

Jan 1 - 10 . 1965



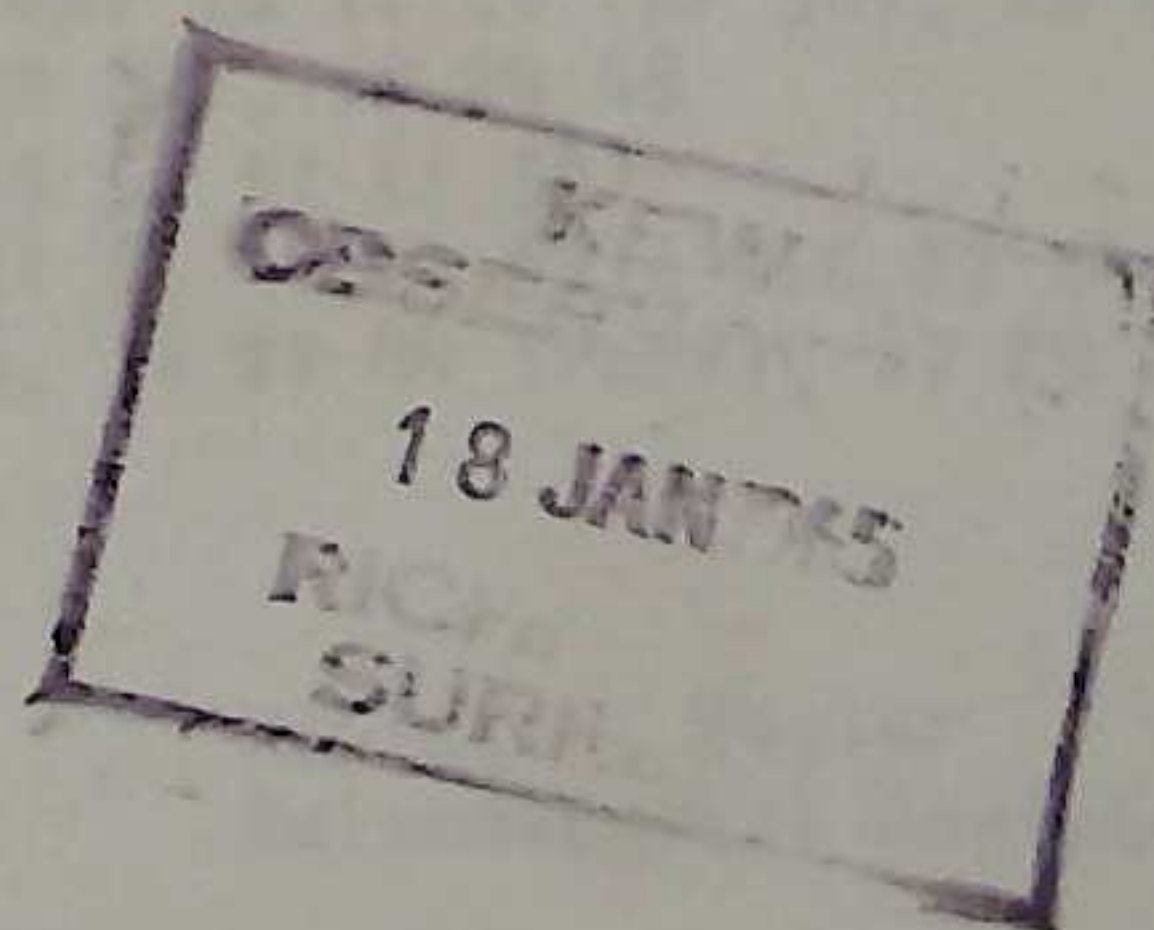
SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 13, 1965

CONTINUATION

Station	Type	Time	Mag.	Notes
January 1	iP	07 41	43.1	January 5
	iS		51.3	
	Magn.	4		
	Felt at Fontana and Riverside			
1	Riverside:			5
	iP!	07 41	36.1	
	iS!		39.1	
1	Pasadena:			
	iP	08 04	28.3	
	iS		35.4	
	Magn.	4 1/4		
	Felt strongly at Fontana, Riverside and Arrowhead, slightly in the Los Angeles area			
1	Riverside:			5
	iP!	08 04	21.4	6
	iS!		24.4	6
1	King Ranch:			
	iP	09 57	26.9	6
	i		32.9	6
	iS		57.4	6
1	Woody:			
	iP	09 57	31.3	
	iS		58 00.6	
2	Pasadena:			7
	iP	13 56	37	
	iS	14 06	46	
	eSS		12.3	8
	eG		17.7	
	eR		22.0	
	Δ 87°			
		μ	sec	
	PZ	0.3	1.5	
2	iP	17 30	08	
2	iP	18 22	34	
4	iP	03 48	31	
4	iP	07 18	38	
5	iP	01 13	29	
	e		14 15	
5	iP	01 38	06	
		μ	sec	
	PZ	0.3	3	
	SH	4	17	
	MH	8	20	
	MZ	6	20	

iP	13 59	26
i		39
e	14 00	05
iP ₂	18 17	44
iS		27 30
Δ 78° Magn. 6 3/4		
(Surface waves disproportionately small)		
	μ	sec
PZ	0.6	2
PH	0.3	2
SH	5	20
MH	5	20
iP	20 57	26
ipP		58 18
iP	23 11	35
iP	01 13	14
iP	02 04	12
i		52
iS		07 31
iL		08.6
eP	09 31	14
iP	11 39	43
iP	18 34	14
ipP		31
isP		40
iP	16 02	03
eS		06.6
eG		08.1
eP	21 16	40
iS		23 42
eSS		27.3
eR		29.8
	μ	sec
PZ	0.3	3
SH	4	17
MH	8	20
MZ	6	20

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 13, 1965

Page 2

January 9	e(S)	14 00 11	January 10	iP	16 50 33
	eSS	05.3	11	iP	07 01 20
	eR	19.7		e	33
10	iP	07 50 56	11	eP	07 32 22
	ePS?	08 03.9		e	31
	eG	18.4	11	eP	17 04 08
	eR	22.0		i	15
10	iP	13 49 06	11	iP	20 25 59
	compression from west		12	eP	04 53 00
	iPP	52 22	12	eP	13 46 55
	iS	59 10		ePP	52 01
	iSS	14 04.9		iPS	14 01 48
	iSSS	08.3		eG	19.8
	iG	11.8		eR	29.0
	iR	14.4		Doubtful.	
	eP'P'	15 18		Δ 120°?	
	Δ 84° Magn. 6 3/4				
		μ sec			
	PZ	3 8			
	PH	2 8			
	SH	14 25			
	MH	50 30			
	MZ	50 30			

SUPPLEMENT:

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

December 20	WDY	08 57 03?
1964 22	WDY	02 45 10 (i 17), 12 18 55, 15 45 07
23	WDY	10 21 25, 10 28 40, 20 00 46 (i 58)
24	WDY	07 29 53, 18 58 40 (pP 59 05), 19 57 19 (pP 35), 20 06 57
25	WDY	00 26 07, 10 02 39 (pP 03 06), 14 02 41 (pP 53)
26	WDY	18 45 31? (i 43)
27	WDY	10 23 25 (pP 36), 17 57 19 (i 18 01 28)
29	WDY	03 42 16, 15 29 36; GSC 02 13 21 (i 29), 13 02 39 (i 47)
30	WDY	16 48 03, 17 01 14 (pP 31)
31	GSC	17 54 09; WDY 01 53 15, 12 59 22
January 1	GSC	07 41 56.4 (S 42 13.1), 08 04 41.8 (S 59.0), 20 01 38 (i 47, eS 03 35), 21 51 37; WDY 10 11 20 (pP 30), 20 09 04
2	GSC	19 28 14; WDY 09 48 13 (pP 50 21), 10 24 48
3	GSC	02 23 32 (i 37), 14 00 07, 15 52 37 (i 54)
4	GSC	20 54 58 (pP 55 38), 22 37 31 (i 40, i 47); CLC 21 24 17
5	GSC	01 10 40, 01 14 01, 14 24 40, 14 27 44 (PcP?), 17 29 14, 22 10 26
6	CLC	09 52 27, 16 39 29
7	GSC	13 06 34

Violet M. Taylor
 Seismological Assistant

1965 Jan 12-16



KEW
OBSERVATORY
25 JAN 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
January 20, 1965

CONTINUATION

January	12	eP	19 08 36	January	17	iP	02 20 01
	13	eP	08 52 49			i	10
	14	eP	08 34 32			eS	25 09
		i(pP)	41			eR	28.8
		iS	42 01	17	iP	08 31 08	
		iScS	44 15		eS	40.4	
		iGN	47.8		eR	51.8	
			μ sec	17	iP	09 12 28	
		PZ	0.05 2	17	iP	10 54 49	
		SH	4 20			dilatation from	
		MH	4 20			southwest	
	15	iP	03 41 26		ipP	56 51	
	15	iP	06 13 24		iS	11 04 21	
	15	eSKS	23 30 15		esS	08.2	
		eSS	40 51		Δ 78°	Depth 600 km	
		eSSS	46 45			μ sec	
		eL	51.8		PZ	0.3 1	
		iR	56 41		PH	0.2 1	
		Doubtful. Δ 127°?		17	iP	21 16 22	
	16	iP	06 47 29		i	17 20	
		ipP	40		i	19 20	
	16	iP'	11 51 14			μ sec	
		ePP	52 44		PZ	0.2 1	
		ePS	12 02.9	18	eP	00 15 24	
		iSS	09 31		i	41	
		eG	21.8		i	16 08	
		Slightly doubtful.			iSKS	25 56	
		Δ 120°?			iPKKP	31 42	
	16	iP	13 03 09		e(R)	42.8	
					Δ 102°		
				19	iP	15 30 30	
					epP	31 06	

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

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

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 20, 1965

Page 2

SUPPLEMENT: (Continued)

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

January	10	GSC	03 05 24, 03 52 40, 08 26 28, 09 09 17, 13 24 43, 19 50 41 (pP 51 22); WDY 03 09 46, 20 24 31, 20 44 05
	11	GSC	04 16 24 (e 54), 04 22 35, 10 51 29 (pP 39), 11 37 28, 11 48 04, 13 43 57, 14 59 08; CLC 20 25 54 (pP 28 44), 22 57 27; WDY 18 11 16
	12	GSC	20 41 43; CLC 14 46 51, 16 07 41; WDY 02 51 55 (i 52 06), 03 28 39, 04 43 46, 09 53 57
	13	WDY	00 36 10, 02 29 31; CLC 03 59 24, 17 08 52 (e 09 08)
	14	GSC	01 21 14, 01 46 01, 12 27 34, 12 31 55; 22 13 22 (i 36, i 14 25); WDY 09 05 13, 13 01 04, 14 12 09
	15	GSC	04 04 26 (pP 05 18)

Violet M. Taylor
 Seismological Assistant

Jan 21 - 29

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
February 3, 1965

CONTINUATION

January 21			January 29			January 29			January 29		
	iP	06 22 59				iP	09 45 13				
	eG	46.5				compression					
23	iP	20 15 13				eS	53 03				
24	eP	00 25 59				eSS	57.2				
	iP'	29 53				eG	59.9				
	iPP	30 44				$\Delta 59^\circ$					
	i(SKS)	37 00		30		iP	04 45 44				
	iSP	39.7				i	48				
	i	40 26				i(pP)	46 02				
	ePKKP	44		30		eP	17 56 56				
	eSKKP	44 56				e	57 03				
	iR	01 02.7		30		iP	18 17 42				
	$\Delta 110^\circ$			31		iP	13 08 53				
	Magn. $7\frac{1}{2} - 7\frac{3}{4}$					e	09 09				
		μ sec				eS	18 01				
	PZ	12 14		31		eP	15 08 49				
	PPZ	5 5				e	09 17				
	MH	100 20		31		eP	23 44 53				
	MZ	150 20				e	45 09				
25	iP	16 56 57				e	20				
26	iP	23 59 34		February 1		iP	05 38 13				
28	iP	02 56 17				dilatation					
28	iP	04 09 37				i	38 23				
28	eP	16 23 12				ipP	39 56				
	eS	29.4				isP	41 14				
	eG	32.6				iS	47 27				
	eR	33.9				esS	50.2				
	$\Delta 41^\circ$					$\Delta 80^\circ$					
29	eP	00 14 29				Depth 450 km					
	i	46				μ msec					
	iG	17.1				PZ	0.4 1				
	eR	18.0				PH	0.2 1				
	$\Delta 16^\circ$					2 iP	04 36 05				
29	eP	02 25 20				i	16				
	e	37				2 eP	10 09 59				
	iG	27.5				e	10 40				
	eR	28.3									
	$\Delta 14^\circ$										

KEW
OBSERVATORY
- 8 FEB 1965
RICHMOND, SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
February 3, 1965

Page 2

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

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

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 148

January-1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965
January

1 07 41 43.1 (S 51.3), 08 04 28.3 (S 35.4). (Riverside 07 41 36.1, S 39.1, 08 04 21.4, S 24.4)

2 13 56 37 (S 14 06 46), 17 30 08, 18 22 34

4 03 48 31, 07 18 38

5 01 13 29 (e 14 15), 01 38 06, 13 59 26 (i 39), 18 17 44 (S 27 30), 20 57 26 (pP 58 18), 23 11 35

6 01 13 14, 02 04 12 (i 52, S 07 31), 09 31 14, 11 39 43, 18 34 14 (pP 31, sP 40)

7 16 02 03 (S 06 42±)

8 21 16 40 (S 23 42)

9 PS? 14 00 11

10 07 50 56 (PS 08 03 54±), 13 49 06 (PP 52 22, S 59 10), 16 50 33

11 07 01 20 (e 33), 07 32 22 (e 31), 17 04 08 (i 15), 20 25 59

12 04 53 00, 13 46 55 P? 13 52 01 (S? 14 01 48), 19 08 36

13 08 52 49

14 08 34 32 (pP 41, S 42 01, ScS 44 15)

15 03 41 26, 06 13 24, SKS? 23 30 15 (SS? 40 51)

16 06 47 29 (pP 40), 11 51 14 (PP 52 44, PS 12 02 54±), 13 03 09

17 08 31 08 (S 40 24 ±), 09 12 28, 10 54 49 (pP 56 51, S 11 04 21, sS 08 12±), 21 16 22 (i 17 20, i 19 20)

18 00 15 24 (i 41, i 16 08, SKS 25 56, PKKP 31 42)

19 15 30 30 (pP 31 06)

21 06 22 59

23 20 15 13

24 00 25 59 (P¹¹ 29 53, PP 30 44, SKS 37 00, SP 39 42±, PKKP 40 44, SKKP 44 56)

25 16 56 57

26 23 59 34

28 PP 02 56 17, 04 09 37, 16 23 12 (S 29 24±)

29 00 14 29 (i 46), 02 25 20, 09 45 13 (S 53 03)

30 04 45 44, 17 56 56, 18 17 42

31 13 08 53 (e 09 09, S 18 01), 15 08 49 (e 09 17), 23 44 53

KEW
OBSERVATORY
25 MAY 1965
SURF

1965

Supplement:

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

January	1	GSC	07 41 56.4 (S 42 13.1), 08 04 41.8 (S 59.0), 20 01 38 (i 47, eS 03 35), 21 51 37; WDY 10 11 20 (pP 30), 20 09 04, 21 10 27; CLC 11 45 51
	2	GSC	19 28 14; WDY 09 48 13 (pP 50 21), 10 24 48
	3	GSC	02 23 32 (i 37), 14 00 07, 15 52 37 (i 54); WDY 23 20 11 (pP 25)
	4	GSC	20 54 58 (pP 55 38), 22 37 31 (i 40, i 47); CLC 21 24 17; WDY 08 30 51, 16 41 56
	5	GSC	01 10 40 (SKP 01 14 01), 14 24 40, 14 27 44 (PcP?), 17 29 14, 22 10 26; WDY 13 13 38 (pP 42), 21 27 14
	6	CLC	09 52 27, 16 39 29; WDY 08 33 24, 18 23 51
	7	GSC	13 06 34; WDY 05 10 25 (e 35), 05 53 29
	8	GSC	19 08 38; CLC 20 37 57 (pP 38 01), 23 29 24 (pP 30); WDY 07 16 58, 11 32 14, 12 05 21, 13 02 48, 18 14 24 (pP 15 44)
	9	ISA	00 46 32, 00 52 53; GSC 01 55 48 (i 56), 04 41 52, 06 58 53, 08 09 42, 11 32 42, 12 15 19, 13 46 56, 17 21 55, 20 04 32; CLC 01 52 54, 03 40 20 (i 40 31); WDY 00 25 52 (pP 59), 08 42 17 (pP 23), 12 50 31 (i 38)
	10	GSC	03 05 24, 03 52 40, 08 26 28, 09 09 17, 13 24 43, 19 50 41 (pP 51 22); WDY 03 09 46, 20 24 31, 20 44 05
	11	GSC	04 16 24 (e 54), 04 22 35, 10 51 29 (pP 39), 11 37 28, 11 48 04, 13 43 57, 14 59 08; CLC 20 25 54 (pP 28 44), 22 57 27; WDY 18 11 16
	12	GSC	13 51 12, 20 41 43; CLC 14 46 51, 16 07 41; WDY 02 51 55 (i 52 06), 03 28 39, 04 43 46, 09 53 57
	13	WDY	00 36 10, 02 29 31; CLC 03 59 24, 17 08 52 (e 09 08)
	14	GSC	01 21 14, 01 46 01, 12 27 34, 12 31 55, 22 13 22 (i 36, i 14 25); WDY 09 05 13, 13 01 04, 14 12 09, 22 05 50
	15	GSC	00 00 09 (i 17), 04 04 26 (pP 05 18), 18 47 49 (e 51 43), 19 40 09, 20 24 27 (i 27 37), 20 55 59, 23 30 24 (i 51); WDY 15 39 09
	16	GSC	00 54 13, 01 22 02, 06 06 29, 10 57 04, 16 31 04, 21 36 25
	17	GSC	11 06 31, 19 29 54 (pP 30 00), 21 00 37 (e 04 04); CLC 01 04 45; WDY 11 26 45, 12 12 03 (pP?)
	18	GSC	13 22 27; CLC 03 59 17, 16 10 12; WDY 22 49 20
	19	GSC	17 33 42, 21 17 35; CLC 02 05 03, 09 20 49
	20	GSC	01 46 03, 06 36 15 (i 21); CLC 09 31 31 (i 40), 20 37 45 (pP 38 01); WDY 16 48 22 (i 59)
	21	CLC	00 22 30 (pP 37), 02 16 16, 16 00 27; WDY 11 48 17, 16 46 05 (pP 17), 17 10 09 (i 13), 21 48 49, 22 20 18
	22	GSC	05 30 07 (pP 31 02); WDY 11 03 28, 22 14 27
	23	WDY	08 15 03, 16 37 57 (pP 38 05), 22 03 00 (pP 14), 23 43 54, 23 53 06 (pP 23)
	24	WDY	01 28 18 (i 29 12), 01 33 14, 08 15 21 (pP 16 04), 16 17 39, 16 45 49
	25	WDY	01 23 16, 04 26 15 (pP 19), 10 15 15 (pP 43)

Supplement: (Continued)

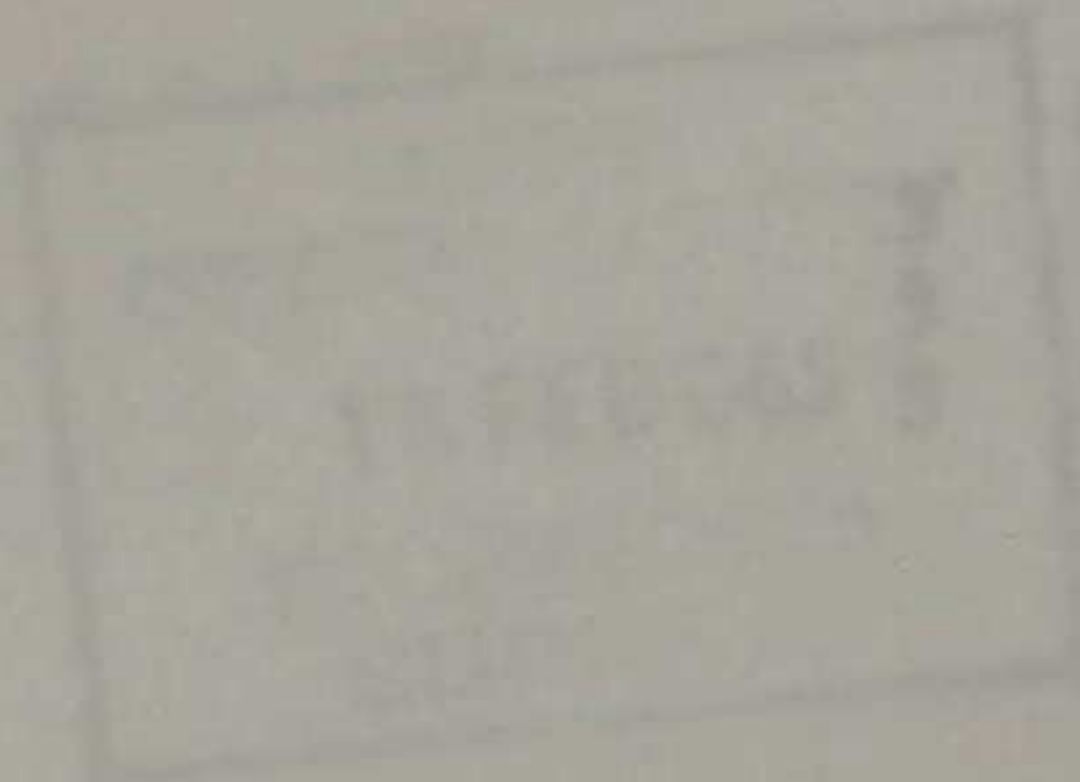
1965

January

- 26 GSC 01 25 55 (pP 26 24), 02 05 21, 05 06 31, 06 47 50; WDY 10 53 40, 11 25 32 (e 28 19), 14 26 43
- 27 GSC 20 06 58, 20 25 03; WDY 06 23 15, 11 18 25, 20 53 32
- 28 GSC 02 53 03? (i 12, PP 02 56 19), 05 45 08, 22 22 00; CLC 00 38 01 (e 09), 02 33 26
- 29 GSC 03 39 39, 07 01 20; WDY 22 40 10 (i 18, i 27)
- 30 WDY 08 53 20 (pP 33), 13 47 11 (pP 21), 15 59 31 (pP 41), 18 45 48;
GSC 17 53 40 (i 55), 17 57 08
- 31 GSC 03 15 42, 11 11 20 (e 30), 23 59 08; WDY 00 13 40

April 21, 1965

Violet M. Taylor
Seismological Assistant



Feb 4 - 9. 1965



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 February 10, 1965

CONTINUATION
 February 4

	e(P')?	03 43 39
	e	57
	e(PP)	45 46
	ISS	04 02 37
	IG	16.6
	iR	22.8
	Doubtful, $\Delta = 128^\circ$?	
4	eP	05 02 37
4	eP	05 09 58
	i	10 09
	i!	25
	eS	17.7
	eG	22.4
	Distance $50^\circ \pm$	
	Magnitude $7 \frac{3}{4}$	
	Probably a multiple shock, with P of the chief event at 05:10:25	
		μ sec
	MH	1300 20
	For the numerous small aftershocks see the special supplement	
4	IP	08 49 12
	i	17
	IS	56 11
	Magn. $6 \frac{3}{4} = 7$	
	(Largest aftershock)	
		μ sec
	PZ	2 2
	SH	4 3
	MH	100 20
4	IP	12 15 12
	i	15
	i	27
	IS	22 32
	Magn. $6 \frac{1}{2}$	
4	IP	14 27 39
	i	47
	IS	35 04
	Magn. $6 \frac{1}{4}$	

February 4	eP	19 55 11
	IS	20 04 18
	eG	11.7
	eR	15.2
	Not an aftershock of the major earthquake at 05h preceding.	
		μ sec
	MH	10 20
6	IP	01 47 33
	IPP	49 00
	IPcP	59
	IS	53 16
	IG	55 50
	IR	58.1
	$\Delta 37^\circ$	
	Magn. $6 \frac{1}{2} = 6 \frac{3}{4}$	
		μ sec
	PZ	3 4
	PH	2 4
	SH	14 8
	MH	80 20
6	IP	16 57 29
	IS	17 03 09
	IG	05 16
	$\Delta 37^\circ$ Magn. $6 \frac{1}{2}$	
		μ sec
	PZ	2 4
	SH	7 9
	MH	120 15
7	IP	09 34 25
	i	30
	IS	41 21
	eG	47.7
	Magn. $6 \frac{1}{4}$	
		μ sec
	PZ	$\frac{1}{4}$ 1
	MH	7 20
8	IP	15 56 21
	IPp	33
	IS	16 04 01
	Magnitude $5 \frac{1}{2}$	
		μ sec
	MH	6 20
	IP	04 43 30
	IP	05 54 27
	IP	12 34 11

KEY
 OBSERVATIONS 9
 15 FEB 1965 9
 RICHMOND
 SURREY

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 February 10, 1965



Page 2

SPECIAL SUPPLEMENT: Readings at Pasadena for smaller shocks following the Aleutian earthquake of Feb. 5, 05^h (Readings difficult and incomplete until about 07^h)

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

5 00 40 52 (i 41 18), 00 51 28 (i 34, i 38), 01 15 12 (i 25),
 02 37 33 (i 42), 02 42 42 (i 53), 03 07 24 (i 34, i 08 16),
 03 11 35 (i 49, i 56), 04 10 35 (i 45), 04 55 40 (i 49), 05 14 19,
 05 15 34, 05 19 27, 05 22 27 (i 36, i 53), 05 49 07 (i 15),
 06 08 43 (i 49, i 54), 06 34 09 (i 19), 06 38 57 (i 39 22),
 06 40 38 (i 46 e 52), 06 48 45 (i 53, i 49 00, L 07 00 06±;
 magn. 6 1/4 - 6 1/2), 06 53 10 (i 17), 07 16 50 (i 17 02), 07 28 10
 (i 15 i 19 i 45), 07 34 14 (e 24), 07 38 10 (i 22 i 29), 07 40 22,
 07 59 32, 09 00 18 (e 25), 09 41 05 (i 20 i 51, ScP 46 14,
 s 48 17; magn. 6 1/2), 09 59 28, 10 07 49 (i 55, i 08 01), 10 17 40
 (e 49), 10 46 20 (i 26), 10 59 32, 11 54 38 (i 46), 12 02 54
 (i 03 02), 12 38 07 (e 20), 13 04 43 (e 52 i 56), 13 14 50 (i 58),
 13 25 24 (e 37), 13 47 45 (i 52 i 57), 14 00 50 (i 56, i 01 01),
 14 17 21 (i 26 i 31), 14 37 40 (i 49), 14 47 11 (i 19 i 25),

SPECIAL SUPPLEMENT: (Continued)

- February 5 16 49 03 (i 11), 17 00 04 (e 13), 18 25 08 (i 17), 18 30 19
(e 28), 18 33 02 (pP 12), 18 50 07 (pP?) 19 09 52 (i 10 01),
20 47 54 (i 48 01), 20 56 08, S 21 03 23, 21 57 03 (i 57 10),
22 24 47 (pP 25 00)
- 6 00 17 13, 01 24 52 (pP 24 57), 01 47 33 (PP 49 00, PcP 49 59,
S 53 16), 03 48 08 (pP 16), 04 11 44 (i 51), 04 27 07, 05 41 02
(pP 14), 06 32 41 (pP 49), 07 23 48 (i 51, pP 57), 08 55 50
(i 53 i 58), 11 41 11, 12 31 18 (pP 29), 13 24 09, 14 20 07
(i 10, pP 18), 16 57 29 (S 17 03 09), 18 16 00 (i 13), 18 19 17
(i 25 i 41), 22 43 54, 23 32 27, 23 57 18 (pP 27)
- 7 01 09 20 (i 27), 02 26 10 (i 21, PcP 28 12, S 33 25), 04 20 12
(i 18), 04 44 43 (i 51), 04 45 47 (i 54), 06 07 50 (i 08 03),
08 49 01 (i 04 i 10), 09 34 25 (i 30, S 41 21), 09 53 05 (i 10),
11 32 20 (i 29), 11 54 37 (i 52, i 55 07), 12 30 30 (i 37),
13 29 36, 14 56 07 (i 14), 17 22 10 (i 19 i 34), 19 38 58
- 8 06 43 11 (i 16), 07 23 06, 07 32 05, 09 46 34, 10 18 14 (pP 20),
13 43 16 (e 29), 15 50 28, 15 56 21 (pP 33, S 16 04 01), 17 46 58
(i 47 07 i 16 i 34)

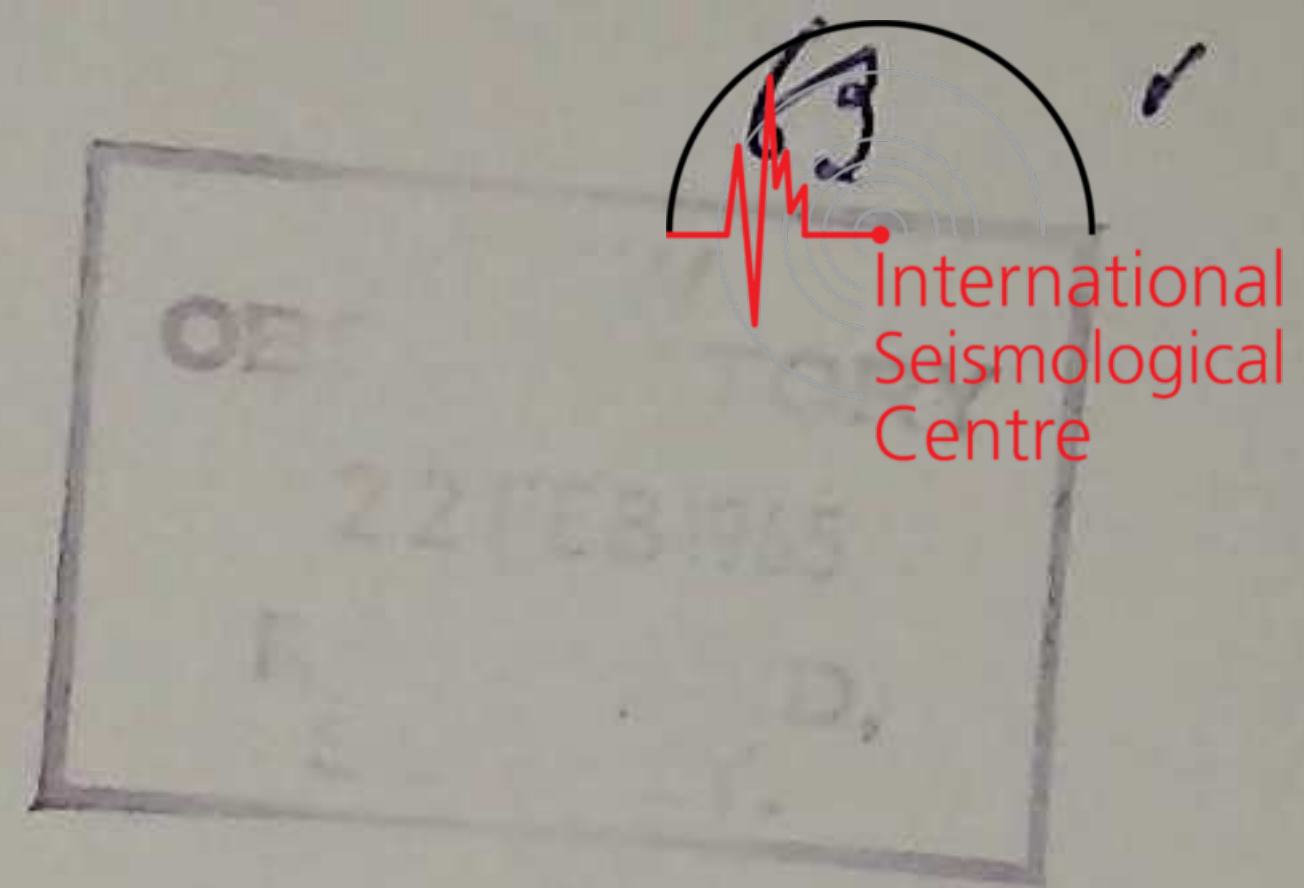
**SUPPLEMENT: Times of P for additional shocks at China Lake (CLC),
Goldstone (GSC) and Woody (WDY)**

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

Violet M. Taylor
 Seismological Assistant

1965 / Feb 9 - 16

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 February 17, 1965



CONTINUATION
 February 4

February 4	IP 05 24 23	February 12	IP 10 52 19
	Earliest identified		iS 53 58
	aftershock of the major		Northern California
	earthquake preceding	12	iP 12 21 22
9	iP 17 46 22		i 29
	i 26	12	eP 12 28 26
9	iP 18 27 24		e 34
	i 27	13	iP 18 17 43
	i 33		ipP 53
9	eL 23 32.7	13	eP 18 25 20
11	eP? 01 13 46		epP 27
	i 14 06	14	eP 04 17 46
	i 14		e 55
11	iP 02 45 12	14	eP 10 47 12
	i 26		epP 21
	i 55	14	iP 19 48 09
	eS 54.9		eS 57.1
	eG 03 05.7		eR 20 08.5
11	iP 13 13 47	14	iP 21 26 32
11	iP (or P') 16 19 22		ipP 44
	i 20 04	15	iP 01 33 42
11	iP 21 53 23.7		ipP 52
	iS 54 16.7		iS 40 36
	Δ 460 km		μ sec
	Magn. $5\frac{1}{2}$ - $5\frac{3}{4}$		PZ $\frac{1}{4}$ 1
12	iP 00 52 08		SH 1 5
	eS 59 21		MH $\frac{1}{4}$ 20
	eG 01 04.6	15	iP 05 10 31
	Δ 50° Magn. $5\frac{3}{4}$		ipP 41
	μ sec		eS 18 00
	PZ $\frac{1}{4}$ 1	15	iP 06 14 04
	MH 4 20		i 11
12	iP 01 04 12	15	eP 06 50 45
	i 15	15	e(SKS) 10 06.1
	i 21		e(S) 03.5
	iS 11 29		i(SS) 14.2
	iG 16.7		eG 22.7
	μ sec		Δ 100° ±?
	PZ 0.1 1	15	iP 11 01 49
	MH 20 20		e 11.9
12	iP 01 44 57		eR 32.7
		16	eP 08 48 37
			iG 50.7
		16	eP 11 01 45
			iG 03.9

SEISMOLOGICAL LABORATORY
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Page 2
SUPPLEMENT:

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

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

SUPPLEMENT: (Continued)

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

Violet M. Taylor
Seismological Assistant

1965. Feb. 16 - 22.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
February 24, 1965

ADDITIONAL
February 12
CONTINUATION

February 16	eP	12 35 54
17	iP	03 01 19
	i	29
17	iP	10 19 52
	i	20 00
17	iP	10 22 10
	i	17
17	iP	10 27 36
	compression	
	ipP	49
	eS	34 44
	eSS	38.2
	eG	38.7
	eR	41.7
	$\Delta 50^\circ$	
	Magn. $6\frac{1}{2}$	
		μ sec
	PZ	0.4 1
	PH	0.3 1
	SH	0.3 4
17	iP	10 48 26
	e	44
17	eP	11 58 06
17	eP	13 01 50
	e	02 00
17	iP	18 35 57
18	eP	02 30 18
18	iP	07 35 55
18	iP	08 42 57
	i	43 06
	i	16
18	iP	09 43 50
	i	44 00
	i	16

February 18	iP	22 41 48
	ipP	42 19
18	iP	23 22 11
	i	18
	i	23
	iS	29 05
	Magn. 6	
		μ sec
	PZ	0.3 $1\frac{1}{2}$
	MH	8 20
18	eP	23 35 34
	e	45
19	eP	19 01 19
	ipP	35
19	iP	03 33 39
	i	48
	i	56
	eS	40 51
19	eP	06 31 03
	e	14
19	iP	10 21 12
20	iP	20 07 30
20	iP	20 52 52
20	eP	22 15 14
20	iP	22 28 55
21	iP	11 25 41
	eS	34 51
	$\Delta 69^\circ$ Magn. 6	
		μ sec
	PZ	0.2 1
	MH	6 20
21	iP	14 20 41
	e	21 08
	i	21
22	iP	09 23 53
	i	24 03
22	iP	14 15 49

KEW
OBSERVATORY
- 1 MAR 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
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 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 February 24, 1965



Page 2

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

SUPPLEMENT CORRECTION: February 8 GSC 06 29 35 (i 45)
 SHOULD READ: 06 28 35 (i 45)

SUPPLEMENT:

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

SUPPLEMENT: (Continued)

February 12 GSC 17 16 35, 18 27 47, 18 50 46, 18 53 57, 22 00 45 (pP 54),
22 15 09 (e 19), 23 27 58 (pP 28 08); WDY 00 07 54
(e 08 17, i 08 34), 01 19 35 (i 43), 07 36 08 (i 22),
09 09 55 (i 10 05), 12 40 43 (i 41 05), 15 46 59

13 GSC 01 10 15, 02 24 14 (i 22 i 28), 02 28 24 (i 58), 02 56 47
(i 57 21), 03 28 47, 03 59 10, 04 54 33, 09 28 24 (i 58),
11 58 34, 12 26 49, 13 00 55, 14 47 54 (i 48 05), 15 17 56
(i 18 05), 15 34 19 (i 27 e 38), 18 08 54, 22 42 08
(e 20 i 41)

14 GSC 02 23 45, 07 00 24 (i 39), 18 59 37; WDY 00 18 54 (i 19 01),
00 34 02, 00 36 37 (e 47), 00 49 31 (e 49), 06 07 41
(i 44 i 50), 09 08 50 (i 59 i 09 04), 10 01 28, 11 54 01
(i 10), 12 10 06 (i 14), 12 30 08 (i 19), 12 36 32
(i 34 i 42), 14 03 33 (i 39), 15 44 48, 15 56 47 (i 57 04),
16 02 19, 16 04 55 (i 05 04), 17 10 36 (i 41), 17 51 34,
18 06 25 (i 30 e 45), 18 19 51 (i 20 02), 18 55 19 (i 30)

15 GSC 06 39 07, 18 21 35 (e 47); WDY 01 41 46 (i 55), 06 32 42,
07 27 50 (i 58), 09 50 10 (i 21 i 30), 10 23 29, 10 57 41,
12 47 51, 13 06 50, 14 43 05, 14 53 42 (e 54 15), 15 11 43,
15 50 08 (i 21)

16 GSC 00 31 21, 00 55 19 (i 37), 01 03 41 (i 47), 09 02 35
(i 45), 09 39 54 (i 40 05), 09 50 31, 12 25 58? (i 26 21),
14 27 35, 14 52 26, 20 42 10 (i 17 i 24), 21 18 37 (i 49),
22 39 42

17 GSC 00 16 09, 00 40 12, 00 42 02, 00 59 20 (i 22 i 39),
01 09 22 (pP 32), 03 34 13, 04 08 09, 04 59 35, 07 18 03,
08 40 16, 08 44 26, 08 52 09, 09 20 15 (i 26), 09 45 44,
12 14 03 (i 31), 13 12 07 (i 12 i 20), 13 16 47, 13 50 55,
15 15 25 (e 35)

18 GSC 01 34 50 (e 35 00), 01 46 03 (i 11), 04 03 52, 04 05 18,
05 03 38 (e 45), 09 20 15 (e 27), 10 53 35, 12 20 34
(i 42), 12 52 04, 14 20 20, 17 50 04, 19 36 38 (i 42),
22 34 48, 22 58 32 (e 48)

19 GSC 01 57 04, 08 04 03, 09 06 58, 09 30 47 (i 50), 09 46 57
(e 47 24), 13 48 33 (i 43), 14 56 38 (i 46)

Violet M. Taylor
Seismological Assistant

1965 Feb 23 - Mar 1.



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 March 3, 1965

CONTINUATION

February 23

Date	Station	Time	μ	sec	Notes	
February 23	IP	22 23 24			dilatation from southeast Depth 40 km Magn 7 $\frac{1}{4}$ Δ 76°	
	ipP	23 36				
	iS	32 51				
	iSS	37.7				
	iG	43 29				
	iR	47.6				
	PZ	2	3			
	SH	25	20			
	MH	100	20			
	MZ	70	20			
	24	iP	08 15 32			
		iS	20 43			
		eL	23.7			
		MH	11	20		
	24	iP	21 02 49			
	i	55				
24	iP	21 32 00				
25	iP	01 45 36				
25	iP	05 04 39				
	iS	15 47				
	iPS	17.1				
	eSS	22.1				
	eG	29.3				
	eR	33.3				
	Δ 94° Magn. 6 $\frac{1}{2}$					
	PZ	$\frac{1}{4}$	1			
	MH	17	20			
25	iP	05 31 18				
	ipP	27				
	iPcP	32 25				
	iS	38 36				
	Δ 51°					
February 25	IP	25			dilatation from southeast P motion is long-period, Magn. 5 $\frac{1}{2}$ ± Aftershock of preceding	
	ipP	25				
	iP	25				
	ipP	25				
	iP	25				
	ipP	25				
	iP	25				
	ipP	25				
	iP	25				
	ipP	25				
	iP	25				
	e	25				
	eL	26				
	iP	26				
	iP	26				
iS						
iG						
iR						
	Δ 76°					
	MH	5	20			
	iP	23 44 51				
	iScP	49 51				
	iS	51 43				
	iP	07 48 17				
	dilatation from southeast					
	iL	49 48				
	iL	10 56 08				
	iP	07 34 07				
	i(pP)	25				
	eS	44 50				
	eL	58.6				
	MH	5	20			
	eP	08 00 10				
	(orP'P'?)					
	iP	09 21 58				
March						

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 - 9 MAR 1965
 RICHMOND,
 SURREY

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 3, 1965

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

February 16	WDY	01 51 05, 01 53 13, 03 11 15, 07 42 04 (i 12); 10 50 19 (1 42 1 48), 18.21 47
17	WDY	07 32 41 (pP 51), 10 09 39 (i 50), 11 12 56, 18 33 17 (pP 25), 22 22 43 (pP 52)
18	WDY	06 26 03, 07 34 39 (pP 49), 13 47 29
19	GSC	18 29 56 (e 31 46), 23 22 36, 23 49 17 (i 26 i 32);
	WDY	03 16 31 (i 36), 04 55 23 (i 36 i 40), 05 18 03 (pP 14), 08 23 31, 19 00 26
20	GSC	02 34 02, 03 47 28, 04 18 20, 05 26 45 (i 58), 05 28 31, 06 24 09, 06 34 16 (i 22), 09 34 12, 10 46 24 (i 30 i 37), 11 00 18, 11 42 07, 15 01 31 (i 41), 17 55 07, 18 36 55, 18 38 19, 20 16 46, 21 21 13; WDY 02 16 54 (e 17 08), 09 20 28, 10 51 35 (i 54 46), 16 39 22, 22 24 58
21	GSC	00 45 15 (i 24 e 42), 03 03 36 (i 45), 04 28 44 (i 29 04), 04 49 49 (i 50 06, e 50 16), 05 55 09 (i 26), 06 00 48 (i 01 01, i 01 08), 10 13 00 (i 08), 10 41 18, 12 04 33, 12 14 50 (i 15 02), 13 32 00, 14 11 23, 14 20 41 (pP 21 09, sP 21 20), 16 18 09 (s 19 42), 17 20 57, 19 53 29, 22 40 16
22	GSC	02 26 45, 03 37 35, 04 00 19 (pP 28), 04 55 21, 05 40 54 (pP 41 04), 07 36 15 (i 26 i 31), 11 01 15, 11 27 12 (i 30), 12 00 55 (i 01 28), 21 50 32
23	GSC	04 01 02, 07 16 14, 08 53 23
24	GSC	00 00 58, 01 19 32, 08 39 36, 09 43 37, 17 15 33 (pP 41);
	CLC	23 07 30 (pP 43, sP 48)
25	GSC	01 22 15, 02 07 23 (e 27), 02 09 03 (e 11), 03 16 58, 03 42 44 (e 56, i 43 05), 04 04 24, 05 40 12 (pP 22), 05 55 52, 05 55 56 (pP 56 06), 06 00 28, 06 37 48, 09 28 40 (i 43), 12 36 33, 13 44 24, 15 04 33 (i 44)

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California 91105

PASADENA PRELIMINARY BULLETIN NO. 149

February - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965
 February

- 1 05 38 13 (pP 39 56, sP 41 14, S 47 27)
- 2 04 36 05 (i 16), 10 09 59 (pP 10 40)
- 4 03 43 39 (e 57, PP 45 46, SS 04 02 37), 05 02 37, 05 09 58 (i 10 09, i! 10 25, S 17 42±. For numerous small aftershocks, as recorded at the Pasadena station, see special supplement), 08 49 12 (S 56 11), 12 15 12 (S 22 32), 14 27 39 (S 35 04), 19 07 15 (i 36), 19 55 11 (S 20 04 18)
- 6 01 47 33 (PP 49 00, PcP 49 59, S 53 16), 16 57 29 (S 17 03 09)
- 7 09 34 25 (S 41 21), 19 38 58
- 8 06 43 11, 15 56 21 (pP 33, S 16 04 01), 17 46 58
- 9 04 43 30, 05 54 27, 12 34 11, 17 46 22, 18 27 24
- 11 01 14 06, 02 45 12 (i 26, i 55, S 54 54±), 13 13 47, 16 19 22 (pP 20 04), 21 53 23.7 (S 54 16.7)
- 12 00 52 08 (S 59 21), 01 04 12 (S 11 29), 01 44 57, 10 52 19 (S 53 58), 12 21 22, 12 28 26, 20 52 45
- 13 18 17 43 (pP 53), 18 25 20
- 14 10 47 12, 19 48 09 (S 57 06±), 21 26 32 (pP 44)
- 15 01 33 42 (pP 52, S 40 36), 05 10 31 (pP 41, S 18 00), 06 14 04, 06 50 45, SKS 10 06 06±, 11 01 49
- 16 08 48 37 (L 50 42±), 11 01 45 (L 03 54±), 12 35 54
- 17 03 01 19, 10 19 52, 10 22 10, 10 27 36 (pP 49, S 34 44), 10 48 26, 11 58 06, 13 01 50, 18 35 57
- 18 02 30 18, 07 35 55, 08 42 57, 09 43 50, 22 41 48 (pP 42 19), 23 22 11 (S 29 05) 23 35 54 (e 45)
- 19 03 33 39 (S 40 51), 06 31 03, 10 21 12, 19 01 19 (pP 35)
- 20 20 07 30, 20 52 52, 22 15 14, 22 28 55
- 21 11 25 41 (S 34 51), 14 20 41 (e 21 08, i 21)
- 22 09 23 53, 14 15 49
- 23 22 23 24 (pP 36, S 32 51)
- 24 21 02 49, 21 32 00
- 25 01 45 36, 05 04 39 (S 15 47), 05 31 18 (pP 27, PcP 32 25, S 38 36), 05 41 05 (pP 14), 05 43 06 (pP 15), 05 55 55, 06 30 00, 10 32 23, 19 36 09
- 26 04 54 50, 05 47 47 (S 57 36±), 23 44 51 (ScP 49 51, S 51 43)
- 27 07 48 17 (L 49 48), L 10 56 08

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Special Supplement: Readings at Pasadena for smaller shocks following the Aleutian earthquake of Feb. 4, 05^h (Readings difficult and incomplete until about 07^h)

February 4 05 18 54, 05 24 23, 05 28 24 (i 34), 05 57 45, 06 13 52,
 06 46 13, 06 48 22 (i 31), 06 51 00, 07 01 55, 07 20 05 (i 16,
 i 28, i 33), 07 23 59, 07 32 17 07 51 50, 07 52 46, 08 00 37,
 08 03 47, 08 09 31, 08 13 14 (i 18), 08 15 14 (i 26), 08 16 20,
 08 16 54, 08 19 12 (i 21), 08 20 22, 08 26 35, 08 29 35 (i 50),
 08 42 41 (i 49, i 58), 08 46 11 (i 21), 08 46 53, 08 47 58,
 08 49 12 (i 17, s 56 11), 09 03 10 (i 18), 09 06 51, 09 08 32,
 09 09 28 (i 39), 09 10 50 (i 11 00), 09 15 13 (pP 23), 09 20 13,
 09 28 50 (i 29 01), 09 40 30, 09 44 09 (i 17), 09 46 17,
 09 51 51 (i 55, i 52 00), 09 57 21 (i 28, i 32), 10 00 54
 (i 57, i 01 03), 10 07 59, 10 09 58, 10 21 16, 10 23 30
 (i 50, i 59), 10 24 29, 10 39 43 (i 52), 10 44 12, 10 47 38,
 10 50 22 (i 28, i 48), 11 09 15 (i 27), 11 15 28, 11 17 35,
 11 24 26 (i 31), 11 27 39, 11 32 12 (i 19, i 29), 11 36 20
 (i 27), 11 42 03, 12 06 54 (i 07 06), 12 15 12 (i 15, i 27,
 iS 22 32), 12 22 53, (i 23 25), 12 24 04 (i 11, i 34),
 12 25 51 (i 26 08), 12 59 55 (i 13 00 02), 13 02 06, 13 20 32
 (i 41), 13 21 33, 13 32 29, 13 38 51 (i 39 00), 13 42 09
 (i 18), 14 01 02 (i 11), 14 08 42 (i 46), 14 14 44, 14 27 39
 (i 47, iS 35 04), 14 34 35, 14 38 32, 14 39 18, 15 12 37 (i 49),
 15 23 42, 15 40 19 (i 38), 15 53 44, 16 00 36 (i 44, i 49,
 s 08 03), 16 37 02 (i 37 07), 16 41 39 (i 47, i 53), 17 00 21
 (e 30), 17 13 24 (i 30, i 40), 17 15 09, (i 16, i 21),
 17 26 24 (i 32, i 36), 17 59 38 (i 47), 18 15 57 (i 16 04),
 18 22 55 (i 23 03), 18 43 06 (i 10, i 27), 18 48 43 (i 52),
 18 57 06 (i 21), 19 07 15, 19 10 50, 19 21 02 (i 12),
 19 55 11 (s 20 04 18), 20 03 32 (i 40, i 46), 20 06 47 (i 06 55,
 07 05), 20 41 12 (i 26), 20 56 06 (i 14), 21 33 05 (i 12),
 21 38 40, 22 39 04 (i 09 i 14)

5 00 40 52 (i 41 18), 00 51 28 (i 34 i 38), 01 15 12 (i 25),
 02 37 33 (i 42), 02 42 42 (i 53), 03 07 24 (i 34, i 08 16),
 03 11 35 (i 49 i 56), 04 10 35 (i 45), 04 55 40 (i 49),
 05 14 19, 05 15 34, 05 19 27, 05 22 27 (i 36 i 53), 05 49 07
 (i 15), 06 08 43 (i 49 i 54), 06 34 09 (i 19), 06 38 57
 (i 39 22), 06 40 38 (i 46 e 52), 06 48 45 (i 53, i 49 00,
 L 07 00 06±), 06 53 10 (i 17), 07 16 50 (i 17 02), 07 28 10
 (i 15 i 19 i 45), 07 34 14 (e 24), 07 38 10 (i 22 i 29),
 07 40 22, 07 59 32, 09 00 18 (e 25),
 09 41 05 (i 20 i 51, ScP 46 14, s 48 17), 09 59 28, 10 07 49
 (i 55, i 08 01), 10 17 40 (e 49), 10 46 20 (i 26), 10 59 32,
 11 54 38 (i 46), 12 02 54 (i 03 02), 12 38 07 (e 20), 13 04 43
 (e 52 i 56), 13 14 50 (i 58), 13 25 24 (e 37), 13 47 45
 (i 52 i 57), 14 00 50 (i 56, i 01 01), 14 17 21 (i 26 i 31),
 14 37 40 (i 49), 14 47 11 (i 19 i 25), 16 49 03 (i 11),
 17 00 04 (e 13), 18 25 08 (i 17), 18 30 19 (e 28), 18 33 02
 (pP 12), 18 50 07 (pP?), 19 09 52 (i 10 01), 20 47 54
 (i 48 01), 20 56 08, (s 21 03 23) 21 57 03 (i 57 10), 22 24 47
 (pP 25 00)

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Special Supplement: (Continued)

February

- 6 00 17 13, 01 24 52 (pP 24 57), 01 47 33 (pP 49 00, PcP 49 59, S 53 16),
03 48 08 (pP 16), 04 11 44 (i 51), 04 27 07, 05 41 02 (pP 14),
06 32 41 (pP 49), 07 23 48 (i 51, pP 57), 08 55 50 (i 53 i 58),
11 41 11, 12 31 18 (pP 29), 13 24 09, 14 20 07 (i 10, pP 18),
16 57 29 (S 17 03 09), 18 16 00 (i 13), 18 19 17 (i 25 i 41),
22 43 54, 23 32 27, 23 57 18 (pP 27)
- 7 01 09 20 (i 27), 02 26 10 (i 21, PcP 28 12, S 33 25), 04 20 12
(i 18), 04 44 43 (i 51), 04 45 47 (i 54), 06 07 50 (i 08 03),
08 49 01 (i 04 i 10), 09 34 25 (i 30, S 41 21), 09 53 05 (i 10),
11 32 20 (i 29), 11 54 37 (i 52, i 55 07), 12 30 30 (i 37), 13 29 36,
14 56 07 (i 14), 17 22 10 (i 19 i 34), 19 38 58
- 8 06 43 11 (i 16), 07 23 06, 07 32 05, 09 46 34, 10 18 14 (pP 20),
13 43 16 (e 29), 15 50 28, 15 56 21 (pP 33, S 16 04 01), 17 46 58
(i 47 07 i 16 i 34)

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

February

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

1965
 Supplement: (Continued)

February
4 GSC (Continued)

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

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

1965
Supplement: (Continued)

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

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 Supplement: (Continued)

February
 8 GSC (Continued)
 (i 21), 08 05 48 (i 53), 08 18 46, 09 06 33 (i 37), 09 38 13
 (i 40 36), 09 51 15 (i 22 i 28), 10 06 54 (i 07 03), 10 26 59
 (i 27 08), 12 16 36 (i 43), 12 40 58, 12 43 27, 13 34 22, 15 46 35,
 16 28 55, 17 12 48 (e 53), 17 40 32, 18 12 34 (i 43), 18 25 09
 (i 14 i 21), 18 32 07 (i 14), 19 37 14, 21 43 20, 22 08 22,
 22 45 39, 23 35 24 (i 34);
 WDY 12 48 48, 21 40 54 (i 41 01), 22 40 22 (pP 34)

9 GSC 01 34 26, 02 15 29, 03 51 53 (e 52 14), 06 18 40, 07 27 48,
 08 25 56, 09 18 03, 10 05 11, 17 12 15, 17 58 54 (i 57, e 59 10),
 18 38 49 (i 51 i 58), 23 18 24, 23 20 28 (pP 23);
 WDY 02 21 10, 04 27 07, 04 27 42, 06 09 51, 07 03 55, 07 46 36
 (i 40 i 49), 08 29 30, 10 03 07 (i 13), 10 15 23 (i 30), 12 04 13,
 15 56 09, 19 02 40, 20 03 26

10 GSC 00 47 06 (i 16), 00 49 23 (i 33), 00 56 15 (e 30 e 37), 01 37 56,
 01 55 22 (i 32), 02 17 36, 02 54 30, 04 32 44, 04 35 53, 05 15 38,
 08 06 32 (pP 07 03), 08 20 52, 08 27 19 (e 25), 09 40 26 (i 40),
 11 17 00 (e 09), 11 37 11 (pP 17), 15 25 41, 18 30 52 (pP 31 04),
 18 36 42 (pP 50), 18 47 27 (i 33 i 41), 20 20 12;
 WDY 06 09 00, 06 50 22, 13 47 40, 15 58 38, 17 40 42 (i 49), 21 34 33
 (pP 44)

11 GSC 00 40 47 (i 41 00), 01 14 07, 01 19 31 (i 35 i 40 i 48),
 03 27 41, 06 26 43, 06 34 20, 06 48 16 (i 20 i 29), 06 55 33
 (i 40, i 56 44, e 59, i 57 40), 09 04 10, 14 27 43, 15 36 40
 (i 43 i 49, i 38 13), 22 44 19 (i 33);
 WDY 03 22 51, 06 05 52, 09 55 37 (pP 46), 13 04 07, 13 19 38 (e 49),
 13 41 48 (i 42 01, e 42 12), 13 49 00, 16 28 56, 23 36 45 (e 53)

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

13 GSC 01 10 15, 02 24 14 (i 22 i 28), 02 28 24 (i 58), 02 56 47
 (i 57 21), 03 28 47, 03 59 10, 04 54 33, 09 28 24 (i 58),
 11 58 34, 12 26 49, 13 00 55, 14 47 54 (i 48 05), 15 17 56
 (i 18 05), 15 34 19 (i 27 e 38), 18 08 54, 22 42 08 (e 20 i 41)

14 GSC 02 23 45, 07 00 24 (i 39), 18 59 37; WDY 00 18 54 (i 19 01),
 00 34 02, 00 36 37 (e 47), 00 49 31 (e 49), 06 07 41 (i 44 i 50),
 09 08 50 (i 59 i 09 04), 10 01 28, 11 54 01 (i 10), 12 10 06
 (i 14), 12 30 08 (i 19), 12 36 32 (i 34 i 42), 14 03 33 (i 39),
 15 44 58, 15 56 47 (i 57 04), 16 02 19, 16 04 55 (i 05 04), 17 10 36
 (i 41), 17 51 34, 18 06 25 (i 30 e 45), 18 19 51 (i 20 02),
 18 55 19 (i 30)

1965

Supplement: (Continued)

February

15 GSC 06 39 07, 18 21 35 (e 47); WDY 01 41 46 (i 55), 06 32 42, 07 27 50 (i 58), 09 50 10 (i 21 i 30), 10 23 29, 10 57 41, 12 47 51, 13 06 50, 14 43 05, 14 53 42 (e 54 15), 15 11 43, 15 50 08 (i 21)

16 GSC 00 31 21, 00 55 19 (i 37), 01 03 41 (i 47), 09 02 35 (i 45), 09 39 54 (i 40 05), 09 50 31, 12 25 58? (i 26 21), 14 27 35, 14 52 26, 20 42 10 (i 17 i 24), 21 18 37 (i 49), 22 39 42;

WDY 01 51 05, (pP 01 53 13), 03 11 15, 07 42 04 (i 12), 10 50 19 (i 42 i 48), 18 21 47

17 GSC 00 16 09, 00 42 02, 00 59 20 (i 22 i 39), 01 09 22 (pP 32), 03 34 13, 04 08 09, 04 59 35, 07 18 03, 08 40 16, 08 44 26, 08 52 09, 09 20 15 (i 26), 09 45 44, 12 14 03 (i 31), 13 12 07 (i 12 i 20), 13 16 47, 13 50 55, 15 15 25 (e 35);

WDY 07 32 41 (pP 51), 10 09 39 (i 50), 11 12 56, 18 33 17 (pP 25), 22 22 43 (pP 52)

18 GSC 01 46 03 (i 11), 04 03 52 (pP 05 18), 05 03 38 (e 45), 09 20 15 (e 27), 10 53 35, 12 20 34 (i 42), 12 52 04, 14 20 20, 17 50 04, 19 36 38 (i 42), 22 34 48, 22 58 32 (e 48);

WDY 06 26 03, 07 34 39 (pP 49), 07 42 31 (pP 44), 13 47 29

19 GSC 01 57 04, 08 04 03, 09 06 58, 09 30 47 (i 50), 09 46 57 (e 47 24), 13 48 33 (i 43), 14 56 38 (i 46), 18 29 56 (e 31 46), 23 22 36, 23 49 17 (i 26 i 32); WDY 03 16 31 (i 36), 04 55 23 (i 36 i 40), 05 18 03 (pP 14), 08 23 31, 19 00 26

20 GSC 02 34 02, 03 47 28, 04 18 20, 05 26 45 (i 58), 05 28 31, 06 24 09, 06 34 16 (i 22), 09 34 12, 10 46 24 (i 30 i 37), 11 00 18, 11 42 07, 15 01 31 (i 41), 17 55 07, 18 36 55, 18 38 19, 20 16 46, 21 21 13; WDY 02 16 54 (e 17 08), 09 20 28, 10 51 35 (i 51 46), 16 39 22

21 GSC 00 45 15 (i 24 e 42), 03 03 36 (i 45), 04 28 44 (i 29 04), 04 49 49 (i 50 06, e 50 16), 05 55 09 (i 26), 06 00 48 (i 01 01, i 01 08), 10 13 00 (i 08), 10 41 18, 12 04 33, 12 14 50 (i 15 02), 13 32 00, 14 11 23, 14 20 41 (pP 21 09, sP 21 20), 16 18 09 (s 19 42), 17 20 57, 19 53 29, 22 40 16; WDY 02 16 35, 08 10 42, 23 20 02 (i 12), 23 20 22 (i 33)

22 GSC 02 26 45, 03 37 35, 04 00 19 (pP 28), 04 55 21, 05 40 54 (pP 41 04), 07 36 15 (i 26 i 31), 11 01 15, 11 27 12 (i 30), 12 00 55 (i 01 28), 21 50 32; WDY 08 58 53, 13 46 07 (i 10), 13 54 51, 20 51 07, 21 27 10

23 GSC 04 01 02, 07 16 14, 08 53 23; WDY 03 13 02 (i 12)

24 GSC 00 00 58, 01 19 32, 08 39 36, 09 43 37, 17 15 33 (pP 41);

CLC 23 07 30 (pP 43, sP 48); WDY 00 52 50 (i 53 00)

25 GSC 01 22 15, 02 07 23 (e 27), 02 09 03 (e 11), 03 16 58, 03 42 44 (e 56, i 43 05), 04 04 24, 05 40 12 (pP 22), 05 55 52, 05 55 56 (pP 56 05), 06 00 28, 06 37 48, 09 28 40 (i 43), 12 36 33, 13 44 24, 15 04 33 (i 44); WDY 11 03 21 (e 49), 17 00 59, 17 24 14 (i 26), 18 43 13 (i 18 i 22), 19 05 37, 19 35 58 (i 36 13)

1965

Supplement: (Continued)

February

26 WDY 01 15 48 (i 16 00), 06 55 21, 07 46 11 (i 20), 09 14 54, 14 35 10
 (e 21), 14 42 36 (i 47), 15 47 12, 16 46 51, 17 23 07, 18 29 17,
 18 58 37, 20 34 16 (i 25), 20 46 13 (e 47 14), 21 07 42 (i 52),
 22 29 37 (i 44), 22 32 11 (i 20)

27 GSC 11 43 44, 11 47 47; WDY 01 58 42 (i 57), 02 14 45 (i 57), 04 21 30
 (i 43), 05 58 09 (i 20), 09 26 17, 10 54 57, 14 49 03, 17 41 46 (i 57)

28 WDY 00 19 44, 00 53 06, 00 55 31, 01 07 47 (i 57), 01 24 53 (i 25 00),
 03 10 57 (e 11 09 e 11 17), 08 00 36, 09 13 59, 09 45 56 (i 46 07),
 12 31 39 (i 52), 12 40 34 (i 46), 13 15 35 (i 45), 23 54 06

May 20, 1965

 Violet M. Taylor
 Seismological Assistant

1965 Mar - 1 to 5



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 March 10, 1965

CONTINUATION

March	1		19 31 01	March	3		10 51 27
		IP				eP	
		ipP				e	41
	1	IP	21 38 12		3	iP	11 48 54
		dilatation from				e	49 00
		southeast			3	iP	14 51 28
		ipP	38 32			i	34
		IS	43 04			eS	15 01 54
		eL	45.1			eG	12.7
		$\Delta 29^\circ$				eR	16.4
		Depth 100 km				$\Delta 84^\circ$	
		Magn. 6				iP	15 27 21
						i	30
		PZ	μ sec			eSKS	37 58
		SH	0.2 $\frac{1}{2}$			IS	38 38
	1	IP	4 8			eSS	44.4
	2	eP	22 03 33			IG	52.3
	2	IP	00 04 58			IR	55.6
		ePP	06 10 01			$\Delta 92^\circ$	
		eS	13 10			Magn. 6 3/4 = 7	
		eSS	20 28			PZ	μ sec
		eG	25.6			MH	$\frac{1}{4}$ 1
		eR	31.5			MZ	50 20
		$\Delta 84^\circ$	35.2			IP	40 20
	2	IP	07 37 47		3	iP	16 56 36
	2	IP	09 32 06			i	44
		ePP	35 16		4	IP	01 51 35
		eS	42.6		4	IP	02 02 06
		eSS	48.0			i	11
		eR	57.1		4	IP	02 10 16
	2	eP	10 35 58			i	27
		i	36 03		4	IP	04 05 03
		e	11			i	17
	2	IP	10 44 48		4	iP	06 39 09
		i	55			i	21
	2	eP	13 05 45			eS	46 45
		e	50			eG	52.1
	2	IP	14 35 33			eR	53.6
		i	39		4	eP	08 36 45
	2	IP	14 44 41		5	iP	06 23 35
	2	iP	21 48 18			i(pP)	45
		epP	50 09			eS	30 17
	3	eP	03 29 38		5	eP	13 51 38
		eS	39 42			i(pP)	47
		eG	50.6			eS	58 43
		eR	54.6				

K3
 OBSERVATORY
 16 MAR 1965
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 10, 1965

CONTINUATION (Continued)

Date	Station	Time	Station	Time	
March 5	iP	14 43 30	March 7	iP	01 55 43
	dilatation			i(pP)	54
	ipP	45 33		i	56 00
	iS	52 51		iS	02 06 09
5	iP	18 08 11		eG	17.9
	i	21		eR	21.3
	i	30		$\Delta 87^\circ$	
	eL	21.4			
5	iP	19 49 18		PZ	μ 1
5	eP	23 38 33		MH	3 20
	i	44	7	iP	11 13 28
6	iP	06 02 03		i	37
6	eP	08 28 50		i	47
	eL	43.0	8	iP	19 35 10
6	iP	11 20 18	8	iP	23 23 23
	i	24	9	iP	01 47 52
	i	35			
	eS	28.0			
	eL	35.8			
6	iP	13 50 09			
	i	20			
	i	29			
	eL	14 04.9			

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

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

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 10, 1965



Page 3

SUPPLEMENT: (Continued)

March 2 GSC 03 03 07 (i 15), 03 55 03, 04 52 44 (e 52), 05 22 33,
05 26 25, 05 52 52, 06 39 51, 07 37 33, 07 37 52, 09 21 09,
09 39 05 (i 16), 10 44 37 (pP 48), 11 51 27 (e 41), 11 55 47,
12 39 12, 13 04 43, 13 10 10 (i 15), 13 50 23, 15 25 10, 15 32 50
(e 56), 15 35 55, 16 01 03, 16 37 36, 16 46 55, 19 41 48,
20 03 36, 21 55 06, 23 43 04, 23 46 10; CLC 09 55 32, 10 41 39,
15 01 11, 16 11 22, 19 15 48, 20 36 50, 21 19 52, 21 35 00,
22 09 54, 23 22 09; WDY 10 00 54, 10 23 59, 16 52 24, 17 13 40,
23 50 24

3 GSC 01 14 57, 01 56 03, 02 10 54, 02 30 20, 02 48 42, 04 35 37,
05 23 37, 05 45 48, 06 05 28, 06 28 20 (e 28), 06 45 01
(e 49), 06 53 31, 07 14 14, 07 30 44, 07 33 58, 07 46 14,
08 06 23 (e 43), 09 10 07, 09 19 08, 11 37 51, 12 33 34,
12 34 09 (i 16), 12 37 43, 13 58 17, 13 59 41, 14 05 02,
14 10 51, 14 12 14, 14 45 24 (i 39 i 49); WDY 01 04 51
(i 05 05), 01 10 17, 13 13 46, 13 45 30, 15 42 04, 17 01 35,
17 37 08, 19 39 58 (i 40 10), 20 07 43, 20 45 55, 21 24 43
(i 48), 22 05 19, 22 17 34

4 GSC 01 51 35, 01 53 19 (PcP?), 02 15 32, 02 33 08, 03 18 34,
03 57 56, 04 20 11 (i 16), 05 10 27, 05 36 48 (i 37 11),
06 10 11, 06 39 09, 06 40 28 (PcP?), 07 35 56, 08 39 58,
09 08 01, 13 59 17

5 WDY 06 25 57 (pP 26 10), 06 34 32 (i 42 i 50), 11 16 18,
11 37 19 (i 28), 14 10 22 (i 32), 15 02 06, 15 12 47

Violet M. Taylor
Seismological Assistant

1965 Mar 9-16



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 March 17, 1965

CONTINUATION

March 9	ePP	18 15 36
	eS	23.2
	ePS	24.5
	iSS	34.6
	eG	39.6
	iR	44.6
	$\Delta 105^\circ \pm$	
	Magn. $6\frac{1}{4}$	
		μ sec
	MH	10 20
	MZ	7 20
10	iP	16 04 59
	e	05 37
11	eP	12 16 54
	i	17 01
14	eP	08 57 49
14	iP	16 07 12
	compression from north	
	iSP	08 21
	iP''	11 06
	i	35

March 14 (Continued)	iPP	16 11 47
	isPP	13.1
	iSKS	17.5
	iPKKP	22 23
	iSKKP	25 41
	iL	45.2
	$\Delta 110^\circ$	
	Depth 200 km	
	Magn. $7\frac{1}{2} - 7\frac{3}{4}$	
		μ sec
	PZ	6 8
	PPZ	20 6
	MZ	40 20
	Hindu Kush. Closely comparable with 1949 March 4, 10h	
15	eP	03 12 45
	eL	33.9
15	iP	05 08 47
	i	09 00
	i	06
16	iP	10 51 03

KEW OBSERVATORY
 22 MAR 1965
 RICHMOND, SURREY.

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

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

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
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March 17, 1965

SUPPLEMENT: (Continued)

March 11 GSC 06 26 28, 08 42 05, 14 12 58 (e 13 20); WDY 02 06 42,
05 38 39, 17 26 27, 17 36 06 (i 37 00), 19 27 53
(i 28 22)
12 WDY 01 41 17 (e 25), 02 03 39 (pP 49), 02 25 11, 02 27 16
(i 41), 03 40 59, 06 13 44, 06 58 08 (i 13),
09 01 13, 09 42 14 (pP 25), 11 26 12 (i 19)

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 March 25, 1965



CORRECTION:

March 4 GSC 01 53 19 should read
 01 53 39
 8 Pasadena 19 35 10 and 23 23 23
 should read 19 35 20 and
 23 23 03

March 21 iP 09 49 48
 ePcP 52 16
 eS 55 30
 eL 10 02.5
 Δ 35°

CONTINUATION

March 16 iP 16 57 53
 iS 17 07 25
 iSS 12.0
 eG 17.0
 iR 20.2
 Δ 75°
 Magn. 6 1/2

μ sec
 PZ 0.15 1 1/2
 SH 10 25
 MH 15 20
 MZ 15 20

17 iP 14 36 20
 dilatation
 iS 36 32
 eG 49.2
 eR 51.4
 Δ 53°

18 iP 06 33 39
 ipP 34 33
 isP 35 32
 iS 43 13
 i(L) 54.2
 Δ 80°
 h 250 km

μ sec
 PZ 1/4 1
 SH 3 25

18 iP 16 27 00
 19 eP 16 39 33
 eSKS 50 30
 eL 17 08.2
 19 iP 17 48 19
 i 41
 19 iP 23 16 55

21 PZ 0.15 1
 MH 4 20
 21 iP 11 23 10
 ePP 27 38
 eSKS 33 36
 ePS 37 00
 iSS 42.2
 iG 54.2
 iR 59.2
 Δ 105°
 Magn. 6 3/4

μ sec
 MH 25 20
 21 iP 12 53 34
 e 59
 22 eP 02 56 08
 i 33
 iS 03 05 30
 iG 14.7
 iR 16.8
 Δ 72°
 Magn. 6 1/2

μ sec
 PZ 0.3 1 1/2
 SH 6 20
 MH 30 20
 22 iP 03 17 02
 22 iP 19 56 38
 i 48
 22 iP 23 08 28
 iPcP 40
 ipP 51
 iS 18 25
 iScS 39
 eG 30.1
 iR 34.1

Δ 81°
 Depth 100 km
 Magn. 6

μ sec
 PZ 1 1/2
 PH 4 1/2
 SH 5 20
 MH 6 20
 MZ 4 20

KEW
 OBSERVATORY
 29 MAR 1965
 RICHMOND,
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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 25, 1965



CONTINUATION

March 23	iP	12 53 40
23	iP	18 27 26
	i	53
	eR	48.1
24	iP	00 05 23
	i	52
	iS	14 44
	iR	26.1
	$\Delta 77^\circ$	
	Magn. $6\frac{1}{2}$	
		μ sec
	PZ	0.3 3
	SH	4 20
	MH	20 20
	MZ	20 20
24	iP	08 11 52
	i	12 47
	i	14 33
	eS	19 09

SUPPLEMENT:

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

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

Violet M. Taylor
Seismological Assistant

1965 Mar 24 - 30



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 March 31, 1965

CONTINUATION

CONTINUATION				March		
March 24	iP	18 25 16		29	iP	10 59 16
	iP	18 36 01			i	24
	eL	19 02.6			iS	11 08 50
25	iP	09 02 18			iSS	13.5
	ipP	25			eG	18.3
	eS	09 38			iR	21.8
	eL	15.1			Δ 73°	Magn. 6 1/2
25	iP	18 45 53				μ sec
26	eP	21 43 16			PZ	0.3 2
28	iP	10 10 35			SH	5 8
	i	47			MH	14 20
	eS	19 21			MZ	14 20
	eSS	23.7	29		iP	14 41 34
	eG	27.1			i	42
	Δ 65°				i	57
28	iP	13 32 44			eS	48 35
	iS	40 39			eR	55.1
	eSS	44.4			Δ 50°	
	eG	46.7				μ sec
	eR	50.1			MH	5 20
	Δ 60°		30		iP	00 09 41
		μ sec	30		iP	00 32 44
	PZ	0.2 1			iS	42 18
	MH	5 20			eG	52.1
28	iP	16 45 17			eR	56.1
	dilatation from southeast		30		Δ 76°	
	iPP	48 17			iP	02 35 46
	iS	55 12			iS	42 48
	iG	17 06.6			iG	47.7
	iP"P"	12 11			iR	49.1
	Δ 81°				Δ 50°	Magn. 7 - 7 1/4
	Magn. 7 - 7 1/4					μ sec
		μ sec			PZ	1 1/2 2
	PZ	27 20			PH	1/2 1
	SH	35 8			SH	10 4
	MH	150 30	30		MH	250 20
	MH	75 20	30		iP	03 06 34
					iP	03 34 10
					i	50
					i	35 42
					i	56

KEW OBSERVATORY
 - 6 APR 1965
 RICHMOND, SURREY

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 31, 1965

CONTINUATION (continued)

March	30	eP	03 38 52
		i	57
30	30	eP	03 40 11
		i	17
	30	iP	03 41 03
		i	09
	30	iP	07 19 36
		i	20 12
	30	eP	09 13 53
	30	iP	10 38 22
	30	iP	11 51 24
		i	50
	30	eP	14 07 26
		e	39

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

March 18 WDY 16 27 02 (pP 28 57)

19 WDY 17 25 52 (pP 26 02), 23 27 43 (pP 53)

21 GSC 01 29 29 (pP 39), 01 54 58 (pP 55 27), 07 45 09, 14 40 20, 19 13 30, 22 58 21 (pP 51); WDY 03 21 28, 18 12 46 (pP 55)

22 GSC 07 59 28 (e 34, i PcP 08 02 17), 08 53 04, 09 54 41 (i 46), 11 43 21, 14 45 07, 15 22 40 (i 47), 20 57 39 (pP 58 07); WDY 09 59 55, 11 04 36, 11 22 15, 16 45 08, 19 40 16

23 GSC 08 27 09 (pP 20), 13 44 30 (i 45); WDY 03 08 09, 04 17 57, 05 39 24 (i 37), 08 42 51 (S 44 21), 10 37 51, 19 38 40 (i 52, i 39 01), 20 08 20, 21 31 30

24 GSC 12 42 48; WDY 01 10 35 (i 44 i 51), 04 24 58, 07 14 00, 09 53 43 (pP 54 34), 10 19 31 (PcP 22 44), 11 26 04 (i 19), 12 38 15, 13 36 10 (i 19, PcP 39 14); WDY 18 36 01 (i 36 15, pP 36 38), 18 45 21

Violet M. Taylor
Seismological Assistant

1965 Mar 24 - Apr 6



International
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12 APR 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 7, 1965

CONTINUATION

Month	Day	Station	Time	Time	Time	Station	Time	Time	Time
March	24	iP	18	25	16	April	4	iP	13 39 29
	24	iP	18	36	01			ipP	40
		eL	19	02.6				eS	46 44
	29	iP	00	18	17			eG	50.1
	30	iP	16	11	24			iR	52.1
	31	iP	06	35	42			Δ 50° Magn. 6	
	31	iP	08	30	10				
		i		31	44				μ sec
	31	iP	10	01	06			PZ	0.7 2
		iPP		05	06			PH	0.4 2
		iSKS		11	38			SH	3 30
		iS		12	25	4		MH	10 20
		iPKKP		17	31			iP	15 48 29
		iSS		19.1				i	43
		iSKKP		21	52			eSKS	58 36
		iG		30.1				iS	48
		iR		39.2				eG	16 09.6
		Δ 102° Magn. 6 3/4						eR	13.1
								iR	16.5
								Δ 85° Magn. 6	
									μ sec
		PZ	0.3	1 1/2				MH	6 20
		PPZ	1 1/2	3				iP	16 22 26
		PPH	0.2	2		4		iP	20 20 05
		MH	40	30		4		i	19
	31	iP	10	54	39			i	21 01
April	1	e(S)	21	43	43			iS	27 34
		eG		56.1				i	28.6
		eR		59.6				eP	03 30 40
						5		e	37.6
		MH	8	20				e(G)	56.1
	3	iP	11	26	16			iP	14 03 02
		eS		30	57	5		i	17
		eG		32.1				i	22
		Δ 27° Magn. 6						eS	11.9
								eR	22.9
								iP	03 28 04
		PZ	1	4		6		iP	05 43 59
		PH	0.7	4		6		eP''	10 01 12
		SH	8	9		6		ePP	02 34
		MH	40	13				eSKS	07 59
	3	iP	11	34	43			ePS	12.0
		eL		40.6				eSS	18.1
								iR	35.7
								Δ 120°?	
		PZ	1 1/2	4				Interpretation doubtful	
		PH	1 1/2	2				eP	13 27 30
		MH	40	13				e	44
						6		iP	13 39 24
						6			

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 7, 1965

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

March 25 WDY 07 29 38 (pP 30 28), 09 38 49 (i 58), 14 38 07, 20 07 28, 21 17 28, 23 47 54

26 WDY 00 32 02 (pP 34 08), 02 30 42 (pP 56), 03 03 31 (pP 42), 12 19 35?, 12 20 54 (i 21, 03, i 16), 16 21 17 (i 33, i 24 39), 19 01 02, 23 06 49 (pP 58), 23 08 38 (pP 50) (PcP?)

27 WDY 03 46 20 (pP 33), 09 06 24 (pP 29), 14 31 29 (pP 36), 14 59 43 (i 58), 19 24 36; GSC 21 05 08

28 GSC 01 46 42 (pP 52), 02 57 31, 05 41 00 (e 21, i 33), 23 58 41; WDY 08 53 48 (i 56), 09 29 10 (pP 20)

29 WDY 00 47 50, 01 39 04, 17 43 42, 18 19 55, 23 20 47 (pP 21 07), 23 34 58; GSC 02 43 38 (e 49), 07 36 44, 09 42 15 (e 25), 10 35 45 (pP 57); CLC 17 53 06 (pP 11), 18 06 43 (pP 52),

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

31 GSC 00 42 28 (i 34), 01 01 28, 04 38 14 (i 18 i 26), 05 12 55, 10 17 35 (pP 18 04), 13 32 08, 15 28 43, 15 57 47 (i 55), 16 03 17 (i 25), 17 18 20 (i 27 i 32), 19 46 50, 19 57 13 (e 20), 21 22 15 (i 22 i 34), 22 41 17 (pP 25), 23 57 07 (i 10 i 19); WDY 00 38 15, 00 43 29 (pP 38), 01 31 13 (pP 24), 06 54 44 (pP 52), 10 24 32, 12 16 29, 15 34 14, 17 23 33 (i 42 i 50), 20 26 14 (pP 23), 21 18 13, 21 31 21 (pP 30)

April 1 WDY 02 45 18 (pP 25), 04 50 23, 06 18 25 (pP 33), 08 43 49, 08 45 06, 08 46 39 (e 52), 10 21 17, 13 25 24 (pP 34), 13 39 36, 13 40 09, 13 55 18 (pP 31, sP 40), 17 10 08, 18 02 17 (pP 26), 21 30 16 (pP? 28), 21 33 21 (i 25)

Violet M. Taylor
Seismological Assistant

PASADENA PRELIMINARY BULLETIN NO. 150

March - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965
March

1 08 00 10, 09 21 58, 19 31 01 (pP 10), 21 38 12 (pP 32, S 43 04),
22 03 33

2 00 04 58, 06 10 01 (PP 13 10, S 20 28), 09 32 06 (PP 35 16, S 42 36±),
07 37 47, 10 35 58, 10 44 48, 13 05 45, 14 35 33, 14 44 41, 21 48 18
(pP 50 09)

3 03 29 28 (S 39 42), 10 51 27 (e 41), 11 48 54, 14 51 28 (i 34, S 15 01 54),
15 27 21 (i 30, SKS 37 58, S 38 38), 16 56 36

4 01 51 35, 02 02 06, 02 10 16 (i 27), 04 05 03 (i 17), 06 39 09
(i 21, S 46 45), 08 36 45

5 06 23 35 (pP 45, S 30 17), 13 51 38 (pP 47, S 58 43), 14 43 30
(pP 45 33, S 52 51), 18 08 11 (i 21), 19 49 18, 23 38 33 (i 44)

6 06 02 03, 08 28 50, 11 20 18 (S 28 00±), 13 50 09 (i 20)

7 01 55 43 (pP 54, i 56 00, S 02 06 09), 11 13 28 (i 37)

8 19 35 20, 23 23 03

9 01 47 52, 18 15 36 (S 23 12±, PS 24 30±, SS 34 36±)

10 16 04 59

11 12 16 54

14 08 57 49, 16 07 12 (sP 08 21, P¹¹ 11 06, i 11 35, PP 11 47, sPP 13 06±,
SKS 17 30±, PKKP 22 23, SKKP 25 41; Hindu Kush)

15 03 12 45, 05 08 47 (i 09 00)

16 10 51 03, 16 57 53 (S 17 07 25), 14 36 20 (pP 32, S 43 43)

18 06 33 39 (pP 34 33, sP 35 32, S 43 13), 16 27 00

19 16 39 33 (SKS 50 30), 17 48 19, 23 16 55

21 09 49 48 (PcP 52 16, S 55 30), 11 23 10 (PP 27 38, SKS 33 36, PS 37 00,
SS 42 12±), 12 53 34

22 02 56 08 (i 33, S 03 05 30), 03 17 02, 23 08 28 (PcP 40, pP 51, S 18 25,
ScS 18 39)

23 12 53 40, 18 27 26 (pP 53)

24 00 05 23 (pP 52, S 14 44), 08 11 52 (pP 12 47, PP 14 33, S 19 09),
18 36 01

25 09 02 18 (pP 25, S 09 09 38), 18 45 53

26 21 43 16

28 10 10 35 (pP 47, S 19 21), 13 32 44 (S 40 39), 16 45 17 (PP 48 17,
S 55 12, G 17 06 36±, P¹¹P¹¹ 12 11)

29 00 18 17, 10 59 16 (i 24, S 11 08 50), 14 41 34 (i 42, S 48 35)

30 00 09 41, 00 32 44 (S 42 18), 02 35 46, (S 42 48, T 03 34-10), 03 06 34,
03 38 52, 03 40 11, 03 41 03, 07 19 36, 09 13 53, 10 38 22, 11 51 24,
14 07 26, 16 11 24

31 06 35 42, 08 30 10, 10 01 06 (PP 05 06, SKS 11 38, S 12 25, PKKP 17 31,
SKKP 21 52), 10 54 39

KEY
OBSERVED BY

24 JUN 1965

RICHARD
SURREY

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC), Goldstone (GSC) Palomar (PLM) and Woody (WDY)

March

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

1965

Supplement: (Continued)

March

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

31 GSC 00 42 28 (i 34), 01 01 28, 04 38 14 (i 18 i 26), 05 12 55, 10 17 35
 (pP 18 04), 13 32 08, 15 28 43, 15 57 47 (i 55), 16 03 17 (i 25),
 17 18 20 (i 27 i 32), 19 46 50, 19 57 13 (e 20), 21 22 15 (i 22 i 34),
 22 41 17 (pP 25), 23 57 07 (i 10 i 19); WDY 00 38 15, 00 43 29
 (pP 38), 01 31 13 (pP 24), 06 54 44 (pP 52), 10 24 32, 12 16 29,
 15 34 14, 17 23 33 (i 42 i 50), 20 26 14 (pP 23), 21 18 13,
 21 31 21 (pP 30)

March 19, 1965

Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY

21 APR 1965

RICHARD D.
SURREY

1965 Apr 8 - 12

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 14, 1965



CORRECTION

GSC March 30

Should read

CONTINUATION

April 8

8

i

8

9

10

iP 03 55 17
iP 02 55 17
iP 13 02 25
iP 13 52 53
i 57
eS 14 00.0
eL 05.4
Magn. 5 3/4

μ sec
PZ 0.2 1
SH 3 25
MH 10 20
iP 14 40 13
i 16
i 24
e 11 05.9
i(S) 06.6
e(SS) 12.0
i(G) 19.6
eR 26.9
eL 00 41.6

April 10
10
10
iP 14 58 35
iP 17 04 16
iP 22 43 38
ipP 45 47
isP 46 52
iS 52 58
eSP 53.8
e 57.0
e(SSS) 23 01.6
e(L) 04.6
Δ 78° Depth 550 km
Magn. m = 6

μ sec
PZ 1 1 1/2
SH 3 20
iP 10 23 04 24
iP 11 05 03 28
iR 06.6
iP 11 19 03 14
i 12 17 48.5
eR 59.8

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

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

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 14, 1965

CONTINUATION (Continued)

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

Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY
26 APR 1965
RICHMOND,
SURREY.

1965. Apr 12 - 20



SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 21, 1965

ADDITIONAL

April 11 Barrett:
iP
iS
Magn. 3.8

00 47 03.8
16.9

April 16 iP 23 29 53
iPcP 31 32
iS 35 58
eR 41.3

CONTINUATION

April 12 iP 19 48 21
i 36
eL 20 13.0
12 iP 20 52 59
eS 21 02.0
eG 09.5
eR 10.6
 $\Delta 70^\circ$

μ sec

PZ $\frac{1}{2}$ 1
MH 3 20

13 iP 11 45 19
i 39
14 eP 07 42 12
15 iP 05 23 06
15 eP 12 38 23
e 35
15 iP! 20 08 44.5
iS 51.7

Magnitude 4.5

Felt strongly in area of Riverside and San Bernardino; maximum intensity V-VI (minor damage to windows and plaster). Reported also felt at Corona, Chino, Fontana, Rialto, Lake Mathews, Pomona, Santa Ana, and by a few persons in Pasadena

Barrett: iP 20 09 00.9
iS 21.3

Goldstone: iP 20 08 56.6
iS 09 06.3

April 16 iP 13 03 09

$\Delta 41^\circ$ Magn 5 $\frac{3}{4}$ - 6

μ sec

PZ $\frac{1}{2}$ 2 $\frac{1}{2}$
SH 5 20
MH 16 25
18 iP 06 36 23
compression from Northwest
iS 38 22
iL 38.6

$\Delta 12^\circ$

μ sec

MH 35 20
MZ 22 20
18 iP'' 09 58 08
ePP 59 29
eS 10 08.2
ePS 09.4
iPPS 11.0
iSS 16.0
eG 29.9
eR 37.8

Interpreted doubtfully
as $\Delta = 118^\circ$

18 ePP 13 01.0
ePPS 13.6
eSS 18.8
eG 34.0

$\Delta 118^\circ$ (?)

18 iP 14 20 19
19 iP 05 28 12
19 iP 23 54 13
ipP 24
eS 24 04 19
eG 15.0
eR 19.0

$\Delta 83^\circ$

20 iP 06 52 15
ipP 25
20 iP 07 00 07
ipP 16

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 April 21, 1965

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

- February 5 GSC 00 40 22, 00 40 47, 02 15 36, 07 34 24, 09 59 22 (i 28).
 (The preceding were omitted from readings issued under
 date of Feb. 24)
- April 9 GSC 17 39 54, 23 08 21
- 10 GSC 00 10 50 (pP 14 23), 00 21 36 (pP 46), 01 31 41,
 01 49 00, 04 52 46, 11 25 47 (i 26 02), 11 47 53
- 11 GSC 12 50 29, 17 14 17 (pP 32), 17 16 27, 19 03 21
 (pP 05 27); CLC 17 06 29 (e 39 i 48)
- 12 GSC 01 53 47, 04 06 07 (i 15), 04 43 42 (i 53), 04 49 15
 (e 27), 04 50 40 (pP 52), 05 04 53 (pP 05 05),
 09 04 08 (e 19), 09 19 04 (e 09 e 18), 11 35 37,
 16 02 40, 17 38 31, 20 38 52, 21 40 49, 22 06 39
- 13 GSC 15 32 14 (pP 24), 17 35 04, 18 04 18 (i 27), 20 48 00
 (i 05 i 18), 23 30 06
- 14 GSC 01 57 08, 02 56 59, 08 32 32, 10 59 25, 11 05 09,
 12 02 13; CLC 23 05 33 (e 06 03)
- 15 CLC 04 45 11, 07 57 14, 15 21 12; GSC 22 29 22, 23 51 34
- 16 GSC 00 27 48, 06 30 55, 10 11 57 (i 12 25), 13 03 08
 (pP 40), 14 42 36

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 April 28, 1965



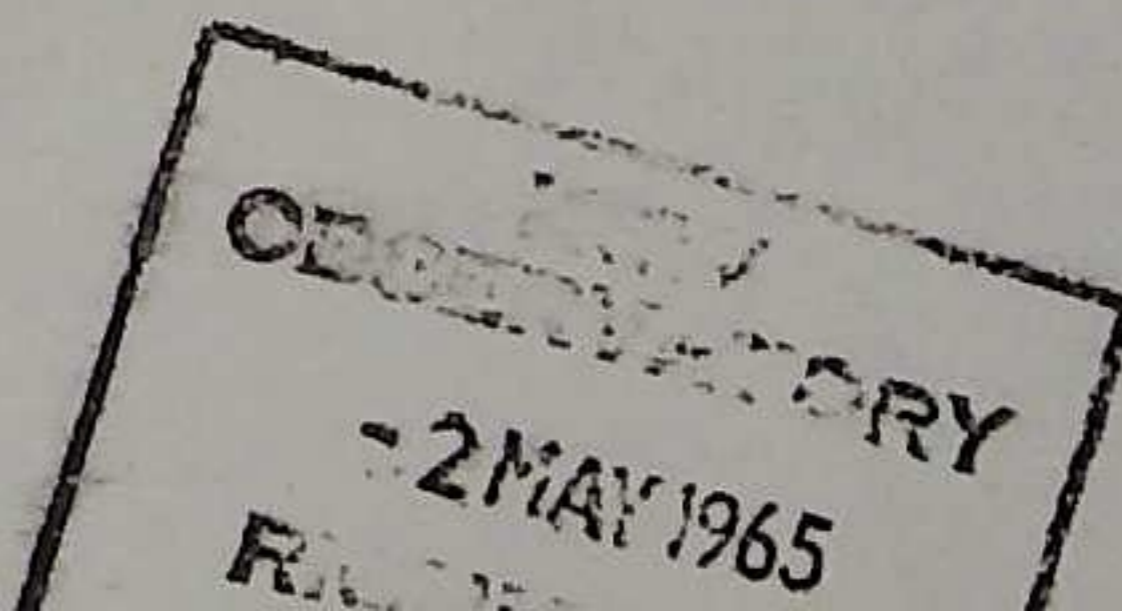
CONTINUATION

April	21	iP	20 30 30	April	25	eP	14 18 17
	22	iP	18 44 50			e	36
		i	58		25	eP	21 23 47
		eL	59.5			epP	58
	24	iP	22 08 37		26	iP	20 36 14
		ipP	44			i	29
		e(SKS)	19.6			iS	41 58
		eG	33.8			iG	43.6
Δ 93°		eR	38.2			eR	46.2
	25	iP	01 12 41			Δ 38°	
		i	46				
		iSKS	23 01			PZ	μ sec 0.1 1
		eR	37.9			MH	7 20
		Δ 93° Magn.	5 3/4 - 6		27	iP	11 12 58
					27	iP	11 16 19
		PZ	μ sec 1/4 2				
		MH	5 20				
		MZ	4 20				

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

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

Violet M. Taylor
 Seismological Assistant



Apr 27 - May 3



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 May 5, 1965

ADDITIONAL
 April 26

e 22 32 36
 eSKS 40 15
 eSS 47.9
 eR 23 02.4
 Δ 102°
 Magn. 5 3/4

μ sec
 MH 5 20
 MZ 4 20

CONTINUATION
 April 27

Revised:
 iP'' 11 12 58
 iSKP 16 19
 eSKS 19 30
 ePS 22.9
 eSS 28.9
 eL 46.5
 Δ 114°
 27 eP 20 17 35
 eS 24 15
 eL 29.9
 28 eP 10 39 03
 e 16
 e 23
 e(S) 48.9
 28 iP 14 13 13
 iS 14 03
 28 iP 14 21 18
 iS 22 11
 28 eP 14 25 20
 eS 26 14
 28 iP 14 34 18
 iS 35 10
 29 iP 09 55 55
 29 iP 11 31 55
 i 32 44

April 29 iP 15 31 57
 iS 34 41

Δ 16° Magn. 6.6
 Damaging in Seattle and surrounding area, State of Washington. Recorded amplitudes average about 0.4 of those of the shock in the same region on April 13, 1949 (of Magn. 7.0)

29 iP 16 07 05
 ipP 09 15
 30 iP 02 35 38
 iS 36 25
 30 iP 02 40 03
 i 41 01
 30 iS 02 43 32
 May 1 iP 13 15 47
 i 53
 eG 39.3
 eR 43.1

Δ 90°
 1 iP 21 34 18
 i 22
 eL 43.4
 3 iP 01 21 35
 i 22 08
 3 iP 10 08 03
 iPP 09 30
 iS 13 44
 eL 17.4

Δ 33°
 Magn. 6 1/4

μ sec
 PZ 0.1 1
 MH 50 20
 3 iP 16 20 41

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 5, 1965

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

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

Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY
11 MAY 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 151

April - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965									
April									
3	11 26 16	(S 30 57, G 32 06±)	, 11 34 43	(L 40 24 ±)					
4	13 39 29	(pP 40, S 46 44)	, 15 48 29	(i 43, SKS 58 36, S 58 48)					
	16 22 26,	20 20 05	(i 19, i 21 01, S 27 34)						
5	PP 03 30 40,	14 03 02	(i 17 i 22, S 11 54±)						
6	03 28 04,	05 43 59,	10 01 12	(PP 02 34, SKS 07 59, PS 12 00±)					
	13 27 30	(e 44), 13 39 24							
8	13 02 25,	13 52 53	(i 57, S 14 00 00±)	, 14 40 13	(i 16 i 24)				
10	14 58 35,	17 04 16,	22 43 38	(pP 45 47, sP 46 52, S 52 58)					
	23 04 24								
11	05 03 28,	19 03 14							
12	19 48 21	(i 36), 20 52 59	(S 21 02 00±)						
14	07 42 12								
15	05 23 06,	12 28 23,	20 08 44.5	(S 51.7)					
16	13 03 09,	23 29 53	(PcP 31 32, S 35 58)						
18	06 36 23	(S 38 22), .09 58 08	(PP 59 29, S 10 08 12±, PS 09 24±),						
	PP 13 01 00±,	14 20 19							
19	05 28 12,	23 54 13	(pP 24, S 24 04 19)						
20	06 52 15	(pP 25), 07 00 07	(pP 16), 20 38 38						
22	18 44 50	(i 58)							
24	22 08 37	(pP 44)							
25	01 12 41	(i 46, SKS 23 01), 14 18 17	(e 36), 21 23 47	(pP 58)					
26	20 36 14	(pP 29, S 41 58), 22 32 36	(SKS 40 15)						
27	11 12 58	(SKP 16 19, SKS 19 30), 20 17 35	(S 24 15)						
28	10 39 03,	14 13 13	(S 14 03), 14 21 18	(S 22 11), 14 25 20					
	(S 26 14),	14 34 18	(S 35 10)						
29	09 55 55,	11 31 55	(i 32 44), 15 31 57	(S 34 41), 16 07 05	(pP 09 15)				
30	02 35 38	(S 36 25), 02 40 03	(i 41 01), S 02 43 32,	16 09 52					

KEW
OBSERVATORY
28 JUL 1965
RICHMOND,
SURREY

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC), Goldstone (GSC), Isabella (ISA) and Woody (WDY)

April

1 WDY 02 45 18 (pP 25), 04 50 23, 06 18 25 (pP 33), 08 43 49, 08 45 06, 08 46 39 (e 52), 10 21 17, 13 25 24 (pP 34), 13 39 36, 13 40 09, 13 55 18 (pP 31, sP 40), 17 10 08, 18 02 17 (pP 26), 21 30 16 (pP? 28), 21 33 21 (i 25)

2 WDY 02 10 56 (pP 11 06), 05 11 32, 08 51 24, 12 19 37, 13 32 16 (pP 25), 14 54 17, 15 26 56, 15 40 09, 15 40 51, 15 55 53 (pP 57 32, sP 58 19), 16 18 00, 17 09 31 (i 39), 17 16 51, 20 04 21, 22 08 30, 22 33 47, 23 31 19; GSC 16 37 06 (i 14 i 45), 17 08 03 (e 11 i 09 44), 17 28 00 (e 07), 19 07 50 (i 08 12), 20 34 12

3 GSC 02 46 47 (i 54 i 57), 03 38 21, 03 39 32, 03 41 55 (e 42 04), 03 42 18 (i 23), 08 09 04, 08 51 59 (e 52 11), 13 50 33 (i 46);
WDY 03 52 23, 06 56 13, 07 10 06 (i 15), 07 58 01, 09 45 25 (i 44), 12 42 13 (i 23), 14 10 48 (i 56), 14 21 22 (pP 31), 14 24 15 (pP 24), 17 42 23 (i 32), 17 48 52 (i 49 01), 18 44 00 (i 08), 19 25 27 (i 35)

4 GSC 04 42 04, 04 48 28, 07 15 09, 16 05 14, 16 45 10 (i 17 i 22), 18 30 12, 19 17 09, 20 19 32 (i 20 06 i 18 i 25), 20 40 08, 22 57 06;
CLC 15 54 12; WDY 08 58 32 (i 35 i 42), 11 07 56 (i 58 i 08 05), 12 08 01 (i 09), 13 45 07 (i 16), 14 01 29 (pP 39), 18 13 11, 23 50 36

5 GSC 03 26 27 (e 30 23), 03 47 03 (pP 13), 07 46 32, 09 30 24 (e 34), 11 32 08, 14 46 04 (e 13), 18 12 29 (i 14 23), 19 41 34, 21 17 18, 21 24 43 (i 50), 22 54 32 (e 43); CLC 06 35 03, 07 37 04, 11 16 45, 18 21 22; WDY 02 09 00, 15 41 20, 17 25 25 (pP 38), 17 28 44

6 GSC 02 36 20, 03 34 42, 04 31 43, 08 22 33, 09 44 14, 10 56 35, 12 13 36, 12 43 08 (i 16 i 23), 12 46 55 (i 47 04), 14 25 38, 14 28 06, 19 30 56 (pP 31 19), 22 01 23 (pP 37); CLC 17 39 13 (pP 23), 19 22 11 (e 24 09), 20 36 48 (i 53); WDY 12 53 31 (pP 40), 15 38 12 (i 21), 16 36 21 (i 40), 17 44 52, 18 50 42, 19 05 48

7 GSC 00 55 30, 04 41 10, 08 18 19, 09 51 20, 18 00 18; WDY 03 39 55, 09 37 45, 12 02 55, 12 50 31, 15 42 38 (i 47), 15 51 59 (i 52 04), 23 19 40

8 GSC 02 06 35 (pP 44), 04 52 36, 12 58 15, 13 02 33 (i 52 i pP 04 35);
WDY 01 16 43 (pP 51), 02 09 44, 14 52 23, 15 01 12 (i 25 i 43 i 57), 15 52 41 (pP 53), 17 52 54, 19 08 13

9 GSC 17 39 54, 23 08 21; WDY 03 11 29 (i 31 i 37), 03 28 47 (pP 58), 05 57 59 (pP 58 11), 06 31 35 (pP 44), 07 47 49, 08 41 04, 10 54 39 (i 48), 10 58 15 (i 26), 14 43 57

10 GSC iP 00 10 50 (PP 14 23), 00 21 36 (pP 46), 01 31 41, 01 49 00, 04 52 46, 11 25 47 (i 26 02), 11 47 53; WDY 00 48 24 (i 35), 06 34 04 (i 17), 08 47 24, 12 08 49 (i 58), 15 07 23, 19 54 43 (i 55 01)

11 GSC 12 50 29, 17 14 17 (pP 32), 17 16 27, 19 03 21 (pP 05 27);
CLC 17 06 29 (e 39 i 48); WDY 00 24 56, 13 37 46

12 GSC 01 53 47, 04 06 07 (i 15), 04 43 42 (i 53), 04 49 15 (e 27), 04 50 40 (pP 52), 05 04 53 (pP 05 05), 09 04 08 (e 19), 09 19 04 (e 09 e 18), 11 35 37, 16 02 40, 17 38 31, 20 38 52, 21 40 49, 22 06 39;
WDY 11 33 51 (i 34 04), 21 15 41

1965
Supplement: (Continued)

April 13 GSC 15 32 14 (pP 24), 17 35 04, 18 04 18 (i 27), 20 48 00 (i 05
i 18), 23 30 06; WDY 00 37 08, 07 41 23 (i 31), 17 55 28 (i 35),
22 42 40

14 GSC 01 57 08, 02 56 59, 08 32 32, 10 59 25, 11 05 09, 12 02 13;
CLC 23 05 33 (e 06 03); WDY 00 50 22 (e 52 30), 02 25 48, 06 02 47,
10 24 33 (PcP 10 27 45), 17 53 00 (i 54 51)

15 CLC 04 45 11, 07 57 14, 15 21 12; GSC 22 29 22, 23 51 34; WDY 08 56 50

16 GSC 00 27 48, 06 30 55, 10 11 57 (i 12 25), 13 03 08 (pP 40),
14 42 36; WDY 11 08 32, 14 59 58

17 GSC 02 13 53 (i 14 01), 03 00 44 (i 52), 03 05 00 (pP 08), 12 31 26
(pP 44), 19 15 04

18 GSC 02 46 12, 05 52 23, 08 19 09, 13 00 43, 20 52 14; CLC 04 08 21
WDY 13 10 06 (e 25), 20 55 56

19 GSC 00 21 21 (i 40), 02 42 26, 04 52 41, 05 42 12, 07 22 33 (i 53),
08 25 09 (e 28 i 43), 08 28 27 (e 47), 22 30 16 (pP 26),
23 05 16; CLC 08 58 53, 18 30 11 (e 18)

20 GSC 04 54 15, 07 06 43, 17 27 58, 22 31 38; CLC 15 45 39, 15 46 23

21 GSC 10 17 13, 10 42 36, 12 01 13, 21 32 35, 21 46 54 (pP 47 03);
ISA 08 36 08 (e 20); WDY 23 04 26

22 GSC 01 18 13 (pP 19 04), 18 29 55, 22 23 22; WDY 08 19 49
(i 20 11), 21 17 32

23 GSC 05 10 09; WDY 03 19 56, 21 57 36

24 GSC 00 17 28, 02 50 11, 10 27 25 (pP 40), 13 33 01, 13 55 38
(i 42), 20 21 55 (i 22 14 i 23 07); WDY 01 12 28, 01 55 32
(e 45), 07 44 17, 14 40 55, 18 40 18 (e 46)

25 GSC 00 38 05, 01 52 03 (i 52 15), 01 59 37 (e 42), 02 58 30 (e 41)
05 29 30, 07 06 00 (i 11), 08 48 20 (i 32, i 49 59), 14 42 36
(e 39), 14 53 34, 15 32 38 (i 59), 15 41 33 (i 43, i 42 22);
WDY 00 32 10, 08 30 10, 09 20 39 (i 49), 19 28 33, 20 31 24,
21 40 30

26 GSC 02 03 14 (i 20), 08 47 53, 13 16 57, 13 44 47, 17 29 30, 18 59 02
(i 12), 21 13 54, 22 29 34 (PP 33 39, SKS 40 15), 22 39 54,
23 06 48 (i 56), 23 58 06; WDY 10 06 38

27 GSC 00 39 14 (e 28), 09 06 32, 11 13 00 (PP 13 50, SKP 16 21,
SKS 19 35), 13 27 46, 14 22 52, 14 59 22, 15 01 10, 15 18 05
(i 13), 21 12 07 (i 17); WDY 01 26 51, 02 55 30 (i 39)
07 30 49 (i 31 57), 11 47 57, 14 39 04

28 GSC 01 33 53 (pP 34 07, PcP 35 35, pPcP 49, ScP 39 21, S 40 47),
02 35 09 (i 16), 03 12 44, 03 23 42 (e 53), 09 46 22, 12 20 37,
23 06 25 (epP 48); CLC 16 54 39 (pP 55 07), 20 43 00 (i 04);
WDY 16 44 37, 20 08 35

29 GSC 04 32 15, 06 19 17, 07 19 09, 07 34 50, 08 04 46, 08 19 18,
11 10 34, 11 41 09 (i 33), 14 14 37, 15 31 44; WDY 13 55 47,
15 31 33, 16 16 39, 16 23 15, 22 44 49 (i 45 00);
ISA 16 20 23

30 WDY 04 10 29 (e 38), 15 56 23

June 17, 1965

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 19, 1965



ADDITIONAL
April 30
CONTINUATION
May

	16 09 52	May 12 (continued)
		eS 11 00.2
	02 36 49	eSS 08.1
6 IP	19 59 04	eR 24.3
6 IP	13	Doubtfully
8 IP	00 07 36	interpreted as
8 ipP	08 05	Δ 116°, depth 150 km
8 IP	02 15 19	13 IP 02 34 02
8 IP	11 44 45	ipP 35 35
9 eL	14 18 42	isP 36 07
9 eP	14 19 04	IS 42 51
9 eS	25.4	I 43 18
9 eR	32.3	13 IP 04 21 42
10 eP	04 45 03	15 IP 21 10 23
10 e	43	15 IP 21 15 23
11 IP	17 44 17	16 IP 11 54 14
11 ipP	31	17 IP 17 33 14
11 eS	49 39	ipP 37 23
11 iL	52.3	eSKS 43 45
	Δ 34° Depth 70 km	IPS 46.0
	Magn. 5 3/4	ISS 51.3
		eG 18 00.8
	μ sec	iR 06.0
12 PZ	0.2 2	Δ 101° Magn. 6 1/2
12 eP''	10 51 39	
12 e(pP'')	52 21	μ sec
12 esPP	54 03	PZ 0.15 1 1/2
12 I	55 26	PPZ 0.3 3
12 ISKS	58 34	PPH 2 20
12 IsSKS	59 32	MH 30 30

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

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

Violet M. Taylor
Seismological Assistant

May 18 - May 25.



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 May 26, 1965

CONTINUATION

Date	Station	Time	Time	Date	Station	Time	Time
May 18	iP	22 57 45		May 22	iP	10 42 50	
	i		58		ipP		44 49
19	iP	03 13 52			isP		45 38
	eR		41.3		IS		52 12
19	iP	04 33 29			ISP		53 00
	i		35		i		56 14
	i		51				μ sec
19	iP	06 19 24			PZ		$\frac{1}{2}$ $\frac{1}{2}$
	iG		20.9	23	iP	23 55 07	
19	iP	14 13 00			ipP		16
	eL		38.3		iScP	24 00 04	
19	iP	22 16 08			i		18
	i		35		IS		02 18
19	iP	23 43 25			i		42
20	iP	00 52 54			iScS		04 54
	i		53 03		iG		07.5
	i		54 09		iR		08.7
	iPP		56 15		Δ 53° Depth 40 km		
	i		27		Magnitude 6		
	iS	01 03.3				μ sec	
	i		04.5		PZ	0.2	1
	iG		15.3		MH	10	20
	iR		19.1	24	eSKS	23	46.0
	Δ 84°				IPS		48 43
	Depth 50 km.				eSS		53.9
	Magn. 6.8				eR	24	08.3
		μ sec			Δ 103°		
	PZ	0.7	$1\frac{1}{2}$			μ sec	
	PH	0.2	$1\frac{1}{2}$		MH	5	20
	PPZ	0.7	3	25	iP	13 16 24	
	PPH	0.4	2		ipP		36
	MH	40	20		eS		23.3
	MZ	50	20		eSS		26.3
20	iP	02 22 38			iR		30.3
	i		51		Δ 48°		
	i		23 03			μ sec	
					MH	4	20

KEYW
 OBSERVATORY
 - 3 JUN 1965
 RICHMOND,
 SURREY.

SUPPLEMENT: Times of P for additional shocks at China Lake (CLC),
 Goldstone (GSC) and Woody (WDY)
 May 13 WDY 00 17 07 (e 16), 01 48 22, 03 05 42 (i 06 04), 16 48 01,
 (e 21), 19 16 15 (i 17 42), 19 34 54 (i 36 10), 21 02 57
 (e 03 10, i 25)
 14 GSC 16 58 59 (pP 59 08); WDY 02 01 03, 02 39 17, 09 54 37 (i 45),
 18 21 45, 21 12 35 (i 44), 23 09 29, 23 39 30

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 26, 1965

Page 2

SUPPLEMENT: (Continued)
 May 15 WDY 20 02 17 (pP 26), 20 04 24 (pP 31), 20 24 21, 22 51 16
 (pP 27)
 16 GSC 05 22 55, 11 45 45, 11 50 10 (P¹¹ 54 15, PP 54 40, SKS 12 00 50,
 S 03 05, PKKP 05 20, G 20 18±, R 25 30±; Δ 110°), 15 59 19,
 21 15 04; WDY 05 52 09
 17 GSC 01 54 04 (i 17), 07 34 45 (e 35 02), 18 17 41 (pP 18 02,
 i 05), 20 31 01; WDY 13 34 30 (i 43), 18 15 59
 18 GSC 01 24 12 (i 48), 08 16 51, 09 04 38, 16 48 05, 18 30 13,
 21 42 25; WDY 04 45 34, 15 38 45, 21 05 46 (e 06 01)
 19 GSC 06 26 31, 11 06 59, 23 43 33 (s 53 04); WDY 01 38 57, 03 20 01,
 04 50 28 (e 49), 05 31 32, 16 10 47 (e 11 22), 17 18 12
 (i 23 i 27), 18 06 46 (i 59), 19 15 16, 19 53 20 (i 29),
 22 28 34 (i 38 i 47), 22 31 11
 20 WDY 01 17 30 (i 38), 02 50 41, 20 52 05, 21 37 56? (i 38 08)
 21 WDY 04 25 47, 12 01 28

Violet M. Taylor
Seismological Assistant

May 16 to June 9



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 9, 1965

CORRECTION

April 21 IP 20 30 30
 Should read: IP 20 38 38

CONTINUATION

May 26 IP 05 05 06
 ePcP 07 52
 eL 13.3
 26 eP 06 56 17
 e 38
 26 IP 20 02 45
 I 03 13
 e 04 27
 I 06 07
 e 13 35
 e(L) 20.3
 Deep. Interpretation
 uncertain. First
 reading may be P''
 27 IP 13 17 33
 29 IP 01 48 49
 ipP 57
 e 02 12.4
 eR 39.4
 31 eP 03 24 26
 eL 27.4
 31 eP 05 10 43
 eL 13.2
 31 IP 08 50 02
 I 19
 eP 11 57 03
 ePP 58 19
 eS 12 04 01
 ePS 05 33
 eSS 13.2
 eR 30.2
 Δ 120°±
 31 IP 20 54 07
 June 2 IP 03 29 37
 I 49
 eS 39.5
 eR 50.5
 2 IP 05 24 24
 I 41
 IS 34 00
 2 IP 14 05 28
 I 40
 IS 11 44
 eG 14.8
 IR 16.5
 Δ 44°

June 2 IG 14 23.2
 IR 25.2
 2 IP 14 56 51
 ipP 59 02
 eS 15 05.9
 2 IP 15 09 29
 epP 11 38
 eS 17.8
 2 IP 23 51 11
 I 17
 I 21
 IS 24 00.2
 eG 07.4
 IR 11.2
 Δ 68°
 PZ μ sec
 MH 1/2 1 1/2
 3 eP 9 20
 I 04 58 13
 I 20
 I 33
 eR 05 26.2
 3 IP 07 52 28
 eR 08 06.2
 3 IP 11 05 34
 e 06 18
 I 07 15
 3 IP 16 27 35.1
 I(S) 28 21.1
 I 36.6
 Magn. 4 1/2
 Felt at Fresno
 3 IP 16 32 10.2
 IS 59.1
 I 33 14.6
 Magn. 4 1/4
 4 eP 15 10 55
 eS 17 50
 eR 24.9
 4 IP 15 39 09
 5 IP 01 07 20
 I 08 03
 I 10
 8 IP 13 43 16
 IG 45.9

KEW
 OBSERVATORY
 14 JUN 1965
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 9, 1965

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

May	22	GSC	10 32 42, 14 23 41; WDY 20 06 02; CLC 13 31 47
	23	GSC	04 35 50 (i 36 07 i 36 11); WDY 04 09 41, 07 16 24, 14 57 41 (i 54)
	24	GSC	23 35 25 (PP 39 33, SKS 45 55, PKKP 51 02); WDY 03 49 37, 14 00 11 (i 19)
	25	GSC	16 33 57 (i 34 06 e 25 i 34), 18 46 50; WDY 20 25 32
	26	GSC	08 46 33, 23 31 34 (e 57, e 32 14); WDY 01 07 00 (e 12), 22 12 59 (pP 13 26); CLC 10 52 28
	27	GSC	12 30 22, 13 04 09; WDY 01 40 52, 03 42 50, 19 35 49 (pP 59), 22 38 42
	28	GSC	18 23 04; WDY 01 04 01, 03 17 49, 06 01 42 (i 04 32), 06 51 55, 08 46 16
	29	GSC	04 09 24, 12 02 12
	30	GSC	01 23 14, 02 21 52 (e 22 05), 19 28 36, 19 35 45 (i 51); WDY 02 39 46, 02 46 31 (i 45), 06 04 46, 21 46 13
	31	GSC	03 34 21, 06 56 45, 09 47 42, 11 35 57 (e 36 08); WDY 00 13 44 (i 50 i 14 04), 03 33 31, 03 34 14, 09 28 23, 10 59 18 (i 25), 12 07 54
June	1	GSC	15 29 45, 16 40 49, 18 36 44; WDY 04 51 24, 09 41 46, 12 14 12 (i 15 00), 13 18 25
	2	GSC	00 49 53, 02 18 03, 09 30 38, 14 13 48; WDY 09 30 13, 09 30 32 (pP 32 41, sP 33 40), 12 51 28
	3	WDY	04 22 23, 07 25 48, 09 43 52, 10 53 19, 12 39 01, 16 27 10.3 (s 46.8), 16 31 44.9 (s 32 19.9), 20 41 35, 21 49 36
	4	GSC	08 18 23, 10 44 56; WDY 13 43 34 (i 51), 14 34 49

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 152

May - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965

May

- 1 13 15 47 (i 53), 21 34 18 (i 22)
- 3 01 21 35 (pP 22 08), 10 08 03 (PP 09 30, S 13 44), 16 20 41
- 6 02 36 49, 19 59 04
- 8 00 07 36 (pP 08 05), 11 44 45
- 9 14 19 04 (S 25 24±)
- 11 17 44 17 (pP 31, S 49 39)
- 12 10 51 39 (pP'' 52 21, sPP 54 03, i 55 26, SKS 58 34, sSKS 59 32,
S 11 00 12±)
- 13 02 34 02 (pP 35 35, sP 36 07, S 42 51, i 43 18), 04 21 42
- 15 21 10 23
- 16 11 54 14
- 17 17 33 14 (PP 37 23, SKS 43 45, PS 46 00±)
- 18 22 57 45 (pP 58)
- 19 03 13 52, 04 33 29 (i 35 i 51), 06 19 24, 14 13 00, 22 16 08 (i 35),
23 43 25
- 20 00 52 54 (i 53 03, i 54 09, PP 56 15, S 01 03 18±), 02 22 38 (i 51)
- 22 10 42 50 (pP 44 49, sP 45 38, S 52 12, SP 53 00, i 56 14)
- 23 23 55 07 (pP 16, ScP 24 00 04, i 18, S 02 18, i 42, ScS 04 54)
- 24 SKS 23 46 00± (PS 48 43)
- 25 13 16 24 (pP 36, S 23 18±)
- 26 05 05 06 (PcP 07 52), 20 02 45 (i 03 13, e 04 27, i 06 07, e 13 35)
- 27 13 17 33
- 29 01 48 49 (pP 57)
- 31 03 24 26, 05 10 43, 08 50 02 (i 19), 11 57 03 (pP 58 19, S 12 04 01,
PS 05 33), 20 54 07

KEW
OBSERVATORY
28 JUL 1965
RICHMOND,
SURINAM

1965

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

May
 1 GSC 02 04 24, 16 44 13, 20 01 10, 22 14 34; WDY 04 23 23
 2 GSC 05 58 52, 07 26 47, 11 03 27; WDY 00 15 26, 09 16 30
 3 GSC 12 53 48 (i 59); WDY 17 49 36 (pP 48)
 4 GSC 02 35 50, 18 15 51 (i 16 03); WDY 12 21 33, 21 57 17
 5 GSC 03 11 57; WDY 00 20 39, 07 21 15, 09 24 22, 10 12 14 (e 21), 21 45 06
 23 21 19
 6 WDY 14 37 22, 23 51 21; GSC 19 53 23
 7 GSC 16 45 22 (i 34), 17 05 05; WDY 02 42 43, 12 19 01, 13 31 14,
 15 56 10 (i 14 i 23), 22 51 57
 8 WDY 17 00 15 (i 24 i 31)
 9 GSC 01 41 49, 04 15 52 (i 16 05), 20 08 08 (e 32), 22 18 41, 23 51 57
 10 GSC 00 02 54, 11 11 06; WDY 08 46 20
 11 GSC 02 33 28, 08 15 21 (e 34), 08 45 26, 12 13 32 (i 43),
 12 55 03, 13 30 44; WDY 01 22 46, 18 20 05
 12 WDY 17 24 17 (pP 26 19), 19 47 01 (i 48 08)
 13 WDY 00 17 07 (e 16), 01 48 22, 03 05 42 (i 06 04), 16 48 01 (e 21),
 19 16 15 (i 17 42), 19 34 54 (i 36 10), 21 02 57 (e 03 10, i 25)
 14 GSC 16 58 59 (pP 59 08); WDY 02 01 03, 02 39 17, 09 54 37 (i 45),
 18 21 45, 21 12 35 (i 44), 23 09 29, 23 39 30
 15 WDY 20 02 17 (pP 26), 20 04 24 (pP 31), 20 24 21, 22 51 16 (pP 27),
 23 44 21
 16 GSC 05 22 55, 11 45 45, 11 50 10 (P¹¹ 54 15, PP 54 40, SKS 12 00 50,
 S 03 05, PKKP 05 20, G 20 18±, R 25 30±; Δ 110°), 15 59 19,
 21 15 04; WDY 05 52 09
 17 GSC 01 45 04 (i 17), 07 34 45 (e 35 02), 18 17 41 (pP 18 02, i 05),
 20 31 01; WDY 13 34 30 (i 43), 18 15 59
 18 GSC 01 24 12 (i 48), 08 16 51, 09 04 38, 16 48 05, 18 30 13, 21 42 25;
 WDY 04 45 34, 15 38 45, 21 05 46 (e 06 01)
 19 GSC 06 26 31, 11 06 59, 23 43 33 (S 53 04); WDY 01 38 57, 03 20 01,
 04 50 28 (e 49), 05 31 32, 16 10 47 (e 11 22), 17 18 12
 (i 23 i 27), 18 06 46 (i 59), 19 15 16, 19 53 20 (i 29),
 22 28 34 (i 38 i 47), 22 31 11
 20 WDY 01 17 30 (i 38), 02 50 41, 20 52 05, 21 37 56? (i 38 08)
 21 WDY 04 25 47, 12 01 28
 22 GSC 10 32 42, 14 23 41; WDY 20 06 02; CLC 13 31 47
 23 GSC 04 35 50 (i 36 07 i 36 11); WDY 04 09 41, 07 16 24, 14 57 41 (i 54)
 24 GSC 23 35 25 (PP 39 33, SKS 45 55, PKKP 51 02); WDY 03 49 37, 14 00 11
 (i 19)
 25 GSC 16 33 57 (i 34 06 e 25 i 34), 18 46 50; WDY 20 25 32
 26 GSC 08 46 33, 23 31 34 (e 57, e 32 14); WDY 01 07 00 (e 12), 22 12 59
 (pP 13 26); CLC 10 52 28
 27 GSC 12 30 22, 13 04 09; WDY 01 40 52, 03 42 50, 19 35 49 (pP 59),
 22 38 42
 28 GSC 18 23 04; WDY 01 04 01, 03 17 49, 06 01 42 (i 04 32), 06 51 55,
 08 46 16
 29 GSC 04 09 24, 12 02 12
 30 GSC 01 23 14, 02 21 52 (e 22 05), 19 28 36, 19 35 45 (i 51); WDY 02 39 46,
 02 46 31 (i 45), 06 04 46, 21 46 13
 31 GSC 03 34 21, 06 56 45, 09 47 42, 11 35 57 (e 36 08); WDY 00 13 44
 (i 50 i 14 04), 03 33 31, 03 34 14, 09 28 23, 10 59 18 (i 25), 12 07 54

July 12, 1965

Violet M. Taylor, Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 16, 1965



ADDITIONAL
 June 3

Tinemaha:

IP	16	26	53.0
IS		27	12.8
IP	15	31	27.5
IS			47.5

June 11

eP	12	11	07
e			18
IP	12	05	52 18
IP	12	16	31 15
IP	12	19	01 24

CONTINUATION
 June 11

IP	01	45	28
i			39
IP	02	46	33
i			43
i			50
IP	03	44	47
i			45 01
IS			53 47
IG	04	01.8	
eR			04.6
eP ⁱ P ⁱ			13 01
Δ 68°			
Magn. 6 3/4			
		μ	sec
PZ		1 1/2	1 1/2
SH		1 1/2	7
MH		55	20
MZ		70	20
IP	11	03	52 04
e			16
IP	11	04	04 14
i			19
IP	11	04	55 54
IP	11	04	56 41
eP	11	07	22 07
eP	11	08	52 04
eP	11	10	27 55
e			28 04

ipP
 e(sP)
 eS
 iSS
 Δ 75° Depth 110 km
 Magn. 6 1/2

PZ	μ	sec
	1/4	1
SH	3	7
IP	12	28 02
IP	13	02 31 59
i		32 10
i		25
IP	13	07 17 46
i		55
IS		27 10

MH	μ	sec
	3	20
eP	14	08 23 14
e		25
eP	14	09 43 21
i		32
IL		45.9
IP	14	13 09 43
eL		11.6
IP	15	04 54 55
e(S)	15	09 44.1
eG		58.1
eR		10 02.1

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

June 4	WDY	17 35 58, 23 03 33 (i 44)
5	GSC	01 09 47 (pP 54), 10 19 18 (e 26), 11 24 57, 12 58 13 (PP 13 02 13), 13 17 03 (i 19 18, e 21 18); WDY 20 15 41
6	GSC	06 22 07, 08 51 05, 13 50 46; WDY 03 30 29, 05 12 39, 05 43 20, 21 41 19
7	GSC	08 28 17 (i 22), 13 27 31; WDY 05 01 18 (i 33), 06 29 40, 10 38 07 (i 41 24), 15 23 54 (pP 25 54), 15 55 44, 16 33 02, 16 36 55, 18 02 38, 18 49 17 (e 34), 22 16 07
8	WDY	04 55 48, 07 57 51, 08 50 07, 09 11 38, 23 35 01 (i 11)
9	GSC	12 40 21, 13 35 55 (e 36 03); WDY 01 18 107, 16 07 25 (e 08 13, e 08 35), 17 10 11 (pP 11 05), 22 40 22, 22 56 25 (e 33)
10	GSC	04 47 18, 06 29 37; WDY 20 44 46, 23 22 39 (i 48)

Violet M. Taylor, Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 23, 1965



CONTINUATION
 June 15

Date	Time	Station	Reading	Date	Time	Station	Reading
June 15	23 23 00	eP		June 16	17 41	IP	20.0
		IS	33 34			IS	49.4
		IPS	34.5			Magn. 3 3/4	
		ISS	38.7			Felt at Brawley	
		IG	45.1	17	04 33	IP	09.6
		IR	49.1			IS	38.6
		$\Delta 83^\circ$				Magn. 3 3/4	
		Magn. 6 1/4		17	07 14	IP	13.5
						IS	42.1
		μ sec				Magn. 3 3/4	
		MH	15 20	17	07 22	IP	24.1
		MZ	15 20			IS	54.1
16	00 55	IP	54.5			Magn. 3 3/4	
		IS	56 21.6	17	07 31	IP	04.5
		Magn. 4 Felt at Brawley				IS	35.3
16	02 16	IP	37			Magn. 4 1/2. This and following shocks reported felt at Brawley, Calipatria and Westmorland.	
		i	17 02	17	07 40	IP	56.0
16	02 42	IP	48.0			IS	41 26.6
		i	50.6			Magn. 4 1/4	
		iS	43 20.5	17	07 43	IP	48.6
		Felt at Brawley etc.				IS	44 19.6
		Magn. 4 1/2				Magn. 4 1/4.	
16	03 03	eS	03.1			Similar shocks of magnitude 3 1/2 at 08:13, 08:40, .	
		eSS	07.5	17	11 04	IP	22
		eG	12.7			i	36
		eR	15.6	17	19 14	IP	09
		$\Delta 68^\circ$				i	23
16	03 47	IP	55.8	18	22 55	IP	26
		IS	48 24.8			ipP	53
		Felt at Brawley				iSP	56 00
		Magn. 3 3/4		19	06 47	IP	17
16	04 06	IP	20			i	26
		i	37			i	34
		IS	15 27			eS	54 39
		ISS	19.7	20	07 00	eL	07 00.7
		IG	24.7	20	02 08	eP	39
		eR	27.6	20	17 26	eP	32
		$\Delta 68^\circ$		20	18 07	IP	17
16	09 36	IP	01.5			iL	10.0
		IS	28.5	20	19 19	eP	08
		Magn. 3 3/4				iL	21.5
16	14 05	IP	09.9				
		IS	41.4				
		Magn. 3 1/2					
16	15 56	IP	50.9				
		IS	57 21.5				
		Magn. 3 3/4					
		Felt at Brawley					

KEW
 OBSERVATORY
 28 JUN 1965
 RICHMOND,
 SUSSEX

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 23, 1965

SUPPLEMENT:

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

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

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(And auxiliary stations as noted)
June 30, 1965



CONTINUATION

June	Station	Time	Reading	June	Station	Time	Reading
22	eP	23 17 10		24	IP	05 00 43	
	e		22		I	01 20	
23	ePP	00 07 16		24	IP	14 20 31	
	ePS	16 22			I	57	
	eSS	22.1		27	IP	11 15 10	
	eSSS	26.1			eS	20 10	
	eG	32.6		27	IP ^{II}	11 49 59	
	eR	38.5			I	50 15	
	$\Delta 108^\circ$				e(SS)	12 08.1	
23	eP	06 31 38			eG	17.6	
	e		55		eR	22.3	
23	IP	11 11 57			$\Delta 120^\circ?$		
23	IP	11 15 44		28	IP	03 46 40	
	IS	21 03			I	47 06	
	eL	23.0			eS	57.3	
23	eP	12 29 52			eSS	04 04.0	
24	IP	03 40 49			eG	11.8	
					IR	15.0	
					$\Delta 92^\circ$		

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

June 16	BAR	00 55 28.6 (S 42.5), 02 42 23.4 (S 37.0), 03 47 29.0 (S 42.7), 09 35 35.8 (S 49.3), 14 04 42.0 (S 54.4), 15 56 24.0 (S 37.6), 17 39 54.0 (S 40 07.0), 17 40 52.5 (S 41 06.1); HAY 00 55 22.7, 02 42 17.8, 03 47 23.1, 09 35 29.9, 14 04 36.3, 15 56 18.3, 17 39 48.2, 17 40 47.1
17	BAR	04 32 42.5 (S 56.4), 07 13 45.7 (S 58.1), 07 21 56.3 (S 22 08.7), 07 30 38.6 (S 52.5), 07 40 30.1 (S 44.1), 07 43 23.1 (S 36.2), 08 12 54.6 (S 13 07.7), 09 54 17.1 (S 54 29.5), 16 45 20.4 (S 32.6); HAY 04 32 37.2, 07 13 38.9, 07 21 50.9, 07 30 33.3, 07 40 23.1, 07 43 17.4, 08 12 49.0, 08 39 48.8, 09 54 10.9, 16 45 14.3
18	WDY	18 27 20 (I 32), 19 43 28 (I 37)
19	GSC	01 46 13 (e 19), 09 14 44, 11 19 49, 13 00 09 (I 01 00)
	WDY	12 13 41, 15 42 16
20	GSC	01 01 18, 06 20 19 (I 21 09), 22 01 51 (e 02 10);
	WDY	06 52 29 (I 41), 09 29 53 (I 30 05), 21 55 57
21	GSC	00 39 59, 10 55 59 (e 56 05), 13 32 40, 22 21 35 (I 43);
	WDY	12 17 57 (I 18 17), 18 06 56 (I 07 04), 19 28 09
22	GSC	14 30 53; WDY 02 19 00 (I 11), 06 04 22 (I 29), 12 10 00, 13 25 51? (I 26 03 I 10)
23	GSC	07 44 44, 08 59 20, 12 09 11 (e 19), 14 29 11 (I 18);
	WDY	00 17 44 (I 58), 12 48 08, 13 55 58, 14 16 46 (I 59), 14 41 23, 20 50 51, 21 20 36
24	GSC	03 26 34 (I 43), 03 50 53 (pP 51 00, s 58 22), 07 46 13, 08 03 38

Violet M. Taylor
Seismological Assistant

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-5 JUL 1965

65

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 8, 1965

CONTINUATION

Date	Time	Station	Time	Station	Time	Station	Time	Station	Magn.
June	29	iP	15 32 05	July 2	i(P)	20 28 45			
	30	ePP	03 12 27		eL	41.4			
		eSKS	18.6	2	iP	21 06 08			
		ePS	22.0		iS	12 09			
		eSS	27.7		iScS	16 15			
		eG	40.1		iR	17.0			
		eR	43.7		Δ 40°	Magn. 6 3/4 - 7			
		Δ 115°				μ sec			
		Magn. 6			PZ	8 5			
			μ sec		PH	5 7			
		MH	5 20		SH	13 20			
		MZ	5 20	5	eP	08 42 06			
30		iP	08 42 17		i	20			
		i	26		iS	50 23			
		e	30		eSS	54.0			
		eScP	47 37		iG	56.0			
		iS	49 21		eR	57.2			
		iScS	52 06		Δ 60°	Magn. 5 3/4			
		eL	53.5			μ sec			
		Δ 48°			PZ	0.1 2			
		Magn. 5 3/4 - 6			SH	2 30			
			μ sec		MH	6 20			
		PZ	0.1 1	6	iP	03 17 00			
		SH	3/4 3		i	05			
		MH	4 20		i	16			
		MZ	4 20		e(S)	27 28			
30		iP	11 24 03		e(SS)	28.9			
30		iP	12 46 36		Δ 90°?				
30		ipP	17 19 58	6	eP	03 32 18			
		i	20 05		iPP	36 28			
July	1	iP	05 06 23		eSKS	43.0			
	1	iP	17 51 39		ePS	45.5			
	1	ePP	23 30 53		iSS	50.9			
		ePS	40 18		eL	04 01.3			
		iSS	46.3		Δ 103°?				
		iR	24 00.0		Confused by preceding				
		Δ 108°	Magn. 6	6	iP	04 19 29			
			μ sec		i	43			
		MH	6 20	6	eP	05 08 40			
					i	48			

KEW
OBSERVATORY
13 JUL 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 July 8, 1965

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

June 16	ECC	00 55 16.7 (S 55 19.1), 02 42 11.6 (S 14.0)
17	ECC	07 30 26.6 (S 28.6), 07 40 17.9 (S 20.1)
		(Smaller shocks also recorded at El Centro with S-P 2.1 to 2.4 sec., June 16/17, P generally about 12 seconds earlier at El Centro than at Barrett)
25	GSC	05 19 02 (i 19 10), 08 09 32 (pP 59), 14 29 33 (i 56), 20 38 41 (i 48 i 53)
26	GSC	21 35 31 (pP 40), 22 23 01 (i 15), 23 20 23 (e 52)
27	GSC	01 08 08, 01 23 32, 10 05 09 (e 17), 11 53 48, 17 18 12 (pP 38); WDY 18 05 08, 18 54 50, 21 20 06
28	GSC	18 08 59; WDY 00 23 04, 04 09 33, 05 24 40, 09 12 19, 14 34 35, 15 58 28 (i 34), 23 02 25
29	GSC	02 15 24, 07 48 11, 08 29 58 (i 30 07), 14 59 25 (i 36 i 41), 16 11 53, 18 03 47, 20 08 49; WDY 05 20 12 (i 23), 16 47 28
30	GSC	10 07 46, 17 19 38 (pP 52 sP 58)
July 1	WDY	07 29 08 (i 13), 14 47 42, 19 56 00, 20 01 00
2	GSC	05 16 18 (pP 38), 13 08 39; WDY 11 24 43

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 153 ✓

June - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

- 1965
 June
- 2 03 29 37 (i 49, S 39 30±), 05 24 24 (i 41, S 34 00), 14 05 28 (i 40, S 11 44), 14 56 51 (pP 59 02, S 15 05 54±), 15 09 29 (pP 11 38, S 17 48±), 23 51 11 (S 24 00 12±)
 - 3 04 58 13 (i 20), 07 52 28, 11 05 34, 16 27 35.1 (S 28 21.1; Tinemaha 16 26 53.0, S 27 12.8), 16 32 10.2 (S 59.1; Tinemaha 16 31 27.5, S 47.5)
 - 4 15 10 55 (S 17 50), 15 39 09
 - 8 13 43 16 (G 45 54±)
 - 11 01 45 28, 02 46 33, 03 44 47 (i 45 01, S 53 47, P'P' 04 13 01), 03 52 04, 04 04 14, 04 55 54, 07 22 07, 08 52 04, 10 27 55, 12 11 07
 - 12 05 52 18, 19 01 24 (pP 50, sP 02 10, S 10 41, sS 11 23), 22 28 02
 - 13 02 31 59, 07 17 46 (S 27 10)
 - 14 09 43 21 (L 45 54±), 13 09 43 (L 11 36±)
 - 15 04 54 55, S 09 44 06±, 23 23 00 (S 33 34)
 - 16 00 55 54.5 (S 56 21.6), 02 42 48.0 (S 43 20.5. Magn. 4½. Imperial Valley; felt at Brawley, window broken at Westmorland), S 03 03 06±, 03 47 55.8 (S 48 24.8), 04 06 20 (S 15 27), 09 36 01.5 (S 28.5), 14 05 09.9 (S 41.4), 15 56 50.9 (S 57 21.5), 17 41 20.0 (S 49.4)
 - 17 04 33 09.6 (S 38.6), 07 14 13.5 (S 42.1), 07 22 24.1 (S 54.1), 07 31 04.5, (S 35.3, Magn. 4½. Imperial Valley), 07 40 56.0 (S 41 26.6) 07 43 48.6 (S 44 19.6), 11 04 22, 19 14 09
 - 18 22 55 26 (pP 53, sP 56 00)
 - 19 06 47 17 (S 54 39)
 - 20 02 08 39, 17 26 32, 18 07 17 (L 10 00±), 19 19 08 (L 21 30±)
 - 23 PP 00 07 16 (PS 16 22), 11 11 57, 11 15 44 (S 21 03), 12 29 52
 - 24 03 40 49, 05 00 43 (pP 01 20), 14 20 31 (pP 57)
 - 27 11 15 10 (S 20 10), 11 49 59
 - 28 03 46 40 (i 47 06, S 57 18±)
 - 29 15 32 05
 - 30 PP 03 12 27 (SKS 18 36±, PS 22 00±), 08 42 17 (i 30, ScP 47 37, S 49 21, ScS 52 06), 11 24 03, 12 46 36, pP 17 19 58

KEW
 OBSERVATORY
 1 10 OCT 1965
 RICHMOND,
 SURREY.

1965
Supplement: Times of P, etc. for additional shocks recorded at Barrett (BAR), China Lake (CLC), El Centro (ECC), Goldstone (GSC), Hayfield (HAY) and Woody (WDY)

June 1	GSC	15 29 45, 16 40 49, 18 36 44; WDY 04 51 24, 09 41 46, 12 14 12 (i 15 00), 13 18 25
2	GSC	00 49 53, 02 18 03, 09 30 38, 14 13 48; WDY 09 30 13, 09 30 32 (pP 32 41, sP 33 40), 12 51 28
3	WDY	04 22 23, 07 25 48, 09 43 52, 10 53 19, 12 39 01, 16 27 10.3 (S 46.8), 16 31 44.9 (S 32 19.9), 20 41 35, 21 49 36
4	GSC	08 18 23, 10 44 56; WDY 13 43 34 (i 51), 14 34 49, 17 35 58, 23 03 33 (i 44)
5	GSC	01 09 47 (pP 54), 10 19 18 (e 26), 11 24 57, 12 58 13 (PP 13 02 13), 13 17 03 (i 19 18, e 21 18); WDY 20 15 41
6	GSC	06 22 07, 08 51 05, 13 50 46; WDY 03 30 29, 05 12 39, 05 43 20, 21 41 19
7	GSC	08 28 17 (i 22), 13 27 31; WDY 05 01 18 (i 33), 06 29 40, 10 38 07 (i 41 24), 15 23 54 (pP 25 54), 15 55 44, 16 33 02, 16 36 55, 18 02 38, 18 49 17 (e 34), 22 16 07
8	WDY	04 55 48, 07 57 51, 08 50 07, 09 11 38, 23 35 01 (i 11)
9	GSC	12 40 21, 13 35 55 (e 36 03); WDY 01 18 10?, 16 07 25 (e 08 13, e 08 35), 17 10 11 (pP 11 05), 22 40 22, 22 56 25 (e 33)
10	GSC	04 47 18, 06 29 37; WDY 20 44 46, 23 22 39 (i 48)
11	GSC	15 50 37 (e 53); WDY 03 23 25 (i 35 i 41), 03 32 15, 03 55 30 (i 43), 03 57 43, 04 03 47 (i 53 i 59), 04 11 38 (i 53), 04 25 43 (i 56), 05 08 46, 05 28 17, 05 55 51 (i 56 03), 06 08 00 (i 13), 07 38 35 (i 49), 09 07 41 (e 52), 10 10 27 (i 41), 10 30 38, 10 32 29 (i 43), 10 51 51 (i 52 18 i 52 30), 12 48 14 (e 30), 12 57 39, 13 05 13 (e 31 e 43), 14 42 22 (i 44), 16 19 56 (pP 20 10), 16 29 53 (i 30 00, i 07), 17 23 08 (pP 18)
12	GSC	00 32 01 (i 16), 02 57 07, 03 20 54 (i 21 14), 05 39 41 (e 56), 06 14 41, 06 30 44, 18 57 02; WDY 02 13 58 (pP 14 11), 06 57 23 (pP 37), 07 03 22, 08 02 09, 12 34 10, 16 22 45 (pP 59), 16 42 20, 18 53 45, 18 56 38 (i 48), 23 08 42 (pP 59)
13	GSC	14 35 43, 19 00 10; WDY 00 56 50, 01 10 18, 16 23 51 (i 24 04), 21 22 43, 21 42 46
14	GSC	16 59 12; WDY 00 11 13, 07 51 59 (i 55 43)
15	GSC	09 33 49, 19 10 04 (i 30); WDY 00 00 03 (i 38), 13 03 15 (i 04 10 i 22), 14 29 51 (i 30 07), 16 35 29 (i 44), 20 00 39, 21 56 47
16	BAR	00 55 28.6 (S 42.5), 02 42 23.4 (S 37.0), 03 47 29.0 (S 42.7), 09 35 35.8 (S 49.3), 14 04 42.0 (S 54.4), 15 56 24.0 (S 37.6), 17 39 54.0 (S 40 07.0), 17 40 52.5 (S 41 06.1); ECC 00 55 16.7 (S 55 19.1), 02 42 11.6 (S 14.0); GSC 02 54 08, 05 09 46; HAY 00 55 22.7, 02 42 17.8, 03 47 23.1, 09 35 29.9, 14 04 36.3, 15 56 18.3, 17 39 48.2, 17 40 47.1
17	BAR	04 32 42.5 (S 56.4), 07 13 45.7 (S 58.1), 07 21 56.3 (S 22 08.7), 07 30 38.6 (S 52.5), 07 40 30.1 (S 44.1), 07 43 23.1 (S 36.2), 08 12 54.6 (S 13 07.7), 09 54 17.1 (S 54 29.5), 16 45 20.4 (S 32.6)
	CLC	04 31 12 (pP 28)

1965
SUPPLEMENT: (Continued)
June 17 (Continued)

- ECC 07 30 26.6 (S 28.6), 07 40 17.9 (S 20.1). (Smaller shocks also recorded at El Centro with S-P 2.1 to 2.4 sec., June 16/17, P generally about 12 seconds earlier at El Centro than at Barrett)
- GSC 03 58 21, 10 57 17, 11 25 28, 14 30 20
- HAY 04 32 37.2, 07 13 38.9, 07 21 50.9, 07 30 33.3, 07 40 23.1, 07 43 17.4, 08 12 49.0, 08 39 48.8, 09 54 10.9, 16 45 14.3
- 18 WDY 03 33 31, 11 00 09, 18 27 20 (i 32), 19 43 28 (i 37), 23 10 02
- 19 GSC 01 46 13 (e 19), 09 14 44, 11 19 49, 13 00 09 (i 01 00); WDY 12 13 41, 15 42 16
- 20 GSC 01 01 18, 06 20 19 (i 21 09), 22 01 51 (e 02 10); WDY 06 52 29 (i 41), 09 29 53 (i 30 05), 21 55 57
- 21 GSC 00 39 59, 10 55 59 (e 56 05), 13 32 40, 22 21 35 (i 43); WDY 12 17 57 (i 18 17), 18 06 56 (i 07 04), 19 28 09
- 22 GSC 14 30 53; WDY 02 19 00 (i 11), 06 04 22 (i 29), 12 10 00, 13 25 51? (i 26 03 i 10)
- 23 GSC 07 44 44, 08 59 20, 12 09 11 (e 19), 14 29 11 (i 18); WDY 00 17 44 (i 58), 12 48 08, 13 55 58, 14 16 46 (i 59), 14 41 23, 20 50 51, 21 20 36
- 24 GSC 03 26 34 (i 43), 03 50 53 (pP 51 00, S 58 22), 07 46 13, 08 03 38
- 25 GSC 05 19 02 (i 19 10), 08 09 32 (pP 59), 14 29 33 (i 56), 20 38 41 (i 48 i 53)
- 26 GSC 21 35 31 (pP 40), 22 23 01 (i 15), 23 20 23 (e 52)
- 27 GSC 01 08 08, 01 23 32, 10 05 09 (e 17), 11 53 48, 14 54 28, 17 18 12 (pP 38); WDY 18 05 08, 18 54 50, 21 20 06
- 28 GSC 18 08 59; WDY 00 23 04, 04 09 33, 05 24 40, 09 12 19, 14 34 35, 15 58 28 (i 34), 23 02 25
- 29 GSC 02 15 24, 07 48 11, 08 29 58 (i 30 07), 14 59 25 (i 36 i 41), 16 11 53, 18 03 47, 20 08 49; WDY 05 20 12 (i 23), 16 47 28
- 30 GSC 10 07 46, 17 19 38 (pP 52 sP 58)

Violet M. Taylor
Seismological Assistant

September 15, 1965

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 22, 1965

KEW
OBSERVATORY
26 JUL 1965
RICHMOND,
SURREY.

CONTINUATION
July 6

	18 48 53	July 16		12 55 01
iP			iP	12 55 01
Dilatation			iS	13 01 21
ipP	50 47		eG	04.9
iSKS	58 32		eR	07.7
iS	59 04		$\Delta 47^\circ$	
isS	19 02 28	17	eP	07 33 24
iSS	05.2		eSKS	43 57
$\Delta 91^\circ$ Depth 510 km			eS	44 15
Magn. $6 - 6\frac{1}{4}$			eG	56.8
	μ sec		eR	08 00.7
PZ	0.2 1		$\Delta 90^\circ$	
PH	0.1 1			μ sec
SH	$1\frac{1}{2}$ 3		PZ	0.3 3
7 iP	12 28 04		MH	$2\frac{1}{2}$ 20
7 eSS	15 58.0	17	iP	13 00 59
eG	16 06.6		eG	25.9
eR	09.0		eR	29.1
7 iP	17 24 59		$\Delta 90^\circ$	
7 iP	21 50 46		Overlaps the next	
e(PP)	53 54	17	iP	13 11 35
8 iP	13 15 53		iS	22 02
i	16 01		eG	32.9
10 iP	19 33 51		eR	36.8
11 iP	20 24 04		$\Delta 85^\circ$	
12 iP	14 09 04	17	iP	16 01 40
ipP	33	19	iP	01 41 02
14 iP	12 40 51	19	iP	04 22 35
ipP	41 25	19	iP	09 05 05
15 iP	18 02 39	20	iP	00 05 32
15 iP	20 44 25	20	iP	00 54 06
16 iP	07 46 31.4		eP	55 08
Dilatation from northwest			eS	
iS	36.7	20	$\Delta 5^\circ$ Magn. $5\frac{1}{4}$	11 30 17
Magn. 4		20	eP	14 05 03
Felt in central and western		21	eP	03 02 29
Los Angeles, San Fernando			iP	13 16
Valley; very slightly felt			eS	23.3
in Pasadena			iG	26.5
Fort Tejon:			iR	
iP	07 46 21.6		$\Delta 78^\circ$	
Mt. Wilson:				μ sec
iP	07 46 31.5		MH	4 20

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 22, 1965

SUPPLEMENT:

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

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

Violet M. Taylor
Seismological Assistant

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

CONTINUATION
July 21

	iP	18 01 44
	eS	09 12
	eG	15.3
	eR	16.6
21	eP	23 59 20
	i	32
22	iP	01 27 41
	ipP	54
23	iP	15 23 02
25	iP	03 59 42
25	iP	08 46 50
	i	47 01
	eL	48.3
25	eP	08 48 33
	e	40
25	iP	13 44 27
	eS	53 42
25	iP	21 55 35
	ipP	46
	iScP	22 00 51
	eS	02 38
	eL	08.2
	Δ 44° Depth 50 km	
	Magn. 5 3/4	
		μ sec
	PZ	1/2 1
	SH	1/2 3
26	eP	15 35 17
	i	27
	iS	44 30
	eG	52.8
	eR	54.8
	Δ 69°	
27	eP	11 29 13
28	iP	22 48 05
	i	15
28	iP	22 51 15
	i	26

July 29

29
29
29
29

30
30

August 1

1
1
1

iP	08 37 10
dilatation from northwest	
iPP	39 02
iS	43 38
iG	46.8
iR	48.4
Δ 44° Magn. 6 1/2 - 6 3/4	
	μ sec
PZ	0.8 1 1/2
PH	0.3 1 1/2
PPZ	0.4 1 1/2
SH	6 8
MH	51 26
MZ	77 20
iP	09 03 32
iP?	09 08 57
eP	12 28 09
eP	15 16 23
eS	22.8
eL	25.8
iP	07 28 45
iP	19 10 29
ipP	11 05
eP	13 35 00
iP	15 15 02
i	29
iP	23 57 13
i	25
eS	24 07.7
eSSS	17.2
eG	19.8
eR	23.8
Δ 88°	

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

Page 2

August 2

eP	13	34	55
eP ¹¹		38	40
IPP		39	39
ISKS		45	35
IPS		49.2	
ISS		55.1	
ISSS		58.5	
IG	14	06.8	
IR		11.4	
$\Delta 115^\circ$	Magn. 7 - 7 $\frac{1}{4}$		
	μ	sec	
PPZ	0.3	2	
PPH	1	7	
MH	38	20	
MZ	45	20	
2 IP	14	42	39
IP		44	27
2 IP	16	51	30
IS		58	15
IL	17	04.4	
2 IP	18	13	13
2 IP	19	16	14
IP			24
IS		22	57
IL		28.8	
2 IP	20	51.49	
i			56

August 3

iP	02	11	17
dilatation			
IP			31
IsP			46
IPcP		12	21
eS		19	07
eSS		23.0	
eG		24.8	
eR		27.8	
$\Delta 56^\circ$			
IP	03	49	48
IP			58
eP	09	00	12
eS		09	34
IP	00	21	01
i			36
IPP		24	36
ISKS		31.8	
IS		32	06
ISS		38.0	
ISSS		42.6	
IG		46.3	
IR		49.8	
$\Delta 92^\circ$	Magn. 6 $\frac{1}{2}$		
	μ	sec	
PZ	0.4	1	
PH	0.2	1	
PPZ	2	30	
PPH	2	30	
SH	1	20	
MH	14	20	
MZ	14	20	
eP	09	45	55
e		46	06

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

Page 3

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

July	17	WDY	13 21 01, 18 28 24 (i 32, i 40), 20 13 58
	18	WDY	07 10 28, 08 09 39 (i 56), 10 10 19 (i 29, i 35), 12 16 57, 13 44 07
	19	GSC	16 58 48; WDY 07 48 30, 10 26 33, 22 21 46, 22 23 52
	20	GSC	12 14 23, 13 37 09 (i 20), 20 19 03 (i 20); WDY 07 49 10
	21	GSC	08 56 21, 09 14 52, 17 05 49 (pP 06.00); WDY 00 42 36, 04 48 50, 05 50 32
	22	WDY	16 39 47 (i 40 07), 19 58 24
	23	WDY	11 32 32, 11 44 41; GSC 20 30 11, 23 33 31 (i 38)
	24	GSC	11 54 51 (i 55 08); WDY 03 58 13 (i 29), 07 50 37, 15 31 04 (i 31 17)
	25	GSC	08 40 44, 15 54 43; WDY 03 13 19, 13 28 11, 15 35 36 (i 47)
	26	GSC	10 53 15, 13 49 32, 16 29 36 (i 31 05, i 32 27), 18 34 43
	27	GSC	16 06 47, 21 27 37, 21 52 02; WDY 05 08 40, 08 39 24
	28	GSC	06 10 26; WDY 14 32 50, 18 59 06, 23 50 28
	29	WDY	01 57 59 (pP 58 05), 05 38 22 (i 34), 07 16 48 (pP 17 04, sP 10, i 19 02), 09 39 38 (pP 50), 11 16 07, 11 28 05, 11 44 54, 13 23 30 (i 43), 14 23 28 (i 57), 14 25 43, 18 23 28
	30	WDY	02 22 45, 03 23 48 (i 24 22), 05 56 25 (i 43), 08 17 05, 08 17 51 (pP 18 04), 08 38 53, 10 29 41; GSC 16 41 28 (i 42 05), 17 00 39, 21 15 32 (i 45, i 52)
	31	GSC	07 18 18, 07 21 59, 07 48 26, 11 22 34, 11 54 26, 14 38 16, 20 08 42, 21 09 42
August	1	GSC	02 52 32, 04 01 27, 06 14 23, 15 13 33 (pP 40), 16 50 54 (i 51 27, i 52 29), 19 40 19, 19 47 06 (pP 19)
	2	GSC	15 16 21, 15 34 10, 18 52 34
	3	GSC	08 42 57, 09 20 46

Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY
- 2 NOV 1965
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California



PASADENA PRELIMINARY BULLETIN No. 154

July - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965
July

1	05 06 23, 17 51 39, PP 23 30 53 (PS 40 18)
2	20 28 45, 21 06 08 (S 12 09, ScS 16 15)
5	08 42 06 (I 20, S 50 23)
6	03 17 00 (S 27 28), 03 32 18 (PP 36 28, SKS 43 00±), 04 19 29 (I 43), 05 08 40 (I 48), 18 48 53 (pP 50 47, SKS 58 32, S 59 04, sS 19 02 28)
7	12 28 04, 17 24 59, 21 50 46
8	13 15 53 (I 16 01)
10	19 33 51
11	20 24 04
12	14 09 04 (pP 33)
14	12 40 51 (pP 41 25)
15	18 02 39, 20 44 25
16	07 46 31.4 (S 36.7, Fort Tejon IP 07 46 21.6), 12 55 01 (S 31 01 21)
17	07 33 24 (SKS 43 57, S 44 15), 13 00 59, 13 11 35 (S 22 02), 16 01 40
19	04 22 35, 09 05 05
20	00 05 32, 00 54 06 (S 55 08), 11 30 17, 14 05 03
21	03 02 29 (S 13 16), 18 01 44 (S 09 12)
22	01 27 41 (pP 54)
23	15 23 02
25	03 59 42, 08 46 50, 08 48 33, 13 44 27 (S 53 42), 21 55 35 (pP 46, ScP 22 00 51, S 02 38)
26	15 35 17 (I 17, S 44 30)
27	11 29 13
28	22 48 05 (I 48 15, SKP 22 51 15, I 51 26)
29	08 37 10 (PP 39 02, S 43 38), 09 03 32, 09 08 57, 12 28 09, 15 16 23 (S 22 48±)
30	07 28 45, 19 10 29 (pP 11 05)

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC),
Goldstone (GSC) and Woody (WDY)

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

Violet M. Taylor, Seismological Assistant

September 30, 1965

1965
Aug 6-11

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 17, 1965



CONTINUATION
August 6

6	iP	18 26 31
8	iP	05 28 28
	i	35
8	iP	06 43 12
	(part of the following?)	
8	iP	06 43 44
	ipP	59
8	eP	12 57 31
	eS	13 04 16
	eSS	07.3
	eG	08.3
	eR	09.6
	$\Delta 46^\circ$	
8	eP	15 16 50
	e	17 01
9	iP	03 38 04
9	iP	23 24 11
11	iP	03 53 40
	iPP	57 03
	iS	04 04 03
	iPS	58
	iSS	09.6
	iSSS	13.3
	iG	16.7
	iR	19.7
	eP'P'	19 57
	$\Delta 84^\circ$ Magn. 7	
		μ sec
	PZ	0.4 1
	PH	0.2 1
	PPZ	0.6 2 1/2
	PPH	0.7 4
	SH	6 12
	MH	85 20
	MZ	87 20
11	eP	07 31 31
11	iP	18 36 00
	eS	41.2
	iL	44.4
	$\Delta 30^\circ$	

August 11

	iP	20 05 13
	iPP	08 33
	iS	15.7
	iPS	16.7
	iSS	21.7
	iSSS	25.2
	iG	27.7
	iR	31.3
	$\Delta 86^\circ$ Magn. 6 1/2	
		μ sec
	PZ	4 11
	PH	1/4 1
	PPZ	1 1/2 4
	PPH	0.2 4
	SH	4 15
	MH	25 20
	MZ	25 20
11	iP	20 26 39
	e	30 02
11	eP	21 08 11
11	iP	22 44 30
	compression from southwest	
	i	43
	iPP	47 55
	iS	56.4
	iR	23 10.7
	eP'P'	10 51
	$\Delta 85^\circ$ Magn. 7 1/4-7 1/2	
		μ sec
	PZ	2 3/4 6
	PH	1 6
	PPZ	1 2
	PPH	0.4 2
	MH	220 20
	MZ	238 20
12	iP	02 39 23
12	iP	08 14 26
	ipP	42
	iPP	17 47
	iSKS	24.7
	eS	25.0
	iPS	26.0
	eSS	30.6
	eSSS	34.2
	iG	37.5
	iR	41.0
	$\Delta 86^\circ$ Magn. 6 3/4	

KEW
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23 AUG 1965
RICHMOND,
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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
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 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 17, 1965



Page 2

August 12 (Continued)

	μ	sec
PZ	0.1	1
PH	0.1	1
PPZ	0.4	2
PPH	0.2	2
SH	9	28
MH	28	20
MZ	28	20
12 IP	09 08	52
12 IP	13 10	19
compression		
ipP		30
i	11	10
ePP	14	10
eSKS	21	14
iS		26
iPS	22	42
iSS	27.7	
iSSS	30.7	
iG	35.5	
iR	39.1	
$\Delta 92^\circ$ Magn	$6\frac{1}{2}$ -6	$3\frac{1}{4}$
	μ	sec
PZ	0.1	1
PH	0.1	1
PPZ	0.2	2
PPH	0.6	3
SH	$1\frac{1}{2}$	8
MH	35	20
MZ	33	20
12 IP	18 17	34
ipP	21	12
eSKS	28.0	
ePS	29.3	
eSSS	37.3	
eG	39.6	
eR	44.1	
$\Delta 87^\circ$		
	μ	sec
PZ	0.9	3
PPZ	0.2	2
13 eP	04 53	52
ePP	56	57
e	57	11
eSKS	05 04	14
ePS	05.5	
eSSS	13.3	
eG	15.9	
iR	20.2	
$\Delta 86^\circ$		

August 13 (Continued)

	μ	sec
PZ	0.3	$2\frac{1}{2}$
PPZ	0.6	3
13 eP	11 37	37
i		55
ePP	41	00
eSKS	48	02
iS		14
ePS	49.2	
iG	21	00.5
iR		03.7
$\Delta 86^\circ$		
13 eP	12 52	50
i	53	12
i		26
ipP	56	20
iS	12	03.7
iG	14.7	
iR	18.7	
$\Delta 86^\circ$ Magn.	7	
	μ	sec
PZ	0.6	5
PPH	$7\frac{1}{2}$	30
SH	$3\frac{3}{4}$	20
MH	87	20
MZ	105	20
13 eP	17 51	21
13 eP	18 09	21
ePP	12	43
iS	19.8	
iG	32.0	
eR	34.3	
$\Delta 86^\circ$		
13 eP	21 12	18
ipP		32
13 IP	22 11	06
i		37
eSKS	22.2	
iG	37.7	
iR	41.7	
$\Delta 96^\circ$		
14 iP	08 31	11

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 17, 1965



Page 3
August 14

eP	11 20 33	August 16	e	04 47 28
e	55		iS	56 13
eSKS	30 54		eG	05 07.4
eS	31 02		eR	12.5
eSS	37.1	16	iP	12 25 26
eG	43.2		i	34
eR	46.7		iPP	28 10
$\Delta 86^\circ$		16	eP	12 53 19
	μ sec		e	48
MH	6 20	17	eP	10 54 32
MZ	6 20	17	iP	14 08 37
14 eP	13 30 37		i	56
i	58			
ePP	34 07			
eS	41.1			
eG	52.2			
eR	56.0			
$\Delta 85^\circ$				

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

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

Violet M. Taylor
Seismological Assistant

1965
Aug 18-24

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
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PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 25, 1965



CONTINUATION
August 18

	eP	15 04 10
	eS	14.7
	ePS	15.7
	iG	27.2
	iR	30.7
	Δ 85° Magn. 5 3/4 - 6	
		μ sec
	MH	10 20
	MZ	10 20
18	iP	16 56 06
19	iP	19 59 04
20	iP	06 08 57
	epP	10 21
	iP''	12 51
	iPP	13 39
	iPPP	15 53
	iSKS	19 04
	i	20 03
	iS	53
	iSP	22 33
	iSS	29.0
	iG	40.7
	eR	42.9
	Δ 107°	
	Depth 350 km	
	Magn. 6 3/4	
		μ sec
	PZ	0.2 2 1/2
	PPZ	1 2
	PPH	1 3
	MH	17 20
20	iP	09 53 53
	dilatation from southeast	
	ipP	54 24
	iS	10 02 59
	isS	03 34
	iPS	54
	iR	19.3
	eP'P'	21 47
	Δ 74° Depth 120 km	
	Magn. 6 1/2	
		μ sec
	PZ	0.7 2
	PH	1/4 1 1/2
	SH	3 5

	August 20	iP	21 33 49
		compression	
		iPcP	59
		epP	34 09
		eS	43 48
		esS	44 14
		eSP	44
		e	45 19
		eR	57.6
		Δ 80° Depth 70 km	
			μ sec
		PZ	0.7 1 1/2
	21	iP	15 26 53
	22	iP	10 52 09
	23	iP	19 51 44
		compression	
		from southeast	
		eS	56 31
		eL	59.0
		iLg	20 00 34
		Δ 28° Magn. 7 1/4	
			μ sec
		PZ	55 13
		PH	40 10
		MH	500 20
	24	iP	01 02 04
		iS	06 38
		iLg	10 58
		Aftershock	
	24	iP	07 18 24
		iS	28 05
	24	iP	13 18 41
		iS	23 45

KEW
OBSERVATORY
- 2 SEP 1965
RICHMOND,
SURREY

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 25, 1965



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

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

Violet M. Taylor
 Seismological Assistant

KEW OBSERVATORY
15 SEP 1965
RICHMOND, SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 9, 1965



International Seismological Centre

Aug 26 - Sep 9

CONTINUATION
August 26

(Barrett:

El Centro:

26

Barrett:

El Centro:

29

29

29

29

29

September 1

1

1

2

iP 12 54 26.9
iS 53.4
Magn. 4.2
iP 12 54 04.2
iS 14.4
eP 12 54 04.0
iS 10.9
iP 13 38 48.3
iS 39 16.4
Magnitude 4.5
Felt at Indio
iP 13 38 27.4
iS 37.4
iP 13 38 26.4
iS 34.1
iP 01 52 15
ipP 30
iPcP? 54 37
i(PcP) 55 03
iS 57 19
iL 02 00.1
 $\Delta 34^\circ$ Depth 70 km
eP 12 59 16
eS 13 09.6
eSS 15.6
eG 21.6
 $\Delta 86^\circ$
iP 13 08 15
i 27
iP 14 08 18
ipP 10 19
eP 14 21 00
e 05
iP 04 39 10
epP 40 58
iP 05 00 23
i 49
iPP 03 58
eS 10.42
eL 24.2
 $\Delta 88^\circ \pm$
iP 06 50 56
i 51 42
eS 07 01 06
eL 13.6
 $\Delta 88^\circ ?$
iP 02 09 58
iL 11.2

September 2

2

2

2

4

4

4

6

7

7

8

8

8

8

iP 04 35 30
iScP 40 42
eS 42 59
eR 49.9
iP 14 06 25
iP 15 46 13
i 47 27
iP 19 45 12
iP 10 30 36
iS 38 55
eSS 43.4
eG 46.5
eR 49.6
 $\Delta 63^\circ$
iP 14 39 36
dilatation from
northwest
eS 44 17
i 49
eR 48.7
 $\Delta 29^\circ$ Magn. 6 3/4 - 7
 μ sec
MH 300 20
iS 21 57 56
iL 22 07 52
eP 21 21 18
eS 27 41
iSS 31 07
iL 35.0
iP 07 09 55
i 10 02
iS 20 15
eL 35.6
iP 11 25 17
iP 03 32 53
i 33 12
iS 38 09
eG 40.4
eR 42.1
eR 07 28 52
iP 11 23 12
iP 19
i 28 36
eS 30.6
eL 32.2
eR 11 57 58
iP 58 10
ipP

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 9, 1965



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

August	20	GSC	23 51 35; WDY 18 15 30, 19 25 47 (i 26 13, i 26 27)	
	21	GSC	01 21 03, 03 29 16 (e 32 27), 08 18 49 (i 19 08), 19 01 21, 21 03 28; WDY 09 32 18, 15 23 29 (i 38), 19 41 13, 19 58 29	
	22	GSC	04 01 21 (e 02 08), 05 00 28 (i 36 i 42); WDY 11 04 27 (i 38), 12 34 17, 13 29 48	
	23	GSC	02 51 13, 03 37 16, 11 36 02, 13 36 31, 14 22 34, 17 26 19, 19 43 36, 21 42 44 (pP 59), 22 23 12, 23 18 06	
	24	GSC	10 02 42, 16 00 08, 19 39 19 (e 36), 22 34 11	
	25	GSC	12 50 48, 14 37 26, 15 01 28 (pP 02 03); WDY 03 11 58 (e 12 58), 16 17 55 (i 18 05)	
	26	WDY	05 32 20 (i 35), 15 14 08 (i 24), 15 15 18, 15 21 38	
	27	GSC	15 39 40 (pP 51), 17 06 59, 18 33 06 (e 19); WDY 02 39 23, 07 23 07 (i 19), 16 58 46	
	28	GSC	03 51 17, 05 48 06, 10 59 02, 18 43 25 (pP 44 07), 20 45 14; WDY 01 00 09, 21 18 07	
	29	GSC	00 10 30, 02 42 03, 02 47 57, 14 00 51, 17 36 52, 18 44 13, 18 51 28 (e 39); WDY 02 39 27, 02 42 06, 02 47 52	
	30	GSC	01 09 00 (e 07), 02 29 36, 03 44 55, 09 47 15 (i 20), 14 18 36, 18 28 55 (PP 32 18); WDY 01 38 49	
	31	GSC	08 00 23, 08 16 03, 09 24 55 (i 25 03), 10 04 26, 11 48 30, 19 55 23 (e 56 12), 20 10 23 (e 11 12), 20 29 38, 20 40 47, 23 24 25; WDY 01 13 16 (i 30), 02 42 56 (i 43 04), 04 03 21 (i 28), 16 49 17	
	September	1	GSC	07 45 08, 16 42 30; WDY 06 04 49, 07 14 23, 11 34 36
		2	GSC	02 09 46 (i 10 18, L 11.2, Lg 11 57), 11 41 31, 18 04 59, 20 20 06, 21 20 22; WDY 12 22 51 (i 23 00)
		3	GSC	02 35 11, 04 46 18, 05 53 40, 10 55 43

Violet M. Taylor
 Seismological Assistant

PASADENA PRELIMINARY BULLETIN NO. 155

August - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965

August

- 1 15 15 02 (i 29), 23 57 13 (pP 25, S 24 07 42±)
2 13 34 55 (P'' 38 40, PP 39 39, SKS 45 35, PS 49 12±), 14 42 39
(pP 44 27), 16 51 30 (S 58 15), 18 13 13, 19 16 14 (pP 24, S 22 57),
20 51 49 (i 56)
3 02 11 17 (pP 31, sP 46, PcP 12 21, S 19 07)
4 09 00 12 (S 09 34)
5 00 21 01 (pP 16, PP 24 36, SKS 31 48±, S 32 06)
8 05 28 28, 06 43 12, 06 43 44 (pP 59), 12 57 31 (S 13 04 16)
9 03 38 04, 23 24 11
11 03 53 40 (PP 57 03, S 04 04 03, PS 04 58, P'P' 19 57), 07 31 31, 18 36 00
(S 41 12±), 20 05 13 (PP 08 33, S 15 42±), 20 26 39 (e 30 02),
21 08 11, 22 44 30 (i 43, PP 47 55, S 56 24 ±, P'P' 23 10 51)
12 08 14 26 (pP 42, PP 17 47, SKS 24 42±, S 25 00±, PS 26 00±), 09 08 52,
13 10 19 (pP 30, PP 14 10, SKS 21 14, S 21 26, PS 22 42), 18 17 34
(PP 21 12, SKS 28 00±, PS 29 18±)
13 04 53 52 (PP 56 57, SKS 05 04 14, 11 37 37 (i 55, PP 41 00, SKS 48 02,
S 48 14, 12 52 50 (PP 56 20±, S 12 03 42±), 18 09 21 (PP 12 43, S 19 48±),
22 11 06 (pP 37, SKS 22 12±)
14 11 20 33 (SKS 30 54, S 31 02), 13 30 37 (pP 58, PP 34 07, S 41 06±)
16 04 47 28 (S 56 13), 12 25 26, 12 28 10, PP 12 53 19
17 10 54 32, 14 08 37 (i 56)
18 15 04 10 (S 14 42±), 16 56 06
19 19 59 04
20 06 08 57 (pP 10 21, P'' 12 51, PP 13 39, PPP 15 53, SKS 19 04, i 20 03,
S 20 53, SP 22 33), 09 53 53 (pP 54 24, S 10 02 59, sS 03 34, PS 03 54,
P'P' 21 47) 21 33 49 (PcP 59, pP 34 09, S 43 48, sS 44 14, SP 44 44)
21 SKP 15 26 53
22 10 52 09
23 19 51 44 (S 56 31, L 59 00±, Lg 20 00 34)
24 01 02 04 (S 06 38, Lg 10 58), 07 18 24 (S 28 05), 13 18 41 (S 23 45)
26 12 54 26.9 (S 53.4. El Centro: 12 54 04.0, S 10.9), 13 38 48.3
(S 39 16.4 El Centro: 13 38 26.4, S 34.1)
29 01 52 15 (pP 30, i 54 37, PcP 55 03, S 57 19), 12 59 16 (S 13 09 24±),
13 08 15 (i 27), 14 08 18 (pP 10 19)

KEW
OBSERVATORY
24 NOV 1965
RICHMOND,
SURREY.

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

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

1965
Supplement: (Continued)

August

22 GSC 04 01 21 (e 02 08), 05 00 28 (i 36 i 42); WDY 11 04 27 (i 38),
12 34 17, 13 29 48

23 GSC 02 51 13, 03 37 16, 11 36 02, 13 36 31, 14 22 34, 17 26 19,
19 43 36, 21 42 44 (pP 59), 22 23 12, 23 18 06

24 GSC 10 02 42, 16 00 08, 19 39 19 (e 36), 22 34 11

25 GSC 12 50 48, 14 37 26, 15 01 28 (pP 02 03); WDY 03 11 58 (e 12 58),
16 17 55 (i 18 05)

26 WDY 05 32 20 (i 35), 15 14 08 (i 24), 15 15 18, 15 21 38

27 GSC 15 39 40 (pP 51), 17 06 59, 18 33 06 (e 19); WDY 02 39 23,
07 23 07 (i 19), 16 58 46

28 GSC 03 51 17, 05 48 06, 10 59 02, 18 43 25 (pP 44 07), 20 45 14;
WDY 01 00 09, 21 18 07

29 GSC 00 10 30, 02 42 03, 02 47 57, 14 00 51, 17 36 52, 18 44 13,
18 51 28 (e 39); WDY 02 39 27 (PcP 42 06, ScP 47 52), 14 20 45

30 GSC 01 09 00 (e 07), 02 29 36, 03 44 55, 09 47 15 (i 20), 14 18 36,
18 28 55 (PP 32 18); WDY 01 38 49

31 GSC 08 00 23, 08 16 03, 09 24 55 (i 25 03), 10 04 26, 11 48 30,
19 55 23 (e 56 12), 20 10 23 (e 11 12), 20 29 38,
20 40 47, 23 24 25; WDY 01 13 16 (i 30), 02 42 56 (i 43 04),
04 03 21 (i 28), 16 49 17

Violet M. Taylor
Seismological Assistant

October 27, 1965

There are P for additional shocks at this time (GSC).
GSC and WDY (WDY)
1 GSC 10 27 29, 20 26 25, 21 52 11
2 GSC 02 50 20, WDY 21 18 16, 21 28 20
3 GSC 11 02 22, 12 19 18 (pP 77), WDY 23 08 40, 32 26 40,
22 01 19, 23 32 02
4 WDY 12 29 16 (pP 26)
5 GSC 06 41 39
6 GSC 04 43 22, 13 25 30, 14 25 30, 14 31 32, WDY 05 27 26,
(pP 38 35, 1 38 57) - station 14

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International
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Centre

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 15, 1965

CORRECTION
September 8
should read:
ADDITIONAL
September 6

CONTINUATION
September 9
September 9

IP 07 28 52
IP 07 13 52

September 12

IP 08 53 27

IP 11 53 20
IP 38

i 35

ISKS 09 03 57

eS 04.5

IPS 05 45

eSS 10.9

eG 17.7

eR 22 33

$\Delta 93^\circ$ Mag. $6\frac{1}{2}$ - $6\frac{3}{4}$

IP 04 51 09
IP 10 10 14
i 18

Compression from
southeast

ePP 11 58

IS 16 38

ISS 20 00

eR 22.8

$\Delta 45^\circ$ Mag. $6\frac{3}{4}$

μ sec

PZ 0.8 1

PH 0.6 1

SH 20 20

MH 30 20

IP 21 29 45.1

Magnitude $4\frac{3}{4}$

Felt at San Francisco

IP 07 06 06

ISKS 16 34

IS 17 06

ePS 18 18

ISS 23 30

eG 30.0

eR 34.0

$\Delta 92^\circ$ Magn. $6\frac{1}{4}$

μ sec

PZ 0.2 2

MH 14 20

MZ 13 20

eP 07 17 31

μ sec

PZ 0.4 $1\frac{1}{2}$

PH 0.2 $1\frac{1}{2}$

MH 5 20

MZ 5 20

eS 20 42 17

eG 52 14

eR 55.5

IP' 22 22 22

i 27

e 24 19

ISKP 26 04

eSKSP 35.9

eSS 45.2

eSSS 50.5

eS 23 09.5

eR 15.5

$\Delta 111^\circ ?$

μ sec

MH 3 20

IP 15 17 20

eS 25 02

eSS 29.0

eG 30.7

$\Delta 58^\circ$

eP 16 27 15

eS 36 39

IG 46 25

$\Delta 78^\circ$

IP 07 38 36

57

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

September 3	WDY	16 27 29, 20 46 29, 21 52 11
4	GSC	07 56 28; WDY 21 38 10, 21 48 59
5	GSC	11 42 22, 12 19 14 (pP 27); WDY 11 03 49, 12 26 46, 22 01 19, 23 32 07
6	WDY	13 29 16 (pP 26)
7	GSC	08 41 39
8	GSC	04 43 22, 13 35 30, 14 25 56, 14 41 53; WDY 00 37 56

- Violet M. Taylor, Seismological Asst.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 23, 1965



ADDITIONAL
 September 10
 Tinemaha:

eP	21 29 23.5
iS	30 15.4
iP	21 29 33.7
12 iP	07 10 54
12 iP	08 59 01

(Not a phase of large shock
 recorded at 08:53 ff.)

September 17 (Continued)

iG	53.3
iR	56.4
Δ 78° Magn.	6 3/4
	μ sec
PZ	0.3 2
PH	0.3 2
SH	18 20
MH	45 20
MZ	45 20
19 iP	15 42 38.8
iS	43 20.0
Magn.	4 1/2 - 4 3/4
21 iP	01 51 15
dilatation	
epP	51 40
e	52 03
ISKS	02 01 33
iS	55
isS	02 47
ISP	03 09
ISS	07 26
isSS	08 09
eSSS	11.7
eL	14.7...
Δ 89° Depth	100 km
Magn.	6 3/4
	μ sec
PZ	3/4 1 1/2
PH	1/4 1 1/2
MH	30 30
21 iP	03 35 57
ipP	36 04
22 eP	13 02 39
e	53
22 iP	14 40 25
e	41

CONTINUATION

16 iP	04 12 26.5
i	40.1
iS	14 04.7
eL	14.3
17 iP	11 22 49
ipP	23 31
esP	41
iScP	27 40
iS	30 01
isS	31 15
iScS	54
eSS	33 43
eL	39.6

Δ 55°
 Depth 200 km
 Magn. 6 1/2

	μ sec
PZ	1 1/2 2
SH	1 1/2 2
SH	15 18
17 iP	16 33 15
ipP	28
iS	43 05
iSS	48 22

KEW
 OBSERVATORY
 17
 28 SEP 1965
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 SURREY.

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

September 2	GSC	21 30 56
3	CLC	00 33 57
4	WDY	15 10 46 (pP 56)
10	GSC	15 50 43, 19 37 43 (pP 38 01); WDY 05 18 43 (i 19 14), 07 32 08 (i 27 e 35.31), 08.56 30, 15 13 06 (pP 34), 21 29 24.3, 23 02 46
11	GSC	22 24 10; WDY 05 33 31 (i 37), 07 38 56, 16 59 27
12	GSC	03 23 46, 13 47 57, 20 32 49, 22 06 45; CLC 06 16 46; WDY 06 09 46, 09 10 08, 09 15 12, 21 34 59

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 23, 1965

SUPPLEMENT: (continued)

September 13 GSC 00 53 43, 15 54 29, 19 36 46, 21 42 04 (pP 24)
CLC 15 38 55, 20 15 30 (pP 39)

14 GSC 23 01 36; CLC 08 45 51, 14 25 58 (pP 26 06)
WDY 09 09 59.4 (S 10 27.8)

15 GSC 13 29 41, 22 29 40; CLC 15 45 18; WDY 10 20 22

16 GSC 04 12 28.5 (S 14 08.0), 13 35 58, 14 04 10, 19 57 57.9
WDY 04 12 05.9 (S 13 28.1), 06 40 15, 15 09 35, 16 31 35,
19 58 11.3, 21 15 17

17 WDY 01 20 38 (pP 52), 08 31 23, 08 33 30, 08 55 57,
11 59 47, 13 11 04 (pP 14), 13 32 47 (pP 57), 14 19 02
(i 06), 14 34 27 (pP 37)

18 GSC 07 31 27, 08 15 43, 14 43 38 (e 48), 17 36 47,
20 52 50

19 GSC 01 19 58, 01 38 57, 09 06 47? (i 56 i 07 12)
09 10 14 (i 28 i 36), 09 57 29, 14 08 42, 15 42 53.0,
23 33 08

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 30, 1965



ADDITIONAL
September 14

Tinemaha:
 IP 09 10 06.0
 IS 37.5
 19 Tinemaha:
 IP! 15 42 40.8
 IS! 43 03.6
 19 Fort Tejon:
 IP 15 42 34.3
 Santa Barbara:
 iP 15 42 38.1

September 25

IP! 17 44 09.7
 Compression from Northeast
 IS 44 30.0
 Magnitude $5\frac{1}{4}$. Felt over
 large area including
 Pomona, San Bernardino,
 Victorville, 29 Palms,
 Barstow, Needles, epicenter
 near 34.7° N, 116.5° W

25

Barrett:
 IP 17 44 16.6
 I 19.0
 IS 46.7

CONTINUATION
September 22

IP 20 15 00
 ePS 27 21
 eG 40.3
 eR 43.6

Riverside:

IP 17 44 02.4
 IS 16.8
 25 IP 17 48 28.5
 IS 49.2

μ sec
 PZ 0.4 1
 MH $4\frac{1}{2}$ 20
 22 IP 21 50 17.9
 IS 51 06.7

Magn. 5

Riverside:

IP 17 48 21.8
 IS 35.8
 26 IP 00 41 09
 ipP 26
 26 IP 07 00 28.2
 IS 47.2

Magn. $4\frac{3}{4} = 5$
 22 eP 22 19 57
 i 20 02
 IS 29 22
 eSS 34.2
 eG 39.4
 eR 42.8

Mag. 5 - $5\frac{1}{4}$, reported felt
 very widely because of quiet
 hours, noticed by several
 in Pasadena

26

Barrett:

IP 07 00 35.4
 i 38.7
 IS 01 04.5

μ sec
 PZ 1 $1\frac{1}{2}$
 PH 0.3 $1\frac{1}{2}$
 SH 3 7
 MH 12 20
 25 eP 00 06 30
 IS 17 17
 eG 29.3
 eR 33.3

Riverside:

IP 07 00 21.1
 IS 35.1

$\Delta 89^{\circ} \pm$
 25 eP 00 23 46
 25 eP 02 13 26
 25 eP 14 48 58
 25 IP 17 04 59
 ipP 05 06
 eS 16 36

26

Cady Mountains:

(Temporary station at
 $34^{\circ} 49' N$ $116^{\circ} 20' W$)
 IP 07 00 05.5

27

IP 05 18 05
 eS 25 07
 28 eP 05 19 00
 IS 29 33
 IS 30 56
 iSP 34.7
 eSS 44.5
 IR

28

$\Delta 87^{\circ}$ Magn. $6\frac{1}{2} = 6\frac{3}{4}$

μ sec
 MH 30 20
 MZ 25 20

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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
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)

CORRECTION:

September	14	CLC	14 25 58	
Should Read:			14 26 58 (pP 27 06)	
September	10	WDY	17 59 49	
	17	WDY	15 30 24 (pP 35), 16 01 10 (e 02 00), 19 02 38 (i 43 i 47), 20 54 25 (pP 37), 23 07 02	
	18	WDY	11 55 11 (i 27), 23 24 18	
	19	GSC	14 28 28; WDY 01 28 42, 04 02 48, 15 42 27.3 (s 40.1)	
	20	GSC	18 20 15; WDY 03 55 37, 17 15 07 (i 18)	
	21	GSC	02 08 37; WDY 00 39 16, 07 15 03, 17 14 23 (e 44)	
	22	GSC	07 35 29 (pP 39), 09 53 53, 12 51 48, 12 57 26, 17 25 12, 17 34 28 (pP 38), 21 50 06.5 (s 46.1); WDY: 00 03 13, 04 44 06, 09 49 35, 21 49 55.9 (s 50 18.2), 23 50 27 (pP 56)	
	23	GSC	02 34 36 (pP 46), 05 29 18	
	24	GSC	03 38 41, 17 18 02 (i 31); WDY 03 17 23, 03 31 05, 09 50 47	

Violet M. Taylor
Seismological Assistant

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



October 7, 1965

CONTINUATION
 September 30

		eP	23 54 02	October 3		eP	10 54 01
		eS	58.9			eS	11 00.0
		eG	24 00.9			eR	03.4
		eR	02.7	3		iP	14 55 45
		$\Delta 30^\circ$				ipP	56 05
		Peculiar seismograms; unusual long periods in P.				iS	15 04 11
			μ sec			iSS	08.3
		RH	25 35			iR	14.0
		RZ	27 35			eP'P'	25 00
October	1	iP	09 00 45			$\Delta 62^\circ$ Depth 80 km	
		dilatation from northwest				Magn. 6	
		ipP	00 51			μ sec	
		iS	07 46			PZ	0.4 2
		eL	11.5			PH	0.2 1 $\frac{1}{2}$
		$\Delta 49^\circ$ Magn. 6 $\frac{1}{2}$				SH	0.6 4
			μ sec			MH	5 20
		PZ	1 1 $\frac{1}{2}$			MZ	5 20
		SH	4 7			3	iP
		MH	30 20			iS	16 27 36
		iP	13 34 02			iSS	38 13
		compression from southwest				iG	44.0
		epP	35 32			iR	50.9
		esP	36 26			$\Delta 86^\circ$ Magn. 6 $\frac{1}{2}$	
		e	55			μ sec	
		ePP	37 22			PZ	2 4
		iS	43 30			PH	0.4 2
		iSS	48 20			SH	2 7
		$\Delta 80^\circ$ Depth 400 km				MH	4 20
			μ sec			4	iP
		PZ	1 $\frac{1}{2}$ 1			i	01 47 52
		PH	1 $\frac{1}{2}$ 1			iP	48 06
		iP	22 53 15			iP	04 15 55
		epP	31			i	16 03
		e	05 32 32			iL	18.0
		e	06 00.7			4	iP
		eL	30.5			e	06 30 48
		Very distant?				eS	31 12
						eL	37 07
						eR	41.3
							47.0

KEY
 LABORATORY
 12 OCT 1965
 MOND,
 JRN.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
October 7, 1965

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

September	22	GSC	17 23 02
	24	WDY	23 12 45
	25	GSC	10 21 22, 10 42 35 (pP 42), 12 41 06, 17 43 55.8 (S 44 05.0), 20 19 56 (i 20 17, i 20 36); WDY 00 54 48 (pP 56 14), 01 40 17 (i 22), 02 13 30, 02 16 43 (or PcP?), 05 26 33, 12 09 53, 14 53 58 (i 54 13), 15 05 05, 16 03 21, 21 10 59 (pP? 11 36, 12 35)
	26	GSC	07 00 14.4, 10 13 08, 13 28 08, 22 03 20 (pP 29);
		WDY	02 21 30, 04 11 59 (pP 12 10), 07 00 37.0, 07 09 54, 13 58 38 (pP 49), 19 54 22 (pP 36), 21 52 30 (i 53 22)
	27	GSC	01 21 22; WDY 03 24 53, 04 52 25, 10 13 30 (pP 37), 12 23 52, 20 50 21 (pP 33)
	28	GSC	07 59 57 (pP 08 00 06), 08 15 27 (pP 35); WDY 05 26 36, 05 32 23, 07 11 49 (i 58), 08 35 19, 12 17 15 (pP 22), 19 36 31 (e 37 04)
	29	GSC	13 57 08 (pP 32), 21 39 12, 23 30 59; WDY 01 29 14 (pP 20), 15 37 43, 18 39 01; CLC 19 03 25, 22 46 02 (e 07)
	30	GSC	04 05 17, 04 14 44 (i 56), 04 25 06, 07 17 52;
		WDY	01 35 05, 07 17 45 (pP 18 55), 19 14 26? (i 36 i 51)
October	1	GSC	19 33 22, 21 39 45, 23 03 20; WDY 09 04 40, 09 07 49 (pP 57), 09 09 52 (pP 10 00), 09 18 12 (pP 19), 09 19 41 (pP 49), 09 22 40 (pP 49), 09 31 14, 09 39 59 (pP 40 07), , 09 57 12, 10 09 10, 10 15 53 (pP 16 01), 10 21 06 (pP 15), 10 34 16 (pP 25), 10 37 47, 11 01 03 (pP 11), 11 49 56 (pP 50 06), 11 55 53 (pP 56 01), 12 08 56 (pP 09 05), 12 11 34 (pP 41), 12 14 05 (pP 12), 12 19 53 (pP 20 02), 12 24 23 (pP 32), 12 50 19, 13 02 14, 13 22 53, 14 13 24 (pP 32)
	2	GSC	02 06 21 (pP 29), 02 29 36 (pP 45), 07 50 17 (pP 25), 08 51 08 (i 17, pP 54 33), 10 24 36, 10 58 32, 12 19 51
	4	GSC	05 44 18 (e 28), 10 43 14 (e 19)

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 156

September - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965

September

- 1 04 39 10 (pP 40 58), 05 00 23 (pP 49, PP 03 58, S 10 42), 06 50 56
(pP 51 42, S 07 01 06)
- 2 02 09 58 (L 11 12±), 04 35 30 (ScP 40 42, S 42 59), 14 06 25
(L 09 24±), 15 46 13, 19 45 12
- 4 10 30 36 (S 38 55), 14 39 36 (S 44 17), S 21 57 56
- 6 11 53 20 (pP 38), 21 21 18 (S 27 41)
- 7 07 09 55 (pP 10 02, S 20 15), 11 25 17
- 8 03 32 53 (S 38 09), 07 13 52, 11 57 58 (pP 58 10), 11 23 12 (S 28 36)
- 9 04 51 09, 10 10 14 (i 18, PP 11 58, S 16 38)
- 10 21 29 46.1 (Tinemaha P 21 29 23.5, S 30 15.4)
- 11 07 06 06 (SKS 16 34, S 17 06, PS 18 18), 07 17 31
- 12 07 10 54, 08 53 27 (i 35, SKS 09 03 57, S 04 30±, PS 05 45),
08 59 01, S 20 42 17, 22 22 22 (i 27, e 24 19, PP 26 04, SKSP 35 54±,
SS 45 12±, SSS 50 30±, G 23 09 30±, R 15 30±)
- 13 13 17 20 (S 25 02), 16 27 15 (S 36 39)
- 14 07 38 36 (pP 57), Tinemaha 09 10 06.0 (S 37.5)
- 16 04 12 26.5 (S 14 04.7)
- 17 11 22 49 (pP 23 31, sP 41, ScP 27 40, S 30 01, sS 31 15, ScS 31 54),
16 33 15 (pP 28, S 43 05)
- 19 15 42 38.8 (S 43 20.0; Tinemaha 15 42 40.8, S 43 03.6; Fort Tejon
15 42 34.3)
- 21 01 51 15 (pP 51 40, e 52 03, SKS 02 01 33, S 01 55, sS 02 47, SP 03 09,
SS 07 26, sSS 08 09), 03 35 57 (pP 36 04)
- 22 13 02 39, 14 40 25, 20 15 00 (PS 27 21), 21 50 17.9 (S 51 06.7;
Tinemaha 21 49 33.7, S 39.3), 22 19 57 (S 29 22)
- 25 00 06 30 (S 17 17), 00 23 46, 02 13 26, 14 48 58, 17 04 59
(pP 05 06, S 16 36), 17 44 09.7 (S 30.0), 17 48 28.5 (S 49.2);
Riverside 17 44 02.4 (S 16.8), 17 48 21.8 (S 35.8)
- 26 00 41 09 (pP 26), 07 00 28.2 (S 47.2); Riverside 07 00 21.1 (S 35.1)
- 27 05 18 05 (S 25 07)
- 28 05 19 00 (S 29 33, SP 30 56)
- 30 23 54 02 (S 58 54±)

KEW
OBSERVATORY
- 1965
RICHMOND,
SURREY.

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC) Goldstone (GSC), and Woody (WDY)

September

- 1 GSC 07 45 08, 16 42 30; WDY 06 04 49, 07 13 23, 11 34 36
- 2 GSC 02 09 46 (i 10 18, L 11.2, Lg 11 57), 11 41 31, 18 04 59, 20 20 06, 21 20 22, 21 30 56; WDY 12 22 51 (i 23 00)
- 3 GSC 02 35 11, 04 46 18, 05 53 40, 10 55 43; WDY 16 27 29, 20 46 29, 21 52 11; CLC 00 33 57
- 4 GSC 07 56 28; WDY 15 10 46 (pP 56), 21 38 10, 21 48 59
- 5 GSC 11 42 22, 12 19 14 (pP 27); WDY 11 03 49, 12 26 46, 22 01 19, 23 32 07
- 6 WDY 13 29 16 (pP 26)
- 7 GSC 08 41 39
- 8 GSC 04 43 22, 13 35 30, 14 25 56, 14 41 53; WDY 00 37 56 (pP 38 35, i 38 57)
- 10 GSC 15 50 43, 19 37 43 (pP 38 01); WDY 05 18 43 (i 19 14), 07 32 08 (i 27 e 35 31), 08 56 30, 15 13 06 (pP 34), 17 59 49, 21 29 24.3, 23 02 46
- 11 GSC 22 24 10; WDY 05 33 31 (i 37), 07 38 56, 16 59 27
- 12 GSC 03 23 46, 13 47 57, 20 32 49, 22 06 45; CLC 06 16 46;
WDY 06 09 46, 09 10 08, 09 15 12, 21 34 59
- 13 GSC 00 53 43, 15 54 29, 19 36 46, 21 42 04 (pP 24); CLC 15 38 55, 20 15 30 (pP 39)
- 14 GSC 23 01 36; CLC 08 45 51, 14 26 58 (pP 27 06); WDY 09 09 59.4 (S 10 27.8)
- 15 GSC 13 29 41, 22 29 40; CLC 15 45 18; WDY 10 20 22
- 16 GSC 04 12 28.5 (S 14 08.0), 13 35 58, 14 04 10, 19 57 57.9;
WDY 04 12 05.9 (S 13 28.1), 06 40 15, 15 09 35, 16 31 35, 19 58 11.3, 21 15 17; CLC 19 58 02
- 17 WDY 01 20 38 (pP 52), 08 31 23 (pP 33 30), 08 55 57, 11 59 47, 13 11 04 (pP 14), 13 32 47 (pP 57), 14 19 02 (i 06), 14 34 27 (pP 37), 15 30 24 (pP 35), 16 01 10 (e 02 00), 19 02 38 (i 43 i 47), 20 54 25 (pP 37), 23 07 02
- 18 GSC 07 31 27, 08 15 43, 14 43 38 (e 48), 17 36 47, 20 52 50;
WDY 11 55 11 (i 27), 23 24 18
- 19 GSC 01 19 58, 01 38 57, 09 06 56 (i 07 12, SKP 09 10 14), 09 57 29, 14 08 42, 14 28 28, 15 42 53.0, 23 33 08; WDY 01 28 42, 04 02 48, 15 42 27.3 (S 40.1)
- 20 GSC 18 20 15; WDY 03 55 37, 17 15 07 (i 18)
- 21 GSC 02 08 37; WDY 00 39 16, 07 15 03, 17 14 23 (e 44)
- 22 GSC 07 35 29 (pP 39), 09 53 53, 12 51 48, 12 57 26, 17 23 02, 17 25 12, 17 34 28 (pP 38), 21 50 06.5 (S 46.1); WDY 00 03 13, 04 44 06, 09 49 35, 21 49 55.9 (S 50 18.2, 23 50 27 (pP 56)
- 23 GSC 02 34 36 (pP 46), 05 29 18
- 24 GSC 03 38 41, 17 18 02 (i 13); WDY 03 17 23, 03 31 05, 09 50 47, 23 12 45
- 25 GSC 10 21 22, 10 42 35 (pP 42), 12 41 06, 17 43 55.8 (S 44 05.0), 20 19 56 (i 20 17, i 20 36); WDY 00 54 48 (pP 56 14), 01 40 17 (i 22), 02 13 30, 02 16 43 (or PcP?), 05 26 33, 12 09 53, 14 53 58 (i 54 13), 15 05 05, 16 03 21, 21 10 59 (pP 11 36, i 12 35)

1965
Supplement (Continued)

September
26 GSC 07 00 14.4, 10 13 08, 13 28 08, 22 03 20 (pP 29); WDY 02 21 30,
04 11 59 (pP 12 10), 07 00 37.0, 07 09 54, 13 58 38 (pP 49),
19 54 22 (pP 36), 21 52 30 (i 53 22)

27 GSC 01 21 22; WDY 03 24 53, 04 52 25, 10 13 30 (pP 37), 12 23 52,
20 50 21 (pP 33)

28 GSC 07 59 57 (pP 08 00 06), 08 15 27 (pP 35); WDY 05 26 36, 05 32 23,
07 11 49 (i 58), 08 35 19, 12 17 15 (pP 22), 19 36 31 (e 37 04)

29 GSC 13 57 08 (pP 32), 21 39 12, 23 30 59; WDY 01 29 14 (pP 20),
15 37 43, 18 39 01; CLC 19 03 25, 22 46 02 (e 07)

30 GSC 04 05 17, 04 14 44 (i 56), 04 25 06, 07 17 52; WDY 01 35 05,
07 17 45, 07 18 55, 19 14 26? (i 36 i 51)

Violet M. Taylor
Seismological Assistant

November 11, 1965

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
October 20, 1965

CONTINUATION
October 8

Date	Station	Time	Reading	Date	Station	Time	Reading	
October 8	iP	16 40 45		October 15	iP	00 40 12		
	ipP		57		iS		45 09	
	isP		41 05		IG		46.9	
	eL		51.9		iR		47.9	
	8 eP	22 12 00			$\Delta 30^\circ$			
	epP		10		16 iP	14 30 33		
	8 iP	22 38 30			eS		36.9	
	ipP		39 04		eG		40.9	
	9 eP	07 52 50			eR		44.4	
	epP		53 04		16 iP	20 11 20		
esP		11	i		33			
e		57.7	16 iP	22 25 35				
eL		58.9	i		46			
10 iP''	17 44 32		17 iP	02 06 39				
ipp''		50	i		44			
iSKP?		45 57	i		07 02			
eSS	18 03.0		eS		17.9			
eG		16.5	eG		31.2			
eR		24.0	eR		34.6			
$\Delta 130^\circ$? Doubtful			$\Delta 90^\circ$					
12 iP	06 35 23		17 iP!	09 45 39.7				
12 eP	08 22 41		Compression from					
12 iP	13 47 31		southeast					
eS		52.6	iS		45 55.0			
eL		55.9	Magnitude	4.7				
$\Delta 28^\circ$			17 iP!	15 37 12.9				
13 iP	14 59 03		iS		28.0			
ipP		14	Magnitude	3.8				
eS	15 10 03		18 iPP	22 08 47				
eG		23.3	iSKS		15.6			
eR		26.9	iPS		18.7			
$\Delta 93^\circ$			iSS		23.9			
14 iP	08 14 22		IG		36.6			
i		38	iR		39.9			
			$\Delta 119^\circ$ Magn.	6 3/4				
			μ	0.1	1 1/2	sec		
			PPZ	14	20			
			MH	18	20			
			MZ					

KEW
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25 OCT 1965
RICHMOND,
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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 October 20, 1965




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

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

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 27, 1965

ADDITIONAL
October 17

Palomar:		October 21	eP	02 16 21
IP	09 45 30.2		i	28
IP	15 37 04.8		i	55
Riverside:		23	IP	06 08 11
IP	09 45 28.6	23	IP	07 05 25
IS	-35.8		IpP	36
IP	15 37 02.0	24	eP	14 53 31
IS	08.4		e	41
		24	IP	18 25 26

CONTINUATION:
October 19

IP	20 57 56		IpP	43
IpP	58 05		IsP	48
IS	21 04 52		eS	33 54
iScS	07 24		eG	41.2
ISS	08.6		eR	43.9
IG	10.9		$\Delta 64^\circ$; depth 60 km	
IR	12.4	24	eP	18 56 48
$\Delta 52^\circ$		24	IP	21 20 47
		25	IP	22 45 25
	μ sec		IpP	46 14
PZ	0.15 1		IS	54 29
MH	8 20		Iss	55 41
19 eP	23 41 25		ISS	59 13
20 IP	09 39 26		ISSS	23 02.8
20 eP	11 16 12		eP'P'	13 16
I	27		$\Delta 72^\circ$ Depth 200 km	
21 IP	00 01 22		Magnitude $6\frac{1}{2}$	
IpP	40			
ePP	03 15			
IS	06.9		PZ	$\frac{1}{2}$ sec
iScP	07 30		PH	$\frac{1}{2}$ 1
IG	11.6		SH	22 25
$\Delta 38^\circ$		26	IP	10 34 33
21 IP	02 09 38	26	IP	12 26 56
			P(P)	27 30
			I	39

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

October 15 WDY 16 51 10, 20 12 42, 22 25 38, 23 23 16
 16 WDY 20 44 31, 22 56 16, 23 44 07
 17 GSC 04 06 49 (1 07 09), 09 45 42.0 (IS 58.6); CLC 22 31 25;
 WDY 04 38 30, 19 09 03
 18 GSC 02 40 27, 05 06 15 (PcP 07 56), 05 32 53, 22 56 25;
 CLC 16 25 59; WDY 09 35 17, 10 44 38, 13 08 20, 13 19 27
 19 GSC 05 17 15 (pP 28); WDY 12 15 23 (pP 16 02, sP 14), 13 02 13
 20 GSC 10 54 26, 12 02 07; WDY 00 27 35, 01 03 00, 03 53 17, 07 05 47
 (1 58), 13 42 25, 14 21 20 (1 30), 19 59 16
 21 GSC 11 36 34; WDY 09 07 39 (pP 54 sP 58), 13 41 37
 22 WDY 02 14 41 (pP 51), 07 55 06, 12 34 46, 13 28 44

Violet H. Taylor
Seismological Assistant



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 November 4, 1965

CONTINUATION

October	27	IP	22 51 16	October	31	IP	13 59 29
	28	IP	01 55 30			IpP	56
		IpP	45			IsP	14 00 09
	28	eS	20 25 53		31	IP	17 43 39
	28	IP	21 23 16			I	45 00
	29	eP	10 31 41	November	1	IP	18 14 39
	29	IP	21 08 36.0		3	IP	01 48 27
		compression				dilatation from	
		I	08 54			southeast	
		ePcP	10 05			ePcP	49 00
		No S or surface waves.				IpP	50 27
		Project Longshot.				IPP	51 09
		Δ 49°				IScP	52 05
	30	e(P)	07 09 15			IS	56 07
		eS	19.0			IScS	57 18
		eSSS	27.2			IsS	59.5
		eR	31.6			ISS	02 00.5
		Δ 78°				IP'P'	16 56
	30	IP	19 48 37			I	17 24
		I	54			Δ 65° Depth	620 km
						Magn	6 3/4
							μ sec
						PZ	2.7 1 1/2
						PH	1 1 1/2
						SH	60 20

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

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

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 157

October - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965
October

1	09 00 45 (pP 51, S 07 46), 13 34 02 (pP 35 32, sP 36 26, S 43 30), PP 22 53 15
3	05 32 32, 10 54 01 (S 11 00 00±), 14 55 45 (pP 56 05, S 15 04 11, P'P' 25 00), 16 27 36 (S 38 13)
4	01 47 52, 04 15 55, 06 30 48 (S 37 07)
8	16 40 45 (pP 57, sP 41 05), 22 12 00 (pP 10), 22 38 30 (pP 39 04)
9	07 52 50 (pP 53 04, sP 53 11)
10	17 44 32 (pP'' 44 50, PP 45 57)
12	06 35 23, 08 22 41, 13 47 31 (S 52 36±)
13	14 59 03 (pP 14, S 15 10 03)
14	08 14 22 (pP 38)
15	00 40 12 (S 45 09)
16	14 30 33 (S 36 54±), 20 11 20 (i 33), 22 25 35 (pP 46)
17	02 06 39 (pP 07 02, S 17 54±), 09 45 39.7 (S 45 55.0), 15 37 12.9 (S 37 28.0)
18	PP 22 08 47 (SKS 15 36±, PS 18 42±, SS 23 54±)
19	20 57 56 (pP 58 05, 21 04 52, ScS 07 24), 23 41 25
20	09 39 26, 11 16 12 (i 27)
21	00 01 22 (pP 40, S 06 54±, ScP 07 30), 02 09 38 (Lg 16 21)
23	06 08 11, 07 05 25 (pP 36), SKP? 14 53 31
24	18 25 26 (pP 43, sP 48, S 33 54), 18 56 48, 21 20 47
25	22 45 25 (pP 46 14, S 54 29, sS 55 41, SS 59 13, P'P' 23 13 16)
26	10 34 33, 12 26 56 (pP 27 30)
27	22 51 16
28	01 55 30 (pP 45), S 20 25 53, 21 23 16
29	10 31 41, 21 08 36.0 (PcP 10 05; Operation Longshot)
30	07 09 15 (S 19 00±), 19 48 37 (i 54)
31	13 59 29 (pP 56, sP 14 00 09), 17 43 39 (i 45 00)

KEW
OBSERVATORY
31 JAN 1966
RICHMOND,
SURREY.

1965
Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC), Goldstone (GSC), and Woody (WDY)

October

- 1 GSC 19 33 22, 21 39 45, PKKP 23 03 20; WDY 09 04 40, 09 07 49 (pP 57), 09 09 52 (pP 10 00), 09 18 12 (pP 19), 09 19 41 (pP 49), 09 22 40 (pP 49), 09 31 14, 09 39 59 (pP 40 07), 09 57 12, 10 09 10, 10 15 53 (pP 16 01), 10 21 06 (pP 15), 10 34 16 (pP 25), 10 37 47, 11 01 03 (pP 11), 11 49 56 (pP 50 06), 11 55 53 (pP 56 01), 12 08 56 (pP 09 05), 12 11 34 (pP 41), 12 14 05 (pP 12), 12 19 53 (pP 20 02), 12 24 23 (pP 32), 12 50 19, 13 02 14, 13 22 53, 14 13 24 (pP 32), 15 20 03 (pP 11), 17 33 47, 22 52 17 (PP 53 18, PKKP 23 03 13, SKKP 07 03; Δ 115°)
- 2 GSC 02 06 21 (pP 29), 02 29 36 (pP 45), 07 50 17 (pP 25), 08 51 08 (i 17), SKP 54 33), 10 24 36, 10 58 32, 12 19 51;
WDY 03 40 39, 13 31 51, 14 16 19, 15 38 43 (i 52), 19 35 07, 19 43 28, 22 45 31
- 3 WDY 08 09 17 (i 25), 13 25 38, 18 16 30
- 4 GSC 00 11 36, 02 41 08, 03 25 15, 05 44 18 (e 28), 10 43 14 (e 19), 20 22 25; WDY 00 26 49 (i 27 01), 01 36 12, 03 25 11 (pP 56), 03 28 07 (or PcP), 04 12 20, 11 43 14 (pP 21), 13 01 15, 14 47 52 (i 48 00), 18 38 42, 19 46 04
- 5 GSC 00 23 38, 03 51 24 (i 28), 10 04 28; WDY 10 04 24, 10 07 42, 21 46 59 (i 47 07, i 15), 21 54 13 (e 25)
- 6 GSC 10 38 05; WDY 10 31 56, 14 00 36, 17 56 30, 18 03 16, 22 47 02
- 7 BSC 02 42 44; WDY 01 21 00 (i 13), 03 50 35, 07 09 55, 08 53 25, 09 32 07, 11 27 22 (i 36), 14 13 37 (i 44 i 50), 17 17 16 (i 24), 19 59 53 (i 20 00 00, i 00 10), 22 18 03, 23 26 19
- 8 GSC 03 45 57, 04 14 21 (pP 29 sP 33), 06 13 21, 12 28 43, 15 43 45, (i 52, i 44 02), 16 10 39 (pP 52), 16 40 32 (i 40, pP 46, ScP 46 08), 16 51 53 (pP 52 07), 19 37 38 (e 38 15, s 40 33);
WDY 15 40 17 (i 33), 21 56 52
- 9 GSC 04 57 08, 07 45 37 (PcP 47 34), 13 35 47, 16 58 18; WDY 01 07 59, 04 04 04, 09 45 58, 11 54 08
- 10 GSC 00 44 06 (i 17, ScP 49 37), 06 00 43, 10 34 13 (i 23), 11 40 51, 23 10 57; WDY 07 08 22, 23 52 38
- 11 GSC 11 28 07, 15 52 03 (i 10), 17 59 02; WDY 02 46 32, 03 04 18, 12 35 33, 12 42 18 (i 24), 20 12 18, 21 48 03, 23 22 22;
- CLC 08 34 04, 12 50 30
- 12 GSC 06 46 12 (i 17), 06 59 45, 07 40 36, 14 30 04, 15 04 53
- 13 WDY 04 03 18 (i 24), 15 26 26, 15 50 25, 15 54 55, 23 05 17 (i 24, i 29)
- 14 WDY 03 40 20
- 15 WDY 04 22 07, 07 46 55 (i 47 51), 11 38 08, 12 42 05, 14 37 31, 16 51 10, 20 12 42, 22 25 38, 23 23 16
- 16 WDY 20 44 31, 22 56 16, 23 44 07
- 17 GSC 04 06 49 (i 07 09), 09 45 42.0 (IS 58.6); CLC 22 31 25;
WDY 04 38 30, 19 09 03

1965
October

18 GSC 02 40 27, 05 06 15 (PcP 07 56), 05 32 53, 22 56 25; CLC 16 25 59;
WDY 09 35 17, 10 44 38, 13 08 20, 13 19 27

19 GSC 05 17 15 (pP 28); WDY 12 15 23 (pP 16 02, sP 14), 13 02 13

20 GSC 10 54 26, 12 02 07; WDY 00 27 35, 01 03 00, 03 53 17,
07 05 47 (i 58), 13 42 25, 14 21 20 (i 30), 19 59 16

21 GSC 11 36 34; WDY 09 07 39 (pP 54 sP 58), 13 41 37; CLC 17 03 13,
17 39 48

22 GSC 18 47 31 (pP 47), 20 29 23; WDY 02 14 41 (pP 51), 07 55 06,
12 34 46, 13 28 44, 19 12 21, 23 22 55; CLC 16 34 29

23 GSC 15 46 49 (e 47 06), 20 53 13; WDY 08 33 54, 12 32 26 (pP 38),
14 42 21 (pP 39), 16 46 54, 22 06 21

24 GSC 03 47 14 (pP 27, 12 38 36, PKKP 15 01 32; WDY 08 46 28
(pP 38), 10 52 53, 14 46 16 (PP 50 22, e 53 33, PKKP 15 01 37),
17 48 59

25 GSC 00 55 53, 08 51 37, 15 28 08 (i 16), 18 50 15; CLC 00 28 32
(i 38); WDY 16 11 15 (i 11 50)

26 GSC 08 27 44, 12 26 41 (pP 55), 20 33 43 (pP 34 01); CLC 07 37 19,
11 34 27? (e 46), 15 05 09 (pP 06 22); WDY 00 10 20, 10 03 01
(pP 12), 23 45 16

27 GSC 09 39 34 (pP 45), 12 53 56 (pP 54 04); CLC 15 21 08, 16 06 19,
18 05 06; WDY 03 56 10 (i 14 i 20), 14 37 41

28 GSC 20 22 35 (S 25 19); CLC 10 58 12 (pP 22), 11 59 11;
WDY 05 21 21, 05 58 09 (pP? 18, i 50), 09 17 49?, 21 12 34
(pP 46), 23 14 38 (i 44)

29 GSC 21 08 37.1 (PcP 10 07.1); WDY 04 00 52 (pP 01 04), 04 20 17
(pP 29), 04 21 40 (pP 50 i 58 i 22 07), 06 00 47 (pP 58),
06 53 02, 10 14 19 (pP 39), 16 55 05 (S 56 35), 18 46 27,
21 08 25.1 (PcP 09 59.5), 23 19 52

30 GSC 08 46 19; WDY 00 07 43 (pP 08 59), 00 14 36 (pP 49), 00 30 05,
08 56 24 (i 30 i 37)

31 GSC 15 14 51; WDY 06 54 37 (i 43), 07 40 43

Violet M. Taylor
Seismological Laboratory

December 30, 1965

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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
November 18, 1965

N 13 to 16

CONTINUATION
November 3

	IP	18 30 50
	e	31 32
	IS	38 43
	ISS	42.7
	IG	44.8
	eR	47.8
	$\Delta 57^\circ$ Mag. $6\frac{1}{4}$	
		μ sec
	PZ	0.8 2 $\frac{1}{2}$
	PH	0.3 2
	SH	1 $\frac{1}{2}$ 6
	MH	14 20
3	iP	20 21 18
5	iP	10 13 07
	eS	21 04
	eSS	24.9
	eG	27.2
	IR	30.1
	$\Delta 59^\circ$	
6	iP	09 31 28
	eS	39.1
	eG	45.6
	eR	48.4
	$\Delta 56^\circ$ Magn. 6	
		μ sec
	PZ	$\frac{1}{2}$ 1 $\frac{1}{2}$
	MH	10 20
9	iP	22 08 45
10	e(P)	21 05 47
	True P may be covered by a preceding small local shock	
11	iP	01 45 43
11	iP	02 30 05
11	e(S)	03 19.6
	e(PS)	21.7
	eSS	27.7
	eG	38.7
	eR	46.1
11	iP	08 57 51
	iPP	59 17
12	iP	01 10 23
12	eP	02 17 18
	eSKS	27.9
	eS	28 13

November 12 (Continued)

	eSS	02 34.2
	IG	41.1
	IR	46.4
	$\Delta 90^\circ$	
		μ sec
	MH	3 $\frac{1}{2}$ 20
	MZ	3 $\frac{1}{2}$ 20
12	iP	17 14 37
12	iP	17 26 35
	eR	51.4
12	iP	18 04 44
	ePP	07 52
	eS	14 56
	eSS	19.9
	eG	25.7
	IR	28.9
	$\Delta 81^\circ$ Mag. $6\frac{3}{4}$	
		μ sec
	PZ	2 2
	PH	0.8 2
	PPZ	0.7 3
	SH	3 6
	MH	17 20
	MZ	17 20
12	iP	19 03 11
13	iP	04 47 30
	compression from north	
	ePP	51 31
	ISKS	58 04
	IS	59 00
	ePS	05 00 27
	ePKKP	03 48
	eSS	06.0
	eG	16.0
	eR	18.9
	$\Delta 102^\circ$ Magn. $6\frac{3}{4}$	
		μ sec
	PZ	$\frac{1}{2}$ 2 $\frac{1}{2}$
	PH	$\frac{1}{4}$ 2 $\frac{1}{2}$
	PPZ	$\frac{1}{2}$ 2 $\frac{1}{2}$
	MH	25 20
	MZ	16 20

KEW
OBSERVATORY
23 NOV 1965
RICHMOND,
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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
November 18, 1965

CONTINUATION: (continued)
November 13

	IP	18 11 42	
	epP	12 40	
	eS	21 40	
	eSS	27.1	
	eG	33.7	
	iR	38.0	
	Δ 83° Depth 250 km		
		μ sec	
	PZ	0.3 1	
14	iP	03 19 09	
	epP	24	
	eS	25.6	
	eG	29.1	
	eR	31.7	
	Δ 46° Depth 60 km		
14	iP	06 06 22	
	eR	29.7	

November 15	eS	11 43 54
	IPS	45.3
	ISS	50.7
	eSSS	54.1
	IG	12 00.0
	iR	04.3
	Interpreted with doubt as Δ 102°, Magn. 6½	
		μ sec
	MH	15 20
	MZ	10 20
16	iP	15 35 13
	iPP	37 36
	IS	43 53
	eR	55.2
	Δ 65° Magn. 6½	
		μ sec
	PZ	0.6 2
	MH	20 20

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

October		
29	GSC	21 08 37.1 (PcP 10 07.1); WDY 04 00 52 (pP 01 04), 04 20 17 (pP 29), 04 21 40 (pP 50 i 58 i 22 07), 06 00 47 (pP 58), 06 53 02, 10 14 19 (pP 39), 16 55 05 (s 56 35), 18 46 27, 21 08 25.1 (PcP 09 59.5), 23 19 52
30	GSC	08 46 19; WDY 00 07 43 (pP 08 59), 00 14 36 (pP 49), 00 30 05, 08 56 24 (i 30 i 37)
31	GSC	15 14 51; WDY 06 54 37 (i 43), 07 40 43
November		
1	GSC	09 59 28 (pP 35, ScP 10 07 07); WDY 01 54 51 (i 55 12), 02 04 57, 08 06 40, 09 12 09 (pP 37 149), 09 39 12, 11 13 44, 18 44 42 (pP 16 40)
2	GSC	01 00 48 (pP 02 42), 16 06 43 (i 10 11); WDY 02 07 55 (pP 08 17), 09 16 59, 13 57 09, 16 37 19, 22 54 17
3	GSC	00 48 42 (i 50), 08 03 05, 08 43 43 (i 47 26); WDY 07 20 03, 08 07 31, 14 35 36
4	GSC	01 22 01, 04 12 16, 07 11 59 (i 12 06), 10 27 29 (i 37), 10 44 45, 13 53 33 (i 42); WDY 14 21 54 (pP 23 53), 19 12 50 (i 13 02), 20 27 51
5	GSC	19 14 46 (pP 18 50), 22 15 03; WDY 03 13 40 (pP 55), 05 11 45, 21 28 49
6	GSC	01 15 49 (pP 16 06), 01 35 24, 04 15 10, 06 45 07 (pP 13), 07 31 09 (e 18), 08 02 27, 09 09 29, 12 39 14, 16 38 59, 22 39 06 (pP 17), 23 11 06, 23 16 58 (pP 17 21), 23 24 01 (pP 08); WDY 03 40 05 (i 10 i 15), 15 27 51 (pP 57), 16 52 37
7	GSC	04 51 57 (i 52 04), 09 47 37, 14 23 04 (pP 16), 21 40 28 (pP 41 05); WDY 22 44 23 (i 31 i 38)
8	GSC	02 09 53 (pP 10 03), 18 32 19, 18 57 54; WDY 03 01 18, 18 16 00
9	GSC	01 48 37 (i 42), 07 27 57, 10 28 15 (i 28 i 38), 11 47 12, 13 40 53, 16 18 13; WDY 02 50 03, 07 20 38

Violet M. Taylor
Seismological Assistant



SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
December 1, 1965

Nov 18-30

CONTINUATION
November 18

	20	11	31	November 21		21	44	55
iP		13	05		eP			
ipP		20	50		e		45	08
iS		23.6			e		49.3	
isS		25.9		22	eP	12	21	16
iss		29	13	22	iP	20	33	59
isSS					iS		40	50
$\Delta 80^\circ$; depth 460 km					iSS		44.1	
	μ		sec		iR		47.1	
PZ	0.3		1		$\Delta 46^\circ$			
PH	0.2		1			μ		sec
SH	4		8		MH	10		20
18 iP	22	08	09	24	iP	08	29	24
ipP			25	25	iP	11	00	00
iS		16	10	25	iP	22	48	05
eSS		20.1		27	iP	03	16	36
iG		22.6			eS		26	48
eR		25.6			iR		41.6	
$\Delta 60^\circ$ depth 60 km					$\Delta 83^\circ$			
	μ		sec	27	eP	03	56	27
PZ	0.2		1	27	iP	08	54	29
PH	0.1		1	27	iP	12	14	43
SH	1 1/2		20		iS		25	19
19 iP	07	20	49		eSS		31.1	
eS		31.4			eG		38.3	
eG		42.6			iR		41.6	
iR		46.9			$\Delta 88^\circ$ Magn. 6 3/4			
$\Delta 82^\circ$						μ		sec
	μ		sec		PZ	1/4		1
MH	5		20		PH	0.2		1
20 eP	03	59	23		MH	7		20
eR	04	20.6			MZ	7		20
20 eSKS	15	30.6		27	iP	14	57	05
eG		51.6		28	eP	04	09	43
eR		57.3			e(P)		12	47
$\Delta 112^\circ$					e(S)		20.2	
21 eP	10	46	19		eSS		26.0	
ip''		50	17		i(G)		34.6	
ePP			55		i(R)		39.0	
iSKS		56	46		$\Delta 90^\circ ?$			
i		57	44		28 eP	05	43	05
eS		58.5			eG	06	10.6	
eSP		59.8			eR		15.6	
ePKKP	11	01	22		$\Delta 90^\circ ?$			
iSS		06.5			28 iP	13	03	50
iG		17.6						
iR		22.5						
$\Delta 112^\circ$ Magn. 6								
	Δ		sec					
MH	5		20					

KEW
OBSERVATORY
13 DEC 1965
RICHMOND,
SURREY

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

CONTINUATION:
November 28

Date	Station	Time	Date	Station	Time
28	iP	21 50 54	29	iP	09 11 05
28	ipP	51 11	29	iP	17 16 31
28	i(P'')	54 13	29	eS	24.3
28	i	36	29	eL	30.0
28	i	41	30	eP	12 37 31
28	eL	22 33.6	30	e	38 09
28	or two shocks?		30	eL	40.3
29	eP	04 07 28	30	eLg	41 32
29	i	50	30	$\Delta 13^\circ$	
29	eP	05 14 18			

SUPPLEMENT: Times of P for additional shocks at China Lake (CLC), Goldstone (GSC), Palomar (PLM), Tinemaha (TIN), Woody (WDY), and Cottonwood (CWC).

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

Cottonwood (CWC) Position 36 degrees 26.3 minutes north 118 degrees 04.7 minutes west

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 158

November - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965

November

1 18 14 39
 3 01 48 27 (PcP 49 00, pP 50 27, PP 51 09, ScP 52 05, S 56 07,
 ScS 57 18, sS 59 30±, P'P' 02 16 56), 18 30 50 (S 38 43),
 20 21 18
 5 10 13 07 (S 21 04)
 6 09 31 28 (S 39 06±)
 9 22 08 45
 10 21 05 47
 11 01 45 43, 02 30 05, S 03 19 36± (FS 21 42±, SS 27 42±), 08 57 51
 12 01 10 23, 02 17 18 (SKS 27 54±, S 28 13), 17 14 37, 17 26 35,
 18 04 44 (S 14 56), 19 03 11
 13 04 47 30 (PP 51 31, SKS 58 04 S 59 00, PS 05 00 27, PKKP 03 48),
 18 11 42 (pP 12 40, S 21 40)
 14 03 19 09 (pP 24, S 25 36±), 06 06 22
 15 11 43 54 (PS 45 18±, SS 50 42±)
 16 15 35 13 (S 43 53)
 18 20 11 31 (pP 13 05, S 20 50), 22 08 09 (pP 25, S 16 10)
 19 07 20 49 (S 31 24±)
 20 03 59 23, SKS 15 30 36±
 21 10 46 19 (P'' 50 17, PP 50 55, SKS 56 46, i 57 44, S 58 30±,
 PKKP 11 01 22), 21 44 55
 22 12 21 16, 20 33 59 (S 40 50)
 24 08 29 24
 25 11 00 00, 22 48 05
 27 03 16 36 (S 26 48), 03 56 27, 08 54 29, 12 14 43 (S 25 19),
 14 57 05
 28 04 09 43 (PP 12 47, S 20 12±), 05 43 05, 13 03 50, 21 50 54
 (pP'' 51 11, SKP 54 13)
 29 04 07 28 (pP 50), 05 14 18, 09 11 05, 17 16 31 (S 24 18±)
 30 12 37 31

KEW
OBSERVATORY
15 FEB 1966
RICHMOND,
SURREY.

1965

Supplement: Times of P, etc. for additional shocks recorded at China Lake (CLC), Goldstone (GSC), Palomar (PLM), Tinemaha (TIN), and Woody (WDY), Cottonwood Creek (CWC).

November

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

1965

November

20 CWC 15 24 03 (i 43), 16 25 23 (eSKP 28 07, i 28 47); GSC 03 50 04,
15 24 06 (i 24 50 i 24 58, PKKP 34 48); WDY 11 48 42;
CLC 18 47 38

21 GSC 05 11 21, 10 46 24 (P¹¹ 50 18, SKS 56 51, PKKP 11 01 08),
17 29 49, 22 22 21, 23 11 39 (i 50); WDY 06 21 16 (pP 24),
07 05 16, 22 45 59 (pP 46 31)

22 GSC 14 08 37 (pP 49), 14 14 05 (pP 30); WDY 09 12 53, 18 09 42,
19 21 06, 20 48 08 (pP 15)

23 WDY 01 36 39, 02 26 05, 13 07 17 (pP 42)

24 GSC 03 23 20, 03 27 26; WDY 03 23 22, 07 03 26, 08 29 11
(pP 31, sP 38), 13 33 23 (pP 48), 13 49 14 (pP 29), 14 45 01
(pP 15), 15 29 28, 19 13 15

25 WDY 03 44 42 (pP 55, sP 45 00), 12 35 53, 16 48 41

26 WDY 00 29 18 (pP 31, sP 36), 01 34 23 (i 31, pP 37), 07 13 44

27 WDY 01 43 10, 06 39 10

28 GSC 05 39 51 (PP 05 44 00), 11 22 16 (e 26); WDY 05 55 57,
16 03 56 (i 04 07), 16 57 25

29 GSC 03 08 46 (pP 09 03, sP 09 09), 04 59 45, 09 15 52 (pP 16 04,
sP 16 11), 15 17 23 (pP 34), 19 01 28; WDY 01 32 40, 04 34 20,
10 31 49

30 GSC 09 06 15, 09 24 46, 09 55 57, 11 35 54, 12 45 05, 19 59 48
(i 54), 22 41 58 (e 42 18)

Violet M. Taylor
Seismological Assistant

January 13, 1966

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International
Seismological
Centre

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
December 9, 1965

CONTINUATION
December 2

2	IP	00 47 14
	ipP	48 00
2	IP	06 07 33
	ipP	44
2	IP	23 49 36
	eL	24 10.4
3	eP	03 21 32
3	IP	06 56 49
	I	57 06
	eS	07 06.7
	eG	16.2
	eR	19.9
	$\Delta 75^\circ$	
3	IP	15 41 11
	I	17
	i	24
4	IP	02 19 35
	i	21 33
5	IP?	18 23 52
	I	24 01
	i	14
	eS	30.9
	eR	38.7
	$\Delta 50^\circ$	

December 6	IP!	11 39 05
	dilatation from	
	southeast	
	IS!	42 41
	IL	43 27
	$\Delta 20^\circ$ Mag. 6 3/4	
		μ sec
	PZ	25 12
	PH	20 4
	SH	50 15
	MH	700 20
6	IP	18 46 46
	dilatation from	
	southeast	
	eS	49.7
	I	50.2
	IR	51.4
	$\Delta 19^\circ$	
	Magn. 5 3/4	
		μ sec
	PZ	1 2 1/2
	MH	35 20
7	IP	22 32 42
	e(S)	44.8
	eG	59.2

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

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

Violet M. Taylor, Seismological Assistant

Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 15, 1965

CONTINUATION
 December 8

iP 18 18 21
 ipP 19 01
 eS 28.7
 eG 43.8
 eR 47.8
 Δ 94°
 Depth 150 km
 9. iP 06 12 53
 compression from
 southeast
 iS 17 09
 iG 18.2
 eLg 20 34
 Δ 24°
 Depth 60 km?
 Magn. 6 $\frac{1}{4}$

	μ	sec
PZ	2	2
PH	2 $\frac{1}{2}$	2
SH	40	20
MH	50	20
MZ	45	20

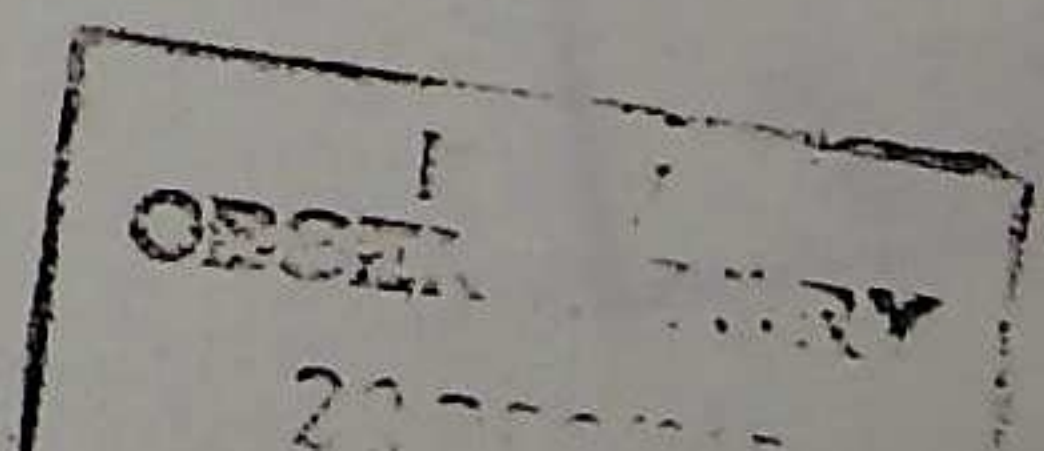
December 9
 iP 13 23 46
 iPP 26 50
 iS 32 47
 e 36.2
 e 41.4
 Interpretation
 uncertain.
 Probably deep
 9 iP 13 36 31
 10 e 22 05 51
 e 16.1
 i 17 26
 e(G) 27.8
 eR 31.4
 12 iP 07 33 27
 12 iP 11 03 56
 13 eP 11 03 07
 e 19
 e 31
 iS 12.1
 iG 19.8
 eR 22.5
 Δ 70°
 13 eS 15 06.2
 eG 13.8
 eR 17.8
 Δ 70°

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

December 3 BAR 07 28 42; WDY 17 22 24, 18 19 28 (pP 44)
 4 WDY 22 35 29
 5 GSC 05 17 10 (S 20 00); WDY 16 44 29, 16 47 40, 17 25 05,
 20 45 21
 6 WDY 00 30 58, 12 21 12, 21 56 40 (pP 48); CLC 04 46 31
 7 GSC 21 17 21 (pP 50); WDY 12 38 34 (pP 39 04), 12 44 29 (pP 46)
 8 WDY 19 17 18
 9 WDY 15 57 56
 10 WDY 03 08 48 (pP 09 48), 08 13 19 (pP 38), 11 43 41, 13 12 54

SEASONS GREETINGS AND BEST WISHES FOR 1966

Violet M. Taylor
 Seismological Assistant





Dec 14 - 26

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
December 29, 1965

CONTINUATION

December	14	e(P) (Microseisms)	17 29 40	December	22	IP	07 37 31
		eL	31.8			eS	45.7
		I(Lg)	35.1			eG	51.7
15		eS	12 33.8			eR	55.1
		eSS	40.2			$\Delta 58^\circ$	
		eG	46.7	22	IP	11 48 00	
		IR	52.4			IpP	14
		$\Delta 90^\circ \pm$				IS	53 21
15		IP	23 13 18			IL	55.6
		IS	19 48			$\Delta 34^\circ$ Depth 60 km	
		IL	23.2			Magn. $6 \frac{3}{4} = 7$	
		iScS	23 24			μ sec	
		$\Delta 45^\circ$ Mag. 6 $\frac{3}{4}$				PZ	2 1
		μ sec				SH	8 10
		PZ	4 4			MZ	10 30
		PH	2 2	23	eP	20 49 01	
		SH	12 20	23	IP	20 53 48	
		MH	40 30			eS	59 15
16		IP	10 29 12			e(L)	21 01.4
16		IP	22 57 52			IR	02.7
16		IP	23 17 40	25	IP	03 08 54	
		IS	26 53			IpP	11 03
18		eP	08 41 35			IsP	59
		e	42 09			IS	18 00
19		iP	20 20 54			$\Delta 80^\circ$ Depth 620 km	
19		IP'	22 26 38			Magn. $m = 6.0$	
		IP2'	27 34			μ sec	
		ePP	31 30			PZ	0.3 1
		eSS	51.9			PH	0.2 1
		eL	23 25.5			SH	4 18
		$\Delta 160^\circ$		25	IP	11 55 27	
20		eP	00 25 57	26	IP	04 06 18	
20		IP	07 22 51			i	44
21		IP	00 17 46			iSKS	16 46
21		IP	08 46 21			IS	17 21
		IS	50 51			eSS	23.5
		eLg	55 16			eL	29.7
		$\Delta 24^\circ$				$\Delta 91^\circ?$	
21		IP	10 50 33	26	IP	14 25 25.4	
21		IP	18 01 28			IS	45.8
22		IP	00 38 47			Magn. 4	
		i	59				
		eS	46 51				
		eG	53.2				
		eR	56.1				
		$\Delta 58^\circ$					
22		eP	07 35 53				

KEW
OBSERVATORY
- 3 JAN 1966
RICHMOND
SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 29, 1965

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

CORRECTION:
 December 1
 Should read:
 December 8

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

Violet M. Taylor
 Seismological Assistant

KEW
OBSERVATORY
21 FEB 1966
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California



PASADENA PRELIMINARY BULLETIN NO. 159

December - 1965

Unless otherwise noted, readings refer to 1st motion at Pasadena

1965

December

- 2 00 47 14 (pP 48 00), 06 07 33 (pP 44), 23 49 36
- 3 03 21 32, 06 56 49 (i 57 06, S 07 06 42±), 15 41 11
- 4 02 19 35 (PcP 21 33)
- 5 18 23 52 (i 24 01, S 30 54±)
- 6 11 39 05 (S 42 41, L 43 27), 18 46 46 (S 49 42±)
- 7 22 32 42 (S 44 48±)
- 8 18 18 21 (pP 19 01, S 28 42±)
- 9 06 12 53 (S 17 09), 13 23 46 (i 26 50, S 32 47), 13 36 31
- 10 22 05 51
- 12 07 33 27
- 13 11 03 07 (S 12 06±), S 15 06 12±
- 14 17 29 40
- 15 S 12 33 48±, 23 13 18 (S 19 48)
- 16 10 29 12, 22 57 52, 23 17 40 (S 26 53)
- 18 08 41 35
- 19 20 20 54, 22 26 38 (i 27 34, PP 31 30)
- 20 00 25 57, 07 22 51
- 21 08 46 21 (S 50 51), 10 50 33, 18 01 28
- 22 00 38 47 (i 59, S 46 51), 07 37 31 (S 45 42±), 19 48 00 (pP 14, S 53 21)
- 23 20 53 48 (S 59 15)
- 25 03 08 54 (pP 11 03, sP 11 59, S 18 00), 11 55 27, 19 31 42
- 26 04 06 18 (pP 44, SKS 16 46, S 17 21), 14 25 25.4 (S 25 45.8)
- 28 20 44 44 (pP 55, S 54 56), 22 14 15
- 29 01 27 25 (pP 35)
- 30 02 13 45 (S 19 42±), 06 26 52 (S 35 42)
- 31 20 02 34

1965

Supplement: Times of P, etc. for additional shocks recorded at Barrett (BAR), China Lake (CLC), Goldstone (GSC), Isabella (ISA) and Woody (WDY)

December

1 GSC 02 43 32 (i 36 i 44), 07 35 33 (i 41), 17 14 46, 20 27 38 (i 46); WDY 01 58 06 (i 12), 07 51 54 (e 52 00)

2 GSC 07 00 05 (i 11 pP 17), 10 28 34 (e 46), 18 50 38;
WDY 06 57 28, 06 59 54 (pP 07 00 05), 13 38 52 (pP 39 03)

3 WDY 03 14 53 (i 15 02 i 15 11), 08 41 55, 13 26 07 (i 19), 17 22 24, 18 19 28 (pP 44); BAR 07 28 42

4 GSC 03 12 15, 10 02 54 (pP 03 04), 12 13 27; WDY 22 35 29

5 GSC 05 17 10 (S 20 00), 20 36 23; WDY 16 44 29, 16 47 40, 17 25 05, 20 45 21

6 GSC 01 31 20, 08 06 28, 08 53 13 (pP 26); 12 20 57, 12 25 55;
WDY 00 30 58, 12 21 12, 21 56 40 (pP 48); CLC 04 46 31

7 GSC 21 17 21 (pP 50); WDY 12 38 34 (pP 39 04), 12 44 29 (pP 46)

8 WDY 19 17 18; ISA 03 41 46

9 WDY 15 57 56

10 WDY 03 08 48 (pP 09 48), 08 13 19 (pP 38), 11 43 41, 13 12 54, 22 05 46 (pP 06 02)

11 GSC 00 13 39, 12 27 13, 22 52 44 (i 53 03); WDY 08 35 05, 13 52 28 (i 36)

12 GSC 00 56 26, 19 35 12; WDY 06 17 08, 13 43 16 (pP 27), 16 52 20

13 GSC 05 56 23, 15 26 27; WDY 03 25 36, 05 07 23, 09 07 01, 10 35 55 (pP 36 07), 14 56 58, 17 01 39, 22 48 25, 23 04 06

14 GSC 00 15 51, 06 17 58 (pP 18 05); WDY 14 27 24 (pP 28 18), 20 13 54 (pP 14 08, i 20)

15 GSC 19 33 08; WDY 10 33 06

16 GSC 01 59 34, 05 29 49, 05 32 17 (pP 31), 06 35 50; 13 49 50; WDY 22 30 12

17 GSC 06 29 15 (i 21), 19 20 02 (i 06), 19 46 13, 21 22 15, 21 31 25

18 GSC 01 09 28, 13 31 25; WDY 18 16 23 (pP 37), 22 06 31

19 WDY 02 08 14, 02 32 28, 03 08 50, 19 28 40 (pP 31 02)

20 GSC 06 30 51 (i 31 00)

21 GSC 00 42 00, 12 34 16; WDY 20 17 33, 23 59 39

22 GSC 02 44 54 (i 45 00); WDY 00 48 14 (pP 23), 00 49 58 (pP 50 10), 01 21 40 (pP 56), 03 31 57 (pP 32 08), 04 34 59, 07 04 09

23 WDY 02 08 14, 02 21 17, 06 07 25, 11 52 13, 13 26 18 (pP 34)

24 WDY 03 48 18, 04 26 52 (pP 27 09), 08 20 27, 14 50 18, 22 34 22;

CLC 05 13 18

25 GSC 12 37 16, 14 17 14; WDY 01 29 22, 13 13 25, 18 28 46 (pP 30 56), 20 57 43 (pP 59 53)

26 GSC 06 55 55, 19 22 44, 20 06 14 (i 21); WDY 02 05 43, 18 17 10 (pP 19 05)

27 GSC 05 11 05 (i 13 i 20), 09 51 07; WDY 01 20 49, 04 19 11 (pP 22), 13 18 52, 20 17 41 (pP 50), 22 37 42

28 GSC 07 49 59 (pP 50 38), 09 18 53, 09 59 53; WDY 12 40 25

29 WDY 18 52 45, 23 52 12 (i 21 i 55)

30 WDY 01 50 50, 03 09 41, 05 44 07, 06 42 50, 07 37 42, 07 58 19 (pP 26), 10 27 00, 11 53 09, 16 40 04 (pP 14), 16 53 58 (pP 54 25), 17 07 49 (pP 08 06, i 10 50), 18 42 49

31 GSC 01 12 20, 02 50 16; WDY 00 24 54 (pP 25 04), 05 37 54 (pP 38 04), 06 38 14, 08 37 08, 09 37 34, 10 54 01 (i 09, pP 39)

February 11, 1966

 Violet M. Taylor
Seismological Assistant
 117

1965

Dec 28 - Dec 31

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 13, 1966



1965

CORRECTION

Pasadena:

December 22 IP 11 48 00
 Should read: 19 48 00

ADDITIONAL

December 25 IP 19 31 42

CONTINUATION

December 28 IP 20 44 44
 ipP 55
 IS 54 56
 eSS 21 00.1
 eG 06.0
 eR 09.0
 $\Delta 81^\circ$ Depth 40 km
 Magn. 6

December 28 IP 22 14 15
 29 IP 01 27 25
 ipP 35
 30 eP 02 13 45
 ePP 15 43
 eS 19.7
 IG 22.7
 $\Delta 44^\circ ?$
 Disturbed by storm
 30 IP 06 26 52
 IS 35.7
 31 IP 20 02 34

	μ	sec
PZ	0.2	1
SH	1	4
MH	2 $\frac{1}{2}$	20
MZ	3	20

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

December 24 WDY 14 50 18, 22 34 22
 25 GSC 12 37 16, 14 17 14; WDY 01 29 22, 13 13 25, 18 28 46
 (pP 30 56), 20 57 43 (pP 59 53)
 26 GSC 06 55 55, 19 22 44, 20 06 14 (i 21); WDY 02 05 43, 18 17 1
 (pP 19 05)
 27 GSC 05 11 05 (i 13 i 20), 09 51 07; WDY 01 20 49, 04 19 11
 (pP 22), 13 18 52, 20 17 41 (pP 50), 22 37 42
 28 GSC 07 49 59 (pP 50 38), 09 18 53, 09 59 53; WDY 12 40 25
 29 WDY 18 52 45, 23 52 12 (i 21 i 55)
 30 WDY 01 50 50, 03 09 41, 05 44 07, 06 42 50, 07 37 42, 07 58 19
 (pP 26), 10 27 00, 11 53 09, 16 40 04 (pP 14), 16 53 58
 (pP 54 25), 17 07 49 (pP 08 06, i 10 50), 18 42 49
 31 GSC 01 12 20, 02 50 16; WDY 00 24 54 (pP 25 04), 05 37 54
 (pP 38 04), 06 38 14, 08 37 08, 09 37 34, 10 54 01
 (i 09, pP 39)

Violet M. Taylor
Seismological Assistant

18 JAN 1966