

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No.

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

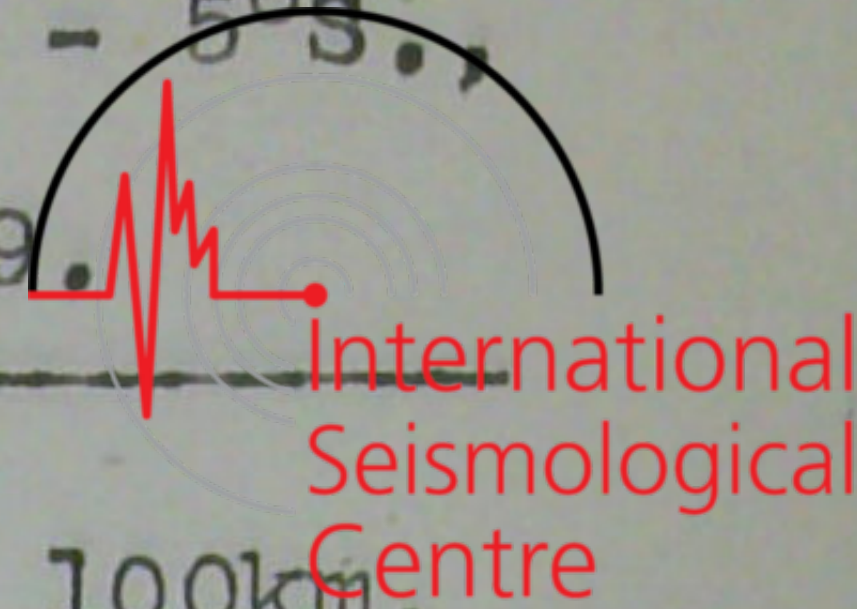
INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
1951 Jan 1st.	iPZ	03-	20-	26	B	Dilatation U.S.C.G.S. - Eastern Mongolia H= 03.07.40.
	iPZN	03-	26-	43	B,M-S	Compression
	iPE		26-	44	S	$\Delta S-P = 22.2^{\circ}$
	ePE		26-	45	M-S	U.S.C.G.S. 5° S., 151° E.
	iSE		30-	40	M-S	H= 03.21, 40
	iSZN		30-	41	B,M-S,S	
	iPZNE	20-	20-	22	B,M-S,S	Compression
	iSNE		23-	32	M-S,S	$\Delta S-P = 17.3^{\circ}$
						U.S.C.G.S. - 18° S., 169° E.
						H = 20-16-20
" 3rd.	iPZE	02-	16-	33	B,S	Dilatation
	ePNE		16-	33	M-S	
" 5th	iPZE	13-	29-	37	B,S	Dilatation
	ePNE		29-	37	M-S	$\Delta P-H = 19.3^{\circ}$
	eSNE		33-	08	M-S,S	U.S.C.G.S. 12° S., 165° E.
						H= 13.25.18. h= 100km. ca.
" 6th	iPZ	05-	30-	39	B	Dilatation
	iZ		31-	34	B	U.S.C.G.S. - $36\frac{1}{2}^{\circ}$ N., $70\frac{1}{2}^{\circ}$ E.
	iZ		33-	48	B	H= 05.17.19. h= about 250km.
	iSE		42-	13	S,M-S	
	iE		44-	53	S,M-S	
	Surface waves beginning about					U.S.C.G.S. - $7\frac{1}{2}^{\circ}$ N., 81° W.
		08-	56-	00	S,M-S	H=07.51.31. h=about 100 km.
	iPZ	19-	16-	24	B	Dilatation
" 8th	iPZ	12-	00-	50	B,M-S	Dilatation
						U.S.C.G.S. - Karmadec Is. region H= 11.55.20.
	ePZ	15-	01-	47	B,S	
	iPZ	17-	59-	38	B	Dilatation
	ePZ	18-	42-	56	B	Dilatation
						U.S.C.G.S. - 35° N., 140° E.
						H = 18.32.18.

DATE.	PHASE.	h.	U. T. m.	s.	UNIT	REMARKS.
Jan. 8th	iPZ iSNE iSSE	21-	44-	27	B M-S,S M-S,S	Dilatation $\Delta S-P = 23.1^\circ$ U.S.C.G.S. - $50^\circ S.$, $151^\circ E.$, H= 21.39.29.
" 10th	iPZ iPPE ePPE	08-32-	44		B S M-S	Compression $\Delta PP-P = 28\frac{1}{2}^\circ$ h = about 100km. U.S.C.G.S. - $23^\circ S.$, $176^\circ W.$, H=08.26.56 , h= about 100 km.
	iE eLN	10- 19-	59		S M-S	
	eIPN eIPZ iSE iN	19- 20-	17		M-S B,S M-S,S M-S	
" 12th	ePZ	10-	47-	51	B	
" 13th	ePZ	06-	46-	50	B	
	ePZ	15-	38-	55	B	
" 14th	iPZ	01-	15-	23	B	Dilatation U.S.C.G.S. - Solomon Islands region, H= 01.10.35.
	ePZ	06-	49-	08	B	
	iPZE ePE iPPE iPPPZE	10- 25-	15		B,S M-S M-S,S B,M-S,S	Dilatation U.S.C.G.S. - $23^\circ S.$, $176^\circ W.$, H= 10.19.24, h= about 100km.
" 15th	iPE iPZE iPN iE ipPNE eSE iN iZE iE	04- 16-	17		M-S B,S M-S M-S M-S M-S M-S B,M-S,S M-S	Dilatation to N.E. $\Delta S-P = 18^\circ$, h=about 150km. U.S.C.G.S. - $15^\circ S.$, $167^\circ E.$, H= 04.12.14, h= about 150 km.
	eZ eE eE eNE iE eNE eZ iE iNE	10- 38-	12		B S S M-S S M-S B S M-S	
	eZ	11-	39-	59	B	
	ePZ	22-	35-	10	B	U.S.C.G.S. - New Hebrides Islands. Region. H= 22.31.30.
" 16th	iPZ ePE ePN ePE eSN eSZ eSE	13- 18-	28		B M-S M-S S M-S B M-S,S	Compression U.S.C.G.S. - about 250 m. east of New Hebrides Islands, H= 13.14.01.
	A few long waves about 21h. 10m.					



DATE.	PHASE	h. m. s.	UNIT	REMARKS.
" 16th	iPZ ePE ePN iPPE ePPN iSNE iSE	22- 42- 12 42- 12 42- 13 42- 39 42- 39 46- 10 46- 11	B M-S,S M-S M-S,S M-S S M-S	Dilatation $\Delta S-P = 22.6^\circ$
" 17th	ePZ iPE iSE eE iZ eZNE eE eN eZ	01- 00- 47 00- 48 04- 47 16- 04- 25 04- 30 17- 02- 14 06- 30 06- 35 19- 18- 38	B S S S B B,M-S,S S M-S B	
" 18th	iPZ eSE	21- 28- 11 38- 28	B S	U.S.C.G.S. - $52^\circ N.$, $177^\circ W.$ H = 21.15.50.
" 19th	iPZ iPZ eZ eZ eE	04- 13- 49 07- 22- 55 10- 25- 28 33- 21 33- 52	B B B B S	Compression U.S.C.G.S. - Solomon Islands Region, H= 04.08.55. Dilatation
" 21st	iPZ ePZ eiPZ iZ iZ	07- 32- 34 11- 18- 19 12- 45- 22 45- 24 15- 23- 15	B B B B B	Dilatation U.S.C.G.S. - Fiji Islands region. H= 07.27.28., h= about 500km.
" 22nd	iPE iFZT ePN iPPZ eSE eiPZ ePE iZ iPZ	10- 36- 17 36- 18 36- 18 36- 52 40- 41 13- 52- 30 52- 30 52- 32 16- 15- 41	M-S B,S M-S B M-S,S B S B B	Compression $\Delta PP-P = 25^\circ Ca.$ U.S.C.G.S. - $33^\circ S.$, $178^\circ W.$ H = 10.30.45. U.S.C.G.S. - Tonga Islands Region. H = 13.46.30, h= about 100km.
" 23rd	iPZ ePE ePE eSN eNE	07- 02- 30 02- 31 02- 33 10- 30 10- 37	B S M-S M-S M-S,S	Compression U.S.C.G.S. - $55^\circ S.$, $136^\circ W.$ H = 06.52.42.
" 24th	iPZ ePE iPPZ iSNE eSZ ePE?Z ePP?N	00- 50- 34 50- 34 50- 44 54- 08 54 08 05- 02- 42 02- 43	B S B M-S,S B B M-S	Compression U.S.C.G.S. - $12^\circ S.$, $167^\circ E.$ H- 00.46.02. h= about 100km. U.S.C.G.S. - Sandwich Islands H= 04.49.28.



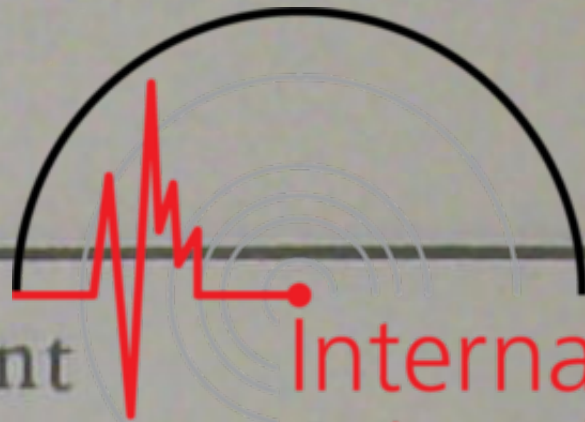
DATE.	PHASE.	h.	U. T. m. s.	UNIT	REMARKS.
" 24th	iPZ ePE eSE	18- 28- 35-	09 10 11	B S M-S,S	Dilatation
" 25th	iP?Z	15- 00-	34	B	Dilatation U.S.C.G.S. - 18°S., 179°W. H= 14.55.33. h= about 600km.
" 29th	iPZ iZ	04- 28- 29- 54	42 54	B B	Compression Microseisms large
" 30th	iPZ ePE	11- 22- 22- 17	17 17	B S	Dilatation
" 31st	Long waves beginning about 04.30				
	iPZ	10- 56-	46	B	



International
Seismological
Centre

MICROSEISM AMPLITUDES (Milne-Shaw Seismographs)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No. 31



International
Seismological
Centre

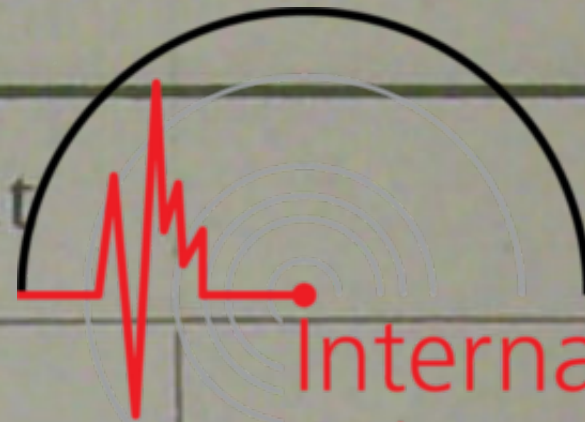
		N-S Component				E-W Component			
Hour G.M.T.	Date	0	6	12	18	0	6	12	18
						January, 1951			
1951	Jan. 1	01	00	01	01	00	01	01	01
	2	01	01	01	01	01	01	01	01
	3	00	00	01	01	00	01	01	01
	4	01	01	01	01	01	01	01	01
	5	01	00	01	01	00	00	01	01
	6	01	02	01	01	01	01	01	01
	7	01	01	01	01	02	01	01	01
	8	01	01	00	01	01	00	00	01
	9	01	01	01	01	01	01	01	01
	10	01	01	01	01	01	01	01	01
	11	01	01	01	01	01	01	01	01
	12	01	01	01	01	00	01	01	01
	13	01	01	01	01	01	01	01	01
	14	00	00	01	01	02	01	02	01
	15	01	01	01	01	01	00	01	01
	16	01	01	01	01	01	01	01	01
	17	01	01	01	01	01	01	01	01
	18	01	01	01	01	01	01	01	01
	19	01	02	02	01	02	02	02	01
	20	02	01	01	01	01	01	01	01
	21	01	01	01	01	01	01	01	01
	22	01	01	01	01	01	01	01	01
	23	01	01	01	01	01	01	01	01
	24	01	01	01	01	01	01	01	01
	25	01	01	01	02	01	01	02	02
	26	03	03	02	02	03	02	02	01
	27	01	01	01	01	01	01	01	01
	28	01	01	01	01	01	01	01	01
	29	01	01	01	01	01	01	01	01
	30	01	01	01	01	01	01	01	01
	31	01	01	01	01	01	01	01	01

MICROSEISM AMPLITUDES (Milne-Shaw Seismographs)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No. 31

SPRENGNETH

Date	N-S Component				E-W Component			
Hour G.M.T.	0	6	12	18	0	6	12	18
1951				Jan 1.	05	04	04	05
				2.	06	07	06	07
				3.	08	07	06	07
				4.	08	07	09	08
				5.	08	07	08	08
				6.	05	06	05	06
				7.	04	06	05	05
				8.	05	06	07	07
				9.	06	07	07	06
				10.	04	06	04	03
				11.	05	06	06	07
				12.	04	03	04	04
				13.	05	05	06	05
				14.	04	04	05	04
				15.	04	03	04	05
				16.	04	05	06	04
				17.	05	05	06	07
				18.	10	11	09	10
				19.	09	10	12	10
				20.	09	08	07	07
				21.	06	06	05	06
				22.	07	06	07	07
				23.	08	05	06	08
				24.	07	06	07	07
				25.	06	08	09	22
				26.	25	30	29	18
				27.	20	16	0	08
				28.	07	08	06	06
				29.	05	04	05	06
				30.	07	06	07	08
				31.	07	06	06	05



International
Seismological
Centre

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 161

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

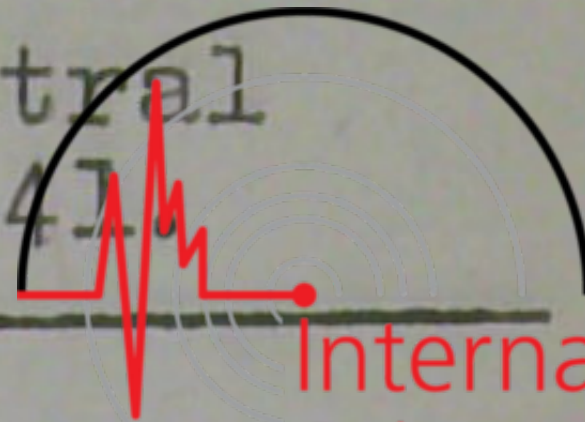
The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
1951 Feb. 1st.	iPZ	16	56	36	B	Compression U.S.C.G.S. - 17° S., 173° W., $H = 16.50.02$. $\Delta P-H = 33^{\circ}$ Ca.
" 2nd	iPZ ePNE eSNE	19	32	16	B M-S, S M-S, S	
" 4th	eiPZ ePE	15	43	04	B S	$\Delta P-H = 29.8^{\circ}$ ca., $h =$ about 250 km. U.S.C.G.S. - 19° S., 176° W., $H = 15.37.18$. & $h =$ about 250 km.
	iPZ	19	10	45	B	Dilatation $\Delta P-H = 17.6^{\circ}$ ca. U.S.C.G.S. - 18° S., 169° E., $H = 19.06.35$
" 7th	ePNE	00	11	06	M-S	
	iPZ ePN eSNE	00	29	51	B M-S M-S	Dilatation
" 8th	ePZ iPP?E eE	10	43	56	B M-S, S M-S	U.S.C.G.S. - 23° S., 176° W., $H = 10.38.05$ & $h =$ about 60 km.
" 9th	iPZ ePE iZ iSZ eSNE	01	24	56	B M-S B B M-S	Compression $S-P =$ about 26° & $h =$ about 650 km. U.S.C.G.S. - 22° S., 179° W., $H = 01.20.10$, $h =$ about 650 km.
" 10th	iPZNE iPPE iSNE	03	33	06	B, M-S, S M-S M-S, S	Compression from south-east $\Delta S-P =$ about 27° Wellington reports epicentre off the coast of southern Hawkes Bay. N.Z.

DATE.	PHASE.	h.	U. T. m.	s.	UNIT.	REMARKS.
Feb. 10th cont.	iPZ iZ	08 - 49 - 23 49 - 30	B B			Dilatation U.S.C.G.S. - $43\frac{1}{2}^{\circ}$ N., 146° E., H = 08.38.09., h = about 100 km. $\Delta P-H = 72^{\circ}$
	ePZ eZ	14 - 50 - 04 51 - 15	B B			U.S.C.G.S. - Fiji Islands region, H = 14.45.02 & h = about 500 km. $\Delta P-H = \text{about } 27^{\circ}$
	eiPZ iZ	15 - 24 - 33 24 - 34	B B			
	iPZ iZ	15 - 26 - 15 26 - 27	B B			
	eiPZ ePNE iZ eSE	21 - 58 - 19 58 - 20 58 - 22 22 - 03 - 32	B M-S, S B S			U.S.C.G.S. - off north coast of New Guinea, H = 21.52.19. $\Delta P-H = \text{about } 29^{\circ}$
	ePE ePZ	22 - 08 - 02 08 - 04	M-S, S B			
" 13th	iPZN iPE iPPZE iPPZ ePPN iPPE iE iSNE eSE isSE esSN iSSN iL _R N	12 - 01 - 56 01 - 57 02 - 53 03 - 21 03 - 21 03 - 22 04 - 26 06 - 48 06 - 49 08 - 27 08 - 28 09 - 31 10 - 09	B, M-S M-S, S B, S B M-S M-S, S M-S, S M-S, S M-S S M-S M-S M-S			Dilatation $\Delta S-P = \text{about } 32^{\circ}$. U.S.C.G.S. - 15° S., 175° W., H = 11.55.50, h = about 250 km.
	ePZ eSKSE eSE iSE eSS?E	22 - 26 - 12 36 - 49 37 - 24 37 - 25 43 - 42	B M-S M-S S M-S, S			U.S.C.G.S. - 56° N., $155\frac{1}{2}^{\circ}$ W., H = 22.12.58.
" 14th	ePZ iZ	21 - 19 - 08 19 - 53	B B			
" 16th	ePNE ePZ eSNE eL _R E	19 - 11 - 40 11 - 41 14 - 52 16 - 11	M-S, S B M-S, S S			U.S.C.G.S. - $17\frac{1}{2}^{\circ}$ S., 167° E., H = 19.07.53
" 17th	iPNZ iPE iSNZ iSE	21 - 11 - 42 11 - 44 15 - 26 15 - 28	M-S, B M-S, S M-S, B M-S, S			$\Delta S-P = \text{about } 21^{\circ}$ U.S.C.G.S. - 7° S., 146° E., H = 21.06.58, h = about 100 km.
" 18th	iPZ	02 - 37 - 03	B			Compression
" 19th	iPZ	17 - 48 - 59	B			Dilatation U.S.C.G.S. - $17\frac{1}{2}^{\circ}$ S., 179° W., H = 17.43.55, h = about 600 km.
" 20th	iPZ	13 - 19 - 47	B			Compression
" 21st	iPZ ePE ePNE eSNE	07 - 24 - 47 24 - 47 24 - 48 28 - 57	B S M-S M-S, S			Compression U.S.C.G.S. - Kermadec Is. Region, H = 07.19.23.



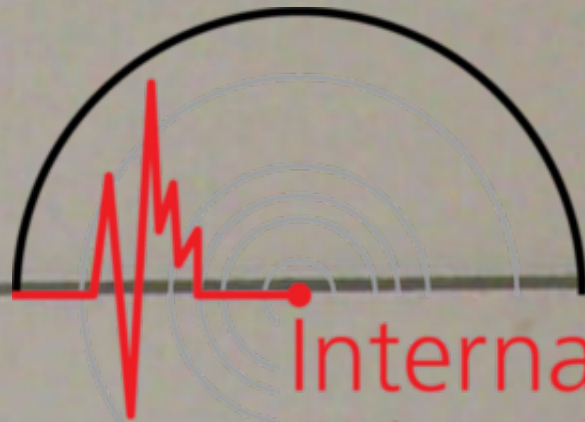
DATE.	PHASE.	h.	U. T. m.	s.	UNIT	REMARKS.
Feb. 22nd	iPZ ePNE eSE SN	01 -	51 -	20	B M-S, S M-S, S M-S	Compression U.S.C.G.S. - North Central New Guinea, H = 01.45.41
" 24th	iPZ iZ	20 -	57 -	58 59 - 46	B B	Dilatation
" 26th	iPZ	20 -	32 -	18	B	Compression



International
Seismological
Centre

SPRENGNETHER
MICROSEISM AMPLITUDES (Milne-Shaw Seismographs)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No. 32



International
Seismological
Centre

		N-S Component				E-W Component			
Hour G.M.T.		0	6	12	18	0	6	12	18
Date									
					<u>1951</u>				
					Feb. 1st	06	05	06	06
					2	05	04	04	05
					3	06	06	-	04
					4	05	04	04	04
					5	04	05	06	06
					6	07	06	06	08
					7	08	08	10	09
					8	08	07	06	07
					9	06	08	08	09
					10	10	09	11	12
					11	11	08	07	08
					12	06	06	05	06
					13	-	-	-	-
					14	07	05	07	06
					15	06	04	06	08
					16	07	08	08	09
					17	08	07	08	09
					18	07	07	07	08
					19	06	05	06	07
					20	09	10	06	07
					21	07	08	08	07
					22	06	06	07	07
					23	08	09	08	06
					24	06	05	05	06
					25	06	08	07	07
					26	08	07	06	05
					27	05	05	06	08
					28	09	06	06	08

UNIVERSITY OF QUEENSLAND
SEISMOLOGICAL STATION
BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No.

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

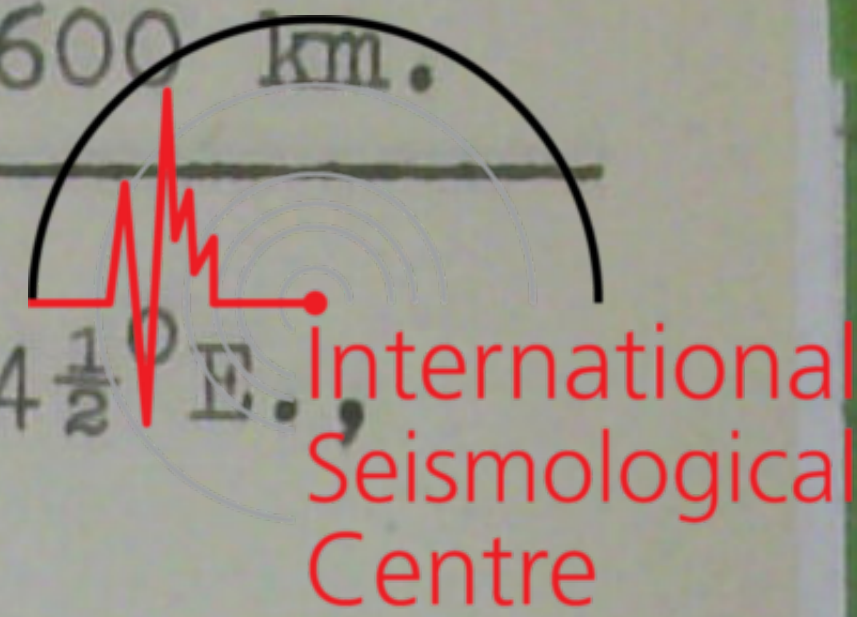
INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

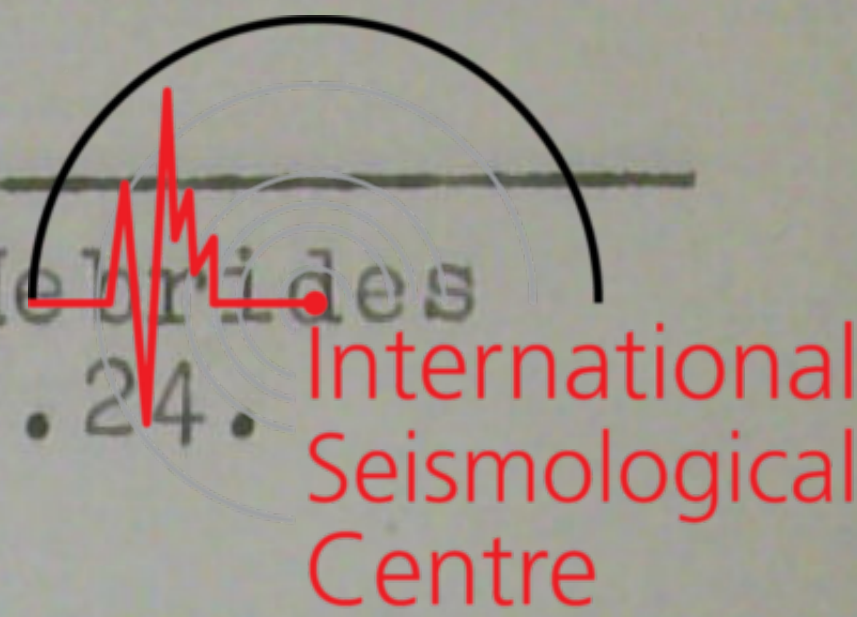
The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. U.T. m. s.	UNIT	REMARKS
Note: From 21/3/51 to 12/4/51 the instruments were being transferred to the new location of the station at St. Lucia Brisbane. The Sprengnether No. 374 was moved on 21/3/51, the Benioffs on 3/4/51, Milne-Shaw No. 60 on 10/4/51 and No. 58 on 12/4/51. The latitude and longitude of the new station are $27^{\circ} 30' 02''$ S., $153^{\circ} 00' 53''$ E. The instruments were put into immediate operation but are gradually being re-standardised. The new constants will be given as soon as possible.				
1951				
March 5th	ePZ	18-21-04	B	
	ePZ	18-45-00	B	
	iPZ	20-21-44	B	Compression $\Delta S-P = 61^{\circ}$ $h =$ about 160 km. U.S.C.G.S. - 29° N., 128° E., H=20.11.45., $h =$ about 160 km.
	ePNE	21-44	M-S	
	ePE	21-45	S	
	epPNE	22-20	M-S, S	
	ipPZ	22-22	B	
	iSNE	29-48	M-S	
	iSE	29-49	S	
	iNE	31-26	M-S, S	
" 6th	iPZ	19-10-19	B	Compression. U.S.C.G.S. - Assam, H=18.58.15.
" 8th	iPZ	15-16-54	B	Compression $\Delta S-P = 21.7^{\circ}$ Ca. $h =$ about 60km. U.S.C.G.S. - 6° S., 154° E., H=15.12.11., $h =$ about 60 km.
	ePNE	16-56	M-S, S	
	iPPZ	17-21	B	
	epPE	17-22	S	
	eSNE	20-47	M-S	
	iSE	20-48	S	
	eSZ	20-48	B	
	eL _R N	22-50	M-S	

DATE.	PHASE.	h. U. T. m. s.	UNIT.	REMARKS.
Mar. 9th	iPZ eSNE	16-14-51 18-44	B M-S, S	Dilatation U.S.C.G.S. - 20°S. , 179°W. , H=16.09.57., h=about 600 km.
	eiPZ iPZ ePNE iZ iE eNE eSNE	19-50-51 50-53 50-53 51-48 51-49 51-50 55-50	B B M-S, S B S M-S	U.S.C.G.S. - 8°S. , $124\frac{1}{2}^{\circ}\text{E.}$, H = 19.44.16.
	iPZ	20-34-37	B	Dilatation. In coda of previous shock.
	ePZ	23-26-56	B	
" 10th	ePZ	12-22-39	B	U.S.C.G.S. - Solomon Islands region, H = 12.17.50.
	iPZE iPNE iN eSZ iSNE	22-01-36 01-37 02-20 05-02 05-03	B, M-S M-S, S M-S B M-S	Dilatation to north-east U.S.C.G.S. - $15\frac{1}{2}^{\circ}\text{S.}$, $167\frac{1}{2}^{\circ}\text{E.}$, H = 21.57.37., h = about 200 km.
	iPZ	23-02-08	B	Dilatation
" 12th	iPZ ePE eSNE iSE	15-04-21 04-21 14-20 14-21	B S M-S S	Compression $\Delta_{S-P} = 80^{\circ}\text{ca.}$ U.S.C.G.S. - Assam, H=14.52.16
" 13th	iPZ eSNE iZ	17-49-46 53-36 55-40	B M-S, S B	Dilatation U.S.C.G.S. - $20\frac{1}{2}^{\circ}\text{S.}$, 180° , H = 17.45.00., h - about 600km.
" 16th	eZ iZ	15-53-21 53-33	B B	Large microseisms.
" 18th	iPZ	09-26-32	B	Large microseisms U.S.C.G.S. - Near east coast of Mindanao, Philippine Is., H=09.18.08.
" 19th	iPZ	15-32-29	B	Dilatation
" 22nd	iPZ	19-43-17	B	Dilatation U.S.C.G.S. - 13°S. , $17\frac{1}{2}^{\circ}\text{W.}$, H = 19.36.52.
" 23rd	iPZ	12-25-56	B	Compression
	iPZNE ipPZNE iSNE iSZ isSZ iSSE iZ	21-43-45 44-32 47-48 47-50 48-56 49-12 50-47	B, M-S B, M-S M-S B B M-S B	Dilatation $\Delta_{S-P} = 24.5^{\circ}$ h = about 250km. U.S.C.G.S. - 31°S. , 180° , H=21.38.54, h=about 300 km.
" 24th	iPZNE ipPNE isPZNE iSNE eSZ	00-22-11 22-36 23-02 25-56 26-00	B, M-S M-S B, M-S M-S B	Compression from north-east. $\Delta_{S-P} = 19.8^{\circ}$ h = about 150km. U.S.C.G.S. - 11°S. , 166°E. , H = 00.17.38., h = about 150km.
" 25th	ePZ	06-58-29	B	
	iPZ	13-56-43	B	Compression

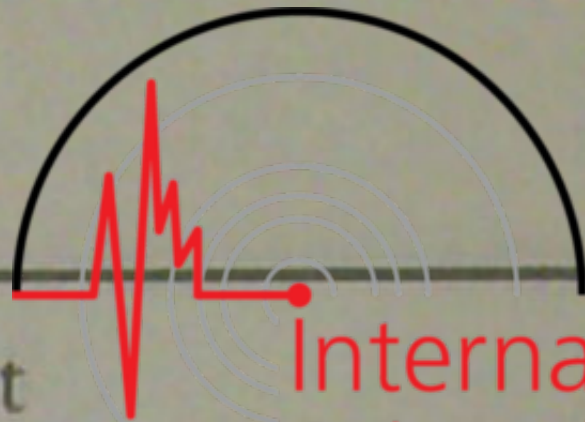


DATE.	PHASE	h. m. s.	U. T.	UNIT.	REMARKS.
Mar. 25th cont.	iPZ	18-33-00	B		Dilatation
" 26th	iPZ	00-35-07	B		Dilatation
" 27th	eiPZ iPZ	13-49-14 49-16	B B		U.S.C.G.S. - New Hebrides Islands, H = 13.45.24. $\Delta_{P-H} = 16.50$.
" 28th	iPZ	01-59-44	B		Dilatation
	ePNE	59-44	M-S		The phases at 02.01.07. & .
	eNE	02-01-27	M-S		02.03.35 both have the form
	eSN	03-27	M-S		and period of S, but U.S.C.
	iSE	03-35	M-S		G.S. reports 35°S., 178°E.,
	iSN	03-37	M-S		H = 01.54.44.
	eiPZ	10-06-58	B		$\Delta_{P-H} = 16.80$
	iPZ	07-00	B		U.S.C.G.S. - 17½°S., 167°E.,
	eSE	10-16	S		H = 10.03.11.
	eSNE	10-17	M-S		
	eL _R NE	11-48	M-S		
	ePZ	10-21-32	B		
	eZ	20-36-02	B		
	eZ	20-47-04	B		
	eN	47-22	M-S		
	eE	47-24	M-S		
	eE	47-25	S		
" 29th	ePZ	13-08-46	B		
" 31st	iPZ iPPZ	06-27-03 27-33	B B		Compression U.S.C.G.S.- Fiji Islands Region, H = 06.21.04., h = about 100 km.



MICROSEISM AMPLITUDES (Milne-Shaw Seismographs)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No 33



International
Seismological
Centre

Hour G.M.T. Date	N-S Component				E-W Component			
	0	6	12	18	0	6	12	18
				<u>1951</u>				
				Mar. 1st	07	06	06	07
				2	08	07	08	08
				3	07	06	05	06
				4	07	08	08	09
				5	08	10	09	08
				6	07	09	11	12
				7	14	13	15	12
				8	11	10	12	11
				9	09	10	08	08
				10	07	08	06	07
				11	08	09	08	08
				12	10	08	07	08
				13	07	07	06	06
				14	08	09	08	09
				15	07	06	06	05
				16	06	05	05	07
				17	07	06	05	—
				18	06	06	06	05
				19	07	07	06	06
				20	06	08	09	07
				21	06	05	07	07
				22	08	07	07	06
				23	05	05	04	05
				24	05	06	06	08
				25	09	10	09	08
				26	08	06	07	07
				27	06	06	07	06
				28	08	07	05	08
				29	08	09	08	06
				30	06	06	05	07
				31	08	06	06	05

UNIVERSITY OF QUEENSLAND
SEISMOLOGICAL STATION
BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No.164



Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
1951						
April 2nd	iPZ ePNE iPPE iSZ iSNE iL _R NE iP _R ES	22	14	26	B M-S, S S B M-S, S M-S B	Compression $\Delta_{S-P} = 22^{\circ}$ U.S.C.G.S. - 6° S., 149° E., H = 22.09.29.
4th	iPZ	08	46	20	B	Dilatation
	iPZ	17	18	42	B	Compression U.S.C.G.S. - 21° S., 179° E., H = 17.14.09., h = about 600 km.
7th	ePE iPN iPE eSNE iSE	09	31	58	M-S M-S S M-S S	$\Delta_{S-P} = 19.8^{\circ}$ Ca U.S.C.G.S. - 11° S., 163° E., H = 09.27.35
8th	ePNE iPE eSN iSE iSE	04	41	03	M-S S M-S M-S S	U.S.C.G.S. - 10° S., 163° E., H = 04.36.52 h = about 200 km.
10th	iPZ iPPZ iPPE	11	02	20	B B S	U.S.C.G.S. - 15° S., $173\frac{1}{2}^{\circ}$ W., H = 10.55.41 $\Delta_{P-H} = 33.6^{\circ}$
12th	ePZ	05	39	34	B	
	ePZ	05	44	20	B	
13th	eiPZ iPZ iPE eSZ eSNE	10	21	43	B B S B M-S, S	U.S.C.G.S. - 10° S. 119° E., H = 10.14.38

DATE.	PHASE.	h.	U. T. m.	s.	UNIT	REMARKS.
April 14th cont.	ePZ	05	46	06	B	
	iPZ iE	11	58 59	24 32	B S	
	ePZ	12	16	11	B	
	ePZ iE	13	46 54	00 40	B S	U.S.C.G.S. - 61°N., 136°E., H = 13.32.59.
	ePZ	23	53	01	B	U.S.C.G.S. - 28½°N., 94°E., H = 23.40.51
15th	ePZ	12	44	37	B	U.S.C.G.S. - Fiji Islands region, H = 12.39.24., h = about 500 km.
16th	ePZ	05	05	54	B	
	ePZ	07	04	11	B	
	eE		07	35	S	
	eE		12	30	S	
	ePZ ipPZ iSE iSKSE isSE	20	02 04 09 11 12	19 00 50 23 41	B B S S S	U.S.C.G.S. - 31°N., 137°E., H = 19.52.56., h = about 500 km.
	ePZ	20	55	04	B	
17th	ePZ	11	07	50	B	
	ePZ	12	58	16	B	
	iPZ	18	00	17	B	
18th	ePZ	10	29	37	B	
19th	ePZ	13	11	15	B	
	ePZ	20	58	02	B	
20th	ePZ	00	03	10	B	
	ePZ	03	48	43	B	
	ePZ iZ	06	39 40	27 15	B B	
	ePZ eSNE	21	09 14	50 20	B&S M-S, S	U.S.C.G.S. - 17°S., 177°W., H = 21.03.50., h = about 100 km.
21st	ePNZ ePE eSNE	17	05 05 09	22 23 05	B, M-S S M-S, S	U.S.C.G.S. - 7°S., 155°E., H = 17.00.43
	ePZ	01	03	30	B	
	ePZ	06	06	37	B	Possibly mechanical
23rd	iPZ iPNE iPPE ePPN eSN	06	55 55 55 55 59	24 25 58 59 59	B M-S, S S M-S M-S	Compression [▲] pp _p = about 26° U.S.C.G.S. - off north-east- ern coast of New Zealand, H = 06.50.15. (in hour break)
	ePZ	12	04	03	B	U.S.C.G.S. - Banda Sea., H = 11.57.21



DATE.	PHASE.	h.	U. T. m.	s.	UNIT	REMARKS.
April 24th cont.	ePZ	05	- 22	- 50	B	
	iPZ	05	- 43	- 14	B	
	ePZ	06	- 23	- 26	B	Possibly mechanical
	iZ		23	- 57	B	
	iZ		24	- 20	B	
	eZ		27	- 12	B	
	eZ		27	- 31	B	
	iPZ	10	- 18	- 54	B	Dilatation U.S.C.G.S. - Fiji Islands region, H = 10.13.54., h = about 600 km.
	ePZ	23	- 06	- 37	B	
25th	ePZ	08	- 38	- 47	B	
26th	iPZ	01	- 48	- 14	B	
	ePZ	01	- 54	- 07	B	
	iPZ	03	- 31	- 23	B	Compression
28th	ePNE	21	- 24	- 35	M-S, S	U.S.C.G.S. - $5\frac{1}{2}^{\circ}$ S., 151° E., H = 21.19.38
	ePZ		24	- 36	B	
	eSN		28	- 40	M-S	
	eSE		28	- 41	S	
	eL _R N		30	- 38	M-S	
	iPZ	21	- 26	- 40	B	
29th	iPZ	10	- 19	- 01	B	Dilatation U.S.C.G.S. 21° S., 179° W., H = 10.14.11, h = about 600 km.
	ePZ	11	- 41	- 37	B	
	ePZ	18	- 21	- 50	B	
	iPZ	19	- 42	- 37	B	Dilatation U.S.C.G.S. - Celebes Region, H = 19.35.00
	ePPZ		44	- 10	B	
30th	iPZ	15	- 32	- 29	B	Compression ▲ S-P = 20° U.S.C.G.S. - 8° S., 153° E., H = 15.28.00
	iPNE		32	- 30	M-S, S	
	iPPN		32	- 43	M-S, S	
	iSNE		36	- 08	M-S, S	
	iSSE		36	- 30	S	
	iSSN		36	- 31	M-S	
	iPZ	16	- 37	- 09	B	Dilatation

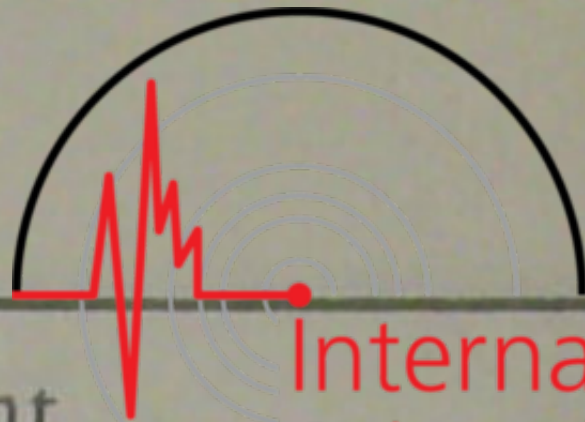


International
Seismological
Centre

MICROSEISM AMPLITUDES (Milne-Shaw Seismographs)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No. 34

Sprengnether 374



International
Seismological
Centre

Hour G.M.T. Date	N-S Component				E-W Component			
	0	6	12	18	0	6	12	18
April 1st					12	07.	07.	10
2nd					09	07.	07	05
3rd					05	07	05	05
4th						no	record	
5th						no	record	
6th					05	07	07	04
7th					04	05	03	04
8th					02	04	03	05
9th					03	02	04	06
10th						no	record	
11th						no	record	
12th						no	record	
13th					-	03	04	05
14th					03	03	03	04
15th					02	04	03	04
16th					03	04	05	05
17th					05	02	06	05
18th					04	03	03	03
19th					03	07	05	05
20th					04	07	05	06
21st					06	05	05	05
22nd					08	04	04	07
23rd						no	record	
24th						no	record	
25th						no	record	
26th					04	05	03	04
27th					03	04	04	05
28th					05	06	04	06
29th					05	03	04	07
30th					03	-	03	05

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 165

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		



Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
<u>1951</u>						
May 1st	iPNZ	05	07	47	M-S, B	Dilatation to north-east.
	iPNE		07	49	M-S, B	$\Delta_{S-P} = 24^{\circ}$
	iZ		07	52	B	U.S.C.G.S. - $50\frac{1}{2}^{\circ}$ S., 149° E.,
	iN		07	53	M-S	H = 05.02.41.
	iPPNZ		08	06	M-S, B	
	iSN		12	03	M-S	
	iSSN		13	02	M-S	
	ePZ	09	28	49	B	
" 2nd	ePZ	16	27	08	B	U.S.C.G.S. - 42° S., 80° E.,
	ePE		27	09	S	H = 16.17.01.
	eSNE		35	24	M-S, S	
	eL _R N		44	21	M-S	
" 3rd	iPZ	01	29	37	B	Compression (Possibly mechanical)
" 4th	iPZ	12	04	12	B	Dilatation. U.S.C.G.S. - 44° N., 142° ., H = 11.53.05.,
						$h =$ about 200 km.
						$\Delta_{P-H} = 72^{\circ}$.
	ePZ	18	01	12	B	
" 5th	iPZ	03	34	39	B	Compression
	epPNE		35	02	M-S, S	$\Delta_{S-P} = 23^{\circ}$., $h =$ about 100 km.
	iSNE		38	45	M-S, S	U.S.C.G.S. - 6° S., $145\frac{1}{2}^{\circ}$ E.,
	isSE		39	21	S	H = 03.29.41, $h =$ about 100 km.
	eSSE		39	29	S	
" 6th	ePZ	07	50	52	B	
" 7th						Note: On this date, installation work was in progress in the vault; in addition the pendulum of the vertical Benioff was not swinging entirely freely. Some of the

DATE	PHASE	U.T. h. m. s	UNIT	REMARKS
May 7th cont.				many movements recorded here may be of mechanical origin, but it is not possible to distinguish these from earth- quake shocks.
	iPZ	00 - 33 - 58	B	Dilatation
	iPZ	00 - 48 - 01	B	Dilatation
	ePZ	01 - 52 - 22	B	
	iPZ	02 - 01 - 23	B	Dilatation
	ePZ	02 - 25 - 24	B	
	ePZ	08 - 04 - 07	B	
	iPZ	10 - 05 - 45	B	Compression $\Delta_{P-H} = 32.1^\circ$ U.S.C.G.S. - $17^\circ S.$, $174^\circ W.$, H = 09.59.25., h = about 100km.
	iPZ	10 - 24 - 19	B	Dilatation
	ePZ	10 - 31 - 32	B	
	iPZ	11 - 24 - 22	B	Dilatation $\Delta_{P-H} = 26.5^\circ$ U.S.C.G.S. - $20^\circ S.$, $179\frac{1}{2}^\circ W.$, H = 11.19.29, h = about 600km.
	iPZ	11 - 47 - 47	B	Compression
	ePZ	11 - 56 - 59	B	
	iPZ	12 - 00 - 06	B	Dilatation
	iPZ	17 - 20 - 29	B	Compression
	iPZ iZ	17 - 31 - 04 32 - 27	B B	Dilatation
	ePZ	17 - 45 - 28	B	
	iPZ	18 - 08 - 57	B	Dilatation
	ePZ	18 - 17 - 55	B	
	ePZ	19 - 01 - 45	B	
	ePZ	19 - 26 - 25	B	
	ePZ	19 - 54 - 14	B	
	iPZ	22 - 05 - 44	B	Dilatation
" 8th	ePZ	02 - 44 - 57	B	
	iPZ	07 - 48 - 28	B	Compression $\Delta_{P-H} = 28.4^\circ$ U.S.C.G.S. - $17\frac{1}{2}^\circ S.$, $178^\circ W.$, H = 07 - 43 - 20, h = about 600 km.
" 9th	ePZ	10 - 11 - 01	B	
" 10th	iPZ	01 - 05 - 21	B	Compression
	iPZ	11 - 40 - 19	B	Dilatation U.S.C.G.S. - New Hebrides.

DATE	PHASE	U.T. h. m. s.	UNIT	REMARKS
May 10th cont.	ePZ	23 - 08 - 46	B	
" 14th	ePNZ ePE eNE	04 - 02 - 19 02 - 20 06 - 09	B, M-S M-S, S M-S, S	Note: The above note (see 17th) applies to this date also. U.S.C.G.S. - 19°S., 170°E., H = 03 - 58 - 11
	iPZ	04 - 10 - 09	B	Dilatation
	iNE	04 - 49 - 18	M-S, S	
	iPZ iZ	05 - 32 - 52 33 - 14	B B	Dilatation
	iPZ	05 - 53 - 31	B	Dilatation
	iPZ iZ iZ	06 - 01 - 28 02 - 07 02 - 30	B B B	Compression
	iPZ iZ	06 - 09 - 28 10 - 18	B B	Dilatation
	ePZ	15 - 46 - 34	B	
	ePZNE iZ eSE eSN	22 - 03 - 54 04 - 03 07 - 57 07 - 58	B, M-S, S B S M-S	U.S.C.G.S. - 6°S., 149°E., H = 21.59.00.
	iPZ	22 - 32 - 26	B	Dilatation
" 15th	ePZ	04 - 35 - 08	B	
	ePZ	09 - 56 - 29	B	U.S.C.G.S. - 19°N., 146°E., H = 09.48.20, h = about 200km. Δ_{P-H} = about 46.5°.
	iPN ePZ eE iSN eSE eSE	11 - 27 - 30 27 - 31 27 - 35 31 - 31 31 - 33 31 - 35	M-S B S M-S M-S S	Δ_{S-P} = 22.8°
	ePZ	12 - 04 - 38	B	
	ePZ	23 - 01 - 50	B	
" 16th	iPZ	02 - 24 - 29	B	Dilatation. U.S.C.G.S. - 24°S., 177°W., H = 02.18.45. Δ_{P-H} = 27°.
	iPZ iPNE ePPNE ePPPNE eSE eNE eScS iE	14 - 13 - 39 13 - 40 15 - 13 15 - 33 19 - 30 19 - 32 23 - 43 25 - 06	B M-S, S M-S, S M-S, S S M-S S S	Dilatation
	iPZ	15 - 36 - 23	B	Compression
" 17th	ePZNE	00 - 55 - 16	B	

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
May 17th cont.	ePZ	01	45	39	B	U.S.C.G.S. - 19°S., 170°E., H = 01.41.38 Riverview - H=01.42.05
	iPE		45	40	S	
	iPPE		45	45	S	
	ePPPE		45	56	S	
	i(S)E		48	44	S	
	e(S)NE		48	44	M-S	
	iE		49	06	S	
	eNE		49	06	M-S	
	eLE		51	07	S	
	iPZ	22	27	57	B	
" 19th	iPZ	05	04	21	B	Compression
	iPZ	07	27	54	B	Dilatation
" 21st	ePN	08	32	07	M-S	U.S.C.G.S. 6°S., 154½°E., H = 08.27.21, h = about 150 km.
	ePE		32	08	S	
	iSNE		35	54	M-S, S	
	isSN		36	45	M-S	
" 25th	ePZ	19	17	22	B	Dilatation U.S.C.G.S. - 17°S., 179°W., H=21.47.31 h = about 600 km. Δ _{P-H} = 28°.
	iPZ	21	52	37	B	
" 27th	iPZ	11	20	30	B	Compression
" 28th	ePZE	15	47	05	B, S	Dilatation Riverview - H=19.57.16, h = 0.03
	iPE	20	01	07	M-S	
	iPZNE		01	09	B, M-S, S	
	iSE		04	17	M-S	
	iSZNE		04	18	B, M-S, S	
#79 " 29th	ePNE	06	08	59	M-S	in minute break. U.S.C.G.S. - 3°S., 138½°E., H = 06 - 03 - 06.
	ePZ		09	00	B	
	ePPNE		09	55	M-S	
	eSNE		13	43	M-S	
	eNE		13	51	M-S	
	iSSNE		14	49	M-S	
" 30th	ePZ	14	23	07	B	Compression U.S.C.G.S. - Solomon Islands H = 19.08.12. U.S.C.G.S. - 3°S., 126½°E., H = 19.57.01.
	ePZ	18	06	23	B	
	iPZ	19	12	56	B	
	ePE		12	58	S	
	ePN		13	00	M-S	
	eSNE		16	53	M-S, S	
	iPE	20	03	58	S	
	ePZNE		03	58	B, M-S	
	ePPNE		05	15	M-S	
	eSNE		29	30	M-S	
" 31st	iPZNE	21	05	25	B, M-S, S	Compression

MICROSEISM AMPLITUDES (~~Milne-Shaw Seismographs~~)
(to nearest tenth of a millimetre)

MICROSEISM SUPPLEMENT No. 35



International
Seismological
Centre

Hour G.M.T. Date	N-S Component				E-W Component			
	0	6	12	18	0	6	12	18
May 1st					05	05	05	05
2nd					05	05	02	05
3rd					05	06	04	05
4th					10	05	06	02
5th					07	06	05	05
6th					05	06	10	11
7th					08	09	08	06
8th					12	08	03	04
9th					05	05	05	05
10th					07	08	07	20
11th					06	07	08	15
12th					06	04	05	04
13th						no record		
14th					04	03	06	10
15th					05	09	08	05
16th					04	06	06	06
17th					04	03	04	04
18th					03	02	04	02
19th					05	03	02	05
20th					03	05	04	03
21st					03	06	-	06
22nd					05	06	04	05
23rd					-	06	04	03
24th					04	-	-	04
25th					03	05	08	09
26th					-	08	10	10
27th					08	08	10	06
28th					07	06	04	03
29th					-	-	03	04
30th					-	02	02	04
31st					03	03	02	03

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. **166**

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. m. s.	UNIT	REMARKS
Note:- The Sprengnether demonstration seismograph has not been operated for earthquake recording after June 24th. On succeeding dates one, two or three, Sprengnether microseismographs have been in operation. These are operated primarily for the detection of storm centres but some readings of earthquake phases are given, and are denoted by M.Sp. The instruments are orientated N-W - S-E.				
1951 June 1st	iPZ	04 - 50 - 42	B	Dilatation
" 2nd	iPZ iSE	06 - 56 - 40 07 - 03 - 43	B M-S	Compression $\Delta_{S-P} = 49^{\circ}$ U.S.C.G.S. - 7° N., 117 $^{\circ}$ E., (near north coast of Borneo), H = 06.47.52.
" 3rd	ePZ	02 - 47 - 12	B	
" 4th	iPZ	00 - 11 - 14	B	Dilatation
" 5th	iPZ ePNE iN eSE eSN iE eNE	17 - 07 - 49 07 - 49 08 - 06 16 - 05 16 - 06 16 - 24 16 - 25	B M-S, S M-S M-S M-S, S S M-S	Compression U.S.C.G.S. - 30° N., 132° E. (south of Kyushu, Japan) H = 16.57.47, h = about 100km.
" 7th	eSNE	11 - 41 - 52	M-S	
	iPZ	16 - 07 - 34	B	Compression
	iPZ ePE iPPE ePPZ eSE eL _R E	23 - 04 - 46 04 - 46 05 - 34 05 - 34 09 - 25 12 - 35	B M-S M-S B M-S M-S	Compression U.S.C.G.S. - $27\frac{1}{2}^{\circ}$ S., 176° W. (Kermadec Islands region), H = 22.59.00.



DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
June 8th	ePZ	22	27	02	B	U.S.C.G.S. - 26°S. , 176°W. , (Tongo Islands region), H = 22.21.19, h = about 100 km.
" 9th	iPZ	03	56	51	B	Dilatation U.S.C.G.S. Seismological 20°S. , $179\frac{1}{2}^{\circ}\text{W.}$, (Fiji Islands) Centre H = 03.52.02, h = about 600km.
" 12th	eZ	03	10	30	B	
	eN		21	25	M-S	
	iPZ	07	56	39	B	Dilatation
	iZ		56	55	B	
" 18th	ePZ	11	20	32	B	
	eiPZ	15	28	54	B	U.S.C.G.S. - $19\frac{1}{2}^{\circ}\text{S.}$, 169°E. , (New Hebrides), H = 15.25.05, h = about 100 km.
	iZ		28	55	B	
" 20th	iPZ	13	55	43	B	Compression
	iPZ	22	48	11	B	Compression
" 23rd	iPZ	09	36	55	B	Compression U.S.C.G.S.
	eSE		40	19	M-S	14°S. , 167°E. , (New Hebrides), H = 09.32.33.
# 98 " 24th	ePZ	13	41	30	B	
	iPZ	04	46	49	B	Dilatation
	ePNE		46	50	M-S, S	$\Delta_{\text{S-P}} = 17^{\circ}$
	iN		46	59	M-S	
	iPPE		47	02	M-S, S	
	iNE		47	11	M-S, S	
	iSE		49	53	S	
	iSE		49	54	M-S	
	eL _R E		52	42	M-S	
	ePZ	11	04	12	B	U.S.C.G.S. - 19°N. , $146\frac{1}{2}^{\circ}\text{E.}$, (Mariana Islands region), H = 10.55.40.
" 25th	iPZ	16	54	11	B	Dilatation
	iPE		54	14	S	$\Delta_{\text{S-P}} = 23^{\circ}$.
	iPPE		54	33	S	
	iSNE		58	11	M-S, S	U.S.C.G.S. - 5°S. , 154°E. , (Solomon Islands), H=16.49.13.
	iSSE		58	48	M-S, S	
	iSSN		58	50	M-S	
" 25th	iPZN-E	15	48	48	B, M. Sp.	
	ePNE		48	48	M-S	
	iPPNE		49	14	M-S, M. Sp.	
	iPPPN		49	21	M-S	
	iPPPN-E		49	23	M. Sp.	
	iSNN-E		53	11	M-S, M. Sp.	
	iSSN, E, N-E		54	03	M-S, M. Sp.	
	iSSSN		54	18	M-S	
	iL _R N-E		56	35	M. Sp.	
	eL _R NE		56	37	M-S	
	ePN-E	18	39	17	M. Sp.	
	ePZ		39	18	B	
	iSN-E		43	33	M. Sp.	
	eSN		43	33	M-S	
	iPZ	20	40	43	B	Compression
	ePN		40	43	M-S	
	eSNE		45	05	M-S	

[illegible]

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 157

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
<u>1951</u>						
July 2nd	ePZ iPPZ	05	14	14	B B	U.S.C.G.S. - 6° N., $124\frac{1}{2}^{\circ}$ E., (near south coast of Mindanao, Philippine Islands), H = 05.06.23, h = about 100km.
" 3rd	ePZ	08	54	25	B	
" 4th	eiPZ iPZ	07	12	47	B B	U.S.C.G.S. - 15° S. $174\frac{1}{2}^{\circ}$ W., (Tonga Islands), H = 07.06.41, h = about 150 km.
	iPZ	12	23	50	B	Dilatation U.S.C.G.S. - 14° N., $143\frac{1}{2}^{\circ}$ E., (Mariana Islands), H = 12.16.06, h = about 150 km.
	iPZ	14	51	18	B	Dilatation
	ePZ	12	42	21	B	
" 10th	iPZ	05	39	35	B	U.S.C.G.S. - 5° S., 130° W., (Near west coast of New Guinea), H = 05.34.00
" 11th	iPZ eSE	18	30	53	B B	Dilatation U.S.C.G.S. - $28\frac{1}{2}^{\circ}$ N, $139\frac{1}{2}^{\circ}$ E., (Bonin Islands re- gion), H = 18.22.00., h = about 550 km.
" 12th	iPZ	00	33	04	B	Compression U.S.C.G.S. - Pacific Ocean, about 300 miles north of western New Guinea, H = 00.25.59.
" 13th	iPNZ ePE iPPN eSE iSZ iZN	19	58	37	B&M-S M-S M-S M-S M-S M-S	Δ S-P = 21° U.S.C.G.S. - 7° S., 156° E., (Solomon Islands), H=19.54.00 h = about 100 km.

DATE	PHASE	h	U.T. m	s		REMARKS
July 16th	iPZ ePNE iNZ iN iPPNE ipPN isPN iSE iSN iSZ iSSNE isSE	10 -	45 -	09	B M-S B&M-S M-S M-S M-S M-S M-S M-S B M-S M-S	Compression $\Delta = 23^{\circ}$, h = about 200 km. U.S.C.G.S. - 6° S., 146° E. (Eastern New Guinea), H = 10.40.23, h = about 200 km.
" 17th	iPZNE isPE iSZNE iZ	14 - 53 - 56 - 15 -	52 - 43 - 22 - 00 -	56 43 22 43	B&M-S M-S B B	Dilatation $\Delta = 21^{\circ}$ h = about 150 km. U.S.C.G.S. - 14° S., 167° E, (New Hebrides Islands), H = 14.48.46, h = about 150 km.
" 18th	iPKPZ eZ eZ eZ eZ	09 -	26 -	22 28 10 12 26	B B B B B	Compression
	iPZ eZ	16 -	53 -	25 56	B B	Compression
" 24th	iPZ iZ	00 -	20 -	49 34	B B	Dilatation (Possibly mechanical)
	ePZ	01 -	51 -	55	B	
" 27th	iPZ	00 -	10 -	01	B	
	ePZ	01 -	09 -	35	B	U.S.C.G.S. - About 250 miles off south-east coast of Honshu, Japan. H = 00.59.23.
" 31st	iPZ	13 -	36 -	29	B	Dilatation
						<u>O.A. JONES</u> Officer in Charge

UNIVERSITY OF QUEENSLAND
SEISMOLOGICAL STATION
BRISBANE

COPY

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 168

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. m. s.	UNIT	REMARKS
1951				
August 2nd	iPZN isPN eN iSN eSE iSZ iN iN iE	03-44-58 46-15 47-16 48-30 48-30 48-31 49-07 51-02 51-33	B M-S, M. Sp. S M-S M-S, S M-S B M-S M-S M-S	Dilatation $\Delta_{S-P} 23.4^{\circ}$ $h = \text{about } 500 \text{ km.}$ U.S.C.G.S. - 4° S., $154\frac{1}{2}^{\circ}$ E., (New Britain Island Region), H=03-40-27, $h=\text{about } 500\text{km.}$
	ePZ	03-51-24	B	
	iSN eSN eL _Q E	10-36-44 36-44 48-40	M. Sp. M-S M-S	U.S.C.G.S. - 1700 miles south of Easter Island, H = 10.16.03
"	4th iPZ	11-30-30	B	Dilatation
"	5th iPZ	06-06-16	B	Dilatation
	iPZ	15-38-40	B	Compression U.S.C.G.S.- $13\frac{1}{2}^{\circ}$ S, 176° W (Samoa Islands region), H = 15.32.56, $h = \text{about } 600\text{km.}$
"	6th iPZ	10-56-19	B	Dilatation
	iPZN ePN ePE iPPN iSN eSZE eL _Q NE	15-15-28 15-28 15-31 15-50 19-21 19-22 21-47	B, M. Sp. M-S M-S M-S M-S, M. Sp. B, M-S M-S	Dilatation $\Delta_{S-P} = 21.6^{\circ}$ U.S.C.G.S. - 6° S., 152° E., (New Britain Island), H = 15.10.42.
"	10th iPZ	21-38-27	B	U.S.C.G.S. - Santa Cruz Is., H = 21.33.41 $\Delta_{P-H} = 20.6^{\circ}$

COPY

DATE	PHASE	U.T. h. m. s.	UNIT	REMARKS
Aug. 12th	iPZ	08-30-18	B	Compression
	iZ	30-36	B	
	iPZ eSNE	21-15-39 20-11	B M-S	Dilatation U.S.C.G.S. - 3 $\frac{1}{2}$ $^{\circ}$ S., 141 $^{\circ}$ E (near north coast of New Guinea), H = 21.10.00
	ePZ	21-23-34	B	in coda of previous shock
" 13th	iPKPZ	18-52-49	B	Dilatation U.S.C.G.S. - 43 $^{\circ}$ N., 32 $\frac{1}{2}$ $^{\circ}$ E., (Black Sea, off north coast of Turkey), H=18.33.40
" 17th	iPZ	05-58-17	B	Compression
" 18th	iPZ ePNE iZ ePPNE iPPPE ePPPN eSN i(PcS)E eL _R NE	03-45-31 45-31 46-00 46-58 47-20 47-21 51-11 51-20 54-00	B M-S B M-S M-S M-S M-S M-S M-S	Dilatation Δ S-P = about 37 $^{\circ}$ U.S.C.G.S. - Gilolo (Halmahera) Island region), H = 03.38.19 Riverview - H=03.38.14
	iPZ	11-16-41	B	
" 21st	iPZ	11-08-01	B	Dilatation Δ S-P = 68.9 $^{\circ}$ U.S.C.G.S. - 19 $\frac{3}{4}$ $^{\circ}$ N., 156 $^{\circ}$ W. (Near west coast of Hawaii), H=10.56.57 Riverview - H=10.56.52
	ePE	08-01	M.Sp.	
	e(PP)Z	10-23	B	
	iSN	17-06	M-S, M.Sp.	
" 22nd	ePZ	19-39-44	B	
" 23rd	iPZ	09-16-11	B	Dilatation U.S.C.G.S. - New Hebrides Islands, H=09.11.48
	iPZ	13-47-28	B	Dilatation
" 24th	iPZ	14-32-52	B	Dilatation U.S.C.G.S. - 47 $^{\circ}$ N., 151 $^{\circ}$ E., (Kurile Islands), H=14.21.15
" 25th	iPZ	03-00-09	B	Dilatation U.S.C.G.S. - New Hebrides Islands, H=02.55.47
	iZ	00-22	B	
" 27th	eZ	09-19-05	B	
	iPZ	13-18-05	B	Compression
	iPZ	14-28-07	B	Compression
" 28th	iPZ	16-35-24	B	Dilatation U.S.C.G.S. - 27 $^{\circ}$ S., 178 $^{\circ}$ E., (Kermadec Islands region H=16.31.11, h=about 600 km.
	ePN	35-25	M.Sp.	
	iZNE	35-36	B, M-S, M.Sp.	
	iN	36-09	M.Sp.	
	iNE	38-26	M-S, M.Sp.	
	eN	38-26	M-S	
	iSNE	39-02	M-S, M.Sp.	
	iE	40-06	M-S	
" 29th	iPZ	13-47-47	B	S-P = 19.3 $^{\circ}$
	iPPZ	47-58	B	
	iSN	51-19	M-S	

DATE	PHASE	U.T. h.m.s.	UNIT	REMARKS
Aug. 31st	iPZ iZ	10-14-18 14-29	B B	Compression U.S.C.G.S. - 19°S., 179°W., (Fiji Islands region), H=10.09.18, h=about 600 km.
	iPZ iZ	10-20-05 20-19	B B	Compression
	iPZ	17-43-18	B	Dilatation



O.A. JONES
Officer in Charge

UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41'' \text{ S.}, \lambda = 153^{\circ} 1' 52'' \text{ E.}, h = 15\text{m.}$ Bulletin No. 169

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. m. s.	U.T.	UNIT	REMARKS
<u>1951</u> Sept. 1st	ePZ eLE	04 - 52 - 35 05 - 21 - 00	B M-S		U.S.C.G.S. - 33° S., 110° W. Easter Island region (foreshock), H=04-40-40
	iPZ eLE	09 - 01 - 14 25 - 00	B M-S		Compression U.S.C.G.S. - 33° S., 110° W., Easter Island region, H = 08-49-18.
	iPZ	13 - 25 - 21	B		Compression
	eZ	18 - 21 - 33	B		
" 2nd	iPZ	16 - 47 - 18	B		Compression. Possibly not seismic.
" 3rd	iPZ ePN iSNE	00 - 05 - 24 05 - 25 09 - 25	B M-S M-S, M.Sp.		Dilatation $\Delta s-p = 23^{\circ} \text{Ca}$, H=00-00-21 U.S.C.G.S. - Southeastern New Guinea, H=23-59-58 (2nd).
	eZ iZ	09 - 43 - 07 43 - 45	B B		
	iZ	10 - 50 - 00	B		
" 4th	eZ	15 - 27 - 06	B		
" 5th	iPZ	16 - 26 - 54	B		Compression



DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Sept. 8th	iPZ	16	20	08	B	Compression U.S.C.G.S. - 25° S., 179½° W., Kermadec Islands region H = 16-15-27, h = about 500 km.
" 9th	ePE iPZE iPPE ePPNE	04	50	35	M-S B, M.Sp. M.Sp. M-S	U.S.C.G.S. - 16° S., 173° W., (Samoa Island region) (33.7°) H = 04 - 43 - 00, but Δ _{P-H} = 40.2. Dilatation
" 10th	iPZ	14	25	12	B	Compression
" 11th	iPZ	06	07	50	B	Dilatation
" 12th	iSN	15	31	18	M.Sp.	U.S.C.G.S. - 45½° N., 151° E., Kurile Islands region. H = 15-10-18
" 13th	iPZ	07	46	39	B	Compression
	iPZ	11	51	16	B	Compression
	iPE ePZ eSE	16	33	27	M.Sp. B M-S	U.S.C.G.S. - Banda Sea region, H = 16-26-25
" 14th	iPZ	23	08	04	B	Compression U.S.C.G.S. - Santa Cruz Islands H=28-03-17
" 16th	iPZE ePNE iNE iSE eSNE	01	36	11	B, M.Sp. M-S M-S M.Sp. M-S	Compression U.S.C.G.S. - 15° S., 167½° E., New Hebrides Islands. H=01-31-58, h = about 100 km.
	iPZ	16	26	56	B	
	iPZ iSE	16	43	38	B M.Sp.	Dilatation U.S.C.G.S. - 22° S., 177° W., Tonga Islands. H=16-38-03. h = about 200 km.
" 17th	iPZE iZ eSE eSE eE	12	04	27	B, M.Sp. B M.Sp. M-S M.Sp.	Compression U.S.C.G.S. = 18° S., 173° W. Tonga Islands H=11-57-39. Riverview - H=11-57-51.
	iPZ ePE iSE eSE	20	57	20	B M.Sp. M.Sp. M-S	Compression Δ _{S-P} = about 53.5°.
" 18th	ePZ	18	51	32	B	
" 19th	iPZ	08	11	55	B	Dilatation
" 20th	eSE	01	23	02	M.Sp.	

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Sept cont. 21st	iPZ	03	25	30	B	Compression U.S.C.G.S. - 24° S., 179½° E., Kermadec Islands region, H=03 - 20 - 15
	ePZE iPPE iSNE eSE iSSE iE	09	17	42	B, M.Sp.	
			19	30	M.Sp.	
			23	25	M-S, M.Sp.	
			23	28	M-S	
			26	13	M.Sp.	
			26	18	M-S	
	eZ	09	29	30	B	
	iPZ	12	12	25	B	Compression
	eZ	14	06	53	B	Possibly not seismic.
"	eZ	18	30	15	B	Possibly not seismic
	iPZE iE eE eNE iE iE	18	50	25	B, M.Sp.	Compression U.S.C.G.S. - 28½° S., 178° W., Kermadec Islands, H=18-44-57
			54	02	M.Sp.	
			54	02	M-S	
			55	19	M-S	
			55	59	M.Sp.	
			58	37	M.Sp.	
	iPZ	21	13	10	B	Dilatation
	eZ	22	29	32	B	
	ePZ	06	33	11	B	U.S.C.G.S. - New Hebrides Islands, H=06-29-35
"	iPZ eSZ	08	12	20	B	Compression U.S.C.G.S. - New Hebrides Islands, H=08-08-32, h=about 100 km.
			15	22	B	
	ePZNE eSE eN	23	32	56	B, M-S, M.Sp.	
			36	10	M.Sp.	
			36	20	M-S	
	ePZE eE eE eLRN iLQE	01	30	50	B, M-S	U.S.C.G.S. - about 300 miles south of Fiji Islands, H = 01 - 25 - 22
			31	10	M-S	
			34	25	M-S, M.Sp.	
			37	22	M-S	
			38	49	M-S	
"	iPZE iZ eLRNE	03	38	51	B, M.Sp.	Columbia University - epicentre between Australia and Indonesia, h=about 100 km.
			39	31	B	
			53	00	M-S, M.Sp.	
	ePZ	09	05	03	B	
	iPZ	11	42	03	B	Dilatation

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Sept. cont. 28th	1PZ	14	43	05	B, M.Sp.	Dilatation U.S.C.G.S. - Kermadec Islands region, H=14-37-30
	ePE		43	05	M-S	
	iPPE		43	50	M.Sp.	
	eLNE		53	10	M-S	
	iPZ	17	30	09	B	Dilatation U.S.C.G.S. - Kermadec Islands, H=17-24-30
	eSE		34	22	M.Sp.	
	eL _R E		37	25	M.Sp.	
	eLNE		37	50	M-S	
	iPZE	22	30	17	B, M.Sp.	Dilatation
	ePE		30	17	M-S	
	iPPE		31	00	M.Sp.	
	eSE		34	54	M.Sp.	
	eL _R NE		38	00	M-S, M.Sp.	Compression U.S.C.G.S. - 30°S., 178°W., Kermadec Islands, H= 23 - 28 - 37.
	iPZE	23	34	17	B, M.Sp.	
	ePNE		34	17	M-S	
	iPPE		35	10	M-S	
	iSE		39	01	M-S	
	eSE		39	03	M.Sp.	
	iSSE		40	02	M-S, M.Sp.	
	iLE		41	02	M.Sp.	
	iLE		41	25	M-S	
" 29th	ePZ	03	53	07	B	
	iPE		53	09	M.Sp.	
	i(S)E		56	15	M.Sp.	
	ePZ	06	13	17	B	
	iPZ	09	16	04	B	
	iPZE	12	25	35	B, M.Sp.	Dilatation U.S.C.G.S. - Flores Sea, H=12-18-55
	iE		32	36	M.Sp.	
	eE		32	38	M-S	
	iPZ	16	41	46	B	Dilatation U.S.C.G.S. - Kermadec Islands Region, H = 16-36-12
	eLE		49	00	M-S, M.Sp.	
	iPZ	18	26	40	B	Dilatation U.S.C.G.S. - 26½°S., 120°W., Pacific Ocean, west of Easter Island, H=18-15-05
	eLE		49	00	M-S, M.Sp.	
	ePZ	22	38	46	B	
" 30th	iPZ	04	27	02	B	Dilatation U.S.C.G.S. - Kermadec Islands region, H=04-21-28
	iE		27	09	M.Sp.	
	eE		27	09	M-S	
	iPPE		27	48	M.Sp.	
	iE		30	31	M.Sp.	
	eE		30	32	M-S	
	eLNE		34	05	M-S	

DATE	PHASE	h.	m.	s.	UNIT	REMARKS
Sept. 30th cont.	iPZE	08	- 53	- 16	B, M. Sp.	Compression U.S.C.G.S. - Kermadec Islands region, H = 08-47-39
	ePE		53	- 16	M-S	
	iZE		53	- 26	B, M. Sp.	
	iZE		53	- 43	B, M. Sp.	
	eLE	04	- 00	- 25	M. Sp.	
	iPZ	09	- 33	- 44	B	Dilatation
	iZ		33	- 55	B	
	ePZ	10	- 20	- 04	B	
	ePZ	11	- 17	- 35	B	
						O.A. JONES Director, Univ. Q'ld. Seis. Stat.



UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 170

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. m. s.	UNIT	REMARKS
1951 Oct. 2nd.	iPZ iZ	00 - 11 - 28 21 - 41	B B	Compression
	Long waves on E-W Milne Shaw at 04-42.			
" 3rd	ePZ iPZ	02 - 18 - 22 13 - 35 - 39	B B	Compression U.S.C.G.S. - about 200 miles south of the Solomon Islands, H= 13-30-35, h= about 100 km.
" 5th	iPZ	06 - 36 - 15	B	Compression U.S.C.G.S. - Kermadec Islands region, H = 06-30-48
	iPZ ePE eZ iZ iPPE ePPN eP _C PE iSE iSSE iL _N eL _R E	11, - 43 - 10 43 - 14 43 - 21 43 - 36 43 - 43 43 - 43 46 - 20 47 - 49 49 - 12 50 - 29 50 - 34	B M-S B B M-S M-S M-S M-S M-S M-S M-S	Dilatation Δ_{S-P} = about 27° U.S.C.G.S. - $28\frac{1}{2}^{\circ}$ S., 177° W., Kermadec Islands region, H = 11 - 37 - 30
" 6th	iPZ iE	02 - 34 - 23 34 - 46	B M-S	Compression
	eiPZ ePE i(PP)E eSE eL _N eL _R E	03 - 34 - 19 34 - 19 34 - 57 39 - 03 41 - 38 42 - 52	B M-S M-S M-S M-S M-S	U.S.C.G.S. - Kermadec Islands region, H=03-28-45



DATE	PHASE	h. m. s.	UNIT	REMARKS
Oct. cont. 9th	iPZ	04 - 57 - 37	B	Dilatation
	eLNE	13 - 45 - 30	M-S	
	iPZNE	15 - 44 - 19	B, M-S	Dilatation
	eN	47 - 15	M-S	U.S.C.G.S. - Loyalty Islands
	eE	47 - 26	M-S	H = 15 - 40 - 35, h=about
	iN	47 - 33	M-S	100 km.
	eZ	47 - 33	B	
" 10th	iPZN	22 - 13 - 28	N, M-S	Dilatation
	ePE	13 - 28	M-S	U.S.C.G.S. - Solomon Is.
	iPPZ	13 - 44	B	H = 22 - 09 - 11.
	iZ	14 - 13	B	
	eSE	16 - 55	M-S	
	eSSN	17 - 12	M-S	
	iSSE	17 - 12	M-S	
" 11th	iPN	01 - 42 - 28	M-S	Compression from N.E.
	iPZ	42 - 30	B	Δ_{S-P} about 23° ,
	ePE	42 - 31	M-S	h = about 120 km.
	iPPN	42 - 42	M-S	U.S.C.G.S. - 5° S., 152° E.,
	iN	43 - 33	M-S	New Britain Island,
	iN	44 - 32	M-S	H = 01-37-31, but depth
	iSNE	46 - 28	M-S	normal.
	iSZ	46 - 33	B	
	iSNE	47 - 07	M-S	
	iPZ	22 - 58 - 10	B	Dilatation
	iZ	59 - 37	B	
" 12th	iPZ	07 - 34 - 09	B	Dilatation
	iPZ	11 - 16 - 27	B	Compression
	iZ	17 - 51	B	
	iZ	18 - 42	B	
" 13th	iPZ	16 - 14 - 09	B	Compression
	iPZ	01 - 21 - 54	B	Dilatation U.S.C.G.S.-
				Tonga Islands region,
				H=01-15-54, H=about 200 km.
	iPZ	07 - 18 - 17	B	Compression
" 14th	ePN	22 - 41 - 18	B	U.S.C.G.S. - 60° S., 19° W.,
	iSKSN	51 - 50	M-S	Sandwich Islands region,
	iSN	52 - 17	M-S	H=22.28.06
	eL _Q N	23 - 12 - 03	M-S	
	iPZ	09 - 38 - 19	B	Dilatation $\Delta_{S-P} = 48^\circ$
" 15th	ePE	38 - 19	M-S	U.S.C.G.S. - Java Sea,
	iSNE	45 - 12	M-S	H=09-29-39
	iPZ	18 - 23 - 50	B	Dilatation U.S.C.G.S. -
" 16th				Fiji Islands, H=18-18-43,
				h = about 600 km.
	iPZ	21 - 12 - 24	B	Dilatation U.S.C.G.S.
" 17th				33° N., 134° E., off south
				coast of Shikoku, Japan,
				H = 21-01-57.
" 18th	iPZ	03 - 04 - 40	B	Dilatation
	iPZ	07 - 45 - 29	B	Dilatation U.S.C.G.S. -
	iZ	45 - 51	B	Kermadec Islands region,
				H = 07 - 40 - 05

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Oct. 18th cont.	iPZ	08	37	26	B	Compression $\Delta = 71^\circ$ h=about 100km. U.S.C.G.S. - 42° N., 142° E., near south coast of Hokkaido Japan, H=08 - 26 - 25, h = about 100 km.
	ipPZ		37	47	B	
	iSNE		46	30	M-S	
	eSSN		51	07	M-S	
	eL _Q N		59	42	M-S	
" 19th	iPZ	15	02	32	B	Compression U.S.C.G.S. - 41° N., 142° E., H= 14-51-14, h=about 100 km.
	iZ		02	39	B	
" 20th	iPZ	04	11	08	B	Dilatation
	iPZ	04	50	21	B	Compression
" 21st	iPZ	01	34	07	B	Dilatation
	iPZ	05	26	52	B	Dilatation
	iPZ	21	44	17	B	Compression $\Delta_{S-P} = 59.9^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., off east coast of Formosa H = 21-34-13 (foreshock).
	ePNE		44	18	M-S	
	eE		46	15	M-S	
	ePPN		46	29	M-S	
	eE		46	42	M-S	
	iPPPN		47	52	M-S	
	iE		48	09	M-S	
	iSN		52	24	M-S	
	eSE		52	24	M-S	
	ePSN		52	37	M-S	
	iPPSNE		52	45	M-S	
	eSSN		56	20	M-S	
	iSSE		56	22	M-S	
	iL _R NE	22	07	25	M-S	
	iPZ	23	05	28	B	Dilatation U.S.C.G.S. Formosa foreshock, H=22.55.54
" 22nd	iPZ	03	39	30	B	Dilatation $\Delta_{S-P} = 61^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., off east coast of Formosa. H = 03 - 29 - 26
	ePPNE		41	54	M-S	
	eP _C SE		44	22	M-S	
	iSNE		47	44	M-S	
	iPSE		47	56	M-S	
	iS _C SE		49	16	M-S	
	iE _C		51	21	M-S	
	eSSN		51	45	M-S	
	iL _Q N		54	37	M-S	
	iL _R N		58	11	M-S	
	iPZ	04	02	27	B	Dilatation
	iPZ	04	38	11	B	Dilatation U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H = 04 - 28 - 05
	eSNE		46	19	M-S	
	iPZ	05	27	50	B	Dilatation U.S.C.G.S. - 24° N., 122° E., Formosa aftershock H = 05 - 17 - 44
	ePE		27	50	M-S	
	iPZ	05	33	57	B	Compression U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H = 05 - 23 - 53
	iPZ	05	53	07	B	Compression U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H = 05-43-01
	ePNE		53	07	M-S	
	eSNE	06	01	19	M-S	
	iPZ	07	17	26	B	Dilatation
	ePE		17	26	M-S	

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Oct. 22nd cont.	iPZ ePE	07	22	09	B M-S	Dilatation
	iZ	09	03	58	B	Compression
	iZ	09	25	09	B	Dilatation
	iZ	10	35	54	B	Dilatation
	iPZ eSN	11	21	09	B M-S	Compression U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H=11-11-02
	iPZ eSNE	12	58	45	B M-S	Compression U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H=12-48-38
	iPZ	13	11	20	B	Dilatation
	iZ	13	31	07	B	Dilatation
	iZ	14	30	07	B	
	iPZ iSN	15	39	54	B M-S	Dilatation $\Delta_{S-P} = 59.1^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., Formosa aftershock. H = 15-29-47
	iPZ	16	17	05	B	Dilatation
	iPZ	18	52	34	B	Dilatation
	iPZ	20	34	51	B	Compression
	iPZ	21	01	44	B	Compression
	iPZ	23	46	31	B	Dilatation
" 23rd	iPZ iSN eSE	01	29	41	B M-S M-S	Dilatation $\Delta_{S-P} = 60^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., Formosa aftershock. H=01-19- 35.
	iPZ	06	18	45	B	Dilatation U.S.C.G.S. - 17° S., 178° W., Fiji Islands H=06-13-03, H=about 200 km.
	iPZ iSN eSE	09	05	19	B M-S M-S	Compression $\Delta_{S-P} = 59.9^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., Formosa aftershock, H = 08-55-13
" 24th	iPZ	03	49	05	B	Compression
	iPZ	04	29	03	B	Compression
	iPZ	05	24	08	B	Compression
" 25th	iPZN ePN iSE iSE eSN	12	29	45	B, M. Sp. M-S M-S M. Sp. M-S	Dilatation $\Delta_{S-P} = 61^\circ$ Ca. U.S.C.G.S. - 24° N., 122° E., Formosa aftershock. H = 12-19-38
	eIPZ iPNE iZ iPPNE	05	39	32	B M-S, M. Sp. B M-S, M. Sp.	$\Delta_{S-P} = 21^\circ$ Ca.
			39	32		
			39	33		
			39	46		



DATE	PHASE	U.T. h. m. s.	UNIT	REMARKS
Oct. 26th cont.	ePPPNE	40 - 03	M-S	
	iSN	43 - 17	M-S, M. Sp.	
	iSE	43 - 19	M-S	
	eSSN	44 - 05	M-S	
	eSSE	44 - 06	M-S	
	iPZ	21 - 59 - 07	B	Dilatation
" 27th	iZ	04 - 47 - 47	B	Possibly not seismic
	iZ	16 - 22 - 18	B	Compression possibly not seismic
" 28th	ePZ	02 - 05 - 22	B	
	iZ	05 - 57	B	
	iPZ	06 - 41 - 08	B	Compression
	iPN	41 - 09	M. Sp.	
	iSN	45 - 29	M. Sp.	
	eSE	45 - 30	M-S	
	iPZN	06 - 54 - 00	B, M. Sp.	Compression
	ipPN	54 - 10	M-S, M. Sp.	$\Delta S-P = 28^\circ \text{Ca.}$
	iPPN	54 - 53	M-S, M. Sp.	Riverview - Macquarie
	iSN	59 - 04	M-S, M. Sp.	Island region.
	eSE	59 - 05	M-S	
	isSN	59 - 10	M. Sp.	
	iL _R NE	07 - 01 - 11	M-S, M. Sp.	
	iPZ	15 - 17 - 35	B	Compression
	iPZ	22 - 22 - 46	B	Dilatation
" 29th	iPZ	12 - 19 - 25	B	Compression
	iZ	19 - 29	B	
	iZ	19 - 36	B	
	iZ	19 - 42	B	
	iZ	15 - 40 - 40	B	Compression
	iPZ	18 - 45 - 43	B	Dilatation
" 31st	iPZ	05 - 29 - 58	B	Dilatation $\Delta S-P = 20.3^\circ \text{Ca.}$
	ePN	29 - 58	M-S	U.S.C.G.S. - New Britain
	iPPZ	30 - 06	B	Island region H=05-25-00.
	iPPPZ	30 - 18	B	
	iSN	33 - 39	M-S	
	ePZ	06 - 18 - 34	B	U.S.C.G.S. - New Britain
	eSN	22 - 36	M. Sp.	Island region. H=06-13-35
	iPZ	07 - 06 - 21	B	Compression
	iPNE	06 - 23	M-S, M. Sp.	$\Delta S-P = 59.8^\circ \text{Ca.}$
	iSNE	14 - 27	M-S	U.S.C.G.S. - 3° N., 101° E.,
	iSN	14 - 28	M. Sp.	Malacca Straits, H=06-56-21
	iSSE	18 - 35	M-S	
	iL _R N	28 - 50	M. Sp.	
	eL _R N	28 - 50	M-S	
	eL _R B	30 - 05	M-S	
	ePZ	08 - 13 - 11	B	Compression
	iPZ	10 - 32 - 19	B	Dilatation $\Delta S-P = 59.9^\circ \text{Ca.}$
	iSN	40 - 25	M. Sp.	U.S.C.G.S. - Near west
	eSNE	40 - 25	M-S	coast of Sumatra, H=10 - 22 - 17.
	eLNE	12 - 31 - 00	M-S	

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 17

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h.	U.T. m.	s.	UNIT	REMARKS
1951 Nov. 1st.	iPZ	07	52	58	B	Compression
	i(PP)NE		53	12	B, M, Sp.	
	e(PP)N		53	12	M-S	
	eSNE		56	19	M-S, M. Sp.	
	eN		56	30	M. Sp.	
	iPZ	11	30	12	B	Dilatation U.S.C.G.S. -
	iZ		30	19	B	23° S., 179° E., Fiji
	iZ		30	31	B	Island region H=11-25-37
	iZ		30	48	B	h = about 500 km.
	iPZ	14	28	44	B	Compression
	iZ		28	58	B	
" 2nd	eZ	08	42	28	B	
	eZ	15	25	07	B	
	iPZ	15	39	29	B	Compression
	iZ		39	32	B	
	eN		41	58	M. Sp.	
" 3rd	ePZ	13	40	19	B	
	iPZ	13	42	16	B	Dilatation
" 4th	iPZN	08	59	22	B, M-S, M. Sp.	Dilatation
	iPE		59	23	M-S	$\Delta_{S-P} = 23.4^{\circ}$, h=about 200km.
	eN		59	46	M-S	U.S.C.G.S. - $5\frac{1}{2}^{\circ}$ S.,
	iPPNE		59	49	M-S, M. Sp.	146° E., (near north-
	iPPNE	09	00	03	M-S	east coast of New
	iSNE		03	15	M-S, M. Sp.	Guinea) H=08-54-30.
	iSSNE		04	09	M-S	h=about 200 km.
	iPZE	11	18	17	B, M, Sp.	Compression to south-east
	ePNE		18	17	M-S	$\Delta_{S-P} = 47.5^{\circ}$ U.S.C.G.S. -
	ePPNE		20	11	M-S, M. Sp.	112° N., 125° E.,
	iPPZ		20	16	B	(Samar Island Phillipines)
	iPPPNE		20	46	M-S, M. Sp.	H = 11-09-41



U.T.

DATE

PHASE

h.

m.

s.

UNIT

REMARKS

Nov. 4th cont.	iPPPE	20 - 48	M-S	
	iPcSZ	23 - 40	B	
	ePcSE	23 - 40	M-S	
	iSNE	25 - 08	M-S, M.Sp.	
	iSSN	28 - 37	M-S, M.Sp.	
	eSSE	28 - 38	M-S	
	ePZ	17 - 19 - 32	B	
	eZ	20 - 54	B	
" 6th	iPZ	01 - 02 - 43	B	Dilatation
	iZ	03 - 22	B	U.S.C.G.S. - Assam
				H = 00 - 50 - 40
	ePZ	15 - 08 - 55	B	U.S.C.G.S. - 47°N., 154°E.,
				(Kurile Islands). H=14-57-15
				foreshock.
	iPZ	16 - 51 - 47	B	Compression $\Delta S-P = 74.5^\circ$
	ePN	51 - 47	M-S	U.S.C.G.S. -
	ePE	51 - 48	M.Sp.	47°N., 154°E., (Kurile
	iPcPN	52 - 09	M-S	Islands) H=16-40-06
" 7th	ePcPE	52 - 10	M.Sp.	
	iSN	01 - 18	M-S, M.Sp.	
	iScSN	01 - 54	M-S, M.Sp.	
	iSSN	06 - 01	M-S	
	eL _R N	21 - 02	M-S	
	iPZ	19 - 02 - 07	B	Dilatation
	iPcPZ	02 - 26	B	U.S.C.G.S. - 47°N., 154°E.,
				(Kurile Islands aftershock)
				H = 18 - 50 - 27
" 8th	iPZ	04 - 40 - 22	B	Compression U.S.C.G.S. -
				(Fiji Islands) H=04-35-20,
				H=about 600 km.
	iPZ	05 - 22 - 41	B	Compression
	iZ	22 - 47	B	
	iPZ	06 - 46 - 53	B	Compression
	iZ	46 - 57	B	
	iZ	47 - 06	B	
" 9th	iSKSN	14 - 08 - 40	M.Sp.	U.S.C.G.S. - 54½°N., 160°W.,
	eSKSN	08 - 40	M-S	(Off south coast of Alaska
	eSN	09 - 04	M-S	Peninsula) H=13-45-09
	iSSN	15 - 01	M.Sp.	
	eSSN	15 - 01	M-S	
	iPZ	19 - 45 - 19	B	Compression U.S.C.G.S. -
				19°N., 155¾°W., (near south-
				west coast of Hawaii)
				H = 19 - 34 - 13
" 10th	ePZ	23 - 57 - 17	B	U.S.C.G.S. - Fiji Islands
				H = 23 - 52 - 27, h = about
				500 km.
	ePZ	06 - 03 - 04	B	U.S.C.G.S. - Near northern
				coast of Formosa
				H = 05-52-47
	iPZE	05 - 38 - 13	B, M-S	Compression U.S.C.G.S. -
	iZ	38 - 22	B	Fiji Islands region
" 10th	ePPE	39 - 07	M-S	H = 05 - 31 - 54
	iSN	43 - 11	M.Sp.	
	eSN	43 - 11	M-S	

DATE	PHASE	U.T. h. m. s.	UNIT	REMARKS
Nov. 10th cont.	iNE	43 - 20	M-S	Dilatation
	eLN	45 - 15	M-S	
	iPZ	07 - 18 - 10	B	
	eE	23 - 10	M-S	
	iN	24 - 04	M. Sp.	
	eE	24 - 41	M-S	
	iZ	07 - 27 - 13	B	
	iN	27 - 25	M. Sp.	
" 12th	iPZ	08 - 21 - 10	B	Dilatation $\Delta_{S-P} = 73^\circ$ U.S.C.G.S. - $47^\circ N.$, $154^\circ E.$, (Kurile Islands) H=08-09-26
	ePN	21 - 10	M. Sp.	
	iZ	21 - 13	B	
	iSE	30 - 40	M-S	
	eSN	30 - 40	M-S	
	iSKSN	31 - 10	M-S, M. Sp.	
	ePPSE	31 - 22	M-S	
	iPZNE	09 - 18 - 48	B, M-S, M. Sp.	Dilatation U.S.C.G.S. - $23\frac{1}{2}^\circ S.$, $179^\circ W.$, (south of Fiji Islands). H=09-13-50, h=about 400 km.
	ePN	18 - 50	M-S	
	ipPZE	19 - 52	B, M-S	
	epPN	19 - 54	M. Sp.	
	epPN	19 - 55	M-S	
	ie	21 - 25	M-S	
	ePcPN	22 - 15	M-S	
	eSE	22 - 40	M-S	
	eE	23 - 40	M-S	
	eSSNE	24 - 52	M-S	
	iZE	25 - 14	B, M-S	
	iPZ	09 - 56 - 10	B	Compression
	iZ	56 - 25	B	
" 16th	iPZNE	17 - 38 - 49	B, M-S, M. Sp.	Compression U.S.C.G.S. - $29\frac{1}{2}^\circ S.$, $178^\circ W.$, (Kermadec Is.) H=17-33-22, H=about 60km.
	ePN	38 - 50	M-S	
	ipP	39 - 06	M. Sp.	
	isPN	39 - 19	M. Sp.	
	isPE	39 - 20	M-S	
	ipPE	39 - 30	M-S	
	iSE	43 - 10	M-S	
	isSE	43 - 35	M-S	
	esSN	43 - 35	M-S	
	iN	43 - 48	M-S, M. Sp.	
	iSSN	44 - 08	M-S	
	eLNE	45 - 25	M-S, M. Sp.	
" 17th	iPZ	04 - 34 - 56	B	Compression
	iZ	05 - 58 - 23	B	Dilatation
	iPZ	18 - 02 - 32	B	Compression
	iZ	02 - 40	B	
" 18th	iPZ	09 - 39 - 02	B	Compression U.S.C.G.S. - $31^\circ N.$, $90\frac{1}{2}^\circ E.$, (Eastern Tibet) foreshock H=09-26-33
	iZ	39 - 06	B	
	eN	39 - 06	M. Sp.	
	iPZN	09 - 48 - 15	B, M. Sp.	Compression $\Delta_{S-P} = 83^\circ$ U.S.C.G.S. - $31^\circ N.$, $90\frac{1}{2}^\circ E.$, (Eastern Tibet). H=09-35-43
	ePNE	48 - 15	M-S	
	iN	49 - 24	M-S, M. Sp.	
	iSNE	58 - 29	M-S, M. Sp.	
	iN	10 - 00 - 29	M-S	
	iPZ	19 - 53 - 53	B	Compression
" 19th	iPZN	10 - 43 - 27	B, M. Sp.	Compression $\Delta_{S-P} = 18.7^\circ$

DATE	PHASE	U.T.			UNIT	REMARKS
		h.	m.	s.		
Nov. 19th cont.	ePE	43	-	27	M-S	Approx. epi-centr. (based on data from and Auckland) 170°S., 19°S.
	iPPN	43	-	33	B, M. Sp.	
	iPPPN	43	-	44	B, M. Sp.	
	iN	43	-	57	M. Sp.	
	iSN	46	-	51	M. Sp.	
	eSNE	46	-	51	M-S	
	iSSN	47	-	11	M. Sp.	
	iPZ	14	-	04 - 27	B	Dilatation
	iPZ	15	-	07 - 55	B	Dilatation
	ePZ	21	-	10 - 21	B	U.S.C.G.S. - 16½°S., 172°W. (Tonga Islands)
	iZ		-	10 - 26	B	
	eSE		-	15 - 48	M-S	
" 22nd	iPZN	02	-	09 - 53	B, M. Sp. M-S	$\Delta S-P = 23^\circ$ Ca. U.S.C.G.S. - 5°S., 151½°E., (New Britain). H = 02 - 04 - 49
	ipPN		-	10 - 05	M. Sp., M-S	
	iPPN		-	10 - 26	M-S	
	iPPPZ		-	10 - 40	B	
	iSNE		-	13 - 54	M. Sp. M-S	
	isSNE		-	14 - 17	M-S	
	iNE		-	14 - 24	M-S	
	eLN		-	16 - 15	M-S	
	iPZ	09	-	57 - 09	B	Dilatation
	iZ		-	57 - 21	B	
	iZ	10	-	00 - 12	B	
	iZ		-	01 - 01	B	
	iPZ	12	-	58 - 12	B	U.S.C.G.S. - 26°S., 177°W., (Kermadec Islands region) H = 15 - 52 - 30.
	eSN	13	-	02 - 52	M. Sp.	
	iSSN		-	03 - 55	M. Sp.	
	eSSN		-	03 - 55	M-S	
" 24th	iPZN	18	-	57 - 18	B, M. Sp.	Compression U.S.C.G.S. - 23°N., 121½°E. (Near east coast of Formosa) Foreshock H=18-47-13
	ePNE		-	57 - 18	M-S	
	eSN	19	-	05 - 17	M-S	
	iPZN	19	-	00 - 24	B, M. Sp.	$\Delta s-p = 58^\circ$ Ca. U.S.C.G.S. - 23°N., 121½°E. (Near east coast of Formosa) H = 18 - 50 - 19
	iSN		-	08 - 23	M. Sp.	
" 26th	iPZN	06	-	48 - 30	B, M. Sp.	Dilatation U.S.C.G.S. - 23°N., 121½°E., (Formosa aftershock) H = 06-38-29
	iSNE		-	56 - 32	M. Sp. M-S	
" 27th	iPZ	16	-	21 - 39	B	Dilatation U.S.C.G.S. - 34½°S., 180°. (Off north east coast of North Island New Zealand) H=16-16-29. h = about 100 km.
	ePE		-	21 - 39	M-S	
	ipPE		-	22 - 01	M-S	
	eSE		-	25 - 38	M-S	
	iPZ	20	-	55 - 09	B	Dilatation U.S.C.G.S. - Santa Cruz Islands, H = 20-50-44
	eSE		-	58 - 38	M-S	
" 29th	iPZ	04	-	53 - 37	B	Dilatation $\Delta = 42.5^\circ$ Ca. h = about 100 km H=04 - 45 - 50 U.S.C.G.S. - 1°N., 121°E., (Northern Celebes Island), H = 04 - 45 - 44
	ipPZ		-	53 - 59	B	
	epPE		-	54 - 01	M-S	
	ePPN		-	55 - 19	M-S	
	iNE		-	55 - 39	M-S	
	iSE		-	59 - 45	M-S	
	iSN		-	59 - 47	M-S	

DATE	PHASE	U.T.		UNIT	REMARKS
		h.	m. s.		
NOv.29th cont.	isSE	05	- 00 - 24	M-S	
	esSN		00 - 24	M-S	
	iE		01 - 24	M-S	
	eE		02 - 36	M-S	
	iSSNE		02 - 54	M-S	
	1Z	14	- 36 - 51	B	Dilatation
" 30th	1PZ	04	- 44 - 05	B	Dilatation
					O.A. JONES
					<u>Director, Univ. Q'ld. Seis. Station</u>



UNIVERSITY OF QUEENSLAND

SEISMOLOGICAL STATION

BRISBANE

$\phi = 27^{\circ} 28' 41''$ S., $\lambda = 153^{\circ} 1' 52''$ E., $h = 15$ m. Bulletin No. 172

Foundation: Semi-consolidated alluvium of raised river terrace.

INSTRUMENTS AND CONSTANTS

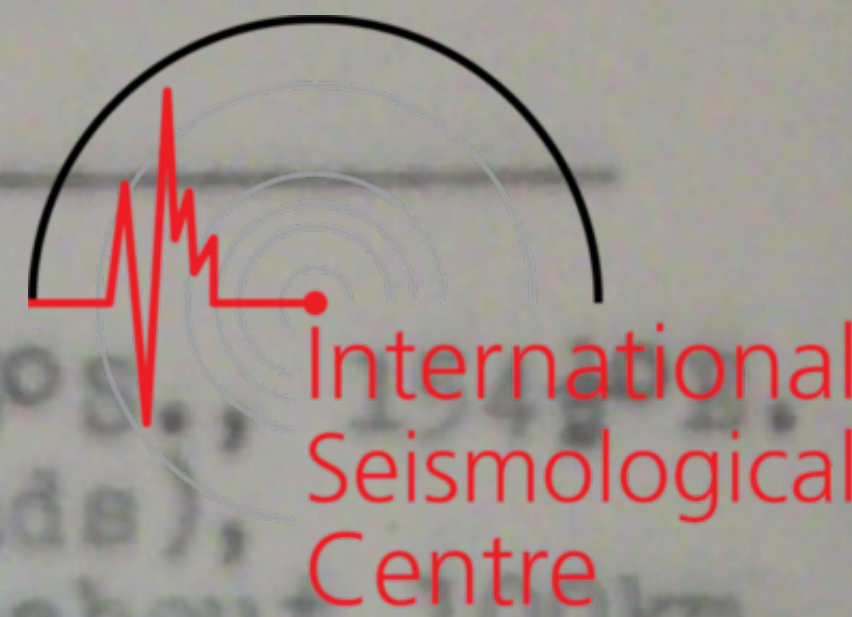
INSTRUMENT	RATE OF RECORDING	COMPONENT	FREE PERIOD	DAMPING	STATIC MAGNIFICATION
Milne-Shaw No. 58 (Modified)	16 m.m. per minute	N.—S.	12 sec.	20 : 1	250
Milne-Shaw No. 60 (Modified)	16 m.m. per minute	E.—W.	12 sec.	20 : 1	
Benioff No. 12	15 m.m. per minute	N.—S.	1.5 sec.		
Benioff No. 11	15 m.m. per minute	E.—W.	1.5 sec.		
Benioff No. 13	15 m.m. per minute	Vertical	1.5 sec.		
Sprengnether No. 374	50 m.m. per minute	E.—W.	7.2 sec.		

Time is correct to the nearest second and is checked daily against radio-signals giving Eastern Australian Standard Time.

The station is maintained and operated by the University of Queensland assisted by grants from the Commonwealth Council for Scientific and Industrial Research.

DATE	PHASE	h. m. s.	UNIT	REMARKS
<u>1951</u>				
Dec. 2nd.	1PZ	07 - 50 - 42	B	Compression
3rd	1PZ	13 - 55 - 39	B	Compression
4th	1PZ	11 - 48 - 31	B	Compression
5th	1PZ eLN	07 - 08 - 32 27 - 30	B M-S	Dilatation U.S.C.G.S. 23°N., 122½°E (Pormosa) H = 06.58.35
	eZ eZ	07 - 19 - 24 07 - 19 - 29	B B	
	1PZN iN iN eLE	18 - 09 - 57 12 - 29 13 - 30 17 - 00	B, M. Sp. M. Sp. M. Sp. M-S	Compression
7th	1PZN eSZ iSN iSSN eLN	20 - 51 - 57 56 - 16 56 - 19 57 - 21 59 - 19	B, M. Sp. B M. Sp. M. Sp. M. Sp.	Compression $\Delta S-P = 25^{\circ}$ Ca.
8th	1PZ	03 - 51 - 46	B	Dilatation U.S.C.G.S. - 43½°N., 146°E (Kurile Islands), H=03.40.25.
	1PZNE ipPE iPPNE iPPPE iSN iSNE iN isSE iSSN	04 - 26 - 19 26 - 43 29 - 29 31 - 18 36 - 29 36 - 31 36 - 35 37 - 05 41 - 30	M-S, M. Sp. M-S M-S M-S M-S M. Sp. M-S M-S M-S	Compression U.S.C.G.S. - 34°S., 56½°E., (Indian Ocean, about 900 miles southeast of Madagascar), H=04.14.20 h = about 100 km.

DATE	PHASE	U.T. h. m. s.	UNIT	REMARKS
Dec. 8th cont,	iPZ	13 - 51 - 54	B	Dilatation
	iPZN ipPN ipPN iPPN iSZN eSE isSN iSSNE	14 - 02 - 57 03 - 16 03 - 17 03 - 26 06 - 46 06 - 47 07 - 23 07 - 34	B, M. Sp. M-S M-S M. Sp. M. Sp. B, M. Sp. M-S M-S M. Sp. M. Sp.	Compression U.S.C.G.S. - 6°S., (Solomon Islands), H=13.58.10, h=about 100km.
" 12th	iZ	01 - 26 - 28	B	Dilatation
	iPPZ	01 - 57 - 52	B	Dilatation U.S.C.G.S. 17°N., 94°W. (Oaxaca, Mexico). H=01.37.34, h=about 100km.
	iE oE iN iE iN iN eE eL	02 - 04 - 15 05 - 00 05 - 10 07 - 20 07 - 40 11 - 58 13 - 10 31 - 50	M-S M-S M. Sp. M-S M. Sp. M. Sp. M-S M-S	
" 14th	iPZ iZ	02 - 16 - 17 18 - 09	B B	Dilatation
" 16th	iPZ	07 - 01 - 57	B	Compression
	iPZ ipPZ	12 - 31 - 01 31 - 19	B B	Dilatation U.S.C.G.S. - 28°S., 178°W., Kermadec Is. H=12.25.30 h=about 60km.
	iPZN iPN iSN eLR	19 - 17 - 47 17 - 49 21 - 03 22 - 26	B, M-S M. Sp. M. Sp. M-S M. Sp.	Dilatation U.S.C.G.S. 18°S., 168°E., New Hebrides Islands, H=19.13.43
	iZ iZ iZ iZ iZ iZ iZ iZ iZ iZ iZ iZ iZ	21 - 15 - 46 16 - 29 16 - 34 16 - 45 16 - 50 16 - 59 17 - 19 17 - 54 18 - 50 23 - 55 24 - 15 25 - 34 26 - 41	B B B B B B B B B B B B B	
" 17th	iPZ	01 - 23 - 16	B	Dilatation
	ciPZ iZ eL _Q E	12 - 36 - 43 36 - 56 46 - 44	B B M-S	U.S.C.G.S. 18°S., 173°W., Tonga Islands H=12.30.08
" 18th	iPZE ipPZ epPE isPZ iPPE ePPPE iE	14 - 15 - 18 15 - 34 15 - 38 15 - 44 16 - 27 16 - 41 17 - 25	B, M-S B M-S B M-S M-S M-S	U.S.C.G.S. 19°S., 174°W Tonga Islands H=14-09-03 h=about 60km.



DATE	PHASE	h.	m.	s.	UNIT	REMARKS
Dec. 18th cont.	iSN	20	- 11		M-S, M. Sp.	
	eSE	20	- 11		M-S	
	isSE	20	- 40		M-S	
	iN	20	- 50		M-S, M. Sp.	
	iE	21	- 40		M-S	
	eLE	23	- 00		M-S	
	iLN	23	- 07		M-S	
	iScSE	25	- 55		M-S	
	1PZ	21	-24 - 31		B	
" 21st	1PZ	08	-49 - 06		B	Dilatation U.S.C.G.S. 26 $\frac{1}{2}$ $^{\circ}$ N., 100 $^{\circ}$ E. Yunnan Province, China H=08.37.28
	iZ	49	- 08		B	
	iZ	49	- 11		B	
	iZ	49	- 19		B	
	iN	58	- 49		M. Sp.	
	iN	09	-03 - 50		M. Sp.	
	ePZ	11	-23 - 51		B	Compression
" 22nd	1PZE	15	-52 - 44		B, M. Sp.	U.S.C.G.S. 1 $^{\circ}$ S., 155 $^{\circ}$ E., New Britain Island region H = 14.47.36 (h = about 90 km.)
	iPN	52	- 45		M-S	
	ipPZN	53	- 04		B, M. Sp.	
	iPPZ	53	- 13		B	
	iZ	53	- 19		B	
	iPPPN	53	- 27		M. Sp.	
	iN	53	- 52		M. Sp.	
	iSN	57	- 04		M. Sp. M-S	
	eSE	57	- 04		M-S	
	iN	57	- 08		M. Sp.	
	isSN	57	- 31		M. Sp.	
	iN	58	- 17		M. Sp.	
" 23rd	1PZ	00	-26 - 45		B	Dilatation U.S.C.G.S. - 24 $\frac{1}{2}$ $^{\circ}$ S., 177 $^{\circ}$ W. H=00.21.06 h=about 100km.
	opPE	-27	- 05		M-S	
	ePPE	27	- 34		M-S	
	iSN	31	- 26		M. Sp.	
	isSE	32	- 00		M-S..	
	iN	32	- 21		M. Sp.	
	eN	32	- 21		M-S	
	ePZ	01	-42 - 24		B	
	iPZN	06	-35 - 58		B, M-S, M. Sp.	Compression Δ_{S-P} = about 28 $^{\circ}$. H=06.30.08, but Riverview - H=06.30.19 Prov., epicentre 52 $^{\circ}$ S 140 $^{\circ}$ E. (In minute break)
	iZ	36	- 07		B	
	iZ	36	- 33		B	
	iPPN	36	- 46		M-S	
	iPePZ	39	- 20		B	
	iSN	06	-40 - 40		M-S, M. Sp.	
	iN	41	- 30		M-S	
	iN	41	- 39		M-S	
	iSSN	42	- 02		M-S	
	iN	42	- 20		M. Sp.	
	iL _Q N	44	- 00		M-S., M. Sp.	
	eL _R N	46	- 03		M-S, M. Sp.	
	iPKPZ	07	-16 - 42		B	U.S.C.G.S. 15 $^{\circ}$ N., 61 $^{\circ}$ W., (Windward Is.) H=06.57.20 h=about 100km.
" 25th	iPZN	15	-36 - 56		B, M. Sp.	Compression Δ_{S-P} = 22 $^{\circ}$ with h=about 600 km. U.S.C.G.S. 8 $^{\circ}$ S., 158 $^{\circ}$ E., Solomon Is., H = 15.32.59 h=about 600km
	iZ	37	- 06		B	
	iN	37	- 08		M. Sp.	
	iSN	40	- 18		M. Sp.	
	1PZ	15	-43 - 37		B	
	iPN	22	-12 - 02		M. Sp.	
	ePN	12	- 02		M-S	
	iSN	16	- 20		M. Sp.	

DATE	PHASE	h. m. s.	U.T.	UNIT	REMARKS
Dec. 25th cont.	eSNE eL _Q NE eL _R N	16 - 20 18 - 40 20 - 36	M-S M.Sp.M-S M.Sp.M-S		
" 26th	iPN iSN	20 - 28 - 30 31 - 52	M.Sp. M.Sp.		
" 28th	eN iN	02 - 57 - 34 59 - 27	M.Sp. M.Sp.		
" 29th	iPN iSN	22 - 13 - 56 21 - 54	B, M.Sp. M.Sp.		Dilatation $\Delta_{S-P}=58^\circ$ U.S.C.G.S. - about 100 miles south of Formosa. H=22.04.05.
" 30th	iPN iP*N iPgN eSN iSN iS*N	20 - 34 - 44 34 - 47 34 - 49 35 - 14 35 - 15 35 - 25	B B, M.Sp. B B M.Sp. M.Sp.		Dilatation $\Delta_{S-P}=2.4^\circ$ Ca Felt about Mundubbera, Queensland.
	iPN iSN	20 - 38 - 41 39 - 11	B B		Dilatation Aftershock Mundubbera earthquake
	ePN	21 - 41 - 08	B		Aftershock Mundubbera earthquake
	iPN iSN	21 - 42 - 23 42 - 53	B B		Dilatation Aftershock Mundubbera earthquake
	ePN	21 - 44 - 29	B		Aftershock Mundubbera earthquake
	ePN	22 - 40 - 49	B		Aftershock Mundubbera earthquake
	ePN ePPPN i(S)N i(SS)N e(SS)E	22 - 35 - 19 40 - 22 45 - 41 51 - 13 51 - 13	B M.Sp. M.Sp.M-S M.Sp.M-S M-S		U.S.C.G.S. - 28° S., 114° W (West of Easter Island) H=22.23.05

O.A. JONES
Director, Univ. Q'ld. Seis. Stat.