

6 MAR 1966

NEW ZEALAND

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA.

 Latitude: $13^{\circ} 54' 33.6''$ S Longitude: $171^{\circ} 46' 38.1''$ W

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

To = 1.0 sec. Tg = 0.75 sec.

Sprengnether long period seismometers

To = 15 sec. Tg = 100 sec.

Nominal Magnifications: S.P. 12500

L.P. 750

JANUARY 1966 *

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						Δ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
1	1	eP	Z	12	31	04							35.0	USCGS: 9.7S, 154.7E. Dentrecasteaux Islands region h about 33 km. H = 12 24 30.1 Mag. 5.6 (CGS)
2	2	iP eS	ZNE ZNE	03	34 35	42.2 12							3.1	Compression USCGS: 16.0S, 174.1W. Tonga Islands h about 111 km. H = 03 33 54.4 Mag. 4.9 (CGS)
3	2	eP	Z	04	14	51	1.8	1.5					65.0	USCGS: 31.3N, 138.2E. South of Honshu, Japan h about 394 km. H = 04 04 45.4 Mag. 5.2 (CGS)
4	2	eP eS eT	Z NE ZNE	14	47 48 50	47 18 52							3.3	USCGS: 17.1S, 172.0W. Tonga Islands region h about 39 km. H = 14 47 06.3 Mag. 4.9 (CGS)
5	2	eP eS	ZNE ZNE	18	44 46	34 42							12.3	USCGS: 23.4S, 180.0 South of Fiji Islands h about 525 km. H = 18 41 56.3 Mag. 5.1 (CGS)

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						△ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
6	2	eP eS	Z NE	22 25 15									Samoa Islands region	
7	3	eP eS	Z NE	00 44 44 46 55								12.6	USCGS: 23.0S, 179.1E. South of Fiji Islands h about 544 km. H = 00 42 00 Mag. 5.0 (CGS)	
8	3	iP eS	Z NE	08 47 47 48 07									Compression Samoa Islands region	
9	3	eP eS eT	ZNE ZNE ZNE	13 35 41 37 20 40 55	1.2	1.3	1.9	1.0	1.0	1.0		9.1	USCGS: 20.3S, 178.5W. Fiji Islands region h about 537 km. H = 13 33 32.6 Mag. 5.3 (CGS)	
10	3	eP epP	Z Z	15 48 49 49 27								18.8	Dilatation USCGS: 18.9S, 169.4E. New Hebrides Islands h about 249 km. H = 15 44 44.9 Mag. 5.4 (CGS)	
11	4	eP eS	Z NE	08 29 49 31 03										
12	5	eP eS	Z ZNE	07 50 04 51 17	1.4	2.0						7.4	USCGS: 20.0S, 176.0W. Tonga Islands h about 201 km. H = 07 48 26 Mag. 4.7 (CGS)	
13	5	eP eS eT	ZNE ZNE ZNE	17 47 03 24 49 07									Samoa Islands region	
14	6	eP eS	Z ZNE	16 59 39 59									Samoa Islands region	
15	6	eP eS	Z ZNE	17 19 22 52										
16	6	eP eS	ZNE ZNE	23 51 01 24									Samoa Islands region	
17	7	eP eS	Z NE	01 08 34 09 02										
18	7	eL	ZNE	15 14.3								37.0	USCGS: 5.2S, 152.6E. New Britain region h about 47 km. H = 14 57 43.8 Mag. 5.3 (CGS)	
19	7	eS eSSS eL eL	ZNE E ZN Z	20 34 16 39.6 41.8 43.7								53.0	USCGS: 62.6S, 155.6E. Balleny Islands region h about 33 km. H = 20 17 14 Mag. 5.8 (CGS)	

No	Date	Phase		Time (G.M.T.)									△ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
36	13	eS	ZN	11	01	12							66.0	USCGS: 52.9N, 172.0E. Near Islands, Aleutian Islands h about 14 km. H = 10 41 11.0 Mag. 4-4½(BRK), 5½-5¾(PAL), 5.6(CGS)
		eSSS	E		08.9									
		eL	ZN		11.8									
		eL	E		13.0									
37	13	eP	ZNE	14	27	16								
		eS	ZNE			53								
38	13	iP	ZN	23	43	25.2	1.5	8.4					2.4	Compression USCGS: 15.3S, 173.8W. Tonga Islands Felt at Apia h about 89 km. H = 23 42 47 Mag. 4.6 (CGS)
		eS	ZNE			50								
		eT	ZNE		45	30								
39	14	eP	Z	04	42	07								
40	14	eP	Z	17	51	31	2.0	1.5						
		eS	ZNE		53	16								
41	14	eP	Z	20	45	50	2.0	1.5					20.0	USCGS: 17.4S, 166.7E. New Hebrides Islands h about 33 km. H = 20 41 07.5 Mag. 5.4 (CGS)
		eS	ZNE		50	00								
		eL	ZE		51	10								
42	15	eP	ZNE	03	59	03							5.7	USCGS: 19.1S, 174.3W. Tonga Islands h about 33 km. H = 03 57 40 Mag. 4.7 (CGS)
		eS	ZNE	04	00	00								
		eT	ZNE		03	34								
43	15	eP	Z	05	41	26								
		eS	ZNE		42	23								
44	15	eP	ZNE	10	58	14							6.9	USCGS: 20.3S, 174.5W. Tonga Islands h about 33 km. H = 10 56 36 Mag. 4.7 (CGS)
		eS	ZNE		59	30								
		eT	ZNE	11	05	05								
45	15	iP	Z	12	29	07.5								Compression
		eS	ZNE			53								
46	15	e(SS)	ZN	12	35.1								76.0	USCGS: 59.5N, 144.6W. Gulf of Alaska h about 33 km. H = 11 59 58.6 Mag. 5.3-5.5(BRK), 5.1(CGS)
47	15	eL	ZNE	20	12.4								92.0	USCGS: 33.5S, 69.9W. Chile-Argentina Border region h about 33 km. H = 19 29 34.7 Mag. 5.5 (CGS)

No	Date	Phase		Time (G.M.T.)									Δ (Deg.)	Remarks		
							Tz	Az	Tn	An	Te	Ae				
48	15	eP	Z	20	44	04							8.3	USCGS: 18.9S, 178.6W. Fiji Islands region h about 600 km. H = 20 41 56.0 Mag. 3.9 (CGS)		
49	16	eP	Z	00	18	03	2.0	0.5								
		eS	ZNE		25	00										
		e	E		28.8											
		e	ZN		29	18										
		eL	ZNE		30.5											
50	16	eL	ZN	09	42.8								66.0	USCGS: 52.9N, 171.9E. Near Islands, Aleutian Islands h about 25 km. H = 09 11 50.0 Mag. 5.7 (CGS)		
51	16	eP	ZNE	21	47	19	2.0	1.3	2.0	1.0	2.0	1.1	6.1	USCGS: 17.4S, 176.8W, Fiji Islands region h about 259 km. H = 21 45 48.7 Mag. 4.3 (CGS)		
		eS	ZNE		48	27										
52	17	iP	Z	03	42	54	1.0	3.5							Compression Samoa Islands region	
		eS	ZNE		43	10										
53	17	iP	Z	03	46	15.3	1.0	11.2							Compression Samoa Islands region	
		eS	ZNE			32										
54	17	iP	ZNE	17	52	11.3	2.0	15.5	2.0	6.5	2.0	5.9	9.5	Compression USCGS: 20.8S, 178.5W. Fiji Islands region h about 543 km. H = 17 49 59.3 Mag. 5.7 (CGS)		
		eS	ZNE		53	54										
55	17	eP	Z	23	59	29							6.9	USCGS: 20.1S, 174.7W. Tonga Islands h about 152 km. H = 23 57 52.5 Mag. 3.9 (CGS)		
		eS	NE	00	00	30										
56	18	eP	ZNE	03	58	03							7.6	USCGS: 17.6S, 178.6W. Fiji Islands region h about 565 km. H = 03 56 11.8 Mag. 4.0 (CGS)		
57	18	iP	ZNE	05	39	49									Compression Samoa Islands region	
		eS	ZNE		40	08										
58	18	iP	ZNE	06	29	01							7.4	Compression USCGS: 18.6S, 177.8W. Fiji Islands region h about 364 km. H = 06 27 12.7 Mag. 5.3 (CGS)		
		iS	ZNE		30	22										
59	19	eP	Z	06	06	04										
		eS	NE			49										

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						△ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
72	22	eP eS eT	Z NE ZNE	19 38 45	14 28 20							7.6	USCGS: 21.0S, 174.2W. Tonga Islands h about 33 km. H = 19 36 32.4 Mag. 5.0 (CGS)	
73	23	eP eS eT	Z NE ZNE	08 36 41	15 05 05							4.5	USCGS: 18.0S, 173.5W. Tonga Islands h about 64 km. H = 08 35 08.9 Mag. 3.8 (CGS)	
74	23	eP	ZNE	09 51 04		1.9	3.2	1.9	1.3	1.9	2.3			
75	23	eP eS eT	Z NE ZNE	15 07 19	32 58 40							14.9	USCGS: 27.9S, 176.9W. Kermadec Islands h about 47 km. H = 15 04 09.5 Mag. 4.8 (CGS)	
76	24	eP eS eT	Z NE ZNE	07 45 49	32 13 30									
77	25	eP eS eT	Z NE ZNE	00 08 13	20 13 12									
78	25	eP eS	ZNE ZNE	05 43 44	10 04									
79	25	iP eS	Z NE	11 36 53									Compression Samoa Islands region	
80	25	eP eS	Z ZNE	21 34 35	18 29									
81	26	eP eS	Z NE	09 05 06	36 40									
82	26	iP eS	ZNE ZNE	13 05 36	55	2.0	8.0	2.0	5.5	2.0	8.5	3.2	Dilatation USCGS: 15.3S, 174.8W. Tonga Islands h about 250 km. H = 13 04 16 Mag. 4.2 (CGS)	
83	26	eP	ZE	15 35 07		2.0	2.0			2.0	2.1	20.2	USCGS: 14.3S, 167.3E. New Hebrides Islands h about 207 km. H = 15 30 42.7 Mag. 4.8 (CGS)	
84	26	eP eS eT	Z NE ZNE	19 02 07	35 31 37									
85	27	iP eS	Z ZNE	02 03 04	30 58	2.0	6.8					7.7	Dilatation USCGS: 17.9S, 178.6W. Fiji Islands region h about 600 km. H = 02 01 36.7 Mag. 5-5½ (BRK), 5.1 (CGS)	

No	Date	Phase	Time (G.M.T.)			Tz Az Tn An Te Ae					(Δ) (Deg.)	Remarks	
86	27	iP eS	Z E	03 44	43 50	34.5	1.9	2.1					Compression
87	27	eP eS	Z ZNE	12 27	26 14	58							Samoa Islands region
88	28	iP eS	Z NE	04 41	39 18	15.6	2.2	5.4			11.5		Compression USCGS: 17.5S, 176.9E. Fiji Islands region h about 558 km. H = 04 36 46.1 Mag. 5(BRK), 5.6(CGS)
89	28	iP eS	Z ZNE	05 50	46 18	44.2	2.3	2.0			19.5		Dilatation USCGS: 17.1S, 168.4E. New Hebrides Islands Felt on Tonga and Port Vila h about 24 km. H = 05 42 16.4 Mag. 6 $\frac{1}{2}$ (P+S), 5 $\frac{3}{4}$ -6(BRK), 5.7(CGS)
90	28	eP eS	Z NE	08 05	04 20	10							
91	28	eL	ZE	08	35.6						77.0		USCGS: 2.7N, 95.3W. Galapagos Islands regio h about 33 km. H = 07 59 58.0 Mag. 5.4 (CGS)
92	28	eP eS	Z ZNE	09 30	29 56	28					7.5		USCGS: 17.9S, 178.5W. Fiji Islands region h about 579 km. H = 09 27 34.3 Mag. 5.5-5.8(BRK), 5.4(CGS)
93	29	eP eS	Z NE	03 22	20 05	57					6.7		USCGS: 19.4S, 175.8W. Tonga Islands h about 294 km. H = 03 19 28 Mag. 4.4 (CGS)

NOTE:

There was no recording on the 30th and 31st due to disruption of power supply by a hurricane.

NOTE:

- (i) Trace amplitude(A) are expressed in millimetres and periods (T) in seconds
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1965

P.D. Muller
OBSERVER-IN-CHARGE

NEW ZEALAND

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (API)

AFIAMALU, WESTERN SAMOA.

 Latitude: $13^{\circ} 54' 33.6''$ S Longitude: $171^{\circ} 46' 38.1''$ W

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

 $T_0 = 1.0$ sec. $T_g = 0.75$ sec.

Sprengnether long period seismometers

 $T_0 = 15$ sec. $T_g = 100$ sec.

Nominal Magnifications: S.P. 12500

L.P. 750

FEBRUARY 1966 *

No	Date	Phase		Time (G.M.T.)									Δ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
1	1	eP eS	Z E	17 18	58 01	(31) (15)							12.4	USCGS: 23.3S, 179.8E. South of Fiji Islands h about 54.5 km. H = 17 56 24.6 Mag. 4.7 (CGS)
2	2	eP eS eT	Z ZNE ZNE	05	34 35 38	(49) (27) (30)							4.1	USCGS: 17.8S, 173.2W. Tonga Islands h about 33 km. H = 05 34 01.8 Mag. 5.2 (CGS)
3	2	eP eS	Z NE	17	12 13	(23) (54)							9.0	USCGS: 21.6S, 176.7W. Fiji Islands region h about 231 km. H = 17 10 34.5
4	3	eP eS	Z ZNE	02	13 15	53 32							9.3	USCGS: 20.9S, 178.3W. Fiji Islands region h about 489 km. H = 02 11 57.5 Mag. 4.6 (CGS)
5	3	eP	Z	05	58	28	2.0	1.0					66.0	USCGS: 0.1N, 123.5E. Northern Celebes h about 131 km. H = 05 48 06.1 Mag. 5.9 (CGS)
6	3	iP eS	Z ZNE	11	28 29	54 10								Compression Samoa Islands region
7	3	iP eS	Z ZNE	22	27	35.5 54	1.8	5.3						Dilatation Samoa Islands region

No	Date	Phase	Time (G.M.T.)	Tz Az Tn An Te Ae						△ (Deg.)	Remarks
				Tz	Az	Tn	An	Te	Ae		
21	5	iPKP Z eL ZN	02 21 43.1 03 14.1	2.1	3.0					153.0	Compression USCGS: 39.2N, 22.0E. Greece 1 killed, 50 injured, 8500 homeless. Town of Alastia, Fourni, Klistos and Krentic destroyed. Felt in Central Greece. h about 38 km. H = 02 01 48.3 Mag. 6 $\frac{1}{4}$ (PAS), 5 $\frac{3}{4}$ -6(BRK), 5.8(CGS)
22	5	eL N eL ZE	15 49.7 55.5							92.0	USCGS: 26.1N, 103.1E. Yunnan Province, China. h about 15 km. H = 15 12 29.1 Mag. 6.1 (CGS)
23	5	eP Z eL ZNE	16 27 02 47.2							70.0	USCGS: 50.2N, 155.1E. Kurile Islands h about 98 km. H = 16 16 00.8 Mag. 5.8 (CGS)
24	5	iP ZNE eS ZNE	17 10 52 11 12	1.2	7.5					1.5	Compression USCGS: 15.0S, 172.8W. Samoa Islands region h about 50 km. H = 17 10 26.3 Mag. 4.6 (CGS)
25	5	eP Z eS ZNE	19 30 50 32 25								
26	5	eP Z eS NE	21 07 38 43								Samoa Islands region
27	5	eP ZNE	23 20 54							32.9	USCGS: 7.1S, 155.4E. Solomon Islands h about 70 km. H = 23 14 25.3 Mag. 5.0 (CGS)
28	6	iP Z eS NE	13 12 42 59								Dilatation Samoa Islands region
29	6	iP ZNE eS ZNE	14 27 29.1 29 25	1.9	1.5	1.9	1.0	1.9	1.2	11.0	Dilatation USCGS: 22.2S, 179.4W. South of Fiji Islands h about 562 km. H = 14 24 59.8 Mag. 3.8 (CGS)
30	6	eP ZNE eS NE eT ZNE	18 30 14 42 32 44	2.0	1.3	2.0	1.3	2.0	2.0		
31	7	eP Z eS NE	01 38 00 23								Samoa Islands region

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Ae					△ (Deg.)	Remarks
							Tz	Az	Tn	An	Ae		
32	7	eSS	NE	05	03.2							123.0	USCGS: 29.8N, 69.7E. West Pakistan 12 dead, extensive damage at Barkhan and nearby villages. Felt at Bahawalpur, Fort Munro and Lahore h about 3 km. H = 04 26 13.9 Mag. 6 ¹ / ₄ -6 ¹ / ₂ (PAS), 6 ¹ / ₂ -6 ³ / ₄ (PAL), 6.0(CGS)
		eSSS	NE		06.5								
		eL	ZNE		16.2								
33	7	eP	ZNE	17	03	27	2.0	1.3	2.0	1.3	2.0	1.4	
34	7	eP	Z	20	49	21							
		iS	NE			53							
35	7	eP	Z	21	16	54	1.4	1.7					
		eS	NE		19	07							
36	8	iP	Z	10	04	21.8						9.7	Compression USCGS: 21.2S, 178.5W. Fiji Islands region h about 525 km. H = 10 02 09.0 Mag. 5.1 (CGS)
		eS	ZNE		06	05							
37	8	iP	Z	17	34	00.2							Compression
		eS	ZNE			25							
38	8	iP	Z	18	50	37	1.0	1.6					Dilatation
		iS	NE		51	10							
39	9	iP	Z	02	14	24.2							Samoa Islands region
		iS	ZNE			30.4							
40	9	eSKS	ZN	05	05.1							105.0	USCGS: 56.7S, 25.7W. South Sandwith Islands region h about 27 km. H = 04 40 28.4 Mag. 6 ¹ / ₄ -6 ¹ / ₂ (PAL)
		eS	ZN		08.1								
		eSS	NE		13.4								
		eSSS	ZE		17.5								
		e	ZN		21.4								
		eL	Z		26.5								
		eL	ZN		28.3								
41	9	eP	ZNE	07	30	03						71.0	USCGS: 9.9S, 116.3E. Flores Island region h about 32 km. H = 07 18 47.8 Mag. 5.8 (CGS)
42	9	eP	Z	09	56	24						13.5	USCGS: 26.0S, 177.7W. South of Fiji Islands h about 172 km. H = 09 53 30.9 Mag. 4.7 (CGS)
		eS	NE		58	36							
		eT	ZNE	10	09	53							
43	9	eP	Z	19	24	52							
		eS	NE		25	44							
44	9	eP	Z	22	01	38							
		eS	ZNE		02	25							

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						△ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
45	10	eS eL	E ZNE	01	31.3 32.3							17.1	USCGS: 29.9S, 178.5W. Kermadec Islands region h about 33 km. H = 01 24 15.1 Mag. 4.7 (CGS)	
46	10	eS eSSS eL	NE NE Z	05	48.3 55.5 59.3							63.0	USCGS: 31.1N, 141.6E. South of Honshu, Japan h about 33 km. H = 05 29 13.3 Mag. 5.3 (CGS)	
47	10	eP eS e eSSS eL	Z ZNE ZNE ZNE ZNE	14	30 31 38 06 40 24 43 18 46 06	2.3	1.8					53.0	USCGS: 20.8N, 146.3E. Mariana Islands region h about 43 km. H = 14 21 10.9 Mag. 6.2 (CGS)	
48	10	eP eS eT	Z ZNE ZNE	14 15	59 23 00 15 04 10							5.6	USCGS: 19.4S, 173.1W. Tonga Islands h about 10 km. H = 14 58 04.2 Mag. 5.1 (CGS)	
49	10	eP eS eT	Z NE ZNE	20	01 30 02 04 03 48									
50	10	eP eS eT	Z ZNE ZNE	20	05 16 39 07 26									
51	11	eP eS eT	Z NE ZNE	07	46 17 47 05 50 14									
52	11	e(P) e(S)	Z NE	16	33 13 35 22									
53	12	eP iS	Z ZNE	11	40 38 41 32							5.2	USCGS: 18.3S, 174.8W. Tonga Islands h about 190 km. H = 11 39 25.5 Mag. 5.6 (CGS)	
54	12	eP eS	Z NE	12	44 08 45 54							9.8	USCGS: 20.9S, 178.7W. Fiji Islands region h about 586 km. H = 12 41 53.4 Mag. 4.4 (CGS)	
55	12	eP	ZE	17	56 40	1.9	1.3							
56	12	eL	ZNE	23	56.3							37.0	USCGS: 3.7S, 152.0E. New Ireland region Felt at Rabaul h about 36 km. H = 23 37 54.2 Mag. 5.5 (CGS)	

No	Date	Phase	Time (G.M.T.)			Tz Az Tn An Te Ae						Δ (Deg.)	Remarks
						Tz	Az	Tn	An	Te	Ae		
57	13	ePKP Z	05	16	39	1.9	0.8					114.0	USCGS: 49.8N, 78.1E. Eastern Kazakh SSR h about 0 km. H = 04 57 57.7 Mag. $5\frac{1}{2}$ - $5\frac{3}{4}$ (BRK), 6.3(CGS)
58	13	eP Z eL N eL ZE	06 07	45 01.2	30 02.3	2.1	1.0					56.0	USCGS: 6.6S, 132.6E. Tanibar Islands region h about 12 km. H = 06 35 55.7 Mag. 5.9 (CGS)
59	13	eP Z eS NE	09	20 21	15 50								
60	13	eSS N eL N eL ZE	11	15.2 25.0 27.4								94.0	USCGS: 26.1N, 103.2E. Yunnan Province, China h about 33 km. H = 10 44 41.0 Mag. $5\frac{3}{4}$ -6(PAL), 5.7(CGS)
61	13	eP Z	21	04	49							6.3	USCGS: 17.1S, 177.3W. Fiji Islands region h about 366 km. H = 21 03 14.9 Mag. 4.3 (CGS)
62	13	eP Z eS ZNE	21	44 45	56 16								Samoa Islands region
63	14	eL ZNE	06	38.2								66.0	USCGS: 0.0S, 123.1E. Northern Celebes h about 138 km. H = 06 10 31.6
64	14	eP Z eS NE	22	50 39	18								Samoa Islands region
65	15	eP Z eS NE	02	31 32	23 02								
66	15	iP Z eS NE	04	13 36	29								Samoa Islands region
67	15	eP Z eS NE eL ZNE eL Z eT ZNE	09 10	58 00 01 02 08	47 28 10 26 23							9.8	USCGS: 22.7S, 176.2W. South of Fiji Islands h about 33 km. H = 09 56 29.8 Mag. 5.0 (CGS)
68	15	eP Z eS NE	12	07 09	41 13	1.8	1.4					7.6	USCGS: 17.7S, 178.7W. Fiji Islands region h about 544 km. H = 12 05 45.7
69	15	eP Z eS NE	19	27 28	05 04								
70	15	eP Z eS NE	20	08 32	13								Samoa Islands region

7.

No	Date	Phase		Time			Tz Az Tn An Te Ae						△ (Deg.)	Remarks
				(G.M.T.)										
71	15	eP eS	Z ZNE	22 20	17 33	56	2.0	3.0					15.7	USCGS: 26.6S, 178.3E. South of Fiji Islands h about 595 km. H = 22 14 43.2 Mag. 4.9 (CGS)
72	15	eP eS	Z ZNE	22 39	37 52	18	5.4	2.0					15.7	USCGS: 26.5S, 178.2E. South of Fiji Islands h about 593 km. H = 22 34 05.4 Mag. 5.6 (CGS)
73	16	eP eS eL	ZNE ZNE ZE	03 26 28	22 46 00	56	6.0	14.0					20.0	USCGS: 17.7S, 167.9E. New Hebrides Islands Felt at Luganville, Norsup and Port Vila. h about 31 km. H = 03 18 27.2 Mag. 6 $\frac{1}{2}$ (PAS), 6 $\frac{1}{2}$ (BRK), 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (PAL), 6.5(CGS) Coda lasting 2 hrs.
74	16	eP eS	ZNE ZNE	23	38 44	11							4.7	USCGS: 18.1S, 173.8W. Tonga Islands h about 33 km. H = 23 37 04.6 Mag. 4.2-4.6(BRK), 5.2(CGS)
75	17	eP eS	Z ZNE	01	14 33	17							6.1	USCGS: 17.4S, 177.2W. Fiji Islands region h about 372 km. H = 01 12 41.9 Mag. 4.1 (CGS)
76	17	eP eS	Z NE	02	11 50	26							7.4	USCGS: 19.4S, 177.0W. Fiji Islands region h about 338 km. H = 02 09 39.8 Mag. 4.8 (CGS)
77	17	eP eS	ZNE ZNE	11	22 19	24								
78	17	iP eS	Z ZNE	18	23 20	11.3	2.0	2.0					12.4	Dilatation USCGS: 23.5S, 179.9W. South of Fiji Islands h about 548 km. H = 18 20 32.4 Mag. 5.6 (CGS)
79	18	eP eS	Z ZNE	01	31 52	16								
80	18	eS eSSS eL	ZNE ZNE ZE	07	19 26.6 30.5	04							67.0	USCGS: 6.9N, 124.0E. Mindanao, Philippine Islands h about 55 km. H = 06 59 05.0 Mag. 5.5 (CGS)
81	18	iP eS	Z ZNE	09	42 25	05.3								Compression Samoa Islands region

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						Δ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
97	24	eP eS	Z NE	17 57 22 58 03										
98	24	eP	ZNE	20 16 35	2.0	1.5	2.0	1.2	2.0	1.0	40.9	USCGS: 6.1S, 147.4E. East New Guinea region h about 59 km. H = 20 08 57.0 Mag. 5.5 (CGS)		
99	24	iP eS	Z NE	20 25 42 26 08	1.0	1.9						Compression		
100	25	iP eS	Z NE	04 51 26 52 00							3.4	Compression USCGS: 16.5S, 174.0W. Tonga Islands h about 187 km. H = 04 50 47.6 Mag. 3.6 (CGS)		
101	25	eP eS eT	Z NE ZNE	16 11 57 12 58 18 22										
102	25	iP	Z	22 51 10	2.0	9.0					1.8	Dilatation USCGS: 15.1S, 173.2W. Tonga Islands h about 33 km. H = 22 50 47.1 Mag. 5.5 (CGS)		
103	25	eP eS	ZNE NE	23 22 35 23 00	1.8	3.0	1.9	4.8	2.0	3.0	1.6	USCGS: 15.1S, 172.9W. Samoa Islands region h about 33 km. H = 23 22 10.8 Mag. 4.3 (CGS)		
104	25	eP eS	Z NE	23 46 30 54	2.0	6.7					1.5	USCGS: 14.2S, 173.4W. Samoa Islands region h about 33 km. H = 23 46 10.1		
105	26	eP eS	Z NE	00 17 04 22	1.0	1.8						Samoa Islands region		
106	26	eP eS eT	Z NE ZNE	02 50 54 52 11 58 42										
107	26	eP eS	Z NE	04 03 01 21								Samoa Islands region		
108	26	eP eS eT	Z NE ZNE	05 43 39 57 45 20								Samoa Islands region		
109	26	eP eS	Z NE	08 27 51 28 10							1.5	USCGS: 14.7S, 173.0W. Samoa Islands region h about 33 km. H = 08 27 28.6 Mag. 4.3 (CGS)		
110	26	eP eS	Z NE	09 39 59 40 17								Samoa Islands region		

No	Date	Phase		Time (G.M.T.)			Tz Az Tn An Te Ae						Δ (Deg.)	Remarks
							Tz	Az	Tn	An	Te	Ae		
128	28	eP	Z	01	59	37							9.1	USCGS: 21.9S, 176.4W. Fiji Islands region h about 171 km. H = 01 57 33.2 Mag. 4.9 (CGS)
		eS	NE	02	01	00								
		eT	ZNE		08	44								
129	28	eP	Z	02	13	17								
		e(S)	NE		15	00								
130	28	eP	Z	10	04	40								Samoa Islands region
		eS	NE		05	00								
		eT	ZNE		07	26								
131	28	iP	Z	17	06	34.9								Dilatation Samoa Islands region
		eS	NE			45								
132	28	eP	Z	17	53	38								Samoa Islands region
		eS	NE			57								
133	28	eP	Z	17	57	30	2.0	2.0					18.6	USCGS: 21.7S, 170.5E. Loyalty Islands region h about 106 km. H = 17 53 19.8
134	28	eP	Z	20	24	45								Samoa Islands region
		eS	NE		25	03								
135	28	eP	Z	22	41	24								
		eS	NE		43	20								

NOTE:

- (i) Trace amplitude(A) are expressed in millimetres and periods (T) in seconds.
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1965.

P.D. Müller
OBSERVER-IN-CHARGE



NEW ZEALAND

3 OCT 1967

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (API)

APIAMALU, WESTERN SAMOA.Latitude: $13^{\circ} 54' 33.6''S$ Longitude: $171^{\circ} 46' 38.1''W$

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

To = 1.0 sec. Tg = 0.75 sec.

Sprongnether long period seismometers

To = 15 sec. Tg = 100 sec.

Nominal Magnifications: S.P. 12500

L.P. 750

MARCH 1966*

No	Date	Phase	Time (G.M.T.)							Δ (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
1	1	eP Z	12 52 10							21.0	USCGS: 33.6S, 179.4W. South of Kermadec Is. h about 36 km. H = 12 47 28.4 Mag. 4.2 (CGS).
2	1	eP Z	15 48 26							14.6	USCGS: 25.3S, 178.5E. South of Fiji Islands h about 547 km. H = 15 45 23.5 Mag. 4.3 (CGS).
3	1	eP Z eS NE	21 34 26 35 56								
4	2	eP Z eS NE	00 31 38 56								Samoa Islands region
5	2	eP Z eS NE	21 26 09 27 45								
6	3	eL Z	03 56.5							68.0	USCGS: 48.3N, 154.3E. Kurile Islands h about 45 km. H = 03 25 28.0 Mag. $5\frac{1}{2}$ (PAL), 5.9(CGS)
7	3	eP Z eS NE	21 31 34 33 23							9.5	USCGS: 20.5S, 178.7W. Fiji Islands region h about 605 km. H = 21 29 35.7 Mag. 4.8 (CGS)
8	3	eP ZNE eS NE	22 30 25 32 06	1.8	2.0	1.5	1.9	1.9	1.8		

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
21	77	eP Z ePcP ZN eS NE eSS NE eSSS ZN eLq NE eLr Z	21 41 57 42 04 52 42 57 40 22 02 00 04.8 08.6	0.6	2.2						USCGS: 37.2N, 114.8E. Northeastern China Moderate to heavy damage and injuries in Hopeh Province Felt widely h about 33 km. H = 21 29 17.0 Mag. $6\frac{3}{4}$ (PAS), 6.4(BRK), 7-7 $\frac{1}{4}$ (PAL), 5.8(CGS)
		Surface waves lasting 2 hours									
22	8	eP Z eS NE	00 15 24 16 15								
23	8	eP ZNE eS ZNE iL ZNE eT ZNE	00 19 22 20 16 35 24 30							5.2	USCGS: 18.9S, 173.3W. Tonga Islands h about 33 km. H = 00 18 09.8 Mag. 5.3 (CGS)
		Coda lasting 1 hour									
24	8	eP Z eS ZNE	01 18 25 22 18	3.5	2.0					21.0	USCGS: 13.9S, 166.6E. New Hebrides Islands h about 37 km. H = 01 13 42.3 Mag. 6(PAS), 5.9-6.3(BRK), 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (PAL), 5.8(CGS)
25	8	eP Z eS ZNE eSS ZNE eL N eL E eL Z	05 51 32 59 58 06 04 22 07 36 08.8 10.0	1.0	2.4					64.0	USCGS: 1.9N, 126.4E. Molucca passage h about 33 km. H = 05 41 04.5 Mag. 4.7-5.2 (BRK)
26	8	eP Z eS ZNE	18 51 03 39								
27	8	eP Z eS ZNE	21 19 13 20 02								
28	8	eP Z eS ZNE eT ZNE	23 17 42 19 06 25 04							8.5	USCGS: 21.5S, 175.2W. Tonga Islands h about 33 km. H = 23 15 45.1 Mag. 4.7 (CGS)
29	9	eP Z eS NE	01 32 41 33 34								
30	9	eP Z eS NE eT ZNE	03 28 27 29 05 31 43								
31	9	eP Z eS NE	09 32 03 35								
32	9	eP Z	09 43 03	1.0	1.9				1.0	2.0	
33	9	eP Z eS NE	16 56 23 57 49							7.4	USCGS: 18.5S, 177.7W. Fiji Islands region h about 567 km. H = 16 54 30.8


No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
34	9	iP eS	Z NE	18	42	37.5 57								Compression Samoa Islands region
35	9	iP eS	Z NE	18	47	21 41								Compression Samoa Islands region
36	10	eP	ZNE	04	36	33	1.7	2.0	1.5	2.0	1.0	2.0	67.0	USCGS: 32.2N, 137.5E. South of Honshu, Japan Felt in Tokyo h about 382 km. H = 04 26 19.6 Mag. 5.5-5.9(BRK), 5.6(CGS)
37	10	iP eS	Z ZNE	05	31	51.3 32 08								Dilatation Samoa Islands region
38	10	eP	Z	07	06	44							27.0	USCGS: 38.5S, 175.7E. North Island, New Zealand. h about 135 km. H = 07 01 18.4 Mag. 4.9 (CGS)
39	10	iP eS	Z ZNE	09	59	29.5 48	6.0	1.0						Compression Samoa Islands region
40	10	iP eS eT	Z ZNE ZNE	12	17	00.2 18 19 22 20							7.3	Compression USCGS: 19.3S, 177.0W. Fiji Islands region h about 320 km. H = 12 15 19.4 Mag. 5.5 (CGS)
41	11	eP eS	Z NE	02	11	22 55								
42	11	eSS eL	NE ZN	08	15.7	18.3							55.0	USCGS: 55.2S, 126.6W. Easter Island Cordillera h about 33 km. H = 07 54 17.0 Mag. 5.3
43	12	eP eS	Z NE	01	09	30 12 33							18.1	USCGS: 30.8S, 178.5W. Kermadec Islands region h about 94 km. H = 01 05 34.6 Mag. 4 ¹ / ₂ -5(BRK), 5.4(CGS)
44	12	eP eS eT	Z NE ZNE	12	12	50 15 55 27 04	1.3	2.1					17.9	USCGS: 30.6S, 178.8W. Kermadec Islands region h about 202 km. H = 12 09 03.9 Mag. 4.8 (CGS)
45	12	iP eS	ZNE ZNE	14	20	03 20	6.2	1.0					2.1	Dilatation USCGS: 15.0S, 173.6W. Samoa Islands region h about 35 km. H = 14 19 38.0 Mag. 5.1 (CGS)

No	Date	Phase		Time			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
				(G.M.T.)										
46	12	iP eS	ZNE ZNE	14	27	24 50	2.1	1.9					2.2	Dilatation USCGS: 15.7S, 173.0W. Tonga Islands h about 33 km. H = 14 26 57.6 Mag. 5.2 (CGS)
47	12	eP eS	Z NE	15	37	56 39 34							10.0	USCGS: 22.6S, 176.6W. South of Fiji Islands h about 64 km. H = 15 35 35.8 Mag. 5.0 (CGS)
48	12	eP ePcP iPPP iS eSSS	ZNE ZNE ZNE ZNE NE	16	42	57 43 17 48 47 52 20 17 00.6	1.3	2.2					75.0	USCGS: 24.1N, 122.6E. Taiwan region 7 killed several injured and major damage on Taiwan and Okinawa. h about 63 km. H = 16 31 21.8 Mag. $7\frac{1}{2}$ - $7\frac{3}{4}$ (PAS), 7 - $7\frac{1}{2}$ (BRK), $7\frac{3}{4}$ -8(PAL), 6.7(CGS) Surface waves lasting 4 hours
49	13	iP eS	Z ZNE	18	18	30.6 50								Samoa Islands region
50	13	eP eS eT	ZNE ZNE ZNE	18	42	27 43 48 49 14							7.8	USCGS: 20.9S, 175.4W. Tonga Islands h about 65 km. H = 18 40 40.7 Mag. 5.2 (CGS)
51	13	eP eS	Z ZNE	21	49	41 51 01							7.7	USCGS: 20.5S, 175.3W. Tonga Islands h about 33 km. H = 21 47 52.4 Mag. 4.7 (CGS)
52	14	eP eS	Z NE	14	08	13 11 20	2.0	2.0					17.9	USCGS: 30.9N, 179.9W. Kermadec Islands h about 396 km. H = 14 04 22.1 Mag. 4.2 (CGS)
53	14	eP eS	Z NE	20	31	16 32 54								
54	15	iP eS eS	Z NE Z	16	12	51.3 14 44 48	1.3	2.0					11.1	Dilatation USCGS: 22.1S, 179.4W. South of Fiji Islands h about 588 km. H = 16 10 25.0 Mag. 4.4 (CGS)
55	15	eP eS	Z NE	16	35	25 37 42							13.9	USCGS: 25.1S, 179.8E. South of Fiji Islands h about 504 km. H = 16 32 35.9 Mag. 4.2 (CGS)
56	15	eP eS	Z NE	23	46	21 47 50	1.4	1.9					7.4	USCGS: 18.0S, 178.2W. Fiji Islands region h about 606 km. H = 23 44 27.6 Mag. 4.5 (CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
57	16	eP	ZNE	12	14	42	7.510.0					7.8	USCGS: 21.2S, 174.3W. Tonga Islands h about 66 km. H = 12 13 02.4 Mag. 5.4 (CGS)	
		eS	NE		16	00								
		eL	ZN		17	00								
		eT	ZNE		21	47								
58	16	iP	Z	14	46	05						70.0	USCGS: 9.5N, 121.9E. Sulu Sea h about 24 km. H = 20 38 23.5 Mag. 5.4 (CGS)	
		eS	NE			25								
59	16	eL	Z	21	11.6		5.0 2.0					1.1	USCGS: 14.5S, 172.8W. Samoa Islands h about 33 km. H = 07 50 22.0 Mag. 4.4 (CGS)	
60	16	eP	ZNE	22	13	04								
		eS	ZNE			45								
		eT	ZNE		16	08								
61	17	eP	ZNE	07	50	38.4	5.0 2.0					1.1	USCGS: 14.5S, 172.8W. Samoa Islands h about 33 km. H = 07 50 22.0 Mag. 4.4 (CGS)	
		eS	ZNE			54								
		Coda lasting 12 minutes												
62	17	eP	Z	08	44	28						10.2	USCGS: 21.1S, 179.2W. Fiji Islands region h about 626 km. H = 15 50 32.2 Mag. 6.2 (PAS), 6.2 (CGS)	
		eS	NE		45	11								
63	17	eP	Z	08	49	01						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	NE			21								
64	17	eP	ZNE	15	52	50						19.0	Dilatation USCGS: 20.7S, 169.7E. New-Hebrides Islands h about 78 km. H = 20 46 19.4 Mag. 5.1 (CGS)	
		eS	ZNE		54	40								
		Coda lasting 30 minutes												
65	17	eP	Z	16	10	57						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	NE		11	24								
		eT	ZNE		13	20								
66	18	eP	ZNE	01	48	10						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	ZNE			34								
67	18	eP	Z	09	21	09						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	NE		22	42								
68	18	eP	Z	15	59	50						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	NE	16	00	17								
		eT	ZNE		02	18								
69	18	eP	Z	18	19	29						8.3	USCGS: 20.4S, 177.4W. Fiji Islands region h about 491 km. H = 09 19 08.9 Mag. 3.9 (CGS)	
		eS	ZNE		20	31								
70	18	iP	Z	20	50	36						19.0	Dilatation USCGS: 20.7S, 169.7E. New-Hebrides Islands h about 78 km. H = 20 46 19.4 Mag. 5.1 (CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
71	19	eP eS	Z NE	13 21	20 13	58								Samoa Islands region
72	19	eSS eL	NE ZE	13	54.5 56.1							28.8	USCGS: 9.4S, 159.2E. Solomon Islands Felt at Honiara h about 33 km. H = 13 42 27.2 Mag. 5.4 (CGS)	
73	19	eP eS	ZNE ZNE	16	31 34	56 12						12.0	USCGS: 24.4S, 179.9E. South of Fiji Islands h about 510 km. H = 16 29 10.3 Mag. 4.8 (CGS)	
74	19	eL	ZN	18	10.5							115.0	USCGS: 52.7S, 19.9E. South west of Africa h about 33 km. H = 17 16 40.9 Mag. 5.4 (CGS)	
75	19	eS eL	N ZE	22	52.7 53.2							20.5	USCGS: 12.3S, 167.2E. Santa Cruz Islands h about 41 km. H = 22 44 19.9 Mag. 4.6 (CGS)	
76	20	ePP e ePKKP e eSKKS eL eL	Z ZNE ZE ZNE Z ZNE ZNE	02 06 10 16 20 27.4 32.4	02 06 26 10 04	55 50 26 10 04						154.0	USCGS: 0.6N, 30.2E. Uganda More than 100 dead. Extensive damage to buildings at Fort Portal and nearby areas, felt in Western Uganda. h about 36 km. H = 01 42 49.9 Mag. $6\frac{3}{4}$ -7(PAS), 6.4-6.6(BRK), 7-7 $\frac{1}{4}$ (PAL) 6.1(CGS)	
Surface waves lasting 3 hours														
77	20	iP eS	ZNE ZNE	07	48 49	44.8 22						4.0	Dilatation USCGS: 17.0S, 174.3W. Tonga Islands h about 117 km. H = 07 47 50.2 Mag. 5.7 (CGS)	
78	20	eP eS	ZNE ZNE	08	07 08	36 15						4.1	USCGS: 17.0S, 174.1W. Tonga Islands h about 140 km. H = 08 06 45.3 Mag. 4.7 (CGS)	
79	20	eP eS eT	ZNE ZNE ZNE	09	06 07 12	07 23 33						7.5	USCGS: 21.0S, 174.5W. Tonga Islands h about 95 km. H = 09 04 31.8 Mag. $5\frac{3}{4}$ (PAS), 6(BRK), 5.2 (CGS)	
80	20	eP eS	Z NE	10	58 59	43 01								Samoa Islands region

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te				△ (Deg.)	Remarks
95	22	eP Z eS NE eT ZNE	08 27 41 28 07 30 12						
96	22	eP ZNE eS ZNE e NE eSS Z eLq NE eLr Z Coda lasting 1½ hours	08 32 13 42 38 47 50 49.0 54.7 59.0					86.0	USCGS: 37.5N, 115.1E. Northeastern China Several casualties and major property damage h about 33 km. H = 08 19 33.8 Mag. 6½-7(PAS), 6.5-6.8(BRK), 7¼-7½(PAL), 6.0(CGS)
97	22	eP ZNE eS ZNE eT ZNE	10 26 22 50 28 53						
98	22	eP Z eS NE	13 07 49 10 04					12.9	USCGS: 24.2S, 180.0 South of Fiji Islands h about 511 km. H = 13 05 06.0 Mag. 4.3 (CGS)
99	22	eP ZNE eS ZNE eT ZNE	22 50 19 54 53 30						
100	23	eP Z eS ZNE eSS NE eSSS ZN eL NE eL ZE	00 16 08 25 28 30 20 34 12 36 00 38 46					75.0	USCGS: 23.8N, 122.8E. Taiwan region h about 51 km. H = 00 04 34.7 Mag. 6(PAS), 5.5-5.9(BRK), 6-6¼(PAL), 6.3(CGS)
101	23	eP Z eS ZNE eT ZNE	08 02 58 04 16 10 18					8.0	USCGS: 21.5S, 174.0W. Tonga Islands h about 33 km. H = 08 01 13.3 Mag. 4.9 (CGS)
102	23	eP Z eS NE	11 25 05 28 32					19.9	USCGS: 32.8S, 178.5W. South of Kermadec Is. h about 44 km. H = 11 20 30.1 Mag. 4.8 (CGS)
103	23	iP Z eS ZNE	16 10 29.3 50						Samoa Islands region
104	24	eP ZNE eS ZNE eT ZNE	04 06 53 08 12 17 35					8.9	USCGS: 21.5S, 176.4W. Fiji Islands region h about 191 km. H = 04 04 55.5 Mag. 4.2-4.6(BRK), 5.2 (CGS)
105	24	eP ZNE eS ZNE	04 30 13 47						
106	24	eP ZNE eS NE eL ZE	08 32 32 36 44 38 00					21.0	USCGS: 13.7S, 166.8E. New Hebrides Islands h about 43 km. H = 08 27 51.3 Mag. 5.2 (CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						 (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
107	24	eP eS	Z ZNE	16 49	48 31	27						6.5	USCGS: 19.0S, 175.9W. Tonga Islands h about 282 km. H = 16 47 04.4 Mag. 4.5 (CGS)	
108	24	eP eS	Z NE	19 10	09 35	25								
109	24	eP eS	Z ZNE	20	28 51	23								
110	24	eP eS	Z ZNE	21 20	19 19	48								
111	24	eP eS	ZNE ZNE	22 10	09 52	42						7.1	USCGS: 19.7S, 176.1W. Fiji Islands region h about 262 km. H = 22 08 11.7 Mag. 4.3 (CGS)	
112	25	eP eS eT	Z ZNE ZNE	12 04 10	02 10 25	51								
113	25	eP eS eT	Z NE ZNE	12 15 18	14 15 16	44								
114	25	eL	ZNE	13	43.0							19.8	USCGS: 12.5S, 167.9E. Santa Cruz Islands h about 57 km. H = 13 34 27.6 Mag. 4.9 (CGS)	
115	25	eP eS	Z NE	16	00 01	53 11							Samoa Islands region	
116	26	eP eS	Z NE	00	18 19	58 26								
117	26	eP eS	ZNE ZNE	06	17 18	53 11							Samoa Islands region	
118	26	eS eL eL eL	N NE Z ZNE	15 16	42.4 54.5 58.9 00.9							85.0	USCGS: 37.6N, 115.2E. Northeastern China h about 33 km. H = 15 19 03.2 Mag. 5.4-5.6(BRK), 6-6 $\frac{1}{4}$ (PAL), 5.5(CGS)	
119	26	eP eS eT	ZNE ZNE ZNE	22	42 43 47	45 39 37		7.0	1.7	2.5	1.4	5.5	USCGS: 18.7S, 174.5W. Tonga Islands h about 162 km. H = 22 41 31.2 Mag. 4.2 (CGS)	
120	27	eP eS	ZNE ZNE	00	45 41	21							Samoa Islands region	
121	27	iP eS	ZNE ZNE	01	26 34	14							Samoa Islands region	
122	27	iP S	ZNE ZNE	21	33 53	45.7 53							Dilatation Samoa Islands region	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
138	30	eS eL	N ZN	13 01 07 11.9								73.0	USCGS: 49.8N, 129.7W. Vancouver Island region h about 33 km. H = 12 40 01.0 Mag. $5\frac{1}{2}$ - $5\frac{3}{4}$ (PAS), 6(BRK), $6\frac{1}{4}$ (PAL), 5.3(CGS)	
139	30	eP eS	ZNE ZNE	13 10 54 12 03								6.8	USCGS: 19.5S, 175.6W. Tonga Islands h about 205 km. H = 13 09 20.4 Mag. 4.4 (CGS)	
140	30	eP eS eL	Z N N	20 45 07 48 46 50.0								19.5	USCGS: 32.5S, 178.0W. South of Kermadec Is. h about 16 km. H = 20 40 44.1 Mag. 4.8 (CGS)	
141	31	eP ePP eS eL	ZNE ZE ZNE ZE	05 10 27 36 14 20 15.5								20.0	Compression USCGS: 17.3S, 167.8E. New Hebrides Islands Felt at Port Vila h about 34 km. H = 05 05 54.7 Mag. 5.4 (CGS)	
142	31	eP eS eT	Z ZNE ZNE	09 31 07 33 33 05										
143	31	eP eS	Z NE	14 37 50 41 22								22.0	USCGS: 33.1S, 178.5W. South of Kermadec Is. h about 33 km. H = 14 33 24.8 Mag. 5.0 (CGS)	
144	31	eP eS	Z NE	20 15 57 17 48								10.5	USCGS: 21.7S, 179.1W. Fiji Islands region h about 580 km. H = 20 13 35.6	
145	31	iP eS	Z ZNE	20 37 07.2 28									Compression Samoa Islands region	
146	31	ePKP	Z	23 56 29.3	1.0	2.0						120.0	USCGS: 36.4N, 70.8E. Hindu Kush region h about 200 km. H = 23 38 00.5 Mag. 5.6 (CGS)	

NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966

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No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te					△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae		
46	11	eP eL	Z ZNE	17 29 10 52.3							75.0	USCGS: 18.4N, 102.3W. Michoacan, Mexico h about 72 km. H = 17 17 33.8 Mag. 5 $\frac{1}{4}$ -5 $\frac{1}{2}$ (PAL), 5.7 (CGS)	
47	11	eP eS	Z NE	19 32 11 33 18	1.0	0.8	0.6	0.8					
48	11	eP eS	ZNE ZNE	22 13 24 15 06							10.1	USCGS: 20.7S, 178.4W. Fiji Islands region h about 605 km. H = 22 11 12.1 Mag. 4.0 (CGS)	
49	11	eS eL eL	NE E ZN	23 21.2 29.5 33.1							72.0	USCGS: 56.6N, 152.0W. Kodiak Island region h about 33 km. H = 23 00 24.0 Mag. 5 $\frac{3}{4}$ -6(PAL), 5.4(CGS)	
50	12	eP eS	Z ZNE	01 55 03 35									
51	12	eP eS	Z NE	02 25 23 26 12									
52	12	iP eS	ZNE ZNE	22 14 26.9 45								Compression Samoa Islands region	
53	12	eP eS eL	ZNE NE ZE	23 20 01 23.5 25.3							19.8	USCGS: 17.9S, 168.0E. New Hebrides Islands h about 30 km. H = 23 15 29.6 Mag. 5.3 (CGS)	
54	13	eS eSS eLq eLr	ZNE ZNE ZNE ZNE	00 01.0 06.2 13.9 17.9	7.022.0	6.521.0	3.722.0				88.0	USCGS: 38.1S, 73.0W. Central Chile Felt at Concepcion, Valdivia and Temuco h about 44 km. H = 23 37 42.1 Mag. 6(PAS), 6.4(BRK), 6-6 $\frac{1}{4}$ (PAL), 5.9(CGS)	
55	13	eS eSS eL	ZNE ZNE ZNE	03 58.5 04 04.1 15.6							88.0	USCGS: 38.2S, 73.2W. Near coast of Central Chile Felt at Concepcion h about 40 km. H = 03 35 16.3 Mag. 5 $\frac{1}{2}$ (PAS), 5 $\frac{1}{2}$ -5 $\frac{3}{4}$ (PAL), 5.8(CGS)	
56	13	iP eS eT	ZNE ZNE ZNE	04 30 32 32 36 37 22	2.3	1.8					12.4	Dilatation USCGS: 23.6S, 179.9W. South of Fiji Islands h about 550 km. H = 04 27 54.8 Mag. 5.2 (CGS)	
57	13	eP eS	ZNE ZNE	16 07 27 48								Samoa Islands region	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
72	17	eP eS	ZNE ZNE	00 37 38	03 31							7.5	USCGS: 17.9S, 178.5W. Fiji Islands region h about 598 km. H = 00 35 09.5 Mag. 3.9 (CGS)	
73	17	eP eS	ZNE NE	02 16 18	51 15							7.0	USCGS: 17.9S, 178.3W. Fiji Islands region h about 555 km. H = 02 14 58.5 Mag. 3.5 (CGS)	
74	17	eP eS	Z NE	04 46 47	59 55									
75	17	eP eS eT	Z ZNE ZNE	06 19 20 23	45 27 05									
76	17	iP eS	ZNE ZNE	06 38 50	30 50	1.0	4.5					2.0	Dilatation USCGS: 15.2S, 173.2W. Tonga Islands h about 33 km. H = 06 38 06.0 Mag. 4.8 (CGS)	
77	17	eP eS eT	Z ZNE ZNE	06 54 55 56	45 04 32									
78	17	eP eS eT	Z NE ZNE	10 24 26	20 48 59									
79	17	eP eS	Z NE	13 13 15	01 32							15.3	USCGS: 26.0S, 178.4E. South of Fiji Islands h about 650 km. H = 13 09 52.7 Mag. 4.7 (CGS)	
80	17	eP eS	Z ZNE	21 08 09	59 18								Samoa Islands region	
81	18	eP eS	Z NE	10 36 37	13 52	0.7	1.5					9.1	USCGS: 20.1S, 178.7W. Fiji Islands region h about 540 km. H = 10 34 04.0 Mag. 4.4 (CGS)	
82	18	eP eS	Z NE	11 36 34	16 34								Samoa Islands region	
83	18	eP eS	Z NE	11 56 20	03 20								Samoa Islands region	
84	18	iP eS	Z NE	17 31 44	23.7 44								Compression Samoa Islands region	
85	19	eP eS	Z ZNE	07 21 24	53 27							15.2	USCGS: 27.8S, 178.1W. Kermadec Islands h about 201 km. H = 07 18 32.4 Mag. 4.2 (CGS)	

No.	Date	Phase		Time			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
				(G.M.T.)										
86	19	eP eS	Z ZNE	09 51	49 02	49	0.5 2.0						7.1	USCGS: 19.7S, 175.9W. Tonga Islands h about 14.9 km. H = 09 48 07.6
87	19	eP eS	Z NE	22 22	20 26	36							9.9	USCGS: 20.3S, 179.5W. Fiji Islands region h about 591 km. H = 22 18 19.4 Mag. 4.5 (CGS)
88	20	eS eL eL	ZN N Z	02	49 55.5 56.4	33							51.0	USCGS: 18.8N, 147.0E. Mariana Islands h about 12 km. H = 02 32 49.7 Mag. 5.0 (CGS)
89	20	eS eSS eL	ZN N Z	06	17.3 21.0 23.2								52.0	USCGS: 18.9N, 146.8E. Mariana Islands h about 33 km. H = 06 00 39.4 Mag. 5.1 (CGS)
90	20	eP eS eSS eL	Z ZN N Z	16	35 4.2 46.5 48.7	25 40	0.6 2.2						51.0	USCGS: 18.8N, 146.9E. Mariana Islands h about 55 km. H = 16 26 21.2 Mag. 5.2-5.4(BRK), 5.4(CGS)
91	20	eP eS	Z NE	20	10 12	56 41								
92	20	eP eS	Z NE	22	10 11	34 26								
93	20	eP eS eT	Z NE ZNE	22	49 50 53	27 21 40								
94	21	eP eS	ZNE ZNE	02	42	14 33								Samoa Islands region
95	21	eP eS eT	Z NE ZNE	04	44 47	25 55 26								
96	21	eP eS eT	Z NE ZNE	06	45 46 49	55 30 10								
97	21	eP eS eT	Z NE ZNE	07	51 53	04 32 30								
98	21	eS eSS eSSS eL	ZNE E N ZNE	16	05.0 08.6 10.5 15.2								66.0	USCGS: 36.1N, 141.8E. Near east coast of Honshu, Japan Felt h about 30 km. H = 15 45 25.4 Mag. 5.5 (CGS)
99	21	eP eS	ZNE ZNE	16	07 08	33 46								

No	Date	Phase		Time									Δ (Deg.)	Remarks
				(G.M.T.)			Az	Tz	An	Tn	Ae	Te		
100	21	eP eS	ZNE ZNE	16	14 16	34 18							8.8	USCGS: 20.4S, 178.0W. Fiji Islands region h about 511 km. H = 16 12 45.1 Mag. 4.5 (CGS)
101	21	eL	ZN	18	16.5								66.0	USCGS: 35.5N, 142.0E. Off east coast of Honshu Japan Felt h about 46 km. H = 17 36 50.0 Mag. 5.1 (CGS)
102	21	iP eS	Z ZNE	19	05	08 31								Samoa Islands region
103	22	eS eSS eL	NE N ZNE	03	29.8 36.1 47.0								88.0	USCGS: 37.8S, 73.4W. Near coast of Central Chile Felt at Concepcion h about 18 km. H = 03 06 32.3 Mag. 5.7 (CGS)
104	22	eP eS	Z NE	08	09 11	28 08							10.2	USCGS: 22.8S, 176.7W. South of Fiji Islands h about 150 km. H = 08 07 20.5 Mag. 4.3 (CGS)
105	22	eP eS	Z NE	16	57 58	02 30							7.3	USCGS: 18.0S, 178.4W. Fiji Islands region h about 542 km. H = 16 55 07.9 Mag. 4.2 (CGS)
106	23	eL	ZN	00	00.4								72.0	USCGS: 57.5N, 152.1W. Kodiak Island region Felt at Kodiak h about 22 km. H = 23 27 20.5 Mag. 5.9 (CGS)
107	23	eP eS eSS eL	Z ZNE E ZN	00	20 29 34 36.7	29.4 24 15	1.5	2.1					67.0	USCGS: 0.9S, 122.4E. Northern Celebes h about 45 km. H = 00 09 34.4 Mag. $6\frac{3}{4}$ (PAS), $6\frac{3}{4}$ -7(PAL), 6.0(CGS)
108	23	eP eS eL eT	Z ZNE ZNE ZNE	03	30 32 33.3 41	42 33 14							10.4	USCGS: 23.8S, 175.7W, Tonga Islands region h about 54 km. H = 03 28 24.7 Mag. 5.1 (CGS)
109	23	eP eS	Z ZNE	05	21 22	36 34								
110	23	eP eS	Z ZNE	05	48 50	26 33							12.0	USCGS: 23.4S, 179.8W. South of Fiji Islands h about 509 km. H = 05 45 53.3 Mag. 4.8 (CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
124	26	eP	Z	04	24	12								Samoa Islands region
		eS	NE			35								
		eT	ZNE		26	12								
125	26	eP	ZNE	19	36	06						8.6		USCGS: 20.0S, 178.3W. Fiji Islands region h about 551 km. H = 19 34 00.3 Mag. 4.6 (CGS)
		eS	ZNE		37	46								
126	26	eP	ZNE	23	09	35						9.1		USCGS: 20.7S, 178.0W. Fiji Islands region h about 34.5 km. H = 23 07 27.9 Mag. 4.6 (CGS)
		eS	ZNE		11	10								
127	27	eP	Z	21	36	08						13.8		USCGS: 25.2S, 179.8E. South of Fiji Islands h about 499 km. H = 21 33 17.7 Mag. 4.5 (CGS)
		eS	NE		38	25								
128	28	eP	ZNE	00	20	11						10.6		USCGS: 21.8S, 179.2W. Fiji Islands region h about 600 km. H = 00 17 51.1 Mag. 4.8 (CGS)
		eS	ZNE		22	02								
129	28	eL	E	01	33.3							41.0		USCGS: 49.1S, 164.1E. Auckland Islands region h about 3 km. H = 01 15 34.2 Mag. 5.8 (CGS)
		eL	Z		36.5									
130	28	eP	ZNE	11	53	48								
		eS	ZNE		54	22								
131	28	eP	ZNE	16	57	36						5.7		USCGS: 19.1S, 173.6W. Tonga Islands h about 27 km. H = 16 56 20.0 Mag. 5.2 (CGS)
		eS	ZNE		58	32								
		eL	E			38								
		eL	ZN			50								
132	28	eP	ZNE	17	02	34								
		eS	NE		03	05								
		eS	Z			11								
133	28	eP	ZNE	17	14	47						5.6		USCGS: 19.3S, 173.5W. Tonga Islands h about 33 km. H = 17 13 31.6 Mag. 5.2 (CGS)
		eS	ZNE		15	40								
		eT	ZNE		19	39								
134	29	iP	Z	12	32	08.4								Samoa Islands region
		eS	NE			29								
135	29	eP	Z	15	49	01								
		eS	NE		50	29								
136	30	eL	ZNE	13	33.5							73.0		USCGS: 18.8N, 106.7W. Off coast of Jalisco, Mexico h about 54 km. H = 13 01 18.5 Mag. 5 $\frac{1}{2}$ (PAS), 5.2(CGS)

12.

No	Date	Phase	Time (G.M.T.)			Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
137	30	eP	ZNE	16	36	34							Samoa Islands region
		eS	ZNE			57							
138	30	e(S)	E	19	10.7								
139	30	eP	Z	19	09	36							
		eS	NE		10	19							
		e(L)	E		10.4								
		eT	ZNE		14	12							

NOTE:

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No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks	
21	5	eP	Z	14	33	01	1.2	2.0						75.0	USCGS: 24.4N, 122.6E. Taiwan region Felt at Taipei h about 60 km. H = 14 21 22.7 Mag. 5.4-6(PAS), 6-6.4(PAL), 5.7(CGS)
		eS	ZE		42	32									
		eSS	ZE		47	20									
		eL	Z		52.8										
		eL	ZE		55.5										
22	5	eP	Z	15	25	58								10.6	USCGS: 21.7S, 179.3W. Fiji Islands region h about 604 km. H = 15 23 36 Mag. 4.7 (CGS)
		eS	NE		27	50									
23	6	eP	ZNE	02	30	27									
		eS	ZNE			54									
24	6	iP	ZNE	07	17	08	3.0	2.0	1.5	2.0	1.9	2.0		13.7	Dilatation USCGS: 25.0S, 179.6E. South of Fiji Islands h about 488 km. H = 07 14 13.5 Mag. 5.3 (CGS)
		eS	NE		19	25									
25	6	eP	Z	19	47	06								10.0	USCGS: 21.8S, 178.3W. Fiji Islands region h about 401 km. H = 19 44 56.2 Mag. 3.2 (CGS)
		eS	ZNE		48	47									
26	6	eP	ZNE	19	54	55								5.8	USCGS: 19.4S, 173.7E. Tonga Islands h about 112 km. H = 19 53 47.0 Mag. 4.9 (CGS)
		eS	ZNE		55	50									
		eL	E		56	52									
		eT	ZNE		59	52									
27	6	eP	ZNE	22	26	40									Samoa Islands region
		eS	ZNE		27	00									
28	7	eP	ZNE	05	12	39								11.7	USCGS: 22.1S, 179.5E. South of Fiji Islands h about 600 km. H = 05 10 07.7 Mag. 4.2 (CGS)
		eS	NE		14	40									
29	7	eP	Z	05	57	14									
		eS	NE			52									
		eL	E		58	50									
		eT	ZNE	06	00	52									
30	7	eP	ZNE	11	11	09								9.8	USCGS: 22.3S, 177.0W. South of Fiji Islands h about 303 km. H = 11 08 53.0 Mag. 4.4 (CGS)
		eS	ZNE		12	45									
31	7	ePKP	Z	13	28	11	0.7	2.5						151.0	USCGS: 37.8N, 27.9E. Turkey Felt in Aydin region h about 12 km. H = 13 08 16.0 Mag. 5.2 (CGS)
32	7	eP	Z	15	15	06	0.6	2.0							

No	Date	Phase	Time (G.M.T.)	Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks	
33	8	eP eS	Z NE	11 19 04 20 39						9.6	USCGS: 21.6S, 177.5W. Fiji Islands region h about 345 km. H = 11 16 53.1 Mag. 4.1 (CGS)	
34	8	eP eS eT	Z NE ZNE	19 48 57 49 46 53 48								
35	9	iP eS eT	ZNE ZNE ZNE	15 15 52 16 17 18 45	3.6	1.9	3.5	1.9	4.4	2.0	3.1	Dilatation USCGS: 15.5S, 174.6W. Tonga Islands h about 59 km. H = 15 15 14 Mag. 4.7 (CGS)
36	9	eP e(T)	ZNE ZNE	15 38 31 41 21								
37	9	eP eT	ZNE ZNE	16 33 51 36 39	1.5	2.0	0.9	1.9	1.8	2.0	2.4	USCGS: 15.3S, 173.9W. Tonga Islands h about 33 km. H = 16 33 13.1 Mag. 4.2 (CGS)
38	9	iP eT	ZNE ZNE	16 51 10 54 00	1.5	2.0	1.1	2.0	1.6	2.0		Compression
39	9	eP e(T)	ZNE ZNE	16 59 45 17 02 40	0.5	2.0			0.9	2.0		
40	9	iP eS eT	ZNE ZNE ZNE	18 13 15.8 45 16 00	2.2	2.0	1.0	1.9	3.4	2.0	2.7	Compression USCGS: 15.5S, 174.0W. Tonga Islands h about 33 km. H = 18 12 35.2 Mag. 4.3 (CGS)
41	9	eP e(T)	ZNE ZNE	19 51 44 54 30								
42	9	iP eS eT	Z NE ZNE	20 06 59 07 36 09 52	0.5	1.9					3.6	Dilatation USCGS: 15.4S, 175.2W. Tonga Islands h about 70 km. H = 20 06 18.3 Mag. 4.6 (CGS)
43	9	eP e(T)	Z ZNE	20 44 53 46 40								
44	9	iP eS eT	ZNE NE ZNE	21 31 20.5 49 34 07	9.0	2.0	3.5	2.0	4.5	2.0	3.0	Dilatation USCGS: 15.1S, 174.6W. Tonga Islands h about 35 km. H = 21 30 41.4 Mag. 4.8 (CGS)
45	9	iP eS eT	ZNE ZNE ZNE	23 08 59.5 09 25 11 39	8.0	1.9					3.0	Dilatation USCGS: 15.1S, 174.6W. Tonga Islands h about 59 km. H = 23 08 23.9 Mag. 4.3 (CGS)

No	Date	Phase		Time (G.M.T.)									Δ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
109	18	eP eS	Z NE	03 43 02 44 12								7.4	USCGS: 20.7S, 174.4W. Tonga Islands h about 33 km. H = 03 41 17.9 Mag. 4.1 (CGS)	
110	18	eL	ZE	08 04.2								72.0	USCGS: 25.ON, 109.0W. Gulf of California. h about 33 km. H = 07 32 07.3 Mag. 5 $\frac{3}{4}$ (PAS), 5-5 $\frac{1}{4}$ (BRK), 6-6 $\frac{1}{4}$ (PAL), 5.3(CGS)	
111	19	eS eSS eSSS eL	ZE ZE ZE ZN	07 26 20 30 16 34.0 37.0								68.0	USCGS: 54.1N, 164.1W. Unimak Islands region h about 28 km. H = 07 06 26.8 Mag. 6(PAS), 5.6-6.0(BRK), 6(PAL), 5.8(CGS)	
112	19	eP eS eT	Z NE ZNE	12 00 25 02 55 15 16								16.6	USCGS: 29.7S, 177.0W. Kermadec Islands region h about 26 km. H = 11 56 23.8 Mag. 4.3 (CGS)	
113	19	eP eS	ZNE ZNE	19 53 38 54 14										
114	20	iP eS eT	ZNE ZNE NE	07 30 36.6 31 54 33 32	5.3	2.0	2.2	2.0	2.9	2.0			Compression	
115	20	eP eS eL eL	Z ZE Z NE	09 23 34 30 44 37.0 39.3								50.0	USCGS: 13.9N, 146.1E. South of Mariana Is. h about 66 km. H = 09 14 49.2 Mag. 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (PAS), 6-6.4(BRK), 6.0(CGS)	
116	21	eP eS	Z NE	08 11 14 13 26								13.0	USCGS: 24.3S, 179.8E. South of Fiji Islands h about 518 km. H = 08 08 30.6 Mag. 5.1 (CGS)	
117	21	eP eS eT	ZNE ZNE ZNE	10 52 46 54 03 58 10								7.7	USCGS: 20.9S, 175.3W. Tonga Islands h about 75 km. H = 10 50 59.8 Mag. 5.1 (CGS)	
118	21	eP eS	ZNE ZNE	16 03 19 39									Samoa Islands region	
119	21	eP eS	Z NE	23 43 34 44 16										
120	21	eP eS	ZNE ZNE	23 55 45 57 14								7.5	USCGS: 18.0S, 178.4W. Fiji Islands region h about 555 km. H = 23 53 50.7 Mag. 5.1 (CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
121	22	iP eS	ZNE ZNE	01 30 31	37 31	3.6	1.1	2.2	1.9	1.9	2.0		Dilatation	
122	22	eP eL	Z ZE	02 58 07.4	37	1.4	2.0	1.5	2.0	1.0	2.1	32.8	USCGS: 7.4S, 155.5E. Solomon Islands Felt at Buin h about 83 km. H = 02 52 12.7 Mag. 5.6 (CGS)	
123	22	eL	Z	08	14.8							71.0	USCGS: 21.2N, 108.7W. Revilla Ggedo Islands region h about 53 km. H = 07 42 49.9 Mag. 4.2-4.6(BRK), 5.5(CGS)	
124	22	e(P) eS	Z NE	09 16 17	07 41									
125	22	eP eS	Z NE	12 22	18 50									
126	23	eP	ZNE	00	09 11							32.5	USCGS: 7.4S, 155.8E. Solomon Islands h about 111 km. H = 00 02 49.5 Mag. 5.4 (CGS)	
127	23	eP eS eT	Z NE ZNE	02 15 16 22	45 48 05							6.8	USCGS: 20.4S, 173.6W. Tonga Islands h about 33 km. H = 02 14 17.1 Mag. 4.6 (CGS)	
128	23	iP eS eT	ZNE NE ZNE	05 59 06 00 02	40 11 38	13.0	2.0			4.0	2.0	3.4	Dilatation USCGS: 16.0S, 174.5W. Tonga Islands h about 33 km. H = 05 58 54.7 Mag. 4.8 (CGS)	
129	23	eP eS eT	ZNE ZNE ZNE	07 48 51	11 50 19							3.2	USCGS: 16.6S, 173.2W. Tonga Islands h about 33 km. H = 07 47 28.3 Mag. 4.8 (CGS)	
130	23	eL	Z	12	23.7							71.0	USCGS: 21.4N, 108.7W. Revilla Ggedo Islands region h about 58 km. H = 11 51 29.6 Mag. 4.6-5.0(BRK), 5.6(CGS)	
131	23	eP eS eL eL	Z ZE Z E	14 31 38.5 44.8 47.0	45							50.0	USCGS: 13.8N, 146.4E. South of Mariana Is. h about 39 km. H = 14 22 32.5 Mag. 5.5-5.7(BRK), 5.9(CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
132	23	eP	Z	18	32	34								
133	23	iP eS	Z ZNE	22	34	18 38								Samoa Islands region
134	24	iP iS	ZNE ZNE	05	25	29 49								Samoa Islands region
135	24	eP eS eT	ZNE ZNE ZNE	15	32	03 10 00						13.0		USCGS: 25.6S, 177.4W. South of Fiji Islands h about 112 km. H = 15 29 12.4 Mag. 5.3 (CGS)
136	24	eP	ZNE	21	00	02	0.4	2.0				93.0		USCGS: 2.3S, 77.9W. Peru-Ecuador border region h about 33 km. H = 20 51 03.0 Mag. 4.3 (CGS)
137	25	eP eS	Z NE	07	08	29 11								
138	25	eP	Z	08	38	44						57.0		USCGS: 6.4S, 131.1E. Tanibar Islands region h about 39 km. H = 08 28 58.6 Mag. 5.8 (CGS)
139	25	eP eS	Z NE	11	25	03 40								
140	25	eP epP eS eL	ZNE Z ZNE Z	12	11	25 37 04 25	1.5 3.2	3.0 2.0				19.2		USCGS: 21.6S, 169.9E. Loyalty Islands region h about 35 km. H = 12 07 04.8 Mag. 5.5 (CGS)
141	25	eP eS eL	ZNE ZE Z	13	29	08 32 36	1.5	3.0				44.0		USCGS: 52.9S, 160.0E. Macquarie Islands region Felt on Macquarie h about 33 km. H = 13 20 56.2 Mag. 6.6 (CGS)
142	25	eP eS	Z NE	14	02	11 37	0.6	2.1				14.5		USCGS: 26.1S, 180.0 South of Fiji Islands h about 432 km. H = 13 59 04.8 Mag. 4.3 (CGS)
143	25	eP eS eT	Z NE ZNE	15	12	44 16 44								
144	26	eP eS	Z NE	00	23	44 22						7.5		USCGS: 17.5S, 178.6W Fiji Islands region h about 514 km. H = 00 21 51.2 Mag. 4.4 (CGS)

No	Date	Phase		Time			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
				(G.M.T.)										
159	28	iP eS	ZE ZNE	19	59	04.6 46	10.30.8						3.3	Dilatation USCGS: 15.3S, 174.9W. Tonga Islands h about 246 km. H = 19 58 07.9 Mag. 4.1 (CGS)
160	28	iP eS	Z ZNE	23	32 33	58 23								
161	29	iP iS	ZNE ZNE	08	30 31	54.1 11							1.5	Compression USCGS: 15.0S, 172.8W. Samoa Islands region h about 33 km. H = 08 30 29.6 Mag. 4.4 (CGS)
162	29	iP eS	Z ZNE	09	18 19	54 14								
163	29	eP eS	ZNE ZNE	13	46 48	45 30							10.2	USCGS: 21.6S, 178.7W. Fiji Islands region h about 516 km. H = 13 44 32.9 Mag. 5.2 (CGS)
164	30	eP eS	Z ZNE	03	57 58	10 58	1.6	2.0	1.5	1.9	1.0	1.7		
165	30	eP eS	ZNE ZNE	14	17	08 28								Samoa Islands region
166	30	eP eS	Z E	19	17 18	05 28							5.9	USCGS: 16.8S, 177.4W. Fiji Islands region h about 380 km. H = 19 15 30.7 Mag. 4.2 (CGS)
167	30	iP S	Z ZNE	19	21	16.9 41							2.6	Dilatation USCGS: 15.2S, 174.1W. Tonga Islands h about 74 km. H = 19 20 36.2 Mag. 4.6 (CGS)
168	30	eP eS	ZNE ZNE	23	30	16 46								
169	31	eP eS	Z NE	15	14	33 58								

NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks	
							Az	Tz	An	Tn	Ae	Te			
7	2	eP	Z	07	18	36	1.0	2.2					66.0	USCGS: 0.ON, 123.2E. Northern Celebes h about 185 km. H = 07 08 08.4 Mag. 5.8 (CGS)	
8	2	eP	Z	07	47	19							24.0	USCGS: 36.8S, 179.6W. East of North Island, New Zealand. h about 33 km. H = 07 42 09.3	
9	2	iP eS	Z ZNE	15	29	31 52								Samoa Islands region	
10	2	eP eS eL eL eL eT	Z ZNE E Z N ZNE	16	55 56	07 00 13 23 50 45	5.0	10.0				15.5	12.0	5.0	USCGS: 18.6S, 173.4W. Tonga Islands h about 33 km. H = 16 53 56.6 Mag. 5.0 (CGS)
		No records between 022204 and 080325													Instrument maintenance by USCGS team.
11	8	eP eS	Z NE	05	34 35	29 55							7.3	USCGS: 18.0S, 178.1W. Fiji Islands region h about 562 km. H = 05 32 38.5 Mag. 4.1 (CGS)	
12	9	iP eS	Z ZNE	12	03 05	29.2 10	2.0	2.0					9.4	Dilatation USCGS: 20.8S, 178.3W. Fiji Islands region h about 560 km. H = 12 01 19.8 Mag. 5.2 (CGS)	
13	9	eL	ZN	22	44.6								63.0	USCGS: 30.1N, 142.2E. South of Honshu, Japan h about 12 km. H = 22 16 22.1 Mag. 5.1 (CGS)	
14	9	eP eS	Z NE	23	36 37	47 22									
15	10	eL	ZNE	12	33.2								38.6	USCGS: 6.1S, 149.8E. New Britain region h about 53 km. H = 12 15 05.7 Mag. 5.0 (CGS)	
16	11	eL	ZNE	03	09.8								70.0	USCGS: 19.2N, 108.1W. Revilla Ggedo Islands region h about 45 km. H = 02 37 38.7 Mag. 4.4-4.8(BRK), 5.3(CGS)	
17	11	eP eS	ZNE ZNE	03	37 38	52 12								Samoa Islands region	

No	Date	Phase	Time (G.M.T.)							△ (Deg.)	Remarks	
				Az	Tz	An	Th	Ae	Te			
18	11	eP ZNE eS ZNE	11 38 54 39 16								Samoa Islands region	
19	12	iP ZNE eS ZNE	14 43 46.5 44 06								Samoa Islands region	
20	13	iP Z eS ZNE eT ZNE	04 00 56.9 01 33 03 20							3.7	Dilatation USCGS: 16.8S, 174.0W. Tonga Islands h about 39 km. H = 04 00 02.3 Mag. 4.9 (CGS)	
21	13	eP Z eS NE eL ZE	07 36 42 39 44 40 36							15.4	USCGS: 21.2S, 174.1E. New Hebrides Islands region h about 49 km. H = 07 33 13.4 Mag. 6-6½(PAS), 5.8-6.2(BRK), 6½(PAL), 5.9(CGS)	
22	13	eP Z eS NE	11 24 14 25 20									
23	13	eP ZNE epP Z ePP ZNE eS E eS ZN e(sS)ZN	18 12 59 13 58 14 08 16 32 36 18 06		9.0 8.0						20.6	USCGS: 12.2S, 167.1E. Santa Cruz Islands h about 259 km. H = 18 08 38.4 Mag. 6¾(PAS), 6.1-6.4(BRK), 6.2(CGS)
24	14	eP Z eS NE	02 40 47 42 27								9.5	USCGS: 20.8S, 178.6W. Fiji Islands region h about 545 km. H = 02 38 37.2 Mag. 4.6 (CGS)
25	14	eP ZNE eS ZNE	04 44 10 28									Samoa Islands region
26	15	eP Z eS ZNE eL ZNE Coda lasting 4 hours	01 05 24 09 22 10.0								27.0	USCGS: 10.4S, 160.8E. Solomon Islands Felt on Guadalcanal, Malaita and San Cristobal h about 31 km. H = 00 59 45.8 Mag. 7½(PAS), 7-7.3(BRK), 7½-7¾(PAL), 6.1(CGS)
27	15	eP Z	03 09 18		1.0 2.3						27.1	USCGS: 10.2S, 160.7E. Solomon Islands h about 33 km. H = 03 03 34.2 Mag. 5.7 (CGS)
28	15	eL N eL ZE	04 37.5 39.6								26.6	USCGS: 10.7S, 161.3E. Solomon Islands h about 33 km. H = 04 26 53.3 Mag. 5.3 (CGS)

4.

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te	Δ (Deg.)	Remarks
29	15	eL ZE	06 13.5			17.3 USCGS: 30.2S, 177.9W. Kermadec Islands region h about 41 km. H = 06 04 58.2 Mag. 4.1 (CGS)
30	15	eP Z eS E eS N eSS E eL ZE	06 19 32 24 16 42 25 42 26 50	1.5 2.4		26.8 USCGS: 10.1S, 161.0E. Solomon Islands Felt at Honiara h about 39 km. H = 06 13 52.3 Mag. 5.9 (CGS)
31	15	eL Z eL NE	16 27.5 28.7			26.6 USCGS: 10.7S, 161.2E. Solomon Islands h about 21 km. H = 16 17 13.2 Mag. 5.4 (CGS)
32	15	eS ZE eL N eL ZE	16 46 56 48 08 34			27.0 USCGS: 10.3S, 160.7E. Solomon Islands Felt at Honiara h about 18 km. H = 16 36 24.1 Mag. 5.9(BRK), 5.8(CGS)
33	15	iP ZNE eS ZNE	20 01 00.4 18			Dilatation Samoa Islands region
34	15	eS ZE eL NE	20 57 40 59 10			20.7 USCGS: 11.4S, 167.1E. Santa Cruz Islands h about 151 km. H = 20 49 21.1 Mag. 4.7 (CGS)
35	15	eS ZE eL ZNE	22 52 06 53 40			20.8 USCGS: 11.2S, 167.0E Santa Cruz Islands h about 107 km. H = 22 43 38.2 Mag. 4.9 (CGS)
36	16	eS Z eL N eL ZE	00 13 54 14.5 16.5			26.6 USCGS: 10.8S, 161.3E. Solomon Islands h about 34 km. H = 00 03 48.5 Mag. 4.9 (CGS)
37	16	eP Z eS NE	08 34 02 35 58			11.0 USCGS: 22.2S, 179.4W. South of Fiji Islands h about 568 km. H = 08 31 36.1 Mag. 4.5 (CGS)
38	16	iP ZNE iS ZNE	10 45 51.9 46 10	7.8 1.5		1.6 Dilatation USCGS: 14.9S, 173.2W. Samoa Islands region h about 33 km. H = 10 45 28.1 Mag. 4.5 (CGS)
39	16	eP Z eS NE	14 09 05 10 05			

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn As Te						△ (Deg.)	Remarks
40	16	eS eL eL	ZN N ZE	14	42.0 42.9 43.4							27.0	USCGS: 10.2S, 160.9E. Solomon Islands h about 38 km. H = 14 31 28.0 Mag. 5.1 (CGS)	
41	16	eP eS	Z NE	14	51 53	52 26						7.6	USCGS: 17.6S, 178.9W. Fiji Islands region h about 473 km. H = 14 49 57.2 Mag. 4.1 (CGS)	
42	16	eL	ZNE	18	52.2							26.6	USCGS: 10.6S, 161.3E. Solomon Islands h about 53 km. H = 18 39 48.2 Mag. 4.9 (CGS)	
43	16	eP eS	Z NE	19	29 31	47 13						7.5	USCGS: 18.9S, 177.6W. Fiji Islands region h about 548 km. H = 19 27 53.1 Mag. 4.3 (CGS)	
44	16	eP eS	Z NE	21	57 58	26 03								
45	17	eS eL	NE Z	00	56.5 57.1							27.0	USCGS: 10.3S, 160.8E, Solomon Islands h about 33 km. H = 00 45 02.9 Mag. 4.8-5.2(BRK), 5.5(CGS)	
46	17	eP eS	Z NE	06	52 53	19 47						7.8	USCGS: 18.6S, 178.2W. Fiji Islands region h about 479 km. H = 06 50 25.0 Mag. 4.4 (CGS)	
47	17	iP eS	Z NE	07	19 20	40.4 18							Dilatation	
48	17	iP eS	Z NE	13	23 25	01.2 02						11.5	Dilatation USCGS: 22.0S, 179.8E. South of Fiji Islands h about 539 km. H = 13 20 28.4 Mag. 4.9 (CGS)	
49	17	eP eS eL	Z ZN ZNE	22	31 36 38.8	28 46						26.8	USCGS: 10.2S, 161.0E. Solomon Islands Felt at Honiara h about 33 km. H = 22 26 04.1 Mag. 5.6 (CGS)	
50	18	eL	ZE	08	24.0									
51	18	eL	ZNE	08	36.2							27.0	USCGS: 10.2S, 160.9E. Solomon Islands h about 22 km. H = 08 24 35.9 Mag. 5.4 (CGS)	

No	Date	Phase	Time (G.M.T.)		Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
90	27	eS N eS ZE e(SS) N	11	07.8 09.7 15.7							112.0	USCGS: 29.7N, 80.9E. Nepal-India border region. 80 killed, many injured, major damage at Baitadi, Darchula and Chainpur, Nepal h about 37 km. H = 10 41 08.6 Mag. $5\frac{3}{4}$ (PAS), $6\frac{1}{4}$ - $6\frac{1}{2}$ (PAL), 6.1(CGS)
91	27	e(S) ZNE eSS E eSSS ZNE eL ZNE	11	26.5 33.9 38.7 44.4							112.0	USCGS: 29.7N, 81.0E. Nepal-India border region. h about 40 km. H = 10 59 18.1 Mag. 6(PAS), $6\frac{1}{2}$ - $6\frac{3}{4}$ (PAL) 6.0(CGS)
92	27	iP ZNE iS ZNE eT ZNE	12	14 52 15 25 17 47	9.0	1.3					3.9	Compression USCGS: 16.4S, 174.8W. Tonga Islands h about 80 km. H = 12 14 04.9 Mag. 4.6 (CGS)
93	27	eP Z e ZNE eS NE eT ZNE	21	52 36 53 02 57 05 22 18 10							26.1	USCGS: 38.0S, 177.2E. North Island, New Zealand h about 54 km. H = 21 47 05.5 Mag. 5.7 (CGS)
94	27	e(S) ZNE	22	17 15							8.0	USCGS: 20.8S, 175.9W. Tonga Islands h about 217 km. H = 22 14 21.2 Mag. 4.0 (CGS)
95	28	eS ZNE eSS E eSSS ZNE eL ZN	04	46.6 51.0 54.3 57.6							69.0	USCGS: 35.9N, 120.5W. Central California h about 4 km. H = 04 26 12.4 Mag. 5.8(PAS), 5.5(BRK) $6\frac{1}{2}$ (PAL), 5.3(CGS)
96	28	eP ZNE eS ZNE	06	10 09 26								Samoa Islands region
97	28	eP Z eS N eL E	11	44 39 50.5 51.8							26.7	USCGS: 10.2S, 161.2E. Solomon Islands h about 33 km. H = 11 39 02.1 Mag. 5.6 (CGS)
98	29	eP Z eS NE	02	42 22 44 25							11.0	USCGS: 22.3S, 179.4W. South of Fiji Islands h about 50 km. H = 02 39 52.8 Mag. 4.5 (CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						(Δ) (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
99	29	eP	ZNE	07	39	35							6.0	USCGS: 19.4S, 174.2W. Tonga Islands h about 50 km. H = 07 38 14.0 Mag. 4.5 (CGS)
		eS	ZNE		40	30								
		eT	ZNE		44	35								
100	29	eP	Z	20	32	33								
		eS	NE		34	03								
101	29	eP	Z	21	51	38							20.7	USCGS: 13.8S, 166.7E. New Hebrides Islands h about 35 km. H = 21 46 54.5 Mag. 5.4-5.8(BRK), 6.2(CGS)
		eS	Z		55	32								
		eS	E			38								
		eS	N			48								
		eL	ZE		56	58								
102	30	eP	Z	01	55	15								
		eS	NE			59								
103	30	eP	Z	06	08	37							8.4	USCGS: 21.0S, 176.3E. Fiji Islands region h about 169 km. H = 06 06 42.3 Mag. 4.5 (CGS)
		eS	NE		09	56								
104	30	eS	NE	12	47	26							66.0	USCGS: 9.6N, 126.7E. Mindanao, Philippine Islands h about 44 km. H = 12 27 41.9 Mag. 5.4 (CGS)
		eS	Z			32								
		eL	ZNE		57	54								
105	30	eP	Z	12	56	47								
		eS	NE		58	24								
106	30	eP	Z	13	58	09								
		eS	NE		59	08								
107	30	eP	Z	16	58	41							5.5	USCGS: 15.5S, 177.3E. Fiji Islands region h about 33 km. H = 16 57 23.4 Mag. 4.9 (CGS)
		eS	ZNE		59	40								
108	30	eP	Z	19	20	56								
		e(S)	NE		23	17								
109	30	eP	Z	22	26	31	2.3	3.0						

NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.

20 DEC 1967

NEW ZEALAND

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA.

Latitude; $13^{\circ} 54' 33.6''S$ Longitude: $171^{\circ} 46' 38.1''W$

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

To = 1.0 sec. Tg = 0.75 sec.

Sprengnether long period seismometers

To = 15 sec. Tg = 100 sec.

Nominal Magnifications: S.P. 12500

L.P. 750

JULY 1966 *

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
1	1	iP	ZNE	01	20	38.7								Samoa Islands region
		eS	ZNE		21	00								
2	1	eP	ZNE	05	44	42	1.6	1.5			1.6	1.8	7.7	USCGS: 17.8S, 178.7W. Fiji Islands region h about 523 km. H = 05 42 46.9 Mag. 4.0 (CGS)
		eS	ZNE		46	12								
3	1	eP	Z	06	02	10	7.6	3.0	3.6	2.0	5.3	3.0	75.0	USCGS: 21.8N, 122.5E. Taiwan h about 117 km. H = 05 50 39.2 Mag. 6.4 (CGS)
		ePcP	Z			36	3.0	3.3						
		eS	ZNE		11	44								
		eScS	NE		12	26								
		e	Z		13	00								
		eSS	ZNE		16.4									
		eSSS	NE		20.0									
		eLq	ZNE		22.0									
		eLr	ZNE		24.8									
4	1	iP	Z	11	18	54	1.7	1.0						Compression Samoa Islands region
		eS	ZNE		19	15								
5	1	eP	Z	19	23	06	2.5	1.9					12.6	USCGS: 23.7S, 179.9W. South of Fiji Islands h about 496 km. H = 19 20 21.9 Mag. 4.1 (CGS)
		eS	ZNE		25	15								
6	2	eP	ZNE	23	05	00								
		eS	ZNE			24								

* See note at end.

No	Date	Phase		Time (G.M.T.)									△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
19	5	eP	Z	19	30	58								
		eS	ZNE		31	30								
20	6	eP	Z	22	45	57						19.7	USCGS: 32.1S, 179.9W. South of Kermadec Is. h about 274 km. H = 22 41 48.9 Mag. 4.9 (CGS)	
		eS	ZNE		49	25								
21	7	eP	ZNE	00	57	11							Samoa Islands region	
		eS	ZNE			31								
22	7	eP	ZNE	13	02	58								
		eS	ZNE		03	30								
23	7	iP	Z	14	23	44.8							Compression	
		eS	ZNE		24	25								
24	7	eP	ZNE	21	22	13							Samoa Islands region	
		eS	ZNE			34								
25	7	eP	ZNE	23	23	12						4.4	USCGS: 17.8S, 173.6W. Tonga Islands h about 26 km. H = 23 22 07.3 Mag. 5.3 (CGS)	
		eS	ZNE		24	00								
		eT	ZNE		25	55								
26	8	eP	Z	13	38	56								
		eS	ZNE		39	16								
27	8	eP	Z	22	13	51						5.8	USCGS: 19.0S, 174.5W. Tonga Islands h about 5 km. H = 22 12 23.2 Mag. 5.3 (CGS)	
		eS	NE		14	47								
		eT	ZNE		18	40								
28	9	iP	Z	03	23	57							Dilatation	
		eS	NE		24	10								
29	9	eP	Z	07	56	23						20.5	USCGS: 33.2S, 179.2W. South of Kermadec Is. h about 62 km. H = 07 51 47.8 Mag. 5.2 (CGS)	
		eS	NE		59	50								
		eL	ZN	08	01.2									
		eT	ZNE		15	41								
30	9	iP	Z	14	16	48.2	22.5	1.9	2.5	1.8	2.5	1.8	8.8	Compression USCGS: 20.1S, 178.4W. Fiji Islands region h about 559 km. H = 14 14 41.6 Mag. 5.1 (CGS)
		eS	ZNE		18	26			4.0	2.0	2.5	1.8		
31	9	eP	Z	14	58	41								
		eS	NE		59	23								
32	9	eP	ZNE	16	09	31			1.5	1.8	1.5	2.0	7.5	USCGS: 17.5S, 178.5W. Fiji Islands region. h about 523 km. H = 16 07 39.2 Mag. 5.6 (CGS)
		eS	NE		11	04								
33	10	eP	Z	01	10	14								
		e(S)	NE		12	13								

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
34	10	iP Z eS ZNE	01 23 55.4 25 20	5.4	2.0					7.6	Dilatation USCGS: 17.4S, 178.7W. Fiji Islands region h about 532 km. H = 01 22 02.9 Mag. 5.8 (CGS)
35	10	eP Z eS NE	01 52 58 55 14							13.6	USCGS: 24.8S, 179.7E. South of Fiji Islands h about 550 km. H = 01 50 11.3 Mag. 4.2 (CGS)
36	10	eP ZNE eS ZNE eL ZNE eT ZNE	10 04 32 07 28 08 00 18 11							17.6	USCGS: 30.5S, 177.8W. Kermadec Islands region. h about 40 km. H = 10 00 39.1 Mag. 5-5.4(BRK), 5.8(CGS)
37	10	eP Z eS ZNE eSS ZE e N eL ZNE	16 24 14 33 30 38 00 42 32 45.7							72.0	USCGS: 24.2N, 125.2E. Southwestern Ryukyu Islands h about 28 km. H = 16 12 41.5 Mag. 4.5-4.9(BRK), 5.9(CGS)
38	11	eP Z e(S) NE	18 21 47 24 03								
39	11	eP Z e Z eS NE eL NE eT ZNE Coda about 1 hr.	22 47 11 29 48 12 49 04 52 07	9.0	1.3					5.6	USCGS: 19.2S, 173.6W. Tonga Islands. h about 120 km. H = 22 46 05.7 Mag. 4.7-5.3(BRK) 5.6(CGS)
40	12	iP Z eS ZNE	16 15 32 53								
41	12	eP Z eS NE	17 41 35 44.2							18.5	USCGS: 21.5S, 170.5E. Loyalty Islands region h about 134 km. H = 17 37 27.3 Mag. 5.3 (CGS)
42	12	eP Z eS ZNE eL ZNE eT ZNE	21 41 38 42 50 43.1 48 46							7.3	USCGS: 20.6S, 174.4W. Tonga Islands h about 33 km. H = 21 39 57.8 Mag. 4.6 (CGS)
43	13	eP Z eS NE eL NE eT ZNE	00 25 05 26 03 27.1 30 00								
44	13	eP Z eS NE eT ZNE	05 51 03 53 36 06 02 28							15.2	USCGS: 28.0S, 177.6W. Kermadec Islands h about 119 km. H = 05 47 44.3 Mag. 5.1 (CGS)

7.

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
73	21	iP Z eS NE eT ZNE	18 32 09.2 33 39 38 32							7.6	Dilatation USCGS: 17.8S, 178.6W. Fiji Islands region h about 59 km. H = 18 30 14.9 Mag. 6(PAS), 5-5.3(BRK), 5.6(CGS)
74	22	e(P) Z eS NE	02 13 24 14 42								
75	22	e(S) NE	07 37 18								
76	22	eP Z	07 46 19							20.7	USCGS: 18.3S, 167.2E. New Hebrides Islands h about 33 km. H = 07 41 42.7 Mag. 5.1 (CGS)
77	22	eP Z eS ZNE	08 30 12 33 50							19.7	USCGS: 16.0S, 168.0E. New Hebrides Islands Felt on Espiritu Santo h about 187 km. H = 08 25 54.7 Mag. 5.5 (CGS)
78	22	e(P) Z	09 49 47								
79	22	eP Z eS ZNE eSSS E eL ZN	10 28 07 36 47 44 00 46 30							64.0	USCGS: 51.7N, 173.5W. Andreanof Islands, Aleutian Islands. Felt on Adak h about 56 km. H = 10 17 22.5 Mag. 5.4(PAL), 5.6(CGS)
80	22	eP Z eS NE	13 00 03 46								
81	22	eP Z eS NE eT ZNE	14 05 16 41 07 15								
82	22	eP Z eS NE	21 37 25 38 00								
83	23	eL ZN	10 28.3								
84	23	eS ZN eL ZN	14 51 00 15 01 00							64.0	USCGS: 51.6N, 173.4W. Andreanof Islands, Aleutian Islands h about 41 km. H = 14 39 48.3 Mag. 4.5 (CGS)
85	23	eP Z eS NE	19 44 21 54								
86	23	eL ZE	22 59.7							21.6	USCGS: 12.0S, 166.2E. Santa Cruz Islands h about 47 km. H = 22 48 15.3 Mag. 5.0 (CGS)

No	Date	Phase	Time (G.M.T.)	Az Tz An Tn Ae Te						(Δ) (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
87	24	eP Z eS NE eL Z eT ZNE Coda lasting 30 minutes	08 52 48 53 15 32 55 16							2.6	USCGS: 16.3S, 172.8W. Samoa Islands region h about 49 km. H = 08 52 13.4 Mag. 4.8 (CGS)
88	24	eP Z eS NE eT ZNE	17 20 01 21 16 25 32							7.6	USCGS: 20.4S, 175.8W. Tonga Islands Felt h about 112 km. H = 17 18 17.6 Mag. 5.2 (CGS)
89	25	eP Z eS ZNE	03 42 16 38								Samoa Islands region
90	25	eP Z	10 56 03							20.2	USCGS: 32.4S, 179.7E. South of Kermadec Is. h about 330 km. H = 10 51 52.4 Mag. 4.5 (CGS)
91	25	iP Z eS ZNE	16 16 49 17 12								Dilatation
92	26	eP Z eS NE	05 46 26 47 55	2.0	2.0					7.6	USCGS: 18.0S, 178.5W. Fiji Islands region h about 596 km. H = 05 44 30.9 Mag. 4.3 (CGS)
93	26	eP Z eS NE eT ZNE	09 51 01 24 53 28								
94	26	eP Z	20 12 20							7.6	USCGS: 18.4S, 178.2W. Fiji Islands region h about 601 km. H = 20 10 24.3
95	26	eP ZNE eS ZNE eT ZNE	22 43 01 45 25 54 20							14.8	USCGS: 27.5S, 177.9W. Kermadec Islands h about 143 km. H = 22 39 47.8 Mag. 5.2 (CGS)
96	27	eScS E eSS ZE e Z eL ZN eL ZNE	05 12 50 20 08 27.1 29.2 33 10							94.0	USCGS: 24.2S, 70.3W. Near coast of Northern Chile Felt at Antofagasta h about 35 km. H = 04 48 59.4 Mag. 5.4-5.8(BRK), 6.0(CGS)
97	27	eP ZNE eS ZNE	17 08 46 09 20								
98	27	eP Z eS NE	19 14 16 15 01								
99	27	iP Z eS ZNE	22 16 42.5 57								Samoa Islands region

10.

NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds.

- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.


P.D. Müller
OBSERVER-IN-CHARGE

No	Date	Phase	Time (G.M.T.)			Az Tz An Tn Ae Te	△ (Deg.)	Remarks
7	1	eP ZNE eS N eS E eSS Z e N eL ZN eL E	20	42 31 51 42 52 24 56 10 57 36	21	02.7 04.0	66.0	USCGS: 44.6N, 150.4E. Kurile Islands region h about 24 km. H = 20 32 01.3 Mag. 5.2 (CGS)
8	1	ePKP Z ePP Z e NE eSS E eSS N e(SSP)Z e E e N eSSS ZE	21	21 55 23 30 32 12 40 12 40 18 40 40 41 06 44 06 45 00			123.0	USCGS: 30.ON, 68.7E. West Pakistan 2 killed, 15 injured about 45 villages destroyed Felt in Quetta h about 33 km. H = 21 02 59.6 Mag. 6 $\frac{3}{4}$ (PAS), 6.2(CGS)
Surface waves lasting 1 hour								
9	1	eP Z eS ZNE	22	19 22 20 05				
10	2	eP ZNE eS ZNE	10	50 02 32				
11	2	eP Z eS ZNE	19	27 21 28 50	1.7 1.5		7.5	USCGS: 18.5S, 177.8W. Fiji Islands region h about 540 km. H = 19 25 29.2 Mag. 4.1 (CGS)
12	2	eP Z	20	49 55	1.0 2.1 1.6 1.9 2.1 2.0			
13	2	eP Z eS ZNE	22	03 28 04 48			8.5	USCGS: 20.7S, 176.8W. Fiji Islands region h about 401 km. H = 22 01 28.7 Mag. 4.0 (CGS)
14	3	eP Z eS NE	04	14 47 15 30				
15	3	eP ZNE eS ZNE	11	41 45 42 06				
16	3	eP Z eS NE	16	00 50 02 08				
17	4	eP ZNE eS ZNE	06	03 10 46				
18	4	eP Z eS ZNE	09	16 03 25				Samoa Islands region
19	4	eP Z eS NE	11	58 20 59 50			7.4	USCGS: 18.1S, 178.0W. Fiji Islands region h about 576 km. H = 11 56 28.2
20	4	iP Z	15	26 51	3.0 1.6		4.9	Compression USCGS: 17.8S, 174.8W. Tonga Islands h about 239 km. H = 15 25 39.9 Mag. 5.1 (CGS)

No	Date	Phase		Time			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
				(G.M.T.)										
21	5	eP	Z	04	38	24	3.5 2.3						25.6	USCGS: 10.9S, 162.3E. Solomon Islands h about 93 km. H = 04 33 07.4 Mag. 5.7 (CGS)
		eS	ZNE		42	50								
		e	NE		43	38								
		eL	ZE		44	10								
22	5	iP	Z	08	02	00								Compression
		eS	ZNE			47								
23	5	e(SS)	N	20	07.0								25.1	USCGS: 11.1S, 162.6E. Solomon Island h about 66 km. H = 19 56 43.0 Mag. 4.9 (CGS)
		eL	ZE		08.3									
24	6	eP	Z	11	26	54							12.2	USCGS: 23.5S, 179.6W. South of Fiji Islands h about 502 km. H = 11 24 13.6 Mag. 5.2 (CGS)
		eS	ZNE		29	05								
25	7	eP	Z	01	38	49								
		eS	NE		40	18								
26	7	eP	Z	02	23	39							64.0	USCGS: 50.6N, 171.3W. Aleutian Islands region h about 39 km. H = 02 13 05.1 Mag. 7.0(BRK), 6.5(CGS)
		eS	ZNE		32	14								
		eScS	ZNE		33	34								
		eSS	ZNE		35	50								
		eSSS	NE		38	10								
		eLq	ZN		39	18								
		eLr	ZN		42	04								
		Surface waves lasting 2 hrs.												
27	7	eP	ZNE	13	44	47	2.5 1.9 1.5 1.9						12.7	USCGS: 24.0S, 179.9W. h about 537 km. H = 13 42 07.8 Mag. 4.7 (CGS)
		eS	ZNE		46	53								
28	7	eP	Z	15	08	32							4.0	USCGS: 17.4S, 173.5W. Tonga Islands h about 33 km. H = 15 07 37.0 Mag. 4.5 (CGS)
		eS	ZNE		09	13								
		eT	ZNE		12	21								
29	7	eP	Z	18	00	08								
		eS	ZE		01	11								
30	7	eS	ZNE	17	57	04							71.0	USCGS: 31.8N, 114.5W, Gulf of California Felt widely in Southern California, Arizona and Northern Mexico h about 33 km. H = 17 36 26.7 Mag. 6 $\frac{1}{2}$ -6 $\frac{1}{2}$ (PAS), 6.7-7.0(BRK), 6.3(CGS)
		eSS	ZNE	18	01	30								
		eLq	ZNE		05	30								
		eLr	ZNE		08	40								
31	8	eS	ZNE	07	33.5								23.7	USCGS: 10.5S, 164.3E. Santa Cruz Islands region h about 16 km. H = 07 24 13.8 Mag. 5.3 (CGS)
		eSS	ZNE		34.5									
		eL	ZE		35.5									

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
44	11	eP eS	Z NE	08 42 01 43 32								7.5	USCGS: 18.1S, 178.3W. Fiji Islands region h about 573 km. H = 08 40 06.1 Mag. 4.2 (CGS)	
45	11	eP eS	Z NE	08 57 01 58 33								7.6	USCGS: 18.1S, 178.4W. Fiji Islands region h about 580 km. H = 08 55 04.9 Mag. 3.5 (CGS)	
46	11	eP	ZNE	15 47 04	0.7	2.0	0.9	2.0	1.0	2.4		7.6	USCGS: 17.6S, 178.6W. Fiji Islands region h about 506 km. H = 15 45 11.6 Mag. 3.6 (CGS)	
47	11	eP eS e eL	ZNE ZNE E ZN	20 42 16 44 03 12 30								10.5	USCGS: 23.5S, 175.9W. Tonga Islands region h about 32 km. H = 20 39 55.9 Mag. 5.3 (CGS)	
48	11	eP eS eL	ZNE ZNE ZNE	22 18 39 20 20 48								10.2	USCGS: 23.3S, 175.8W. Tonga Islands region h about 33 km. H = 22 16 15.8 Mag. 4.8 (CGS)	
49	11	eP eS eL	Z ZN ZNE	23 19 39 21 24 52								9.9	USCGS: 23.6S, 175.1W. Tonga Islands region h about 33 km. H = 23 17 19.8 Mag. 4.9 (CGS)	
50	11	eP eS eL eL	ZNE ZNE ZNE ZNE	23 27 57 29 42 30 04 37 47								10.4	USCGS: 23.4S, 175.9W. Tonga Islands region h about 37 km. H = 23 25 37.9 Mag. 5.4-5.8(BRK), 5.3(CGS)	
51	11	eP eS	Z NE	23 36 10 38 21								10.5	USCGS: 23.9S, 175.3W. Tonga Islands region h about 33 km. H = 23 33 51.8 Mag. 4.7 (CGS)	
52	12	eP eS	ZNE ZNE	00 15 00 16 41								10.4	USCGS: 23.3S, 175.9W. Tonga Islands region h about 33 km. H = 00 12 37.9 Mag. 5.2 (CGS)	
53	12	eP eS eL eT	ZNE ZNE ZNE ZNE	01 49 56 50 41 51 00 53 44								4.0	USCGS: 14.7S, 175.9W. Samoa Islands region h about 33 km. H = 01 49 03.9 Mag. 4.8 (CGS)	

7.

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						 (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
69	14	eP eS	Z ZNE	22 58 58 59 33										
70	14	eP	Z	23 05 02								10.2	USCGS: 21.2S, 179.2W. Fiji Islands region h about 584 km. H = 23 02 42.0 Mag. 4.0 (CGS)	
71	15	eP eS	Z NE	02 14 40 16 06								7.4	USCGS: 17.7S, 178.4W. Fiji Islands region h about 556 km. H = 02 12 47.1 Mag. 4.8 (CGS)	
72	15	eS eSS eSS eL	ZNE ZE NE Z	03 06 26 12 20 15.6 16.8								72.0	USCGS: 13.3N, 121.3E. Mindoro, Philippine Is Felt h about 14 km. H = 02 45 32.3	
73	15	eP eS	Z NE	07 42 20 43 53										
74	15	eP eS	Z NE	13 10 50 11 48										
75	15	eP eS	Z NE	13 16 10 17 24										
76	15	eL	ZE	14 12.5								77.0	USCGS: 60.4N, 146.0W. Southern Alaska h about 9 km. H = 13 36 23.7 Mag. 5.3 (CGS)	
77	16	eP eS eT	Z NE ZNE	01 02 07 41 05 47										
78	16	iP eS	Z NE	01 12 59 13 15	3.2	1.0							Compression	
79	16	eP eS	Z NE	03 36 17 38									Samoa Islands region	
80	16	eP eS	Z ZNE	04 58 52 05 02.4										
81	16	eP eS	Z NE	15 40 38 41 03										
82	16	eP eS eT	Z NE ZNE	17 50 57 53 28 18 04 20								15.3	USCGS: 27.7S, 178.2W. Kermadec Island h about 192 km. H = 17 47 41.9 Mag. 4.9 (CGS)	

No	Date	Phase	Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
95	18	eP Z ePP ZE ePPP Z eS ZNE eSS NE eSSS Z eLq ZN eLr ZNE	10	45	42							85.0	USCGS: 14.6N, 91.7W. Guatemala Felt at San Salvador h about 76 km. H = 10 33 16.5 Mag. 6.0(PAS), 5.9-6.2(BRK), 6-6 $\frac{1}{4}$ (PAL), 5.9(CGS)
96	18	eP Z	14	44	42							64.0	USCGS: 0.2S, 125.1E. Malucca Sea h about 56 km. H = 14 33 59.8 Mag. 6.3 (CGS)
97	18	eP Z ePcP Z eS ZNE eScS E eSS ZNE eL ZNE	14	48	25	2.6	2.5					64.0	USCGS: 0.1S, 125.1E. Molucca Sea h about 33 km. H = 14 37 52.6 Mag. 6.3 (CGS)
98	18	eP Z eS NE eT ZNE	19	20	23								
99	18	eP ZNE e(S) NE	21	13	58	2.4	2.0						
100	19	eP ZNE eS ZNE	01	03	19								
101	19	e(P) Z eS NE	07	47	10								
102	19	eP ZNE eS ZNE	08	58	13								
103	19	eL ZN	11	53.3								66.0	USCGS: 53.6N, 167.6W. Fox Islands, Aleutian Islands h about 54 km. H = 11 23 13.5 Mag. 5.1 (CGS)
104	19	ePKP Z e(PPP)ZE e NE e NE eSKSP Z e Z e NE eSS NE eSSS E e N e ZE eL Z eL NE	12	41	43							141.0	USCGS: 39.2N, 41.3E. Turkey More than 300 killed many injured, with many major property damaged in Erzurum, Bingol, Mus, and Hitlis Provinces. h about 26 km. H = 12 22 09.6 Mag. 7(PAS), 6.7-6.9(BRK), 6 $\frac{3}{4}$ (PAL), 6.7(CGS surface wave), 6.1 (CGS)
105	19	eP Z eS NE eT ZNE	13	40	55							5.6	USCGS: 19.1S, 173.6E. Tonga Islands h about 33 km. H = 13 39 42.0 Mag. 4.4 (CGS)

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
106	19	eP eS	Z NE	13 14	59 00	15 42							7.4	USCGS: 19.0S, 177.4W. Fiji Islands region h about 566 km. H = 13 57 22
107	19	iP eS	Z NE	14	53	14 55	1.6	1.1						Compression
108	19	eP eS	Z NE	21	00 01	13 57								
109	20	eP	Z	09	43	35	2.1	2.4					72.0	USCGS: 43.1N, 140.6E. Hokkaido, Japan region Felt on Hokkaido h about 101 km. H = 09 32 31.7 Mag. 6 $\frac{1}{4}$ (PAS), 5.8(CGS)
110	20	e e e e e eL eL	NE NE ZE N ZE N ZE	12	41.0 45.3 57.4 59.0 03.5 05.1 06.1									
111	20	eP eS	Z NE	15	40	33 52								Samoa Islands region
112	20	e eL	NE Z	22	30.6 31.5									
113	20	eP eS e eL eT	Z NE NE Z ZNE	22	57 59	21 10 36 39 55							10.4	USCGS: 23.4S, 176.0W. South of Fiji Islands h about 57 km. H = 22 55 03.0 Mag. 5 $\frac{3}{4}$ (PAS), 5.6-5.8(BRK), 5.6(CGS)
		Coda lasting 1 $\frac{1}{2}$ hrs.												
114	20	eP eS	Z NE	23	15 17	44 25								
115	20	eP eS	Z NE	23	36 37	44 08								
116	21	eP eS	Z NE	02	16 18	23 08								
117	21	eP eS eT	Z NE ZNE	04 05	57 58 02	17 05 00								
118	21	eP eS eSS eSSS eL	Z ZNE ZNE N ZNE	05	11 19 23 26 29.5	08 48 56 44							66.0	USCGS: 8.5N, 126.7E. Mindanao, Philippine Islands h about 67 km. H = 05 00 26.8 Mag. 6.6-6.9(BRK), 6.0(CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
119	21	eP eS	Z NE	06 06 25 08 09								10.0	USCGS: 23.0S, 176.0W. Tonga Islands region h about 33 km. H = 06 04 03.1 Mag. 4.4 (CGS)	
120	21	eP eS	Z NE	07 46 00 47 57										
121	22	eP eS	Z NE	03 32 03 45										
122	22	eP eS	Z NE	08 35 08 25										
123	22	eP	Z	14 31 41								73.0	USCGS: 50.3N, 147.6E. Sea of Okhotsk h about 628 km. H = 14 21 13.7 Mag. 5.2-5.6(BRK), 5.2(CGS)	
124	22	eP eS eSSS eL	Z NE NE Z	17 11 25 16 44 21.8 25.8								55.0	USCGS: 1.8S, 134.2E. West New Guinea region h about 13 km. H = 17 02 03.5 Mag. 5.9 (CGS)	
125	22	eP eS eSS eL	Z ZE N ZE	17 46 27 49 54 50 24 51 12	2.1	2.0						18.8	USCGS: 22.4S, 170.6E. Loyalty Islands region h about 39 km. H = 17 42 10.6 Mag. 6.7-7.1(BRK), 5.5(CGS)	
126	22	eP	Z	20 36 13								19.0	USCGS: 22.5S, 170.5E. Loyalty Islands region h about 33 km H = 20 31 58.2 Mag. 5.2 (CGS)	
127	23	eP eS	ZNE ZNE	02 36 32 50										Samoa Islands region
128	23	eP eS	ZNE ZNE	07 05 11 30										Samoa Islands region
129	23	eP eS	Z NE	07 29 33 30 39										
130	23	eP eS	Z NE	08 20 00 22 07										
131	23	eP eS	ZNE ZNE	18 06 56 07 18										Samoa Islands region
132	24	eP eS	Z ZNE	02 22 41 24 05								7.7	USCGS: 19.0S, 177.7W. Fiji Islands region h about 442 km. H = 02 20 49.1 Mag. 4.4 (CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
133	24	eP eS	Z NE	21 27	26 51	42						7.0	USCGS: 20.0S, 175.3W. Tonga Islands h about 33 km. H = 21 24 59.9 Mag. 4.3 (CGS)	
134	25	eP eS eT	Z NE ZNE	11 48 51	47 05 55	02						5.4	USCGS: 18.7S, 173.9W. Tonga Islands h about 33 km. H = 11 45 46.0 Mag. 4.7 (CGS)	
135	26	eP eS eL eT	Z ZNE ZNE ZNE	00 57 58.5 01	55 33 58.5 07	06	6.0	2.1				14.6	USCGS: 27.5S, 177.3W. Kermadec Islands h about 59 km. H = 00 51 51.3 Mag. 5.7-6.1(BRK), 5.7(CGS)	
136	26	eP eS	ZNE ZNE	03	08 09	35								
137	26	eP eS eS e eL	Z ZNE N Z ZE	09 14 15 16	11 50 10 49 20	08						19.2	USCGS: 22.1S, 170.0E. Loyalty Islands region h about 33 km. H = 09 06 50.4 Mag. 5.4-5.8(BRK), 5.6(CGS)	
		Coda lasting 20 minutes												
138	26	eP eS eL	Z NE Z	13	32 36 37.3	37	1.4	2.0						
139	26	eP eS	ZNE ZNE	15	21	21 52								
140	26	eP eS eL	Z NE ZNE	22	27 28 29.5	06						10.5	USCGS: 23.6S, 175.8W. Tonga Islands region h about 33 km. H = 22 24 45.3 Mag. 4.9 (CGS)	
141	26	eP eS	Z NE	23	16 53	02								
142	27	eP	Z	02	46	38						61.0	USCGS: 3.2N, 128.2E. North of Halmahera h about 170 km. H = 02 36 33.0 Mag. 5.6 (CGS)	
143	27	eP eS eL	Z NE ZNE	03	04 06 07.3	50 37						10.5	USCGS: 23.6S, 175.8W. Tonga Islands region h about 63 km. H = 03 02 32.9 Mag. 4.9 (CGS)	
144	27	eP eS	Z ZNE	03	10 53	27								
145	27	eP eS	Z ZNE	08	02 03	35 14								
146	27	eP eS	Z ZNE	09	47 44	19								

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
147	27	iP eS	Z NE	10 29 43 31 08									7.5	Dilatation USCGS: 17.9S, 178.4W. Fiji Islands region h about 550 km. H = 10 27 50.0 Mag. 4.6 (CGS)
148	27	iP eS	Z ZNE	14 09 31 51										Compression Samoa Islands region
149	28	eP eS eT	Z NE ZNE	07 34 37 08 38 48 00 10									23.7	USCGS: 35.8S, 178.5E. Off east coast of North Island New Zealand h about 9.4 km. H = 07 29 34.7 Mag. 5.8 (CGS)
150	28	e(P) eS e(T)	Z NE ZNE	07 54 57 56 20 58 58										
151	28	eP eS eL	Z ZE ZNE	10 09 00 13 48 16.3									33.8	USCGS: 4.6S, 155.2E. Solomon Islands h about 509 km. H = 10 03 03.0 Mag. 5.9 (CGS)
152	28	eP eS eT	Z NE ZNE	13 22 41 23 41 26 40									6.2	USCGS: 18.6S, 175.6W. Tonga Islands h about 179 km. H = 13 21 13.5 Mag. 4.7 (CGS)
153	28	eP eS	Z NE	13 40 36 57										Samoa Islands region
154	28	iP eS	Z ZNE	14 49 44 50 22										Compression
155	29	eP eS	Z NE	01 59 30 54										Samoa Islands region
156	29	eS eSS eL	ZNE E ZN	13 27 06 31.7 33.6									50.0	USCGS: 65.2S, 176.9E. Ballerby Islands region h about 33 km. H = 13 10 27.0 Mag. 5.5 (CGS)
157	30	eP eS eL eT	Z NE ZNE ZNE	13 38 33 39 10 40 42 30									4.2	USCGS: 17.7S, 173.3W. Tonga Islands h about 33 km. H = 13 37 38.7 Mag. 4.8 (CGS)
158	30	eP eS	Z NE	15 06 43 08 47									12.4	USCGS: 25.5S, 179.9W. South of Fiji Islands h about 505 km. H = 15 04 01.4
159	30	iP eS	ZNE ZNE	16 57 18.1 59 25									12.6	Dilatation USCGS: 23.9S, 179.8W. South of Fiji Islands h about 510 km. H = 16 54 38.1

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
160	30	eP	Z	20	00	23								
		eS	NE		01	20								
161	30	eL	ZN	20	59.5							77.0	USCGS: 61.3N, 147.5W. Southern Alaska, Felt at Anchorage, Valdez, Glennallen, Cordova, and Kenai. h about 36 km. H = 20 20 54.0 Mag. $5\frac{3}{4}$ -6(PAS), 4.9-5.3(BRK), $5\frac{3}{4}$ (PAL) 5.9(CGS)	
162	31	eL	ZNE	00	09.5							72.0	USCGS: 18.7N, 107.0W. Off coast of Jalisco, Mexico. h about 54 km. H = 23 37 19.4 Mag. 5.3 (CGS)	
163	31	eP	Z	08	47	25	0.8	1.6						
164	31	eP	Z	08	48	28						9.5	AFI: $23\frac{1}{2}$ S, 173W. Tonga Island region h about 33 km. H = 08 46 09 RAR and AFI readings used to determine epicentre	
		eS	NE		50	16								
		eL	ZNE		51.0									
		eT	ZNE		58	58								
165	31	eP	Z	09	41	18						13.9	USCGS: 27.0S, 176.5W. Kermadec Islands h about 58 km. H = 09 38 17.1 Mag. 4.7 (CGS)	
		eS	NE		43	45								
		eL	ZNE		44.5									
		eT	ZNE		53	52								
166	31	eP	Z	10	07	02								
		eS	NE			45								
167	31	eP	Z	14	04	18								Samoa Islands region
		eS	NE			39								

NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds.
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.

16 JAN 1968

NEW ZEALAND
 Department of Scientific and Industrial Research
 Geophysics Division
 APLA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN
 STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA.

Latitude: 13° 54' 33.6"S Longitude: 171° 46' 38.1"W

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

To = 1.0 sec. Tg = 0.75 sec.

Sprengnether long period seismometers

To = 15 sec. Tg = 100 sec.

Nominal Magnifications: S.P. 12500

L.P. 750

SEPTEMBER 1966 *

No	Date	Phase		Time			Az	Tz	An	Tn	Ae	Te	△ (Deg.)	Remarks
				(G.M.T.)										
1	1	eP eS	Z NE	03	32 33	52 50							4.8	USCGS: 16.2S, 176.2W. Fiji Islands region h about 345 km. H = 03 31 34.1 Mag. 3.8 (CGS)
2	1	eP eS	ZNE ZNE	15	26 28	47 03							7.6	USCGS: 20.6S, 175.4W. Tonga Islands h about 33 km. H = 15 24 59.2 Mag. 5.2 (CGS)
3	2	eS eS eSSS eL	NE Z NE ZE	08	18 19 26 28.8	32 00 16							66.0	USCGS: 4.5S, 105.9W. Northern Easter Island, Cordillera h about 33 km. H = 07 59 05.7 Mag. 6.4 (PAS), 5.7-6.1 (BRK), 5.1 (CGS)
4	3	eP eS	Z NE	02	44 45	32 09								
5	3	eP eS	Z NE	06	45	22 53								
6	3	eP eS	Z NE	10	57 58	27 00								
7	3	eL	N	16	53.5								72.0	USCGS: 10.2N, 104.2W. Off coast of Mexico h about 47 km. H = 16 24 20.7 Mag. 4.4-4.8 (BRK), 5.3 (CGS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks			
33	9	eP eS eT	Z ZNE ZNE	13	02	08								
					04	36								
34	9	eP	Z	23	17	52				19.8	USCGS: 17.6S, 168.0E. New Hebrides Islands Felt at Port Vila h about 36 km. H = 23 13 19.8 Mag. 5.2 (CGS)			
35	10	e(S)	ZNE	10	21	30								
36	10	eP eS	Z NE	17	34 36	38 46				12.4	USCGS: 23.3S, 179.8E. South of Fiji Islands h about 550 km. H = 17 32 03.0 Mag. 5.0 (CGS)			
37	11	e(L)	N	01	44.6									
38	11	iP eS	Z ZNE	11	55	10.5 31					Samoa Islands region			
39	11	eP eS	Z NE	21	22	16 36					Samoa Islands region			
40	11	eP eS	ZNE ZNE	22	20 22	46 01	1.5	2.0	1.4	2.0	2.0	2.0	6.5	USCGS: 17.5S, 177.5E. Fiji Islands region h about 368 km. H = 22 19 07.4 Mag. 4.9 (CGS)
41	12	eP eS	Z NE	08	14	36 57					Samoa Islands region			
42	12	eP eS	Z NE	09	31 32	55 40								
43	12	eP eS	ZNE ZNE	11	33 37	55 54				19.0	USCGS: 23.1S, 170.6E. Loyalty Islands region h about 49 km. H = 11 29 40.3 Mag. $6\frac{1}{2}$ - $6\frac{3}{4}$ (PAS), 6.4-6.7(BRK), $6\frac{3}{4}$ (PAL), 6.1 (CGS)			
44	12	eP	Z	14	09	48				19.2	USCGS: 22.8S, 170.4E. Loyalty Islands region h about 33 km. H = 14 05 20.6 Mag. 4.9 (CGS)			
45	12	eP eS	ZNE ZNE	14	43	17 51								
46	12	eP eS	ZNE ZNE	16	13	25 45					Samoa Islands region			

No	Date	Phase		Time									Remarks	
				(G.M.T.)			Az	Tz	An	Tn	Ae	Te		(Deg.)
47	12	eS	N	17	01	48						71.0	USCGS: 39.4N, 120.1W. Northern California. Damage at Truckee, California and, at Carson City and Reno, Nevada. Felt widely h about 8 km. H = 16 41 01.7 Mag. 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (PAS), 6.1(BRK), 5.4(CGS)	
		eS	E		02.5									
		eL	NE		09.8									
		eL	Z		12.5									
48	13	eP	Z	00	39	13							Samoa Islands region	
		eS	NE		34									
49	13	eP	Z	00	43	45							Samoa Islands region	
		eS	NE		44 05									
50	13	eP	ZNE	00	55	00						19.0	USCGS: 23.0S, 170.6E. Loyalty Islands region h about 28 km. H = 00 50 42.8 Mag. 5.0 (CGS)	
		eS	ZNE		58 42									
No records after 13d 01h until 22d 06h 05m due to an inoperative Console.														
51	22	eP	ZNE	21	35	58							3.4	USCGS: 17.0S, 172.8W. Samoa Islands region h about 10 km. H = 21 35 09.2 Mag. 4.4 (CGS)
		eS	ZNE		36 36									
		eT	ZNE		39 15									
No hour marks on the 23rd.														
52	24	eP	Z	09	05	50							49.0	USCGS: 12.0N, 130.8W. North Pacific Ocean h about 33 km. H = 08 57 10.2 Mag. 5.3 (CGS)
53	24	eP	Z	16	52	29	1.0	2.0					18.0	USCGS: 22.4S, 171.6E. Loyalty Islands region h about 127 km. H = 16 48 31.7 Mag. 5.1 (CGS)
		eS	NE		56 18									
54	25	eP	Z	06	14	13							76.0	USCGS: 18.3N, 100.8W. Guerrero, Mexico Slight damage at Altamirano h about 60 km. H = 06 02 26.4 Mag. 4.7-5.1(BRK), 6.1(CGS)
55	26	eP	ZNE	06	10	42	2.4	2.0	2.2	2.0	4.6	2.0	4.5	USCGS: 16.0S, 175.7W. Tonga Islands h about 145 km. H = 06 10 08.2 Mag. 4.7 (CGS)
		eS	ZNE		11 30									
		eT	ZNE		14 08									
56	27	eP	Z	09	08	44	1.2	1.5					9.6	USCGS: 20.7S, 178.7W. Fiji Islands region h about 568 km. H = 09 06 31.1 Mag. 4.7 (CGS)
		eS	ZNE		10 26									

6.

No	Date	Phase		Time				Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
				(G.M.T.)											
57	28	eP	Z	11	51	24							6.6	USCGS: 14.4S, 178.6W. Fiji Islands region h about 33 km. H = 11 49 05.2 Mag. 4.6 (CGS)	
		eS	NE		52	45									

No readings after 28th until 4th of October due to timing system failure.


NOTE:

- (i) Trace amplitude (A) are expressed in millimetres and periods (T) in seconds.
- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.

P.D. Muller
OBSERVER-IN-CHARGE

3.

No	Date	Phase	Time (G.M.T.)			Az	Tz	An	Tn	Ae	Te	△ (Deg.)	Remarks
24	10	eiP	ZNE	23	58	49						2.3	USCGS:15.9S, 172.7W. Samoa Islands region h about 33 km. H = 23 58 23.8 Mag. 4.6 (CGS)
		eS	ZNE		59	10							
25	11	iP	ZNE	02	50	03							Dilatation
26	11	eL	Z	06	21.3							92.0	USCGS: 29.8S, 71.2W. Near coast of Central Chile h about 33 km. H = 05 39 07.1 Mag. 5.3 (CGS)
27	11	eL	ZN	07	12.3							102.0	USCGS:60.3S, 26.0W. South of Sandwich Islands h about 37 km. H = 06 25 55.1 Mag. 5.9 (CGS)
28	11	eP	Z	09	30	15							
		eS	ZNE		31	00							
29	11	eP	ZNE	20	45	01						19.8	USCGS: 32.6S, 178.7W. South of Kermadec Islands h about 33 km. H = 20 40 39.8 Mag. 4.8-5.2(BRK), 5.1(CGS)
		eS	ZNE		48	24							
		eT	ZNE	21	04	03							
30	12	eP	Z	00	17	13						66.0	USCGS:11.9S, 121.8E. South of Timor h about 33 km. H = 00 06 37.8 Mag. 5.7 (CGS)
		eS	ZN		26.1								
		e	Z		28	40							
		eL	N		36.4								
		eL	E		37.4								
31	12	eP	ZNE	04	26	20	3.4	2.0				18.2	USCGS: 31.2S, 177.8W. Kermadec Islands h about 14 km. H = 04 22 14.0 Mag. 4.5-4.9(BRK), 5.2(CGS)
		eS	ZNE		29	30							
		eT	ZNE		40	44							
32	12	eP	Z	08	02	24						25.5	USCGS: 11.0S, 162.3E. Solomon Islands h about 41 km. H = 07 56 59.4 Mag. 5.0 (CGS)
		eS	ZN		07	06							
		eSS	N		08	03							
		eL	ZE		09	16							
33	12	e(P)	Z	17	05	03							
		eS	ZNE		06	44							
34	12	eL	Z	21	00.7							89.0	USCGS:11.2N, 36.2E Near coast of Nicaragua h about 43 km. H = 20 20 06.8 Mag. 5.6 (CGS)
35	13	eP	ZNE	09	08	48							
		iS	ZNE		09	23							

No	Date	Phase	Time		Az	Tz	An	Tn	Ae	Te	 (Deg.)	Remarks	
			(G.M.T.)										
36	13	e e(L)	NE Z	17	44.3 45.7						52.0	USCGS: 53.9S, 133.9W. South Pacific Cordillera h about 33 km. H = 17 25 50.2 Mag. 4.7 (CGS)	
37	13	e eL	ZN ZN	19	04.2 14.2								
38	13	iP eS	Z ZNE	22	42 43	37 10						Comparison	
39	13	eP eS	Z ZNE	23	55 56	55 13							
40	14	eP eS	Z ZNE	12	14 16	18 02							
41	15	eP eS	Z ZNE	08	32 34	46 16	5.2	2.0			7.5	USCGS: 18.0S, 178.4W. Fiji Islands region h about 576 km. H = 08 30 51.3 Mag. 4.8 (CGS)	
42	15	eP eS eT	Z NE ZNE	20	37 38 47	09 50 00					10.5	USCGS: 23.6S, 175.4W. Tonga Islands region h about 48 km. H = 20 34 53.9 Mag. 4.6 (CGS)	
43	15	eP eS	Z NE	22	41 43	37 20							
44	16	eP eS eT	ZNE ZNE ZNE	06	56 57 59	54 17 00							
45	16	eP eS	Z ZNE	16	23	19 38						Samoa Islands region	
46	16	iP eS	Z ZNE	20	49 50	53 15						Compression	
47	17	eS eL	ZNE ZNE	04	06 08	34 16					21.1	USCGS: 11.1S, 166.7E. Santa Cruz Islands h about 55 km. H = 03 57 51.9 Mag. 4.9 (CGS)	
48	17	eP eS	Z NE	07	32 34	50 57	1.3	2.0			12.5	USCGS: 23.5S, 180.0 South of Fiji Islands h about 497 km. H = 07 30 07.1 Mag. 5.1 (CGS)	
49	17	eP eS e eL	Z NE Z ZNE	10	20 24 26.0	23 20 33					21.2	USCGS: 11.0S, 166.7E. Santa Cruz Islands h about 55 km. H = 10 15 40.6 Mag. $5\frac{3}{4}$ (PAS), 4.6-5.0(BRK), 5.5(CGS)	
					Coda lasting 20 minutes								
50	17	eP eS	Z NE	10	45 47	24 10							
51	17	eS eL	ZNE ZNE	12	18 19.6	12					21.0	USCGS: 10.9S, 166.8E. Santa Cruz Islands h about 55 km. H = 10 15 40.6 Mag. $5\frac{3}{4}$ (PAS), 4.6-5.0(BRK), 5.5(CGS)	

No	Date	Phase	Time (G.M.T.)			Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
63	18	eP	ZNE	17	26	51							
		eS	ZNE		27	19							
		eT	ZNE		29	12							
64	18	eP	ZNE	19	30	14							
		eS	ZNE		31	03							
65	18	eL	ZNE	20	15.3						21.0	USCGS: 10.8S, 166.8E. Santa Cruz Islands h about 33 km. H = 20 06 51.4 Mag. 4.8 (CGS)	
66	18	eS	ZNE	20	58.5							21.1	USCGS: 11.1S, 166.7E. Santa Cruz Islands h about 33 km. H = 20 49 51.8 Mag. 4.9 (CGS)
		eL	ZE	21	00.0								
67	18	iP	Z	22	28	08.5						2.4	Dilatation USCGS: 15.2S, 174.0W. Tonga Islands h about 62 km. H = 22 27 29.0 Mag. 5.5 (CGS)
		eS	ZNE			34							
68	19	eP	ZNE	00	06	45							
		e(S)	ZNE		07	52							
		e(T)	ZNE		12	47							
69	19	eS	ZNE	03	30.1							21.5	USCGS: 10.8S, 166.5E. Santa Cruz Islands h about 55 km. H = 03 21 24.8 Mag. 4.7 (CGS)
		eL	ZNE		31.8								
70	19	ePKP	Z	08	21	28	1.5	2.0				153.0	USCGS: 1.6S, 15.5W. North of Ascension Island h about 33 km. H = 08 01 33.8 Mag. $6\frac{3}{4}$ (PAS), $6\frac{3}{4}$ (CGS) Surface waved)
		e	Z		23	22							
		ePP	ZE		25	30							
		e(SKKS)	Z		33	00							
		eSSP	N		45	12							
		eSSP	ZE			50							
		eSSS	Z		49.8								
		eL	ZE		53.5								
		eL	Z		54.3								
				Surface waves lasting 2 hours									
71	19	iP	Z	11	26	38	2.4	2.0				20.5	Dilatation USCGS: 12.6S, 167.2E. Santa Cruz Islands h about 218 km. H = 11 22 14.7 Mag. 5.1 (CGS)
72	19	eP	Z	15	26	11							
		eS	ZNE			55							
73	19	eL	ZE	18	19.5								
74	20	eP	Z	03	01	36							
		e(S)	ZNE		02	48							
75	20	eP	ZNE	09	31	05							Samoa Islands region
		eS	ZNE			25							

No	Date	Phase		Time (G.M.T.)			Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
94	25	eP eS	Z ZNE	12 41	40 12	08							5.4	USCGS: 15.7S, 177.0W. Fiji Islands region h about 33 km. H = 12 38 52.3 Mag. 4.3 (CGS)
95	25	e(P) e(S)	Z ZNE	12 49	48 42	29								
96	26	eP eS eL	Z NE Z	18 37.3 38.6	33 32	32							20.3	USCGS: 18.4S, 167.6E. New Hebrides Islands Felt at Port Vila h about 36 km. H = 18 28 54.1 Mag. 5-5.4(BRK), 5.6(CGS)
97	27	eP	Z	06	16	37							116.0	USCGS: 73.4N, 54.8E. Novaya Zemlya h about 0 km. H = 05 57 58.0 Mag. 5.8-6(BRK), 5-5.4(PAL), 6.3(CGS)
98	27	eP eS eSSS eL	Z ZNE N ZNE	14 38 44.2 46.2	30 10	30							54.0	USCGS: 22.2N, 145.9E. North Pacific Ocean h about 29 km. H = 14 21 04.8 Mag. 6-6.4(PAS), 5.8-6.2(BRK), 6.0(CGS)
99	27	eP eS	Z ZNE	17 58	57 39	55								
100	28	eP eS eT	Z ZNE ZNE	20 22 24	21 13 43	37								
101	28	eP eS eL	Z ZNE ZNE	22 19.7 21.3	16 01	01	1.0	2.5					19.6	USCGS: 20.1S, 168.8E. Loyalty Islands h about 19 km. H = 22 11 47.6 Mag. 4.8-5.2(BRK), 5.3(CGS)
102	28	eP	Z	23	28	16	0.5	2.0					18.6	USCGS: 22.5S, 170.9E. Loyalty Islands region h about 25 km. H = 23 24 14.5 Mag. 4.9 (CGS)
103	29	ePKP	ZE	02	59	25	2.9	2.0					150.0	USCGS: 39.2N, 21.2E. Greece One killed, 23 injured, and major property damage h about 20 km. H = 02 39 29.4 Mag. 5.7 (CGS)
104	29	eP eS	Z ZNE	05 34	01 34	00								
105	29	iP S	ZNE ZNE	13 35	34 06	52.3								Compression Samoa Islands region

No	Date	Phase	Time (G.M.T.)			Az	Tz	An	Tn	Ae	Te	Δ (Deg.)	Remarks
106	30	eP	ZNE	00	04	17						3.4	USCGS: 20.9S, 176.4W. Fiji Islands region h about 292 km. H = 00 02 35.0 Mag. 4.5 (CGS)
		eS	ZNE	05	05	35							
107	30	eP	Z	09	52	33						9.9	USCGS: 21.2S, 178.8W. Fiji Islands region h about 503 km. H = 09 50 15.4 Mag. 4.4 (CGS)
		eS	NE	54	23								
108	30	eP	Z	11	32	03							Samoa Islands region
		eS	ZNE			25							
109	30	eP	Z	17	01	44							Samoa Islands region
		eS	ZNE		02	04							
110	30	eP	Z	17	23	10							Samoa Islands region
		eS	NE			36							
111	30	eP	Z	20	48	21							Samoa Islands region
		eS	ZNE			42							
112	30	eP	ZNE	21	50	40							Samoa Islands region
		e(S)	ZNE		51	05							
113	30	eP	Z	22	26	46						18.7	USCGS: 31.3S, 179.3W. Kermadec Islands h about 213 km. H = 22 22 46.3 Mag. 4.4 (CGS)
		eS	NE		29	58							
		eT	ZNE		40	18							
114	30	eP	Z	23	08	50							Samoa Islands region
		eS	NE		09	32							
		eT	ZNE		12	30							
115	31	eP	ZNE	03	35	23							Samoa Islands region
		eS	ZNE			43							
116	31	eP	ZNE	13	09	56							Samoa Islands region
		eS	ZNE		10	16							
117	31	iP	ZNE	17	10	52.5							Compression Samoa Islands region
		eS	ZNE		11	16							
118	31	eP	ZNE	22	29	02							Samoa Islands region
		eS	ZNE			24							

NOTE:

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- (ii) *Readings to be incorporated in the New Zealand Seismological Report for 1966.

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No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
18	6	iP eS	Z ZNE	14 45 46	11.3 40	5.0	1.3					7.5	Dilatation USCGS: 17.9S, 178.5W. Fiji Islands region h about 548 km. H = 14 43 16.6 Mag. 4.8 (CGS)	
19	6	eP eS	ZNE ZNE	19 06 02	02 20								Samoa Islands region	
20	6	iP eS	Z ZNE	19 49 50	00 32	0.8	1.9					9.0	Dilatation USCGS: 20.3S, 178.5W. Fiji Islands region h about 408 km. H = 19 46 51.7 Mag. 4.1 (CGS)	
21	7	iP eS	Z ZNE	05 29 30	52 12								Samoa Islands region	
22	7	eP eS eT	Z NE ZNE	07 15 16 18	43 09 35									
23	7	eP eS	Z ZNE	09 15 16	48									
24	7	eP eS	Z NE	11 04 05	34 22									
25	7	iP eS	ZNE ZNE	17 38 05.4 30								2.1	Dilatation USCGS: 15.1S, 173.6W Tonga Islands h about 45 km. H = 17 37 41.2 Mag. 5.0 (CGS)	
26	8	iP eS	ZNE ZNE	04 03 04.5 22									Samoa Islands region	
27	8	eP eS	ZNE ZNE	06 52 28 49									Samoa Islands region	
28	8	eP eS	Z NE	08 11 27 44									Samoa Islands region	
29	8	eP eS	ZNE ZNE	14 32 29 50									Samoa Islands region	
30	8	eP eS	ZNE ZNE	19 46 13 33									Samoa Islands region	
31	9	eP eS	ZNE ZNE	17 26 27 12										
32	9	eP eS	Z ZNE	18 46 47 34										
33	10	eP eS	Z ZNE	07 00 14 01 47								8.6	USCGS: 20.2S, 177.9W. Fiji Islands region h about 531 km. H = 06 58 09.9 Mag. 4.1 (CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
34	10	eP eS	Z ZNE	09 51 05 25									Samoa Islands region	
35	10	iP eS	Z NE	20 26 43 27 15									Compression	
36	10	eP eS	Z ZNE	21 36 36 37 18										
37	10	eP eS	Z NE	22 07 16 09 05							9.4		USCGS: 20.8S, 178.4W. Fiji Islands region h about 455 km. H = 22 05 04.2 Mag. 4.3 (CGS)	
38	11	eP eP eS	Z NE NE	09 51 56 52 00 55 44	1.2	1.9		0.6	1.8	1.0	2.0	19.2	USCGS: 18.8S, 168.5E. New Hebrides Islands Felt at Port Vila h about 81 km. H = 09 47 36.7 Mag. 4.9 (CGS)	
39	11	eS eL eL	N E ZN	15 50.9 58.3 16 05.7							65.0		USCGS: 52.3N, 169.1W. Fox Islands, Aleutian Islands h about 38 km. H = 15 31 04.2 Mag. 5.4 (CGS)	
40	11	iP eS	ZNE ZNE	17 59 13 18 00 25	12.5	2.0	8.0	2.0	16.5	2.0	6.4		Compression USCGS: 17.5S, 177.2W. Fiji Islands region h about 390 km. H = 17 57 43.4 Mag. 4.7 (CGS)	
41	12	eP eS eT	ZNE ZNE ZNE	09 09 30 48 11 18									Samoa Islands region	
42	12	eP eS eT	Z NE ZNE	09 53 55 56 09 10 06 00							13.3		USCGS: 26.5S, 175.7W. South of Tonga Islands h about 19 km. H = 09 50 52.8 Mag. 5.2 (CGS)	
43	12	eS eSS eL	ZN Z ZNE	13 10 00 13.7 20.1							68.0		USCGS: 41.8N, 144.1E. Hokkaido, Japan region h about 33 km. H = 12 49 43.6 Mag. 5.8 (CGS)	
44	12	eP iS iL	Z ZNE ZNE	18 49 38 53 30 54 40	5.0	2.6	3.2	2.1	5.5	2.1	20.4		USCGS: 15.6S, 167.3E. New Hebrides Islands h about 40 km. H = 18 45 01.0 Mag. 6.4-6.6 (BRK), 5.2 (CGS)	
45	12	eP eS	ZNE ZNE	19 33 48 34 52	3.0	2.0					6.2		USCGS: 18.8W, 175.5W. Tonga Islands h about 213 km. H = 19 32 20.9 Mag. 4.1 (CGS)	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
91	23	iP eS	Z NE	18 21	20 35	00.5 35							Compression USCGS: 20.1S, 177.7W. Fiji Islands region h about 465 km. H = 18 17 59.0 Mag. 4.2 (CGS)	
92	23	e(L)	ZNE	19	42.6									
93	24	eP eS eT	Z NE ZNE	07	35 38 53	55 50 10						17.7	USCGS: 30.6S, 177.9W. Kermadec Islands region h about 11 km. H = 07 31 51.8 Mag. 5.0 (CGS)	
94	24	eP eS	Z NE	13	02 04	12 32						14.4	USCGS: 25.5S, 179.4E. South of Fiji Islands h about 520 km. H = 12 59 15.9 Mag. 4.6 (CGS)	
95	24	eS eL eL	ZNE N ZNE	17	06 14 16.9	36 48						68.0	USCGS: 38.3S, 92.1W. West Chile Rise h about 33 km. H = 16 45 47.1 Mag. 4.7 (CGS)	
96	25	eP eS eS	ZE ZN E	03	21 22	00 36 56						9.0	USCGS: 15.6S, 179.1E. Fiji Islands h about 67 km. H = 03 18 54.7 Mag. 4.9 (CGS)	
97	25	eP eS	Z NE	07	18 19	50 45								
98	25	iP eS	Z ZNE	09	56	28 49							Compression Samoa Islands region	
99	25	eP eS	Z ZNE	19	12	34 53							Samoa Islands region	
100	25	iP eS	Z ZNE	21	26 27	32.4 06							Compression	
101	26	eP eS e	Z ZNE ZNE	05	11 12	03 22 56							Samoa Islands region	
102	26	iP eS	Z ZNE	09	01 02	57 17							Dilatation	
103	27	eP	ZE	09	02	40	1.2	2.0		1.0	1.9	12.4	USCGS: 23.4S, 179.8W. South of Fiji Islands h about 498 km. H = 08 59 59.3 Mag. 4.3 (CGS)	
104	27	eP eS	Z ZNE	19	44 45	53 10							Samoa Islands region	

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						△ (Deg.)	Remarks
105	28	eL	N	08	10.8								91.0	USCGS: 6.6N, 82.7W. South of Panama h about 33 km. H = 07 32 53.4 Mag. $6\frac{1}{2}$ - $6\frac{3}{4}$ (PAS), 5.5(CGS)
		eL	ZE		15.3									
106	28	eP	Z	08	11	35								
		eS	ZNE		12	02								
107	28	eP	ZNE	10	09	07							3.8	USCGS: 16.9S, 174.3W. Tonga Islands h about 118 km. H = 10 08 08.7 Mag. 4.5 (CGS)
		eS	ZNE			48								
108	28	eP	ZNE	11	45	47								Samoa Islands region
		eS	ZNE		46	06								
109	28	eP	ZNE	12	05	27								
		eS	ZNE		06	16								
110	29	eP	ZNE	08	01	33							5.3	USCGS: 15.9S, 176.8W. Fiji Islands region h about 370 km. H = 08 00 09.6 Mag. 4.6 (CGS)
		eS	ZNE		02	35								
111	29	eP	ZNE	09	09	00								
		eS	ZNE			30								
		e	ZNE		11	30								
112	29	eP	ZNE	11	01	44								
		eS	ZNE		02	11								
		e	ZNE		04	00								
113	30	eP	ZNE	07	46	18								
		eS	ZNE		48	07								
114	30	eL	ZE	22	27.5								36.0	USCGS: 4.7S, 152.9E. New Britain region Felt h about 73 km. H = 22 10 26.3 Mag. 4.9 (CGS)

NOTE:

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P.D. Muller
OBSERVER-IN-CHARGE

13 MAY 1968

NEW ZEALAND

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA.

 Latitude: $13^{\circ} 54' 33.6''S$ Longitude: $171^{\circ} 46' 38.1''W$

Height above mean sea level: 705.6 metres, 2315 ft.

Geocentric direction cosines: a. - 0.961 070

b. - 0.138 883

c. - 0.238 862

Lithological Foundation: Basaltic Lava Flows

Instruments: World-wide standard seismograph system

Benioff short period seismometers

To = 1.0 sec. Tg = 0.75 sec.

Sprengnether long period seismometers

To = 15 sec. Tg = 100 sec.

Nominal Magnifications: S.P. 12500

L.P. 750

December 1966 *

No	Date	Phase	Time (G.M.T.)							Δ (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
1	1	eP Z eS ZNE	01 25 15 26 25							7.0	USCGS: 19.7S, 175.7W. Tonga Islands h about 139 km. H = 01 23 34.8 Mag. 4.1 (CGS)
2	1	eP Z eS NE	09 18 21 47								
3	1	eP ZNE eS ZNE	19 24 10 30								Samoa Islands region
4	2	eP Z eSSS ZNE eL ZE	09 41 35 56.9 10 00.5							61.0	USCGS: 3.2N, 128.1E. North of Halmahera h about 92 km. H = 09 31 17.6 Mag. 5.8 (CGS)
5	2	eP Z eS NE	13 10 37 59								Samoa Islands region
6	2	eP ZNE eS ZNE	17 42 40 43 00								Samoa Islands region
7	2	iP Z S ZNE	18 06 04 22								Dilatation Samoa Islands region
8	3	eP Z eS NE	03 55 49 57 07							6.9	USCGS: 17.7S, 177.8W. Fiji Islands region h about 387 km. H = 03 54 04.3 Mag. 4.2 (CGS)

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks
							Az	Tz	An	Tn	Ae	Te		
95	27	eP eS	Z ZNE	21 30	27 00	59							8.3	USCGS: 21.3S, 175.6W. Tonga Islands h about 14 km. H = 21 26 06.5 Mag. 5.0 (CGS)
96	28	eP ePP eS SS L	ZNE ZNE ZNE ZNE ZE	08 35 41 48.0 09	31 06 42 03.3	16	2.6	2.4	1.0	2.2	1.7	2.4	93.0	USCGS: 25.5S, 70.7W. Near coast of Northern Chile Three killed, at least six injured, extensive property damage in the Taltal area. Felt in northern and Central Chile, southern Peru and northern Argentina. A seiche was recorded at Caldera with an amplitude of 90 CM. h about 4.7 km. H = 08 18 07.4 Mag. $7\frac{3}{4}$ (PAS), 7.5-7.8(BRK), 6.9(CGS)
														Surface waves about 4 hours
97	28	e(P)	Z	08	48	23	1.0	3.0						
98	28	eP	Z	08	56	35	0.6	3.9						
99	28	eP S	ZNE ZNE	10	51	07 32							2.5	USCGS: 16.1S, 172.9W. Samoa Islands region h about 33 km. H = 10 50 42.3 Mag. 4.3 (CGS)
100	29	eL	ZNE	02	32.2								93.0	USCGS: 25.7S, 70.7W. Near coast of northern Chile Felt h about 33 km. H = 01 48 28.9 Mag. 5.4 (CGS)
101	29	eS eSSS eL	ZNE ZNE ZNE	12	14.2 20.1 22.5								58.0	USCGS: 32.6S, 111.8W. Easter Island, Cordillera h about 33 km. H = 11 56 23.0 Mag. 6(PAS), 4.9(CGS)
102	29	eS eSS eSSS eL	ZNE Z NE ZNE	22	34 37.6 40.8 42.5	12				6.0	16.0		58.0	USCGS: 32.8S, 111.7W. Easter Island, Cordillera h about 33 km. H = 22 16 22.7 Mag. 6(PAS), 5-5.4(BRK), 5.4(CGS)
103	30	iP eS	Z NE	01	02 04	35 21	4.0	2.0					9.9	Dilatation USCGS: 17.8S, 178.9E. Fiji Islands h about 658 km. H = 01 00 25.4 Mag. 5.0 (CGS)

9.

No	Date	Phase		Time (G.M.T.)			Az Tz An Tn Ae Te						Δ (Deg.)	Remarks	
							Az	Tz	An	Tn	Ae	Te			
104	30	eP eS	ZNE ZNE	07 14	12 48	36 48							13.0	USCGS: 24.2S, 179.9E South of Fiji Islands h about 505 km H = 07 09 51.3 Mag. 4.2 (CGS)	
105	30	eP	ZNE	09	47	56							18.7	USCGS: 21.3S, 170.3E Loyalty Islands region h about 63 km H = 09 43 43.2 Mag. 4.6 (CGS)	
106	30	eP	ZNE	13	17	03							9.9	USCGS: 17.9S, 178.9E Fiji Islands h about 670 km H = 13 14 50.5 Mag. 4.2 (CGS)	
107	31	iP eS	ZNE ZNE	00	05	06.3 39									Compression
108	31	eP eS eT	Z ZNE ZNE	01	56	12 50 57									
109	31	e(L)	ZNE	03	28.2				1.7		18.0				
110	31	eP eS	Z ZNE	03	29 30	47 43									
111	31	eP eS'	ZNE ZNE	03	49 50	58 24									
112	31	eP eP	ZNE ZNE	18	27 28	51 06	4.6	2.0			4.1	2.0	21.3	USCGS: 11.8S, 166.5E Santa Cruz Islands Felt strongly at Vanikoro. Landslides and 3 foot 4 inch Tsunami inside Barrier Lagoon. h about 33 km H = 18 23 03.9 Mag. 7.5 (PAS) 7.4-7.8 (BRK) 7.7 (CGS Surface Wave)	
113	31	eP	ZE	18	48	08	1.2	2.3			2.0	2.3			
114	31	eP eS	ZNE ZE	18 19	58 01	03 28							21.9	USCGS: 11.6S, 165.9E Santa Cruz Islands h about 33 km H = 18 53 12.5 Mag. 5.0 (CGS)	
115	31	e(P)	ZE	19	04	35									
116	31	eP	ZE	19	43	21							21.8	USCGS: 11.6S, 166.0E Santa Cruz Islands h about 33 km H = 19 38 29.9 Mag. 5.1 (CGS)	



10.

No	Date	Phase	Time (G.M.T.)							Δ (Deg.)	Remarks
				Az	Tz	An	Tn	Ae	Te		
117	31	eP ZE	22 20 09	8.3	2.3			7.2	2.2	23.0	USCGS: 11.3S, 164.8E Santa Cruz Islands region. Felt at Vanikoro Landslides and 2½ foot Tsunami at Vanikoro. h about 33 km H = 22 15 14.0 Mag. 7¼-7½(PAS), 7-7.6(BRK), 7.3(CGS Surface Wave)

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