

PRELIMINARY SEISMIC BULLETIN

APIA, WESTERN SAMOA

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NO.	DATE	PHASE	COMP	TIME			AMP mm	PERIOD secs.	DISTANCE deg.	EPICENTRE & REMARKS
				h.	m.	s.				
1	1	eP eS	NE NE	10	15 15	09 22	0.6 0.4	0.5 0.5		South of Tonga Is. (BCIS) 0 = 10 10.0
2	1	eP iS	NE	23	03 54	22	2.5 15.5	0.5 0.6	3.2	Tonga Is. region (USCGS) 16 S., 174 W 0 = 23 02 33 iS to W and N
3	11	iP P iS S	NE NE NE NE	13	21 40 23 34	37 40 31 34	8.5 14.0 6.0 12.0	0.5 0.5 0.5 0.5	10.6	Tonga Is. region (USCGS) 23½ S., 177 W 0 = 13 18 47 Mag.: 6¼ (Matsushima)
4	13	eP	NE	02	59	31	1.7	2.0	21.6	Santa Cruz Is. (USCGS) 11 S., 166 E 0 = 02 54 37 h about 100 km
5	13	iP eS	E NE	07	13 14	18 48	1.1 0.6	0.8 0.8		Fiji Is. (USCGS) 0 = 07 10 30 iP to W
6	13	eP iS	NE NE	18	00 28	02	2.5 4.5	0.5 0.5		Samoa Is. region
7	13	eP iS	NE NE	23	00 01	46 06	1.1 8.0	0.4 0.5		Samoa Is. region
8	14	eP iS	NE NE	05	56 58	56 28	1.7 2.5	0.6 0.7	8.8	Tonga Is. (USCGS) 22 S., 175 W 0 = 05 54 48 iS to S & W.

JANUARY, 1958.



International
Seismological
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9	14	eP eS	NE NE	07 24 06 26 56		0.5 0.9	0.5 0.6	16.6	Kermadec Is. 29 S., 179 O = 07 20 25 h = 350 km
10	15	iP! e eL _R	E E E	22 20 39 24 (27) 25 .54		1.7 1.0 1.3	3.0 4.0 18.0	19.7	New Hebrides Is. (USCGS) 15½ S., 167 E O = 22 15 44 iP to W, 10 mu 3.0sec.
11	16	iP! iS	NE E	04 17 55 18 40		8.0 18.5	0.5 0.5	3.7	Tonga Is. region (USCGS) 16S., 175 W O = 04 16 46 h about 250 km. iP to S & W; iS to W.
12	16	eP eiS	NE NE	06 54 39 59		3.0 11.5	0.5 0.7		Samoa Is. region
13	16	iP eiS	N NE	21 08 33 50		9.0 15 ⁺	0.5 0.5		Samoa Is. region iP to N
14	18	iP iS	NE E	22 38 46 39 23		3.5 17.0	0.5 0.6		iP to N & E; iS to E. iS 14 mu, 0.6 sec.
15	19	eL _Q eL _R	E E	14 51.3 56.3		0.5 0.5	21 17		Near coast of Ecuador (USCGS) 1½ N., 79½ W. O = 14 07 27 Mag.: 7½, h about 60km
16	25	eP eS	NE E	08 56 35 00 (01)		0.6 0.3	0.7 1.0	18.1	New Hebrides Is. (USCGS) 18½ S., 170 E. O = 08 52 23, h about 150 km.

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17	23	iP! i iS!	NE NE NE	16	23 24 24 20 25	2.4 1.2 4.0	0.5 0.5 0.5	4.7 ca	Tonga Is. region Near 18 S., 175½ W.		
18	23	eP eS	NE NE	23	49 03 51 18	0.8 0.8	0.5 0.5	13.5 ca	South of Tonga Is. Near 26 S., 178 W O = 23 45.8 (BCIS)		
19	24	e(P)	E	06	06.1	0.4	1.2	73	Near E coast of Kamchatka (USCIS) 56½ N., 163 E. O = 05 53 58. Mag.: 6½ (Pas.)		
20	24	eP eS	NE NE	13	10 48 12 07	0.3 0.4	0.5 0.5		Fiji Is. region (BCIS) O = 13 08.0		
21	24	eiP eS	NE NE	23	55 28 57 02	4.5 1.5	0.5 0.5	7.5	Fiji Is. (USCIS) 17½ S., 178½ W. O = 23 53 29 n about 550 km.		
22	26	eP eS	NE NE	12	28 35 29 27	0.8 0.9	0.4 0.5		Tonga Is. region (BCIS)		
23	27	eiP S	NE NE	07	44 36 45 (04)	10.5 22.0	0.5 0.5	2.6	Samoa Is. (USCIS) 15 S., 174 W. O = 07 43 58 Mag.: 6¾ (Pas.) 6.0 (Wellington) Coda for over ½ hour		
24	28	iP eS	NE NE	08	32 18 33 06	2.1 1.0	0.6 0.5	4.5 ca	Tonga Is. region O = 08 31.2 ca. iP to N & E.		
25	29	eiP eiS	NE NE	18	40 52 41 29	3.5 11.0	0.4 0.5		Samoa Is. region.		

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NO.	DATE	PHASE	COMP	TIME		AMP	PERIOD	DISTANCE	EPICENTRE	REMARKS
				mm	secs.					
26	30	eP eS	NE NE	02	11 29 13 21	0.5 3.0	0.4 0.5	10.3	S of Fiji Is. (USCGS) 21 S., 179½ W. O = 02 08 44 h about 250 km.	
27	30	eP eS	NE NE	04	59 22 00 17	1.1 5.0	0.4 0.4	5.5	Tonga Is. (USCGS) 18 S., 172½ W. O = 04 58 01 Mag.: 5.2 (Roxburgh)	
28	30	eP eL _R	NE NE	06	20 05 29.4	0.6 0.8	1.7 15	32.4	Solomon Is. (USCGS) 7½ S., 155½ E. O = 05 13 24 Mag.: 6½ (Pas., Wellington)	
29	30	eP eS	NE NE	22	44 09 46 14	0.9 1.2	0.8 0.8	12.4 ca	Tonga Is. region (USCGS) O = 22 41 27 h about 600 km. Near 26½ S., 170½ W.	
30	31	eP eS	NE NE	21	01 52 03 28	0.7 1.0	0.5 0.5	9.9 ca	South of Tonga Is. (BCIS) Near 23 S., 175 W. O = 20 59.5	



KEW
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MARCH, 1959.

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NO.	DATE	PHASE	COMP	TIME			AMP mm	PERIOD secs.	DISTANCE deg.	EPICENTRE & REMARKS.
				h.	m.	s.				
45	1	eP iS	NE E	06	24 25	46 25	2.0 4.5	0.5 0.5	3.3	Tonga Is. region (USCGS) 17S., 172½W. O = 06 23 58 iS to W.
46	1	eP eS eT	NE NE E	07	26 27 30.1	58 33	0.5 1.5 0.7	0.4 0.4 1.5		Samoa Is region.
47	1	eP iS	NE NE	11	23 24	46 18	1.4 11.3	0.4 0.5		Samoa Is. region.
48	1	eIP iS	NE NE	16	16 17	52 25	12.0 26.0	0.5 0.5	3.2	Tonga Is. region (USCGS) 17S., 173W O = 16 16 01 Felt Apia MM 2
49	3	iP iS	NE E	04	51 52	37 06	4.5 20	0.4 0.5	3±	Fiji Is. region (USCGS) O = 04 50 44 iP to N & E iS to E
50	3	iP iS	E NE	07	56 57	59 28	3.7 25	0.5 0.5		Samoa Is. region iP to W. iS to N & E.
51	3	eP iS	NE NE	08	29 47	29 47	1.5 8.0	0.4 0.4		Samoa Is. region. iS to N & W.

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NO.	DATE	PHASE	COMP	TIME			AMP mm	PERIOD secs.	DISTANCE deg.	EPICENTRE & REMARKS.
				h.	m.	s.				
52	3	eP eS	NE NE	11	06 07	32 33	0.6 3.0	0.5 0.4	6.7	Tonga Is. (USCGS) 20S., 174½W. O = 11 04 49
53	3	eP iS	NE NE	14	45	31 47	1.3 16	0.4 0.4		Samoa Is. region. iS to N & E.
54	4	eP eS	NE NE	04	39 41	53 18	0.4 0.8	0.4 0.8		South Pacific (BCIS)
55	5	eP	NE	05	41	47	0.2	0.4	23.3	Off coast of North island New Zealand (USCGS) 35.3S., 178.9E O = 05 36 58 h = 260 km. Mag. = 5.9 (WN)
56	5	eP iS	NE NE	22	26	31 51	1.0 5.0	0.4 0.5	1.6ca	Samoa Is. region. iS to N & E.
57	6	eP iS	NE NE	01	10	17 42	2.3 21	0.3 0.5	2.1ca	Samoa Is. region. iS to N & W.
58	6	iP! iS!	NE NE	03	22 23	48 33	2.9 4.5	0.5 0.5	3.4	Fiji Is. region (USCGS) 15S., 175W. O = 03 21 49 h = 250 km iP to N & E iS to S & W.
59	7	eP iS!	NE NE	17	33 35	34 09	2.9 4.5	0.5 0.5	7.3	Tonga Is. (USCGS) 20S., 176... O = 17 30 38 iS to S & W.

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				h.	m.	s.				
60	9	eP eS	NE NE	10	27 30	08 36	0.5 0.7	0.5 0.7	20.8	Kermadec Is. region. (USCGS) 34S., 178 $\frac{1}{2}$ W. O = 10 22 25 h about 60 km. Mag. 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.)
61	10	eP eS	NE NE	21	33 34	33 43	1.0 6.5	0.4 0.4	7.3	Tonga Is. (USCGS) 20S., 176W. O = 21 31 48 h about 200 km.
62	11	eP iPP	E E	14	03 04	(56) 09	0.5 0.8	1.4 2.0	20.7	New Hebrides Is. (USCGS) 13S., 167E. O = 13 59 00 Mag. 5 $\frac{3}{4}$ - 6 (Mat.) iPP to E
63	15	eP iS	NE NE	07	53 54	(20) (52)	0.5 1.6	0.4 0.4		Fiji Is. region?
64	24	e(P)	NE	21	51	(19)	0.5	2.0	18.5	Loyalty Is. region (USCGS) 21 $\frac{1}{2}$ S., 170 $\frac{1}{2}$ E O = 21 46 31
65	28	eP iS	NE N	09	00.1 01	(37)	0.5 1.1	0.7 0.6		Fiji Is. region? P confused by microseisms. iS to N.
66	28	eP eS	NE NE	14	47.1 48.3		1.0 2.6	0.5 0.5	7.0	Tonga Is. (USCGS) 20 $\frac{1}{2}$ S., 174W. O = 14 45 22

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NO.	DATE	PHASE	COMP	TIME			AMP mm	PERIOD secs.	DISTANCE deg.	EPICENTRE & RESEARCH
				h.	m.	s.				
67	30	eP	NE	14	37	56	1.7	0.3	4.8	Tonga Is. region (BCIS) 17S., 175 $\frac{3}{4}$ W. O = 14 36 48 iS to S & E.
		iS	NE		38	45	20	0.4		
58	30	iP	N	17	35	49	1.2	0.5	12.2	Fiji Is. region (USCGS) 23S., 179 $\frac{1}{2}$ E. O = 17 35 01 h about 550 km. iP to S.
		eS	NE		38	00	0.7	0.5		
30	30	eP	NE	22	39	06	0.5	0.5	8.4	Tonga Is. (USCGS) 22S., 176W. O = 22 36 53
		eS	NE		40	36	0.7	0.5		
		eS	N	21	36	05	0.2	0.6		Kermadec Is. region (BCIS) O = 21 30.7

The recording instruments are two short period Wood-Anderson seismographs, designated N and E, and orientated approximately NS and EW.

Instrumental constants:

N T = 0.80
 V = 2050 \pm 100
 Damping ratio 15:1

E 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. Keys,
Observer-in-Charge,
Apia Observatory.