

SEISMOLOGICAL REPORT FOR I.G.Y.

January, 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
Latitude : 36° 12' 39" N  
Elevation: 286 m  
Foundation: Granite

Instrument:

No.	Name	Component	V <sub>max</sub>	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	σ	Date of Calibration
				sec	sec			mm		
1.	Hagiwara Inverted Pendulum Seismograph	EW	37	4.4		0.67		0.55		May 13
2.	"	NS	36	4.4		0.63		0.37		1955
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.71		0.01		"
4.	"	NS	230	0.11		0.71		0.01		"
5.	"	UD	205	0.09		0.45		0.01		"
6.	Short-period Electro- magnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0		0.1	June 30,
7.	"	NS	29000	0.98	1.10	1.0	1.0		0.1	1957
8.	"	UD	37000	0.97	1.26	0.3	1.0		0.1	"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		nearly				"
10.	"	NS	2400	0.80		critical				"
11.	Long-period Electro- magnetic Seismograph	EW	1740	1.0	22.4	3.1	1.0		0.74	Dec. 26
12.	"	NS	1880	1.0	20.7	3.0	1.0		0.73	1957
13.	"	UD	2330	1.0	21.6	2.3	1.0		0.66	"

T<sub>1</sub> : Period of pendulum

T<sub>2</sub> : Period of galvanometer

h<sub>1</sub> : Damping constant of pendulum

h<sub>2</sub> : Damping constant of galvanometer

ρ : Solid friction

σ : Coupling factor

Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks		
			h	m	s		sec.	N	E			Z	
157.	January 3	ePZ	18	00	21.9	1.4		1.5	92°	8			
		ePN			22.4	1.2	-0.5			7			
		ePE			23.9	1.2		-1.0		6			
		MZ			25.4	1.2			2.0	8			
		epPZ			32.9	1.2			-2.0	8			
158.	5	ePN	08	11	42.2				38°	7			
		ePZ			42.4	0.8		1.0		8			
		ePE			42.8					6			
		epP or ePPZ	13		22.5	1.0		1.0		8			
		opP or ePPE			28.2	1.0		1.0		6			
		ePcPZ			33.5	1.2			-1.5	8			
		eSZ	16		39.3	0.6			-5.0	8			
		eSE			48.8					6			
		eSN			"	0.8	1.0			7			
		eSE			53.6					11			
		eSN			"	4.4	-2.0			12			
		iXE			55.5	0.8		3.0		6			
		iXZ			56.0	0.8			4.5	8			
		iXN			57.5	0.8	3.0			7			
		MN			58.0	1.0	-5.5			7			
		MZ			58.3	1.2			-7.0	8			
		ME			58.8	0.8			-7.0	6			
		eXE	31		03.4	1.8			-2.0	6			
		159.	5	ePN	11	45	59.8	1.4	1.5		25°	7	
				ePZ				1.4		2.0		8	
ePE	46				03.8	1.0			-1.5	6			
epPN					12.0	1.4	-2.0			7			
ePPZ					34.8	1.2		3.0		8			
eSZ	50				12.0	10.0			-4.0	13			
eSN					19.3	6.8	3.0			12			
eSE					19.8	4.8		3.0		11			
iSN					20.9	2.0	-3.0			7			
iSE					24.3	2.8		2.5		6			
cLQE	52				36	29.2			-11.0	11			
eLRZ	53				18	17			-16.0	13			
ME	50				24.3	2.8		4.0		6			
ME	54				02.3	15.2			-30.0	11			
MZ	56				07.8	12.8			32.0	13			
MN			46.3	12.8	-18.0			12					
160.	9	ePZ	11	21	38.4	0.4		-1.0	42.5°	8			
		ePN			38.7					7			
		ePE			39.0					6			
		eXE	22		31.5	1.2			-1.0	6			
		eXN	23		15.7	1.0				7			
		eXE			21.3	1.0			-0.5	6			
		ePN	13	30	15.0	0.8	0.5			72.5°	7		
161.	11	ePZ			15.1	0.8			-1.5	8			
		ePE			17.4	1.2		1.0		11			
		eXZ			57.5					8			
		eScSE	40		41.0	6.6			-4.0	11			
		eScSE			42.5	5.0			-2.0	6			
		eScSN			44.9	6.8	-4.5			12			

Serial No.	Date	Phase	Time			Period	Amplitude			$\Delta$ (ca.)	Instrument	Remarks	
			h	m	s		sec	N	E				Z
162.	January 13	ePZ	03	03	49.4	1.6			2.5	53.50	8		
		ePN			49.7	1.8	-1.0				7		
		ePE			50.1	1.6		1.0			6		
		EXZ	04	03.0		2.0			3.0		8		
		epPE			12.5	2.2		2.5			6		
		ePcP?Z			45.6	1.4			-3.0		8		
		ePPZ	05	59.5		1.6			3.0		8		
163.	13	ePZ	20	23	16.2	1.0			4.0	49°	8		
		ePE			16.4	0.8		-2.0			6		
		ePN			"	0.8	0.5				7		
		eXE			25.3	0.8		-1.5			6		
		ePcPZ	24	40.5		1.6			-2.0		8		
		eXN	28	30.4							7		
		eXE			50.6	1.0		0.6			6		
		eXZ			31.5	0.8			1.0		8		
		eXZ	38	00.7		1.0			1.5		8		
		eXE			01.0	1.2		-1.0			6		
		eXN			01.7	0.6					7		
		164.	14	ePE	07	31	37.5	1.2		1.0	76°	6	
				ePN			"	1.2	1.5			7	
				ePZ			38.0	1.0			6.0		8
eXE					42.8	1.0		-2.5			6		
eXN					46.9	0.8	1.5				7		
eXZ	32			01.0		1.6			2.0		8		
165.	15	iP <sub>1</sub> Z	19	33	59.8	1.0			-1.5	145°	8		
		eP <sub>1</sub> N	34	00.2							7		
		eP <sub>1</sub> Z			01.3						13		
		eP <sub>1</sub> E			01.9	1.0		-1.0			6		
		eXZ			20.0	6.6			-14.0		13		
		MZ			27.7	1.2			-22.0		8		
166.	15	ePN	22	16	26.1	0.8	1.5		55.5°	7			
		ePZ			26.2	5.0			5.0		8		
		ePE			29.1						6		
167.	16	ePN	11	13	13.5				57°	7			
		ePE			15.5						6		
168.	17	ePZ	04	21	31.4	1.2			1.5	39.5°	8		
		ePN			32.6						7		
		ePE			34.4						6		
		eXZ			50.7	0.8			2.0		8		
169.											No trace.		
170.	18	eP <sub>2</sub> E	15	34	54.4	1.0		1.0			6		
		eP <sub>2</sub> E			35 27.6	1.6		1.5			6		
171.	19	eP''Z	14	26	29.8	2.0			-1.0	127.5°	8		
		eP''N			30.1						7		
		eP''E			30.9						6		
		eXZ			58.8				-1.5		8		
		ePPZ	28	36.5		3.0			1.0		13		
		ePPZ			37.3	2.7			2.5		8		
		ePPPZ	31	25.2		3.2			-1.0		8		
		ePPPZ			33.0	6.0			-6.0		13		
		eSKSZ	33	52.7		7.6			2.0		13		
		ePKKPZ	36	22.2		0.6			-3.5		13	Continuing	

Serial No.	Date	Phase	Time			Period sec.	Amplitude			$\Delta$ (ca)	Instrument	Remarks	
			h	m	s		N	E	Z				mm.
171.	January 19	ePSE	14	38	40.0	14.8		-4.5			11	Continued.	
		ePSN			43.2	14.0		-4.0			12		
		eXN	41	35.7		2.0		-5.5			12		
		eXZ	43	14.8		12.4			-5.0		13		
		eP'P'Z	44	40.6		14.0			-5.0		13		
		eXN	45	23.0		14.8		-5.0			12		
		eSSE		52.0		12.8			7.0		11		
		eXE	49	08.0		12.0			4.0		11		
		ME	15	32	52.3		20.0		-14.0		11		
		MN		34	47.0		19.2		16.5		12		
MZ		35	47.0		19.0			22.5	13				
172.	19	eP"Z	15	02	30.5	1.8			-1.0	127.5°	8		
		eP"E			32.0						6		
		eP"N			35.8	1.0		0.5			7		
		iPPZ	04	52.6		3.0			-3.0		8		
173.	20	eP'E	02	39	52.9	1.0		-0.5		153°	6		
		eP'Z		"		0.8			2.5		8		
		eP'Z	40	14.5		1.2			5.0		8		
		eXE		24.0		1.4		-1.5			6		
		ePPZ	43	48.0		5.2			-2.0		8		
		eXZ	03	00	49.0	0.6			2.5		8		
174.	22	ePZ	18	33	31.4	0.6			-1.0	20°	8		
		ePE			33.3	0.6		-0.5			6		
		eSE		37	15.6						6		
175.	23	ePZ	02	36	17.3					10°	13		
		ePN		"		0.2		0.5			7		
		ePE			17.7	0.3			1.0		6		
		ePZ		"		0.4			-3.0		8		
		ePE		"							11		
		ePN		"							12		
		iSN	37	50.7		2.0		-9.5			12		
		iSE		51.9		1.2			-10.0		6		
		iSE		52.5		5.2			23.0		11		
		iSZ		"		2.8			18.0		13		
		iSN		54.4		0.8		34.0			7		
		ME		52.5		5.2			23.0		11		
		MZ		55.6		2.4			25.0		13		
		MN	38	06.7		2.4		18.0			12		
		176.	24	ePN	05	59	27.2	1.0				26°	7
				ePZ		"		1.6			2.5		8
ePE					29.0	1.2			2.0		6		
ePE					29.5	7.0			3.0		11		
ePN				"		8.8		-5.0			12		
ePZ					31.4	4.0			-5.0		13		
eXE					33.6	1.2			-3.0		6		
eXN					46.0	1.0		5.5			7		
ePPN	06			00	03.9	0.8		3.0			7		
ePPZ					13.1	2.8			11.0		8		
ePPP					29.1	1.2		-2.5			7		
eSZ	03			57.9		2.4			-2.0		8		
eSN					58.1	1.2		1.5			7		
eXE	04			18.7							6		
ME	11			14.0		14.4			-12.0		11		
MZ					50.5	16.0			-10.0		13		

Serial No.	Date	Phase	Time			Period sec.	Amplitude			Instru- ment	Remarks
			h	m	s		N	E	Z		
177.	January 24	ePZ	23	26	09.5	3.2		-2.5	48°	13	
		iPE			11.3	1.4		3.0		6	
		ePN			11.4	1.2	1.0			7	
		iPZ			11.7	1.0			-9.0	8	
		epPN			17.8	1.0	-2.5			7	
		cpPE			18.1	0.8			-2.5	6	
		eXZ			29.3	2.0			4.5	8	
178.	25	ePZ	00	03	28.1	1.4		2.0	66°	8	
		oPN			28.2					7	
		ePE			29.3	0.4				6	
179.	27	iPZ	07	54	56.2	1.2		4.0	67.5°	8	
		iPN			57.2	1.2	-3.0			7	
		oPcPZ			55 36.5	1.4			7.5	8	
180.	30	ePZ	11	21	43.0	1.6		2.0	46°	8	
		ePN			44.4					7	
		ePE			45.9					6	
		eXE			54.1	1.2		-3.0		6	
		oXZ		22	24.0	1.2		2.0		8	
		eXZ		23	06.0	3.2			-2.0	8	
		ePPZ			26.2	3.6			3.0	8	
		eXZ			49.2	1.4			1.0	8	

SEISMOLOGICAL REPORT FOR I.G.Y.

February, 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
Latitude : 36° 12' 39" N  
Elevation: 286 m  
Foundation: Granite

Instrument:

No.	Name	Component	$V_{max}$	$T_1$	$T_2$	$h_1$	$h_2$	$\rho$	$\sigma$	Date of Calibration
				sec	sec		mm			
1.	Hagiwara Inverted Pendulum Seismograph	EW	37	4.4		0.67	0.35			Sept. 30, 1957
2.	"	NS	36	4.4		0.63	0.37			
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.71	0.01			"
4.	"	NS	230	0.11		0.71	0.01			"
5.	"	UD	205	0.09		0.45	0.01			"
6.	Short-period Electro- magnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0	0.1		June 30, 1957
7.	"	NS	29000	0.98	1.10	1.0	1.0	0.1		
8.	"	UD	37000	0.97	1.26	0.8	1.0	0.1		"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		nearly				"
10.	"	NS	2400	0.80		critical				"
11.	Long-period Electro- magnetic Seismograph	EW	17405	1.0	22.4	3.1	1.0	0.74		Dec. 26 1957
12.	"	NS	1880	1.0	20.7	3.0	1.0	0.73		
13.	"	UD	2330	1.0	21.6	2.3	1.0	0.66		"

$T_1$  : Period of pendulum

$T_2$  : Period of galvanometer

$h_1$  : Damping constant of pendulum

$h_2$  : Damping constant of galvanometer

$\rho$  : Solid friction

$\sigma$  : Coupling factor

Serial No.	Date	Phase	Time			Period	Amplitude				Instrument	Remarks
			h	m	s		sec.	N	E	Z		
181.	February 1	eP"Z	16	29	25.0	8.4			-2.0	127.5°	13	
		eP"E			27.2	0.6			-0.5		6	
		eP"N			27.4	0.6			-0.3		7	
		eP"Z			17.8	1.4			-1.0		8	
		ePPZ	31		19.8	5.6			-1.0		13	
		ePPZ			30.8	2.4			1.0		8	
		eXN	32		05.8	2.4			-0.8		7	
		eSKSE	36		27.8	7.6			-3.0		11	
		eSKSN			28.5	6.0			1.0		12	
		eXZ	43		10.1	12.0			-3.0		13	
		MZ	17	40	25.0	18.0			5.5		13	
182.	1	eP"Z	18	22	53.1	1.2			1.0	127.5°	8	
		eP"E			53.2	1.0			-0.5		6	
183.	1	eP"Z	21	04	56.3	3.6			-1.5	127.5°	13	
		eP"Z			58.3						8	
		ePPZ	06		57.0	3.6			1.5		13	
184.	2	ePPZ			57.7	2.8			1.5		8	
		ePE	08	15	37.7	0.6			1.0	17°	6	
		iPN			37.8	0.6			1.0		7	
		iPZ			37.9	0.8			-5.0		8	
		ePZ			38.0						13	
		epPN			45.3						10	
		ipPE			"	0.6			-3.0		6	
		ipPN			"	0.4			-4.0		7	
		ipPZ			"				10.5		8	
		epPE			45.7						11	
		epPN			"	1.6			1.5		12	
		ME			46.2	1.0			14.0		6	
		MN			56.8	1.0			11.5		7	
		eSE	18	25	6	0.8			6.0		6	
		eSN			27.5	0.6			-6.5		7	
		eSSZ			45.7	2.2			1.0		13	
		eSSE			48.2	4.0			-3.5		11	
		eSSN			50.4	5.6			3.5		12	
		eSSE			53.4	1.0			0.5		9	
		185.	7	ePZ	23	29	45.2	1.8			-3.5	30°
ePE					51.2						6	
ePN					54.6						7	
186.	9	ePZ	22	35	43.6	1.2			-1.0	29°	8	
		eXE	36		23.0	2.6			-1.0		6	
		ePPZ			32.8	2.4			3.0		8	
187.	12	ePN	23	50	42.2	1.6			-0.5	36°	7	
		iPZ			42.4	1.2			7.0		8	
		ePE			42.6	1.0			-1.0		6	
		MZ	51	00	00.0	1.0			-11.0		8	
		eXN			02.6	0.6			-1.5		7	
188.	15	ePN	01	48	56.4					10.5°	7	
		iPZ			56.8	0.8			2.0		8	
		ePE			57.2	0.8			-1.0		6	
		ePZ			57.7						13	
		ePE			58.5	0.8			1.0		9	
		ePN			"	0.6			1.0		10	(continuing)

Serial No.	Date	Phase	Time			Period	Amplitude				Instrument	Remarks
			h	m	s		sec.	N	E	Z		
188.	February 15	iSE	01	50	32.8	0.6		6.0			6	(continued)
		iSN			33.9	2.7	-11.5				12	
		eSE			34.8	0.6	-1.0				9	
		iSZ			35.1	3.0		-8.0			13	
		eSN			35.3						10	
		iSE			35.4	1.6	14.0				11	
		iSN			36.6	0.4	-20.5				7	
		iSZ			38.1						8	
		ME			37.3	0.8	-5.5				9	
		MN			39.7	0.6	-6.5				10	
		MZ	53		24.4	8.8		12.0			13	
		eXN	50		39.5	5.2	-12.0				12	
		eXE			50.7	4.8	-11.0				11	
		eXE	51		45.5	0.8	1.0				9	
		ePcP?E	54		49.5	3.8	3.0				6	
189.	16	iPE	06	04	51.3	0.3	-2.0		4°		6	
		iPN			51.5	0.4	-1.5				7	
		iPZ			"	0.3		6.0			8	
		ePE			"						9	
		ePN			"						10	
		ePE			"	0.4	-1.0				11	
		ePN			"						12	
		ePZ			"						5	
		ePZ			51.9	0.4		-1.0			13	
		ePE			52.6						1	
		ePN			"						2	
		ePE			52.9						3	
		ePN			"						4	
		esPN			57.3						10	
		iSN	05		21.7	0.8	37.0				12	
		iSE			22.2	1.5	-1.4				1	
		iSZ			"	0.1		-0.2			5	
		iSN			22.4	1.5	-1.4				2	
		iSZ			"			-24.0			13	
		iSE			23.6	0.2	0.5				3	
		iSN			"	0.2	1.2				4	
		iSE			"						9	
		iSE			26.1	0.8	39.5				11	
		eXN			31.7	1.5	-3.1				2	
		eLE			37.2	3.7	3.2				1	
		MN			26.9	0.2	1.6				4	
		ME			30.9	0.2	1.5				3	
		ME			36.2		-107.5				11	
		MN			37.1	2.5	-2.3				2	
		ME			37.2	4.0	2.5				1	
		MZ			40.0	0.2		-0.5			5	
		MZ	06		02.7	3.6		109.0			13	
		MN			22.6	3.0	-118.0				12	
		iPcPE	12		21.0	5.6	-4.0				11	
		iPcPZ			29.8	6.8		-21.0			13	



Serial No.	Date	Phase	Time	Period	Amplitude			$\Delta$ (ca)	Instrument	Remarks		
					N	E	Z					
			h m s	sec.	mm.							
190.	February 17	ePE	05 27 49.1	3.6		1.5		55.5°	11			
		iPE	49.3	1.2		1.5			6			
		iPZ	"	1.2			6.0		8			
		ePZ	"	3.2			3.0		13			
		ePN	49.7	0.4	0.5				7			
		MZ	50.3	1.6			18.0		8			
		iXN	28 01.2	0.4	-4.5				7			
		iXE	05.7	1.2			4.0		6			
		epPZ	28.4	0.8			4.0		8			
		isPZ	41.6	1.2			13.5		8			
		ePcPZ	57.7	9.2			-6.0		13			
		ePPZ	30 00.5	1.2			-4.0		8			
		eSN	35 12.5	3.2	1.0				12			
		eSE	18.4	10.0			-2.5		11			
		eScSN	37 17.0	3.6	4.0				12			
		eScSE	20.4	6.0			-4.5		11			
		191.	18	ePZ	19 53 48.3	2.8			1.0	22.5°	13	
ePZ	48.7			0.8			-2.0		8			
ePE	49.1								6			
ePN	"								7			
ePE	49.6			3.2			-1.0		11			
ePN	49.8			2.8	-1.0				12			
esPZ	54 01.8			3.2			-4.0		8			
ePPE	07.4			10.0			-5.0		11			
ePPN	08.9			1.2	4.5				7			
eXN	15.5			1.2	-4.0				7			
ePPPE	23.9			1.6			-3.0		6			
eXZ	55 39.3			1.6			-3.5		8			
eSN	57 52.8			5.6	1.5				12			
ePcPE	58 03.9			1.6			1.0		6			
esSE	12.7			4.4			2.5		11			
eSSN	35.9			5.2	4.0				12			
eSSSN	56.2			6.0	2.0				12			
eXZ	59 50.2	8.0			4.0		13					
192.	18	ePZ	20 16 41.1	1.2			-1.0	60°	8			
193.	19	ePE	19 34 42.1	1.2			-1.0	53°	6			
		ePZ	42.2	1.0			-6.0		8			
		ePN	42.3	1.2	-1.5				7			
		epPZ	49.7	1.6			3.0		8			
		iPcPZ	35 52.2	1.0			4.0		8			
		ePcPN	52.6	1.0	-3.5				7			
		iXZ	36 10.5	1.6			9.5		8			
		eXZ	37 20.3	3.0			-3.5		8			
		194.	22	ePN	10 57 10.4					35.5°	12	
				ePZ	"	4.0			-2.0		13	
ePE	11.5			3.6			2.0		11			
ePE	12.0			1.2			1.0		6			
iPZ	"			0.6			-5.0		8			
iPN	12.3			1.8	-1.5				7			
ipPE	16.2			1.4			-6.0		6			
ipPZ	"			1.8			23.0		8	(continuing)		

Serial No.	Date	Phase	Time			Amplitude			$\Delta$ (ca)	Instrument	Remarks	
			h	m	s	sec.	N	E				Z
194.	February 22	isPN	10	57	22.8	1.6	5.0			7 (continued)		
		eXE			30.2	2.6		4.0		6		
		oPPE	58	37.2		1.6		-3.0		6		
		oPPZ		"		2.0			-3.5	8		
		ePcPZ	59	16.8		5.2			-5.0	13		
		eSZ	11	02	43.9	8.4			2.0	13		
		iSE			46.6	9.6			-7.5	11		
		iPZ	09	14	15.0	1.2			6.0	7.5°	8	
		ePZ		"		1.4			2.5		13	
		iPN			15.4	0.8	1.5				7	
195.	23	ePE			16.0					11		
		ePN		"		1.6	3.0			12		
		ePE			16.2	0.4		1.5		6		
		ePE		"						9		
		ePN			16.6	0.4	-1.0			10		
		ePPE			23.8	4.0		4.0		11		
		iSN	15	36.2		1.6	6.5			12		
		iSZ		"		1.6			9.0	13		
		iSE			36.8	2.2		-5.0		11		
		iSE			42.6	0.4		-3.5		9		
		eSN			44.3	0.8	3.5			10		
		MZ			42.6	1.6			18.5	13		
		MN			44.3	0.8	17.5			10		
		MN			45.7	0.6	22.5			12		
		ME			46.2	1.0		-20.0		9		
		ME			58.9	3.2		30.0		11		
		196.	23	ePN	10	50	38.7				12°	7
				iPN			39.4	3.0	-5.0			12
				iPZ		"		2.8			-3.0	13
				ePZ			40.1	0.6			-1.0	8
ePN					40.2					10		
ePE					40.9	1.4		0.5		11		
ePE					41.0					9		
iPE					41.3	1.0		-5.0		6		
ME					47.4	0.6		-19.5		6		
MN	52			57.0		0.8	-26.0			7		
eSN					48.8	0.8	-1.0			12		
eSE					49.2	0.8		0.5		11		
iSE					49.9	0.4		-11.0		6		
eSZ					51.4	1.6			2.0	13		
197.	24			ePZ	12	33	30.6				32°	8
		ePE			32.3	1.0		-0.5		6		
		ePE			33.1					11		
		ePN		"						12		
		ePPZ	34	38.7		8.0			-1.5	13		
		ePPE			41.7	6.0		-1.0		11		
		ePPN			42.5	6.0	1.0			12		
		ePcPE	36	23.3		0.6		0.5		6		
		ePcPN			24.1					7		
		iPcPZ			24.2	1.2			-5.0	8		
		eXE	40	10.9		8.8			1.5	11		
		eSSN			40.6	4.4	-1.5			12		
		oLQE	42	52.5		30				11		
		eLQN	43	08.7		27				12		
		eLRZ	44	37.9		17				13		
		MN	44	42.5		15.0	8.8			12		
		ME	46	47.5		13.6		8.4		11		
		MZ		52.5		13.6			-13.0	13		

Serial No.	Date	Phase	Time	Period	Amplitude			$\Delta$ (ca)	Instru- ment	Remarks
					N	E	Z			
198.	February 27	ePN	h m s 23 32 53.8	sec. 0.6				22.5°	7	
		ePZ	"						8	
		ePE	54.1	0.6		-1.0			6	
		ePZ	33 01.2	7.6			-5.0		13	
		eXN	07.9	3.0	-3.5				12	
		ePPZ	34.5	8.4			-9.0		13	
		esSE	37 03.0	1.2		-0.5			6	
		eSSZ	22.7	10.4			-8.0		13	
		MN	44 32.7	14.2	21.0				12	
		MZ	47 42.4	14.0			12.5		13	

SEISMOLOGICAL REPORT FOR I.G.Y.

March, 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
Latitude : 36° 12' 39" N  
Elevation: 286 m  
Foundation: Granite

Instrument:

No.	Name	Component	V <sub>max</sub>	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	σ	Date of Calibration
				sec	sec			mm		
1.	Hagiwara Inverted Pendulum Seismograph	EW	34	5.0		0.60		0.45		Sept. 10, 1957
2.	"	NS	34	5.0		0.64		0.47		"
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.69		0.01		"
4.	"	NS	220	0.11		0.58		0.04		"
5.	"	UD	190	0.10		0.57		0.05		"
6.	Short-period Electro-magnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0		0.1	June 30, 1957
7.	"	NS	29000	0.98	1.10	1.0	1.0		0.1	"
8.	"	UD	37000	0.97	1.26	0.8	1.0		0.1	"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		nearly				"
10.	"	NS	2400	0.80		critical				"
11.	Long-period Electro-magnetic Seismograph	EW	1740	1.0	22.4	3.1	1.0		0.74	Dec. 26, 1957
12.	"	NS	1880	1.0	20.7	3.0	1.0		0.73	"
13.	"	UD	2330	1.0	21.6	2.3	1.0		0.66	"

- T<sub>1</sub> : Period of pendulum
- T<sub>2</sub> : Period of galvanometer
- h<sub>1</sub> : Damping constant of pendulum
- h<sub>2</sub> : Damping constant of galvanometer
- ρ : Solid friction
- σ : Coupling factor

Serial No.	Date	Phase	Time			Period sec.	Amplitude			△	Instrument	Remarks		
			h	m	s		N	E	Z				mm.	
199	March	03	ePN	16	23	55.4	3.2	3.5			26.5°	12		
			ePZ			55.6	2.8			2.0			13	
			iPZ			55.7	1.0			4.5			8	
			ePN			55.9	0.2	0.5					10	
			ePE			56.1	1.0			1.5			6	
			ePN			"	0.8	1.0					7	
			ePE			56.6							9	
			epPE		24	01.1	1.8			0.5			9	
			epPN			02.9	2.0	6.0					7	
			ipPE			04.4	2.0			9.0			6	
			ipPZ			04.8	1.4			18.5			8	
			cpPN			05.9	0.2	0.5					10	
			eXE			12.3	0.4			0.5			9	
			eXN			13.4	3.0	1.0					10	
			iPPN			29.0	1.0	9.5					7	
			eSN		28	32.8	5.6	4.0					12	
			eSN			44.1	3.0	1.5					7	
			eSE			46.5	2.4			2.0			6	
			eSE			48.1							9	
			esS?E			52.0	5.2			4.0			11	
MZ		24	05.5	2.4			21.0			8				
MZ			05.6	5.4			14.0			13				
ME			22.9	0.8			8.5			6				
MN			29.1	1.0	9.5					7				
200	09	ePZ	10	34	28.3	0.8			0.5	80.0°	8			
		ePE			31.7						6			
		ePN			32.4						7			
		epP or ePcPE			38.6	1.0			0.5		6			
		epPZ			40.3	2.6			2.0		8			
201	11	ePE	00	30	00.1	2.4			1.5	17.2°	6			
		ePN			00.2	2.2	1.0				7			
		ePZ			00.8	2.0			4.5		8			
		iPZ			00.9	4.0			6.0		13			
		iPE			01.3	3.6			3.0		11			
		iPN			"	3.2	1.5				12			
		ePN			04.1						10			
		ePE			04.3						9			
		eXE			12.7						1			
		eXN			"						2			
		iPPZ			18.9	3.6					13			
		iPPE			20.3	6.0			40.0		11			
		iPPN			20.7	6.0	18.5				12			
		iPPN			24.8	1.0	29.5				7			
		ePPN			"	0.4	1.5				10			
		eXN			28.2	6.5	1.0				2			
		eXE			30.2	10.0			1.0		1			
		iXE			30.6	0.8			9.0		6			
		eXE		31	00.2	8.0			1.0		1			
		eXN			06.2	8.0	0.5				2			
		eSN		33	07.6	5.2	16.0				12			
		iSN			11.7	1.8	17.0				7			
		eSSE			28.0	1.0			3.0		9			
		eSSN			28.2	1.0	2.0				10			
		isSE			30.0	5.0			48.0		11	(continuing)		

Serial No.	Date	Phase	Time			Period sec.	Amplitude			△	Instrument	Remarks	
			h	m	s		N	E	Z				mm.
201.	March 11	iSSN	00	33	37.8		68.0				12	(continued)	
		eSSSN			48.2	22.0	1.3				2		
		eSSSE			50.2	22.0	1.0				1		
		iSSSE			50.9		133.0				11		
		eScSN		41	57.8						10		
		eScSE			57.9						9		
		iScSN		42	08.4	8.0	55.0				12		
		iXE			22.5	12.0	40.0				11		
		MN			30	19.3	2.0	64.0					7
		ME			33	57.6	0.8	66.0					6
202.	20	ePZ	01	45	07.7	4.4		4.0	36.5°		13		
		ePE			09.0	0.6	0.5				6		
		ePN			09.3	0.8	0.5				7		
		ePE			09.6	2.4	2.0				11		
		ePN			"	2.4	2.5				12		
		iXN			11.5	1.6	2.5				7		
		iXE			11.8	1.2	4.5				6		
		esP?N			23.5	1.8	3.5				7		
		eXE			33.6	1.0	5.0				6		
		ePPN		46	20.5	2.0	3.0				7		
		ePPE			31.3	1.2	2.0				6		
		ePcPZ		47	38.9	6.0	14.0				13		
		esSN		51	17.1	1.6	1.5				7		
		eLQN		53	37.0	12.4	6.0				12		
		203.	22	ePZ	10	19	14.2	3.4		3.0	41.2°		13
ePE					15.5	1.0	1.5				6		
ePE					"	2.0	1.0				11		
ePN					15.9	0.8	1.5				7		
ePN					17.4						12		
iPZ					18.9	1.2	5.0				8		
epPN					22.6	0.4	3.5				7		
eXE					50.4	1.0	1.5				6		
iPcPZ				21	13.7	0.8	8.5				8		
eSN				25	19.6	2.0	1.5				7		
eSN					23.8	5.2	3.0				12		
eSZ					24.5	1.4	2.0				8		
eSZ					"	4.0	1.5				13		
eSE					25.2	1.2	1.5				6		
eXN					37.6	1.4	2.0				7		
eXZ				28	56.8	5.2	2.0				13		
eLQN				33	44.8	22	5.0				12		
eLRZ				38	38.4	12	7.0				13		
204.	22	ePN	11	17	38.4			57.8°		7			
		ePZ			38.7					8			
		ePE			38.9					6			
		eXZ		18	00.9	1.0	4.5			8			
205.	23	eXZ			47.8	1.2	2.5			8			
		ePZ			01.4	4.8	2.0			8			
		ePZ	10	20	07.6	1.6	5.0	25.9°		13			
		ePE			07.8	1.4	2.0			6			
		ePN			08.6					7	(continuing)		

Serial No.	Date	Phase	Time			Period sec	Amplitude			△	Instru- ment	Remarks
			h	m	s		N	E	Z			
205.	March, 23	epPZ	10	20	18.5	2.4			4.5		8	(continued)
		eXZ			36.5	1.4			4.0		8	
		eXN		21	04.2	2.2	2.5				7	
		eSZ		24	35.7	1.8			3.0		8	
206.	28	ePE	12	15	31.8	2.0		1.0		54.4°	6	
		ePZ			32.3						13	
		ePN			32.9	1.8	1.0				7	
		iPZ			33.1	1.2			4.5		8	
		epPN			51.8	0.8	2.0				7	
		eXZ		16	16.6	2.8			6.0		13	
		iXZ			17.7	2.0			10.0		8	
		eXN			18.5						12	
		iXE			19.0	1.2		4.5			6	
		eXN			"	1.2	1.0				7	
		eSN		22	56.7	3.0	3.0				7	

SEISMOLOGICAL REPORT FOR I.G.Y.

April 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
Latitude : 36° 12' 39" N  
Elevation: 286 m  
Foundation: Granite

Instrument:

No.	Name	Component	V <sub>max</sub>	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	σ	Date of Calibration
				sec	sec			mm		
1.	Hagiwara Inverted Pendulum Seismograph	EW	37	4.4		0.67		0.35		May 13, 1955
2.	"	NS	36	4.4		0.63		0.37		"
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.71		0.01		"
4.	"	NS	230	0.11		0.71		0.01		"
5.	"	UD	205	0.09		0.45		0.01		"
6.	Short-period Electro- magnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0		0.1	June 30, 1957
7.	"	NS	29000	0.98	1.10	1.0	1.0		0.1	"
8.	"	UD	37000	0.97	1.26	0.8	1.0		0.1	"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		nearly				"
10.	"	NS	2400	0.80		critical				"
11.	Long-period Electro- magnetic Seismograph	EW	1740	1.0	22.4	3.1	1.0		0.74	Dec. 26, 1957
12.	"	NS	1880	1.0	20.7	3.0	1.0		0.73	"
13.	"	UD	2330	1.0	21.6	2.3	1.0		0.66	"
14.	Columbia Long-period Seismograph	EW	585	15.1	77.	3.6	2.0		0.16	Feb. 10, 1958
15.	"	NS	610	15.1	97.	3.6	2.1		0.16	"
16.	"	UD	1460	15.0						"
					104.	1.5	2.1		0.15	"

T<sub>1</sub> : Period of pendulum

T<sub>2</sub> : Period of galvanometer

h<sub>1</sub> : Damping constant of pendulum

h<sub>2</sub> : Damping constant of galvanometer

ρ : Solid friction

σ : Coupling factor



Serial No.	Date	Phase	Time			Period sec.	Amplitude				Instrument	Remarks
			h	m	s		N	E	Z	$\Delta$		
207	April	4	07	37	59.9					43.1 <sup>0</sup>	7	
				38	00.4				-1.5		8	
208	4	cPZ	15	46	01.9	7.6			2.1	43.1 <sup>0</sup>	16	
		ePN			03.0	8.0	1.0				15	
		ePN			12.2						7	
		ePE			14.4						6	
		ePZ			15.9	1.3			3.0		8	
		ePP or PcPN		48	00.4	5.9	1.5				15	
		cPPPE			27.9	5.6		1.0			14	
		eXN			53.6	3.2	-1.6				15	
		eSN		52	38.7	10.0	-4.0				15	
		iXZ		53	36.5	10.5					16	
		iSSSE		56	27.1	8.4	-1.6				14	
		iXZ		57	09.9	9.2			5.3		16	
209	7	ePE	15	39	09.4	3.3		1.5		46.5 <sup>0</sup>	11	
		ePZ			12.0	2.4			2.0		13	
		iPZ			12.2	1.5			4.0		8	
		ePE			13.0	1.5		2.5			6	
		ePN			"	1.9	2.5				7	
		iPE			"	15.4		2.2			14	
		iPN			14.1	6.7	2.5				15	
		iPZ			"						16	
		iXZ			19.7	4.6			-19.0		13	
		eSE		46	01.4	4.1		2.0			6	
		iSE			02.5	8.8		15.5			14	
		eSE			13.0	7.9		-18.0			11	
210	7	iPE	18	05	53.4	0.7			-3.0		6	
		iPZ			"				28.0		16	
		cPN			53.8	0.6	-1.5				7	
		iPZ			"	2.4			27.0		8	
		iPE			"			scale out			14	
		iPN			"						15	
		iPN			"	3.1	-18.5				12	
		ePE			54.0						9	
		iPE			"	2.8		-18.5			11	
		iPZ			54.4	2.5			18.0		13	
		ePE			54.5						1	
		ePN			"						2	
		ePN			54.7						10	
		eXN		06	12.1	3.8	-0.5				2	
		cXN			55.5	4.0	-3.7				2	
		MN			57.0	0.8	42.0				10	
		ME		07	04.5	0.9		36.0			9	
211	7	iPE	18	01	05.6	1.1			-7.0		6	
		iPN			06.0	0.8		-3.0			7	
		iPZ			06.1				9.0		8	
		ePE			06.5						9	
		ePN			07.6						10	
		MN			08.2	0.7	-16.0				10	
		ME			10.2	0.7		27.0			9	

Serial No.	Date	Phase	Time				Amplitude				Instrument
			h	m	s	sec.	N	E	Z	△	
212	April 7	ePN	18	37	33.3						7
		ePE			33.4						9
		ePN			"						10
		ePZ			33.7						8
		ePE			34.5						6
		MN	40		31.2	1.1	18.5				10
		ME	41		12.5	0.9	27.5				9
213.	7	ePE	19	19	53.3				32.6°	6	
		ePN			54.6					7	
		ePZ			55.2					8	
214	8	eXZ	23		50.3	2.4		-3.0		8	
		ePN	00	22	50.7				47.1°	7	
		ePZ			53.5					8	
215	10	ePE			54.5					6	
		iPN	11	50	57.2	0.8	-5.0			7	
		ePN			"	0.6	-0.2			10	
		iPE			57.3	2.2	-6.0			11	
		iPN			"	3.0	-3.5			12	
		iPZ			"	1.6		6.0		13	
		iPE			57.4	0.8	-11.0			6	
		iPZ			"			19.0		8	
		ePE			"	0.8	-0.5			9	
		iPN			57.5	3.2	-3.2			15	
		iPZ			"	4.0		5.4		16	
		iPE			57.9	2.8	-5.5			14	
		ePE	51		05.9					1	
		ePN			"					2	
		eSN			35.1	0.6	-6.0			10	
		eSN			35.2	0.5	-0.2			2	
		eSE			36.4	0.8	-0.3			1	
		iSN			44.7	1.1	-9.0			12	
		iSZ			47.5	1.1		-20.5		13	
		eXE			59.9	4.0	-0.6			1	
eXN	52		00.9	4.8	-1.3			2			
MN	51		52.7	0.6	-16.0			10			
ME			53.9	0.6	-25.0			9			
MZ	52		02.5	2.5		-83.5		13			
ME			02.7	3.4		77.0		11			
216	11	eLRZ	00	03	54.6	30.2		-1.8	111.1°	16	
		eLRE		05	00.7	39.5		-1.5		14	
217	11	ePE	00	59	07.3	0.8		-1.0		9	
		ePN			"					10	
		iPZ			07.4			13.0		8	
		iPN			07.4	3.7	-8.5			12	
		iPE			07.6	0.9	-8.0			6	
		iPN			"	0.9	-3.5			7	
		iPZ			"					16	
		iPE			07.8	3.4	-13.0			11	
		iPZ			"	3.2		15.0		13	
		iPE			08.0	4.0	-16.6			14	
		iPN			"	4.0	-9.5			15	
		ePE			08.1					1	
		ePN			"					2	
		iPcP?E	01	06	14.0	8.4	-87.0			11	
		MN	06	00	16.4		38.5			10	
ME			32.4	1.9	-29.5			9			

Serial No.	Date	Phase	Time			Period	Amplitude				Instrument	Remarks	
			h	m	s		N	E	Z	$\Delta$			
218	April 11	ePN	23	14	52.9						15.2°	7	
		ePZ			"	1.4		-1.0				8	
		iPZ			54.2	5.6		1.7				16	
		ePE			54.8	0.9		-0.5				6	
		ePN			"	2.0	-0.3					15	
		ePE			55.7	2.4		1.0				11	
		ePN			"	2.4	-1.0					12	
		ePZ			"	2.0		-2.0				13	
		ePE	15		00.0	2.4		-0.9				14	
		iXE			01.6	0.9		-7.0				6	
		ePPZ			06.6	4.4			7.0			16	
		ePPN			08.9	6.4	3.6					15	
		eXE			30.7	3.2		1.3				14	
		iXN			33.4	1.0	4.7					15	
		iXZ			34.2	8.4			-4.9			16	
		eSE	17		27.8	0.6		-4.0				6	
		eSE			27.9	0.6		1.5				11	
		eSN			28.2	3.6	-1.3					15	
		iSN			28.4	1.0	-11.0					7	
		iSN			30.2	1.6	4.0					12	
		eSZ			32.0							8	
		iSSZ			40.2	5.6			-3.0			16	
		eSSZ			41.6	6.6			7.0			13	
		iSSN			44.2	2.8	5.5					15	
		iSSE			45.0	1.6		-1.1				14	
		iSSE			46.1	3.2		-8.0				11	
		eSSN			47.2	1.8	4.5					12	
		iXZ	19		03.0	14.8			11.8			16	
		iPcPN			22.2	17.6	-14.8					15	
		iPcPE			26.3	10.1		2.2				14	
		ePcPE			26.8	17.2		-5.0				11	
		iPcPN			17.0	15.4	12.0					12	
		MN	17		39.4	0.8	26.0					7	
		ME			53.7	0.4		-19.5				6	
219	12	ePZ	11	59	27.1	1.4		-3.0		88.2°		8	
		ePZ			"	5.0		-1.5				13	
		eXZ	12	00	01.6	5.2		-1.6				16	
		eSN		10	40.0	9.2	-2.0					15	
		eSE			47.0							14	
		eSZ			53.6	12.8		-2.1				16	
		eSSN		16	35.2	4.0	-0.3					15	
		eLQN		23	15.2	52.8	-3.0					15	
		eXZ		24	29.2	18.0		-2.4				16	
220	12	iPE	13	29	16.5	6.0		-3.1		17.0°		14	
		iPN			"	6.4	-2.1					15	
		iPZ			"	8.0		-7.9				16	
		ePZ			16.6	6.4		-3.0				13	
		ePE			16.7	6.0		-2.0				11	
		ePN			17.7							7	
		iPZ			"	1.2		3.0				8	
		ePE			17.8	1.2		2.0				6	(continuing)

Serial No.	Date	Phase	Time			Period sec.	Amplitude mm.				Instrument	Remarks		
			h	m	s		N	E	Z	△				
220	April 12	iXE	13	31	21.7	12.0		-6.6			14	(continued)		
		iSN		32	26.9	9.2	9.7				15			
		iSE			27.8	7.0		13.5			11			
		eSN			29.5	3.2	-3.5				7			
		iSZ			29.7	8.0			-10.0		16			
		iSE			30.2	3.2		3.5			6			
		iSN			30.4		8.0-19.0				12			
		eSZ			31.9	2.6			5.0		8			
		iSSZ			43.8	6.6			17.0		13			
		iPcPN			34	03.3	10.0	5.0			15			
		MZ			32	44.5	8.8		21.5		16			
		MM				52.9	10.4	15.3			15			
		ME			33	48.2	1.2		-12.5		14			
		221	13	ePN	09	15	52.0	2.8	-1.0				48.9°	7
				iPZ			58.6	6.8			-2.9			16
ePN				16	04.0						15			
ePE					04.2	0.6		0.5			6			
ePZ					07.5	0.6			1.0		8			
eSN				22	52.8	7.9	-1.8				15			
eSZ					55.4						16			
222	13	MZ		40	29.6	14.8			9.0		16			
		ePN	12	34	01.5	10.0	-6.0			22.5°	12			
		iPN			01.8	9.2	-7.7				15			
		ePZ			02.8	1.4			2.5		8			
		iPZ			02.9				16.9		16			
		ePZ			03.1	7.6			6.0		13			
		ePE			03.9	1.2		-1.5			6			
		ePN			"	1.2	-1.0				7			
		ePE			"	7.0		-3.0			11			
		iPE			04.1	4.3		-6.5			14			
		iXN			08.3	0.8	-8.5				7			
		iXE			16.1	1.0		-16.0			6			
		oSE			38	04.7	2.4		4.0		6			
		iSE			06.5	6.8		-21.5			11			
		iSN			09.7	1.6	-5.0				7			
		iSZ			12.1	6.0			13.0		13			
		eSN			16.5		3.2-12.0				12			
		iSN			20.1		16.0-16.5				15			
		iPcPN			23.9		2.8-15.0				7			
		iPcPZ			32.0		3.2		17.0		8			
		ME			11.5		9.6		35.0		11			
		MN			26.4		2.8-15.0				7			
MZ			42		22.9		82.0		16					
MN			45	24.9	14.0-45.5				15					
ME			46	14.9	16.4		-36.6		14					
223	14	eP"Z	21	51	38.1	4.4		3.5	127.7°	8				
		eP"E			41.9					6				
		eXN			55.7					7				
224	14	eP"E	22	38	42.2			127.7°	6					
225											No trace			
226											No trace			

Serial No.	Date	Phase	Time			Period sec	Amplitude			Instrument	Remarks
			h	m	s		N	E	Z		
227	April 17	iPE	11	33	13.9	1.6	25.0		30	11	
		iPN			"	1.6	17.0			12	
		iPZ			"	1.6		-33.0		13	
		iPE			14.1					6	
		iPN			"					7	
		iPZ			"					8	
		ePE			14.2	2.0	0.2			1	
		ePN			"	2.0	0.1			2	
		ePZ			14.0					5	
		ePE			14.3					3	
		ePN			"					4	
		iPN			"					10	
		iPN			14.4					15	
		iPZ			"					16	
		iPE			14.5					9	
		iSE			26.3				45.0	11	
		iSN			27.4				-30.0	12	
		eSZ			28.2	0.1				5	
		eSE			28.4	0.3			-1.1	3	
		eSN			"	0.3	1.2			4	
		eSN			28.7	2.0	-5.2			2	
		eSE			28.8	2.5	3.0			1	
228	19	eLRZ	04	44	33.5	32.4		2.0	89°	16	
229	21	ePN	20	25	39.7				60.5°?	12	
		iPZ			40.0	1.4		-7.0		8	
		ePN			43.8	1.8	1.5			7	
		ePE			44.2	1.2		-0.5		6	
		eXN		26	02.3	1.2	1.5			7	
		iSN		34	28.6	28.4	3.7			15	
		iSE			46.0	24.0		6.1		14	
		eSSSN		41	57.5	29.6	5.0			15	
		eSSSE			58.7	4.1		1.0		14	
		iLRE		44	52.8	32.0		6.4		14	
		iXN		45	32.0	29.2	12.0			15	
		eLRZ			54.0	40.8		17.0		16	
230	21	ePN	22	46	33.7	1.0	-1.0		53°	7	
		ePZ			"	1.0		-3.0		8	
		ePE			34.9	1.2		1.0		6	
		ePE			35.8					11	
		ePN			36.0					12	
		iXZ			42.2	0.6		-3.0		8	
		eXE			42.6	0.8		6.5		6	
		eXN			44.0	1.4	4.0			7	
		eXN			53.8	1.0	-2.5			7	
		ePcPZ		47	43.4	1.0		4.5		8	
		eSN		53	42.4	0.6	-0.5			7	
		eSE			43.3	0.8		1.0		6	
		eSZ			45.3	1.0		5.0		8	
231	22	ePN	00	05	08.4	0.8	0.5		43.8°	7	
		ePZ			"	1.0		3.5		8	
		ePE			09.1					6	
		iXZ			22.0	0.8		5.5		8	
		eXE			28.0					6	
		eLQE		15	19.9					14	
		eLRZ		18	25.5	22		4.8		16	

Serial No.	Date	Phase	Time			Period sec.	Amplitude				Instru- ment	Remarks
			h	m	s		N	E	Z	$\Delta$		
232	April	28	12	07	03.0	1.6			-2.5	140.5°	8	
					09.7					7		
					13.0	5.6		1.4		16		
					10 31.0					16		
					54 03.1	40.3	1.5			15		
					05.0	26.4		4.5		16		
233	30	19	47	14.2	1.2			5.0	151.5°	8		
				14.4	1.0		1.0		6			
				"	0.8	0.5			7			
				24.1	0.8		-2.0		6			
				46.1	1.4		-1.5		8			
				48 41.1					7			

SEISMOLOGICAL REPORT FOR I.C.Y.



May, 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
 Latitude : 36° 12' 39" N  
 Elevation: 286 m  
 Foundation: Granite

Instrument:

No.	Name	Component	V <sub>max</sub>	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	σ	Date of Calibration
				Sec.	Sec.			m.m.		
1.	Hagiwara Inverted Pendulum Seismograph	EW	37	4.4		0.67		0.35		May 13, 1955
2.	"	NS	36	4.4		0.63		0.37		"
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.71		0.01		"
4.	"	NS	230	0.11		0.71		0.01		"
5.	"	UD	205	0.09		0.45		0.01		"
6.	Short-period Electromagnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0		0.1	June 30, 1957
7.	"	NS	29000	0.98	1.10	1.0	1.0		0.1	"
8.	"	UD	37000	0.97	1.26	0.8	1.0		0.1	"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		0.8				"
10.	"	NS	2400	0.80		0.8				"
11.	Long-period Electromagnetic Seismograph	EW	1740	1.0	22.4	3.1	1.0		0.74	Dec. 26, 1957
12.	"	NS	1880	1.0	20.7	3.0	1.0		0.73	"
13.	"	UD	2330	1.0	21.6	2.3	1.0		0.66	"
14.	Columbia Long-period Seismograph	EW	585	15.1	77.	3.6	2.0		0.16	Feb. 10, 1958
15.	"	NS	610	15.1	97.	3.6	2.1		0.16	"
16.	"	UD	1460	15.0						"
					104.	1.5	2.1		0.15	"

T<sub>1</sub> : Period of pendulum

T<sub>2</sub> : Damping constant of pendulum

h<sub>1</sub> : Damping constant of pendulum

h<sub>2</sub> : Damping constant of galvanometer

ρ : Solid friction

σ : Coupling factor

Serial No.	Date	Phase	Time			Period sec.	Amplitude				Instrument	Remarks		
			h	m	s		N	E	Z	Δ deg.				
234.	May 1	iPN	00	38	34.9	3.6	2.7			56.0	15			
		iPZ			35.8	3.2			6.5		13			
		ePE			36.2	1.6		-1.5			6			
		ePE			36.2	1.6		2.0			7			
		iPZ			"	1.6				9.0		8		
		ePN			36.5	3.0		-1.5				12		
		ePE			39.3	4.0			-0.9			14		
		ePE			40.3	3.2			2.0			11		
		ePZ		39	20.3	12.0				5.0		13		
		opPZ			23.6	1.2				4.5		8		
		iPcPZ			35.8	1.8				5.0		8		
		ePcPN			40.9	10.4		-18.0				15		
		ePPZ		40	21.9	1.4				3.0		8		
		ePPN			52.9	4.4		-0.9				15		
		ePPPN		41	54.1	4.8		-1.2				15		
		eXN		42	53.4	10.0		2.0				12		
		eScP?		43	08.3	6.0				-3.5		13		
		iSN		46	00.9	21.6		11.0				15		
		iSZ			01.3	10.0				3.0		13		
		eSE			03.3	7.2			1.8			14		
		iSN			11.2	12.4		-8.5				12		
		isSE		47	23.7	14.0			7.6			14		
		isSN			36.9	24.8		-9.8				15		
		isSN			41.8	16.4		7.0				12		
		iSSN		49	57.7	24.0		07.8				15		
		eSSN		50	05.9	18.2		5.0				12		
		eSSSZ		52	25.9	24.0				-3.5		13		
		iSSSE			32.9	16.8			22.2			14		
		iSSSN			36.9	25.2		7.2				15		
		eSSSN			48.9	22.0		-6.0				12		
ePPPPKPZ			44.0	1.4				11.5		8				
235.	1	ePZ	12	35	52.8	0.8			1.0	11.5	8			
		ePN			53.0	1.2		-1.0			7			
		ePZ			53.4						13			
		ePE			53.8	0.4			-1.0		6			
		ePE			"						9			
		ePE			"						11			
		ePN			"						12			
		ePN			54.2							10		
		eSZ		37	28.2	0.6				-7.5		8		
		eSZ			28.6	4.8				-2.5		13		
		eSE			36.6	0.4				-0.5		9		
		eSE			36.8	3.2				-4.5		11		
		eSE			36.9	0.6				-6.5		6		
		iSN			38.0	0.6		17.5				7		
		eSN			"	4.2		3.0				12		
		eSN			38.4	0.4		1.0				10		
		ME			42.9	0.6			3.5			9		
		MN			49.9	0.4		-7.0				10		
		236.	2	ePZ	20	43	55.8					103.2	8	
				ePPZ		47	46.8	2.8			-1.5		8	



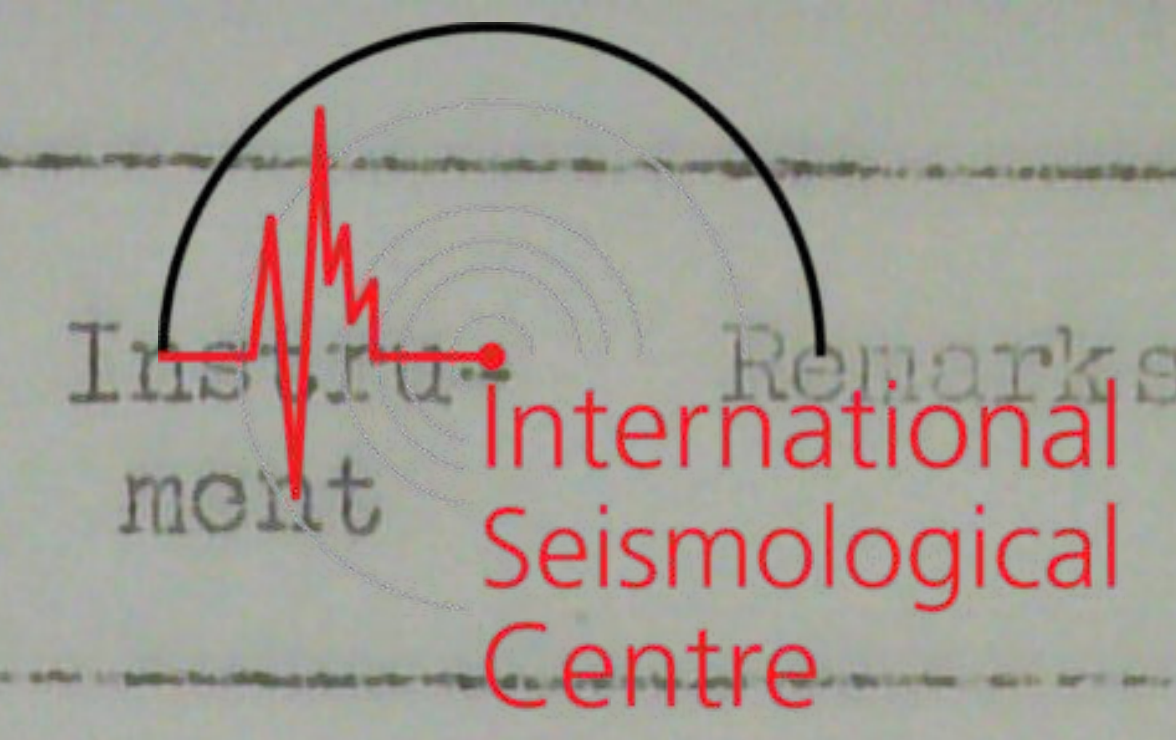


Serial No.	Date	Phase	Time			Period sec	Amplitude				Instrument	Remarks	
			h	m	s		N	E	Z	Δ			
237.	May 8	eP <sub>1</sub> E	13	00	18.3						153.8	6	
		cP <sub>1</sub> Z			"	1.0			-1.5			8	
		eP <sub>1</sub> N			19.0							7	
		iP <sub>1</sub> Z			19.2	9.6			-2.5			16	
		eP <sub>1</sub> E			21.2	38.0	3.0					11	
		iP <sub>1</sub> N			26.4	4.0	-0.5					15	
		eP <sub>1</sub> N			41.3	1.2	2.0					7	
		iP <sub>1</sub> Z			"	1.0			5.0			8	
		eP <sub>2</sub> E			41.5	30.0	2.0					11	
		iP <sub>2</sub> Z			42.8	7.6			5.9			16	
		cXE			48.9	1.2	2.0					6	
		iXZ		01	29.3	2.0			7.5			8	
		cPPZ		04	15.0	3.0			1.5			8	
		ePPZ			18.2	0.4			-3.7			16	
		cPPN			22.4	7.2						15	
		ePKKP or PcPPKPZ		08.	41.6	5.2			1.1			16	
		238	9	cLRZ01		38	34.0	36.0		1.5	116.9		16
		239	9	eP <sub>1</sub> E	04	29	34.6	1.2		-0.5		158.0	
cP <sub>1</sub> N					37.4	0.4	0.5					7	
iP <sub>1</sub> N				30	00.4							7	
iXZ					40.1	1.2			-3.5			8	
MZ					44.2	1.4			-19.0			8	
eXE					44.2	1.4		1.5				6	
eXN					44.6	0.8	-1.5					7	
iPPZ				34	24.2	2.0			-5.5			8	
cPPE					24.6	1.4			-2.5			6	
240.	10			ePZ	23	03	25.6				48.1		8
		ePN			32.0						7		
		ePZ			33.0	6.0		-0.7			16		
		eSZ		10	25.0	6.8		-0.7			14		
		eSE			26.2	16.8	0.5				15		
		eSN			28.6	6.8		0.5			15		
		cXZ		16	05.0	6.8		-0.5			16		
		cXN		17	33.0						15		
		eXN		21	40.2	22.0	-2.0				15		
		cLQN			57.4	24.0	-1.0				12		
		iXZ		28	14.6	14.0		-2.5			16		
241.	11	ePZ	05	32	43.9	1.6		2.0	48.1		8		
		cPN			44.2						7		
		cPPZ		34	05.2						8		
242.	18	iPZ	02	42	27.2	8.0		4.0	55.5		13		
		ePN			28.3							7	
		ePN			28.5	8.8	1.7					15	
		iPZ			28.9	10.4			8.8			16	
		cPE			29.0							6	
		cPZ				1.0			1.0			8	
		ePE			29.3	8.0		-0.8				14	
		MZ			31.1	1.4			6.0			8	
		epPZ			33.3	3.0			-4.5			8	
		epPE			38.3	1.8			-1.5			6	
		epPN			38.5	2.0	-1.0					7	
		eXZ			56.7	1.8			5.0			8	
		eXE			59.2	1.2			1.5			6	

(continuing)

Serial No.	Date	Phase	Time		Period sec.	Amplitude				Instrument				
			h	m		N	E	Z	Δ					
							mm	deg						
242.	May 18	ePcPZ	02	43	29.2	2.0			3.0		8	(continued)		
		ePcPN			33.3	1.6	1.5				7			
		eSN		49	47.3	10.4	-1.0				15			
		eSE		50	08.3	8.0		1.0			11			
		eSE			09.0	9.2		-1.4			14			
		eSN			09.5	6.8	2.0				12			
		eSSE		55	42.5	20.0		4.9			14			
		ME		58	20.1	20.0		11.0			14			
		MN	03	00	42.5	16.0	6.5				15			
		MN			46.9	16.0	3.0				12			
		eXE		04	36.5	15.2		-1.8			14			
		MN			52.7	16.8			4.5		13			
		iPPZ		12	36.5	16.4			-6.5		16			
		243.	18	cPN	12	30	52.9	0.4	1.0		55.5			12
				cPN				4.4	1.5					15
iPZ					53.0	1.9			2.5		8			
iPZ						3.2			3.0		13			
iPZ					53.2	9.6			4.5		16			
iPN					53.4	1.8	0.5				7			
cPE					58.4	2.6		0.7			14			
MZ					53.6	2.4			6.0		8			
MN	31			00.0	2.6	2.0					7			
ePPZ	32			38.8	8.0			-2.3			16			
ePPN	33			31.0	9.6	-0.8					15			
eSN	38			33.2	13.2	2.2					15			
eSE				36.8	13.6		1.9				14			
eSN				38.6	8.8	1.5					12			
eLQE	44			18.0			-2.7				14			
cLQN		59.6	13.8						15					
ME	46	45.2	22.0		9.0				14					
MN	47	50.0	14.4	6.5					15					
MZ	13	07.	29.6	14.4					16					
244.	22	ePN	15	15	38.1				39.6		7			
		ePZ			38.7				-0.5		8			
		cPZ			42.9	8.0			-1.6		16			
		cPcPZ	17	54.1	7.2				-1.8		16			
		iSE	21	4.17	7.2		-1.3				14			
		iSN		46.5	9.2	1.6					15			
		iSZ	22	48.1	9.6			-1.7			16			
		iSSE	24	40.9	19.2		6.5				14			
		ME	25	20.5	50.0		7.5				14			
		MN		29.3	19.2	4.1					15			
		MZ	28	05.3	26.4			7.7			16			
		iLRE	26	39.3	20.8		-4.9				14			
		cLRZ	27	33.7	24.0			8.0			16			
		245.	25	ePZ	17	42	17.2	1.8			1.5	10.5	8	
				cPZ			17.9						13	
cPN					19.4						7			
ePPZ					39.1	2.7			-1.0		8			
eSZ	45			26.3							16			
eSN				28.3							15			
eSN				42.5	6.4	3.0					12			
iSZ				49.5	4.0			-4.0			8			
cSN	46			02.3	3.0	-2.5					7			
eXN				12.7	4.8	2.5					15			
eXN				16.7	4.0	11.0					12			

(continuing)



Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks					
			h	m	s		N	E	Z			Δ				
245.	May	25	17	46	iLZ	43.1	13.2			6.4	16	(continued)				
					iLE	57.9	14.0		7.9		14					
					eLN	00.7	10.8	3.5			15					
					eLN	02.9	10.2				12					
					iLZ	05.0	12.0			24.0	13					
					iLE	07.8	12.0		16.5		11					
					MN	16.1	2.4	3.5			7					
					MZ	23.9	2.6			12.0	8					
					ME	01.5	12.4		15.3		14					
					MZ	06.7	11.2			38.8	16					
					MN	22.7	29.2	8.9			15					
					246.	25	21	30	eP"Z	54.6	5.2			1.5	132.2	16
									eP"Z	55.0	2.0			-2.5	8	
									eP"Z	58.2	4.0			3.0	13	
eP"Z	58.4									7						
ePPZ	16.6	9.2							2.0	16						
ePPE	17.4	4.0		-1.7						15						
ePKSZ	20.6	6.8							-1.0	16						
ePKSZ	23.1	2.8							3.0	8						
ePKSZ		7.6							5.0	13						
ePKSN	23.8									7						
ePKSN	25.7	5.6	2.0							12						
ePKSE	25.8			-3.8						14						
ePKSE	26.1	3.6		2.5						11						
ePKSZ	36.6	6.4							6.5	13						
eSSE	47.8	35.6							3.5	13						
eLRZ	22	13	46.6							16						
eLRE			52.6							14						
247.	29	05	23	ePN					30.3					9	12	
				ePZ					30.3	0.8	0.5			13		
				ePN					30.7	6.8	0.9			15		
				ePZ	30.7	4.0			6.0	16						
				ePE	30.8					11						
				ePN	31.1	0.8	1.0			7						
				iPZ	31.1	1.2			2.5	8						
				ePE	31.4					9						
				ePN	31.4					10						
				ipPN	36.7	0.8		-19.0		7						
				iXZ	54.0	1.0			10.5	10						
				eSN	24	57.2	0.8	0.5		12						
				iSZ	57.3	1.2			-13.5	8						
				eSZ	57.9	1.6			2.5	13						
				eSN	58.1	1.0	11.0			7						
				eSN	58.3	2.4	-1.0			15						
				eSZ	58.3	3.6			-1.8	16						
				MN	25	00.5	1.4	4.0		12						
				MZ	05.0	1.2			4.5	13						
				MN	05.6	1.2	37.0			7						
				ME	07.7	1.2		8.0		11						
				ME	08.4	0.8		-6.0		9						
				MN	08.7	5.6	2.0			10						
				M				scale out		8,9,14 15 & 16						
				248.	30	18	12	ePZ	18.5	1.2			-1.5	39	8	
								ePZ	19.2	5.6			-1.0	13		
ePN	20.4									12						
ePN	20.5									7						
ePN	20.5									(continuing)						

Serial No.	Date	Phase	Time			Period sec	Amplitude			Instrument	Remarks					
			h	m	s		N	E	Z			$\Delta$ deg				
248.	May	30	18	12	cPN	21.4	6.0	-0.8			15 (continued)					
					cPE	23.0	3.2		-0.8		14					
					ePZ	23.0	8.0			2.3	16					
					ePE	23.8					11					
					MZ	37.7	2.0			10.0	8					
					MN	45.8	1.8	3.0			12					
					ePPZ	13	54.2	11.2			-5.0	16				
					ePPE		54.6	11.2		-2.5		14				
					eSE	18	18.2	6.0		0.8		14				
					eSN		21.4	8.0	21.5			12				
					eSN		22.2	7.2	2.0			15				
					eSN		22.5	2.4	-1.0			7				
					eSZ		22.5	4.4			1.5	8				
					eSE		23.3	8.4		3.0		11				
					eSZ		23.7	4.8			2.0	13				
					LQN	21	19.8	17.2	4.3			15				
					iSSE		20.6	5.6		-3.9		14				
					eScSZ	22	30.5	4.0			-0.5	8				
					LQE		44.6	23.6		5.8		14				
					LRE	26	23.0	20.0		-4.0		14				
					LRN		25.4	22.0	-21.0			15				
					LRE		28.5	22.0		3.0		11				
					LRZ		42.1	21.6			7.0	13				
					MN	23	27.8	22.0	6.5			15				
					ME	27	36.6	18.8		7.0		14				
					MZ		49.8	20.4			21.9	16				
					249.	31	19	42	ePZ	23.4	2.8			-2.0	57.8	8
									cPE	23.5	7.2		-0.7		14	
									ePZ	24.6	6.0			2.0	13	
									ePN	24.9					7	
ePN	25.1	4.8	1.5							15						
ePE	27.5									11						
ePN	29.1									12						
MZ	33.7	2.4							21.0	8						
iXZ	39.6	10.4							36.5	13						
MN	49.5	1.8	5.0							7						
ePPPZ	45	55.7	4.4							-4.0	8					
eSN	50	25.0	3.2	1.0							7					
iSN		25.5	20.0	35.6							15					
iSE		32.1	11.6							-13.0	11					
iSE		33.1	11.2						-23.3		14					
LN	57	29.1	19.2	10.3							15					
MN	59	47.5		55.2							15					
MN	20	00	22.8	25.2					3.5		12					
ME	05	20.7	14.8						40.0		11					
MZ		56.9	16.0							48.0	13					
eP'P'Z	12	13.9	3.0							-2.5	8					

SEISMOLOGICAL REPORT FOR I.G.Y.

June 1958

STATION: Mt. Tsukuba (Japan)

Longitude: 140° 06' 36" E  
Latitude : 36° 12' 39" N  
Elevation: 286 m  
Foundation: Granite

Instrument:

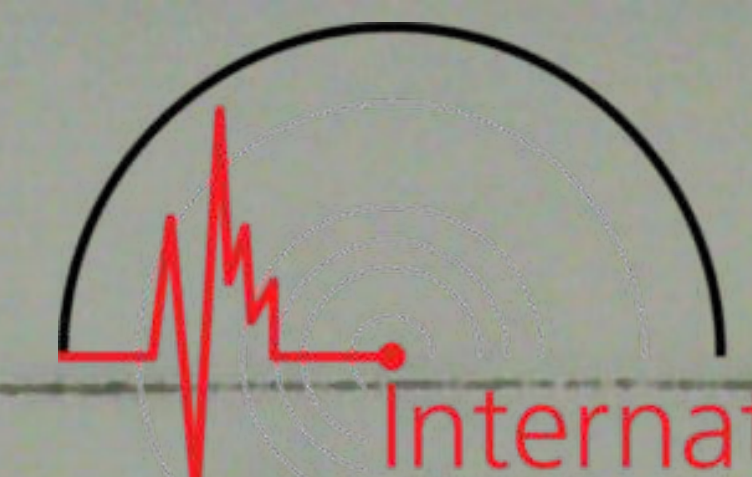
No.	Name	Component	V <sub>max</sub>	T <sub>1</sub>	T <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	ρ	σ	Date of Calibration
				sec.	sec.			mm.		
1.	Hagiwara Inverted Pendulum Seismograph	EW	37	4.4		0.67		0.35		May 13, 1955
2.	"	NS	36	4.4		0.63		0.37		"
3.	Ishimoto Acceleration Seismograph	EW	200	0.12		0.71		0.01		"
4.	"	NS	230	0.11		0.71		0.01		"
5.	"	UD	205	0.09		0.45		0.01		"
6.	Short-period Electro- magnetic Seismograph	EW	29000	1.00	1.16	1.0	1.0		0.1	June 30, 1957
7.	"	NS	29000	0.98	1.10	1.0	1.0		0.1	"
8.	"	UD	37000	0.97	1.26	0.8	1.0		0.1	"
9.	Wood-Anderson type Seismograph	EW	2000	0.80		0.8				"
10.	"	NS	2400	0.80		0.8				"
11.	Long-period Electro- magnetic Seismograph	EW	1740	1.0	22.4	3.1	1.0		0.74	Dec. 26, 1957
12.	"	NS	1880	1.0	20.7	3.0	1.0		0.73	"
13.	"	UD	2330	1.0	21.6	2.3	1.0		0.66	"
14.	Columbia Long-period Seismograph	EW	585	15.1	77.	3.6	2.0		0.16	Feb. 10, 1958
15.	"	NS	610	15.1	97.	3.6	2.1		0.16	"
16.	"	UD	1460	15.0						"
					104.	1.5	2.1		0.15	"

- T<sub>1</sub> : Period of pendulum  
T<sub>2</sub> : Damping constant of pendulum  
h<sub>1</sub> : Damping constant of pendulum  
h<sub>2</sub> : Damping constant of galvanometer  
ρ : Solid friction  
σ : Coupling factor



International  
Seismological  
Centre

Serial No.	Date	Phase	Time			Period	Amplitude				Instrument	Remarks			
			h	m	s		sec	N	E	Z			Δ		
250	June, 3	ePN	19	41	45.8						57.5	7			
		iPZ			46.2	3.6				-3.0		8			
		ePE			"	6.8			-1.0			11			
		ePN			47.3	5.2		-1.0				12			
		ePZ			"	6.0				3.5		13			
		ePE			47.4	6.8				-1.0		14			
		ePN			"	6.4		1.6				15			
		iPZ			47.8	8.4					5.9	16			
		ePcPZ		42	26.2	2.8					-2.0	8			
		eSZ		49	29.3	10.0					2.0	13			
		eSE			35.6	14.0				5.0		11			
		eSE			54.2	9.2				4.4		14			
		eSN			"	12.4		3.3				15			
		eSSZ		53	05.0	9.6					-3.0	13			
		iXN		57	29.1	19.2		10.3				15			
		eLQE		59	48.1	20.0					-10.5	11			
		eLRZ		20	05	23.5	16.6				5.0	13			
		MZ		19	41	57.1	3.2				6.0	8			
		MZ				57.2	7.2				7.0	13			
		ME		42	04.7	1.2				0.5		6			
		MN			08.5	2.4		1.5				7			
		MN		59	13.8	26.4		6.0				15			
		ME			38.2	25.2				11.8		14			
		ME			48.1	20.0				6.0		11			
		MN			59.4	18.4		2.0				12			
		MZ		20	06	34.2	21.2				13.0	16			
		251.	4	ePN	14	37	26.7	7.2				-0.6	40.5	15	
				ePE			28.0						6		
				ePZ			"	1.8				4.5	8		
				ePE			"	3.2				-1.0	11		
ePZ					"	5.6				2.0	13				
iPZ					"	9.2				3.8	16				
ePN					28.3						7				
ePE					"	10.0				-1.0	14				
ME					42.9	1.4				0.5	6				
MN					44.0	2.2		1.5			7				
MZ					55.5	1.8				6.0	8				
eXZ					53.7	2.0				-3.0	8				
ePPZ				38	59.7	8.1				2.0	16				
eScPE				43	31.9	10.4				-2.3	14				
eScPN					34.1	11.6		2.9			15				
eScPZ					36.5	8.2				4.2	16				
eSN					33.8	3.0		1.0			7				
eSN					34.6	8.8		1.0			12				
eSZ					35.0	7.4				2.0	13				
eSE					35.2	9.2				3.5	11				
eSE					46.9	9.2				-2.4	14				
eSN					47.7	12.0		10.0			15				
eSZ					"	10.0				9.6	16				
eScSN				47	24.0	11.2		-3.0			12				
eLQN				46	58.5	21.6		-10.1			15				
eLQE				47	23.6	30.0				8.5	14				
eLQE				51	12.0	20.0				5.0	11				
eLRZ					00.3	24.0				-10.1	16				
eLRZ				53	10.2	24.0				9.0	13	(continuing)			



Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks			
			h	m	s		sec.	N	E			Z		
							mm.	deg.						
251	June	4	ME	14	54	04.9	19.6	6.5			14	(continued)		
			MZ			06.4	18.4			17.5	16			
			ME			11.1	18.0		4.0			11		
			MN			15.8	15.6	2.5				12		
			MZ			27.2	18.8				5.0		13	
252	6	ePPE	09	31	28.5					119.0	14			
		ePPZ			29.4	7.6				1.0	16			
		ePPE			36.0						6			
		ePPZ			37.1	2.0				1.0	8			
		eXE	32		05.3				1.0		11			
		eXZ			06.1	6.4				-2.0	13			
		ePKSZ	33		51.6	2.4				2.0	8			
		ePPPZ	34		06.8	8.4				3.0	13			
		ePPPZ			08.2	7.2				4.5	16			
		ePPPE			11.6	6.0			1.5		14			
		ePPPZ			19.1	5.2				1.5	8			
		eSKKSE	38		36.5	6.8			1.0		14			
		ePSZ	41		19.0	19.8				4.4	16			
		ePSE			20.6	25.6			-3.3		14			
		ePSN			25.4	8.8			-1.2		15			
		ePSE			27.1	5.6			2.0		11			
		eSSZ	47		55.5	8.8				1.5	13			
		eSKKSE	48		08.0	18.0					11			
		eSKKSN			09.4	25.2			32.0		15			
		iSSPE			17.0	32.0			-12.2		14			
		ePoSPKPZ			55.4	15.2				4.7	16			
		eXZ	10	07	34.2	42.0				-6.5	16			
		eLRZ		22	37.0	21.6				4.5	16			
		eLRN			44.2	28.0			-6.8		15			
		ME	09	48	16.6	20.0			2.5		11			
		ME			17.0	32.0			6.1		14			
		MZ	10	25	17.0	23.6				11.0	16			
		MN			25.0	24.0			6.0		15			
		253	6	ePSZ	19	46	54.4					122.5	16	
				ePSN		52	51.8						15	
eXE				53	01.8	30.0			1.0		14			
eSSZ					25.0	15.2				1.5	16			
eLQE	20			14	03.8						14			
eLRZ				28	51.8	19.6				2.5	16			
MZ				41	33.8	18.0				2.3	16			
254	8	ePN	00	46	30.9	1.0	1.0			40.5	7			
		ePE			"						9			
		ePZ			"						13			
		ePZ			31.0	0.8				1.0	8			
		ePE			31.2	1.0			1.0		6			
		ePE			"						11			
		ePN			33.2	4.8		-0.4			15			
		ePZ			"	5.2				1.3	16			
		ePE			33.6						14			
		MZ			31.5	1.2				13.5	8			
		ME			32.1	1.2			4.5		6			
		MN			34.9	1.0		1.5			7	(continuing)		

Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks			
			h	m	s		sec.	N	E			Z		
							mm.	deg.						
254	June	8	ePcPZ	00	48	34.4	1.6			2.0	8	(continued)		
			ePcPN			39.3	6.8	-2.0			12			
			ePcPE			40.0	9.0		-2.0		11			
			eScPZ	52		21.2	11.2			0.9	16			
			eSE			34.4	8.0		-0.7		14			
			eSN			34.8	13.2		2.4		15			
			eSZ			54.0	16.0			-2.1	16			
			eLQN	56		26.0	28.0		3.0		15			
			eLRE	58		42.4	26.0			-4.4	14			
			eLRZ	59		05.6	24.4			-6.5	16			
			MN	58		20.0	19.2		3.4		15			
			ME	01	00	00.0	22.0			3.0	14			
			MZ			21.6	20.4				7.7	16		
			255	10	ePZ	04	55	35.1	2.8			2.5	10.0	13
ePN					35.3						12			
ePN					38.4	0.6	1.0				7			
ePZ					"	1.2			3.0		8			
iPE					39.5	1.2		-1.5			6			
ePN					39.7						10			
ePE					39.8	1.2		-0.5			11			
ePE					40.5						9			
eSE	57				13.4	4.8		-2.0			11			
eSN					"	3.2	2.5				12			
iSN					13.8	0.8	-10.0				7			
eSN					14.2						10			
eSE					14.8	0.8		4.0			6			
eSE					15.6	0.4		-1.0			9			
eSZ					15.7	4.4			-4.5		13			
MN					18.1	0.8	22.5				7			
MN					18.6	3.0	5.0				12			
MN					19.9	0.6	1.5				10			
ME					24.5	0.6		2.5			9			
MZ					24.9				-29.5		8			
ME					29.0	0.8		36.5			6			
ME					33.8	4.0		5.0			11			
MZ					38.3	3.6				3.0	13			
256	12	eLZ			13	07	05.1					120	16	
		eLN					05.3						15	
257	12	ePZ			21	00	34.8	3.0			4.0	40.5	8	
		ePN					35.7						15	
		ePZ					35.9	9.2			2.5		13	
		ePE			36.3	10.0		-2.0			11			
		ePE			36.5	2.4		2.0			6			
		ePN			"						7			
		ePE			36.9	11.8		-2.2			14			
		iPZ			"	10.8			5.5		16			
		ePN			39.9	10.4	1.0				12			
		MZ			40.1	1.0			11.5		8			
		ME			59.1	1.4		4.0			6			
		MN				1.6	2.5				7			
		ePcPZ	02		32.8	2.8			-4.0		8			
		ePcPN			35.1	2.4	-2.0				7			
		eScPZ	06		20.3	9.2			2.5		13	(continuing)		





Serial No.	Date	Phase	Time			Period	amplitude			Instrument	Remarks			
			h	m	s		N	E	Z					
						sec.	mm.	deg.						
257	June	12	eSN	21	06	41.7					7	(continued)		
			iSE			42.9	11.2	-7.3			14			
			eSZ			43.9	3.6			-1.5	8			
			eSE			45.3	2.0	-0.5			6			
			eSZ			46.2	10.0	9.0			13			
			iSN			47.1	17.6	-13.0			15			
			eSE			48.2	16.0	-5.0			11			
			iLQN	10		20.9	32.0	19.0			15			
			iLQE			24.9	31.6	-20.0			14			
			eLRZ	13		28.1	24.0			-36.8	16			
			eLRZ	15		12.3	22.0			-14.0	13			
			eLRE			14.1	20.8	-8.0			11			
			ME	17		12.7	21.6	11.0			11			
			MZ			13.0	19.6			13.0	13			
			MZ			15.3	22.0			47.0	16			
			ME			24.1	17.6			20.5	14			
			MN			29.0	18.0	8.5			12			
			258	15	eFN	15	04	36.1	2.8	1.0		67	15	
					ePE			36.3	2.2		-0.5		6	
					ePN			36.9	0.8	1.0			7	
ePZ					"	0.8			5.0	8				
ePE					"	1.6		-1.0		11				
ePN					"	2.4	0.5			12				
iPZ					"	5.6			4.5	13				
iPZ					"	8.4			4.5	16				
ePE					37.1	28.0	-0.9			14				
MZ					37.4	1.6			20.4	8				
MN					37.6	0.8	3.0			7				
ME					38.2	1.2	2.5			6				
ePcPZ					52.4	1.2			-2.5	8				
ePcPE					52.5	43.6	0.6			9				
eXZ	05				27.7	1.2			-1.5	8				
eXZ					44.5	2.0			1.5	8				
eXE	06				21.3					14				
eXZ					28.9	6.0			2.0	16				
eXZ					31.4	3.2			5.0	8				
epPZ					58.8	2.4			-5.0	8				
ePPN	07				08.9	4.0	-1.0			15				
eXE	08				38.9					14				
ePcSN					53.3	6.0	1.0			15				
ePcSZ					58.8	2.4			5.0	16				
eSZ	12				37.7	5.6			3.7	16				
eSE					39.8	5.2			1.0	11				
eSE					40.2					6				
eSE					40.9	5.2			1.0	14				
eSZ					42.5	9.6			5.0	13				
eSN					42.9					7				
eSN					44.1					12				
eSZ					44.3	2.8			-1.5	8				
MZ					42.5	9.6			4.0	13				
ME					44.8	8.0			9.0	11				
ME					45.7	9.2			9.7	14				
MZ			46.1	10.8			5.5	16						
MN	13		43.7	12.8	7.5			15						
MN			44.9	8.8	3.5			12	(continuing)					

Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks
			h	m	s		sec.	N	E		
258	June 15	iScSN	15	13	43.7	12.8	7.0			15	(continued)
		eScSE			44.1	9.2		-2.6		14	
		eXN	16		12.9	16.8		-3.0		15	
		eSSE	17		05.3	18.0			0.6	14	
		eSSSN	20		19.7	11.2		1.0		15	
		eXE	23		12.9	16.0			2.5	14	
259	17	ePN	19	09	29.4	3.2	-1.1			12	15
		ePN			29.8	1.4	2.0				7
		ePZ			30.6	1.2					8
		ePN			31.4						12
		ePZ			"	0.6			-1.5		13
		ePE			38.2	7.2		-0.7			14
		ePZ			"	8.0			4.9		16
		eSE	11		29.1	4.8		-2.5			11
		eSE			31.0	4.8		-2.6			14
		eSE			38.0	0.8		-10.0			6
		eSN			39.0	1.6		1.5			12
		iSN			40.5	1.0		-16.0			7
		eSZ			40.6	2.4				-0.8	16
		eSN			41.0	2.4		-2.4			15
		eSZ			41.2	1.0				-8.0	8
		iLQE			54.8	10.0				-18.0	11
		eLRZ	13		27.9	23.2				13.0	13
		ME	11		43.7	0.8				28.0	6
		MN			46.3	1.0		15.5			7
		MZ			"	1.6				31.5	8
		ME	12		27.8	9.0				22.0	11
		MZ	13		28.2	2.0				31.0	16
		ME	14		42.2	14.0				29.5	14
		MZ	15		12.2	14.8				11.0	13
MN			"	14.0		16.4			15		
eXE			22	40.4	14.8			-6.9	14		
260	19	ePZ	05	22	06.2	13.2			3.5	17.5	16
		ePE			06.7						6
		ePE			06.9	16.0			-1.6		14
		ePN			"	14.8		-2.1			15
		ePN			07.0						7
		ePZ			07.3						8
		ePZ			08.3						13
		ePE			09.4						11
		ePN			09.9						12
		MZ			12.7	7.2				5.5	13
		ME			13.0	1.4				-6.5	6
		MZ			"	1.4		5.5			8
		MN			50.7	2.0				14.5	7
		ME	25		54.0	8.4				5.5	11
		eSE			29.5						6
		eSN			30.4	0.8		5.5			7
		eSN			30.5	5.0		-4.0			12
		eSE			30.9	7.6				10.5	14
		eSN			"	8.4		-6.4			15
		eSZ			31.0	2.2				-4.0	8
		eSE			31.3	5.0				8.0	11
		eSZ			32.0	8.0				4.0	13
		eScSN			33	53.7	14.0		4.0		12
		eScSN				54.9	12.8		12.0		15

Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks		
			h	m	s		sec.	N	E			Z	
261	June 23	ePZ	05	16	25.6					8	Love and Rayleigh waves were clearly recorded		
		eLQE		23	23.0	48.0		-2.0	30.5	14			
		eLQN			35.0	52.0	3.8			15			
		eLQN		25	12.5	26.8	-3.0			12			
		eLRZ		26	32.5	18.0			-4.0	13			
		MN		18	18.2	1.2	0.5			7			
		ME		19	39.3	1.4		0.5		6			
		MZ		20	05.8	1.8			1.0	8			
		MN		26	31.3	15.6	11.4			15			
		MN			55.2	14.8	7.5			12			
		ME		28	33.0	14.0		11.0		14			
		ME			36.5	13.6		8.0		12			
		MZ		30	56.3	11.2			6.5	13			
		262	25	ePN	09	44	04.8	8.0	1.0			39.5	15
				ePZ			"	7.6				2.4	16
ePN					05.3					7			
ePZ					"	2.2			-2.5	8			
epN					06.2	6.8	-2.5			12			
ePZ					"	7.4			-5.0	13			
ePE					06.5					6			
ePE					11.8	3.6		-1.5		11			
ePE					15.2	5.6		2.5		14			
ePPN				45	42.4	7.6	4.0			15			
MZ				44	26.5	2.0			14.0	8			
MN					31.0	2.0	5.5			7			
ME				45	09.8	2.0		3.5		6			
iPcSE					05.5	13.0		-11.5		11			
iScPE				50	06.8	17.6		-29.4		14			
iSN					09.6	10.4	-22.0			15			
eSN					11.6	5.4	3.5			7			
eSE					13.0	4.8		-2.5		6			
eXE					50.0	14.4		19.9		14			
iLRZ				58	04.4	20.0			24.0	13			
iLRN					14.0	19.2	46.0			12			
ME				53	31.1	44.0		73.0		14			
ME				59	55.3	14.0		32.0		11			
MN				10	04	02.0	18.0	77.5		15			
MN						02.8	18.0	44.0		12			
MZ						15.2			49.0	13			
MZ						27.2			132.0	16			
263	26	ePE	04	43	12.9	2.4		1.5	22.5	6			
		ePN			"	2.8	2.5			7			
		ePZ			"	2.8			-9.0	8			
		iPE			13.4	4.4		4.0		11			
		iPN			"	4.2	-5.0			12			
		iPZ			"	5.6				13			
		iPZ			13.9	8.0			-13.0	16			
		MZ			13.4	5.6			12.0	13			
		MZ			13.7	2.2			42.0	8			
		MN			22.7	2.4	13.5			7			
		ME			23.2	1.0		8.5		6			

(continuing)

Serial No.	Date	Phase	Time			Period	Amplitude			Instrument	Remarks				
			h	m	s		sec.	N	E			Z			
263	June	26	ePPZ	04	43	51.2	8.6			-7.0	13	(continued)			
			ePPZ			51.9	9.2			14.0	16				
			eSZ	47	02.7	18.4				-28.4	16				
			eSE		07.2	9.4				6.5	11				
			eSE		08.3	1.2				-2.0	6				
			eSN		"	13.4		5.0			12				
			eSZ		09.2	4.4				-4.0	13				
			eSN		10.2	1.6		-4.0			7				
			ePcPZ		16.9	3.6				10.0	8				
			ePcPZ		19.2	7.2				11.0	13				
			eSSZ		54.8	18.8				17.5	16				
			MZ		57.9	16.8				15.8	16				
			ME		59.2	9.6				17.0	11				
			MN	48	03.4	9.6		10.0			12				
			ePcSZ	50	35.5	2.6				-5.5	8				
			eScSE	54	14.8	3.6				-3.0	6				
			eScSE		16.3	2.6		-1.5			7				
			264	27	eLZ	06	38	08.9	36.0				113.0	16	
			265	29	eP <sup>h</sup> Z	03	45	07.8	7.6				-1.6	142.5	16
					ePPZ		48	10.0	5.2				0.8		16
266	30	ePE	18	27	37.0	10.0			-0.5	6	14				
		ePN			38.1	8.8		3.5			12				
		ePZ		"	"	8.0				4.0	13				
		iPN			38.6	9.6		6.1			15				
		iPZ		"	"	10.0				9.6	16				
		ePE			38.9						6				
		ePE			39.3						11				
		iSE	28	31.4	12.0				-17.0		14				
		iSE		37.0	8.0				-29.5		11				
		iSE		39.1	1.0				29.0		6				
		iSZ		39.3	7.0					41.0	13				
		iSN		42.1	1.0				-41.0		7				
		iSN		43.0	8.4				27.0		15				
		ME		43.1	0.8					50.5	6				
		MN		44.0	0.8				44.0		7				
		MZ		44.6	1.2					61.0	8				
		ME	29	02.8	8.0					145.0	11				
		ME	31	17.4						107.5	14				
		MZ		37.4	10.8					105.0	13				
		MN	32	03.3	10.8			120.0			12				
MZ	34	29.4						107.5	16						
MN		51.4	16.8			111.0			15						