

地震季報

第八卷 第一號

中華民國五十年一、二、三月

SEISMOLOGICAL BULLETIN

Janunry to March, 1961

VOL. VIII No. 1

臺灣省氣象所

PUBLISHED QUARTERLY BY

TAIWAN WEATHER BUREAU

64 KUNG YUAN ROAD, TAIPEI, TAIWAN, CHINA

Geographical coordinates of the Seismological Station, Taiwan China.

λ : Longitude φ : Geographical Latitude

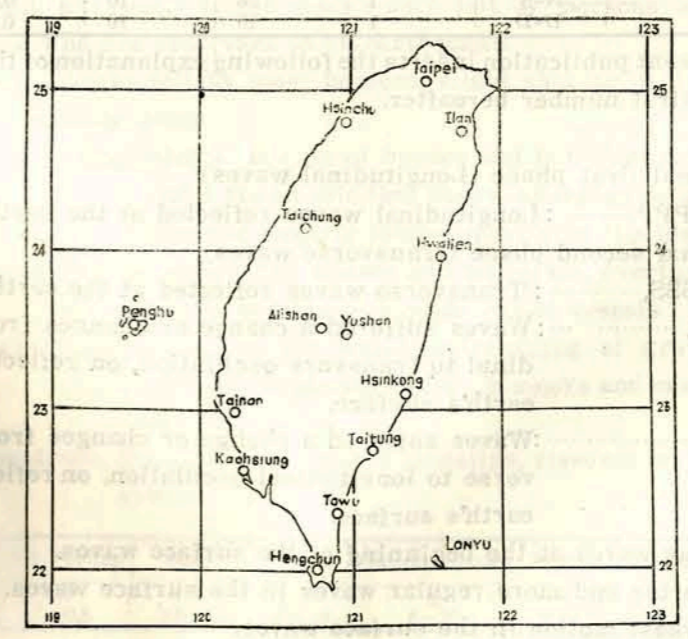
φ' : Geocentric Latitude

$a = \cos\varphi' \cos\lambda$ $b = \cos\varphi' \sin\lambda$ $c = \sin\varphi'$

Station	φ ; (N)	λ ; (E)	φ'	Alitude	Subsoil	a	b	c	Seismographs
Alishan(mt.)	23.31	120.48	23.22	2406.1	m Mioceme Sands-	- 0.4700	+ 0.7885	+ 0.3966	W. (H. V.) O. S ₁ .
Hengchun	22.00	120.45	21.52	22.3	Alluvium	- 0.4745	+ 0.7976	+ 0.3724	W. (H. V.) S ₂ .
Hsinkong	23.06	121.22	22.58	36.5	"	- 0.4793	+ 0.7862	+ 0.3901	P ₁ S ₂ W. (H. V.) A ₁ .
Hsinchu	24.48	120.58	24.39	32.8	"	- 0.4677	+ 0.7793	+ 0.4171	P ₁ S ₂ .
Hwaiien	23.58	121.37	23.49	17.6	"	- 0.4796	+ 0.7791	+ 0.4038	W. (H. V.) P ₁ S ₂ A ₂ .
Ilan	24.46	121.45	24.37	7.4	"	- 0.4784	+ 0.7731	+ 0.4165	W. (H. V.) P ₁ S ₁ .
Kaohsiung	22.37	120.16	22.29	33.1	"	- 0.4657	+ 0.7981	+ 0.3824	P ₁ S ₁ .
Lanyu	22.02	121.33	21.54	332.2	Basalt	- 0.4381	+ 0.7950	+ 0.3730	P ₂ .
Penghu	23.32	119.33	23.23	9.4	"	- 0.4527	+ 0.7985	+ 0.3969	P ₁ .
Taipei	25.02	121.31	24.53	8.0	Alluvium	- 0.4742	+ 0.7733	+ 0.4208	W. (H. V.) O. S ₁ P ₃ A ₁ .
Tawu	22.21	120.54	22.13	7.6	"	- 0.4754	+ 0.7944	+ 0.3781	W. (H. V.) S ₁ .
Taitung	22.45	121.09	22.37	8.9	"	- 0.4775	+ 0.7900	+ 0.3846	W. (H. V.) S ₂ .
Tainan	23.00	120.13	22.52	12.7	"	- 0.4637	+ 0.7962	+ 0.3886	W. (H. V.) P ₁ S ₁ A ₁ .
Taichung	24.09	120.41	24.00	77.1	"	- 0.4662	+ 0.7856	+ 0.4067	W. (H. V.) S ₂ P ₁ .
Yushan(Mt. Morrison)	23.29	120.57	23.21	3850.0	"	- 0.4722	+ 0.7873	+ 0.3964	P ₁ .

- W(H): Wiechert's horizontal seismograph.
- W(V): Wiechert's vertical seismograph.
- O : Omori's horizontal seismograph. (V:20)
- P₁ : C.M.O. type horizontal portable seismograph. (V:40)
- P₂ : Three component portadle seismograph. (V:20)
- P₃ : Higtuti-C.M.O. type short period, horizontal seismograph. (V:50)
- S₁ : C.M.O. type three component strong motion seismograph. (V:2)
- S₂ : Higtuti-C.M.O. type three component strong motion seismograph. (V:1)
- A₁ : Ishimoto's three component acceleration seismograph.
- A₂ : Higtuti's three component strong motion accelerometer.

Map showing the position of Seismological Station in Taiwan, China.



Specification of instruments:-

Mass of the pendulum M (kg) Friction r (mm.²)
 Magnification V. Proper period of the pendulum T₀(sec.)
 Damping coefficient V.

The Constants of Seismographs at Taipei for the Month of January are as follows, and those constants at the other stations are nearly the same.

Seismographs	Component	M.	V.	U.	R.	T.
W(H)	E-W	200	77	9	0.10	5.1
	N-S	200	78	9	0.13	5.1
	U-D	80	75	8	0.08	5.1
P ₁	E-W	18	40	8	0.13	5.1
	N-S	18	40	8	0.13	5.1
P ₂	E-W	10	20	2	0.24	4.0
	N-S	10	20	2	0.41	4.0
	U-D	7.5	20	2	0.29	4.0
P ₃	E-W	20	49	10	0.08	2.2
	N-S	20	49	10	0.08	2.3
O	E-W	15	20	3	0.05	15.7
	N-S	15	20	3	0.08	15.1
S ₁	E-W	2	2	4	0.06	3.8
	N-S	2	2	4	0.06	3.8
	U-D	1.5	2	8	0.06	3.5
S ₂	E-W	4	1	8	0.04	6.0
	N-S	4	1	8	0.04	6.0
	U-D	2	1	8	0.03	5.0
A ₁	E-W	15	220	10	0.005	0.10
	N-S	15	220	10	0.009	0.10
	U-D	15	170	10	0.006	0.08
A ₂	E-W	1	16	10	0.01	0.11
	N-S	1	16	10	0.02	0.10
	U-D	1	16	10	0.01	0.11

The present publication inserts the following explanation of the notations only in the first number hereafter.

1. Phase.

- P : Normal first phase (Longitudinal waves)
- pP, PP, PPP,.....: Longitudinal waves reflected at the earth's surface.
- S : Normal second phase (transverse waves).
- sS, SS, SSS,.....: Transverse waves reflected at the earth's surface.
- PS, PPS, : Waves suffered a change or changes from longitudinal to transverse oscillation, on reflection at the earth's surface.
- SP, SPP,.....: Waves suffered a change or changes from transverse to longitudinal oscillation, on reflection at the earth's surface.
- L : Long waves at the beginning of the surface waves.
- Q : Shorter and more regular waves in the surface waves.
- M : Largest motion in the surface waves.

- C : Tail or end portion.
 - F : End of the discernible movement.
 - Δ : Epicentral distance.
 - ΔH: Focal distance.
 - H : Depth of focus.
 - μ : Micron.
 - P-S : Duration of Preliminary tremor.
2. Nature of the motion.
- i : Sudden commencement of a phase.
 - e : Gradual or indistinct commencement of a phase.
 - ? : Questionable or uncertain.
3. Period and Initial motion
- T : Period, duration of one complete oscillation.
 - I : Amplitude of the true displacement of the ground from the position at rest.
 - I_N : N-S component of I.
 - I_E : E-W component of I.
 - I_Z : Vertical component of I.
- Displacement to the north, east and upward are regarded as positive.
4. Scales of seismic intensity.
- The intensity of the shock is estimated according to the scales O-VI, as follows:
- O : No feeling: Shocks too weak to cause human feelings, registered only by seismographs.
 - I : Slight: Extremely feeble shocks only felt by persons at rest or by those who are observant to an earthquake.
 - II : Weak: Shocks felt by most persons, slight shaking of doors and latticed sliding doors.
 - III : Rather strong: Slight shaking of houses and buildings, rattling of doors and latticed sliding doors, swinging of hanging objects like the electric lamps, moving of liquids in vessels.
 - IV : Strong: Strong shaking of houses and buildings, overturning of unstable objects spilling of liquids out of vessels.
 - V : Very Strong: Cracks in the walls, overturning of gravestones, etc., lanterns etc., damaging of chimneys and mud-and-plaster warehouses.
 - VI : Disastrous: Demolition of houses landslips, fissures on the roads, the ground etc.

	No Feeling	Slight	Weak	Rather Strong	Strong	Very Strong	Disastrous
Scale	O	I	II	III	IV	V	VI
Acceleration(gal)	< -0.8	0.8-2.5	2.5-8	8-25	25-80	80-250	> 250

- 5 The magnitude of an earthquake is classified according to the radius of the felt area assumed, roughly to be a circle as follows:-
 - (r) Remarkable earthquake: The radius of the felt area is greater than 300 km.
 - (m) Moderate earthquake: The radius is smaller than 300 km. but greater than 200 km.
 - (s) Earthquake of small felt area: The radius is smaller than 200 km. but greater than 100 km.
 - (l) Local earthquake: The radius is smaller than 100 km.
 - (d) Distant earthquake: The epicentral distance is greater than 300 km. from the coast of Taiwan.
6. The depth of hypocenter is as a rule expressed in terms of kilometers, If it is not determined so definitely, the following scale will be adopted.

Class	Very shallow	Shallow	Rather deep	Deep
Depth	0~30km.	30~100km.	100~200 km.	>200km.
7. Geographical coordinates:
 - λ : Longitude (E)
 - ϕ : Latitude (N)

The coordinates are been expressed in degrees with one place of decimal.
8. Time
Time is referred to Greenwich Mean Time (G.M.T.)

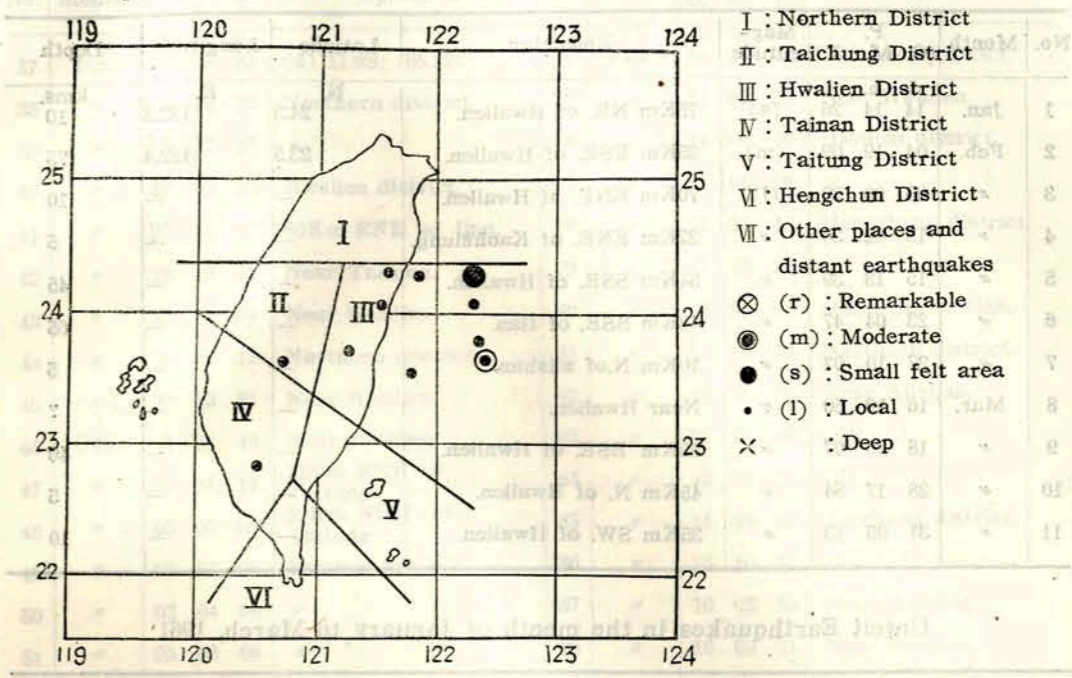
General Aspect of Earthquakes January to March, 1961

In the first month of this year, the number of occurrences of earthquakes was forty-six. One small felt area earthquake occurred in the direction of NE. Hwalien at a distance of 75 kms. The remains were unfelt earthquakes. Among those unfelt earthquakes in this month ten distant earthquakes were recorded at our stations.

In February seventy-nine seismic waves had been depicted from the seismograms on our recorders. Under the classification of their categories, felt earthquakes six, distant earthquakes eight and the remains were unfelt earthquakes. Those felt earthquakes during this month one considered as moderate and the other five listed as local one in relating to their magnitudes.

During the month of March, sixty-seven earthquakes had been recorded. Four of these seismic waves could be felt by human feelings, and the rests were unfelt ones. These felt earthquakes are belonging to the local classification in relating to their magnitudes. Other earthquakes are not subjected to human feelings during this month. We found seven remote earthquakes and fifty-six of local originals.

Epicenter of Felt Earthquakes January to March, 1961



Number of earthquakes classified according to its magnitude and districts January to March 1961

Classification	Number of felt earthquakes					Number of unfelt earthquakes	Total
	Remarkable	Moderate	Small felt area	Local	Total		
Districts							
Northern District	—	—	—	—	—	18	18
Taichung "	—	—	—	1	1	20	21
Hwalien "	—	1	1	7	9	94	103
Tainan "	—	—	—	1	1	2	3
Taitung "	—	—	—	—	—	7	7
Hengchun :	—	—	—	—	—	15	15
Other places "	—	—	—	—	—	25	25
Total	—	1	1	9	11	181	192

Felt earthquakes in the month of January to March, 1961.

No.	Month	P.			Mag- nitude	Epicenter	Latitude	Longitude	Depth
		(G.	M.	T.)					
		d.	h.	m.		N.	E.	kms.	
1	Jan.	14	14	26	(s)	24.3	122.2	10	
2	Feb.	04	19	09	(m)	23.5	122.4	75	
3	"	05	00	30	(l)	—	—	10	
4	"	13	02	30	"	—	—	5	
5	"	15	13	39	"	—	—	45	
6	"	23	04	47	"	—	—	65	
7	"	27	10	02	"	—	—	5	
8	Mar.	16	19	50	"	—	—	?	
9	"	18	20	07	"	—	—	40	
10	"	28	17	54	"	—	—	5	
11	"	31	05	13	"	—	—	10	

Unfelt Earthquakes in the month of January to March, 1961

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
1	Jan.	01	01	18	Hwalien district.	19	Jan.	07	07	31	40Km NNW. of Hwalien.
2	"	01	01	35	Northern district.	20	"	07	07	46	Northern district.
3	"	01	01	55	Hwalien district.	21	"	10	14	22	(d) faint.
4	"	01	12	53	"	22	"	11	15	50	Tainan district.
5	"	01	13	53	Near Alishan.	23	"	13	05	46	75Km ENE. of Tainan.
6	"	01	13	54	"	24	"	13	14	04	Near Hwalien.
7	"	01	21	03	Northern district.	25	"	14	07	53	"
8	"	02	00	41	53Km ESE. of Hwalien.	26	"	14	08	58	"
9	"	02	00	52	Taichung district.	27	"	15	10	14	Hwalien district.
10	"	02	01	45	Near Hwalien.	28	"	15	22	57	"
11	"	02	10	21	Northern district.	29	"	16	07	24	(d) 36.0N, 141.1 E.
12	"	04	09	14	27Km N. of Hsinkong.	30	"	16	11	23	35.7N, 140.6 E.
13	"	05	14	15	Hwalien district.	31	"	16	12	17	(d) faint.
14	"	05	14	33	(d) faint.	32	"	16	14	13	(d) "
15	"	05	16	00	(d) 4.1S, 143.0E.	33	"	16	15	50	(d) 36.4N, 140.6 E.
16	"	05	18	08	(d) faint.	34	"	17	11	34	Near Hwalien.
17	"	05	19	01	Near Hwalien.	35	"	18	23	37	Hengchun district.
18	"	05	19	14	"	36	"	19	01	57	Hwalien district.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
37	Jan.	22	03	33	(d) 11.9S. 166.2E.	74	Jan.	10	07	25	Taichung district.
38	"	24	12	26	Northern district.	75	"	11	03	20	Near Hwalien.
39	"	25	12	27	"	76	"	11	06	16	Hwalien district.
40	"	27	04	22	Hwalien district.	77	"	11	06	18	"
41	"	27	14	57	60Km ENE. of Ilan.	78	"	11	21	13	Hengchung district.
42	"	28	19	15	Near Taitung.	79	"	11	23	21	"
43	"	28	21	34	Near Hwalien.	80	"	12	00	06	40Km SE. of Ilan.
44	"	30	15	17	Northern district.	81	"	12	00	10	Northern district.
45	"	30	23	51	Near Hwalien.	82	"	12	06	00	Near Alishan.
46	Feb.	01	01	46	Near Hwalien.	83	"	12	21	59	(d) ?
47	"	03	01	14	32Km ENE. of Taitung.	84	"	12	23	32	(d) ?
48	"	03	02	09	37Km NNW. of Taitung.	85	"	14	00	54	Taichung district.
49	"	03	04	02	Hwalien district.	86	"	15	10	52	(d) ?
50	"	03	04	06	"	87	"	16	02	55	Near Hwalien.
51	"	03	06	06	"	88	"	16	03	51	Near Hwalien.
52	"	03	06	28	"	89	"	16	04	43	Hwalien district.
53	"	03	06	40	55Km E. of Ilan.	90	"	16	05	36	Near Hwalien.
54	"	03	06	47	Near Hwalien.	91	"	16	05	37	Hwalien district.
55	"	03	07	12	Northern district.	92	"	16	05	39	"
56	"	03	07	25	Hwalien district.	93	"	16	05	40	Near Hwalien.
57	"	04	03	45	Taichung district.	94	"	16	06	31	Hwalien district.
58	"	04	03	47	"	95	"	16	20	33	Near Ilan.
59	"	04	08	56	Hwalien district.	96	"	17	06	42	Taichung district.
60	"	04	22	07	Northern district.	97	"	17	06	52	Near Hwalien.
61	"	04	22	20	Hwalien district.	98	"	17	07	04	Near Hwalien.
62	"	05	05	21	"	99	"	20	09	01	45Km SSE. of Hwalien.
63	"	05	10	59	119Km ENE. of Ilan.	100	"	21	02	34	Near Hwalien.
64	"	05	11	16	Hwalien district.	101	"	22	00	12	"
65	"	06	14	04	Near Hwalien.	102	"	22	20	17	Hwalien district.
66	"	06	21	53	Hwalien district.	103	"	23	02	06	60Km E. of Hwalien.
67	"	06	22	00	(d) ?	104	"	23	04	21	25.°0N, 38.°2E. H= 119Km.
68	"	07	15	28	200Km E. of Hengchun.	105	"	23	05	59	116Km E. of Ilan.
69	"	07	23	46	93Km ENE. of Hwalien.	106	"	24	03	04	26.°1N, 124.°4E. H= 25Km.
70	"	08	03	39	Near Hwalien.	107	"	24	03	30	134Km ENE. of Hwalien.
71	"	08	14	24	71Km NE. of Hwalien.	108	"	24	17	00	Near Alishan.
72	"	08	20	44	Near Taitung.	109	"	26	18	12	31.°4N, 131.°2E. H= 54Km.
73	"	10	02	56	Near Hwalien.	110	"	26	21	02	(d) ?

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P~S	Intensity	Epicenter & Remarks	
					N	E	Z	N	E	Z	N	E	Z				
	Taitung	13	ep	h. m. s. 40.8	μ	μ	μ	μ	μ	μ	s	s	s	m	s	8.5 O	
	Alishan		ep	44.2												11.8 O	
	Hwalien		ep	31 12.5												— O	
7	Taipei	15	ep	10 52 03.7												—04 15.5 O (d)	
	Taichung		ep	56 24.3												— O faint.	
	Tainan		ep	58 22.1												— O	
8	Hwalien	15	ip	13 39 06.0	+	8-	3+	35	135	102	0.8	0.8				7.5 I	54Km SSE of
	Yushan		p	11.0												9.8 O	Hwalien.
	Taitung		ep	15.8												13.5 O	H≐45Km
	Alishan		p	18.4												10.9 O (1)	
	Taichung		p	19.3												14.9 O	
	Taipei		ep	25.0												18.2 O	
	Tainan		ep	26.2												— O	
	Hsinchu		ep	29.5												20.0 O	
	Hengchun		ep	41.6												— O	
9	Tainan	23	ep	04 21 25.8												—04 41.0 O (d) faint.	
	Tawu		ep	44.7												—04 25.1 O	
10	Hsinchu	24	ep	03 05 20.0												—01 45.0 O	26°1, 125.4 E.
	Ilan		p	21.0												— O	H≐ 25Km
	Alishan		p	23.5												— O (d)	
	Taipei		ip	24.6	+	18+	23									44.4 O	
	Hwalien		p	25.5				77	4.0							— O	
	Taichung		ep	35.6												— O	
	Taitung		p	37.1												53.9 O	
	TAWU		p	44.7												57.4 O	
	Hengchun		ep	51.3												—01 03.6 O	
	Tainan		ep	51.4												— O	
11	Taipei	26	ip	18 13 32.2	-	38-	38+	10	1900	2400	1400	15.3	17.7	16.7	02 31.8	— O	31.4N, 131.2 E.
	Hsinchu		ep	33.5												—02 45.0 O	H≐ 54Km
	Hwalien		ip	44.2	+	34+	20-	24	773	591	374	7.7	6.4	17.0	02 21.2	— O (d)	
	Taichung		p	51.1												—02 26.0 O	

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P~S	Intensity	Epicenter & Remarks		
					N	E	Z	N	E	Z	N	E	Z					
	Alishan	26	ip	h. m. s. 52.3	+	27+	14-	5	118	70	μ	s	s	s	m	s	—02 25.0 O	
	Yushan		p	56.0												—02 32.1 O		
	Taitung		ep	58.1												—03 10.9 O		
	Ilan		p	14 00.0					221	252		5.0	5.0			—02 15.6 O		
	Tainan		p	11.0												—02 48.5 O		
	Hengchun		ip	16.1	-	18-	18+	23								—02 37.9 O		
	Kaohsiung		ep	19.8												— O		
12	Taitung	26	p	21 02 47.7												— O		
	Hengchun		ep	51.3												— O (d) faint.		
	Hwalien		ep	03 02.8												— O		
13	Alishan	27	ip	10 02 04.5	-	33+	28-	98		315			?			1.6 II	10Km N. of	
	Yushan		ip	07.7	±	0+	5									3.2 I	Alishan.	
	Tainan		p	16.8												15.3 O	H≐ 10Km	
	Taichung		p	21.0												12.5 O (1)		
	Hwalien		p	22.7												14.2 O		
	Tawu		p	22.8												17.9 O		
	Kaohsiung		p	26.5												16.0 O		
	Hsinchu		ep	28.0												25.0 O		
	Hengchun		ep	32.2												25.4 O		
	Taipei		ep	37.2												27.0 O		
	Ilan		ep	37.2												14.8 O		
14	Taitung	20	ep	16 04 36.6												— O	18.4S, 175.2 W.	
	Hengchun		ep	38.0												— O	H≐ 175Km	
	Hwalien		ep	38.1												— O (d)		
	Taipei		p	41.5												—09 23.0 O		
	Alishan		ep	41.7												— O		
	Taichung		ep	42.1												— O		
15	Taitung	24	ep	23 07 51.0												—02 01.1	(d) faint.	
16	Alishan	28	ip	09 40 01.0	+	18+	7									—03 34.0 O	0.2N, 123.6E.	
	Hengchun		ip	50.6	+	58-	22+	70								— O	H≐ 83Km	
	Tawu		ip	52.2	+	25-	14		76	75		6.2	5.4			—04 06.1 O (d)		

地震季報

第八卷 第二號

中華民國五十年四、五、六月

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臺灣省氣象所

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TAIWAN WEATHER BUREAU

64 KUNG YUAN ROAD, TAIPEI, TAIWAN, CHINA

General Aspect of Earthquakes

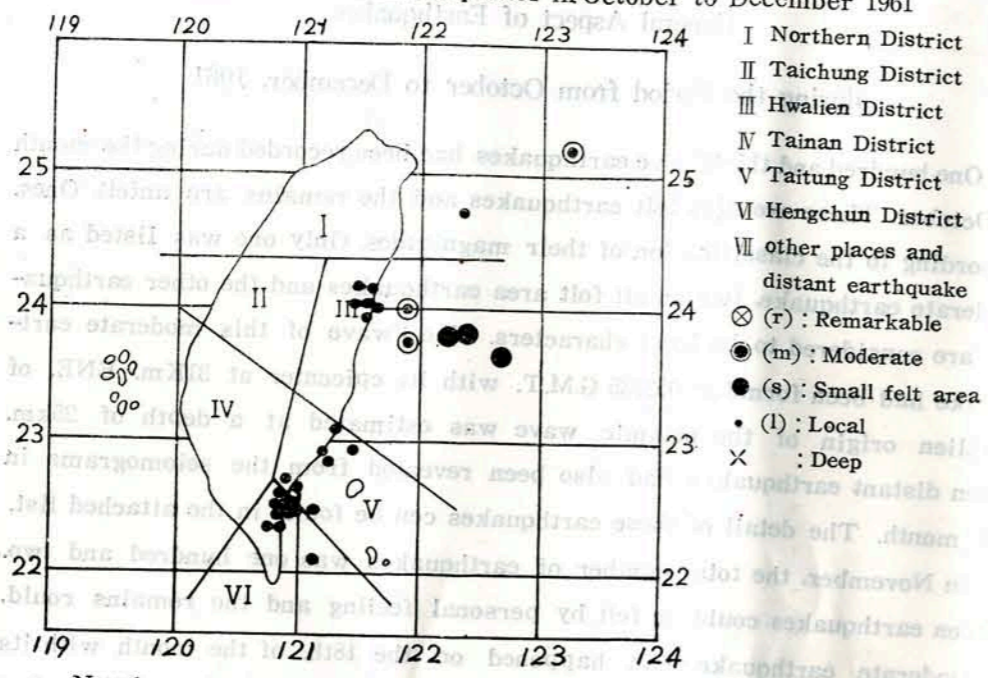
during the Period from October to December, 1961

One hundred and thirty-five earthquakes had been recorded during the month of October. There are nine felt earthquakes and the remains are unfelt Ones. According to the classification of their magnitudes Only one was listed as a moderate earthquake, two small felt area earthquakes and the other earthquakes are considered to be local characters. The Pwave of this moderate earthquake had been formed at 052235 G.M.T. with its epicenter at 31Km. ENE. of Hwalien origin of the seismic wave was estimated at a depth of 25km. Seven distant earthquakes had also been revealed from the seismograms in this month. The detail of these earthquakes can be found in the attached list.

In November, the total number of earthquakes was one hundred and two. Eleven earthquakes could be felt by personal feeling and the remains could. A moderate earthquake had happened on the 18th. of the month with its epicenter located at about 40km. ESE. of Hwalien and at a depth of 30km. One small felt area earthquake had also been recorded. the remains are of local characters. Four distant earthquakes had been recorded in November and they are listed in the table of major earthquakes.

During the month of December, seventy-five earthquakes had been recorded in Taiwan. Eight felt earthquakes had been noticed. According to their difference in magnitudes of earthquakes, only one remarkable, one moderate and one small belt area earthquake had been reported and the rests are belonging to Characters. The epicentre of a remarkable earthquake happened on 1st, December, had been extrapolated at a position about 400km. to the ENE. of Ilan with a depth of 80km. A moderate earthquake had happened on the 3rd of December, Its epicenter was located approximately at a distance of 172km. E. of Taipei with a depth of 80km. The number of distant earthquakes in this month was six. Their initial motion, maximum amplitude and period of these seismic waves are given in the last part of this bulletin.

Epicenters of Felt Earthquakes in October to December 1961



Number of earthquakes classified according to its magnitude and districts October to December 1961

Classification	Numbr of felt earthquakes					Number of unfelt earthquakes	Total
	Maghitudes	Remark-able	Moderate	Small felt area	Local		
Districts							
Northern District			1		1	2	25
Taichung "							24
Hwalien "			2	3	6	11	92
Tainan "							10
Taitung "					5	5	53
Hengchun "				1	8	9	64
Other places "		1				1	16
Total		1	3	4	20	28	284

Felt Earthquakes happened in the Month of October to December, 1961.

No.	Month	P. (G. M. T.)			Mag-nitude	Epicenter	Latitude		Longitude	Depth
		d.	h.	m.			N.	E.		
57	Oct.	1	23	12	s	115km. ESE. of Hwalien.	23.6	122.7	70	
58	"	5	22	35	m	31km. ENE. of Hwalien	24.0	121.9	25	
59	"	12	19	07	s	10km. NE. of Tawu.	22.4	120.9	10	
60	"	12	19	28	l	11km. NNE. of Tawu.			5	
61	"	12	21	04	"	Near 15km. NNE. of Tawu.			5	
62	"	12	21	28	"	Near 14km. NNE. of Tawu.			20	
63	"	12	21	48	"	Near Tawu.				
64	"	14	11	41	"	Near 14km. E. of Tawu.			0	
65	"	15	20	15	"	Near Hsinkong				
66	Nov.	2	01	12	"	Near 28km. N. of Hwalien.			5	
67	"	5	12	45	"	Near 35 km. ENE. of Hengchun.			5	
68	"	6	05	17	"	Near 28km. N. of Hwalien.			40	
69	"	10	18	40	"	Near Hwalien.				
70	"	11	03	27	"	Near Tawu.				
71	"	13	23	23	"	"				
72	"	14	01	06	s	Near 77km. ESE. of Hwalien.	23.9	122.3	45	
73	"	14	12	38	l	Near 11km. SW. of Tawu.			0	
74	"	18	22	10	m	Near 40km. ESE. of Hwalien.	23.8	121.9	30	
75	"	22	07	23	l	Near 68km. E. of Hwan.			20	
76	"	22	21	02	"	Near 31km. SSW. of Hsinkong.			0	
77	Dec	1	10	29	"	Near Hwalien.				
78	"	1	21	14	r	About 400km. ENE. of Hwan.	25.4	125.6	80	
79	"	2	17	04	l	Near Hwalien.				
80	"	3	08	40	m	About 172km. E. of Taipei.	25.1	123.2	80	
81	"	6	18	22	l	Near Hwalien.				
82	"	8	01	35	"	About 20km. SE. of Hsinkong.			15	
83	"	8	01	53	"	About 22km. NE. of Taitung.			25	
84	"	19	17	30	s	85km. ESE. of Hwalien.	23.8	122.4	20	

Unfelt Earthquakes in The Month of October to December, 1961

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
794	Oct.	d.	h.	m.			d.	h.	m.		
		1	00	09	Hengchun district	827	Oct.	12	12	33	Hwalien district.
795	"	1	00	24	d.	828	"	12	13	03	Taichung district.
796	"	1	10	48	Hwalien district.	829	"	12	15	49	Hwalien district.
797	"	1	19	58	Near Alishan.	820	"	12	18	16	Taichung district.
798	"	3	02	08	Near Hsinkong.	831	"	12	19	12	Near Tawu.
799	"	3	23	09	"	832	"	12	19	12	"
790	"	4	04	51	Hengchun district.	833	"	12	19	13	"
801	"	5	00	32	"	834	"	12	19	15	"
802	"	5	05	40	Hwalien district.	835	"	12	19	16	"
802	"	5	14	45	Near 65km. ESE. of Hwalien.	836	"	12	19	23	"
804	"	5	18	07	Near Hwalien.	837	"	12	19	34	"
805	"	6	13	27	384km. ESE. of Hengchun.	838	"	12	19	43	"
806	"	6	14	34	Northern district.	839	"	12	19	52	"
807	"	6	21	29	Near Alishan.	830	"	12	20	00	"
808	"	7	23	43	Near Hsinkong.	841	"	12	20	03	"
809	"	7	23	54	Near Alishan.	842	"	12	20	23	Near Taitung.
800	"	8	10	57	Near Hwalien.	843	"	12	20	26	Near Tawu.
811	"	8	12	59	Near Hsinkong.	844	"	12	21	27	"
812	"	8	13	31	Near Alishan	845	"	12	21	30	"
813	"	8	23	46	d.	846	"	12	21	36	"
814	"	9	12	08	Near Hwalien	847	"	12	21	42	Near Hwalien.
815	"	9	13	31	Near Hsinkong	848	"	12	21	56	Near Tawu.
816	"	10	07	30	78km. ESE. of Taitung.	849	"	12	22	28	Near Taitung.
817	"	10	13	32	Near 36km. ENE. of Tawu.	840	"	13	02	02	Near Tawu.
818	"	10	20	05	Near 33km. NW. of Hsinkong.	851	"	13	03	11	"
819	"	11	02	12	Near 48km. NW. of Taitung.	852	"	13	06	41	"
810	"	11	02	16	Near Alishan.	853	"	13	16	49	"
821	"	11	02	19	"	854	"	14	00	07	"
822	"	11	07	15	Near Tawu.	855	"	14	00	26	Hengchun district.
823	"	11	09	29	"	856	"	14	00	39	Near Tawu.
824	"	11	10	29	Near Alishan.	857	"	14	02	46	"
825	"	11	14	30	"	858	"	14	04	28	"
826	"	11	23	22	"	859	"	14	06	12	Near Hsinkong.
						860	"	14	06	41	Near Hwalien.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
861	Oct.	14	15	13	Near Hwalien.	895	Oct.	23	02	15	Near Hsinkong.
862	"	14	17	13	Near Alishan.	896	"	23	07	06	Near Hwalien.
863	"	15	17	26	Near Hwalien.	897	"	23	14	44	Molucca passage.
864	"	15	18	32	"	898	"	23	21	07	Near Hsinkong.
865	"	16	01	50	Hwalien district.	899	"	24	02	25	Hwalien district.
866	"	16	05	37	Near Tawu.	890	"	24	02	48	Near 55Km SW. of Hwalien.
867	"	16	09	37	Near Hsinkong.	901	"	24	06	47	Near Hwalien.
868	"	16	09	46	Near 25km. E. of Taitung.	902	"	25	13	56	100Km ESE. of Ilan.
869	"	16	22	34	Near Hsinkong.	903	"	25	16	52	Northern district.
860	"	17	02	10	Near 31km SSE. of Hwalien.	904	"	26	00	42	(d)
871	"	17	13	40	Hengchun district.	905	"	26	13	41	Near Hwalien.
872	"	17	17	56	Hwalien district.	906	"	27	17	03	100Km ENE. of Hwalien.
873	"	17	21	54	Near Hsinkong.	907	"	27	17	09	Hwalien district.
874	"	17	22	42	Near Tawu.	908	"	29	02	43	Near 35Km SE. of Hwalien.
875	"	18	08	48	Hengchun district.	909	"	29	06	43	Near Hsinkong.
876	"	18	11	14	Near Ilan.	900	"	29	11	07	Near Hwalien.
877	"	18	11	52	Hwalien district.	911	"	29	12	50	Near Hsinkong.
878	"	18	15	09	Hengchun district.	912	"	29	22	01	Near Ilan.
879	"	18	16	45	Hwalien district.	913	"	29	22	47	Near Hsinkong.
870	"	18	22	37	36km. SSW. of Alishan.	914	"	30	21	11	Northern district.
881	"	19	01	41	Near Alishan.	915	"	30	21	20	"
882	"	19	02	25	Near Hwalien.	916	"	30	21	23	Taichung district.
883	"	19	18	32	Hengchun district.	917	"	30	21	50	(d)
884	"	19	20	52	Near Hwalien.	918	"	31	02	50	Northern district.
885	"	19	22	56	"	919	"	31	18	20	Near Alishan.
886	"	20	03	04	"	910	Nov.	1	17	59	Near Tawu.
887	"	20	07	48	Hwalien district.	921	"	1	20	11	Near 25Km S. of Ilan.
888	"	20	15	57	Near Hwalien.	922	"	1	21	43	Near Hwalien.
889	"	21	04	35	Near Alishan.	923	"	2	12	16	"
880	"	21	05	38	Northern district.	924	"	3	00	57	Near Hsinkong.
891	"	21	18	16	Hwalien district.	925	"	3	01	32	"
892	"	21	19	32	Near Hwalien.	926	"	3	05	23	Near Tawu.
893	"	21	20	49	Hwalien district.	927	"	3	11	55	Near Tawu.
894	"	21	21	19	Near 26Km ESE. of Ilan.	928	"	4	06	55	Hengchun district.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
929	Nov.	4	10	24	Near Ilan.	963	"	14	09	54	Hwalien distict.
920	"	5	03	20	Hwalien district.	964	"	14	11	49	Near Tawu.
931	"	5	03	42	Near Alishan.	965	"	14	12	12	"
932	"	5	08	17	Near Hwalien.	966	"	14	12	53	"
933	"	5	12	51	Near Tawu.	967	"	14	12	59	"
934	"	5	14	12	Near 166Km ESE. of Hengchun.	968	"	14	18	59	Hwalien distaict.
935	"	5	14	51	Near 15Km SE. of Tawu.	969	"	15	06	46	Near 54Km ESE. of Ilan.
936	"	5	15	15	Near Tawu.	960	"	15	07	21	d.
937	"	5	17	38	Near Hsinkong.	971	"	16	00	18	Near 21Km ENE. of Ilan.
938	"	6	04	18	Near 78Km ENE. of Hwalien.	972	"	16	01	06	Northern distaict.
969	"	6	04	28	Hwalien district.	973	"	16	05	20	Hengchun district.
930	"	6	15	37	Taitung district.	974	"	16	06	32	Taichung district.
941	"	6	15	47	Near 50Km S. of Alishan.	975	"	16	09	33	"
942	"	7	13	55	Near Hwalien.	976	"	16	16	19	Hengchun district.
943	"	8	00	28	Hwalien. district.	977	"	16	16	31	Near 38Km ENE. of Hengchun.
944	"	8	01	20	"	978	"	16	17	45	Near Tawu.
945	"	8	06	43	Near Hwalien.	979	"	16	19	33	Tainan distit.
946	"	8	07	36	Near 20Km N. of Ilan.	970	"	16	22	40	Near Tawu.
947	"	8	10	41	Taitung district.	981	"	17	05	01	Near Hsinkong.
948	"	8	12	49	Near Hwalien.	982	"	17	16	24	Near Hsinkong.
949	"	8	14	59	Near Taitung.	983	"	18	22	22	Near 40Km ESE. of Hwalien.
940	"	9	10	54	Near 56Km NNW. of Taichung.	984	"	18	22	23	"
951	"	9	16	43	Near Hsinkang	985	"	19	01	10	Near Hwalien.
952	"	10	12	47	Hwalien district.	986	"	19	02	34	Near Hsinkong
953	"	10	13	58	Near Hwalien.	987	"	19	09	17	Hwalien district.
954	"	12	03	32	Near Tawu.	988	"	19	19	35	Near 78Km E. of Hwalien.
955	"	12	03	33	"	989	"	19	23	26	Northern Celebes.
956	"	12	17	56	Near Hwalien.	980	"	20	09	45	Near Hsinkong.
957	"	13	14	50	Near 67Km ESE. of Hwalien.	991	"	20	20	26	Near 125Km E. of Taipei.
958	"	13	16	46	Near Hwalien.	992	"	21	02	06	Hengchun district.
959	"	14	01	14	Hwalien district.	993	"	21	04	48	Hwalien district.
950	"	14	03	33	Near Tawu.	994	"	21	06	21	"
961	"	14	04	11	Hengchun district.	995	"	22	07	13	Near Hsinkong.
962	"	14	05	13	Near Tawu.	996	"	22	20	59	"

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
997	Nov.	23	19	52	Near Hsinkong.	1031	Dec.	13	14	34	Near Hwalien.
998	"	24	17	51	Hwalien district.	1032	"	14	03	37	About 77Km ESE. of Ilan.
999	"	27	05	59	Near S. coast of Kyushu japan.	1033	"	14	20	59	Near Alishan
1000	"	27	07	51	Near Hsinkong.	1034	"	16	22	37	Near Hwalien.
1001	"	27	12	42	"	1035	"	17	05	14	"
1002	"	27	17	15	Halmahera region.	1036	"	17	06	53	Hengchun district.
1003	"	28	10	08	Hwalien district.	1037	"	18	02	19	"
1004	"	28	16	34	55Km N. of Tainan.	1038	"	18	05	25	Hwalien ditsrict.
1005	"	29	05	00	Hwalien district.	1039	"	18	13	50	About 45Km S. of Hwalien.
1006	"	29	05	37	Near Hwalien.	1040	"	18	14	10	Near Yushan.
1007	"	29	19	40	"	1041	"	18	17	30	Taitung district
1008	"	30	01	53	Near Hsinkong.	1042	"	19	01	35	Near Alishan
1009	"	30	06	52	Near 68Km ENE. of Hwalien.	1043	"	19	02	19	Hwalien district.
1010	"	30	19	09	Near Hwalien	1044	"	19	04	36	Taichung. district.
1011	Dec	3	10	23	"	1045	"	19	05	24	About 50Km WSW. of kaohsiung.
1012	"	4	12	43	Tibet.	1046	"	19	10	34	Hengchun district.
1013	"	5	16	57	Near Hsinkong.	1047	"	20	13	45	Hwalien district
1014	"	5	22	21	About 54Km ESE. of Hsinkong.	1048	"	21	02	05	Near Hsinkong.
1015	"	6	00	50	Hwalien district.	1049	"	21	03	05	"
1016	"	6	06	01	d.	1050	"	21	03	30	Northern district.
1017	"	6	13	44	Tainan district.	1051	"	22	11	07	About 96Km ESE. of Ilan.
1018	"	6	16	51	d.	1952	"	23	12	44	Taitung district.
1019	"	6	19	47	Near Hsinkong.	1053	"	24	18	23	Hwalien district.
1020	"	7	22	46	Near Hwalien.	1054	"	24	20	45	"
1021	"	8	03	25	"	1055	"	25	11	26	Taitung district.
1022	"	8	12	05	Tainan district.	1056	"	25	18	24	"
1023	"	8	14	28	Near Hwalien.	1057	"	25	20	15	Northern district.
1024	"	10	11	28	Hwalien district.	1058	"	25	22	13	Near 70Km NE. of Hwalien.
1025	"	10	12	33	50Km N. of Tainan.	1059	"	26	00	26	Near Hsinkong.
1026	"	10	16	33	Hwalien district.	1060	"	26	04	30	Hengchun district.
1027	"	11	01	14	Near Yushan.	1061	"	26	11	18	Hwalien district.
1028	"	11	01	19	Near Hsinkong.	1062	"	26	11	23	Near 38Km ENE. of Ilan.
1029	"	12	04	05	Hwalien disrict.	1063	"	27	00	25	Near 68Km ESE. of Hwalien.
1030	"	12	05	29	Hwngchun district.	1064	"	28	14	05	Near Alishan.

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P-S	Intensity	Epicenter & Remarks
					N	E	Z	N	E	Z	N	E	Z			
6	Tawu	27	ep	h. m. s. 17 15 46.9	μ	μ	μ	μ	μ	μ	s	s	s	m s	3 53.8	O U.S.C.G.S.
	Hengchun		ep	15 49.9	-	-	-	-	-	-	-	-	-	4 13.5	O 0.6S 127.1E	
	Taichung		ep	15 52.5	-	-	-	-	-	-	-	-	-	-	O Halmahera	
	Taitung		ep	15 53.5	-	-	-	-	-	-	-	-	-	4 13.9	O region	
	Hsinkong		ep	15 57.0	-	-	-	-	-	-	-	-	-	4 19.1	O	
	Tainan		ep	16 00.3	-	-	-	-	-	-	-	-	-	-	O	
	Hwalien		ep	16 05.9	-	-	-	-	-	-	-	-	-	4 26.9	O	
	Taipei		p	16 13.8	-	-	-	-	-	-	-	-	-	4 31.2	O	
	Ilan		ep	16 35.4	-	-	-	-	-	-	-	-	-	4 26.9	O	

Major Earthquakes Occurred in December, 1961

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P-S	Intensity	Epicenter & Remarks			
					N	E	Z	N	E	Z	N	E	Z						
1	Taipei	1	ip	h. m. s. 21 14 1.0	-	23	-	69	+	34	μ	μ	μ	s	s	s	m s	41.7	I About 400
	Ilan		ip	14 2.4	-	53	-	74	+	34	584	673	225	1.9	1.9	2.5	43.1	II km ENE. of	
	Hwalien		ep	14 6.4	-	-	-	+	-	450	550	182	3.7	4.3	2.7	46.6	O Ilan		
	Hsinchu		ep	14 6.5	-	-	-	-	-	-	-	-	-	-	-	48.8	O 25.4N 125.6E		
	Hsinkong		ip	14 8.7	-	12.8	-	19	-	188	282	-	1.7	2.1	-	51.8	III (H=80)		
	Taichung		p	14 14.7	-	-	-	-	-	-	-	-	-	-	-	52.4	O		
	Taitung		p	14 18.5	-	12.5	-	6.2	-	402	375	-	1.9	1.9	-	57.3	II		
	Tawu		ep	14 25.7	-	-	-	-	-	170	101	-	3.3	3.0	-1	0.5	O		
	Tainan		p	14 27.7	-	-	-	-	-	-	-	-	-	-	-	57.9	O		
	Hengchun		ip	14 31.5	-	24.5	-	16.0	+	0.01	457	313	-	1.4	2.0	-1	10.0	I	
2	Ilan	3	p	08 40 55.3	-	69	+	10	+	151	532	500	208	1.9	1.7	2.0	18.2	I About	
	Taipei		ip	40 59.4	-	-	-	+	-	-	-	-	-	-	-	-	17.7	O 172km	
	Hwalien		ip	40 59.5	-	11.0	-	2.5	+	8.7	186	248	100	3.0	3.0	2.5	20.7	II E. of Taipei	
	Hsinchu		ep	41 03.0	-	-	-	-	-	-	-	-	-	-	-	22.5	O 25.1N 123.2E		
	Hsinkong		ip	41 08.0	-	13.9	+	22.1	+	36.9	93	84	71	2.5	2.5	1.3	27.9	I (H=80)	
	Taichung		p	41 08.5	-	-	-	-	-	-	-	-	-	-	-	28.0	O		
	Taitung		ip	41 13.3	-	15.6	-	8.3	-	75	158	-	1.7	1.7	-	34.7	I		
	Tawu		ep	41 18.3	-	-	-	-	-	-	-	-	-	-	-	36.4	O		
	Tainan		ep	41 21.4	-	-	-	-	-	-	-	-	-	-	-	36.8	O		

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P-S	Intensity	Epicenter & Remarks		
					N	E	Z	N	E	Z	N	E	Z					
	Hengchun		ep	h. m. s. 41 25.5	μ	μ	μ	μ	μ	μ	s	s	s	m s	45.5	O		
	Penghu		ep	40 42.6	-	-	-	-	-	-	-	-	-	-	37.4	O		
	Yushan		p	42 08.6	-	-	-	-	-	-	-	-	-	-	29.2	O		
	Alishan		ep	42 17.1	-	-	-	-	-	-	-	-	-	-	29.0	O		
	Kaohsiung		ep	42 58.0	-	-	-	-	-	-	-	-	-	-	-	O		
3	Taipei	4	ep	12 43 10.5	-	-	-	-	-	-	-	-	-	-	-	4 57.5	O U.S.C.G.S.	
	Tawu		ep	43 17.7	-	-	-	-	-	-	-	-	-	-	-	-	O 33.2N 953E.	
	Hwalien		ep	43 38.8	-	-	-	76	56	-	9.0	9.0	-	-	-	-	O Tibet	
	Hsinkong		ep	43 39.7	-	-	-	-	-	-	-	-	-	-	4 39.0	O		
	Taitung		ep	43 44.8	-	-	-	-	-	-	-	-	-	-	4 39.2	O		
	Ilan		ep	47 23.0	-	-	-	-	-	-	-	-	-	-	3 56.6	O		
	Taichung		ep	47 42.0	-	-	-	-	-	-	-	-	-	-	-	O		
	Tainan		ep	48 01.4	-	-	-	-	-	-	-	-	-	-	-	O		
	Hengchun		ep	52 26.1	-	-	-	-	-	-	-	-	-	-	-	O		
4	Taipei	6	ep	06 01 54.5	-	-	-	-	-	-	-	-	-	-	-	-	O	
5	Taipei	6	ep	16 51 8.0	-	-	-	-	-	-	-	-	-	-	-	-	O	
6	Hwalien	19	p	17 30 26.5	-	-	-	360	750	305	3.0	2.8	2.8	9.8	I	85km ESE.		
	Penghu		ep	30 27.3	-	-	-	-	-	-	-	-	-	-	13.8	O of Hwalien		
	Ilan		ip	30 29.5	-	24	+	17	-	58	412	548	-	1.8	2.0	-	13.9	I 23.8N 122.4E
	Hsinkong		ep	30 30.3	-	-	-	-	-	-	-	-	-	-	15.5	O (H=20)		
	Taipei		ip	30 32.8	+	-	-	-	-	420	419	360	1.6	-	-	-	19.8	I
	Alishan		ep	30 33.0	-	-	-	-	-	-	-	-	-	-	-	19.7	O	
	Hsinchu		ep	30 33.5	-	-	-	-	-	-	-	-	-	-	22.5	O		
	Taichung		p	30 38.8	-	-	-	269	317	108	2.5	2.5	3.5	21.2	I			
	Hengchun		ep	30 51.6	-	-	-	-	-	-	-	-	-	-	33.2	O		
	Yushan		ep	28 52.8	-	-	-	-	-	-	-	-	-	-	23.0	O		
	Tainan		ep	30 56.2	-	-	-	-	-	-	-	-	-	-	23.5	O		
	Kaohsiung		ep	31 00.6	-	-	-	-	-	-	-	-	-	-	10.6	O		
7	Taipei	30	ep	00 40 55.0	-	-	-	-	-	-	-	-	-	-	-	-	O U.S.C.G.S. 52.3N 177.7E Rat Is. Ale- utian Is.	
8	Tawu	30	ep	01 01 52.7	-	-	-	-	-	-	-	-	-	-	-	-	O	

地震季報

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General Aspect of Earthquakes

July to September 1961

In the month of July, one hundred thirty-five earthquakes had been recorded in Taiwan. Among them seven seismic waves are listed in the classification of felt earthquakes but the remains are unfelt ones. A remarkable earthquake had happened on the date of 25th of July. Its epicentre was located at about 244 kms. ESE of Hengchun. Another moderate earthquake had happened on the 20th with its epicentre at 140 kms. east of Nan. A small felt area earthquake recorded on 14th, July, was located approximately at 145 kms. to the east Taitung. Four local earthquakes on the 5th had been traced out on seismograms in Taitung district of the month. Some other local earthquakes had been reported in different districts, such as one in Tainan on the 6th and two in Hwalien on the date of 15th and 31st. of the month.

Eleven distant earthquakes had also been recorded on the records during the month of July. The epicentres of those unfelt earthquakes had also been found out accordingly. One had located around New Britain Is. on the 7th. Three distant earthquakes had been extrapolated its epicentres around boochoo Is. on 18th. and 28th. Another one had been recorded on 24th. This epicentre was located at New Hebrides Is. The epicentre of other distant earthquakes are still unknown.

During the month of August, one hundred and three earthquakes had been recorded. According to their classification nine shocks were considered as felt earthquakes and the others were unfelt shocks including eight distant earthquakes.

A small felt area earthquake had happened on the 13th which was located at about 30kms, to SSE of Ilan. The others were belonged to felt earthquakes of local characters.

Tracing from the seismograms in August, we found eight distant earthquakes happened in this month. The epicentre of three earthquakes had been located around Japan on 11th, 16th and 18th of the month. Their actual positions had been mapped out at eastern part of Hokkaido, at south of Honshu and the Kurile Islands. Another two distant earthquakes happened on the date of the 19th and the 31st, their epicentres had been located at Peru and Brazil in S. America. The epicentre of other quakes were still unkoown.

The occurrence of earthquakes in September had a number only one hundred and one which showed the lowest frequency during the season. Nine shocks belonged to the group of felt earthquakes and the remains all were unfelt earthquakes.

Among the these felt earthquakes only one moderate earthquake had been reported on the 17th which was located at about 67kms. to ESE of Hwalien.

A small felt area earthquake had been occurred on the 22nd and its epicentre was located at about 160 kms to East Ilan. The others were all classified into local characters.

Six distant earthquakes had been revealed from the seismograms of this month. The shock happened on the 28th, its epicentre had been located near Loochoos Is. On the 30th two distant earthquakes had appeared on the same day, and their epicentres had been located one at northern Celebes and another around Loochoos Is. The epicentre of other distant earthquakes happened on the 1st; 18th and the 21st were all still unknown.

Other distant earthquakes had also been recorded on the records during the month of July. The epicentres of those distant earthquakes had also been found out approximately. One had located around New Britain Is. on the 7th. Two distant earthquakes had been extrapolated its epicentres around Loochoos Is. on 18th and 20th. Another one had been recorded on 21st. This earthquake was located at New Hebrides Is. The epicentres of other distant earthquakes are still unknown.

During the month of August, one hundred and three earthquakes had been recorded. According to their classification nine shocks were considered as felt earthquakes and the others were called shocks including eight distant earthquakes.

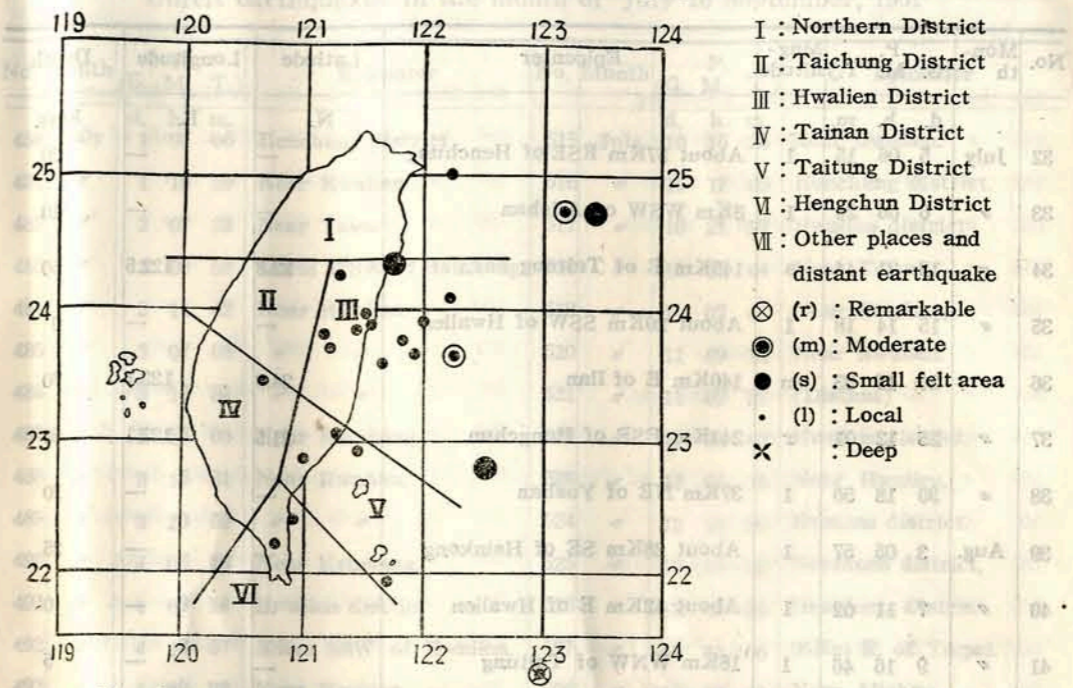
A small felt area earthquake had happened on the 13th which was located at about 30 kms. to SSE of Ilan. The others were believed to felt earthquakes of local character.

Tracing from the seismograms in August, we found eight distant earthquakes happened in this month. The epicentres of three earthquakes had been located around Japan on 10th, 16th and 18th of the month. Their actual positions had been traced out at eastern part of Hokkaido, at south of Honshu and the Kurile Islands. Another two distant earthquakes happened on the date of the 19th and the 21st, their epicentres had been located at Formosa and Brazil in S. America. The epicentres of other quakes were still unknown.

The occurrence of earthquakes in September had a number only one hundred and one which showed the lowest frequency during the season. Nine shocks belonged to the group of felt earthquakes and the remains all were called earthquakes.

Among the felt earthquakes only one moderate earthquake had been reported on the 13th which was located at about 160 kms. to SSE of Ilan.

Epicenters of Felt Earthquakes in July to Sept. 1961.



Number of earthquakes classified according to its magnitude and districts July to Sept. 1961

Classification	Number of felt earthquakes					Number of unfelt earthquakes	Total
	Remarkable	Moderate	Small felt area	Local	Total		
Northern District	—	1	1	1	3	57	60
Taichung "	—	—	—	—	0	26	26
Hwaiien "	—	1	2	11	14	138	152
Tainan "	—	—	—	1	1	0	1
Taitung "	1	—	—	4	5	46	51
Hengchun "	—	—	—	2	2	22	24
Other Places "	—	—	—	—	0	25	25
Total	1	2	3	19	25	314	339

Felt earthquakes in the month of July to September in 1961

No.	Month	P. (G. M. T.)			Mag-nitude	Epicenter	Latitude		Longitude	Depth
		d.	h.	m.			N.	E.		
32	July	5	06	15	1	About 57Km ESE of Hengchung	—	—	20	
33	"	6	06	24	1	8Km WSW of Alishan	—	—	10	
34	"	13	21	44	s	145Km E of Taitung	22.8	122.5	50	
35	"	15	14	18	1	About 20Km SSW of Hwalien	—	—	0	
36	"	20	15	33	m	140Km E of Ilan	24.8	123.1	70	
37	"	25	12	01	r	244Km ESE of Hengchun	21.5	123.1	60	
38	"	30	18	50	1	37Km NE of Yushan	—	—	20	
39	Aug.	3	05	57	1	About 28Km SE of Hsinkong	—	—	25	
40	"	7	11	02	1	About 42Km E of Hwalien	—	—	0	
41	"	9	16	46	1	16Km WNW of Taitung	—	—	5	
42	"	11	02	09	1	About 46Km ENE of Alishan	—	—	5	
43	"	13	06	01	s	30Km SSE of Ilan.	24.4	121.9	5	
44	"	13	06	36	1	About 60Km ESE of Taipei	—	—	20	
45	"	14	06	42	1	Near Hwalien	—	—	—	
46	"	14	11	04	1	About 10Km NNE of Hengchun	—	—	0	
47	"	29	04	35	1	About 48Km SE of Hwalien	—	—	20	
48	Sept.	12	10	51	1	35Km SE of Hwalien	—	—	35	
49	"	13	07	11	1	About 34Km SSE of Hwalien	—	—	35	
50	"	17	08	42	m	67Km ESE Km of Hwalien	23.7	122.2	45	
51	"	21	20	31	1	Near Hsingkong	—	—	—	
52	"	22	07	25	1	About 63Km ESE of Hwalien	—	—	40	
53	"	22	13	40	s	160Km E of Ilan	24.8	123.3	80	
54	"	25	23	01	1	Near Tawu.	—	—	—	
55	"	27	01	26	1	Near Hwalien	—	—	—	
56	"	27	08	56	1	55Km SW of Ilan	—	—	0	

Unfelt earthquakes in the month of July to September, 1961

No.	Month	P. (G. M. T.)			Epicenter	No.	Month	P. (G. M. T.)			Epicenter
		d.	h.	m.				d.	h.	m.	
480	July	1	01	06	Hengchung district	515	July	10	16	25	Near Hwalien.
481	"	1	18	59	Near Hwalien	516	"	10	17	09	Hengchung district.
482	"	2	07	32	Near Tawu.	517	"	10	21	27	Hwalien district.
483	"	2	08	58	14Km WSW. of Hsinkong.	518	"	11	01	44	Near Tawu
484	"	2	11	42	Near Hwalien.	519	"	11	07	48	Near Hsinkong.
485	"	3	07	08	" "	520	"	11	09	14	Near Hwalien.
486	"	3	15	34	" "	521	"	11	09	37	(Distant)
487	"	3	16	00	Near Hsinkong.	522	"	11	21	43	Hwalien district.
488	"	3	16	31	Near Hwalien.	523	"	12	06	16	Near Hwalien.
489	"	3	20	59	" "	524	"	12	10	20	Hwalien district.
490	"	4	06	13	Near Hsinkong.	525	"	12	10	50	Northern district.
491	"	4	09	14	Hwalien district	526	"	12	11	23	Hengchung district.
492	"	4	18	57	30Km SSW. of Hwalien.	527	"	13	11	06	95Km E. of Taipei.
493	"	4	20	28	Near Hwalien.	528	"	13	12	40	Near Alishan.
494	"	4	23	49	Hwalien district.	529	"	13	12	44	Near Hsinkong.
495	"	6	04	41	" "	530	"	13	13	43	Hwalien district.
496	"	6	19	21	Near Alishan.	531	"	13	17	24	38Km E. of Yuohan.
497	"	6	19	30	Near Hsinkong.	532	"	13	22	18	Hwalien district.
498	"	6	22	20	(Distant)	533	"	14	00	08	" "
499	"	7	11	13	23Km S. of Hwalien	534	"	14	20	21	" "
500	"	7	13	18	5.7S 149.7E H=57Km.	535	"	15	11	33	Taitung district.
501	"	7	17	13	(Distant)	536	"	15	14	30	Near Hwalien
502	"	7	17	34	Near Hengchung.	537	"	15	14	49	Northern district.
503	"	7	20	46	Northern district.	538	"	15	21	28	Near Hwalien.
504	"	7	20	59	Near Hwalien.	539	"	15	22	51	Near Hsinkong.
505	"	7	21	18	Near Lanyu.	540	"	16	02	10	Hwalien district
506	"	7	23	13	" "	541	"	16	02	54	Near Hsinkong.
507	"	8	00	46	Near Tawu.	542	"	16	19	40	Hwalien district.
508	"	8	04	05	Near Alishan	543	"	17	02	25	40Km NE of Hwalien.
509	"	8	04	24	38Km ENE. of Ilan.	544	"	17	08	05	Near Alishan.
510	"	9	06	19	Near Alishan	545	"	17	16	28	(Distant)
511	"	10	05	06	Near Hwalien.	546	"	18	07	20	60Km ENE. of Han
512	"	10	05	06	" "	547	"	18	07	58	Near Hsinkong.
513	"	10	05	57	Hwalien district	548	"	18	14	05	(Distant)29.4N 131.6E
514	"	10	13	19	Near Lanyu.	549	"	18	14	34	29.9N. 131.2E H=72Km.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		G.	M.	T.				G.	M.	T.	
550	July	d.	h.	m.	Near Hsinkong.	585	July.	d.	h.	m.	Hwalien district.
		19	02	29				27	15	46	
551	"	19	14	10	67Km ENE of Ilan.	586	"	27	19	19	35Km EaE. of Taipei.
552	"	20	04	35	Hwalien district.	587	"	27	19	24	" " "
553	"	20	11	01	16Km S. of Ilan.	588	"	27	19	27	" " "
554	"	20	13	11	Near Hwalien.	589	"	27	19	33	" " "
555	"	20	13	15	" "	590	"	27	19	45	" " "
556	"	20	15	01	(Distant)	591	"	27	20	32	" " "
557	"	20	21	46	Near Hsinkong.	592	"	28	00	27	Near Alishan.
558	"	21	02	04	Near Lanyu.	593	"	28	00	35	27.0N 126.6E H=136Km.
559	"	21	08	35	75Km. ENE of Taipei.	594	"	28	00	36	Taitung district.
560	"	21	18	44	(Distant)	595	"	28	01	25	Hwalien district.
561	"	22	14	05	Taichung distict.	596	"	28	03	01	Near Alishan.
562	"	22	19	21	Near Hwalien.	597	"	28	03	28	Near Hwalien.
563	"	22	20	46	70Km. ENE. of Ilan.	598	"	28	13	26	Hwalien district.
564	"	23	09	40	Near Hwalien.	599	"	28	19	15	Near Hwalien.
565	"	23	17	58	32Km. ENE of Ilan	600	"	29	04	57	" " "
566	"	23	18	30	Hwalien district	601	"	29	18	23	" " "
567	"	23	19	29	Near Alishan	602	"	30	05	26	35Km. SW. of Hwalien.
568	"	23	22	01	18.3S 168.3E H=44Km.	603	"	30	06	07	50Km. ENE. of Hsinkong.
569	"	24	07	48	Hwalien district.	604	"	30	07	09	Near Hwalien.
570	"	24	09	23	Near Alishan.	605	"	30	15	18	Hengchung district.
571	"	24	13	44	Hwalien distrist.	606	"	30	17	15	Near Aliskan.
572	"	24	13	46	Near Hwalien.	607	"	31	13	28	Near Hsinkong.
573	"	24	13	46	Hwalien district.	608	Aug.	1	05	48	(Distant)
574	"	24	15	09	" "	609	"	1	11	56	Near Hwalien.
575	"	24	16	44	Near Alishan.	610	"	2	05	07	Taitung district.
576	"	24	18	52	Hwalien district.	611	"	2	16	34	Near Hsinkong.
577	"	25	05	44	Near Alishan.	612	"	2	20	58	" " "
578	"	25	14	06	Near Hsinkong.	613	"	3	22	16	Northern district.
579	"	25	18	24	73Km. E. of Taipei.	614	"	4	05	55	Near Hwalien.
580	"	25	20	53	Hwalien district.	615	"	4	06	27	" " "
581	"	25	22	48	Northern district.	616	"	4	14	27	Hwalien district.
582	"	26	18	43	Near Hwalien.	617	"	4	14	50	" " "
583	"	26	21	39	Hwalien district.	618	"	4	16	07	Near Hwalien.
584	"	27	10	55	Near Alishan.	619	"	4	16	08	54 Km. NE. of Taipei.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		G.	M.	T.				G.	M.	T.	
620	Aug.	d.	h.	m.	80Km. ENE of Taipei.	654	Julg	d.	h.	m.	Near Ilan.
		4	16	12				15	00	14	
621	"	4	16	16	Taichung district.	655	"	15	01	03	Near Hwalien.
622	"	6	16	16	70Km. E of Ilan.	656	"	15	02	39	Near Hsinhong.
623	"	6	20	26	Near Alishan	657	"	15	03	01	Near Hwalien.
624	"	8	04	49	Near Hwalien.	658	"	15	15	37	Near Hwalien.
625	"	8	12	28	Hwalien distrcet.	659	"	15	19	08	32.8N. 142.4E. H=39Km.
626	"	8	15	25	Near Ilan.	660	"	16	01	49	Hwalien district.
627	"	9	05	33	Northern district.	661	"	16	02	47	Henehung district.
628	"	9	16	13	Hwalien district.	662	"	16	12	38	Hwalien district.
629	"	9	18	13	16Km WNW. of Taitung.	663	"	16	20	54	Near Ilan.
630	"	9	22	32	Near Hwalien.	664	"	17	08	27	Hwalien district.
631	"	10	00	05	" "	665	"	17	09	59	Near Hwalien.
632	"	10	00	30	Hwalien district.	666	"	17	10	25	45Km. S of Ilan.
633	"	11	08	52	Near Hwalien.	667	"	17	21	22	46.3N 149.3E H=186Km.
634	"	11	15	09	Near Taitung.	668	"	18	00	41	Northern district.
635	"	11	15	57	42.9N. 145.1E. H=71Km.	669	"	18	13	08	Hwalien district.
636	"	12	05	23	Near Hengchun.	670	"	19	05	28	10.7S 71.0W H=649Km.
637	"	12	15	39	Near Hwalien.	671	"	19	17	34	Hwalien district.
638	"	12	19	40	Near Hsinkong.	672	"	19	18	21	Northern district.
639	"	12	21	00	Hengchun district.	673	"	20	05	14	(Distant)
640	"	13	06	28	41Km. ESE of Taipei.	674	"	20	05	57	Near Hwalien.
641	"	13	09	09	26Km. SSW of Ilan.	675	"	20	17	57	Hwalien district.
642	"	13	10	06	" " "	676	"	20	18	15	41Km. NNE of Hsinkong.
643	"	13	10	16	" " "	677	"	21	07	40	94Km. ESE of Hwalien.
644	"	13	18	23	64Km. SE of Ilan.	678	"	21	16	37	Near Hsinkong.
645	"	13	18	40	Northern district.	679	"	22	14	06	" " "
646	"	14	01	06	Near Hwalien.	680	"	22	18	10	36Km. ENE of Alishan.
647	"	14	01	17	" " "	681	"	23	16	18	Near Hsinkong.
648	"	14	01	40	" " "	682	"	24	07	43	95Km. ESE of Hwalien.
649	"	14	01	52	43Km. WSW of Ilan.	683	"	25	09	09	Near Alishan.
650	"	14	02	33	Near Hwalien.	684	"	26	00	00	" " "
651	"	14	10	36	15Km. NNW of Hengchun.	685	"	26	20	20	Henchung district.
652	"	14	11	36	Near Hsinkong.	686	"	27	16	53	(Distant)
653	"	14	14	59	Near Hwalien.	687	"	28	13	49	Hwalien district.

No.	Month	P. (G. M. T.)			Epicenter	No.	Month	P. (G. M. T.)			Epicenter
		d.	h.	m.				d.	h.	m.	
688	Aug.	29	14	58	Henchung district.	721	Sept.	6	23	12	Near Hsinkong.
689	"	29	15	09	Taitung district.	722	"	7	11	49	86Km. ESE of Hwalien.
690	"	30	07	30	Near Hsinkong.	723	"	7	12	02	95Km. E of Hwalien.
691	"	30	07	47	Near Hwalien.	724	"	7	12	33	Northern district.
692	"	30	11	42	Near Hsinkong.	725	"	7	19	16	Henchung district.
693	"	30	11	50	Near Hwalien.	726	"	8	05	12	Near Tawu.
694	"	30	12	35	Northern district.	727	"	8	06	01	Hwalien district.
695	"	31	02	07	10.4S. 70.7W. H=629Km.	728	"	8	08	21	100Km. NE of Ilan.
696	"	31	05	02	Hwalien district.	729	"	8	11	45	(Distant)
697	"	31	05	12	Northern district.	730	"	8	14	04	25Km. E of Taitung
698	"	31	05	34	" " "	731	"	8	22	51	50Km. SW of Hwalien.
699	"	31	05	56	50Km. ESE of Hwalien.	732	"	9	04	58	Near Hwalien.
700	"	31	10	56	Northern district.	733	"	9	07	02	Hwalien district.
701	"	31	11	13	42Km. SSW of Hwalien.	734	"	9	08	56	" " "
702	Sept.	1	00	28	(Distant)	735	"	9	13	22	Northern district.
703	"	1	05	04	Northern district.	736	"	9	13	42	76Km. ENE of Hwalien.
704	"	2	05	24	" " "	737	"	9	21	08	Near Alishan.
705	"	2	08	01	Near Alishan.	738	"	9	21	26	Near Hwalien.
706	"	2	09	50	81Km. ESE of Hwalien.	739	"	9	22	25	Hwalien district.
707	"	2	10	01	50Km. E of Hwalien.	740	"	10	08	44	Near Hwalien
708	"	2	18	53	" " "	741	"	10	06	18	83Km. ENE of Hwalien.
709	"	2	18	55	Hwalien district.	742	"	10	13	04	Near Hsinkong.
710	"	2	21	50	" " "	743	"	10	12	31	Hwalien district.
711	"	3	00	05	Near Hwalien.	744	"	11	22	31	Near Hsinkong.
712	"	3	08	31	" " "	745	"	11	23	23	" " "
713	"	3	09	18	Taichung district.	746	"	12	03	11	Northern district.
714	"	3	15	45	" " "	747	"	12	23	39	Near Tawu.
715	"	3	20	33	60Km. SE of Hwalien.	748	"	13	15	43	Near Alishan.
716	"	5	11	08	Taichung district.	749	"	14	17	36	Near Hsinkong.
717	"	5	11	45	Hwalien district.	750	"	15	18	05	" " "
718	"	5	16	05	20Km. N of Hsinkong.	751	"	16	08	41	Near Henchung.
719	"	6	00	32	Near Hwalien.	752	"	17	09	54	Near Hsinkong.
720	"	6	00	55	Hwalien district.	753	"	17	11	18	55Km. ENE of Hwalien

No.	Month	P. (G. M. T.)			Epicenter	No.	Month	P. (G. M. T.)			Epicenter
		d.	h.	m.				d.	h.	m.	
754	Sept	18	07	04	Near Hwalien	774	Sept	24	20	47	" "
755	"	18	17	49	90Km. ENE of Ilan.	775	"	25	17	22	Near Tawu
756	"	18	22	29	Northern district.	776	"	25	17	26	" "
757	"	19	11	07	27Km. ENE of Ilan.	777	"	26	20	22	36Km. ENE of Taichung.
758	"	19	11	30	Near Hwalien.	778	"	27	04	22	Hwalien district.
759	"	19	21	49	Near Hsinkong.	779	"	27	07	59	" "
760	"	20	00	33	Northern district.	780	"	27	21	08	29.7N. 125.0EH=17Km.
761	"	20	02	01	Near Hwalien	781	"	27	23	27	Near Hsinhong.
762	"	20	19	11	(Distant)	782	"	28	03	00	Northern district.
763	"	21	15	11	Henchung district.	783	"	28	17	35	35Km. ENE of Taipei
764	"	22	03	17	Taitung district.	784	"	28	22	33	Northern district.
765	"	22	04	29	Near Hwalien.	785	"	28	23	19	" "
766	"	22	05	13	" " "	786	"	29	00	07	" "
767	"	22	13	16	Northern district.	787	"	29	00	39	" "
768	"	22	14	42	Hwalien district.	788	"	29	15	32	Near Hsinkong.
769	"	22	19	39	" " "	789	"	29	19	10	0.5N. 122.4E. H=110Km.
770	"	23	20	09	" " "	790	"	29	20	08	Near Hwalien.
771	"	24	18	53	" " "	791	"	30	01	37	25.3N. 124.8E. H=100Km.
772	"	24	19	25	" " "	792	"	30	02	57	Northern district.
773	"	24	19	25	Near Hsinkong.	793	"	30	03	03	120Km. ESE of Hwalien.

No.	Station	Date	Phase	P. (G.M.T.)			Initial Motion			Maximum Amplitude			Period			P-S	Intensity	Epicenter & Remarks
				h.	m.	s.	N	E	Z	N	E	Z	N	E	Z			
	Tainan		ep	00	31	24.3												
	Hengchun		ep	00	31	56.2												
2	Tawu	8	ep	11	45	02.0											O (d)	
	Taipei		ep	11	45	57.2											O	
	Hwalien		p	11	46	04.8											O	
	Hengchun		ep	11	48	35.5											O	
3	Hwalien	12	p	10	51	34.4				+350	-435		0.5	0.5		05.5 II	35Km. SE of	
	Alishan		ep	10	51	41.7										10.4 O	Hwalien	
	Hsinkong		ep	10	51	42.4										09.8 O	H=35Km.	
	Hsinchu		ep	10	51	50.7										16.3 O	(1)	
	Yushan		ep	10	51	56.5										07.5 O		
	Taipei		ep	10	51	59.5										06.4 O		
	Tawu		ep	10	52	00.6										O		
	Tainan		ep	10	52	12.8										O		
4	Hwalien	13	p	07	11	30.8				+32	-43	-25	0.5	0.6	0.7	07.5 I	4Km. SSE of Hwalien	
	Alishan		ep	07	11	33.9										10.4 O	H=55Km.	
	Hsinkong		ep	07	11	36.2										09.2 O	(1)	
5	Hwalien	17	ip	08	42	08.9											23.7N.122.2E	
	Ilan		ip	08	41	13.0											H=45Km.	
	Yushan		ep	08	42	10.5											(m)	
	Hsinkong		ip	08	42	16.3												
	Alishan		ip	08	42	19.5	?	+7	+9	58	54	12				17.4 II		
	Taipei		ip	08	42	19.7	+171	-82	+300	1800	1200	665	2.3	1.7	3.0	17.2 II		
	Taitung		p	08	42	21.8										19.8 II		
	Taichung		ip	08	42	23.1	7	53	90	3170	1158	984	2.0	2.9	3.4	19.5 II		
	Hsinchu		p	08	42	25.4										18.4 II		
	Tawu		ip	08	42	28.2	+7	+4	-12	147	141	129	3.6	2.4	2.3	23.6 O		
	Penghu		p	08	42	31.1					2900			1.3		28.4 O		
	Hengchun		ip	08	42	35.8	+6.4	+7.0	+8.3	234.0	270.1	168.1	1.2	1.9	2.4	33.9 I		
	Tainan		e p	08	42	36.1										20.0 O		
	Kaohsiung		e	08	42	44.7										25.5 O		

No.	Station	Date	Phase	P. (G.M.T.)			Initial Motion			Maximum Amplitude			Period			P~S	Intensity	Epicenter & Remarks	
				h.	m.	s.	N	E	Z	N	E	Z	N	E	Z				s
6	Hwalien	20	ep	19	11	15.7											05.44.3 O (d)		
7	Hsinkong	21	p	20	31	31.4						332.3	609.5	159.3	0.6	0.8	0.7	03.5 II	Near Hsinkong (1)
8	Ilan	22	ip	07	25	23.3	-14	+14		+170	-198		1.6	1.6		10.5 I	63Km. ENE		
	Hwalien		p	07	25	23.9				-185	+226	-139	1.6	1.9	2.5	07.7 I	of Hwalien		
	Hsinkong		ep	07	25	25.4										14.9 O	H=40Km.		
	Taipei		ip	07	25	29.7	-11	+5		300	158		1.7	1.8		14.6 O	(1)		
	Alishan		ep	07	25	29.8										16.3 O			
	Yushan		ep	07	25	32.5										17.5 O			
	Taichung		ep	07	25	33.8										O			
	Hsinchu		ep	07	25	34.5										20.8 O			
	Tawu		ep	07	25	48.6										27.2 O			
	Hengchun		ep	07	25	57.1										O			
	Kaohsiung		ep	07	26	21.4										O			
9	Ilan	22	p	13	40	49.9				+252	-312	-104	1.8	1.8	2.0	17.3 I	160Km. E of		
	Taipei		p	13	40	54.2										19.4 O	Ilan		
	Hwalien		p	13	41	02.8										20.1 O	H=80Km.		
	Hsinchu		ep	13	41	05.8										18.1 O	(s)		
	Taichung		ep	13	41	15.3										O			
	Alishan		ep	13	41	19.2										O			
10	Tawu	25	p	23	01	55.0	+5	+4		119	34		0.5	?		01.9 I	Near Tawu		
	Taitung		p	23	02	01.0										07.7 O	(1)		
	Hengchun		ep	23	02	02.3										O			
11	Hwalien	27	p	01	26	20.7				+33	-22	+21	0.4	0.4	0.5	02.0 I	Near Hwalien (1)		
12	Ilan	27	ep	08	56	48.5										08.0 O	55Km. SW		
	Taipei		ep	08	56	55.7										10.2 O	of Ilan		
	Hwalien		p	08	57	01.1				+48	-43		3.8	3.8		07.6 I	H=OKm.		
	Taichung		ep	08	57	09.9										O			
	Hsinkong		p	08	57	21.5										O			
13	Ilan	27	ep	21	08	02.0										38.1 O	26.7N.125.0E		

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General Aspect of Earthquakes

April to June 1961

In April, the number of earthquakes was eighty-four. Among them six were classified as felt earthquakes and the rest were unfelt ones.

A moderate earthquake happened on the ninth of this month, and its epicenter was located at 75 km. ESE. of Hwaliem, and its focal depth was estimated about 55 km. Five local earthquakes had been traced out.

Six distant earthquakes had been recorded on from seismograms in Taiwan during this month. Two of them had been located in Sinkiang Province. Another one had been extrapolated near Ryukyu Is.

In May, one hundred and fourteen earthquakes had been recorded. The monthly frequency of earthquakes had an increase in comparison with the previous month. Six earthquakes had been classified as felt earthquakes and the remains were unfelt ones. Among the felt earthquakes happened in this month one was classified as a remarkable earthquake. There was another moderate earthquake. The remains were classified as local ones. This remarkable earthquake happened on the 19th of this month, its epicenter was located at 213 km. ESE. of Hwalien, and the focal depth of this quake was estimated at about 65 km. The moderate earthquake had been recorded on the 13th May. Its epicenter was located at about 178 km ENE of Taipei, and its focal depth was estimated about 100 km.

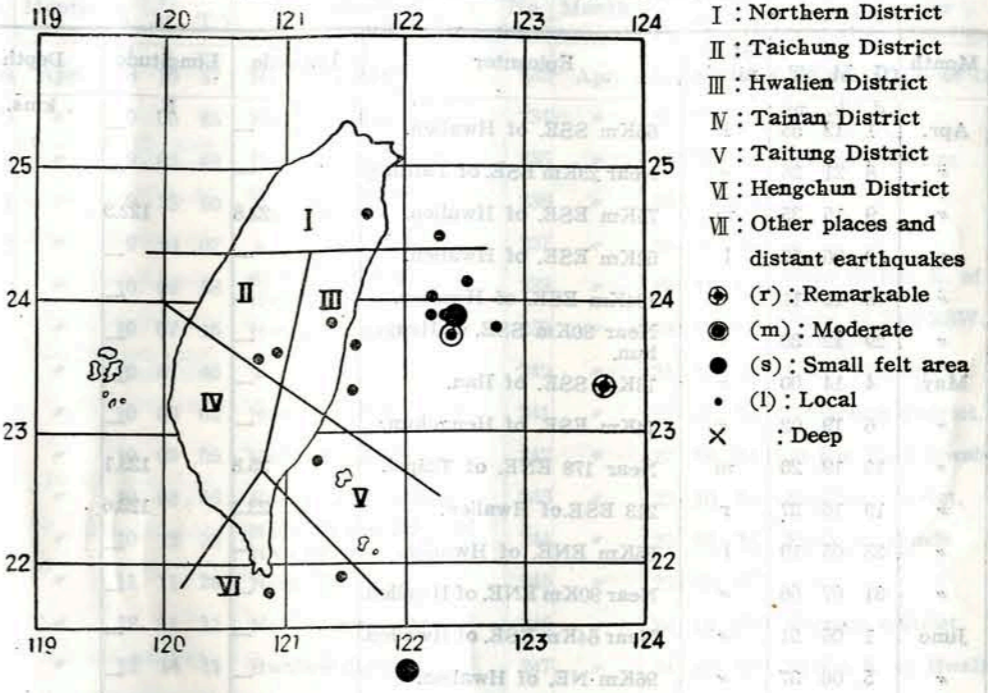
Three distant earthquakes had been recorded at Taipei. Their locations had been found at the neighbourhood of the coast of Mindanao, and Ryukyu Is.

In June, one hundred and nineteen earthquakes had recorded in Taiwan. Among them eight were classified as felt earthquakes and the others were unfelt ones. The felt earthquakes happened in this month, two of them were classified as small felt area earthquakes, and the other six were local ones.

Eight distant earthquakes had been traced out from seismogram. Their locations had been found in southern part of Iran, at a spot about 430 km. E. of Taitung, at Luzon Is., near north of Mariana Is., and in Yunan Province of inland China respectively.

In April, the number of earthquakes was eight. Three of them were classified as local earthquakes and the rest were distant ones. A moderate earthquake happened on the night of 13th April and its epicenter was located at 17 km. ESE. of Hualien and its focal depth was estimated about 52 km. The local earthquakes had been traced out. Six distant earthquakes had been recorded on four stations in Taiwan during this month. Three of them had been located in Hualien Province. Another one had been estimated near Hualien Is. In May, one hundred and fourteen earthquakes had been recorded. The monthly frequency of earthquakes had an increase in comparison with the previous month. Six earthquakes had been classified as local earthquakes and the remains were distant ones. Among the local earthquakes happened in this month one was classified as a remarkable earthquake. There was another moderate earthquake. The remains were classified as local ones. This month, one earthquake happened on the 13th of this month. The epicenter was located at 213 km. ESE. of Hualien and the focal depth of this quake was estimated about 65 km. The moderate earthquake had been recorded on the 13th May. The epicenter was located about 17 km. ESE. of Taitung, and its focal depth was estimated about 102 km. Three distant earthquakes had been recorded at Taitung. Their locations had been found at the neighborhood of the coast of Mindanao and Luzon Is. In June one hundred and thirteen earthquakes had been recorded in Taiwan. Among them eight were classified as local earthquakes and the others were distant ones. The local earthquakes happened in this month two of them were classified as small felt earthquakes and the other six were local ones.

Epicenters of Felt Earthquakes in April to June 1961



Number of earthquakes classified according to its magnitude and districts April to June 1961

Classification	Number of felt earthquakes					Number of unfelt earthquakes	Total
	Remarkable	Moderate	Small felt area	Local	Total		
Northern District	—	1	—	2	3	25	28
Taichung "	—	—	—	2	2	22	24
Hualien "	1	1	1	8	11	154	165
Tainan "	—	—	—	—	—	4	4
Taitung "	—	—	1	1	2	33	35
Hengchun "	—	—	—	2	2	42	44
Other places "	—	—	—	—	—	17	17
Total	1	2	2	15	20	297	317

Felt earthquakes in the month of April to June 1961.

No.	Month	P. (G. M. T.)			Mag-nitude	Epicenter	Latitude	Longitude	Depth
		d.	h.	m.					
12	Apr.	1	12	55	1	65Km SSE. of Hwalien.	N.	E.	kms. 10
13	"	8	21	26	"	Near 23Km ESE. of Taitung.			15
14	"	9	15	35	m.	75Km ESE. of Hwalien.	23.8	122.3	55
15	"	10	06	57	1	62Km ESE. of Hwalien.			45
16	"	18	12	11	"	104Km ESE. of Hwalien.			60
17	"	29	12	30	"	Near 30Km SSE. of Hengchun.			20
18	May	4	14	00	"	13Km SSE. of Ilan.			0
19	"	6	19	02	"	44Km ESE. of Hengchun.			0
20	"	13	19	20	m	Near 178 ENE. of Taipei.	25.8	123.1	100
21	"	19	16	37	r	213 ESE. of Hwalien.	23.3	123.6	65
22	"	23	05	19	1	65Km ENE. of Hwalien.			35
23	"	31	07	56	"	Near 90Km ENE. of Hwalien.			70
24	June	1	06	51	"	Near 64Km ESE. of Hwalien.			30
25	"	5	06	37	"	96Km NE. of Hwalien.			0
26	"	7	02	17	"	Near 30KmSSW. of Hwalien.			0
27	"	11	21	04	"	Near Alishan.			
28	"	13	08	02	"	Near Alishan.			
29	"	14	09	08	s	136Km SSE. of Lanyu.	20.9	121.9	100
30	"	15	00	58	1	Tear 40Km SSE. of Hwaline.			0
31	"	29	08	23	s	Near 75Km ESE. of Hwalien.			40

Unfelt Earthquakes in the Month of April to June 1961

No.	Month	P. (G. M. T.)			Epicenter	No.	Month	P. (G. M. T.)			Epicenter
		d.	h.	m.				d.	h.	m.	
182	Apr.	1	02	08	Near Hengchun.	190	Apr.	4	11	46	Near Hwalien.
183	"	1	15	26	Sinkiang. Province China.	191	"	5	03	43	Near 18km. SSE. of Tawu.
184	"	2	04	23	Hwalien district.	192	"	5	04	43	Hengchun district.
185	"	2	09	43	Near Hwalien.	193	"	5	21	54	Hwalien district.
186	"	3	00	54	"	194	"	5	21	56	"
187	"	3	23	43	"	195	"	6	17	12	"
188	"	4	07	40	Hwalien district.	196	"	6	18	30	"
189	"	4	10	09	Hengchun district.	197	"	7	00	07	Near Hwalien.

No.	Month	P. (G. M. T.)			Epicenter	No.	Month	P. (G. M. T.)			Epicenter
		d.	h.	m.				d.	h.	m.	
198	Apr.	8	15	37	Near Alishan.	233	Apr.	18	01	41	110 km. ENE. of Ilan.
199	"	9	00	45	Near Hwalien.	234	"	18	04	59	"
200	"	9	05	49	Hengchun district.	235	"	18	05	02	Hwalien district.
201	"	9	15	50	75 Em. ESE. of Hwalien.	236	"	18	05	07	"
202	"	9	20	07	"	237	"	18	05	10	"
203	"	10	06	58	62 Km. ESE. of Hwalien.	238	"	18	13	06	Near 63 Km E. of Hengchun.
204	"	10	07	16	Hwalien district.	239	"	19	13	28	Near 32 Km SSW. of Hwalien.
205	"	10	07	46	"	240	"	21	04	19	Near Taitung.
206	"	10	08	02	Near Hwalien.	241	"	22	00	34	Hengchun district.
207	"	10	09	05	Hwalien district.	242	"	22	06	14	32 Km E. of Hwalien.
208	"	10	08	46	Northern district.	243	"	22	10	04	Hwalien district.
209	"	10	12	22	Near 40 Km ESE. of Hwalien.	244	"	23	05	16	Ryukyu Islands
210	"	11	11	28	Near Hwalien.	245	"	23	05	07	"
211	"	12	11	11	Near thern district.	246	"	24	02	37	Hwalien district.
212	"	12	14	11	Hwalien district.	247	"	24	09	05	32 Km E. of Hwalien.
213	"	12	17	17	Taichung district.	248	"	24	10	30	Hwalien district.
214	"	12	17	22	Hengchun district.	249	"	25	03	14	Near Hengchun.
215	"	12	19	36	Near Alishan.	250	"	25	18	36	Hwalien district.
216	"	12	22	43	Hwalien district.	251	"	25	23	06	"
217	"	13	01	55	Near Hwalien.	252	"	26	11	36	"
218	"	13	15	27	Hwalien district.	253	"	26	07	51	(d)
219	"	13	16	41	Sinkiang China.	254	"	28	00	35	Hengchun district.
220	"	13	17	17	Hwalien district.	255	"	29	15	28	50 Km ENE. of Hwalien.
221	"	13	19	36	"	256	"	29	21	00	Near Taipei
222	"	14	00	58	Northern district.	257	"	30	07	14	Hwalien district.
223	"	14	17	17	Hengchun district.	258	"	30	11	27	(d)
224	"	15	05	29	Near 130 Km SE. of Hengchun.	259	"	30	19	33	Near Hwalien.
225	"	15	07	49	Hengchun district.	260	"	30	20	27	"
226	"	15	08	31	"	261	May	1	04	10	Near 60 Km. ENE. of Hwalien
227	"	16	11	41	Near Hwalien.	262	"	1	13	11	Hwalien district.
228	"	16	11	49	"	263	"	1	14	32	Near Ilan
229	"	16	15	37	Taichung district.	264	"	1	15	55	"
230	"	17	17	43	Hwalien district.	265	"	1	22	36	Northern district.
231	"	17	17	46	"	266	"	1	23	56	Near Hwalien
232	"	17	18	12	"	267	"	2	00	30	Hwalien district.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
268	May	2	06	36	Near Hwalien.	303	May	12	06	54	Taichung district.
269	"	2	08	26	90 Km ENE. of Ilan.	304	"	12	07	19	"
270	"	2	09	33	Hwalien district.	305	"	12	15	39	Near 20 Km S. of Hwalien.
271	"	2	14	31	Near 15 Km N. of Hwalien.	306	"	13	01	18	Near Hwalien.
272	"	2	15	33	"	307	"	13	11	41	Taichung district.
273	"	2	14	41	Near Hwalien.	308	"	13	12	12	Near Hsinkong.
274	"	2	27	07	Near Tawu.	309	"	13	14	23	Taichung district.
275	"	2	27	50	Near Hwalien.	310	"	13	22	42	Near 20 Km. SSW. of Hwalien.
276	"	2	20	39	"	311	"	13	22	56	Near Hwalien.
277	"	3	13	11	Hengchun district.	312	"	14	04	09	"
278	"	4	01	02	"	313	"	14	12	03	56 Km ENE. of Hwalien.
279	"	4	01	09	"	314	"	14	13	56	Near Hwalien.
280	"	5	22	31	Near Hwalien.	315	"	15	11	20	"
281	"	6	19	02	44 Km ESE. of Hengchun.	316	"	15	13	27	"
282	"	6	19	20	"	317	"	15	14	34	Hwalien district.
283	"	7	00	33	(d)	318	"	15	20	06	Taitung district.
284	"	7	04	38	Hwalien district.	319	"	15	20	46	Near 55 Km E. of Hwalien.
285	"	7	05	23	Hengchun district.	320	"	16	05	13	Hwalien district.
286	"	7	08	40	"	321	"	16	07	08	Taichung district.
287	"	7	10	26	Off coast of Mindanao.	322	"	16	09	34	Near 45 Km ESE. of Tawu.
288	"	7	17	10	Hengchun district.	323	"	16	09	47	Near 140 Km ENE. of Taipei.
289	"	7	17	11	"	324	"	16	15	44	Hwalien district.
290	"	7	18	30	"	325	"	16	21	47	Rynkyu Islands.
291	"	8	11	35	Near Hwalien.	326	"	16	23	55	Near Hwalien.
292	"	9	01	03	Hwalien district.	327	"	17	02	09	"
293	"	9	07	07	"	328	"	17	05	48	Near Hsinkong.
294	"	10	03	16	"	329	"	17	11	02	Near 105 Km NE. of Taipei.
295	"	10	03	42	Near Alishan	330	"	17	13	12	Hwalien district.
296	"	11	06	25	Near Hwalien.	331	"	17	18	04	Near Alishan.
297	"	11	06	28	"	332	"	18	03	54	Near Hwalien.
298	"	11	07	02	"	333	"	18	05	33	Near Hengchun.
299	"	11	07	03	"	334	"	18	16	44	Near Hwalien.
300	"	11	07	06	"	335	"	19	20	59	213 Km ESE. of Hwalien.
301	"	11	11	45	"	336	"	20	08	59	Northern district.
302	"	12	06	48	Near 220 Km ESE. of Hwalien.	337	"	20	22	35	Near Hwalien.

No.	Month	P.			Epicenter	No.	Month	P.			Epicenter
		(G.	M.	T.)				(G.	M.	T.)	
		d.	h.	m.			d.	h.	m.		
338	May	21	03	20	Near Lanyu.	373	June	4	07	39	(d)
339	"	21	03	46	Near 56 Km. SSE. of Hwalien.	374	"	4	10	54	Near Lanyu.
340	"	21	07	20	Near 50 Km. ESE. of Ilan.	375	"	4	23	40	Tainan district.
341	"	21	10	13	Near 205 Km. ESE. of Hwalien.	376	"	5	14	35	Northern district.
342	"	21	10	16	Taitung district.	377	"	5	14	51	Near 36 Km ENE. of Tainan.
343	"	23	00	59	Near Hwalien.	378	"	5	15	34	36 Km. NNE. of Tawu.
344	"	23	01	28	Hwalien district.	379	"	5	17	14	Hengchun district.
345	"	23	12	25	Near Hsinkong.	380	"	5	18	04	Tainan district.
346	"	23	05	21	Taitung district.	381	"	6	05	54	Near Hwalien.
347	"	23	16	58	Hengchun district.	382	"	6	15	03	Near 30 Km ENE. of Hengchun.
348	"	24	16	03	Near Hsinkong.	383	"	7	02	23	Near Hwalien
349	"	24	21	28	Near Hwalien.	384	"	7	02	46	"
350	"	25	00	33	Hwalien district.	385	"	7	02	47	"
351	"	25	12	33	Northern district.	386	"	7	07	38	"
352	"	25	22	44	Hengchun district.	387	"	8	22	28	Near 32 Km SSW. of Ilan.
353	"	26	06	56	Near Hwalien	388	"	9	03	49	Taichung district.
354	"	27	15	12	Near Lanyu.	389	"	9	03	49	Near Alishan.
355	"	29	10	46	"	390	"	9	07	30	Northern district.
356	"	29	11	17	Hengchun district.	391	"	9	11	55	Hengchun district.
357	"	29	23	15	Taitung district.	392	"	9	15	27	Near Lanyu.
358	"	29	23	22	"	393	"	9	15	36	Near Hwalien.
359	"	30	03	23	Near 105 Km ENE. of Hwalien.	394	"	9	16	49	Near Lanyu.
360	"	30	03	28	Tainan district.	395	"	9	21	30	Near 25 Km ENE. of Hsinkong
361	"	30	18	00	Hwalien district	396	"	10	02	09	Near Hwalien.
362	"	30	20	18	Near Lanyu.	397	"	11	05	19	Southern Iran 28.9 N 54.6 E.
363	"	31	08	02	"	398	"	11	05	28	Hengchun district
364	"	31	09	26	Near 37 Km NNE. of Hsinkong.	399	"	11	17	24	(d)
365	"	31	13	44	Hengchun district.	400	"	11	21	04	Near Alishan.
366	"	31	14	40	"	401	"	11	21	35	Near Lanyu.
367	June	2	09	20	Near Hsinkong.	402	"	11	23	13	Hwalien district.
368	"	2	17	17	Hwalien district.	403	"	12	10	04	Near 430 Km E. of Taitung.
369	"	2	20	05	"	404	"	12	11	09	Near Alishan
370	"	2	21	45	Near Hsinkong.	405	"	13	09	20	"
371	"	3	00	57	Near Taitung.	406	"	13	11	13	"
372	"	3	10	44	Near Hwalien	407	"	13	21	22	Near Lanyu.

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			Period			P~S	Intensity	Epicenter & Remarks
					N	E	Z	N	E	Z	N	E	Z			
3	Taipei	11	ep	h. m. s. 17 24 53.4	μ	μ	μ	μ	μ	μ	s	s	s	m	s	O
	Taichung		ep	25 39.1	-	-	-	-	-	-	-	-	-	-	-	O
	Tainan		ep	26 01.2	-	-	-	-	-	-	-	-	-	-	-	O (d)
	Ilan		ep	26 29.0	-	-	-	-	-	-	-	-	-	-	-	O
	Hwalien		ep	26 32.4	-	-	-	-	-	-	-	-	-	-	-	O
4	Tainan	12	ep	10 04 40.8	-	-	-	-	-	-	-	-	-	-	-	44.2 O
	Hwalien		ep	04 44.5	-	-	-	-	-	-	-	-	-	-	-	O
	Taichung		ep	04 48.2	-	-	-	-	-	-	-	-	-	-	-	O Near 430 Km.
	Tawu		p	04 48.2	-	-	-	-	-	-	-	-	-	-	-	35.5 O E. of Taitung
	Yushan		ep	04 50.2	-	-	-	-	-	-	-	-	-	-	-	46.2 O (H=90)
	Hengchun		ep	04 51.8	-	-	-	-	-	-	-	-	-	-	-	O
	Alishan		ep	04 52.4	-	-	-	-	-	-	-	-	-	-	-	47.2 O
	Hsinchu		ep	05 06.9	-	-	-	-	-	-	-	-	-	-	-	54.1 O
	Hsinkong		p	05 09.1	-	-	-	-	-	-	-	-	-	-	-	O
	Taitung		p	05 17.1	-	-	-	-	-	-	-	-	-	-	-	47.6 O
	Ilan		ep	05 30.0	-	-	-	56	77	-	3.5	3.0	-	-	-	41.7 O
	Taipei		ep	05 42.9	-	-	-	-	-	-	-	-	-	-	-	47.6 O
5	Lanyu	14	p	09 08 13.9	+ 30	+ 10	- 20	370	388	100	0.4	0.2	0.4	17.6	I	136 Km. SSE.
	Hengchun		ip	08 17.0	- 13.8	+ 10.0	- 46.3	121	216	71	-	-	-	20.3	O	of Lanyu
	Tawu		ip	08 18.2	-	+	-	-	-	-	-	-	-	21.8	O	
	Hsinkong		ep	08 25.6	-	-	-	-	-	-	-	-	-	26.2	O	20.9N 121.9E
	Kaohsiung		ep	08 26.9	-	-	-	-	-	-	-	-	-	26.4	O	(H=100)
	Alishan		ep	08 30.0	-	-	-	-	-	-	-	-	-	28.8	O	
	Yushan		ep	08 31.2	-	-	-	-	-	-	-	-	-	30.0	O	
	Hwalien		p	08 38.3	-	-	-	-	-	-	-	-	-	34.9	O	
	Taichung		ep	08 47.7	-	-	-	-	-	-	-	-	-	-	O	
	Ilan		ep	08 49.8	-	-	-	-	-	-	-	-	-	42.2	O	
	Taipei		ep	09 01.0	-	-	-	-	-	-	-	-	-	39.1	O	
	Taitung		p	09 23.6	-	-	-	-	-	-	-	-	-	19.2	O	
	6	Taipei	19	ep	01 46 18.4	-	-	-	-	-	-	-	-	-	-	O
Tawu			p	47 59.5	-	-	-	-	-	-	-	-	-	-2	12.8	O
Hwalien			ep	48 09.1	-	-	-	-	-	-	-	-	-	-	O	Philippine

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximum Amplitude			period			P~S	Intensity	Epicenter & Remarks
					N	E	Z	N	E	Z	N	E	Z			
Hengchun			ep	h. m. s. 48 10.1	μ	μ	μ	μ	μ	μ	s	s	s	m	s	O Islands
	Tainan		ep	48 35.4	-	-	-	-	-	-	-	-	-	-	-	O 12.6N 121.9E
7	Hwalien	25	ep	16 51 18.8	-	-	-	-	-	-	-	-	-	-3	4.0	O North of
	Hsinkong		ep	51 20.1	-	-	-	-	-	-	-	-	-	-4	7.5	O Mariana
	Tawu		p	51 24.8	-	-	-	-	-	-	-	-	-	-4	3.3	O Islands
	Taitung		ep	51 26.2	-	-	-	-	-	-	-	-	-	-3	54.5	O 31.7N 143.1E
	Alishan		ep	51 28.5	-	-	-	-	-	-	-	-	-	-	O	
	Taipei		ep	51 29.4	-	-	-	-	-	-	-	-	-	-3	12.1	O
	Tainan		ep	51 33.7	-	-	-	-	-	-	-	-	-	-	O	
	Hengchun		ep	51 33.8	-	-	-	-	-	-	-	-	-	-	O	
Taichung		ep	51 36.6	-	-	-	-	-	-	-	-	-	-	O		
8	Taichung	27	p	07 08 12.6	-	-	-	-	-	-	-	-	-	-3	44.9	O
	Hsinchu		ep	08 14.6	-	-	-	-	-	-	-	-	-	-	O	Yunan
	Alishan		ip	08 14.8	- 12.2	- 6.0	-	-	-	-	-	-	-	-3	47.8	O
	Taipei		p	08 19.5	-	-	-	950	1050	-	12.7	10.4	-	-3	50.8	O Province
	Yushan		p	08 20.4	-	-	-	-	-	-	-	-	-	-	O	China
	Hsinkong		ep	08 21.3	-	-	-	141	151	-	6.9	8.9	-	-3	51.8	O 27.7N 99.4E
	Tawu		ep	08 21.6	-	-	-	53	70	-	10.4	6.1	-	-3	49.7	O
	Taitung		ep	08 21.7	-	-	-	-	-	-	-	-	-	-3	56.5	O
	Kaohsiung		p	08 23.0	-	-	-	-	-	-	-	-	-	-	O	
	Lanyu		ep	08 23.0	-	-	-	-	-	-	-	-	-	-4	8.0	O
	Ilan		p	08 23.1	-	-	-	444	572	-	7.9	8.7	-	-	O	
Hwalien		ip	08 23.2	- 6.3	+ 14.2	+ 3.2	442	695	834	8.7	8.3	8.83	50.0	O		
Tainan		p	08 27.3	-	-	-	-	-	-	-	-	-	-3	19.4	O	
Hengchun		ep	08 42.1	-	-	-	-	-	-	-	-	-	-	O		
9	Taichung	27	ep	10 55 06.5	-	-	-	-	-	-	-	-	-	-	O	
	Taipei		ep	56 13.0	-	-	-	-	-	-	-	-	-	-	O (d)	
	Hwalien		ep	56 53.3	-	-	-	-	-	-	-	-	-	-	O	
10	Hwalien	29	p	08 23 41.9	-	-	-	149	156	85	2.2	2.2	2.2	8.9	O	Near 75 Km.
	Ilan		ip	23 42.7	- 7.0	+ 6	+ 14	80	240	104	1.6	2.0	2.5	12.3	I	ESE. of
	Taipei		p	23 50.7	-	-	-	175	163	-	2.0	-	-	15.2	O	Hwalien
	Hsinkong		ep	23 51.5	-	-	-	-	-	-	-	-	-	15.4	O	

No.	Station	Date	Phase	P. (G. M. T.)	Initial Motion			Maximun Amplitude			period			P~S	Intensity	Epicenter & Remarks
					N	E	Z	N	E	Z	N	E	Z			
	Hsinchu		ep	h. m. s. 23 53.4	μ	μ	μ	μ	μ	μ	s	s	s	m s		
	Taichung		p	23 55.0	-	-	-	-	-	-	-	-	-	23.5	O	
	Alishan		ep	23 56.5	-	-	-	-	-	-	-	-	-	19.5	O	
	Yushan		p	23 56.7	-	-	-	-	-	-	-	-	-	17.0	O	
	Taitung		ep	23 57.9	-	-	-	-	-	-	-	-	-	14.5	O	
	Lanyu		ep	24 04.9	-	-	-	-	-	-	-	-	-	18.2	O	
	Tainan		ep	24 13.2	-	-	-	-	-	-	-	-	-	21.5	O	
	Kaohsiung		ep	24 24.0	-	-	-	-	-	-	-	-	-	0		
	Hengchun		ep	24 31.7	-	-	-	-	-	-	-	-	-	0		