

Vulcanological Observatory RabaulProvisional Readings : 17th March to 23rd March 1961.

Additions: 8th March. iP Z 02 02 12.5

11th March. iP Z 12 29 44.0
i(s) ZNE 30 (29)

✓ 12th March. eP Z 23 28 57.5

13th March. e Z 11 33 (19½)

17th. e(P) Z 08 30 42 Record confused by long period
microseisms

i(P) Z 08 31 33.3

e(P) Z 08 40 31

i(P) Z 16 42 59.6
e N 45 38

• iP Z 20 17 44.2

18th. • eP Z 02 15 37

iP! ZNE 07 48 21.1 Also recorded on Omori
Dilatation to south-east

e Z 08 38 31

iP Z 10 59 03.6 Confused by preceding local
shock

• iP Z 15 03 27.1

i N 06 20.7

e(s) N 10 18

e Z 18 08 00

19th. • eP Z 07 19 25

• i Z 28.2

e Z 23 28

• i(P) Z 07 57 16.2

• iP Z 12 10 13.3

eP Z 19 10 22

i Z 25.6

20th. iP Z 02 23 02.6

i Z 04 03 24.1

e Z 04 24 (16) Confused by microseisms

e Z 26 16

e Z 06 52 (47)



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International Seismological Centre
Rabaul, New Guinea

Mr. Observatory
Richmond, Surrey
England.

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Seismograms read by J.H.L. G.A. Taylor, Volcanologist.

Time	Station	Phase	Amplitude	Duration	Notes
07 31 09	Z	ep	10.3		
07 31 09	Z	t			
07 31 09	Z	e(s)	33		
07 31 09	Z	e	50		
15 59 49	ZE	ep	15		
15 59 49	Z	t			
15 59 49	Z	e(s)	16		
15 59 49	Z	e	29.1		
01 29.1	Z	t			
01 29.1	Z	e	02		
01 29.1	Z	e	05		
01 29.1	Z	e	01		
01 29.1	Z	e	48		
01 29.1	Z	e	49.7		
01 29.1	Z	e	56.6		
09 11 45	Z	e(p)	11		Record confused by long period
09 11 45	Z	t			
09 11 45	Z	e(s)	45		
09 11 45	Z	e	44.3		
17 03 44.3	Z	t			
17 03 44.3	Z	e	17		
17 03 44.3	Z	e	03		
17 03 44.3	Z	e	31.4		
20 00 22	Z	ep	20		
20 00 22	Z	t			
20 00 22	Z	e(s)	00		
20 00 22	Z	e	22		
04 16 05.9	Z	1P	04		
04 16 05.9	Z	t			
04 16 05.9	Z	e(s)	16		
04 16 05.9	Z	e	05.9		
04 17 51.3	Z	1(P)	04		
04 17 51.3	Z	t			
04 17 51.3	Z	e(s)	17		
04 17 51.3	Z	e	51.3		
04 24 25 (04)	Z	e(P)	04		
04 24 25 (04)	Z	t			
04 24 25 (04)	Z	e(s)	24		
04 24 25 (04)	Z	e	25		
04 24 25 (04)	Z	e	37		
12 55 34	ep	t			
12 55 34	Z	e(s)	12		
12 55 34	Z	e	55		
20 57 20.4	1P	t			
20 57 20.4	Z	e(s)	20		
20 57 20.4	Z	e	57		

22nd. 1P 04 16 05.9

23rd. 1P 05 21 57.9

24th. 1P 00 07 41.6

21st. e(P) 09 11 45

cont. ep 07 31 09

52.1

24th. 1P 00 07 41.6

Record confused by long period

microseisms

Dilatation

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TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAU
Provisional Readings: 14th April to 20th April 1961.

Additions: 6th April. 1 N 22 36 10.9
 12th April. e Z 09 06 05
 " " 1P Z 15 39 46.1
 13th April. 1P Z 21 51 28.4

14th.	1P	Z	09	49	26.1	
	eP	Z	12	44	58	
	i	Z		45	01.6	
	1P	Z	13	07	26.1	Dilatation to north-west
15th.	eP	Z	01	22	01	
	e	Z		25	(19)	
	1P	Z	22	49	47	
16th.	1P	Z	11	50	32.9	
	1P	Z	12	06	19.3	Dilatation to west. (Also recorded on Omori (S-P c. 28-30")).
	e(P)	Z	15	57	20	
	eP	N	20	32	41	
	eP	Z	23	16	44	
17th.	1P	Z	12	26	46.2	Compression from west
	1P	Z	15	56	43.4	
	e	Z		58	11	
18th.	e	Z	02	49	10	
	e	Z	04	18	(04)	Confused by interference
	1P	Z	13	48	49.0	
	e	Z	14	27	(10)	
	1P	Z	22	50	13.6	
19th.	1P	Z	05	57	35.2	
	1P	Z	07	43	54.5	
	1P	Z	12	54	31.8	
	eP	Z	16	21	09	
	i	Z		21	09.9	
	i	Z			27.8	
	e(P)	Z	17	13	18	
	1P	Z	18	24	00.9	
	i	Z			14.9	



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G.A. Taylor,
Vulcanologist.

Seismograms read by J.H. Herlhy.

19th.	EP	Z	20	28	34 ²
20th.	1P	Z	00	20	01.2
	e	Z	07	42	39
	e(p)	Z	09	53	(09)
	e	Z	14	25	31
	1P	Z	19	26	56.5
	e	Z	21	33	02
	e(p)	Z	21	46	(14)

Confused by interference.

TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAU
Provisional Readings: May 5th to 14th May 1961.

5th. Nil recorded.

6th. No Z record

eP NE 05 27 26

✓ e N 22 38 (35½)

✓ eP NE 23 18 03

i N 21

e N 21 (46)

e N 29 36

7th. ✓ iP Z 00 26 24.6

i! Z 25.5

e Z 35 (10½) Also recorded on Omori

iP Z 06 18 55.4 Dilatation to south west

iP Z 06 55 00.5 Also recorded on Omori

✓ eP Z 10 28 21½

 iP! Z 14 51 21.4 Dilatation to south east.
Also recorded on Omori.

 iP Z 22 41 (42) Beginning confused by
microseisms. Also recorded on Omori.

 8th. Nil recorded. Power failures between 0019 - 0125
hours and 0437 - 0742 hours.

eP (omori) 00 34.8 -

9th. iP! Z 03 18 10.4 Compression from north east.

iP Z 10 55 56.6

iP Z 11 07 11.3 Also recorded on Omori

eP Z 17 03 59

i Z 04 00.5

i Z 01.9

 10th. Nil recorded. Instrument operating between 0003 -
0420 hours and 1240 - 2248 hours only.

 11th. Instrument not operating. Removed for alterations to
vault.

Seismograms read by J.H.H.

 G.A. Taylor,
Vulcanologist.

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TERRITORY OF PAPUA AND NEW GUINEA

VULCANOLOGICAL OBSERVATORY RABAU

Provisional Readings from Willmore Seismograph Records:

May 10th to May 16th, 1961.

Additions: (Benioff Recordings)

May 1st.	e	Z	02	14	40
"	"	e(P)Z	18	33	24
May 9th.	e(P)Z		13	29	06
May 10th.	1P	Z	22	37	14.8

<i>May</i>	10th	1P	22	37	14.7
	11th.	1P	12	00	01.5
		e	18	32	29½
		e	22	42	48½
	12th.	e(P)	01	15	42
		1P	12	54	46.0
		e	14	29	58½
		e	19	31	09½
	13th.	1P	09	24	10.5
		e(P)	14	01	01
		e(P)	14	43	07½
		e	15	58	09½
		eP	18	09	06½
		i			07.5
	14th.	1P	12	26	04.3
	15th.	e(P)	19	16	31
	16th.	Nil Recorded.			

Seismograms read by J.H.H.

G.A. Taylor,
Vulcanologist.

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TERRITORY OF PAPUA AND NEW GUINEA

VULCANOLOGICAL OBSERVATORY RABAU

Corrections: With the following shocks the time corrections were incorrectly applied. Below are the corrected times. We apologise for any inconvenience caused.

May 23. e Z 16 20 52½
 eP Z 17 03 40
 i Z 17 03 40.4
 26. i Z 13 50 23.6
 27. iP Z 08 54 50.6
 28. iP Z 02 32 12.9
 iP Z 10 49 16.1
 e Z 17 48 27½
 iP Z 18 37 22.5
 e Z 19 07 40½
 iP Z 20 32 28.9
 29. iP Z 04 21 39.5
 eP E 14 28 16
 e Z 16 58 29½
 e Z 16 58 44
 eP Z 17 44 20
 eP Z 17 53 43½
 iP Z 21 44 45.3
 e(S)Z 45 16

May 30. iP Z 08 24 04.8
 eP Z 16 03 36
 e Z 16 03 48
 eP Z 18 37 30
 eP Z 19 08 25
 eP Z 19 38 (30)
 June 1. iP Z 13 31 27.3
 iP Z 15 08 10.5
 iP Z 15 12 11.1
 iP Z 15 20 06.3

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist



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TERRITORY OF PAPUA AND NEW GUINEA
VULCANOLOGICAL OBSERVATORY RABAU

Provisional Readings: May 17th to May 25th.

Additions: (Willmore Recordings).

May 11th.	eP	07	13	22.0
May 12th.	eP	06	29	49½
	eP	16	51	33½
May 13th.	iP	13	48	10.6
	iP	14	58	35.8
	iP	19	27	02.1
May 14th.	eP	00	20	24½
	eP	13	34	40½

Willmore Recordings:

May 17th - May 25th. Nil Recorded.

Provisional Readings Beni off Recordings.

May 23rd. Beni off recording from 0712 hrs. to 2309 hrs.

NS pendulum not operating.

e	Z	16	19	52½
eP	Z	17	02	40
i	Z			40.4

24th. Beni off not operating.

25th. Beni off recording from 0757 hrs. to 2215 hrs.

NS pendulum not operating.

Nil recorded.

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA

VULCANOLOGICAL OBSERVATORY

RABAU



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Provisional Readings of Benioff Recordings: May 26 - June 1, 1961.

May 26. i Z 13 49 12.6

May 31. No time marks.

27. iP Z 08 53 50.6

iP(Omori) 19 16 19.2

28. iP Z 02 31 12.9

Felt Palmamal, Int. 6 (M.M.)

iP Z 10 48 16.0

05°35'S, 151°30'E

e Z 17 47 27½

Rangarere, Int. 5 (M.M.)

iP Z 18 36 22.5

04°15'S, 151°35'E

e Z 19 06 40½

Rabaul, Int. 4-4½ (M.M.)

iP Z 20 31 28.9

04°10'S, 152°10'E

Cutarp, Int. 3-4 (M.M.)

Karlai, Int. 3 (M.M.)

05°05'S, 152°00'E

Gavit, Int. 3 (M.M.)

04°12'S, 151°39'E

29. iP Z 04 20 39.5

eP(Omori) 23 00 14.8

eP E 14 27 16

e Z 16 57 29½

e Z 44

Felt Rangarere, Int. 2 (M.M.)

eP Z 17 43 20

04°15'S, 151°35'E

eP Z 17 52 43½

Rabaul, Int. 1-2 (M.M.)

iP Z 21 43 45.4

04°10'S, 152°10'E

e(S)Z 44 16

30. iP Z 08 23 04.8

eP Z 16 02 16

e Z 48

eP E 18 36 30½

eP N 19 07 25½

eP Z 19 37 (20)

June 1. Benioff Recording from 0710 hrs. to 2200 hrs.

iP Z 13 30 26.9

iP Z 15 07 10.2

iP Z 15 11 10.8

iP Z 15 19 06.0

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NEW GUINEA

VULCANOLOGICAL OBSERVATORY RABAU

Provisional Readings of Benioff Recordings, June 2 to 8, 1961.

Addition: May 28. eP Z 20 56 41½
 May 30. e(P)Z 12 47 50.2

June 2.	eP	Z	18	14	58.5	
3.	iP	Z	00	30	13.2	
	eP	Z	01	23	43	
	eP	Z	03	23	12½	
	eP	Z	03	45	01½	
	iP	Z	05	47	15.9	Also recorded on Omori.
	iP	Z	05	55	31.7	Compression from south west. Also recorded on Omori.
	iP!	Z	06	07	14.7	Felt Rangarere, Int. 4 (M.M.) 04°15'S, 151°35'E Rabaul, Int. 2-3 (M.M.) 04°10'S, 152°10'E
	iP	Z	07	01	50.3	Felt Rabaul, Int. 1-2 (M.M.) 04°10'S, 152°10'E
						Compression from nth.west. Also recorded on Omori.
	iP!	Z	07	12	09.2	Compression from north west. Also recorded on Omori.
	iP	Z	07	33	51.2	
	iP!	Z	09	14	52.5	Felt Rangarere, Int. 3 (M.M.) 04°15'S, 151°35'E Rabaul, Int. 2 (M.M.) 04°10'S, 152°10'E
						Compression from nth.west? Also recorded on Omori.
	iP!	Z	10	06	17.6	Compression from north west.
	eP	Z	17	14	16	
	i	Z			16.1	
	eP	Z	17	49	16.0	
	i	Z			16.9	
	e	N	17	53	59	
	eP	Z	21	55	48½	
	i	Z			52.4	
4.	eP	Z	07	44	53	
	eP	Z	08	51	21½	
	eP	Z	15	19	24½	
	i	Z			25	
	eP	N	20	17	16½	
5.	iP	Z	03	34	04.3	5 June cont..
	iP	Z	06	32	48.4	eP Z 17 30 25 i Z 25.7
						Also recorded on Omori.
	e	Z	00	00	27.2	e(P)N 19 09 09½
	e(P)N		11	09	52½	eP Z 19 47 42½
	e(P)Z		15	27	49½	

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J.H. Latter
Vulcanologist

Seismograms read by J.H.H.

- 7. 1P1Z 09 41 41.8
e Z 11 09 (59)
e Z 11 20 (19)
e Z 14 35 (15)
e Z 19 22 39
N11 recorded.
- 8.

June 6. Benloft only operating from 0035 hrs. to 1123 hrs. owing to power and from 2120 hrs. to 2400 hrs. N11 recorded. breakdown.

FOLD FLAPS BEFORE MOISTENING ADHESIVE

TERRITORY OF PAPUA AND NEW GUINEA

VULCANOLOGICAL OBSERVATORY RABAU

Provisional Readings of Benioff Recordings, June 9 to 15, 1961.

June 9th. Nil recorded. Microseisms large.

10th. Nil recorded. Microseisms moderately large.

11th. iP Z 16 26 47.8

e(P)Z 17 25 37.2

12th. e Z 10 07 26
e Z 29

e Z 14 42 53

iP! Z 15 44 05.5
Compression from South East.
Also recorded on Omori.

Felt Rabaul, Int.2 (M.M.)
04°10'S, 152°10'E

eP Z 17 54 23½
i 28.0
Also recorded on Omori.

13th. e Z 12 02 01½

eP Z 21 44 38

e Z 21 50 39½

14th. iP! Z 03 00 10.6
Compression from South West.
Also recorded on Omori.

Felt Rabaul, Int.2 (M.M.)
04°10'S, 152°10'E
? Rangarere, Int.2(M.M.)
04°15'S, 151°35'E

iP Z 04 00 (38)
Confused by microseisms.
Also recorded on Omori.

iP Z 10 27 20.5

e Z 11 18 (21)

e Z 14 49 06

15th. eP Z 17 08 11

Seismograms read by J.H. Herlihy.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NEW GUINEA

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings- June 16 to 22, 1961.

Additions:	June 9th.		eP	Z	18	56	(08½)
	June 12th.		e(P)Z		07	43	51
			e(P)Z		14	00	25
June 16.0	e(P)	Z	10	51	06		
	e	Z			37		
	e(P)	Z	10	54	25		
	e	Z		55	19		
	iP	Z	16	01	33.0		Compression from Nth. West.
	e(P)	Z	17	52	(10)		
17.	eP	Z	14	00	10		
	eP	Z	15	27	34		
18.	eP	Z	13	27	49		
	i	Z			50.0		
	eP	Z	14	01	55)		
	e	Z	14	07	11)		Same shock?
	e(P)	Z	14	11	(22)		
19.	Nil Recorded.						
20.0	e(P)	Z	14	32	20½		
	eP	Z	16	35	36)		
	e	Z	16	38	13½)		Same shock?
21.	e	Z	02	46	01		
	iP	Z	07	35	09.2		
	i	Z	16	42	19.5		
	eP	Z	20	32	41½		
22.	Nil Recorded.						

Felt Wau, Int. 3 (M.M.)
07°20'S, 146°45'E

Seismograms read by J.H. Herlihy.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings - June 23 - June 29.

June 23rd.	eP	Z	10	10	26 $\frac{1}{2}$	
	1	Z			27.4	
24th.	1P	Z	16	21	08.4	<u>Felt</u> Kundiawa, Int. 4 (M.M.) 06°00'S, 145°00'E Nanam, Int. 2 (M.M.) 04°05'S, 145°05'E
	1P	Z	19	39	26.7	
25th.	1P!	Z	16	10	47.7	
	eP	Z	16	52	17	
26th.	e	Z	14	57	(25 $\frac{1}{2}$)	
	eP	Z	18	06	01	
27th.	eP	Z	07	13	48	
28th.	1P	Z	07	28	18.4	
	eP	Z	10	57	55 $\frac{1}{2}$	
	1	Z			57.0	
	eP	Z	11	09	38	
	e	Z	13	24	10 $\frac{1}{2}$	
	e	Z			22 $\frac{1}{2}$	
	1P!	Z	15	42	07.8	Compression from Nth. East.
	eP	Z	16	37	39	
	1	Z			41.4	
	1	Z		38	09.2	
	eP	Z	16	45	24	
	e	Z	20	16	34	
29th.	eP	Z	01	16	35 $\frac{1}{2}$	(Recording 0000 hrs. to 0347 hrs.)

Seismograms read by J.H. Herlihy.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NE
 Vulcanological Observatory Rabaul



From the ISC collection scanned by SISMOS

Provisional Readings of Benioff Recordings: June 29 - July 6, '61.

Additions:

June 15th.	e	Z	10	42	06
18th.	e	Z	03	19	15
	e	Z	18	12	50½
20th.	e	Z	14	49	03½
22nd.	1P	Z	22	36	(50½)
Confused by microseisms.					
23rd.	e	Z	19	43	36
24th.	eP	Z	17	12	06
25th.	e(P)Z		07	08	(12½)
Confused by microseisms.					
28th.	e	Z	17	47	34

June 29th.	From 0350 hrs.				
	eP	Z	09	26	53
	eP	Z	17	15	53½
30th.	1P	Z	13	29	19.5
	e(P)Z		18	56	06
	e	Z			23
	e	Z			32
	e	Z		57	19

July 1st.	eP	Z	11	41	04
	e(P)Z		13	29	45½
	eP	Z	18	56	38½
	1P	Z	20	09	47.0
2nd.	eP	Z	07	51	40
	e(P)Z		16	51	24½
	eP	Z	20	40	37
3rd.	eP	Z	08	08	(13) Confused by microseisms.
	eP	Z	15	52	29
	eP	Z	18	56	46½
	eP	Z	19	43	59½
	i	Z		44	07.1
	e	Z	20	36	(11½)
4th.	1P	Z	02	24	23.8
	1P!	Z	04	54	09.5
	1P	Z	06	15	37.6
	1P	Z	21	50	04.0

Felt Rabaul, Int. 1-2 (M.M.)
 04°10'S, 152°10'E

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MOISTENING ADHESIVE

Post Office 29

Provisional Readings of Benioff Recordings, June 29

July 5th. M11 recorded - microseisms very large.

6th. Microseisms large.

1P 2 08 19 44.6

1P 2 22 14 38.9

1P 2 23 35 (46.8) confused by microseisms.

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist

TERRITORY OF PAPUA AND NEW GUINEA

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings, July 7 - July 13, 1961.

Correction In Additions of Provisional Bulletin June 29 to July 6, 1961, shock recorded as June 25, e(P) Z 0708 (12½), confused by Microseisms; should read June 26.

Additions

June 29th.	e	Z	10	29	45½
	e	Z	15	43	30½
	e	Z	05	18	41½
	e	Z	18	34	19

July 7th.

e	Z	07	43	(37½)
1P	Z	13	11	33.0

Also recorded on Omori
 8-P = 33.4 Secs.
Felt Walindi, Int. 4 (M.M.)
 05°25'S, 150°05'E
 Kandrian, Int. 4 (M.M.)
 06°15'S, 149°35'E
 Palmalmal, Int. 3-4 (M.M.)
 05°35'S, 151°30'E
 Lagenda, Int. 3 (M.M.)
 Rabaul, Int. 2-3 (M.M.)
 04°10'S, 152°10'E
 Rangarero, Int. 2 (M.M.)
 04°15'S, 151°35'E

e	Z	14	36	34	
8th.	e	Z	02	40	30½
	eP	Z	09	16	28
	eP	Z	10	51	20
	i	Z			20.4

1P! Z 12 15 35.4 Compression from North West.
Felt Rabaul, Int. 1-2 (M.M.)
 04°10'S, 152°10'E

e	Z	15	13	(37½)
e	Z	15	39	37½
e(P)Z		15	45	24
e(P)Z		19	13	43½
e	Z	21	19	07
e	Z	21	53	49½

9th. 1P! Z 17 49 37.2 Compression from South East.
Felt Rabaul, Int. 3 (M.M.)
 04°10'S, 152°10'E.

10th.	eP	Z	10	27	03½
	i	Z			04.1
	eP	Z	12	00	42
	i	Z			42.7



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Volcanologist

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Compression. Felt Rabaul, Int. 2 (M.M.) 04.10'S, 152.01'E
(Kerarat, Int. 5 (M.M.) 04.20'S, 152.00'E)
Pomio, Int. 4-5 (M.M.) 05.30'S, 151.30'E
Lolobau, Int. 4 (M.M.) 04.55'S, 151.10'E

Compression from South West?

11th.	0	Z	08	36	10.7
	0P	Z	11	22	19.7
	1P	Z	19	59	52.7
12th.	1P	Z	02	22	37.0
	1P	ZN	18	01	10.3
	0P	Z	20	43	(52)
13th.	1P	Z	10	32	26.2

FOLD FLAPS BEFORE MOISTENING ADHESIVE

TERRITORY OF PAPUA AND NEW GUINEA
 Volcanological Observatory Rabaul

Provisional Readings of Benioff Recordings: July 14 - July 20, '61

Additions	July 7th.	e	Z	22	24	(29)
	11th.	e <td>Z</td> <td>09</td> <td>41</td> <td>(53$\frac{1}{2}$)</td>	Z	09	41	(53 $\frac{1}{2}$)
	12th.	e <td>Z</td> <td>14</td> <td>42</td> <td>(31)</td>	Z	14	42	(31)
	13th.	e <td>Z</td> <td>11</td> <td>16</td> <td>15 Felt Lae, Int. 4 (M.M.) 06°04'5"S, 147°00'E Rabaul, Int. 2 (M.M.) 04°10'S, 152°10'E</td>	Z	11	16	15 Felt Lae, Int. 4 (M.M.) 06°04'5"S, 147°00'E Rabaul, Int. 2 (M.M.) 04°10'S, 152°10'E

July 14th.	1P! Z 01 07	34.5	Dilatation(?) Also recorded on Omori (S-P=20 Secs approx) Felt Rabaul, Int. 1-2 (M.M.) 04°10'S, 152°10'E
	1P! Z 08 38	52.1	Dilatation to the North West.
	e Z 14 16	11	
	1P Z 16 19	55.8	
	1P Z 16 49	43.9	Dilatation to the North(?) West.
	eP Z 17 43	38 $\frac{1}{2}$	
15th.	eP Z 11 58	51	
	1P Z 14 54	47.8	Dilatation.
	e E 18 47	49 $\frac{1}{2}$	
	e Z 19 43	17 $\frac{1}{2}$	
	e Z 20 44	38 $\frac{1}{2}$	
16th.	1P Z 03 46	44.5	Compression.
	e Z 06 53	56 $\frac{1}{2}$	
	e Z 14 07	12	
	1P Z 16 30	22.8	Dilatation.
17th.	e Z 15 07	18	
	e Z 15 35	23	
	e Z 16 27	(57)	Confused by Microseisms.
	1P! Z 17 08	46.3	Dilatation to the South East. Also recorded on Omori (S-P =27 Secs. approx).
	e Z 19 42	(55)	
	e Z	0 $\frac{1}{2}$	
18th.	1P! Z 10 59	55.5	Felt Rabaul, Int. 2 (M.M.) 04°10'S, 152°10'E
	Dilatation.		
	1P Z 11 44	56.5	Also recorded on Omori.
	1P Z 14 10	56.2	
	1S Z 11	64.8	Also recorded on Omori.



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July 19th Ni ... rled

20th: ... 17 09.0

dilatation ...

ograms read by
A.H.H.

I.H. Lalter
Vulcanologist

FOLD FLAPS BEFORE MOISTENING ADHESIVE

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings: July 21 - July 26, '61

July 21st. e E 13 12 (27½)

eP Z 17 28 30
i Z 30.7

e Z 18 58 19½

iP Z 22 00 16.7

22nd. Nil Recorded.

23rd. iP Z 11 15 19.9

e(P)Z 14 08 29½

e(P)Z 14 21 23

e Z 14 50 29½

e(P)Z 15 33 43

e(S)Z 35 03

iP Z 21 55 37.0

iS Z 56 00.0

Also recorded on Omori.

e Z 22 06 35

e Z 23 51 04

24th. e(P)Z 08 53 50

e Z 16 19 26½

e Z 39½

e Z 18 14 31

e Z 18 56 22

25th. e Z 08 55 21

e Z 12 08 12

e Z 12 13 07½

eP Z 14 52 39½

i Z 40.9

e(P)Z 18 45 11

e E 49 48

e N 49½

e(P)Z 19 11 14½

26th. e(P)Z 09 26 26

iP Z 10 34 35.2

Dilatation.

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26th. 1P 2 11 29 32.2
Compression. Folte Rabaut, Int. 1-2 (M.M.)
47010's, 152010's

1P 2 12 03 45.0

Seismograms read by J.H.H.

J.H.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND N
Vulcanological Observatory Rabaul

Provisional readings of Benioff Recordings, July 27 - Aug.2, 1961

July 27.	e(P) Z	10	35	(05)	
	eP Z	11	38	(31)	
	eP Z	15	41	14	
	iP ZE	16	25	14.1	Compression from South-East?
	Small local shock				
	iP ZN	19	29	18.9	Dilatation to South?
	near shock				
	eP Z	19	36	09	
	i Z			10.3	
	near shock				
July 28.	eP Z	00	41	(39)	Confused by microseisms.
	eP Z	01	24	(21)	Confused by microseisms.
	eP Z	06	16	(27)	Confused by microseisms.
	eP ZE	13	26	41	
	eP Z	15	28	16	
	e(P) Z	16	43	(12)	
	eP Z	17	22	05	
	iP Z	23	58	21.1	Confused by microseisms.
July 29.	eP Z	07	23	00	
	i Z			00.7	Records confused by microseisms.
July 30.	e(P) Z	14	11	(06)	
	iP Z	15	37	01.2	
	E/W Pendulum out of order.				
July 31.	eP Z	01	25	49	
	eP Z	10	23	59	
	eP Z	15	13	34	
	eP ZN	17	57	44	
	iP Z	19	30	13.6	Deep?
Aug. 1.	eP Z	01	21	(49)	Confused by microseisms.
	eP Z	05	42	22	
	i Z			26.4	
	(Also recorded on Omori. No clear S-P)				
	iP Z	10	28	43.7	
	eP Z	15	57	36	
	i! Z			36.5	



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J.H. Latter
Vulcanologist

Aug. 1. cont..	1P	Z	19	21	22.1
	eP	ZB	19	29	21
Aug. 2.	1P	Z	12	21	05.5
	1P	Z	13	59	58.5

Dilatation to North-West?

FOLD-FLAPS BEFORE
MOISTENING ADHESIVE

TERRITORY OF PAPUA AND NEW GUINEA
Vulcanological Observatory Rabaul
Provisional Readings of Benioff Recordings:

August 3rd to August 9th, 1961.

August 3rd.	e(P) Z	06 56	31½	
	e Z	10 25	(16½)	
4th.	e Z	18 24	26	
5th.	1P!	Z 22 47	19.7	Dilatation to South East. Near shock.
6th.	e Z	10 40	40½	
	1P Z	19 46	05.6	
7th.	e Z	04 28	33	
	e(P) Z	10 49	16	
8th.	eP Z	07 20	01½	
	e Z	12 28	52	
9th.	e(P) Z	16 07	26	Also recorded on Omori.
	eP Z	18 18	52	
	1P Z	23 01	08.8	Confused by Microseisms. Also recorded on Omori. Felt Rabaul, Int. 1-2(M.M.) 04°10'S, 152°10'E
	eP Z	23 50	33½	Confused by Microseisms. Also recorded on Omori.

Seismograms read by J.H.H.

 J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NEW GUINEA.

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings: August 10th to August 17th, 1961.

Date	Time	Station	Depth (km)	Amplitude	Remarks
July 9th.	1P!	Z 07	35	22.7	
13th.	eP	Z 01	23	56	Confused by microseisms.
16th.	e	Z 01	55	45½	
17th.	eP	Z 09	08	12½	
23rd.	e	Z 22	45	(43)	(Confused by
	e	Z 23	27	(08)	(microseisms.)
27th.	e(P)	Z 15	54	38½	
	i	Z 23	13	07	Confused by microseisms.
30th.	e(P)	Z 08	09	33½	
	e	Z 11	08	40	
August 1st.	iP	Z 23	13	30.6	
3rd.	eP	Z 23	37	(52)	(Confused
6th.	e	Z 17	10	(01)	by
9th.	e	Z 01	26	(52½)	(microseisms.)

August 10th.	e	N 00	36	(.3)	Confused by microseisms.
					Also recorded on Omori.
	iP	N 03	43	(11.6)	Confused by microseisms.
					Also recorded on Omori. <u>Felt: Rabaul, Int. 1-2 (M.M.)</u>
					04°10'S, 152°10'E
	iP	Z 05	52	(19.6)	Confused by microseisms.
					Also recorded on Omori.
	e	N 08	25	47½	Confused by microseisms.
11th.	e	Z 10	29	48½	
	e	Z 11	10	10	
	e			22½	
	iP	Z 12	52	08.7	Dilatation.
					Also recorded on Omori.
	iP	Z 16	00	07	Also recorded on Omori.
	eP	Z 22	43	28½	
	i			32.7	Confused by microseisms.
12th.	iP	Z 22	33	47.1	
13th.					Nil recorded. No record after 0200 hrs.
14th.	e	Z 23	33	47½	Confused by microseisms.
15th.					Nil recorded.
16th.	iP	Z 21	42	46.2	

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Vulcanologist

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1P	Z	13	24	45.8	Compression.
1P	Z	13	32	49.9	Compression.
1P	Z	14	36	10.2	Compression.
1P	Z	17	44	16.7	Compression.
1P	Z	21	25	13.1	Dilatation.
1P	Z	21	32	16	Compression.
1P	Z	23	05	46.7	Local shock.

FOLD FLAPS BEFORE MOISTENING ADHESIVE

August 17th.

TERRITORY OF PAPUA AND NEW GUNIEA
Vulcanological Observatory Rabaul

Provisional Headings of Rabaul Seismograms for the
Period 16th August to 22nd August 1961

16th August	iP!	ZX	13	45	02.4	Compression		
	i(S)	N			20.9			
17th August	eP	Z	17	41	38			
	e	Z/	00	48	(00)?			
	eP	Z/	05	11	12			
	e	Z/		16	36			
	e	Z/		19	44			
18th August	e	Z/		24	50			
	e(P)	N/	05	39	58	Also recorded on Omori		
	e(S)	N/		43	24			
	e(P)	N/	06	12	34			
	e	Z/		13	20			
	e	Z/		14	30			
	e(P)	Z	07	09	38	Also recorded on Omori		
	e(S)	N/					10	20
	e	Z/					15	36
	e	Z/	07	36	56	In coda of preceding shock		
	e(P)	Z/	08	22	45	Also recorded on Omori		
	e(S)	N/					23	23
	e	N/	08	35	29	In coda of preceding shock		
	e	N/	08	43	50	In coda of preceding shock		
	e	Z/	09	34	06			
	e	Z/	09	45	29			
	e	Z/	09	56	09			
	e	Z	16	55	52			
	e	Z	16	58	49			
	e	N/	17	20	24			
e	Z	17	58	12½				
e	Z/	18	22	26				
eP	Z/	22	51	01				

2.

18th August contd.	i(S)	Z	<i>w</i>	52	22½	Also recorded on Omori
19th August	iP!	Z	05	32	31.4	
	iP	Z	10	40	39.4	
	i(S)	E		41	22	
	e(P)	Z	18	38	42	
	e	Z/	18	49	17½ ?	
	e	Z/	19	00	15½	
	e(P)	Z	23	31	54	
20th August	iP!	Z	03	07	41.8	Dilatation
	e	Z/	11	27	14	
	iP!	Z	14	32	27.0	
	i(S)	Z			41½	
	e	Z	15	19	30	
	e	Z/	23	28	28	
	21st August	iP!	Z	02	10	19.0
e		Z/	16	28	38	
e		Z	18	30	07)	one shock?
e		Z	18	40	55)	
e(P)		Z/	21	13	11	
e		Z/		24	54	
e		Z/		28	05	
e		Z/		30	50	
e	Z/		53	06		
22nd August	eP	Z	17	34	30½	
	i(S)	N		35	37	

Seismograms read by
J.H.Herlihy

J.H.Latter
VULCANOLOGIST

TERRITORY OF PAPUA AND NEW GUINEA

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings:
August 18th - August 24th, 1961.

Additions:

August 11th.	iP	Z	17	01	22.6
15th.	eP	Z	19	11	07
16th.	eP	Z	11	13	02

August 18th.	eP	Z	11	07	26	
	eP	Z	12	53	03½	
	iP!	Z	14	55	40.0	Dilatation to South West. Shallow local shock.
	iP!	Z	16	18	58.0	
	i	Z		19	14.8	Small local shock.
19th.	iP	Z	05	27	48.2)	
	i	Z		28	01.7)	
	iP	Z	05	30	23.2)	Superimposed shocks.
	i!	Z			38.1)	
	e	Z		38	01½)	
	e	Z		41	28½)	
	e	Z	11	53	08½	
	e	Z	16	21	55½	
	e	Z	17	00	00½	
	e	Z	17	53	45	
	eP	Z	18	07	22	
	i	Z			32.6	
	e	Z	22	01	44	
20th.	e(P)	Z	01	35	06½	
	i(P)	Z	05	09	52.7	
	e	N		14	22½	
	e	Z		19	23½	
	iP	Z	07	44	01.5	
	iP	Z	10	20	52.6	
	i				55.2	
	eP	Z	19	16	11½	
21st.	iP	Z	06	07	30.3	
	iP!	Z	09	58	20.9	Compression. Also recorded on Omori.

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Vulcanologist

Seismograms read by J.H.H.

Time	Phase	Duration	Notes
16 13	Z	51 1/2	August 21st. (P)
16 14	Z	07 1/2	
16 22	Z	22	
16 39	Z	39	
16 46	Z	46	
16 56	Z	56	
17 09	Z (P)	09	
17 17	Z	17	
17 03	Z	03	22nd.
18 00	Z	18	
18 00	Z	30.2	Compression.
10 23	Z	23 (20)	
13 06	Z	13	24th. 1P
17 26	Z	17	20.7 Dilatation to South West.
22 00	Z	22	06.0 Compression.

FOLD FLAPS BEFORE MOISTENING ADHESIVE

TERRITORY OF PAPUA AND NEGUATU
 Volcanological Observatory



From the ISC collection scanned by SISMOS

Provisional Readings of Benioff Recordings,
 August 25th - August 31st, 1961.

<u>Additions:</u>		Date	Time	Phase	Duration	Amplitude	Notes
	August 17th.	1P	Z 08	37	38.6		
	August 21st.	e	Z 02	12	(37)		
	August 23rd.	e	Z 14	44	19		
		1P	Z 21	10	21.7		
		1P	Z 21	35	(42.7)		
August 25th.	eP	Z 05	53	(02)		Confused by microseisms.	
26th.	1P	Z 00	34	(01.0)		Confused by microseisms.	
	1P	Z 07	34		54.2		
	1P	Z 08	16		33.2		
	1P!	Z 09	31		55.6	Compression from South West.	
	1P	Z 17	39		07.4		
	e(P)	Z 18	54		47½		
27th.	e	Z 16	31		12½		
	1P	Z 16	52		47.7		
	e	Z	57		00		
	e	Z 17	00		13		
	1P	Z 16	54	(10)		Superimposed on previous shock	
	1P	Z 17	07		26.4		
	e	Z 17	08		14½	Two shocks?	
	e	Z 17	28		12		
	e	Z 18	02		56½		
28th.	1P	Z 07	45		11.0		
	e	Z 09	54	(41)			
	1P	Z 12	03		36.6		
	e	Z 15	15	(19)			
	e	Z 20	39		10		
29th.	1P	Z 07	51		54.5		
	e	Z 15	01		50½		
	e	Z 21	38	(10½)		Confused by microseisms.	
30th.	1P!	Z 03	49		10.6		
	e(P)	Z 22	19		59½		
	1P!	Z 23	12		23.7	Compression from North West.	
31st.	1P	Z 02	06		28.2		



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J.H. Latter

Seismograms read by J.H.H.

Compression from South East.
Elt: Rebut Int. 3 (M.M.)
04.10'S, 152.10'E

09.2	Z	02	09	09	26.2
12.8	Z	02	15	12.8	25.1
36.2	Z	02	17	36.2	56.4
01.7	Z	02	24	01.7	
34.4	Z	04	09	34.4	
10.4	Z	09	54	10.4	
14.3	Z			14.3	
15.7	Z			15.7	
20.1	Z			20.1	
21.5	Z			21.5	
25.2	Z			25.2	
30.7	Z			30.7	
12	Z			12	
51.3	Z	13	15	51.3	
53.5	Z	14	43	53.5	
12.0	Z	14	44	12.0	
45.2	Z	21	06	45.2	

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August 31st cont..

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TERRITORY OF PAPUA AND NEW GUINEA
Vulcanological Observatory Rabaul
Provisional Readings of Benioff Recordings:
September 1st - September 7th, 1961.

September 1st.	i(P)	Z	00	28	06.5	
	eP	Z	12	54	10 $\frac{1}{2}$	
	iP!	Z	14	42	00.8	Dilatation to the North West.
	iP	Z	18	47	11.3	
	e	Z	18	49	44 $\frac{1}{2}$	
	e	Z	18	52	33	
	e	Z	19	09	15 $\frac{1}{2}$	
	e	Z	✓	10	12	
2nd.	e	E	06	56	(00)	
3rd.	iP!	Z	10	37	19.4	
	e	Z	15	07	34 $\frac{1}{2}$	
4th.	iP!	Z	11	21	14.7	Dilatation.
5th.	eP	Z	11	46	32	
	e	Z	15	01	03	
	iP!	Z	15	29	53.6	Compression.
	eP	Z	21	11	55 $\frac{1}{2}$	
	iP	Z			56.6	
	iP!	Z	23	20	17.9	Compression from North West.
6th.	iP!	Z	06	58	(30)	
	iP	Z	07	23	23.6	
	e	Z	10	32	36 $\frac{1}{2}$	
	iP	Z	22	53	41.2	
7th.	iP	Z	10	11	59.0	
	iP!	Z	18	54	34.7	Compression from North West

Seismograms read by J.H. Herlihy

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Provisional Readings of Benioff Recordings:

September 8th - September 14th, '61.

Sept. 8th.	1(P) Z	00	23	(02)	
	1P!	Z	11	45	08.4
	1	Z			12.3
	1	Z			17.0
	1P!	Z	19	52	47.7 Dilatation.
9th.	Microseismic background high. Nil recorded.				
10th.	Not recording between 0215 - 0344 hrs. Microseismic background high. Nil recorded.				
11th.	eP	Z	20	02	08½
12th.	1P	N	23	14	(43) Confused by microseisms.
13th.	1P!	Z	03	07	20.7 <u>Felt:</u> Madang, Int. 2-3 (M.M.) 05°15'S, 145°50'E.
					? (Kundiawa, Int. 4(M.M.) (06°05'S, 145°10'E)
14th.	e	Z	09	39	50
	1P!	Z	11	07	47.4
	e	Z	18	24	35

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Provisional Readings of Benioff Recordings:

September 15th - September 21st, 1961.

Additions: September

8th.	1P	Z	04	35	(17)) Confused) by) microseisms.
9th.	eP	Z	15	27	(16)	
10th.	eP	Z	08	59	(23)	
11th.	1P	Z	22	34	(27.5)	

Sept. 15th.	1P	Z	00	31	19.8	
	1P	Z	01	21	(36)	Confused by microseisms.
16th.	1P!	Z	11	34	02.9	Dilatation.
17th.	i	Z	08	49	35.2	
	1P!	Z	23	23	21.2	
18th.	Power failures 0615-0630 hrs and 1100-1103 hrs.					
	1P	Z	02	16	01.5	
19th.	1P	Z	13	50	11.1	
20th.	eP	Z	19	03	27	
	i	Z			30.4	
	1!	Z			56.2	
21st.	1P!	Z	04	49	24.3	Dilatation to South East. Felt: Rabaul, Int. 2 (M.M.) 04°10'S, 152°10'E
	1P	Z	08	34	34.1	
	i	Z	12	43	(00)	Confused by microseisms.
	eP	Z	12	55	48) 2 Shocks?)
	i	Z			58.3	

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Provisional Readings of Benioff Recordings:
22nd September - September 28th, 1961

Correction: Provisional Readings for 18th September should read -
Sept. 18th. Power failures 0716-0730 hrs. and 1200-1203 hrs.
iP Z 03 16 00.5

Sept. 22nd. iP Z 10 42 50.6 Compression.

e Z 15 19 17½

23rd. iP Z 01 21 46.2

24th. eP Z 12 05 26

iP Z 13 02 52.6

iP Z 18 34 44.2

iP! Z 22 00 39.3
Compression

Felt: Rabaul, Int. 1-2 (M.M.)
04°10'S, 152°10'E.

25th. iP Z! 09 02 16.8

eP Z 10 47 20½

26th. eP Z 09 36 39
i Z 39.9

27th. iP! Z 06 39 41.7 Compression.
e Z 44 11½
i Z 45 12.5

e(P) Z 13 39 35

28th. iP Z 08 18 47.0

iP Z 12 07 59.5

e(P) Z 13 23 04

iP! Z 17 37 31.8 Felt: Rabaul, Int. 2 (M.M.)
Compression from South East. 04°10'S, 152°10'E.

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Provisional Readings of Benioff Recordings: September 29th to
October 5th, 1961.

N.B. From Sept. 30th N pendulum has not been swinging correctly.

Sep. 29th.	eP	Z	15	07	39 $\frac{1}{2}$	Oct. 4th.	e	E	10	09	09 $\frac{1}{2}$	
	e	Z			47 $\frac{1}{2}$		1P	Z	10	46	31.6	
	i	Z			51.7		e	E	12	51	57	
	e	Z	16	59	07 $\frac{1}{2}$		eP	Z	20	03	53	
	1P	Z	17	02	46.4		1	Z			54.3	
	eP	Z	19	12	14		5th.	1P	Z	07	51	07.1
	1	Z			15.4		e	Z	18	13	36	
	eP	Z	23	04	40		e(P)Z		19	32	47	
	1	Z			40.8							
30th.	1P!	Z	09	52	06.2							
	e	E	13	41	35 $\frac{1}{2}$							
	1P!	Z	16	48	17.6							
Oct. 1st.	1P	Z	03	39	(00)							
	1P!	Z	09	25	51.1							
	e	E	17	54	50 $\frac{1}{2}$							
	e	E	18	14	42 $\frac{1}{2}$							
	e	E	19	09	15 $\frac{1}{2}$							
	e	E	21	16	37 $\frac{1}{2}$							
2nd.	1	Z	06	01	05.7							
	1	Z	07	09	(54)							
	1P	Z	11	40	21.7							
	1	Z			41.9							
	1P!	Z	11	44	22.4							
	e	Z	11	55	57							
	1P	Z	12	51	45.2							
			Dilatation.									
	1P	Z	13	21	06.6							
3rd.	e	E	02	29	(42)							
	1P!	Z	11	14	13.1							
			Compression.									
	e	E	13	44	33							
	1P!	Z	15	29	29.1							
	e	E	18	53	17							

Seismograms read by J.H.H.

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Provisional Readings of Benioff Recordings:
October 6th to October 11th, 1961

Oct. 6th.	iP	Z	02	25	31.8
	i	Z			32.4
	iP	Z	10	26	01.5
7th.	iP	Z	18	54	59.4
8th.	iP!	Z	02	10	28.6
	iP	Z	17	16	22.3
	eP	Z	21	23	14½
	eP	Z	23	46	54½
9th.	iP	Z	10	28	52.4
10th.	iP	Z	08	26	23.6
	i!	Z			36.4
	iP!	Z	16	51	05.3
	eP	Z	17	28	17½
11th.	eP	Z	18	55	(40)

Felt: Karoola, Int. 3 (M.M.)
 05°10'S, 154°35'E
 Rabaul, Int. 2 (M.M.)
 04°11'S, 152°10'E

Dilatation.

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Provisional Readings of Benioff Recordings:

12th October to 19th October, 1961.

N-S pendulum not operating.

12th	1P	Z	01	39	(25)	Confused by microseisms
	1P!	Z	08	24	36.0	Compression Felt: Gavit, Int. 3 (MM) 04°12'S, 151°39'E. Rabaul, Int. 3 (MM) 04°11'S, 152°10'E.
	1P	Z	13	09	46.4	
	1P!	Z	14	30	38.4	
	1P!	Z	16	34	14.7	Compression Felt: Rabaul, Int. 3 (MM) 04°11'S, 152°10'E.
13th.	eP	Z	17	34	(54)	Confused by microseisms
14th.	1P	Z	00	55	(24)	Confused by microseisms
	1P!	Z	11	15	56.1	Dilatation
	1P!	Z	11	49	26.4	Dilatation
	e	Z	16	18	39	
15th.	1P!	Z	18	42	23.3	Dilatation
	1P	Z	23	45	22.6	
16th.	1P	Z	17	56	22.0	
	1P	Z	21	50	36.7	
17th	1P	Z	00	44	01.3	
	1P	Z	02	58	(37½)	Confused by microseisms
	1P	Z	03	08	57.0	Two shocks?
	e	Z	11	06	(52½)	Confused by microseisms
	1P	Z	14	52	48.5	
	eP	Z	16	30	40.4	



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18th.	1P	Z	16	56	33.3	
	1P!	Z	20	53	16.3	Compression
19th.	1P	Z	02	06	10.2	

Seismograms read by J.H.H.

J.H. Latter,
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Provisional Readings of Benioff Recordings:
20th October to 26th October, 1961.

N-S Pendulum not operating from 20th to 23rd October.

Oct. 20th. 1P! Z 01 34 03.4 Compression.

1P Z 21 20 43.5

21st. Nil Recorded.

22nd. Nil Recorded.

23rd. eL E 09 17 (04)

6 eP Z 14 45 (13.6) Confused by microseisms.

24th. Z pendulum not operating 0126-0549 hrs.
2254-2341 hrs.

N-S pendulum not operating 0000-0125 hrs.
0552-2240 hrs.

E-W pendulum not operating 0429-0436 hrs.

1P! E 02 33 28.5

1P Z 15 36 02.9

25th. E-W pendulum not operating 0034-0054 hrs.

1P Z 21 57 26.1

26th. 1P Z 00 39 24.0 Dilatation.

i Z 40 30.2

i! Z 41 52.8

i Z 41 33.2

i Z 43 01.2

e Z 45 04

e Z 47 34

e Z 48 32

1P Z 09 19 59.1 Dilatation.

eP Z 17 34 11

i Z 11.4

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Provisional Readings of Benioff Recordings:

27th October - 2nd November, 1961

Oct. 27th. Nil Recorded.

28th. 1P Z 14 49 07.7

e N 22 48 (31½) Confused by microseisms.

29th. 1P! Z 02 11 54.7 Compression from North West.

1P Z 03 06 58.1 Compression.

1P Z 04 23 32.1

1P! Z 15 46 34.4 Dilatation to South(?) West.

eP N 19 44 42½

1P Z 20 15 18.8 Compression.

30th. Nil Recorded.

31st. eP Z 14 50 57

Nov. 1st. 1P Z 04 48 10.8

2nd. 1P Z 16 56 01.6

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3rd November to 8th November, '61

Nov. 3rd.	Nil Recorded.					
4th.	1P	Z	18	14	44.2	Dilatation.
	1P	Z	18	43	40.6	
5th.	1P!	Z	00	07	14.9	Dilatation to North East (?)
	1P	Z	11	27	47.1	
6th.	1P	Z	13	11	19.3	
	1	Z			22.3	
	1	Z			29.8	
	1P	Z	13	39	37.1	
	1	Z			37.7	
7th.	Z pendulum partially jammed.					
	eP	NE	16	23	27	
	1(s)	E			48½	
	eP	NE	16	29	47	
	1(s)	E			55	
	1P!	E	18	09	17½	
8th.	1P	N	14	09	39½	
	1(s)	N		10	16½	
	1P	N	22	30	01.5	Confused by microseisms.
	1P!	Z	23	33	56.6	<u>Felt:</u> Rabaul Int. 1-2 (MM) 04°11'S, 152°10'E

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist

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Provisional Readings of Benioff Recordings:

9th November - 16th November, 1961

<p>Nov. 9th. Z pendulum jammed. eP N 01 14 (37) Confused by microseisms. iP! E 01 57 32.1 iP N 03 53 (35) Confused by microseisms. <u>Felt: Lae, Int. 4(M.M.)</u> 06°45'S, 147°00'E iP! E 09 52 26.8 iP! N 18 37 09.5 i(P)E 18 42 07.0</p>	<p>14th. iP Z 19 10 48.2 cont. i Z 53.0 i(S)Z 11 19.7 i Z 32.0 15th. iP Z 03 36 57.2 ⊙ iP Z 07 25 44.5 iP Z 21 33 45.3 Dilatation. 16th. eP Z 11 57 (09½) Confused by microseisms. iP Z 12 07 38.6 i Z 08 22.6 ● e E 16 09 29 i E 17 52 38.5</p>
<p>10th. Z & N-S pendulums jammed. ● eP E 18 06 28 i E 29.4 i E 35.2 i E 46.3 i E 50.7 e E 10 53</p>	<p style="text-align: right;">Seismograms read by J.H.H.</p>
<p>11th. Z & N-S pendulums jammed. eP E 19 13 46½</p>	<p style="text-align: right;">J.H. Latter <u>Vulcanologist</u></p>
<p>12th. iP! Z 09 10 04.5 <u>Felt: Rabaul, Int. 1(M.M.)</u> 04°11'S, 152°10'E</p>	
<p>13th. Z pendulum partially jammed. e Z 07 43 (42) Confused by microseisms. eP N 15 12 30½ eP E 19 18 08 iP! Z 21 35 58.8</p>	
<p>14th. eP Z 14 40 57.2 i Z 41 24.7 i Z 51.7 eP Z 16 58 12½ i Z 18.8 i Z 59 22.2 eP Z 18 14 58½ i! 59.7</p>	

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Provisional Readings of Benioff Recordings;
17th November - 23rd November, 1961

Nov. 17th.	e	E	04	35	(05)	Confused by microseisms.
	e(P)	E	19	10	28	
18th.	iP	Z	06	08	01.5	
	eP	N	11	21	46½	
	eP	Z	22	17	32½	
	iP!	Z	23	21	54.8	<u>Felt:</u> Rabaul, Int. 1 (M.M.) 04°11'S, 152°10'E
						Compression.
19th.	eP	Z	10	13	(46½)	Confused by microseisms.
	iP	Z	22	00	(08.6)	Confused by microseisms.
	e	E			54½	
	e	E		01	44½	
	iP!	Z	23	27	37.6	Compression from North West.
20th.	E-W pendulum jammed from 0150 hrs. to 0446 hrs.					
	e	Z	18	18	09½	
	eP	Z	19	10	05	<u>Felt:</u> Mendi, Int. 4 (M.M.) 06°10'S, 143°40'E Sinibai, Int. 4 (M.M.) 05°08'S, 144°30'E Manam Is. Int. 3 (M.M.) 04°05'S, 145°05'E
21st.	eP	Z	11	12	42	
	i!	Z			42.7	
	iP	Z	12	54	32.8	
	i(S)Z				58.9	<u>Felt:</u> Rabaul, Int. 1 (M.M.) 04°11'S, 152°10'E
	iP	Z	15	39	34.5	
	i	Z			37.4	
	i(S)Z		40		02.6	
	iP	Z	17	27	40.7	Compression.
	i(S)Z				59.7	
22nd.	iP!	Z	05	47	33.6	Compression.
23rd.	iP!	Z	02	33	15.9	
	iP!	Z	05	44	45.0	Compression from South East.
	iP	Z	12	46	45.1	
	iP!	Z	23	39	39.6	Dilatation to North East.

Seismograms read by J.H.H.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NEW GUINEA

Vulcanological Observatory Rabaul

Provisional Readings of Benioff Recordings:
24th November to 29th November, 1961

Nov. 24th.	Nil.				
25th.	1P	Z	01	04	49.8
	1P	Z	14	12	15.7
	i	Z			17.6
26th.	1P	Z	05	26	51.1
	1P	Z	14	00	35.3
	eP	Z	19	05	18½
	i(S)E			06	23
	i(S)Z				25.1
27th.	1P	ZE	12	38	37.7
	i	Z			38.4
	i!	Z			38.7
	eP	Z	17	16	00
	i	Z			01.3
	i	Z			04
	i	E			30.3
	e(S)N		20		27
	e(S)E				28½
	e(S)Z				31
	eP	Z	19	31	52
28th.	1P	N	00	34	45.9
	i	Z			47.6
	1P	ZN	08	18	13.2 Dilatation to North.
	e	N	20	58 (23)	
29th.	Nil. Records confused by microseisms.				

Seismograms read by J.H.L.

J.H. Latter
Vulcanologist

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TERRITORY OF PAPUA AND NEW GUINEA
 Volcanological Observatory Rabaul

Daily Readings of Benioff Recordings:
 30th November - 7th December, 1961.

Nov. 30th. 1P Z 13 00 40.6
 11 Z 41.2

Dec. 1st. 1P! Z 03 09 40.0
 Compression

Felt: Rabaul, Int. 1 (M.M.)
 04°10'S, 152°10'E.

1P Z 06 55 54.8 Compression.

eP Z 21 20 23
 i Z 21 29.9 Record confused by microseisms.

2nd. 1P ZNE 19 03 28.4 Dilatation to North West.

3rd. eP Z 15 51 17
 1 Z 28.2
 1S NE 52 15
 1 Z 18.0

eP ZN 16 18 09½
 e(S) N 21 08

4th. 1P! Z 05 33 42.1 Compression from South-East?

Felt: Palmalma, Int. 3-4 (M.M.)
 05°35'S, 151°30'E
 Felt: Cutarp, Int. 3-4 (M.M.)
 05°30'S, 151°40'E
 Felt: Rabaul, Int. 3 (M.M.)
 04°10'S, 152°10'E

eP Z 12 48 58½

5th. eP ZNE 13 06 51
 e Z 14 20
 e E 18 06

1P Z 15 01 47.4

1P ZN 16 42 15.3

1P Z 22 36 10.9 Dilatation (to South?)

6th. Z pendulum sticking.
 eP N 10 25 56

eP N 13 25 36

eP E 13 42 52
 e E 49 17

eP NE 16 48 53

7th. 1P Z 07 50 43.1
 1S NE 52 00½

1P Z 08 40 46.6
 1(S) E 41 (42)



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1P	2	09	12	04.3
1(S)	2	13	02.8	
2P	2	13	40	54.8
2P	2	17	59	36.4
2P	2	18	53	(01)
2P	2	19	31	33

cont. 7th.



TERRITORY OF PAPUA AND NEW GUINEA
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Provisional Readings of Benioff Recordings:
8th December - 14th December, 1961

Additions: Dec. 3rd. 1P Z 02 02 32.7
 e Z 08 47 56.2
 e Z 20 03 (21.2)
 6th. e(P) E 02 11 (18)

Dec. 8th. 1P! Z 08 40 28.9 Compression.
 e(P) E 09 39 38

1P Z 14 56 14.9
 eP Z 16 12 40
 i Z 49.5
 i(S) Z 13 42.9

9th. e E 00 44 22 ?
 1P Z 02 38 04 Compression.
 e(P) E 11 37 5 Distant.
 e E 38 ()

i(P) Z 19 55 1.2
 i Z 55 5.0
 e Z 57 5.7
 e Z 20 04 6.2

1P Z 22 47.8 Dilatation.
 i! Z 48.3

10th. 1P Z 05 06.3
 eP N 1 (22) Confused by micros.
 eP N 55 (21 1/2) Confused by micros.
 eP Z 24 (40) Confused by micros.

11th. 1P 7 01 35.3
 1P! 8 57 13.7 Compression.

12th. 1P! 18 41 55.3 Dilatation.
 1P 19 18 22.1 Dilatation.
 1 19 36 51.7 Dilatation.
 E 23 05 (03.7) Confused by microseism
 Z 23 18 (55 1/2) Confused by microseism

13th. N 16 54 42
 N 58 03 1/2

14th. Z 07 13 04
 Z 13 21.1
 Z 15 51.8
 Z 16 41.3

Seismograms read by J.H.

J.H. Latter
Vulcanologist



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Provisional Readings of Benioff Recordings:

15th December - 21st December, 1961

Dec. 15th. Broken drive belt. Instrument operating 0010 hrs. to 0448 hrs.

iP Z 02 53 23.8

eP Z 03 21 (49½) Confused by microseisms.

iP Z 04 41 07.9

16th. iP Z 12 08 05.6

17th. Instrument operating 0024 hrs. to 2210 hrs.

iP! Z 14 15 40.5 Dilatation. Also recorded on Omori.

Felt: Rabaul, Int. 1 (M.M.)
 04°11'S, 152°10'E.

18th. Repairs to vault. Instrument not operating 2210 hrs. on 17th to 1230 hrs. on 18th.

iP! Z 21 26 05.8 Dilatation.

19th. iP Z 08 31 39.8

iP Z 10 47 (37½) Confused by microseisms.

e(P)Z 15 58 45½

20th. eP Z 00 11 38½

iP! Z 01 06 44.1

iP Z 10 55 36.6

eP Z 13 44 23
 i Z 45 18.0

i(P)Z 13 47 40.6

e Z 49 15½

e Z 49 20½

e Z 50 14½

e Z 50 38

iP Z 18 21 56.0

eP Z 19 31 17 (Local?)

iP Z 23 25 (56) Confused by microseisms.

21st. Nil recorded.

Seismams read by J.H. Herlihy.

Happyristmas and New Year.

J.H. Latter
 Vulcanologist



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Provisional Readings of Benioff Recordings:-

22nd December to 29th December, 1961

N.B. The N pendulum jammed at 0324 hours and the E pendulum at 0334 hours on 22nd December. The N pendulum remained inoperative for the entire period while the E pendulum resumed operation at 2355 hours on ~~29th~~²⁷ December.

Dec. 22nd	eP	Z	10	37	(25 $\frac{1}{2}$)	Confused by microseisms.
	• 1P	Z	22	51	22.6	
23rd	1P!	Z	13	49	25.4	Dilatation
	1P!	Z	16	12	49.0	Compression
24th	Nil recorded.					
25th	1P	Z	07	06	36.0	
	1P	Z	12	14	16.0	
26th	1P!	Z	14	49	42.0	
	1P!	Z	21	02	45.0	
27th	1P	Z	10	01	04.7	Dilatation
	1P	Z	13	43	25.0	Dilatation
	1P	Z!	17	34	16.0	Compression
	1P	Z	23	19	21.0	
	• e(P)	Z	23	55	55.5	
28th	1P!	Z	10	24	15.5	
	eP	Z	11	18	15.5	
	1P	Z	16	49	12.9	
	1P	Z	23	05	03.4	
	1P	Z	23	51	32.2	
	• e	Z	23	59	(35 $\frac{1}{2}$)	Confused by microseisms.

Seismograms read by J.H. Herlihy.

J.H. Latter,
Vulcanologist.

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Vulcanological Observatory Rabaul.

Provisional Readings of Benioff Recordings:-

29th December, 1961, to 4th January, 1962.

N.B. N pendulum inoperative.

Additions:

Dec. 22nd	e(P)	Z	10	32	(05)	
24th	e(P)	Z	02	43	(06)	Confused by microseisms
	e(P)	Z	11	28	(28)	
25th	eP	Z	11	56	49.6	
	e(P)	Z	14	03	(05)	Confused by microseisms.

29th Power off from 2221 hrs.

1P	Z	10	01	25.3
i	Z			30.8

Dilatation. Also recorded on Omori.

1P!	Z	16	31	27.9
i(S)	Z			47.3

Dilatation.

30th Power off until 0139 hrs.

1P!	Z	01	51	53.5
-----	---	----	----	------

Dilatation.

eP	Z	03	44	28.1
i	E		45	26.3

31st eP E 00 21 (49)

 Confused by
microseisms.

eP	Z	01	23	(04)
----	---	----	----	------

" " "

1P	Z	10	25	35.3
----	---	----	----	------

Dilatation.

e(P)	Z	19	10	(31)
------	---	----	----	------

 Confused by
microseisms.

1962

Jan. 1st

Nil recorded.

2nd	e(P)	E	02	17	33.2
-----	------	---	----	----	------

 Felt: Angoram.
Int. 4 (MM)
04°05'S, 144°05'E.

3rd	1P!	Z	10	21	04.8
-----	-----	---	----	----	------

e	E	13	38	34½
---	---	----	----	-----

1P	Z	17	14	05.0
----	---	----	----	------

e	E	23	55	(50)
---	---	----	----	------

 Confused by
microseisms.



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4th Power break 0148 hrs. to 0214 hrs.
E pendulum jammed 0219 hrs. to 0328 hrs.
Z pendulum not operating 2325 hrs to 2334 hrs.

1P Z 07 38 25.2

Seismograms read by J.H. Herlihy.

J.H. Latter,
Vulcanologist.

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