

APIA OBSERVATORY

AFIAMALU WWSSS FINAL SEISMIC READINGS

FEBRUARY 1984



No	Date	Phase		(G.M.T.)			Az Tz An Tn Ao Te	(Deg.)	Remarks
1	1	P S	ZNE ZNE	03 25	23 25	15 25	13.0 1.0	12.8	USGS: 23.25S, 179.10E South of Fiji Islands h = 554 km H = 03 20 33.7 Mag. 5.1 (GS)
2	1	P e(s)	ZNE ZNE	07 41	39 41	00 00		73	USGS: 49.06N, 146.59E Sea of Okhotsk Felt h = 573 km H = 07 28 28.7 Mag. mb 6.1 (BRK) 6.0 (PAS) 5.9 (GS)
3	1	(PKP)	ZNE	14	40	59		121	USGS: 34.62N, 070.48E Afghanistan Felt h = 033 km H = 14 22 07.9 Mag. 5.9 MB 5.8 MSZ(GS)
4	1	P S	ZNE ZNE	16	57	02 45			
5	2	e(P)	Z	11	40	07		72	USGS: 09.90S, 115.06E South of Bali Islands Felt (II) on Bali h = 033 km N H = 11 30 33.6 Mag. 5.4 MB 4.8 MSZ(GS)
6	3	e(P)	ZNE	00	10	43			
7	3	eS eL	ZNE ZNE	05	06	44 15		51	USGS: 17.49N, 147.37E Mariana Islands region h = 050 km H = 04 50 27.0 Mag. 5.2 MB 5.2 MSZ(GS)
8	3	P S	ZNE ZNE	06	55	15 35			
9	3	eP	ZNE	11	30	50		12.6	USGS: 23.67S, 179.98W South of Fiji Islands h = 522 km H = 11 28 10.5 Mag. 4.6 (GS)
10	3	iP S	ZNE ZNE	14	26	53.5 22		7.6	d USGS: 19.28S, 177.42W Fiji Islands region h = 579 km H = 14 25 00.5 Mag. 5.3 (GS)
11	3	P epP eS	ZNE ZE ZNE	19	10	23 36 20		21.5	USGS: 11.51S, 166.25E Santa Cruz Islands h = 062 km H = 19 05 35.7 Mag. 5.4 (GS)
12	3	P S T	ZNE ZNE ZNE	23	35	33 42 41		6.7	USGS: 20.23S, 173.64W Tonga Islands h = 033 km N H = 23 34 05.7* Mag. 4.9 (GS)

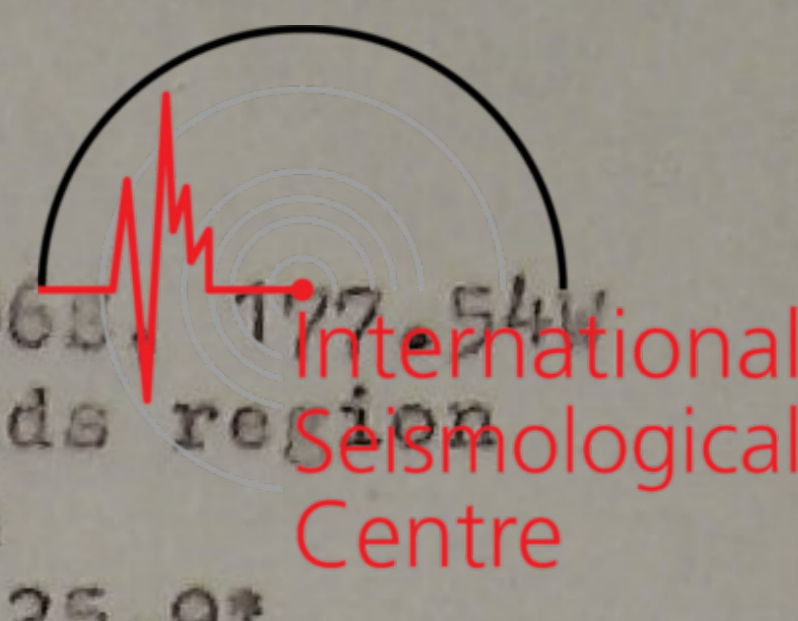


International
Seismological
Centre

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
13	4	eP S	ZNE ZNE	01	27 28	55 43					
14	4	P S T	ZNE ZNE ZNE	18	23 24 29	00 07					
15	4	eP eS	ZN ZNE	20	13 16	15 16				17.1	USGS: 30.00S, 177.76W Kermadec Islands h = 046 km H = 20 09 23.7? Mag. 5.2 (GS)
16	4	P S	ZNE ZNE	23	49 50	04 05					
17	5	ePKP	Z	00	40	11				151	USGS: 37.21N, 028.65E Turkey Felt h = 010 km G H = 00 20 16.6 Mag. 5.1 (GS)
18	5	P (S)	ZNE ZNE	03	56 58	06 31					
19	5	P (S)	ZNE ZNE	07	25 27	34 08	3.4	0.9			
20	5	P S	ZNE ZNE	08	29	28 54				3.0	USGS: 16.62S, 172.89W Samoa Islands region h = 033 km N H = 08 28 53.1 Mag. 4.5 (GS)
21	5	P (S)	ZNE ZNE	21	38 40	26 16					
22	6	eP S	ZNE ZNE	03	17 21	19 00				20.6	USGS: 33.34S, 179.24W South of Kermadec Is. h = 052 km H = 03 12 44.8 Mag. 4.8 (GS)
23	6	P S	ZNE ZNE	08	38 40	45 17	8.0	1.0			
24	6	eP S	ZNE ZNE	10	46 48	56 23				9.1	USGS: 21.78S, 176.52W Fiji Islands region h = 257 km H = 10 44 52.6* Mag. 5.3 (GS)
25	7	P S	ZNE ZNE	05	16 18	14 30				13.7	USGS: 25.76S, 178.79W South of Fiji Islands h = 352 km H = 05 13 19.3 Mag. 5.3 (GS)
26	7	iP S L	ZNE ZNE ZNE	21	39 44 49	07 00				27.4	u USGS: 10.01S, 160.47E Solomon Islands Felt throughout the Solomon Islands h = 018 km D H = 21 33 21.4 Mag. Ms 7.7 (PAL) 7.5 (BRK) 7.3 (PAS) 6.6 MB 7.5 MSZ (GS)

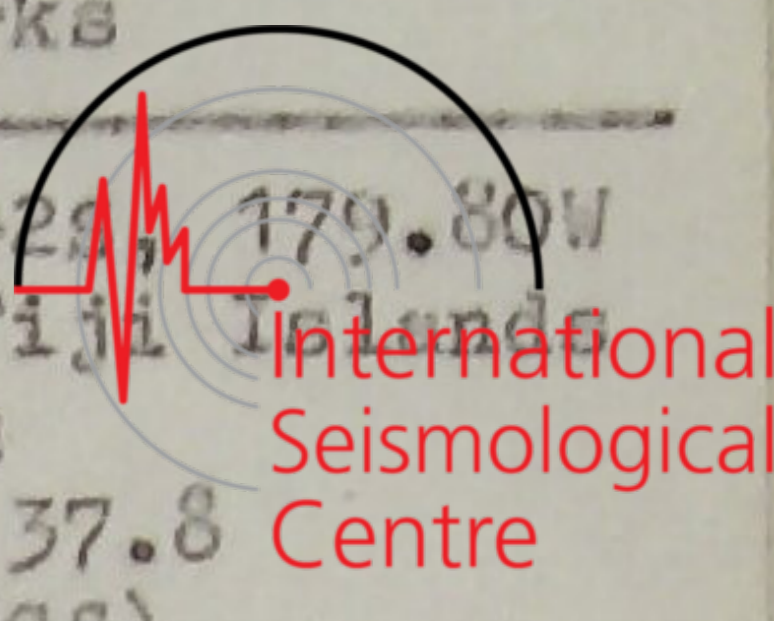
No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
27	8	P	ZNE	00	45	38				27.6	USGS: 09.82S, 160.27E Solomon Islands Felt on Guadalcanal h = 027 km H = 00 39 51.0 Mag. 6.0 MB 6.4 MSZ(GS)
28	8	iP S	ZNE ZNE	21	42	12.3 47					u
29	9	P S T	ZNE ZNE ZNE	17	55	58				6.5	USGS: 19.52S, 175.11W Tonga Islands h = 182 km D H = 17 54 33.2 Mag. 5.2 (GS)
30	10	(P)	ZNE	04	26	23					
31	10	P	ZNE	07	41	53					
32	10	P (S)	ZNE ZNE	11	05	38 46					
33	10	eS eLq eLr	ZNE NE ZE	17	12	36				72	USGS: 28.27N, 112.14W Gulf of California Felt h = 010 km G H = 16 51 20.8 Mag. 5.6 MB 6.2 MSZ(GS)
34	10	P	ZNE	23	48	54	3.0	0.9			
35	11	P	ZNE	08	22	50					
36	11	P	ZNE	08	27	59					
37	11	P S	ZNE ZNE	15	20	21 50				3.0	USGS: 16.50S, 172.99W Samoa Islands Region h = 033 km N H = 15 19 46.9 Mag. 5.2 (GS)
38	13	(P)	ZNE	18	40	48					
39	14	P S T	ZNE ZNE ZNE	00	12	12 08 22				11.6	USGS: 24.60S, 176.09W South of Fiji Islands h = 067 km H = 00 09 44.6 Mag. 5.0 (GS)
40	14	(P) S	ZNE ZNE	15	25	22 52					
41	14	P S	ZNE ZNE	18	44	25 58				8.7	USGS: 20.33S, 177.81W Fiji Islands region h = 526 km H = 18 42 28.5 Mag. 4.7 (GS)
42	15	P S	ZN ZN	05	32	07 47				9.5	USGS: 21.67S, 177.18W Fiji Islands region h = 455 km H = 05 29 56.9* Mag. 4.7 (GS)
43	15	P S T	ZN ZNE ZN	09	26	37 20 36				9.7	USGS: 22.98S, 174.67W Tonga Islands region h = 123 km H = 09 24 22.8* Mag. 5.0 (GS)
44	15	P	ZN	18	30	27	6.0	1.0		19.0	USGS: 20.80S, 169.67E Vanuatu Islands h = 079 km D H = 18 26 11.1 Mag. 5.0 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
45	16	P	ZN	13	52	17	3.5	0.7			
46	16	PKP eSS	ZNE ZN	17	37 55	09 20	9.5	0.8		121	USGS: 36.43N, 1070.83E Hindu Kush region Felt h = 208 km H = 17 18 41.6 Mag. 6.1 (GS)
47	17	P S	ZNE ZNE	02	07	31 51					
48	17	P S	ZNE ZNE	05	40 41	16 15					
49	17	P S	ZNE ZNE	10	36 39	23 07				17.3	USGS: 30.21S, 177.66W Kermadec Islands h = 050 km D H = 10 32 25.6 Mag. 5.0 MB 4.9 MSZ(GS)
50	17	P	ZNE	12	25	17				19.9	USGS: 16.91S, 167.92E Vanuatu Islands h = 033 km N H = 12 20 44.2 Mag. 4.9 (GS)
51	17	P pP	ZNE ZNE	16	41 42	57 42	8.0	1.1		57.5	USGS: 06.60S, 130.12E Banda Sea h = 158 km H = 16 32 21.3 Mag. 6.1 (GS)
52	17	eS eLq eLr	NE NE ZE	20 21	54 02 06	44				71	USGS: 20.59N, 109.09W Revilla Gigedo Islands region h = 010 km G H = 20 33 42.2 Mag. 5.5 MB 5.5 MSZ(GS) Ms 6.0 (BRK)
53	17	P	ZNE	22	39	16				18.6	USGS: 22.39S, 170.88E Loyalty Islands region h = 042 km H = 22 35 01.5 Mag. 5.2 (GS)
54	18	P (S)	ZNE ZNE	15	51 52	28 55					
55	18	P S	ZNE ZNE	18	28 30	32 02	8.0	0.9		7.6	USGS: 18.00S, 178.48W Fiji Islands region h = 606 km H = 18 26 37.7 Mag. 5.0 (GS)
56	19	eP	ZNE	18	34	59				37.7	USGS: 06.11S, 150.66E New Britain region h = 033 km N H = 18 27 45.1 Mag. 5.2 MB 4.7 MSZ(GS)
57	19	P eS eLq eLr	ZNE ZN ZN Z	19	29 35 38 40	17 12	2.0	1.0		37.9	USGS: 06.15S, 150.52E New Britain region h = 034 km H = 19 22 00.6 Mag. 5.3 MB 5.4 MSZ(GS)
58	19	iP S	ZNE ZNE	22	13 14	48 21				3.4	u. USGS: 16.53S, 173.73W Tonga Islands h = 059km H = 22 12 59.1* Mag. 4.5 (GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
59	20	P S	ZNE ZNE	01	18	54					
					20	12					
60	20	P S	ZNE ZNE	17	08	14				8.2	USGS: 19.96S, 177.54W Fiji Islands region h = 374 km H = 17 06 25.9* Mag. 4.3 (GS)
					09	37					
61	20	P (S)	ZNE ZNE	17	28	58					
					31	05					
62	21	P S T	ZNE ZNE ZNE	20	40	22				3.7	USGS: 17.53S, 172.11W Tonga Islands region h = 033 km N H = 20 39 34.7 Mag. 4.9 (GS)
					41	01					
					44						
63	22	P (S)	ZNE ZNE	08	28	11					
					29	45					
64	22	P S	ZNE ZNE	19	50	24					
						49					
65	24	P S	ZNE ZNE	05	01	04				16.5	USGS: 29.65S, 176.80W Kermadec Islands region h = 033 km N H = 04 57 01.8* Mag. 5.4 (GS)
					03	36					
66	24	P (PP)	ZNE ZNE	21	25	23				19.0	USGS: 21.26S, 170.02E Loyalty Islands region h = 092 km D H = 21 21 09.6 Mag. 5.4 (GS)
						45					
67	25	P	ZNE	06	53	28				85	USGS: 07.14S, 103.53E Southwest of Sumatera h = 033 km N H = 06 41 02.4 Mag. 5.5 MB 5.6 MSZ(GS)
68	25	iP S	ZNE ZE	15	30	16.2				4.1	d USGS: 16.75S, 174.77W Tonga Islands h = 257 km D H = 15 29 14.5 Mag. 5.5 (GS)
					31	04					
69	26	P S	ZNE ZNE	01	34	18				10.8	USGS: 23.23S, 177.32W South of Fiji Islands h = 223 km H = 01 31 56.7* Mag. 5.0 (GS)
					36	08					
70	26	iP S	ZNE ZNE	01	38	38.5					u
						55					
71	26	P	ZNE	09	43	18	7.6	1.0			
72	26	P	ZNE	12	46	18				40.9	USGS: 07.62S, 147.03E East Papua New Guinea h = 033 km N H = 12 38 35.5 Mag. 5.3 MB 4.6 MSZ(GS)
73	27	P	ZNE	09	44	34				20.6	USGS: 16.09S, 167.95E Vanuatu Islands h = 201 km D H = 09 40 18.3 Mag. 5.5 (GS)
74	28	(P) S L	Z Z ZNE	00	12	36				31.8	USGS: 08.93S, 156.24E Solomon Islands h = 033 km N H = 00 05 25.2 Mag. 5.5 MB 5.4 MSZ(GS)
					16	42					
					20						

NO	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
75	28	e(P)	ZNE	11	45	17				12.2	USGS: 23.42S, 179.80W South of Fiji Islands h = 561 km H = 11 42 37.8 Mag. 5.2 (GS)
76	29	P	ZNE	17	48	53				9.6	USGS: 20.78S, 178.70W Fiji Islands region h = 583 km H = 17 46 45.4* Mag. 4.6 (GS)



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March 1984



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	P S	ZNE ZNE	02	24	00					
2	1	P S	ZNE ZNE	18	17	55	5.9	1.0		8.6	USGS: 20.38S, 177.61W Fiji Islands region h = 504 km H = 18 15 53.5 Mag. 5.2 (GS)
3	1	eS eL	ZNE ZE	19	41	09				82	USGS: 04.52S, 105.99W Northern Easter Islands Cordillera h = 10 km G H = 19 21 25.2 Mag. 5.5 MB 5.9 MSZ(GS)
4	2	P S T	ZNE ZNE ZNE	00	02	30				8.5	USGS: 21.14S, 176.44W Fiji Islands region h = 228 km D H = 00 00 38.0 Mag. 5.4 (GS)
5	2	P eS e(Lq) eLr	ZE ZNE ZNE ZE	05 06	56 02	04 27				42.8	USGS: 04.34S, 145.86E Near N. Coast of Papua New Guinea h = 033 km N H = 05 48 01.7 Mag. 5.6 MB 5.9 MSZ(GS)
6	4	P S T	ZNE ZNE ZNE	15	56	53				8.4	USGS: 21.91S, 174.05W Tonga Islands h = 033 km N H = 15 55 01.2 Mag. 5.1 (GS)
7	4	P S	ZNE ZNE	16	50	48					
8	4	P S T	ZNE ZNE ZNE	18	05	50				11.8	USGS: 24.50S, 177.01W South of Fiji Islands h = 135 km H = 18 03 13.4 Mag. 4.8 (GS)
9	5	P PP S eS	ZNE ZE ZNE ZNE	03	43	48				68	USGS: 08.15N, 123.76E Mindanao, Philippine Is. Felt h = 649 km D H = 03 33 50.9 Mag. mb 6.6 (BRK) 6.5(GS)
10	5	P	ZE	04	52	32				19.5	USGS: 17.04S, 168.27E Vanuatu Islands h = 033 km N H = 04 48 04.3 Mag. 5.2 (GS)
11	6	P S	ZNE ZNE	00	28	56				16.8	USGS: 29.18S, 178.96W Kermadec Islands h = 294 km H = 00 25 23.2 Mag. 5.0 (GS)
12	6	P PcP PP PPP S sCS SSS	ZNE ZE ZE Z ZE ZE ZE	02	27	11				64	USGS: 29.38N, 138.94E South of Honshu, Japan Felt h = 457 km D H = 02 17 21.2 Mag. mb 6.6 (BRK) 6.2(GS)

No	Date	Phase		(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
13	6	iP S	ZNE ZNE	05	53 54	24 05					3.8	d USGS: 15.95S, 174.91W Tonga Islands h = 282 km H = 05 52 25.9 Mag. 5.2 (GS)
14	6	iP S	ZNE ZNE	11	13	30.5 47						d
15	6	P	ZNE	15	06	19					69	USGS: 42.57N, 142.84E Hokkaido, Japan region Felt h = 103 km D H = 14 55 16.5 Mag. 5.5 (GS)
16	6	P S	ZNE ZE	17	57 59	41 00					6.8	USGS: 18.78S, 176.64W Fiji Islands region h = 033 km N H = 17 56 10.6 Mag. 5.3 MB 5.0 MSZ(GS)
17	7	P (S)	ZNE ZNE	02	02 03	03 34						
18	7	(P)	Z	05	27	45						
19	7	iP S	ZNE ZNE	06	22	13 36						d
20	7	eP S	ZNE ZNE	13	40 42	42 54					12.9	USGS: 24.06S, 179.87W South of Fiji Islands h = 540 km H = 13 37 55.8 Mag. 4.8 (GS)
21	8	(P)	ZNE	00	35	26						
22	8	P S T	ZNE ZNE ZNE	00 01	46 50 12	17 50					26.3	USGS: 38.25S, 177.22E North Island, N.S. Felt h = 088 km H = 00 40 50.5 Mag. 5.9 (GS)
23	8	P (S)	ZNE ZNE	10	46 47	02 32						
24	8	P (S)	ZNE ZNE	10	53 55	32 20						
25	8	P S	ZNE ZNE	16	25 26	33 08						
26	9	P S T	ZNE ZNE ZNE	14	13 15	37 55						
27	10	eP	ZNE	09	14	07	2.0	1.0			80	USGS: 07.64S, 106.96E Java Felt h = 52 km D H = 09 02 00.6 Mag. 5.7 (GS)
28	11	P S	ZNE ZNE	01	02 03	49 23						
29	11	P S	ZNE ZNE	14	24 26	56 57					12.0	USGS: 24.58S, 177.40W South of Fiji Islands h = 232 km H = 14 22 12.6? Mag. 4.9 (GS)
30	11	P S	ZNE ZNE	22	19 21	20 11					10.7	USGS: 22.06S, 178.91W South of Fiji Islands h = 600 km H = 22 16 55.5? Mag. 5.1 (GS)



No	Date	Phase	(G.M.T.)	As	Ts	An	Tn	As	Te	(Deg.)	Remarks
46	17	P S	ZNE ZNE	05	37 38	54 27				3.1	USGS: 16.19S, 173.90W Tonga Islands h = 119 km H = 05 37 06.17 Mag. 4.3 (GS)
47	18	P S	ZNE ZNE	07	56 58	31 04				9.6	USGS: 21.76S, 177.25W Fiji Islands region h = 287 km H = 07 54 25.9 Mag. 5.2 (GS)
48	18	(P) (S)	ZNE ZNE	22	53 54	23 49					
49	19	P S	ZNE ZNE	13	01 03	36 06				9.6	USGS: 22.32S, 176.45W South of Fiji Islands h = 134 km H = 12 59 27.6 Mag. 4.4 (GS)
50	19	P S	ZNE ZNE	19	18 20	24 00				8.4	USGS: 18.02S, 179.44W Fiji Islands region h = 614 km H = 19 16 21.0 Mag. 4.8 (GS)
51	19	P	ZNE	20	03	25				21.7	USGS: 34.73S, 178.33W South of Kermadec Islands h = 033 km N H = 19 58 37.6* Mag. 4.9 (GS)
52	19	FKP oPP e	ZNE Z Z	20	47 49 51	42 32 00				126	USGS: 40.32N, 063.35E Uzbek SSR Felt h = 015 km H = 20 28 38.2 Mag. Ms 7.1 (BRK) 6.5 MB 7.0 MSZ (GS)
53	20	P	ZNE	00	49	17					
54	20	P	ZNE	08	38	18				19.2	USGS: 20.09S, 169.27E Vanuatu Islands h = 051 km D H = 08 33 56.5 Mag. 5.3 (GS)
55	21	P eS eSS eLq eLr	ZNE Z Z E ZE	02	55 04 09 12 15	28 40 00				68	USGS: 49.18N, 155.39E Kuril Islands Felt h = 041 km H = 02 44 24.3 Mag. 6.0 MB 5.7 MSZ (GS)
56	21	P	Z	08	41	13				94	USGS: 43.95S, 077.92E Mid Indian Rise h = 010 km G H = 08 27 51.4 Mag. Ms 6.2 (BRK) 5.9 MB 5.7 MSZ (GS)
57	21	P S T	ZNE ZNE ZNE	10	12 13 17	07 00				5.7	USGS: 19.23S, 173.66W Tonga Islands h = 033 km N H = 10 10 48.7 Mag. 5.3 MB 5.8 MSZ (GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
31	11	P	ZNE	22	33	12				72	USGS: 38.39N, 135.48E Sea of Japan h = 351 km D H = 22 22 25.7 Mag. 5.3 (GS)
32	12	iP S	ZNE ZNE	04	47	04					u
33	12	P S	ZNE ZNE	10	53	26				12.4	USGS: 23.42S, 179.97W South of Fiji Islands h = 547 km H = 10 50 48.8 Mag. 5.5 (GS)
34	12	P S	ZNE ZNE	11	48	28				8.7	USGS: 20.82S, 177.17W Fiji Islands region h = 321 km H = 11 46 31.0 Mag. 4.7 (GS)
35	13	(P)	Z	12	32	39				58	USGS: 07.19S, 129.16E Banda Sea h = 168 km H = 12 22 01.9 Mag. 5.3 (GS)
36	14	P	ZNE	00	50	40					
37	14	P	ZNE	02	14	05					
38	14	iP S	ZNE ZNE	11	38	32.5				8.7	u USGS: 20.09S, 178.07W Fiji Islands region h = 570 km H = 11 36 30.9 Mag. 5.7 (GS)
39	14	P S	ZNE ZNE	12	41	57				8.0	USGS: 19.93S, 177.15W Fiji Islands region h = 360 km H = 12 40 09.1 Mag. 5.1 (GS)
40	14	P S	ZNE ZNE	15	46	25				8.7	USGS: 20.48S, 177.73W Fiji Islands region h = 545 km H = 15 44 26.1* Mag. 4.8(GS)
41	15	P	ZNE	03	34	33				82	USGS: 06.61S, 105.33E Sunda Strait Felt h = 068 km D H = 03 22 18.5 Mag. 5.5 (GS)
42	15	P (S)	ZNE ZNE	17	15	45					
43	16	P e(S)	ZE ZNE	09	15	32				18.7	USGS: 20.39S, 170.04E Vanuatu Islands h = 014 km H = 09 11 35.5 Mag. 4.8 MB 5.1 MSZ(GS)
44	16	P	ZE	21	46	32				58	USGS: 06.73S, 129.85E Banda Sea h = 171 km H = 21 36 56.2 Mag. 5.4 (GS)
45	16	eP eS eSS	ZNE E ZE	22 23 02	58 01 56	12 40				18.9	USGS: 20.57S, 169.92E Vanuatu Islands h = 011 km H = 22 53 57.4 Mag. 5.2 MB 5.4 MSZ(GS)



No	Date	Phase		(G.M.T.)		Az Ts An Tn Ao Te (Deg.)			Remarks
58	21	P S	ZNE ZNE	14 01 03	22 22			11.2	USGS: 22.95S, 178.45W South of Fiji Islands h = 509 km H = 13 58 51.0 Mag. 5.1 (GS)
59	21	P S	ZNE ZNE	14 07 08	37 37				
60	21	P eS	ZNE Z	17 09 14	30 08			20.6	USGS: 17.17S, 167.20E Vanuatu Islands h = 032 km H = 17 04 47.0 Mag. 5.3 MB 4.6 MSZ (GS)
61	21	P S	ZNE ZE	18 23 25	02 36			9.8	USGS: 16.28S, 178.43E Fiji Islands h = 009 km H = 18 20 37.7 Mag. 5.0 (GS)
62	22	P S	ZNE ZNE	07 48 51	32 17			17.0	USGS: 29.52S, 178.67W Kermadec Islands h = 238 km H = 07 44 55.7* Mag. 4.8 (GS)
63	22	iP S	ZNE ZNE	14 13	32.3 32			1.5	u USGS: 15.23S, 172.19W Samoa Islands region Felt (III) at Apia, W. Samoa h = 042 km D H = 14 13 16.1 Mag. 5.4 MB 5.2 MSZ (GS)
64	22	PKP	Z	22	32 43			120	USGS: 36.63N, 071.20E Afghanistan-USSR border region Felt h = 254 km D H = 22 14 20.1 Mag. 5.3 (GS)
65	23	P S	ZNE ZNE	00 08 09	18 2.5 0.9 52			8.7	USGS: 20.40S, 177.81W Fiji Islands region h = 490 km H = 00 06 16.6 Mag. 4.2 (GS)
66	23	P S	ZNE ZNE	08 33 34	25 5.0 1.0 56			7.7	USGS: 17.88S, 178.69W Fiji Islands region h = 596 km H = 08 31 33.6* Mag. 4.6 (GS)
67	23	iP S	ZNE ZNE	20 32	04 24			2.3	u USGS: 15.19S, 173.74W Tonga Islands Felt (II) at Apia, W. Samoa h = 045 km D H = 20 31 33.4 Mag. Ms 5.9 (BRK) 5.6 MB 5.9 MSZ (GS)
68	23	iP S	ZNE ZNE	23 13	17.5 36				u

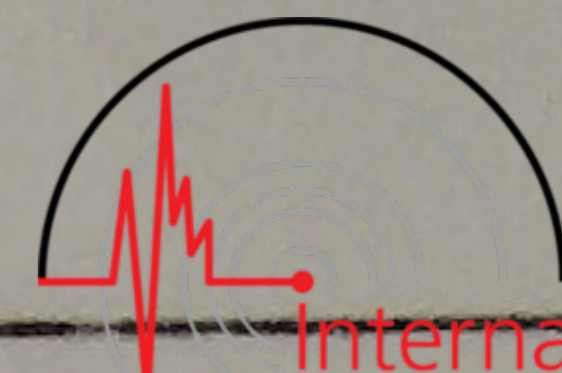
No	Date	Phase	(G.M.T.)	As	Ts	An	Tn	As	Te	(Deg.)	Remarks
69	24	P	ZNE	09	55	05				70	USGS: 44.12N, 148.19E Kuril Islands Felt h = 044 km H = 09 44 02.6 Mag. Ms 6.7 (BRK) 6.1 MB 7.0 MSZ (GS)
		S	ZNE	10	04	20					
		ess	ZE		08	00					
		elq	ZNE		11						
		Lr	ZNE		14						
70	24	P	ZNE	12	01	44				7.6	USGS: 17.91S, 178.58W Fiji Islands region h = 589 km H = 11 59 52.1* Mag. 4.4 (GS)
		S	ZNE		03	11					
71	24	P	ZNE	21	11	35	4.0	0.9			
		S	ZNE		13	14					
72	24	iP	ZNE	22	52	37				9.6	u? USGS: 20.87S, 178.73W Fiji Islands region h = 597 km H = 22 50 27.8 Mag. 4.9 (GS)
		S	ZNE		54	20					
73	25	iP	ZNE	02	47	03.2					d
74	25	P	ZNE	04	51	16				16.6	USGS: 29.62S, 177.02W Kermadec Islands h = 033 km N H = 04 47 34.7* Mag. 4.7 (GS)
		S	ZNE		54	00					
		T	ZNE	05	06						
75	25	P	ZNE	10	34	32					
		S	ZNE		35	22					
76	26	P	ZNE	02	14	14	12.5	1.0		8.9	USGS: 20.40S, 177.95W Fiji Islands region h = 550 km H = 02 12 11.8 Mag. 5.1 (GS)
		S	ZNE		15	49					
77	26	iP	ZNE	08	21	15					u
78	26	P	Z	10	49	57				16.1	USGS: 29.41S, 176.38W Kermadec Islands region h = 033 km N H = 10 46 13.3* Mag. 4.7 MB 5.2 MSZ (GS)
79	26	P	ZNE	14	50	51				7.3	USGS: 20.19S, 175.54W Tonga Islands h = 242 km H = 14 49 13.7* Mag. 4.9 (GS)
		S	ZNE		52	00					
80	27	P	ZNE	01	40	00				9.2	USGS: 17.47S, 179.53E Fiji Islands h = 616 km H = 01 37 57.9* Mag. 4.8 (GS)
81	27	P	ZNE	18	10	11	11.5	0.9		10.6	USGS: 21.67S, 179.29W Fiji Islands region h = 591 km H = 18 07 49.3 Mag. 5.2 (GS)
		S	ZNE		12	03					
			ZNE		14	09					
82	27	P	ZNE	20	14	32				42.7	USGS: 04.65S, 145.81E Near N. Coast of Papua New Guinea Felt h = 028 km H = 20 06 33.2 Mag. Ms 6.8 (BRK) 5.8 MB 6.6 MSZ (GS)
		PP	ZE		15	48					
		S	ZNE		20	52					
		SS	E		22	00					
		Lq	ZN		24						
		Lr	ZE		26						

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
83	28	P	ZNE	01	40	02				
		S	ZNE			30				
84	28	eS	E	09	32	53			75	USGS: 24.11N, 122.62E Taiwan region Felt h = 044 km H = 09 11 19.4 Mag. 5.4 MB 5.9 MSZ (GS)
		eL	ZNE		45					
85	28	P	ZNE	19	01	23				
		S	ZNE		02	19				
		T	ZNE		07					
86	29	P	ZNE	13	02	17				
		S	ZNE			55				
87	29	P	ZNE	14	04	40	6.2	1.7	50.6	USGS: 01.77S, 158.52E Near N. Coast of Papua New Guinea h = 044 km D H = 13 55 42.8 Mag. 5.7 MB 5.5 MSZ (GS)
88	29	P	ZNE	21	52	16	1.8	1.1	66	USGS: 00.02N, 123.32E Minahassa Peninsula h = 175 km H = 21 41 46.6 Mag. 5.7 (GS)
89	30	P	ZNE	14	39	51	2.7	1.0	41.4	USGS: 05.46S, 147.01E East Papua New Guinea region h = 194 km H = 14 32 21.1 Mag. 5.2 (GS)
90	30	iP	ZNE	16	17	27				u
		S	ZNE			47				
91	30	P	ZNE	16	42	53			16.8	USGS: 30.41S, 174.76W Kermadec Islands region h = 033 km N H = 16 38 38.2* Mag. 4.7 (GS)
		S	ZNE		45	49				
92	31	P	ZNE	05	11	32	8.9	0.9	7.9	USGS: 19.80S, 177.20W Fiji Islands region h = 421 km H = 05 09 39.0* Mag. 5.0 (GS)
		S	ZNE		12	57				
93	31	iP	ZNE	20	22	47.1			3.7	d
		S	ZNE		23	25				USGS: 14.59S, 175.61W Samoa Islands region h = 066 km H = 20 22 03.9* Mag. 4.3 (GS)
		T	ZNE		25					



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No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
1	1	P (S)	ZNE ZNE	10	08	33				
2	1	P S	ZNE ZNE	18	00	15			12.6	USGS: 23.63S, 179.97W South of Fiji Islands h = 519 km H = 17 57 33.4 Mag. 5.0 (GS)
3	1	iP S	ZNE unreadable due to rapid motion	20	19	24				u
4	1	P S e	ZNE ZNE Z	21	32	42			20.0	USGS: 17.64S, 167.80W Vanuatu Islands h = 033 km N H = 21 28 09.6 Mag. 5.0 MB 5.0 MSZ(GS)
5	2	P (S)	ZNE ZNE	14	13	48				
6	2	P S T	ZNE ZNE ZNE	23	38	19				
7	3	P (S)	ZNE ZNE	02	10	17				
8	3	P es	ZNE ZNE	03	14	14	19.5	1.0	20.4	USGS: 14.32S, 167.22E Vanuatu Islands h = 156 km D H = 03 09 44.2 Mag. 5.5 (GS)
9	3	P S	ZNE ZNE	10	34	46			9.3	USGS: 20.45S, 178.45W Fiji Islands region h = 592 km H = 10 32 36.1 Mag. 4.7 (GS)
10	3	eP	ZNE	18	40	14			53	USGS: 55.59S, 146.63E West of Macquarie Is. h = 010 km G H = 18 31 00.2 Mag. 5.1 (GS)
11	3	P	ZNE	21	30	27				
12	3	P S	ZNE ZNE	22	51	23			7.6	USGS: 18.14S, 178.38W Fiji Islands region h = 599 km H = 22 49 28.6* Mag. 4.6 (GS)
13	4	P S	ZNE ZNE	05	33	20			10.4	USGS: 21.41S, 179.27W Fiji Islands region h = 606 km H = 05 30 58.9 Mag. 5.1 (GS)
14	4	iP S	ZNE unreadable due to rapid motion	05	46	41				u
15	5	P	ZNE	06	29	38			20.8	USGS: 14.96S, 166.65E Vanuatu Islands h = 038 km H = 06 24 54.9 Mag. 5.2 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
16	6	P S	ZNE ZNE	00	27 28	03 20			8.0	USGS: 21.01S, 175.73W Tonga Islands h = 119 km D H = 00 25 15.7 Mag. 5.3 (GS)
17	6	e(P)	Z	02	39	45				
18	6	P eS eLq eLr	ZNE ZNE NE ZNE	04	22 30 36 38	31 04			53	USGS: 55.51S, 147.08E West of Macquarie Islands h = 010 km G H = 04 13 18.9 Mag. 5.5 MB 6.0 MSZ(GS)
19	6	iP (s)	ZNE ZNE	06	24 25	44.9 07				d
20	6	P PP S (PcS)	ZNE ZNE ZNE ZNE	23	12 13 16 20	29 24 24 15			19.1	USGS: 18.90S, 168.85E Vanuatu Islands h = 182 km D H = 23 08 22.3 Mag. 5.7 (GS)
21	7	P	ZNE	13	41	03			21.7	USGS: 11.83S, 166.04E Santa Cruz Islands h = 043 km H = 13 36 11.5 Mag. 5.4 MB 4.7 MSZ (GS)
22	7	P	ZNE	13	44	17			21.6	USGS: 11.80S, 166.09E Santa Cruz Islands h = 045 km H = 13 39 28.1 Mag. 5.1 (GS)
23	7	P S	ZNE ZNE	17	31 32	10 26			7.5	USGS: 20.14S, 175.99W Tonga Islands h = 254 km H = 17 29 25.2* Mag. 4.7 (GS)
24	8	P	ZNE	00	06	43			59	USGS: 07.41S, 128.31E Banda Sea h = 033 km N H = 23 56 44.3 Mag. 5.2 (GS)
25	8	P (s)	ZNE ZNE	19	35 38	54 15				
26	8	P	ZNE	19	57	02			41.4	USGS: 05.73S, 147.03E East Papua New Guinea reg. h = 136 km H = 19 49 27.1 Mag. 5.3 (GS)
27	9	eP	ZNE	03	59	14			13.9	USGS: 24.37S, 178.62E South of Fiji Islands h = 575 km H = 03 56 16.6* Mag. 4.8 (GS)
28	10	P	ZNE	10	30	09			19.6	USGS: 17.65S, 168.18E Vanuatu Islands h = 072 km H = 10 25 43.2 Mag. 5.4 (GS)
29	10	P	ZNE	14	21	16			65	USGS: 05.12N, 125.50E Mindanao, Philippine Is. h = 046 km H = 14 10 36.2 Mag. 5.5 MB 5.4 MSZ (GS)



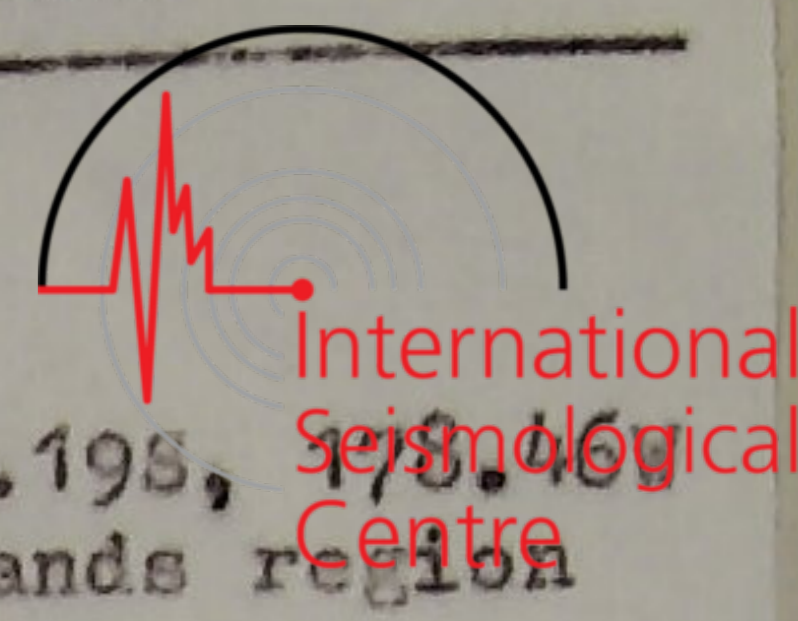
No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
30	10	P S	ZNE ZNE	20	47 49	37 16	8.0	1.0		7.1	USGS: 17.87S, 177.94W Fiji Islands region h = 599 km H = 20 45 45.5 Mag. 4.6 (GS)
31	11	eP	ZNE	05	05	32				19.7	USGS: 22.09S, 169.35E Loyalty Islands region h = 033 km N H = 05 01 01.3 Mag. 4.7 (GS)
32	11	P S T	ZNE ZNE ZNE	14	36 38 45	37 05				8.8	USGS: 22.15S, 174.58W Tonga Islands region h = 033 km N H = 14 34 40.8* Mag. 4.7 (GS)
33	12	(P)	ZNE	16	18	11				26.1	USGS: 38.16S, 177.61E North Island, N. Zealand Felt h = 075 km H = 16 12 49.4* Mag. 5.2 (GS)
34	12	P S	ZNE ZNE	17	02 03	06 36				7.6	USGS: 17.78S, 178.60W Fiji Islands region h = 562 km H = 17 00 11.4* Mag. 4.8 (GS)
35	13	P PcP eS eScS	ZNE ZNE ZNE ZNE	22	12 14 18 21	30 16 07 44				40.1	USGS: 05.65S, 148.30E New Britain region h = 168 km D H = 22 05 07.8 Mag. mb 5.9 (BRK) 5.8(GS)
36	14	P	Z	08	13	45				20.6	USGS: 14.84S, 167.04E Vanuatu Islands h = 071 km H = 08 09 06.4 Mag. 5.2 (GS)
37	14	P (S)	ZNE ZNE	17	54 56	30 33					
38	14	P S T	ZNE ZNE ZNE	23	37 38 41	53 31				3.3	USGS: 16.97S, 172.35W Samoa Islands region h = 033 km N H = 23 37 05.4*
39	15	P	Z	10	20	05				18.9	USGS: 15.50S, 168.74E Vanuatu Islands h = 255 km H = 10 15 58.2* Mag. 4.6 (GS)
40	15	(P)	ZNE	22	34	17					
41	16	P S	ZNE ZNE	06	25 26	22 53	11.5	1.0		7.7	USGS: 18.16S, 178.45W Fiji Islands region h = 586 km H = 06 23 30.0 Mag. 4.7 (GS)
42	16	P S	ZNE ZNE	07	46 47	43 51				7.0	USGS: 19.52S, 175.96W Tonga Islands h = 277 km H = 07 45 14.2? Mag. 4.5 (GS)
43	16	(P)	ZNE	10	29	27					
44	16	P S	ZNE ZNE	10	44 45	08 42				8.9	USGS: 20.72S, 177.56W Fiji Islands region h = 507 km H = 10 42 07.0* Mag. 4.8 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
45	17	P S	ZNE ZNE	05	16	27			6.0	USGS: 16.23S, 177.50W Fiji Islands region h = 442 km H = 05 14 54.6" Mag. 4.4 (GS)
46	17	P	ZNE	14	26	18	2.6	1.1	61	USGS: 06.65S, 126.76E Banda Sea h = 452 km H = 14 46 49.3 Mag. 5.6 (GS)
47	17	P	ZNE	19	48	19			19.9	USGS: 15.06S, 166.69E Vanuatu Islands h = 050 km H = 19 43 31.0 Mag. 5.4 MB 4.9 MSZ (GS)
48	18	P S	ZNE ZNE	06	50	00			3.2	USGS: 15.93S, 174.35W Tonga Islands Felt at Pago Pago, Am. Sam h = 150 km H = 06 49 13.9 Mag. mb 6.4 (BRK) 6.0' (GS)
49	18	P S	ZNE ZNE	08	29	59				
50	18	P	ZNE	16	05	22			7.5	USGS: 18.10S, 178.31W Fiji Islands region h = 629 km H = 16 03 25.5* Mag. 4.7 (GS)
51	18	P S	ZNE ZNE	21	02	54				
52	19	e(S) eL	NE ZNE	08	54	00			91	USGS: 31.76S, 071.80W Near Coast of Central Chile Felt h = 033 km D H = 08 28 53.4 Mag. 5.5 MB 5.6 MSZ(GS)
53	19	P S	ZNE ZNE	13	05	18			6.8	USGS: 17.72S, 178.59W Fiji Islands region h = 554 km H = 13 03 24.4* Mag. 4.5 (GS)
54	19	P (S)	ZNE ZNE	21	32	22				
55	20	iP PP eS	ZNE ZNE ZNE	06	41	40	12.5	1.0	73	u USGS: 50.12N, 148.75E Sea of Okhotsk h = 582 km D H = 06 31 10.6 Mag. 6.0 (GS)
56	20	(P)	ZNE	08	11	55				
57	20	P	ZNE	08	30	59				
58	20	P	ZNE	10	06	08			65	USGS: 05.52N, 126.00E Mindanao, Philippine Is. h = 106 km H = 09 55 37.8 Mag. 5.5 (GS)
59	21	P S	ZNE ZNE	12	31	45				

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
60	21	iP (s)	ZNE ZNE	12	36	36				2.3	Id? USGS: 15.68S, 172.97W Samoa Islands region h = 073 km H = 12 36 16.0 Mag. 5.4 (GS)
61	21	P S	ZNE ZNE	18	43	36				2.2	USGS: 15.64S, 173.14W Tonga Islands h = 033 km N H = 18 43 09.6 Mag. 4.8 (GS)
62	22	iP S	ZNE ZNE	03	35	24				10.8	u? USGS: 21.87S, 179.38W Fiji Islands region h = 593 km D H = 03 33 00.5 Mag. 5.7 (GS)
63	23	P S	ZNE ZNE	00	02	50				4.4	USGS: 16.08S, 172.87W Samoa Islands region h = 033 km N H = 00 02 21.2? Mag. 4.8 (GS)
64	23	P S	ZNE ZNE	10	25	02					
65	23	P	ZNE	16	56	59					
66	23	(PKP) Z	Z	21	45	07				120	USGS: 36.43N, 070.75E Hindu Kush region Felt h = 209 km D H = 21 26 39.2 Mag. 5.3 (GS)
67	23	P e(PcP) Z ePP eS e(SS) eLr	ZNE Z Z ZNE NE ZNE	21	51	14				71	USGS: 47.45N, 146.69E Northwest of Kuril Is. Felt h = 414 km D H = 21 40 35.5 Mag. 6.0 (GS)
68	24	P e(PcP) ePP S eL	ZNE ZNE Z ZNE ZNE	04	21	32				65	USGS: 30.91N, 138.43E South of Honshu, Japan Felt h = 403 km H = 04 11 29.0 Mag. 6.1 (GS)
69	24	P (s)	ZNE ZNE	10	19	11					
70	24	F S T	ZNE ZNE ZNE	16	25	22				5.0	USGS: 18.75S, 172.54W Tonga Islands region h = 033 km N H = 16 24 16.9* Mag. 4.8 (GS)
71	24	eP eS eL	ZNE ZNE ZNE	21	26	34				70	USGS: 37.32N, 121.70W Central California Felt h = 008 km G H = 21 15 19.06& Mag. ML 6.2 (BRK) 5.7 MB 6.1 MSZ (GS)
72	25	P (s)	ZNE ZNE	00	50	41					
73	25	iP S	ZNE ZNE	04	21	03.2				6.2	d USGS: 17.31S, 177.23W Fiji Islands region h = 415 km H = 04 19 32.0 Mag. 5.7 (GS)

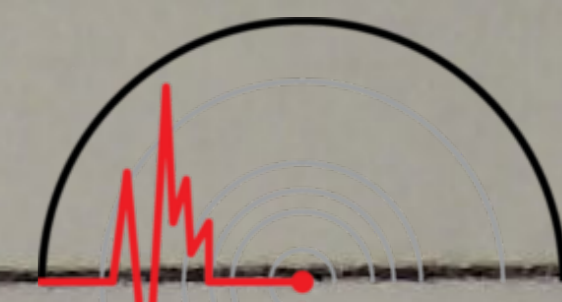
No	Date	Phase	(G.M.T.)	As	Tz	An	Tn	Ae	Te	(Mag.)	Remarks
74	25	P (s)	ZNE ZNE	08	25	43					
75	25	P S T	ZNE ZNE ZNE	14	04 06 14	58 38				10.3	USGS: 23.71S, 174.86W Tonga Islands region h = 033 km N H = 14 02 43.6 Mag. 5.2 (GS)
76	26	iP S	ZNE ZNE	07	08 09	52.5 13				2.2	d USGS: 15.87S, 172.53W Samoa Islands region h = 033 km N H = 07 08 25.1 Mag. 4.9 (GS)
77	26	P S	ZNE ZNE	17	03 05	54 20				9.0	USGS: 21.23S, 177.26W Fiji Islands region h = 429 km H = 17 02 12.5 Mag. 4.8 (GS)
78	27	P	ZNE	02	24	29					
79	27	iP S	ZNE ZNE	19	56	25 48					u
80	27	P S	ZNE ZNE	20	51 53	53 02					
81	28	P (s)	ZNE ZNE	01	01 04	46 29					
82	28	P (s)	ZNE ZNE	01	47 48	30 36					
83	28	P (s)	ZNE ZNE	04	12 13	43 50					
84	28	P (s)	ZNE ZNE	04	27 28	35 45					
85	28	P	ZNE	07	08	10					
86	28	P (s)	ZNE ZNE	14	37 38	26 49					
87	28	iP S	ZNE ZNE	15	28	12 32					u
88	28	iP S	ZNE ZNE	15	36 37	59.5 13				0.8	u USGS: 14.43S, 172.36W Samoa Islands h = 033 km N H = 15 36 47.0* Mag. 5.1 (GS)
89	29	P (s)	ZNE ZNE	11	21	02 20				2.1	USGS: 15.24S, 173.50W Tonga Islands h = 033 km N H = 11 20 30.3* Mag. 4.6 (GS)
90	29	P S	ZNE ZNE	14	59 00	52 39					
91	29	P S	ZNE ZNE	17	21 22	45 52				7.1	USGS: 19.71S, 175.70W Tonga Islands h = 236 km H = 17 20 14.8 Mag. 5.3 (GS)
92	29	P es e	ZNE NE ZNE	22	38 42 43	38 32 44				20.6	USGS: 18.06S, 167.24E Vanuatu Islands h = 033 km N H = 22 34 00.4* Mag. 5.2 ME 4.9 MSZ(GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
93	30	iP S	ZNE ZNE	08	48	25.5 54					u
94	30	P S	ZNE ZNE	10	12 14	45 12				7.7	USGS: 19.19S, 178.46W Fiji Islands region h = 485 km H = 10 10 53.6*



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No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
1	1	P eS eSS eLr	ZNE ZNE N ZE	04	13	45			42.6	USGS: 04.538, 146.10E East Papua New Guinea region h = 033 km N H = 04 05 44.3 Mag. 5.3 MB 5.1 MSZ(GS)
2	1	P S T	ZNE ZNE ZNE	12	35	05				
3	1	P (S)	ZNE ZNE	20	13	43				
4	2	P S T	Z ZN ZNE	12	07	59			20.3	USGS: 33.058, 178.93W South of Kermadec Islands h = 033 km N H = 12 03 41.7* Mag. 5.0 MB 4.7 MSZ(GS)
5	3	P	ZNE	12	40	31	3.6	1.0	76	USGS: 08.578, 111.34E Java h = 086 km H = 12 28 51.7 Mag. 5.7 (GS)
6	4	P eS eL	Z ZN ZNE	00	33	34			53	USGS: 55.518, 146.56E West of Macquarie Island h = 010 km G H = 00 24 20.6 Mag. 5.2 MB 5.4 MSZ(GS)
7	4	P eS eS	Z NE Z	06	45	57			13.6	USGS: 16.86S, 174.41E Fiji Islands region h = 023 km H = 06 42 39.0 Mag. 5.0 (GS)
8	7	P S	ZNE ZNE	01	15	38				
9	7	P S	ZNE ZNE	03	52	37				
10	7	PKP	ZNE	18	09	42			153	USGS: 41.77N, 013.90E Southern Italy Felt h = 010 km G H = 17 49 41.6 Mag. ML 6.0 (TRI) Ms 5.8 (BRK) 5.5 MB 5.8 MSZ(GS)
11	7	(P)	ZNE	21	42	34				
12	8	P S T	ZNE ZNE ZNE	03	41	11			17.4	USGS: 30.31S, 177.72W Kermadec Islands Felt on Raoul h = 033 km N H = 03 37 14.5 Mag. Ms 6.0 (BRK) 5.8(PAS) 5.6 MB 6.0 MSZ (GS)
13	8	P S	ZNE ZNE	05	41	05				
14	8	P S T	ZNE ZNE ZNE	07	01	08			6.5	USGS: 20.17S, 173.39W Tonga Islands h = 033 km N H = 06 59 40.0 Mag. 5.2 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
15	8	P (s)	ZNE ZNE	09	57 58	02 00					
16	8	P S	ZNE ZNE	10	31 32	48 34					
17	9	iP S	ZNE ZNE	11	41 42	27.5 00				2.3	d USGS: 15.49S, 173.38W Tonga Islands h = 033 km N H = 11 40 59.6 Mag. 4.7 (GS)
18	11	P S T	ZNE ZNE ZNE	09 10	57 58 03	53 56				5.8	USGS: 19.36S, 173.50W Tonga Islands h = 033 km N H = 09 56 35.6 Mag. 5.3 MB 4.8 MSZ(GS)
19	12	P S T	ZNE ZNE ZNE	00	35 36 40	21 14				5.8	USGS: 19.46S, 173.32W Tonga Islands h = 033 km N H = 00 34 03.6? Mag. 4.3 (GS)
20	12	P S T	ZNE ZNE ZNE	18 19	52 54 05	16 34				14.1	USGS: 27.08S, 176.67W Kermadec Islands region h = 033 km N H = 18 49 06.3 Mag. 5.3 MB 5.0 MSZ (GS)
21	12	P S	ZNE ZNE	21	01 02	20 57				8.6	USGS: 21.12S, 176.64W Fiji Islands region h = 577 km H = 20 59 02.7 Mag. 4.8 (GS)
22	12	P (s)	ZNE ZNE	22	24 26	07 15	2.0	1.0			
23	13	P S T	ZNE ZNE ZNE	14 15	57 00 16	15 43				20.6	USGS: 33.33S, 179.37W South of Kermadec Island h = 033 km N H = 14 52 39.0 Mag. 5.4 MB 4.5 MSZ(GS)
24	13	P S T	ZNE ZNE ZNE	19	16 17 21	28 16				5.6	USGS: 19.36S, 172.82W Tonga Islands region h = 033 km N H = 19 15 18.5 Mag. 4.9 MB 4.9 MSZ(GS)
25	14	P S	ZNE ZNE	15	07 09	37 40	10.9	1.8		10.2	USGS: 15.25S, 177.81E Fiji Islands h = 033 km N H = 15 05 10.3 Mag. 5.1 MB 5.0 MSZ(GS)
26	15	eP S T	ZN ZN ZN	14	24 25 30	46 34					
27	15	P	ZN	15	34	11				6.9	USGS: 00.82N, 119.93E Minahassa Peninsula h = 046 km H = 15 23 05.5 Mag. 5.5 MB 4.9 MSZ(GS)
28	16	eP S T	ZN ZN ZN	02	12 13 15	29 00					
29	17	P S L	ZNE ZNE ZE	09	26 30 32	41 40				20.9	USGS: 14.06S, 166.56E Vanuatu Islands h = 025 km D H = 09 21 55.0 Mag. 5.5 MB 5.6 MSZ(GS)



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No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
30	17	P S T	ZN ZN ZN	13	15 16 21	50 44				
31	17	ePP e e eSS eSSS eLq eLr	ZNE ZNE ZNE ZNE ZE NE ZNE	17	13 23 24 29 33 42 47	32 20 32 28 12			116	USGS: 36.45S, 1052.42E Atlantic-Indian Rise h = 010 km G H = 16 53 46.3 Mag. 5.7 MB 6.2 MSZ(GS)
32	18	P S	ZN ZN	07	29 31	58 29	13.5	1.0	7.9	USGS: 17.55S, 178.96W Fiji Islands region h = 540 km H = 07 28 04.1 Mag. 4.8 (GS)
33	18	P eS	Z ZE	09 10	59 04	45 52			19.7	USGS: 17.73S, 168.12E Vanuatu Islands h = 043 km H = 09 55 05.1 Mag. 5.2 (GS)
34	18	P S	ZN ZN	11 12	58 00	26 47			13.8	USGS: 24.95S, 179.62E South of Fiji Islands h = 516 km H = 11 55 29.2 Mag. 4.7 (GS)
35	18	P eS eL	ZE ZNE ZE	13	23 27 30	40 52			23.0	USGS: 10.86S, 165.00E Santa Cruz Islands reg. h = 033 km N H = 13 18 38.5 Mag. 4.9 (GS)
36	19	eP eS eL	Z ZN ZNE	11	07 12 14	52 00			23.0	USGS: 10.89S, 165.02E Santa Cruz Islands h = 047 km H = 11 02 51.8 Mag. 4.8 (GS)
37	19	eP eS eL	Z ZN ZNE	14	50 54 56	00 20			23.0	USGS: 10.78S, 164.92E Santa Cruz Islands reg. h = 033 km N H = 14 45 03.7 Mag. 5.5 MB 4.8 MSZ(GS)
38	19	P S	ZNE ZNE	23	13 14	50 37				
39	20	P S	ZN ZN	01 02	59 01	19 33	5.0	1.0	12.8	USGS: 24.19S, 179.58W South of Fiji Islands h = 491 km H = 01 56 35.3* Mag. 4.7 (GS)
40	20	P S	ZN ZN	07	25 27	33 44			12.9	USGS: 24.26S, 179.76W South of Fiji Islands h = 527 km H = 07 22 45.1 Mag. 4.9(GS)
41	20	P S	ZN ZN	20	02 04	09 15	9.0	0.9	14.4	USGS: 25.51S, 179.37E South of Fiji Islands h = 568 km H = 19 59 33.8 Mag. 5.1 (GS)
42	20	P eS	ZN ZNE	22	10 14	03 20			20.1	USGS: 15.41S, 167.48E Vanuatu Islands h = 132 km D H = 22 05 37.0 Mag. 5.5 (GS)

No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
43	21	eP S	ZN ZN	08 13	10 24	32 24			17.9	USGS: 30.85S, 177.80W Kermadec Islands h = 033 km N H = 08 06 24.2* Mag. 5.3 (GS)
44	21	P	ZN	15	51	03			79	USGS: 32.69N, 121.51E Eastern China Felt h = 018 km H = 15 38 58.7 Mag. Ms 5.8 (BRK) 5.7 MB 6.0 MSZ (GS)
45	22	P (S)	ZNE ZNE	03	32 34	08 06				
46	22	P S	ZNE ZNE	14	42 43	58 48				
47	23	P S T	ZNE ZNE ZNE	01	53 55 02	05 29 05				
48	23	P S	ZNE ZNE	04	44 45	36 23			5.1	USGS: 18.01S, 174.57W Tonga Islands h = 135 km D H = 04 43 29.0 Mag. 4.8 (GS)
49	23	P eS eSS eLr	ZNE ZN ZN ZN	05	24 31 34 37	46 12 48	3.5	1.0	44	USGS: 51.95S, 161.09E North of Macquarie Island h = 010 km G H = 05 16 33.1 Mag. 5.9 MB 5.9 MSZ(GS)
50	23	P (S)	ZNE ZNE	08	02 04	17 38				
51	23	P	ZNE	08	43	50				
52	24	P S	ZNE ZNE	01	26 27	10 40			4.8	USGS: 15.83S, 167.27W Samoa Islands region h = 033 km N H = 01 22 10.5? Mag. 5.2 (GS)
53	25	iP S	ZNE ZNE	01	54	04.5 25				d
54	25	P S T	ZNE ZNE ZNE	02	36 39 55	52 56			17.9	USGS: 30.65S, 178.21W Kermadec Islands Felt on Raoul h = 059 km D H = 02 32 45.9 Mag. 5.5 (GS)
55	25	P S	ZNE ZNE	08	01 04	17 46			17.5	USGS: 30.42S, 177.83W Kermadec Islands Felt on Raoul h = 033 km N H = 07 57 47.7 Mag. 5.1 MB 4.6 MSZ (GS)
56	25	P S	ZNE ZNE	12	03 04	02 40	4.0	1.0	7.5	USGS: 17.40S, 178.66W Fiji Islands region h = 581 km H = 12 01 07.4* Mag. 4.7 (GS)
57	25	P S	ZNE ZNE	16	19	06 51				
58	25	P S	ZNE ZNE	19	07 09	12 30			13.6	USGS: 24.61S, 179.49E South of Fiji Islands h = 506 km H = 19 04 22.7* Mag. 4.6 (GS)

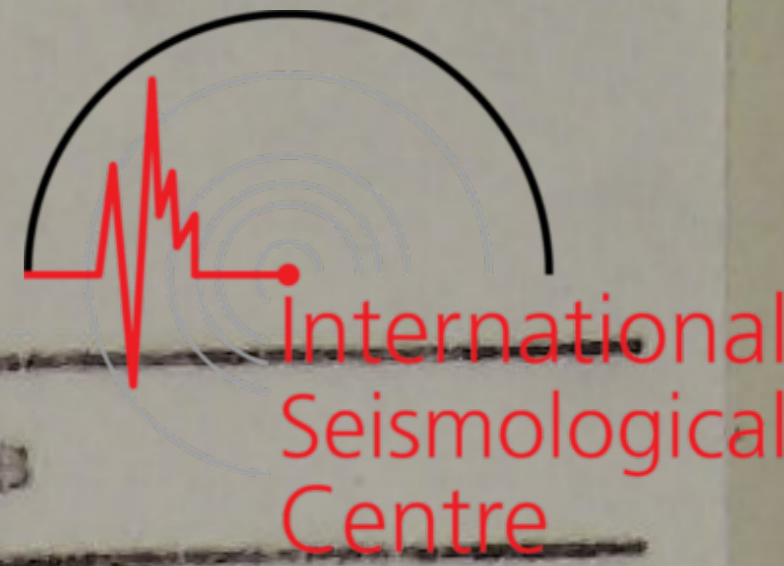


No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
59	26	eS Lq Lr	ZNE ZNE ZN	00	09	56				50	USGS: 54.988, 135.69W South Pacific Cordillera h = 010 km G H = 23 53 51.9 Mag. 5.8 MB 6.3 MSZ (GS)
60	26	eS Lq Lr	ZNE ZNE ZNE	03	00	52				50	USGS: 54.878, 135.42W South Pacific Cordillera h = 010 km G H = 02 44 46.5 Mag. 5.4 MB 5.9 MSZ (GS)
61	26	e eSS e(SKKS) e(SSS) eLq eLr	ZNE ZNE ZN N NE ZN	04	28	24 35 52 30 48 53				118	USGS: 43.558, 038.94E Prince Edward Islands re region. Possibly felt on Marion Island h = 010 km G H = 03 58 56.9 Mag. Ms 6.5 (PAS) 5.7MB 6.4 MSZ (GS)
62	26	P S	ZNE ZNE	21	50	30 28					
63	26	P S Lr	ZNE ZN Z	22	47	56 16 54				23.6	USGS: 10.90S, 164.18E Santa Cruz Islands reg. h = 027 km H = 22 42 47.3 Mag. Ms 5.9 (PAS) 5.8MB 6.2 MSZ (GS)
64	26	P	ZNE	23	06	02				23.7	USGS: 10.89S, 164.12E Santa Cruz Islands reg. h = 039 km H = 23 00 51.3 Mag. 5.5 MB 5.7 MSZ(GS)
65	26	P	ZNE	23	27	45	9.0	1.0		40.5	USGS: 06.20S, 147.82E East Papua New Guinea region h = 055 km H = 23 20 10.7 Mag. 5.6 (GS)
66	27	P S	ZNE ZNE	08	50	53 38					
67	28	P (S)	ZNE ZNE	07	53	56 49					
68	28	P	ZNE	16	41	12					
69	28	P	ZNE	20	00	34					
70	29	P S	ZNE ZNE	04	11	58 31					
71	29	P S T	ZNE ZNE ZNE	19	14	26 43 21				7.6	USGS: 21.19S, 173.69W Tonga Islands h = 033 km N H = 19 12 42.2 Mag. 5.0 MB 5.4 MSZ(GS)
72	29	P S	ZNE ZNE	22	46	34 05				9.5	USGS: 22.10S, 176.50W South of Fiji Islands h = 177 km H = 22 44 34.4 Mag. 4.9 (GS)
73	30	P PP S sS SS ScS sScS	ZN ZN ZN ZN ZN Z Z	07	56	40 20 12 12 20 00 20				37.2	USGS: 04.84S, 151.58E New Britain region Felt h = 174 km D H = 07 49 43.6 Mag. mb 6.2 (PAS) 6.2(GS)

No	Date	Phase	(S.M.T.)	Az	Tz	An	Tn	Ao	Te (Deg.)	Remarks
74	30	P S	ZN ZN	09	20	15			12.2	USGS: 23.78S, 179.26W South of Fiji Islands h = 424 km H = 09 17 38.5 Mag. 4.8 (GS)
75	31	iP S	ZNE ZNE	00	14	50.5			2.1	u USGS: 15.30S, 173.36W Tonga Islands h = 033 km N H = 00 14 18.3 Mag. 4.6 (GS)
76	31	P S	ZNE ZNE	01	27	46			6.4	USGS: 16.10S, 178.03W Fiji Islands region h = 033 km N H = 01 26 16.4 Mag. 4.7 MB 4.8 MSZ (GS)
77	31	P S T	ZNE ZNE ZNE	08	33	53	11.9	1.0	11.1	USGS: 23.55S, 177.30W South of Fiji Islands h = 189 km H = 08 31 34.1 Mag. 4.9 (GS)
78	31	P	Z	13	15	32			7.3	USGS: 37.10N, 116.05W Southern Nevada (DOE) h = 000 km G H = 13 04 00.18 37° 06' 11.28"N, 116° 02' 52.97"W. Surface Elev. 1264m, Depth of burial 600m, Shot Time 130400.102, "CAPROCK" Nevada. Test Site (Dept of Energy) Mag. 5.6 (BRK) 5.8 MB 4.1 MSZ (GS)
79	P	ZNE		14	40	05				



APIA OBSERVATORY
AFIAMALU WSSS FINAL SEISMIC READINGS
June 1984



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
1	1	(P)	ZNE	00	13	06					
2	2	P S	ZNE ZNE	03	50 53	00 29				19.9	USGS: 32.73S, 178.67W South of Kermadec Islands h = 033 km N H = 03 45 33.2 Mag. 5.3 MB 5.1 MSZ(GS)
3	2	P S T	ZNE ZNE ZNE	14	17 18 24	18 35				7.3	USGS: 20.76S, 174.24W Tonga Islands h = 033 km N H = 14 15 38.2 Mag. 5.0 MB 5.0 MSZ(GS)
4	2	iP S	ZNE ZNE	16	21	21.5 42					u
5	2	P (S)	ZNE ZNE	19	06 07	43 38					
6	3	P S	ZNE ZNE	13	35 36	52 34					
7	3	P eS eL	ZNE ZNE Z	14	50 54 55	39 00				17.9	USGS: 22.65S, 171.86E Loyalty Islands region h = 024 km H = 14 46 35.7 Mag. 5.3 MB 5.4 MSZ(GS)
8	3	P S	ZNE ZNE	16	03 05	38 41				20.0	USGS: 32.90S, 178.41W South of Kermadec Islands h = 033 km N H = 16 01 23.2 Mag. 5.1 (GS)
9	4	P (S)	ZNE ZNE	17	34	46.5 21					
10	5	e(S) eL	ZN Z	15	45 48	32				25.5	USGS: 10.95S, 162.32E Solomon Islands h = 069 km H = 15 35 34.0 Mag. 5.4 (GS)
11	5	P S T	ZNE ZNE ZNE	22	34	00 28 36					
12	6	e(P) eS eSS e(SSS) eLr	Z ZNE Z N ZE	05 06	48 57 01 04 08	52 20 32 32				63	USGS: 04.82S, 125.85E Banda Sea h = 033 km N H = 05 38 23.6 Mag. 5.7 MB 5.9 MSZ(GS)
13	7	P S T	ZNE ZNE ZNE	04	22	14 16 28					
14	7	P S	ZNE ZNE	05	55	10 47				3.6	USGS: 16.67S, 174.04W Tonga Islands h = 096 km H = 05 54 16.7* Mag. 4.8 (GS)
15	7	P S T	ZNE ZNE ZNE	12	07	55 30 11					

No	Date	Phase	(G.M.T.)	As	Tz	An	Tn	Ae	Te	(Deg.)	Remarks
16	8	P eS eSSS eLr	ZNE Z Z ZE	01 02	53 04	40 24				84	USGS: 05.80S, 104.17E Southern Sumatra Felt (II) h = 033 km N H = 01 41 14.2 Mag. 5.5 MB 6.1 MSZ(GS)
17	8	P S	ZNE ZNE	10	50 51	38 17					
18	10	P S	ZNE ZNE	01	31 33	31 53				13.1	USGS: 25.15S, 178.80W South of Fiji Islands h = 437 km H = 01 28 39.8 Mag. 5.0 (GS)
19	10	P S	ZNE ZNE	03	39 40	29 14				3.8	USGS: 15.87S, 175.01W Tonga Islands h = 282 km H = 03 38 26.2 Mag. 5.0 (GS)
20	11	eS e eSS e eLr	ZE ZE ZE Z ZNE	02	29 30 35 43 47	28 25 44 00				91	USGS: 30.17S, 071.18W Near Coast of Central C Chile Felt h = 046 km D H = 02 05 34.0 Mag. Ms 6.0 (BRK) 5.8 (PAS) 6.3 MB 5.8 MSZ(GS)
21	11	P	ZNE	08	49	31.5					
22	11	P S	ZNE ZNE	22	31	22 59					
23	13	P S	ZNE ZNE	01	51 52	56 48					
24	13	eP eS eL	Z Z ZN	02	40 49 59	05 13				65	USGS: 31.45N, 140.04E South of Honshu, Japan Felt h = 041 km H = 02 29 25.3 Mag. 5.5 MB 5.5 MSZ(GS)
25	13	P S	Z ZNE	20	09 10	14 44				7.6	USGS: 17.73S, 178.56W Fiji Islands region h = 614 km H = 20 07 19.0* Mag. 4.7 (GS)
26	15	P (S)	ZNE ZNE	01	32 34	26 12					
27	15	P S	ZNE ZNE	11	14 15	17.5 12				5.6	USGS: 18.05S, 174.95W Tonga Islands h = 267 km H = 11 13 05.4 Mag. 5.3 (GS)
28	15	iP S	ZNE ZNE	14	23 24	21 00				3.6	d USGS: 15.82S, 174.83W Tonga Islands h = 247 km D H = 14 22 23.0 Mag. 6.1 (GS)
29	16	P S	ZNE ZNE	22	09 10	48 36					
30	16	P (S) (T)	ZNE ZNE ZNE	22	34 36 46	33 53					
31	17	P (S)	ZNE ZNE	05	21 23	13 52					
32	17	P S	ZNE ZNE	05	40 41	21.5 36					



No	Date	Phase	(G.M.T.)	As	Tz	An	Tj	As	Te	(Deg.)	Remarks
33	18	eP ePcP ePP eS eSS e e eLr	Z Z Z ZN ZN' Z Z Z	11	33	24				95	USGS: 15.71S, 072.49W Southern Peru Felt h = 117 km D H = 11 20 17.9 Mag. 5.8 (GS)
34	18	P (s)	ZNE ZNE	22	05	48					
35	19	P S	ZNE ZNE	08	13	21	10.3	1.0		7.5	USGS: 21.01S, 179.01W Fiji Islands region h = 632 km H = 08 11 04.1 Mag. 4.8 (GS)
36	21	ePKP	Z	11	03	54				155	USGS: 35.36N, 023.24E Crete Felt h = 039 km H = 10 43 42.1 Mag. 5.8 MB 5.9 MSZ (GS)
37	21	P S	ZNE ZNE	16	44	07					
38	22	P	ZNE	08	28	41				63	USGS: 02.76N, 127.58E Molucca Passage h = 057 km H = 08 18 21.4 Mag. 5.7 (GS)
39	22	e e e(SSP) eLq eLr	ZN ZN Z N ZN	16	23	12				105	USGS: 58.32S, 015.79W Southwestern Atlantic Ocean h = 010 km G H = 15 55 28.4 Mag. Ms 6.0 (BRK) 6.2 MB 6.1 MSZ(GS)
40	23	P S	ZNE ZNE	19	25	12	5.3	1.0		7.8	USGS: 17.68S, 178.93W Fiji Islands region h = 575 km G H = 19 23 19.2 Mag. 4.5 (GS)
41	24	P S	ZNE ZNE	02	45	36					
42	24	ePP eS e eSS eLq eLr	Z N Z ZN ZN ZN	11	36	00				106	USGS: 17.98N, 069.34W Dominican Republic reg. Felt h = 024 km H = 11 17 11.9 Mag. Ms 6.6 (BRK) 6.5 (PAL) 6.3 (PAS) 6.0 MB 6.7 MSZ(GS)
43	24	eP eS eLr	ZNE ZN ZN	13	36	24				33.3	USGS: 43.54S, 170.67E South Island, N. Zealand h = 006 km H = 13 29 39.2 Mag. 5.8 MB 6.1 MSZ(GS)
44	24	eS eL	ZN ZNE	21	54	08				74	USGS: 51.19N, 130.36W Queen Charlotte Island region Felt h = 010 km G H = 21 33 09.5 Mag. ML 5.8 (OTT) 5.4 MB 5.8 MSZ(GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Te (Deg.)	Remarks
45	25	P S	ZNE ZNE	09	02	00			18.3	USGS: 30.90S, 178.85W Kermadec Islands h = 129 km H = 06 57 55.4 Mag. 5.5 (GS)
46	25	P S	ZNE ZNE	17	00	09			7.9	USGS: 18.09S, 178.68W Fiji Islands region h = 567 km H = 16 58 16.4 Mag. 4.7 (GS)
47	25	P S	ZNE ZNE	23	17	44			10.8	USGS: 21.69S, 179.53W Fiji Islands region h = 599 km H = 23 15 19.2* Mag. 4.8 (GS)
48	26	P	ZNE	01	22	06			62	USGS: 01.31S, 127.26E Halmahera h = 051 km H = 01 11 48.8 Mag. 5.5 MB 5.4 MSZ(GS)
49	27	(P)	ZNE	18	01	18				
50	27	P S	ZNE ZNE	20	58	24			7.4	USGS: 20.02S, 176.04W Fiji Islands region h = 254 km H = 22 10 25.3* Mag. 4.7 (GS)
51	27	P S	ZNE ZNE	22	11	57				
52	27	(P)	ZNE	23	03	06				
53	28	P	ZNE	02	36	29			11.5	USGS: 18.42S, 177.28E Fiji Islands Felt h = 010 km G H = 02 33 31.8 Mag. 5.0 MB 5.4 MSZ(GS)
54	28	P	ZNE	02	56	02			7.8	USGS: 17.89S, 178.79W Fiji Islands region h = 633 km H = 02 54 12.1* Mag. 4.8 (GS)
55	28	eP eS eLr	ZNE ZNE ZNE	11	26	48			35.9	USGS: 09.65S, 151.79E Dentrecasteaux Island reg. h = 020 km H = 11 19 46.5 Mag. 5.5 MB 5.6 MSZ (GS)
56	28	P eS eLr	ZNE ZN ZN	20	02	05			64	USGS: 02.92N, 126.56E Molucca Passage h = 063 km H = 19 51 24.1 Mag. 5.5 (GS)
57	29	P	Z	00	36	39			64	USGS: 02.91N, 126.56E Molucca Passage h = 050 km H = 00 26 10.5 Mag. 5.4 MB 4.4 MSZ (GS)
58	29	P S T	ZNE ZNE ZNE	04	30	31			7.3	USGS: 20.93S, 173.27W Tonga Islands h = 042 km D H = 04 28 52.3 Mag. 5.4 (GS)



No	Date	Phase	(G.M.T.)	Az	Tz	An	Tn	Ae	Tø	(Deg.)	Remarks
59	29	P	ZNE	15	31	34	4.4	1.0		18.5	USGS: 12.87S, 169.17E Santa Cruz Islands region h = 662 km H = 15 27 54.9 Mag. 5.0 (GS)
60	30	eS eSS eSSS	ZNE Z ZNE	11	54	20				54	USGS: 55.31S, 129.21W South Pacific Cordillera h = 010 km G H = 11 37 24.0 Mag. 5.3 MB 5.6 MSZ(GS)
61	30	P S	ZNE ZNE	12	12	03				7.8	USGS: 17.77S, 178.77W Fiji Islands region h = 571 km H = 12 10 10.1 Mag. 4.8 (GS)
62	30	P S	ZNE ZNE	17	50	54				7.0	USGS: 19.03S, 176.76W Fiji Islands region h = 033 km N H = 17 49 10.7* Mag. 4.9 (GS)

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