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Old seismologic reports

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SEISMIC OBSERVATIONS
AT FABRA OBSERVATORY IN 1995

by M^a TERESA SUSAGNA VIDAL
and RAMON SECANELL GALLART

The Observatory has now the following seismographs:

Station FONT (Coordinates 41° 45,7'N, 2° 26,0'E).

— Three short period «Teledyne Geotech» seismographs, vertical and horizontal components, with ink recording.

Station FBR (Coordinates 41° 25,0'N, 2° 07,5'E).

— Three short period «Mark-Lennartz» seismographs, vertical and horizontal components, with ink recording.

— Two long period «Mainka» seismographs, horizontal components, with mechanic recording.

— One short period «Vicentini» seismograph, vertical component, with mechanic recording.

We symbolize by ZT Teledyne Geotech vertical component, by NT and ET the Teledyne Geotech horizontal components, by ZL Mark-Lennartz vertical component, by NL and EL the Mark Lennartz horizontal components, by NM and EM the Mainka horizontal components and by ZV the Vicentini vertical component.

For the most outstanding earthquakes, we describe their epicentral characteristics, calculated by the Seismic Section of this Observatory, together with «Servei Geològic de Catalunya» (SGC) or provided by the United States Geological Survey (GS), by the «Centre Seismologique Europeo-Mediterranean» (CSEM), by the «Instituto Geográfico Nacional» (IGN) or by the «Laboratoire de Détection et de Déophysique» (LDG).

The average instrumental constants have been:

1) Electromagnetic seismograph (electronic and ink recording):

Type	Component	Mass (kg)	Period(s) To	Amplification m/ms ⁻¹	Damping
Teledyne Geotech	Z (ZT)	5	1	7200	0,7
	N-S (NT)	5	1	7200	0,7
	E-W (ET)	5	1	7200	0,7
Mark-Lennartz	Z (ZL)	1	1	510	0,7
	N-S (NL)	1	1	510	0,7
	E-W (EL)	1	1	510	0,7

2) Mechanical seismographs (recording on smoked paper):

Type	Component	Mass (kg)	Period(s) To	Damping	Friction	Amplification
Mainka	N-S (NM)	141	6,7	2	0,044	43,0
	E-W (EM)	144	6,4	2	0,043	59,2
Vicentini	Z (ZV)	56	0,9	—	—	125



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1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
4 Jan	NT	Pg	10	39	36,7		Ep.: Local
6	NT	P	22	50		10.080	Ep.: 40,2 N; 142,2 E; H = 22:37:34,3 h = 27 km; M = 6,7 (GS) Near East coast of Honshu, Japan
6	NT	Pn	23	10	10,0		Ep.: See pag. 104
	NT	Sg	23	10	21,4		
7	NT	Pg	00	15	03,0		Ep.: See pag. 104
	NT	Sg	00	15	14,3		
8	NT	Pg	23	16	56,0		Ep.: See pag. 104
	NT	Sg	23	17	05,6		
12	NT	Pg	10	56	50,5		Ep.: Local
	NT	Sg	10	56	54,6		
14	NT	Pg	19	11	46,8		Ep.: See pag. 104
	NT	Sg	19	11	58,5		
16	NT	Pg	21	26	46,6		Ep.: Local
18	NT	Pg	09	12	16,8		Ep.: Local
	NT	Sg	09	12	19,3		
19	NT	Pg	12	02	20,0		Ep.: Local
	NT	Sg	12	02	21,6		
20	NT	Pg	13	13	23,6		Ep.: Local
	NT	Sg	13	13	26,6		
21	NT	P	09	00		9.940	Ep.: 43,4 S; 146,7 E; H = 08:47:29,6 h = 59 km; M = 6,5 (GS) Kuril Islands
8 Feb	NT	Pn	04	22	57,6		Ep.: See pag. 104
	NT	Sn	04	23	32,8		
8	NT	Pn	04	40	06,6		Ep.: See pag. 104
	NT	Sn	04	40	29,4		
9	NT	Pg	10	49	29,0		Ep.: Local
	NT	Sg	10	49	38,0		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
9 Feb	NT	Pg	03	02	51,2	Ep.: Local	
	NT	Sg	03	02	54,5		
12	NT	Pn	15	31	47,6	Ep.: See pag. 104	
	NT	Sn	15	32	17,2		
12	NT	Pg	19	00	10,9	Ep.: Local	
	NT	Sg	19	00	22,3		
13	NT	Pg	08	46	40,0	Ep.: Local	
	NT	Pg	08	46	45,2		
13	NT	Pg	11	45	45,8	Ep.: Local	
	NT	Pg	11	45	55,9		
13	NT	Pg	13	35	45,3	Ep.: Local	
	NT	Sg	13	35	49,8		
14	NT	Pg	00	43	48,6	Ep.: Local	
	NT	Sg	00	43	52,0		
17	NT	Pg	11	24	17,3	Ep.: See pag. 105	
17	NT	Pn	11	34	31,2	Ep.: Local	
	NT	Sn	11	34	55,6		
20	NT	Pg	12	25	29,4	Ep.: Local	
	NT	Sg	12	25	40,4		
22	NT	Pg	14	08	06,7	Ep.: Local	
	NT	Sg	14	08	13,8		
23	NT	Pg	09	00	02,9	Ep.: Local	
	NT	Sg	09	00	15,0		
23	NT	Pg	09	07	00	Ep.: Local	
	NT	Sg	09	07	12,1		
3 Mar	NT	Pg	11	21	46,3	Ep.: Local	
	NT	Sg	11	21	50,3		
3	NT	Pg	13	37	06,3	Ep.: Local	
	NT	Sg	13	07	11,3		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
3 Mar	NT	Pn	13	54	04,1		Ep.: See pag. 105
	NT	Sn	13	54	26,1		
5	ZT	Pn	02	40	30,3		Ep.: See pag. 105
	ZT	Sn	02	40	48,3		
5	ZT	Pg	21	14	34,1		Ep.: Local
	ZT	Sg	21	14	38,4		
8	ZT	P	03	55		6.450	Ep.: 16,5 N; 59,5 W; H = 03:45:58,6 h = 8 km; M = 6,1 (GS) Leeward Islands
8	ZT	Pg	09	16	13,6		Ep.: Local
	ZT	Sg	09	16	24,3		
9	ZT	Pg	10	21	56,6		Ep.: See pag. 105
	ZT	Sg	10	22	07,8		
9	ZT	Pg	11	58	06,6		Ep.: Local
	ZT	Sg	11	58	08,6		
14	ZT	Pg	12	59	32,3		Ep.: Local
	ZT	Sg	12	59	46,1		
14	ZT	P	17	46		9.200	Ep.: 54,7 N; 161,3 W; H = 17:33:50,7 h = 35 km; M = 6,1 (GS) Alaska
15	ZT	Pg	11	36	23,0		Ep.: Local
	ZT	Sg	11	36	33,3		
15	ZT	Pn	19	44	39,7	3.435	Ep.: 43,9 N; 44,5 W; H = 19:42:48,8 h = 24 km; M = 4,2 (LDG) North-West of Spain (IGN)
	ZT	Sn	19	46	05,0		
24	ZT	Pg	12	22	44,6		Ep.: Local
	ZT	Sg	12	22	55,3		
25	ZT	P	23	04		16.420	Ep.: 10,9 S; 166,1 W; H = 22:44:28,9 h = 79 km; M = 5,9 (GS) Santa Cruz Islands
29	ZT	Pg	21	00	04,8		Ep.: Local
	NT	Sg	21	00	06,3		
31	ZT	Pg	09	15	16,6		Ep.: See pag. 106
	ZT	Sg	09	15	29,1		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
1 Abr	ZT	Pg	22	56	24,5	17.045	Ep.: Local
	ZT	Sg	22	56	26,9		
2	ZT	Pg	21	07	35,0	17.045	Ep.: Local
	ZT	Sg	21	07	36,7		
4	ZT	Pg	15	25	30,7	17.045	Ep.: Local
	ZT	Sg	15	25	33,0		
7	ZT	Pg	21	27	32,6	17.045	Ep.: See pag. 106
	ZT	Sg	21	27	35,0		
7	ZT	P	22	26		17.045	Ep.: 15,1 S; 173,6 W; H = 22:06:58,0 h = 31 km; M = 6,7 (GS) Tonga Island
8	ZT	Pg	18	58	59,1	17.045	Ep.: See pag. 106
	ZT	Sg	18	59	07,3		
10	ZT	Pg	10	56	44,5	17.045	Ep.: Local
	ZT	Sg	10	56	46,3		
13	ZT	P	2	53		16.675	Ep.: 13,3 S; 170,4 E; H = 02:34:38,3 h = 640 km; M = 5,5 (GS) Vanuatu islands
20	ZT	Pg	14	54	41,5	16.675	Ep.: Local
	ZT	Sg	14	52	43,0		
20	ZT	Pg	15	29	17,3	16.675	Ep.: Local
	ZT	Sg	15	29	19,3		
21	ZT	P	00	53		11.680	Ep.: 12,0 N; 125,0 E; H = 00:34:47,3 h = 23 km; M = 6,2 (GS) Samar, Philippine Islands
1 May	ZT	P	18	49		16.010	Ep.: 10,5 S; 161,4 E; H = 18:29:34,5 h = 32 km; M = 5,5 (GS) Solomon Islands
2	ZT	P	06	18		9.365	Ep.: 3,7 S; 76,9 W; H = 06:06:05,6 h = 97 km; M = 6,5 (GS) Northern Perú
	ZL	P	06	18			



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
4 May	ZT	P	00	38		1.800	Ep.: 40,5 N; 23,6 E; H = 00:34:09,1 h = 10 km; M = 5,1 (GS) Greece
4	ZT	Pg	01	51	18,6		Ep.: Local
	ZT	Sg	01	51	23,6		
4	ZT	P	02	38		12.770	Ep.: 1,9 N; 128,4 E; H = 02:18:47,9 h = 23 km; M = 5,9 (GS) Halmahera, Indonesia
4	ZT	Pn	15	38	38,3		Ep.: 42,9 N; 2,0 E; H = 15:38:18,8 h = 2,3 (GS) North of Pontarlier, France
	ZT	Sn	15	38	54,0		
4	ZT	P	02	09		2.364	Ep.: 34,7 N; 27,9 E; H = 16:03:30,7 h = 33 km; M = 4,7 (GS) Eastern Mediterranean sea
5	ZT	P	04	11		11.650	Ep.: 12,6 N; 125,3 E; H = 03:53:45,0 h = 16 km; M = 6,2 (GS) Samar, Philippine islands
5	ZT	Pg	07	58	24,6		Ep.: Local
	ZT	Sg	07	58	35,4		
5	ZT	Pg	11	06	08,6		Ep.: Local
	ZT	Sg	11	06	21,6		
6	ZT	P	02	10		8.445	Ep.: 24,9 N; 95,2 E; H = 01:59:07,1 h = 118 km; M = 6,4 (GS) Birmania
	ZL	P	02	10			
8	ZT	Pn	13	32	53,5		Ep.: See pag. 107
	ZT	Sn	13	33	24,7		
	ZL	Pn	13	33	23,3		
8	ZT	Pn	15	16	02,6		Ep.: See pag. 107
	ZT	Sn	15	16	33,8		
9	ZT	P	12	49		16.525	Ep.: 53,9 S; 134,3 W; H = 12:29:57,6 h = 10 km; M = 5,4 (GS) Pacific-Antartic Ridge
9	ZT	Pg	17	23	29,6		Ep.: Local
11	ZT	Pg	13	04	43,6		Ep.: Local
	ZT	Sg	13	04	47,7		
11	ZT	Pg	20	32	22,3		Ep.: Local



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
12 May	ZT	Pg	08	33	05,0		Ep.: Local
	ZT	Sg	08	33	05,6		
13	ZT	P	08	50		1.650	Ep.: 40,1 N; 21,7 E; H = 08:47:12,0 h = 14 km; M = 6,2 (GS) Greece
15	ZL	Pg	15	37	55,4		Ep.: See pag. 107
	ZL	Sg	15	38	04,2		
	ZT	Pg	15	38	01,4		
15	ZL	Pg	15	41	35,7		Ep.: See pag. 107
	ZL	Sg	15	41	44,7		
	ZT	Pg	15	41	42,6		
15	ZT	Pg	19	11	41,6		Ep.: Local
	ZT	Sg	19	11	56,8		
15	ZT	Pg	20	34	53,0		Ep.: See pag. 107
	ZT	Sg	20	35	05,0		
16	ZL	Pg	01	53	34,4		Ep.: See pag. 109
	ZT	Pg	01	53	40,0		
	ZT	Sg	01	53	55,6		
16	ZT	P	03	43		5.805	Ep.: 36,4 N; 70,8 E; H = 03:35:02,6 h = 187 km; M = 5,7 (GS) Hindu Kush region, Afghanistan
16	ZT	P	20	32		17.658	Ep.: 23,0 S; 169,9 E; H = 20:12:44,2 h = 20 km; M = 6,9 (GS) Loyalty Islands Region
18	ZT	P	00	15		5.290	Ep.: 0,9 S; 21,9 W; H = 00:06:27,4 h = 12 km; M = 6,2 (GS) Central Mid-Atlantic Ridge
19	ZT	Pg	14	46	23,6		Ep.: Local
	ZT	Sg	14	46	26,1		
19	ZT	Pg	14	57	46,6		Ep.: Local
	ZT	Sg	14	57	53,0		
30	ZL	Pg	03	15	21,0		Ep.: Local
	ZL	Sg	03	15	25,9		



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Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
9 Jun	ZL	Pg	03	57	39,0		Ep.: Local
15	ZT	P	00	19		1.745	Ep.: 38,4 N; 22,3 E; H = 00:15:48,6 h = 14 km; M = 6,0 (GS) Greece
	ZL	P	00	19			
15	ZT	Pg	00	34		1.755	Ep.: 38,4 N; 22,4 E; H = 00:31:00,4 h = 10 km; M = 5,4 (GS) Greece
15	ZT	Pn	23	01	49,0		Ep.: Local
	ZT	Sn	23	01	52,3		
16	ZT	Pg	05	42	23,0		Ep.: Local
	ZT	Sg	05	42	36,6		
19	ZT	Pg	11	52	37,3		Ep.: See pag. 108
	ZT	Sg	11	52	51,0		
20	ZT	Pg	14	50	14,6		Ep.: See pag. 108
	ZT	Sg	14	50	26,6		
24	ZT	P	07	16		14.975	Ep.: 3,9 S; 153,9 E; H = 06:58:06,6 h = 386 km; M = 6,2 (GS) New Ireland Region
27	ZL	Pg	01	44	33,0		Ep.: See pag. 108
29	ZT	P	12	43		17.565	Ep.: 19,5 S; 177,6 W; H = 12:24:03,7 h = 144 km; M = 6,2 (GS) Vanuatu Islands
29	ZT	Pg	14	06	44,1		Ep.: Local
	ZT	Sg	14	06	47,6		
29	ZT	P	23	13		7.140	Ep.: 52,0 N; 103,3 E; H = 23:02:28,2 h = 12 km; M = 5,6 (GS) Lake Baikal Region
3 Jul	ZT	P	20	10		18.640	Ep.: 29,2 S; 177,6 W; H = 19:50:50,6 h = 35 km; M = 6,5 (GS) Kermadec Islands, New Zealand
4	ZT	Pg	10	45	12,6		Ep.: Local
	ZT	Sg	10	45	24,3		
4	ZT	Pg	19	59	36,6		Ep.: Local
	ZT	Sg	19	59	42,0		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
6 Jul	ZT	Pn	10	33	56,3		Ep.: 42,0 N; 0,5 W; H = 10:33:27,8 h = 4 km; H = 2,8 (IGN) Estopiñan, HU
	ZT	Sn	10	34	20,0		
6	ZT	Pg	12	23	51,6		Ep.: Local
7	ZT	Pg	19	37	37,6		Ep.: Local
	ZT	Sg	19	37	42,8		
8	ZT	Pg	02	37	16,4		Ep.: See pag. 108
	ZT	Sg	02	37	21,6		
9	ZT	Pg	03	55	20,6		Ep.: Local
9	ZT	Pg	04	48	50,0		Ep.: Local
9	ZT	Pg	04	51	32,6		Ep.: Local
11	ZT	P	21	58		8.960	Ep.: 21,9 N; 99,1 E; H = 21:46:39,7 h = 13 km; M = 6,1 (GS) Myanmar-China Border Region
12	ZT	Pn	03	23	21,0		Ep.: See pag. 108
	ZT	Sn	03	23	41,3		
12	ZT	Pg	10	33	46,6		Ep.: Local
	ZT	Sg	10	33	57,6		
13	ZT	Pg	12	52	45,6		Ep.: Local
	ZT	Sg	12	52	49,5		
13	ZT	Pn	13	20	20,0		Ep.: See pag. 108
	ZT	Sn	13	20	50,5		
14	ZT	Pg	08	14	31,6		Ep.: Local
	ZT	Sg	08	14	42,1		
21	ZT	P	22	55		8.210	Ep.: 36,4 N; 103,1 E; H = 22:44:07,6 h = 33 km; M = 5,7 (GS) Gansu, China
23	ZT	Pg	15	09	12,1		Ep.: See pag. 108
	ZT	Sg	15	09	24,2		
24	ZT	P	19	19		3.100	Ep.: 55,6 N; 35,0 W; H = 19:13:21,4 h = 10 km; M = 5,4 (GS) North Atlantic Ocean



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
25 Jul	ZT	Pn	10	04	14,1		Ep.: 43,2 N; 1,4 W; H = 10:03:37,1 M = 3,3 (LDG) South of Bayonne, France
	ZT	Sn	10	06	10,6		
26	ZT	Pn	21	22	30,1		Ep.: 43,5 N; 0,7 W; H = 21:21:44,7 M = 3,1 (LDG) Northern part of Pau, France
	ZT	Sn	21	23	14,0		
27	ZT	P	0	01		12.610	Ep.: 2,5 N; 127,7 E; H = 23:42:02,7 h = 65 km; M = 6,0 (GS) Northern Molucca Sea
27	ZT	P	6	04		9.870	Ep.: 12,5 S; 79,2 E; H = 05:51:18,9 h = 16 km; M = 6,2 (GS) South Indian Ocean
27	ZT	Pg	08	36	02,6		Ep.: Local
	ZT	Sg	08	36	06,7		
28	ZT	P	14	49		17.505	Ep.: 19,0 S; 177,0 W; H = 14:29:11,0 h = 92 km; M = 6,3 (GS) Tonga Islands
28	ZT	Pg	18	12	16,3		Ep.: Local
28	ZL	Pg	18	12	10,2		Ep.: Local
	ZL	Sg	18	12	12,2		
30	ZT	P	5	24		10.340	Ep.: 23,3 S; 70,3 W; H = 05:11:23,6 h = 46 km; M = 6,6 (GS) Near Coast of Northern Chile
5 Aug	ZT	Pn	16	39	31,6		Ep.: 43,1 N; 1,4 W; H = 16:38:47,7 M = 3,2 (LDG) South of Oloron-St. Marie, France
	ZT	Sn	16	40	09,2		
5	ZT	P	22	52		7.225	Ep.: 22,5 S; 10,7 W; H = 22:42:03,3 h = 10 km; M = 5,4 (GS) Atlantic Ocean
7	ZT	Pg	09	58	59,3		Ep.: Local
	ZT	Sg	09	59	09,3		
14	ZT	P	04	56		14.920	Ep.: 4,8 S; 151,5 E; H = 04:37:17,5 h = 128 km; M = 6,4 (GS) New Britain Region
16	ZT	P	16	46		15.105	Ep.: 5,4 S; 153,7 E; H = 16:24:26,7 h = 19 km; M = 5,6 (GS) New Ireland Region
16	ZT	P	11	41		16.705	Ep.: 14,8 S; 167,1 E; H = 11:21:42,6 h = 135 km; M = 5,8 (GS) Vanuatu Islands



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
16 Aug	ZT	Pg	15	30	40,6		Ep.: See pag. 108
	ZT	Sg	15	30	53,3		
16	ZT	P	23	29		15.168	Ep.: 5,7 S; 154,3 E; H = 23:10:23,9 h = 33 km; M = 6,2 (GS) Solomon Islands
17	ZT	P	01	10		6.880	Ep.: 41,5 N; 88,8 E; H = 00:59:57,7 h = 0 km; M = 6,0 (GS) Southern Xonhjiang, China
17	ZT	Pg	11	12	26,5		Ep.: Local
	ZT	Sg	11	12	37,1		
17	ZT	P	23	23		5.830	Ep.: 36,4 N; 71,1 E; H = 23:14:19,0 h = 234 km; M = 5,5 (GS) Afghanistan-Tajikistan Border
18	ZT	Pg	19	56	25,6		Ep.: Local
	ZT	Sg	19	56	26,9		
19	ZT	P	21	55		8.610	Ep.: 5,1 N; 75,7 W; H = 21:43:32,4 h = 125 km; M = 6,1 (GS) Colombia
21	ZT	Pg	17	55	14,0		Ep.: See pag. 109
	ZT	Sg	17	55	27,4		
22	ZT	P	05	38		2.180	Ep.: 36,6 N; 26,7 E; H = 05:34:17,6 h = 168 km; M = 5,1 (GS) Dodecanese Islands
22	ZT	Pg	13	57	12,4		Ep.: Local
	ZT	Sg	13	57	14,5		
5 Sep	ZT	Pn	19	06	15,0		Ep.: See pag. 109
	ZT	Sn	19	06	30,3		
5	ZT	Pg	21	39	59,7		Ep.: Local
	ZT	Sg	21	40	06,8		
6	ZT	P	23	01		9.425	Ep.: 14,9 N; 94,2 W; H = 22:48:49,6 h = 12 km; M = 5,8 (GS) Off Coast of Chiapas, Mexico
8	ZT	Pg	12	45	08,6		Ep.: Local
	ZT	Sg	12	45	18,6		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
11 Sep	ZT	Pg	00	31	41,0		Ep.: See pag. 109
	ZT	Sg	00	31	55,0		
11	ZT	Pg	19	08	35,6		Ep.: See pag. 109
	ZT	Sg	19	08	48,7		
14	ZT	Pn	04	03	18,1		Ep.: See pag. 109
	ZT	Sn	04	03	36,6		
	ZL	Pn	04	03	19,7		
	ZL	Sn	04	03	38,2		
14	ZT	P	14	17		9.635	Ep.: 16,8 N; 98,6 W; H = 14:04:31,5 h = 21 km; M = 6,4 (GS) Near Coast of Guerrero, Mexico
	ZL	P	14	18			
15	ZT	Pg	07	22	56,3		Ep.: Local
	ZT	Sg	07	22	07,0		
15	ZL	Pg	07	22	50,7		Ep.: Local
15	ZT	Pn	11	23	04,6		Ep.: See pag. 109
	ZT	Sn	11	23	20,0		
17	ZT	Pg	01	58	43,1		Ep.: Local
	ZT	Sg	01	58	46,3		
18	ZT	Pg	11	17	38,0		Ep.: Local
20	ZT	Pn	08	24	29,3		Ep.: 43,2 N; 8,2 E; H = 08:23:22,4 M = 3,5 (LDG) San Remo
	ZT	Sn	08	25	17,3		
21	ZT	P	23	01		2.195	Ep.: 36,4 N; 26,8 E; H = 23:52:38,5 h = 153 km; M = 4,9 (GS) Mediterranean Sea
22	ZT	P	11	22		855	Ep.: 35,3 N; 8,2 E; H = 11:20:10,3 h = 10 km; M = 4,8 (GS) Tunisia
23	ZT	P	22	45		10.080	Ep.: 10,7 S; 78,6 W; H = 22:31:56,3 h = 60 km; M = 6,0 (GS) Near Coast of Peru
24	ZT	Pg	21	41	19,0		Ep.: Local
	ZT	Sg	21	41	21,6		
26	ZT	P	18	43		16.530	Ep.: 13,1 S; 167,0 E; H = 18:24:12,9 h = 186 km; M = 5,6 (GS) Vanuatu Islands



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
27 Sep	ZT	P	02	25		16.695	Ep.: 14,7 S; 167,0 E; H = 02:05:21,4 h = 79 km; M = 5,2 (GS) Vanuatu Islands
28	ZT	Pg	05	23	06,8		Ep.: Local
	ZT	Sg	05	23	09,9		
29	ZT	Pg	08	39	52,7		Ep.: Local
	ZT	Sg	08	40	02,6		
29	ZT	Pg	17	59	46,3		Ep.: See pag. 110
	ZT	Sg	17	59	56,0		
30	ZL	Pg	17	59	55,7		Ep.: Local
	ZL	Sg	18	00	07,3		
30	ZT	P	10	16		1.135	Ep.: 41,8 N; 15,8 E; H = 10:14:32,5 h = 25 km; M = 5,2 (GS) East of Pescara, Italy
1 Oct	ZT	P	16	02		2.415	Ep.: 38,1 N; 30,2 E; H = 15:57:16,0 h = 33 km; M = 5,7 (GS) Turkey
1	ZT	P	18	07		2.410	Ep.: 38,0 N; 30,1 E; H = 18:02:58,3 h = 33 km; M = 5,0 (GS) Turkey
1	ZT	Pg	19	52	34,6		Ep.: See pag. 110
	ZT	Sg	19	52	48,0		
3	ZT	P	02	03		9.380	Ep.: 2,8 S; 77,9 W; H = 01:51:24,1 h = 27 km; M = 6,5 (GS) Peru-Ecuador Border Region
3	ZL	P	02	03		9.380	Ep.: 2,8 S; 77,9 W; H = 01:51:24,1 h = 27 km; M = 6,5 (GS) Peru-Ecuador Border Region
3	ZT	Pg	07	17	39,6		Ep.: See pag. 110
	ZT	Sg	07	17	56,3		
3	ZT	Pg	12	01	56,3		Ep.: Local
	ZT	Sg	12	01	07,3		
3	ZT	P	12	57		9.370	Ep.: 2,8 S; 77,8 E; H = 12:44:58,0 h = 24 km; M = 6,5 (GS) Ecuador Coast
	ZL	P	12	57			



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
7 Oct	ZT	P	21	40		9.335	Ep.: 2,8 S; 77,8 E; H = 21:28:03,1 h = 12 km; M = 5,8 (GS) Peru-Ecuador Border Region
8	ZT	Pn	04	04	54,3	370	Ep.: 43,2 S; 1,7 W; H = 04:04:13,0 M = 3,0 (LDG) East of St. Oloron-Marie, France
	ZT	Sn	04	05	29,1		
8	ZT	P	09	04		5.685	Ep.: 41,0 N; 72,2 E; H = 08:55:45,8 h = 15 km; M = 5,9 (GS) Kyrgyztan
9	ZT	Pg	11	09	02,3		Ep.: Local
	ZT	Sg	11	09	12,6		
9	ZT	P	15	58		9.880	Ep.: 19,2 N; 104,2 W; H = 15:35:53,9 h = 33 km; M = 6,5 (GS) Near Coast of Jalisco, Mexico
10	ZT	Pn	06	55	52,6	705	Ep.: 44,1 N; 10,0 E; H = 06:54:22,1 h = 10 km; M = 4,7 (GS) Northern Italy
	ZT	Sn	06	56	58,6		
	ZL	Pn	06	55	57,3		
	ZL	Sn	06	57	09,0		
10	ZT	Pg	17	22	26,0		Ep.: See pag. 110
	ZT	Sg	17	22	39,6		
10	ZT	Pn	23	36	01,6		Ep.: See pag. 110
	ZT	Sn	23	36	33,6		
13	ZT	Pn	01	46	20,2		Ep.: 42,9 N; 0,3 E; H = 01:45:45,9 M = 2,8 (LDG) South of France
	ZT	Sn	01	46	45,6		
16	ZT	Pg	06	13	49,3		Ep.: See pag. 110
	ZT	Sg	06	14	01,2		
17	ZT	Pg	00	41	51,1		Ep.: See pag. 110
	ZT	Sg	00	41	54,1		
17	ZT	Pg	01	09	19,3		Ep.: Local
	ZT	Sg	01	09	22,0		
18	ZT	Pg	8	59	56,6		Ep.: Local
	ZT	Sg	8	59	59,6		
18	ZT	P	9	39		5.775	Ep.: 36,4 N; 70,4 E; H = 09:30:38,5 h = 223 km; M = 5,5 (GS) Hindu Kush Region, Afghanistan
	ZL	P	9	40			



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
18 Oct	ZT	P	10	50		10.640	Ep.: 27,9 N; 130,3 E; H = 10:37:26,3 h = 27 km; M = 6,5 (GS) Ryukyu Islands
21	ZT	P	02	51		11.615	Ep.: 16,9 N; 130,3 E; H = 02:38:57,5 h = 161 km; M = 6,2 (GS) Chiapas, Mexico
23	ZT	P	04	17		16.650	Ep.: 14,2 S; 167,2 E; H = 03:58:08,5 h = 199 km; M = 5,5 (GS) Vanuatu Islands
23	ZT	P	22	59		8.905	Ep.: 25,9 N; 102,2 E; H = 22:46:54,1 h = 33 km; M = 5,8 (GS) Yunnan, China
25	ZT	Pn	03	18	52,3		Ep.: 41,0 N; 4,0 E; H = 03:18:23,2 M = 3,9 (IGN) East of Spain
	ZT	Sn	03	19	16,0		
	ZL	Pn	03	18	53,9		
	ZL	Sn	03	19	18,3		
29	ZT	P	06	34		4.065	Ep.: 39,6 N; 51,9 E; H = 06:27:19,8 h = 33 km; M = 5,4 (GS) Caspian Sea
6 Nov	ZT	Pg	23	54	41,7		Ep.: See pag. 111
	ZT	Sg	23	54	55,0		
7	ZT	Pg	08	44	02,3		Ep.: Local
	ZT	Sg	08	44	05,0		
8	ZT	P	07	27		10.115	Ep.: 1,8 N; 95,1 E; H = 07:14:18,5 h = 33 km; M = 6,1 (GS) Off W Coast of Northern Sumatera
8	ZT	Pg	00	39	20,0		Ep.: Local
	ZT	Sg	00	39	22,6		
8	ZT	Pg	21	42	57,3		Ep.: Local
	ZT	Sg	21	43	00,0		
12	ZT	Pg	02	00	53,3		Ep.: See pag. 111
	ZT	Sg	02	01	00,6		
12	ZT	Pn	21	19	55,3		Ep.: 41,3 N; 4,6 E; H = 21:19:31,8 M = 3,9 (IGN) East of Spain
	ZL	Pn	21	19	55,3		
	ZL	Sn	21	20	17,5		
16	ZT	Pg	11	24	14,3		Ep.: See pag. 111
	ZT	Sg	11	24	22,7		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
20 Nov	ZT	Pn	19	14	34,0		Ep.: See pag. 111
	ZT	Sn	19	15	03,3		
21	ZT	Pg	02	23	26,0		Ep.: Local
	ZT	Sg	02	23	30,0		
21	ZT	Pn	04	05	49,0	602	Ep.: 45,1 N; 7,6 E; H = 04:04:36,6 M = 4,2 (LDG) West of Turin, Italy
	ZT	Sn	04	06	42,3		
29	ZT	Pg	14	03	33,0		Ep.: Local
	ZT	Sg	14	03	44,3		
29	ZT	Pn	23	58	14,0	790	Ep.: 42,8 N; 7,3 W; H = 23:56:29,0 M = 4,9 (IGN) North-West of Spain
	ZL	Pn	23	58	15,2		
	ZL	Sn	23	59	29,0		
30	ZT	P	11	53		2.215	Ep.: 36,5 N; 27,1 E; H = 11:49:34,0 h = 134 km; M = 5,2 (GS) Dodecanese Islands
30	ZT	P	15	22		9.805	Ep.: 44,3 N; 145,6 E; H = 15:09:22,4 h = 137 km; M = 5,9 (GS) Hokkaido, Japan Region
30	ZT	P	23	50		9.910	Ep.: 44,5 N; 149,3 E; H = 23:37:36,3 h = 23 km; M = 5,9 (GS) Kuril Islands
30	ZT	Pg	12	13	00,0		Ep.: Local
1 Dec	ZT	Pg	00	53	21,0		Ep.: See pag. 112
	ZT	Sn	00	53	55,0		
2	ZT	P	17	26		9.895	Ep.: 44,6 N; 148,9 E; H = 17:13:20,7 h = 33 km; M = 5,9 (GS) Kuril Islands
3	ZT	P	18	14		9.890	Ep.: 44,6 N; 149,3 E; H = 18:01:08,7 h = 33 km; M = 5,9 (GS) Kuril Islands
3	ZT	P	21	51		9.930	Ep.: 44,6 N; 150,2 E; H = 21:38:38,0 h = 33 km; M = 5,7 (GS) Kuril Islands
7	ZT	Pn	20	05	17,0	756	Ep.: 44,9 N; 5,9 W; H = 20:03:39,1 M = 3,7 (IGN) North-West of Spain
	ZT	Sn	20	05	29,0		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
9 Dec	ZT	Pg	22	25	59,0		Ep.: Local
	ZT	Sg	22	26	07,6		
10	ZT	P	03	32		2.050	Ep.: 34,8 N; 24,1 E; H = 03:27:49,7 h = 40 km; M = 5,3 (GS) Creta
10	ZT	P	22	36		9.940	Ep.: 44,3 N; 149,7 E; H = 22:23:14,7 h = 33 km; M = 5,6 (GS) Kuril Islands
11	ZT	P	00	06		13.010	Ep.: 21,5 N; 178,0 W; H = 23:46:59,6 h = 413 km; M = 6,0 (GS) Fiji Islands Region
11	ZT	Pg	14	32	31,3		Ep.: Local
	ZT	Sg	14	32	42,0		
11	ZT	Pg	14	32	31,3		Ep.: Local
	ZT	Sg	14	32	42,0		
19	ZT	P	23	47		14.100	Ep.: 3,7 S; 140,3 E; H = 23:28:12,8 h = 71 km; M = 6,2 (GS) Irian Jaya, Indonesia
20	ZT	Pg	08	43	45,6		Ep.: Local
	ZT	Sg	08	43	56,3		
21	ZT	Pg	05	45	16,8		Ep.: See pag. 112
	ZT	Sg	05	45	31,0		
21	ZT	P	08	14		16.435	Ep.: 12,2 S; 167,0 E; H = 07:54:48,0 h = 242 km; M = 5,0 (GS) Santa Cruz Islands
23	ZT	Pg	17	40	14,3		Ep.: Local
	ZT	Sg	17	40	16,3		
24	ZT	Pn	14	31	06,3	790	Ep.: 42,8 N; 7,3 W; H = 14:29:21,3 M = 4,6 (IGN) North-West of Spain
	ZL	Pg	14	31	04,5		
	NL	Pg	14	31	06,5		
24	ZT	Pn	18	21	38,6	790	Ep.: 42,8 N; 7,3 W; H = 18:19:52,8 M = 4,6 (IGN) North-West of Spain
28	ZT	Pg	14	00	02,6		Ep.: Local
	ZT	Sg	14	00	12,6		
29	ZT	Pg	04	45	43,6		Ep.: Local
	ZT	Sg	04	45	47,0		



SEISMIC OBSERVATIONS

1995

Date	Comp.	Phase	Time TU			Δ Km	Remarks
			h	m	s		
31 Dec	ZT	P	07	38		9.190	Ep.: 54,0 N; 160,0 E; H = 07:26:13,0 h = 44 km, M = 6,0 (GS) Near East Coast of Kamchatka
31	ZT	Pg	10	00	31,6		Ep.: Local
	ZT	Sg	10	00	34,3		
31	ZT	Pn	15	42	45,6		Ep.: See pag. 112
	ZT	Sn	15	42	40,3		
31	ZT	Pn	16	24	15,6		Ep.: See pag. 112
	ZT	Sn	16	24	52,0		
31	ZT	Pn	21	31	23,3	785	Ep.: 44,5 N; 10,6 E; H = 21:29:47,5 h = 27 km, M = 4,6 (GS) North of Italy

