

APIA OBSERVATORY
AFIAMAU WSSS FINAL SEISMIC READINGS
August 1984



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	P S	ZNE ZNE	11	05 06	49 32					
2	1	iP S	ZNE ZNE	15	35	39 58					d
3	1	P S	ZNE ZNE	16	11 13	25 36				12.6	USGS: 23.75S, 179.85W South of Fiji Islands h = 536 km H = 16 08 45.7 Mag. 5.0 (GS)
4	2	P S	ZNE ZNE	05	03 05	11 19				12.5	USGS: 23.52S, 179.90W South of Fiji Islands h = 572 km D H = 05 00 36.1 Mag. 5.3 (GS)
5	2	iP (S)	ZNE ZNE	18	01	18.6 46					u
6	3	P (S)	ZNE ZNE	12	36 38	20 37					
7	3	P S	ZNE ZNE	14	23 25	47 55	9.7	0.9		12.6	USGS: 22.90S, 179.05E South of Fiji Islands h = 585 km H = 14 21 07.1 Mag. 5.1 (GS)
8	3	eP eS eSS eSSS eLr	Z Z Z Z ZE	14 15	43 54 59 02 09	36 40 24 32				85	USGS: 14.39N, 092.22W Near coast of Chiapas Mexico h = 036 km D H = 14 30 58.3 Mag. 5.4 MB 5.4 MSZ(GS)
9	4	P S T	ZNE ZNE ZNE	15	04 07 24	04 31				20.2	USGS: 32.82S, 179.27W South of Kermadec Island h = 033 km N H = 14 59 34.1 Mag. 5.6 (GS)
10	5	P S	ZNE ZNE	05	26 28	28 34				12.5	USGS: 23.96S, 179.42W South of Fiji Islands h = 489 km H = 05 23 45.1 Mag. 5.2 (GS)
11	5	P S	ZNE ZNE	09	18 19	08 56	4.5	1.0		7.6	USGS: 17.60S, 178.66W Fiji Islands Region h = 551 km H = 09 16 18.7 Mag. 4.5 (GS)
12	6	iP ePoP e ePPP S (SS)	ZNE Z Z Z ZNE Z	12	12 13 14 16 21 26	20 32 08 44 00 05				66	d USGS: 00.09S, 122.52E Minghassa Peninsula Felt h = 242 km D H = 12 01 52.4 Mag. 6.2 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ac	Te (Deg.)	Remarks
13	6	P S	ZNE ZNE	13	23 24	37 20				
14	6	P ePP ePPP eS eSS eLq eLr	ZNE Z Z ZNE Z NE ZNE	19	17 20 22 27 30 36 39	52 32 12 44 08	14.0	1.3	71	USGS: 32.39N, 131.95E Kyushu, Japan Felt h = 046 km H = 19 06 38.3 Mag. Ms 6.9 (BRK), 6.3 MB 6.7 (MSZ (GS))
15	7	eS eL	Z ZE	08	32 34	56			20.7	USGS: 15.41S, 166.87E Vanuatu Islands h = 033 km N H = 08 24 24.1 Mag. 5.3 MB 5.0 MSZ (GS)
16	7	P (S)	ZNE ZNE	09	00 03	57 32				
17	8	eP (S)	ZNE ZNE	22	05 08	59 54				
18	9	P S	ZNE ZNE	09	08 10	24 05				
19	10	P S	ZNE ZNE	08	40 42	02 54			17.0	USGS: 29.66S, 178.31W Kermadec Islands h = 211 km H = 08 36 22.4* Mag. 5.2 (GS)
20	11	P ePPP eS eSSS eLr	ZNE ZE ZE ZE ZE	01	27 29 33 36 38	59 44 28 20			36.7	USGS: 05.04S, 152.12E New Britain region h = 040 km H = 01 20 45.7 Mag. Ms 6.2 (BRK), 5.6 MB 5.9 MSZ (GS)
21	11	P S	ZNE ZNE	10	38 39	17.5 40			7.2	USGS: 15.22S, 179.10W Fiji Islands region h = 443 km H = 10 36 34.2 Mag. 4.6 (GS)
22	11	(P)	ZNE	15	56	56				
23	12	P S T	ZNE ZNE ZNE	09	31 32 35	33 16			4.2	USGS: 17.84S, 173.23W Tonga Islands h = 033 km N H = 09 30 37.1 Mag. Ms 4.9 (BRK), 5.2 MB 5.0 MSZ (GS)
24	12	P	ZE	17	02	56			74	USGS: 18.39N, 120.81E Luzon Philippine Islands Felt h = 013 km H = 16 51 19.6 Mag. 5.5 MB 5.2 MSZ (GS)
25	13	P	Z	08	27	41			10.7	USGS: 17.72S, 178.04W Fiji Islands Region h = 631 km H = 08 25 50.6? Mag. 4.5 (GS)
26	15	1P S	ZNE ZNE	06	22	32.5 56			1.9	u USGS: 14.82S, 173.53W Samoa Islands region h = 033 km N H = 06 22 04.1 Mag. 5.2 (GS)

No	Date	Phase	(G.M.T.)	As	Tz	An	Th	As	Te	(Deg.)	Remarks
27	15	(P)	ZNE	08	03	04					
28	15	P	Z	08	35	10				52.1	USGS: 03.23S, 136.60E West Irian h = 033 km H = 08 25 54.2 Mag. 5.4 MB 4.9 MSZ(GS)
29	15	P	ZNE	12	58	33				8.8	USGS: 20.41S, 177.93W Fiji Islands region h = 512 km H = 12 56 34.0 Mag. 4.1 (GS)
		S	ZNE	13	00	08					
30	17	P	ZNE	07	25	47.5				2.7	USGS: 16.29S, 172.81W Samoa Islands region h = 033 km N H = 07 25 12.4 Mag. 4.8 MB 4.8 MSZ (GS)
		S	ZNE		26	16					
31	17	P	ZNE	10	44	05				8.3	USGS: 21.42S, 175.27W Tonga Islands h = 114 km H = 10 42 20.1 Mag. 5.5 (GS)
		S	ZNE		45	26					
32	19	(P)	ZNE	13	20	49					
33	19	(P)	Z	20	02	55					
		(S)	Z		05	52					
34	20	P	ZNE	04	45	41					
		S	ZNE		47	17					
35	20	eP	Z	05	14	32				22	USGS: 11.663S, 165.756E Santa Cruz Islands h = 033 km N H = 05 09 11.8 Mag. 4.6 (GS)
		eS	Z		18	24					
		eL	ZE		20						
36	20	iP	ZNE	14	33	54					u
		S	ZNE		34	28					
37	20	eP	Z	15	32	44				22	USGS: 11.366S, 165.744E Santa Cruz Island h = 033 km N h = 15 27 55.4 Mag. 4.8 MB 5.0 MSZ (GS)
		eS	ZE		36	52					
		eL	ZE		38						
38	21	P	ZNE	06	04	15				9.4	USGS: 22.29S, 176.01W South of Fiji Islands h = 141 km H = 06 02 19.0* Mag. 4.8 (GS)
		S	ZNE		05	50					
39	21	P	Z	10	08	11				12.5	USGS: 23.756S, 179.898W South of Fiji Islands h = 534 km H = 10 05 26.9* Mag. 4.9 (GS)
		S	ZNE		10	18					
40	21	P	ZNE	12	19	52	16.0	0.9		7.6	USGS: 18.03S, 178.46W Fiji Islands region h = 607 km H = 12 17 57.7 Mag. 4.9 (GS)
		S	ZNE		21	21					
41	21	P	ZNE	14	59	10					
42	22	P	ZNE	05	21	03				8.8	USGS: 20.02S, 178.43W Fiji Islands region h = 616 km H = 05 18 41.5 Mag. 5.2 (GS)
		S	ZNE		22	26					

No	Date	Phase	(G.N.T.)	Az	Tz	An	Tn	As	Te	(Deg)	Remarks
43	22	P	ZNE	08	15	20					
		S	ZNE		16	08					
44	22	P	ZNE	09	14	51				40.0	USGS: 05.68S, 148.37E New Britain region h = 163 km H = 09 07 30.4 Mag. 5.7 (GS)
45	22	eS	E	18	36	44				86	USGS: 11.459N, 86.635W Near Coast of Nicaragua Felt h = 062 km H = 18 13 24.1 Mag. 5.3 (GS)
		ePFS	ZE		38	28					
		eSS	E		42	36					
		eLr	ZNE		53						
46	23	P	ZNE	00	50	29				3.6	USGS: 16.81S, 173.86W Tonga Islands h = 104 km H = 00 49 35.5* Mag. 4.4 (GS)
		S	ZNE		51	07					
47	23	P	ZNE	07	17	47				8.5	USGS: 19.76S, 178.07W Fiji Islands region h = 440 km H = 07 15 55.5* Mag. 4.9 (GS)
		S	ZNE		19	15					
48	23	eP	ZE	20	02	16				89	USGS: 11.62N, 086.49W Near Coast of Nicaragua Felt h = 057 km H = 19 49 17.4 Mag. Ms 5.7 (BRK) 5.3 MB 5.9 MSZ (GS)
		eS	ZE		12	40					
		e	Z		13	48					
		e	E		14	40					
		eSS	E		18	52					
		eSSS	E		22	24					
		eLq	E		26						
		eLr	ZNE		29						
49	23	P	ZNE	23	19	10				15.3	USGS: 27.20S, 179.69W Kermadec Islands region h = 428 km H = 23 15 59.1 Mag. 5.1 (GS)
		S	ZNE		21	44					
50	24	P	Z	09	56	35				12.8	USGS: 23.70S, 179.75E South of Fiji Islands h = 618 km H = 09 53 55.9? Mag. 4.6 (GS)
		S	ZNE		58	37					
51	25	P	ZNE	23	31	46	12.5	0.8		11.0	USGS: 15.47S, 177.52W Fiji Islands Region h = 420 km H = 23 30 14.6? Mag. 4.3 (GS)
		S	ZNE		33	02					
52	26	iP	ZNE	05	03	31				13.1	u USGS: 23.59S, 179.07E South of Fiji Islands h = 560 km D H = 05 00 45.6 Mag. mb 5.7 (BRK) 5.9 (GS)
		S	ZNE		05	44					
53	27	P	ZNE	05	54	45				8.8	USGS: 20.41S, 177.80W Fiji Islands region h = 542 km H = 05 52 40.3? Mag. 4.4 (GS)
		S	ZNE		56	20					
54	28	P	ZNE	02	10	18				8.1	USGS: 18.57S, 178.60W Fiji Islands region h = 431 km H = 02 08 19.1? Mag. 4.2 (GS)
		S	ZNE		12	08					

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
55	28	P S	ZNE ZNE	10	10	10				8.0	USGS: 19.33S, 177.14W Fiji Islands region h = 643 km H = 10 08 21.2* Mag. 4.5 (GS)
56	28	es eL	ZE ZE	10	24	26				70	USGS: 41.39N, 141.47E Hokkaido, Japan region Felt h = 118 km H = 10 14 54.0 Mag. 4.5 (GS)
57	28	P S	ZNE ZNE	13	51	11				4.9	USGS: 18.19S, 173.98W Tonga Islands h = 033 km E H = 13 49 41.0? Mag. 4.4 (GS)
58	28	(P)	ZNE	19	15	45				71	USGS: 27.43N, 128.52E Ryukyu Islands Felt h = 058 km H = 19 04 30.5 Mag. 5.9 (GS)
59	28	P S	ZNE ZNE	21	00	20				12.3	USGS: 20.18S, 177.44W Fiji Islands region h = 431 km H = 20 58 19.0? Mag. 4.5 (GS)
60	28	P S	ZNE ZNE	21	44	34					
61	29	P S	ZNE ZNE	12	10	37					
62	29	P S	ZNE ZNE	16	20	08				7.6	USGS: 18.17S, 178.38W Fiji Islands region h = 592 km H = 16 18 13.9 Mag. 4.8 (GS)
63	29	P S	ZNE ZNE	17	55	25				7.6	USGS: 18.07S, 178.38W Fiji Islands region h = 602 km H = 17 53 29.2* Mag. 4.5 (GS)
64	30	P es	ZNE ZNE	05	54	11				13.4	USGS: 24.75S, 179.95E South of Fiji Islands h = 524 km H = 05 51 24.7* Mag. 4.8 (GS)
65	30	es ess esGS eLq eLr	ZE ZE E E ZNE	12	50	04				75	USGS: 54.11N, 133.64W Queen Charlotte Islands region Felt h = 010 km G H = 12 28 39.7 Mag. ML 5.5 (PWR), 5.5 M 5.5 MSE (GS)
66	30	P S eT	ZNE ZNE ZNE	16	10	48				20.6	USGS: 33.33S, 179.36W South of Kermadec Island h = 033 km N H = 16 06 13.9 Mag. Ms 5.9 (BRK) 5.9 MB 5.7 MSE (GS)
67	30	(P)	Z	16	18	37					

No	Date	Phase	(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
68	31	P	ZNE	00	19	55						7.2	USGS: 20.58S, 174.15W Tonga Islands h = 033 km H = 00 18 18.4* Mag. 5.1 MB 4.8 MSZ (GS)
		S	ZNE		21	10							
		T	ZNE		27								
69	31	P	ZNE	00	40	12						3.6	USGS: 17.21S, 173.21W Tonga Islands h = 033 km H = 00 39 18.6? Mag. 4.5 (GS)
		S	ZNE			53							
		T	ZNE		44								
70	31	eS	ZE	05	08	28						88	USGS: 12.923N, 87.071W Near Coast of Nicaragua Felt h = 042 km H = 04 42 59.7* Mag. 5.6 MB 5.1 MSZ (GS)
		eL	ZE		24								
71	31	P	ZNE	13	52	44							USGS: 17.96S, 172.15E Vanuatu Islands region h = 029 km H = 15 42 11.7 Mag. 6.1 MB 6.2 MSZ (GS)
72	31	P	ZNE	15	45	58						15.9	
		S	ZNE		49	00							
73	31	P	ZNE	19	58	47						83	USGS: 16.08N, 093.29W Chiapas, Mexico Felt h = 119 km H = 19 46 03.9 Mag. 5.3 (GS)
		ePP	ZE	20	01	44							
		eS	NE		08	28							
		eScS	Z		09	12							
		eSSS	Z		16	48							
		eIq	ZE		20								
		eLr	ZE		23								



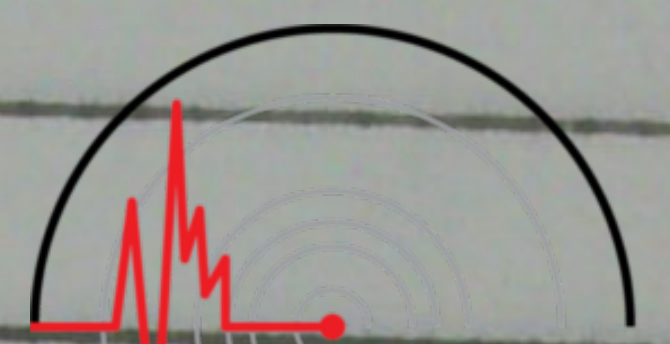
APIA OBSERVATORY
APIAMALU WSSS FINAL SEISMIC READINGS
September 1984



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	P S	ZNE ZNE	08 18	17 00						
2	1	eS eLq eLr	ZNE E ZN	17	26 34 36					67	USGS: 44.45N, 149.58E Kuril Islands h = 026 km H = 17 05 54.3 Mag. 5.7 MB 5.7 MSZ (GS)
3	1	P S	ZNE ZNE	19	13 15	40 54				13.1	USGS: 24.15S, 179.83E South of Fiji Islands h = 512 km H = 19 10 52.6? Mag. 4.5 (GS)
4	1	P S	ZNE ZNE	21	17 19	57 19				7.5	USGS: 18.13S, 178.24W Fiji Islands region h = 476 km H = 21 16 08.9 Mag. 4.8 (GS)
5	1	iP (S)	ZNE ZNE	21	40 41	42 44				4.7	d USGS: 16.01S, 176.14W Fiji Islands region h = 389 km H = 21 39 25.4 Mag. 5.0 (GS)
6	2	P	ZNE	18	38	28				70	USGS: 26.51N, 129.89E Ryukyu Islands h = 033 km N H = 18 27 22.9 Mag. 5.5 MB 5.2 MSZ (GS)
7	2	P S	ZNE ZNE	10	39 40	08 38				10.2	USGS: 18.02S, 178.23W Fiji Islands region h = 592 km H = 10 37 19.4? Mag. 4.4 (GS)
8	3	iP B	ZNE ZNE	06	29 30	52.5 14					u
9	3	P S	ZNE ZNE	11	52 55	19 07				16.9	USGS: 29.83S, 177.76W Kermadec Islands h = 033 km N H = 11 48 25.3 Mag. 5.4 (GS)
10	4	P S	ZNE ZNE	10	15 16	50 42					
11	4	P S eT	ZNE ZNE ZNE	14	43 48	04 52				5.9	USGS: 19.55S, 173.18W Tonga Islands h = 033 km N H = 14 41 37.9? Mag. 4.5 (GS)
12	4	P S	ZNE ZNE	15	17 18	15 49					
13	4	P S T	ZNE ZNE ZNE	20	45 47	24 37				3.0	USGS: 16.65S, 172.45W Samoa Islands region h = 033 km N H = 20 44 53.2 Mag. 5.0 MB 5.2 MSZ (GS)

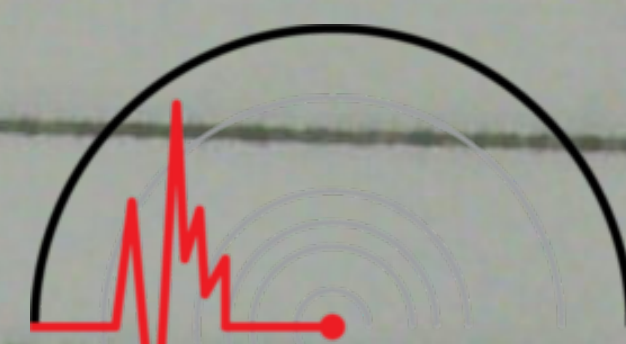
No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
14	5	P	ZNE	00	31	17				7.8	USGS: 17.45S, 179.00W Fiji Islands region h = 522 km H = 00 29 19.87 Mag. 3.7 (GS)
15	5	P S	ZNE ZNE	03	28 29	29 50				8.3	USGS: 20.94S, 176.31W Fiji Islands region h = 222 km H = 03 26 32.7* Mag. 4.6 (GS)
16	5	P S	ZNE ZNE	08	20 22	30 17				10.0	USGS: 21.14S, 179.02W Fiji Islands region h = 622 km H = 08 18 13.0 Mag. 5.3 (GS)
17	5	P eS eScS eLq eLr	ZNE ZE ZE NE ZE	22	37 44 47 51 52	16 56 16				54	USGS: 25.49S, 116.06W Easter Island, Cordillera h = 010 km G H = 22 27 54.3 Mag. 5.6 MB 5.4 MSZ (GS)
18	6	P	Z	07	27	08				12.4	USGS: 23.36S, 179.93W South of Fiji Islands h = 566 km H = 07 24 32.3 Mag. 5.2 (GS)
19	6	P S	ZNE ZNE	09	55 56	26 32				6.0	USGS: 18.09S, 176.10W Fiji Islands region h = 033 km N H = 09 54 00.1* Mag. 5.1 MB 5.1 MSZ (GS)
20	6	P	ZNE	13	33	51					
21	6	P eS	ZNE ZNE	21 22	58 01	56 40				13.5	USGS: 16.91S, 174.52E Fiji Islands region h = 033 km N H = 21 55 41.0 Mag. 5.5 MB 5.5 MSZ (GS)
22	7	(P)	ZNE	12	45	33					
23	7	eS ePS eSS eSSS eLr	ZE ZE ZE Z ZE	15	38 39 44 47 55	28 40 20 44				86	USGS: 43.40S, 091.76E Southeast Indiana Rise h = 010 km G H = 15 15 27.3 Mag. 5.4 MB 5.7 MSZ (GS)
24	8	P S T	ZNE ZNE ZNE	06	32 33 39	44 51				7.2	USGS: 20.57S, 173.89W Tonga Islands h = 033 km N H = 06 31 01.3* Mag. 4.0 (GS)
25	8	P S	ZNE ZNE	19	30 32	32 06				8.2	USGS: 19.96S, 177.44W Fiji Islands region h = 544 km H = 19 28 32.6* Mag. 4.9 (GS)
26	9	P S	ZNE ZN	08	30 31	16 23				5.4	USGS: 16.08S, 176.80W Fiji Islands region h = 415 km H = 08 28 54.7* Mag. 4.2 (GS)
27	10	P eS	ZE ZE	01	02 06	56 44				20.7	USGS: 33.49S, 178.85W South of Kermadec Island h = 067 km H = 00 58 20.8* Mag. 4.8 (GS)

No	Date	Phase	(G.N.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
28	10	P eS	ZNE ZE	02	01	50				20.2	USGS: 33.15S, 178.23W South of Kermadec Islands h = 033 km N H = 01 57 17.6* Mag. 4.9 (GS)
29	10	P eS eSS eLr	ZNE ZNE Z ZNE	03	25	10				68	USGS: 40.50N, 126.83W Off Coast of Northern California Felt h = 010 km G H = 03 14 10.1 Mag. ML 6.6 (BRK) 6.1 MB 6.7 MSZ (GS)
30	10	P S	ZNE ZNE	05	34	09				10.5	USGS: 20.800S, 178.557W Fiji Islands Region h = 621 km H = 05 31 41.7* Mag. 5.0 (GS)
31	10	(P)	ZNE	18	31	12					
32	11	P S L	ZNE ZNE ZNE	07	20	59				19.9	USGS: 15.50S, 167.69E Vanuatu Islands h = 126 km D H = 07 16 35.1 Mag. 5.6 (GS)
33	11	P S T	ZNE ZNE ZNE	15	44	35				5.8	USGS: 19.35S, 173.62W Tonga Islands h = 033 km N H = 15 43 15.3* Mag. 4.8 (GS)
34	12	P S T	ZNE ZNE ZNE	09	01	41					
35	12	P	ZNE	17	33	49	4.5	1.0		14.8	USGS: 20.66S, 169.54E Vanuatu Islands h = 037 km H = 17 29 27.3 Mag. 4.7 (GS)
36	13	(P)	ZNE	07	38	41					
37	13	eS eLr	ZE ZE	08	00	32				89	USGS: 11.37N, 086.73W Near Coast of Nicaragua h = 054 km D H = 07 36 57.1 Mag. 5.0 (GS)
38	13	P eS eSS e(SSS) eLr	ZNE ZE Z ZE ZNE	23 00	59 09	59 16				69	USGS: 35.79N, 137.49E Honshu, Japan Felt h = 010 km G H = 23 48 49.9 Mag. Ms 6.3 (BRK), 6.0 MB 6.1 MSZ (GS)
39	14	P	ZNE	07	13	54				21.5	USGS: 33.360S, 178.602W South of Kermadec Island h = 033 km N H = 07 09 07.1* Mag. 4.8 MB 4.9 MSZ (GS)
40	14	P	Z	09	43	16				22.2	USGS: 33.392S, 176.882W South of Kermadec Island h = 033 km N H = 09 38 28.3* Mag. 5.1 (GS)
41	15	(P)	ZNE	09	57	43					



International
Seismological
Centre

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
42	15	P S	ZNE ZNE	11	01 03	52 34				5.9	USGS: 20.87S, 178.39E Fiji Islands region h = 599 km D H = 10 59 43.1 Mag. 5.3 (GS)
43	15	P S T	ZNE ZNE ZNE	11 12	56 57 01	51 38					
44	15	P	ZNE	20	03	01				17.4	USGS: 14.16S, 170.44E Vanuatu Islands region h = 644 km H = 19 59 34.3* Mag. 4.6 (GS)
45	16	P eS eT	ZNE ZNE ZNE	07	12 15 31	07 20				19.2	USGS: 32.10S, 178.21W South of Kermadec Islands h = 010 km G H = 07 07 43.1 Mag. 5.3 MB 5.3 MSZ (GS)
46	16	P pPcP	ZNE ZNE	10	33 36	52 26				70	USGS: 07.04S, 117.50E Bali Sea h = 647 km D H = 10 23 42.4 Mag. 5.5 (GS)
47	16	P S	ZNE ZNE	12	54 55	25 14					
48	16	P	ZNE	14	58	17				19.2	USGS: 32.22S, 177.97W South of Kermadec Islands h = 010 km G H = 14 53 52.5 Mag. 5.1 (GS)
49	16	P S	ZNE ZNE	22	02 03	26 04					
50	16	P S T	ZNE ZNE ZNE	22	29 31 40	13 12				11.7	USGS: 24.78S, 175.77W South of Tonga Islands h = 033 km N H = 22 26 39.4 Mag. 5.5 MB 5.2 MSZ (GS)
51	17	P S	ZNE ZNE	04	09 10	47 37					
52	17	ePS eSS eSSS eLr	ZE ZE ZE ZE	07	11 17 22 39	16 51 10				119	USGS: 10.04S, 065.64E Mascarene Islands region h = 010 km H = 06 41 43.2 Mag. 5.5 MB 5.8 MSZ (GS)
53	17	P S T	ZNE ZNE ZNE	09	13 15 32	14 50				19.3	USGS: 32.16S, 178.32W South of Kermadec Island h = 010 km G H = 09 08 48.8 Mag. 5.8 MB 6.4 MSZ (GS)
54	17	P	Z	10	42	58				20.8	USGS: 32.515S, 178.048W South of Kermadec Island h = 033 km N H = 10 38 33.9 Mag. 4.8 (GS)
55	18	P	ZNE	03	19	38				21.5	USGS: 32.50S, 176.48W South of Kermadec Island h = 033 km N H = 03 15 05.9? Mag. 5.1 (GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
56	18	P	ZNE	04	15	53				10.8	USGS: 21.71S, 149.53W Fiji Islands region h = 606 km H = 04 11 38.0 Mag. 4.6 (GS)
57	18	P PcP S Lq Lr	ZNE ZNE ZNE ZNE ZNE	17	13 14 22 29 32	22 04 08				65	USGS: 34.01N, 141.50E Off East Coast of Honshu, Japan Felt h = 048 km H = 17 02 44.3 Mag. Ms 6.9 (BRK) 6.6 MB 6.9 MSZ (GS)
58	19	P S T	ZNE ZNE ZNE	00	01 48 04						
59	19	eP ePP eS eSSS eLr	Z E ZE E Z	01	31 33 40 47 51	32 48 28 32				65	USGS: 33.93N, 141.33E Off East Coast of Honshu, Japan h = 043 km H = 01 20 55.8 Mag. 5.7 MB 5.7 MSZ (GS)
60	19	P S	ZNE ZNE	03	54 57	28 52				19.2	USGS: 32.20S, 178.07W South of Kermadec Islands h = 033 km N H = 03 50 11.2 Mag. Ms 5.5 (BRK) 5.3 MB 5.7 MSZ (GS)
61	19	P S	ZNE ZNE	04	37 40	17 32				19.3	USGS: 32.27S, 178.03W South of Kermadec Islands h = 033 km N H = 04 32 55.0 Mag. 5.2 MB 5.8 MSZ (GS)
62	19	P S	ZNE ZNE	20	27 31	45 00				18.8	USGS: 31.81S, 177.92W Kermadec Islands Region h = 033 km N H = 20 23 29.3 Mag. 5.2 MB 4.5 MSZ (GS)
63	20	P S	ZNE ZNE	04	09 10	12 08					
64	20	P S	ZNE ZNE	04	32 33	06 53				10.8	USGS: 23.81S, 176.08W South of Fiji Islands h = 033 km N H = 04 29 39.7? Mag. 5.2 (GS)
65	20	P S	ZNE ZNE	12	47 49	12 26				13.1	USGS: 24.47S, 179.82W South of Fiji Islands h = 491 km H = 12 44 25.1 Mag. 5.3 (GS)
66	20	P S	Z ZNE	14	26 30	10 08				17.2	USGS: 29.81S, 178.90W Kermadec Islands h = 033 km N H = 14 22 13.0* Mag. 4.9 MB 5.1 MSZ (GS)
67	20	eS eSS e(SSS) eLr	ZNE E NE ZNE	17	15 19 23 26	52 36 20				65	USGS: 34.01N, 141.59E Off East Coast of Honshu, Japan Felt h = 033 km H = 16 56 24.3 Mag. 5.5 MB 5.8 MSZ (GS)



International
Seismological
Centre

No	Date	Phase	(G.M.T.)	As	Tz	An	Th	As	Te	(Deg.)	Remarks
68	20	P eS eLr	ZNE ZNE ZNE	19	28 35 42	20 48				51	USGS: 16.78N, 141.17E Mariana Islands region h = 045 km H = 19 19 23.0 Mag. Ms 5.4 (BRK) 5.7 MB 5.5 NSZ (GS)
69	20	P S T	ZNE ZNE ZNE	20	55 56 00	44 45					
70	20	P eS e(Lq) eLr	ZNE ZNE E ZNE	22	04 13 20 23	35 24				65	USGS: 33.98N, 141.55E Off East Coast of Honshu, Japan Felt h = 033 km H = 21 53 55.2 Mag. 5.7 MB 5.8 MSZ (GS)
71	21	P	ZNE	03	37	58				20.2	USGS: 14.90S, 167.35E Vanuatu Islands h = 160 km D H = 03 33 32.9 Mag. 5.3 (GS)
72	21	P S	ZNE ZNE	05	20 22	46 24				9.5	USGS: 21.58S, 177.37W Fiji Islands region h = 489 km H = 05 18 32.3* Mag. 4.3 (GS)
73	21	(P)	ZNE	08	29	28					
74	21	P eS eSSS eLq eLr	Z ZE E E ZNE	09	40 49 56 59 04	32 48 56				65	USGS: 34.00N, 141.51E Off East Coast of Honshu, Japan Felt h = 040 km H = 09 29 53.4 Mag. 5.9 MB 5.7 MSZ (GS)
75	21	P	Z	06	25	36				18.3	USGS: 30.243S, 178.798W Kermadec Islands h = 033 km N H = 06 21 46.9* Mag. 4.9 (GS)
76	21	P	ZNE	18	47	51				18.6	USGS: 32.592S, 178.300W South of Kermadec Islands h = 033 km N H = 18 43 36.5* Mag. 4.8 (GS)
77	22	P S eT	ZNE ZNE ZNE	00	53 55 04	28 21				11.4	USGS: 24.54S, 175.63W South of Tonga Islands h = 033 km N H = 00 50 54.2 Mag. 4.9 (GS)
78	22	P S	ZNE ZNE	04	25 27	42 31				15.1	USGS: 23.672S, 176.086W South of Fiji Islands h = 144 km H = 04 23 28.9* Mag. 4.6 (GS)
79	22	P S T	ZNE ZNE ZNE	05	34 36 45	37 26				10.9	USGS: 24.00S, 175.96W Tonga Islands region h = 068 km H = 05 32 15.6 Mag. 5.2 (GS)
80	22	P S	ZNE ZNE	07	41 43	22 12					

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
81	22	P S	ZNE ZNE	07 08	59 01	19 05				11.5	USGS: 24.82S, 175.43W South of Tonga Islands h = 033 km N H = 07 56 49.3? Mag. 4.5 MB 4.9 MSZ (GS)
82	22	P S	ZNE ZNE	10	19 23	35 16				19.3	USGS: 32.24S, 178.26W South of Kermadec Island h = 033 km N H = 10 15 15.6 Mag. 5.5 MB 5.2 MSZ (GS)
83	22	P S	ZNE ZNE	11	47 50	35 54				19.4	USGS: 32.28S, 178.29W South of Kermadec Islands h = 033 km N H = 11 43 16.1 Mag. 5.5 MB 5.5 MSZ (GS)
84	22	P eS eLr	ZNE ZNE ZNE	18	19 26 33	23 36				50	USGS: 13.82N, 145.38E Mariana Islands Felt (IV) on Guam h = 098 km D H = 18 10 35.5 Mag. 5.9 (GS)
85	22	P S	ZNE ZNE	21	48 51	34 51				19.2	USGS: 32.04S, 178.41W South of Kermadec Island h = 044 km H = 21 44 17.2 Mag. 5.5 MB 6.3 MSZ (GS)
86	22	P S	ZNE ZNE	23	44 48	49 06				19.8	USGS: 32.68S, 178.14W South of Kermadec Island h = 033 km N H = 23 40 26.8 Mag. 4.8 (GS)
87	23	P	Z	00	42	28				22.0	USGS: 33.110S, 177.997W South of Kermadec Island h = 033 km N H = 00 38 04.6* Mag. 4.7 (GS)
88	23	P S	ZNE ZNE	10	28 29	27 19					
89	23	eS eScS eSSS eLq eLr	ZNE N ZNE ZNE ZNE	17	26 27 30 34 37	16 16 40				66	USGS: 53.58N, 165.42W Fox Islands, Alentian Islands Felt h = 033 km N H = 17 06 36.3 Mag. ML 5.9 (PBR), Ms 5.6 (BRK), 5.7 MB 5.5 MSZ (GS)
90	24	P S eT	ZNE ZNE ZNE	02	07 08 17	05 55				10.8	USGS: 23.84S, 175.90W Tonga Islands region h = 033 km N H = 02 04 39.6* Mag. 5.0 (GS)
91	24	P S	ZNE ZNE	08	04 05	07 40					
92	24	P S	ZNE ZNE	14 15	56 00	37 20				19.2	USGS: 32.20S, 178.01W South of Kermadec Island h = 039 km D H = 14 52 18.5 Mag. 5.2 MB 5.2 MSZ (GS)

International
Seismological
Centre

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
93	24	P S	ZNE ZNE	15	10 14	01 41				18.9	USGS: 31.91S, 177.86W Kermadec Islands region h = 033 km N H = 15 05 42.8 Mag. 5.0 (GS)
94	24	P S T	ZNE ZNE ZNE	16	25 28	24 53				2.7	USGS: 16.40S, 172.73W Samoa Islands region h = 033 km N H = 16 24 48.3 Mag. 4.8 (GS)
95	25	P (s)	ZNE ZNE	00	18 19	16 50				11.8	USGS: 20.299S, 177.939W Fiji Islands region h = 538 km H = 00 16 14.8* Mag. 4.3 (GS)
96	25	eS eLr	ZE ZE	02	06 08	48				21.5	USGS: 10.622S, 166.554E Santa Cruz Island h = 063 km N H = 01 57 29.1 Mag. 5.1 MB 5.0 MSZ (GS)
97	25	P S	ZNE ZNE	03	09 11	40 36				11.2	USGS: 22.34S, 179.57W South of Fiji Islands h = 580 km H = 03 07 12.5 Mag. 5.2 (GS)
98	25	P eS eL	ZE ZNE ZNE	04	33 37 39	53 56				21.4	USGS: 10.68S, 166.51E Santa Cruz Islands h = 063 km H = 04 29 09.0 Mag. 5.4 (GS)
99	26	P S	ZNE ZNE	11	36 38	29 37	4.9	1.0		12.8	USGS: 24.04S, 179.92W South of Fiji Islands h = 515 km H = 11 33 46.9 Mag. 5.1 (GS)
100	27	P	Z	04	21	06				19.4	USGS: 32.30S, 178.28W South of Kermadec Islands h = 033 km N H = 04 16 36.9* Mag. 4.8 MB 4.9 MSZ (GS)
101	27	eS eSS eLr	ZE N Z	07	33 34 35	36 20				19.2	USGS: 21.990S, 170.281E Loyalty Islands Region h = 033 km N H = 07 26 05.7 Mag. 4.5 MB 5.4 MSZ (GS)
102	28	P S	ZNE ZNE	00	06 08	24 36				12.7	USGS: 25.85S, 175.91W South of Tonga Islands Felt on Raoul Islands h = 21 km H = 00 03 34.5 Mag. Ms 6.7 (BRK) 6.4 MB 6.8 MSZ (GS)
103	28	P	ZNE	02	07	30				18.7	USGS: 31.84S, 177.37W Kermadec Islands region h = 033 km N H = 02 03 10.2* Mag. 5.4 (GS)
104	28	P S	ZNE ZNE	03	05 07	54 30				9.7	USGS: 21.51S, 177.80W Fiji Islands region h = 364 km D H = 03 03 46.8 Mag. mb 6.2 (BRK) 5.8 (GS)



No	Date	Phase	(G.M.T.)			Az	Tz	An	Tn	Ac	Te	(Deg.)	Remarks
105	28	P	ZNE	04	42	11							
		S	ZNE		43	45							
106	28	eS	ZNE	10	58	32						52	USGS: 31.58S, 110.84W
		eLq	E	11	05								Easter Island region
		eLr	ZNE		06								h = 010 km G
													H = 10 40 24.2
													Mag. 5.9 MB 5.9 MSZ (GS)
107	28	(P)	ZNE	17	57	59							
108	28	P	ZNE	20	27	17							
		S	ZNE		28	20							
109	28	P	ZNE	22	11	47							
		S	ZNE		12	55							
110	28	(P)	ZNE	22	18	41							
111	30	iP	ZNE	04	54	06						7.6	d
		S	ZNE		55	35							USGS: 17.83S, 178.62W
													Fiji Islands region
													h = 546 km
													H = 04 52 14.3
													Mag. 5.0 (GS)
112	30	P	ZNE	20	56	13	7.5	1.0				39.9	USGS: 06.06S, 148.54E
		eS	ZNE	21	02	16							New Britain region
		eSS	ZNE		05	20							h = 075 km
		eLr	ZE		07								H = 20 48 45.9
													Mag. 5.8 (GS)

APIA OBSERVATORY
APIAMALU WSSS FINAL SEISMIC BULLETIN
October 1984



10

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	P	ZNE 08 52 46								
2	1	P S	ZNE 09 34 53 ZNE 38 22							20.9	USGS: 33.96S, 177.93W South of Kermadec Islands h = 033 km N H = 09 30 21.8 Mag. 5.2 (GS)
3	1	P S	ZNE 12 08 01 ZNE 10 53							17.5	USGS: 30.07S, 178.78W Kermadec Islands h = 220 km H = 12 04 15.6 Mag. 4.9 (GS)
4	1	iP S	ZNE 13 33 16 ZNE 31							2.3	d USGS: 15.30S, 173.59W Tonga Islands h = 033 km N H = 13 32 47.5* Mag. 4.7 (GS)
5	1	P S	ZNE 14 04 01.5 ZNE 28							2.2	USGS: 15.12S, 173.58W Tonga Islands h = 060 km D H = 14 03 37.7 Mag. 4.8 (GS)
6	2	P S	ZNE 01 41 44 ZNE 46 52							20.0	USGS: 18.63S, 167.98E Vanuatu Islands h = 006 km H = 01 37 08.1 Mag. Ms 5.9 (BRK) 5.7 MB 5.9 MSZ (GS)
77	2	(P)	ZNE 01 59 11								
8	2	P	Z 04 53 44							70	USGS: 26.10N, 128.51E Ryukyu Islands Felt (1 JMA) on Okinawa h = 031 km D H = 04 42 29.7 Mag. 5.6 MB 5.6 MSZ (GS)
9	2	P eS	ZNE 13 27 14 ZNE 32 44							20.0	USGS: 18.52S, 167.98E Vanuatu Islands h = 015 km H = 13 22 40.9 Mag. 5.5 MB 4.8 MSZ (GS)
10	2	P eS	ZNE 19 46 21 ZNE 51 40							20.0	USGS: 18.51S, 168.14E Vanuatu Islands h = 025 km D H = 19 41 49.1 Mag. 5.5 MB 4.8 MSZ (GS)
11	2	P S	ZNE 23 44 34 ZNE 46 05							7.7	USGS: 17.67S, 178.77W Fiji Islands region h = 577 km H = 23 42 41.9* Mag. 4.7 (GS)
12	3	P	ZNE 14 35 14							20.1	USGS: 18.45S, 167.93E Vanuatu Islands h = 037 km H = 14 30 43.1 Mag. 5.0 MB 4.5 MSZ (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
13	3	P S	ZNE ZNE	17	05 07	36 28				11.1	USGS: 22.21S, 177.46W South of Fiji Islands h = 597 km H = 17 03 05.5 Mag. 5.2 (GS)
14	3	P	Z	21	56	51				84	USGS: 6.284S, 103.063E Southwest of Sumatera h = 033 km N H = 21 44 20.1 Mag. 5.2 (GS)
15	4	P S	ZNE ZNE	09	44 47	52 02				13.4	USGS: 26.32S, 177.20W South of Fiji Islands h = 091 km D H = 09 41 55.6* Mag. 4.9 (GS)
16	4	P eS e(ScS) e eLq eLr	ZNE ZNE E N ZN ZE	16	42 51 52 53 00 03	54 56 20 00				68	USGS: 09.81S, 118.79E Sumbawa Island region h = 034 km D H = 16 31 53.4 Mag. 5.8 MB 6.3 MSZ (GS)
17	4	(P)	ZNE	19	24	15					
18	4	P S	ZNE ZNE	20	20 22	34 43					
19	5	P	ZNE	19	16	42				39.4	USGS: 06.33S, 148.98E New Britain region h = 057 km H = 19 09 16.8 Mag. 5.7 (GS)
20	6	P S	ZNE ZNE	02	53	07 44				3.6	USGS: 14.90S, 175.26W Samoa Islands region h = 033 km N H = 02 52 20.8 Mag. 5.5 MB 5.7 MSZ (GS)
21	6	iP S	ZNE ZNE	20	10 11	50 35					u
22	7	P S	ZN ZN	09	57 59	53 49				10.2	USGS: 21.00S, 179.37W Fiji Islands region h = 510 km G H = 09 55 25.5* Mag. 4.8 (GS)
23	9	P S	ZNE ZNE	21	25 27	37 28					
24	9	eS eLq eLr	E E ZNE	23	24 32 35	00				72	USGS: 24.89N, 109.01W Gulf of California h = 010 km G H = 23 02 28.8 Mag. 5.2 MB 5.1 MSZ (GS)
25	10	P S	ZNE ZNE	16	32 34	47 41				18.9	USGS: 31.92S, 177.67W Kermadec Islands region h = 033 km N H = 16 28 29.7 Mag. 5.3 (GS)
26	10	P S	ZNE ZNE	19	08 09	12 58				9.6	USGS: 20.15S, 179.27W Fiji Islands region h = 676 km D H = 19 05 58.1 Mag. 5.6 (GS)
27	10	P	ZNE	22	17	44				55.6	USGS: 05.48S, 130.14E Banda Sea h = 026 km D H = 22 07 51.5 Mag. 5.4 MB 4.8 MSZ (GS)

No	Date	Phase	(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
28	11	P	ZNE	04	55	36						20.2	USGS: 32.233S, 178.603W South of Kermadec Island h = 135 km H = 04 51 25.5* Mag. 4.8 (GS)
29	11	P S	ZNE ZNE	06	57 58	48 11							
30	11	P S	ZNE ZNE	08	26 29	13 52						21.6	USGS: 34.00S, 179.72E South of Kermadec Island h = 135 km H = 08 21 33.0 Mag. 5.5 (GS)
31	12	P S	ZNE ZNE	00	55 59	12 00						20.2	USGS: 33.06S, 178.41W South of Kermadec Island h = 033 km N H = 00 50 41.8 Mag. 5.1 MB 5.2 MSZ (GS)
32	12	P	Z	03	37	09						40.1	USGS: 08.37S, 147.66E East Papua New Guinea region h = 117 km H = 03 29 42.6 Mag. 5.4 (GS)
33	12	P S T	ZNE ZNE Z NE	11	24 25 29	46 35							
34	12	P S	ZNE ZNE	14	01 02	01 23						7.1	USGS: 18.74S, 177.06W Fiji Islands region h = 385 km H = 13 59 16.8? Mag. 4.3 (GS)
35	12	P S	ZNE ZNE	18	24 26	31 28						11.1	USGS: 16.68S, 177.11E Fiji Islands Felt (V) on Yasawa and (IV) on Vanua Levu h = 013 km H = 18 21 47.3 Mag. Ms 6.5 (BRK) 6.1 (PAS) 5.6 MB 6.1 (MSZ)
36	12	P S	ZNE ZNE	19	02 04	39 32						11.0	USGS: 16.72S, 177.22E Fiji Islands Felt h = 012 km H = 19 00 01.1 Mag. Ms 6.1 (BRK) 5.4 MB 5.8 MSZ (GS)
37	13	P S	ZNE ZNE	02	05 06	01 04						5.8	USGS: 18.16S, 175.61W Tonga Islands h = 037 km H = 02 03 47.5 Mag. Ms 6.2 (PAS) 5.4 MB 6.0 MSZ (GS)
38	13	P S	ZNE ZNE	05	35 37	14 12						10.7	USGS: 15.77S, 177.25E Fiji Islands h = 010 km G H = 05 32 38.8 Mag. Ms 6.1 (BRK) 6.1 (PAS) 5.8 MB 6.0 MSZ (GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
39	13	eS eL	ZNE ZNE	17	40 55	52				82	USGS: 15.02N, 094.30W Near Coast of Oaxaca, Mexico h = 031 km D H = 17 18 13.8 Mag. Ms 5.8 (PAS) 6.1 MB 5.7 MSZ (GS)
40	13	P S	ZNE ZNE	19	17 18	18 45				8.7	USGS: 21.84S, 175.20W Tonga Islands h = 033 km N H = 19 15 21.1* Mag. 4.9 (GS)
41	13	iP S	ZNE ZNE	19	53 54	29 20				5.1	d USGS: 17.910S, 174.925W Tonga Islands h = 234 km D H = 19 52 19.1 Mag. 5.4 (GS)
42	13	iP S	ZNE ZNE	20	08 09	29 20					
43	14	P S	ZNE ZNE	02	31 33	38 19				9.7	USGS: 20.81S, 178.77W Fiji Islands region h = 535 km H = 02 29 25.3 Mag. 5.0 (GS)
44	15	P S T	ZNE ZNE ZNE	02	03 04 10	10 31				8.2	USGS: 21.68S, 174.18W Tonga Islands h = 033 km N H = 02 01 21.2? Mag. 4.8 (GS)
45	15	iP S unreadable	ZNE	10	21	44				2.7	u USGS: 15.86S, 173.64W Tonga Islands Felt (V) at Apia, Samoa Islands h = 128 km H = 10 21 07.5 Mag. mb 7.1 (PAS) 6.9 (BRK) 6.5 (GS)
46	15	P (S)	ZNE ZNE	17	31 33	24 38				13.5	USGS: 25.76S, 178.29W South of Fiji Islands h = 332 km H = 17 28 25.3* Mag. 4.3 (GS)
47	16	P S	ZNE ZNE	00	09 11	58 30				7.5	USGS: 14.754S, 179.395W Fiji Islands region h = 347 km H = 00 07 47.2* Mag. 4.3 (GS)
48	16	P S	ZNE ZNE	02 03	59 00	05 35				7.8	USGS: 17.26S, 179.13W Fiji Islands region h = 505 km H = 02 57 09.1* Mag. 4.0 (GS)
49	16	P S	ZNE ZNE	21	48 49	40 37				7.9	USGS: 19.86S, 177.09W Fiji Islands region h = 560 km H = 21 48 03.4? Mag. 4.3 (GS)
50	18	P	ZNE	02	22	59					
51	18	P S	ZNE ZNE	11	16 18	41 19				8.2	USGS: 19.95S, 177.41W Fiji Islands region h = 033 km N H = 11 13 49.1? Mag. 4.5 (GS)

No	Date	Phase		(G.M.T.)			Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
52	19	iP S	ZNE ZNE	01	28 29	35 16							1.3	d USGS: 14.85S, 171.20W Samoa Islands Felt (III) at Apia, W. Samoa h = 033 km N H = 01 28 20.7 Mag. 5.1 MB 5.1 MSZ (GS)
53	19	P S	ZNE ZNE	03	32 33	22 52							8.3	USGS: 20.421S, 177.713W Fiji Islands region h = 436 km H = 03 30 23.5* Mag. 5.0 (GS)
54	19	iP S	ZNE ZNE	14	38 39	32 08							3.0	u USGS: 15.89S, 173.95W Tonga Islands Felt (III) at Apia, W. Samoa h = 121 km D H = 14 37 50.8 Mag. 5.8 (GS)
55	19	P S	ZNE ZNE	17	05 09	05 08							23.0	USGS: 35.59S, 179.94W East of North Island, New Zealand h = 033 km N H = 16 59 58.5 Mag. 5.1 MB 4.9 MSZ (GS)
56	19	P S	ZNE ZNE	20	03 06	59 56							17.7	USGS: 30.49S, 178.41W Kermadec Islands h = 033 km N H = 19 59 56.0 Mag. 5.6 MB 5.0 MSZ (GS)
57	20	P S T	ZNE ZNE ZNE	21	24 26 30	30 01							9.4	USGS: 20.69S, 178.44W Fiji Islands region h = 575 km D H = 21 22 11.0 Mag. 5.4 (GS)
58	21	iP S	ZNE ZNE	06	10	08 28								u
59	22	P S	ZNE ZNE	15	31 34	04 14							18.7	USGS: 31.57S, 177.72W Kermadec Islands region h = 033 km N H = 15 26 54.9 Mag. 5.3 MB 5.4 MSZ (GS)
60	22	P S	ZNE ZNE	16	53 54	10 52							7.6	USGS: 17.84S, 178.56W Fiji Islands region h = 589 km H = 16 51 18.5 Mag. 4.8 (GS)
61	22	P es	ZNE ZNE	18	06 09	09 52							19.0	USGS: 32.08S, 177.29W South of Kermadec Island h = 033 km N H = 18 01 57.5 Mag. 5.3 (GS)
62	23	P	ZNE	02	13	14							18.5	USGS: 31.528S, 177.923W Kermadec Islands region h = 166 km H = 02 09 16.7 Mag. 5.0 (GS)
63	23	iP S	ZNE ZNE	09	33	08.5 41							3.4	u USGS: 16.49S, 173.76W Tonga Islands h = 033 km N H = 09 32 16.9* Mag. 4.4 (GS)

No	Date	Phase	(G.M.T.)			Az	Tz	An	Th	Ae	Te	(Deg.)	Remarks
64	23	P S T	ZNE ZNE ZNE	21	38 39 44	09 22						7.0	USGS: 20.47S, 174.01W Tonga Islands h = 109 km H = 21 36 46.8* Mag. 4.7 (GS)
65	24	P S	ZNE ZNE	02	31 33	44 55						11.2	USGS: 24.56S, 179.80W South of Fiji Islands h = 478 km H = 02 28 59.3 Mag. 5.1 (GS)
66	24	P	ZNE	09	55	30						18.5	USGS: 31.49S, 177.70W Kermadec Islands region h = 033 km N H = 09 51 17.7* Mag. 5.0 (GS)
67	24	P (S)	ZNE ZNE	17	27 29	40 24							
68	25	P S	ZNE ZNE	07	50	00 42							
69	25	P S	ZNE ZNE	11	25 27	59 48						9.9	USGS: 21.18S, 178.82W Fiji Islands region h = 639 km H = 11 23 41.4* Mag. 4.5 (GS)
70	25	P S	ZNE ZNE	16	28 30	09 17						13.0	USGS: 23.95S, 179.66E South of Fiji Islands h = 561 km H = 16 25 34.7* Mag. 5.0 (GS)
71	25	P S	ZNE ZNE	22	33 34	16 00						5.2	USGS: 18.68S, 173.55W Tonga Islands h = 033 km N H = 22 32 01.6 Mag. 5.1 (GS)
72	26	P S	ZNE ZNE	00	17 19	40 22						9.1	USGS: 20.57S, 178.11W. Fiji Islands region. h = 559 km. H = 00 15 39.2* Mag. 4.6 (GS).
73	26	P S	ZNE ZNE	07	51 53	51 31						8.8	USGS: 21.68S, 175.90W. Tonga Islands. h = 525 km. H = 07 49 25.1? Mag. 5.0 (GS)
74	26	P eS e(ScS) eSS eSSS eLq eLr	ZNE ZNE NE Z Z N ZNE	08 09	57 08 09 12 15 16 19	50 16 12 48 40						64	USGS: 01.62N, 126.29E. Molucca Passage. h = 056 km. H = 08 49 24.8 Mag. 5.8 (GS)
75	26	P	ZNE	15	59	37						22.0	USGS: 10.669S, 165.904E. Santa Cruz Islands. h = 169 km. H = 15 54 56.6 Mag. 5.0 (GS)
76	27	P S	ZNE ZNE	23	05 06	16 26						7.2	USGS: 20.39S, 174.88W. Tonga Islands. h = 033 km. N H = 23 03 32.4 Mag. 4.8 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ac	Te	(Deg.)	Remarks
77	28	eP S	ZNE ZNE	03	55 56	47 48				7.9	USGS: 20.54S, 175.15W Fiji Islands region h = 250 km H = 03 53 50.7* Mag. 4.3 (GS)
78	28	iP S	ZNE ZNE	09	57 58	36.5 03					u
79	28	P S	ZNE ZNE	14	44 45	15 47				8.0	USGS: 17.50S, 179.15W Fiji Islands region h = 592 km H = 14 42 24.9* Mag. 4.7 (GS)
80	28	P	ZNE	19	52	46				14.0	USGS: 16.917S, 174.361E Fiji Islands region h = 033 km N H = 19 49 40.9 Mag. 4.6 MB 4.6 MSZ (GS)
81	29	P ePcP eS eScS eSS eSSS	ZNE ZE ZNE ZNE ZNE ZNE	23	28 29 37 42 45	33 04 08 48 16 28				65	USGS: 05.73N, 125.54E Mindanao, Philippine Island Felt h = 153 km D H = 23 18 05.1 Mag. 5.9 (GS)
82	30	iP S	ZNE ZNE	01	06 07	43.6 16				4.0	u USGS: 17.11S, 174.08W Tonga Islands h = 141 km D H = 01 05 49.9 Mag. mb 5.7 (BRK) 6.0 (GS)
83	30	iP S	ZNE ZNE	08	48	17 48				3.1	d USGS: 15.68S, 174.28W Tonga Islands h = 122 km H = 08 47 30.1 Mag. 4.6 (GS)
84	30	P S	ZNE ZNE	17	24 27	40 57				18.8	USGS: 31.79S, 177.52W Kermadec Islands region h = 033 km N H = 17 20 31.6 Mag. 5.1 MB 5.8 MSZ (GS)
85	30	P S	ZNE ZNE	20	37 41	52 20				18.5	USGS: 31.54S, 177.67W Kermadec Islands region h = 033 km N H = 20 33 41.0 Mag. 5.4 MB 5.5 MSZ (GS)
86	31	P	ZNE	04	32	57					
87	31	P S	ZNE ZNE	21	37	21 57				3.7	USGS: 16.60S, 174.26W Tonga Islands h = 192 km H = 21 36 40.3* Mag. 4.6 (GS)
