPP 27 40  
iPS 37.5  
iSS 45.0  
iG 58.0  
e(R) 03 02.2

Δ 123°  
Magnitude 6¼

	μ	sec
MH	8	20
MZ	7	20

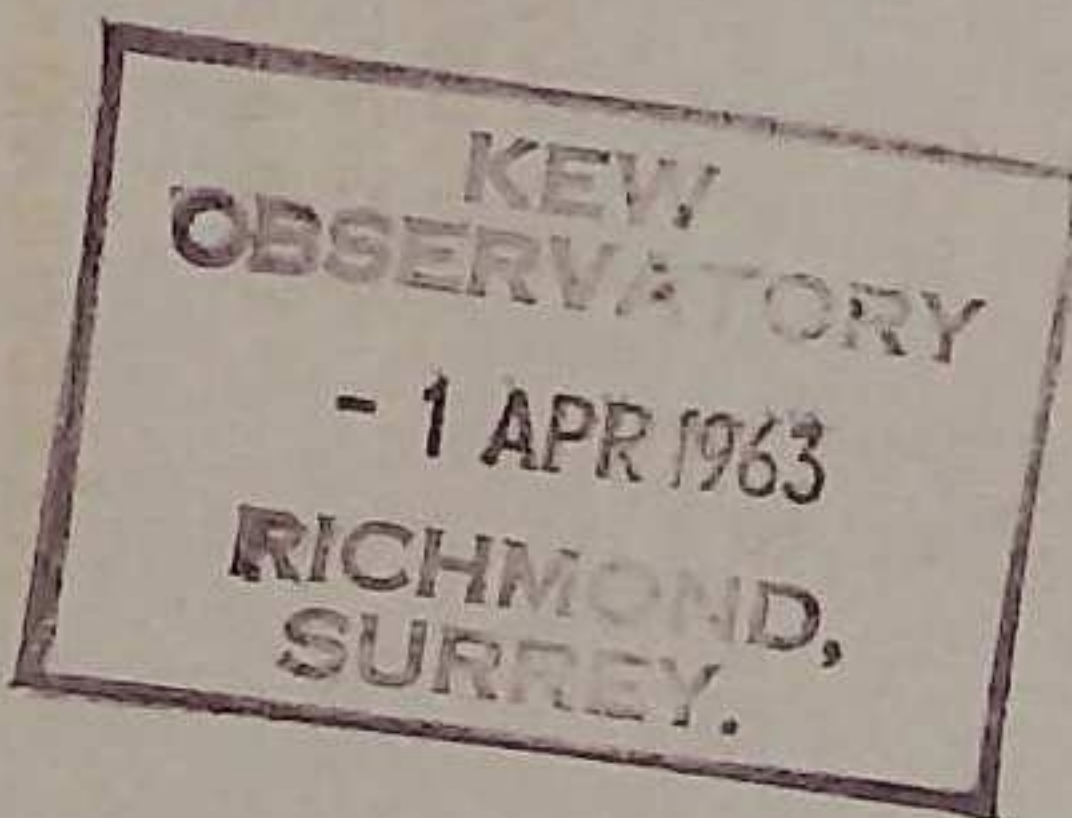
Mar. 24  
iP 2 21 43 43  
Compression  
i 21 43 50  
iPP 45 19  
eS 50 24  
eSS 54.0  
eG 55.0  
eR 56.5

Δ 50°  
Magnitude 6

	μ	sec
PZ	0.3	1
PH	0.1	1
MH	2	20
25 iP	09 29 36	
i	45	
iS!	30 29	

Δ 370 km  
Magnitude 4 ¾

25  
iP 23 05 31  
i 41



SUPPLEMENT: Times of P for additional shocks at Goldstone

Mar. 16 21 52 08  
Mar. 18 04 13 10, 04 38 44, 13 27 22  
Mar. 19 05 23 23, 05 59 42, 14 15 20 (eS 17 28), 14 54 57  
Mar. 20 07 14 57, 15 00 50

SUPPLEMENT: Times of P for additional shocks at Woody

Mar. 14 08 14 06 (i 18 25), 18 11 19, 18 20 22, 18 41 10  
(pP 22, sP? 27), 20 12 00 (pP 11)  
Mar. 15 00 30 02 (i 34 12, iP'KKP? 45 41, i 45 59), 04 14 36,  
05 21 33, 05 57 10  
Mar. 17 06 26 56, 08 52 36, 13 19 17 (pP 33)  
Mar. 21 00 01 06, 01 24 34, 04 47 05 (pP 19), 18 03 40,  
18 23 18 (i 24), 23 46 11  
Mar. 22 01 53 07, 02 50 38 (i 53), 04 08 05 (pP 31), 04 37 24

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Seismological Assistant

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

April 2, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



**ADDITIONAL:**

Mar. 25 Goldstone:  
IP 09 29 13.5  
IS 45.2  
Hayfield:  
IP 09 29 22.2  
IS 30 02.8  
Tinemaha:  
IP 09 29 31.8  
IS 30 20.2  
Santa Barbara:  
IP 09 29 49.4  
Barrett:  
IP 09 29 40.3  
Felt at Las Vegas, Nevada

Mar. 26 IP 14 47 01  
26 IP 19 58 47  
26 IP2 21 46 58  
Compression  
i 21 47 12  
i 57  
IS 57 13  
iG 22 08.6  
eR 12.5

Δ 82°  
Magnitude 6½

	μ	sec
PZ	0.8	1½
PH	0.3	2
SH	3	24
MH	15	20
MZ	6	20
IP	00 26 14	
IPP2	28 32	
IPPP	30 06	
IS	34 44	
iScS	36.0	
ISS	38.9	
iG	41.8	
IR	46.2	

**CONTINUATION:**

Mar. 26 IP2 10 00 51  
Compression from southwest  
10 iPcP! 10 00 59  
iPP 04 18  
IS 11 20  
iG 23.2  
2 IR 26.5  
eP'P' 27 11  
Δ 83°  
Magnitude 6 ¾ - 7

	μ	sec
PZ	1	1
PH	¾	1
SH	35	10
MH	70	20
MZ	65	20

28 IP 00 26 14  
11 IPP2 28 32  
IPPP 30 06  
IS 34 44  
iScS 36.0  
ISS 38.9  
iG 41.8  
IR 46.2

Δ 63°  
Magnitude 7 - 7½

	μ	sec
PZ	0.2	1
PPZ	0.4	2
PPN	0.5	3
SH	16	19
MH	245	20
MZ	184	20
IP	11 25 05	
i	21	
IP	23 41 43	
i	49	
IS	52 16	
eL	24 07.6	
Δ 85°		
iP!	02 05 58	
Compression		
ePP	02 09 16	
IS	16 10	
eG	29.0	
eR	33.0	

Possibly deep, but appears to be complex; pP, sP, etc. cannot be selected from the numerous arrivals

26 IP 11 58 33  
26 IP 13 04 10  
26 IP2 13 37 35  
i 52  
iPP 41 10  
IS 48 00  
eG 59.9  
eR 14 03.3  
eP'P' 03 53

28 IP 11 25 05  
i 21  
28 IP 23 41 43  
i 49  
IS 52 16  
eL 24 07.6  
30 IP! 02 05 58  
Compression  
ePP 02 09 16  
IS 16 10  
eG 29.0  
eR 33.0

Δ 83°  
Magnitude 6¼

	μ	sec
PZ	0.4	1
PH	0.2	1
SH	20	20
MH	17	20

Δ 78°  
μ sec  
PZ 2 3½  
Surface waves small

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
- 8 APR 1963  
RICHMOND,  
SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

April 3, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

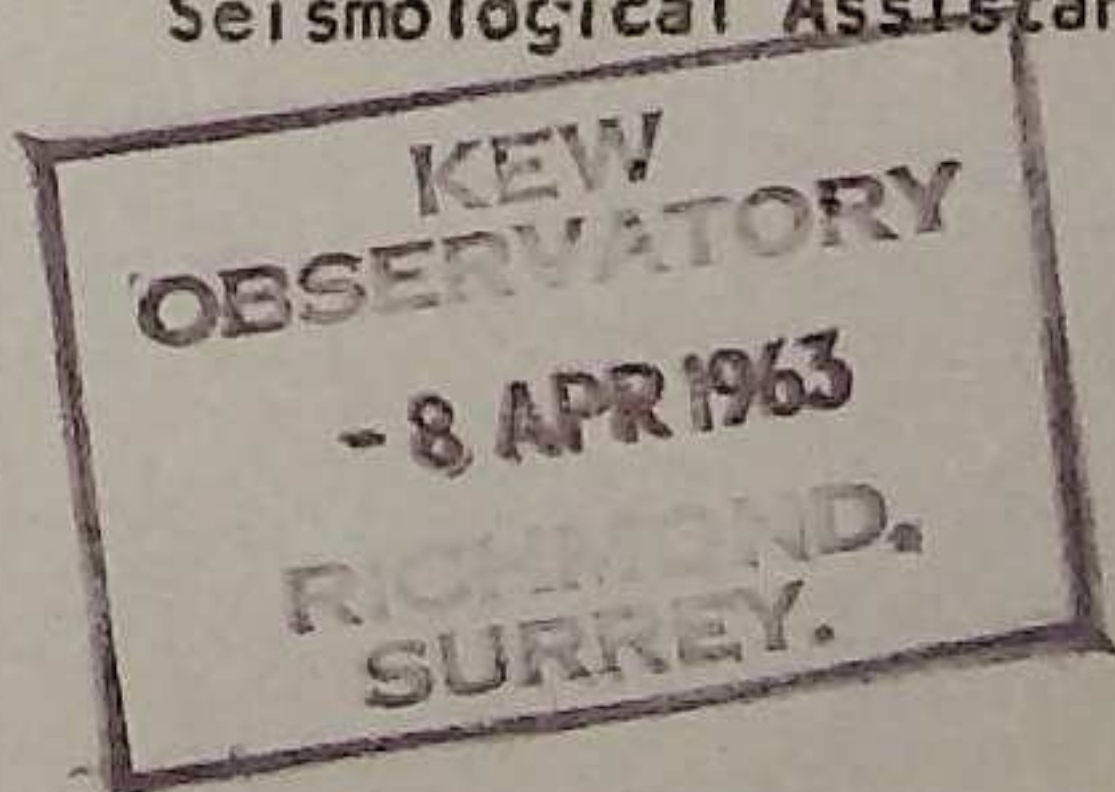
Mar. 30	iP!	17 03 03	
		Compression	
	i	17 03 18	
	iS	13.0	
	iR	24.1	
		$\mu$	sec
	PZ	2	1½
30	iP	21 21 57	
31	iP	04 55 22	
	iS	05 02 58	
	eL	09.0	
	$\Delta 56^\circ$		
(31)	iP	05 43 21	
	i(sP)	37	
	iPP	46 38	
10	iS	53 48	
	iPS	55.4	
	iSS	59.5	
	iG	06 05.6	
	iR	09.0	
2	$\Delta 86^\circ$		
	Depth 50 km?		
	Magnitude $6\frac{1}{4} - 6\frac{1}{2}$		
		$\mu$	sec
	PZ	0.2	1½
	SH	12	24
	MH	11	20
	MZ	12	20
31	iP	06 00 57	
31	iP	07 21 10	
	iPS	33 40	
	eSS	39.0	
	eG	46.5	
	iR	51.6	
	$\Delta 95^\circ$		
	Magnitude $6\frac{1}{4}$		
		$\mu$	sec
	PZ	0.1	1
	MH	14	20

Mar. 31	iP	09 19 53
31	iP	13 06 43
(31)	iP 2	19 35 26
	Compression from northwest	
	iPP	19 35 37
	iSP	43
	i	36 12
	iPP	38 34
	iS	46 00
	eG	58.0
	eR	20 01.3
	$\Delta 84^\circ$	
	Depth 50 km	
	Magnitude $6\frac{1}{4} - 6\frac{1}{2}$	
	Interpretation doubtful	
		$\mu$
	PZ	½
	PH	0.2
	SH	2
	MH	5
Apr. 1	iP	04 39 51
	i(pP)	40 52

SUPPLEMENT: Times of P for additional shocks at Goldstone

Mar. 23	01 22 26
Mar. 25	02 47 34, 20 36 01
Mar. 26	18 31 45 (pP 57)
Mar. 27	07 01 44, 07 24 41, 08 54 47 (pP 55 00), 09 15 59, 12 40 25
Mar. 28	09 57 35 (pP 49)
Mar. 29	07 10 54 (i 11 03)

Violet M. Taylor  
Seismological Assistant



KEW OBSERVATORY  
22 APR 1963  
RICHMOND, SURREY.

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
April 17, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)  
Apr. 2  $\Delta 42^\circ$



ADDITIONAL:

Apr. 25	China Lake:	
	iP	09 29 20.4
	Haiwee:	
	iP	09 29 24.5
	Riverside:	
	iP	09 29 29.5
	Isabella:	
	iP	09 29 30.0
	Woody:	
	iP	09 29 34.3
29	eP	06 18 13

Depth 160 km  
Magnitude  $6\frac{1}{4}$  -  $6\frac{1}{2}$

	$\mu$	sec
PZ	0.7	1
PH	0.5	$2\frac{1}{2}$
SH	1	3
IP	15	00 51
i		01 22
ISKS		11 24
IS		44
ISS		17.7
iG		24.5
iR		29.4

CONTINUATION:

Apr. 2

iP	16 26 34
Dilatation from northwest	
i	16 26 49
ipP	27 08
isP	35
iPcP	28 26
ipPP	51
isPP	29 05
iScP	32 01
iS	42
e(SS)	36.2

$\Delta 90^\circ$   
Magnitude 6

	$\mu$	sec
PZ	0.2	2
MH	$6\frac{1}{2}$	20
MZ	6	20
IP	16	01 22

SUPPLEMENT:

Times of P for additional shocks at Goldstone

Apr. 25	19 56 28
Apr. 26	22 48 52
Apr. 27	03 52 26, 11 11 53, 21 52 16
Apr. 28	02 14 22?
Apr. 29	21 29 23 (pP 40)
Apr. 30	00 38 50, 09 45 29 (i 37), 11 50 07, 16 21 16
Apr. 31	06 09 36, 08 25 16, 12 38 41, 13 16 46, 13 54 18, 15 14 56, 15 40 04, 20 01 38
Apr. 3	01 23 52, 01 33 38, 02 20 14 (i 32), 11 34 30
Apr. 10	07 05 08, 11 52 09, 12 59 17, 18 44 49 (pP 45 01)
Apr. 12	04 13 49, 04 19 49 (pP 20 01)

SUPPLEMENT:

Times of P for additional shocks at Woody

Apr. 24	02 26 04, 02 32 31 (i 44, i 33 11), 08 32 13, 09 57 22 (Lg? 10 01 51), 12 15 14, 13 03 02
Apr. 31	16 52 11, 17 24 50, 17 48 03
Apr. 2	03 45 45, 04 16 38, 04 56 05?, 05 33 29, 11 38 06
Apr. 3	12 41 01, 19 05 51
Apr. 4	08 37 16, 18 38 22 (i 37), 22 13 41 (i 50)
Apr. 5	01 03 31 (i 42), 02 38 48 (pP 39 01, sP 05), 11 02 38, 12 50 10
Apr. 6	00 54 00 (i 25), 05 46 44, 12 13 36, 18 15 06 (pP 19)
Apr. 7	07 31 19, 09 45 13
Apr. 8	06 09 35, 11 29 58 (i 30 14), 14 48 48 (i 49 02), 19 03 02, 20 21 43, 22 49 13
Apr. 9	01 16 21, 01 52 22, 04 45 19, 11 09 09, 12 33 07, 15 07 15

Violet M. Taylor  
Seismological Assistant

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22 APR 1963  
RIMOND,  
SURREY.

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
April 18, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Apr. 6	iP	07 14 08
6	iP	11 26 15
	eS	32.0
	eR	36.9
	$\Delta 38^\circ$	
6	iP	23 44 10
7	iP	04 09 34
	Compression	
7	iP	11 25 59
7	iP	15 35 28
	Compression	
	ipP	15 35 47
7	iP	15 40 55
7	eP'	22 55 01
	i	12
	i	30
16	iPP2	57 23
	iSKP!	58 33
	i	54
	e(SKKP)	23 07 20
	ePS	08 04
	ePPS	09.5
	iSS	16.0
	eSSS	20.1
	eG	30.0
	iR	37.4
2	$\Delta 133^\circ$	
	Magnitude $6\frac{1}{2}$	
	$\mu$	sec
	PPZ	0.2 $1\frac{1}{2}$
	PPH	0.15 2
	MH	$7\frac{1}{2}$ 30
	MZ	$7\frac{1}{2}$ 30
7	iP	23 43 30
8	iP	12 06 14
	Dilatation	
9	iP	02 13 26
	Compression	
	i	02 15 26
10	iP	08 09 15
11	iP	12 14 16
	i	28
12	iP	08 55 06
	eS	09 06 32
	ePS	08.0
	eG	21.0
	eR	24.5
	$\Delta 95^\circ$	
12	iP	13 46 19
12	iP	20 59 46

Apr. 13	iPNEZ!2	02 30 27
	Dilatation from southeast	
	ipP	02 30 57
	isP	31 09
	iPcP	23
	iS	38 12
	isS	39 11
	iScS	40 02
	iSS	42 05
	eR	48.9
	$\Delta 58^\circ$	
	Magnitude $6\frac{3}{4} - 7$	
	$\mu$	sec
	PZ	3 2
	PH	2 2
	SH	1 2
14	iP	05 45 14
	i	23
15	iP	23 51 04
	i	21
16	iP	01 44 15
	iPP1	48 25
	iSKS	54 24
	iS	55 26
	i	58 46
	eSS	02 03.0
	eG	10.7
	iR	19.2

2	$\Delta 98^\circ$	
	Magnitude 7	
	$\mu$	sec
	PPZ	$1\frac{1}{2}$ 2
	MH	150 20
	MZ	130 20
16	iP	02 13 47
	ipP	14 05
	Involved in the preceding	

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

May 3, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Apr. 17	IP 2	02 23 37		ISS	08 08.3
	Compression			ISSS	12.0
	iPcP?	02 23 46		iG	18.0
	i(pP)	49		iR	25.9
	iS	33 48		2- Δ 103°	
	IPS	34 32		Magnitude 7	
	ISS	39.0			
	iG	44.7			
	iR	48.0			
	2- Δ 81°				
	Depth 40 km?		22	PPZ	μ sec
	Magnitude 6½ - 6 ¾			PPH	1 ¾ 8
				MH	60 20
				MZ	60 20
				IP	07 38 05
				lpp	20
			24	iP	21 53 57
			29	eP	20 41 35
				I	44
				eS	46 54
				eG	48.5
18	eP	04 31 35		eR	50.1
	eL	34.9		Δ 44°	
19	eP	07 49 30			
	ePP <sup>2</sup>	53 41			
	iSKS	08 00 12			
	iS	01 13			
	ePS	02 52			

SUPPLEMENT:

Times of P for additional shocks at Goldstone

Apr. 12	10 55 28,	10 57 53,	19 58 08
Apr. 13	02 44 53,	03 32 13,	09 20 11, 14 45 41, 19 56 12, 22 20 07
Apr. 17	08 35 00		
Apr. 21	04 52 06 (PP 56 09),	09 30 16 (i 24),	13 14 56
Apr. 22	11 50 57 (i 59 07),	15 18 48 (pP 19 23)	
Apr. 23	03 04 24,	07 38 36 (e 46),	13 02 14, 15 44 00, 20 01 33
Apr. 24	02 41 09,	04 06 34,	13 45 20, 16 08 18, 21 00 59 (i 01 14)
Apr. 25	08 30 27 (i 31 17, i 33 05),	11 31 37 (e 49),	
	13 12 24,	18 02 01 (pP 03 27)	
Apr. 26	16 55 14 (pP 47)		
Apr. 27	11 14 54 (pP 15 19, sP 29),	19 41 40 (i 55),	08 45 37
Apr. 28	05 32 11 (pP 25),	14 27 17,	18 26 29
Apr. 30	07 16 30 (i 44, i 54),	08 37 47,	10 23 36

SUPPLEMENT:

Times of P for additional shocks at Woody

Apr. 9	17 32 12,	23 10 17
Apr. 10	00 36 20,	08 36 58, 12 38 35, 14 18 16 (i 20 58), 15 08 30
Apr. 11	01 21 41 (pP 22 00),	09 52 07, 11 12 27, 11 42 28
Apr. 14	06 40 47,	07 36 42, 08 04 12, 09 01 46, 11 29 07,
	19 10 42,	20 48 57
Apr. 15	05 52 18 (pP 47, sP 58),	07 39 13
Apr. 16	05 43 00,	14 21 55
Apr. 17	00 20 45,	01 29 06
Apr. 18	02 03 04 (pP 04 59),	11 39 49, 22 16 26
Apr. 19	16 36 37 (pP? 52),	22 56 52 (pP 57 06)
Apr. 20	01 00 32 (pP 55),	03 15 44, 05 58 56, 07 13 31,
	08 24 00,	17 07 19, 20 42 07

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
- 8 MAY 1963  
RICHMOND,  
SURREY.



SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

May 15, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)

May 1

IP<sup>2</sup>

10 15 51



International  
Seismological  
Centre

CONTINUATION:

Apr. 29 IP<sup>2</sup> 21 52 52  
IS 59 47  
eScS 22 02.6  
ISS 03.6  
eG 04.7  
eR 06.4

2 Δ 50°  
Magnitude 6

	μ	sec
PZ	0.15	1
PH	0.1	1
SH	3	5
MH	11	20
MZ	11	20
IPP	01 16	56
eSKS	23	39
IPS	25	39
ISKKP?	32	05
ISS	33.0	
IG	44.0	
IR	48.1	

Compression  
13 ipP 10 16 29  
isP 44  
iPP<sup>2</sup> 19 55  
ISKs 26 07  
ISKKS 21  
eS<sup>1</sup> 27 04  
eSP 28 27  
ISS 33.2  
IR 43.3

Δ 99°  
Depth 150 km  
Magnitude 7

	μ	sec
PZ	0.6	1
PH	0.2	1
PPZ	1 1/4	1 1/2
PPH	1	3
SH	2	8
MZ	11	20
IS	11 15	27
eL		24.0

Δ 74°  
4 IP 06 04 14  
eL 13.9  
eR 16.4  
7 IP 16 34 32

Dilatation  
ipP 16 35 01  
isP 13  
8 IP 08 58 05  
eS 09 03 50  
eR 06.8

Δ 35°

30 eP 03 34 31  
30 IP 18 52 54  
May 1 IP 01 13 15

2 Δ 106°  
Magnitude 6 3/4

	μ	sec
PPZ	0.1	1
MH	55	20
MZ	75	20

Interpretation  
doubtful

SUPPLEMENT: Times of P for additional shocks at Goldstone

Apr. 27 15 16 41 (i 51)  
Apr. 29 15 10 38  
Apr. 30 00 44 39, 06 16 54, 18 26 19 (i 28)  
May 4 07 50 28, 12 32 44, 16 25 42, 16 28 36 (i 55), 16 33 37,  
16 51 53, 21 44 43, 22 21 42, 22 28 25  
May 5 15 28 38 (pP 53), 17 23 29 (pP 43)  
May 6 08 57 36, 09 28 16  
May 7 05 13 18, 05 23 06, 18 08 48 (pP 09 03)  
May 8 09 03 58 (i 04 44)  
May 9 07 38 07, 15 10 38, 20 52 33 (i 44)  
May 10 11 29 39  
May 13 07 22 28

SUPPLEMENT: Times of P for additional shocks at Woody

May 1 02 45 36  
May 3 10 51 52

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
20 MAY 1963  
RICHMOND,  
SURREY.



KEW  
SERVATORY  
- 4 JUN 1963  
RICHMOND,  
SURREY.

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
May 29, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:  
by 17

CONTINUATION:  
by 19

22 52 15  
25

May 20

$\Delta 88^\circ$   
Magnitude  $6 \frac{3}{4} - 7$

B

2

19

0

2

19

20  
20

B

2

IP  
i  
IP 2  
IPP 2  
e  
ISKS  
IS 1  
IPS  
ISS  
IG  
iR  
 $\Delta 90^\circ$   
Magnitude  $6 \frac{3}{4}$   
 $\mu$  sec  
PZ 1 2  
PH 0.1 1  
PPZ 1 3  
PPH  $\frac{1}{2}$  3  
SH 15 20  
MH 10 20  
MZ 10 20  
IP 2 21 46 16  
Compression  
IPP 1 21 48 44  
IS 1 54 50  
ISS 58.6  
IG 22 01.8  
iR 04.0  
IP'IP' 15 29  
 $\Delta 63^\circ$   
Magnitude  $6 \frac{1}{2}$   
 $\mu$  sec  
PZ 0.3 1  
PH 0.3 3  
PPH 0.3 2  
SH 6 10  
MH 25 20  
MZ 19 20  
IP 23 42 21  
ipP 54  
IP? 01 43 19  
IP 2 11 50 38  
Compression  
i(sP) 11 50 56  
IPP 1 54 01  
ISKS 12 01 00  
eS 1 16  
ISS 07.0  
iPKKP 08 42  
eG 13.3  
iR 16.3  
IP'IP' 16 48

PZ 0.6 1  
PH 0.2 1  
PPZ 0.4 2  
SH 9 14  
MH 30 30  
MZ 30 30  
IP 17 42 59  
i 43 23  
eS 53 36  
eSSS 18 02.6  
eG 05.4  
eR 09.3

2

$\Delta 86^\circ$   
 $\mu$  sec  
MH 3 20  
MZ 3 20  
IP 22 02 40 36  
i 54  
IP 22 04 28 59  
IG 32.7  
eR 34.1

22

22

22

22

$\Delta 20^\circ$   
IP 10 31 08  
IP 2 14 07 14  
Dilatation  
ipP 14 07 28  
ePP 09 36  
IS 1 15 56  
ISS 20.0  
IG 23.3

$\Delta 65^\circ$   
Depth 60 km  
Magnitude  $6 \frac{1}{2}$

22  
22

$\mu$  sec  
PZ 2 5  
PH 0.4 2  
SH 2 8  
IP 22 16 38 43  
IP 22 12 00  
i 05  
i 12  
i 23

Violet M. Taylor  
Seismological Assistant

**KEW  
OBSERVATORY**

- 4 JUN 1963

WESTMORLAND,  
SURREY.

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

May 31, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

May	Time	Station	Time	Station	Value
23	03 44 26	iP	18 26 22	iP	
	48 19	iPP	30.7	eL	
	04 11.3	eG	08 52 30	iP	
	14.9	eR	48	i	
		$\Delta 97^\circ$	23 16 46	iP	
23	03 45 35	iP	24 52	eS	
	53 32	iS	31.6	eG	
		$\Delta 59^\circ$		$\Delta 59^\circ$	
23	06 37 16.3	iP	04 08 38	iP	
	Magnitude 4.2		16 45	iS	
	Felt, Imperial Valley		23.3	eG	
23	07 52 47	iP		$\Delta 59^\circ$	
	53 01	i			
	59 56	eS			
	08 08.3	eL			
23	09 06 44.9	iP			
	Magnitude 4.4				
	Felt, Imperial Valley				
23	15 53 44.1	iP			
	Magnitude 4.6				
	Maximum VI MM in Imperial Valley. Minor damage to store goods and to plaster at Westmorland, Brawley, El Centro, etc.				

WESTMORLAND, SURREY  
 KEW OBSERVATORY  
 THE INTERNATIONAL SEISMOLOGICAL CENTRE

SUPPLEMENT: Times of P for additional shocks at Goldstone

May 17	06 39 14, 10 46 57, 14 21 31
May 18	02 11 54, 12 53 05, 15 03 49, 23 57 34
May 20	02 51 00, 03 45 09, 05 27 09, 17 12 17, 19 28 57 (pP? 29 08)
May 22	16 12 39, 16 32 55
May 24	12 58 36

SUPPLEMENT: Times of P for additional shocks at Woody

May 16	20 48 03 (i 47, i 51 39)
May 18	12 49 16, 23 27 46 (pP 28 07)
May 21	01 11 19, 10 27 43 (pP 28 10), 15 28 46, 17 53 22, 18 02 26, 18 22 42, 18 47 37, 20 07 11, 20 33 46
May 22	05 53 04 (pP 16), 08 04 23 (pP 36), 08 53 54, 16 12 45 (pP 13 04), 22 11 08, 22 12 02, 22 21 48, 22 25 41
May 23	01 10 10 (pP 32), 02 39 49, 04 04 56, 04 06 44, 07 09 32, 08 00 45, 08 53 10, 12 09 39, 15 41 42, 16 38 14 (i 29), 21 45 46 (pP 46 25)
May 24	21 03 46, 21 12 11 (i 23), 21 30 28
May 25	02 49 46, 04 29 46, 07 43 20 (pP 33), 08 08 34, 14 59 09, 16 26 51, 20 09 21, 22 31 27

Violet M. Taylor  
Seismological Assistant

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

June 12, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

May 23	El Centro:		June 2	iP	10 13 02
	iP	06 36 38.8		eSKS?	23 47
	iS	41.1		eS?	25.3
	iP	09 06 10.0		eG	37.6
	iS	12.2		eR	41.7
	iP	15 53 06.9		$\Delta 93^\circ$	
	iS	09.3			

Revised magnitudes:  
4.4, 4.6, 4.8

CONTINUATION:

May 31	iP	06 15 03		MH	$\mu$ sec	2 1/2	20
	iS	24 19		iP''		21	23 24
	iG	33.2		iPP			25 09
	iR	36.2		ePS			35 15
	$\Delta 70^\circ$			eSS			42.1
June 1	iP	00 10 10		iG			56.2
	i	24		iR		22	04.6 $\leftarrow \Delta 127^\circ$
	eS	19.5		iP		22	28 22
	eG	28.6		i			53
	iR	31.2		eP		07	48 06
	$\Delta 75^\circ$			iS			58 15
	MH	$\mu$ sec		eG		08	09.4
	4	20		eR			13.4
	iP	12 42 17		$\Delta 82^\circ$			
	e(S)	52.2		iP		11	40 49
	iR	13 02.7		iPcP			41 47
	iP	21 25 13		eS			48 03
	i	27		eG			53.7
	iS	34 37		eR			56.4
	eG	43.2		$\Delta 53^\circ$			
	iR	46.2		iP		12	06 45
	$\Delta 75^\circ$			eS			17 15
	MH	$\mu$ sec		eSS			22.9
	8	20		eG			29.2
				eR			32.7
				$\Delta 88^\circ$			
				iP		13	18 31
				iP		19	34 17
				i			47

SUPPLEMENT: Times of P for additional shocks at Goldstone

May 28	00 17 36 (pP 54), 01 36 32, 08 31 20, 21 14 41
May 29	04 55 51 (i 56 05), 08 38 56, 08 54 06, 11 10 16, 13 34 56, 18 37 09, 18 40 27, 22 56 44 (i 54)
May 31	04 50 24, 05 39 20, 14 20 46 (pP 41 02)

SUPPLEMENT: Times of P for additional shocks at Woody

May 26	00 11 42 (i 50), 00 55 51, 05 02 13, 09 47 42, 11 09 29, 12 54 45, 18 45 09 (pP 23), 19 44 28
May 27	00 43 21 (i 33), 02 01 51, 07 12 12, 22 04 56 (pP 05 22, sP 35)
May 28	07 11 52, 11 00 35
May 29	05 29 26, 13 17 01
May 30	03 16 01, 03 54 54 (i 55 02), 05 22 02, 05 46 42, 07 15 06, 19 16 43, 20 42 30

**KEW  
OBSERVATORY**  
17 JUN 1963  
RICHMOND,  
SURREY.

Violet M. Taylor  
Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
June 25, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

		June 10		(Continued)	μ	sec	
June 4	eS?	21	33	23	MH	7 20	
	eSS		40.4		MZ	6 20	
	iG		50.2	(10)	iP''	06 57 55	
	iR		55.2		iPP	59 23	
	Δ 105°				iPS	07 09 26	
	Magnitude 6 - 6 1/4				iG	30.4	
		μ	sec		iR	33.9	
	MH	9	20		Δ 125°		
	MZ	10	20		Magnitude 6 1/4 - 6 1/2		
7	iP	19	36	35		μ	sec
	e(S)		41.3		MH	10	20
	eL		43.2		MZ	9	20
	Δ 27°?			10	iP	10	57 00
7	iP	21	34	49	eS	11	05.4
(7)	eP	22	48	50	eG		11.7
	e		53	10	eR		14.7
4	iR	23	10.4		Δ 62°		
	Magnitude 6			10	iP	12	32 50
		μ	sec	11	iP!	15	24 25.4
	MH	7	20		iS		25 04.8
8	iP	05	47	22	Magnitude 5.8		
(10)	iP''	04	35	30	Baja California.		
	iPP		36	52	Felt sharply (IV+) at		
	ePS		46	56	San Diego; also felt		
7	eG	05	07.8		in Imperial Valley		
	iR		13.0		and north at least		
	Δ 125°				to Escondido.		
	Magnitude 6 1/4						

SUPPLEMENT: Times of P for additional shocks at Goldstone (GSC) and Woody (WDY)

June 1	WDY	02 18 12 (pP 23, sP 27), 21 21 09, 22 29 07?, 22 29 24
June 2	WDY	18 05 08, 21 20 00, 22 31 14
June 3	WDY	07 30 02, 07 31 39; GSC 19 01 33 (pP 50)
June 4	GSC	20 34 03, 21 23 22 (i 24 00)
June 5	GSC	05 20 50, 09 23 59, 10 25 04, 14 19 30, 14 59 45
June 6	GSC	05 32 52, 11 37 53, 12 24 24, 17 55 16, 23 55 13
June 7	GSC	00 32 19, 16 04 02, 22 43 25 (i 45)
June 8	GSC	00 30 25, 01 13 22; WDY 07 04 39 (pP 48, sP 56), 12 54 51, 12 56 06, 13 40 45 (pP 41 19, sP 38), 13 46 50
June 9	GSC	01 05 13, 07 18 03, 09 20 04, 16 02 02, 20 49 12;
	WDY	01 42 40, 07 54 29 (i 55 51)
June 10	GSC	05 33 08, 08 02 52, 18 55 16
June 11	GSC	00 11 52 (i 15 33), 04 22 30, 13 15 23, 17 24 42 (pP 25 06), 18 43 11
June 12	GSC	04 19 36 (pP? 20 11)
June 13	GSC	05 25 58, 05 42 19, 17 11 14, 22 42 08
June 14	GSC	07 29 08, 08 19 39, 16 41 51, 23 41 58
June 15	GSC	02 27 39, 05 13 05, 16 01 30
June 16	GSC	06 32 28, 17 35 42, 22 48 34
June 17	GSC	10 34 08, 14 49 21 (i 51 11)
June 18	GSC	04 15 30 (i 19 12), 11 01 57

Violet M. Taylor  
Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
June 26, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Date	Station	Time	Value	Date	Station	Time	Value
June 12	iP	22 16	01.7	June 19	iP	12 11	50
	iS		41.0		i	12 08	
	iS	22 17	22.9		eG		35.7
	Magnitudes 4.8 and 4.6.				eR		39.5
	Both shocks felt at				$\Delta 90^\circ \pm$		
	El Centro, at least one			19	iP	18 34	43
	at San Diego.				Compression		
13	iP?	17 39	42		ipP	18 35	21
	i		40 06		isP		50
	i		20	19	iP	23 14	09
15	eP	15 42	01		eS		24 23
	iS		51 28		eR		39.5
	eL		59.3		$\Delta 85^\circ$		
16	iP	09 24	09	20	iP	01 07	49
	eL		27.8	20	iP	22 58	40
	$\Delta 20^\circ ?$				iS?	23 08	59
17	iP''	18 38	24	21	i	03 39	52
	i(SKP)		42 39	21	iP	12 29	49
	i		43 27	23	iP	04 02	05
	e(SKS)		46.0		i		18
	eG	19 16.4			eS		12 27
	iR		21.5		eSSS		21.8
	$\Delta 138^\circ ?$				eG		24.5
	Magnitude 6				eR		27.9
		$\mu$	sec		$\Delta 84^\circ$		
	MH	4	20	23	iP	09 06	40
17	iP	20 20	23		i		57
17	i(P')	23 21	14	24	iP 2	04 33	15
	i		35		Dilatation from		
	i(SKP)		24 35	7	northwest		
	i		25 05		iS	04 38	35
18	eP	05 51	44		iG		41.0
19	eP''	09 27	28		iR		41.5
	ePP		28 03	2	$\Delta 35^\circ$		
	iSKS		33 58		Magnitude 6 3/4 - 7		
	ePS		37.1		$\mu$	sec	
	eG		53.1		PZ	1 1/2	1
	eR		57.5		PH	4	3
	$\Delta 110^\circ$				SH	20	12
		$\mu$	sec		MH	50	20
	MH	2	20		MZ	50	20
				24	iP	05 50	23

Violet M. Taylor  
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KEW  
OBSERVATORY  
- 1 JUL 1963  
RICHMOND,  
SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
July 10, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

June 21 eP 13 56 20  
June 22 iP 04 50 24  
June 24 iP 03 11 57

CONTINUATION:

June 24 iP 15 12 43  
eP 16 25 03  
iS 31 17  
iG 34.5  
iR 36.5

Δ 43°

μ sec

MH 7 20

MZ 5 20

25 iP 02 40 35

e 11 51 25

eP 15 54 37

26 iP 2 17 50 39

Compression from  
southeast

ipP 17 50 53

isP 57

iPP 2 52 19

iS 1 57 07

iG 18 01.7

iR 03.9

2 Δ 46°

Depth 60 km

Magnitude 6 1/4 - 6 1/2

μ sec

PZ 1 2

PH 1 3

PPZ 0.5 2

PPH 0.4 2

SH 10 20

MH 9 20

MZ 8 20

SUPPLEMENT: Times of P for add: shocks at Goldstone (GSC), China Lake (CLC),  
and Woody (WDY).

June 19 GSC 11 06 01 (i 56)  
June 21 CLC 00 21 07, 17 55 06, 21 54 39  
June 24 GSC 10 21 39, 13 30 04, 14 24 18, 16 33 46, 16 59 54  
June 25 GSC 08 29 27, 09 42 23, 14 51 27  
June 26 GSC 08 08 46, 10 39 44  
June 27 WDY 00 17 27, 03 23 43, 08 24 22,  
12 34 01 (pP 11, sP 18), 15 51 43  
June 28 WDY 14 06 55 (e 09 02), 14 51 44  
June 29 WDY 02 32 15, 04 17 42, 04 21 02, 05 49 27 (i 38), 10 14 50,  
11 31 01, 13 17 21, 13 24 32 (i 43, i 32 00) 20 27 11, 22 14 29  
June 30 WDY 00 52 55, 01 52 05 (i 17), 02 17 19, 04 32 15, 05 24 46,  
07 04 28 (i 05 13, e 06 40), 23 22 50

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KEW  
OBSERVATORY  
15 JUL 1963  
RICHMOND,  
SURREY.



SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
July 22, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

July 1	iP	20 42 04
4	iP <sub>2</sub>	11 10 21
	Dilatation from southwest	
	ipP	11 11 03
	isP	23
	iS\	20 28
	i	21 17
	iL	31.9
	Δ 82°	
	Depth 160 km	
	Magnitude 6 3/4	
		μ sec
	PZ	2 1 1/2
	PH	3/4 1 1/2
	SH	10 15
	MH	7 20
5	iP	05 58 17
	i	31
	i	48
	iS	06 06 27
7	iP	10 29 46
7	iP	15 21 39
7	iP	19 22 32.0
	eS	24.5
	iS	32.6
	Magnitude 5 - 5 1/4	
8	iP	04 21 20

July 8	iP	17 56 54
9	iP	09 32 18
	iS	38 38
	iL	43.5
	Δ 43°	
10	iP <sub>2</sub>	05 33 40
	Dilatation	
	iS\	05 42 20
	iSS	46.4
	iG	49.7
	iR	52.9
	Δ 65°	
	Magnitude 6 1/4 - 6 1/2	
		μ sec
	PZ	0.2 1
	PH	0.1 1
	SH	4 24
	MH	12 20
	MZ	10 20
10	iP	10 00 32
10	iP	20 04 37
	Dilatation	
12	iP	14 07 49
14	iP	00 14 56
	iS	25 28

SUPPLEMENT: Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY).

June 29	WDY	08 11 20.0 (S 12 48.0), 17 50 43
June 30	WDY	16 22 31 (i 23 42)
July 1	WDY	04 16 32, 06 43 00, 10 24 35; CLC 18 06 10 (e 22), 22 50 29 (i 39)
July 2	GSC	03 02 05, 18 13 08; WDY 15 13 59
July 4	CLC	03 06 25, 07 00 50, 12 42 43; WDY 14 28 56 (pP 29 08)
July 6	CLC	18 02 59
July 7	CLC	00 16 36 (pP 17 40), 19 22 09.4 (S 23 49.2)
July 8	CLC	14 19 00 (pP 07)
July 9	CLC	03 15 12 (pP 23), 04 21 50, 04 26 52, 04 32 42, 17 29 34, 19 08 18, 20 27 06 (S 28 52); WDY 02 56 33, 04 29 56 (pP? 30 07)
July 10	GSC	04 42 04 (pP 18); CLC 03 25 18 (pP 30), 14 04 57, 17 33 50, 18 30 32, 18 34 53, 22 57 24; WDY 17 01 22 (pP 38)
July 11	CLC	13 25 38; GSC 23 36 36
July 12	GSC	06 00 24, 06 58 48, 08 06 09, 12 27 32, 12 56 44, 15 38 43
July 13	GSC	14 09 30 (pP 44)
July 14	GSC	04 11 54 (pP 12 19), 09 20 33
July 15	GSC	06 36 37, 08 42 03
July 16	GSC	08 11 25
July 17	GSC	10 44 46

KEW OBSERVATORY  
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Seismological Assistant  
25 JUL 1963  
RICHMOND, SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
July 26, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

July 14	eP	05 51 20	July 18	iP <sup>11</sup>	05 17 01	
	i!	38		iPP	18 34	
	iPP	53 30	7	ePS	28.5	
	i	54 52		eSS	35.2	
	iS	59 10		eG	49.6	
	iG	06 05 28		iR	57.0	
	eR	08.6		$\Delta 122^\circ$		
	e(G <sub>11</sub> )	12.4			$\mu$ sec	
	e(R <sub>11</sub> )	14.3	18	MH	3 20	
	$\Delta 54^\circ$			iP	19 38 14.1	
	Undesignated readings probably refer to another shock (11)			eS	36.3	
		$\mu$ sec		Felt at 29 Palms		
	PZ	0.8 4		Magnitude 3.9		
	SH	1 1/2 7		19	iPP	05 58 57
	MH <sub>11</sub>	10 20			ePS	06 08.8
14	iP	14 40 54			eSS	15.4
15	iP	08 50 49			eR	28.4
	i	51 04				$\mu$ sec
16	iP <sup>1</sup>	18 41 05	20	PZ	0.2 1 1/2	
	ePP <sup>2</sup>	45 03	20	MH	10 20	
	iPS	54 18		iP	05 39 12	
	eG	19 09.3		ePP	06 56.4	
	iR	14.7		i	07 04 33	
	$\Delta 102^\circ$			iPS	06 26	
	Magnitude 6 3/4			iSS	12 51	
		$\mu$ sec		eG	24.9	
	PZ	0.4 3		iR	31.0	
	PPZ	1 3		eG <sub>2</sub>	08 18.4	
	PPH	1 3 1/2		$\Delta 120^\circ$		
	MH	20 20		Magnitude 6 1/4		
	MZ	23 20			$\mu$ sec	
16	eP	19 21 04		MH	10 20	
18	iP	00 08 02		MZ	10 20	
	eS?	11.2				

PLEMENT: Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY).

Y 12	GSC	06 52 27
Y 13	CLC	13 43 25, 14 19 57
Y 14	CLC	19 38 18 (pP? 56)
Y 15	CLC	04 33 45, 16 48 27, 19 31 58
Y 17	CLC	15 10 31, 15 17 33, 17 57 00
Y 18	GSC	05 36 10, 11 26 23, 19 38 07.6 (S 24.7)
Y 19	GSC	05 58 06 (PP 49), 11 54 31 (pP 39), 19 01 03, 19 25 12
Y 20	WDY	00 17 50, 02 24 09 (pP 32), 06 55 01, 15 18 35
Y 21	WDY	06 58 15
Y 22	WDY	04 23 03, 08 34 18

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Seismological Assistant  
KEW OBSERVATORY  
29 JUL 1963  
RICHMOND, SURREY.

RICHMOND  
 12 AUG 1963  
 OBSERVATORY  
 KEW

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SEISMOLOGICAL LABORATORY  
 220 North San Rafael Ave.  
 Pasadena 2, California  
 August 2, 1963

PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



CONTINUATION:

Station	Time	Phase	Time	Phase	Time
22	00 43 04	eP	July 29	iP	20 29 08
	01 08.4	eG		iS	39 36
	13.0	iR			
	$\mu$ sec			PZ	$\frac{1}{4}$ $1\frac{1}{2}$
	3 20			SH	10 18
23	06 29 32	MH		MH	30 20
24	11 45 53	eP		MZ	33 20
	12 13.3	eG	30	iP	05 58 23
	18.4	iR		iS	06 08 53
24	19 17 29	iP	30	iP	06 35 25.7
25	07 13 02	iP		iS	48.0
	40	i		Magnitude 4.7	
	53	i	30	iP	07 02 37
	20 01	eS	30	iP	13 07 53
26	04 30 44	iP		iS	16 32
	34 36	iPP		eG	23.6
	41 18	eSKS		iR	27.3
	43 26	i		$\Delta 67^\circ$	
	48.2	eSS	30	iP	14 10 41
	56	eL		i	56
	$\Delta 95^\circ$			e	11 52
	Magnitude 5 $\frac{3}{4}$ - 6			i	12 08
	$\mu$ sec			e(S)	21.4
	0.2 3			eR	49.0
	10 20		30	iP	14 35 44
27	06 30 12	e(P)	30	eP	15 17 05
	33.8	eL		eL	42.8
28	07 24 50	eP	31	eP	01 56 50
28	08 14 33	i		i	57 07
28	19 02 19	iP		eR	02 22.4
29	20 26 39	iP			
	37 10	iS			
	$\mu$ sec				
	$\frac{1}{4}$ $1\frac{1}{2}$				
	7 15				

Overlaps next

ELEMENT: Times of P for additional shocks at China Lake (CLC),  
 Goldstone (GSC), and Woody (WDY).

19	WDY	08 58 31, 09 12 30 (pP 42)
22	WDY	15 59 45
23	WDY	12 52 00 (pP 11), 18 22 40, 19 30 16, 21 59 11, 23 46 47 (i 52)
24	WDY	05 34 07, 09 39 13, 09 43 58 (pP 44 09, sP 44 13), 09 55 23
26	GSC	13 42 24, 23 58 14 (i 30, i 39)
27	GSC	16 58 28, 21 38 56 (e 39 16), 22 32 41 (e 53, i 33 44)
28	GSC	04 25 53 (i 26 05); WDY 09 48 24 (pP 51, sP 49 04), 11 51 21, 12 21 20 (pP 36, sP 45), 14 45 45, 14 50 34, 14 55 57 (pP 56 10), 16 30 35 (pP 48), 16 45 26
29	GSC	05 01 33, 05 53 43, 10 48 43, 11 31 56, 23 31 21
30	GSC	03 10 13, 04 40 09

Violet M. Taylor  
 Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
August 12, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Aug. 1	iP	10 54 46
1	iP	14 53 12
3	iP	04 00 23
	ipP	01 59
	eS	11 03
3	iPl	10 33 41
	Dilatation from east	
	iPPi	10 36 42
	iSl	43 46
	iSS	48 40
	iG	55 05
	eR	58.6
	iR	59 19
2	eP'P'	11 00 23
	$\Delta 78^\circ$	
	Magnitude 6.9	
	$\mu$	sec
	PZ	1 $1\frac{1}{2}$
	PPZ	2 3
	SH	25 25
	MH	60 20
	MZ	50 20
3	eP	16 37 49
3	iP	20 38 41
4	iP	07 27 41
	ipP	59
4	eP	11 55 20
4	iP	12 16 40
4	iP	13 13 38
5	iP	00 05 17
	iS?	14 29
	i	17 53
6	i(P)	13 46 40
	e	50 13
	i(S)	54.8
	eL	14 04.9

Aug. 7	iP	18 43 10
	eS	48 29
	e	51.4
	eL	55.9
	$\Delta 33^\circ$	
8	iP	02 24 15
	i	28
	iS	31 51
	eL	38.1
	$\Delta 54^\circ$	
8	iP	11 09 41
8	iP	11 29 27
	Dilatation	
	eSKS	11 40 18
	eS	41
	ePS	41.8
	eG	55.1
	eR	59.4
	$\Delta 98^\circ$	
8	iP	14 05 33
9	iPl	14 48 17
	iSl	57 54
4	iR	15 09 40
	$\Delta 76^\circ$	
	Magnitude 6	
	$\mu$	sec
	PZ	$\frac{1}{4}$ $1\frac{1}{2}$
	SH	5 25
	MH	7 20
10	iP	13 29 49

SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY).

July 29 GSC 20 36 58 (i 37 50)

July 30 GSC 07 02 31, 08 08 20, 08 32 42, 08 40 22, 17 44 46; WDY 15 02 04

July 31 GSC 11 40 56, 13 33 04, 15 21 03, 16 32 05

Aug. 1 GSC 10 33 18, 12 53 57 (pP? 54 42), 15 33 32; WDY 17 09 24 (pP 46), 17 33 55, 18 34 19 (i 36), 21 05 02, 21 51 53

Aug. 2 WDY 03 43 07, 06 29 47, 09 17 12, 09 23 43, 10 32 49, 12 51 04, 12 59 12, 22 00 29

Aug. 3 WDY 10 46 34

Aug. 4 WDY 02 26 21, 09 25 54 (pP 26 05), 15 32 12

Aug. 5 WDY 02 54 05, 07 54 07 (i 25), 08 56 06, 08 56 59 (i 57 12)

Violet M. Taylor  
Seismological Assistant  
**OBSERVATORY**  
16 AUG 1963  
RICHARD D. SUTHERLAND

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SEISMOLOGICAL LABORATORY  
 220 North San Rafael Ave.  
 Pasadena 2, California  
 August 20, 1963  
 PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



CORRECTION:

Aug. 10 iP 13 29 49  
 should read:  
 iP 13 30 12

Aug. 15 iP 17 35 05

CONTINUATION:

Aug. 10 iP 16 17 04  
 11 iP 07 49 09  
 13 iP 22 04 23  
 eS 14 01  
 eSS 18.4  
 eG 23.7  
 eR 26.6

Compression  
 i! 17 35 06  
 Dilatation from  
 southeast  
 iPcP! 17 37 09  
 iPP2 52  
 isP 38 19  
 iS! 43 15  
 i! 26  
 iP'P' 18 03 04  
 iSKPP' 05 10

13 iP 23 12 08  
 Dilatation

Depth 600 km  
 Magnitude  $m = 7\frac{1}{4} - 7\frac{1}{2}$   
 $M = 7\frac{3}{4}$

14 iP 02 59 00  
 14 iP 03 18 24  
 14 iP 03 45 40  
 i 46 34  
 eG 04 10.2  
 eR 14.4

	$\mu$	sec	
PZ	13	1 $\frac{1}{2}$	8.67
PPZ	5	2	2.50
PPH	4	4	1.00
SH	12	6	2.00

14 iP 22 54 14  
 15 iP 02 28 58  
 i 30 49

17 iP 11 25 31  
 eS 36 01  
 iS 15  
 eSS 41.4  
 iG 49.0  
 eR 53.6

15 iP 06 23 22  
 ipP 33  
 iS! 33 06  
 iG 43.4  
 iR 46.5

$\Delta 88^\circ$   
 Magnitude  $6\frac{1}{4}$

2  $\Delta 77^\circ$   
 Depth 60 km  
 Magnitude  $6\frac{1}{2}$

	$\mu$	sec
PZ	0.2	1 $\frac{1}{2}$
SH	8	20
MH	19	20
MZ	14	20

	$\mu$	sec
PZ	1 $\frac{1}{2}$	5
MH	7	20
MZ	6	20
17 iP	11	39 51
e		40 07
i		31
i		42 07

SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

Aug. 5 WDY 15 58 02  
 Aug. 6 WDY 09 40 57, 11 45 47, 19 01 59, 20 08 21, 20 49 42  
 Aug. 7 WDY 04 38 55, 04 44 32, 07 29 29, 11 26 12, 13 20 11,  
 15 50 28, 20 49 35, 21 14 29  
 Aug. 8 WDY 03 21 25  
 Aug. 9 WDY 07 35 34, 08 52 24 (i 39), 12 28 15, 21 52 26  
 Aug. 10 WDY 00 09 20 (i 29), 03 46 56 (pP 47 25), 08 30 33  
 18 20 26, 18 45 39, 21 12 05 (pP 17)  
 Aug. 11 WDY 05 35 06, 10 15 35, 14 43 51, 20 13 51  
 Aug. 12 WDY 00 01 03, 01 17 42 (pP 56); GSC 13 14 13 (S 18)  
 Aug. 13 GSC 03 33 24; CLC 06 40 34, 13 38 27  
 Aug. 14 CLC 09 08 26, 14 44 01 (pP 30)

**KEW OBSERVATORY**  
**26 AUG 1963**  
**RICHMOND, BURREY.**

Violet M. Taylor  
 Seismological Assistant



SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California

September 11, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

Aug. 27	eP	05 54 55		PZ	μ	sec
27	iP	06 55 49		PZ	2½	2
	ipP	58		PH	8	6
(29)	eP	09 07 56		SH	4	5
	eP'	11 11	29	iP	6 ¾	10
	ePP	12 24		iS	21 08	55
	e	14 36		iS		18 21
	eSKS	18 36		iPS		19 00
	eS	19 54		iG		27.4
	iPS	21.7		iR		29.6
	iSS	27.9		Δ 73°		
	iSSS	31.6	Sept. 31	iP	13 15	47
	eG	38.1	1	iP	11 19	15
	eR	43.6	2	eS		25 53
	Δ 110°		2	eP?	13 31	59
	MH	μ 5 sec 20	2	e		34 13
	MZ	3½ 20	2	iP	14 13	26
(29)	iP!	15 39 55	3	iL		15.7
	Dilatation from southeast		4	iP	06 20	04
	ipP	15 41 09	4	i		18
	iS	47 33	(4)	iP	05 19	56
	iS	49 46		iL		33.1
	iSS	51.4	8	iP <sup>2</sup>	13 40	21
	iG	53.5		iPP		42 04
	iR	56.4		iS		46 54
	iP'P'	16 10 08		iSS		50.1
	Δ 58°			iG		52.3
	Depth 350 km			iR		52.9
	Magnitude 6½			iLg		55 14
				Δ 44°		
				Magnitude 6¼ - 6½		
				PZ	μ 0.4 sec 1	
				PH	0.1	1
				SH	11	30

PPLEMENT: Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

g. 26	GSC	18 56 37; WDY 02 39 53, 03 11 30, 06 05 09 (i 20), 08 55 27 (pP 53), 12 32 13 (pP 33)
g. 27	GSC	07 02 45, 22 14 24, 23 46 17; WDY 02 16 05, 03 45 30, 13 07 51 (pP 08 18), 17 50 59
g. 28	GSC	16 03 23 (i 49), 17 09 43; WDY 01 07 34, 03 55 10, 06 05 02
g. 29	GSC	04 46 29, 06 21 03
g. 30	WDY	00 35 45 (i 36 02), 00 54 47, 03 01 27, 03 16 32, 11 46 07, 14 03 51 (pP 04 10, sP 15)
g. 31	WDY	16 40 53, 21 37 27
t. 1	WDY	15 27 47, 16 49 17, 23 04 10
t. 2	WDY	02 30 41, 03 49 53, 07 03 31, 08 10 47 (i 11 01), 11 54 44 (pP 57), 19 15 17, 21 33 39, 22 52 41, 23 55 44 (pP 56 15, sP 42)
t. 3	WDY	05 08 41 (i 55), 05 40 23 (i 37), 09 23 42, 13 06 15; GSC 18 46 18 (i 54)
t. 5	GSC	10 03 18
t. 6	GSC	01 52 40, 02 39 14, 14 06 02

Violet M. Taylor  
Seismological Assistant

OBSERVATORY

16 SEP 1963

RICHMOND,  
SURREY.

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
September 18, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION  
Sept. 5

	iP	01 06 57	IP 2	20 01 55
	eP	11 40 44	Compression from	
	iP	23 47 22	southwest	
	compression		i. iPcP	02 05
6	iP	06 16 27	ipP	03 56
	i	34	ipPcP	04 08
	eSKS	26 54	isP	43
	eS	27 42	iPP	05 11
	eG	39.4	is \	11 29
	eR	43.0	isS	14.9
	$\Delta 90^\circ$		isSS	20.0
	iP	10 28 10	$\Delta 80^\circ$	
	e	31 25	Depth 550 km	
	eP	20 35 56	Magnitude $6\frac{1}{4}$	
	eL	39.9		$\mu$ sec
	i	21 04 26	PZ	0.6 1
7	iP	01 29 37	PH	0.5 1
	iS?	39 57	PPZ	2 1
	iP	12 53 46	SH	$1\frac{1}{2}$ 16
	e(S)	13 02.0	iP	02 58 52
	eG	08.4	ePP	03 02 25
	eR	11.4	iSKS	09 25
8	iP	00 59 50	IPS	11.1
	eS	01 10 11	ISS	15.6
	ePS	11 23	eG	23.1
	eG	21.4	iR	27.6
	eR	24.9	$\Delta 90^\circ$	
	$\Delta 84^\circ$			$\mu$ sec
	iP	09 17 53	MH	5 20
	eS	27 03	MZ	5 20
	eSS	32.1	iP	17 08 00
	eG	35.4	iP	19 26 45
	eR	37.1	eG	48.9
	$\Delta 70^\circ$		eR	51.9

PPLEMENT:

Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

pt. 3	WDY	19 35 30, 23 40 12
4	WDY	03 13 23, 03 37 49 (pP 38 01), 21 48 57
5	WDY	10 55 28 (pP 41)
6	GSC	20 16 44, 21 04 20 (pP 27)
7	GSC	02 41 40, 07 24 34, 08 38 17, 15 28 21, 20 13 31, 22 13 21 (pP 34)
8	GSC	05 44 29, 07 49 29, 17 26 27, 19 41 51; WDY 04 52 20 (i 54 26), 05 38 10, 09 33 29 (i 33 45), 13 19 03
9	GSC	00 30 31 (pP 32 36), 13 04 49; WDY iP 18 10 03, 21 23 51
10	WDY	01 22 24, 06 36 43 (pP 38 38), 10 58 57, 11 35 57 (i 37 40), 19 5
11	WDY	01 02 52, 01 05 59, 06 44 13

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
23 SEP 1963  
RICHMOND,  
SURREY.



SEISMOLOGICAL LABORATORY  
 220 North San Rafael Ave.  
 Pasadena 2, California  
 September 24, 1963  
 PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



CONTINUATION

Sept. 11	iP	11 19
	i	14 11
	iP	12 01 15
	iS	02 56
Sept. 12	iP	06 26 00
	i(S)	29 20
	iL	28
Sept. 13	iP	10 55 08
Sept. 14	iP	07 28 52
	iP	16 00 39
	i	01 17
	i	03 32
	iP	16 27 49
	iP	19 47 17.0
	iS	48 19.1
	Fort Tejon	
	iP	19 47 03.8
	Tinemaha	
	iP	19 47 02.5
	ipl	00 59 24
	Dilatation from southwest	
	iPP2	01 02 40
	iS1	09 37
	i	11 23
	iG	21.7
	iR	25.0
	2 Δ 84°	
	Magnitude 7 1/4 - 7 1/2	
	μ	sec
	PZ	15 7
	PPZ	13 8
	PPE	7 8
	SH	20 10
	MH	50 20
	MZ	50 20
	iP	02 10 08
	iP	02 36 49
	iP	18 36 58
	iP	21 00 58
Sept. 17	iP2	06 04 26
	ipP	42
	isP	50
	iPcP	05 14
	isPcP	35
	eS1	12 35
	eSS	16.6
	eG	19.9
	eR	23.4

Sept. 17	Δ 60°	
	Depth 60 km	
	Magnitude 6 3/4	
	μ	sec
	PZ	0.6 1 1/2
	PH	0.2 1
	SH	1 10
	iP2	19 32 43
	Dilatation from southwest	
	i	19 33 08
	iPP1	36 07
	iS1	43 17
	iPS	44.3
	iG	54.5
	iR	58.3
	2 Δ 84°	
	Magnitude 7 1/4	
	μ	sec
	PZ	3 2
	PH	1 1/4 2
	PPZ	5 5
	SH	13 20
	MH	70 20
	MZ	60 20
	iP	19 35 44
	iP	20 13 31
	iP	22 41 03
	eP	17 12 01
	ePP	16 03
	eS	23.7
	iPS	25.1
	eG	40
	eR	44.5
	Δ 100°	
	Magnitude 6 1/4	
	μ	sec
	MH	7 20
	iP	07 36 30
Sept. 20	iP?	14 52 38
	i(P)	53 09
	iP	22 22 27
	ipP	23 05
	isP	23
	eP?	02 56 38
Sept. 22	i(P)	57 02
	i	26

0.40 6.48  
 0.20 6.48  
 0.10 5.60  
 -----  
 6.20

Violet M. Taylor  
 Seismological Assistant

KEW  
 OBSERVATORY  
 30 SEP 1963  
 RICHMOND,  
 SURREY.

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
September 27, 1963  
PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:  
Sept. 14 King Ranch:

CONTINUATION:  
Sept. 22

IP 19 46 52.8  
eS 03 08 45  
eSS 18 55  
eG 24.0  
IR 30.0  
IR 33.4  
 $\Delta 83^\circ$

22 MH  $\mu$  sec  
IP 2 20  
e(S) 19 34 18  
23 IP' 43 43  
eR 07 00 14  
48.9  
Foreshock of next  
23 IP' 09 21 34  
ePP 24 48  
eSKSP 35 11  
eSS 43.9  
eG 10 05.4  
eR 10.0  
 $\Delta 143^\circ$   
Magnitude 6

23 MH  $\mu$  sec  
IP' 3 20  
14 42 12.8  
Compression from southeast  
IS! 14 42 27.1  
Magnitude 4.9±  
Felt (III) in Pasadena.  
Intensities V - VI in  
vicinity of San Jacinto

Sept 23 and Hemet. IV at  
San Diego. Epicenter  
near 33.5 N 116.9 W  
Riverside:

23 IP 14 42 01.7  
IS 07.8  
23 IP 15 22 01  
23 IP 17 11 12  
eS 17 51  
eL 20.9  
23 IP 22 43 15  
i 21  
i 35  
24 IP 08 41 53  
24 IP 09 33 13  
24 IP 2 16 40 07

Dilatation from  
southeast  
ipP 16 40 25  
isp 35  
IS1 48 10  
ISS 52.2  
eG 55.0  
IR 57.7  
eP'P' 17 09 38  
 $\Delta 61^\circ$   
Depth 70 km  
Magnitude 7

	$\mu$	sec		
PZ	3	2	1.5	7.08
PH	2	2	1.0	7.20
SH	8	6	1.25	6.52
MH	8	20		6.10

SUPPLEMENT: Times of P for additional shocks at China Lake (CLC),  
Goldstone (GSC), and Woody (WDY)

Sept. 11 WDY 22 33 17 (pP 37)  
Sept. 12 WDY 02 40 20, 03 24 43, 13 22 26, 14 23 17  
Sept. 13 GSC 23 09 56 (pP 11 37), 23 46 26 (i 33)  
Sept. 14 GSC 00 50 58, 04 05 08, 10 13 46; WDY 05 29 58, 09 39 03,  
11 59 58, 12 00 18, 19 46 56.7  
Sept. 15 WDY 01 45 43, 02 14 53, 06 02 10, 06 27 54, 06 41 14,  
08 33 03, 08 43 52, 11 12 08 (pP 30)  
Sept. 16 GSC 02 01 54, 09 53 26, 15 19 22, 17 18 17  
Sept. 17 GSC 00 27 04, 07 43 29 (i 44 08, i 28), 19 38 21,  
20 45 43, 21 36 06, 22 46 31  
Sept. 18 GSC 02 08 29; WDY 00 03 21, 01 29 26, 07 00 30, 08 14 52,  
17 28 18  
Sept. 19 WDY 00 16 07, 06 05 28, 17 00 14, 19 41 41 (pP 42 24)  
Sept. 20 GSC 03 14 02, 04 10 38, 14 52 39 (pP 53 09)  
Sept. 21 GSC 16 31 44, 16 39 42, 17 03 16 (pP 26)

Violet M. Taylor  
Seismological Assistant

W  
OBSERVATORY  
- 10 OCT 1963  
RICHMOND,  
SURREY.

RICHMOND, SURREY  
 14 OCT 1963  
 OBSERVATORY  
 KEW

SEISMOLOGICAL LABORATORY  
 220 North San Rafael Ave.  
 Pasadena 2, California  
 October 9, 1963

PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



ADDITIONAL:

Sept. 23 Barrett:  
 IP 14 42 11.3  
 IS 24.2  
 23 Hayfield:  
 IP! 14 42 11.6  
 23 Palomar:  
 IP! 14 41 59.8

Oct. 3 IP 01 27 08  
 eS 30 50  
 IR 32.4  
 3 IP 16 07 04  
 3 IP! 23 37 16  
 ePP! 40 56  
 10 ISKS 47 46  
 IS 56  
 ISS 53.6  
 ISSS 57.3  
 IG 24 00.6  
 IR 05.1

CONTINUATION:

Sept. 25 IP 05 39 22  
 25 IP 07 23 32  
 25 IP 14 13 31  
 25 IP 15 02 52  
 26 IP 04 26 53  
 e(S) 32.0  
 e 35.2  
 26 IP 05 36 24  
 eS 43 08  
 26 IP 06 08 23  
 28 IP 07 10 11  
 e 12 03  
 29 IP 22 50 15  
 e(S) 55 28  
 eL 58.6  
 Oct. 1 IP 10 37 55  
 i 38 03  
 e(S) 44 08  
 2 IP 02 33 35  
 2 IP 05 58 54  
 IS 06 08 42  
 eG 18.6  
 Δ 78°  
 MH μ 3 sec 20

2 Δ 88°  
 Magnitude 6½  

	μ	sec
PZ	0.2	2
PPZ	0.3	2½
SH	2	5
MH	7	20
MZ	7	20
4 IP	02 59 19	
4 eP	17 50 45	
IS	51 49.6	
4 eP	17 59 55	
IS	18 00 51.0	
4 eP	21 17 03	
IS	18 04.7	
4 IP	21 20 46.1	
IS	21 50.1	
5 IP	02 06 53	
eS	17 04	
5 IP	07 44 00	
5 eP	11 59 30	
5 IP	20 28 31	

SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY)  
 Sept. 22 GSC 00 45 46, 02 28 18, 19 41 13, 22 38 58; WDY 02 36 50, 16 00 13, 20 40 33, 21 40 35, 22 38 27  
 Sept. 23 GSC 16 27 14; WDY 00 41 16  
 Sept. 24 GSC 05 38 30, 07 17 17, 22 21 14; WDY 15 57 59, 22 34 26, 22 37 46, 22 41 46, 23 18 19, 23 21 19  
 Sept. 25 GSC 04 08 15 (i 24), 13 57 04; WDY 01 16 33, 02 14 09, 02 27 24, 06 23 57 (pP 24 16), 13 34 06 (pP 35 43), 14 36 21, 15 14 11, 15 55 25, 21 30 09  
 Sept. 26 GSC 06 47 13, 06 55 57 (i 50); WDY 01 24 09, 03 42 01  
 Sept. 27 GSC 10 40 29, 11 38 19; WDY 08 05 18 (i 30), 10 13 41, 15 01 05, 16 38 32 (i 44), 18 15 21 (pP 42)  
 Sept. 28 WDY 03 13 01, 05 34 44 (i 51), 10 06 45, 11 16 56, 14 10 37 (e 11 01); GSC 19 05 01 (pP 25)  
 Sept. 29 GSC 02 50 32, 20 43 14, 21 58 20, 22 30 10  
 Sept. 30 GSC 03 55 14; CLC 03 11 54  
 Oct. 1 GSC 02 52 04, 13 29 58

Violet M. Taylor  
 Seismological Assistant

SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
October 16, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



ADDITIONAL:

4 eP  
4 eP  
CONTINUATION:

6 IP  
7 IP  
7 eL  
7 IP  
7 Compression  
7 IP  
7 Compression from southwest  
ipP  
esP  
iPP  
eS  
Δ 82°  
Depth 540 km

8

2 Δ 75°  
Magnitude 6

	Δ	sec
PZ	0.2	1
SH	1 1/2	20
MH	10	20
MZ	7	20

Oct.	Time	Station	μ	sec
11	00 12 47	IP		
11	09 55 47	IP		
11	10 21 37	IP		
	25 24	IL		
		PZ	1	2
		MH	15	20
12	11 38 00	IP 2		
	47 00	IS		
	54.5	eG		
	58.5	IR		
	12 06 14	IP'IP'		

Δ 68°  
Magnitude 6 3/4 - 7

	μ	sec
PZ	1	2 1/2
PH	3/4	1 1/2
MH	90	20
MZ	90	20
13	05 28 59	IP
	37 52	IS
	46.6	eG
	49.4	IR

Δ 68°  
Magnitude 8 1/4

	μ	sec
PZ	12	6 1/2
MH	1000	20
13	17 36 53	eP
	37 17	i

Shallow  
7.78  
7.47  
M = 8.1

PLEMENT:

Times of P at Pasadena for earthquakes believed to be aftershocks of the major earthquake at 05h Oct. 13.  
13 09 27 37, 09 33 49, 10 21 41, 12 53 15, 13 09 16 (pP 29), 14 37 10, 16 10 45 (pP 57, S 19 40), 16 39 12, 16 49 54, 17 42 33, 18 25 49 (pP 26 02), 19 38 24, 22 05 48  
14 00 03 19 (pP 31), 04 16 57 (pP 17 09), 04 22 09 (pP 21), 04 23 57 (pP 24 08), 05 35 04 (pP 19), 07 12 13, 08 05 24 (pP 38), 13 32 36 (pP 50, S 41 32), 14 01 01 (pP 13)

PLEMENT:

Times of P for additional shocks at Chin a Lake (CLC), Goldstone (GSC), and Woody (WDY)  
1 WDY 05 12 28 (i 13 21), 12 50 51  
2 CLC 17 09 43; WDY 10 03 25  
3 CLC 08 05 07; GSC 18 14 43; WDY 08 56 15  
4 GSC 00 40 42 (i 52); WDY 04 03 21, 04 03 43  
5 GSC 04 25 42, 04 33 43, 06 30 10, 15 15 35, 17 14 29, 18 45 15; CLC 00 26 23  
6 GSC 00 01 43 (pP 56), 08 51 59, 15 13 09; WDY 22 15 42  
7 WDY 04 07 07, 04 09 24 (pP 35), 23 47 28  
8 GSC 10 41 08, 11 04 08, 23 12 57; WDY 02 14 21  
9 GSC 03 28 31, 08 05 56, 08 24 42 (i 25 01), 10 27 47, 10 48 50, 13 07 57, 13 56 23; WDY 05 25 07, 09 39 04, 21 39 59, 22 49 44  
10 GSC 03 18 38, 14 28 50; WDY 10 25 56 (pP 58), 12 16 39, 17 02 44

Violet M. Taylor  
Seismological Assistant

KEW  
OBSERVATORY  
21 OCT 1963  
RICHMOND,  
SURREY.

Pasadena

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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
October 25, 1963  
PROVISIONAL READINGS



SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC) Goldstone (GSC), and Woody (WDY)

Correction:

Oct. 10 WDY 10 25 56 (pP 58) should read 10 25 46 (pP 58)

CONTINUATION:

Oct. 10 WDY 16 43 51

11 GSC 10 10 05; WDY 16 44 58, 18 52 42 (pP 57)

12 GSC 13 18 09 (pP 23), 18 59 36, 21 29 16: WDY 00 49 42, 16 22 43 (i 55), 20 07 50 (pP 08 04), 20 31 56 (pP 32 09), 22 12 54 (pP 13 05), 22 18 24 (i 35)

13 GSC 05 17 37, 05 19 47, 10 44 57 (pP 45 09). 10 58 04 (pP 15), 12 40 29 (i 37), 14 55 16, 17 00 41, 18 21 57 (pP 22 12), 20 38 29, 23 35 49 (pP 36 04); WDY iP 01 37 27 (pP 42), 01 45 47, 04 16 43, 08 17 16, 08 22 11, 10 17 12 (i 23), 11 26 23 (pP 36), 11 33 40 (pP 55)

14 GSC 05 48 31, 06 26 11, 06 33 34, 12 22 30, 18 01 06, 21 18 55 (pP 19 09), 21 31 16, 22 46 28, 23 11 34 (e 49)

15 GSC 08 11 05, 14 08 52, 18 34 55

16 GSC 10 41 50 (pP 42 04), 14 06 59, 21 41 45 (pP 42 07), iP 22 30 18 (pP 32)

17 GSC 00 46 20

18 GSC 02 10 42, 04 12 18, 04 46 58, 06 31 36, 08 06 26, 08 11 55 (pP 12 16), 08 54 33, 09 04 29 (pP 47), 18 05 52, 20 15 48 (pP 16 00)

19 GSC 03 25 42 (pP 53), 03 45 01 (pP 11), 03 57 48 (pP 58 03), 11 26 08

20 GSC 00 35 20, 01 28 33, 13 13 46, 13 30 33.8 (i! 45.0, IS 31 41.0), 17 52 38, 18 10 00 (i 11)

21 GSC 09 30 02 (i 15), 13 19 57 (i 20 09), 13 39 06, 20 50 35 (pP 49), 23 44 40 (pP 54), 23 55 19, 23 59 18 (pP 33)

22 GSC 03 36 38, 10 29 13

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 Pasadena 2, California  
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 PROVISIONAL READINGS AT PASADENA  
 (and auxiliary stations as noted)



CONTINUATION:

Oct.	Time	Station	μ	sec
15	07 18 46	IP		
15	09 13 03	IP		
		I		
15	09 43 03	IP		
		I		
15	10 09 53	eP		
		eS?		
		iG		
15	10 58 13	IP		
15	12 04 32	eP		
		e		
15	12 14 50	eP		
15	20 52 33	IP		
16	05 26 31	IP		
		ipP		
16	16 11 03	i(P?)		
		iG		
		eR		
17	03 18 57	IP		
(17)	23 35 38	ipP		
		ipP		
7		iS		
		iG		
2		iR		
		Δ 68°		
		Magnitude 6		
		PZ	0.1	1
		SH	3	20
		MH	11	20
		MZ	7	20
18	09 04 50	IP		
19	02 29 17	eP		
		ipP		
		eS		
19	03 44 59	e		
		eS		
19	16 26 07	IP		
		i		
(20)	01 04 10	ipP		
		iS		
7		iG		
		iR		
2		ipP		
		Δ 68°		
		Magnitude 6 3/4 - 7		
		PZ	0.3	1
		SH	70	30
		MH	100	20
		MZ	100	20
		IP	03 11	17
		IP	06 21	21
		IP	09 21	42
		ipP		59
		iS		30 47
		eP	12 03	18
		i		28
		iS		12 15
		IP	13 30	26.0
		i		28.9
		iS		31 14.9
		Magnitude 5 1/4 - 5 1/2		
		Barrett:		
		IP	13 29	58.2
		iS		30 17.8
		IP	15 49	19
		ipP		35
		IP	17 31	43
		IP	03 28	11
		ipP		25
		iS		37 11
		IP	04 37	53
		IP	08 09	46
		IP	09 58	37
		i		50
		IP	20 31	11
		IP	01 17	25
		ipP		44
		eS?		26.4
		IP	06 52	51
		ipP	07 45	33
		ePP		47 54
		ISKP		49 00
		eSS	08 05.1	
		Δ 130°		

see pg 44  
for Oct cont.

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28 OCT 1963  
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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
December 27, 1963



PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)

ADDITIONAL:

Dec. 6 King Ranch:  
iP 08 35 04.3

CONTINUATION:

Dec. 18 iP 2 00 42 12  
Dilatation from southwest

iPP 45 20

iS 52 20

iPKKP 01 00 55

eP'P' 08 57

eSKPP' 12 17

eP'P'P' 29 10

Distance 81°

m = 7½ ±

Surface waves

abnormally small

μ sec

PZ 2 1

PH 2 1

SH 50 14

Dec. 18 iP 03 01 21

19 iPl 17 13 51

iS 21 54

iSS 25 42

i 28 52

iL 33 35

Δ 62°

PZ μ sec

19 iP 20 46 16

20 iP 00 36 33

ipP 4.0

20 eP 09 15 44

20 eP 10 57 14

e 35

21 iP 12 46 11

24 eP 11 31 00

e(PS) 42 38

eG 53.4

eR 56.5

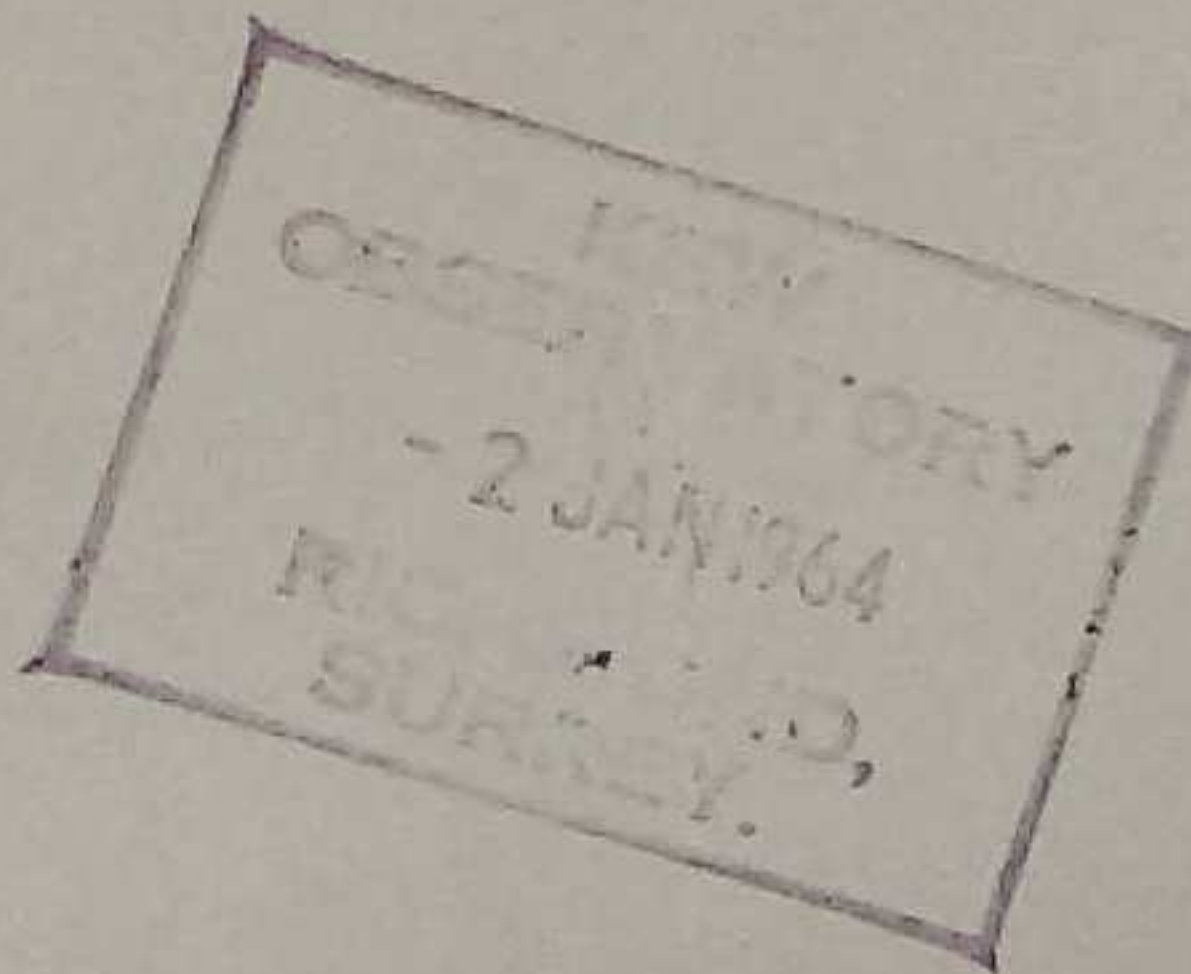
Δ 88° ±

SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC)  
Goldstone (GSC), and Woody (WDY)

Dec. 13	CLC	12 21 54 (pP 22 05), 22 31 18 (pP 29)
14	CLC	02 09 22, 03 54 53 (pP 55 08), 04 30 03, 07 00 22 (pP 36), 08 03 57 (e 04 35), 10 34 57
16	CLC	02 25 20 (pP 29 11), 04 39 14, 05 22 08, 05 29 44 (pP 52), 06 30 15 (e 33 02), 14 01 34, 15 30 05 (pP 17), 16 25 45, 16 29 09
17	GSC	04 25 02 (pP 26), 08 45 48, 23 29 31 (pP 43)
18	GSC	03 19 53 (pP 20 07), 10 09 37, 12 34 20, 18 25 19
19	GSC	22 42 46 (i 58, i 43 13)
20	GSC	04 20 22, 05 04 17, 13 03 28 (e 59, eS? 06 13)
21	GSC	09 21 29, 13 23 22 (i 38, e 27 38)
22	GSC	23 22 28

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1963

Pasadena

63  
Hall Bldg.

into sec.

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December 31, 1963

PROVISIONAL READINGS AT PASADENA  
(and auxiliary stations as noted)



CONTINUATION:

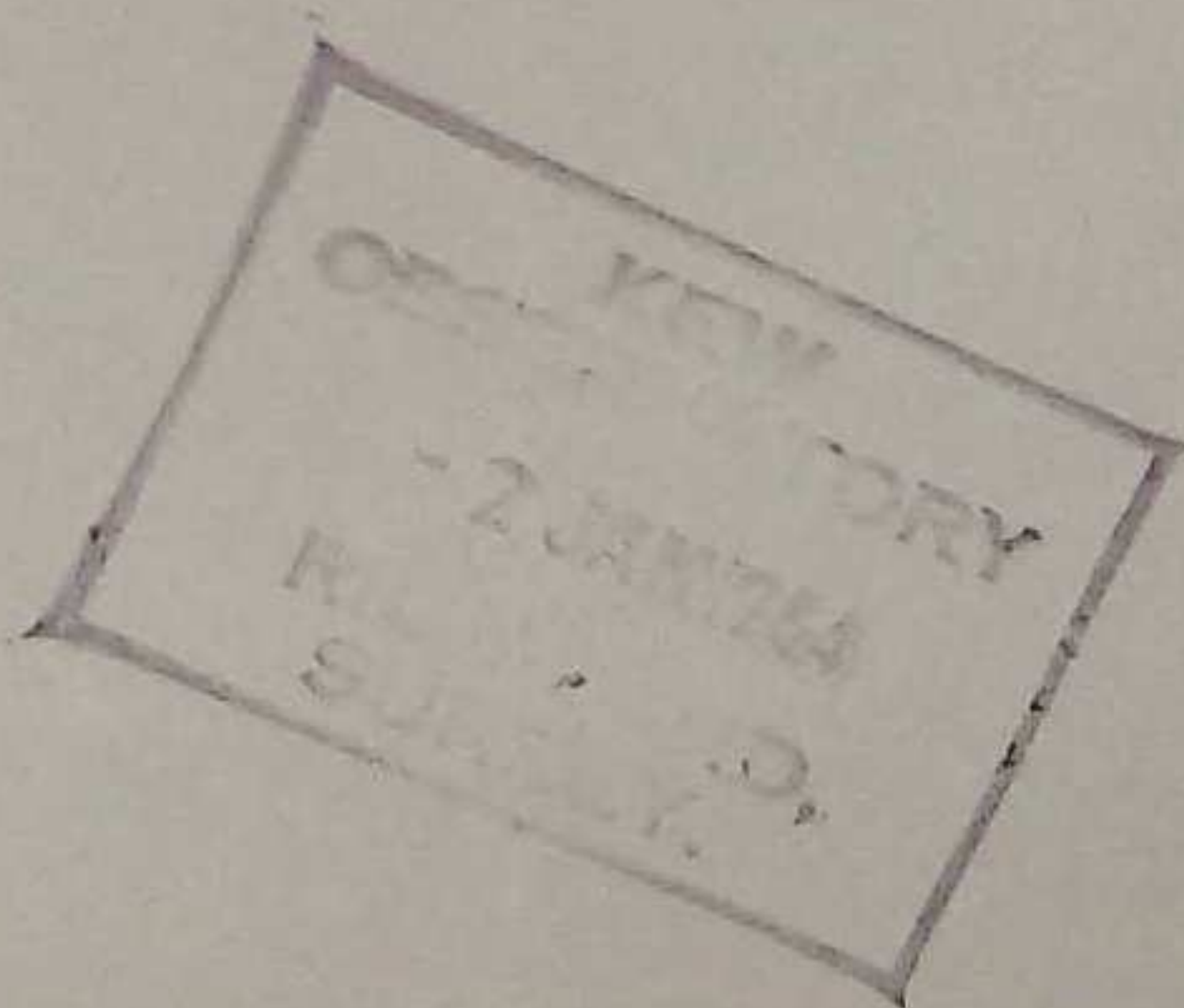
		Dec. 29		eP?		03 45 47	
Dec. 28	eP	05 58 20		eL		50.5	
	e		39	29	eP	06 26 35	
	eS	06 09 09			e	27 10	
	eG	22.0			eL	31.0	
	eR	26.4		29	iP	15 11 34	
	$\Delta 90^\circ$			29	iP	17 26 40	
(28)	iP	09 16 39			i	27 07	
	Dilatation			30	iP	01 27 43	
	eS	27.0			eL	53.0	
4	eG	40.1		30	iP	13 40 18	
	eR	43.6			i	30	
	$\Delta 93^\circ \pm$				i	41	
		$\mu$	sec		eS	48 59	
	PZ	$\frac{1}{2}$	$1\frac{1}{2}$				

APPENDIX: Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

11	WDY	17 21 01, 17 33 28, 17 51 33, 18 17 35, 18 37 04
13	CLC	04 25 25 (pP 55, sP 26 04), 07 07 29
14	WDY	06 52 28, 21 20 58
15	WDY	00 15 55, 13 23 01
16	WDY	06 32 50 (i 33 07)
18	WDY	02 42 23, 18 24 59 (pP 25 11), 19 40 43 (pP 55)
19	WDY	04 47 13 (pP 49), 08 36 41
20	WDY	00 58 08, 09 06 45, 16 10 07 (PP? 13 56)
21	GSC	09 21 29, 13 23 22 (i 38, e 27 38)
22	GSC	23 22 28
23	WDY	09 07 14, 13 52 12 (pP 26); GSC 18 10 56 (e 11 32), 18 50 47 (i 51 04), 22 07 44, 22 42 44
24	GSC	02 25 26, 02 37 06 (pP 29, sP 43), 03 11 48 (i 12 02), 03 38 14 (i 20), 10 48 03, 11 48 51 (pP 49 03), 03 07 47 (i 08 00), 14 52 51 (e 53 14)
25	GSC	00 54 02 (e 24), 06 10 06, 09 07 54 (i 09 46)
26	GSC	01 50 06 (e 53 45), 08 09 04, 21 18 53 (i 19 09)
27	GSC	02 39 11 (i 35), 05 33 18

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With best regards for the New Year.





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SEISMOLOGICAL LABORATORY  
220 North San Rafael Ave.  
Pasadena 2, California  
January 8, 1964  
PROVISIONAL READINGS AT PASADENA  
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CONTINUATION:

Dec. 28	eP	16 53 00	Jan. 4	iP	13 53 15
	i	56 44	4	iP	21 31 44
30	iP	22 25 10		i	51
31	iP''	17 56 19	5	iP	18 43 41
	iPP	57 49		ipP	44 19
	iPS	18 07 39	6	iP''	00 05 58
	iPPS	08 45		i	06 11
	iSS	14.3		iPP	09 40
	iG	27.5		i	18 39
	Δ 120° ?			eSS	28.1
	Mag. 6 3/4 - 7			iG	48.5
		μ sec		eR	59.0
	PPZ	1 3		Δ 145° ±	
	PPH	1 1/4 3			
	MH	1 5 20			μ sec
	MZ	1 0 20		MH	5 20
31	iP	19 28 23	6	iP	06 07 47
	i	48		i	08 11
Jan. 1, '64	iP	09 48 24		e	09 56
1	eP	14 26 27	6	iP	23 47 37.4
	eS	32 45		iS	56.4
	eG	35.8		Magnitude 4.4	
	eR	37.8		Felt at San Bernardino and Palm Springs	
1	iP	17 37 31	6	iP	23 55 37
	i	43		iS	24 03 54
	iS	46 22		eSS	07.6
	iG	53.9		iG	11.1
2	iP	05 30 49		iR	13.5
2	iP	06 44 19		Δ 63°	
	ipP	50			
2	iP	19 28 24			
3	iP	22 07 40			

IMPLEMENT:

Times of P for additional shocks at China Lake (CLC)  
Goldstone (GSC), and Woody (WDY)

Dec. 20 CLC 16 44 29 (e 48 05), 17 06 37 (e 10 14)

22 CLC 01 26 26, 06 09 00, 18 11 26

24 WDY 01 24 41 (pP 52), 02 53 13

GSC 16 54 49, 22 40 59

27 GSC 23 54 39

28 GSC 19 21 49; WDY 04 46 19, 12 49 30, 22 27 23, 23 27 15

29 GSC 00 07 56, 03 12 56 (i 13 03, i 13 13), 04 38 47, 13 05 09

30 GSC 04 51 20, 06 36 12, 08 32 02,  
13 58 58, 20 43 51 (pP 44 08); WDY 15 33 55, 22 44 36

31 GSC 10 56 09, 21 47 01; WDY 09 45 11, 10 22 36, 10 32 52

Jan. 1, '64 GSC iP 12 40 23 (i 41 10, e 41 46), 19 49 17 (e 26),  
CLC 09 26 24, 22 53 10 (pP 23), 23 51 25 (pP 41)

2 GSC 00 19 10, 05 11 52 (pP 12 03)

3 GSC 01 12 34

Violet M. Taylor  
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