NEW ZEALAND

Department of Scientific and Industrial Research

Geophysics Division

APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA

May 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
1	1	P	ZNE	00	16	18	12.01.0	7.5	USGS: 17.96S, 178.29W
		S	ZNE		17	44			Fiji Islands region
									h = 595 km
									H = 00 14 24.3
									Mag. 4.8 (GS)
2	1	eS	ZN	18	30	38		68	USGS: 46.35N, 153.45E
		eLq	E		38				Kuril Islands
		eLr	ZNE		41				h = 024 km D
									H = 18 10 40.3
									Mag. Ms 5.8 (BRK), 6.1 MB
									6.0 MSZ (GS)
3	1	P	ZNE	20	15	24			d
		S	ZNE		16	05			
4	2	P	ZNE	04	30	11			
		S	ZNE			53			
5	2	P	ZNE	10	00	23		9.5	USGS: 20.73S, 178.48W
		S	ZNE		02	05			Fiji Islands region
									h = 596 km D
									H = 09 58 13.8
									Mag. 5.7 (GS)
6	2	e(P)	ZNE	21	41	10		16.6	USGS: 29.60S, 176.78W
		e(S)	ZNE		44	02			Kermadec Islands region
									h = 043 km
									H = 21 37 33.2*
									Mag. 4.7 (GS)
7	2	P	ZNE	23	53	50		69	USGS: 36.22N, 120.32W
		PP	Z		56	20			Central California
		S	ZNE	00	03	12			h = 010 km G
		SS	ZE		07	28			H = 23 42 37.7&
		Lq	NE		12				Mag. ML 6.7 (BRK), 6.3
		Lr	ZNE		14				(PAS) 6.2 MB 6.5 MSZ (GS)
8	3	iP	ZNE	15	41	43.7		9.0	u
		S	ZNE		43	24			USGS: 20.29S, 178.30W
									Fiji Islands region
									h = 594 km
									H = 15 39 39.1
									Mag. 5.5 (GS)
9	3	P	ZNE	21	39	27		5.4	USGS: 18.28S, 174.85W
		S	ZNE		40	20			Tonga Islands
									h = 074 km
									H = 21 38 09.2
									Mag. 5.3 (GS)

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
10	4	eS	Z	08	12	00		37.9	USGS: 09.46S, 148.70E East Papua New Guinea region h = 023 km H = 07 58 26.4 Mag. 5.1 MB 4.9 MSZ (GS)
		eL	ZE		17				
11	4	P	ZNE	11	30	23		2.9	USGS: 16.57S, 172.53W Samoa Islands region h = 033 km N H = 11 29 50.7 Mag. 4.7 (GS)
		S	ZNE			46			
12	4	P	ZNE	22	18	49		10.7	USGS: 21.52S, 179.58W Fiji Islands region h = 479 km H = 22 16 15.8 Mag. 5.0 (GS)
		S	ZNE		20	43			
13	4	P	ZNE	25	25	51			
		S	ZNE		26	20			
14	4	P	ZNE	23	33	27			
		S	ZNE			54			
15	5	eP	ZNE	04	48	46		21.5	USGS: 35.87S, 179.65E South of Kermadec Islands h = 025 km H = 04 43 50.4 Mag. 5.8 MB 5.4 MSZ (GS)
		eS	ZNE		53	40			
16	5	P	ZNE	22	51	30			
		S	ZNE		52	24			
17	6	P	ZNE	01	35	37		18.9	USGS: 31.73S, 178.00W Kermadec Islands region h = 088 km H = 01 31 22.3* Mag. 5.2 (GS)
		S	ZNE		38	45			
18	6	P	ZNE	12	01	25		7.8	USGS: 21.28S, 174.19W Tonga Islands h = 033 km N H = 11 59 41.8 Mag. 5.3 MB 4.7 MSZ (GS)
		S	ZNE		02	40			
		T	ZNE		08				
19	7	P	ZNE	03	17	25			
		S	ZNE		18	19			
20	7	(P)	ZNE	04	58	49			
21	7	P	ZNE	06	18	57		40.9	USGS: 06.04S, 147.40E East Papua New Guinea region h = 120 km H = 06 11 24.2 Mag. 5.1 (GS)
22	7	iP	ZNE	08	54	07			u
		S	ZNE			28			
23	8	eS	NE	15	26	08		70	USGS: 19.97W, 109.37W Gigedo Islands region h = 010 km G H = 15 05 08.5 Mag. Ms 5.8 (BRK) 5.3 MB 5.8 MSZ (GS)
		eLq	NE		34				
		eLr	ZNE		37				

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)	Remarks
24	8	eS	E	16	46	16	70	USGS: 19.95N, 109.33W
		eLq	NE		54			Revilla Gigedo Islands region
		eLr	ZNE		57			
								h = 010 km G
								H = 16 23 08.6
								Mag. Ms 5.7 (BRK) 5.3 (PAS) 5.2 MB 5.3 MSZ (GS)
25	9	eP	Z	11	11	08	90	USGS: 40.93S, 074.91W
		eSKS	ZNE		21	40		Offcoast of Southern Chile
		eS	ZNE		22	40		h = 023 km
		eSS	ZNE		27	28		H =10 58 25.4
		e	NE		34	12		Mag. Ms 5.8 (BRK) 5.9 MB 5.8 MSZ (GS)
		eL	ZNE		37			
26	9	eS	ZNE	14	02	02	51	USGS: 61.87S, 161.28E
		eSS	E		05	40		Balleny Islands region
		eL	ZNE		08			h = 010 km G
								H = 13 45 28.0
								Mag. 5.5 MB 5.3 MSZ (GS)
27	9	e(SKS)	ZE	16	16	44	91	USGS: 08.23N, 082.96W
		eS	N		17	12		Panama Costa Rica Border region
		eSS	ZNE		23	24		
		eLq	N		30			h = 039 km
		eLr	ZE		34			H = 15 53 03.0
								Mag. Ms 6.0 (BRK) 5.7 (PAS) 5.5 MB 6.1 MSZ (GS)
28	9	PKP	Z	16	35	10	146	USGS: 04.21S, 037.78E
								Tanzania
								h = 017 km
								H = 16 15 20.0
								Mag. 5.3 MB 5.2 MSZ (GS)
29	9	P	ZNE	19	42	49	8.4	USGS: 19.80S, 177.92W
		S	ZNE		44	25		Fiji Islands region
								h = 584 km
								H = 19 40 47.7
								Mag. 4.9 (GS)
30	9	eS	ZN	20	29	45	70	USGS: 19.98N, 109.45W
		e(ScS)	E		30	12		Revilla Gigedo Islands region
		eSS	ZNE		34	12		
		eLq	NE		38			h = 010 km G
		eLr	ZNE		41			H = 20 09 15.4
								Mag. Ms 6.2 (BRK) 5.7 (PAS) 5.5 MB 6.1 MSZ (GS)
31	9	eS	ZN	22	58	08	51	USGS: 61.73S, 161.14E
		eSS	E	23	02	24		Balleny Islands region
		eL	ZN		05			h = 010 km G
								H = 22 41 32.2*
								Mag. 4.9 MB 5.3 MSZ (GS)
32	9	P	ZNE	23	26	32		
		S	ZNE		27	18		
33	10	P	ZNE	00	00	04	6.0	USGS: 14.83S, 177.87W
		S	NE		01	15		Fiji Islands region
								h = 343 km
								H = 23 58 32.9*
								Mag. 4.5 (GS)

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)	Remarks
34	10	P	ZNE	00	26	53	76	USGS: 24.42N, 121.56E
		eS	ZNE		37	28		Taiwan
		eLq	NE		47			Felt Northeresstern
		eLr	ZNE		50			Taiwan
								h = 028 km
								H = 00 15 05.5
								Mag. 5.6 MB 5.4 MSZ (GS)
35	10	P	ZNE	06	26	43		
		S	ZNE		27	10		
		T	ZNE		29			
36	10	P	ZNE	10	37	10	65	USGS: 07.27S, 123.40E
								Banda Sea
								h = 600 km
								H = 10 27 32.4
								Mag. 5.1 (GS)
37	10	P	ZNE	11	09	43	37.7	USGS: 05.40S, 150.90E
		pP	ZNE		10	04		New Britain region
		S	ZNE		15	28		Felt (III) in the
		SS	ZNE		18	25		Rabaul area
								h = 112 km
								H = 11 02 35.8
								Mag. 6.1 (GS)
38	10	iP	ZNE	16	12	40.5		
		S	ZNE		13	00		
								u
39	10	P	ZNE	18	34	29	36.3	USGS: 04.81S, 152.51E
		pP	ZNE		35	10		New Britain region
		PP	ZNE		36	08		Felt (IV) in the
		S	ZNE		40	08		Rabaul area
		SS	ZNE		42	48		h = 072 km
		(ScS)	Z		44	36		H = 18 27 31.8
								Mag. Ms 6.9 (BRK)
								6.8 (PAS) 6.0 MB 6.5
								MSZ (GS)
40	10	(P)	Z	18	40	47		
41	11	P	ZNE	00	27	19	61	USGS: 02.29N, 128.34E
		PcP	ZNE		28	18		Halmahera
		eS	ZNE		35	32		h = 125 km D
		eLq	NE		43			H = 00 17 12.0
		eLr	ZE		46			Mag. 5.7 (GS)
42	11	P	ZNE	15	52	26		
43	11	P	ZNE	21	50	00	7.8	USGS: 21.43S, 173.45W
		S	ZNE		51	20		Tonga Islands
		T	ZNE		56			h = 033 km D
								H = 21 48 15.4
								Mag. 5.7 MB 5.3 MSZ(GS)
44	11	P	ZNE	23	16	36	4.8	USGS: 14.81S, 176.59W
		S	ZNE		17	27		Fiji Islands region
								h = 033 km N
								H = 23 15 28.1
								Mag. 5.1 MB 5.0 MSZ(GS)
45	12	P	ZNE	09	14	18	4.9	USGS: 14.83S, 176.84W
		S	ZNE		15	13		Fiji Islands region
								h = 033 km N
								H = 09 13 12.1*
								Mag. 4.8 MB 4.9 MSZ(GS)

	Date	Phase		(G.M.T.)			As Tz An Tn Ae Te	(Deg.)	Remarks
46	12	e	ZE	11	23	08		126	USGS: 17.63N, 046.53W
		e	E		26	12			North Atlantic Ridge
		eSSP	ZNE		30	32			h = 010 km G
		eLr	ZNE		52				H = 10 51 49.7
									Mag. Ms 6.2 (PAS) 5.9
									(DEK) 5.7 MB 5.7 MSZ (GS)
47	13	P	ZNE	07	50	18			
		S	ZNE		51	37			
48	13	eP	ZNE	18	19	45		61	USGS: 02.97N, 128.06E
									Halmahera
									h = 123 km D
									H = 18 09 35.4
									Mag. 5.5 (GS)
49	13	eP	ZNE	23	18	58		13.0	USGS: 24.75S, 179.33W
		eS	ZNE		21	12			South of Fiji Islands
									h = 677 km
									H = 23 16 10.3?
									Mag. 5.1 (GS)
50	14	P	ZNE	07	39	02			
51	14	P	ZNE	11	50	43			
		eS	ZNE		51	57			
52	14	eP	ZNE	23	01	41		12.7	USGS: 23.44S, 179.54E
									South of Fiji Islands
									h = 606 km
									H = 22 58 56.8?
									Mag. 4.4 (GS)
53	14	iP	ZNE	23	10	56			d
		S	ZNE		11	17			
54	15	P	ZNE	00	25	25		6.4	USGS: 18.91S, 175.64W
		S	ZNE		26	24			Tonga Islands
									h = 033 km
									H = 00 24 00.6
									Mag. Ms 6.5 (PAS) 6.4
									(DEK) 5.7 MB 6.5 MSZ(GS)
55	15	P	ZNE	03	00	31		6.1	USGS: 18.63S, 175.71W
		S	ZNE		02	00			Tonga Islands
									h = 033 km N
									H = 02 59 08.0*
									Mag. 4.8 (GS)
56	15	iP	ZNE	19	55	47			u
		S	ZNE		56	23			
57	17	P	Z	11	57	18		34.2	USGS: 06.66S, 154.15E
		eS	ZNE	12	02	40			Solomon Islands
		eL	NE		05				h = 065 km D
		eL	ZNE		06				H = 11 50 25.3
									Mag. 5.3 (GS)
58	17	P	ZNE	14	01	29		7.6	USGS: 21.06S, 173.79W
		S	ZNE		02	45			Tonga Islands
		T	ZNE		08				h = 033 km N
									H = 13 59 50.0
									Mag. 5.0 MB 5.1 MSZ (GS)
59	17	P	ZNE	20	37	49		19.5	USGS: 14.97S, 168.05E
		e	NE		41	44			Vanuatu Islands
		eL	ZNE		43				h = 037 km
									H = 20 33 23.9
									Mag. 5.4 MB 4.9 MSZ(GS)
60	17	P	Z	23	34	06		37.7	USGS: 05.37S, 150.94E
		e(SS)	N		42	24			New Britain region
									Volt
									h = 097 km D
									H = 23 26 30.8
									Mag. 5.7 (GS)

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
61	18	P	ZNE	06	16	58								
		S	ZNE		17	26								
		T	ZNE		19									
62	19	P	ZNE	13	35	10							4.5	USGS: 17.05S, 174.84W Tonga Islands h = 033 km N H = 13 34 06.9? Mag. 4.6 (GS)
		S	ZNE		36	00								
		T	ZNE		39									
63	20	P	ZNE	01	04	13.5								
		S	ZNE			35								
64	20	P	ZNE	01	31	02								
		S	ZNE			53								
65	20	P	ZNE	22	00	12							7.4	USGS: 18.83S, 177.54W Fiji Islands region h = 429 km H = 21 58 28.9* Mag. 4.6 (GS)
		S	ZNE		01	32								
66	21	P	ZNE	09	58	43							14.3	USGS: 25.40S, 179.37E South of Fiji Islands h = 540 km H = 09 55 43.9 Mag. 4.7 (GS)
		S	ZNE	10	01	05								
67	21	iP	ZNE	13	38	40								u
		S	ZNE		39	00								
68	21	eP	ZNE	21	05	13								
		S	ZNE		06	05								
69	21	P	ZNE	23	52	38								
		e(S)	ZNE		54	33								
70	21	P	ZNE	23	57	32								
		S	ZNE		58	18								
71	23	eP	ZNE	06	03	34							48.6	USGS: 03.88S, 140.01E West Irian h = 033 km N H = 05 54 52.1 Mag. 4.8 (GS)
72	23	eP	ZNE	06	58	26							16.5	USGS: 13.81S, 171.31E Vanuatu Islands region h = 027 km D H = 06 54 36.6 Mag. 5.7 MB 5.6 MSZ(GS)
		eS	ZNE	07	01	28								
73	23	P	ZNE	18	09	49	2.0	1.0					7.2	USGS: 17.19S, 178.46W Fiji Islands region h = 579 km H = 18 07 54.5? Mag. 4.7 (GS)
74	24	eP	ZNE	10	07	40							19.0	USGS: 31.73S, 178.64W Kermadec Islands region h = 033 km N H = 10 03 25.8* Mag. 5.4 (GS)
		eS	ZNE		10	50								
75	25	eP	ZNE	00	07	30							10.2	USGS: 23.34S, 175.83W Tonga Islands region h = 033 km N H = 00 05 12.4* Mag. 4.9 (GS)
		S	ZNE		09	19								
76	25	P	ZNE	01	07	20								
		e(S)	ZNE		08	53								

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
77	25	iP	ZNE	13	47	06			d
		S	ZNE		48	32		7.4	USGS: 18.31S, 177.88W Fiji Islands region h = 576 km H = 13 45 14.9 Mag. 5.1 (GS)
78	26	iP	ZNE	03	11	16			
		S	ZNE		20	42		71	u USGS: 40.46N, 139.10E Near West Coast of Honshu, Japan h = 024 km H = 02 59 59.6 Mag. Ms 7.8 (PAL) 7.7 (BRK) 7.7 (PAS) 6.8 MB 7.7 MSZ (GS)
		SS	ZNE		24	40			
		SSS	ZNE		27	30			
		Lq	ZNE		29				
		Lr	ZNE		32				
79	26	P	ZNE	04	06	09			
		S	ZNE		07	09			
80	27	eP	Z	11	10	26		7.6	USGS: 18.02S, 178.84W Fiji Islands region h = 611 km H = 11 08 30.8* Mag. 4.2 (GS)
81	28	eP	ZN	09	28	19			
		S	ZN			50			
		T	ZN		31				
82	28	P	ZNE	12	19	56			
83	28	e(P)	Z	18	02	30			
84	29	P	ZN	02	24	24		67	USGS: 04.20N, 122.61E Celebes Sea h = 614 km H = 02 14 22.8 Mag. 5.4 (GS)
85	29	eS	NE	07	16	20		69	USGS: 40.46N, 125.44W Off coast of Northern California Felt h = 010 km G H = 06 55 33.1 Mag. ML 5.2 (BRK) 5.1 MB 5.1 MSZ (GS)
		eL	ZNE		27				
86	29	iP	ZN	17	46	46.2			u
		S	ZN		47	16			
87	29	iP	ZN	22	08	54		3.5	d USGS: 15.60S, 174.89W Tonga Islands h = 287 km H = 22 07 57.4 Mag. 5.4 (GS)
		S	ZN		09	36			
88	30	P	Z	14	59	39		85	USGS: 04.74S, 103.08E Southern Sumatera h = 063 km D H = 14 47 10.1 Mag. 5.6 (GS)
89	31	(P)	ZNE	04	56	25			
90	31	eP	ZN	14	23	46			
		S	ZN		24	33			

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APIA OBSERVATORY

FINAL SEISMOLOGICAL BULLETIN

STANDARD SEISMIC STATION (AFI)

AFIAMALU, WESTERN SAMOA

June 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
1	1	iP	ZNE	02	00	53.5		4.2	d USGS: 17.04S, 174.61W Tonga Islands Felt (II) at Apia, Samoa Islands h = 180 km D H = 01 59 54.6 Mag. mb 6.6 (PAS) 6.3 (BRK) 6.2 (GS)
		S	ZNE		01	24			
2	1	iP	ZNE	10	59	12		2.2	u USGS: 15.69S, 172.81W Samoa Islands region h = 033 km N H = 10 58 44.8 Mag. Ms 6.5 (BRK) 5.6 MB 6.1 MSZ (GS)
		S unreadable due to rapid motion							
3	1	P	ZNE	11	55	10		1.9	USGS: 15.57S, 172.46W Samoa Islands region h = 033 km N H = 11 54 44.3* Mag. 4.6 (GS)
		S	ZNE			28			
4	1	iP	ZNE	12	11	16.5			u
		S	ZNE			44			
5	1	iP	ZNE	13	14	54		4.2	u USGS: 16.98S, 174.55W Tonga Islands h = 153 km H = 13 13 51.8 Mag. 4.9 (GS)
		S	ZNE		15	50			
		(T)	ZNE		17				
6	1	P	ZNE	14	05	04			
		(S)	ZNE			35			
7	1	P	ZNE	15	31	27			
		S	ZNE			49			
8	1	P	ZNE	16	49	04			
		S	ZNE			31			
9	1	P	ZNE	19	48	08			
		S	ZNE			30			
10	2	P	ZNE	05	15	46			
		S	ZNE		16	39			
11	2	P	ZNE	12	00	02	5.0 1.0		
12	2	P	ZNE	16	11	17			
		S	ZNE			47			

No	Date		Phase	(G.M.T.)			Az Tz An Tn Ac Tc	(Deg.)	Remarks
13	2	P	ZNE	20	54	46		13.6	USGS: 24.79S, 179.60W
		S	ZNE		56	57			South of Fiji Islands
									h = 511 km
									H = 20 51 56.6
									Mag. 5.1 (GS)
14	2	P	ZNE	21	10	23			
		S	ZNE			45			
15	2	P	ZNE	21	41	15			
		S	ZNE			41			
16	3	P	ZNE	02	07	50			
		S	ZNE		08	11			
17	3	P	ZNE	06	11	06			
		S	ZNE			49			
18	3	P	ZNE	08	19	31			
		S	ZNE			55			
19	3	(P)	ZNE	11	53	03			
20	3	(P)	ZNE	12	46	06			
		(S)	ZNE		47	28			
21	3	P	ZNE	14	54	34			
		eS	ZNE		55	48			
22	3	P	ZNE	15	01	31		7.3	USGS: 19.48s, 176.54W
		eS	ZNE		02	52			Fiji Islands region
									h = 033 km N
									H = 14 59 57.3*
									Mag. 5.0 (GS)
23	4	P	ZNE	01	55	21			
		S	ZNE			42			
24	4	P	ZNE	08	57	05		3.7	USGS: 16.87S, 173.68W
		S	ZNE			41			Tonga Islands
									h = 035 km
									H = 08 56 12.0*
									Mag. 4.6 (GS)
25	4	P	ZNE	18	39	15			
		e(S)	ZNE		41	06			
26	5	P	ZNE	13	24	07		2.6	USGS: 16.05S, 172.91W
		S	ZNE			32			Samoa Islands region
									h = 033 km N
									H = 13 23 34.8
									Mag. 5.1 MB 4.7 MSZ(GS)
27	5	P	ZNE	13	59	43		2.7	USGS: 16.34S, 172.80W
		S	ZNE	14	00	03			Samoa Islands region
									h = 033 km N
									H = 13 59 10.2
									Mag. 5.2 MB 5.3 MSZ (GS)
28	5	iP	ZNE	16	27	10.5		2.4	d
		S	ZNE			32			USGS: 15.92S, 172.86W
									Samoa Islands region
									h = 033 km N
									H = 16 26 41.5
									Mag. 5.3 MB 5.1 MSZ (GS)
29	5	P	ZNE	18	38	07			
		S	ZNE			28			
		T	ZNE		40				

No	Date	Phase		(G.M.T.)			Ax Tx Am Tm Ao To	(Deg.)	Remarks
30	6	iP	ZNE	03	20	09.7	8.5 0.6	9.0	u
		S	ZNE		21	51			USGS: 20.55S, 178.00W Fiji Islands region h ≯ 578 km H = 03 17 57.9 Mag. 4.9 (GS)
31	7	P	ZNE	00	36	35			
		S	ZNE		37	10			
32	7	e(S)	ZNE	07	09	28			
		eL	E		14				
		eL	ZN		17				
33	8	P	ZNE	04	14	39			
		S	ZNE		15	20			
34	9	P	ZNE	03	36	37			
		(S)	ZNE		38	55			
35	9	iP	ZNE	10	51	26.5			u
		S	ZNE		[illegible]	44			[illegible]
36	9	iP	ZNE	13	00	18.6	5.8 1.7	71	u
		eS	ZNE		10	08			USGS: 40.24N, 139.02E Near West Coast of Honshu,Japan
		eSS	ZE		14	20			Felt
		e	Z[illegible]		17	48			h = 031 km D
		eL	NE		18				H = 12 49 03.8
		eL	ZN		21				Mag. Ms 5.5 (PAS) 6.3 MB 5.6 MSZ (GS)
37	9	P	ZNE	13	15	15		71	USGS: 40.27N, 139.02E
		eL	ZNE		36				Near west coast of Honshu, Japan
									Felt h = 028 km D H = 13 04 00.5 Mag. 6.3 MB 5.6 MSZ(GS)
38	9	eP	ZNE	18	56	41		65	USGS: 51.41N, 174.11W
		eS	ZNE	19	05	24			Andreanof Islands, Aleutian Islands
		eSS	ZE		09	40			Felt
		eSSS	ZE		12	40			h = 021 km
		eLr	ZN		15				H = 18 46 00.9 Mag. Ms 5.8 (BRK) 6.2 MB 5.8 MSZ (GS)
39	9	e(P)	Z	19	25	47			
40	9	eP	ZNE	20	37	29		66	USGS: 05.94S, 122.64E
									Sulawesi h = 046 km D H = 20 26 50.4 Mag. 5.3 MB 5.2 MSZ(GS)
41	9	iP	ZNE	23	19	36			d
		S	ZNE			56			
42	10	P	ZNE	00	52	35			
		(S)	ZNE		54	08			
43	10	P	ZNE	19	48	07			
		(S)	ZNE		49	11			
44	10	P	ZNE	22	41	38	14.0 1.0	11.2	USGS: 24.18S, 176.33W
		S	ZNE		43	34			South of Fiji Islands h = 047 km H = 22 39 09.2 Mag. 5.7 MB 5.4 MSZ(GS)
		T	ZNE		51				

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ao	To	(Deg.)	Remarks
45	11	eS	ZE	03	30	56							69	USGS: 36.24N, 120.46W
		eL	ZNE		42									Central California
														Felt
														h = 003 G
														H = 03 09 52.1G
														Mag. ML 5.2 (GS) 5.0
														(BRK) 5.3 MB 5.4 MSZ (GS)
46	12	P	ZNE	07	55	54	2.0	1.0					13.2	USGS: 23.69S, 179.09E
		eS	ZNE		58	05								South of Fiji Islands
														h= 603 km
														H = 07 53 13.6?
														Mag. 4.2 (GS)
47	12	iP	ZNE	09	17	55.1	8.5	0.9					18.8	d
														USGS: 12.95S, 169.02E
														Santa Cruz Islands region
														h = 620 km
														H = 09 14 12.7
														Mag. 5.3 (GS)
48	12	P	ZNE	10	22	55	2.5	1.0					62	USGS: 01.53N, 127.32E
		eS	ZE		30	56								Halmahera
														h = 120 km
														H = 10 12 42.8
														Mag. 5.7 (GS)
49	12	P	ZNE	15	18	25	2.0	1.0						
50	12	iP	ZNE	17	24	55								u
		S	ZNE		25	15								
51	13	eP	ZNE	04	08	39							10.1	USGS: 21.30S, 178.94W
		eS	ZNE		10	29								Fiji Islands region
														h = 610 km
														H = 04 06 23.1*
														Mag. 4.6 (GS)
52	14	eP	ZNE	20	17	13							15.2	USGS: 27.23S, 179.41W
		eS	ZNE		19	45								Kermadec Islands region
														h = 377 km
														H = 20 01.6
														Mag. 5.1 (GS)
53	15	iP	ZNE	03	17	22							2.9	u?
		S	ZNE			55								USGS: 15.56S, 174.24W
														Tonga Islands
														h = 033 km N
														H = 03 16 23.9?
														Mag. 4.4 (GS)
54	15	iP	ZNE	06	08	26.4							2.2	u
		S	ZNE			44								USGS: 15.23S, 173.63W
														Tonga Islands
														h = 033 km N
														H = 06 07 54.8
														Mag. Ms 5.5 (BRK) 5.5
														MB 5.5 MSZ (GS)
55	15	e(P)	ZNE	10	39	22								
		(S)	ZNE		41	20								
56	15	P	ZNE	22	53	19								
		S	ZNE		55	00								
57	16	iP	ZNE	11	03	46.8	5.0	0.8						d
		(S)	ZNE		05	03								
58	16	e(P)	ZNE	14	06	47							20.3	USGS: 18.78S, 167.68E
														Vanuatu Islands
														h = 011 km
														H = 14 02 10.2*
														Mag. 4.7 (GS)
59	16	P	ZNE	21	21	00								
		(S)	ZNE		22	35								

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
60	17	P	ZNE	05	17	00								
		e(S)	ZNE		18	44								
61	17	eS	ZNE	11	53	40							69	USGS: 36.38S, 097.52W
		eLq	NE	12	02									West Chile rise
		eLr	ZNE		05									h = 010 km G
														H = 11 33 16.6
														Mag. Ms 5.8 (BRK) 5.7
														(PAS) 5.6 MB 5.5 MSZ(GS)
62	17	P	ZNE	22	13	26								
		e(S)	ZNE		15	46								
63	18	P	ZNE	06	28	07	7.5	0.8					7.5	USGS: 17.86S, 178.36W
														Fiji Islands region
														h = 608 km
														H = 06 26 14.2
														Mag. 4.8 (GS)
64	18	P	Z	19	37	38	2.0	1.0					31.7	USGS: 08.23S, 156.36E
														Solomon Islands
														h = 009 km
														H = 19 37 10.4
														Mag. 5.5 (GS)
65	18	(P)	ZNE	23	02	07								
66	18	iP	ZNE	23	02	51							2.3	d
		S	ZNE		03	12								USGS: 15.64S, 173.30W
														Tonga Islands
														h = 033 km N
														H = 23 02 17.2
														Mag. 4.8 (GS)
67	19	P	ZNE	06	46	17							4.2	USGS: 16.73S, 174.80W
		S	ZNE		47	04								Tonga Islands
														h = 286 km
														H = 06 45 14.4
														Mag. 4.8 (GS)
68	20	iP	ZNE	05	33	31.5								u
		S	ZNE		34	16								
69	20	P	ZNE	05	46	21							13.1	USGS: 23.58S, 179.10E
		S	ZNE		48	35								South of Fiji Islands
														h = 544 km
														H = 05 43 37.7
														Mag. 5.5 (GS)
70	20	P	ZNE	13	28	59								
		S	ZNE		30	06								
71	20	P	ZNE	16	46	29								
		S	ZNE			48								
72	21	P	ZNE	06	36	48							71	USGS: 41.35N, 139.10E
		PP	Z		39	52								Hokkaido, Japan region
		S	ZNE		46	12								Felt
		SS	ZNE		50	48								h = 010 km
		SSS	Z		53	22								H = 06 25 27.3
		Lq	NE		55									Mag. Ms 6.9 (PAS) 6.5
		Lr	ZNE		58									(BRK) 6.7 MB 6.9 MSZ (GS)
73	21	iP	ZNE	11	37	28.2							2.2	d
		S-	ZNE			48								USGS: 15.43S, 173.42W
														Tonga Islands
														h = 033 km N
														H = 11 36 57.6
														Mag. 5.1 (GS)

No	Date	Phase		(G.M.T.)			Ax Tx An Tn Ae Te	(Deg.)	Remarks
74	21	eS	ZNE	15	09	22		75	USGS: 24.20N, 122.42E
		eSS	N		14	28			Taiwan region
		eSSS	NE		17	36			Felt
		eLq	ZNE		19				h = 037 km
		eLr	ZNE		22				H = 14 48 07.3
									Mag. Ms 6.0 (PAS) 5.8 MB 6.3 MSZ (GS)
75	21	(P)	ZNE	21	15	36			
76	22	eS	ZNE	22	50	36		20.7	USGS: 16.72S, 166.98E
									Vanuatu Islands
									h = 036 km D
									H = 22 41 41.3
									Mag. 4.5 MB 4.4 MSZ (GS)
77	23	eS	ZNE	12	22	28		55	USGS: 51.72S, 139.57E
		e(Lq)	NE		28				South of Australia
		eLr	ZNE		31				h = 010 km C
									H = 12 05 19.0
									Mag. 5.5 MB 5.6 MSZ (GS)
78	23	P	ZNE	19	43	28		13.7	USGS: 26.66S, 176.80W
		S	ZNE		45	46			South of Fiji Islands
									h = 033 km N
									H = 19 40 19.2
									Mag. 5.0 MB 4.8 MSZ (GS)
79	23	P	ZNE	20	26	07		10.9	USGS: 24.15S, 173.35W
		S	ZNE		27	55			South of Tonga Islands
		TT	ZNE		36				h = 033 km N
									H = 20 23 36.2
									Mag. 4.9 (GS)
80	24	P	ZNE	01	15	44			
		S	ZNE		16	23			
81	24	P	ZNE	07	31	27		90	USGS: 21.72N, 103.28E
		eS	ZNE		42	36			Southeast Asia
		eSS	ZE		48	44			Felt
		eSSS	ZNE		52	08			h = 018 km D
		eLq	ZNE		56				H = 07 18 22.1
		eLr	ZE	08	00				Mag. Ms 6.4 (PAS) 6.1 MB 6.6 MSZ (GS)
82	24	P	ZNE	09	18	25		75	USGS: 24.18N, 122.40E
		eS	ZNE		28	00			Taiwan region
		eSS	ZNE		32	43			Felt
		eSSS	ZNE		36	16			h = 044 km
		eLq	ZNE		38				H = 09 06 45.8
		eLr	ZN		41				Mag. Ms 6.4 MPK 6.4 (PAS) 6.1 MB 6.7 MSZ (GS)
83	25	P	ZNE	10	07	42	2.4 1.1	20.1	USGS: 32.84S, 178.79W
		S	ZNE		11	09			South of Kermadec Islands
		eT	ZNE		26				h = 046 km D
									H = 10 03 17.4
									Mag. 5.6 MB 5.6 MSZ (GS)
84	25	iP	ZNE	12	01	37	3.4 0.5	7.4	d
		S	ZNE		03	05			USGS: 19.02S, 177.43W
									Fiji Islands region
									h = 591 km
									H = 11 59 44.7
									Mag. 5.0 (GS)
85	25	P	ZNE	15	06	19		9.8	USGS: 22.00S, 177.45W
		S	ZNE		07	22			South of Fiji Islands
									h = 278 km D
									H = 15 04 10.4
									Mag. 5.5 (GS)

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
86	25	eP	ZNE	19	14	30							20.1	USGS: 32.93S, 178.70W South of Kermadec Islands h = 033 km N H = 19 10 01.8 Mag. 5.5 (GS)
		eS	ZNE		18	07								
		eT	ZNE		34									
87	26	P	ZNE	07	45	21							8.0	USGS: 17.91S, 179.02W Fiji Islands region h = 583 km H = 07 43 28.8* Mag. 4.1 (GS)
		S	ZNE		47	02								
88	26	P	ZNE	10	32	37								
		e(S)	ZNE		34	12								
89	26	eP	ZNE	15	58	57							20.2	USGS: 17.87S, 167.60E Vanuatu Islands h = 013 km H = 15 54 19.0 Mag. 5.1 MB 5.1 MSZ (GS)
		eS	ZNE	16	02	48								
		e	ZNE		04	08								
90	26	P	ZNE	17	11	47	3.6	0.8					13.1	USGS: 23.72S, 179.07E South of Fiji Islands h = 572 km H = 17 09 05.8* Mag. 5.0 (GS)
		S	ZNE		14	00								
91	27	iP	ZNE	02	16	39							2.8	u USGS: 15.55S, 173.89W Tonga Islands h = 196 km H = 02 16 17.3 Mag. 4.3 (GS)
		S	ZNE		17	03								
92	27	eP	ZNE	08	29	45							20.1	USGS: 18.13S, 167.82E Vanuatu Islands h = 033 km D H = 08 25 10.4 Mag. 5.0 MB 4.6 MSZ(GS)
		eS	ZNE		34	52								
93	27	(P)	ZNE	14	12	44							12.6	USGS: 23.92S, 179.83W South of Fiji Islands h = 532 km H = 14 10 04.4 Mag. 5.4 (GS)
		S	ZNE		14	50								
94	27	P	ZNE	22	12	51							5.2	USGS: 18.54S, 173.92W Tonga Islands h = 053 km D H = 22 11 38.0 Mag. 5.1 (GS)
		S	ZNE		13	35								
		T	ZNE		17									
95	28	P	ZNE	03	03	28								
96	28	eS	ZNE	03	47	20							78	USGS: 60.22N, 141.29W Southeastern Alaska Felt h = 019 km H = 03 25 17.0 Mag. ML 5.9 (PMR) 6.0 MB 5.4 MSZ (GS)
		eLr	ZNE	04	01									
97	28	P	ZNE	11	05	02								
		(S)	ZNE		06	00								
98	28	P	ZNE	17	50	05							11.7	USGS: 24.81S, 175.97W South of Tonga Islands h = 033 km N H = 17 47 27.9* Mag. 5.0 (GS)
		S	ZNE		52	00								

No	Date	Phase		(G.M.T.)			Az	Ts	An	Tn	Ac	Tc	(Deg.)	Remarks
99	28	P	ZNE	18	01	34							12.0	USGS: 24.92S, 176.6[illegible]
		(S)	ZNE		03	28								South of Fiji Islands
														h = 033 km N
														H = 17 59 01.0*
														Mag. 4.5 (GS)
100	28	P	ZNE	20	31	03								
		S	ZNE			58								
101	28	P	ZNE	21	57	46							9.0	USGS: 22.44S, 174.81W
		S	ZNE		59	05								Tonga Islands region
														h = 033 km N
														H = 21 55 47.5
														Mag. 5.1 MB 4.9 MSZ (GS)
102	29	iP	ZNE	03	29	24							1.9	d
		S	ZNE			44								USGS: 15.39S, 172.89W
														Samoa Islands region
														h = 033 km N
														H = 03 29 00.7
														Mag. 5.2 MB 5.1 MSZ (GS)
103	29	iP	ZNE	04	37	57								d
		S	ZNE		38	14								
104	29	P	ZNE	11	27	32								
		S	ZNE			50								
105	29	(P)	ZNE	23	22	53	2.0	1.0						
106	30	P	ZNE	02	40	24.4	1.5	0.5					12.3	USGS: 23.01S, 179.57E
		eS	ZNE		42	38								South of Fiji Islands
														h = 537 km
														H = 02 37 36.4*
														Mag. 4.7 (GS)
107	30	P	ZNE	03	41	34								
		e(S)	ZNE		44	26								
108	30	P	ZNE	05	17	23							5.1	USGS: 17.39S, 175.47W
		S	ZNE		18	16								Tonga Islands
														h = 391 km
														H = 05 16 23.9*
														Mag. 4.4 (GS)
109	30	eS	NE	13	59	36							68	USGS: 44.04N, 147.84E
		eLr	ZNE	14	10									Kuril Islands
														Felt
														h = 042 km
														H = 13 39 04.0
														Mag. 5.6 MB 5.4 MSZ (GS)
110	30	P	ZNE	14	12	40							5.6	USGS: 18.46S, 174.96W
		S	ZNE		13	35								Tonga Islands
														h = 279 km
														H = 14 11 24.5*
														Mag. 4.6 (GS)

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APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

July 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
1	1	P	ZNE	03	18	14		9.4	USGS: 20.75S, 178.35W Fiji Islands region h = 529 km D H = 03 16 05.0 Mag. 5.5 (GS)
		S	ZNE		19	53			
2	1	P	ZNE	22	14	32		67	USGS: 36.94N, 141.12E Near East Coast of Honshu Japan Felt (IV JMA) h = 052 km D H = 22 03 42.1 Mag. Ms 5.0 (BRK) 5.5 (GS)
		eS	NE		23	56			
		eL	ZNE		34				
3	2	P?	Z	09	47	21		96	USGS: 05.75N, 094.72E Norhtern Sumatera h = 093 km H = 09 34 04.9 Mag. 5.7 (GS)
		(P)	Z			28			
4	2	P	ZNE	19	46	13	2.0 0.9		
5	3	P	ZNE	03	00	36	4.5 1.4	74	USGS: 20.16N, 122.38E Phillipine Islands region h = 220 km H = 02 49 27.9 Mag. 6.1 (GS)
		eS	ZNE		09	48			
6	3	P	ZNE	17	27	31		91	USGS: 09.65N, 083.69W Costa Rica h = 033 km N H = 17 14 23.1 Mag. Ms 6.7 (BRK) 6.1 (PAS) 5.9 MB 6.2 MSZ (GS)
		eS	ZNE		38	12			
		e	ZE		39	40			
		eSS	ZN		44	28			
		eSSS	Z		48	14			
		e(Lq)	N		51				
		e(Lq)	Z		53				
		eLr	ZNE		57				
7	3	iP	ZNE	19	41	01.5			d
		S	ZNE			24			
8	4	P	ZNE	09	34	21			
		S	ZNE		35	15			
9	4	eP	ZNE	09	59	08			
		S	ZNE	10	00	07			
10	5	P	ZNE	01	47	01		6.1	USGS: 14.91S, 178.01W Fiji Islands region h = 394 km H = 01 45 29.8 Mag. 4.9 (GS)
		e	ZNE		48	12			
11	5	eS	ZNE	06	15	56		56	USGS: 55.85S, 123.40W Easter Island Cordillera h = 010 km G H = 05 58 21.4 Mag. 5.5 MB 5.9 MSZ(GS)
		eSS	NE		19	40			
		eL	ZNE		23				

.../2

July 1983

No	Date		Phase		(G.M.T.)		Az Tz An Tn Ae Te (Deg.)	Remarks
12	5	P	ZNE	10	00	03	10.8	USGS: 24.22S, 174.87W
		S	ZNE		01	51		South of Tonga Islands
		T	ZNE		10			h = 033 km
								H = 09 57 38.0
								Mag. 5.5 (GS)
13	5	P	ZNE	11	15	52	18.5	USGS: 22.60S, 171.02E
		S	ZNE		19	05		Loyalty Islands region
								h = 033 km N
								H = 11 11 39.8
								Mag. Ms 6.4 (BRK) 5.9 (PAS) 6.1 MB 6.4 MSZ (GS)
14	5	P	ZNE	11	45	52	18.7	USGS: 22.77S, 170.95E
								Loyalty Islands region
								h = 033 km N
								H = 11 41 51.0
								Mag. 5.0 (GS)
15	5	P	ZNE	11	53	12	18.6	USGS: 22.70S, 170.98E
								Loyalty Islands region
								h = 033 km N
								H = 11 48 59.8
								Mag. 5.2 (GS)
16	5	P	ZNE	12	08	42	18.9	USGS: 22.69S, 170.62E
								Loyalty Islands region
								h = 033 km N
								H = 12 04 26.5
17	5	PKP	ZNE	12	21	25	149	USGS: 40.32N, 027.22E
								Turkey
								h = 010 km G
								H = 12 01 27.3
								Mag. ML 5.9 (ATH) 5.7 MB 6.1 MSZ (GS)
18	5	P	ZNE	12	59	19	18.6	USGS: 22.66S, 171.02E
		S	ZNE	13	03	00		Loyalty Islands region
								h = 033 km N
								H = 12 55 05.5
								Mag. 5.6 (GS)
19	5	P	ZNE	14	40	27	18.7	USGS: 22.76S, 171.00E
		S	ZNE		44	08		Loyalty Islands region
								h = 033 km N
								H = 14 36 10.6
								Mag. 5.0 (GS)
20	6	P	ZNE	03	28	29	18.6	USGS: 22.68S, 170.98E
								Loyalty Islands region
								h = 033 km N
								H = 03 24 16.2
								Mag. 5.3 MB 5.0 MSZ (GS)
21	6	P	ZNE	04	56	23	8.0	USGS: 21.46S, 174.06W
		S	ZNE		57	53		Tonga Islands
		T	ZNE	05	03			h = 040 km D
								H = 04 54 38.1
								Mag. 5.3 MB 4.9 MSZ(GS)
22	6	P	ZNE	18	04	45	21.5	USGS: 11.59S, 166.29E
		eS	ZNE		08	44		Santa Cruz Islands
		e	ZE		10	28		h = 033 km N
								H = 17 59 55.1
								Mag. Ms 5.2 (BRK) 5.4 MB 4.8 MSZ (GS)

July 1983

No	Date		Phase		(G.M.T.)		Az Tz An Tn Ae Te	(Deg.)	Remarks
23	6	(P)	Z	18	32	34		97	USGS: 01.72N, 098.08E Northern Sumatera h = 081 km H = 18 19 31.2 Mag. 5.2 (GS)
24	6	P	Z	20	07	02		19.4	USGS: 21.65S, 169.64E Loyalty Islands region h = 033 km N H = 20 02 40.8 Mag. 5.1 MB 5.2 MSZ(GS)
25	7	P	ZNE	01	07	06		18.6	USGS: 22.67S, 170.95E Loyalty Islands region h = 033 km N H = 01 02 55.1 Mag. Ms 5.0 (BRK) 5.3 MB 5.0 MSZ (GS)
		eS	ZNE		10	52			
		e	ZNE		12	04			
26	7	P	ZNE	05	34	01		18.6	USGS: 22.65S, 170.89E Loyalty Islands region h ≥ 039 km H = 05 29 45.8 Mag. Ms 6.0 (BRK) 5.8 (PAS) 5.4 MB 5.8 MSZ (GS)
		S	ZNE		37	28			
27	7	P	ZNE	13	35	35		7.6	USGS: 19.19S, 177.40W Fiji Islands region h = 377 km H = 13 33 54.4 Mag. 5.1 (GS)
		S	ZNE		36	56			
28	7	P	ZNE	15	39	59		18.7	USGS: 22.76S, 170.92E Loyalty Islands region h = 033 km N H = 15 35 45.5 Mag. 4.7 (GS)
		S	ZNE		43	43			
29	7	P	ZNE	16	09	55		18.8	USGS: 22.61S, 170.73E Loyalty Islands region h = 034 km H = 16 05 39.7 Mag. Ms 6.5 (BRK) 5.7 MB 6.2 MSZ (GS)
		S	ZNE		13	19			
30	7	PKP	ZE	20	55	36	5.5 1.4	151	USGS: 07.27S, 027.84E Zaire Republic h = 010 km G H = 20 35 38.1 Mag. 5.8 MB 5.5 MSZ(GS)
31	7	P	ZNE	22	17	00		8.1	USGS: 21.75S, 173.38W Tonga Islands h = 033 km N H = 10 05 00.4 Mag. 5.5 MB 4.8 MSZ (GS)
		S	ZNE		18	53			
32	7	iP	ZNE	22	22	07	4.5 0.9		u
33	8	P	ZNE	10	06	51			
		S	ZNE		08	10			
		T	ZNE		13				
34	9	e(P)	ZNE	04	40	49			
35	9	P	ZNE	10	24	23			
		S	ZNE		25	02			

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July 1983

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
36	9	P	ZNE	12	31	42							13.9	USGS: 25.20S, 179.82E South of Fiji Islands h = 491 km H = 12 28 46.3 Mag. 5.0 (GS)
37	9	P	Z	23	02	09								
		S	ZNE		04	28								
38	10	P	Z	19	22	55							7.4	USGS: 17.78S, 178.33W Fiji Islands region h = 548 km H = 19 21 03.6 Mag. 4.8 (GS)
		S	ZNE		24	14								
39	11	eP	ZNE	13	09	36							91	USGS: 60.89S, 053.02W South Shetland Islands h = 010 km G H = 12 56 28.3 Mag. Ms 7.0 (BRK) 6.7 (PAS) 6.1 MB 6.9 MSZ(GS)
		ePP	ZN		13	12								
		S	ZNE		20	16								
		e	ZN		21	56								
		eSS	ZNE		26	28								
		eSSS	E		30	16								
		Lq	ZNE		34									
		Lr	ZN		37									
40	12	eS	E	04	00	52							73	USGS: 23.95N, 108.29W Gulf of California h = 010 km G H = 03 39 27.7 Mag. 5.2 MB 5.5 MSZ (GS)
		eL	ZE		12									
41	12	P	ZNE	10	09	01							14.3	USGSL 25.52S, 179.44E South of Fiji Islands h = 667 km H = 10 06 20.4* Mag. 4.4 (GS)
		S	ZNE		11	26								
42	12	P	ZNE	10	47	11	3.6	1.0						
		eS	ZNE		48	55								
43	12	P	ZNE	15	21	49							76	USGS: 61.03N, 147.29W Southern Alaska Felt h = 037 km H = 15 10 03.4 Mag. ML 6.4 (PMR) Ms 6.3 (BRK) 6.2 (PAS) 6.1 MB 6.4 MSZ (GS)
		eS	NE		31	28								
		e(ScS)	ZN		32	29								
		Lr	ZNE		45									
44	12	P	ZNE	23	21	45								
		S	ZNE		22	35								
45	13	P	ZNE	17	28	38								
		(S)	ZNE		29	49								
46	14	P	ZNE	00	36	12								
47	14	P	ZNE	09	38	32							6.1	USGS: 16.63S, 177.38W Fiji Islands region h = 427 km H = 09 37 03.6* Mag. 4.1 (GS)
		eS	ZNE		39	43								
48	14	iP	ZNE	09	49	58							6.4	d USGS: 19.03S, 175.58W Tonga Islands h = 264 km H = 09 48 35.2 Mag. 5.1 (GS)
		S	ZNE		51	00								

July 1983

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
49	14	eP	ZNE	19	58	20							65	USGS: 05.56N, 126.45E Mindanao Phillipine Is. h ± 043 km H = 19 47 46.5 Mag. 5.8 MB 6.0 MSZ (GS)
		eS	ZNE	20	07	00								
		eSS	ZE		10	48								
		eSSS	Z		14	32								
		eLq	N		15									
		eLr	ZNE		18									
50	14	P	ZNE	20	06	05							8.2	USGS: 19.24S, 178.16W Fiji Islands region h = 591 km H = 20 04 15.1* Mag. 4.7 (GS)
		eS	ZNE		07	35								
51	15	P	ZNE	02	03	04							5.9	USGS: 15.40S, 177.66W Fiji Islands region h = 413 km H = 02 01 37.6* Mag. 4.5 (GS)
52	15	P	ZNE	03	22	35							19.9	USGS: 18.95S, 168.09E Vanuatu Islands h = 033 km N H = 03 18 04.7 Mag. 5.0 (GS)
		eS	ZE		27	04								
53	15	eP	Z	10	56	24							65	USGS: 05.49N, 126.50E Mindanao Phillipine Is h = 049 km H = 10 45 38.5 Mag. 5.7 MB 5.6 MSZ(GS)
		eS	ZNE	11	04	48								
		eSS	ZNE		09	24								
		eSSS	ZN		12	24								
		eLr	ZNE		15									
54	16	eP	ZNE	01	36	22								
		S	ZNE		37	08								
		(T)	ZNE		41									
55	16	eP	ZNE	07	08	03								
		eS	ZNE		10	10								
56	16	e(P)	ZNE	11	06	29								
57	16	P	ZNE	15	52	51							11.3	USGS: 19.03S, 177.74E South of Fiji Islands Felt h = 033 km N H = 15 50 09.9 Mag. 5.1 MB 4.4 MSZ (GS)
		eS	ZNE		55	00								
58	16	iP	ZNE	15	55	00								d
		S	ZNE			19								
59	17	eP	ZNE	01	36	05								
		eS	ZNE		38	14								
60	17	P	ZNE	06	31	09							7.3	USGS: 18.54S, 177.66W Fiji Islands region h = 586 km H = 06 29 18.9 Mag. 5.2 (GS)
		S	ZNE		32	36								
61	17	P	ZNE	14	49	49	11.8	1.0					13.0	USGS: 23.61S, 179.13E South of Fiji Islands h = 536 km D H = 14 47 03.8 Mag. 5.1 (GS)
		S	ZNE		52	02								
62	17	P	ZNE	18	31	55	6.8	1.0					12.5	USGS: 23.14S, 179.36E South of Fiji Islands h = 516 km H = 18 29 08.7* Mag. 4.6 (GS)
		S	ZNE		34	06								

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July 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)	Remarks
63	17	P	ZNE	19	12	21		
		(S)	ZNE		14	27		
64	17	P	ZNE	22	00	25	18.5	USGS: 31.41S, 178.13W Kermadec Islands region h = 049 km D H = 21 56 16.6 Mag. 5.6 (GS)
		S	ZNE		03	35		
		eT	ZNE		18			
65	17	P	ZNE	23	05	07	10.9	USGS: 23.01S, 177.87W South of Fiji Islands h = 311 km H = 23 02 46.4 Mag. 5.2 (GS)
		S	ZNE		06	53		
66	18	P	ZNE	00	36	05		
		S	ZNE			29		
67	18	P	ZNE	02	16	41		
68	18	P	ZNE	07	21	12		
		S	ZNE		22	24		
		eT	ZNE		28			
69	18	eS	ZE	08	42	56	56	USGS: 27.53S, 113.69W Easter Island region h = 010 km G H = 08 25 17.2* Mag. 5.0 MB 4.7 MSZ (GS)
		eL	ZNE		50			
70	18	P	ZNE	11	14	04	19.5	USGS: 30.32S, 177.81W Kermadec Islands h = 033 km N H = 11 10 10.5* Mag. 4.9 (GS)
		eS	ZNE		16	57		
71	18	P	ZNE	13	05	26	89	USGS: 12.67N, 087.18W Near Coast of Nicaragua Felt h = 086 km H = 12 52 43.4 Mag. mb 6.0 (PAS) 5.1 (BRK) 5.6 (GS)
		(PcP)	ZNE			47		
		eS	ZNE		15	56		
		eSSS	Z		25	32		
		eL	ZNE		29			
		eL	ZNE		32			
72	18	P	ZNE	16	24	20		
		S	ZNE		25	53		
73	18	P	ZNE	19	17	55		
		S	ZNE		18	37		
		T	ZNE		21			
74	19	P	ZNE	06	12	09	11.5	USGS: 19.19S, 177.65E South of Fiji Islands Felt (VI) on Kandavu h = 033 km N H = 06 09 28.4 Mag. 5.1 MB 4.8 MSZ (GS)
		(S)	ZNE		14	20		
75	19	P	ZNE	09	51	02	15.4	USGS: 28.03S, 178.25W Kermadec Islands region h = 076 km D H = 09 47 20.1* Mag. 5.0 (GS)
		S	ZNE		53	42		
76	19	P	ZNE	23	59	34	66	USGS: 01.02N, 123.89E Mindhassa Peninsula h = 297 km H = 23 49 18.9 Mag. 5.4 (GS)

No	Date	Phase		(G.M.T.)		Az Tz An Tn Ae Te (Deg.)	Remarks
77	20	(P)	ZNE	09 41	22		
		S	ZNE	43	15		
78	20	e(P)	ZNE	15 09	23		
		eS	ZNE	10	44		
79	20	e(P)	ZNE	17 55	40		
		e(S)	ZNE	57	34		
80	20	P	ZNE	23 07	48		
		eS	ZNE	16	48		
		eL	ZE	27			
81	22	P	ZNE	01 02	16		
		eS	ZNE	04	24		
82	22	P	ZNE	02 41	07		
		(pP)	ZE		56		
		eS	ZE	44	48		
		e(SS)	ZNE	45	40		
83	22	P	Z	02 51	06		
		eS	ZNE	03 00	20		
		eSS	ZE	04	28		
		eLq	E	08			
		eLr	ZNE	11			
84	22	P	Z	07 46	52		
		S	ZNE	49	00		
85	23	P	ZNE	02 53	46		
		S	ZNE	54	43		
86	24	P	ZNE	00 55	40		
		S	ZNE	58	07		
		eT	ZNE	01 07			
87	24	P	ZNE	04 21	08		
		S	ZNE		50		
88	24	eP	ZNE	17 51	35		
		S	ZNE	52	44		
89	24	P	ZNE	23 18	36	6.8 1.0	
90	24	P	ZNE	23 49	06	1.0 1.0	

64 USGS: 05.96N, 127.44E
Phillipine Islands region
h = 043 km D
H = 22 57 18.8
Mag. 5.7 MB 5.1 MSZ(GS)

11.0 USGS: 19.12S, 178.07E
South of Fiji Islands
h = 040 km
H = 00 59 27.0
Mag. 4.6 (GS)

20.2 USGS: 14.64S, 167.33E
Vanuatu Islands
h = 163 km D
H = 02 36 40.7
Mag. 5.2. (GS)

69 USGS: 32.23N, 120.42W
Central California
Felt
h = 009 km G
H = 02 39 53.7&
Mag. ML 5.9 (BRK) 5.8
(PAS) 6.0 MB 5.7 MSZ(GS)

10.4 USGS: 22.35S, 177.96W
South of Fiji Islands
h = 391 km
H = 07 45 25.1
Mag. 4.5 (GS)

14.8 USGS: 28.00S, 176.38W
Kermadec Islands region
h = 071 km D
H = 00 52 25.1
Mag. 5.5 (GS)

4.4 USGS: 16.95S, 174,93W
Tonga Islands
h = 033 km N
H = 04 19 57.6?
Mag. 4.6 (GS)

6.8 USGS: 19.48S, 175.77W
Tonga Islands
h = 249 km
H = 17 50 03.0
Mag. 4.7 (GS)

71 USGS: 53.93N, 158.37E
Near East Coast of
Kamchatka
h = 180 km D
H = 23 07 30.9
Mag. mb 6.1 (PAS) 6.1 (GS)

68 USGS: 08.14S, 119.50E
Flores Island region
h = 048
H = 23 38 09.8
Mag. 5.8 MB 5.8 MSZ (GS)

No	Date	Phase		(G.M.T.)			Az Tz Am Tn Ae Te (Deg.)	Remarks
91	25	eP	ZNE	15	48	20		
		S	ZNE			53		
		T	ZNE		51			
92	25	P	ZNE	17	04	15	5.5	USGS: 15.30S, 177.33W Fiji Islands region h = 406 km H = 17 02 51.9 Mag. 5.0 (GS)
93	27	P	ZNE	13	34	24	15.4	USGS: 27.97S, 178.09W Kermadec Islands region h = 189 km H = 13 30 58.9 Mag. 5.0 (GS)
		S	ZNE		36	53		
94	27	P	ZNE	21	14	26	3.7	USGS: 15.10S, 175.37W Tonga Islands h = 033 km H = 21 13 36.9 Mag. 4.8 MB 5.0 MSZ (GS)
		S	ZNE		15	04		
95	28	P	ZNE	01	43	54	15.0	USGS: 28.16S, 176.32W Kermadec Islands region h = 031 km D H = 01 40 33.3 Mag. 5.6 MB 5.5 MSZ (GS)
		S	ZNE		46	25		
		Tm	ZNE		57			
96	28	P	ZNE	19	32	23	18.1	USGS: 22.34S, 171.42E Loyalty Islands region h = 134 km H = 19 28 24.7 Mag. 5.3 (GS)
		eS	ZE		35	36		
97	29	P	ZNE	11	37	45	82	USGS: 06.73S, 105.59E Sunda Strait Felt h = 033 km N H = 11 25 27.6 Mag. 5.4 MB 5.4 MSZ (GS)
98	30	P	ZNE	04	24	06		
		S	ZNE			51		
99	30	P	ZNE	12	04	22		
		S	ZNE			49		
		T	ZNE		06			
100	31	eP	Z	10	34	04	44	USGS: 20.13S, 126.93W South Pacific Ocean h =010 km G H = 10 26 00.3 Mag. 5.9 MB 5.3 MSZ (GS)
		eS	ZE		40	36		
		eSS	ZNE		44	00		
		eL	ZE		46			

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APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

August, 1983

International Seismological Centre

No	Date	Phase		(G.M.T.)	Az Tz An Tn Ae Te	(Deg.)	Remarks
1	1	P	ZNE	11 23 38		9.3	USGS: 21.84S, 176.77W
		S	ZNE	25 20			Fiji Islands region
							h = 349 km
							H = 11 21 14.6?
							Mag. 4.4. (GS)
2	2	P	ZNE	02 28 58		74	USGS: 20.44N, 122.10E
		PcP	Z	29 15			Philippine Islands reg
		epP	NE	44			Felt
		epPP	NE	32 30			h = 158 km D
		ePPP	E	33 28			H = 02 17 41.0
		eS	ZNE	38 48			Mag. mb 6.5 (PAS)
		eSP	Z	39 20			6.1 (GS)
		e(PS)	E	41 48			
		eSS	Z	43 48			
		esSS	E	48 04			
3	2	P	ZNE	20 12 40			
		S	ZNE	13 10			
		T	ZNE	15			
4	3	P	ZNE	02 55 00			
		S	ZNE	53			
5	3	P	ZNE	18 22 14		19.9	USGS: 17.40S, 167.91E
		eS	ZNE	26 08			Vanuatu Islands
		eL	ZNE	27			h = 033 km N
							H = 18 17 42.2
							Mag. 5.5 MB 5.6 MSZ(GS
6	3	P	ZNE	22 43 07		8.7	USGS: 19.86S, 178.35W
		S	ZNE	44 45			Fiji Islands region
							h = 614 km
							H = 22 41 03.3
							Mag. 5.2 (GS)
7	4	eP	ZNE	02 36 20			
		S	ZNE	37 05			
		eT	ZNE	41			
8	4	P	ZNE	22 36 21			
		S	ZNE	37 02			
9	5	P	ZNE	05 27 18			
		S	ZNE	28 06			
10	5	P	ZNE	05 30 15		19.9	USGS: 17.30S, 167.87E
		eS	ZNE	34 08			Vanuatu Islands
		(SSS)	ZE	35 16			h = 033 km N
							H = 05 25 43.4
							Mag. 5.3 MB 5.7 MSZ(GS
11	5	eP	ZNE	07 07 16		19.9	USGS: 17.24S, 167.84E
		eS	ZNE	11 22			Vanuatu Islands
		e(SSS)	NE	12 24			h = 015 km
							H = 07 02 38.8
							Mag. 5.3 MB 5.2 MSZ(GS

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
12	5	P	ZNE	13	27	01								
		S	ZNE			20								
13	5	P	ZNE	13	34	04								
		S	ZNE			55								
14	6	PKP	ZNE	16	03	48.6	6.01.7						150	USGS: 40.14N, 024.77E Aegean Sea Felt h = 002 km H = 15 43 51.2 Mag. Ms 7.3 (BRK) 7.2 (PAS) 6.2 MB 7.0 MSZ (GS)
		eSSP	NE		27	00								
		eSSS	NE		32	04								
		eLq	NE		46									
		eLr	ZE		52									
15	6	iP	ZNE	22	47	31							57.5	d USGS: 06.52S, 130.12E Banda Sea h = 160 km D H = 22 37 54.9 Mag. 5.8 (GS)
16	8	P	ZNE	02	07	19							19.1	USGS: 19.22S, 169.14E Vanuatu Islands h = 169 km H = 02 03 05.7 Mag. 5.2 (GS)
17	8	eS	ZE	04	07	56							68	USGS: 35.50N, 139.07E Near S. Coast of Honshu Japan Felt h = 025 km D H = 03 47 57.1 Mag. 5.9 MB 5.3 MSZ (GS)
		eLq	E		16									
		eLr	ZE		19									
18	8	P	Z	06	09	21							12.6	USGS: 23.25S, 179.43E South of Fiji Islands h = 471 km H = 06 06 30.3? Mag. 4.7 (GS)
19	8	P	ZNE	09	37	08							9.3	USGS: 20.67S, 178.17W Fiji Islands region h = 545 km H = 09 35 02.5 Mag. 4.8 (GS)
		S	ZNE		38	45								
20	8	e(P)	ZNE	13	15	06								
21	8	iP	ZNE	13	34	24	7.70.5						7.6	d USGS: 19.19S, 177.50W Fiji Islands region h = 571 km H = 13 32 31.8 Mag. 4.7 (GS)
		S	ZNE		35	51								
22	9	P	ZNE	07	09	36								
		S	ZNE		10	17								
23	9	P	Z	18	24	44	2.4	1.0					13.0	USGS: 24.04S, 179.73E South of Fiji Islands h = 632 km H = 18 22 16.0? Mag. 4.5 (GS)
24	10	P	ZNE	08	59	20							7.2	USGS: 20.61S, 174.35W Tonga Islands h = 033 km N H = 08 57 39.6* Mag. 4.6 (GS)
		S	ZNE	09	00	32								
		T	ZNE		06									

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
25	10	P	ZNE	20	08	12							10.8	USGS: 23.78S, 179.97W
		S	ZNE		10	02								Tonga Islands region
														h = 033 km N
														H = 20 05 48.0
														Mag. 5.4 MB 5.5 MSZ (GS)
26	10	iP	ZNE	20	30	06.3								u
		S	ZNE			27								
27	11	P	ZNE	23	06	26	2.0	1.2					63	USGS: 01.82N, 127.29E
														Halmakera
														h = 100 km
														H = 22 36 10.7
														Mag. 5.7
28	12	e(P)	ZNE	05	16	50								
		eS	NE		17	52								
29	12	e	ZE	11	44	12							116	USGS: 17.79S, 065.82E
		eSS	ZNE		50	08								Mascerene Islands region
		eLr	ZE	12	10									h = 010 km G
														H = 11 41 49.0*
														Mag. 5.1 MB 5.4 MSZ (GS)
30	13	P	Z	15	32	52							11.2	USGS: 19.20S, 178.03E
		eS	NE		35	02								Felt
														South of Fiji Islands
														h = 033 km N
														H = 15 30 02.6*
														Mag. 5.1 (GS)
31	13	eP	ZNE	15	40	22								
		(S)	ZNE		41	08								
		T	ZNE		44									
32	13	e(P)	ZNE	15	49	18							58	USGS: 07.05S, 129.47E
														Banda Sea
														h = 125 km
														H = 15 39 35.5
														Mag. 5.6 (GS)
33	13	P	ZNE	22	39	58	3.6	1.2					76	USGS: 08.67S, 111.24E
		eS	E		49	40								Java
		eLr	ZE	23	05									Felt
														h = 081 km
														H = 22 28 19.6
														Mag. 5.9 (GS)
34	1414	P	ZNE	16	22	01							7.5	USGS: 17.22S, 178.70W
		S	ZNE		23	30								Fiji Islands region
														h = 516 km
														H = 16 20 12.2
														Mag. 5.0 (GS)
35	14	eP	Z	20	05	44							50	USGS: 63.36S, 169.44E
		eS	ZNE		13	04								Ballery Islands region
		eSS	ZNE		16	08								h = 010 km G
		e(SSS)	ZNE		17	12								H = 19 56 39.4
		eLq	E		18									Mag. Ms 6.0 (BRK) 5.6,
		eLr	ZN		20									MB 5.9 MSZ (GS)
36	14	P	ZNE	21	17	35							8.1	USGS: 20.73S, 176.18W
		(S)	ZNE		18	34								Fiji Islands region
														h = 166 km
														H = 21 15 24.69
37	15	P	Z	07	30	28							21.1	USGS: 11.99S, 166.64E
		[illegible]	[illegible]		[illegible]	[illegible]								Santa Cruz Islands
														h = 154 km
														H = 07 25 21.6
														MAG. 5.2 (GS)

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	REMARKS
38	15	iP	ZNE	19	45	37							4.2	d USGS: 17.10S, 174.51W Tonga Islands h = 182 km D H = 19 44 39.0 Mag. 5.5 (GS)
		S	ZNE		46	19								
39	16	P	ZNE	00	10	26							4.0	USGS: 17.59S, 172.92W Tonga Islands region h = 060 km G H = 00 09 36.8* Mag. 4.5 (GS)
		S	ZNE		11	05								
		T	ZNE		14									
40	16	P	ZNE	08	39	20								
		S	ZNE			54								
41	16	P	ZNE	09	38	25							17.8	USGS: 30.16S, 179.19W Kermadec Islands region h = 384 km H = 09 34 49.9* Mag. 5.0 (GS)
		S	ZNE		41	19								
42	17	iP	ZNE	11	07	19							73	u USGS: 55.87N, 161.29E Near East Coast of Kamchatka h = 063 km H = 10 55 54.1 Mag. mb 7.0 (PAS) Ms 6.5 (BRK) 6.6 (GS)
		S	ZNE		16	40								
		SS	ZE		21	26								
		SSS	ZNE		25	00								
		Lq	ZE		26									
		Lr	ZN		29									
43	17	P	ZNE	12	29	31							74	USGS: 18.23N, 120.86E Luzon, Philippine Island Felt h = 12 17 56.0 Mag. 6.2 MB 6.5 MSZ(GS)
		S	ZNE		39	02								
		SS	Z		44	08								
		SSS	ZE		47	15								
		Lq	NE		49									
		Lr	ZNE		52									
44	17	(P)	ZNE	12	53	21								
45	17	P	ZNE	13	01	16							9.0	USGS: 22.52S, 174.33W Tonga Islands region h = 033 km H = 12 59 10.5 Mag. 5.0 (GS)
		S	ZNE		02	34								
		T	ZNE		09									
46	18	P	ZNE	08	31	31							5.4	USGS: 18.98S, 173.02W Tonga Islands h = 038 km D H = 08 30 21.9* Mag. 5.3 MB 5.0 MSZ(GS)
		S	ZNE		32	24								
		T	ZNE		36									
47	19	eP	Z	14	55	53							12.8	USGS: 24.08S, 179.90W South of Fiji Islands h = 540 km G H = 14 53 09.8* Mag. 4.6 (GS)
		S	ZNE		58	01								
48	20	eS	NE	13	27	06							61	USGS: 27.90N, 141.79E Bonin Islands region Felt h = 041 km H = 13 08 32.5 Mag. Ms 5.4 (BRK) 5.7 MB 5.5 MSZ (GS)
		eLq	E		33									
		eLr	ZNE		36									
49	20	P	ZNE	17	17	12	8.9	0.9					8.7	USGS: 18.18S, 179.65W Fiji Islands region h = 654 km H = 17 15 06.2 Mag. 4.7 (GS)

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
50	21	P	ZNE	08	45	13	3.0 1.0	64	USGS: 03.74N, 126.6E
		eS	ZE		53	48			Talaud Islands
		eLr	ZE	09	05				h = 046 km
									H = 08 34 45.7
									Mag. 5.8 MB 5.6 MSZ (GS)
51	21	eS	ZNE	19	16	08		56	USGS: 28.73S, 112.59W
		eL	ZNE		22				Eastern Islands region
									h = 010 km G
									H = 18 58 19.5
									Mag. Ms 6.0 (BRK) 5.4 MB 5.5 MSZ (GS)
52	21	P	ZNE	22	59	54		11.0	USGS: 23.53S, 177.14W
		S	ZNE	23	01	40			South of Fiji Islands
		T	ZNE		09				h = 151 km D
									H = 22 57 29.3
									Mag. 5.5 (GS)
53	22	P	Z	05	58	03		20.5	USGS: 14.76S, 167.08E
									Vanuatu Islands
									h = 083 km D
									H = 05 53 23.4
									Mag. 5.4 (GS)
54	22	P	ZNE	08	52	16			
		S	ZNE			35			
55	22	P	ZNE	22	17	15			
		(S)	ZNE		18	55			
56	22	P	Z	23	24	30		42.3	USGS: 03.55S, 146.64E
		eS	ZNE		30	58			Bismarck Sea
		eSS	ZE		33	32			Felt(III) at Rabaul,
		eSSS	ZNE		34	44			New Britain
		eLr	ZE		37				h = 021 km
									H = 23 16 36.7
									Mag. 5.5 MB 5.5 MSZ (GS)
57	23	P	ZNE	09	11	04			
		S	ZNE		12	00			
		T	ZNE		16				
58	23	P	ZNE	23	46	58	2.8 1.1	37.5	USGS: 05.88S, 151.03E
		eS	ZE		52	40			New Britain region
		eSS	NE		55	36			Felt(IV) at Rabaul
		eLr	ZE		57				h = 046 km
									H = 23 39 40.3
									Mag. Ms 6.3 (BRK) 5.4 MB 5.8 MSZ (GS)
59	24	P	ZNE	05	41	50			
		S	ZNE		42	16			
60	24	eS	ZNE	13	57	16		70	USGS: 40.31N, 124.77W
		eL	ZNE	14	08				Near Coast of Northern
									California
									Felt(V)
									h = 030 km G
									H = 13 36 30.9S
									Mag. ML 5.5 (BRK) 5.5 MB 5.8 MSZ (GS)
61	25	P	ZNE	15	24	51			
		eS	ZNE		25	44			
		T	ZNE		28				
62	25	P	ZNE	20	00	15		7.6	USGS: 17.86S, 178.55W
									Fiji Islands region
									h = 607 km
									H = 19 58 20.6*
									Mag. 4.3 (GS)

No	Date	Phase		(G.M.T.)			As	Ts	An	Tn	Ae	Te	(Deg.)	Remarks
63	25	P	ZNE	20	34	45	5.4	1.1					71	USGS: 31.51N, 131.[illegible]E
		pP	ZNE		35	15								Kyushu, Japan
		eS	ZNE		43	56								Felt(IV)JMA)
														h = 126 km
														H = 20 23 33.3
														Mag. 6.1 (GS)
64	26	iP	ZNE	02	13	34.5								d
		(S)	ZNE		14	20								
65	26	P	ZNE	18	24	45	2.0	1.0					19.0	USGS: 20.68S, 169.60E
		eS	ZNE		28	42								Vanuatu Islands
														h = 104 km
														H = 18 20 32.3
														Mag. 5.4 (GS)
66	27	P	ZNE	04	16	39							9.7	USGS: 20.83S, 178.68W
		S	ZNE		18	23								Fiji Islands region
														h = 618 km
														H = 04 14 27.4
														Mag. 4.8 (GS)
67	27	eP	ZNE	19	00	38							66	USGS: 08.17N, 125.95E
		eS	ZNE		09	24								Mindanao, Philippine Is.
		eSS	ZNE		13	32								h = 21 km D
		eLq	N		17									H = 18 49 48.4
		eLr	ZNE		20									Mag. 5.7 MB 6.0 MSZ (GS)
68	28	P	ZNE	01	27	42								
		S	ZNE		28	20								
69	28	P	ZNE	02	03	14								
		S	ZNE			35								
70	28	P	ZNE	10	39	18								
		S	ZNE		40	15								
71	28	eP	ZNE	19	26	12								
		eS	ZNE		27	18								
72	29	P	ZNE	04	01	07								
73	29	eP	Z	05	27	08							40.3	USGS: 03.45S, 148.80E
		ePP	Z		28	40								Bismarck Sea
		eS	ZNE		33	16								Felt(III) at Rabaul,
		eSS	ZNE		36	20								New Britain
														h = 033 km N
														H = 05 19 24.8
														Mag. 5.2 MB 5.8 MSZ (GS)
74	30	iP	ZNE	08	50	57.5							2.9	d
		S	ZNE		51	26								USGS: 16.71S, 172.08W
														Samoa Islands region
														h = 039 km D
														H = 08 50 17.1
														Mag. 6.0 MB 5.7 MSZ (GS)
75	30	iP	ZNE	22	53	15								u
		S	ZNE			33								
76	31	eS	ZNE	09	08	36							57	USGS: 29.57S, 111.84W
		eL	ZNE		17									Easter Island region
														h = 010 km G
														H = 08 50 37.2
														Mag. 5.3 MB 5.0 MSZ (GS)
77	31	P	ZNE	14	20	39	10.5	1.0					5.8	USGS: 15.49S, 177.51W
		S	ZNE		21	50								Fiji Islands region
														h = 430 km
														H = 14 19 12.1*
														Mag. 4.3 (GS)

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APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

September, 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
1	1	P	ZNE	08	17	54		8.4	USGS: 19.76S, 178.03W
		S	ZNE		19	24			Fiji Islands region
									h = 461 km
									H = 08 16 01.5*
									Mag. 4.7 (GS)
2	1	eS	ZNE	09	08	40		57	USGS: 29.90S, 112.11W
		eL	NE		14				Easter Islands region
		eL	ZE		16				h = 010 km G
									H = 08 50 32.3
									Mag. 5.1 MB 5.2 MSZ (GS)
3	1	eS	ZE	18	35	08		57	USGS: 29.41S, 111.91W
		eL	ZNE		44				Easter Islands region
									h = 010 km G
									H = 18 18 07.9
									Mag. 5.4 MB 5.5 MSZ (GS)
4	1	P	ZNE	22	50	10	4.8 1.0	12.7	USGS: 24.00S, 179.79W
		S	ZNE		52	20			South of Fiji Islands
									h = 510 km
									H = 22 47 30.5
									Mag. 5.1 (GS)
5	2	P	ZNE	06	47	37			
		(S)	ZNE		48	34			
6	3	iP	ZNE	02	54	23.5		9.4	d
		S	ZNE		56	01			USGS: 21.25S, 177.72W
									Fiji Islands region
									h = 431 km
									H = 02 52 17.0
									Mag. 4.9 (GS)
7	3	iP	ZNE	08	03	01		7.7	u
									USGS: 17.47S, 178.86W
									Fiji Islands region
									h = 559 km
									H = 08 01 10.2
									Mag. 4.7 (GS)
8	3	P	ZNE	21	44	11			
		S	ZNE		45	32			
9	4	P	ZNE	01	47	50		12.5	USGS: 23.70S, 179.78W
		S	ZNE		50	00			South of Fiji Islands
									h = 558 km
									H = 01 45 10.9*
									Mag. 4.7
10	4	P	ZNE	20	57	11	23.5 1.0	19.0	USGS: 21.00S, 169.80E
		pP	Z			33			Vanuatu Islands
		eS	E	21	00	52			h = 112 km
		eaS	ZNE		01	16			H = 20 52 59.5
									Mag. 5.5 (GS)
11	5	P	ZN	03	27	55			
		S	ZN		28	37			
12	5	(P)	ZN	06	14	21			
13	5	eP	ZN	07	07	53			
		(S)	ZN		09	08			

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
14	6	P	ZE	01	12	01							29.3	USGS: 09.51S, 158.6[illegible]
		eLq	N		19									Solomon Islands
		eLr	ZNE		20									h = 033 km D
														H = 01 05 58.[illegible]
														Mag. 5.5 MB 5.[illegible] MSZ
15	6	eP	ZNE	03	44	23								
		S	ZNE			55								
		T	ZNE		47									
16	6	eP	ZNE	09	13	08								
		S	ZNE			37								
		T	ZNE		16									
17	7	P	ZNE	14	29	05								
		S	ZNE			39								
18	7	P	ZNE	14	43	20								
		S	ZNE			42								
19	7	P	ZNE	15	25	29	3.0	0.9					9.2	USGS: 20.18S, 178.73[illegible]
		S	ZNE		27	15								Fiji Islands region
														h = 496 km
														H = 15 23 10.1*
														Mag. 4.5 (GS)
20	7	P	ZNE	18	20	06								
		(S)	ZNE		21	25								
21	7	P	ZNE	19	33	54							77	USGS: 60.98N, 147.50[illegible]
		eS	ZNE		43	52								Southern Alaska
		eSS	E		48	48								Felt
		eSSS	E		51	32								h = 045 km
		eLq	E		54									H = 19 22 05.1
		eLr	ZNE		57									Mag. Ms 6.2 (BRK) 6.[illegible]
														MB 6.2 MSZ (GS)
22	8	eP	ZNE	18	39	09							14.5	USGS: 26.05S, 179.90[illegible]
														South of Fiji Island
														h = 480 km
														H = 18 36 04.7*
														Mag. 4.4 (GS)
23	9	eP	ZNE	12	18	33								
		S	ZNE		19	27								
24	9	P	ZNE	19	14	25								
		S	ZNE			50								
25	9	P	ZNE	22	21	33								
		S	ZNE		22	25								
26	10	P	ZNE	12	53	34							7.6	USGS: 17.97S, 178.45[illegible]
		S	ZNE		55	05								Fiji Islands region
														h = 639 km
														H = 12 51 40.1
														Mag. 4.7 (GS)
27	11	P	ZNE	16	55	38							12.9	USGS: 25.57S, 177.33[illegible]
		S	ZNE		57	43								South of Fiji Islands
														h = 159 km D
														H = 16 52 51.3
														Mag. 5.2 (GS)
28	12	PKP	ZNE	16	00	37	9.3	1.1					120	USGS: 36.50N, 071.08E
														Afghanistan-USSR
														border region
														Felt
														h = 209 km D
														H = 15 42 08.[illegible]
														Mag. 6.1 (GS)
29	13	eP	ZNE	02	14	05							65	USGS: 07.53N, 126.63E
		eS	ZE		22	48								Mindanao, Phillipine I
		eL	ZE		34									h = 047 km
														H = 02 03 27.1
														Mag. [illegible] MB 5.[illegible] MSZ

No	Date	Phase		(G.MT.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
30	13	P	ZN	19	33	16							10.8	USGS: 24.01S, 175.71W
		S	ZN		35	02								South of Tonga Islands
		T	ZN		43									h = 033 km N
														H = 19 30 54.9
														Mag. 5.4 MB 5.5 MSZ (GS)
31	14	P	ZNE	11	34	00							52	USGS: 18.10N, 145.77E
		eS	NE		41	20								Mariana Islands
		e(ScS)	NE		43	44								h = 159 km D
		eSS	NE		44	49								H = 11 25 00.9
		e(SSS)	ZNE		47	10								Mag. mb 6.3 (PAS) 6.0 (GS)
32	14	P	ZNE	23	12	46								
		S	ZNE		14	18								
33	15	iP	ZNE	03	56	39	2.9	0.6					13.5	d
		S	ZNE		58	50								USGS: 24.08S, 179.13E
														South of Fiji Islands
														h = 526 km
														H = 03 53 50.3
														Mag. 4.7 (GS)
34	15	P	ZNE	10	51	18							84	USGS: 16.10N, 093.15W
		e(PcP)	Z			48								Chiapas, Mexico
		ePP	ZNE		54	32								Felt
		eS	ZNE	11	01	32								h = 115 km D
		e	Z		02	04								H = 10 39 02.3
		eSS	Z		07	08								Mag. 5.6 (GS)
		eSSS	Z		10	20								
		e	ZNE		13	32								
		e	ZE		16	40								
35	15	iP	ZNE	15	58	25	3.0	0.5					9.8	u
		S	ZNE	16	00	10								USGS: 20.98S, 178.77W
														Fiji Islands region
														h = 604 km
														H = 15 56 13.3
														Mag. 5.0 (GS)
36	15	eP	ZNE	20	50	53								
		(S)	ZNE		51	45								
37	16	P	ZNE	04	32	21							67	USGS: 00.04S, 122.50E
														Minahassa Peninsula
														h = 281 km
														H = 04 21 56.1
														Mag. 5.4 (GS)
38	16	P	ZNE	07	45	26							8.3	USGS: 21.40S, 175.36W
		S	ZNE		46	46								Tonga Islands
														h = 047 km D
														H = 07 43 31.5
														Mag. 5.4 (GS)
39	16	iP	ZNE	08	12	07.6							12.7	u
		e	ZNE		13	48								USGS: 24.03S, 179.80W
		(S)	ZNE		14	16								South of Fiji Islands
														h = 510 km D
														H = 08 09 26.6
														Mag. 6.0 (GS)
40	16	P	ZNE	13	56	42							7.6	USGS: 17.89S, 178.58W
		S	ZNE		58	13								Fiji Islands region
														h = 577 km
														H = 13 54 50.3
														Mag. 4.7 (GS)
41	16	P	ZNE	23	12	34								
		S	ZNE		14	03								

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
42	17	eS	ZE	01	01	10		48	USGS: 63.66S, 166.80W
		eL	ZNE		07				South Pacific Cordillera
									h = 010 km G
									H = 00 44 58.0*
									Mag. 5.1 (GS)
43	17	P	Z	06	10	16		95	USGS: 04.75N, 095.04E
		eS	ZNE		21	12			Northern Sumatera
		eSS	ZNE		28	12			h = 066 km
									H = 05 56 56.6
									Mag. 5.8 (GS)
44	17	iP	ZNE	12	13	04		6.2	u
		S	ZNE		14	04			USGS: 16.64S, 177.48W
									Fiji Islands region
									h = 033 km N
									H = 12 11 42.7
									Mag. Ms 6.4 (BRK) 6.1 MB 6.5 MSZ (GS)
45	17	P	ZNE	13	11	26		9.6	USGS: 20.89S, 178.63W
		S	ZNE		13	10			Fiji Islands region
									h = 610 km
									H = 13 09 14.4*
									Mag. 4.9 (GS)
46	18	P	Z	06	22	35		41.1	USGS: 06.23S, 147.07E
									East Papua New Guinea Reg.
									h = 104 km D
									H = 06 14 35.7
									Mag. 5.3 (GS)
47	18	iP	ZNE	08	28	23.3			u
		S	ZNE			45			
48	18	eP	ZNE	19	49	44		23.3	USGS: 36.41S, 178.09W
		eS	ZNE		53	56			East of North Island, NZ
									h = 033 km N
									H = 19 44 26.4*
									Mag. 5.2 MB 4.9 MSZ (GS)
49	19	P	ZE	08	55	56		7.7	USGS: 17.59S, 178.87W
		S	ZE		57	24			Fiji Islands region
									h = 538 km
									H = 08 54 04.4*
									Mag. 4.2 (GS)
50	19	P	ZNE	18	44	22		12.7	USGS: 23.75S, 179.96E
		S	ZNE		46	30			South of Fiji Islands
									h = 563 km D
									H = 18 41 45.7*
									Mag. 5.0 (GS)
51	20	(P)	ZNE	14	03	06			
52	21	(P)	ZNE	16	35	25			
53	21	P	Z	19	32	24		76	USGS: 24.10N, 122.15E
		eS	ZNE		42	02			Taiwan region
		eSS	ZE		47	44			Felt
		eSSS	ZN		49	52			h = 028 km D
		eLq	NE		52				H = 19 20 42.4
		eLr	ZE		55				Mag. Ms 5.9 (BRK) 6.0 MB 6.4 MSZ (GS)
54	22	eP	ZNE	20	41	54		12.6	USGS: 16.78S, 175.51E
		eS	ZNE		44	28			Fiji Islands region
									h = 033 km N
									H = 20 39 00.9
									Mag. 5.3 (GS)

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
55	23	P	Z	12	41	06							75	USGS: 24.01N, 122.29E
		eS	ZNE		50	48								Taiwan region
		eL	N	13	01									h = 032 km
														H = 12 29 23.0
														Mag. 5.7 MB 5.8 MSZ (GS)
56	24	iP	ZNE	12	29	20								u
		S	ZNE			56								
57	24	P	Z	17	25	15							37.9	USGS: 03.73S, 151.09E
		PP	Z		26	50								New Ireland region
		S	ZNE		31	12								Felt(III) at Rabaul,
		L	ZNE		34									New Britain
		L	ZE		36									h = 010 km G
														H = 17 17 53.6
														Mag. Ms 5.9 (BRK)
														5.9 MB 6.1 MSZ (GS)
58	25	eP	ZNE	20	53	37								
		e(S)	ZNE		56	26								
		e(T)	ZNE	21	10									
59	26	iP	ZNE	08	46	45								u
		S	ZNE		47	19								
60	26	P	ZNE	11	03	15							20.1	USGS: 15.65S, 167.48E
		eS	ZNE		07	04								Vanuatu Islands
														h = 109 km D
														H = 10 58 46.0
														Mag. 5.2 (GS)
61	26	P	ZNE	17	07	35								
		S	ZNE		08	04								
62	28	P	ZNE	06	59	24							9.9	USGS: 20.76S, 179.20W
		S	ZNE	07	01	10								Fiji Islands region
														h = 625 km
														H = 06 57 08.8*
														Mag. 4.9 (GS)
63	29	P	ZNE	02	20	16							71	USGS: 11.18S, 115.37E
														South of Bali Island
														h = 033 km N
														H = 02 06 20.3
														Mag. 5.6 MB 4.8 MSZ (GS)
64	29	P	ZNE	04	24	33	3.5	1.2					22.0	USGS: 10.65S, 165.88E
														Santa Cruz Islands
														h = 148 km
														H = 04 19 48.1
														Mag. 5.1 (GS)
65	29	P	Z	06	53	56								
66	29	e(P)	Z	07	08	31								
67	29	P	ZNE	12	22	34								
		S	ZNE			55								
68	29	P	ZNE	16	08	53								
69	30	e(P)	ZNE	02	03	45								
70	30	(P)	ZNE	06	17	57								
71	30	P	ZNE	17	33	40	3.4	0.9					10.1	USGS: 21.21S, 179.07W
		S	ZNE		35	31								Fiji Islands region
														h = 638 km
														H = 17 31 22.2
														Mag. 5.3 (GS)

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APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

OCTOBER 1983

International Seismological Centre

No	Date	Phase		(G.M.T.)			Az	Tz	Am	Tn	Ae	Te	(Deg.)	Remarks.
1	1	eS	N	13	17	36							67	USGS: 45.63N, 150.76E Kuril Islands Felt h = 033 km N H = 12 57 57.8 Mag. 5.4 MB 5.5 MSZ (GS)
		eL	ZNE		29									
2	2	P	ZNE	04	07	36								
		(S)	ZNE			57								
3	2	P	ZNE	16	19	19								
		S	ZNE		20	00								
4	3	P	ZNE	07	14	53								
		(S)	ZNE		16	04								
5	3	eP	ZNE	13	44	33							66	USGS: 33.94N, 139.51E South of Honshu, Japan Felt (VJMA) h = 012 km H = 13 33 35.0 Mag. 5.8 MB 6.0 MSZ (GS)
		eS	ZNE		53	11								
		eLq	NE	14	00									
		eLr	Z		03									
6	4	P	ZNE	19	05	36							93	USGS: 26.54S, 070.56W Near Coast of NorthernChile Felt (VII) h = 015 km H = 18 52 13.3 Mag. Ms 7.4 (BRK) 7.4 (PAL) 6.4 MB 7.3 MSZ (GS)
		PP	Z		09	40								
		eS	ZN		16	32								
		e	ZN		18	30								
		eSS	ZN		22	28								
		eSSS	Z		27	06								
		eLr	ZN		36									
7	4	P	ZNE	21	24	12								
		S	ZNE		26	09								
8	5	P	ZNE	02	06	46								
		S	ZNE		07	15								
9	5	P	ZNE	12	09	42								
		eS	ZN		10	36								
10	5	P	ZNE	14	16	57								
		eS	ZN		17	44								
11	5	(P)	ZN	22	16	51								
12	6	P	ZN	11	05	42								
		S	ZN		06	27								
13	7	(P)	Z	05	33	04								
14	8	iP	ZNE	07	56	29.7	7.5	1.3					77	u USGS: 44.23N, 130.74E E. USSR-N.E. China border Reg. h = 558 km H = 07 45 26.6 MAG. mb 6.3 (BRK) 5.7 (GS)
		e(S)	NE	08	05	40								
15	8	P	ZNE	22	41	23	5.5	1.0					42.4	USGS: 05.46S, 146.02E East Papua New Guinea region h = 059 km D H = 22 33 32.0 Mag. mb 6.0 (BRK) 5.7 (GS)
		eS	ZNE		47	48								
		e(SSS)	ZNE		51	36								
		eLr	ZNE		54									

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No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)	Remarks
16	9	eP	Z	11	38	52	93	USGS: 26.14S, 070.54W
		ScS	NE		49	36		Near Coast of Nothern Chile
		eS	ZNE		50	08		Felt (III)
		e	ZNE		51	26		h = 016 km
		SS	ZNE		56	40		H = 11 25 40.5
		e	ZE	12	03	36		Mag. Ms 6.2 (BRK) 5.9 MB
		eLq	N		04			6.2 MSZ (GS)
		eLr	ZNE		08			
17	10	P	Z	03	45	51	87	USGS: 05.82S, 103.16E
								Southern Sumatera
								h = 038 km D
								H = 03 33 22.6
								Mag. 5.6 MB 5.1 MSZ (GS)
18	10	iP	ZNE	06	15	33		u
		(S)	ZNE			53		
19	10	iP	ZNE	14	11	34.5	7.5	d
		S	ZNE		12	59		USGS: 18.41S, 177.88W
								Fiji Islands region
								h = 521 km
								H = 14 09 47.2
								Mag. 5.2 (GS)
20	12	eS	ZNE	02	42	20	60	USGS: 02.95S, 128.13E
		eLq	NE		50			Ceram Sea
		eLr	ZE		53			h = 031 km D
								H = 02 23 57.0
								Mag. 5.5 MB 5.5 MSZ (GS)
21	12	eS	NE	13	35	18	85	USGS: 13.66N, 090.99W
		eLr	ZNE		51			Near Coast of Guatemala
								Felt(IV)
								h = 068 km
								H = 13 12 07.9
								Mag. 5.1 (GS)
22	13	P	ZNE	17	03	37	7.4	USGS: 17.37S, 178.49W
		S	ZNE		05	18		Fiji Islands region
								h = 565 km
								H = 17 01 45.2*
								Mag. 4.7 (GS)
23	14	P	ZNE	08	35	50	7.9	USGS: 19.26S, 177.65W
		S	ZNE		37	17		Fiji Islands region
								h = 437 km
								H = 08 33 56.3?
								Mag. 4.1 (GS)
24	14	P	ZNE	23	04	03	2.6	USGS: 15.85S, 173.31W
		S	ZNE			28		Tonga Islands
								h = 033 km N
								H = 23 03 29.3
								Mag. 5.0 MB 4.7 MSZ (GS)
25	15	P	NE	08	54	14	19.0	USGS: 31.26S, 179.92W
		(S)	NE		56	12		Kermadec Islands region
								h = 464 km
								H = 08 50 23.8*
								Mag. 4.4 (GS)
26	15	P	ZNE	11	03	16	31.7	USGS: 08.10S, 156.31E
		(PPP)	ZN		04	36		Solomon Islands
		S	ZN		08	28		Felt (VI) at Rabaul, New Britain
		SS	N		10	00		h = 007 km
		L	ZN		11			H = 10 56 50.8
								Mag. Ms 6.7 (BRK) 5.9 MB
								6.7 MSZ (GS)

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No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
27	15	P	NE	11	10	30		31.7	USGS: 08.36S, 156.26E Solomon Islands h = 019 km H = 11 04 04.6* Mag. 5.4 (GS)
28	15	P	NE	18	47	37		31.9	USGS: 07.73S, 156.40E Solomon Islands Felt (IV) h = 027 km H = 18 41 12.0 Mag. 5.4 MB 5.1 MSZ (GS)
		e(PPP)	N		49	00			
		eS	ZN		53	00			
		eLq	N		55				
		eLr	ZN		56				
29	15	iP	ZNE	20	44	33			u
		S	ZNE			57			
30	15	P	ZNE	21	50	24		6.5	USGS: 18.41S, 176.55W Fiji Islands region h = 352 km H = 21 48 53.9 Mag. 4.7 (GS)
		S	ZNE		51	32			
31	16	eP	ZNE	05	43	34		68	USGS: 01.08N, 121.05E Minahassa peninsula h = 040 km D H = 05 32 28.7 Mag. 6.0 MB 6.0 MSZ (GS)
		eS	ZNE		52	40			
		eSS	N		57	00			
		eSSS	ZN	06	00	16			
		eLr	ZNE		05				
32	17	P	ZNE	13	26	56		7.3	USGS: 20.79S, 173.76W Tonga Islands h = 030 km D H = 13 25 21.1 Mag. Ms 6.3 (BRK) 6.0 MB 6.3 MSZ (GS)
		S	ZNE		28	04			
		T	ZNE		33				
33	17	ePKP	ZNE	19	56	12		124	USGS: 37.59N, 017.52W North Atlantic Ocean h = 010 km G H = 19 36 21.4 Mag. Ms 6.6 (BRK) 6.0 MB 6.3 MSZ (GS)
34	19	P	ZNE	12	43	09		7.6	USGS: 18.32S, 178.25W Fiji Islands region h = 653 km H = 12 41 14.4* Mag. 4.8 (GS)
35	20	P	ZNE	02	07	13		7.4	USGS: 20.91S, 173.95W Tonga Islands h = 070 km H = 02 05 41.2 Mag. 5.3 (GS)
		S	ZNE		08	27			
36	20	P	ZNE	22	57	43			
		S	ZNE		58	21			
37	21	P	ZNE	03	32	31			
		S	ZNE		33	08			
		T	ZNE		35				
38	21	P	ZNE	17	06	00		7.6	USGS: 18.04S, 178.53W Fiji Islands region h = 607 km H = 17 04 07.6 Mag. 4.9 (GS)
		eS	ZNE		07	30			

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No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
39	22	P	ZNE	03	16	10							11.4	USGS: 24.17S, 176.61W South of Fiji Islands h = 121 km H = 03 13 40.5* Mag. 4.4 (GS)
		S	ZNE		18	03								
40	22	eP	Z	04	35	39							101	USGS: 60.67S, 025.45W South Sandwich Islands region h = 024 km D H = 04 21 35.0 Mag. Ms 6.7 (BRK) 6.5 MB 6.8 MSZ (GS)
		ePP	ZNE		39	36								
		ePPP	ZNE		42	00								
		eSKS	NE		46	14								
		eS	E		47	16								
		e	ZN		48	40								
		eSS	ZNE		54	00								
		eSSS	ZNE		58	04								
		eLq	NE	05	04									
		eLr	ZN		08									
41	22	eP	Z	13	21	24							101	USGS: 60.62S, 025.39W South Sandwich Islands region h = 033 km N H = 13 07 39.1 Mag. 6.2 MB 6.1 MSZ (GS)
		ePP	Z		25	40								
		eS	E		33	00								
		e	ZN		34	32								
		eSS	ZNE		40	00								
		eSSS	ZN		43	48								
		eLq	E		50									
		eLr	ZN		54									
42	22	P	ZNE	15	52	35.5								
		S	ZNE		53	20								
43	22	(P)	Z	17	59	07							9.2	USGS: 17.66S, 179.51E Fiji Islands h = 528 km H = 17 57 17.8? Mag. 4.5 (GS)
		S	ZNE	18	00	35								
44	23	iP	ZNE	13	08	20								d
		(S)	ZNE			42								
45	24	P	ZNE	05	12	48							14.5	USGS: 27.24S, 177.75W Kermadec Islands region h = 169 km H = 05 09 33.8* Mag. 4.9 (GS)
		S	ZNE		15	06								
		T	ZNE		26									
46	24	P	ZNE	05	52	24							13.9	USGS: 25.05S, 179.79E South of Fiji Islands h = 530 km H = 05 49 34.4* Mag. 4.3 (GS)
		S	ZNE		54	47								
47	24	P	ZNE	17	40	20							12.2	USGS: 23.43S, 179.83W South of Fiji Islands h = 543 km H = 17 37 43.4* Mag. 5.3 (GS)
		S	ZNE		42	24								
48	24	iP	ZNE	20	51	30								d
		S	ZNE			49								
49	25	P	ZNE	00	47	27	5.5	1.3					68	USGS: 01.13N, 120.86E Minahassa Peninsula h = 033 km N H = 00 36 23.4 Mag. 5.8 MB 6.1 MSZ (GS)
		PP	Z		50	00								
		S	ZNE		56	32								
		SS	NE	01	00	44								
		SSS	ZNE		04	16								
		L	Z		08									
50	25	P	ZNE	13	41	22							4.4	USGS: 18.07S, 172.58W Tonga Islands region h = 068 km H = 13 40 26.6 Mag. 5.2 (GS)
		S	ZNE		42	08								

October 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
51	26	P	ZNE	00	20	30		10.6	USGS: 21.80S, 179.13W
		S	ZNE		22	23			Fiji Islands region
									h = 600 km
									H = 00 18 06.6
									Mag. 4.8 (GS)
52	26	eP	ZNE	02	45	57		6.1	USGS: 18.93S, 175.21W
		S	ZNE		47	02			Tonga Islands
									h = 277 km
									H = 02 44 28.0*
									Mag. 4.9 (GS)
53	26	P	ZNE	05	43	35		23.9	USGS: 36.55S, 179.98W
									East of North Island N.Z.
									h - 033 km N
									H = 05 38 27.5*
									Mag. 5.1 (GS)
54	26	P	ZNE	10	05	59		7.2	USGS: 18.06S, 177.76W
		S	ZNE		07	33			Fiji Islands region
									h = 648 km
									H = 10 04 06.3*
									Mag. 4.6 (GS)
55	26	iP	ZNE	10	56	22		68	u
									USGS: 01.63N, 122.16E
									Minahassa Peninsula
									h = 499 km
									H = 10 46 14.7
									Mag. 5.6 (GS)
56	26	P	ZNE	11	15	13			
		S	ZNE		16	20			
		T	ZNE		21				
57	26	P	ZNE	14	34	45		24.0	USGS: 36.58S, 179.68E
									Off E. Coast of N. Is, New Zealand
									h = 033 km N
									H = 14 29 22.3*
									Mag. 4.8 (GS)
58	27	P	ZNE	04	25	16			
		S	ZNE		26	15			
59	27	iP	ZNE	19	54	51.2	5.4 1.3	68	u?
		ePP	Z		57	27			USGS: 01.09N, 120.83E
		ePPP	ZE		59	16			Minahassa Peninsula
		eS	ZNE	20	03	56			h = 028 km
		eSS	NE		08	26			H = 19 43 48.4
		eSSS	ZNE		11	24			Mag. Ms 6.1 (BRK) 5.7 MSZ 6.2 MB (GS)
60	28	P	ZNE	06	01	08		18.9	USGS: 31.36S, 179.52W
		S	ZNE		05	36			Kermadec Islands region
		T	ZNE		20				h = 033 km N
									H = 05 56 56.2*
									Mag. 5.7 MB 5.9 MSZ (GS)
61	28	iP	ZNE	14	18	08		78	d?
		PP	ZNE		21	12			USGS: 44.06N, 113.86W
		S	ZNE		28	08			Eastern Idaho
		SS	ZNE		32	38			Belt
		SSS	ZE		36	32			h = 010 km G
		Lq	ZNE		39				H = 14 06 06.6
		Lr	ZNE		42				Mag. 6.2 MB 7.3 MSZ (GS)

October 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)		Remarks
62	29	P	ZNE	00	39	04			
		S	ZNE			30			
63	30	P	ZE	00	29	57		11.6	USGS: 23.10S, 178.96W South of Fiji Islands h = 562 km H = 00 27 13.0*
64	30	P	ZNE	03	54	51		6.8	USGS: 17.35S, 177.77W Fiji Islands region h = 536 km H = 03 52 59.6? Mag. 4.4 (GS)
		S	ZNE		56	21			
65	30	ePKP	Z	04	32	04		140	USGS: 40.33N, 042.19E Turkey Felt h = 012 km H = 04 12 27.1 Mag. Ms 6.9 (BRK) 6.7 (PAL) 6.1 MB 6.9 MSZ (GS)
		ePP	Z		35	04			
		e(PKS)	Z			40			
		e(SKSP)	ZE		44	48			
		eSS	NE		53	32			
		e(PSPS)	Z		54	20			
		eSSS	ZNE		58	20			
		eLq	NE	05	09				
		eLr	Z		21				
66	30	P	ZNE	12	28	22		7.6	USGS: 17.77S, 178.71W Fiji Islands region h = 553 km H = 12 26 28.8* Mag. 4.6 (GS)
		S	ZNE		29	55			
67	30	iP	ZNE	23	17	40.2			u
		S	ZNE		18	00			
68	31	P	ZNE	00	07	14		9.0	USGS: 20.88S, 177.62W Fiji Islands region h = 527 km H = 00 05 06.4* Mag. 4.7 (GS)
		S	ZNE		08	48			
69	31	eP	ZNE	16	52	53		6.3	USGS: 19.37S, 174.57W Tonga Islands h = 206 km H = 16 51 24.3 Mag. 4.7 (GS)
		S	ZNE		53	57			
70	31	P	ZNE	17	48	48	4.0 1.2	67	USGS: 09.02S, 119.18E Sumba Island region Felt (III) h = 083 km H = 17 37 56.2 Mag. 6.0 (GS)
		PP	ZE		51	15			
		eS	ZNE		57	44			
		eSS	ZE	18	02	00			
		eSSS	ZNE		05	00			
		eLq	E		07				
		eLr	ZNE		10				

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APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

November 1983

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	P	ZNE	01	51	20								
		(S)	ZNE		52	47								
2	1	iP	ZNE	13	22	05.5							u	
		S	ZNE			29								
3	1	P	ZNE	15	27	04								
		S	ZNE		28	33								
4	1	(P)	ZNE	20	12	23								
		S	ZNE		13	53								
														No Readings between 012018Z and 022031Z - records completely fogged.
5	3	P	Z	10	53	06							84	USGS: 05.78S, 104.51E Southern Sumatera h = 050 km D H = 10 40 44.0 Mag. 5.5 (GS)
6	3	P	ZNE	13	27	01								
		S	ZNE			40								
7	3	P	ZNE	14	35	22								
		S	ZNE		36	00								
		T	ZNE		38									
8	4	P	ZNE	01	29	32	2.2	0.9						
		eS	NE		30	16								
		T	ZNE		32									
9	5	P	ZNE	05	28	18	2.9	1.3					22.1	USGS: 11.04S, 165.82E Santa Cruz Islands h = 078 km H = 05 23 12.2 Mag. 5.4 (GS)
10	5	P	ZNE	10	51	39	2.8	1.0					41.1	USGS: 05.55S, 147.15E East Papua New Guinea reg. h = 195 km H = 10 44 10.3 Mag. 4.7 (GS)
11	5	P	ZNE	10	52	39	4.6	1.0					41.2	USGS: 05.59S, 147.12E East Papua New Guinea reg. h = 191 km H = 10 45 10.0 Mag. 5.1 (GS)
12	6	P	ZNE	07	31	42							8.2	USGS: 20.19S, 177.42W Fiji Islands region h = 567 km H = 07 29 40.5* Mag. 5.0 (GS)
		S	ZNE		33	14								
13	6	P	ZNE	09	40	35							8.5	USGS: 20.15S, 177.68W Fiji Islands region h = 387 km D H = 09 38 39.9 Mag. 5.6 (GS)
		S	ZNE		42	01								

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NO	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)			Remarks
14	6	P	ZNE	21	22	20	1.8	1.3	85	USGS: 35.21N, 115.21E Eastern China Felt h = 19 km H = 21 09 45.2 Mag. 5.7 MB 5.3 MSZ (GS)
15	7	P	ZNE	08	49	35			61	USGS: 01.41N, 128.16E Halmahera h = 031 km D H = 08 39 20.4 Mag. 5.7 MB 6.1 MSZ (GS)
16	7	P	ZNE	08	52	44			61	USGS: 01.27N, 128.34E Halmahera h = 059 km D H = 08 42 29.9 Mag. 5.8 (GS)
17	7	P	ZNE	16	36	54			61	USGS: 01.41N, 128.15E Halmahera Felt on Morotai h = 039 km D H = 16 26 31.7 Mag. 5.9 MB 6.4 MSZ (GS)
		eS	ZNE		45	16				
		eSS	ZNE		49	16				
		eLq	NE		52					
		eLr	ZE		56					
18	7	P	ZNE	17	13	44	2.2	1.0		
19	8	P	ZNE	08	31	17			5.9	USGS: 18.95S, 174.59W Tonga Islands h = 172 km H = 08 30 00.3 Mag. 5.2 (GS)
		S	ZNE		32	11				
20	8	(P)	ZNE	17	55	05			12.5	USGS: 23.59S, 179.78W South of Fiji Islands h = 548 km H = 17 52 25.9 Mag. 5.2 (GS)
		S	ZNE		57	11				
21	9	P	ZNE	00	16	24	4.0	1.0		
		e(S)	ZNE		17	40				
22	9	eS	ZE	03	33	00			66	USGS: 11.26N, 126.22E Philippine Islands region Felt (IIRF) on Leyte h = 033 km N H = 03 13 08.7 Mag. 5.2 MB 5.2 MSZ (GS)
		eL	ZNE		47					
23	10	P	ZNE	06	01	24				
		S	ZNE		02	10				
		T	ZNE		05					
24	10	eS	ZN	08	49	48			52	USGS: 65.39S, 177.08W South Pacific Cordillera h = 010 km G H = 08 33 11.6 Mag. 5.4 (GS)
		eL	ZN		56					
25	10	P	ZNE	09	04	36				
		(S)	ZNE		06	14				
26	10	P	ZNE	11	44	12			78	USGS: 06.90S, 109.08E Java h = 219 km H = 11 32 35.4 Mag. 4.9 (GS)

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November 1983

No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te (Deg.)		Remarks
27	10	P	ZNE	20	05	59		12.7	USGS: 23.08S, 179.76E
		S	ZNE		08	09			South of Fiji Islands
									h = 572 km
									H = 20 03 19.6
									Mag. 5.2 (GS)
28	10	P	ZNE	20	43	51			
29	10	P	ZNE	22	00	38		68	USGS: 00.17S, 121.83E
									Minahassa Peninsula
									h = 294 km
									H = 21 50 12.0
									Mag. 5.2 (GS)
30	10	P	ZNE	22	17	48			
		(S)	ZNE		19	27			
31	10	P	ZNE	23	43	53		67	USGS: 04.26W, 123.02E
									Celebes Sea
									h = 577 km
									H = 23 33 52.0
									Mag. 5.6 (GS)
32	11	P	ZNE	04	16	29		12.8	USGS: 23.75S, 179.87E
		S	ZNE		18	44			South of Fiji Islands
									h = 492 km
									H = 04 13 43.9?
									Mag. 4.1 (GS)
33	11	P	ZNE	21	29	59		65	USGS: 06.34W 125.81E
									Mindanao Philippine Islands
									h = 136 km
									H = 21 19 28.3
									Mag. 5.4 (GS)
34	12	P	ZNE	03	54	24		7.4	USGS: 17.35S, 178.53W
		S	ZNE		56	12			Fiji Islands region
									h = 580 km
									H = 03 52 30.8?
									Mag. 4.4 (GS)
35	12	P	ZNE	08	33	07			
		(S)	ZNE		34	56			
36	13	P	ZNE	01	17	47			
		S	ZNE		18	34			
37	14	P	ZNE	03	09	13			
		S	ZNE		10	00			
38	14	P	ZNE	10	22	23	2.0 0.8	9.6	USGS: 20.87S, 178.54W
		S	ZNE		24	07			Fiji Islands region
									h = 589 km
									H = 10 20 10.8*
									Mag. 4.6 (GS)
39	15	P	ZNE	03	59	23	2.1 1.0		
		(S)	ZNE	04	00	33			
40	15	P	ZNE	05	36	31		15.2	USGS: 28.48S, 175.74W
		S	ZNE		38	55			Kermadec Islands region
									h = 033 km N
									H = 05 33 00.8*
									Mag. 4.7 (GS)
41	15	eP	Z	10	50	10	1.4 1.2	71	USGS: 11.29S, 115.33E
									South of Bali Island
									h = 033 km N
									H = 10 38 52.8
									Mag. 5.4 (GS)

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NO	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
42	15	eP	Z	17	45	38		64	USGS: 31.18N, 141.80E
		eS	ZNE		54	12			South of Honshu, Japan
		eSSS	NE	18	01	12			h = 023 km
		eLq	ZNE		03				H = 17 35 05.0
		eLr	ZNE		06				Mag. 5.6 MB 5.9 MSZ(GS)
43	16	P	ZNE	07	00	51		19.7	USGS: 15.93S, 167.96E
									Vanuatu Islands
									h = 184 km
									H = 06 56 33.1
									Mag. 5.4 (GS)
44	16	iP	ZNE	14	51	10.1		2.0	une
		S	ZNE			28			USGS: 15.21S, 173.22W
									Tonga Islands
									h = 033 km
									H = 14 50 41.2*
									Mag. 4.9 (GS)
45	16	P	ZNE	16	20	12	5.3 1.4	37	USGS: 19.43N, 155.45W
		PP	ZE		21	26			Hawaii
		S	ZNE		25	42			Felt
		Lq	NE		29				h = 012 km G
		Lr	ZN		31				H = 16 13 00.0*
									Mag. 6.4 MB 6.7 MSZ (GS)
46	17	iP	ZNE	07	41	44			u
*		S	ZNE		42	07			
47	18	iP	ZNE	21	50	30.2	4.1 1.0	9.8	u
		S	ZNE		52	15			USGS: 21.32S, 178.27W
									Fiji Islands region
									h = 583 km
									H = 21 48 14.6*
									Mag. 4.4 (GS)
48	19	P	ZNE	18	46	39		8.7	USGS: 20.28S, 177.91W
		S	ZNE		48	15			Fiji Islands region
									h = 548 km
									H = 18 44 34.6*
									Mag. 4.7 (GS)
49	20	eP	Z	00	55	48		67	USGS: 43.71N, 148.44E
		eS	ZNE	01	04	40			Kuril Islands region
		eSS	ZNE		08	56			Felt (IJMA)
		eLq	E		13				h = 029 km
		eLr	ZNE		15				H = 00 44 43.5
									Mag. Ms 5.7 (BRK) 5.9 MB 6.1 MSZ (GS)
50	20	P	ZNE	05	11	37		5.0	USGS: 18.29S, 174.32W
		S	ZNE		12	28			Tonga Islands
									h = 120 km
									H = 05 10 24.4*
									Mag. 5.2 (GS)
51	20	P	ZNE	20	42	01	3.9 1.1	56	USGS: 07.45S, 130.65E
		eS	ZNE		49	56			Tanibar Islands region
		eLq	NE		56				h = 059 km
		eLr	ZE		59				H = 20 32 20.5
									Mag. 6.0 (GS)
52	21	P	ZNE	20	29	00		7.5	USGS: 17.82S, 178.53W
		S	ZNE		30	30			Fiji Islands region
									h = 581 km
									H = 20 27 06.0*
									Mag. 4.8 (GS)

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* No readings between 172023Z and 182008Z - records completely fogged.

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No	Date	Phase		(G.M.T.)			Az Tz An Tn Ae Te	(Deg.)	Remarks
53	22	(P)	Z	02	16	24		51	USGS: 12.12N, 144.50E South of Mariana Islands h = 039 km H = 02 07 12.2 Mag. 5.6 MB 5.2 MSZ (GS)
54	22	eP	ZNE	14	34	11		92	USGS: 00.48N, 179.88W Near Coast of Ecuador Felt (VI) h = 055 km D H = 14 21 03.0 Mag. Ms 6.3 (BRK) 6.3 (GS)
		ePP	Z		37	52			
		eS	ZNE		44	44			
		eSS	ZNE		51	36			
		eSSS	Z		55	02			
		eLq	N		58				
		eLr	ZE	15	03				
55	22	P	ZNE	15	31	32			
		S	ZNE		32	18			
56	22	P	ZNE	16	05	34		18.8	USGS: 31.13S, 178.40W Kermadec Islands region h = 033 km N H = 16 01 13.0* Mag. 5.5 (GS)
		S	ZNE		08	33			
57	22	P	ZNE	20	58	33			
		(S)	ZNE	21	00	02			
58	23	P	ZNE	05	48	10		9.0	USGS: 20.24S, 178.48W Fiji Islands region h = 599 km H = 05 46 03.7* Mag. 4.7 (GS)
		S	ZNE		49	49			
59	23	P	ZNE	05	50	27		7.5	USGS: 18.11S, 178.33W Fiji Islands region h = 607 km H = 05 48 33.5 Mag. 5.6 (GS)
		S	ZNE		51	58			
60	23	P	Z	15	20	39		10.5	USGS: 17.809S, 178.806E Fiji Islands h = 563 H = 15 18 23.7* Mag. 4.6 (GS)
		(S)	ZNE		22	52			
61	23	e(P)	ZNE	19	38	17			
62	24	iP	ZNE	05	40	20		59	u USGS: 07.48S, 128.17E Banda Sea Felt h = 179 km H = 05 30 34.2 Mag. mb 7.1 (BRK) 6.4 (GS)
		ePcP	ZNE		41	12			
		ePP	ZNE		43	16			
		S	ZNE		48	12			
		eSSS	Z		55	00			
		eLq	ZN		56				
		eLr	ZNE		59				
63	24	P	ZNE	17	32	47			
		(S)	ZNE		34	22			
64	24	P	ZNE	20	38	53			
		S	ZNE		39	50			
		eT	ZNE		45				
65	25	P	ZNE	20	03	34		39	USGS: 40.45S, 155.51E Southeast of Australia Felt h = 019 km H = 19 56 07.8 Mag. 6.0 MB 5.8 MSZ (GS)
		eS	ZNE		09	32			
		eL	ZNE		14				
66	25	eP	ZE	22	01	28		36.6	USGS: 05.47S, 152.00E New Britain region Felt (V) at Rabaul h = 026 km H = 21 54 12.3 Mag. 5.7 MB 6.0 MSZ (GS)
		eS	ZNE		07	00			
		eSSS	NE		09	40			
		eLr	Z		11				

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No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
67	28	eP	Z	19	22	39							87	USGS: 44.87S, 075.94W Off Coast of Southern Chile h = 026 km H = 19 10 08.0 Mag. 5.6 MB 4.8 MSZ (GS)
68	28	eP eS	ZNE NE	19	29 33	55 12							18.5	USGS: 21.91S, 170.74E Loyalty Islands region h = 112 km H = 19 25 49.0 Mag. 5.3 (GS)
69	29	eS eL	ZE ZNE	03	13 19	24							59	USGS: 49.76S, 114.42W Easter Island Cordillera h = 010 km G H = 02 55 15.7* Mag. 4.9 MB 5.2 MSZ (GS)
70	29	P S T	ZNE ZNE ZNE	13	32 34 39	41 54							6.5	USGS: 20.22S, 173.15W Tonga Islands h = 033 km N H = 13 31 06.6? Mag. 4.4 (GS)
71	29	P S	ZNE ZNE	14	00 01	16 45							7.5	USGS: 17.80S, 178.53W Fiji Islands region h = 558 km H = 13 58 25.2* Mag. 4.8 (GS)
72	29	(P)	ZNE	17	42	33								
73	29	P eS eSS eSSS eLr	ZNE ZNE ZN E ZE	22	26 32 35 38	18 36 28 52	8.8	1.0					41.6	USGS: 06.22S, 146.56E East Papua New Guinea. h = 039 km. H = 22 18 30.9 Mag.5.8MB 5.2MSZ(GS)
74	29	iP S	ZNE ZNE	23	43 44	01 30							7.3	u USGS: 19.50S, 177.78W Fiji Islands region Felt h = 525 km H = 23 41 07.3 Mag. mb 5.8 (BRK) 5.7 (GS)
75	30	P	ZNE	02	23	58							41.0	USGS: 05.63S, 147.43E East Papua New Guinea Reg. h = 147 km H = 02 16 28.3 Mag. 5.3 (GS)
76	30	e(S)	ZNE	03	12	34								
77	30	P S	ZNE ZNE	16	42 44	38 06							7.6	USGS: 17.96S, 178.50W Fiji Islands region h = 591 km H = 16 40 45.8 Mag. 4.9 (GS)
78	30	ePDIF PKP PP (PKKP) SS Lq Lr	ZE Z ZNE ZNE ZNE NE ZE	18	00 04 05 15 21 33 40	48 56 40 16 28							115	USGS: 06.85S, 072.11E Chagos Archipelago region Felt h = 010 km G H = 17 46 00.6 Mag. Ms 7.7 (BRK) 6.6 MB 7.6 MSZ (GS)

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