

Seismological Laboratory
 220 North San Rafael Avenue
 Pasadena, California
PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 20, 1967

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 British Geological Survey (BGS)



1967. 580
 Jan 7-19

CONTINUATION

January	7	IP	00 46 51
	7	IP	13 47 50
		I	59
	7	IP	19 29 27
	8	eP	05 12 32
		eS	20 26
		eSS	24.3
		eG	27.0
		eR	29.5
		$\Delta = 58^\circ$	
	8	IP	07 37 41.7
		IS	49.0
		IP	38 15.0
		IS	21.5
		Magnitude: 4, 3 3/4 felt in Santa Monica Bay south coastal area (Redondo Beach, etc.)	
	8	IP	08 27 09.1
		IS	17.2
		Felt at Redondo, etc. Magnitude 3.6	
	8	IP	20 47 51.0
		I	55.9
		I	48 01.4
		Magn. 3 1/2 Reported felt at Redondo etc.	
	9	IP	18 16 55
	9	IP	19 14 44
	9	IP	19 59 36
	11	eP	11 39 51
	11	eP	11 50 13
	11	eP	11 53 33
	11	IP	16 16 12
		eS	22 51
		eG	26.7
		eR	29.5
		$\Delta 45^\circ$	
			μ sec
		PZ	0.2 1
		MH	5 20
		IP	14 01 01
		IPP	04 26
		e	11.3
		IS	11.7
		ISS	17.7
		IG	24.5
		IR	28.2
		$\Delta 88^\circ$ Magn. 6 3/4	
			μ sec
		PZ	1/4 1
		PPZ	0.1 1
		MH	10 20
		MZ	10 20

January	14	IP	02 45 27.6
		IS	33.8
		Magnitude 3 1/2 Felt at Rollings Hills, Torrance, Etc.	
	14	ipP	12 13 53
		eG	26.4
		eR	28.4
	14	IP	13 46 21
	14	IP	14 26 13
	15	IP	20 11 03
	15	IP	23 27 17.2
		IS	28 05.8
		Magn. 4 1/4 - 4 1/2	
	16	eP	04 57 02
		ePS	05 08.2
		eG	19.3
		eR	22.7
		$\Delta 88^\circ$	
	16	IP	07 22 40
	16	IP	11 21 57
		I	22 10
		eS	32.7
		ePS	33.9
		eSS	38.7
		eG	45.4
		eR	48.9
		$\Delta 88^\circ$	
			μ sec
		MH	3 20
	16	IP	14 39 02
		eG	15 01.2
		eR	05.1
		$\Delta 88^\circ$	
	16	IP	15 01 22
	16	eP	16 14 52
	17	IP	01 19 06
		dilatation from southeast	
		ipP	21 11
		IS	28 27
		eSS	32.1
		eSS	34.1
		esSS	37.2
		eG	41.5
		eSKPP'	48 01
		$\Delta 81^\circ$ Depth 600 km Magn. m = 6 1/4	
			μ sec
		PZ	0.4 1
		PH	0.4 1
		SH	3 6

SEISMOLOGICAL LABORATORY
 23 JAN 1967
 PASADENA, CALIFORNIA

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
January 20, 1967

CONTINUATION (Continued)

January 17	IP	03 32 27
17	IP	10 44 10
17	IP	11 03 33
	ipP	44
17	IP	12 11 18
	ipP	31
	IS	20 59
	ISS	26.2
	IG	31.0
	IR	34.3
	Δ 76° Depth 45 km	
	Magn. 6½	
		μ sec
	PZ	0.2 1
	SH	3 8
	MH	18 20
	MZ	16 20
18	IP	04 31 19
18	IP	05 46 26
	IPP	49 21
	IS	56 16
	IG	06 08.7
	Δ 79° Magn. 6½-6¾	
		μ sec
	PZ	0.9 3
	PH	0.8 4
	SH	4 8
	MH	16 20

January 18	IP	08 25 55
	I	26 03
	eS	32 03
	eG	35.1
	Δ 41° Magn. 6	
		μ sec
	PZ	0.2 1½
	PPZ	1 6
	SH	2 6
	MH	50 30
18	IP	10 48 33
	ipP	55
18	eP	22 02 25
	e	29
19	IP	12 50 48
	I(P)	51 24
	IP	51 57
	IS	13 01 41
	eG	10.3
	IR	13.7
	Two or three shocks: the last Δ 74° magn. 6¾	
		μ sec
	MH	60 20

SUPPLEMENT: Times of P for additional shocks recorded at China Lake (CLC),
1966 Goldstone (GSC), Palomar (PLM) and Woody (WDY)

December	30	WDY	16 44 46, 17 21 36, 18 42 51 (i 44 52)
	31	WDY	00 42 00, 03 13 01, 03 34 00, 05 19 42; CLC 21 12 29 (i 36), 21 33 03, 23 50 46
1967			
January	1	CLC	00 59 57, 03 25 59, 04 16 52, 07 58 34, 08 56 52, 09 08 20, 12 27 05, 13 06 08, 13 17 32 (i 45), 17 59 50; WDY 17 33 37, , 22 15 26, 22 30 49
	2	WDY	09 02 10, 10 13 01 (i 10), 15 59 39, 18 22 45 (i 23 06), 20 32 52, 22 16 05 (i 15), 23 14 16
	3	WDY	00 02 13, 00 08 13 (i 22), 01 26 34, 01 53 13, 05 57 59, 06 02 45, 06 11 39, 07 45 35, 09 50 02, 10 24 14, 11 24 58, 11 41 23, 12 12 39, 13 36 30, 17 18 02, 17 30 28, 17 59 18, 20 42 52 (i 59), 22 39 41, 23 26 28
	4	CLC	06 12 29 (i 39); WDY 02 07 42 (i 51), 13 31 35, 21 02 35
	5	WDY	02 18 45, 02 22 51 (i 23 00), 05 32 41 (e 47), 06 27 24 (e 30 25, e 44), 06 43 20, 14 50 48
	6	GSC	15 43 43 (s 45 26)

Seismological Laboratory
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Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
January 20, 1967

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

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 January 26, 1967



CONTINUATION
 January 20

Station	Time	Phase	Time	Phase	Time	
January 20	02 10 23	iP	January 21	04 41 00	iP	
		compression		21	08 27 58	iP
		iPP			28 25	ipP
		iSKS		21	14 00 48	eP
		eS			01 03	ipP
		iPS		23	20 29 24	iP
		eSS			32 29	iS
		eG				
		iR				
		$\Delta 90^\circ$ Magn. 6 $\frac{3}{4}$				
		μ sec		24		
		PZ $3\frac{1}{2}$ 4				
		PPZ 2 4				
		MH 18 20				
		MZ 9 20				
21	03 06 32	iP	24	03 17 14	iP	
		iS			i	
		eSS			i	
		eG			e(S)	
		eR			eL	
		$\Delta 88^\circ$ Magn. 6 $\frac{3}{4}$			e	
		μ sec			e	
		PZ 1 2			iG	
		MH 20 20			iR	
		MZ 20 20			iG2	

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

January 14 CLC 21 09 21; WDY 12 18 47, 14 46 46, 16 04 31, 17 31 50, 22 27 38

15 WDY 01 41 35, 02 43 57, 08 50 39, 09 22 37 (i 44), 15 17 29 (pP 37), 20 38 01 (e 07)

16 WDY 11 59 06 (i 11), 12 35 22, 15 11 15, 19 20 41, 23 53 34

17 WDY 01 29 50 (i 30 15, i 30 32), 02 13 22, 12 38 00, 15 27 32

18 GSC 15 38 33, 19 53 30 (e 40), 23 31 42; WDY 02 30 51, 05 22 47 (e 24 15), 05 38 47, 09 13 19 (i 26), 11 28 06, 12 48 15, 14 05 28, 14 41 13 (i 42 14), 16 20 48

19 GSC 06 46 30 (i 49 16), 14 55 00; WDY 00 34 57 (i 35 08), 01 20 28 (i 35), 02 18 42, 19 50 16 (pP 26)

20 GSC 03 40 11 (i 41 42), 06 36 13; PLM 23 51 02 (i 12); WDY 13 12 11

21 Glamis: 08 26 30 (i 27 36), 09 31 26

22 GSC 10 37 18, 12 14 46, 12 29 00, 22 46 55

Violet M. Taylor
 Seismological Assistant

Glamis: 33° 03.1' N 114° 49.6 W elevation 627 meters

SEISMOLOGICAL LABORATORY
 30 JAN 1967

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
February 9, 1967

CONTINUATION
January 26

	IP	06 08 07
	iR	11.2
		μ sec
	PZ	0.3 1
	MH	15 20
26	eP	16 16 37
	eS	21 33
	IL	23.7
26	eP	20 22 49
	eS	26.9
27	eP	08 48 03
27	eP	12 48 29
28	eP	14 00 35
	eS	06.2
	IS	06 45
	eL	09.9
	eR	11.6
	Magn.	$6\frac{1}{4}-6\frac{1}{2}$
		μ sec
	MH	80 20
	MZ	70 20
28	IP	17 49 40
	ipP	47
	IS	55 45
	IG	59.1
	IR	18 00.9
	Magn.	6
		μ sec
	MH	7 20
	MZ	5 20
28	IP	22 37 45
	ipP	38 12

January	31	IP	13 45 44
		i	51
		i	57
		IPcP	47 27
		i	34
		eS	52 26
		eR	59.6
February	2	IP	06 44 31
		epP	45
		eS	55.9
		eSS	07 02.7
		eL	16.9
		$\Delta 101^\circ$	
	2	IP	16 36 10
		epP	52
	2	IP	18 30 55
	3	IP	13 06 13
		i	07 18
		i	08 40
		i	09 01
		eL	45.7
	4	eP	18 01 28
	6	eP	03 22 28
	6	IP	03 33 12
	7	IP	08 41 36
		e	42 29
		IS	52 09
		eSS	58.1
		eG	09 04.7
		$\Delta 85^\circ \pm$	
			μ sec
		PZ	$\frac{1}{2}$ $1\frac{1}{2}$
		SH	2 3
	7	IP	15 00 00
		eL	08.2
	7	IP	19 49 56

KEW
OBSERVATORY
13 FEB 1967
RICHMOND,
SURREY.

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
February 8, 1967

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

January 21 GSC 13 53 49, 15 38 54 (e 39 12); WDY 00 54 23, 12 52 26, 16 56 36
22 GLA 08 26 30 (i 27 36), 09 31 26; WDY 21 46 06. (Note GLA not
Jan. 21 as previously reported)
23 GLA 21 27 32; WDY 03 21 38, 03 52 23, 11 22 14 (pP 29), 11 55 04,
21 50 59
24 WDY 09 43 08? (e 46 55)
25 WDY 10 55 31, 23 52 49
26 WDY 02 25 05, 02 30 10, 08 29 35 (i 48), 19 14 48, 20 38 05
27 PLM 05 12 06 (pP 18); WDY 04 18 29, 08 24 45, 14 25 49 (e 56)
28 GSC 07 55 22 (i 26), 14 13 36 (i 46), 14 20 37 (i 49),
14 31 03 (i 10), 16 09 16 (i 20), 16 39 00 (i 13),
17 27 11 (i 18), 17 34 12 (e 18), 20 56 18 (e 25);
PLM 13 48 58; WDY 01 53 50, 03 13 40, 14 37 50 (i 58),
14 48 47 (e 57), 14 57 07, 15 41 54 (i 42 01), 16 29 23,
17 06 47 (i 07 00), 21 10 29 (i 39)
29 GLA 02 11 35, 07 14 41, 08 32 49, 20 17 47; GSC 08 15 34,
17 57 58 (e 58 29), 22 45 00; WDY 00 04 00 (i 06), 01 30 00,
02 36 41, 09 31 08 (e 13)
30 GSC 02 48 18; WDY 06 01 55 (i 02 12), 10 51 43, 11 52 44,
12 40 13, 14 23 04, 18 40 10 (i 22), 21 24 20 (i 36)
31 CLC 20 21 52; GLA 03 48 47, 14 43 35 (i 42); WDY 17 55 08 (i 18)
February 1 WDY 09 02 11 (i 15 i 26), 09 28 17 (i 26 i 48 i 56), 14 55 06,
15 42 25 (pP 47 i 53), 19 48 06 (i 10), 23 57 35
(i 47 i 58 31, i 36)
2 GSC 06 54 42 (e 52), 09 37 58; WDY 16 55 39 (e 46, e 56 02)
3 GLA 08 29 32, 13 06 20 (i 08 40); WDY 01 59 20, 03 07 49
(pP 08 14), 06 05 17, 13 06 10 (i 07 16, i 08 17),
13 15 48 (i 16 53)
6 GSC 01 29 48

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 172

January - 1967

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

1967

January

- 1 00 33 45, 07 17 12 (PP 19 50, S 26 34), 22 11 32 (S 22 08)
 2 07 04 54 (I 05 03, S 14 24), 20 12 32 (S 23 08)
 3 05 04 49, 05 35 09, 05 36 24, 05 48 12 (S 58 54), 06 05 28, 06 14 37,
 11 17 51 (S 28 18±), 12 44 43, 20 16 41, 20 25 28 (pP 46, sP 52)
 5 00 27 41 (PP 31 23, SKS 38 24), 00 55 33
 6 00 15 36 (pP 47, S 25 06)
 7 00 46 51, 13 47 50, 19 29 27
 8 05 12 32 (S 20 26), 07 37 41.7 (S 49.0), 08 27 09.1 (S 17.2), 20 47 51.0
 (S? 48 01.4)
 9 18 16 55, 19 14 44, 19 59 36
 11 11 39 51, 11 50 13, 11 53 33, 16 16 12 (S 22 51)
 13 14 01 01 (PP 04 26, S 11 42±)
 14 02 45 27.6 (S 33.8), pP 12 13 53, 13 46 21, 14 26 13
 15 20 11 03, 23 27 17.2 (S 28 05.8)
 16 04 57 02, 07 22 40, 11 21 57 (S 32 42±), 14 39 02, 15 01 22, 16 14 52
 17 01 19 06 (pP 21 11, S 28 27, sS 32 06±, SKPP' 48 01), 03 32 27, 10 44 10,
 11 03 33 (pP 44), 12 11 18 (pP 31, S 20 59)
 18 04 31 19, 05 46 26 (PP 49 21, S 56 16), 08 25 55 (S 32 03), 10 48 33
 (pP 55), 22 02 25
 19 12 50 48, 12 51 24, 12 51 57 (S 13 01 41), 14 48 28, 14 49 27
 20 02 10 23 (PP 13 58, SKS 20 29, S 21 21)
 21 03 06 32 (S 16 58), 04 41 00, 08 27 58 (pP 28 25), 14 00 48 (pP 01 03)
 23 20 29 24 (S 32 29)
 24 03 17 14 (I 22 1 31)
 26 06 08 07, 16 16 37 (S 21 33), 20 22 49 (S 26 54±)
 27 08 48 03, 12 48 29
 28 14 00 35 (S 06 12±), 17 49 40 (pP 47, S 55 45), 22 37 45 (pP 38 12)
 31 13 45 44 (PcP 47 27, S 52 26)

KEW
OBSERVATORY
10 APR 1967
RICHMOND,
SURREY.

SUPPLEMENT: Times of P etc., for additional shocks recorded at auxiliary stations. Standard abbreviations for stations of this group now in operation are as follows:

BAR	Barrett	ISA	Isabella
CLC	China Lake	PAS	Pasadena
CWC	Cottonwood	PLM	Palomar
ECC	El Centro	RVR	Riverside
FTC	Fort Tejon	SBC	Santa Barbara
GLA	Glamis	SNC	San Nicolas
GSC	Goldstone	TIN	Tinemaha
HAY	Hayfield	WDY	Woody

1966
January

At present, recordings at GLA, GSC, PLM and SBC are telemetered directly to Pasadena. Further installations are in progress.

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

SUPPLEMENT: (Continued)
1967

January

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


Violet M. Taylor
Seismological Assistant

March 13, 1967

- For additional shocks recorded at China Lake (CLC), Grants (GLA), Goldstone (GSC), Palomar (PLM), and Woodbury (WDY).
- 1 WDY 16 40 53, 21 33 10 (i 18)
 - 2 GSC 05 54 26, 14 17 11 (i 17), 20 57 18, 23 35 35; WDY 18 45 21
 - 3 WDY 18 25 38
 - 4 GSC 01 29 48; WDY 00 23 31, 08 30 01, 10 39 21, 14 55 18, 16 07 45
 - 5 WDY 10 14 31, 10 58 25, 11 13 43, 15 21 18, 20 48 50; PLM 10 06 52
 - 6 GLA 19 44 31 (i 54); WDY 30 01 41, 15 54 40 (e 55 03 e 18), 19 40 43, 19 44 09 (i 17), 19 48 19 (i 27)
 - 7 GLA 08 54 02; GSC 14 21 46 (e 25 32); WDY 10 56 39
 - 8 GLA 04 38 14
 - 9 GLA 04 38 42 (i 18), 04 52 53 (i 53 07), 05 08 24 (i 32), 05 12 01 (i 06), 05 16 39 (i 46), 07 00 58 (i 07 04); GSC 14 43 17, 15 41 35 (i 50), 22 59 38
 - 10 PLM 12 18 57 (i 21 32)
 - 11 GLA 11 33 25, 14 02 11; GSC 05 27 42

Violet M. Taylor
Seismological Assistant

63



International
Seismological
Centre

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

ADDITIONAL

February 3

iP 23 37 02
dilatation

February 12

iP 14 19 37
compression

CONTINUATION

February 9

e 14 25 49
iP 15 33 45

13

ipP 19 45
isP 51

compression from
southeast

13

iP 10 35 23
iP 15 42 34

i 34 00

13

ipP 46
iP 21 09 38

iS 41 03

13

eP 23 24 35
i 41

iG 45.8

iS 32 58
iSS 37.3

$\Delta 51^\circ$

iG 38.7

Magn. 6 3/4

$\Delta 60^\circ$ Magn. 6 3/4

μ Sec

PZ 3/4 1 1/2

PH 1 1/2 2

SH 100 16

MH 100 20

11 eP 04 31 09

i 18

e 35.9

14

eL 39.9

14

11 eP 05 09 53

e 10 00

11 iP 09 40 12

e 18

11 iP 12 33 44

i 53

μ sec
PZ 1/4 2

SH 12 20

MH 50 20

MZ 50 20

iP 05 13 55

eP'' 01 54 50

iPP 56 42

eSKKP 02 08 34

eL 13.7

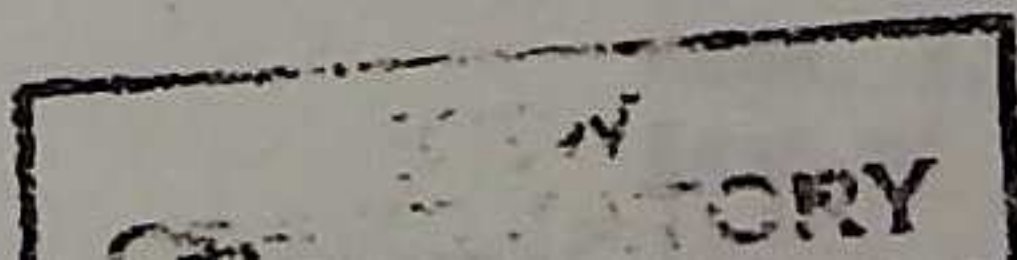
$\Delta 123^\circ$

μ sec
MH 8 20

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

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

Violet M. Taylor
Seismological Assistant



Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 2, 1967

CONTINUATION
February 15

Date	Time	Phase	Time	Phase	Time	
		iP!	16 20 36	February 19	iP''	22 33 44
		dilatation from			i	46
		southeast			i	55
		ipP	22 30		iPP	35 29
		isP	23 23		i	36
		iScP	24 15		eSS	52.3
		iS	28 13		eG	23 06.8
		isS	31 47		eR	14.2
		eP'P'	49 23		Δ 128° Magn.	6 3/4
		Δ 63° Depth	580 km		μ	sec
		Magn.	6 3/4 - 7		PPZ	0.4 2
					PPH	0.4 2
		PZ	2 1 1/2	21	iP	04 24 51
		PH	3/4 1 1/2		i	25 04
		SH	30 8	21	iP	09 24 34
15		iP	19 44 36		i	47
16		iP	17 38 55.9	21	iP	20 45 58.6
		i	59.2		iS	46 05.6
		iS	39 32.2		Magnitude	3.7±
		Baja California.			Felt in Orange County	
		Magn.	4 1/2	22	iP	18 39 26
		Several strong			epP	49
		aftershocks, notable			isP	40 01
		at 18:48, 19:41 and			eS	50.1
		08:13 Feb. 17			eG	19 02.7
17		iP	00 56 09		eR	06.7
17		iP	10 22 57		μ	sec
		dilatation			PZ	0.15 1
		ipP	23 18		PPZ	0.2 2
		eS	33 04	24	iP	11 00 27
		i	33.8	25	iP	11 39 19
		iR	46.5		eG	12 06.4
		iP'P'	49 59	25	iP	11 57 15
		Δ 81° Depth	80 km		eG	12 24.5
		Magn.	6 1/2	26	iP	04 11 35
				28	iP	05 44 15
		PZ	3/4 2	28	eP	09 49 25
		SH	4 20		eS	59 26
		MH	15 20		eG	10 11.7
		MZ	15 20		eR	13.7
		eP	20 28 35		Δ 82° Magn.	5 3/4-6
		e	42		μ	sec
		iP	18 49 09.2		PZ	0.1 1 1/2
		iS	17.7		SH	1 1/2 20
		Magn.	3 1/2		MH	2 20
		Felt at San Bernardino	March	1	eP	01 22 55
		iP	11 52 13		eG	25.4
		eS	56.9	1	iP	06 10 40.3
		eL	12 00.9		iS	55.5
19		iP	12 40 05		Magn.	3.7±
					East of Big Bear	

KEW
OBSERVATORY 17
- 6 MAR 1967 18
RICHMOND,
SURREY.

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and Auxiliary Stations as noted)
March 2, 1967

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

February 10 GSC 07 02 11
11 CLC 02 49 47 (pP 59, sP? 50 05), 19 59 30 (pP 39); WDY 03 48 20, 04 20 15 (i 54), 19 03 06
12 WDY 03 09 06, 06 22 47, 16 40 31, 18 07 50; CLC 00 36 25 (e 37), 03 39 57, 21 16 32 (e 50)
13 CLC 10 15 16, 11 41 48 (pP 42 01), 21 09 27 (pP 42);
GLA 17 16 41 (i 58), 17 19 57; WDY 06 15 35, 20 52 06
14 WDY 05 36 06 (i 12), 18 24 54 (i 26 07), 22 11 15
15 CLC 13 09 08 (pP 09 16), 20 20 16; WDY 02 01 51, 15 19 39, 16 57 36, 21 24 47 (i 53)
16 WDY 20 01 01; BAR 17 38 27.1 (S 38.0), 18 48 48.1 (S 59.5), 19 41 41.1 (S 52.0)
17 WDY 00 51 53, 08 10 05, 10 17 09; 12 51 03 (i 08); BAR 08 13 15.7 (S 26.8)
18 GSC 00 12 48, 02 52 36, 07 02 39 (e 48), 11 45 33, 12 59 47 (pP 58); PLM 00 42 07 (i 13); WDY 20 18 16
19 CLC 15 48 31; GLA 14 33 56, 20 07 56 (i 08 04), 23 47 03;
GSC 15 02 08 (i 18), 23 57 51
20 CLC 15 37 43, 16 53 37; GLA 00 47 09; WDY 03 25 14
21 CLC 05 48 20; PLM 20 46 03.7 (S 11.7)
22 CLC 14 07 08 (i 15 i 24), 15 00 56; GLA 23 46 40;
GSC 03 30 16, 04 02 48, 10 00 07; WDY 08 59 00 (i 09)
23 CLC 05 07 13; GLA 06 10 32; GSC 06 29 53, 14 39 19, 15 04 06;
WDY 23 44 41 (i 48)
24 GLA 08 30 12 (pP 24), 09 15 36 (pP 47), 11 49 58, 11 57 21;
WDY 04 42 41, 05 26 15 (e 44 e 54), 16 55 21
25 WDY 05 53 32 (i 58, i 54 15)
26 GSC 03 19 58 (i 20 04), 12 09 32 (i 37)
27 GSC 02 15 36 (pP 46, sP? 52), 02 41 58 (pP 42 06)
March 1 GLA 01 22 09

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Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 173

February - 1967

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

1967

February

- 2 06 44 31 (pP 44 45, S 55 54±), 16 36 10 (pP 52), 18 30 55
- 3 13 06 13 (i 07 18, i 08 40, i 09 01), 23 37 02
- 4 18 01 28
- 6 03 22 28, 03 33 12
- 7 08 41 36 (e 42 29, S 52 09), 15 00 00, 19 49 56
- 9 14 25 49, 15 33 45 (i 34 00, S 41 03)
- 11 04 31 09 (i 18), 05 09 53 (e 10 00), 09 40 12, 12 33 44 (i 53)
- 12 14 19 37 (pP 45, sP 51)
- 13 10 35 23, 15 42 34 (pP 46), 21 09 38, 23 24 35 (i 41, S 32 58)
- 14 01 54 50 (pP 56 42, SKKP 02 08 34), 05 13 55
- 15 16 20 36 (pP 22 30, sP 23 23, ScP 24 15, S 28 13, sS 31 47, P'P' 49 23),
19 44 36
- 16 17 38 55.9 (S 39 32.2)
- 17 00 56 09, 10 22 57 (pP 23 18, S 33 04, P'P' 49 59), 20 28 35
- 18 18 49 09.2 (S 17.7)
- 19 11 52 13 (S 56 54±), 12 40 05, 22 33 44 (i 46, i 55, PP 35 29,
i 35 36)
- 21 04 24 51 (pP 25 04), 09 24 34 (pP 47), 20 45 58.6 (S 46 05.6)
- 22 14 07 22, 18 39 26 (pP 49, sP 40 01, S 50 06±)
- 24 11 00 27
- 25 11 39 19, 11 57 15
- 26 04 11 35
- 28 05 44 15, 09 49 25 (S 59 26)

KEW
OBSERVATORY
25 MAY 1967
RICHMOND,
SURREY.

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

February 1 WDY 09 02 11 (i 15 i 26), 09 28 17 (i 26 i 48 i 56), 14 55 06, 15 42 25 (pP 47, i 53), 19 48 06 (i 10), 23 57 35 (i 47, i 58 31, i 36)

2 GSC 06 54 42 (e 52), 09 37 58; WDY 16 55 39 (e 46, e 56 02)

3 GLA 08 29 32, 13 06 20 (i 08 40); WDY 01 59 20, 03 07 49 (pP 08 14), 06 05 17, 13 06 10 (i 07 16, i 08 17), 13 15 48 (i 16 53), 16 40 53, 21 33 10 (i 18)

4 GSC 05 54 26, 14 17 11 (i 17), 20 57 18, 23 35 35; WDY 18 45 21

5 WDY 18 26 38

6 GSC 01 29 48; WDY 00 23 35, 08 30 01, 10 30 21, 14 55 18, 16 07 45

7 WDY 10 14 31, 10 50 25, 11 15 43, 15 21 10, 20 48 58; PLM 10 06 52

8 GLA 19 44 31 (i 52); WDY 10 01 41, 15 54 40 (e 55 03 e 12), 19 40 43, 19 44 09 (i 17), 19 48 19 (i 27)

9 GLA 08 54 02; GSC 14 21 45 (e 25 32); WDY 10 56 39

10 GLA 22 38 14; GSC 07 02 11

11 CLC 02 49 47 (pP 59, sP? 50 04), 19 59 30 (pP 39); GLA 04 30 42 (i 48), 04 52 59 (i 53 07), 05 09 24 (i 32), 05 12 01 (i 06), 05 16 38 (i 46), 07 00 58 (i 01 04); GSC 14 43 57, 15 41 38 (i 50), 22 59 28; WDY 03 48 20, 04 20 15 (i 54), 19 03 06

12 CLC 00 36 25 (e 37), 03 39 57, 21 16 32 (e 50); PLM 12 10 51 (i 11 32); WDY 03 09 06, 06 22 47, 16 40 31, 18 07 50

13 CLC 10 15 16, 11 41 48 (pP 42 01), 21 09 27 (pP 42); GLA 11 33 25, 14 02 11, 17 16 41 (i 58), 17 19 57; GSC 05 27 42; WDY 06 15 35, 20 52 06

14 WDY 05 36 06 (i 12), 18 24 54 (i 26 07), 22 11 15

15 CLC 13 09 08 (pP 09 16), 20 20 16; WDY 02 01 51, 15 19 39, 16 57 36, 21 24 47 (i 53)

16 WDY 20 01 01; BAR 17 38 27.1 (s 38.0), 18 48 48.1 (s 59.5), 19 41 41.1 (s 52.0); GLA 19 57 17

17 WDY 00 51 53, 08 10 05, 10 17 09; 12 51 03 (i 08); BAR 08 13 15.7 (s 26.8)

18 GSC 00 12 48, 02 52 36, 07 02 39 (e 48), 11 45 33, 12 59 47 (pP 58); PLM 00 42 07 (i 13), WDY 20 18 16

19 CLC 15 48 31; GLA 14 33 56, 20 07 56 (i 08 04), 23 47 03; GSC 15 02 08 (i 18), 23 57 51

20 CLC 15 37 43, 16 53 37; GLA 00 47 09; WDY 03 25 14

21 CLC 05 48 20; PLM 20 46 03.7 (s 11.7)

22 CLC 14 07 08 (i 15 i 24), 15 00 56; GLA 23 46 40; GSC 03 30 16, 04 02 48, 10 00 07; WDY 08 59 00 (i 09)

23 CLC 05 07 13; GLA 06 10 32; GSC 06 29 53, 14 39 19, 15 04 06; WDY 23 44 41 (i 48)

24 GLA 08 30 12 (pP 24), 09 15 36 (pP 47), 11 49 58, 11 57 21; WDY 04 42 41, 05 26 15 (e 44 e 54), 16 55 21, 18 30 40

25 GSC 18 02 07, 22 39 39; WDY 05 53 32 (i 58, i 54 15), 15 58 04

26 GSC 03 19 58 (i 20 04), 06 51 57 (pP 52 04), 12 09 32 (i 37); WDY 22 24 25

27 GSC 02 15 36 (pP 46, sP? 52), 02 41 58 (pP 42 06), 13 58 00; WDY 09 58 56

28 CLC 12 38 51, 15 25 48 (e 58)

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Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 10, 1967



CONTINUATION

arch	1	iP	22 24 56	March	6	iP	04 51 57
	2	iP!	02 56 19			ipP	53 42
		dilatation from				eS	05 01.6
		southeast			6	iP	08 23 43
		e(pP)	56 38		7	eP	17 35 13
		eS	03 03.4		9	iP	03 36 49
		eR	12.7			eR	04 01.7
			μ sec			$\Delta 85^\circ \pm$	
		PZ	$\frac{1}{2}$ $1\frac{1}{2}$		9	iP	06 04 49
	2	iP	07 12 56			eS	15.3
	2	iP	13 25 15			eR	30.0
		iL	28.2			$\Delta 85^\circ \pm$	
	2	iP	14 13 28.2			Magn. $5\frac{1}{4} \pm$	
		dilatation					
		iS	14 03.7			μ sec	
		Magn. $4\frac{1}{4} - 4\frac{1}{2}$			9	MH	$1\frac{1}{2}$ 20
	4	iP	06 27 43			iP	07 11 06
		ipP	28 37			iS	21 38
		iS	37 08			iSS	26.3
		eL	48.1			eG	33.3
	4	iP	18 11 48			iR	36.4
		IPP	15 52			$\Delta 85^\circ$ Magn. $6\frac{1}{2}$	
		eS	23.4			μ sec	
		IPS	24 56			PZ	0.6 2
		iSS	29.9			SH	5 24
		eL	39.4			MH	18 20
		eR	45.2			MZ	17 20
		$\Delta 104^\circ$					
		Magn. $6 \frac{3}{4} - 7$					
			μ sec				
		PZ	$\frac{1}{2}$ 3				
		PPZ	4 16				
		MH	20 20				
		MZ	16 20				

UPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

February	24	WDY	18 30 40
	25	GSC	18 02 07, 22 39 39; WDY 15 58 04
	26	GSC	06 51 57 (pP 52 04); WDY 22 24 25
	27	GSC	13 58 00
	28	CLC	12 38 51, 15 25 48 (e 58); WDY 09 58-56
March	1	CLC	18 52 05; GLA 01 22 09, 20 57 56 (pP 58 06); GSC 14 43 30; WDY 14 53 43? (i 54 10)
	2	CLC	14 13 00.9; CWC 14 12 55.8 (s 13 01.0); GLA 06 10 10, 08 29 59, 18 16 20 (pP 30), 23 13 53 (pP 14 04); GSC 14 13 13.3; WDY 00 52 35
	3	GLA	06 08 50 (pP 57); WDY 03 13 08
	4	GSC	05 23 00 (e 53, e 27 03)
	5	GLA	11 15 44, 21 42 09

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 17, 1967

CONTINUATION

March	9	eP	18 10 07		March	12	iP	16 15 21.7
		eS?	19 34				eS	53.4
		overlaps the next					Magn. $4\frac{1}{4}$	
	9	iP	18 15 13			12	eL	21 26.0
		eS	25 45				iLg	26 30
		eR	39.8			13	iP	14 51 26.5
		$\Delta 85^\circ$ Magn. 6					Immediately precedes the next	
			μ	sec				
		PZ	$\frac{1}{2}$	2		13	iP	14 51 26.5
		MH	5	20			i	36.1
		MZ	6	20			iS	52 16.1
	10	iP	00 42 57				Magn. $4\frac{1}{4}$	
	10	iP	06 45 15			13	iP	16 19 24
	10	eP	10 15 08				eL	46.6
	10	eP	13 06 42.1					μ sec
		iS	07 44.1			13	PZ	$\frac{1}{2}$ $1\frac{1}{2}$
		Magn. $4\frac{1}{2}$					iP	22 00 28.6
	11	iP	08 45 56				iS	01 01.0
		dilatation					Felt in the Parkfield area	
		epP	46 11				Magn. $3\frac{1}{2}$	
		iS	56 23			14	eSKS	07 23.2
		ePS	57.3				ePS	26.6
		eR	09 10.8				eSS	32.6
		$\Delta 85^\circ$ Magn. $6\frac{1}{4}$					eL	45.8
			μ	sec			$\Delta 108^\circ$?	
		PZ	$\frac{1}{2}$	$1\frac{1}{2}$			Interpretation doubtful	
		PH	$\frac{1}{4}$	$1\frac{1}{2}$		14	iP	23 36 05
		MH	5	20		15	iP	06 52 17
		MZ	6	20		16	e(P'')	12 22 35
	11	iP	14 50 23				e(PP)	23 49
		ipP	49				e(PS)	32.6
		eS	54.9				eSS	37.9
		eL	57.3				eG	45.9
		$\Delta 21^\circ$ Depth 50 km					eR	50.0
		Magn. $5\frac{1}{2}$					$\Delta 104^\circ$	
			μ	sec			Interpretation doubtful	
		PZ	$\frac{1}{4}$	$1\frac{1}{2}$			μ sec	
		MH	20	20			MH	4 20

KEW
OBSERVATORY
21 MAR 1967
RICHMOND,
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Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 17, 1967

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

March 3 WDY 21 02 10
 4 GLA 03 14 57, 09 10 04; GSC 14 46 54, 15 07 21, 22 54 28;
 WDY 17 34 59, 18 28 16 (i 50)
 5 WDY 06 08 00 (i 05), 10 05 49 (i 58, i 06 04), 19 58 01
 6 CLC 11 47 55 (e 48 05, e 48 15); GLA 08 23 53 (pP 24 47),
 23 43 27; GSC 11 51 16; WDY 00 30 12, 18 15 35, 20 07 27 (pP 58)
 7 GLA 01 21 25, 01 49 20, 03 03 04, 03 54 54, 03 56 47, 04 33 29,
 04 53 49 (e 54 01), 08 41 38, 17 43 39 (i 44), 18 09 07,
 22 53 41; GSC 07 30 31 (i 38); WDY 03 54 38, 03 57 05,
 04 32 28, 04 33 32, 15 39 29 (pP 40 07), 16 50 51, 17 49 51,
 17 57 17 (e 21)
 8 CLC 02 24 12 (i 18), 05 26 01 (e 04), 08 25 41, 12 46 00 (i 50),
 22 26 29 (i 27 02), 23 05 06 (e 14); GLA 01 44 39, 01 54 40,
 02 01 44 (PcP 03 05, ScP 06 52), 02 29 48, 03 01 33, 04 16 12,
 21 14 35, 21 59 53, 22 36 57, 23 19 00; WDY 10 58 43 (i 49),
 11 23 12
 9 CLC 05 00 56, 05 12 44 (pP 13 15), 10 18 38, 11 54 43, 13 23 58,
 13 45 17, 14 05 40, 15 01 00; GLA 03 50 52, 05 50 38, 06 07 34
 (e 08 02), 06 17 54 (e 18 52), 06 35 43, 08 03 40, 08 23 17,
 08 29 22, 09 17 18, 13 07 49, 13 13 14 (e 20), 13 51 43 (e 48),
 14 14 29 (PcP 14 17 41), 15 00 22, 15 01 08, 18 38 57 (e 39 02),
 20 12 35 (i 40), 20 14 35 (i 39), 20 18 29, 20 20 34, 20 26 52,
 20 29 36 (i 40), 20 32 52, 20 44 39 (i 42), 20 48 28, 21 32 41,
 21 34 44 (i 49), 21 37 14 (i 52); GSC 05 08 03; WDY 20 08 01
 (pP 39, sP 56), 21 09 38 (e 10 49), 21 18 28 (i 19 26)
 10 GLA 01 53 46 (i 50), 03 39 16, 05 04 46, 10 15 30, 10 24 34,
 11 09 10, 11 24 29 (i 36), 13 06 00.3 (S? 45), 13 24 57
 (i 26 07); WDY 00 29 08, 02 05 54, 13 24 46 (i 25 56, e 26 08,
 i 27 20, e 30 37; multiple event?), 14 28 08 (e 29 38)
 11 GLA 03 15 17, 18 25 10, 20 54 41 (i 46)
 12 GLA 01 34 19 (e 36), 03 03 42 (e 50, i 04 12), 11 01 43, 16 14 59.3
 (S 15 13.5), 21 24 36.4 (S 25 51.6); PLM 16 14 59.6 (S 15 12.9)
 13 GLA 01 07 48 (e 58), 07 48 52, 14 51 10.5 (S 34.2); GSC 19 41 10
 PLM 14 51 14.8 (S 38.3)
 14 GLA 02 14 16
 15 GLA 10 33 17 (e 21)

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Seismological Assistant

220 NORTH San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 29, 1967



CONTINUATION
March 16

17 IP 17 44 27
 17 IP 11 37 59
 i 38 03
 iSKS 48 38
 iS 49 02
 iSS 55.3
 iG 12 02.6
 iR 06.6

$\Delta 93^\circ$ Magn. $6\frac{1}{4}$

	μ	sec
PZ	0.2	$1\frac{1}{2}$
MH	10	20
MZ	10	20
17 eP	14 01	20
e		26
18 iP	09 38	47
18 compression		
iP	18 01	45
i		02 13
19 eP	01 25	21
iP''		29 17
iPP		49
eSS		39.5
iR	02 01.6	

$\Delta 115^\circ$

19 eP 04 12 30
 ipP 43
 i 51
 iS 21 20
 isS 42
 iSS 25.8
 iG 28.6
 iR 31.8

$\Delta 69^\circ$ Depth 50 km
Magn. $6\frac{1}{2}$

	μ	sec
PZ	0.2	3
PZ	$1\frac{1}{2}$	5
SH	20	25
MH	30	20
MZ	20	20

Initial P abnormally small

19 iP 17 33 43
 20 iP 13 42 22
 i 28
 i 36
 i 46
 eS 51.2
 eG 58.6
 $\Delta 68^\circ$
 20 eP 13 51 41
 i 48
 i 53
 eL 14 08.8
 $\Delta 68^\circ?$

March 20 eP 17 22 16
 20 eS 19 30.6
 eG 43.8
 eR 48.1

$\Delta 90^\circ \pm$
 21 iP 11 36 47
 21 iP 18 20 22
 epP 55
 22 iP 15 01 35
 i 42

24 e(S) 03.6
 iP'' 09 18 17
 ipP'' 20 33
 i 57
 iSKS 24.5
 iSKKS 26.1
 ePKKP 27 57
 esSKS 28 38
 e(PS) 30 24
 eSKKP 31 14
 e(PSP) 32 08
 iSS 36.3
 isSS 40.5
 i(SSS) 41.2

$\Delta 126^\circ$ Depth 600 km

Estimated magnitude $6\frac{3}{4} \pm$

24 iP 12 04 11
 epP 06 26
 25 iP 22 59 02
 iS 23 06 41
 27 iP 08 35 58
 i 36 31
 i 59
 i 37 55
 e 38 42
 e 39 35
 27 iP 09 11 28
 ipP 46
 isP 57
 eS 22.6
 eSS 28.6
 eG 37.9

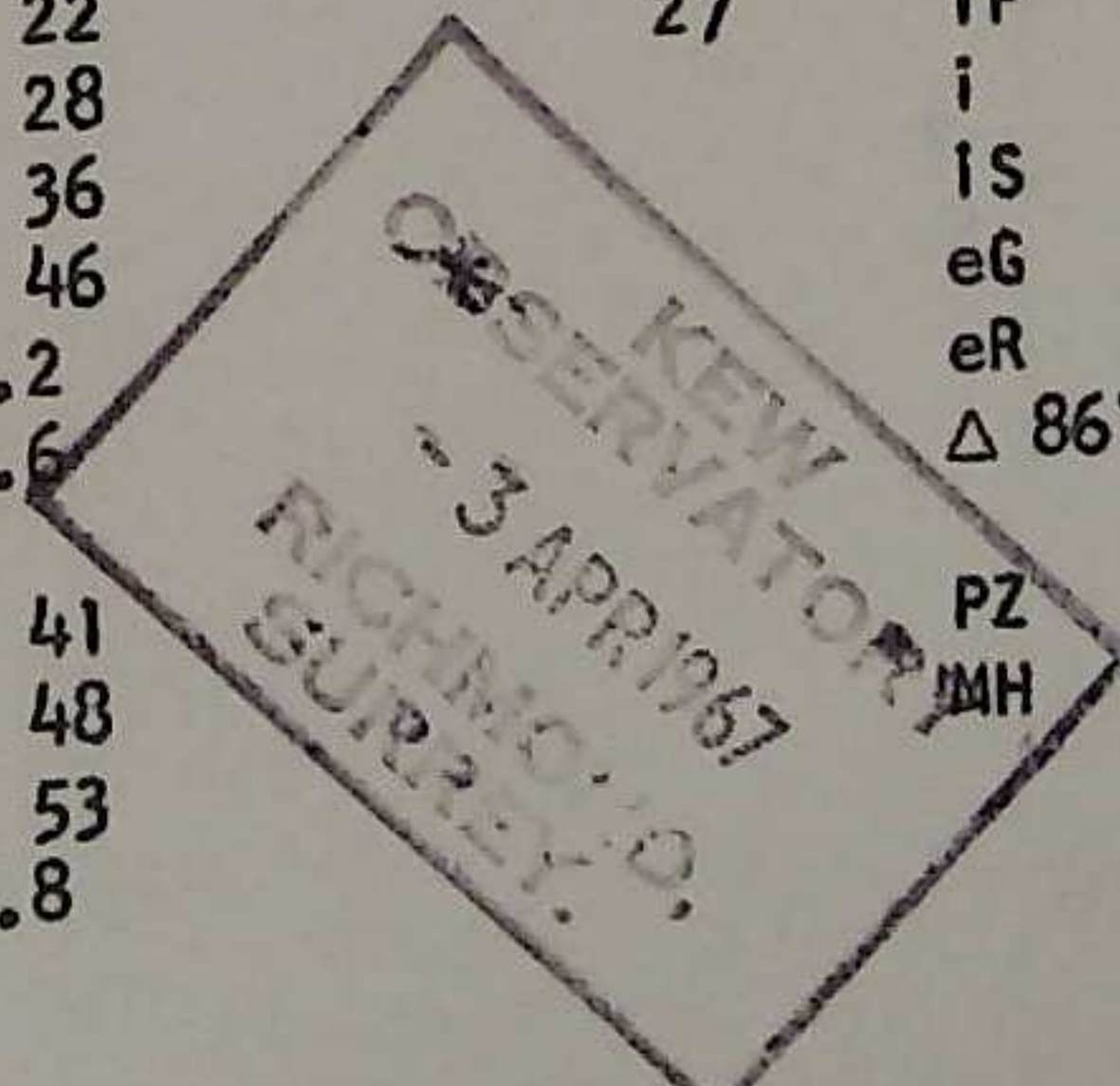
$\Delta 95^\circ$

Depth 70 km

27 iP 10 14 26
 i 31
 iS 25 06
 eG 36.9
 eR 40.7

$\Delta 86^\circ$ Magn. $6\frac{1}{4}$

	μ	sec
PZ	$\frac{1}{4}$	1
MH	20	20



Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
March 29, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR),
China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA),
Palomar (PLM), Tinemaha (TIM), and Woody (WDY).

March 10	WDY	22 09 24
11	WDY	18 05 45
12	WDY	01 04 48
13	WDY	12 55 26
14	CLC	09 59 06, 11 51 36; GSC 08 00 37
15	WDY	15 25 11 (pP 22), 15 28 55
16	GLA	19 14 50; GSC 18 13 21; WDY 15 28 15, 23 14 30 (i 36)
17	CLC	19 44 15; GSC 02 34 12, 02 48 03, 06 55 00 (pP 10), 14 59 05 (e 09); WDY 07 25 48 (i 54 i 59), 11 28 39, 14 49 28, 19 55 36
18	GLA	07 55 42; WDY 01 05 54 (pP 06 08), 13 27 14 (pP 28), 18 01 37 (i 02 03), 18 04 56, 19 28 59
19	CWC	11 28 22 (e 28 e 33); GLA 21 37 40; WDY 01 59 02, 03 47 53, 21 52 53 (e 53 21); 23 00 13
20	CLC	13 49 36 (i 49); GLA 10 57 20 (i 27), 14 03 13 (i 22, i 26), 15 21 24 iP 15 57 35 (i 42), 19 20 24, 22 07 04, 22 48 30 (i 35);
	GSC	19 14 42 (i 15 11); WDY 05 24 44 (i 51), 08 15 50, 09 01 19 (e 28), 09 41 17 (i 30), 14 54 56 (i 55 03, i 10)
21	CLC	14 55 41 (e 56); GLA 18 48 35, 19 19 16; GSC 12 41 57
22	CLC	04 10 53, 13 14 07, 18 00 30 (i 47), 19 25 56, 21 36 22;
	GLA	00 23 39, 05 29 59, 06 07 46; GSC 05 15 13 (e 21), 19 53 22, 23 58 05
23	GLA	00 30 06, 00 47 36, 03 06 41 (i 47), 05 15 41, 05 24 05 (i 10), 05 43 23 (i 31), 11 02 56, 13 53 06 (i 16), 15 19 50, 15 23 31 (i 42)
24	GSC	04 23 04, 15 48 25, 23 10 57 (i 11 08)
25	GLA	20 55 31 (pP 54), 22 55 04.3 (S 24.1); GSC 06 11 23, 12 29 47, 14 37 19 (pP 29)
26	GLA	21 23 01 (i 12); GSC 04 30 59, 16 39 09, 20 55 00 (e 08), 21 11 26 (i 31)
27	GSC	00 07 22, 08 28 52, 09 05 03 (e 07)

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 5, 1967

CONTINUATION

March	29	iP	09 51 27	April	1	eP	15 41 04	
	29	eS	11 06.6		1	eP	15 41 09	
		eG	15.2			iS	42 12	
		eR	18.6			Magn. $4\frac{1}{2}$		
		$\Delta 70^\circ \pm$			2	eP	17 54 07	
	30	iP''	02 27 06			eSKS	18 04.8	
		iSS	46.1			eS	05.5	
		eG	03 00.1			ePS	06.6	
		$\Delta 128^\circ ?$				eSS	11.5	
	30	iS	23 26 18			eG	19.6	
		iL	35.9			eR	24.6	
	31	eP	10 41 14			$\Delta 95^\circ$		
		i	25			Magn. $5\frac{3}{4}$		
		eS	50.6					
		iG	11 00.1			MH	μ 5 sec 20	
		eR	03.6		2	iP	20 16 12.2	
		$\Delta 73^\circ$				iS	36.6	
	31	eP	20 17 46			Magn. $4\frac{1}{4}-4\frac{1}{2}$		
		e	18 16		3	eP	08 17 34	
April	1	iP	06 05 09			eSKS	28 09	
		ipP	21			eS	46	
		ePP	07 57			eSS	34.9	
		e	08 07			eG?	42.6	
		iS	13 58			$\Delta 94^\circ$		
		eG	21.5		3	iP	13 10 22	
		eR	24.5			ipP	34	
			μ $\frac{1}{2}$ sec $1\frac{1}{2}$			eSKS	20.1	
		PZ				eSS	24.6	
		PPZ	0.2 $1\frac{1}{2}$			eG	29.6	
		MH	6 20			eR	32.6	
		MZ	4 20			$\Delta 73^\circ$		
	1	e	07 59 53				μ 3 sec 20	
	1	eP	10 48 36		4	e	01 10.5	
		i	46			eL	18.9	
		eS	54 50			eR	22.6	
		iG	57.8		4	eP	04 05 14	
		eR	59.4			epP	25	
		$\Delta 43^\circ$			4	iP	09 17 45	
			μ $\frac{1}{4}$ sec $1\frac{1}{2}$					
	1	PZ						
		iP	12 34 24					
		ipP	35					
		iS	43 15					
		eG	50.7					
		eR	54.1					

$\Delta 68^\circ$ Depth 50 km
Magn. $5\frac{3}{4}$

	μ $\frac{1}{2}$ sec 1
PZ	
MH	7 20
MZ	5 20

KEW
OBSERVATORY
10 APR 1967
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 April 5, 1967



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

March	24	WDY	18 41 52
	25	CLC	21 46 48; WDY 07 48 38, 20 41 33, 20 59 25, 22 39 26, 23 32 10
	26	CLC	01 24 44, 13 14 43; GSC 08 00 06 (e 17); WDY 16 33 46 (e 35 58), 22 52 39
	27	WDY	20 27 26
	28	GLA	21 32 35 (e 45); GSC 02 05 02, 05 00 42, 05 14 31
	29	GLA	02 01 21, 10 57 51; GSC 01 29 26, 13 25 40 (e 50), 14 33 07;
		WDY	13 01 59, 17 20 29, 20 05 21 (i 43)
	30	GLA	23 16 40; WDY 03 47 27, 15 43 23 (i 47), 19 24 52 (i 25 00)
	31	GSC	02 19 58 (i 20 18), 04 25 10 (i 37); WDY 09 24 05 (pP 23 sP 34), 10 45 26
April	1	GLA	07 59 32 (e 45 i 08 00 11, i 24), 15 40 00, 15 40 20;
		GSC	14 11 23 (pP 34)
	2	GLA	02 05 44 (i 56), 12 04 09 (i 18), 20 16 00.1; PLM 20 15 49.9
	4	GLA	00 55 55, 18 21 59 (i 24 03)

Violet M. Taylor
 Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 174

March - 1967

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

1967
March

- 1 01 22 55 (L 25 24±), 06 10 40.3 (S 55.5), 22 24 56
- 2 02 56 19 (pP 56 39, S 03 03 24±), 07 12 56, 13 25 15 (L 28 12±),
14 13 28.2 (S 14 14 03.7)
- 4 06 27 43 (pP 28 37, S 37 03), 18 11 48 (PP 15 52, S 23 24±, PS 24 56)
- 6 04 51 57 (pP 53 42, S 05 01 36±), 08 23 43
- 7 17 35 13
- 9 06 04 49 (S 15 18±), 07 11 06 (S 21 38), 18 10 07 (S 19 34),
18 15 13 (S 25 45)
- 10 00 42 57, 06 45 15, 10 15 08, 13 06 42.1 (S 07 44.1)
- 11 08 45 56 (pP 46 11, S 56 23), 14 50 23 (pP 49, S 54 54±)
- 12 16 15 21.7 (S 53.4), L 21 26 00± (Lg 26 30)
- 13 14 51 26.5 14 51 36.1 (S 52 16.1), 16 19 24, 22 00 28.6 (S 01 01.0)
- 14 SKS 07 23 12± (PS 26 36±), 23 36 05
- 15 06 52 17, 12 22 35 (S 32 36±)
- 16 17 44 27
- 17 11 37 59 (SKS 48 38, S 49 02), 14 01 20
- 18 09 38 47, 18 01 45 (pP 02 13)
- 19 01 25 21 (P'' 29 17, PP 29 49), 04 12 30 (pP 43, sP 51, S 21 20,
sS 21 42), 17 33 43
- 20 13 42 22 (i 28, pP 36, sP 46, S 51 12±), 13 51 41 (i 48 i 53),
17 22 16, S 19 30 36±
- 21 11 36 47, 18 20 22 (pP 55)
- 22 15 01 35 (S 03 36±)
- 24 09 18 17 (pP'' 20 33, i 20 57, SKS 24 30±, SKKS 26 06±, PKKP 27 57,
sSKS 28 38, SKKP 31 14), 12 04 11 (pP'' 06 26)
- 25 22 59 02 (S 23 06 41)
- 27 08 35 58 (i 36 31, i 36 59, pP 37 55), 09 11 28 (pP 46, sP 57,
S 22 36±), 10 14 26 (S 25 06)
- 29 09 51 27, S 11 06 36±
- 30 02 27 06, S 23 26 18
- 31 10 41 14 (S 50 36±), 20 17 46 (e 18 16)

KEW
 OBSERVATORY
 26 JUN 1967
 RICHMOND,
 SURREY.

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

1967	March	1	CLC	18 52 05; GLA 01 22 09, 20 57 56 (pP 58 06); GLA 14 43 30;
			WDY	14 53 43? (i 54 10)
		2	CLC	14 13 00.9; CWC 14 12 55.8 (s 13 01.0); GLA 06 10 10, 08 29 59, 18 16 20 (pP 30), 23 13 53 (pP 14 04);
			GSC	14 13 13.3; WDY 00 52 35
		3	GLA	06 08 50 (i 57); WDY 03 13 08, 21 02 10
		4	GSC	05 23 00 (e 53, e 27 03), 14 46 54, 15 07 21, 22 54 28;
			GLA	03 14 57, 09 10 04; WDY 17 34 59, 18 28 16 (i 50)
		5	GLA	11 15 44, 21 42 09; WDY 06 08 00 (i 05), 10 05 49 (i 58, i 06 04), 19 58 01
		6	CLC	11 47 55 (e 48 05, e 48 15); GLA 08 23 53 (pP 24 47), 23 43 27;
			GSC	11 51 16; WDY 00 30 12, 18 15 35, 20 07 27 (pP 58)
		7	GLA	01 21 25, 01 49 20, 03 03 04, 03 54 54, 03 56 47, 04 33 29, 04 53 49 (e 54 01), 08 41 38, 17 43 39 (i 44), 18 09 07, 22 53 41; GSC 07 30 31 (i 38); WDY 03 54 38, 03 57 05, 04 32 28, 04 33 32, 15 39 29 (pP 40 07), 16 50 51, 17 49 51, 17 57 17 (e 21)
		8	CLC	02 24 12 (i 18), 05 26 01 (e 04), 08 25 41, 12 46 00 (i 50), 22 26 29 (i 27 02), 23 05 06 (e 14); GLA 01 44 39, 01 54 40, 02 01 44, 02 03 05, 02 06 52, 02 29 48, 03 01 33, 04 16 12, 21 14 35, 21 59 53, 22 36 57, 23 19 00; WDY 10 58 43 (i 49), 11 23 12
		9	CLC	05 00 56, 05 12 44 (pP 13 15), 10 18 38, 11 54 43, 13 23 58, 13 45 17, 14 05 40, 15 01 00; GLA 03 50 52, 05 50 38, 06 07 34 (e 08 02), 06 17 54 (e 18 52), 06 35 43, 08 03 40, 08 23 17, 08 29 22, 09 17 18, 13 07 49, 13 13 14 (e 20), 13 51 43 (e 48), 14 14 29 (PcP 14 17 41), 15 00 22, 15 01 08, 18 38 57 (e 39 02), 20 12 35 (i 40), 20 14 35 (i 39), 20 18 29, 20 20 34, 20 26 52, 20 29 36 (i 40), 20 32 52, 20 44 39 (i 42), 20 48 28, 21 32 41, 21 34 44 (i 49), 21 37 14 (i 52)
			GSC	05 08 03; WDY 20 08 01 (pP 39, sP 56), 21 09 38 (e 10 49), 21 18 28 (i 19 26)
		10	GLA	01 53 46 (i 50), 03 39 16, 05 04 46, 10 15 30, 10 24 34, 11 09 10, 11 24 29 (i 36), 13 06 00.3 (s? 45), 13 24 57 (i 26 07)
			WDY	00 29 08, 02 05 54, 13 24 46 (i 25 56, e 26 08, i 27 20, e 30 37; multiple event?), 14 28 08 (e 29 38), 22 09 24
		11	GLA	03 15 17, 18 25 10, 20 54 41 (i 46); WDY 18 05 45
		12	GLA	01 34 19 (e 36), 03 03 42 (e 50, i 04 12), 11 01 43, 16 14 59.3 (s 15 13.5), 21 24 36.4 (s 25 51.6); PLM 16 14 59.6 (s 15 12.9); WDY 01 04 48
		13	GLA	01 07 48 (e 58), 07 48 52, 14 51 10.5 (s 34.2); GSC 19 41 10;
			WDY	12 55 26; PLM 14 51 14.8 (s 38.3)
		14	CLC	09 59 06, 11 51 36; GLA 02 14 16; GSC 08 00 37
		15	GLA	10 33 17 (e 21); WDY 15 25 11 (pP 22), 15 28 55
		16	GLA	19 14 50; GSC 18 13 21; WDY 15 28 15, 23 14 30 (i 36)
		17	CLC	19 44 15; GSC 02 34 12, 02 48 03, 06 55 00 (pP 10), 14 59 05 (e 09); WDY 07 25 48 (i 54 i 59), 11 28 39, 14 49 28, 19 55 36
		18	GLA	07 55 45; WDY 01 05 54 (pP 06 08), 13 27 14 (pP 28), 18 01 37 (i 02 03), 18 04 56, 19 28 59
		19	CLC	11 28 22 (e 28 e 33); GLA 21 37 40; WDY 01 59 02, 03 47 53, 21 52 53 (e 53 21), 23 00 13

SUPPLEMENT (continued)

1967

March 20 CLC 13 49 36 (i 49); GLA 10 57 20 (i 27), 14 03 13 (i 22, i 26)
 15 21 24 iP 15 57 35 (i 42), 19 20 24, 22 07 04, 22 43 30 (i 35);
 GSC 19 14 42 (i 15 11); WDY 05 24 44 (i 51), 08 15 50, 09 01 19
 (e 28), 09 41 17 (i 30), 14 54 56 (i 55 03, i 10)
 21 CLC 14 55 41 (e 56); GLA 18 48 35, 19 19 16; GSC 12 41 57
 22 CLC 04 10 53, 13 14 07, 18 00 30 (i 47), 19 25 56, 21 36 22;
 GLA 00 23 39, 05 29 59, 06 07 46; GSC 05 15 13 (e 21), 19 53 22,
 23 58 05
 23 GLA 00 30 06, 00 47 36, 03 06 41 (i 47), 05 15 41, 05 24 05
 (i 10), 05 43 23 (i 31), 11 02 56, 13 53 06 (i 16), 15 19 50
 (SKP 15 23 31)
 24 GSC 04 23 04, 15 48 25, 23 10 57 (i 11 08); WDY 18 41 52
 25 CLC 21 46 48; GLA 20 55 31 (pP 54), 22 55 04.3 (S 24.1);
 GSC 06 11 23, 12 29 47, 14 37 19 (pP 29); WDY 07 48 38,
 20 41 33, 20 59 25, 22 39 26, 23 32 10
 26 CLC 01 24 44, 13 14 43; GLA 21 23 01 (i 12); GSC 04 30 59,
 08 00 06 (e 17); 16 39 09, 20 55 00 (e 08), 21 11 26 (i 31);
 WDY 16 33 46 (e 35 28), 22 52 39
 27 GSC 00 07 22, 08 28 52, 09 05 03 (e 07); WDY 20 27 26
 28 GLA 21 32 35 (e 45); GSC 02 05 02, 05 00 42, 05 14 31
 29 GLA 02 01 21, 10 57 51; GSC 01 29 26, 13 25 40 (e 50), 14 33 07;
 WDY 13 01 59, 17 20 29, 20 05 21 (i 43)
 30 GLA 23 16 40; WDY 03 47 27, 15 43 23 (i 47), 19 24 52 (i 25 00)
 31 GSC 02 19 58 (i 20 18), 04 25 10 (i 37); WDY 09 24 05
 (pP 23 sP 31), 10 45 26

Violet M. Taylor
 Seismological Assistant

June 1, 1967

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 12, 1967.

CONTINUATION
April 5

	eP	01 02 58
	eS	04 03
	Magnitude	4 3/4 ±
5	iP	02 46 31
	eS	55.9
	ePS	56.6
	eSS	03 01.7
	eR	10.9
	Δ 78°	
5	iP	03 00 17
	i	29
	eR	25.0
5	iP	23 45 41
	ipP	57
6	iP	06 29 43
	eG	49.6
	eR	54.8
6	eP	09 01 51
	eG	23.2
	eR	26.0
6	iP	12 34 20
	e(G)	42.6
	e(R)	44.6
	See next	
6	e(G)	12 55.7
	eR	59.0
	Associated with preceding?	
6	eP	14 06 52
8	iP	05 46 18
	eS	55 27
9	e	00 33.8
	e	38.6
	eG	48.6
	eR	52.6
9	iP	06 41 33
9	iP	09 10 00
10	iP	05 12 55
	ipP	13 11
	isP	21
	eSKS	23.4

April 10 (continued)

eS	05 24.1
ePS	25.1
eSS	30.1
iG	37.5
eR	40.9
Δ 94°	Depth 60 km
Magn.	6
	μ sec
PZ	0.1 1 1/2
MH	4 20
iP	00 47 56.4
iS	48 24.5
Magnitude	4
iP	15 15 46
ePP	19 20
eS	26.7
e	27.9
eG	39.9
eR	43.8
Δ 93°	Magn. 6 1/4
	μ sec
PZ	0.2 1 1/2
MH	11 20
i(S)	17 21.2
iG	31.3
e(S)	19 06 03
iP	20 02 12
ipP	32
iP	22 02 21
i	29
eP	05 28 04
eS	39 07
eG	57.7
eR	06 04.7
e(P)	12 51.7
e(S)	59.2
eL	13 08.5

SEISMOLOGICAL LABORATORY
7 APR 1967
PASADENA, CALIFORNIA

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
April 12, 1967

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

- April 1 GSC 12 52 07 (i 53 33); WDY 07 48 32, 17 26 22,
17 29 13 (e 19), 17 29 33 (i 40), 17 31 46 (i 54 i 59),
23 27 38 (e 56), 23 33 54
- 2 GSC 15 25 48, 19 31 25; WDY 17 39 22 (pP 32)
- 3 CLC 00 17 21 (pP 29); GSC 15 41 33 (i 49)
- 4 WDY 00 51 24, 00 55 51, 01 30 21 (e 32 19), 06 45 59, 08 03 00,
11 06 17, 11 15 10
- 5 CLC 22 48 37; GLA 01 02 18.5, 02 04 01, 21 42 01; PLM 01 02 40.3
(S 03 29.3); WDY 00 03 46 (i 53, i 04 20), 07 02 50, 07 08 14,
08 08 43, 11 54 56 (e 58 08), 14 16 40 (e 20 32), 18 22 49,
21 51 29, 23 19 40
- 6 GLA 01 44 20 (pP 29), 02 04 00, 02 47 35 (e 45), 03 15 38,
09 19 11 (i 15), 12 51 31 (e 38), 23 41 20 (i 30), 23 44 25
(i 30); WDY 10 11 21, 12 14 31, 21 50 14 (i 18)
- 7 GLA 02 10 31, 19 50 07; WDY 06 03 10 (i 15 i 54), 06 37 03
(i 14 i 22), 09 04 08
- 8 GLA 09 41 20 (pP 50), 20 32 39 (i 48)
- 9 GLA iP 01 39 23
- 10 GLA iP 00 47 38.8, 19 03 01 (i 43, iS 05 59), 19 42 21, 21 15 28;
GSC 20 41 44; PLM 00 47 33.5 (S 45.2)

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SEISMOLOGICAL LABORATORY
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 APRIL 20 1967



CONTINUATION
 P11 12

	05 07.4	April 12		
eP			iP	15 04 54
iP ¹¹	10 45		i	05 01
iPP	12 56	13	iP	04 27 06
iSS	30.1	13	iP	14 35 54
iSSS	34.9	13	iP	17 24 38
iG	44.5	13	iP	18 50 16
iR	50.5	13	iP	20 04 44
Δ 128° Magn. 6½			ipP	56
	μ sec		i	06 49
MH	12 20		i	07 09
MZ	12 20		e	08 44
iP	14 07 58		e(S)	54
e	08 15		Interpretation	
eS	18.5		doubtful	
eSS	23.7	14	iP	05 23 39
eG	31.9		e	55
eR	36.0	14	eP	14 58 06
Δ 90°				
	μ sec			
PZ	0.2 1			
MH	4 20			

YES...
 NO...
 12

PLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY).

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

Violet M. Taylor
 Seismological Assistant

24 APR 1967

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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)
April 27, 1967

CONTINUATION
April 21

	eP ¹¹	08 33 17	April 23	iP	14 03 11
	ePP	34 08		eL	07.1
	eS	41 44	23	eP	17 36 26
	eSS	49.7		eL	38.7
	eSSS	53.7	23	iP	18 05 33
	iG	09 00.6	23	iP	22 33 12
	eR	06.6		i	19
	eG2	50.5	24	iP	08 15 51
	$\Delta 120^\circ$ Magn. $6\frac{1}{4}$		24	iP	15 24 08
		μ sec	25	iP	10 48 28
	MH	5 20		ipP	26
	MZ	5 20		eL	11 15.5
22	eP	14 51 08	25	eP	07 19 32.5
	e	14		eS	20 40.5
	eL	15 02.5		Magn. 5	

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIM) and Woody (WDY).

April 12	WDY	21 57 00 (i 16)
13	WDY	11 44 17
14	CWC	10 57 12, 14 57 30 (pP 49), 15 59 54; WDY 23 43 49
15	WDY	00 53 56 (i 54 07), 01 14 17, 10 05 02, 12 23 54 (i 24 05) 15 00 24, 16 08 54 (i 57), 21 04 00 (i 04 i 10), 23 47 15 (i 21 i 35)
16	WDY	14 41 35, 15 06 47, 16 21 15 (i 20), 16 44 45 (i 53), 18 29 24 (i 29)
17	WDY	11 20 41, 12 44 21, 15 14 09, 17 42 01, 22 24 33 (i 44)
18	WDY	01 58 24, 05 01 32, 19 01 25 (e 35)
19	GLA	18 17 27; GSC 22 05 13, 22 05 34 (pP 47);
	WDY	01 58 27, 10 45 09 (i 13)
20	GLA	13 46 14; GSC 00 19 44, 04 21 21; WDY 03 10 37, 10 04 47, 13 13 53
21	WDY	04 26 57
22	GLA	08 56 08 (e 57 19), 10 03 54, 12 28 35, 13 25 50 (e 29 15), 16 40 16
23	GLA	09 43 18 (i 22), 17 35 25 (S 38 23)
24	GLA	02 31 19, 03 03 17, 14 25 29, 15 24 24 (pP 26 21)
	ISA	10 09 06
25	GSC	12 01 54; ISA 15 36 42 (pP 37 34)
26	GLA	06 46 48, 07 18 51.5; ISA 13 31 12

Violet M. Taylor
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NEW
OBSERVATORY

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 17, 1967

CORRECTION

April 22 GLA 13 25 50 (e 29 15) should read
13 26 50 (e 29 15)

CONTINUATION

Date	Time	Station	Time	Magnitude	Depth	Other
May 4						eP 22 36 00 iS 37 12 Magn. 5 Largest of a swarm
April 26		eP	21 53 45			
		eL	22 23.5			
28		eP	07 56 56	5		iP 15 12 55 eG 40.4
		e	57 07	5		iP 17 12 59
28		iP	12 53 36.4	5		eP 17 57 16 e 18 00 38
		iS	59 21.5			iP 14 08 56
		Magn. 4 1/4		6		eP 20 00 16
28		iP	22 54 17.3	6		eP 06 49 06
		iS	22.2	7		eP 07 48 14
		Magn. 5		7		eP 08 55 18
29		iP	00 09 09	7		eP 10 30 23
		i	14	7		eP 11 12 52
		eS	12 48	7		ipP 57
		Δ 20°				iP 18 02 35.9 i 45.4
			μ sec	7		iS 03 39.3
		PZ	1 1 1/2			Magn. 5 - 5 1/4
		SH	8 9			iP 18 57 41
29		iP	04 03 40	8		e 54
		i	45			e(P) 06 26 04
		eL	10.4			eS 35 04
30		ipP	07 35 41	9		iP 11 11 18
		e	45.2			eP 12 43 05
30		eP	11 18 22	9		eS 43.1
30		eL	13 32.3	9		eL 51.9
30		eL	16 43.0			iP 20 24 40
30		eSKS	17 23.6	9		i 25 20
		ePS	26.1			eLg 18 04 28
		eSS	31.9	10		iP 15 16 35
		eR	45.5	11		dilatation from southeast
		Δ 105° ± Magn. 5 ±				ipP 17 03 iS 25 50 e 26 28
			μ sec			Δ 70° depth 100 km Magn. 6-3/4
		MH	1 20			PZ 1 1/2 1 1/2
30		iP	23 19 18			PH 1 1/2 1 1/2
May 1		eP	07 22 45			SH 1 1/2 4
		ePP	26 37			MH 1 1/2 20
		eS	34.1			iP 05 25 45
		ePS	35.5			eS 30.7
		eG	47.6			eL 34.1
		Δ 98° Magn. 5-3/4-6				iP 08 49 48
			μ sec			ipP 50 14
3		MH	4 20	13		
		iP	00 35 46			
		eL	39.0			
4		eP	08 36 27	14		
		eS?	47.0			
4		eP	10 30 55			
		eL	50.5			

OBSERVATORY
 23 MAY 1967
 RICHMOND,
 SURREY.

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Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 17, 1967



CONTINUATION

		May 16			
May 14	eP	12 36 58		eP	13 04 32
	ipP	37 08		ePcP	07 19
15	iP	02 39 23		eS	09 51
	ipP	44		eL	12.1
	isP	55		$\Delta 32^\circ$	
	eS	49 48	16	iP	16 25 45
15	iP	17 18 58		eL	46.8
16	iP	06 31 56	16	eP	19 37 08
	eG	58.7	17	iP	08 34 56
	eR	07 02.5	17	eP	13 09 49
16	eP	08 25 29		e	59
	ipP	38			
	eS	34.7			
	eSS	39.0			
	eSSS	43.1			
	eG	44.0			
	eR	47.0			
	$\Delta 72^\circ$				

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY).

April 23	WDY	18 26 39	
24	GSC	05 12 59; WDY 02 16 07, 12 05 00, 16 34 58	
25	GLA	06 26 40 (i 51); WDY 12 41 47 (pP 42 05)	
26	GLA	17 33 04; WDY 02 27 44, 10 57 21 (pP 52), 22 46 01	
27	GLA	00 53 49, 05 52 04, 12 35 56	
28	GLA	22 53 33.0; WDY 07 31 29 (e 44), 10 24 58, 11 55 02	
29	CLC	04 48 37 (i 42, i 48); ISA 12 33 44 (i 50), 12 42 35; WDY 03 14 22, 06 37 12, 22 13 59	
30	GLA	07 35 14 (pP 24), 08 48 36, 13 26 26, 16 34 11; WDY 02 48 25, 07 42 12	
May 1	WDY	06 49 16 (e 16, i 25, i 34)	
2	GLA	23 50 15; GSC 17 27 15 (e 24), 19 20 40	
3	GLA	11 02 08; GSC 00 05 13, 14 03 12	
4	GLA	05 08 00 (i 07), 05 38 05 (i 10), 12 39 28 (i 37, i 44), 22 35 35; GSC 07 11 33; WDY 00 40 14 (i 23), 08 06 18, 23 37 37	
5	GSC	07 04 02, 23 30 34? (e 31 36)	
6	GLA	04 56 30, 12 45 17, 13 17 56; GSC 06 32 07 (e 19), 19 55 47, 23 44 39; WDY 18 41 46, 23 33 03	
7	GLA	18 02 36.9; GSC 08 19 00, 08 23 09, 10 30 23, 11 12 52 (i 57), 18 02 12.9, 21 07 37 (pP 42); ISA 18 02 34.6; TIN 18 02 17.6 (S 03 01.2); WDY 00 09 22, 22 01 49	
8	GLA	03 44 20, 08 14 54; GSC 07 33 36, 14 49 30 (pP 48); WDY 06 46 58, 14 47 06, 21 50 58	
9	CLC	05 45 20; GLA 06 26 18 (i 30), 15 13 51 (i 58); WDY 16 10 24, 21 44 09 (e 47, 02, e 48 24), 21 59 44 (pP 22 00 00)	
10	GLA	18 01 11	
11	GLA	06 16 34	
12	GLA	02 11 08, 06 25 36, 09 37 03, 17 06 23, 22 24 09; WDY 06 22 31, 06 25 29 (e 58)	
13	GLA	03 11 58	

Violet M. Taylor
Seismological Assistant

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Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 175

April - 1967

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

1967

April

- 1 06 05 09 (pP 21, S 13 58), 06 07 57 (e 08 07), 07 59 53, 10 48 36
(i 46, S 54 50), 12 34 24 (pP 35, S 43 15), 15 41 04, 15 41 09 (S 42 12)
- 2 17 54 07 (SKS 18 04 48±, S 0530±), 20 16 12.2 (S 36.6)
- 3 08 17 34 (SKS 28 09, S 28 46), 13 10 22 (pP 34, SKS 20 06±)
- 4 04 05 14 (pP 25), 09 17 45
- 5 01 02 58 (S 04 08), 02 46 31 (S 55 54±), 03 00 17 (i 29), 23 45 41 (pP 57)
- 6 06 29 43, 09 01 51, 12 34 20, 14 06 52
- 8 05 46 18 (S 55 27)
- 9 06 41 33, 09 10 00
- 10 00 08 50 00 47 56.4 (S 48 24.5), 05 12 55 (pP 13 11, sP 13 21, SKS 23
24±, S 24 06±), 15 15 46 (S 26 42±), S? 17 21 12±, S 19 06 03,
20 02 12 (pP 32), 22 02 21 (i 29)
- 11 05 28 04 (SKS? 39 07)
- 12 05 07 24±, p'' 10 45, PP 12 56, SS 30 06±, 14 07 58 (i 08 15, S 18 30±),
15 04 54
- 13 04 27 06, 14 35 54, 17 24 38, 18 50 16, 20 04 44 (pP 56, i 06 49, i 07 09)
- 14 05 23 39 (e 55), 14 58 06
- 21 08 33 17 (PP 34 03, S 41 44)
- 22 14 51 08
- 23 14 03 11 (L 07 06±), 17 36 26 (L 38 42±), 18 05 33, 22 33 12 (i 19)
- 24 08 15 51, 15 24 08
- 25 10 48 28 (pP 36)
- 26 07 19 32.5 (S 20 40.5), 21 58 45
- 28 07 56 56 (e 57 07), 12 58 36.4 (S 59 21.5), 22 54 17.8 (S 55 22.2)
- 29 00 09 09 (S 12 48), 04 03 40 (i 45)
- 30 pP 07 35 41, 11 18 22, SKS 17 23 42±, 23 19 18

KEW
OBSERVATORY
13 JUL 1967
RICHMOND,
SURREY.

- SUPPLEMENT: Times of P etc., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), Woody (WDY)
- April 1 GLA 07 59 32 (e 45 i 03 00 11, i 24), 15 40 00, 15 40 20; GSC 12 52 07 (i 53 33), 14 11 23 (pP 34); WDY 07 48 32, 17 26 22, 17 29 13 (e 19) 17 29 33 (i 40), 17 31 46 (i 54 i 59), 23 27 38 (e 56), 23 33 54
- 2 GLA 02 05 44 (i 56), 12 04 09 (i 18), 20 16 00.1; GSC 15 25 48, 19 31 25 PLM 20 15 49.9; WDY 17 39 22 (pP 32)
- 3 CLC 00 17 21 (pP 29); GSC 15 41 33 (i 49)
- 4 GLA PP 00 55 55, 18 21 59, 18 24 03; WDY 00 51 24 (PP 00 55 51), 01 30 21 (e 32 19), 06 45 59, 08 03 00, 11 06 17, 11 15 10
- 5 CWC 22 48 37; GLA 01 02 18.5, 02 04 01, 21 42 01; PLM 01 02 40.3 (S 03 29.3); WDY 00 03 46 (i 53, i 04 20), 07 02 50, 07 03 14, 08 08 43, 11 54 56 (e 58 03), 14 16 40 (e 20 32), 18 22 49, 21 51 29, 23 19 40
- 6 GLA 01 44 20 (pP 29), 02 04 00, 02 47 35 (e 45), 03 15 38, 09 19 11 (i 1 12 51 31 (e 33), 23 41 20 (i 30), 23 44 25 (i 30); WDY 10 11 21, 12 14 31, 21 50 14 (i 18)
- 7 GLA 02 10 31, 19 50 07; GSC 00 20 24 (i 33), 15 21 50; WDY 06 03 10 (i 1 i 54), 06 37 03 (i 14 i 22), 09 04 08
- 8 GLA 09 41 20 (pP 50), 20 32 39 (i 48); WDY 04 17 05, 08 28 39
- 9 CWC 18 01 00; GLA 01 39 23; GSC 18 11 15, 21 31 43; WDY 00 19 19 (PP 23 38), 01 57 01, 02 05 50, 06 11 20, 22 03 14
- 10 GLA iP 00 47 38.8, 19 03 01 (i 43, iS 05 59), 19 42 21, 21 15 28; GSC 02 07 24, 20 41 44; PLM 00 47 33.5 (S 45.2); WDY 10 14 52, 10 32 36, 11 25 08, 20 58 40, 21 20 43
- 11 GLA 10 51 32, 12 51 29, 19 14 44; WDY 02 19 14, 07 56 54
- 12 CLC 05 05 52, 05 54 58, 13 59 10; GLA 01 00 30, 04 49 41, 04 44 21, 14 38 10 (i 19), 21 34 12 (pP 23); WDY 03 13 22, 21 57 00 (i 16)
- 13 CLC 04 57 52, 06 16 43, 11 35 52; GLA 14 06 15; GSC 05 39 41; WDY 11 44 17
- 14 CWC 10 57 12, 14 57 30 (pP 49), 15 59 54; GLA 00 01 19 (S 02 35), 04 46 09, 04 49 13, 10 06 25, 13 08 35, 15 36 34, 23 11 52; GSC 09 51 35 (e 44); WDY 23 43 49
- 15 GLA 01 01 28 (e 36); WDY 00 53 56 (i 54 07), 01 14 17, 10 05 02, 12 23 54 (i 24 05), 15 00 24, 16 08 54 (i 57), 21 04 00 (i 04 i 10), 23 47 15 (i 21 i 35)
- 16 GLA 07 41 52, 10 21 08; WDY 14 41 35, 15 06 47, 16 21 15 (i 20), 16 44 45 (i 53), 18 29 24 (i 29)
- 17 GLA 11 31 04 (e 09); WDY 11 20 41, 12 44 21, 15 14 09, 17 42 01, 22 24 33 (i 44)
- 18 GLA 07 11 50, 08 35 44 (PcP 08 38 33), 12 50 58; WDY 01 58 24, 05 01 32, 19 01 25 (e 35)
- 19 GLA 18 17 27; GSC 22 05 13, 22 05 34 (pP 46); WDY 01 58 27, 10 45 09 (i 13)
- 20 GLA 13 46 14; GSC 00 19 44, 04 21 21; WDY 03 10 37, 10 04 47, 13 13 53
- 21 WDY 04 26 57
- 22 GLA 08 56 08 (e 57 19), 10 03 54, 12 28 35, 13 26 50 (e 29 15), 16 40 16
- 23 GLA 09 43 18 (i 22), 15 20 43, 17 35 25 (S 33 23); WDY 18 26 39
- 24 GLA 02 31 19, 03 03 17, 14 25 29, 15 24 24 (pP 26 21); GSC 05 12 59; ISA 10 09 06; WDY 02 16 07, 12 05 00, 16 34 58
- 25 GLA 06 26 40 (i 51); GSC 12 01 54; ISA 15 36 42 (pP 37 34); WDY 12 41 47 (pP 42 05)

SUPPLEMENT (Continued)

1967
 April 26 GLA 06 46 48, 07 18 51.5, 17 33 04; ISA 13 31 12; WDY 02 27 44, 10
 57 21 (pP 52), 22 46 01
 27 GLA 00 53 49, 05 52 04, 12 35 56
 28 GLA 22 53 33.0; WDY 07 31 29 (e 44), 10 24 58, 11 55 02
 29 CLC 04 48 37 (i 42 i 48); ISA 12 33 44 (i 50), 12 42 35; WDY 03 14 22,
 06 37 12, 22 13 59
 30 GLA 07 35 14 (pP 24), 08 48 36, 13 26 26, 16 34 11; WDY 02 48 25, 07
 42 12

Violet M. Taylor
 Seismological Assistant

June 21, 1967

OBSERVATORY
 - 6 JUN 1967
 F
 SURREY



Seismological Laboratory
 220 North San Rafael Avenue
 Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 May 31, 1967

CORRECTION

April 28 Pasadena iP 22 54 17.8
 should read iP 22 54 17.8
 iP 22 54 17.8
 iS 55 22.2

May 21
 iP'' 19 04 04
 ipP'' 50
 iPP 06 08
 iSKP 07 09
 i 33
 i 08 29
 e 12 59
 i 14 16
 eSKKP 16 34
 iSS 23.0
 Δ 131° Depth 200 km
 Magn. 6-3/4

CONTINUATION

May 13 eP 11 34 03
 i 08
 eS 43.4
 19 iP 05 22 04
 eL 49.5
 19 eP 07 58 38
 i 53
 eS 08 03 54±
 eL 06.7
 19 ipP 12 15 10
 i 14
 19 e(S) 13 12.6
 e(L) 20.4
 20 iP 03 03 36
 i 50
 eR 28.5
 20 eP 07 55 15
 e 23
 eL 08 03.8
 21 eP 07 20 23
 eL 22.0
 iLg 22 41
 Δ 10°
 21 iP 14 42 58.9
 iS 43 18.9
 Compression from southeast 29
 Epicenter near Anza, Riverside 29
 County. 30
 Magnitude 4.8 - 4.9. Felt by
 a few persons as far as Pasadena 31

μ sec
 PPZ 1 2
 PPH 1 2
 eP 03 02 27
 eP 03 57 07
 eP 17 38 12
 iP 17 31 48
 ipP 56
 iScP 37 02
 iS 33 55
 iScS 41 36
 eL 44.4
 Δ 50° Depth 40 km
 Magn. 6
 μ sec
 PZ 0.3 2
 PH 0.2 1
 SH 1 5
 MH 9 20
 iP 04 58 45
 iP 11 21 21
 i(P) 14 30 56
 eL 33.2
 eP 11 48 13

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC) Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), Woody (WDY).

May 12 WDY 18 15 06, 18 13 29
 13 WDY 04 17 57 (i 13 47)
 14 WDY 00 51 35, 09 25 47, 19 53 46

Seismological Laboratory
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Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
May 31, 1967

SUPPLEMENT CONTINUED

May 15 GSC 00 17 59 (e 18 09), 00 25 43, 02 50 51, 03 23 08 (e 16 e 27)
08 31 13; WDY 02 47 52 (e 48 02), 02 50 40, 12 53 05 (i 16, i 24)

16 GLA 04 18 22 (pP 34), 05 19 44 (pP 58), 06 16 10; GSC 01 07 58?,
01 08 40, 07 28 52, 08 34 54, 08 39 44, 17 43 30, 23 23 55;
WDY 01 08 38, 05 33 24, 23 19 30

17 GLA 00 39 53, 11 27 29, 12 28 48, 16 25 56, 21 44 32; GSC 07 23 02;
WDY 09 46 27 (i 35), 10 03 37

18 GLA 04 18 39, 07 57 34, 11 53 46, 13 12 03, 14 12 39 (i 49), 23 52 17

19 GLA 05 22 11 (i 23), 07 58 12 (i 27, iPcP 08 01 11, i 27, iScP 04 49),
11 28 21 (i 30, iPcP 30 48), 12 15 07 (pP 17, sP 22), 13 02 50
(e 03 01)

20 CLC 08 04 41; GLA 01 13 53, 12 17 48, 13 03 16, 13 16 05, 19 48 42;
GSC 06 44 23, 08 54 54 (e 55 04), 08 58 41, 13 35 45

21 GLA 03 18 07, 07 19 38.6, 14 42 59.8; GSC 14 43 04.2; PLM 14 42 40.7;
WDY 12 30 47, 20 35 14

22 CLC 07 30 49; GLA 03 32 06 (pP 30), 06 31 46, 09 02 08 (pP 50),
11 36 30 (pP 44), 12 20 03, 22 46 55

23 CLC 01 33 17 (i 30); GLA 01 40 53 (eS 42 44), 02 03 56 (i 04 11),
06 03 51 (e 04 02), 08 08 51 (i 09 02), 08 53 52; ISA 12 04 31,
12 13 05 (i 59), 15 37 47, 19 18 57; WDY 01 27 54, 21 39 10

24 GLA 03 21 25, 03 23 18 (e 24), 04 27 08, 05 11 17 (e 26), 08 32 45,
09 46 54; WDY 01 46 32

25 GLA 19 03 23 (e 04 41)

26 GLA iP 10 47 48 (e 48 19); WDY 03 00 22

28 GSC 04 21 22, 06 41 28

29 GSC 21 13 15 (i 35, i 40)

30 GLA 16 57 56 (i 58 05); GSC 10 02 50 (i 58, i 03 04), 10 08 01 (i 10),
14 30 44 (i 50)

31 GLA 11 47 57 (i 48 16)

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105

PASADENA PRELIMINARY BULLETIN NO. 176

May - 1967

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

1967

Month	Day	Time	Phase	Amplitude
May	1	07 22 45	(PP 26 37, S 34 06±)	
	3	00 35 46		
	4	08 36 27, 10 30 55, 22 36 00	(S 37 12)	
	5	15 12 55, 17 12 59, 17 57 16	(SKP 18 00 38)	
	6	14 08 56, 20 00 16		
	7	06 49 06, 07 48 14, 08 55 18, 10 30 23, 11 12 52	(pP 57), 18 02 35.9 (S 03 39.3)	
	8	18 57 41	(e 54)	
	9	06 26 04±	(S 35 04), 11 11 18, 12 43 05 (S 48 06±), 20 24 40 (pP 25 20)	
	10	Lg 18 04 28		
	11	15 16 35	(pP 17 03, S 25 50)	
	13	05 25 45	(S 30 42±)	
	14	08 49 48	(pP 50 14), 12 36 58 (pP 37 08)	
	15	02 39 23	(pP 44, sP 55, S 49 48), 17 18 58	
	16	06 31 56, 08 25 29	(pP 38, S 34 42±), 13 04 32 (PcP 07 19, S 09 51), 16 25 45, 19 37 08	
	17	08 34 56, 13 09 49	(pP 59)	
	18	11 34 03	(i 08, S 43 24±)	
	19	05 22 04, 07 58 38	(i 53, S 08 03 54±), pP 12 15 10, S? 13 12 42±	
	20	03 03 36	(i 50), 07 55 15 (e 23)	
	21	07 20 23	(L 22 00±, Lg 22 41), 14 42 58.9 (S 43 18.9), 19 04 04 (pP ^{II} 04 50, PP 06 08, SKP 07 09)	
*	22	03 02 27, 08 57 07		
	24	17 38 12		
	27	17 31 48	(pP 56, ScP 37 02, S 38 55 ScS 41 36)	
	29	04 58 45, 11 21 21		
	30	14 30 56?		
	31	11 48 13		
*	23	iPP 19 36 20		

SUPPLEMENT: Times of P etc., for additional shocks recorded at Barret (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

May	Station	Time	Details
1	WDY	06 49 16	(e 16, 125, 134), 19 17 51
2	GLA	23 50 15	; GSC 17 27 15 (e 24), 19 20 40
3	GLA	11 02 08	; GSC 00 05 13, 14 03 12
4	GLA	05 08 00	(i 07), 05 38 05 (i 10), 12 39 28 (i 37 i 44), 22 35 35;
	GSC	07 11 33	; WDY 00 40 14 (i 23), 08 06 18, 23 37 37
5	GSC	07 04 02	, 23 30 34? (e 31 36)
6	GLA	04 56 30	, 12 45 17, 13 17 56; GSC 06 32 07 (e 19), 19 55 47,
		23 44 39	; WDY 18 41 46, 23 33 03
7	GLA	18 02 36.9	; GSC 08 19 00, 08 23 09, 10 30 23, 11 12 52 (i 57),
		18 02 12.9	, 21 07 37 (pP 42); ISA 18 02 34.6; TIN 18 02 17.6
		(S 03 01.2)	; WDY 00 09 22, 22 01 49
8	GLA	03 44 20	, 08 14 54; GSC 07 33 36, 14 49 30 (pP 48); WDY 06 46 58,
		14 47 06	, 21 50 58
9	CLC	05 45 20	; GLA 06 26 18 (i 30), 15 13 51 (i 58); WDY 16 10 24,
		21 44 09	(e 47 02, e 48 24, PKKP 59 44, i 22 00 00)
10	GLA	18 01 11	
11	GLA	06 16 34	
12	GLA	02 11 08	, 06 25 36, 09 37 03, 17 06 23, 22 24 09; WDY 06 22 31,
		06 25 29	(e 58), 18 15 06, 18 18 29
13	GLA	03 11 58	; WDY 04 17 57 (i 18 47)
14	WDY	00 51 35	, 09 25 47, 19 53 46
15	GSC	00 17 59	(e 18 09), 00 25 43, 02 50 51, 03 23 08 (e 16, e 27),
		08 31 13	; WDY 02 47 52 (e 48 02), 02 50 40, 12 53 05 (i 16, i 24)
16	GLA	04 18 22	(pP 34), 05 19 44 (pP 58), 06 16 10; GSC 01 07 58?, 01
		08 40	, 07 28 52, 08 34 54, 08 39 44, 17 43 30, 23 23 55; WDY 01
		08 38	, 05 33 24, 23 19 30
17	GLA	00 39 53	, 11 27 29, 12 28 48, 16 25 56, 21 44 32; GSC 07 23 02;
	WDY	09 46 27	(i 35), 10 03 37
18	GLA	04 18 39	, 07 57 34, 11 53 46, 13 12 03, 14 12 39 (i 49), 23 52 17
19	GLA	05 22 11	(i 23), 07 58 12 (i 27, iPcP 08 01 11, i 27, iScP 04 49),
		11 28 21	(i 30), 11 30 48, 12 15 07 (pP 17, sP 22), 13 02 50
		(e 03 01)	
20	CLC	08 04 41	; GLA 01 13 53, 12 17 48, 13 03 16, 13 16 05, 19 48 42;
	GSC	06 44 23	, 08 54 54 (e 55 04), 08 58 41, 13 35 45
21	GLA	03 18 07	, 07 19 38.6, 14 42 59.8; GSC 14 43 04.2; PLM 14 42 40.7;
	WDY	12 30 47	, 20 35 14
22	CLC	07 30 49	; GLA 03 32 06 (pP 30), 06 31 46, 09 02 08 (pP50), 11 36
		30	(pP 44), 12 20 03, 22 46 55
23	CLC	01 33 17	(i 30); GLA 01 40 53 (eS 42 44), 02 03 56 (i 04 11),
		06 03 51	(e 04 02), 08 08 51 (i 09 02), 08 53 52; ISA 12 04 31,
		12 13 05	(i 59), 15 37 47, 19 18 57; WDY 01 27 54, 21 39 10
24	GLA	03 21 25	, 03 23 18 (e 24), 04 27 08, 05 11 17 (e 26), 08 32 45,
		09 46 54	; WDY 01 46 32
25	GLA	19 03 23	(e 04 41)
26	GLA	10 47 48	(e 48 19); WDY 03 00 22, 19 44 25, 19 45 27
27	CLC	19 18 52	, 19 24 37; WDY 00 55 46

SUPPLEMENT (Continued)

May
 28 GSC 01 40 51 (i 51 00), 04 21 22, 06 41 28
 29 GSC 17 02 38, 21 13 15 (i 35, i 40); WDY 21 11 49, 21 12 48, 22 06 40,
 22 45 21
 30 GLA 16 57 56 (i 58 05); GSC 10 02 50 (i 58, i 03 04), 10 08 01 (i 10),
 14 30 44 (i 50); WDY 06 00 43
 31 GLA 11 47 57 (i 48 16)

August 21, 1967

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 June 15, 1967



KEW OBSERVATORY
 20 JUN 1967
 RICHMOND, SURREY.

CONTINUATION

June	1		03 43 37	June 12	eP	00 15 38
		iP			i	50
		compression			e	25.0
		ipP	52		eG	32.0
		IPcP	45 48		eR	36.0
		eS	49 33		Two shocks	
		iL	52.6		12 iP	01 00 52
		$\Delta 39^\circ$ Depth 60 km			eR	20.0
		μ sec			12 eP	05 41 13
		PZ	$\frac{1}{2}$ 1		i	19
1		iP	11 14 53		eL	06 05.1
1		iP	21 00 51		12 iP	23 33 16
		i	57		i	22
		eL	29.0		i	31
2		eP	06 44 27		iS	41 51
		e	56.4		eSS	46.0
		eR	07 14.0		eG	49.4
3		eS	06 29 04		eR	52.4
3		iP	09 15 28		$\Delta 65^\circ$	
		dilatation			μ sec	
		eS	20 44		PZ	0.1 1
		eR	24.9		SH	1 6
		μ sec			MH	3 20
4		PZ	0.3 $1\frac{1}{2}$		14 iP	03 24 48
5		iP	09 47 39		ipP	25 14
		iP	01 33 12		14 eP	03 57 29
		iS	43.0		14 iP	05 17 42
		eSS	47.4		dilatation from southwest	
		eG	52.3		eS	27 03
		eR	56.4		eG	36.0
		$\Delta 82^\circ$			IR	38.4
		μ sec			$\Delta 72^\circ$	
		PZ	0.15 1		Magn. $6\frac{1}{2}$	
		MH	$2\frac{1}{2}$ 20		μ sec	
6		eP	09 42 28		PZ	0.4 1
		i(pP)	43 00		PH	$\frac{1}{2}$ 1
		eS	53.4		MH	8 20
		eG	10 05.5		MZ	8 20
		eR	08.2		14 eP	08 16 29
		$\Delta 90^\circ?$ Two shocks?			eS	25.1
7		eP	07 11 42		eR	35.7
		e(pP)	49		$\Delta 64^\circ$	
		eS	16 03		14 eP	08 23 33
7		eP	11 48 52		eS	32.1
8		iP	13 34 53		$\Delta 64^\circ$	
		ipP	35 18			
		eSKS	45 15			
		eSS	51.0			
		eSSS	55.0			
		eG	58.1			
		$\Delta 88^\circ$ Depth 100 km				

1967
 June 1-14

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 15, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

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

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 21, 1967

ADDITION
June 13
CONTINUATION
June 15

	IP	15 52 36		June 18	IP	20 17 36
	iP	04 58 10.5		19	IP	17 15 13
	IS	12.5		19	IS	21 14
	Magn. 3.8±				IP	17 15 12
	Felt locally and from					dilatation
	Los Angeles to San				ePcS	21 04
	Bernardino. Epicenter				IS	15:
	near Whittier.				iL	24.2
17	IP	01 04 07			Δ 39° Magn. 6	
	IS	10 25				μ sec
	eG	13.5			PZ	0.4 1½
	eR	15.6			SH	2½ 6
	Δ	43°			MH	30 20
					MZ	12 20
				20	eS	05 38.8
	PZ	0.1 1½			eL	42.0
	SH	3 8			Δ 39° ±	
	MH	7½ 20		20	eL	06 30.5
	MZ	6 20		20	eP	07 46 16
17	eP	05 15 09			eS	52 05
	iP	18 45			eL	55.2
	i	19 31			Δ 39°	
	iPP	20 06				μ sec
	eSKS	25 24			PZ	0.2 1
	ePS	29 32			MH	10 20
	eSS	36.0		20	eP	13 54 24
	eR	50.0		21	IP	06 59 07
	Δ 120° Depth 150 km?				i	11
	Magn. 6 3/4				IS	07 06 39
					eG	12.4
					eR	14.7
	PPZ	2 4			Δ 53° Magn. 6	
	PPH	3 5				μ sec
17	IP	05 28 58			PZ	¼ 1½

KEW
OBSERVATORY
26 JUN 1967
RICHMOND,
SURREY.

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 21, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

June	9	CLC	11 06 13	
	10	CLC	06 45 41; WDY 14 18 25	
	12	GSC	21 37 07 (e 39 27, i 40 31)	
	13	GSC	00 30 10, 01 14 22, 12 29 47 (pP 56, sP 30 00); WDY 01 32 40 (e54), 02 53 09 (e 20)	
	14	GSC	22 15 28	
	15	GLA	00 27 42, 00 44 21, 02 45 37 (i 48), 10 11 31, 13 05 15; ISA 17 52 49; 18 53 39 (i 46), 21 06 39	
	16	GSC	09 55 18, 10 12 07, 11 44 16, 18 11 03 (e 36), 20 31 07; ISA 09 23 54;	
		WDY	00 31 57	
	17	GLA	05 29 09; GSC 05 28 58, 17 50 16 (PcP 53 02), 18 08 21; ISA 05 28 53;	
		WDY	05 28 54	
	18	GSC	02 34 40	
	19	GLA	04 29 28; GSC 15 19 37 (e 20 24)	
	20	GLA	13 32 38 (e 47); GSC 02 17 22, 04 01 23, 05 32 51, 06 28 20, 07 43 12, 11 48 52, 12 33 20	
	21	GLA	02 17 37 (e 44), 03 14 23, 13 43 05; GSC 05 52 14 (i 16)	

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 29, 1967

CORRECTION, SUPPLEMENT

June 19, 1967 GLA 04 29 28 should read
04 49 28

CONTINUATION

	June 21	eG	16 29.0		June 22	iP	19 21 46
		eR	34.0			eL	48.1
	21	iP	18 11 49		23	iP	00 36 47
		eS	17.5			eS	46 11
		eL	20.9			eR	57.4
		iR	26 09			$\Delta 73^\circ$	
		$\Delta 36^\circ$	Magn. $5\frac{1}{2}$		23	iP	00 53 30
			μ sec		23	iP	14 49 46
		PZ	0.2 $1\frac{1}{2}$		23	iP	21 43 01
		MH	$2\frac{1}{2}$ 20			ipP	12
	21	iP	18 20 01		24	eG	22 06.5
		i	07		24	eR	10.0
		iL	29.1		24	iP	13 39 47
		iR	34.2		24	iP	14 33 48
		$\Delta 36^\circ$	Magn. 6		24	eR	40.1
			μ sec		24	iP	21 13 31
		PZ	0.3 $1\frac{1}{2}$			ipP	42
		MH	18 20		25	eS?	24.6
	21	iP	18 31 44		25	iP	21 31 09
		i	51			eSKS	42 08
		iL	44.6			eG	56.0
		$\Delta 36^\circ$	Magn. $5\frac{3}{4}$			$\Delta 88^\circ$	
			μ sec		26	iP	02 27 01
		PZ	0.2 $1\frac{1}{2}$			iS	30.8
		MH	$7\frac{1}{2}$ 20			iL	32.2
	21	iP	19 21 55			$\Delta 23^\circ$	
		compression					μ sec
	21	iP	20 21 07			PZ	0.7 $1\frac{1}{2}$
		i	20			MH	12 20
		eS	30 31			MZ	12 20
		eSS	35.5			eP	04 18 27
		eG	41.0			eP	20 41 41
		iR	45.3			i	47
		$\Delta 74^\circ$				eP	21 57 42
			μ sec			i	52
		PZ	0.4 $1\frac{1}{4}$			iP	23 03 54
	21	iP	22 16 52			iP	00 27 40
	22	iP	05 24 17			i	46
	22	eP	13 59 04			iP	01 20 53
	22	iP	15 44 51			i	21 04
		i	45 04			eP	05 45 22
						i	33
						eS	54.8
						eG	06 03.6
						eR	06.0
					28	eP	14 00 34

KEW OBSERVATORY
 - 4 JUN 1967
RICHMOND, SURREY.

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
June 29, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

June	12	WDY	10 46 41 (e 50)
	16	CLC	01 07 58, 19 29 08; WDY 17 37 09, 20 23 57
	18	GSC	13 19 57 (e 20 09)
	19	GSC	00 04 53, 14 47 00 (e 05, e 48 15, e 24), 15 19 37 (e 20 24), 20 30 30
	20	GSC	05 41 36, 10 16 02
	21	GLA	17 03 42 (i 04 00), 19 22 05 (pP 24 04, sP 25 26); WDY 15 59 35
	22	GLA	11 01 38, 11 52 46; GSC 02 41 29, 23 49 33
	23	GLA	05 23 37, 05 34 26, 12 01 49 (i 53); WDY 10 02 22
	24	GLA	07 57 25; 18 17 43, 21 41 05; ISA 14 21 24
	25	GLA	01 05 46, 01 09 29, 10 23 12, 21 40 01 (i 11); GSC 20 00 11
	26	GSC	03 45 21, 04 13 26, 09 20 57
	27	GLA	05 03 40

Violet M. Taylor
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SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91109

PASADENA PRELIMINARY BULLETIN NO. 177

June - 1967

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

1967
June

1 03 43 37 (pP 52, PcP 45 48, S 49 33), 11 14 53, 21 00 51 (i 57)
2 06 44 27
3 06 29 04, 09 15 28 (S 20 44)
4 09 47 39
5 01 33 12 (S 43 00±)
6 09 42 28 (S 53 24±), 09 43 00
7 07 11 42 (pP 49, S 16 03), 11 48 52
8 13 34 53 (35 18, SKS 45 15)
9 17 17 08
10 05 39 21 (pP 32, S 49 54)
12 00 15 38, 00 15 50, 01 00 52, 05 41 13 (i 19), 23 33 16 (i 22 i 31, S 41 51)
13 15 52 36
14 03 24 48 (pP 25 14), 03 57 29, 05 17 42 (S 27 03), 08 16 29 (S 25 06±),
08 23 33 (S 32 06±)
15 04 58 10.5 (S 12.5)
17 01 04 07 (S 10 25), 05 15 09 (P" 18 45, pP" 19 31, PP 20 06, SKS 25 24,
PS 29 32), 05 28 58 (PKKP?)
18 20 17 36
19 17 15 12 (PcS 21 04, S 21 15)
20 S 05 38 48±, 07 46 16 (S 52 05), 13 54 24
21 06 59 07 (S 07 06 39), 18 11 49 (S 17 30±), 18 20 01, 18 31 44, 19 21 55,
20 21 07 (i 20, S 30 31), 22 16 52
22 05 24 17, 13 59 04, 15 44 51 (i 45 04), 19 21 46
23 00 36 47 (S 46 11), 00 53 30, 14 49 46, 21 43 01 (pP 12)
24 13 39 47, 14 33 48, 21 13 31 (pP 42)
25 21 31 09 (SKS 42 08), 23 31 09
26 02 27 01 (S 30 48±), 04 18 27
27 20 41 41 (i 47), 21 57 42 (i 52), 23 03 54
28 00 27 40 (i 46), 01 20 53 (i 21 04), 05 45 22 (i 33 S 54 48±), 14 00 34
29 03 00 56 (S 07 35), 10 48 36

KEW
OBSERVATORY
- 6 DEC 1967
RICHMOND,
SURREY.

SUPPLEMENT: Times of P etc., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY)

June

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

Violet M. Taylor
Seismological Assistant

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 12, 1967

CONTINUATION

Date	Time	Station	Reading	Date	Time	Station	Reading
June 29		eP	03 00 56	July 6		iP	05 12 51
		eS	07 35			eP	18.3
		eL	14.5		6	eP	13 49 57
29		eP	10 48 36			iS	56 03
July 1		iP	14 39 31			iL	59.1
		ipP	38			Δ 40°	
1		iP	23 15 53			Magn. 6¼-6½	
		dilatation					
		eS	22 25			PZ	0.8 3
		iL	24 39			SH	4 8
		Δ 36° Magn. 6 3/4				MH	27 20
		μ sec				MZ	9 20
		PZ	3 30		6	iP	18 41 22
		MH	45 20			i	28
		MZ	50 20			i	37
2		eP ¹¹	07 23 01		7	iP	09 53 14
		ePP	25 06±		8	iP	01 11 21
		eSS	41.9			ipP	51
		eSSS	47 11			eS	22.7
		eG	58.2			eG	34.4
		Δ 130°±				eR	38.1
2		eP	07 50 21			Δ 87° Depth 110 km	
		e	33		8:	eP	06 35 43
2		eP	16 28 12			eS	46.2
3		iP	03 55 15			eG	59.0
3		eP	05 38 50			eR	07 02.8
4		iP	10 16 18			Δ 88°	
		eL	23.2		8	iP	10 14 02
4		eP	14 29 10		10	iP	06 40 33
		i	16		10	iP	10 29 36
		eS	39 34		10	iP	12 19 28
		eSS	45.0			i	21 43
		eG	52.0			e	37.7
		eR	56.2		10	eG	20 02.1
		Δ 84° Magn. 5 3/4				eR	06.5
		μ sec			11	eP	04 30 12
		MH	4 20			eR	58.4
		MZ	3 20				
4		iP	23 53 21				
		compression					
		ipP	54 10				
		isP	27				
		iS	24 02 51				
		Δ 76° Depth 150 km					
		μ sec					
		PZ	0.1 1				
		SH	1 5				

KEW
OBSERVATORY
17 JUL 1967
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 12, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

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

Violet M. Taylor
Seismological Assistant

KEW
OBSERVATORY
27 JUL 1967
RUSHMORE,
SURREY.



SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 20, 1967

CONTINUATION
July 12

iP 04 53 06.0
iS 11.3
Magn. $3\frac{1}{2}$
Felt generally
near the Littlerock
reservoir, at
Palmdale, and by
some persons at
Lancaster

12 eP 10 39 02
e 17
eS 44.8
iScP 45 08
eL 47.5
 $\Delta 37^\circ$

12 eP 21 08 23
i 28
ePP 10 16
iS 14 58
i 18.5
eG 19.7
iR 21.7
 $\Delta 45^\circ$ Magn. $6\frac{1}{2}$

	μ	sec
PZ	$3/4$	$1\frac{1}{2}$
SH	15	20
MH	25	30

12 iP 21 26 53
13 iP 07 48 05
eG 08 08.0
eR 13.0
13 iP 09 43 42.4
iS 44 19.4
Magn. $4\frac{1}{4}$

13 e(S) 10 28.1
eR 43.8

July 13
14 iP 14 31 07
iP 03 00 20
ipP 37
eS 10.7
eG 21.8
eR 25.9
 $\Delta 85^\circ$ Depth 60 km

14 iP 03 30 23
epP 34

14 iP 09 25 08
14 eP 10 18 08
15 iP 08 23 45
i 55
eR 37.9

16 iP 09 54 41
16 eP 13 49 02
ePP 53 04
eSKS 59.6
eS 14 00.8
iPS 02.4
ISS 08.2
iG 18.4
eR 21.0
 $\Delta 104^\circ$ Magn. 6

	μ	sec
MH	8	20

19 iP 09 22 15
19 iP 12 52 39
20 iP 13 23 21
i 24 00
i 06
eS 33 08
20 eP 14 34 53
i 35 02

KEW
OBSERVATORY

27 JUL 1967

RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
July 20, 1967



SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

July	7	GSC	18 45 11, 19 38 11; WDY 22 24 55 (e 58, e 25 25)
	8	GSC	10 34 44 (pP 35 21), 13 24 44; WDY 07 03 51, 09 25 16, 19 30 13 (e 26)
	9	WDY	03 20 07 (e 44), 13 13 43, 21 46 23
	10	GSC	03 27 17(i 23), 03 46 20 (i 28); WDY 06 09 04 (e 08), 10 55 45 (e 56), 21 50 33
	11	GSC	03 40 10
	12	GSC	01 13 45, 01 55 39 (e 55), 21 33 47
	13	GLA	01 04 07, 02 23 13, 09 43 11.8, 10 17 15 (i 28); PLM 09 43 18.7
	14	GLA	07 45 59 (i 46 08), 14 01 05 (i 13)
	15	GLA	11 58 04 (i 11)
	16	GSC	20 52 30; ISA 21 22 50
	17	GSC	11 35 50 (pP 36 01), 12 48 11; GLA 18 57 14 (i 20)
	19	GLA	21 34 15
	20	ISA	09 09 06

Violet M. Taylor
Seismological Assistant

KEW
ERVATORY
-7 AUG 1967
SURF

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 1, 1967



CONTINUATION

July 20

eP	15 50 08
i	36
ePP	54 18
ISKS	16 00.9
eS	01 54
iPS	03 13
iSS	08.6
iSSS	12.3
IG	17.4
iR	21.0
$\Delta 100^\circ$ Magn. $6\frac{1}{2}$	
	μ sec
PZ	0.15 2
PPZ	$1\frac{1}{2}$ 20
SH	3 10
MH	10 20
MZ	9 20
21 eP	12 57 36
eS	13 07.5
eSS	12.4
eL	20.6
$\Delta 78^\circ$	
22 iP	04 10 55
i	11 03
eS	21 22
eG	34.2
eR	37.5
$\Delta 90^\circ$	
	μ sec
MH	$3\frac{1}{2}$ 20
MZ	$3\frac{1}{2}$ 20
22 iP	13 59 52
i	14 00 21
22 iP	17 10 47
iPP	14 54
ISKS	21 28
iPS	23 44
iSS	29.6
i	34 22
eG	37.9
$\Delta 100^\circ$ Magn. $7\frac{1}{4}$	
	μ sec
PPZ	$1\frac{1}{4}$ 5
PPH	3 $\frac{3}{4}$ 5
MH	80 20
MZ	140 20

July 23

eP	03 21 29
e	47
eS	32.0
ePS	33.1
eG	44.2
eR	47.7
$\Delta 85^\circ$	
eP	14 16 24
i	17 34
eP	14 40 08
iP	07 58 00
iP	06 43 53
eP	08 27 42
eSKS	38.3
eS	38.5
eSS	44.0
eG	52.0
eR	55.3
$\Delta 90^\circ$	
ePP	19 07 22
ePS	17 46
eG	37.5
eR	41.0
$\Delta 129^\circ$	
iP	00 04 38
i	46
IG	07.7
e	08.2
iR	08.5
eLg	09.8
$\Delta 18^\circ$	
iP	20 25 46
ipP	26 18
iP	10 33 02
dilatation from southeast	
ipP	10 33 38
isP	34 02
iPcP	37
iScP	38 02
isScP	39 13
iS	40 00
isS	41 00
iSS	43.8
isSS	44.4
iSSS	45.6

July 29 (continued from page 1)
 Δ 50° Depth 150 km
 Magn. $6\frac{1}{2}$ - $6\frac{3}{4}$

	μ	sec
PZ	1	$1\frac{1}{2}$
PH	0.3	$1\frac{1}{2}$
SH	30	14
MH	30	20
MZ	20	20
29 eP	11	02 50
30 eP	00	09 07
ipP		20
isP		36
iS		15 56
eSS		20.8
eG		22.9
iR		25.6

Δ 56° Magn. $6\frac{1}{2}$

	μ	sec
PZ	0.2	1
PH	0.1	1
SH	11	20
MH	50	20
MZ	40	20

July 30	iP	03 49 42
30	eP	13 48 31
	i	52
30	iP	17 35 42
	compression	
	ipP	37 41
	isP	38 41

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

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

Violet M. Taylor
 Seismological Assistant

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 220 North San Rafael Avenue
 Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 August 16, 1967

CONTINUATION
August

		iP	01 23 53		August	10	iP	11 32 18
	1	compression from southeast					compression	
		ipP	24 12				ipP	29
		eS	32 18				eS	41 14
	2	iP	00 55 40				eSS	45.2
	2	iP	08 56 56				eG	49.0
	2	iP	09 48 39				eR	51.8
		i	43				Δ 69° Depth 40 km	
	2	eP	11 17 12		11		iP	00 03 09.8
		i	34				iS	30.2
		e	21 14				Foreshock of next;	
		eS	25 52		11		iP	00 57 36.8
		iSS	30.0				iS	56.9
		iG	32.8				Epicenter near Anza	
		eR	36.0				Magn. 4	
		Δ 68° Magn. 6			11		iP	01 51 41.1
							iS	52 01.0
							Magn. 3	
		MH	7 20		11		iP	12 33 28
		MZ	3½ 20				ipP	38
	2	eP	14 16 51				eL	43.6
	2	iP	18 40 24		11		iP	17 40 41.1
	3	iP	12 50 37				iS	59.9
		compression					Magn. 3.1±	
		i	52		11		iP	19 06 47
		i	51 16		12		iP	04 42 25
	4	iP	06 13 18		12		eP	09 51 47
		eS	23 18				ipP	52 22
		eG	34.4				iS	10 01 48
		eR	38.0				e	02 52
		Δ 80°					eP'p'	18 32
	4	iP	22 46 23				Δ 81° Depth 140 km	
	5	iP	18 37 23				Magn. 6½	
	7	eP	11 21 29					
		i	39					
		e	24 03				PZ	1 1
	8	iP	07 24 53				PH	1 1
	9	eS	08 54.9				SH	15 10
		eG	09 06.2		12		eP	12 43 38
		eR	11.2				i	48
	9	eP	13 28 07.8				eG	13 06.4
		eS	31 25				eR	09.9

KEW
 OBSERVATORY
 21 AUG 1967
 RICHMOND,
 SURREY.

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California 91105
 PROVISIONAL READINGS AT PASADENA
 (and auxillary stations as noted)
 August 16, 1967

2.



August	12	iP	18 51 21.1	August 13.	ipP	20 19 08
		iS	49.2		(continued)	iPP
		Magn.	3 3/4		iS	28 22
		Felt in the Parkfield area			isS	30.9
	13	iP	08 02 59.4		iSS	34.0
		iS	03 39.4		isSS	36.2
		Magn.	4 3/4		iG	40.6
	13	iP	12 52 37.8		iSKPP'	47 55
		iS	54.7		Δ 80° Depth 400 km	
		Magn.	3 3/4		Magn. 6 3/4	
	13	iP	16 47 09		PZ	2 1/2 3
		ipP	19		PH	1 1/2 2
		eL	49.4		PPZ	1/4 2
	13	eP	16 52 51		SH	5 5
		eG	17 32.0	13	eP	22 20 23
		eR	35.9		eL	52.4
	13	iP	20 18 36			μ sec
		dilatation			MH	10 30

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

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

Violet M. Taylor
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Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 178

July - 1967

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

1967
July

- 1 14 39 31 (pP 38), 23 15 53 (S 22 25)
- 2 07 23 01 (PP 25 06±), 07 50 21 (pP 33), 16 28 12
- 3 03 55 15, 05 38 50
- 4 10 16 18, 14 29 10 (i 16, S 39 34), 23 53 21 (pP 54 10, sP 54 27, S 24 02 51)
- 6 05 12 51, 13 49 57 (S 56 03), 18 41 22 (i 37)
- 7 09 53 14
- 8 01 11 21 (pP 51, S 22 42±), 06 35 43 (S 46 12±), 10 14 02
- 10 06 40 33, 10 29 36, 12 19 28 (pP" 12 21 43)
- 11 04 30 12
- 12 10 39 02 (S 44 48±, ScP 45 08), 21 08 23 (PP 10 16, S 14 58), 21 26 53
- 13 07 48 05, 09 43 42.4 (S 44 19.4), 14 31 07
- 14 03 00 20 (pP 37, S 10 42±), 03 30 23 (pP 34), 09 25 08, 10 18 08
- 15 08 23 45 (i 55)
- 16 09 54 41, 13 49 02 (PP 53 04, SKS 59 36±, S 14 00 48±, PS 02 24±, SS 08 12±)
- 19 09 22 15, 12 52 39
- 20 13 23 21 (pP 24 00, S 33 08), 14 34 53 (i 35 02), 15 50 08 (PP 54 18,
SKS 16 00 54±, S 01 54, PS 03 13, SS 08 48±)
- 21 12 57 36 (S 13 07 30±)
- 22 04 10 55 (pP 11 08, S 21 22), 13 59 52 (pP 14 00 21), 17 10 47 (PP 14 54,
SKS 21 28, PS 23 44, SS 29 36±)
- 23 03 21 29 (S 32 00±) 14 16 24, 14 40 08
- 24 07 58 00
- 26 06 43 53, 08 27 42 (SKS 38 18±, S 38 30±), 19 07 22 (SKS 17 46)
- 27 00 04 38 (G 07 42±, R 08 30±, Lg 09 48±)
- 28 20 25 46 (pP 26 18)
- 29 10 33 02 (pP 33 38, sP 34 02, PcP 34 37, ScP 38 02, sScP 39 13, S 40 00,
sS 41 00), 11 02 50
- 30 00 09 07 (pP 20, sP 36, S 16 56), 03 49 42, 13 48 31 (pP 52), 17 35 42
(pP 37 41, sP 38 41)

KEW
OBSERVATORY
-6 DEC 1967
RICHMOND,
SURREY.

SUPPLEMENT: Times of P etc., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY)

1967
July

- 1 GLA 06 46 38, 07 48 17, 15 11 12 (e 16), 21 29 34; GSC 04 48 41 (i 54);
WDY 05 10 05, 08 40 45, 10 04 40, 11 01 30, 19 11 26, 20 26 44
- 2 GLA 02 43 28 (e 34), 10 16 21 (i 26), 12 27 18, 13 35 25 (e 28);
GSC 20 47 12 (i 56), 22 13 14; WDY 01 01 55, 01 16 11, 02 28 09, 03 12 44
(pP 13 59), 16 34 09
- 3 GLA 05 20 59, 07 01 51 (e 58); GSC 12 55 21 (pP 46, sP 57); WDY 03 05 23,
09 46 13, 11 15 04, 15 06 38
- 4 GLA 03 30 23 (i 30), 06 19 46, 07 45 54; GSC 19 41 00, 22 21 14;
WDY 06 22 36, 14 05 24, 23 16 31
- 5 GLA 04 10 15 (i 19), 06 26 04 (pP 13, sP 18); GSC 20 45 16
- 6 GLA 06 52 33, 13 54 47 (i 59); GSC 16 21 56, 19 31 34 (i 43); WDY 23 28 21
(i 39, i 29 00)
- 7 GSC 18 45 11, 19 38 11; WDY 10 50 38, 22 24 55 (e 58, e 25 25)
- 8 GSC 10 34 44 (pP 35 21), 13 24 44; WDY 07 03 51, 09 25 16, 19 30 13 (e 26)
- 9 ISA 20 50 35, 21 41 51; WDY 03 20 07 (e 44), 13 13 43, 21 46 23
- 10 GLA 23 21 02; GSC 03 27 17 (i 23), 03 46 20 (i 28); WDY 06 09 04 (e 08),
10 55 45 (e 56), 21 50 33
- 11 GLA 15 03 55 (i 04 18), 21 34 03; GSC 03 40 10
- 12 GSC 01 13 45, 01 55 39 (e 55), 21 33 47
- 13 GLA 01 04 07, 02 23 13, 09 43 11.8, 10 17 15 (i 28); PLM 09 43 18.7
- 14 GLA 07 45 59 (i 46.08), 14 01 05 (i 13)
- 15 GLA 11 58 04 (i 11); CLC 03 40 17, 17 15 35 (pP 52)
- 16 GSC 20 52 30; ISA 21 22 50; CLC 19 48 41
- 17 GSC 11 35 50 (pP 36 01), 12 48 11; GLA 18 57 14 (i 20); WDY 03 36 21
- 18 GLA 00 53 11, 17 11 16 (e 27)
- 19 GLA 21 34 15; CLC 22 37 16; GSC 17 16 25
- 20 ISA 09 09 06, 16 06 32 (i 07 00), 16 14 45; CLC 06 56 25; WDY 11 54 08
(e 22); GSC 23 24 38 (pP 26 45)
- 21 ISA 19 40 53; WDY 09 19 53 (e 20 02); GSC 18 09 00 (i 34), 18 21 34, 20 59 50
- 22 ISA 06 53 47; GLA 16 10 22; GSC 08 15 04 (i 15, i 20); WDY 05 41 02,
15 37 00
- 23 GSC 18 56 06 (i 26); GLA 20 16 26
- 24 GSC 00 38 22 (e 31), 00 45 47, 07 08 56, 13 49 45; WDY 00 14 57, 00 50 11
(e 21), 04 55 14 (e 27), 09 49 41
- 25 GSC 00 22 42, 07 30 17
- 26 GLA 05 58 21; GSC 09 16 33, 19 04 06 (PP 07 15); WDY 09 51 30, 12 31 13
- 27 GLA 01 26 19, 05 28 18, 13 40 04; PLM 11 55 55; GSC 16 43 40 (i 53),
16 59 54; WDY 00 22 40 (e 23 05)
- 28 GLA 00 51 01, 03 51 37 (i 46, i 52 02), 05 29 27; GSC 04 15 17, 14 37 08
(i 39 14), 17 46 47, 18 43 55; WDY 06 08 55, 07 12 59, 09 55 23
(e 46); ISA 10 06 40
- 29 GLA 03 08 52, 11 10 24 (e 11 03), 13 09 05 (i 09 17), 22 16 05;
WDY 08 57 57, (i 58 14)
- 30 GLA 01 44 48 (e 51), 15 33 42; GSC 22 21 27; WDY 01 14 09 (i 24)
- 31 GLA 07 00 06; GSC 23 57 28 (i 46); CLC 05 59 00

Violet M. Taylor
Seismological Assistant

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SEISMOLOGICAL LABORATORY
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PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 31, 1967

CORRECTION

August 12
should read

iP 18 51 21.1
iP 18 58 21.1

August 22

iG 13 53.5
iR 14 00.4

Δ 120°
Magn. 6 3/4

CONTINUATION

August 16

iP 19 41 25

i 42 01

17 iP 22 48 45

17 iP 23 31 29

i 55

i 32 04

18 iP 03 48 42

19 iP 15 54 19

e 44

20 iP 00 14 28

20 iP 07 35 05

20 iP 15 15 09

iPP 36

iSP 45

20 eP 20 06 26

eS 13.2

eL 16.6

eR 18.9

21 Δ 48°

eP 07 49.0

eP'' 52 02

i 12

iPP 54 25

iSKP 55 30

e 08 04.6

eSS 13.0

eL 35.0

22 Δ 132°

Magn. 6 1/2 - 6 3/4

22 eP 07 52 40

22 iP 09 07 05

22 eP 13 17 29

iP'' 20 57

ePP 22 26

iPP 45

e(S) 30.4

iPS 32.4

eSS 38.6

22

iG 13 53.5

iR 14 00.4

Δ 120°
Magn. 6 3/4

μ sec

PPZ 0.2 1 1/2

PPH 0.2 2

MH 17 20

MZ 12 20

22 iP'' 13 35 56

(aftershock)

22 eP 23 24 21

i 28

eP 09 30 54

eS 38.6

24 eP 01 30 22

24 iP 03 32 25

24 iP 05 41 08

24 eP 10 45 34

e 46 37

eSKS 55.6

eS 56.2

eG 11 08.4

eR 12.1

24 Δ 90°

iP 13 45 45

25 eP 15 12 07

e 20

eS 19.2

eL 24.1

eR 26.0

26 Δ = 52°

iP 00 49 50

eS 01 00 47

ePS 01 36

eSS 07.5

eG 14.5

eR 18.4

Δ 92°

Magn. 6 1/2 - 6 3/4

μ sec

PZ 3/4 1 1/2

PH 3/4 1 1/2

MH 12 20

KEW
OBSERVATORY
- 4 SEP 1967
RICHARD
SURREY

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
August 31, 1967

CONTINUATION

August				August			
26	eP	02 20 18		27	eP	18 07 42	
	e	38			eS	08 33	
26	iP	17 26 17			Magn. $4\frac{1}{2}$		
	ipP	27 01		27	eP	18 33 36	
26	eP	18 31 17		28	iP	01 06 20	
	i	27		28	eP	13 53 58	
	eS	40.7		28	iP	15 30 07	
	eG	49.8			iS	33 37	
	eR	51.6		28	iP	16 24 20	
	$\Delta 70^\circ$				eS	27.9	
		μ sec		30	eP	04 36 17	
	MH	$2\frac{1}{2}$ 20			eP''	40 12	
27	eP	12 37 49			iPP	37	
	eS	38 43			iPS	50.0	
27	eP	13 01 09			ePKKP	51 56	
27	iP	13 15 45			iSS	55.5	
	iS	21 17			eL	05 06.4	
	iScP	36			$\Delta 108^\circ$		
	iScS	25 43		30	eP	13 44 18	
	$\Delta 37^\circ$				eS	53.1	
27	iP	13 39 05					
	iL	42.8					

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), Woody (WDY), Santa Barbara (SBC).

August	10	GLA	04 32 57, 12 04 51 (i 05 00); 12 53 41, 13 39 07
	11	GLA	07 11 05; GSC 06 29 25, 10 51 19; PLM 00 02 48.6, 00 57 18.1, 01 51 21.1, 17 40 21.5; WDY 04 02 28, 10 20 39
	12	GLA	10 51 00
	13	GLA	05 26 47 (pP 55), 08 02 44.3; PLM 08 02 43.9; SBC 12 52 16.8 (s 20.3); WDY 17 07 52
	14	GLA	12 49 13 (i 40)
	15	GLA	03 02 23, 15 48 23; GSC 03 32 11, 04 15 30 (i 16 07)
	16	GLA	03 19 05 (e 21 05); WDY 13 47 11, 19 38 06
	17	GSC	06 08 39; GLA 14 43 52
	18	GLA	05 57 48, 21 53 49; GSC 19 14 15 (i 54)
	19	GLA	07 11 24 (e 12 15), 08 34 00, 12 26 12, 13 15 21, 18 50 29; GSC 05 29 10, 15 42 14 (e 46 24 SKS 52 54)

575K

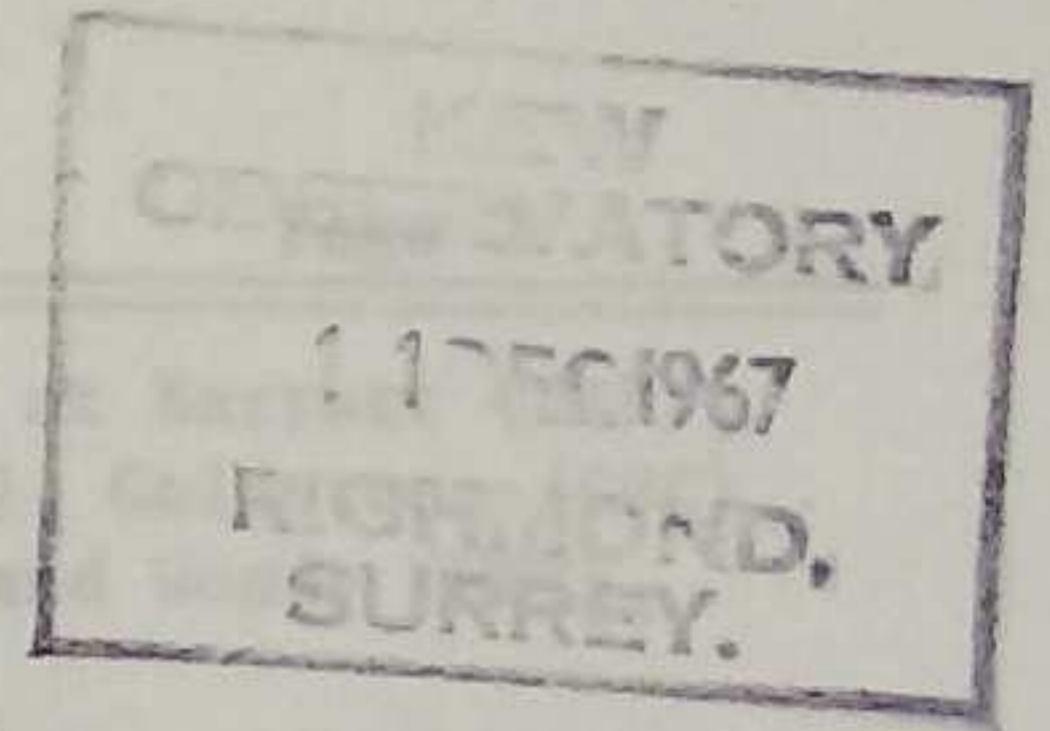
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220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)

August	20	GLA	01 24 03, 16 50 47; GSC 02 15 42
	21	GLA	01 05 51 (i 59, i 06 12), 21 50 25
	22	GSC	10 09 43 (i 58), 11 39 14
	23	GSC	00 20 36; GLA 17 20 13; WDY 23 09 29
	24	GLA	06 22 12; 11 41 04 (s 43 06); GSC 11 03 25 (i 35);
		WDY	17 54 51
	25	GLA	17 25 35, 23 07 41, 23 12 10
	26	GLA	01 06 43
	27	GLA	02 17 22, 12 37 01.3, 18 06 49.5, 19 35 48.8
	28	GLA	01 06 00 (i 39, i 07 58), 11 36 48, 11 45 50, 11 50 13, 12 03 41, 12 27 48, 12 31 29, 12 43 52, 12 48 32, 13 03 41, 13 21 11, 13 54 22, 15 10 29, 15 11 48, 15 30 30, 16 24 45, 17 16 49
	29	GLA	04 54 19, 07 46 28 (e 37 e 47 52), 13 53 44, 17 16 56
	30	GLA	02 18 27, 02 36 35, 07 30 51, 08 21 55, 11 27 26, 12 08 22 (pP 59)

Violet M. Taylor
Seismological Assistant

August 31, 1967



SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California

PASADENA PRELIMINARY BULLETIN NO. 179

August - 1967

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

1967

August

- 1 01 23 53 (pP 24 12, S 32 18)
- 2 00 55 40, 08 56 56, 09 48 39, 11 17 12 (S 25 52), 14 16 51, 18 40 24
- 3 12 50 37 (i 50 32, pP 51 16)
- 4 06 13 18 (S 23 18), 22 46 23
- 5 18 37 23
- 7 11 21 29 (i 21 39)
- 8 07 24 53
- 9 13 28 07.8 (S 31 25)
- 10 11 32 18 (pP 29, S 41 14)
- 11 00 57 36.8 (S 56.9), 12 33 28 (pP 38), 19 06 47
- 12 04 42 25, 09 51 47 (pP 52 22, S 10 01 48, P'P' 18 32), 12 43 38,
18 58 21.1 (S 49.2)
- 13 08 02 59.4 (S 03 39.4), 12 52 37.8 (S 54.7), 16 47 09, 16 52 51, 20 18 36
(pP 19 08, PP 21 48, S 28 22, sS 30 54±), 22 20 23
- 16 19 41 25 (i 42 01)
- 17 22 48 45, 23 31 29 (pP 31 55, sP 32 04)
- 18 03 48 42
- 19 15 54 19
- 20 00 14 28, 07 35 05, 15 15 09 (pP 36, sP 45), 20 06 26 (S 13 12±)
- 21 07 49 00± (P'' 52 02, PP 54 25, SKP 55 30)
- 22 07 52 40, 09 07 05, 13 17 29 (P'' 20 57, PP 22 26, S 30 24±, PS 32 24±),
13 35 56, 23 24 21
- 23 09 30 54 (S 38 36±)
- 24 01 30 22, 03 32 25, 05 41 08, 10 45 34 (SKS 55 36±, S 56 12±), 13 45 45,
17 26 14 (pP 27 01)
- 25 15 12 07 (S 19 12±)
- 26 00 49 50 (S 01 00 47, PS 01 01 36), 02 20 18, 17 26 17 (pP 27 01),
18 31 17 (i 27, S 40 42±)
- 27 12 37 49 (S 38 43), 13 01 09, 13 15 45 (S 21 17, ScP 21 36, ScS 25 43),
13 39 05 (L 42 48±), 18 07 42 (S 08 33), 18 33 36
- 28 01 06 20, 13 53 58, 15 30 07 (S 33 37), 16 24 20 (S 27 54±)
- 30 04 36 17 (P'' 40 12, PP 40 37, PS 50 00±, PKKP 51 56), 13 44 18 (S 53 06±)
- 31 19 04 36 (pP 05 39)

SUPPLEMENT: Times of P etc., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY), Santa Barbara (SBC).

1967

August

1 GLA 14 11 23, 19 30 43; GSC 18 28 44, 22 55 50; WDY 18 05 16
 2 GLA 18 36 45; GSC 04 40 29
 3 GLA 00 20 14 (i 23), 09 04 38 (e 43), 23 24 57, (i 25 51); GSC 19 27 40, 21 44 52 (i 45 05); WDY 11 03 52
 4 GSC 07 11 22
 5 GLA 17 04 19 (i 28); GSC 01 56 11; WDY 05 40 25 (e 30), 15 50 18, 19 06 51 (e 57)
 6 GLA 22 54 10; WDY 13 25 25
 7 GLA 10 00 03 (e 02 30); WDY 08 28 02, 12 06 08, 17 19 39, 19 31 14 (e 24)
 8 GSC 11 10 55, 14 42 11; WDY 07 46 54, 16 18 01
 9 GLA 05 08 35, 07 23 50 (i 24 02), 08 39 13, 09 38 41, 13 27 42 (S 30 40), 15 53 35, 16 14 02, 19 35 10; GSC 08 49 32, 13 27 42 (S 30 43), 23 09 15; WDY 21 07 11
 10 GLA 04 32 57, 12 04 51 (i 05 00), 12 53 41, 13 39 07
 11 GLA 07 11 05; GSC 06 29 25, 10 51 19; PLM 00 02 48.6, 00 57 18.1, 01 51 21.1, 17 40 21.5; WDY 04 02 28, 10 20 39
 12 GLA 10 51 00
 13 GLA 05 26 47 (pP 55), 08 02 44.3; PLM 08 02 43.9; SBC 12 52 16.8 (S 20.3)
 WDY 17 07 52
 14 GLA 12 49 13 (i 40)
 15 GLA 03 02 23, 15 48 23; GSC 03 32 11, 04 15 30 (i 16 07)
 16 GLA 03 19 05, 03 21 05; WDY 13 47 11, 19 38 06
 17 GSC 06 08 39; GLA 14 43 52
 18 GLA 05 57 48, 21 53 49; GSC 19 14 15 (i 54)
 19 GLA 07 11 24 (e 12 15), 08 34 00, 12 26 12, 13 15 21, 18 50 29;
 GSC 05 29 10, 15 42 14 (e 46 24, SKS 52 54)
 20 GLA 01 24 03, 16 50 47; GSC 02 15 42
 21 GLA 01 05 51 (i 59, i 06 12), 21 50 25
 22 GSC 10 09 43 (i 58), 11 39 14
 23 GSC 00 20 36; GLA 17 20 13; WDY 23 09 29
 24 GLA 06 22 12, 11 41 04 (S 43 06); GSC 11 03 25 (i 35); WDY 17 54 51
 25 GLA 17 25 35, 23 07 41, 23 12 10
 26 GLA 01 06 43; WDY 21 51 43 (i 53)
 27 GLA 02 17 22, 12 37 01.3, 18 06 49.5, 19 35 48.8; GSC 08 38 05 (e 52), 17 18 41, 14 46 31, 17 18 41
 28 GLA 01 06 00 (i 39, i 07 58), 11 36 48, 11 45 50, 11 50 13, 12 03 41, 12 27 48, 12 31 29, 12 43 52, 12 48 32, 13 03 41, 13 21 11, 13 54 22, 15 10 29, 15 11 48, 15 30 30, 16 24 45, 17 16 49
 29 GLA 04 54 19, 07 46 28 (e 37 e 47 52), 13 53 44, 17 16 56; WDY 23 41 39
 30 GLA 02 18 27, 02 36 35, 07 30 51, 08 21 55, 11 27 26, 12 08 22 (pP 59); WDY 10 54 07, 11 55 02, 20 44 45
 31 GLA 15 29 04; GSC 19 10 40; WDY 10 59 40, 14 16 37

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 8, 1967

CONTINUATION

August 31

September 1

iP	19 04 36
IpP	05 39
iP	03 44 23
iP	09 07 54
iP	22 53 00
ipP	30
iP	05 49 53
iP	01 36 44
iP	21 17 19
compression from southeast	
iS	25 20
iSS	29 04
eG	32.1
eR	35.8
eP'p'	46 54
$\Delta 58^\circ$	
Magn. 6 3/4 - 7	
	μ sec
PZ	3 2
PZ	13 7
PH	10 7
SH	70 20
MH	100 20
MZ	50 20

September 4

iP 04 04 20

dilatation

epP 05 16

ePP 07 43

iS 14 27

eL 27.6

$\Delta 84^\circ$; h = 240 km.

μ sec

PZ 1/2 1 1/2

SH 2 6

eP 04 41 40.2

iS 42 46.1

Magn. 4 1/2

iP'' 07 30 39

ipP'' 31 53

e 32 19

eSKS 36 53

ePS 40 23

iPKKP 41 48

eSS 46.5

eL 57.1

$\Delta 112^\circ$ Depth 300 km.

iP 11 20 14

iS 30 25

iP 12 40 18.0

iS 41 06.3

Santa Cruz County

Magn. 4.4 \pm

8 iP 09 11 28

SUPPLEMENT:

Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody.

August

26

WDY 21 51 43 (i 53)

27

GSC 08 38 05 (e 52), 14 46 31, 15 22 50, 17 18 41

29

WDY 23 41 39

30

WDY 10 54 07, 11 55 02, 20 44 45

31

GLA 15 29 04; GSC 19 10 40; WDY 10 59 40, 14 16 37

September

1

GLA 02 57 34; GSC 23 52 49

2

GSC 01 37 05

3

GSC 11 37 28

4

GSC 04 04 29 (pP 05 25), 04 22 08, 14 16 19

5

GLA 03 53 46, 05 29 22, 05 32 06

6

GLA 07 49 13, 08 13 37, 09 23 20, 17 32 39, 19 57 29 (pP 44)

7

GLA 02 00 28.0, 08 12 04, 09 46 55, 11 20 22 (pP 22 06);

PLM 02 00 44.7

Violet M. Taylor, Seismological Assistant

KEW
OBSERVATORY
12 SEP 1967
RICHMOND,
SURREY.

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California 91105
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 13, 1967

ADDITION
September 7

eP 02 01 13
iS 02 11.6
Magn. $5\frac{1}{2}\pm$

CONTINUATION
September 9

eP 17 05 05
iS 15 53
eSS 22.0
eG 28.6
eR 33.0
 $\Delta 88^\circ$ Magn. $6\frac{1}{4}$

CONTINUATION
September 8

iP 22 50 49
i 53
i 57
eS 23 02 16
eL 16.5
9 iP 08 50 01
ipP 59
9 iP 10 17 58
ipP 20 01
iS 27 18
esS 31.1
eG 41.8
 $\Delta 83^\circ$ Depth 580 km
 μ sec
PZ 0.7 $1\frac{1}{2}$
PH $\frac{1}{2}$ $1\frac{1}{2}$
SH 20 5
9 eP 14 57 07
epP 16
eL 15 22.0
eR 25.7

μ sec
PZ 0.1 $1\frac{1}{2}$
MH 17 20
MZ 17 20
11 iP 04 50 06
eR 17.5
11 eP 07 04 48
eS 15.2
eG 28.1
eR 31.5
 $\Delta 88^\circ$
11 i 10 27 13
eG 49.8
eR 53.6
 $\Delta 88^\circ$
12 iP 10 27 54

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

September 1 GLA 15 06 15 (i 32)
2 GSC 05 26 55
4 CLC 16 16 01; GSC 18 14 38
6 CLC 03 29 44 (e 53), 20 09 25
7 BAR 02 00 37.1 (S 01 15.5), 04 39 58.0 (S 40 34.7);
CLC 12 40 11.9; CWC 12 40 05.0
8 GLA 08 18 54 (pP 19 12), 08 44 53, 22 02 14, 23 48 51;
WDY 14 51 54 (pP 52 02)
9 GLA 06 28 25, 14 50 13, 20 35 18, 23 50 36 (e 58)
10 GLA 01 00 46 (i 53), 06 25 52 (i 26 06); ISA 21 12 44 (i 50)
11 GLA 01 35 14 (i 29), 10 27 13 (i 22), 11 26 49, 13 07 01
(e 06), 20 19 44; GSC 00 43 45
12 GLA 00 20 50 (i 55), 02 54 51 (e 55 01), 10 10 25 (i 33),
10 19 38 (i 47)

Violet M. Taylor, Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 29, 1967

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Palomar (PLM), Tinemaha (TIN), Woody (WDY) and Isabella (ISA)

September 8 WDY 12 29 33
9 GSC 21 26 38
10 GSC 16 00 56 (pP 01 11); GLA 01 18 34
11 WDY 18 36 50
13 GLA 00 19 00 (i 10), 00 28 08 (i 14), 00 52 21 (i 31)
12 17 13, 18 39 30, 20 26 48; WDY 22 04 21, 22 37 11
14 GLA 20 44 08 (pP 22); WDY 00 54 30 (e 42), 15 47 43 (e 48 17),
19 30 02 (e 18 e 31)
15 GLA 08 16 02, 10 51 25 (i 31, i 52 22), 11 02 06; ISA 18 04 06
(pP 38); WDY 11 49 28 (e 37)
16 GLA 23 43 41; WDY 11 45 37, 15 23 51 (pP 24 06)
17 BAR 16 49 36.6; GLA 01 21 45 (pP 59), 14 51 12, 16 49 30.3
18 BAR 06 56 08.1 (s 46.5); GLA06 55 59.5, 19 04 41 (pP 48),
19 25 10
19 CLC 19 20 51 (e 21 15, e 24 10, i 24 34); GLA 00 57 40
(pP 58 15), 13 04 20 (pP 31), 13 14 41; WDY 03 40 39
(i 48), 13 58 58
20 GLA 00 44 56, 04 18 11 (e 19 07), 10 49 55, 10 50 05
(PP 53 08), 11 00 44, 11 30 47, 18 50 55 (i 51 00);
WDY 01 45 00
21 GLA 00 02 25.0, 12 51 21.7, 12 59 33
22 GLA 08 21 23 (e 37), 11 30 39 (pP 52), 12 46 09 (pP 23),
23 21 10; WDY 11 11 07 (e 22)
23 GLA 00 01 04, 01 48 40.6 (s 51 11), 06 42 16, 07 08 07
(pP 10 12, sP 11 24), 07 51 11 (pP 53 14), 08 20 26.3
22 55 27 (pP 56 50)
24 GLA 01 22 50 (pP 23 14), 20 30 29 (i 36 i 45), 20 46 08
(i 28.4, s 47 18.4)
25 GLA 08 19 01 (pP 17), 09 00 42 (pP 56), 19 46 23; PLM 06 29 43
26 GLA 11 38 01 (e 27), 12 41 48.7, 14 45 00.9, 20 13 26.3
PLM 12 42 08.4, 14 45 16.9, 20 13 46.0
27 GLA 06 11 49.1; PLM 06 11 52 (i 12 03), 06 12 11.0 (s 36.7)
28 GLA 03 08 37 (pP 50); GSC 00 38 04

Violet M. Taylor
Seismological Assistant

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 September 29, 1967



CORRECTION

September 1 GSC eP
 Should read:

September 1 GSC eP

CONTINUATION

September 12

		23 52 49	September 18	iP	15 46 40	
				e(pP)	49	
		23 51 59		ePS	59 40	
				eSS	16 05 08	
		22 02 59		eG	12.6	
		i		eR	17.8	
		03 18		$\Delta = 100^\circ$		
		14 14		eP	19 24 13	
		eS		i	37	
		eG		i	42	
		eR		iP	11 07 25	
		$\Delta 93^\circ$ Magn. $6 \pm$		ipP	44	
				iS	16 43	
		μ sec		esS	17 20	
		MH		eSS	21 16	
		6 20		eR	28.5	
		MZ		$\Delta 73^\circ$		
		6 20		Depth 80 km		
13	iP	18 50 20		Magn. $6\frac{1}{2}$		
	e	30		μ sec		
	eS	57 35		PZ	0.4 $1\frac{1}{2}$	
	eL	19 03.6		PH	0.2 $1\frac{1}{2}$	
	eR	05.1		SH	10 8	
13	iP	20 16 18		IP	09 43 39	
13	eP	20 50 03		epP	44 12	
	i	05		eP	09 54 02	
	eL	53.4		ePP	58 03	
14	eP	14 24 20		eSKS	10 04.5	
	e	28		IPS	07 53	
	iR	37.6		ePKKP	09 09	
15	eP	00 40 32		ISS	13 39	
	eL	01 01.1		iG	24 06	
	iR	04.6		eR	28.4	
		μ sec		$\Delta 108^\circ$ Magn. $6\frac{1}{4}$		
		MH		μ sec		
		5 20		MH	10 20	
16	eP	08 40 06		MZ	11 20	
	e	19		IP	10 49 55	
	eS	46.6		dilatation from		
	eL	50.4		southwest		
	eR	52.5		IPP	53 33	
16	eP	18 32 52		IP	00 02 46.4	
16	iP	19 25 01		iS	03 34.5	
	ipP	18		Magnitude $5\frac{1}{4}$		
17	iP	08 02 06		Roughly 00:01:50,		
	ipP	17		31.1 N 115.8 W		
	e	23		iP	12 51 51.8	
	eL	09.5		iS	52 36.8	
		μ sec		Magnitude $4\frac{1}{4}$		
		PZ		Roughly 12 50 54		
		0.15 $1\frac{1}{2}$		31.4 N 115.6 W		
		MH		IP	20 45 56.6	
		5 20				
17	eP	16 50 09				
	i	20.1				
	iS	51 15.4				
	Magn. $4\frac{3}{4}$ -5					
18	eP	06 56 38				
	i	49.6				
	iS	57 43.9				

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
September 29, 1967

CONTINUATION
September 22

Date	Station	Time	Depth	Δ	μ	sec	Station	Time	Depth	Δ	μ	sec			
September 22	iP	10 28 57	60 km	70°	1/4	2	eP	12 42 33.8	26	26	16 23 15	15			
	ipP	29 13					i	39.7							
	iS	37 57					iS	43 27.1							
	eSS	42.4					Magn.	4 1/4 - 4 1/2							
	iSSS	45 44					eP	14 45 44.7							
	iR	49.0					eS	46 38.9							
							Magn.	4 1/4							
							dilatation from								
							southeast								
							ipP	23 31							
							iS	33 06							
							eSS	38.1							
							iL	48.6							
September 23	PZ		60 km	70°	1/4	20	PZ	0.3	26	26	0.3	1 1/2			
	MH	4					PH	0.2					1 1/2		
	eS	00 07 59					pPZ	1						1 1/2	
	eL	11.3					SH	5							7
	eR	13.8					eP	02 13 13.8							
	iP	03 33 58					i	18.3							
	iP	07 07 57					iS	14 06.5							
	eL	46.8					Magn.	4 1/4 - 4 1/2							
	iP	07 51 02					iP	06 12 03							
	eP	09 22 16					i(P)	06 12 37.2							
	e	30					iS	14 16.7							
	eP	04 49 44					Magn.	4							
	epP	59					eP	05 10 03							
	eR	05 10.8					i	11							
	iP	08 19 22					ePP	13 48							
eP	09 01 03	eSKS	20.8												
e	08.6	iS	22 21												
eR	16.6	eG	34.0												
iP	09 23 50	eR	38.5												
iP	06 57 49														
epP	58 25														
e(L)	07 15.0														
iP	11 23 30														
ipP	52														
eS	33 33														
eR	49.6														
September 26			90 km	82°	1/4	1	PZ	0.2	26	26	0.2	1 1/2			
							PH	0.2					20		
							MH	25							
		MZ	20	20											

SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 October 12, 1967

CONTINUATION
 September 28

		iP	15 39 35.7	October 4	iP	10 21 51.6
		i	40.9		i	22 16.0
		iS	41 27.7		iS	23 24.6
		Magn. 4.8±			Torsion seismometer trace	
		Santa Clara County			amplitudes 0.6 and 0.5 mm.	
28		iP	15 51 18		Magnitude 4.8±	
		ePP	52 31		Wyoming?	
		iS	56 32	4	iP	17 34 25
		eL	16 00,1		i	36 39
		iR	00 12		iPP	38 09
			μ sec		iSKS	44 59
		PZ	3 5		iS	45 11
		PH	3 5		eSS	51.6
		MH	9 20		ePKKP	52 30
		MZ	8 20		iG	58.6
29		eP	15 46 19		iR	18 02.6
30		eP	08 10 08		Δ 88°	
		eS	21 07		Magn. 6 3/4	
		eG	33.7			μ sec
		eR	39.3		PZ	0.2 1 1/2
		Δ 90° ±			PPH	9 24
October 1		iP	12 07 20		MH	63 20
1		iP	22 38 18		MZ	70 20
2		iP	00 24 00	5	iP	04 20 55
		e(S)	34 18	5	iP	09 51 52
2		iP	15 07 20	6	iP	07 55 09
2		iP	17 46 46	7	iP	01 25 57
3		iP	18 23 18		iP	26 13
		ipP	27		isP	19
		iPcP	25 37		eR	51.5
		iS	29 15	7	eP	08 38 22
		iL	32.0		i	27
		Δ = 37°			i	36
		Depth 40 km			eG	54.4
		Magn. 6 1/2			eR	58.5
			μ sec	7	iP	09 17 13
		PZ	1 2		e	18
		PH	3 1/4 2	7	iP	10 44 06
		SH	8 13		dilatation	
		MH	20 20	8	eP	17 10 00
3		eP	19 29 55		ePP	13 13
3		eP	19 59 32		e(SS)	25 14
4		iP	06 09 31		eL	38.7
		ipP	38		Δ 80°?	
		iPcP	11 56	8	iP	18 21 18
					iPcP	24
					ipP	30
					isP	39
					eSKS	31.6
					eL	45.4
					eR	50.1
					Δ 93°?	

SEISMOLOGICAL LABORATORY
220 NORTH SAN RAFAEL AVENUE
PASADENA, CALIFORNIA 91105



PASADENA PRELIMINARY BULLETIN NO. 180

SEPTEMBER - 1967

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

1967

Sept.

- 1 03 44 23, 09 07 54, 22 53 00(pP 30)
2 05 49 53
3 01 36 44, 21 17 19(S 25 20, P'P' 46 54)
4 04 04 20(pP 05 16, S 14 27)
.
7 02 01 13(S 02 11.6), 04 41 40.2(S 42 46.1), 07 30 39(pP^{II} 31 53, SKS 36 53,
PS 40 23, PKKP 41 48), 11 20 14(S 30 25), 12 40 18.0(S 41 06.3)
8 09 11 28, 22 50 49(S 23 02 16)
9 08 50 01(pP 59), 10 17 58(pP 20 01, S 27 18, sS 31 06±), 14 57 07(pP 16),
17 05 05(S 15 53)

11 04 50 06, 07 04 48(S 15 12±), 10 27 13
12 10 27 54, 22 02 59(pP 03 18, S 14 14)
13 18 50 20(S 57 35), 20 16 18, 20 50 03
14 14 24 20
15 00 40 32
16 08 40 06(e 40 19, S 46 36±), 18 32 52, 19 25 01(pP 18)
17 08 02 06(pP 17) 16 50 09(S 51 15.4)
18 06 56 38(S 57 43.9) 15 46 40(PS 59 40)
19 11 07 25(pP 44, S 16 43, sS 17 20, SS 21 16), 19 24 13(i 37, i 42)
20 09 43 39(pP 44 12), 09 54 02(PP 58 03, SKS 10 04 30±, PS 07 53, PKKP 09 09,
SS 13 39), 10 49 55(PP 53 33)
21 00 02 46.4(S 03 34.5), 12 51 51.8(S 52 36.8)
22 10 28 57(pP 29 13, S 37 57)
23 00 07 59(=S), 03 33 58, 07 07 57, 07 51 02, 09 22 16(e 30)

25 04 49 44(pP 59), 08 19 22, 09 01 03, 09 23 50
26 06 57 49(pP 58 25), 11 23 30(pP 52, S 33 33), 12 42 33.8(S 43 27.1)
14 45 44.7(S 46 38.9), 16 23 15(pP 31, S 33 06), 20 13 13.8(S 14 06.5)
27 06 12 03, 06 12 37.2(S 14 16.7
28 05 10 03(i 11, PP 13 48, SKS 20 48±, S 22 21), 15 39 35.7(S 41 27.7),
15 46 19, 15 51 18(S 56 32)

30 08 10 08(S 21 07)

KEW
OBSERVATORY
25 JAN 1968
RICHMOND,
SURREY.

658

SUPPLEMENT: Times of P ect., for additional shocks recorded at Barrett(BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha(TIN), and Woody (WDY).

- Sept.
- 1 GLA 02 57 34, 15 06 15(i 32); GSC 23 52 49
 - 2 GSC 01 37 05, 05 26 55
 - 3 GSC 11 37 28
 - 4 CLC 16 16 01; GSC 04 04 29(pP 05 25), 04 22 08, 14 16 19, 18 14 38
 - 5 GLA 03 53 46, 05 29 22, 05 32 06
 - 6 CLC 03 29 44(e 53), 20 09 25; GLA 07 49 13, 08 13 37, 09 23 20, 17 32 39, 19 57 29(pP 44)
 - 7 BAR 02 00 37.1(S 01 15.5), 04 39 58.0(S 40 34.7); GLA 02 00 28.0, 08 12 04, 09 46 55, 11 20 22(pP 22 06); CLC 12 40 11.9, CWC 12 40 05.0; PLM 02 00 44.7
 - 8 GLA 08 18 54(pP 19 12), 08 44 53, 22 02 14, 23 48 51; WDY iP 12 29 33, 14 51 54(pP 52 02)
 - 9 GLA 06 28 25, 14 50 13, 20 35 18, 23 50 36(e 58); GSC 21 26 38
 - 10 GLA 01 00 46(i 53), 01 18 34, 06 25 52(i 26 06); ISA 21 12 44(i 50); GSC 16 00 56(pP 01 01)
 - 11 GLA 01 35 14(i29), 10 27 13(i 22), 11 26 49, 13 07 01(e 06), 20 19 44; GSC 00 43 45; WDY 18 36 50
 - 12 GLA 00 20 50(i 55), 02 54 51(e 55 01), 10 10 25(i 33), 10 19 38(i 47)
 - 13 GLA 00 19 00(i 10), 00 28 08(i 14), 00 52 21(i 31), 12 17 13, 18 39 30, 20 26 48; WDY 22 04 21, 22 37 11
 - 14 GLA 20 44 08(pP 22); WDY 00 54 30(e 42), 15 47 43(e 48 17), 19 30 02 (e 18 e 31)
 - 15 GLA 08 16 02, 10 51 25(i 31, i 52 22), 11 02 06; ISA 18 04 06(pP 38); WDY 11 49 28(e 37)
 - 16 GLA 23 43 41; WDY 11 45 37, 15 23 51(pP 24 06)
 - 17 BAR 16 49 36.6; GLA 01 21 45(pP 59), 14 51 12, 16 49 30.3
 - 18 BAR 06 56 08.1(S 46.5); GLA 06 55 59.4, 19 04 41(pP 48), 19 25 10
 - 19 CLC 19 20 51(e 21 15, e 24 10, i 24 34); GLA 00 57 40(pP 58 15) 13 04 20 (pP 31), 13 14 41; WDY 03 40 39(i 48), 13 58 58
 - 20 GLA 00:44 56, 04 18 11(e 19 07) 10 49 55, 10 50 05(PP 53 08), 11 00 44, 11 30 47, 18 50 55(i 51 00); WDY 01 45 00
 - 21 BAR 00 02 20.2(S 39.0) 12 50 21.5(S 40.3); GLA 00 02 25.0, 12 51 21.7, 12 59 33
 - 22 CLC 03 04 27, 05 17 17; GLA 08 21 23(e 37), 11 30 39(pP 52), 12 46 09 (pP 23), 23 21 10; WDY 11 11 07(e 22), 22 16 00(pP 16)
 - 23 GLA 00 01 04, 01 48 40.6(S 51 11), 06 42 16, 07 08 07(pP 10 12, sP 11 24), 07 51 11(pP 53 14); 08 20 26.3, 22 55 27(pP 56 50); WDY 03 33 59(pP 35 59)
 - 24 GLA 01 22 50(pP 23 14), 20 30 29(i 36 i 45), 20 46 08(i 28.4, S 47 18.4); WDY 07 33 20, 08 02 00
 - 25 CLC 19 52 25; GLA 08 19 01(pP 17), 09 00 42(pP 56), 19 46 23; PLM 06 29 43; WDY 04 14 35
 - 26 GLA 11 38 01(e 27), 12 41 48.7, 14 45 00.9, 20 13 26.3; CLC 17 16 53, PLM 12 42 08.4, 14 45 16.9, 20 13 46.0; BAR 12 42 00.6, 14 45 11.0, 20 13 37.9, 20 24 58.0, 21 24 01.9
 - 27 GLA 06 11 49.1; BAR 06 12 01.5; PLM 06 11 52(i 12 03), 06 12 11.0(S 36.7) WDY 00 34 29, 00 48 38, 09 45 03(pP 28, sP 38)
 - 28 GLA 03 08 37(pP 50); GSC 00 38 04, 15 39 41.3; TIN 15 39 21.0(S 56.7); ISA 15 39 22.5; SYP 15 39 22.5; WDY 15 39 18.2
 - 29 CLC 17 49 50(e 57); GLA 05 24 57(PcP 27 59), 10 50 26, 15 17 33, 15 55 25, 19 30 01; WDY 07 31 21(pP 30)

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
October 12, 1967

CONTINUATION

Date	Time	Phase	Time	Date	Time	Phase	Time
October	8	eP	21 30 19	October	9	iP'P'	17 59 37
	9	iP	05 24 15.4			iSKPP'	18 02 09
		iS	53.1			eP'P'P'	19 30
		Magn.	3 3/4			Δ 82° depth	650 km
	9	eP	08 37 42			Magn m =	7 - 7 1/4
	9	eP	13 40 50				
	9	iP	14 20 35			μ	sec
		ipP	21 59			PZ	7 2
	9	iP!	17 32 54			PH	4 2
		dilatation from				SH	25 5
		southwest			9	eP	18 44 18
		ipP	35 08		10	iP	03 01 03
		isP	36 08		10	eP	05 28 28
		iS	42 12			eR	57.2
		isS	46.1		10	iP	06 39 14
						eR	07 04.8

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY)*

Date	Station	Time	Phase	Time
September	21	BAR	00 20.2 (S 39.0), 12 51 21.5 (S 40.3)	
	22	CLC	03 04 27, 05 17 17; WDY 22 16 00 (pP 16)	
	23	WDY	03 33 59 (pP 35 59)	
	24	WDY	07 33 20, 08 02 00	
	25	WDY	04 14 35	
	26	CLC	17 18 53; BAR 12 42 00.6, 14 45 11.0, 20 13 37.9, 20 24 58.0, 21 24 01.9	
	27	WDY	00 34 29, 00 48 38, 09 45 03 (pP 28, sP 38); BAR 06 12 01.5	
	28	GSC	15 39 41.3; ISA 15 39 22.5; SYP 15 39 22.5; WDY 15 39 18.2;	
		TIN	15 39 21.0 (S 56.7)	
	29	CLC	17 49 50 (e 57); GLA 05 24 57 (PcP 27 59), 10 50 26, 15 17 33, 15 55 25, 19 30 01	
October	1	GLA	12 31 22, 20 06 04 (i 10), 22 00 50; WDY 02 49 03 (i 15)	
	2	CLC	11 41 07; GLA 00 24 10 (pP 26 17, sP 27 17), 16 06 19, 16 09 13; WDY 16 06 57, 16 09 14 (i 25)	
	3	CLC	16 36 53; GLA 22 54 13; WDY 03 29 55 (i 30 01, i 30 07), 05 29 14 (i 19 i 24)	
	4	CLC	17 51 46; GLA 00 08 32 (e 38), 00 18 15 (i 20), 09 05 54 (i 06 02), 10 21 44.5; GSC 02 01 30 (e 37), 10 21 28.4;	
		ISA	10 21 40.6 (i 22 02.6, S 23 10.0)	
	5	GLA	16 06 14 (e 25), 18 39 39 (i 40 21); WDY 09 32 27, 19 00 59 (i 01 06), 20 01 29 (pP 44)	
	6	GLA	04 19 59 (i 20 06)	
	7	GLA	06 11 32 (i 37), 07 20 37; PLM 10 44 09 (pP 46 12, sP 47 12)	
	8	GLA	21 19 53 (i 20 05), 21 35 02 (i 15); GSC 23 53 01	
	9	BAR	05 23 44.9 (S 24 02.4); GLA 05 23 35.5, 18 44 27 (pP 46 38), 21 14 17; PLM 05 23 50.1, 08 37 38 (pP 39 59), 13 41 07 (i 29)	
	10	GLA	06 59 12 (i 25), 08 20 05, 08 37 19, 21 33 11	
	11	GLA	08 03 42 (pP 04 08)	

Violet M. Taylor
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* Santa Ynez Peak (SYP)

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CONTINUATION

October	11	iP	08 33 21	October	15	eP	18 40 50
	11	iP	16 04 27			e	58
		i	38		16	iP	13 31 34
	11	iP	20 37 42			dilatation	
		ipP	39 38			eL	34.4
	12	iP	06 46 13			$\Delta = 16^\circ$	
		Dilatation			17	eP	05 17 25
		iPcP	18		17	eP	09 44 33±
		iS	55 31			eL	47.5
		i	59.5		17	eP	14 20 04
		iSKPP'	07 15 27			epP	22 23
		$\Delta 82^\circ$ Depth 500 km Magn. 6			17	eP	21 19 21
		μ sec			18	iP	01 22 01
		PZ	0.3 1			iPP	24 14
		PH	0.1 1			iS	30 23
		SH	1 4			iL	36.9
	12	iP	13 03 30			$\Delta 62^\circ$ Magn. 6 3/4	
		Compression				μ sec	
		ipP	05 19			PZ	0.3 1 1/2
		ipPcP	55			SH	1 1/2 10
		iS	11 30			MH	100 20
		iScS	12 34		18	eP	10 43 00
		eP ₂ P ₂ '	32 05		18	iP	10 58 24
		$\Delta 65^\circ$ Depth 500 km			18	iP	22 19 17
		Magn. 6			18	eP	23 48 05
		μ sec			20	iP	01 21 36
		PZ	0.5 1			eS	32.7
		PH	0.1 1			eG	39.9
		SH	0.1 3			$\Delta 97^\circ$	
	12	eP	18 46 19		20	iP	16 07 41
		iP''	50 10		21	iP	02 47 00
		i	23			ipP	12
		iSKS	56 48			eS	56 41
		i	57 48			eSS	03 01.3
		i	58 31			eR	11 27±
		eG	19 17.6			$\Delta 78^\circ$ Depth 40 km	
		eR	22.2			μ sec	
		$\Delta 110^\circ$				MH	4 1/2 16
	14	iP	03 40 26			MZ	4 16
		eL	58.6		21	iP	05 11 29
	15	iP	08 07 44		21	eP	17 14 52
		compression			21	eP	20 15 50
		i	08 16		22	iP	01 03 26
		iPcP	09 51			dilatation	
		i	10 03			ipP	04 33
		iS	13 21		22	e	18 57 37
		iScP	34			eL	19 19.5
		iScs'	17 46		23	iP	03 04 46
		$\Delta 36^\circ$ Mag. 6 3/4					
		μ sec					
		PZ	3/4 1 1/2				
		PH	3/4 1				
		SH	5 14				

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CONTINUATION
 October 23

	iP	08 38 47	October 25	iP	01 12 53
	dilatation			i	16 09
	epP	40 31		iPP	56
	eS	48 24		iSKS	23 34
		μ sec		iS	24 02
	PZ	0.2 1		iPPS	25 54
23	eP	09 52 34		ePKKP	29 57
24	iP	03 25 45		eP'P'	37 33
	ipP	26 48		eL	39.9
24	eP	11 10 23		Δ 92°	
24	iP	11 13 45			μ sec
	e	14 07		PZ	2 6
24	iP	15 26 50	25	iP	01 44 20
			25	iP	09 30 36
				i	48

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY)

*
 October 7. CLC 14 46 51 (pP 47 02, sP 09), 15 09 38 (e 46), 20 05 08;
 WDY 02 50 12, 11 06 16 (pP 28), 21 48 39 (e 55)

8 CLC 05 40 12 (pP 27); WDY 04 06 55 (e 07 11), 07 50 35, 08 04 59
 09 49 04 (e 12)

9 GSC 02 53 42

10 CLC 02 28 51, 03 15 02, 19 18 23 (pP 32)

11 GLA 16 37 27 (i 40); WDY 02 40 37, 06 25 36, 12 08 23, 18 52 27

12 GLA 01 06 35; WDY 04 02 44

13 GLA 01 19 45.1 (i 20 03.7 iS 58.1), 19 32 10 (pP 17), 20 01 13;
 BAR 22 13 40.5 (s 14 35.5); CLC 08 21 05, 08 52 35

14 WDY 16 21 09 (e 28)

15 GSC 18 18 40, 23 14 55, 23 47 22; WDY 17 46 09

16 GSC 17 38 36; WDY 01 41 52, 22 27 46

17 GLA 09 44 01; GSC 14 02 56, 21 23 38; WDY 02 00 50, 13 00 19, 14 58 58

18 GLA 04 52 36.2 (s 53 03.7), 23 17 26; GSC 06 50 17 (e 44)

19 GSC 15 58 00

21 GLA 18 51 56

22 GLA 23 17 37

23 GLA 11 03 08, 11 33 13

25 GLA 09 29 16, 09 30 57 (pP 31 08)

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*October 6 CLC 01 15 17 (e 26)

SEISMOLOGICAL LABORATORY
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CONTINUATION

Date	Time	Station	Time	Time
October	25	iL	15	50.3
	25	eP	19	25 18
		e		27
	26	iP	00	35 59
		e(S)		46.8
		eG	01	03.5
		eR		07.5
	26	iP	13	54 03
		i		17
		eS	14	01.6
		eL		12.4
	26	iP	12	30 51
		i		31 05
		eS		38.5
		eL		48.5
	26	eSKS	17	47.0
		eS?		49.5
		eSS		57.5
		eL	18	14.0
		$\Delta = 105^\circ$		
	28	iP	04	56 30
	29	eL	13	14.5
		e(L)		28.7
	31	eP	10	26 59
November	1	iP	15	11 52
	1	iP	16	19 46
	1	iP	16	41 27
	1	eP	16	57 07
		iS		58 18.6
		Mag. 4 3/4		
	2	iP	03	44 16
	3	iP	07	45 10
		e		46 11
		ePP		48 34
		iSKS		55 34
		i		57.5
		iSS	08	01.5
		iL		08.2
		$\Delta 87^\circ$		
		μ sec		
		PZ	0.2	1
	3	eP	08	25 01
	3	iP	22	56 19
	4	eP	10	28 13
		i		15
		epP	30	13
		i	31	17
		iS	37	22
		eS		40.8
		eSS		41.4
		eSKPP		58 00

Date	Time	Station	Time	Time
November	4	$\Delta 80^\circ$, depth 600 km, Magn m = $6\frac{1}{4}$		
		μ sec		
		PZ	0.4	1
	4	eP	12	03 39
	4	eP	13	38 38
		ipP		49
		iS		48 25
		iL		58.8
		$\Delta = 79^\circ$		
	4	iP	14	42 02
		ipP		18
		eS		51.4
		e		56.4
		eL	15	00.4
		μ sec		
		PZ	$\frac{1}{4}$	2
	4	eP	14	57 27
	4	iP	15	20 39
	4	iP	16	35 56
		e		36 08
		i		20
		iPcP		37 04
		eScP		40 52
		iS		43 21
		$\Delta = 53^\circ$		
		μ sec		
		PZ	$1\frac{1}{2}$	$1\frac{1}{2}$
		PH	$1\frac{1}{4}$	$1\frac{1}{2}$
	6	eP	21	45 56
	7	eP	03	36 57
		e		37 04
		iS		43 10
		iG		45.4
		eR		47.0
		$\Delta = 40^\circ$		
		μ sec		
		MH	5	20
	7	iP	04	00 35
		ipP		47
		iS		10 42
		e(R)		20.2
		$\Delta 77^\circ$ Depth 40 km		
		μ sec		
		PZ	$\frac{1}{4}$	$1\frac{1}{4}$
		MH	3	20
		iP	03	17 34
		compression		
		ipP		49
		iPP		18 32
		eS		22 59
		eL		27.0

KEW
 OBSERVATORY
 13 NOV 1967
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SEISMOLOGICAL LABORATORY
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CONTINUATION
 November 8

eP 07 23 21
 epP 33

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY)

October	19	WDY	15 16 14, 16 33 27
	20	WDY	19 40 37
	21	WDY	05 39 04 (i 10), 17 54 23
	22	WDY	04 51 50 (e 52 29), 15 08 21, 18 59 12, 21 45 06 (e 10), 22 29 47
	23	WDY	05 02 51
	24	WDY	06 39 03
	25	GLA	15 41 58, 16 16 55, 22 48 25; GSC 02 10 55, 05 54 50 (i 55 09) 18 54 37; WDY 02 54 59, 09 08 07
	26	PLM	20 30 21; CLC 17 51 43 (PKKP?)
	27	GLA	00 46 42; GSC 21 19 49; WDY 06 39 32, 10 19 04 (e 14), 15 45 53, 20 54 57
	28	GLA	18 52 20 (i 29, e 39), 19 28 06 (i 13), 19 31 33 (i 40); WDY 19 09 56
	29	CLC	03 10 53, 05 36 46 (i 37 09), 12 56 16; GLA 07 57 34 WDY 16 11 48
	30	CLC	02 49 40; GSC 03 01 04, 06 17 21; WDY 14 40 34
	31	CLC	01 28 13; GSC 05 12 50; WDY 02 36 28, 08 50 11
November	1	CLC	09 09 02 (pP 13), 19 11 10; GLA 16 56 21.1 (S? 57 12.5) 19 49 16; WDY 13 14 31, 17 33 46 (e 50)
	2	WDY	07 04 28
	3	GLA	01 57 07; WDY 04 42 05 (i 14 i 34), 09 06 06, 10 37 09 (e 20), 13 26 29 (e 41), 16 02 05
	4	GLA	16 08 55, 16 15 10
	5	GLA	03 57 06, 14 32 31, 18 16 53.3 (S 17 40.5)
	8	GLA	02 08 30, 02 48 25 (i 32), 05 00 59, 10 58 39 (pP 52)

Violet M. Taylor
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PASADENA PRELIMINARY BULLETIN NO. 181

October - 1967

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

1967

Oct
 1 12 07 20, 22 38 18
 2 00 24 00, 15 07 20, 17 46 46
 3 18 23 13(pP 27, PcP 25 37, S 29 15), 19 29 55, 19 59 32
 4 06 09 31(pP 38, PcP 11 56), 10 21 51.6(S 23 24.6), 17 34 25(SKS 44 59,
 S 45 11, PKKP 52 30)
 5 04 20 55, 09 51 52
 6 07 55 09
 7 01 25 57(pP 26 13, sP 26 19), 08 38 22(i 27), 09 17 13(e 18), 10 44 06
 8 17 13 13, 18 21 18(PcP 24, pP 30, sP 39, SKS 31 24±), 21 30 19
 9 05 24 15.4(S 53.1), 08 37 42, 13 40 50, 14 20 35(pP 21 59), 17 32 54
 (pP 35 08, sP 36 08, S 42 12, sS 46 06±, P'P' 59 37, SKPP' 18 02.09,
 P'P'P' 18 19 30), 18 44 18
 10 03 01 03, 05 28 28, 06 39 14
 11 08 33 21, 16 04 27(i 38), 20 37 42 (pP 39 38)
 12 06 46 13(PcP 46 18, S 55 31, SKPP' 07 15 27), 13 03 30(pP 05 19, pPcP
 05 55, S 11 30, ScS 12 34, P'P' 32 05), 18 46 19(P' 50 10, SKS 56 48)
 14 00 36 32.7(S 40.9), 03 40 26
 15 08 07 44(pP 08 16, PcP 09 51, S 13 21, ScP 13 34, ScS 17 46), 18 40 50
 16 13 31 34
 17 05 17 25, 09 44 33±, 14 20 04(pP 22 23), 21 19 21
 18 01 22 01(PP 24 14, S 30 23), 10 43 00, 10 58 24, 22 19 17, 23 48 05
 20 01 21 36, 16 07 41
 21 02 47 00(pP 12, S 56 41), 05 11 29, 17 14 52, 20 15 50
 22 01 03 26(pP 04 33), 18 57 37
 23 03 04 46, 08 38 47(pP 40 31, S 48 24), 09 52 34
 24 03 25 45(pP 26 48), 11 10 23(SKPP 13 45), 15 26 50
 25 01 12 53(PP 16 56, SKS 23 34, S 24 02, PKKP 29 57, P'P' 37 33), 01 44
 20, 09 30 36, 19 25 18
 26 00 35 55, 12 30 51(i 31 05, S 38 30±), 13 54 03
 (i 17, S 14 01 36±), SKS 17 47 00±
 28 04 56 30
 31 10 26 59

KEW
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 18 MAR 1968
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SUPPLEMENT: Times of P ect., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

- Oct. 1 GLA 12 31 22, 20 06 04(i 10), 22 00 50; WDY 02 49 03(i 15)
- 2 CLC 11 41 07; GLA 00 24 10(pP 26 17, sP 27 17), 16 06 19(PcP 16 09 13); WDY 16 06 57(PcP 16 09 14, i 25)
- 3 CLC 16 36 53; GLA 22 54 13; WDY 03 29 55(i 30 01, i 30 07), 05 29 14(i 19 i 24)
- 4 CLC 17 51 46; GLA 00 08 32(e 38) 00 18 15(i 20), 09 05 54(i 06 02), 10 21 44.5; GSC 02 01 30(e 37), 10 21 28.4; ISA 10 21 40.6 (i 22 02.6, S 23 10.0)
- 5 GLA 16 06 14(e 25), 18 39 39(i 40 21); WDY 09 32 27, 19 00 59 (i 01 06), 20 01 29(pP 44)
- 6 GLA 04 19 59(i 20 06); CLC 01 15 17(e 26)
- 7 CLC 14 46 51(pP 47 02, sP 09), 15 09 38(e 46); 20 05 08; GLA 06 11 32(i 37), 07 20 37; WDY 02 50 12, 11 06 16(pP 28), 21 48 39(e 55); PLM 10 44 09(pP 46 12, sP 47 12)
- 8 CLC 05 40 12(pP 27); GLA 21 19 53(i 20 05), 21 35 02(i 15); GSC 23 53 01; WDY 04 06 55(07 11), 07 50 35, 08 04 59, 09 49 04 (e 12)
- 9 BAR 05 23 44.9(S 24 02.4); GLA 05 23 35.5, 18 44 27(pP 46 38), 21 14 17; GSC 02 53 42; PLM 05 23 50.1, 08 37 38(pP 39 59), 13 41 07(i 29)
- 10 CLC 02 28 51, 03 15 02, 19 18 23(pP 32); GLA 06 59 12(i 25), 08 20 05, 08 37 19, 21 33 11
- 11 GLA 08 03 42(pP 04 08), 16 37 27(i 40); WDY 02 40 37, 06 25 36, 12 08 23, 18 52 27
- 12 GLA 01 06 35; WDY 04 02 44
- 13 GLA 01 19 45.1(i 20 03.7 IS 58.1), 19 32 10(pP 17), 20 01 13; BAR 22 13 40.5(S 14 35.5; CLC 08 21 05, 08 52 35
- 14 WDY 16 21 09(e 28)
- 15 GSC 18 18 40, 23 14 55, 23 47 22; WDY 17 46 09
- 16 GSC 17 38 36; WDY 01 41 52, 22 27 46
- 17 GLA 09 44 01; GSC 14 02 56, 21 23 38; WDY 02 00 50, 13 00 19, 14 58 58
- 18 GLA 04 52 36.2(S 53 03.7) 23 17 26; GSC 06 50 17(e 44)
- 19 GSC 15 58 00; WDY 15 16 14, 16 33 27
- 20 WDY 19 40 37
- 21 GLA 18 51 56; WDY 05 39 04(i 10), 17 54 23
- 22 GLA 23 17 37; WDY 04 51 50(e 52 29), 15 08 21, 18 59 12, 21 45 06 (e 10), 22 29 47
- 23 GLA 11 03 08, 11 33 13; WDY 05 02 51
- 24 WDY 06 39 03
- 25 GLA 09 29 16, 09 30 57(pP 31 08), 15 41 58, 16 16 55, 22 48 25; GSC 02 10 55, 05 54 50(i 55 09), 18 54 37; WDY 02 54 59, 09 08 07
- 26 PLM 20 30 21; CLC 17 51 43(PKPP?)
- 27 GLA 00 46 42; GSC 21 19 49; WDY 06 39 32, 10 19 04(e 14), 15 45 53, 20 54 57
- 28 GLA 18 52 20(i 29, e 39), 19 28 06(i 13), 19 31 33(i 40); WDY 19 09 56
- 29 CLC 03 10 53, 05 36 46(i 37 09), 12 56 16; GLA 07 57 34; WDY 16 11 48
- 30 CLC 02 49 40; GSC 03 01 04, 06 17 21; WDY 14 40 34
- 31 CLC 01 28 13; GSC 05 12:50; WDY 02 36 28, 08 50 11

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CONTINUATION
November 8

Date	Time	Station	Reading	Date	Time	Station	Reading
8	06	eSS	41.8	11	18	iP'	19 52
		e	45.9			i	59
		eL	50.9			eSS	48.8
		eR	55.0			$\Delta = 150^\circ$	
		$\Delta 105^\circ$		11		iP'	20 38 04
8	17	eP	18 06			i	11
		e	16	12		eP	02 38 14
		eS	25 06			e	39
		eL	31.2	12		iP	10 48 16
8	17	eP	31 13			compression	
9	02	iP''	36 30			iS	57 36
		dilatation				eSS	11 02.1
		ePP	37 47			iG	06.5
		eSS	53.0			iR	09.5
		$\Delta 118^\circ$				$\Delta 72^\circ$ Magn.	6 - 6 1/2
9	18	iP	31 35			μ	sec
		ipP	53			PZ	1/4 1
10	13	iP	22 14			PH	1/4 1
10	18	eP'	58 33			MH	6 20
		i	39	12		iP	17 37 30
		eSS	19 27.7			eG	18 01.5
		$\Delta = 150^\circ$				eR	05.1
11	12	iP'	15 47			$\Delta = 90^\circ \pm$	
		i	53	12		iP	22 11 43
		eSS	44.7			i	51
		eG	57.2	13		eP	08 01 24
		eR	13 03.7	13		eP	08 25 48
		$\Delta 150^\circ$		13		iP	16 13 06
11	12	iP'	34 48	13		eP	17 46 51
		i	53	14		iP	05 41 48
		eSS	13 03.7			eSKS	52.1
		eG	16.9			ePS	54.4
		$\Delta 150^\circ$				$\Delta 107^\circ \pm$	
11	12	iP	38 23	14		iP	13 46 38
11	15	iP	25 03			e	47 42

SUPPLEMENT:

Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN) and Woody (WDY).
 29 WDY 07 31 21 (pP 30)
 3 WDY 21 46 45 (pP 47 16), 22 56 22, 23 06 34 (PKKP?)
 4 GSC 05 20 50 (pP 21 06), 11 15 05, 11 31 04; WDY 14 56 52, 14 57 20
 5 WDY 08 14 23, 10 20 03, 15 20 47, 23 38 59
 6 GSC 21 44 03 (i 46 06); WDY 19 10 57
 7 GSC 01 47 23 (e 29), 02 14 43 (i 50); WDY 1P 22 15 07
 8 GSC 17 11 42, 19 19 31 (e 20 05); WDY 02 32 45 (e 50), 06 21 38
 (PP 25 58), 13 23 25, 19 06 38
 9 GLA 02 32 54 (P'' 36 35, PP 38 08, PKKP 46 44), 07 54 44 (pP 58),
 22 34 24; WDY 20 22 52 (e 57)

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CONTINUATION
 November 15

	iP	21 43 44	November 21	iP	05 31 17.5
	compression			eS	32 05.8
	i	43 58		Magn. 4.7±	
	iS	53 32	21	iP	17 13 19
	iSS	58.7		i	25
	iSSS	22 02.5		eR	34.0
	iG	04.5	22	iP	15 32 04
	iR	08.5		i	21
	Δ = 79° Magn. 6-6¼			eS	42 39
		μ sec		eG	56.3
	PZ	0.6 2		eR	59.8
	SH	3 20		Δ = 89°	
	MH	8 20			μ sec
17	eP	05 09 21		MH	4 20
	eS	17 53	23	eP ¹¹	08 55 09
	eG	24.5		i	13
	iR	28.4		iPP	57 23
	Δ 64° Magn. 6			iSKP	58 30
		μ sec		ePS	09 08.3
	MH	10 20		eSS	15.4
	MZ	10 20		eG	31.2
17	i(P)	09 32 21		iR	38.4
	i(pP)	37		Δ 130° Magn. 6 3/4-7	
	eR	10 00.5			μ sec
18	iP	12 23 30		MH	20 20
	iPcP	26 10		MZ	15 20
	iScP	29 53	23	eP	13 52 16
	eL	32.6		i	21
	Δ = 34°			i	26
18	iP	12 32 44		iS	14 00 28
19	eP	12 19 15±		iSS	04 36
	eS	28 47		eL	06.7
	eG	39.1		Δ 61° Magn. 6¼	
	eR	42.5			μ sec
	Δ = 72°±			PZ	0.3 2
		μ sec		MH	14 20
	SH	1½ 20	24	iP	05 53 17
	MH	3 20		i	27
	MZ	2 20	24	e	54 52
19	iP	17 42 07		iP	13 59 04
	eSKS	52 32		eL	14 01.1
	eS	53 03	24	iP	22 17 45
	i	54.1	25	iP	10 44 02
	iG	18 06.3	26	eP	00 21 16
	eR	09.6		e(S)	31 49
	Δ 89° Magn. 6¼			e	33.4
		μ sec		eSS	38.1
	PZ	3 20		e(G)	44.4
	MH	10 20		i	45.7
	MZ	15 20		eR	50.0
				Δ 90°±	

KEW OBSERVATORY
 - 5 DEC 1967
 RICHMOND, SURREY.

Seismological Laboratory
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxiliary stations as noted)
November 30, 1967

CONTINUATION

November 26	iP	03 12 54	November 27	iP	08 30 33
	i	13 14		ipP	46
	i	40		eL	55.4
26	iP	08 17 34	28	iP	02 49 30
	i	46		ipP	50 02
	eS	22.5		isP	15
	e	24.9		ePP	52 55
	eR	26.3		epPP	53 26
26	eP	12 08 36		iS	59 58
	e	47		eG	03 12.8
27	e(P)	04 33 32		eR	17.0
	eL	38.4			μ sec
27	eP	05 12 39		PZ	0.15 $1\frac{1}{2}$
	e	13 08		PPZ	0.15 $1\frac{1}{2}$
	eL	15.4	28	eP	03 30 09
27	iP	05 25 09	29	iP	13 36 12
	ipP	26			
	eR	51.0			

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY)

November 10	CLC	20 59 12 (e 21 i 37); GLA 03 39 31 (pP 55), 04 02 07, 04 50 59, 06 01 09, 18 37 03 (pP 23); WDY 00 07 12 (e 31 e 44)
11	CLC	19 43 04 (e 11); GLA 06 51 18, 12 12 30, 18 02 15, 19 27 31
	GSC	02 48 01; WDY 02 45 03, 10 50 22, 12 20 35, 12 23 26, 13 41 49 (pP 59)
12	CLC	06 05 30 (e 36 i 42)
13	GLA	02 14 42, 06 40 09, 16 49 53.5 (S 51 03.0); GSC 23 58 35
14	GSC	19 56 11, 23 30 38
15	CLC	19 40 36; GLA 07 15 55 (i 17 00), 18 46 05, 20 55 41
16	CLC	13 18 11 (e 18), 14 25 35 (i 39 i 43); GLA 06 16 35, 13 35 34, 22 38 50 (i 56); GSC 15 10 08 (i 14 i 20); WDY 16 42 13, 19 02 15 (i 21), 22 38 37 (i 44, i 41 20)
17	GLA	08 00 18 (i 35 i 45), 10 22 30; GSC 18 42 32 (pP 43 05)
	WDY	01 05 09, 01 43 08, 05 35 44, 05 39 51 (i 40 00)
18	CLC	00 03 22, 07 29 06; GSC 00 50 41, 12 21 40, 21 53 24
19	GLA	07 07 41, 12 19 12 (pP 24), 17 24 19 (i 40), 18 02 17, 19 18 55; GSC 15 52 29
20	CLC	13 48 12; GLA 02 23 02, 10 25 56, 11 00 55 (i 01 09)
21	GLA	00 45 08; CLC 20 12 14; GSC 05 31 03.2, 22 00 57; ISA 05 30 54.1 (S 31 19.4); TIN 05 30 30.6 (iS 36.9)
22	CLC	05 06 00, 09 44 15, 16 53 29; GLA 15 32 23 (i 30 i 34) 15 45 11 (pP 46 45); GSC 04 45 14 (i 43), 04 50 42 03 38 19 (i 24 i 31), 10 51 53
	ISA	
23	CLC	03 27 42 (e 49)
24	CLC	13 54 13
25	GLA	13 11 42, 19 03 44 (S 05 23)
27	GLA	05 12 01.1 (i 40.6, iS 14 56.0), 11 21 07, 21 59 20; GSC 04 33 08 (i 16)
28	GLA	02 41 52 (e 44 23)
29	GLA	01 32 19, 07 32 31

Violet M. Taylor
Seismological Assistant

PASADENA PRELIMINARY BULLETIN NO. 182

November-1967

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

1967

Nov.

- 1 15 11 52, 16 19 46, 16 41 27, 16 57 07(S 58 19)
 2 03 44 16, 07 45 10(SKS 55 34)
 3 08 25 01, 22 56 19
 4 10 28 13(pP 30 13, S 37 22, sS 40 48±, SKPP' 58 00), 12 03 39, 13 38
 38(pP 49, S 48' 25), 14 42 02(pP 18, S 51 24±), 14 57 27, 15 20 39,
 16 35 56(e 36 08, i 20, PcP 37 07, ScP 40 52, S 43 21)
 6 21 45 56
 7 03 36 57(S 43 10), 04 00 35(pP 47, S 10 42)
 8 03 17 34(pP 49, PP 18 32, S 22 59), 07 23 21(pP 33), 17 18 06(S 25 06),
 17 31 13
 9 02 36 30(PP 37 47), 18 31 35(pP 53)
 10 13 22 14, 18 58 33
 11 12 15 47, 12 34 48, 15 25 03, 18 19 52; 20 38 04
 12 02 38 14, 10 48 16(S 57 36), 17 37 30, 22 11 43
 13 08 01 24, 08 25 48, 16 13 06, 17 46 51
 14 05 41 48(SKS 52 06±), 13 46 38
 15 21 43 44(i 58, S 53 32)
 17 05 09 21(17 53), 09 32 21(pP 37)
 18 12 23 39(PcP 26 10, ScP 29 53) 12 32 44
 19 12 19 15±(S 28 47), 17 42 07(SKS 52 32, S 53 03)
 21 05 31 17.5(S 32 05.8), 17 13 19
 22 15 32 04(i 21, S 42 39)
 23 08 55 09(PP 57 23, SKP 58 30), 13 52 16(S 14 00 28)
 24 05 53 17(i 27, e 54 52), 13 59 04, 22 17 45
 25 10 44 02
 26 00 21 16(S 31 49) 03 12 54, 08 17 34(i 46, S 22 30±), 12 08 36(e 47),
 15 21 26
 27 04 33 32, 05 12 39, 05 25 09(pP 26), 08 30 33(pP 46)
 28 02 49 30(pP 50 02, sP 15, PP 52 55, pPP 53 26, S 59 58), 03 30 09
 29 13 36 12
 30 07 06 28, 07 37 15(PP 41 07, PS 50 04), 15 58 36




SUPPLEMENT: Times of P ect., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

- Nov.
 1 CLC 09 09 02(pP 13), 19 11 10; GLA 16 56 21.1(S? 57 12.5), 19 49 16; WDY 13 14 31, 17 33 46(e 50)
 2 WDY 07 04 28
 3 GLA 01 57 07; WDY 04 42 05(i 14 i 34), 09 06 06, 10 37 09(e 20), 13 26 29(e 41), 16 02 05, 21 46 45(pP 47 16), 22 56 22, 23 06 34 (PKKP?)
 4 GLA 16 08 55, 16 15 10; GSC 05 20 50(pP 21 06), 11 15 05, 11 31 04; WDY 14 56 52, 14 57 20
 5 GLA 08 57 06, 14 32 31, 18 16 53.3(S 17 40.5); WDY 08 14 23, 10 20 03, 15 20 47, 23 38 59
 6 GSC 21 44 03(i 46 06); WDY 19 10 57
 7 GSC 01 47 23(e 29), 02 14 43(i 50); WDY 22 15 07
 8 GLA 02 08 30, 02 48 25(i 32), 05 00 59, 10 58 39(pP 52); GSC 17 11 42, 19 19 31(e 20 05), 20 02 35; WDY 02 32 45(e 50), 06 21 38(PP 25 58), 13 23 25, 19 06 38
 9 GLA 02 32 54(P^{II} 36 35, PP 38 08, PKKP 46 44), 07 54 44(pP 58), 22 34 24; WDY 20 22 52(e 57)
 10 CLC 20 59 12(e 21 i 37); GSC 07 46 55; GLA 03 39 31(pP 55), 04 50 59, 06 01 09, 18 37 03(pP 23); WDY 00 07 12(e 31 e 44)
 11 CLC 19 43 04(e 11); GLA 06 51 18, 12 12 30, 18 02 15, 19 27 31; GSC 02 48 01; WDY 02 45 03, 10 50 22, 12 20 35, 12 23 26, 13 41 49(pP 59)
 12 CLC 06 05 30(e 36 i 42)
 13 GLA 02 14 42, 06 40 09, 16 49 53.5(S 51 03.0); GSC 23 58 35
 14 GSC 19 56 11, 23 30 38
 15 CLC 19 40 36; GLA 07 15 55(i 17 00), 18 46 05, 20 55 41
 16 CLC 13 18 11(e 18), 14 25 35(i 39 i 43); GLA 06 16 35, 13 35 34, 22 38 50(i 25); GSC 15 10 08(i 14 i 20); WDY 16 42 13, 19 02 15 (i 21), 22 38 37(i 44, i 41 20)
 17 GLA 08 00 18(i 35 i 45), 10 22 30; GSC 18 42 32(pP 43 05); WDY 01 05 09, 01 43 08, 05 35 44, 05 39 51(i 40 00)
 18 CLC 00 03 22, 07 29 06; GSC 00 50 41, 12 21 40, 21 53 24
 19 GLA 07 07 41, 12 19 12(pP 24), 17 42 19(i 40), 18 02 17, 19 18 55; GSC 15 52 29; WDY 02 14 51, 02 24 58
 20 CLC 13 48 12; GLA 02 23 02, 10 25 56, 11 00 55(i 01 09)
 21 GLA 00 45 08; CLC 20 12 14; GSC 05 31 03.2, 22 00 57; ISA 05 30 54.1 (S 31 19.4); TIN 05 30 30.6(iS 36.9); WDY 01 42 00, 05 30 53.5 (S 31 17.0)
 22 CLC 05 06 00, 09 44 15, 16 53 29; GLA 15 32 23(i 30 i 34), 15 45 11 (pP 46 45); GSC 04 45 14(i 43), 04 50 42; ISA 03 38 19(i 24 i 31), 10 51 53; WDY 02 51 03(e 07)
 23 CLC 03 27 42(e 45)
 24 CLC 13 54 13; WDY 18 39 46(pP 54), 20 11 41(e 55)
 25 CLC 04 20 07; GLA 13 11 42, 19 03 44(S 05 23); GSC 02 13 35(PcP 15 16); WDY 22 01 39
 26 CLC 08 24 01; WDY 08 28 24, 11 12 28
 27 CLC 09 26 11(i 19), 15 54 24; GLA 05 12 01.1(i 40.6, iS 14 56.0), 11 21 07, 21 59 20; GSC 04 33 08(i 16); WDY 00 17 54(e 18 05) (pP 26 36); WDY 20 25 51(i 58)
 28 GLA 02 41 52(e 44 23); GSC 04 24 46(pP 26 36); WDY 20 25 51(i 58)
 29 GLA 01 32 19, 07 32 31
 30 GLA 18 14 30(pP 43, PcP 15 41)

Violet M. Taylor
 Seismological Assistant

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62.0



SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 20, 1967

ADDITIONAL
 November 26
CONTINUATION
 November 30
 30

IP 15 21 26 December 5
 IP 07 06 28
 eP 07 37 15
 ePP 41 07
 ePS 50 04
 ISS 55.8
 IL 08 04.4
 IR 09.4
 Δ 96° Magn. 6½

	μ	sec	
PZ	0.2	1	6
MH	20	20	6
MZ	20	20	7
eR	11	58.4	
IP	15	58 36	8
IP	14	07 19	
ipP		52	8
isP		08 10	9
IS		15 44	10
isS		16 40	
ISSS		23.0	
IR		26.4	
eP'P'		36 19	

Δ 64° Depth 135 km
 Magn. 6½

	μ	sec	
PZ	½	1½	
PH	¼	1	10
SH	10	20	
eP	00	34 23	10
eL		36.9	

Δ 17° ±

	μ	sec	
PZ	¾	2	10
PH	1½	2	
MH	30	20	
IP	08	25 55	
IP	08	51 35	
IL		53.8	

Δ = 13° ±

	μ	sec	
PZ	0.1	2	11
MH	10	20	
IP	22	16 54	12
eP	22	26 29	
IP	09	13 10	
IP	11	10 50.5	
IS		11 55	

Magn. 5½

eP 18 05 47
 IS 06 58
 Magn. 5¼
 IP 18 36 50.5
 IS 38 03.2
 Magn. 5½
 IP 02 59 57
 iPcP 03 02 26
 iScP 06 07
 Δ = 33°

IP	03 16 09	6
IP	05 14 52	6
IP	08 14 03	7
eP	09 52 34	
e	53 06	
IP	02 13 19	8
ipP	28	
eR	11 30.2	8
IP	05 39 43	9
IP	12 08 51.2	10
eS	10 30	

Δ 9°
 Off the north coast.
 Magnitude 5¼ - 5½
 Torsion seismogram
 trace amplitudes:

PH 0.5 mm
 LH 0.9 mm
 IP 12 35 58
 Δ = 9° Aftershock
 IP 19 32 18.4
 I 52.4
 IS 34 48.4

Project Gasbuggy
 eP'' 23 10 28
 ePP 12 38
 ISS 29 46
 eSSS 34.3
 eR 55.6

Δ 126° Magn. 6½

	μ	sec	
MH	12	20	
eP	19	52 41	
epP		49	
eP	08	19 07	
eS		29 40	
eSS		35.1	
eG		43 12	
eR		46.6	

Δ 91°

	μ	sec	
MH	2	20	

KEW OBSERVATORY
 - 1 JAN 23
 RICHMOND, SURREY.

30
 30
 December 1

4

4

4

4

5

5

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SEISMOLOGICAL LABORATORY
 220 North San Rafael Avenue
 Pasadena, California
 PROVISIONAL READINGS AT PASADENA
 (and auxiliary stations as noted)
 December 20, 1967

CONTINUATION

December 13	ipP	10 49 27		December 16	iP	21 04 11
13	iP	11 08 38			ipP	24
13	iP	19 19 57.5			i	43
14	eP	03 32 22			eS	12.2
14	iP	18 35 10			eSS	16.6
15	iP	19 59 40			eG	19.2
	ipP	58			eR	21.9
16	iP	03 28 23			Δ 62°	Depth 50 km
	e	48		18	eP	10 34 50
				18	iP	14 17 22
				19	iP	08 54 12

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY)

November 19	WDY	02 14 51, 02 24 58				
21	WDY	01 42 00, 05 30 53.5 (S 31 17.0)				
22	WDY	02 51 03 (e 07)				
24	WDY	18 39 46 (pP 54), 20 11 41 (e 55)				
25	CLC	04 20 07; GSC 02 13 35 (PcP 15 16); WDY 22 01 39				
26	CLC	eP 08 24 01; WDY 08 28 24, 11 12 28				
27	CLC	09 26 11 (i 19), 15 54 24; WDY 00 17 54 (e 18 05)				
28	GSC	04 24 46, 04 26 36; WDY 20 25 51 (i 58)				
30	GLA	18 14 30 (pP 43, PcP 15 41)				
December 1	CLC	21 37 24; GLA 07 59 14; GSC 22 51 29 (e 37); WDY 21 40 12				
2	GSC	20 19 09 (i 24); WDY 16 49 44 (i 57 e 50 05)				
3	ISA	11 08 09, 11 31 49				
4	GSC	04 17 33; CLC 22 55 57; WDY 12 06 22 (i 26 i 32), 21 41 55				
5	GLA	06 45 24.5, 07 34 14.5, 09 55 34.0, 11 10 11.9, 12 41 14.4, 13 16 14.6, 14 50 32.4, 18 05 06.2, 18 12 48.9, 18 36 11.1;				
	PLM	21 13 10 (i 13 13, i 13 27); WDY 04 00 04, 07 18 07, 17 39 36, 21 24 14				
6	GLA	05 41 10.7; GSC 05 00 17, 22 41 37 (i 45 i 53); PLM 03 39 38; WDY 05 00 11 (i 03 31)				
7	GLA	10 02 12 (i 28, i 49, i 04 30); GSC 07 31 54 (i 32 11)				
8	CLC	06 17 17, 12 04 59; GLA 10 10 16, 23 50 08.6				
9	GLA	11 03 38; GSC 05 40 01 (i 42 05); ISA 08 05 44 (e 51), 09 36 41, 18 35 23 (i 28); WDY 01 13 49, 22 18 12 (pP 25)				
10	GLA	19 31 48.7; CLC 19 32 05.2; CWC 19 32 10.7; GSC 12 08 51.7, 12 35 57, 19 31 58.0 (i 32 29.2); ISA 08 21 16, 09 43 45, 12 08 34.7, 12 35 40, 19 32 15.8; PLM 19 32 07.5; RVR iP 19 32 10.0; SYP 12 08 34.4, 12 35 40, 19 32 37.3				
11	CLC	06 17 17, 10 28 38 (i 59), 14 25 33 (i 26 09), 22 20 20; GLA 22 49 36 (i 52 58)				
12	GLA	06 37 46, 08 19 13 (i 18); CLC 04 37 51 (e 38 02)				
13	GLA	10 49 11 (pP 49 46, sP 50 01); WDY 10 15 03, 17 58 19 (i 59 46), 21 46 11				
14	WDY	01 04 27, 11 33 50, 20 28 42, 23 39 38				
15	WDY	01 04 28, 08 25 48 (i 27 06)				

Violet M. Taylor
 Seismological Assistant

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
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January 4, 1968

1967
CONTINUATION
December 20

20	iP	11 53 23
20	iP''	17 20 15
	i	50
21	iP	02 36 45
	i	37 02
	iS	46 14
	iSS	50.7
	iL	56.3
	iR	03 00.6
	eP'P'	04 40
	Δ71° Magn. 7	
		μ sec
	PZ	1/2 1
	PH	1/4 1
	SH	5 5
	MH	70 20
	MZ	40 20
21	iP	08 01 34
	e	45
	i(pP)	51
21	iP	11 46 19
21	iP	16 22 56
	i	23 03
21	eP	17 58 41
	i	46
	eG	18 21.7
	eR	26.4
22	iP	23 21 32
	eR	47.2
23	iP	02 50 05
	e	50
23	iP	13 36 23
	i(pP)	36
	e(PS)	48.7
	eG	14 01.7
	eR	05.3
	Δ 95°	
		μ sec
	PZ	0.15 1
	MH	3 1/2 20
	MZ	4 20
23	iP	16 14 58
24	iP	02 36 18
24	eP	08 45 12
	eR	09 06.9
24	iP	20 12 31
	i!	33
	iS	20 08
	eScS	22.5
	iG	25.1
	Δ 54° Magn. 6 3/4-7	

December 24

	PZ	μ sec
	PH	2 1/2 2
	MH	2 2
	MH	50 20
24	iP	21 41 53
	Δ 54° Magn. 6 1/2	
		μ sec
	PZ	1/2 1 1/2
25	eP	01 36 34
	eS	47 04
	e	48.4
	eSS	52.4
	eP'P'	02 02 13
	Δ 88° Magn. 6 3/4-7	
		μ sec
	PZ	1 3
	MH	50 20
	MZ	50 20
25	iP	10 52 50
	dilatation	
	ipP	53 04
	eS	11 02 10
	iS	32
	eSS	06.9
	eG	10.9
	eR	15.8
	Δ 74° Depth 50 km	
	Magn. 6 3/4	
		μ sec
	PZ	3/4 1 1/2
	SH	3 6
25	eP	12 22 35
	(short-period)	
	e	22 57
26	eP	09 06 03
	eS?	18.0
	Δ = 88° ?	
26	iP	09 32 52
	i	33 01
	iS	36 00
	eL	36.1
	Δ = 15°	
		μ sec
	PZ	0.15 1 1/2
	MH	9 20
26	eP	10 43 54
	i	44 03
	i(S)	46.4
	eL	47.5
	Δ = 15°	

OBSERVATORY
11 JAN 1968
RICHARDSON
SUPERVISOR

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxillary stations as noted)
January 4, 1968

1967
CONTINUATION
December 26
26

	eP	14 47 11
	iP	22 32 58
	i	33 06
	i	11
27	eP	00 40 21
	eL	01 08.5
27	eP	02 01 06
	eG	24.6
	eR	29.3
27	eP	04 41 39
	eS	51.6
	eL	05 07.0
	eR	09.5
	$\Delta = 90^\circ \pm$	
27	iP	06 27 26
27	iP	09 29 11
	dilatation from southeast	
	i	29 28
	i	43
	iS	38 28
	iSS	42.9
	eP'P'	56 41
	e	58
	$\Delta = 72^\circ$	
	Magnitude at least 7, possibly $7\frac{1}{2}$. Surface waves small due to effect of Pacific boundary	
		μ sec
	PZ	3 1
	PH	$1\frac{1}{2}$ 1
	SH	5 4
	MH	4 20
27	iP	10 05 21
	e	51
27	iP	16 34 45
	dilatation	
	ePP	37 41
	iS	44 38
	i	45.6
	eSS	49.3
	iG	55.0
	iR	58.0
	$\Delta 75^\circ$ Mag. 6	

December 27

		μ	sec
	PZ	0.2	2
	PH	0.1	1
	PPZ	0.1	$1\frac{1}{2}$
	SH	3	15
	MH	5	20
	MZ	5	20
	eP	06 29 20	
	dilatation from northwest		
	i	29 23	
	iG	31.9	
	iR	32.6	
	$\Delta 15^\circ$		
	eP	07 04 21	
	e	27	
	iP	07 04 45	
	i	48	
	iG	07.4	
	iR	08.0	
	$\Delta 15^\circ$		
	eP	07 40 07	
	iP	17 42 15	
	eP	22 14 39	
	iL	17.1	
	$\Delta = 15^\circ$		
	eP	00 18 55	
	eL	21.3	
	$\Delta = 15^\circ$		
	iP	20 41 32	
	iS	51 31	
	eL	21 01.6	
	eR	04.1	
	$\Delta = 83^\circ$		
		μ	sec
	PZ	0.1	1
	MH	20	20
	MZ	27	20
	eP	22 35 08	
	iP	02 25 59	
	eP	04 32 20	
	iP	08 06 39	
	eL	08 28	
	iP	02 37 29	
	iP	14 12 16	

SEISMOLOGICAL LABORATORY
220 North San Rafael Avenue
Pasadena, California
PROVISIONAL READINGS AT PASADENA
(and auxillary stations as noted)
January 4, 1968

1967
CONTINUATION
December 31

iP	15 18 40	December 31	iP	23 48 56.5
ipP	50		iS	49 28.7
oL	43.7		Magn.	4.5
eR	46.9			

SUPPLEMENT: Times of P for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Goldstone (GSC), Glamis (GLA), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY).

December 15 CLC 19 25 02(i 33), 19 51 56; GSC 19 25 03(i 27)

16 GLA 13 26 12; GSC 01 44 15(pP 25), 22 10 06

17 CLC 21 05 54

18 CLC 10 22 37(i 53), 17 25 26.5; CWC 17 25 19.7; GLA 06 37 16; GSC 17 25 37.5; ISA 17 25 18.5; SYP 17 25 16.6; WDY 02 51 23, 17 25 13.4; TIN 17 25 18.1(iS 53.2)

19 GSC 14 48 55(i 49 12); ISA 23 04 18

20 ISA 02 21 26; GSC 23 21 05; WDY 09 01 19(pP 55)

21 CLC 16 13 36(i 41 i 59), 16 26 56(i 27 01 i 09) GSC 05 28 51(pP 29 29)

22 GSC 00 02 13(i 33), 12 56 51; ISA 05 30 00

24 GLA 04 32 46, 20 35 07

25 GLA 11 20 44(e 56)

26 GLA 19 50 00; GSC 09 51 53(e 52 00), 09 53 05(i 14), 10 31 14 (i 22), 10 42 12(i 19), 10 52 36(i 45), 23 31 01

27 CLC 03 57 39; GLA 07 02 10, 10 14 28(i 38); WDY 10 39 48, 19 38 02, 22 26 06(e 10, 19)

Violet M. Taylor
Seismological Assistant

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PASADENA PRELIMINARY BULLETIN NO. 183

December-1967

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

1967
Dec.
1 14 07 19(pP 52, sP 08 10, S 15 44, sS 16 40, P'P' 36 19)
2 00 34 23(L 36 54±)
4 08 25 55, 08 51 35(L 53 48±), 22 16 54, 22 26 29
5 09 13 10, 11 10 50.5(S 11 55), 18 05 47(S 06 58), 18 36 50.5(S 38 03.2)
6 02 59 57(PcP 03 02 26, ScP 06 07), 03 16 09, 05 14 52, 08 14 03
7 09 52 34(e 53 06)
8 02 13 19(pP 28)
9 05 39 43
10 12 08 51.2(S 10 30), 12 35 58, 19 32 18.4(Project Gasbuggy), 23 10 28
(PP 12 38, SS 29 46)
11 19 52 41(pP 49)
12 08 19 07(S 29 40)
13 pP 10 49 27, 11 08 38, 19 19 57.5
14 03 32 22, 18 35 10
15 19 59 40(pP 58)
16 03 28 23(e 48), 21 04 11(pP 24, i 43, S 12 12±)
18 10 34 50, 14 17 22, 17 25 33.1
19 08 54 12
20 11 53 23, 17 20 15(i 50)
21 02 36 45(i 37 02, S 46 14, P'P' 03 04 40), 08 01 34(e 45 i 51), 11 46 19,
16 22 56(i 23 03), 17 58 41(i 46)
22 23 21 32
23 02 50 05(e 50), 13 36 23(pP 36), 16 14 58
24 02 36 18, 08 45 12, 20 12 31(S 20 08), 21 41 53
25 01 36 34(S 47 04, P'P' 02 02 13), 10 52 50(pP 53 04, S 11 02 10),
12 22 35(e 57)
26 09 06 03(S? 18 00±), 09 32 52(i 33 01, S 36 00), 10 43 54, 22 32 58
27 00 40 21, 02 01 06, 04 41 39(S 51 24±), 06 27 26, 09 29 11(i 28,
i 43, iS 38 28, P'P' 56 41), 10 05 21(e 51), 16 34 45(PP 37 41,
S 44 38)
28 06 29 20, 07 04 21(e 27), 07 04 45, 07 40 07, 17 42 15, 22 14 39
(L 17 06±)
29 00 18 55, 20 41 32(S 51 31), 22 35 08
30 02 25 59, 04 32 20, 08 06 39
31 02 37 29, 14 12 16, 15 18 40(pP 50), 23 48 56.5(S 49 28.7)

KEW
OBSERVATORY
16 MAY 1968
RICHMOND,
SURREY.

SUPPLEMENT: Times of P ect., for additional shocks recorded at Barrett (BAR), China Lake (CLC), Cottonwood (CWC), Glamis (GLA), Goldstone (GSC), Isabella (ISA), Palomar (PLM), Tinemaha (TIN), and Woody (WDY), Santa Ynez Peak (SYP), Riverside (RVR), Santa Barbara (SBC). *

Dec. 1 CLC 21 37 24; GLA 07 59 14; GSC 22 51 29(e 37); WDY 21 40 12
 2 GSC 20 19 09(i 24); WDY 16 49 44(i 57, e 50 05)
 3 ISA 11 08 09, 11 31 49
 4 GSC 04 17 33; CLC 22 55 57; WDY 12 06 22(i 26 i 32), 21 41 55
 5 GLA 06 45 24.5, 07 34 14.5, 09 55 34.0, 11 10 11.9, 12 41 14.4, 13 16 14.6,
 14 50 32.4, 18 05 06.2, 18 12 48.9, 18 36 11.1; PLM 21 13 10
 (i 13 13, i 13 27); WDY 04 00 04, 07 18 07, 17 39 36, 21 24 14
 6 GLA 05 41 10.7; GSC 05 00 17, 22 41 37(i 45 i 53); PLM 03 39 38;
 WDY 05 00 11(i 03 31)
 7 GLA 10 02 12(i 28, i 49, i 04 30); GSC 07 31 54(i 32 11)
 8 CLC 06 17 17, 12 04 59; GLA 10 10 16, 23 50 08.6
 9 GLA 11 03 38; GSC 05 40 01(i 42 05); ISA 08 05 44(e 51), 09 36 41,
 18 35 23(i 28); WDY 01 13 49, 22 18 12(pP 25)
 10 GLA 19 31 48.7; CLC 19 32 05.2; CWC 19 32 10.7; GSC 12 08 51.7,
 12 35 57, 19 31 58.0(i 32 29.2); ISA 08 21 16, 09 43 45, 12 08 34.7,
 12 35 40, 19 32 15.8; PLM 19 32 07.5; RVR iP 19 32 10.0;
 SYP 12 08 34.4, 12 35 40, 19 32 37.3
 11 CLC 06 17 17, 10 28 38(i 59), 14 25 33(i 26 09), 22 20 20; GLA 22 49 36
 (i 52 58)
 12 GLA 06 37 46, 08 19 13(i 18); CLC 04 37 51(e 38 02)
 13 GLA 10 49 11(pP 49 46, sP 50 01); WDY 10 15 03, 17 58 19(i 59 46),
 21 46 11
 14 WDY 01 04 27, 11 33 50, 20 28 42, 23 39 38
 15 CLC 19 25 02(i 33), 19 51 56; GSC 19 25 03(i 27); WDY 01 04 28,
 08 25 48(i 27 06)
 16 GLA 13 26 12; GSC 01 44 15(pP 25), 22 10 06
 17 CLC 21 05 54
 **18 CLC 10 22 37(i 53), 17 25 26.5; CWC 17 25 19.7; GLA 06 37 16;
 GSC 17 25 37.5; ISA 17 25 18.5; SYP 17 25 16.6; WDY 02 51 23,
 19 GSC 14 48 55(i 49 12); ISA 23 04 18
 20 ISA 02 21 26; GSC 23 21 05; WDY 09 01 19(pP 55)
 21 CLC 16 13 36(i 41 i 59), 16 26 56(i 27 01 i 09); GSC 05 28 51(pP 29 29)
 22 GSC 00 02 13(i 33), 12 56 51; ISA 05 30 00
 24 GLA 04 32 46, 20 35 07; GSC 11 44 43
 25 GLA 11 20 44(e 56)
 26 GLA 19 50 00; GSC 09 51 53(e 52 00), 09 53 05(i 14), 10 31 14(i 22),
 10 42 12(i 19), 10 52 36(i 45), 23 31 01
 27 CLC 03 57 39; GLA 07 02 10, 10 14 28(i 38); WDY 10 39 48, 11 00 15
 (pP 44, sP 53), 19 38 02, 22 26 06(e 10, e 19)
 28 GSC 07 34 27(i 33), 07 54 25, 08 08 08(i 13), 08 50 56, 17 31 51
 (i 32 01); PLM 00 30 28(e 36); WDY 00 09 53(i 10 31), 01 55 05
 (e 10), 05 38 16, 15 59 30
 29 GLA 02 28 45; GSC 12 46 02, 21 51 53(pP 52 04); WDY 09 50 11,
 14 39 31
 30 GSC 01 08 07(e 16), 02 39 40, 02 53 57, 03 44 09(i 13), 13 16 11
 31 CLC 15 44 05, 20 16 33; FTC 23 48 42.1; GSC 19 18 58, 23 06 16;
 ISA 23 48 43.2; SBC 23 48 43.3(S 49 09.8); SYP 23 48 40.9;
 WDY 23 48 38.3(S 56.3)

** WDY 17 25 13.4; TIN 17 25 18.1(iS 53.2)

March 6, 1968

* Fort Tejon (FTC)

Violet M. Taylor
Seismological Assistant