

*Copied to end of May. to end of 1958*

SEISMOLOGICAL BULLETIN.

JANUARY 1958

MAGNETIC OBSERVATORY, HERMANUS.

LOCATION.

Lat.  $34^{\circ} 25.5' S.$ , Long.  $19^{\circ} 13.5' E.$

85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS.

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8 mm/min. Free periods: E-W, 12 secs; N-S 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock.	$A_{meas}$	Remarks.
✓ Jan. 3	e S e SS F	18 01 21 04(20) 18 52	USCGS: $22^{\circ} S, 65^{\circ} E$ (Mascarene Isl. region). H = 17h 47m 12s	42°	Weak.
✓ Jan. 5	e F	12 36 13 04			Traces.
✓ Jan. 15	i P i e e PP i S F	19 26 46 27 26 29 00 29 52 36 58 21 38	USCGS: $16\frac{1}{2}^{\circ} S, 71\frac{1}{2}^{\circ} W$ (Southern Peru) H = 19h 14m 29s h = 100 Km ca.	81°	
✗ Jan. 15	e F	22 54 24 00			Weak.
✗ Jan. 16	e F	12 16 12 28			Traces.
✓ Jan. 17	e e e S e (SS) F	07 34(00) 36(34) 37(56) 43(25) 08 50	USCGS: $52^{\circ} S, 139\frac{1}{2}^{\circ} E$ (Antarctic Ocean) H = 07h 15m 38s	80°	Weak.
✓ Jan. 18	e P e PP e e e S F	15 20 25 21(07) 22 23 23 15 25 05 16 40	USCGS: $29^{\circ} S, 13^{\circ} W.$ (North Tristan da Cunha). H = 15h 14m 26s	28°	



Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock.	$\Delta$ meas	Remarks.
✓ Jan. 19	e P e PP i (SKS) e S F	14 21 01 25 06 31 51 32 30 18 51	USCGS: $1\frac{1}{2}^{\circ}$ N, $79\frac{1}{2}^{\circ}$ W (Near coast of Ecuador) H = 14h 07m 23s	98°	
✓ Jan. 20	e PP e S e (SKS) F	02 34 27 02 41 08 41 27 04 07	USCGS: $30\frac{1}{2}^{\circ}$ S, $71\frac{1}{2}^{\circ}$ W (Northern Chili) H = 02h 19m 53s	74°	
✓ Jan. 24	e i e L i L i F	06 52 09 55 23 55 31 56 24 57 35 08 00			"Near" earthquake.
X Jan. 27	e F	08 50 09 13			Traces.
✓ Jan. 30	e SKS e SS F	06 39 27 50(40) 07 40	USCGS: $7\frac{1}{2}^{\circ}$ S, $155\frac{1}{2}^{\circ}$ E (Solomon Islands) H = 06h 13m 24s	122°	Phases un- certain re- cord changed at 0642-0649.



SEISMOLOGICAL BULLETIN.

FEBRUARY 1958.

MAGNETIC OBSERVATORY, HERMANUS.

LOCATION.

Lat.  $34^{\circ} 25.5' S.$ , Long.  $19^{\circ} 13.5' E.$   
 85 feet above <sup>mean</sup> sea-level, 700 yards from coast.

INSTRUMENTS.

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/min. Free periods : E-W, 12 secs; N-S 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta_{meas}$	Remarks.
✓ Feb. 1	e P e PP i SKS i SKKS e PS i i PPS i (SSS) F	16 23 53 27 50 34 32 34 50 36 50 37 17 37 35 45 44 20 03	USCGS: $2^{\circ} N$ , $79^{\circ} W$ (near coast of Ecuador)  H = 16h 10m 15s	$98\frac{1}{2}^{\circ}$	At 17h 13mm: $T_E = 14\frac{1}{2}$ sec. $A_N = 22$ $A_E = 82$
✓ Feb. 1	i SKS F	21 10 02 23 10	Ecuador aftershock. H = 20h 45m 45s		At 21h 49m: $T_E = 15$ sec. $A_N = 4$ $A_E = 14$
✗ Feb. 2	e F	09 19 10 07			Traces.
✗ Feb. 13	e F	10 51 .. 11 00			Traces. (Near earthquake ?)
✓ Feb. 17	e (S) i (ScS) e (PS) F	05 41(05) 41 13 42 00 06 30	USCGS: $35\frac{1}{2}^{\circ} N$ , $70^{\circ} E$ (Hindu Kush) H = 05h 18m 35s	$84^{\circ}$	E-W record only.



Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock.	$\Delta$ meas	Remarks.
X Feb. 22	X e F	11 35 .. 12 54			Disturbed by microseisms.
X Feb. 27	e PS F	23 56 38 00 56	USCGS: 21 N, 120 E (Batan Islands re- gion). H = 23h 27m 49s	110 $\frac{1}{2}$	Disturbed by microseisms.
X Feb. 28	e F	08 21 08 29			Traces.
✓ Feb. 28	e PS F	10 19 05 10 51	USCGS: 27 N, 44 W (Mid-Atlantic Ocean). H = 09h 54m 53s	85 $\frac{1}{2}$	Weak.



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INSTRUMENTS.

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/minute. Free periods: E-W, 12 secs; N-S 10 secs.

The time is recorded in <sup>the form of</sup> a 2-} sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Lambda_{meas}$	Remarks
✓ June 3	e PP e e SKS <sub>2</sub> F	19 52 15 56 49 58 07 21 17	USCGS: $15^{\circ}S, 168^{\circ}E$ (New Hebrides) H = 19h 31m 52s	$122\frac{1}{2}^{\circ}$	Very weak phases.
X June 4	e F	15 01 16 47			Traces
✓ June 6	e SKS e SKKS e (PS) i PS i i PPS e SS F	09 36 19 37(00) 39 07 39 13 40 00 40 16 44 57 11 48	USCGS: $8^{\circ}N, 85^{\circ}W$ (Off coast of Costa Rica) H = 09h 11m 18s	$106\frac{1}{2}^{\circ}$	At 10h 08 $\frac{1}{2}$ m: $T_G = 21$ secs; $A_N = 6\mu$ , $A_E = 30\mu$
✓ June 6	i PS F	19 42 53 21 05	USCGS: $5\frac{1}{2}^{\circ}N, 82\frac{1}{2}^{\circ}W$ (South of Costa Rica) H = 19h 15m 26s	$102\frac{1}{2}^{\circ}$	
X June 7	e F	13 32 13 41			Traces
X June 12	e F	22 01 23 05			Disturbed by microseisms.
X June 15	e F	19 00 19 20			Traces
✓ June 25	e e e (ScSP) e e e F	10 01 35 04 30 06 30 09 08 13 52 17 37 12 30	USCGS: $3^{\circ}S, 144\frac{1}{2}^{\circ}E$ (Near north coast of New Guinea) H = 09h 36m 30s	$117^{\circ}$	At 10h 43 $\frac{1}{2}$ m, $T_G = 17$ secs; $A_N = 22\mu$ , $A_E = 12\mu$ . Phases uncertain.



Date 1958	Phase	G.M.T. h m s	Epicentre and Time of shock.	$\Delta$ <sub>meas</sub>	Remarks.
X Apr. 11	e F	02 21 02 23			Traces.
X Apr. 12	e F	12 57 13 27			Traces.
✓ Apr. 13	e e e e e F	13 49 08 55 10 55 45 57 57 59 53 14 21			Disturbed by microseisms.
✓ Apr. 14	e P e PP e PPP i e (SKS) e PS i F	21 46 15 50 07 52 26 56 53 57 51 59 06 22 04 52 00 30 ca	USCGS: 1°N, 79½°W. (Near coast of Ecuador) H = 21h 32m 28s	98°	At 22h 32m T <sub>G</sub> = 15secs; A <sub>N</sub> = 23u; A <sub>E</sub> = 93u.
✓ Apr. 15	i (SKS) e PS F	01 55 22 57 28 03 16	Ecuador aftershock H = 01h 30m 43s		N-S record lost
✓ Apr. 15	e (S) i (PPS) e SS F	04 18 44 21 25 26(25) 05 30 ca	USCGS: 9°N, 84°W (Off west coast of Costa Rica) H = 03h 52m 39s	106°	
✓ Apr. 17	e F	10 39(41) 11 30	USCGS: 5½°S, 152°E (New Britain) H = 10h 04m 46s	120°	Very weak. (Epicentral data not relevant?)
✓ Apr. 20	e e F	21 28 24 28 55 21 44	USCGS: 38½°N, 122°W (California) H = 21h 06m 59s	149°	Very weak. (Epicentral data not relevant?)
✓ Apr. 21	e SS e F	20 53 36 58(40) 21 57	USCGS: 15°S, 174½°W (Samoa Islands region) H = 20h 14m 47s	129°	
✓ Apr. 21	e e iS(or SKS) i PS i F	22 50(29) 59(10) 59 59 23 00 51 01 36 24 00 ca	USCGS: 4½°S, 104°E (Sumatra) H = 22h 37m 18s	83°	First two phases from different earthquake?
X Apr. 23	e F	04 16 04 46			Traces.
✓ Apr. 28	i S i (SoS) e e PPS F	12 10 59 11(15) 11 34 12 19 13 30 ca	USCGS: 11°S, 74°W (Peru) H = 11h 47m 40s	86½°	
X* Apr. 4	e F	17 54 18 04			

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Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta$ meas	Remarks
✓ July 10	e e F	15 15 58 23 52 15 36			Very weak
✓ July 11	e e e F	19 23 37 32 13 3 32 33 20 17			Very weak
X July 12	e F	01 45 02 37			Traces
X July 19	e F	18 43 22 20 44			Very weak
X July 20	i F	11 07 07 11 13			Very weak
X July 21	e F	16 02 16 28			Traces.
X July 23	e F	11 52(06) 12 52			Very weak
X July 25	e F	00 58(00) 01 01 $\frac{1}{2}$			Near earthquake
✓ July 26	e PP i i e (PcP) i F	06 19 06 20 10 20 40 22 52 22 59 07 39	USCGS: 40°S, 45 $\frac{1}{2}$ °E. (Southern Indian Ocean) H = 06h 13m 50s	21 $\frac{1}{2}$ °	
✓ July 26	i P i i PP i (:) F	17 48 34 48 43 51 44 57 50 20 14	USCGS: 13 $\frac{1}{2}$ °S, 69°W (Peru-Bolivia border) H = 17h 37m 09s H = 650 Km. ca.	81°	



SEISMOLOGICAL BULLETIN.

AUGUST, 1958.

MAGNETIC OBSERVATORY, HERMANUS.

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85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS.

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/min. Free periods : E-W, 12 secs; N-S, 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta_{meas}$	Remarks.
X Aug. 6	e	22 23 22 37			Traces
✓ Aug. 9	e <sub>N</sub> e <sub>N</sub> e <sub>E</sub> e <sub>E</sub> e <sub>L</sub> F	12 54(08) 55(24) 57(44) 58(23) 58(44) 13 00 13 46			Phases very weak, times uncertain.
✓ Aug. 12	e PP i(SKS) F	19 43 32 50 05 21 56	USCGS: $0, 126\frac{1}{2}^{\circ} E.$ (Molucca Passage) H = 19h 25m 05s	$104\frac{1}{2}^{\circ}$	Weak
✓ Aug. 14	e e L F	12 00(35) 12 05 .. 12 27	USCGS: $34\frac{1}{2}^{\circ} N, 48^{\circ} E$ (Iran) H = 11h 27m 00s	$74^{\circ}$	
✓ Aug. 14	e PP e PPP i(SKKKS) i i(PPP <sub>2</sub> ) e SKSP e F	15 19(35) 23(16) 27 16 27 30 27 57 30 01 31 59 17 23	USCGS: $52^{\circ} N, 175^{\circ} W.$ (Adreanof Islands) H = 14h 55m 10s	$159\frac{1}{2}^{\circ}$	All phases very weak.



Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta_{meas}$	Remarks.
✓ Aug. 15	i PKP i i i PKS i e F	20 15 22 16 28 16 36 19 23 27 27 29 02 22 25	USCGS: $53^{\circ}N$ , $160\frac{1}{2}^{\circ}E$ . (Near east coast of Kamchatka) H = 19h 55m 39s h about 60 km.	$147^{\circ}$	All phases very weak.
✓ Aug. 15	eP(weak) e (weak) e PP i i e (weak) i SKS! e S i : i : F	22 44 18 47(09) 47 30 48 12 48 52 49 18 53 33 54 42 54 55 56 01 24 56	USCGS: $1\frac{1}{2}^{\circ}N$ , $125^{\circ}E$ . (Celebes) H = 22h 29m 17s h about 200 km.	$104\frac{1}{2}^{\circ}$	
X Aug. 16	e F	12 18 12 41			Traces
X Aug. 16	e F	14 52 15 30			Traces
✓ Aug. 16	i F	19 34 55 21 14	USCGS: $34\frac{1}{2}^{\circ}N$ , $48^{\circ}E$ . (Iran) H = 19h 13m 45s	$106^{\circ}$	At 19h 53 $\frac{1}{2}$ m: $T_G = 18$ secs; $\Delta_N = 80\mu$ ; $\Delta_E = 134\mu$ .
X Aug. 17	e F	19 00 19 15			Traces
X Aug. 20	e F	04 59 05 05			Traces
✓ Aug. 21	e PcP e PP e e ScS F	15 28(23) 30(45) 37(19) 38(10) 16 32 ..	USCGS: $38^{\circ}N$ , $20\frac{1}{2}^{\circ}E$ (Near west coast of Greece) H = 15h 16m 35s	$72^{\circ}$	Phases very weak; times uncertain.



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SEISMOLOGICAL BULLETIN

SEPTEMBER, 1958

MAGNETIC OBSERVATORY, HERMANUS

LOCATION

Lat.  $34^{\circ} 25.5' S.$ , Long.  $19^{\circ} 13.5' E.$

85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/min. Free periods : E-W, 12 secs; N-S, 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta_{meas}$	Remarks
✓ Sept. 3	is i i F	04 00 21 03 15 04 07 05 12	USCGS: 0, 18 W (Atlantic Ocean) H = 03h 44m 24s	49°	
✓ Sept. 4	e P e (PP) i (!)(S) F	22 02 32 02 43 11 58 24 00	USCGS: $33\frac{1}{2}$ S, $69\frac{1}{2}$ W (Chili - Argentine border) H = 21h 51m 08s.	71°	P and (PP) very weak
✓ Sept. 12	e S e L F	05 53 36 58.0 06 09	USCGS: 42 S, 80 E (Indian Ocean) H = 05h 37m 53s	47 $\frac{1}{2}$ °	
✗ Sept. 14	e F	15 31 15 49			Traces
✓ Sept. 14	e e e F	21 59.5 22 00.9 02.0 22 11			Weak



Date 1958	Phase	G.M.T. h m s	Epicentre and time of shock	$\Delta$ meas	Remarks
✓ Sept. 15	i(!)SKS e S e i e PS i e SS e F	20 08 11 09 17 10 55 11 40 12 12 14 49 16 32 20 21 20 59	USCGS: $2\frac{1}{2}$ W, $120\frac{1}{2}$ E (Celebes Sea) H = 19h 45m 40s h about 600 km.	$101\frac{1}{2}^{\circ}$	
✓ Sept. 18	e (PS) i (PPS) F	14 59 43 59 50	USCGS: $\frac{1}{2}$ N, 30 W (Mid-Atlantic) H = 14h 41m 40s	$57\frac{1}{2}^{\circ}$	
✓ Sept. 20	e SKS e S <sub>c</sub> SP or (PS) i e F	17 35 26 39(42) 40 10 41 18 18 30 ca	USCGS: $6\frac{1}{2}$ S, $154\frac{1}{2}$ E (Solomon Islands) H = 17h 09m 24s	$121\frac{1}{2}$	All phases Very weak
<del>Sept. 20</del>	e L F	19 07 19 35			Traces
✓ Sept. 22	e (?) e PP i PPP e (PS) e (SS) F	19 24 56 25 10 27 24 34(35) 40(42) 20 40	USCGS: $33\frac{1}{2}$ S, $177\frac{1}{2}$ W (Kermadec Islands region) H = 19h 05m 44s	$111^{\circ}$	All phases Very weak
✓ Sept. 25	e S e e PS e (SS) F	07 40 28 40 43 40(56) 44(35) 09 00 ca	USCGS: 9 N, $39\frac{1}{2}$ W (Atlantic Ocean) H = 07h 20m 02s	$70^{\circ}$	Disturbed by microseisms



SEISMOLOGICAL BULLETIN

OCTOBER 1958

MAGNETIC OBSERVATORY, HERMANUS

LOCATION

Lat.  $34^{\circ} 25.5$  S., Long.  $19^{\circ} 13.5$  E.

85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/min. Free periods : E-W, 12 secs; N-S 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and Time of shock	$\Delta$ meas	Remarks.
✓ Oct. 1	e SKS i PS e(PFS) F	09 52(01) 52 38 53(00) 10 43	USCGS: 57 S, 147 E (Southwest of Macquarie Island) H = 09h 29m 43s	$79^{\circ}$	Initial phases very weak.
✓ Oct. 2	e P e PP e S e L F	04 31(51) 32 49 36 51 38.0 05 18	USCGS: $58\frac{1}{2}$ S, 10 W (Sandwich Islands region) H = 04h 25m 30s	$31^{\circ}$	Initial phases very weak.
X Oct. 6	e L e L F	10 10 .. 10 17.5 10 26	USCGS: $37\frac{1}{2}$ N, $54\frac{1}{2}$ E (Iran-Turkmen, S.S.R border) H = 09h 29m 22s	$88\frac{1}{2}^{\circ}$	Very weak.
X Oct. 7	e F	12 58 .. 14 ..			Confused by microseisms
X Oct. 7	e F	14 48 .. 15 02			Traces
X Oct. 8	e L F	15 58.8 16 00			$\Delta < 30^{\circ}$ ?
✓ Oct. 9	e P e i PP i(Weak) i S F	11 27 47 28 15 29 15 31 37 33 42 13 28	USCGS: $55\frac{1}{2}$ S, $27\frac{1}{2}$ W (Sandwich Islands region) H = 11h 20m 17s	$38^{\circ}$	



Date 1958	Phase	G. MMT T. h m s	Epicentre and Time of shock	$\Delta$ <sub>meas</sub>	Remarks.
X ✓ Oct. 19	e e F	<b>02</b> 15.2 16.1 03 12	USCGS: 19 S, 172½ W (Tonga Islands) H = 01h 53m 54s	126°	Very weak
✓ Oct. 20	e P e i SKS e ScS (or S) F	01 25 28 25 53 35 47 36 14 03 00	USCGS: 9½ S, 112½ E (Off south coast of Java)  H = 01h 12m 30s	87½°	
X Oct. 22	e F	00 56.5 01 07			Traces
X Oct. 25	e LQ (or PcS) F	06 37.9 06 50	USCGS: 22½ S, 11 W (South Atlantic ocean) H = 06h 25m 06s	29°	Traces
X Oct. 26	e F	12 53.7 13 07			$\Delta < 30^\circ?$
X Oct. 27	e F	16 09 45 16 14			$\Delta < 30^\circ?$
✓ ✓ Oct. 28	e S e F	11 10 14 10(28) 12 17	USCGS: 30½ N, 85 E (Southern Tibet) H = 10h 46m 27s	89½°	
✓ Oct. 29	e PKP <sub>2</sub> e PP F	08 04(48) 08 23 10 15	USCGS: 51½ N, 179½ E (Adreanof Islands) H = 07h 44m 10s	157½°	Initial phases very weak. At 09h 22.7m, T <sub>G</sub> = 19 secs; A <sub>N</sub> = 5 $\mu$ , A <sub>E</sub> = 14 $\mu$



SEISMOLOGICAL BULLETIN

NOVEMBER 1958.

MAGNETIC OBSERVATORY, HERMANUS

LOCATION

Lat.  $34^{\circ} 25.5$  S., Long.  $19^{\circ} 13.5$  E.  
85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8mm/min. Free periods: E-W, 12 secs; N-S, 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and Time of Shock	$\Delta_{meas}$	Remarks.
✓ Nov. 1	e F	04 09.1 06 15	USCGS: 3 S, 150 E (Bismarch Sea) H = 03h 38m 36s	$120\frac{1}{2}^{\circ}$	No clear phases.
✓ Nov. 1	e(PS) F	12 46.7 14 35	USCGS: $17\frac{1}{2}$ S, 168 E (New Hebrides Islands) H = 12h 16m 36s	$120\frac{1}{2}^{\circ}$	No clear phases.
✓ Nov. 1	e F	16 27 .. 17 20			Traces
X Nov. 4	e F	23 19 21 24 06			Disturbed by microseisms
✓ Nov. 6	e P e PKP i e PP i PKS e SS F	23 14 53 17 18 17 29 20 36 21 13 38.9 05 00	USCGS: $44\frac{1}{2}$ N, $148\frac{1}{2}$ E (Kurile Islands) H = 22h 58m 10s	$140^{\circ}$	At 00h 30m: $T_G = 19$ secs; $A_N = 125 \mu$ ; $A_E = 560 \mu$ .
X Nov. 7	e F	06 13 06 45			Traces.
X Nov. 8	e F	10 43 11 30			Traces.
X Nov. 10	e F	07 33 07 46			Traces.



Date 1958	Phase	G.M.T. h m s	Epicentre and Time of Shock	$\Delta_{meas}$	Remarks.
✓ Nov. 12	e PKP i PP e PKS e SKSP e SS F	20 42 53 46 02 46 45 56(10) 21 04(19) 24 20	USCGS: 44 $\frac{1}{2}$ N, 149 E (Kurile Islands) H = 20h 23m 26s	140 $\frac{1}{2}$ <sup>0</sup>	
✓ Nov. 14	e PP e SKS <sub>1</sub> e SKS <sub>2</sub> e e SS F	14 06(51) 13 05 14(00) 21(00) 21(43) 15 00	USCGS: 6 S, 131 E (Banda Sea) H = 13h 48m 20s	104 $\frac{1}{2}$ <sup>0</sup>	Measured phases very weak.
✓ Nov. 22	e F	00 50(34) 01 00	USCGS: 10 $\frac{1}{2}$ S, 112 $\frac{1}{2}$ E (South of Java) H = 00h 04m 20s	87 <sup>0</sup>	Disturbed by microseisms
✓ Nov. 24	e e F	07 14(00) 17(31) 07 33			Very weak.
X Nov. 27	e F	14 25 14 50			Traces.



SEISMOLOGICAL BULLETIN

DECEMBER 1958.

MAGNETIC OBSERVATORY, HERMANUS.

LOCATION

Lat.  $34^{\circ} 25' 5''$  S.; Long.  $19^{\circ} 13' 5''$  E.  
85 feet above mean sea-level, 700 yards from coast.

INSTRUMENTS

Two Milne-Shaw seismographs, recording N-S and E-W horizontal ground movements. Nominal magnification 250; damping ratio 20:1; recording speed 8 mm/min. Free periods: E-W, 12 secs; N-S, 10 secs.

The time is recorded in the form of a 2-3 sec. break in the record every minute excepting on the hour and half-hour. The clock correction is determined daily to an accuracy of 0.2 sec.

Date 1958	Phase	G.M.T. h m s	Epicentre and Time of Shock	$\Delta_{\text{meas}}$	Remarks
X Dec. 3	e F	10 45 .. 11 01			Traces
$\alpha$ Dec. 5	e eL F	04 15(04) 17.6 04 40			Very weak
$\beta$ Dec. 6	eL F	10 25 10 55			Traces
X Dec. 9	eL F	21 20 21 34			Traces
$\checkmark$ Dec. 10	e i i SKS e(SKKS) e e PS e SS F	07 22(09) 22 14 26 54 27 43 29 45 30 24 35(50) 09 23	USCGS: $37^{\circ}$ S, $176^{\frac{1}{2}}$ E (Off North Island, New Zealand) h about 300 km. H = 07h 02m 59s	$106^{\frac{1}{2}}$ $^{\circ}$	
X Dec. 11	eL F	12 35 .. 40			Ocean earthquake $\Delta < 30^{\circ}$ ?
$\checkmark$ Dec. 13	i PcS eL F	09 20 33 26 .. 09 46	USCGS: $55^{\frac{1}{2}}$ S, $22^{\circ}$ W (Sandwich Islands region) H = 09h 07m 30s	$35^{\circ}$	



Date 1958	Phase	G.M.T. h m s	Epicentre and Time of Shock	$\Delta$ meas	Remarks
✓ Dec. 14	e(SS or SSP) eL F	07 43(00) 52 .. 08 43	USCGS: 35S, 108 $\frac{1}{2}$ W (South Pacific Ocean) H = 07h 11m 28s	95 $\frac{1}{2}$ <sup>o</sup>	Weak
X Dec. 16	e e F	10 16 .. 10 19 21 10 28			Very weak
X Dec. 18	e F	20 43 .. 20 48			Traces
X Dec. 18	e F	23 44 .. 23 48			Traces
✓ Dec. 19	e ScS e(PS) F	11 37(17) 37(39) 12 04	USCGS: 16S, 72W (Southern Peru) h about 100 Km H = 11h 14m 40s	82 <sup>o</sup>	Very weak
X Dec. 20	e F	00 22 00 43			Traces
X Dec. 21	e F	06 35 .. 07 30 ..			Sheets changed 0624 - 0631
X Dec. 23	e F	07 20 .. 07 40 ..			Traces
X Dec. 25	e F	08 35 .. 10 24			No clear phases.
✓ Dec. 28	e F	05 57(49) 07 00	USCGS: 29 $\frac{1}{2}$ N, 80E (Western Nepal-India Border) H = 05h 34m 36s	85 $\frac{1}{2}$ <sup>o</sup>	Very weak