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SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
January 22, 1964

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CONTINUATION:

Jan. 14	IP	15 51 14
	ipP	54
	iS	16 02 08
	iSS	08.7
	iG	17.5
	Δ 94° Depth 160 km	
15	I	18 59 36
15	IP	21 48 21
	Compression from west	
	ipP	48 39
	eS	58 56
	iSS	22 04.4
	eL	09.9
	Δ 82° Depth 60 km	
	Magn. 6 3/4	
		μ sec
	PZ	2 2
	PH	1 2
	SH	1 1/2 16
	MH	4 20
17	eP	03 05 12
	e	25
17	eP	03 07 17
	e	36
	e(S)	17.9
	eG	30.8
	eR	34.8
18	eP	12 18 32
	ePP	22 29
	iSKS	29 05

Jan. 18	eG	12 45.7
	eR	50.3
	Δ 99°	
	Magnitude 6 3/4	
		μ sec.
	PZ	0.05 1
	PPZ	0.2 1 1/2
	MH	10 20
	IP	22 44 32
20	IP!	17 21 10
	dilatation from southwest	
	ipP	21 45
	ipp	24 36
	iS	31 43
	iSS	32.7
	iSS	37.3
	iG	44.5
	iP!P!	47 33
	Δ 88°	
	Depth 140 km	
	Magnitude 6 3/4	
		μ sec
	PZ	1 1/2 1
	PH	0.6 1
	PPZ	0.4 1 1/2
	PPH	0.1 1
	SH	3 7
20	iP	20 35 42
20	i(P)	23 19 17

SUPPLEMENT:

		Times of P for additional shocks at China Lake (CLC)	
Jan. 13	GSC	Goldstone (GSC), and Woody (WDY), 13 35 39.	
1	GSC	04 24 52, 05 26 16 (pP 26)	
7	WDY	21 14 27 (pP? 49), 09 03 22, 10 32 27	
8	WDY	05 54 22 (pP 35 09), 08 23 36, 18 08 53 (pP 59 16)	
9	WDY	03 10 50 (i 11 08, iP? 13 41, iS? 15 43; two shocks?), 21 07 15 (pP 50), 21 34 08	
10	WDY	05 48 03	
11	WDY	06 51 34, 21 36 42. Correction:	
	GSC	previously reported 20 46 52 should read 20 45 52	
12	WDY	12 55 04, 13 05 16, 14 32 07	
13	GSC	04 12 56, 17 30 27; WDY 06 17 21, 13 35 39, 13 44 33, 19 05 07	
14	GSC	01 21 09, 04 30 17, 09 03 22, 10 32 27	
15	GSC	02 34 43 (pP 35 09), 08 23 36, 18 58 53 (pP 59 46), 21 37 06, 23 16 13	
16	GSC	11 00 46, 14 49 42, 15 18 54; WDY 04 31 06	

SEISMOLOGICAL LABORATORY
27 JAN 1964
RECORDED
SURF

Violet M. Taylor
Seismological Assistant

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 January 15, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



ADDITIONAL:

Jan. 3 IP 21 36 06
 4 eP 06 59 04

CONTINUATION:

Jan. 8 IP 22 49 32
 9 eP? 03 10 58
 i 11 17
 i 33
 9 e 03 16 40
 e 58
 (Part of preceding?)
 ✓ 9 IP 18 42 44
 ipP 55
 IS 51 36
 ISS 55 58
 IR 59.3
 μ sec.
 SH 7 24
 MH 10 20
 10 IP 05 02 28
 ipP 39
 IS 11 54
 IR 25.1
 10 IP 17 04 06
 10 IP 17 08 22
 ipP 36
 12 IP 06 07 36
 IS 13 38
 IL 16 34
 IR 17.9
 Δ 40°
 μ sec
 PZ 1/2 1 1/2
 MH 9 20
 12 IP 11 26 28

NEW
 OBSERVATORY
 21 JAN 1964
 RICHMOND,
 SURREY.

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SUPPLEMENT:

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

Jan. 3 GSC 03 29 37, 17 29 57
 4 GSC 16 28 11 (i 25, i 38), 23 08 04
 5 GSC 01 37 49, 03 16 55
 5 GSC 09 09 31, 10 24 16 (pP 27), 12 07 22,
 12 29 47 (i 53), 15 58 06 (pP 13), 17 25 59;
 CLC 15 28 45, 23 00 32, 23 29 08
 7 CLC 04 46 27, 21 14 53
 8 CLC 12 10 29
 11 GSC 00 45 43, 10 42 48, 20 46 52

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena 2, California
 December 19, 1963



PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)

Station	Time	Reading	Time	Reading	Time	Reading
Hayfield:					23 35 22	
iP	08 35	31.3	14	ipP		44
Riverside:			14	eP	00 16	30
iP	08 35	20.2	14	iP	01 56	13
Haiwee:				iP	07 57	51
iP	08 34	49.0		epP		58 07
iS	35	11.6	15	isP		15
Tinemaha:				iP	15 48	39
iP	08 34	32.3	15	eL		51.6
			15	eP	16 59	43
				eP	19 49	4
	11 05	00		epP		52.0
		06 38		ipP		52 44
		14 27		iPP		55 02
		18 12		iSKS	20 00	47
	15 00	50		iSKKP		05 07
	00 59	11		iSS		11.4
	01 01	49		eG		43.0
		08 35		$\Delta 127^\circ$		
		17.6		Depth 700 km?		
		20.1		Magnitude m = 7		
	$\Delta 74^\circ$				μ	sec
	Magnitude 6	μ	sec	PPZ	$1\frac{1}{2}$	$1\frac{1}{2}$
	PZ	0.1	1	PPH	$1\frac{1}{2}$	$1\frac{1}{2}$
	PH	0.1	1	16 eP'	02 10	39
	PPZ	0.2	2	iPP		14 02
	SH	1	10	eSKSP		25 01
	MH	5	20	ePPS		27 47
11	iP	02 42	20	eSS		34.3
	Compression from southwest			e		45.5
	e		43 17	eL		55.2
	i		44 18	$\Delta 150^\circ$		
11	eP	17 16	44	16 iP	11 20	29
	eS	23 45		16 eP	14 37	20
12	iP	00 42	40	16 iP	16 50	02
	eR		47.3			
12	eP	21 03	22			

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

30	WDY	00 09 53, 20 55 08
1	WDY	13 44 40, 16 01 07 (pP 19), 16 07 58 17 55 19 (pP 31), 23 36 25
2	WDY	14 17 10, 20 13 22 (pP 44)
4	CLC	04 30 54 (pP 31 04), 09 45 54
6	WDY	08 34 55.5 (S 35 20.3), 21 34 08, 22 18 09; CLC 08 34 54.7
7	GSC	04 45 51; WDY 07 04 06 (pP 18)
9	WDY	01 47 49, 02 34 50 (i 35 01), 12 33 24 (i 57), 12 39 57, 19 29 25, 21 04, 21 22 12
10	GSC	03 50 19 (PP 51 52, ISKS 57 29), 06 59 45, 20 12 31 (pP 44); WDY 0 49 34 (i 51 35), 09 39 16 (pP 30), 17 38 42, 20 26 59
11	GSC	04 13 03 (i 14 14), 11 24 10;
	CLC	09 23 06 (pP 20), 19 21 19

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

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October 31, 1963
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CONTINUATION

		Oct. 27	IP	
25	iP	06 10 58	i	14 57 32.6
	IpP	11 14	iS	36.6
25	iP	20 11 54		58 03.6
	IpP	12 04		Magnitude 4.1
	eG	35.0	27	eP
	eR	39.3		i
26	iP	06 10 41		iS
	IpP	57		Magnitude 4.6
26	iP	11 32 44	27	iP
	IpP	33 00		i
26	iP	12 45 08		iS
	IpP	44	27	iP
26	iP	22 54 37		IpP
	IpP	56	28	iP
27	iP	08 56 40		i
27	iP	14 51 01.1		iS
	i	03.4		iG
	iS	31.6		eR
	Magnitude 4.2			$\Delta 81^\circ$
27	eP?	14 53 28	28	iP
	i	30.6		IpP
	iS	57.0		iS
	Magnitude 4.3		28	iP
			29	iP

SUPPLEMENT:

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

Oct. 13	WDY	11 45 59, 14 05 05 (pP 19), 15 44 29, 17 27 59, 18 24 36, 19 22 13, 19 36 44 (pP 54), 20 46 31, 22 00 39 (pP 51) 22 13 42 (pP 55), 23 16 14 (i 24)
14	WDY	00 13 45, 00 15 25 (i 34), 01 30 00 (pP 15), 03 41 47 (i 55), 07 26 45 (i 57), 11 33 51 (pP 34 04), 20 56 56
15	WDY	05 21 19 (pP 33), 07 00 24, 07 31 43 (i 32 57), 12 34 17 (i 30), 18 04 47 (pP 05 03)
16	WDY	01 35 42, 08 02 58, 08 44 19 (pP 32), 09 40 28 (pP 39), 14 31 23, 20 26 26
17	WDY	02 23 29, 03 55 50 (pP 56 02), 04 30 29 (pP 44), 07 22 56, 08 21 47 (pP 58), 08 34 27 (pP 41), 08 41 56 (pP 42 10), 10 27 36 (pP 48), 14 17 25 (pP 36), 14 32 51, 15 14 05 (pP 18)
18	WDY	00 05 50 (pP 06 03), 02 39 15 (pP 29), 02 57 57, 05 27 37, 07 56 55, 08 25 59 (pP 26 14), 21 33 33 (pP 46)
19	GSC	03 25 42 (pP 53), 03 45 01 (pP 11), 03 57 48 (pP 58 03), 11 26 08; CLC 15 53 22, 18 12 29 (i 47)
20	GSC	05 15 21 (pP 36), 05 31 09, 06 49 48, 12 14 36 (pP 48); CLC 01 18 06, 01 24 57, 03 45 05 (e 24), 04 50 59 (pP 51 14), 05 09 49 (e 10 04), 08 37 09, 21 19 15 (e33 /23 0 ;
21	CLC	01 51 06, (03:34 48; 08 52 05 (pP 20), 10 18 42 /23 02 52
22	GSC	(pP 56), 15 46 26 (pP 40)
		15 48 17, 23 14 35; CLC 16 11 32

KEW
OBSERVATORY
- 4 NOV 1963
RICHMOND,
SURREY.

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



ADDITIONAL
Oct. 27

	Barrett:	
	IP	14 50 39.8
	IS	52.9
27	Hayfield:	
	IP	14 50 31.0
27	IP	14 52 54.3
27	Barrett:	
	IP	14 53 04.5
	IS	16.9
27	IP	14 57 14.6
	IS	27.1
27	Hayfield:	
	IP	14 56 59.6
27	Barrett:	
	IP	14 58 35.1
	IS	48.1
27	IP	18 13 09.0
	IS	22.4
27	Hayfield:	
	IP	18 13 00.6

Oct. 31 iG 03 49.4
eR 53.7

$\Delta 79^\circ$
Magnitude $6\frac{1}{2}$

		μ	sec
		1	3
		5	20
		10	20
	31	IP	09 02 35
Nov. 1	IP	21 11 27	
1	IP	22 52 22	
2	eP	08 48 48	
	eS	49 25	
	IP	03 19 33	

(3)
Compression

IS¹ 27 07
IScS 29 22
eG 32.7

$\Delta 53^\circ$
Magnitude $6\frac{3}{4}$

CONTINUATION:

Oct. 29	IP	07 03 41
29	IP	20 34 37
29	IP	22 34 45
	i	37 17
	Two shocks?	
30	IP	01 26 59
	i	27 14
	i	31
(31)	IP	03 29 37
	IS	39 28
	ISS	44.4

		μ	sec
		$3\frac{1}{2}$	
		7	7
		15	20
	4	IP	01 26 58
		i (PP)	32 14
		i (PP?)	35 44
		i	42 10
		i (S or PS)	30
		i (SS)	50 48
		eG	02 02.0
		eG2	58.4

Probably two earthquakes.
Interpretation unsettled.

SUPPLEMENT:

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

Oct. 23	GSC	00 17 02, 01 12 24, 03 56 28, 04 36 07, 11 29 19, 12 21 34; CLC 08 26 11 (pP 24)
24	GSC	13 56 08 (pP 20), 19 32 18, 20 29 13 (pP 26, sP 31); CLC 14 05 28, 15 34 58
25	GSC	07 39 54 (e 40 04), 10 28 54 (pP 19 04); CLC 05 59 40, 11 23 48
26	GSC	11 42 51 (pP 43 06), 14 56 03; CLC 04 06 32 (pP 48), 04 08 58 (pP 09 14), 04 59 57, 06 35 55 (pP 36 11), 06 38 46 (pP 39 02), 07 32 50, 08 47 55, 22 15 45 (pP 16 10)
27	GSC	00 09 57, 01 41 22, 10 50 59 (i 51 09), 12 11 16
28	GSC	10 29 25, 14 24 36, 21 58 41; CLC 18 20 31, 19 28 01 (i 07), 20 10 51 (pP 12 44), 20 47 50 (pP 48 03)
29	GSC	17 08 13; CLC 02 34 41 (pP 54), 03 08 20 (pP 32)
31	GSC	04 37 20, 09 47 44 (i 48 04), 19 33 31 (pP 39), 23 28 39 (pP 54)

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena 2, California
 November 13, 1963
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



CORRECTION:

Oct. 2 iP 02 33 35 should read
 iP 03 44 35 Nov. 9

ADDITIONAL:

Oct. 5 iP 05 26 58
 31 iP 11 00 13

CONTINUATION:

Nov. 6 eP 02 27 16
 7 iPP 2 31 24
 iSKS 37 54
 eG 55.8
 eR 59.8
 Δ 103°

Δ 62°
 Depth 600 km
 Magnitude from
 body waves:
 m = 7 1/4, M = 7 1/2

	μ	sec
PZ	6	1
PH	4	1
SH	15	3
MH	80	30
iP2	01	10 02
ipP		11 58
iScP		13 42
iS\		17 40
iScS		18 53

Δ 62° Depth 600 km
 Magnitude 6 1/2 - 6 3/4

	μ	sec
PZ	1	1
PH	1/2	1
SH	5	3
eP	17	28 43
i		52
i		57
iS		37 49
iG		45.6
iR		50.2

	μ	sec
MH	10	20

	μ	sec
PPZ	1/2	3
PPH	1	6
MH	10	20
6 iP	09	35 24
7 iP	13	08 07
i		49
i	10	36
eL		35.1
Two shocks?		
8 iP	10	19 02
9 eP	09	02 11
e		20
9 iP2	21	24 53
iPcP		25 32
ipP		26 53
iS\		32 33
iScS		33 48
iP'P'		53 26
i		54

SUPPLEMENT:

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

Oct. 30 GSC 00 46 37 (pP 53), 05 43 54, 07 58 15, pP? 15 32 19
 Nov. 1 GSC 02 34 09, 04 02 28, 21 38 24
 2 GSC 18 04 27, 21 47 04
 3 GSC 04 47 48, 07 48 45 (pP 49 10), 12 11 47, 14 44 44
 4 GSC 18 34 57
 5 GSC 08 29 36, 16 14 44
 6 CLC 06 41 05 (e 42 40), 07 08 16 (pP 08 40), 18 44 17
 7 GSC 09 33 49, 16 06 00, 16 58 34
 8 GSC 05 16 19
 9 GSC 02 56 31, 23 23 33
 10 GSC 09 01 07 (pP 19)
 11 GSC 00 21 28 (pP 42)
 12 GSC 06 20 23, 08 07 56 (pP 08 13), 12 56 12 (PcP 58 48)

Violet M. Taylor
 Seismological Assistant

KEW
 OBSERVATORY
 18 NOV 1963
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena 2, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
Nov. 15

Nov. 21, 1963



CONTINUATION:

Nov.	Time	Station	Time	Station	μ	sec
11	10 00 44	eP		PZ	0.5	2
		e		MH	30	20
11	11 40 22	iP	(16)	iP1	22 55 24	
		e(S)		IS1	23 05 19	
11	20 03 34	iP		ISS	10.8	
11	20 26 51	iP		IG	15.4	
12	08 44 17	eP		Δ 79°		
		epP		Magnitude 6		
12	13 11 01	iP				
		epP				
13	11 29 56	iP		PZ	0.1	1
13	20 06 03	eP		SH	4	20
		eL		MH	6	20
14	04 11 03	iP	(16)	IP	23 51 55	
		i	(17)	IP2	01 00 01	
		i		i	20	
14	04 48 44	eP		IS1	10 01	
		eSKS		ISS	15.0	
		eSS		IG	20.3	
		eG		Δ 79°		
		iR		Magnitude 6 1/2 - 6 1/2		
		Δ 83°				
14	05 17 06	eP		PZ	0.4	2
14	03 11 46	eP		PH	0.3	2
		epP		SH	6	30
		eS		MH	20	20
		eG		17 IP	01 25 30	
		eR		17 IP	13 24 50	
		Δ 35°		18 IP	14 03 00	
15	21 17 35	iP		18 IP!	14 39 54.9	
		ipP		Dilatation from southeast		
		eS		IL	41 09	
		iG		iLg	28	
		Δ 68°		Δ 7°		
		Depth 50 km		Magnitude 6 1/2		
		Magnitude 6 1/2				

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

Nov.	Station	Time
1	GSC	11 41 15
3	CLC	19 33 46 (pP 34 00)
4	CLC	06 20 12 (pP 25), 19 14 33, 21 43 44
5	CLC	03 06 45, 09 29 36 (pP 48), 09 45 59 (pP 46 10)
6	WDY	18 36 46
7	GSC	20 27 54
8	CLC	08 19 06 (pP 17)
9	GSC	11 24 22; CLC 20 34 10, 22 01 56
10	GSC	01 46 06, 19 32 21
12	GSC	11 22 37
13	GSC	17 31 00; CLC 13 19 57
14	GSC	00 32 43 (pP 57), 10 29 09, 13 45 25; CLC 14 14 08, 14 18 24
15	GSC	00 28 08, 15 24 21
16	GSC	02 41 09 (pP 24), 15 18 49

Violet M. Taylor
Seismological Assistant

KEY OBSERVATORY
25 NOV 1963
RICHMOND, SURREY.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena 2, California
 November 27, 1963



PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)

CONTINUATION:

Nov.	Time	Station	Nov.	Time	Station
18	16 03 48	iP	20	12 12 03	iP
	05 16	i	21	21 11 49	iP
18	22 02 23	eP		12 05	ipP
	03 08	eL	22	11 18 52	iP
		iLg		19 13	ipP
19	01 13 11	eP		22 53	iS
		eL	22	14 56 56	iP
	14 13	iLg		57 08	ipP
		i		15 05 51	iS
19	08 24 28	eP	22	17 15 08	eP
		i		21	ipP
	25 17	iL	22	19 08 23	iP
	41	iLg	23	07 52 04	eP
		$\Delta 7^\circ$		53 16	iL
		Magnitude $5\frac{1}{4}$		31	iLg
19	10 52 35	eP			$\Delta 6^\circ$
	53 30	eL			Magnitude 6
		iLg	23	08 33 50	eP
19	11 11 57	iP		35 19	iLg
	21 21	eS	23	19 41 28	iP
19	20 05 07	eP	24	05 20 40	iP
	05.8	eL	24	10 17 56	iP
	06 06	iLg		19 04	i

SUPPLEMENT:

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

12	GSC	22 01 12
13	CLC	14 04 40
15	GSC	00 55 41 (pP 54)
16	GSC	18 15 53
17	GSC	12 22 26
18	GSC	09 50 52; CLC 01 55 48 (pP 56 59), 06 17 25
19	CLC	04 49 25 (pP 51 35), 10 58 42; GSC 22 47 59 (pP 48 12)
20	GSC	01 18 26; CLC 04 20 32

Violet M. Taylor
 Seismological Assistant

KEW
 OBSERVATORY
 - 2 DEC 1963
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 December 4, 1963
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



CORRECTION:

Nov. 17 iP
 17 iP
 ipP

10 17 56 etc. Nov. 29 eP 02 09 12
 should read 29 iP 15 01 54
 11 17 56 Dec. 1 iP 04 38 23
 19 04 e 40 10
 iP 12 05 03
 e 06 55

CONTINUATION:

Nov. 26 iP
 eS
 iPS
 iR
 Δ 82°
 MH
 28 ePP
 i
 eR

23 02 22 Nov. 29 2 eP? 06 57 23
 12 40 2 eP 11 56 10
 13.4 2 eP 21 06 12
 26.9 eS 14 32
 μ sec 3 eP 00 00 38
 4 20 3 iP 05 20 04
 15 22 08 3 eP 08 49 51
 19 i(pP) 50 01
 37.4

SUPPLEMENT:

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

Nov. 20 CLC eP 22 44 28 (pP 43)
 21 WDY 20 09 15 (i 28), 20 35 28
 22 GSC 00 40 02; WDY 12 51 21 (pP 49), 15 33 03 (pP 14)
 23 WDY 05 11 22 (e 51)
 24 GSC 05 25 31, 05 33 48, 17 55 25, 18 20 03 (pP 13); WDY 18 06 52
 (pP 07 05)
 25 WDY 01 02 17 (i 03 12) 06 54 02 (pP 15), 10 13 12 (i 31),
 10 21 55 (i 22 10), 11 41 11 (pP 24)
 27 GSC 02 30 29, 03 43 14, 05 24 31, 07 52 30 (e 53 17), 09 32 41
 (pP 56); WDY 20 28 40
 28 WDY 08 53 05, 15 20 25 (pP 21 58, i 22 07)

Violet M. Taylor
 Seismological Assistant

NEW
 OBSERVATORY
 11 DEC 1963
 RICHMOND,
 SURREY.

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

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

PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



ADDITIONAL:

Oct. 27 iP
 i

18 36 51
 37 05

CONTINUATION:

Dec. 3 eP
 iS
 eR

17 20 13
 26 58
 34.0

③ e(PP)
 e(PS)
 4 eR

21 27 48
 38 25
 53.5

Magnitude 6±

μ sec
 MH 3 20

③ iP2
 Compression

23 15 13

ipP 15 27
 eS1 24 13
 iR 39.3

Δ 75° Depth 60 km
 Magnitude 6¼

μ sec

PZ 0.4 1
 PH 0.1 1
 PPZ 0.2 2
 PPH 0.2 2
 SH 3 8

4 iP 01 38 23
 iS 47 04

eR 57.6

4 eP 02 54 12

4 iP 04 22 44

iL 26 00

4 eP 08 35 01

ipP 13

e(S) 43 46

4 eP? 15 55 37

Dec. 4

eP?

16 10 53

iS

20 21

eSS

24.5

iG

30.1

iR

33.5

Δ = 75°?

5

eP?

04 34 40

eS

44.0

iG

53.7

iR

57.0

Δ = 75°?

5

eP

11 38 11

iS

45 11

eL

51.1

Δ 52°

6

iP

02 09 59

6

iP

08 35 16.9

i

25.4

iS

36 08.6

Magnitude 5 - 5¼

7

iP

04 19 10

ipP

21 17

7

iP

04 59 12

7

iP

10 45 15

eSKS

55 35

eG

11 07.5

iR

11.2

Δ = 90°

7

iP

15 30 56

7

iP

17 49 39

8

e(pP)

08 04 00

eS

12 43

eR

23.2

Δ = 68°?

9

eP

05 45 22

9

iP

08 44 54

e

45 22

SUPPLEMENT:

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

Nov. 28 CLC 18 26 00, 21 04 22 (pP 39)
 29 GSC 04 07 54, 14 20 09 (pP 26), 18 46 38 19 06 31 (pP 19 08 30),
 30 GSC 10 17 45, 11 38 46, 21 59 28 (pP 41)
 Dec. 1 GSC 02 59 03, 16 17 38 (pP 18 07)
 2 GSC 00 34 58 07 02 18, 09 57 01, 13 56 16, 15 45 58, 17 44 06 ;
 3 GSC 02 46 31, 04 37 11, 04 48 26, 07 34 06, 12 27 46 (i 28 26),
 19 55 44 (i 56 03);
 CLC 03 55 23, 13 38 07 (i 19), 21 42 49
 4 GSC 00 57 36 (e 58 18), 03 22 30 (e 23 08), 03 25 18 ; CLC 01
 46 01 (i 13)
 5 GSC 02 11 26, 20 16 57
 6 GSC 01 48 18, 04 24 25, 07 02 54, 08 35 05.2 (S 47.7), 18 24 04

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
 16 DEC 1963

back to
 1935 for
 Dec cont

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena 2, California
March 26, 1964

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CONTINUATION:

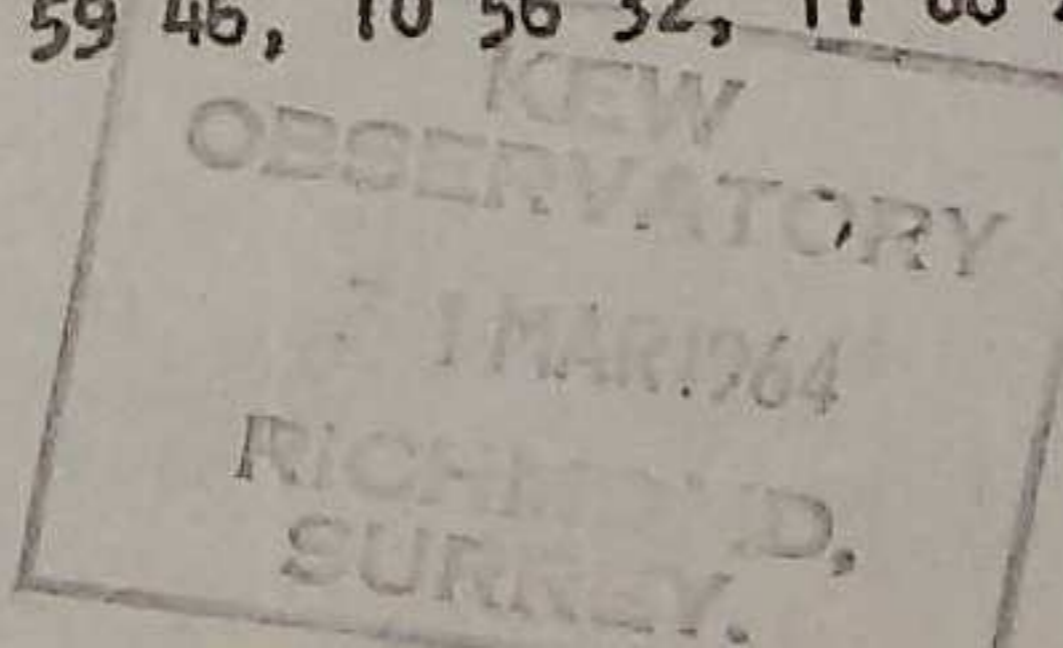
March	Time	Station	Phase	Time	Station	Phase	Time
18	04 47 09		IP	March 21		eP	03 56 24
			Compression from northwest			epP	58 00
			ipP			IP''	04 00 19
	48 40		esP			IP	01 03
	49 23		IS			IsPP	03 18
	55 05		IScS			SKS	06 25
	56.3		ISS			IS	08 27
	59.3		$\Delta 64^\circ$			eSP	10 06
			Depth 430 km			IPKKP	11 06
			Magnitude $m = 6\frac{1}{2}$			ISS	16 26
						eG	27.3
						eR	34.5
						$\Delta 113^\circ$	
						Depth 400 km	
						Magnitude $7 - 7\frac{1}{4}$	
19	05 47 19		IP			PPZ	$1\frac{1}{2}$ 3 $\frac{1}{2}$
19	21 55 23		IP			PPH	1 3 $\frac{1}{2}$
			ipP			MH	10 20
			IS			MZ	5 20
	22 04 41		ISS	21		IP	15 12 45
	09.1		IG			I(pP)	13 20
	13.4		eR			IS	16 48
	16.0		$\Delta 72^\circ$			IL	17.9
			Depth 40 km	21		IP	16 39 35
			Magnitude $6\frac{1}{2}$	22		IP	07 15 01
				22		IP	16 32 11.1
						I	18.1
						IS	33 19.2
						Nevada.	
						Magnitude 5	
20	07 04 26		IP	25		IP	08 48 12

PLEMENT:

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

March	Station	Time
12	PLM	04 41 58; WDY 10 48 21, 16 25 05, 18 39 24
13	GSC	04 34 03 (i 19), 05 59 13 (i 29), 21 17 19; CLC 03 59 22, 08 50 12, 21 14 37; WDY 18 57 50
14	GSC	03 03 28 (e 05 03), 11 32 56 (pP 33 08), 11 56 11 (pP 58 07), 14 58 46; WDY 23 19 47 (i 58)
15	GSC	02 19 29, 08 13 23, 14 24 00
16	GSC	01 19 11 (PP? 23 23), 07 11 59 (pP 12 10), 20 33 06 (IL 35 53); CLC 15 10 57 (pP 11 09), 21 50 59; WDY 17 34 09, 19 27 56, 20 49 38
17	GSC	02 14 44, 05 10 07; WDY 18 17 19, 21 34 39, 21 39 57
18	GSC	00 21 54, 02 00 42, 07 30 28; CLC 19 09 26, 20 05 26; WDY 02 44 06, 08 59 34
19	CLC	04 57 13 (pP 59 27), 08 54 59, 12 02 35; GSC 11 16 47, 22 39 36; WDY 22 02 06, 23 28 46
20	GSC	06 42 18 (PcP 45 05), 19 27 07; WDY 00 14 47
21	GSC	05 58 11, 07 59 46, 10 56 32, 11 08 23; WDY 09 51 02, 16 39 42 (pP 55)

Violet M. Taylor
Seismological Assistant





SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena 2, California
PROVISIONAL READINGS AT PASADENA
April 2, 1964

SPECIAL SUPPLEMENT: Readings at Pasadena for shocks believed to be aftershocks of the major Alaskan earthquake of March 28, 03^h (Details of seismograms nearly illegible until about 06^h)

- March 28 05 00 44, 06 15 16 (pP 22), 06 46 35, 06 47 57, 06 49 28, 06 50 32 (pP 39), 06 54 08, 07 00 04, 07 02 52, 07 15 38, 07 16 49 (pP 56), 07 19 38 (pP 45), 07 30 54 (pP 07 31 05), 07 31 51, 07 34 48 (pP 55), 07 37 01 (pP 05), 07 54 14, 08 40 17 (pP 25), 08 43 14, 08 46 25 (pP 35), 09 01 49 (pP 58), 09 07 27 (pP 34), 09 12 29 (pP 36), 09 20 33 (pP 44), 09 25 12, 09 51 53, 09 52 48, 09 59 17, 10 12 31 (pP 35), 10 14 06, 10 22 14, 10 24 17, 10 39 32 (pP 44), 10 41 51, 10 42 09 (pP 19), 11 05 44 (pP 06 07), 11 08 48, 11 14 59 (pP 15 05), 11 38 55, 11 48 34, 11 49 05, 11 49 45, 11 51 56, 11 56 12 09 44, 12 27 25, 12 32 23, 12 38 01, 12 53 34, 12 54 43, 13 07 41 13 34 07 (pP 12), 13 50 45, 13 51 06, 13 54 11, 14 00 59, 14 08 34, 14 24 40, 14 24 47, 14 39 47, 14 53 05, 14 54 06, 14 55 44, 15 42 53, 16 01 51, 16 32 43, 16 51 00, 16 53 09 (pP 19), 17 53 43, 17 56 15, 18 09 25, 18 10 01, 19 28 11 (pP 24), 20 35 37 (S 20 40 31 22 35 16 (pP 22), 23 52 48 (pP 55)
- March 29 00 59 35, 01 16 11 (pP 17), 01 18 53 (pP 19 00), 01 54 52, 02 22 56 (pP 23 07), 02 25 42 (pP 48), 02 31 54 (pP 32 01), 03 13 50 (pP 58) 03 45 13 (pP 24), 04 18 39, 05 27 34 (pP 40), 05 44 20 (pP 27), 05 55 59 (pP 56 04), 05 58 29 (pP 34), 06 11 19 (pP 28), 06 36 04, 07 59 23 (pP 29), 08 38 03 (pP 07), 09 22 26, 10 14 34, 10 17 09 (pP 28), 10 56 09 (pP 16), 11 50 38 (pP 45), 12 03 05 (pP 16), 12 39 57 (pP 40 04), 12 54 29, 13 14 29, 14 30 49, 15 37 11 (pP 29) 16 15 43 (pP 47), 16 24 56 (pP 25 00), 16 47 24 (pP 28), 16 51 58, 16 59 52 (pP 56), 17 59 26, 18 01 55, 19 15 28, 21 53 32 (pP 43)
- March 30 02 09 29, 02 24 38 (pP 45, S 29 57), 07 15 56 (S 21 07), 09 29 25, 10 03 59 (pP 04 04), 11 05 51 (pP 06 03), 11 42 07, 11 55 11, 12 12 10 (pP 29), 12 21 01 (pP 09), 12 44 40, 13 01 36, 13 10 07 (pP 12), 13 38 50 (pP 55), 14 16 20, 15 14 16 (pP 24), 15 17 04 (pP 11), 16 15 56 (pP 16 00, S 20 51), 16 22 26, 16 45 54, 16 59 37 17 28 33, 23 58 16

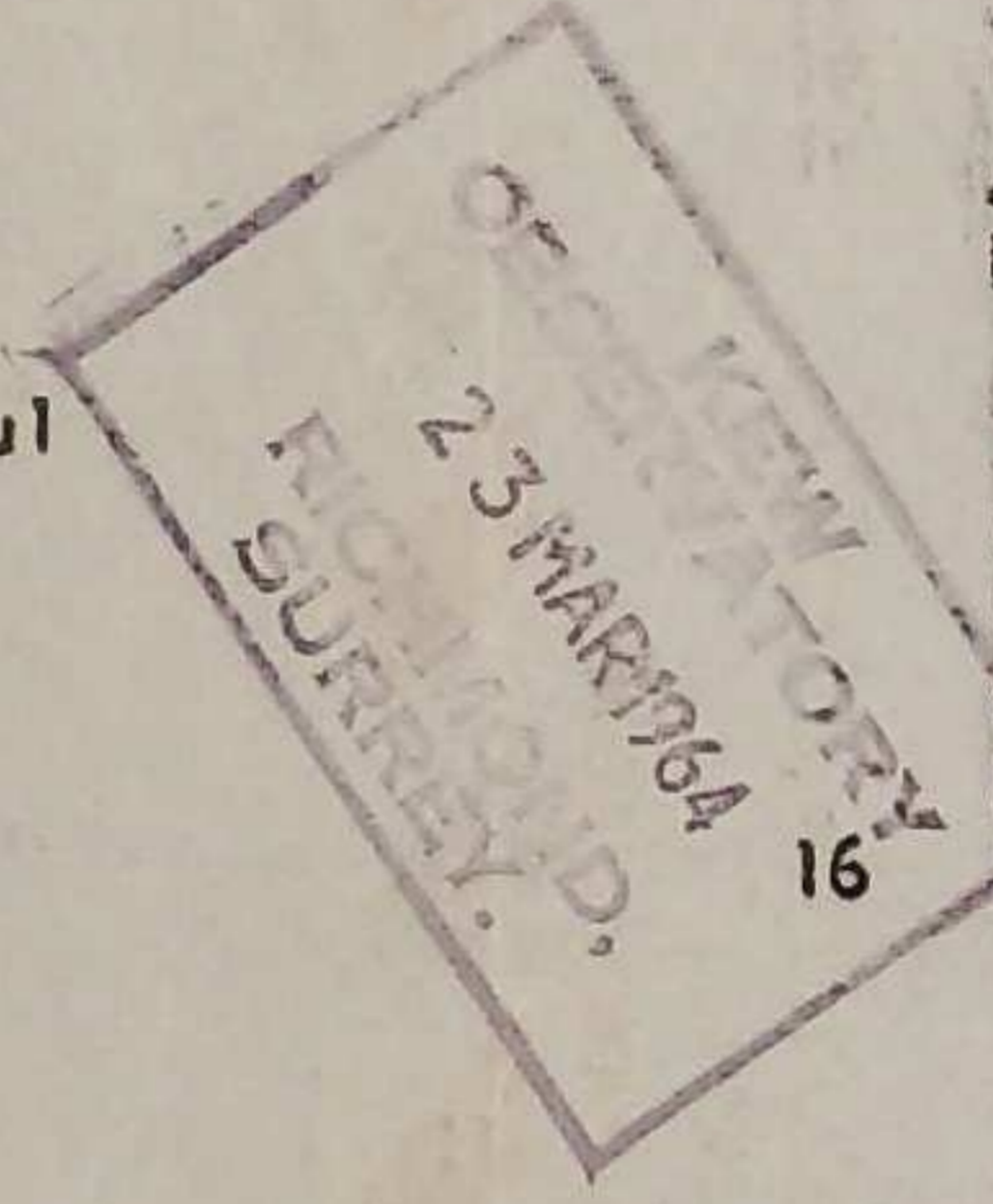
Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY
- 6 APR 1964
RICHMOND,
SURREY.

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PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)

STATION:	Time	Phase	Time	Phase	Time	Phase
25	21 29 14	eP	Mar. 6	IP	21 16 51	
	31.3	eL		i	17 12	
26	20 34 51	iP		IP	06 30 04	
	36 31	iS	13	IP	12 00 31	
	37.0	iR	13	IP	05.9	
	37 53	iLg		eS7	08.3	
		$\Delta 10^\circ$		eG	15 17 11	
	μ sec		14	IP	15 21 50	
	0.3 1		14	iP	09 59 36	
26	21 29 01	iP	15	IP	22 43 00	
	38 44	iS	15	IP	Compression from northwest	
	48.4	eG		eSKS	53 24	
	50.5	eR		iS	54 22	
		$\Delta 76^\circ$		iG	23 10.0	
27	11 40 02	iP		$\Delta 96^\circ$		
	44 00±	eS		Magn. 6 3/4 - 7		
27	15 29 24	iPKP		μ sec		
	32 50	iPP		PZ	4 5	
	Interpretation doubtful			PH	3 5	
28	20 58 50	iP		SH	7 20	
1	00 08 38	iP		MH	30 20	
	09 13	i		MZ	30 20	
5	06 20 35	iP		IP	08 55 31	
	07 11.3	eR		i(pP)	56 04	
5	10 18 24	eP				
	45.0	eR				
6	19 10 13	iP				
		i				
	32					
	38.3	eR				



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

21	WDY	13 23 41, 17 25 51
22	GSC	02 00 30 ; WDY 06 04 02, 08 29 22? (i 52), 21 29 53
23	GSC	00 17 29 (pP 43), 12 38 07, 16 05 50
24	GSC	05 14 14, 10 12 13 (i 20), 15 03 14, 20 12 00
25	GSC	00 54 27, 04 16 15, 18 35 45, 21 10 43 (e 57, e 11 15), 23 36 13 (pP 28), 23 43 27 (i 50) ; CLC 15 31 48
26	GSC	06 35 41
27	GSC	02 52 03 (i 52 10); WDY 20 47 28, 21 25 12
28	WDY	00 09 59, 07 02 37, 15 22 26
29	GSC	19 54 38, 20 25 23; WDY 07 14 48 (pP 15 20), 07 38 37, 15 32 (i 20)
1	CLC	04 16 32; WDY 11 33 20
2	GSC	12 45 29, 19 44 26 (S 54 07); WDY 03 50 15, 12 07 07, 16 19 1 (i 26), 16 25 26 (i 36), 17 29 13 (i 20), 18 50 43
3	WDY	04 09 38, 15 24 53, 17 14 27, 22 09 06 (i 19)
4	GSC	03 09 11, 04 24 56, 05 11 10, 20 04 34; CLC 03 30 20, 16 27 1
5	GSC	19 55 56, 20 43 41 ; WDY iP 02 33 55 (pP 34 10)
6	GSC	19 10 19 (i 40); WDY 02 48 05, 20 55 20
7	GSC	23 24 39; WDY 00 04 08, 03 45 39, 23 12 58
8	GSC	19 48 38 ; WDY 05 01 50, 17 28 33 (pP 55), 23 18 01
9	GSC	10 01 11
10	GSC	09 08 18, 14 19 09; WDY 11 38 44
11	GSC	01 24 29, 06 03 17, 18 36 03
12	GSC	04 13 08 (i 15)

Violet M. Taylor
 Seismological Assistant

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 January 29, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



ADDITIONAL:

an. 15 eP 19 01 42
 19 eP 07 13 00
 i 10

CONTINUATION:

an. 23 iP 00 12 24
 eSKS 22 59
 iS 23 07
 iPS 24 03
 iG 35.1
 eR 39.0
 Δ 90° Mag. 6 1/2
 μ sec
 PZ 1 1/2 4
 MH 6 20
 24 iP 17 29 21
 epP 31 30
 26 iP 90 20 17
 dilatation from
 southeast
 ipP 44
 iPcP 49
 iS 29 04
 iScS 55
 iSS 33.5
 iG 38.0
 eP'P' 48 39
 Δ 67° Depth 100 km
 Magn. 6 3/4

Jan. 26

PZ 0.9 1 1/2
 PH 0.3 1 1/2
 SH 5 7
 28 eP 05 56 48
 eG 06 22.2
 28 eP 14 23 22
 epP 24 14
 iPP 28 00
 isPP 29 03
 iS 35.2
 isS 36.7
 iPKKP 38 29
 epPKKP 39 21
 iSS 43.4
 eP'P' 47 44
 eG 54.4
 eR 15 00.4
 Δ 109° Depth 220 km
 Magn. 6 3/4
 μ sec
 PPZ 1 1/2 2 1/2 0.60 6.7
 PPH 1 1/2 2 0.25 6.6
 MH 10 20

SUPPLEMENT:

Times of P for additional shocks at China Lake (CLC)
 Goldstone (GSC), and Woody (WDY)
 an. 16 GSC 21 06 03 (i 12)
 17 GSC 05 48 07, 22 23 36; CLC 00 29 55 (i 30 07),
 03 26 10 (i 27 11), 12 26 32
 19 GSC 07 08 46, 12 53 07, 17 12 42, 17 22 10
 20 GSC 23 19 03 (pP 21); CLC 00 28 30, 02 38 39, 10 43 58
 21 GSC 21 11 27
 22 CLC 18 10 39 (i 49)
 23 CLC 01 47 00, 13 55 30 ; GSC 18 57 07
 24 GSC 10 44 57

Violet M. Taylor
 Seismological Assistant

KEW
 OBSERVATORY
 - 3 FEB 1964
 RICHMOND,
 SURREY

Jan 1964
 cont.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave,
 Pasadena, California
 February 5, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



CORRECTION

Jan. 26 IP 90 20 17 etc.
 should read IP 09 20 17
 pP 44 etc.

CONTINUATION

Jan. 31 IP 04 24 02
 Feb. 1 eP 01 55 37
 eS 02 01.9
 eG 05.6
 eR 06.9 $\Delta 45^\circ$
 1 IP 11 56 47
 1 IP 23 01 54
 I 02 10
 2 IP 06 39 54
 IpP 40 07
 iS 46 38
 eSS 50.0
 eG 51.6
 eR 53.4
 $\Delta 50^\circ$
 3 IP 08 44 38
 I 56
 iS 45 45
 4 IP 10 12 52
 e 13 02

SUPPLEMENT:

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

Jan. 24 WDY 20 04 24, 21 42 12(1 29, 1 38, 1 53), 21 56 13, 23 06 20
 25 WDY 03 52 04, 12 21 38(1 45), 19 57 55, 21 51 58, 21 58 38,
 23 18 40
 26 WDY 12 17 19
 27 GSC 01 25 55
 28 GSC 00 14 08
 30 GSC 05 42 47, 13 01 23, 17 32 44

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL
 OBSERVATORY
 10 FEB 1964
 RICHMOND,
 SURREY.



SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 February 12, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)

ADDITIONAL
 Barrett:

Feb. 3 eP 08 40 42
 3 iP 08 43 59

Feb. 6 IP 13 20 26
 May be ScP

CONTINUATION

Feb. 5 iP 11 30 43
 5 iP 11 42 12
 ipP 27
 iS 52 02
 eG 12 02.4
 iR 05.9

7 IP 13 10 32
 epP 40
 eS 20 09
 8 IP! 05 29 29.8
 iS! 34.8

Δ 78° Depth 60 km
 Magnitude 6½

Magn. 3.7
 Felt in San Fernan
 Valley

	μ	sec
PZ	0.2	1½
SH	4	20
MH	10	20
5 iP	11	46 42
e		49 44
6 iP	04	44 36
6 iP	13	14 05
dilatation from northwest		
iPP		15 12
iS		19 23
eG		21.9
iR		23 15

8 iP 11 26 34
 i(pP) 49
 eS 33 48
 9 IP 02 11 10
 dilatation
 i 11 32
 e 13 54
 i 14 10

Δ 34° Magn. 6 ¾ - 7

	μ	sec
PZ	1½	5
PH	2	6
SH	100	25
MH	150	18
MZ	140	20

OBSERVATORY
 17 FEB 1964
 RICHMOND,
 SURREY.

SUPPLEMENT:

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

Jan. 24	WDY	21 24 25, 23 03 01
25	WDY	07 15 51 (i 17 56)
27	WDY	15 49 10; GSC 20 31 06
30	WDY	21 34 03
31	GSC	17 11 43 (i 12 04), 21 55 31
Feb. 1	GSC	01 38 08, 02 45 36 (i 47), 09 32 26
2	GSC	02 59 48, 09 08 31 (e 12 29)
3	WDY	17 40 21, 19 04 45 (pP 55), 20 17 16, 21 16 21 (pP 33)
4	GSC	00 21 38, 03 09 09, 11 38 50, 23 11 17 (i 14 43)
5	GSC	11 46 49 (i 49 58, iS 56 24), 21 24 49;
6	WDY	02 10 16, 12 59 48
	GSC	07 51 29 (pP 46), 14 20 53 (pP 21 00);
7	WDY	00 01 58 (pP 02 08, sP 14), 08 12 39 (i 48, i 55), 20 45 45
	GSC	09 42 34, 11 10 18

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 February 20, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



CONTINUATION:

Feb.	11	iP	21 42 34
	12	eP?	20 45 33
		e(S)	56 17
		eG	21 09.9
		iR	15.0
			μ sec
		MH	15 20
	12	e(P)	22 45 30
		i(S)	55 05
		iG	23 04.0
		iR	06.4
			μ sec
		MH	10 20
	13	iP	11 33 45
	14	iP	16 42 53
		eS	53.8
		eSS	17 00.3
		iG	08 15
		iR	11.4
		Δ 95° Magn.	6 3/4
			μ sec
		PZ	0.3 1
		PH	0.2 1
		MH	20 20
		MZ	15 20
	15	eP	22 14 58
	16	eP	21 47 48
	18	iP	04 53 47
	18	iP	04 58 20
		i	30
		Part of preceding?	
	18	iP	10 48 04
	18	iP	15 38 14.3
		iS	39 32.3
		Magn.	4 3/4 - 5
	19	iP	15 37 13
		ipP	28

KEW
 OBSERVATORY
 24 FEB 1964
 RICHMOND,
 SURREY.

SUPPLEMENT:

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

Feb.	7	GSC	22 08 17.3 (S 37.6), 22 11 19.7 (S 40.6)
	8	CLC	10 05 41, 21 32 18, 22 26 53 (pP 27 05)
	9	CLC	16 23 30
	10	CLC	iP 00 31 26; GSC 17 46 14 (i 47 14, i 29), 17 49 38 (i 50 38, i 50 55)
	11	GSC	00 54 57, 02 46 18, 04 02 18, 18 32 39
	13	GSC	02 28 24, 02 36 15, 08 54 43

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
February 26, 1964
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CORRECTION:
Feb. 18

15:38
Delete magnitude

ADDITIONAL:

CONTINUATION:

15	iP	14 11 32
20	iP?	03 33 34
	i(P)	03 35 52
20	iP	03 39 37
20	iP?	08 46 32
20	iP	10 04 48
	ipP	05 00
21	eP	14 15 39
22	iP	09 03 08
22	iP	16 16 18
22	iP	18 01 22
	ipP	37

SUPPLEMENT:

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

Feb.	8	WDY	00 40 56, 17 22 29
	9	WDY	02 25 36, 02 35 54
	11	WDY	02 00 16, 06 45 13 (pP 27)
	15	GSC	09 39 03, 11 02 48, 13 14 59
	16	WDY	05 14 51, 10 18 23, 21 12 19
	17	WDY	09 40 01, 16 54 33 (pP 56 43)
	18	GSC	12 30 22; WDY 01 44 03, 06 08 45, 22 54 38
	19	GSC	00 45 11, 09 34 43, 10 10 17, 21 36 02 (pP 37 45)
	20	GSC	00 02 15, 02 56 08 (i 18), 04 00 32 (i 44);
		WDY	02 36 48 (pP 37 09), 09 17 55, 10 01 53, 18 33 13, 21 34 59
	21	WDY	00 17 41 (pP 54), 12 29 32 (pP 43), 14 01 18

Violet M. Taylor
Seismological Assistant

KIEW
OBSERVATORY
- 2 MAR 1964
RICHMOND,
SURREY.



SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
April 17, 1964

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)

SUPPLEMENT:

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

March 25	WDY	05 03 54, 05 15 33, 15 45 14 (pP 18)
26	WDY	01 54 59, 19 48 59 (pP 49 02)
27	WDY	08 13 56 (pP 14 08), 13 46 45 (pP 55)
28	CLC	07 56 42, 07 58 28, 09 24 11, 10 44 52, 10 48 34, 12 12 29, 12 16 57 (pP 17 05), 15 33 56 (pP 34 03), 16 35 27, 17 45 47, 17 48 40
31	GSC	00 51 09 (pP 16), 01 23 34 (pP 41), 01 47 14, 02 50 11, 04 11 11 (pP 18), 04 56 05, 07 15 15 (pP 22), 07 58 04, 08 12 11, 08 47 18, 10 19 50 (pP 56), 11 08 32, 11 12 52, 11 24 45 (pP 51), 11 31 21, 11 58 36 (pP 39), 13 00 09 (pP 12), 13 29 36, 15 31 47, 18 43 56;
	WDY	00 22 01 (i 23 45), 00 32 05, 00 45 33 (pP 41), 04 51 08 (i 10), 05 03 39, 05 27 57, 07 21 23 (i 26), 09 58 55 (i 59 00, i 59 03), 10 59 33, 11 59 58, 12 36 53 (pP 37 01), 16 38 22 (pP 27), 16 49 59 (i 50 08, i 50 14), 18 26 42, 18 41 53 (pP 42 07), 20 35 49, 21 02 30 (pP 38), 21 26 55 (pP 27 00)
April 1	GSC	00 07 35 (i 08 50), 02 00 25 (pP 30), 03 11 11 (pP 19), 04 35 58 (pP 36 05), 04 39 09, 04 55 52 (pP 56 02), 05 39 22 (pP 26), 06 22 45, 06 46 12 (pP 17), 08 39 45 (pP 48), 11 07 51, 13 39 47 (pP 55), 14 00 59 (pP 01 04), 16 35 30 (pP 34) 20 19 32 (pP 39)
2	GSC	10 04 24 (pP 31), 11 47 39 (pP 44), 16 15 08, 19 44 47 (pP 51), 19 46 32 (pP 38), 20 16 07, 22 13 50, 22 40 44
3	GSC	17 28 09
4	GSC	04 42 22, 10 44 11 (i 14), 15 14 33, 18 22 34, 20 08 05
5	GSC	17 48 20
6	GSC	13 53 02 (pP 26, sP 39), 18 25 24, 19 47 17 (pP 24)
7	GSC	03 24 00 (pP 04), 04 41 44, 08 09 47, 09 09 21, 10 49 51 (pP 56), 11 05 55 (i 06 01, i 07), 13 47 23 (i 33), 17 58 27, 23 33 12 (pP 15)
8	GSC	02 14 50 (pP 15 02), 08 28 04, 09 50 17 (pP 20) 10 00 23, 19 05 07
9	GSC	00 50 34, 06 59 44 (pP 53), 10 43 38 (pP 43), 13 28 54, 17 21 04, 18 31 21
10	GSC	04 15 54, 12 13 05, 18 01 22 (i 44)
11	GSC	00 45 31 (i 36), 07 40 03, 09 30 18, 12 23 03 (pP 08), 22 09 02
12	GSC	01 21 51, 01 30 57 (s 36 13), 01 31 58 (s 37 12), 02 43 56, 06 13 34 (pP 44),
13	GSC	03 14 34, 08 43 02, 09 00 56

Violet M. Taylor
Seismological Assistant

Apr 2 - Apr 8
 SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 April 9, 1964



PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)

Section: to supplement, Alaska shocks
 h 28 Pasadena 16 53 09
 should read 16 54 09
 30 Pasadena 14 16 20
 should read 14 17 20

tional:
 h 21 iP 16 39 35
 inuation:
 1 2 iPKP 01 30 50
 ePP 33 01
 eSKP 34 21
 e 35 01
 iSS 50.4
 ISSS 55.2
 i(G) 02 04.4
 i 06.4
 iR 13.4
 $\Delta 126^\circ$
 Magn. 7

	μ	sec.
MH	40	20
3 iP	04 31	46
i	32	03
3 iP	22 40	18
ipP		30
i		35
iPP	41	30
i		50
eS	45	40
i		54
eG	47.8	

$\Delta 34^\circ$ Depth 60 km
 Magn. 6

	μ	sec
PZ	$\frac{1}{4}$	$1\frac{1}{2}$
SH	$1\frac{1}{2}$	6
MH	13	20
4 iP	05 00	26
iS		05 39
4 eP	06 59	52
ipP		58
iS	07 04	21
4 iP	08 47	05
iS		52 20
4 iP	09 17	29
4 iP	17 52	45
ipP		53
iS		57 56
iG	18	00.3
eR		02.1

Magn. $6\frac{1}{2}$

	μ	sec
PZ	$\frac{1}{2}$	$1\frac{1}{2}$
MH	85	20

April 4 iP 18 06 22
 ipP 29
 4 iP 22 23 16
 iS 28 25
 4 iP 22 57 49
 5 iP 01 28 47
 ipP 55
 iS 34 04
 Magn. 6

	μ	sec
PZ	0.2	1
SH	$1\frac{1}{2}$	6
MH	20	20
5 iP	01 48	16
ipP		25
5 iP	11 30	59
i		31 09
5 iP	11 44	42
5 iP	19 34	46
ipP		55
iS		40 04
6 iP	10 48	59
7 i(P)	01 50	17
7 iP	13 36	42
e		37 17
i		26
7 iP	18 08	52
7 iP?	19 11	33
7 iP	19 34	48
i		57
i		36 06
8 iP	11 09	00
ipP		12
iS		17 50
iS		18 04
iSS		22.2
iG		25.6
iR		28.3

$\Delta 68^\circ$
 Depth 60 km
 Magn. $6\frac{1}{4}$

	μ	sec
PZ	0.2	2
SH	1	4

Violet M. Taylor
 Seismological Assistant

KEW
 OBSERVATORY
 13 APR 1964
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



PLEMENT:

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

ch 24	CLC	17 50 00, 23 58 07
26	CLC	05 34 33 (e 35 03), 07 23 55
27	GSC	17 20 08, 17 35 06, 20 14 28
28	GSC	06 35 44, 07 50 22, 07 55 22, 08 01 34(pP 41), 08 11 55, 08 15 06 08 19 36, 08 36 36, 08 38 49, 08 48 54, 08 49 10, 09 01 34, 09 04 09 05 30, 09 32 51, 09 40 29(pP 36), 09 51 41, 10 23 51(pP 23 56) 10 55 46(pP 51), 11 00 11 (pP 18), 11 03 34, 11 08 30, 11 08 46, 11 59 14(pP 19), 12 42 57, 12 57 54, 13 00 29(pP 36), 13 13 51, 13 18 34, 13 20 24, 13 59 35, 14 03 30, 14 41 54, 14 48 19, 14 52 44, 15 06 54, 15 26 54, 15 29 02(pP 06), 15 37 25 (pP 30), 15 40 20 (pP 25), 15 49 18, 15 58 18(pP 24), 16 01 08 (pP 15), 16 10 58, 16 28 23, 16 53 50, 17 12 34, 17 19 54, 17 21 26 (pP 30), 17 33 47, 17 43 04, 18 03 10, 18 12 36, 18 14 38, 18 18 08(pP 15), 18 18 40(pP 46), 18 20 29(pP 36), 18 47 12, 18 52 54, 18 53 24(pP 29), 19 08 14 (pP 17), 19 14 06, 19 35 28 (pP 35), 19 51 49 (pP 56), 20 24 51, 20 49 51, 21 07 04, 21 21 43(pP 51), 21 35 29, 21 36 41 (pP 47), 21 44 04, 22 04 21, 22 16 25, 22 19 56 (pP 20 04), 22 28 23, 22 38 02(pP 38 09), 23 04 19, 23 23 13, 23 31 26, 23 55 35 (pP 41)
29	CLC	00 00 21, 00 04 05, 00 17 02, 00 18 56(pP 19 07), 00 21 22, 00 27 22, 00 42 34, 00 57 18, 00 58 13, 01 01 51, 01 13 51, 01 38 47, 01 57 34 (pP 41), 02 14 04 (pP 10), 02 20 22, 02 38 21, 03 31 35, 03 47 51 (pP 48 00), 03 51 33 (pP 49), 03 58 49, 04 58 12 (pP 23), 05 06 45 (pP 56), 05 14 48, 05 30 26, 05 47 02, 05 58 52, 06 02 38, 06 17 42(i 18 03), 06 38 50, 06 42 24, 06 44 19, 06 55 10, 06 59 47, 07 09 05 (pP 13), 07 11 39 (pP 47), 07 24 27, 07 27 03 (pP 10), 07 46 01(pP 07), 08 02 09, 08 05 43(i 59), 08 12 24, 08 14 14, 08 18 16 08 37 53, 09 06 31, 09 13 06, 09 22 17 (pP 22), 09 28 23, 09 32 15(pP 19), 09 35 30 (pP 40), 09 47 29, 09 58 16, 10 20 05, 10 24 21 (pP 24), 10 45 19 (pP 23), 10 58 53 (pP 59 00), 11 38 21, 11 53 19(pP 25) 12 01 04, 12 05 48 (pP 54), 12 09 12, 12 18 30 (pP 37), 14 57 53 (pP 59), 15 13 48, 15 36 53 (i 37 19), 15 58 00, 16 18 29, 16 22 45 (pP 53), 16 50 13 (pP 21), 17 06 22 (N.B.: Goldstone timing deficient, March 29 00h to 17h; times are given for China Lake instead)
29	GSC	17 44 35, 18 04 18, 18 43 11 (pP 17), 18 43 39, 18 56 49, 19 04 58, 19 38 13, 19 56 51 (pP 57), 21 06 06, 21 09 30, 21 45 28 (pP 35), 22 33 33, 22 42 02, 22 53 39, 23 05 03, 23 40 23, 23 55 52
30	GSC	00 02 19, 01 00 20, 01 47 54, 02 31 05(pP 09), 02 48 29, 04 29 02(pP 07), 04 58 25, 05 01 12, 05 21 56, 07 59 05, 08 03 05, 08 05 48(pP 55), 10 22 17 (pP 22), 10 37 56, 10 53 35, 11 12 15(pP 19), 12 18 42, 12 23 45, 12 37 57, 13 04 41 (i 43), 13 47 25(i 28), 14 20 05, 17 10 48, 17 47 52(pP 48 03), 18 54 21, 19 24 36, 19 29 26, 20 39 01, 20 42 06 (pP 10), 21 38 38, 22 11 24, 23 10 06, 23 12 51 (pP 56)

Violet M. Taylor
Seismological Assistant

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SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
April 22, 1964
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



SUPPLEMENT:

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

April 2	WDY	09 11 07, 11 04 28 (pP 04 36), 16 26 22 (i 38, i 54), 16 43 03, 18 31 32 (pP 44)
3	WDY	08 52 50 (i 53 03), 09 00 05, 20 04 08, 20 29 16, 22 22 05 (pP 10)
4	WDY	07 44 36, 08 54 54, 08 59 14, 18 47 43
5	GSC	02 42 30 (pP 34) WDY 03 54 08 (pP 15), 04 01 42 (pP 46), 04 18 04 (pP 09), 07 35 18 (pP 21), 07 50 56 (pP 51 01), 08 19 27, 09 05 26, 16 55 28 (pP 32), 19 56 59 (pP 57 05), 21 32 44, 22 35 16
6	WDY	01 34 09, 01 57 59 (pP 58 03), 08 27 47 (pP 57), 12 14 10, 13 52 21 (pP 53 14), 22 06 59
7	WDY	04 00 21, 05 01 25 (pP 32), 05 01 58 (pP 02 17), 06 08 05, 08 16 56, 12 57 05, 18 23 29 (i 39)
8	WDY	00 19 24, 00 42 39 (pP 46), 02 21 08 (pP 20), 16 52 55 (pP 53 01), 19 48 19 (pP 26), 19 56 03, 19 56 29
9	WDY	00 02 14, 05 49 39, 16 17 54 (pP 18 03), 19 54 48 (pP 55 13), 21 26 16 (e 29), 22 19 11
10	WDY	04 55 33, 06 17 07
11	WDY	04 46 16, 06 24 17, 16 16 37 (pP 43), 19 15 33, 23 03 41
13	GSC	17 49 54, 18 20 40, 19 23 22 (pP 29), 21 49 21, 22 53 51 (pP 57)
14	GSC	01 14 50 (pP 15 05), 08 05 54, 15 16 34, 17 12 28, 21 40 03 (pP 15), 22 35 48
15	GSC	20 37 12 (pP 19)
16	GSC	01 16 25 (pP 34), 07 43 52, 11 57 12, 12 17 51, 14 37 53
17	GSC	04 10 08, 04 23 11 (pP 18), 11 55 01 (pP 04)

Violet M. Taylor
Seismological Assistant

KEW OBSERVATORY
20 APR 1964
R. SURK...

Apr 8 - 15/64

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SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
April 16, 1964



PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)

CORRECTION

March 31 iP
eP
Should read:
iP
epP

17 15 39
17 18 36

17 15 39
17 36

April 12 iP 12 42 48
ipP 56
12 iP 12 54 27
iS 59 44
12 iP 14 42 26
12 eP 17 28 27
13 iP 06 34 35
13 eP 08 44 45
13 iP 08 48 26
13 iP 08 57 29
e 58 41
13 eP? 12 31 49
i(P) 32 00
iS 37 04
13 iP 14 11 30
13 iP 16 20 34
13 iP 21 32 11
i 20
14 iP 14 40 56.1
i 41 09.5
iS 42 01
14 iP 16 01 45
i 57
14 iP 17 06 14
14 iP 23 02 06
i 20
eS 07 19
15 iP 08 29 53
15 iP 15 37 23
eS 42 49
15 iP 15 43 46

CONTINUATION

April 8 iP
8 iP
9 iP
9 iP
9 iP
ipP
eS
9 iP
10 eP
ipP
eS

19 39 45
19 56 43
04 21 51
12 39 54
13 12 39
43
17 50
22 05 44
01 14 32
37
19 50

μ sec
4 20

MH
10 iP
10 iP
i
10 iP
i
11 iP
11 iP
e
12 iP
iS
iG
Magn. 6 1/4

13 22 47
19 12 23
42
21 51 00
03
01 16 34
11 42 28
33
01 31 00
36 14
38.3

μ sec

PZ
SH
MH
12 iP
ipP
12 iP
ipP
iSP
eS
eG
eR
Δ 87°
depth 200 km

0.3 1 1/2
10 13
25 20
09 40 13
18
11 23 42
24 27
51
34.0
47.7
51.3

Violet M. Taylor
Seismological Assistant

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1964 Apr 16 - 21 -

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 April 22, 1964
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



CORRECTION

Special supplement
 issued April 2
 Pasadena March 28
 should read
 delete
 April 4 GSC
 should read

CONTINUATION

April 16	iP	03 26 04
16	iP	04 17 52
	iS	18 56
	Magn.	4.5
16	iP	06 21 27
	iS	22 29
	Magn.	4.9
16	iP	07 04 46
	iS	05 47
	Magn.	4.8
16	iP	04 57 55
	iS	58 55
	Magn.	4.7
16	iP	09 19 26
	iS	20 34
	Magn.	4.8
16	eP	13 50 40
	eS	56 59
16	iP	14 18 26
16	iP	19 33 27
	ipP	36
	iS	38 46
	iG	40.9
	iR	42.1
	Δ	33°
	Magn.	$6\frac{1}{2} - 6\frac{3}{4}$
	μ	sec
	PZ	0.5 2
	PH	2 4
	SH	8 12
	MH	28 20
17	iP	04 56 03
	ipP	10
	eS	05 01 19
17	iP	06 12 57
17	iP	09 15 39
	ipP	46
	eS	20 59

April 17	iP	10 06 22
19	iP	04 41 29
19	iP	05 25 22
	i	32
19	ePP	14 31 03
	iSKS	37 19
	iS	38 39
	iPS	40 31
	iSS	46 07
	iG	57.1
	eR	15 02.3
	Δ	112°
19	iP	18 57 43
	ipP	53
19	eP?	19 51 49
	i(P)	52 22
20	iP	12 03 18
	ipP	31
	iS	08 37
	iR	12.9
	Δ	33°
	Depth	60 km
	Magn.	$6\frac{1}{2}$
	μ	sec
	PZ	$\frac{1}{2}$ 1
	SH	6 8
	MH	25 20
20	iP	15 47 03
	ipP	17
20	eP?	16 24 33
	e	53
	eS	30 15
21	iP	05 08 10
	ipP	24
	eS	13 32
	eG	15.8
	eR	17.3
	Δ	33° Depth 60 km
	Magnitude	6
	μ	sec
	PZ	0.2 1
	MH	6 20

KE
 OBSERV
 27 AP
 RICHM
 SURR

1964 Apr 23 - Apr 28

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 April 30, 1964



STATION:

23 iP 03 47 11
 ipP 27
 iPP 51 37
 ipPP 49
 eSKS 58.1
 eS 59.6
 iPS 04 01.2
 iSS 07.1
 e(G) 16.8
 eR 20.3
 Δ 112°
 Depth 60 km
 Magnitude 7±

April 24 (cont.) μ sec
 PZ 0.4 2
 PPZ 1 1/2 4
 PPH 1 3
 MH 20 20
 MZ 15 20
 April 24 iP 14 47 00
 i 10
 i 31
 iS 52 14
 iScP 53 08
 Δ 34°

μ sec
 PZ 1 4
 PPZ 4 5
 PPH 1 1/2 5
 MH 35 20
 MZ 25 20
 23 iP 10 45 48
 ipP 58
 23 iP 15 03 01
 ipP 09
 24 iP 06 09 41
 epP 10 16
 iPP 13 38
 ipPP 14 08
 i 20 12
 iS 58
 iSS 27.0
 eG 35.8
 iR 41.3

25 iP 09 49 50
 eS 55.0
 25 eP? 18 51 24
 26 iP 14 18 34
 e 21 54
 26 iP 15 03 20
 compression
 e 05 06
 28 eP 12 27 18
 eS 32 18

KEW
 OBSERVATORY
 - 5 MAY 1964
 RICHMOND,
 SURREY.

MENT: Times of P for additional shocks at China Lake (CLC)

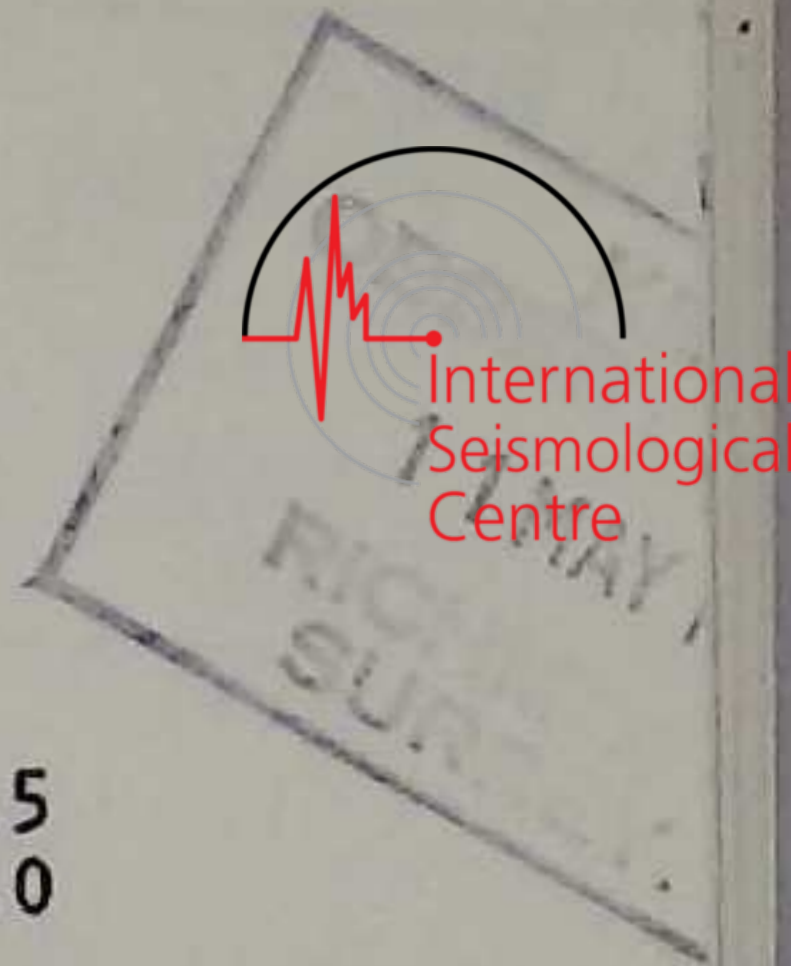
Goldstone (GSC), Woody (WDY)
 29 WDY 00 24 39, 00 32 29 (e 43), 01 27 07, 01 28 48, 02 09 08 (pP 19),
 02 26 17 (pP 24), 04 04 13, 04 07 39, 06 20 03, 06 43 47,
 07 15 34, 08 34 44 (pP 59), 08 56 16, 10 48 57 (pP 49 05),
 15 45 51, 16 38 28, 16 39 20, 18 25 34, 18 41 38, 18 59 44,
 19 51 40, 20 41 09, 20 44 04 (pP 12), 21 03 30 (pP 35),
 21 15 57, 22 21 12, 22 24 03, 23 14 59, 23 21 38, 23 34 09, 23 47 2
 12 WDY 02 12 46, 03 45 06, 12 27 19 (pP 37), 15 14 30 (pP 36), 20 35 05,
 20 50 10 (i 18)
 13 WDY 01 24 10, 16 25 13, 23 03 04, 23 55 16 (pP 29)
 14 WDY 00 18 31, 06 59 58, 09 11 26, 09 54 13 (pP 21); GSC 22 58 04,
 23 08 17 (pP 33)
 15 GSC 01 09 31, 04 59 01, 16 54 45
 16 GSC 06 32 26, 14 28 01
 17 GSC 07 33 14

Violet M. Taylor
 Seismological Assistant

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Apr 30 - May 5

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 May 6, 1964



CONTINUATION:

		(Continued)			
April 30	eP	16 16 34	May 2	eG	16 38.5
	e(SKS)	26 58		eR	42.0
	iG	41.6		$\Delta 68^\circ$	
	eR	44.5		Depth 40 km	
30	e(P)	17 32 41		Magn. 6 1/2	
	eL	41.4			
1	iP	03 19 27		PZ	μ 0.3 sec $1\frac{1}{2}$
1	iP	06 08 20		PH	0.2 $1\frac{1}{2}$
	ipP	24		SH	7 12
	eS	13 38		MH	7 20
2	iP	16 21 55		MZ	5 20
	ipP	22 06	4	iP	12 11 21
	isP	10		i	56
	iS	30 50	5	iP	05 13 17
	i	31 13		i	27
				iS	14 03

SUPPLEMENT:

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

March 30	WDY	00 15 37, (pP 47), 00 32 33, 01 00 03, (pP 11), 01 38 22, 02 08 45, 03 41 03 (pP 10), 03 41 44 (pP 53), 05 20 44, 05 38 43 06 35 17, 07 43 03 (pP 06), 08 34 43, 08 40 57, 08 46 28, 08 59 3 09 00 12 (i 25), 11 51 08, 13 24 44, (pP 51), 13 57 16 (pP 21), 14 59 32, 15 52 30, 16 10 31, 17 22 13, 20 01 33 (pP 40), 21 06 32 (pP 37), 23 17 53, 23 39 48 (pP 51)
April 14	WDY	16 11 53, 16 37 45
15	WDY	16 10 49, 17 05 40, 21 46 54, 22 16 10, 23 06 19
16	WDY	00 11 22, 02 48 27 (i 55), 12 02 19 (i 24), 12 56 56 (pP 57 07)
17	WDY	03 10 14 (i 28), 23 48 39
18	GSC	00 19 35, 01 38 49, 02 57 55 (pP 58 04), 05 38 38 (pP 49), 06 06 37 (pP 46), 06 36 38, 07 23 00, 07 53 23 (pP 32), 07 56 16 (pP 26), 15 21 12, 20 14 51, 20 22 48 (i 57); WDY 03 12 42 (pP 51), 07 52 04 (pP 11), 08 11 14 (pP 24), 12 48 04 (i 21), 18 07 37, 19 31 31 (pP 34)
19	GSC	04 07 44
20	GSC	03 40 58 (pP 41 03), 11 02 40 (pP 03 06, sP 03 17), 11 20 58 (pP 21 07), 16 56 12 (pP 25), 22 49 53, 22 53 15 (e 24); WDY 05 06 21, 16 45 35, 20 44 55 (i 45 03), 22 14 28 (pP 34), 23 20 09 (e 20 17)
21	GSC	04 43 51, 08 47 49 (e 56); WDY 07 14 31, 10 19 18
22	GSC	00 24 10, 09 56 41 (i 57 13), 19 49 28 (pP 44), 20 35 44
23	GSC	21 18 38 ; WDY 01 44 38 (pP 48), 02 03 23 (pP 32), 15 14 49 (pP 59), 18 50 30, 19 11 22 (pP 28), 21 30 33
24	GSC	03 57 13 ; WDY 00 52 18 (pP 31, sP 34), 06 03 30, 19 58 25 (i 40) 22 42 21 (pP 29)
25	WDY	05 48 40, 05 49 39, 11 17 59, 11 40 41, 13 46 48, 16 16 07, 21 37 43 (pP 50)
26	WDY	22 29 33, 22 53 46, 23 46 22 (e 29)
27	GSC	12 20 23, 19 16 01 ; WDY 01 56 23 (e 58 35, i 59 43), 04 00 07, 14 48 38

Violet M. Taylor
 Seismological Assistant

May 6 - 13.

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California

May 14, 1964

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CONTINUATION:

6	e(P)	08 23 33	May 8	iP	16 28 25
	e	34 05		ipP	33
	eR	50.7		eS	33 47
6	iP	15 33 05		eL	36.0
	ipP	10	8	iP	21 40 58
	iS	38 21		ipP	41 09
7	iP	00 46 14		eS	46.2
7	i(P')	06 04 55		eL	48.8
	e	05 05	8	iP	23 48 48
	i(PP)	07 42		eS	54 38
	e	08 57		iL	57 44
	iSS	27.6	9	iP	02 10 14
	eL	47.7		ipP	24
	$\Delta 140^\circ ?$			eS	16 18
7	iP	08 10 08		eG	19.2
	compression		9	iP	15 22 04
	ipP	10 24	9	iP	21 20 46
	iPP	13 18		i	21 02
	iS	19 59	10	iP	05 51 57
	iSS	25.2		i	52 32
	eP i	36 56	10	eP	10 57 45
	i	38 05	11	iP	02 15 45
	$\Delta 80^\circ$			eS	28 32
	Depth 60 km		12	eP	10 14 10
	Magn. $7 \pm$			e	30
	μ	sec	12	iP	17 02 03
PZ	2	$1\frac{1}{2}$	12	iP	18 23 14
PPH	10	7		eS	28 03
SH	11	11		iG	30.3
MH	21	20		iR	31.8
7	iP!	11 22 45		$\Delta 30^\circ$	
	dilatation			μ	sec
	ipP	24 32		MH	20 20
7	iP	20 24 42	12	iP	18 28 51
	ipP	56		Phase of preceding?	
	iPP	27 35	13	iP	05 38 10
	iS	34 39		iPP	41 36
	iSS	39.9		iS	48 44
	iSSS	43.2		iG	06 01.2
	eG	45.3		iR	04.7
	iR	48.3		$\Delta 87^\circ$	
	$\Delta 78^\circ$			Magn. $6\frac{1}{2}$	
	Depth 60 km			μ	sec
	Magnitude $6\frac{1}{2}$			PZ	0.2 $1\frac{1}{2}$
	μ	sec		MH	27 20
PZ	0.7	$1\frac{1}{2}$	13	eP	11 17 31
PH	1	3		e	44
PPZ	0.4	$2\frac{1}{2}$		e	19 39
SH	$2\frac{1}{2}$	26			
MH	7	20			
MZ	5	20			

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California

May 14, 1964



PLEMENT:

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

- i 28 GSC 13 40 30 (e 40), 22 44 51 : WDY 00 35 34, 00 43 54, 08 12 05 (pP 18)
08 44 31, 14 00 51 (pP 01 00), 20 48 06 (i 19), 23 02 31
- 29 GSC 00 56 46 (pP 57 04, sP 57 09), 17 56 41 (pP 51) 18 10 31 (pP 39),
19 21 32, 19 24 33 (i 37): WDY 04 17 28 (pP 35), 18 29 31, 19 09 36
- 30 GSC 03 55 47 (pP 52), 04 07 08 (pP 22), 08 04 20, 11 57 16 (pP 34);
WDY 03 52 55, 05 01 13, 05 38 08 (pP 23), 11 00 54 (pP 59), 11 09 08
- 1 GSC 07 14 40, 07 51 04; WDY 00 23 33 (pP 41), 03 46 36 (pP 42), 14 46 04
16 04 49, 16 08 46 (pP 09 12), 18 01 44
- 2 GSC 11 41 38 (i 41, i 53), 11 43 11, 16 45 47 (i 51), 17 15 17 (e 26);
WDY 00 00 25 (pP 32), 05 26 10, 05 57 54, 17 43 03
- 3 WDY 02 06 03, 04 54 10, 07 39 17 (pP 25), 08 05 02, 13 42 48,
21 38 01 (i 09)
- 4 WDY 02 33 15 (pP 49)
- 5 GSC 03 37 53, 08 12 45 (pP 56);
WDY 02 10 24 (i 27, i 31), 04 11 24, 08 49 54 (i 50 07), 08 58 02,
09 39 55 (i 40 08), 16 19 56 (i 20 05)
- 6 GSC 17 22 51 (pP 23 01), 20 44 33 (pP 46), 20 56 04 (pP 10);
WDY 04 45 56, 06 24 00 (pP 15)
- 7 GSC 00 22 13, 04 10 48 (i 55), 12 59 14, 19 18 56, 23 25 14 (pP 26);
CLC 08 18 56 (pP 19 01), 09 39 21 (pP 26), 09 59 22 (pP 29),
12 19 54 (pP 59), 13 26 45
- 8 WDY 03 04 19 (pP 30), 03 48 48 (pP 59), 04 10 36, 04 23 20 (pP 31),
05 39 29 (pP 37), 06 02 46, 07 25 52, 09 29 37 (pP 53),
10 06 38, 10 31 27 (pP 34), 12 37 23 (pP 33); GSC 20 48 26 (i 47)
- 9 GSC 00 34 44 (pP 52), 12 25 08 (pP 17), 19 59 58, 20 15 45,
21 13 01 (i 04)
- 10 GSC 06 36 54 (i 37 05), 13 48 18 (e 24), 14 50 22, 14 52 38 (i 42),
15 47 14 (i 18)
- 11 GSC 02 23 12 (i 14), 05 40 56, 14 51 12 (i 22)

Violet M. Taylor
Seismological Assistant

May 13 - 20

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SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California

May 21, 1964

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)



CONTINUATION

CONTINUATION								μ	sec	
May 13	iP	16	55	39	May 17	Cont.	PZ	1	16	
	i			49			PH	1	20	
13	iP	20	50	12			SH	4 $\frac{1}{2}$	20	
	i			37			MH	14	20	
14	iP	02	43	36	17		iP	04	48	36
14	iP	12	02	29			ipP		52	
15	eP	11	03	33			iPcP		51	07
	e			42			eS		54	18
	eSKS		14	16			eG		56.5	
	eS			46			eR		57.4	
	ePS		16.2				Δ 34° Depth 80 km			
	eSS		21.2		17		iP	19	37	04
	eG		29.0				iPP		39	28
	eR		33.2				iS		45	54
	Δ 98°						iSS		50.2	
15	iP	12	17	43			eG		53.1	
	i			51			eR		58.0	
	i			18			Δ 66° Magn. 6 $\frac{1}{2}$			
15	eP	19	41	45				μ	sec	
	iS			42			PZ	0.1	1	
	Magn. 5						PH	0.1	1	
16	iP	14	57	21			SH	13	32	
16	iP	16	20	34			MH	31	20	
	eS			31.0	18		iP	10	50	19
	iG			44.0			ipP		29	
	eR			46.8			eS		59.2	
	Δ 86° Magn. 6				18		iP	14	24	01
		μ	sec		19		iP	15	44	08
	MH	5	20				eS		49	24
17	iP	00	56	27	19		iP	23	12	33
	iS			01			iS		19	39
	eL			04.9			iG		25.2	
	Δ 30° Magn. 5 3/4						iR		28.2	
							Δ 51° Magn. 6			
							μ	sec		
							PZ	0.1	1	
							PH	0.1	1	
							SH	15	28	
							MH	14	20	
							MZ	10	20	
							iP	05	38	39

SUPPLEMENT: Times of P for additional shocks at China Lake (CLC)
Goldstone (GSC), and Moody (WDY)
May 9 GSC 00 34 44 (pP 52), 12 25 08 (pP 17), 19 59 58, 20 15 45,
21 13 01 (i 04); CLC 18 28 58 (i 29 37)
10 GSC 06 36 54 (i 37 05), 13 48 18 (e 24), 14 50 22, 14 52 38 (i 42),
15 47 14 (i 18)
11 GSC 00 22 28; CLC 10 13 53
12 GSC 01 49 42, 22 21 32 (i 22 10), 23 43 57 (e 44 25), 23 48 29;
CLC 18 35 18
13 GSC 00 18 46 (i 56), 07 40 28 (i 44), 08 23 56, 15 12 21,
Violet M. Taylor
Seismological Assistant
KEW OBSERVATORY

1964.
May 20-27

SEISMOLOGICAL LABORATORY
220 North San Rafael Ave.
Pasadena, California
May 28, 1964

B2 ✓

PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)

CORRECTION

May 13 IP
I
should read
IP

20 50 12
37

20 50 37

CONTINUATION

May 20 eP
ePP
eSKS
eG
eR
Δ 94°

06 15 03
19 09
25 24
43.2
47.2

μ sec
5 20

21 MH

21 IP

21 IP

eS

eG

23 IP

e

24 IP

24 IP

eS

eG

eR

24 IP

eS

eG

IR

01 17 49

15 42 47

48 19

50.7

11 34 19

35 47

00 47 04

04 24 59

34 54

45.0

48.0

10 43 25

53 48

11 03.9

07.2

CONTINUATION (cont.)

May 25 IP

20 03 42

I

94

I

04 08

26 IP

09 53 40

I

54 07

26 eP

11 14 11

IP'

17 48

IPP

19 05

ISKP

21 15

ISKS

24 35

ePKKP

28 07

IPS

28 43

IR

52.6

Δ 120°

Magn. 7 1/2 - 7 3/4

μ sec

PZ

4 12

PPZ

14 8

PPH

5 6

MH

70 20

MZ

30 20

27 IP''

01 15 17

IPP

16 40

ISKP

18 39

ISKS

22 40

ePS

26.1

Δ 120°

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

May 8 WDY 20 44 44 (i 47)
9 WDY 00 04 52 (pP 05 05, i 05 14), 01 22 18, 01 52 44,
10 44 20, 14 16 24, 20 44 28
10 WDY 08 23 52, 15 04 37
11 WDY 18 29 08, 20 16 45 (i 17 15), 20 49 40 (i 50 14)
12 WDY 02 10 27 (pP 35), 06 51 26, 06 57 14 (i 38), 11 27 47
13 WDY 00 13 47 (pP 56), 10 21 30, 15 31 05, 17 03 18 (i 05 35),
20 12 00 (pP 04), 22 49 23 (i 36), 23 46 10 (pP 18)
14 GSC 01 05 03, 01 18 11, 02 04 54, 20 02 35, 20 12 18;
WDY 12 36 54, 13 24 58, 13 36 13, 13 59 08 (pP 14), 14 04 17,
14 25 07, 15 18 13, 16 59 38
15 GSC 10 24 27, 10 27 05, 13 12 18;
WDY 10 59 47 (i 55, i 11 00 00)
16 GSC 06 14 21, 09 58 54 (i 59 08), 16 11 39;
WDY 02 11 23, 10 34 00 (pP 10), 12 51 43 (pP 54, i 58)
17 GSC 17 18 19; WDY 18 38 42 (pP 56), 19 21 29 (pP 40)
18 GSC 13 53 37, 17 51 00, 21 18 51 (i 54)
19 GSC 01 51 00 (i 03), 06 19 36, 14 49 01, 23 32 33 (pP 47);
20 GSC 03 34 00, 05 06 18 (pP 34), 05 47 35
21 GSC 11 52 31, 13 38 12
22 GSC 00 39 45 (pP 59)
23 GSC 02 02 29 (i 38), 21 42 04 (i 36)
24 06 59 09, 18 13 03 (i 09), 21 10 39, 22 35 50
25 05 12 23 (e 33, i 40), 08 44 02, 11 06 18

Violet M. Taylor
Seismological Ass't.

KEW
OBSERVATORY
- 4 JUN 1964
RICHMOND



May 28 - June 4.

63 ✓

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



CONTINUATION:

June 5, 1964
(continued)

Date	Station	Time	Depth (km)	Magnitude	Station	Time	Depth (km)	Magnitude
May 28	iP	13 00 14			May 31	iR	00 12.5	
	i		50			iP'P'	19 43	
28	iP	16 24 34				$\Delta 71^\circ$		
	i		41			Depth 60 km		
29	iP	10 24 04				Magn. 6.9		
	iS		29 18					
30	eP	14 42 42						
	i		50					
	iS		52 32					
	eSS		57.1					
	iG	15 03.0						
	iR		11.1					
	$\Delta 75^\circ$							
	Magn. $6\frac{1}{4}$							
			μ	sec				
	PZ		0.2	1.2		PZ	1	2
	SH		2	6		PH	1 $\frac{1}{2}$	3
	MH		10	20		SH	10	8
	MZ		7	20		MH	75	30
31	iP	00 51 48				MZ	71	30
	compression					31	eP	17 27 37
	from northwest				June	1	eP	13 29 16
	ipP	52	06			2	iP	16 15 41
	iS	01 00 58				3	iP	14 09 58
	i(SS)		05.1			4	iP	04 33 58
	iG		09.2				i	34 04
							eS	38.2
							eL	39.2
							eLg	41 41
							$\Delta 23^\circ$	
						4	eP?	11 30 58
							e(S)	41 24
							eL	12 00.5
						4	iP	11 55 51
							i	56 39

SUPPLEMENT:

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

Date	Station	Time
May 20	GSC	06 31 26 (e 45); WDY 11 37 30, 21 14 09
21	WDY	00 08 44, 22 39 35 (i 42 01), 23 21 40 (i 46, i 53)
22	GSC	16 20 15, 16 23 16
23	WDY	13 19 01 (i 16), 16 52 52, 20 51 15 (i 41)
24	WDY	09 11 14 (pP 21), 10 22 30, 14 45 09 (pP 20, sP 26), 19 38 49 (pP 39 03, sP 08)
25	WDY	13 24 01, 13 30 28, 21 46 37 (i 40), 22 27 34
26	GSC	05 40 02, 11 14 08 (P'' 17 42, PKKP 28 07);
	WDY	01 39 37 (i 40), 10 14 45 (i 47)
27	GSC	01 15 18 (PKKP 25 38), 06 49 32 (PKKP 59 52), 11 14 56, 11 32 10 (i 20)
28	GSC	02 10 36 (i 44), 12 46 19, 17 58 39, 21 16 50 (i 17 08); WDY 00 44 45 (i 53)
29	GSC	02 55 09 (i 15), 03 41 13, 05 19 15 (i 35, i 40), 09 23 10 (e 24 33), 18 46 44
30	GSC	03 24 34, 22 41 02; WDY 17 32 06 (i 23)
31	GSC	10 34 47 (i 35 18), 10 38 33
June 1	GSC	06 17 36 (i 18 18)

Violet M. Taylor
Seismological Assistant

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KEY
OBSERVATORY
- 9 JUN 1964
RICHMOND,
SURREY

June 5-16

63

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 17, 1964



CORRECTION

June 4 eP?
 should read:

CONTINUATION

Date	Time	Station	Reading	Date	Time	Station	Reading
June 4		eP?	11 30 58	June 11		iP	22 20 29.6
		eP	11 30 38			iS	22 13.6
		iP	09 25 25		13	iP	04 29 58
		i	28			iS	37 19
5		iP	09 57 01		13	eP	08 39 20
		i	05		13	iP	22 44 18
		eS	10 02 18			eS	54.7
		eG	04.2			eG	23 06.2
		eR	06.5			$\Delta 87^\circ$	
		$\Delta 33^\circ$			15	e(PP)	00 24 33
5		iP	22 13 30		15	e(L)	43.8
6		iP	17 16 43.7			iP	11 05 05
		i	46.9			i	15
		iS	17 23.9		16	iP	04 13 41
		Magnitude $4\frac{1}{2}$				i	56
6		eP	19 09 30			iPP	16 32
6		iP	19 18 01			iS	23 36
7		iP	20 22 38			iG	34.0
8		iP!	23 05 41			$\Delta 78^\circ$	
		dilatation				Magnitude 7.3	
10		eP''	22 34 43			μ	sec
		eSKS	41 25			PZ	4.2 2
		e	57			PH	2.2 3
		iPKKP	46 17			SH	13 14
		i	32			MH	140 20
		iG	23 00.6		16	MH	450 40
		iR	05.4			iP	04 29 38
		$\Delta 110^\circ$				i	48
10		iP	23 31 53		16	eP	04 47 34
		i	32 02		16	iP	04 58 35
10		iP	19 26 35		16	iP	06 29 08
11		eP	03 19 55		16	iP	07 05 05
					16	iP	07 26 57
						i	27 02

SUPPLEMENT:

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

May	31	CLC	18 46 27 (i 55)
June	1	GSC	11 33 16; CLC 18 42 22 (e 39)
	2	GSC	16 35 55 (pP 36 00)
	3	GSC	11 45 57, 14 16 35; WDY 18 05 55
	4	GSC	00 28 32; WDY 11 30 30
	5	GSC	04 11 56 (e 12 09), 04 55 24 (i 33), 19 33 30 (e 34 20);
		WDY	16 36 42
	6	GSC	06 46 14 (i 38)
	7	WDY	13 19 32, 20 22 35 (i! 47)
	8	WDY	02 38 04, 04 30 30, 05 50 38
	9	GSC	04 34 21, 09 30 30 (pP 42), 14 44 17, 15 40 54, 17 20 57,
			18 25 05
	10	GSC	20 07 38

Violet M. Taylor
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KEW
 OBSERVATORY
 23 JUN 1964

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June 18-23

63 ✓

SEISMOLOGICAL LABORATORY
 220 North San Rafael Ave.
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 25, 1964



ADDITIONAL

June	9	iP	15	13	22
	12	iP	18	23	51
	12	iP	23	00	45
	13	iP	14	13	50

June	22	iP	03	16	22
		i			39
		eSKS			26 27
	23	iP!	01	37	49
compression from northwest					
		i	01	38	09
		iS			47 02
		i(PS)			35
		iSS			51.7
		iG			55.0
		iR			58.4
		eP'P'	02	05	41
$\Delta 70^\circ$					
Magnitude 7.0					
			μ		sec
		PZ	0.7		1
		PH	0.3		1
		SH	7		6
		MH	31		20
		MZ	23		20

CONTINUATION

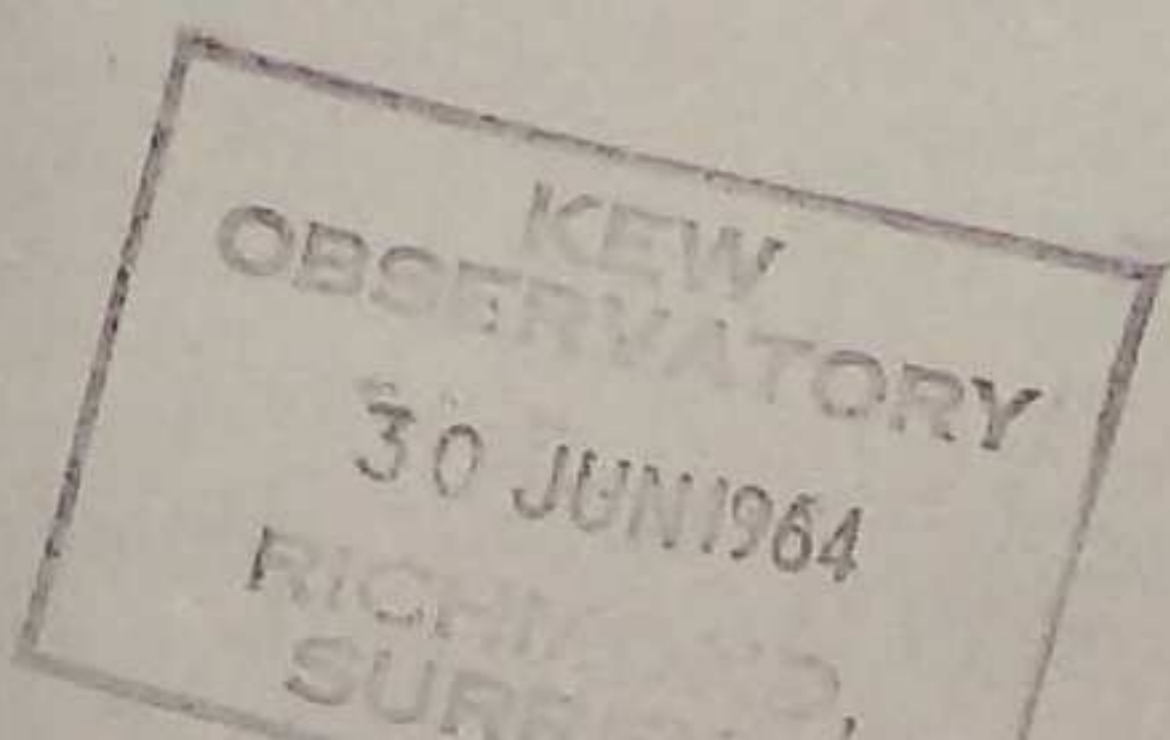
June	18	iP	20	46	20
	19	iP	10	17	33
		i			37
	20	iP	17	16	39
		eS			20 25
		eL			20.7
		eR			21.8
	21	iP	01	43	22
		ipP			36
		e(S)			51 39
	21	iP	17	44	51
	22	iP	00	27	49
		i			58
		iS			37 11
		eG			46.0
		eR			47.8

SUPPLEMENT:

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

June	10	GSC	09 07 00
	11	GSC	17 15 40 (e 19 44), 17 33 47, 18 11 25 (i 33), 18 44 06, 21 57 02; CLC 21 46 42 (e 48 26, i 50 03), 22 06 09
	12	GSC	00 29 13, 06 55 03, 11 08 10, 14 31 42; CLC 16 14 25 (i 31), 16 52 57 (e 53 04), 19 04 26 (i 38), 22 15 23
	13	GSC	11 27 00 (i 12), 23 58 16 (i 24 00 24); CLC 16 04 43
	14	GSC	01 07 29 (e 41, i 08 05), 01 32 30 (i 38), 01 50 38, 05 26 13 (i 22), 09 39 54
	15	GSC	02 17 10 (pP 56), 16 38 06 (pP 21), 21 53 35
	16	GSC	04 43 54, 04 52 48, 04 54 03 (i 16), 05 05 13, 05 10 47, 05 23 35, 05 34 12, 05 51 24, 05 58 38, 07 21 02, 07 39 43, 08 03 15, 08 27 18, 09 22 24, 10 07 57, 10 30 07 (PcP 33 04), 11 55 10, 22 14 44; CLC 05 02 27, 08 46 16 (e 35), 14 14 54, 17 21 06
	17	GSC	22 29 15; WDY 08 01 41 (pP 47)
	18	GSC	18 12 23, 23 42 47
	19	WDY	01 40 22 (i 28), 04 06 52 (i 56), 12 20 45 (i 49), 13 38 07 (pP 40)
	20	GSC	10 11 13, 12 43 08, 18 53 09, 19 39 48 (pP 59)
	21	GSC	07 05 20 (pP 46, sP 56), 11 32 16, 15 17 14, 19 27 13, 22 33 34 (pP 40), 23 11 29
	22	GSC	13 52 16

Violet M. Taylor
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June 23 - July 5

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 7, 1964



CONTINUATION

Time	Station	Time	Station	Time	Station
23	iP	02 13 43	June 30	15 58 37	eP
25	iP	11 29 31		59 37	i
26	iP	13 21 49		47	i
26	iP	13 45 49	30	20 19 04	iP
	i	46 07		20 30	i(pP)
28	iP	13 04 49		51	i
	ePP	08 31		28 48	eS?
	iSKS	15 34	July 1	02 58 38	iP
	iSS	22.3		47	i
	iG	29.6	1	09 57 54	iP
	eR	32.2		58 39	i
	$\Delta 93^\circ$	μ sec		10 06 36	iS
	PZ	$\frac{1}{4}$ $1\frac{1}{2}$	1	20 31 48	iP
	MH	9 20		32 23	ipP
28	i(P)	17 26 40	1	22 59 48	iP
	e(L)	42.2		23 00 12	ipP
28	e	17 40 31		31	iS
	eL	18 02.8		08 26	iS
28	iP	19 15 35	2	01 25 28	iP
	eL	24.4		32	i
29	iP	04 45 51		35	i
29	iP	07 28 30		47	i
	ipP	35		30.7	e(S)
	eS	34 06	2	15 12 58	iP
	eScP	43	2	17 07 17	eP
	$\Delta 33^\circ$			10 12	eS
30	eP	14 01 10	2	17 21 22	eP
	dilatation from			24 12	eS
	west		3	05 09 53	iP
	iP''	05 00	4	11 02 25	iP
	iPP	59		30	i
	iSKS	11 50	4	12 24 29	iP
	iPS	15 34	5	03 20 57	iP
	iPKKP	15 40		25 58	eS
	iSKKP	19 43	5	19 10 30	iP
	iSS	21.7		12 48	iL
	eG	31.9		μ sec	
	eR	38.6		$1\frac{1}{2}$ 2	PZ
	$\Delta 113^\circ$			250 20	MH
	Magnitude $6\frac{3}{4} - 7$		5	21 41 20	iP
		μ sec	5	23 47 11	iP
	PPZ	$\frac{1}{2}$ 4		49	i
	PPH	$\frac{1}{2}$ 4		48 08	i
	MH	15 20		55 58	iS
				$\Delta 68^\circ$	
				Magnitude $6\frac{1}{4}$	μ sec
				PZ	$\frac{1}{4}$ $1\frac{1}{4}$
				SH	5 25
				MH	10 20

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RICHMOND, SURREY

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 7, 1964



Page 2 (Continued)

CONTINUATION

July 6	eL	02 12 48	July 6 (Cont'd.)	$\Delta 21^\circ$		
6	iP	02 17 06		Magnitude 6 3/4		
	eL	19 12			μ	sec
6	iP!	07 27 04			MH	500 20
	dilatation from		6		eP	08 00 44
	southeast		6		iP	10 19 05
	iS	31 04			ipP	18
	eL	33.4	6		iP	10 43 27

SUPPLEMENT:

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

July 19	WDY	16 58 10, 17 41 22
20	GSC	11 46 28, pP 17 11 05; WDY 02 45 20 (i26)
21	GSC	21 24 37, 23 08 32
22	CLC	07 43 50 (e 44 01, e 44 11); WDY 02 32 28 (pP 42, sP 52), 07 54 10, 08 38 29 (e 35), 12 17 18 (i 24), 16 41 52 (i 52 04), 21 11 24
23	GSC	00 39 29 (pP 36), 02 26 31 (pP 36), 04 51 19, 05 32 43 (pP 33 00); 23 22 43; CLC 17 13 03; WDY 09 30 30
24	GSC	07 23 26, 15 18 07, 21 16 59
25	GSC	17 28 06; WDY 15 55 15
26	GSC	00 30 13, 04 57 58, 05 35 23
27	GSC	22 06 24 (pP 38)
28	GSC	17 19 34 (i 43), 18 29 49, 23 58 23 (i 39)
29	GSC	00 10 10, 07 24 03
30	GSC	05 39 52, 05 53 37, 10 26 38 (pP 50), 11 40 04, 20 06 05
July 1	GSC	12 35 34, 13 38 39 (pP 45)

Violet M. Taylor
 Seismological Assistant



July 9 - 14.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 15, 1964



ADDITIONAL
 June 28
 Barrett:

2 Pasadena

iP 17 23 35
 eS 25 35
 eP 06 42.9
 eS 48.9
 eL 51.9

July 9 iP 16 52 16
 compression
 from southwest

i 52 49
 iPP 55 39
 iS 17 02 43
 i 03 33
 iG 15.1
 iP'P' 18 28

$\Delta 86^\circ$ Magn. $7\frac{1}{2}$
 μ sec

PZ 2 1
 PH $\frac{1}{2}$ 1
 PPZ 2 $1\frac{1}{2}$
 PPH 7 4
 SH 30 25
 MH 50 20

CONTINUATION
 July 7

iP 07 50 37
 eS 08 00 18
 7 iP 13 47 30
 i 39
 eS 49.5
 eL 49.7
 8 eP 08 04 20
 eS 10 42
 8 iP 12 02 23
 i 37
 8 iP 12 10 05
 i(P'') 13 16
 i! 56
 i(PP) 14 36
 i! 17 13
 i(S) 20 20
 i(SKS) 21 20
 i(S) 22 04
 i 24 28
 e(SS) 30 00
 iG 41.0

9 iP 18 55 52
 10 iP 11 53 19
 eL 55.2
 11 iP 09 50 39
 11 iP 20 32 00
 i 48
 eS 37 23
 eG 39.5

μ sec
 PZ 0.3 1
 12 iP 01 57 26
 i 31
 eS 02 07 17
 eSS 12.4
 eG 17.6

Complicated record;
 two or more
 distant earthquakes

9 iP 11 34 07
 i(pP) 14
 iS 44 03
 eSS 48.7
 iG 54.3
 iR 57.5
 iP'P' 12 01 23
 $\Delta 75^\circ$ Magn. $6\frac{1}{2}$
 μ sec
 PZ 0.2 $1\frac{1}{2}$
 SH 3 7
 MH 10 20

μ sec
 PZ $\frac{1}{2}$ $1\frac{1}{2}$
 12 iP 12 20 28
 12 iP 16 59 42
 13 iP 10 20 45
 13 iP 11 57 24
 i 34
 eL 59.4
 14 iP 10 04 02
 eS 10.9
 14 iP 12 49 45
 i 50
 eL 51.9
 14 iP 14 08 27

ICEW
 OBSERVATORY
 27 JUL 1964
 RICHMOND,
 SURREY.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 15, 1964



Page 2

SUPPLEMENT:

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

June	28	BAR	17 23 35 (eS 25 35); WDY 20 02 53
	29	GSC	00 10 10, 07 24 03, 07 27 56, 07 28 20; WDY 15 45 29
	30	GSC	05 39 52, 05 53 37, 10 26 38 (pP 50), 11 40 04, 18 03 57, 20 06 05
July	1	GSC	16 17 09, 20 19 51 (pP 55), 22 58 27 (i 59 48);
		WDY	00 53 43, 10 03 22 (i 32, i 04 18)
	2	GSC	05 22 09 (i 14), 06 42 49 (i 54); CLC 09 20 03, 17 09 59;
		WDY	19 06 33
	3	CLC	08 28 29 (pP 35)
	5	GSC	12 44 03, 18 05 19, 18 10 39 (pP 45), 23 38 10 (i 24)
	6	GSC	09 59 08, 10 29 23, 14 17 57, 14 38 15 (i 39 05, i 39 29, e 41 37, e 41 46; two shocks?), 14 49 08, 15 30 58, 20 03 28; CLC 14 04 36 (e 48)
	7	GSC	16 41 47, 20 00 56
	8	GSC	01 46 33 (e 38, i 44)
	9	GSC	05 11 10 (i 17), 06 01 23, 12 14 19 (ipP 32), 14 10 01 (i 06)

Violet M. Taylor
 Seismological Assistant

July 16 - 24 / 1964

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 29, 1964



STATION	Phase	Time	Time	Time	Time	Phase	Time	Time	Time
16	iP	16	26	52	July 24	iP	07	01	28
	i		27	11		ipP			40
16	iP	17	59	36		iS		10	08
17	iP	04	51	14		iSS			14.1
18	iP	13	04	17		iG			17.6
	i			53		iR			20.4
20	iP	18	53	36		eP'P'		30	11
	i		54	42		e			22
	iG			56.7		Δ 64°			
	iR			57.5		Magnitude 6			
	Δ 18°						μ	sec	
20	iP	23	08	43		PZ	0.1	1	
21	iP	01	11	51		PH	0.1	1	
	iL			15.0		SH	5	20	
21	iP	01	13	16		MH	7	20	
	iG			16.4		MZ	3½	20	
	iR			17.1	24	iP	08	23	17
	Δ 18°					iS		31	56
21	iP	04	00	58		iG		39.1	
	compression					iR		42.1	
	ipP	04	01	42		eP'P'		52	10
	iPP		04	09		e			21
	iS		11	02		Δ 64°			
	eG			19.7		Magnitude 6½			
	Δ 80°						μ	sec	
	Depth 170 km					PZ	0.1	1	
	Magn. 6½					PH	0.1	1	
			μ	sec		SH	25	20	
	PZ		0.4	1		MH	50	20	
	PH		0.15	1	24	MZ	17	20	
	PPZ		0.6	3	24	iP	09	27	39
	SH		1½	6		iP	11	07	41
21	iP	07	11	17		ipP			53
	i			33	24	iP	13	35	55
21	eP	10	06	51		iS		44	34
21	iP	21	14	52		eSS		48.8	
	i		15	16		iG		52.1	
22	iP	10	35	13.3		iR		55.1	
	i			19.4	24	Δ 64°			
	i			29.8		iP	14	00	48
	iS		36	14.5					
23	iP	19	14	36					

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 29, 1964



e 2

TINUATION

y . 24

	iP	17 13 25	July 25	iP	19 42 55
	iS	22 07		compression	
	iScS	23 19		iS	52 41
	iG	29.6		iSS	57.6
	iR	32.5		iG	20 03.5
	eP'P'	42 13		iR	07.2
	Δ 66°			Δ 76°	
	Magnitude 6 $\frac{1}{4}$			Magnitude 6 $\frac{1}{2}$	
		μ sec			μ sec
	PZ	0.1 1		PZ	0.8 2
	PH	0.1 1		PH	0.3 2
	SH	7 20		SH	6 24
	MH	11 20		MH	9 20
	MZ	7 20		MZ	6 20
24	iP	19 00 48	26	iP	06 39 55
	i	55	26	iP	11 52 48
25	iP	12 31 53	26	iP	14 04 20
	compression			e	29
	i	32 13			

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

ly	10	CLC	17 19 26, 22 31 16
	11	GSC	00 23 24, 06 05 52, 12 05 11, 14 37 00, 17 19 17 (e 35), 17 54 45 (e 55 35), 21 12 08 (pP 15), 22 45 27; CLC 01 49 49 (e 52 59), 04 57 01 (e 15)
	12	GSC	13 45 50 (e 46 06), 21 27 24; CLC 20 13 57
	13	GSC	01 25 50, 06 51 10 (i 18), 10 15 34, 15 06 13, 21 14 36, 22 59 47
	14	GSC	04 13 24, 15 53 38 (i 43, i 53), 23 05 22, 23 25 12 (i 18)
		CLC	17 30 15 (i 26)
	15	GSC	07 33 47 (i 59), 19 07 35 (e 56); CLC 08 37 22 (i 48)
	16	GSC	09 31 29, 10 20 36
	17	GSC	02 47 50 (i 48 28, e 51 25), 03 04 17 (i 47, e 07 43), 03 11 05, 05 06 47 (e 08 38), 23 05 44 (i 56)
	18	GSC	07 03 39, 23 42 30
	19	GSC	06 13 22, 13 51 38; CLC 07 02 40 (i 03 29)
	20	GSC	22 55 59 (i 56 09)
	21	GSC	07 08 38 (i 44), 07 44 30
	22	GSC	20 27 47; CLC 07 17 34
	23	GSC	14 25 21

Violet M. Taylor
 Seismological Assistant

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July 28 - Aug 2

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 5, 1964



CONTINUATION
 July 28

eP¹¹ 18 59 05
 ePP 19 01 55
 eSKS 06 51
 eSS 18.1
 eG 30.5
 eR 36.9
 Δ 130°
 Magn. 6 $\frac{1}{4}$

	μ	sec
MH	7	20
MZ	3 $\frac{1}{2}$	20

Interpretation
 doubtful.

30 iP 05 23 13
 compression from
 southeast

ipP 05 23 37
 isP 42
 iPP 24 47
 iPcP 25 33
 iS 29 01
 eScP 15
 iG 31.8
 iScS 33 27
 isScS 47

Δ 36°
 Magn. 6

	μ	sec
PZ	1 3/4	2
PH	0.2	1
PPZ	0.2	2
PPH	1	20
SH	2	20
MH	10	20
MZ	3 $\frac{1}{2}$	20
iP	04 15 57	
i	16 11	
i		35

31

July 31

iP 06 05 44
 ePP '09.5
 iSKS 16.5
 iS 17.2
 iPS 18.1
 iSS 23.1
 iSSS 27.0
 iG 31.1
 iR 34.6

Δ 97°
 Magnitude 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$

	μ	sec
PZ	0.1	1
PPZ	3	30
PPH	2 $\frac{1}{2}$	30
SH	3 $\frac{1}{2}$	30
MH	80	28
MZ	65	28

31 iP 06 38 18
 31 iP 21 32 25
 i 33
 31 iP 23 56 02
 eS 24 04 15
 eSS 08.1
 eG 12.6
 eR 13.9

Δ 65°

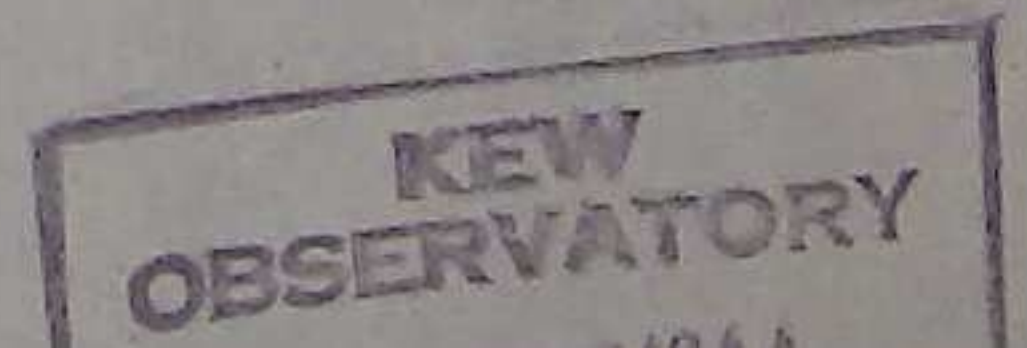
	μ	sec
MH	5	20
MZ	5	20
iP	08 42 33	
ipP		50
iS	47 38	
iG	49.5	
iR	50.6	

August 2

Δ 33°
 Magnitude 6

	μ	sec
PZ	0.3	2
PH	0.1	2
SH	1 $\frac{1}{2}$	20
MH	10	20
MZ	10	20

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Aug 4 - 10 / 1964.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 12, 1964



CORRECTION
 May should read 16
 May should read 18
CONTINUATION
 August 4

iP 14 57 21
 14 51 21
 iP 10 50 19, etc.

May 19

iP 17 35 11
 iS 43 54
 iP 11 18 27
 dilatation
 i(pP) 18 53
 i 19 24
 iPP 22 02
 iSKS 28 34
 iS 54
 iS 29 54
 ePKKP 36 01
 eG 41.5
 eP'P' 44 23

$\Delta 88^\circ$

Depth 100 km

Magn. $6 \frac{3}{4}$

	μ	sec
PZ	1/2	1 1/2
PH	0.2	1
SH	7	8
iP	22 35	46
i		58
iS	46	10
i	47.3	
iR	23 03.1	

$\Delta 85^\circ$ Magn. $6 \frac{3}{4}$

	μ	sec
PZ	3	3
PH	1	4
SH	2	7
MH	5	20

August 6
 6

iP 07 30 49
 iP 10 49 11
 i 20
 i 27

6
 6

eL 51.4
 iP 17 14 52
 iP 18 31 18
 ipP 24
 eS 36 40

8

μ sec
 PZ 0.2 3
 MH 7 20
 iP 15 11 47
 iS 21 52
 eR 36.5

8

iP 15 52 00
 iPcP 54 32
 iS 57 24
 iScP 58 14
 eL 16 00.0

10

$\Delta 33^\circ$
 iP 01 18 47
 ipP 54
 iPP 20 41
 eS 25 43

5

$\Delta 50^\circ$
 Magn. $6-6\frac{1}{4}$

	μ	sec
PZ	0.4	1 1/2
PH	0.2	1 1/2
PPZ	1/2	4
SH	1	6

10

iP 17 08 26

10

i 46
 iP 21 53 06
 i 22
 i 34

KEW
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 17 AUG 1964
 RICHMOND,
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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 12, 1964



Page 2

SUPPLEMENT:

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

8	CLC	15 35 15
11	CLC	19 06 19
12	CLC	01 08 22
16	CLC	10 48 27, 11 38 08
18	CLC	11 24 22
23	GSC	19 30 47 (i 31 29)
24	GSC	01 45 51, 04 16 25, 09 45 57, 10 12 55 (i 13 28), 16 45 08, 17 59 55 (e 18 00 07), 19 02 40 (i 51), 20 39 03, 22 01 28
25	CLC	18 14 43 (i 54), 21 44 08; GSC 23 00 42
26	GSC	18 45 12, 19 52 14
27	GSC	00 25 17, 04 12 26, 21 52 30, 23 11 12
28	GSC	04 48 54, 08 12 25, 10 57 32, 19 51 08, 21 45 47 (i 46 22), 21 57 40
30	GSC	01 33 08, 16 59 39 (i 48)
31	CLC	20 53 37
August 2	GSC	00 25 21 (i 34), 03 11 05, 21 50 08 (i 24)
3	GSC	01 56 28, 18 59 47 (i 19 00 00); CLC 08 02 32
4	GSC	12 49 42
5	GSC	04 37 49 (i 38 07), 07 00 19 (i 26), 11 13 44 (pP 52);
	CLC	22 53 42 (e 52)
6	GSC	02 46 12, 13 17 50 (i 55), 23 55 41 (pP 54)
7	GSC	05 43 51 (i 57), 07 15 23 (pP 29), 08 30 18

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KEW OBSERVATORY
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Aug 12 - 25 / 1964

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 26, 1964



CONTINUATION
August 12
13

	iP	07 02 11	August 21	eP	19 42 55
	iP	00 43 37		eS	43 50
	dilatation		21	eP	19 54 41
	ipP	45 05		eS	55 35
	isP	54	21	eP	19 55 32
	ipPP	48 29		eS	56 34
	iSKS	53 33		Magn. 5	
	iS	54 01	22	eP	03 04 23
	iSP	55.1		iP	27
	eP'P'	01 09 09		iS	05 22
	$\Delta 92^\circ$			Magnitude	$5\frac{1}{4} - 5\frac{1}{2}$
	Depth 400 km		22	eP	05 27 20
	Magn. $6\frac{3}{4}$			eS	28 10
		μ sec	22	eP	07 35 24
	PZ	0.4 1		eS	36 20
	PH	0.1 1	23	eSKS	15 37 31
	SH	15 10		eS	41 08
17	iP	11 55 52		eSS	48.9
	eS	12 04 56		eG	16 02.6
17	iP	12 02 04		eR	07.1
	i	18		Magn. $6\frac{1}{2}$	
17	iP	16 47 24			μ sec
17	iP	22 34 22.8		MH	10 20
	iS	47.9	24	iP	22 03 26
	Magn. $4\frac{1}{2}$			iS	08 40
18	iP	04 56 41	25	iP	13 57 36
	compression			dilatation	
	from southeast			i	57 54
	iS	05 06 15		iS	14 06 05
	ePS	07.0		eG	13.9
	eSS	11.1		eR	16.7
	eG	16.7		eP'P'	26 50
	eR	20.6		$\Delta 64^\circ$	
	$\Delta 80^\circ$			Magn. 7	
	Magn. $6\frac{1}{2} - 6\frac{3}{4}$				μ sec
		μ sec		PZ	2 $1\frac{1}{2}$
	PZ	2 3		PH	1 $1\frac{1}{2}$
	PH	1 3		SH	20 15
	SH	0.8 5		MH	40 20
	MH	8 20			
	MZ	6 20			
18	iP	11 29 20			
20	iP	08 47 15			
21	eP	19 14 32			
	eS	15 25			

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 26, 1964



Page 2
 SUPPLEMENT:

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

1	CLC	14 06 36
3	CLC	17 02 39 (pP 46)
7	WDY	08 16 44 (i 55, i 17 03), 15 37 43
8	WDY	01 29 21 (pP 29), 09 54 50 (e 57); GSC 20 14 45, 21 11 12, 21 58 12
9	GSC	05 30 07
10	GSC	07 45 38 (pP 46 04, sP 15), 18 03 00, 20 28 02 (pP 17)
11	GSC	12 45 02, 13 57 11; CLC 21 54 58; WDY 14 20 55
12	GSC	12 27 40 (i 28 06), 14 45 05
13	GSC	10 32 09
14	GSC	07 27 46; WDY 21 39 41, 22 01 15 (i 02 33)
15	WDY	03 57 18 (i 26), GSC 21 30 33
16	WDY	03 03 32 (i 48), 19 51 55 (pP 53 04), 20 45 03
17	WDY	09 17 22, 12 49 36, 15 05 24 (i 38, i 49), 15 25 44 (pP 15 28 09), 21 49 03 (e 12), 22 14 50 (i 15 13, i 15 30), 22 57 51
18	WDY	00 36 43 (pP 37 20)
20	CLC	07 30 25 (e 43), 08 45 18, 13 08 53 (e 09 59), 14 09 57

Violet M. Taylor
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Aug 26 - Sept 8

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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 10, 1964



ADDITIONAL
August 24

CONTINUATION
August 26

September 1

iP 08 39 17
iP 10 46 16
ipP 56

iP 03 29 08
i 25
iP 05 50 54
ipP 52 04
iP 08 05 20
eS 14.9
iP 04 46 31
iP 06 16 28
ipP 17 30
iP 08 22 45
iP 21 56 22
iP! 22 57 42.4
iS! 46.8
Magnitude $4\frac{1}{4}$
eP 02 25 32
iP 17 24 25
i 30
i 37
e(S) 30.7
eL 33.9
iP 05 35 50
iL 38 58
iP 10 18 55
ipP 19 24
eP 21 17 46
eL 23 47.4
eP 03 40 36
eS 50 27

September

4 iP 09 48 03
4 ipP 28
4 eP 09 53 18
4 eL 55.8
4 e(PP) 10 52.7
i(S) 59 21
i(PS) 11 02 29
eSS 08.0
eL 19.7
Doubtful. Δ 113°?
Magn. 6

 μ sec
MH 5 20
5 iP 03 06 50
i 07 05
ipP 10
iPP 10 26
iS 17 49
i 18 08
eG 30.4
eR 34.9
 Δ 91°
Depth 70 km Magn. 6 3/4
 μ sec
PZ $\frac{1}{2}$ 1 1/2
MH 20 20
MZ 15 20
6 eP 08 09 50
i 55
iP 16 24 28
i 35
6 iP 18 54 35
eS 19 05 32
6 eP 21 13 33
iS 19 56
eG 23.2
iR 25.0
8 iP 13 52 12
e 24
e(S) 14 02 32

3

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 10, 1964



Page 2

SUPPLEMENT:

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

Year	Month	Day	Station	Time (HH MM SS)	Notes	
1964	September	19	WDY	06 00 29		
		21	CLC	03 35 35;		
	21	WDY	08 46 35, 08 51 34, 10 24 51;	BAR 19 06 04, 19 08 58,		
			19 13 49, 19 42 14, 19 53 59			
	22	WDY	17 14 51;	BAR 03 03 57.1 (S 04 27.2), 05 26 40		
			(S 27 17.4), 07 35 24 (S 36 20), 20 14 14 (S 40.6)	21 19 03.8 (S 40.5); CLC 12 54 13		
	23	WDY	13 32 24;	CLC 15 37 27		
	24	WDY	01 42 39, 02 13 12;	CLC 17 44 41 (e 45 46), 21 34 39 (i 43)		
	25	GSC	21 14 48	(i 53)		
	26	GSC	23 51 36	(e 43)		
	27	GSC	01 46 52 (pP 47 05), 03 17 49, 06 51 56, 12 33 54			
	28	GSC	00 00 27, 13 40 19 (pP 41 13);	CLC 14 53 53, 23 02 09 (i 14)		
29	GSC	04 14 44 (i 15 06), 17 38 53, 21 48 19 (pP 29);				
	CLC	13 37 45, 16 23 31, 17 25 56				
30	BAR	21 04 51.3 (S 05 38.2);	CLC 15 27 40 (pP 56), 15 30 13			
		(e 30), 20 49 30				
31	GSC	19 42 52, 23 28 07 (ScP 33 47)				
1965	September	1	GSC	13 41 16 (e 53)		
		2	CLC	18 21 02 (i 21 05), 21 45 05		
		3	CLC	10 36 42 (e 47), 11 51 10;	GSC 11 44 55, 23 45 05	
		4	GSC	01 20 31, 09 14 51, 09 23 48, 10 52 45 (e 53 16)		

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Sept-8-16

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 17, 1964



ADDITIONAL:
 September

CONTINUATION:
 September

3	iP	17 10 19
3	eP	17 42 08
8	eP	14 21 06
	e	24 34
10	iP	17 49 16
11	iP	04 35 22
	i	36 15
12	iP	12 56 47
	ipP	57 20
	iPP	13 00 47
	iSKS	07 16
	ePS	09 37
	eG	24.0
	eR	28.0

Δ 98°
 Depth 130 km
 Magn. 6½

		μ	sec
	PZ	0.1	i
	PPZ	0.7	3½
	PPH	½	3½
12	iP	15	30 24
	ipP		32 31
	isP		33 30
	eS		39 33
	esS		43 12
	eG		51.3

Δ 80°
 Depth 600 km

12	eP	22 21 21
	ePP	25 44
	i (SKKS)	32 13
	iPS	35 13
	iPPS	36 21
	ISS	45.0
	eG	50.7
	i	51.2
	eG2	23 48.6
	Δ 111° Magn. 7½	

September 12

	PZ	μ	sec
	PH	3	12
	PPH	1	20
	MH	4	20
	MZ	50	20
	MZ	60	20
14	iP	10	24 34
14	iP	13	39 34
	i		48
	eS		44.5
	eG		47.0
14	eP	23	46 34
15	eP	12	55 35
	epP		54
	eS	13	04 54±
	eL		13.9
15	eP	15	45 22
	eP''		48 29
	iP''		37
	iPP		50 41
	iSKP		52 07
	eSKKP	16	01 45
	eSP		02 13
	ISS		07.8
	iG		24.2
	iR		30.9

Δ 130°
 Magn. 6 ¾

		μ	sec
	PPZ	4	8
	PPH	1¼	5
	MH	15	20
16	iP	01	57 00
	i		58 13
	iS	02	02 16
	eG		04.5
	eR		05.8
	Δ 31° Magn. 5 ¾		
		μ	sec
	PZ	0.3	2
	MH	15	20

KEW
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 24 SEP 1964
 RICHMOND,
 SURREY.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 17, 1964



Page 2

SUPPLEMENT:

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

September	3	CLC	15 49 28
	4	CLC	23 14 23
	5	GSC	02 19 42, 02 20 58 (pP 21 26, sP 21 38), 02 29 31, 12 40 24 (e 48)
	6	GSC	17 23 13; CLC 03 40 35, 09 32 33, 11 28 34, 15 59 42 (i 55), 16 04 39
	7	GSC	11 46 27; CLC 15 26 07
	8	CLC	12 33 17, 17 16 39 (i 51)
	9	GSC	06 18 41 (i 46), 10 48 34; CLC 05 08 49, 05 43 02 (i 13), 23 58 49 (pP 58, i 59 04, i 10)
	10	CLC	09 21 28 (pP 38, sP 43); GSC 14 29 59, 19 12 38 (pP 13 10), 21 45 41 (pP 46 51)
	11	GSC	00 32 51 (i 56)
	12	GSC	20 36 49 (pP 37 04), 21 26 18 (i 26 24)

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Sept 16 - 23 / 1964



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 24, 1964

CORRECTION

September 14 eP 23 46 34
 Should read: eP 22 46 34

CONTINUATION:

September 16 IP 22 34 11
 eG 54.0
 17 eP 11 15 51
 17 IP 15 12 41
 IpP 48
 eS 21.4
 eR 32.0
 Δ 68°
 18 eP 10 32 33
 eL 40 00
 Δ 35° Magn. 4½
 μ sec
 MH ½ 20
 18 IP 13 23 45
 e 50
 eS 32 37
 eR 44.2
 Δ 68° Mag. 6
 μ sec
 PZ 0.3 3
 MH 7 20
 MZ 6 20

September 18 IP 21 56 09
 19 IP 05 14 11
 eS 19.0
 IL 21.7
 Δ 28°
 Magn. 6
 μ sec
 PZ ½ 2
 MH 30 20
 20 eS 04 56.3
 eSS 05 01.5
 eG 08.4
 eR 12.0
 20 IP 14 47 47
 I(pP) 49 31
 21 IP 04 34 31
 IpP 36 44
 eS 43 54
 esS 48 12
 Δ 82° Depth 600 km
 23 eP 05 07 05
 eS 12.7
 IL 15.6
 μ sec
 MH 10 20

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

September 5 CLC 15 16 22 (pP 48)
 12 GSC 17 19 35
 14 GSC 12 36 04, 14 31 08 (pP 32 37), 15 51 33,
 20 51 23 (pP 34)
 15 GSC 01 11 55, 02 14 54, 06 07 17
 16 GSC 01 45 28, 03 32 40, 03 40 33 (pP 46), 05 34 06
 (pP 16), 08 46 24, 13 55 22, 19 38 11, 20 58 28,
 22 28 35, 23 54 55
 17 GSC 02 53 52 (pP 54 08), 06 08 47, 07 12 03 (I 14),
 07 51 49, 11 13 40 (S 16 08), 22 14 44 (pP 15 07)
 18 GSC 12 30 45
 19 GSC 17 35 28, 19 19 54
 20 GSC 04 32 48, 04 46 00 (S 56 30), 07 35 13
 21 GSC 00 19 08, 14 29 22 (I 27)

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 Seismological Assistant



but 14 - but 18.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 October 21, 1964



CONTINUATION
 October 14

Date	Time	Phase	Value	Date	Time	Phase	Value
14	03 17 09	iP		16	08 29 33	iP	
		eS	27.1			i	46
		eL	37.6	16	09 29 18	iP	
15	20 37 51	eP				i	34
		i	38 08			eG	46.2
		iS	46 50	18	06 27 35	iP	
		eG	54.5	18	12 46 37	eP	
15	23 06 10	iP				iP''	50 05
		i	18			iPP	51 26
16	06 27 26	iP				ipPP	52 40
		eS	37 22			isPP	53 27
		eL	49.2			iPPP	54 13
16	06 50 06	eP				iSKS	56 09
16	07 10 39	iP				ISP	13 00 17
		i	52			iPKKP	34
		iS	19 40			i(SPP)	01.4
		iSS	24.0			i!	03.9
		iG	27.4			(i! is a large unidentif long-period arrival)	
		eR	30.8			Δ 117° Depth 400 km	
		Δ 70°				Magn. m (from PP only)=	
		Depth 50 km				μ	sec
		Magn. 6½				PZ	0.2 2
						PPZ	1½ 3
						PPH	1 3
						SKSH	3 3
16	07 32 45	eP		18	18 38 12	e(P)	
		e	54			e	20

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

October 9 GSC 00 25 33 (i 39, i 44), 11 36 00, 19 35 14 (pP 50, sP 36 04, ScP 40 18)

10 GSC 07 56 16 (i 24), 08 08 33, 08 42 50

11 GSC 00 26 02; CLC 00 04 54 (e 05 07), 03 11 52; WDY 06 12 54, 08 46 38 (e 44), 10 34 23, 11 23 05, 22 07 54

12 CLC 06 12 28 (e 34), 08 11 56; WDY 02 00 18 (e 01 17), 09 14 32, 09 59 20 (pP 27), 19 30 28, 20 27 02

13 GSC 02 31 44 (i 32 12), 03 25 00 (i 41); WDY 14 06 29 (e 36), 17 32 57

14 WDY 00 04 37 (i 48)

15 CLC 02 20 10; GSC 06 41 06; WDY 06 04 58, 06 08 40, 17 54 46, 20 46 22 (i 35), 21 11 56, 22 51 20 (pP 33), 23 00 19 (i 24), 23 15 37 (pP 43) 23 50 43 (e 54, i 51 02)

Violet M. Taylor
 Seismological Assistant

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 October 7, 1964



SUPPLEMENT:

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

September	18	CLC	08 01 49 (i 02 16)
	21	CLC	12 14 39, 16 40 13, 17 08 53'
	22	GSC	12 42 32
	23	GSC	06 26 11, 13 36 25, 18 10 08.8 (i 11.8, IS 32.5)
	24	GSC	02 40 33, 06 14 51, 09 27 57, 14 47 08 (i 17) 23 46 39 (pP 49); WDY 18 11 19, 20 32 00, 23 23 20
	25	GSC	05 29 42 (i 53), 06 41 53, 17 32 03, 23 39 58 (i 41 23, S 47 48, i 48 15); WDY 05 01 05 (e 18), 16 38 37 (pP 43), 17 37 53
	26	WDY	00 29 57 (pP 30 07); GSC 01 04 38, 06 38 59 (e 39 07)
	27	GSC	01 39 43, 13 36 40, 19 00 23, 22 14 58; WDY 03 51 51 (1pP 52 03)
	28	GSC	01 15 18, 05 18 09, 05 52 07, 16 37 56 (e 38 17, i 40 56), 18 36 42; WDY 13 05 13
	29	GSC	13 59 20
October	30	WDY	19 26 00 (pP 14)
	1	WDY	08 57 51, 18 26 22 (e 28 56, i 29 08), 20 51 52
	2	WDY	04 42 51, 10 00 08 (pP 18)

Violet Taylor
 Seismological Assistant

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 October 14, 1964

ADDITIONAL
 October 3

CONTINUATION
 October 6

	eP	22	13	28	October	11	iP ¹¹	21	33	44
	e			34			i			50
							ePP	34	42	
							eS	42	28	
							iPKKP	44	24	
							iPS		25	
							eSS	50.6		
							eG	22	01.4	
							$\Delta 115^\circ$			
						12	iP	06	08	11
							i		42	
						12	eP	06	22	35
						12	iP	08	48	40
						12	iP	08	55	08
							i		15	
							i		22	
						12	ePP	16	02	14
							eSKS		07	58
							eS		09	26
							eSS		16.4	
							iG		27.0	
							eR		33.0	
							$\Delta 110^\circ$			
						12	iP	22	06	16
							ipP			28
							iS		14	58
							eSS		19.0	
							iG		22.7	
							eR		26.4	
							$\Delta 68^\circ$			
							Depth 50 km			
							Magn. $6\frac{1}{4}$			
								μ	sec	
							PZ	0.9	3	
							PH	0.3	2	
							SH	4	24	
							MH	15	20	
						13	iP	10	52	11
							ePS	11	04	34
							eSS		09.0	
							eG		16.7	
							eR		21.0	
							$\Delta 90^\circ$			

$\Delta 101^\circ$
 Magn. $6\frac{3}{4} - 7$

μ sec

PZ	$\frac{1}{4}$	2
PPZ	$\frac{1}{4}$	2
PPH	$3\frac{1}{2}$	20
MH	40	20
MZ	35	20
6 IP	19	24 50
8 IP	10	52 12
9 IP	12	54 42
9 IP	20	02 05
9 IP	21	45 28
		54.9
10 IP	19	45 10
		14
		54.4
10 IP	20	13 03
		06
		18 14
		22.4
11 IP	10	13 56
		14 02
		08
		15.7
		22.5
11 IP	14	30 05
		12

Kew Observatory
 16 OCT 1964
 RICHMOND,
 SURREY.

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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
October 14, 1964

Page 2

SUPPLEMENT:

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

October	3	GSC	17 37 47; CLC 02 06 18, 12 49 17, 12 59 32, 17 04 39, 20 52 24 (e 38), 22 52 49; WDY 09 09 50
	4	GSC	19 05 55; CLC 00 53 07, 09 43 03; WDY 12 38 35, 15 44 50, 16 34 35
	5	GSC	03 37 36, 03 46 43, 08 41 54 (i 42 12), 12 35 38, 13 24 54, 14 11 05, 22 22 16 (pP 27); CLC 06 35 26
	6	GSC	01 43 47, 10 13 36, 14 43 55, 14 44 59, 15 09 41, 17 46 01; WDY 02 25 12
	7	GSC	06 16 57 (i 17 01), 14 18 17; CLC 01 36 20, 04 05 13; WDY 01 04 12, 20 11 49, 21 32 45 (e 54)
	8	WDY	01 42 35, 03 27 26, 17 00 42 (i 53), 17 19 16 (i 21), 20 06 57

Violet M. Taylor
Seismological Assistant

bu. 21-26

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)



October 28, 1964

CONTINUATION
 October 21

21
 iP 07 41 21
 eL 43.8
 eP 23 23 49
 ePP 28 33
 eSKS 34.4
 iPS 38.0
 iSSS 48.3

Δ 113°
 Magn. 6 1/2

	μ	sec
MH	15	20
iP	10 06	46
eR		30.1

23
 iP 02 05 44

compression
 from northeast

ipP	05 56
iPP	08 04
iS	13 37
iSS	17.5
iG	19.3
iR	22.3

Δ 60°
 Depth 40 km
 Magn. 6 3/4

	μ	sec
PZ	0.7	2
PH	1/2	1 1/2
SH	7	12
MH	80	20
MZ	50	20

October 23

iP 13 58 18.9
 i .31.8
 iS 59 20.8
 23 iP 21 17 34
 i 42
 eS 26.0
 eR 38.0
 25 iP 03 51 27
 eS 58 13
 25 iP 06 34 49
 i 35 04
 iPcP 26
 iScP 39 39
 eS 42 09

Δ 57°?

Interpretation
 doubtful

25 iP 12 20 04
 eS 29 25
 25 iP 23 05 35
 i 40
 26 iP 01 02 59
 26 iP 14 39 17
 i 23

KEW
 OBSERVATORY
 - 2 NOV 1964
 RICHMOND,
 SURREY

SUPPLEMENT:

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

October 15 WDY 21 16 42
 16 WDY 01 47 34 (i 46), 04 12 38 (i 45), 07 27 54 (i 28 07,
 i 14), 07 48 10 (i 24, i 28), 08 44 24, 08 48 25
 (i 41), 09 09 45 (e 59), 10 05 22, 11 09 24 (i 40),
 12 14 56, 12 29 45, 12 48 20, 13 40 22 (i 34, i 38)
 17 WDY 01 11 33 (i 37, i 58), 01 51 33 (i 46), 02 06 06 (i 10),
 03 36 05, 03 46 41 (i 46, i 54), 06 08 31, 06 46 03,
 07 56 20, 08 27 50, 12 19 19 (i 28), 14 58 36;
 GSC 08 26 25, 08 27 44
 18 WDY 02 58 06, 07 16 01, 09 25 58 (e 28 55), 10 52 11,
 20 14 50, 21 51 34 (i 52), 22 09 05 (i 15), 22 53 30;
 GSC 22 42 44
 19 GSC 00 15 01, 05 50 37, 09 02 12, 16 36 12, 21 26 03,
 21 30 16 (i 23); WDY 01 36 39 (e 50), 07 17 10,
 21 49 22 (i 34), 23 03 31; CLC 15 44 24 (e 34)
 20 GSC 01 00 59; WDY 05 45 42, 06 30 27 (i 33), 20 16 05,
 23 44 38

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SEISMOLOGICAL LABORATORY
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PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
October 28, 1964



Page 2

SUPPLEMENT: (Continued)

October 21	GSC	02 26 08, 21 08 29; WDY 13 49 47, 14 39 17 (i 21), 14 47 14 (i 20), 16 01 55 (i 59), 18 35 10
22	GSC	03 14 12 (e 30), 12 50 11 (i 22), 16 05 09, 16 08 26, 22 04 52 (i 56); WDY 00 19 52 (e 20 02)
23	GSC	09 51 37, 11 18 53 (i 19 10), 13 58 04.0 (s 57); WDY 13 57 56.0 (s 58 37.9), 16 17 35 (e 58), 22 29 19, 23 28 58
24	WDY	00 51 02 (i 20, i 57), 04 37 37 (i 50), 06 47 31 (i 40), 08 59 50, 10 04 11 (e 18), 13 55 59 (i 56 30), 18 48 32 (i 35), 21 38 36
25	WDY	10 13 13 (i 30)

Violet M. Taylor
Seismological Assistant

Oct 27 to Nov 2, 63

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 November 4, 1964



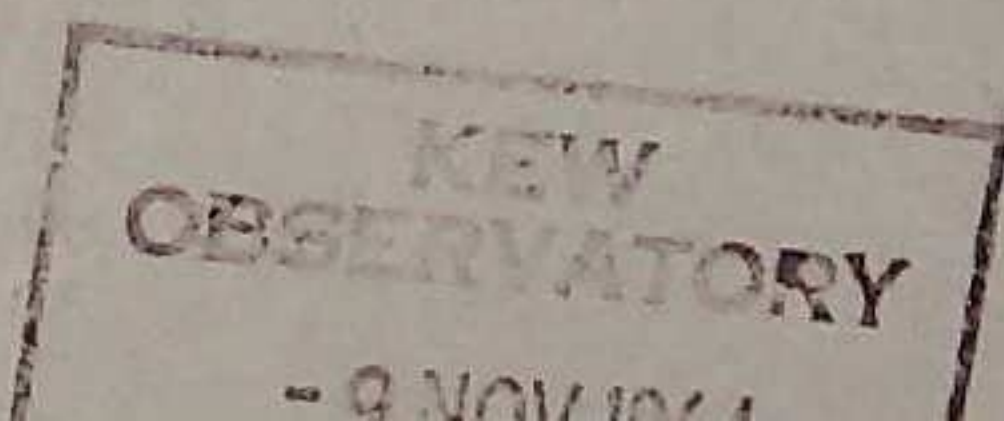
CONTINUATION
 October 27

	iP'	21 44 25	November 1	iP	12 40 23
	i	37		e	44 32
	eSS	22 07.0		ePP	45.0
	eR	34.9		ISKs	51.0
	$\Delta 145^\circ \pm$			ePS	54.0
	Magn. 6			ePKKP	55 58
		μ sec		eSS	59.8
	MH	5 20		iG	13 10.0
	MZ	5 20		eR	15.2
28	iP	00 34 01		$\Delta 107^\circ$	
28	eP	06 00 26	2	iP	07 00 19
	i	33		ipP	41
31	eP	18 43 14		eS	07 54
November 1	iP	05 00 17		esS	08.7
	e	03 11		eG	14.3
	eL	04 00		eR	17.7
1	iP	10 14 43		$\Delta 57^\circ$	
				Depth 100 km	
				Magn. 6 3/4	
		μ sec			
		PZ	2	0.7 1 1/2	
		iP		11 39 49.5	
		i		57.5	
		i		40 43.5	
				Magn. 4 1/2	

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

October 23	GSC	05 18 17
24	WDY	06 40 36; CLC 10 00 26
25	WDY	02 21 03, 08 11 18
26	GSC	07 17 22, 14 37 36, 14 39 17 (e 41 58), 15 20 10
27	GSC	06 24 06 (e 13), 20 12 49
29	GSC	13 51 22
30	GSC	02 21 51 (pP 22 03), 04 56 15

Violet M. Taylor
 Seismological Assistant



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (And auxiliary stations as noted)
 November 18, 1964



Page 2

SUPPLEMENT:

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

October 30	GSC	17 19 39, 20 11 18
31	GSC	09 01 18
November 1	GSC	06 55 04 (i 10, i 19); WDY 00 58 13 (i 16), 02 47 16, 16 55 33
3	WDY	00 40 10 (i 41 39), 06 36 11, 09 20 46, 11 21 41 (i 59), 14 03 43, 15 06 35 (i 49), 17 20 28, 18 29 14
4	GSC	03 47 17 (pP 33), 04 51 06, 21 53 43
5	GSC	00 08 58 (i 09 47), 04 07 41, 07 10 44, 07 14 31, 08 55 13 (i 51), 09 19 29 (pP 34), 13 32 11, 15 15 24, 20 47 17 (i 48 17)
6	GSC	14 16 02, 20 23 08 (e 14)
7	GSC	01 12 18, 01 46 24 (i 43), 04 16 17 (i 22), 09 23 54, 18 56 40 (i 19 00 07), 23 53 32
8	GSC	00 19 21, 18 08 36 (i 09 02)
10	GSC	05 09 54 (i 56), 06 13 57 (pP 14 56), 12 57 44
11	CLC 08	04 36, 09 28 12, 11 31 24, 12 17 26, 13 21 04, 14 47 03, 15 30 02 (e 47), 15 49 58, 16 42 05, 16 48 24 (i 49 11), 17 07 05, 17 36 02, 17 38 30; GSC 18 03 04, 18 21 36, 18 25 46, 18 28 38, 18 59 12 (i 19 01 13)
12	GSC	01 25 11 (i 15), 05 26 58 (pP 28 18), 12 24 36
13	WDY	15 26 27

Violet M. Taylor
 Seismological Assistant

Nov. 17 - 21
 Nov. 22 - Dec 1.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 2, 1964



ADDITIONAL
 November 16

Fort Tejon:
 iP 02 47 30.2
 Santa Barbara:
 iP 02 47 19.2
 eS 48 10.2
 Isabella:
 iP 02 47 28.2
 Tinemaha:
 iP 02 47 28.2
 iS 59.2

Minor damage at Corralitos,
 Santa Cruz County. Epicenter
 not far from 37.0° N
 121.7° W

November 19

eP 15 58 44
 i 59 01
 eL 16 27.9
 iP 23 48 28
 compression from west
 iP 48 40
 iPP 52 23
 iSKS 59 13
 iSS 24 06.1
 iG 13.9
 eR 16.9

Δ 94°
 Depth 40 km
 Magn. 6 3/4

μ sec

PZ 1 2
 PH 1/2 2
 MH 30 20
 MZ 25 20
 iP 00 08 31
 iP 01 36 58
 iP 01 48 50
 iP 02 43 05
 iP 03 15 03
 eP 04 57 20
 eP 06 58 10
 eP 23 44 08
 iP 22
 eS 53 05
 eG 24 01.1
 Δ 68°
 iP 12 55 07
 eSKS 13 05 41
 eS 06 29
 eG 20.9
 Δ 92°
 iP 15 47 05
 i 18
 eSKS 57 35

CONTINUATION

November 17

iP 19 13 14
 i 23
 eS 23.6
 eG 36.2
 eR 39.9
 Δ 88°
 18 iP 05 13 56
 i 14 03
 18 iP 14 48 20
 e 29
 e(PP) 52 09
 eS 58.9
 iPS 15 01.1
 eSS 05.9
 eSSS 09.3
 eG 14.6
 iR 18.2
 Δ 96°
 μ sec
 MH 3 20
 MZ 5 20
 18 iP 22 32 46
 iS 42 33
 18 iP 23 46 48

KEY
 OBSERVATORY
 - 7 DEC 1964
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 2, 1964



Page 2
 CONTINUATION
 November

22	iP	02 49 27	November 25	eP	09 52 16
22	eP	02 53 55		e	22
22	iP	05 59 51		(Not a PKKP etc)	
	eG	06 26.4	26	eS	10 45.3
	eR	30.9		eG	11 02.0
22	iP	18 53 46		eR	06.9
	i(pP)	54 03	27	iP	07 53 53
23	iP	23 53 16.5		eS	59 24
	i	32.2		iG	08 00.9
	iS	54 15.6		eR	04.1
	Magn. 4.2		27	iP	13 59 44
24	iP	01 52 09		eS	14 09.7
24	iP	11 00 33		eG	20.3
	i	01 02		$\Delta 80^\circ$	
24	iP!	11 03 43	28	iP	16 50 49
	(may be part of preceding)		28	iS	58 23
24	eP	12 55 10		iP	16 58 45
	ePP	59 17	29	i	59 19
	iSKS	13 05 37	29	iP	06 32 21
	iS	06 47	29	iP	09 19 42
	iPS	08.3		eP	14 26 08.6
	ePKKP	11 06		i	09.6
	iR	27.9		iS	40.3
	$\Delta 104^\circ$		30	Magn. $4\frac{1}{4}$	
	Magn. $6\frac{1}{4}$			eP ^{II}	12 46 47
	μ sec			ePP	48 58
	MH	15 20		eSKKP	59 36
24	eP	14 55 36		iSS	13 06.4
25	iP	08 42 36		iSSS	11.3
25	iP	09 41 49		eG	20.9
	i	42 00	30	$\Delta 130^\circ$	
	epP	43 29	30	iP	19 04 37
	isP	44 25	December 1	iP	22 48 13
	iSKP	47 47		iP	05 04 48
	eSKS	51.9		iS	14 18
	$\Delta 128^\circ?$			eL	22.5
	Depth 450 km?				

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
December 2, 1964

ge 3

PLEMENT:

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

Month	Day	Station	Times of P
December	13	WDY	08 09 30 (i 52, i 11 56); GSC 22 10 06
	14	GSC	04 08 43 (pP 09 00); WDY 06 08 33 (i 43)
	15	GSC	00 35 56, 14 17 16; CLC 07 33 09; ISA 15 47 09, 16 42 26 (e 34)
	16	CLC	02 47 36.6, 17 34 27, 20 43 39 (i 44 07), 22 19 47, 22 59 26, 23 10 01 (i 27), 23 17 02; WDY 00 07 45, 10 33 56, 23 14 32
	17	CLC	00 12 52 (pP 13 05), 14 51 12, 16 23 43 (PcP 26 16, ScP 29 59)
	18	CLC	04 14 20 (pP 46, sP 15 03); ISA 13 29 42 (i 57)
	19	WDY	14 16 57 (pP 17 22), 16 27 41 (i 28 23)
	20	GSC	21 34 15; WDY 00 25 13, 01 08 58, 03 02 18, 03 17 39, 03 34 01, 07 33 00, 19 34 28
	21	WDY	00 02 25 (pP 40), 00 45 04 (e 46 15), 01 48 31, 02 34 51, 02 45 47 (i 57), 02 49 53, 04 20 10 (i 20, e 22 19, i 23 29), 06 31 47 (i 32 17), 12 08 12 (i 24), 12 51 43 (e 58), 14 00 27, 15 42 31 (i 38), 15 53 56 (i 54 05), 22 59 21, 23 02 39 (i 03 02, i 03 08), 23 39 33
	22	WDY	00 13 04 (i 10), 02 53 36 (pP 58), 05 23 59 (i 24 04), 05 35 41, 14 35 55, 20 16 47 (pP 57)
	23	WDY	09 14 25, 10 59 20 (e 30), 12 58 53; GSC 22 34 21
	25	GSC	00 03 33 (i 37, i 46)

Violet M. Taylor
Seismological Assistant

Dec 2 - 9^u

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 10, 1964



ADDITIONAL
 November 23

Tinemaha:
 IP 23 52 20.1
 IS 27.1
 Magnitude 3
 IP 23 52 37.4
 IS 45.1
 Magnitude 4
 Haiwee:
 IP 23 52 38.9
 IP 52 55.0
 IS 53 15.0
 29 Barrett:
 IP 14 25 42.8
 IS 55.5
 Hayfield:
 IP 14 25 39.5
 IS 49.7
 Palomar:
 IP 14 25 45.6

December 6

IP 00 01 28
 IpP 39
 eS 09.4
 IP 00 05 48
 IpP 59
 eS 13.6
 IP 09 11 55
 compression from southwest
 ePP 15.4
 eS 22.9
 eG 36.1
 IR 40.9
 Δ 92° Magn. 6 3/4

CONTINUATION
 December 2

eP 13 25 46
 i 59
 eS 31 48
 3 IP' 04 09 59
 i(P2') 10 48
 IPP 14 24
 eSS 34.4
 eSSS 40.7
 eR 05 06.1
 Δ 163°
 4 eP 02 00 58
 eS 05 55
 eL 08.4
 4 eP 16 02 05
 eS 13.8
 eSS 19.6
 eG 27.9
 Δ 97°
 4 IP 21 24 47
 i 59
 5 IP 05 25 52
 5 eP 19 56 27
 eG 20 03.6
 eR 04.7
 5 IP 22 41 33
 IpP 44

6

7

7

8

8

9

μ sec
 PZ 1/2 1
 PH 1/4 1
 MH 3 1/2 20
 IP 19 00 47
 eS 07 19
 eG 11.9
 eR 14.2
 IP 04 18 57
 eS? 21.9
 IP 18 01 58
 eS 12 06
 ePS 12.8
 eG 22.8
 IR 26.1

Δ 80°
 μ sec
 MH 3 20
 IP 13 46 55
 IpP 48 59
 IsP 50 10
 eS 56 06
 IS 15
 eSP 56.9
 SS 59.8
 ISS 14 01.8
 eG 08.0

Δ 78°
 Magn. m = 6
 μ sec
 PZ 0.4 1
 PH 0.4 1
 SH 3 3

NEW
 OBSERVATORY
 16 DEC 1964
 RICHMOND,
 SURREY.

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 10, 1964



Page 2

SUPPLEMENT:

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

November	22	WDY	09 14 13, 18 05 40
	23	CLC	02 40 50; WDY 19 07 19 (i 34), 19 19 16, 20 03 56 (e 05 45), 20 07 18 (e 29), 22 45 11 (i 20)
	24	GSC	15 00 35; CLC 06 46, 22, 09 28 45; WDY 13 20 25 (i 49, i 59)
	25	GSC	07 44 19; CLC 12 54 52, 13 15 41 (e 16 11)
	26	WDY	07 07 52, 10 34 38, 16 43 12
	27	WDY	03 43 54, 05 11 32, 05 46 46 (i 58) 07 59 51, 14 25 01
	28	WDY	13 02 57
	29	GSC	21 08 56 (i 09 00, i 09 12); CLC 03 16 30, 03 33 39 (i 48), 17 17 44
	30	GSC	00 28 21; CLC 07 54 29, 15 51 11, 16 19 10
December	1	CLC	11 59 47 (pP 12 00 03)
	2	CLC	08 30 59, 10 21 41 (i 46), 13 31 44
	3	CLC	09 47 29
	6	GSC	03 26 15 (i 59), 05 52 15 (pP 54 17, sP 55 23), 08 24 20 (i 43)
	7	GSC	16 05 24

Violet M. Taylor
 Seismological Assistant

Dec 7 - 22

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 23, 1964



ADDITIONAL
 November 29

CONTINUATION
 December 7
 9

E1 Centro:

December 17
 17

iP 14 25 30.0
 iS 34.5

iP 04 15 26
 iP 05 29 32
 eS 38 29
 eSS 42.8
 eR 48.8

iP 18 40 23
 iP 16 55 40
 ipP 50
 isP 56 04
 iP 15 21 40
 iS 31 02
 iP 15 22 58
 eS 32 50
 eSS 37.8
 eSSS 41 00
 eG 42.8
 i(R) 46.8

17
 17

$\Delta 70^\circ$
 iP 09 15 31
 iP 14 04 59
 eS 10.0
 eL 11.8

Interpreted as two overlapping shocks, but may be a single deep shock

17

$\Delta 30^\circ$
 iP 23 53 04
 i 16
 i 24
 iS 59 46
 eR 24 05.8

10 eP 23 42 44
 11 eP 06 54 41
 e 59

18

$\Delta 47^\circ$
 eP 19 01 14
 i 22
 eS 02 20

12 iP 07 33 22
 i 32
 eL 59.7

19

Magn. 4 3/4
 eP 04 09 08
 i 14
 eS 10 13
 Magn. 4 3/4

12 eP 10 18 10
 12 eP 21 19 25
 eS 21.4
 iP 00 41 11
 i 19
 iS 47 38
 eG 49.8
 eR 53.6

21

eP 07 41 52

21

e? 17 40 04

$\Delta 40^\circ$
 14 eP¹¹ 02 18 22
 ePP 21 38
 e 32 42
 eSS 38 18
 eR 03 02.4

21

e(L) 52.3

22

iP 18 39 13

22

iP 00 34 14

$\Delta 130^\circ$
 Doubtful

22

iS 41 55

22

i(SP) 05 06.4

15 iP 03 44 11
 15 iP 12 19 32
 i 20 06
 iPcP 22 29
 iS 24 35
 iL 26.8
 eR 29.2
 iScS 30 02
 $\Delta 30^\circ$

22

e(SS) 13.3

22

e(SSS) 17.8

22

$\Delta 130^\circ?$
 iP 08 09 31

22

ipP 52

22

isP 58

22

eScP 14 46

22

eS 16 12

22

eSS 19.8

22

eR 23.2

22

Depth 100 km $\Delta 48^\circ$

22

Magn. 6

22

μ sec

22

PZ 1/4 1/4

22

iP 12 09 25

KEW
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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
December 23, 1964

Page 2

SUPPLEMENT:

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

November	29	WDY	02 49 15, 03 03 59
December	1	WDY	00 08 47, 12 04 17
	2	WDY	08 29 10 (i 31 12), 09 41 04 (pP 24), 11 45 38
	3	WDY	08 30 11, 08 35 40, 19 45 09 (i 14)
	4	WDY	00 50 23 (e 27), 07 54 09, 09 32 49 (pP 33 19), 20 38 04
	5	WDY	05 12 45, 05 25 51, 05 30 36, 10 45 25 (pP 35)
	6	WDY	05 16 39
	7	WDY	05 47 02 (i 06), 20 52 53 (pP 53 20)
	8	GSC	21 04 42 (i 49); WDY 09 25 20 (pP 25)
	9	GSC	11 33 36, 19 21 07 (i 52); WDY 00 56 59
	10	GSC	12 01 08
	11	CLC	13 09 14 (e 21), 16 16 26 (i 18 30), 16 25 57, 16 48 13 (i 20)
	12	GSC	02 31 29, 07 37 17, 10 29 14, 19 57 12 (e 32), 22 27 46 (e 28 04); CLC 19 39 27 (i 35)
	13	GSC	00 26 30 (pP 27 09), 00 39 53 (i 57), 00 41 13 (i 17); CLC 14 37 07 (e 20), 19 25 36 (i 54)
	14	GSC	06 53 39; CLC 13 28 44, 16 04 35 (e 47)
	15	GSC	01 28 17, 02 07 25 (pP 37), 03 27 06, 04 32 33 (i 54), 05 24 26 (pP 37), 08 04 29, 22 41 48; CLC 15 14 29 (e 39)
	16	GSC	04 13 37, 06 26 51, 19 32 32
	17	GSC	04 52 11 (i 31), 15 09 42; ISA 12 13 55, 18 59 41
	18	GSC	06 17 13 (pP 23), 10 59 40, 11 01 51 (pP 02 13), 12 30 28

Violet M. Taylor
Seismological Assistant

With best wishes for the New Year.

Dec 20 - 31 - 1964.

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Hall Bal

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 6, 1965



CONTINUATION
 December 20
 1964

22	iP	21 56 54.4
	iS	57 49.4
	iP	20 55 12.8
	i	14.4
	i!	21.8
	iS	56 02.9

Δ 330 km
 Magnitude 5.6

Epicenter near coast of
 Baja California (Mexico).
 Felt strongly in and near
 San Diego, with some minor
 damage.
 Felt moderately in Imperial
 Valley
 Felt as far as the Los Angeles
 area, chiefly on unstable
 ground or in tall buildings

22	El Centro:	
	iP	20 55 03.7
	iS	23.2
	Riverside:	
	iP	20 55 10.1
	iS	37.7
	Barrett:	
	iP	20 54 50.7
	San Nicolas:	
	eP	20 55 13.8
25	eP	16 34 52
26	eP	08 21 44
	iS	26 18
	iL	28 10

December 26	iP	14 40 31
	ipP	41 03
	isP	16
	iS	48 42
	eL	56.5
	iR	58 55
28	iP	16 27 26
	ipP	29 33
	iS	36 51
	isS	40 26
	Δ 85° H 600 km	
	Magn. 6¼-6½	

		μ	sec
	PZ	0.3	1
	PH	0.2	1
	SH	6	10
28	iP	17 14 59	
	i	15 06	
	May be P'P'P' of the preceding		
30	e(P)	10 06 04	
	eS?	14.7	
	e(G)	17.0	
	iR	18.5	
30	iP	15 39 21	
	compression		
30	iP	21 42 22	
31	eP	01 08 43	
	May be S		
31	iP	01 58 56	
31	iP	10 41 32.1	
	iS	52.6	
	Magn. 3½		
	Near Goldstone		

1963 } Jan - Dec Together
 1964 }

Trans. & Hall Bal

Dec 10 - 31

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
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PROVISIONAL READINGS AT PASADENA
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January 6, 1965



Page 2
SUPPLEMENT:

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

Year	Month	Day	Station	Time
1964	December	10	WDY	18 39 50
		11	WDY	03 27 45 (i 52), 13 14 46 (i 50)
		13	WDY	13 29 39 (i 32 40), 14 02 28
		14	WDY	17 23 32, 21 35 45 (e 59, i 38 38)
		15	WDY	02 25 03
		16	WDY	04 10 07, 19 42 14
		17	WDY	00 56 50, 14 45 09, 21 55 02
		18	WDY	00 23 40 (e 24 07), 06 42 22 (i 43 48), 07 01 59 (i 02 09); BAR 19 00 31.6 (i 41.1, eS 01 20)
		19	BAR	04 08 31.8 (i 41.2, S 09 22); GSC 06 54 19 (e 25, e 44), 13 05 50
		20	GSC	11 37 31, 11 39 21, 13 43 24 (pP 36), 15 56 22 (pP 47)
		21	GSC	08 30 47, 17 42 51 (i 56, i 45 36), 18 25 42, 18 38 44 (pP 39 09, PcP 41 15)
		22	GSC	00 57 31 (pP 47), 04 55 19, 10 31 15, 11 41 45, 21 55 29.8
		23	GSC	07 54 33 (pP 55 24), 09 25 03 (i 11)
		25	GSC	08 59 42 (e 09 00 14, i 00 27), 17 13 43, 18 08 19 (pP 55)
		26	GSC	23 56 49
		29	GSC	00 52 26 (i 35), 01 48 20 (i 25), 06 43 15 (i 20), 06 47 15 (i 28), 10 17 46 (i 18 13), 23 10 34 (e 12 29)
		30	GSC	09 34 56 (i 35 04), 13 21 49 (i 22 31), 13 27 39, 16 17 44, 21 42 31 (pP 44 39, sP 45 51)
		31	GSC	10 41 10.3 (S 13.9)

Violet M. Taylor
Seismological Assistant

KEW
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11 JAN 1965
RICHMOND,
SURREY.