

APIA PRELIMINARY SEISMIC BULLETIN.

1957 JULY.



Date.	Phase.	Comp.	Time	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks
✓ 1	eP e e(S)		02 24 44 26 20 24	0.5 2.0			Tonga Is. Near 22½ S 176 W O=02 22.5
✓ 3	P i e(S) e e		06 05 23 07 31 35 37 12 01	1.4 0.4 0.5 1.0	½ 1 ½ 1		Possibly Fiji region
2	e(P)		08 26 53 28 31	0.2 0.3			
4	P S		06 26 19 39	5 26			
6	eP eS		10 37 41 39 23	0.5			
✓ 5	e e		12 38 01 39 23	0.3 0.3	1	16	Kermadec Is. (USCGS)
✓ 7	e		16 17 56	0.5	2	32½	Solomon Is. (USCGS) (P) ½ mu, 2 sec.
8	iP S		14 18 31 19 24	3 4			
✓ 13	iP (S)		09 32 36 56	10± 57±		1¾	Samoa Is. (USCGS.) iP to SW Felt Apia.
✓ 13	iP e S		13 59 13 20 34	2 5 30		1¾	Samoa Is. (USCGS.) iP to SW.
9	P e S		14 24 52 57 25 02	2 5 30			
✓ 14	P e e iS i eT		06 27 09 26 29 32 34 37 37 18	3.0 4.5 2 5 13	½ 1½ ½	14½	Tonga Is. (USCGS.) P to NE and NW. P 1½ mu, ½ sec. S 6½ mu, ½ sec.
✓ 14	eP i i(S) eT		08 14 40 17 30 33 25 18	0.8 2.5M	2 2/3	17	Kermadec Is. (USCGS.) P 3 mu, 2 sec. (S) 1½ mu, 2/3 sec.
✓ 14	eP i e e(S) eT		09 44 09 34 45 16 32 50 52	0.9 0.5 0.8 1.3	½	6¾	Tonga Is. (USCGS.) S ½ mu, ½ sec.
✓ 17	i(P) e(S) e e		11 15 04 19 05 32 40	3.0 0.5 0.5 0.4	2 6 10 8	21	Santa Cruz Is. (USCGS.) i(P) to NE and SE (P) 11mu, 2 sec. (S) 17 mu, 6 sec.

JULY 1957 (Continued.)

Date.	Phase.	Comp.	Time.	W/A Trace Amp.-mm.	Period Secs.	Dist. Degs.	Remarks.
✓20	P e S		15 40 25 41 22 28	3½ 10		6	Tonga Is. Near 19S 175W. O=15 39.0 h=100 km ±
✓22	eP e(S)		06 21 34 25 03	0.7 0.7	2 ½	20½	Kermadec Is. (USCGS.) P 2½mu, 2 sec. (S) ½mu, ½ sec.
✓22	eP e(S)		06 26 33 30 00	0.5 0.4	2/3 2/3	21	Kermadec Is. (USCGS.)
✓22	eP e e e		19 40 23 42 29 36 53 35	0.5	½	14½	Kermadec Is. (USCGS.)
✓23	eP		06 25 07	0.6	2	18 2/3	Loyalty Is. (USCGS.) P 2½mu, 2sec.
✓23	e(P) e(S)		13 33 07 35 28	0.5	½	13½	Kermadec Is. (USCGS.)
✓24	eP		10 01 21	0.3	2	18½	New Hebrides (USCGS.) P 1mu, 2sec.
✓24	eP i e e		11 06 51 56 13.0 14 14	0.8 0.1 0.1	2 9 9	19½	New Hebrides (USCGS.) P 3mu, 2sec.
24	eP S		19 57 51 58 33	8			
25	P S		10 41 00 52	0.6			
25	P eS		11 08 48 10 19	0.5			
✓26	eP		06 54 44	0.2	2	22½	New Zealand (USCGS.) P 1mu, 2sec.
26	P i i(S) i		12 17 55 18 27 29 32	1.2 1.0 2.5 5			
27	e(P) e e		13 41 54 42 22 44 18	0.3 0.4 0.3	1 2 2		
✓27	eP eS e e		14 47 12 48 25 51 25 54 12	0.5 0.8 0.2 0.6	1 2 2 2/3	6¾	Tonga Is. (USCGS.)
28	P eS		20 09 12 40	4.2 13			

JULY 1957 (Continued.)

Date.	Phase.	Comp.	Time.	W/A Trace Amp.-mm.	Period Secs.	Dist. Degs.	Remarks.
✓28	e e e eL		08 52 15 48 54 14 09 16 26	0.2 0.4 0.4	2 2 2½ 25	78	Maxico (USCGS.) (P) ¾ mu, 2sec.
28	P e S		13 15 37 17 23 25	0.6 0.4 0.7			
28	e e		19 46 36 49 47	0.2 0.1	2/3 ½		

The recording instruments are two short period Wood-Anderson seismographs W and X, oriented approximately NE and SE respectively. Owing to tilt, the X component is frequently not recording. The constants of W are: T = 0.75
V = 1800
Damping ratio 15:1

The amplitudes and ground motions refer to the NE-SW component. Deflection time-marks are controlled by a Synchronome clock, which is corrected daily by WWVH time signals.

A.A. Thomson,
Observer-in-Charge,
Apia Observatory.



1957 AUGUST.

Date.	Phase.	Comp.	Time.	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks.
4	e(P) e(S)		08 19 13 21 48	0.2 0.2	1 1/2 1	15	Kermadec Is. (USCGS.)
4	iP S		23 55 46 56 04	17 45 +			
4	P S		07 49 48 50 09	5 27			
4	iP S		12 58 05 25	12 35			
✓ 5	e(P) e(S)		21 35 43 38 51	0.2 0.1	1 2/3		Kermadec Is. (USCGS)
✓ 7	eP e eS		19 42 47 44 18 20	2.0 3.5	1/2 1	8	Fiji Is. (USCGS.) P 1mu, 1/2sec. S 4mu, 1sec.
8	e(P) eS		14 54 45 55 46	0.3 0.4			
✓ 10	eP eS		02 21 08 23 01	0.3 0.7	1/2 1 1/2	10 1/2	Fiji Is. (USCGS.) P 0.2mu, 1/2sec. S 1mu, 1 1/2sec.
✓ 10	eP? e(P) e S e eT		03 56 39 41 59 57 19 59 59 04 00 04	0.8 1.1 6	2/3 1/2	3 1/2	Tongs Is. (USCGS.) Coda for 1/4 hr.
✓ 10	iP S		09 44 07 28	19 20			Samoa Is. (USCGS.)
10	P S		05 33 20 34 13	0.9 3.8			
✓ 11	eP? e?		13 44 34 47 37			18 1/2	Kermadec Is. (USCGS.)
✓ 11	e		21 43 10 48.5	0.5 0.2	1 1/2 10	19	1mu, 1 1/2sec. Beginning lost while changing records. New Hebrides (USCGS.)
11	eP eS		22 04 52 06 15	0.4 0.6			
12	iP S		10 25 59 26 41	11 18			
12	eP eS		07 03 02 43	0.7			
12	eP eS e		08 00 58 01 36 04 29	0.4 1.0 0.5			
12	P S		10 02 25 03 07	0.7 2.0			

AUGUST 1957 (Continued.)



AUGUST 1957 (Continued.)

Date	Phase	Comp.	Time.	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks.
14	e(P) S eT		18 28(46) 30(08) 34(33)	1.1 7 1/2	1 1/2	8 1/2	Tongs Is. (USCGS.) Time marks failed, but times should be reliable to say 2secs or better. P 1/2 mu, 1/2 sec. S 4 mu, 1/2 sec.
14	eP e eS		19 55(33) 57(13) (18)	0.6 1.1	1/2 1/2		Ditto.
14	P S		23 09 17 50 28	2 1/2			
14	eP eS		14 53 27 55 45	0.2 0.3	1 1/2		
14	e(L) M		00 07 09		8 7	72	Pacific Ocean (USCGS)
14	P		18 34 30	0.5	1		
14	eP eS eT		07 49 03 40 52 35	0.5 0.4	1/6 1		Weak Coda.
14	P eS eT e		10 47 45 48 24 51 17 33	0.3 1.2 0.9 1.3	1/3 1/6 1 4		Coda for 10mins.
14	eL	W	12 14.1	0.3	20	27	Solomon Is. (USCGS) L 100mu, 20sec.
20	eP eS eT		22 58 27 59 07 23 02 02	0.4 1.6 0.6			
21	P S		17 39 13 36 50	8		2	Samoa Is. (USCGS.)
22	e		16 48 19	0.3	1		New Hebrides (USCGS) (P) 1/2 mu, 1 sec.
20	P eS		18 50 50 51 32	1.0 16			
20	e e(L)		01 03 26 05.6	0.2	2/3 10		
20	e(P) e(S)		02 10 18 11 33	0.3 0.3			
27	eP i eS		20 59 37 40 21 02 09	0.2 0.8 0.4	0.4 0.4 1/2	15	Fiji (USCGS.) P 1/2 mu, 1/2 sec. S 1/2 mu, 1/2 sec.

Date	Phase	Comp.	Time.	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks.
28	eP e eL		08 22 42 25 08 26 1/2	0.2 0.6	1 1/2 10	15	Kermadec Is. (USCGS) P 0.1 mu, 1/2 sec. (S) 1/2 mu, 1/2 sec.
29	e(P) e eS		14 05 20 29 07 39 41	0.1 1.4 0.3 0.5	0.4 1 1/2		P 3/4 mu, 1/2 sec. S 1/4 mu, 1/2 sec.

The recording instruments are two short period Wood-Anderson seismographs W and X, oriented approximately NE and SE respectively. Owing to tilt, the X component is frequently not recording. The constants of W are: T = 0.75 V = 1800 Damping ratio 15:1

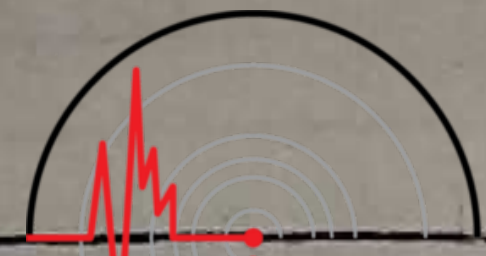
The amplitudes and ground motions refer to the NE-SW component. Deflection time-marks are controlled by a Synchronome clock, which is corrected daily by WWVH time signals.

A.A. Thomson,
Observer-in-Charge,
Apia Observatory.

1957 SEPTEMBER.

Date.	Phase.	Comp.	Time.	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks.
2	eP e	WX W	05 42 01 44 44	0.4 0.3	1½ 2		Fiji Is. region O = 05 38.1 P 1mu, 1½sec.
2	P e(S)		09 46 58 47 18	15 52		2	Samoa Is. (USCGS.) P to NE Felt Apia MM 2. Coda for ½hr.
2	eS		09 51 52	2.0			Aftershock.
2	eP eS		09 53 19 39	7½ 27			Aftershock.
3	P S	WX XW	14 42 54 44 45	0.3 0.3	0.4 ½	10	Fiji Is. region Near 20S 180° O = 14 40.5 h = 600 km ± P 0.2mu, ½sec. S 0.2mu, ½sec.
3	eP eS		00 26 10 27 17	0.6 0.6			
9	eP e e(S) e(T)		09 01 43 44 02 15 03.0 05 38	0.6 0.7 0.8	2½ 0.4 2 9	4 2/3	Fiji Is. region (USCGS.) P to NE P 0.3mu, ½sec. Coda for ½hr.
9	P S		13 06 12 33	2½ 11			
11	P e i(S)		13 43 40 45 08 12	1.6 0.8 1.8	0.4 0.4	8	Fiji Is. (USCGS.) P to SW and NW P 1mu, ½sec. S 1mu, ½sec.
11	iP S		23 22 46 23 08	22 55+		2½	Samoa Is. (USCGS.) P to NE and NW Felt Apia.
19	iP S		00 54 58 55 18	15 40		2	Samoa Is. 15S 175½W. O = 00 54.4 P to NE.
19	P S		17 03 32 04 36	0.8 14	0.4 0.4	6½	Tonga Is. (USCGS.) P to NE and NW P ½mu, ½sec. S 8mu, ½sec.
20	iP iS		06 33 14 52	3½ 27			P to NE and NW
20	P eS		18 48 12 49 27	0.3 0.8	0.4 1		Tonga Is. Near 19S 176 W O = 18 46.6 P ½mu, ½sec. S 1mu, 1sec.

SEPTEMBER 1957 (Continued)



International
Seismological
Centre

Date.	Phase	Comp.	Time.	W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	Remarks.
23	P S		18 44 49 45 14	20		2½	Samoa Is. (USCGS.)
24	eP S		01 45 14 39	12			Samoa Is. region. O = 01 44.7
24	e(PcP) e e(S) e LR MR		08 32 02 36.3 40.4 41.2 51 58	0.4 0.1 0.1 0.3	2 3 12 15 22 18	63	Philippine Is. (USCGS) (PcP) 1½mu, 2sec. (S) 15mu, 12sec. MR 100mu, 18 sec.
28	P		11 30 06	0.2	1½		P ½mu, 1½sec.
28	eP		00 37 32	0.3	2/3	66	Japan (USCGS) P 0.2mu, 2/3 sec.
28	iP e iS e		14 22 12 23 56 59 34 46	23 9 40 0.5	½ 1 1	9	Fiji Is. (USCGS) P to NE. S to SW P 12mu, ½sec. S 40mu, 1sec. Coda for an hour. X record absent.
28	P e S		14 46 15 47 55 58	0.6 3.2	½ ½	9¼	Fiji Is. (USCGS.) P ½mu, ½sec. S 2mu, ½sec.
29	P eS		07 08 20 10 02	1.3 0.5	2/3 ½	8½	Fiji Is. (USCGS.) P 1mu, 2/3 sec. S ¼mu, ½sec.
29	eP i eS eScS		08 16 26 33 18 53 27 22	1.7 4½ 1.7 0.4	0.4 0.4 0.5 2	14½	Fiji Is. (USCGS.) O = 08 13 22 P to NE. P Max 2½mu, ½sec. S 1mu, ½sec. ScS 1½mu, 2sec.
29	eP e eS		13 40 28 42 16 19	0.3 0.5	½ ½	10½	Fiji Is. region 22½S 178W. O = 13 38.1 h = 600km ± P 0.2mu, ½ S 0.3mu, ½

The recording instruments are two short period Wood-Anderson seismographs W and X, oriented approximately NE and SE respectively.

The constants of W are T = 0.75
V = 1800
Damping ratio 15:1

The constants of X are T = 0.72
V = 1900
Damping ratio 20:1

The amplitudes and ground motions refer in general to the component recording the largest values.

Deflection time-marks are controlled by a Synchronome clock which is corrected daily by WWVH time signals.

A.A. Thomson,
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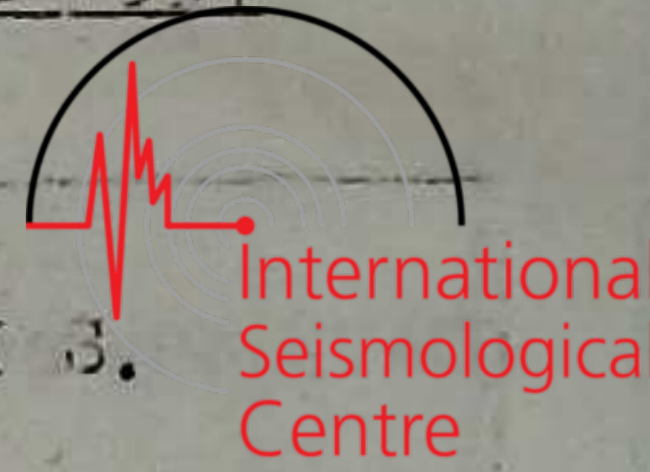
NEW APPIA PRELIMINARY SEISMIC BULLETIN.
OBSERVATORY

APPIA

13 FEB 1959

NOVEMBER 1957

RICHMOND,
SURREY.



DATE	Phase	Comp.	Time			W/A Trace Amp. mm.	Period Secs.	Dist. Degs.	REMARKS.
2	iP ePP ePPP S ePcS	WX W X WX WX	18	35	13	2.2 2.5 1.2 0.7 0.3	2 2 2 3 6	21.1	New Hebrides Is. (USCGS) P to NE and NW P 9 mu, 2 sec. S 6 mu, 3 sec.
5	iP	W	09	58	18	0.6	1	18.7	New Hebrides Is. region (USCGS) P to SW P 1 mu, 1 sec.
8	P S	X X	14	35	12	0.8 4.5	$\frac{1}{2}$ $\frac{1}{2}$	4.3ca	
8	e(P)	X	16	01	03	0.5	1		
9	eP eS	W WX	10	02	32	0.2 0.2	$\frac{1}{2}$ $\frac{1}{2}$	7.6ca	Tonga Is. region
10	eP ePP eL	WX W W	02	42	56	0.3 0.4 0.2	2 2 18	33	Solomon Is. (USCGS)
10	P eS e(T)	WX	05	30	49	0.4 0.5 0.3	0.4 1 1	11.3	Tonga Is. (USCGS) P to NE Weak coda 10 sec. period Deep.
12	P S	WX WX	00	22	57	1.4 1.4	$\frac{1}{2}$ 1	11.5	Tonga Is. region (BCIS) P to SW P 0.7 mu, $\frac{1}{2}$ sec. S 1.7 mu, 1 sec.
12	P S	WX WX	17	04	27	0.5 0.5	$\frac{1}{2}$ $\frac{1}{2}$	10.5	Fiji Is. region (BCIS)

DATE	Phase.	Comp.	Time	W/A Trace Amp. mm.	Period Secs.	Dist Degr.	REMARKS.
12	eP e i	W W W	18 25 (17) 27 (55) 28 15	0.5 0.3 0.3	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	20.8	South of Kermadec Is. (BCIS) P 0.2 mu, $\frac{1}{2}$ sec.
13	P ePP e eS e(PcP) e i(sScS) (T) max	WX WX W WX W W WX	17 27 15 32 28 24 30 56 30 59 31 04 39 16 48	0.4 2.0 1.0 0.7 0.8 1.0 0.8 0.5	2 2 2 $\frac{1}{3}$ 2/3 $\frac{1}{2}$ 2 1	20.3	Kermadec Is. region (USCGS) P $1\frac{1}{2}$ mu, 2 sec. PP 3 mu, 2 sec. e $\frac{1}{2}$ mu, 2 sec. S $\frac{1}{2}$ mu, 2/3 sec. e(PcP) $\frac{1}{2}$ mu, $\frac{1}{2}$ sec. i(sScS) 3 mu, 2 sec (ScS) to NW Data for $\frac{1}{2}$ hr.
14	iP S	WX WX	16 35 27 36 05	4 $\frac{1}{2}$ 20	$\frac{1}{2}$ $\frac{1}{2}$		North of Tonga Is. (BCIS) iP to NE and NW
18	eP eS	W W	14 59 39 15 01 (42)	0.3 0.5	$\frac{1}{2}$ $\frac{1}{2}$	11.5ca	South of Fiji Is. (BCIS)
21	e(PP)	W	14 40 (08)	0.4	$\frac{1}{2}$	21.5	Kermadec Is. region (USCGS)
24	P eS	W W	03 22 41 24 12	0.5 0.3	$\frac{1}{2}$ $\frac{1}{2}$	8.0ca	
25	eP	W	22 46 36	0.4	1.0	72.7 \pm	Near East coast of Borneo (USCGS)

No records from 26^d 21^h to 27^d 10^h, and from 28^d 10^h to 29^d 01^h - re-installation of seismographs.

29	P iS	NE NE	21 44 36 45 26	2.0 14	$\frac{1}{2}$		Tonga Is. region (BCIS) iS to S and W
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DATE	Phase.	Comp.	Time	W/A Trace Amp. mm.	Period Secs.	Dist. Degr.	REMARKS.
50	eP eS	NE NE	17 58 31 58 50	2.3 15	$\frac{1}{2}$	1.5ca	Samoa Is.

The recording instruments are two short period Wood-Anderson seismographs. Up to November 26^d they are designated W and X, oriented approximately NE and SW respectively. From November 28^d onwards they are designated N and E, oriented approximately NS and EW.

Instrumental constants:

- W (to 26.11.57) T = 0.75
V = 1800
Damping ratio 15:1
- X (to 26.11.57) T = 0.72
V = 1900
Damping ratio 20:1
- N (from 28.11.57) T = 0.80
V = 2050 \pm 100
Damping ratio 15:1
- E (from 28.11.57) T = 0.80
V = 2050 \pm 100
Damping ratio 15:1

The amplitudes and ground motions refer to the component recording the largest values. Deflection time marks are controlled by a Synchronome clock which is corrected daily against WWVH time signals.

J.G. Kops,
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