

JAN 1962

Geological Survey Office,
Department of Mines,
Union of South Africa.

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1962

SEISMOLOGICAL BULLETIN.

The data herewith give the results from a network of seismographs intended particularly for the study of earthquakes occurring in or near South Africa. This bulletin, however, is prepared regularly and will be sent to interested organisations on request.

Stations	Pretoria (Pret)	Grahamstown (Gran)	Pietermaritz- burg (Piet)	Kimberley (Kim)	Windhoek (Wind)
Lat:	25°45.2'S	33°18.6'S.	29°37.2'S.	28°45.1'S.	22°34'S.
Long:	28°11.4'E	26°34.5'E.	30°23.8'E.	24°46.8'E.	17°06'E.
Lithologic foundation:	Weathered Shale (Pretoria series)	Dwyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist.
Height:	1350 m.	558 m.	656 m.	1321 m.	1728 m.
Instrument	Willmore S.P. vert- ical and horizontal	Benioff S.P. vertical with short and long period recorders.	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
Seismo. Officer:	The Director	Professor of Physics	Professor of Physics	Rev. Br. T.M. Purcell	Officer in Charge
Observer:	Mr. T.E. Dicker	Mr. A.R. Scanlen	Mr. M.J.R. Hoch	Rev. Br. A.E. Long.	Mr. J.A. Meyer
Institution:	Geological Survey Office	Rhodes University	Natal University	Christian Brothers College	Weather Office

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All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

Address:

Bernard Price Institute of Geophysical Research,
University of the Witwatersrand,
Johannesburg,
South Africa.

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KEW
OBSERVATORY
12 JUN 1962
RICHMOND,
SURREY.
H.O. Oliver.

Seismological Officer.

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance	C/R	Remarks
1	Grh	e	00 00 10			
1	X Kim	iPKP ₁	03 00 56	151		USCGS H = 02 41 06 52.3N, 177.9E Rat islands, h + 26 Km.
1	Kim	iPKP ₁	10 36 50	151		USCGS H=10 17 05.6 51.9N, 177.7E, Rat Islands h + 58 Km
2	Kim	i	00 00 08			
2	X Kim	iP	05 56 15	87	R	USCGS H = 05 23 38.2 17.8S, 69.8W, Peru-Bolivia Border h + 74 Km.
2	Kim	e	12 38 38			
2	Kim	i	19 19 41			
2	Kim	i	23 34 17			
4	X Kim	i	04 54 31			
5	X Kim	iP	04 38 21	79	R	USCGS H = 24 27 05.4 36.4N, 71.2E, Hindu Kush h+ 182 km. USCGS H = 23 08 29.9 52.3N 177.6E Rat Is. h + 70 Km.
5	Kim	iPKP ₁	23 28 09	151		
7	Win	e	08 13 51			
		i	14 00			
7	X Kim	iP	10 14 37	73		USCGS H = 10 03 12.8 43.4N, 17.4E, Yugoslavia h+32 Km.
7	Win	i	20 07 17			
7	Kim	iP	22 12 27	78	R C	USCGS H = 20 00 30.9 37.7S, 71.8W, Central Chile- Argentine border, h+ 90 Km. USCGS H = 01 00 24.2 15.5N, 70.5W, Near South Coast of Dominican Republic. h+ 63Km. M=6.6 USCGS H = 22 25 11.1 36.5N, 70.9E, Hindu Kush h+ 208 km.
8	X Win	eP	01 13 42	94		
8	X Kim	eP	22 36 (47)	79		
9	Kim	i	13 03 15			
11	? Kim	iPKP ₁	03 13 47	151	R	USCGS h+02 54 10.8, 51.6N, 176.9E Rat Islands, h+ 53 Km.
	Win	iPKP ₂	53	148	C	
	Grh	iPKP ₂	14 52	153	R	
11	X Kim	iP	05 16 26	73		USCGS H = 05 05 01.2 43.5N, 17.7E, Near Coast of Central Yugoslavia, h+ 25 Km. M=5.4 USCGS H = 06 49 07.6, 51.9N, 179.3W, Andreanof Is. h + 60 Km.
11	X Pre	iPKP ₁	07 02 47	148		
	X Win	iPKP ₁	51	151		
	X Kim	iPKP ₁	59	153		
12	Win	e	08 14 39			
12	Win	e	11 09 03			
		i	25			
12	Kim	iPKP ₁	11 14 47	151		USCGS H = 10 55 00.8 52.4N, 177.7E, Rat Islands, h + 49 Km.
12	Pre	i	13 36 02			
12	Kim	i	14 18 11			
12	Win	i	15 29 55			
12	Grh	i	21 45 01			
13	Kim	i	05 03 24			
13	Win	e	12 55 (13)			
13	Pre	i	17 12 44			
13	Kim	i	17 13 13			
13	Win	e	17 14 33			
		i	39			
13	Grh	i	17 16 18			
14	Kim	e	04 28 06			
14	Kim	i	08 57 28			
15	Kim	i	15 13 51			
15	Kim	i	22 02 24			
16	Pre	i	08 29 58			
16	X Kim	iPKP	11 54 26	118	C	USCGS H = 11 35 41.3, 30.5S, 177.9W, Kermadec Islands M = 6.4, h + 39 Km.
	X Win	iPKP	42	126		USCGS H = 18 17 29.7 7.8N, 36.0W, Mid-Atlantic Ocean h+ 30 Km.
16	X Kim	iP	18 28 36	70		

January, 1962 (Continued)

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance	C/R	Remarks
16	Kim	e	19 55 23			
		i	45			
21	Kim	iPP	13 12 16	129		USCGS H = 12 51 52.1, 17.7S, 178.8W, Fiji Islands, h + 558 Km.
X	Win	iPP	13 02	138		
23	Win	ePKP ₁	13 19 06	153		USCGS H = 15 59 20.4, 52.5N, 169.5W, Fox Islands, h + 25 Km.
24	Win	e	13 16 54			
25	Win	iP	07 37 57	87	C	USCGS H = 07 26 05.7, 15.8S, 69.5W, Peru-Bolivia border h + 209 Km.
X	Kim	iP	38 23	82	R	
25	Kim	iPKP ₁	10 22 47	155	R	USCGS H = 10 03 07, 4.4S, 152.7W, Line Is. Region h + 50 Km.
26	Pre	e	08 12 45			
X	Kim	iP	08 27 25	65	R	USCGS H = 08 17 37
X	Win	iP	29	59	C	35.1N, 22.7E, Mediterranean Sea, West of Crete. M = 6, h + 32 Km.
X	Pre	eP	51	62		
		i	52			
26	Kim	i	14 34 45			
27	Kim	i	12 02 49			
27	Kim	i	05 19 40			

A. A. Attridge.

25th April, 1962.

-- FEB 1962

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Geological Survey Office,
Department of Mines,
Union of South Africa.

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South Africa.

H.O. Oliver.

Seismological Officer.

FEBRUARY 1962.

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance	C/R	Remarks
1	Win	ePP	01 00 22	126		USCGS H = 00 39 54.6 31.7S 177.3W Kermadec Is region h=30km.
1	Kim	i	13 27 47		R	
1	Kim	i	21 36 52		R	
3	Kim	e	02 29 16			
		i	28			
4	Pre	e	03 37 29			
		i	35			
4	Win	(e)iP	21 37 27	43		USCGS H = 21 29 33.2
	Kim	iP	38 40	52	C	0.5S 20.2W S. Atlantic Ocean h=17 km.
	Pre	eP	39 22	53		
		i	28			
5	Kim	i	11 24 02			
8	Kim	iP	19 52 14	75		USCGS H = 19 40 27.7
	Win	iP	48	82		0.7N 98.6E Sumatra h=43km.
9	Kim	e	00 13 14			
10	Pre	iP	00 12 11	140km from station		South African local earth probably Grobblersdal dist.
		iS	31			
10	Kim	i	05 13 31			
10	Win	e	08 40 07			
		i	41 16			
10	Pre	e	08 45 56			
10	Pre	e	11 09 01			
10	Pre	e	13 07 (15)			
10	Win	iP	19 57 41	73	R	USCGS H = 19 46 11
	Kim	iP	57 56	78	R	33.1N 69.0W Mendoza Prov. Argentine h=171
10	Win	e	22 34 59			
		i	38 06			
	Kim	i	37 05			
11	Kim	iPKP	03 00 49	124	R	USCGS H = 02 42 36.1 29.6N 139.0E South of Honshu, Japan. h=400 km.
11	Kim	i	19 15 06			
	Win	e	17 47			
		i	(-)			
14	Win	iP	06 47 52	78	R	USCGS H = 06 36 01.3
	Kim	iP	59	79		38.1S 73.1W Near coast of Chile h=44 km Mag 7 $\frac{1}{4}$.
14	Pre	e	06 52 08			
14	Win	i	07 20 09		R	
14	Win	eP	08 23 55	77		USCGS H = 08 11 59.3 38.1S 73.7W Near coast of Chile h=40km.
14	Win	iP	08 40 44	77	R	USCGS H = 08 29 00.1
	Kim	iP	59	79	R	38.2S 73.1W Near coast of Chile h=40km.
15	Pre	iP	10 00 32	24		USCGS H = 09 56 01.
	Kim	iP	37	22		49.4S 32.1E Prince Edward Is. region h=25 km
	Win	eP	01 51	29		
15	Kim	iP	20 40 44	79	C	USCGS H = 20 28 47.2 38.1S 73.2W Near coast of Chile h=40km.
16	Win	iP	03 06 54	77	R	USCGS H = 02 55 07 38.1S 73.1W Near coast of Chile h=40km.
16	Kim	i	19 22 18			
17	Kim	i	11 36 50			
17	Win	i	18 27 58		R	
	Kim	i	28 08			
18	Win	iP	17 38 34	95	R	USCGS H = 17 25 17.3 8.1N 74.6W N. Colombia.
20	Kim	iP	09 27 33	75		USCGS H = 09 15 55.1
	Win	eP	28 03	80		6.8N 92.5E Nicobar Is. h=29 km.
		i	16			

FEB. 1962 (Contd).

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance	C/R	Remarks.
20	Win	i	10 27 44		R	USCGS H = 10 07 26.6 25.9S 178.4E S. of Fiji Is. region h=655 km.
20	Kim	i	16 24 50			
20	Kim	eP	22 15 (17)	90		USCGS H = 22 02 38.2 26.1N 96.8E N. Burma h=25 km.
	Pre	iP	31 45	86		
22	Kim	i	05 50 31		R	
22	Win	e	06 12 (34)			
	Kim	e	22 (13)			
		i	43			
		i	23 13			
23	Pre	e	11 01 49			
23	Pre	iP	11 47 58	140km from station		
		iS	48 20			
23	Kim	i	11 59 31			
23	Win	e	16 11 49			
26	Kim	(e)i	15 15 17			
27	Kim	iPKP	06 11 56	150	R	USCGS H = 05 52 28.5 63.0N 150W Central Alaska h=100 km.
27	Win	eP	12 52 07	77½		USCGS 12 40 48.9 37.4S 73.2W Near Coast of Central Chile h=40km
		i	34			
	Kim	iP	45	80	R	Mag. 6½
28	Win	e	13 50 (37)			
		i	51 32			
	Pre	e	55 31			
	Kim		41		C	

A.A. Attridge

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Department of Mines,
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H.O. Oliver.

Seismological Officer.

MARCH, 1962.

Date	Station	Phase	G. M. T.	Arc. Dist.	C/R	Remarks
1	Win	iP	02 25 09	87°	C	USCGS H= 02 12 37.2 15.7S 74.4W
	Kim	iP	32	91°	R	Southern Peru h= 62Km
1	Kim	e	23 09 42			
		i	10 08			
2	Kim	iPKP ₁	09 17 13	155°		USCGS H= 08 57 13 51.4N 178.1W Andreanof Is. h=34Km
2	Kim	i	19 01 39			
3	Pre	e	01 17 33			
		i	19 44			
	Kim	i	20 26			
3	Pre	e	03 14 41			
		i	16 24			
	Kim	i	17 37			
3	Win	e	14 00 45			
4	Kim	eP	16 32 25	81°		USCGS H= 16 20 53.5 36.3S 72.9W Off Coast of Central Chile h=60Km
5	Kim	i	01 00 06			
5	Kim	iP	10 23 44	48°		USCGS H= 10 15 22.1 55.9S 27.9W
	Win	eP	54	50°		Sandwich Is. h= 25Km
5	Pre	e	10 30 30			
		i	31 25			
	Kim	e	32(09)			
		i	33 41			
6	Kim	i	01 35 02		R	
6	Kim	iP	06 07 45	81°	R	USCGS H=05 55 42 13.7N 93.7E
	Win	iP	08 10	85°	R	Andaman Is. h= 18Km
7	Pre	iPKP	11 18 16	125°		USCGS H= 11 01 00.4 19.3N 145.3E Mariana Is. Mag.7 h= 680Km
	Kim	ePKP	33	127°		
		i	51			
	Win	iPKP	49	135°		
7	Win	i	18 05 33			
7	Pre	eP	18 10 05	+150° from		South African Local Earthquake
		iS	26	Station		
8	Pre	iP	01 57 19	13°		USCGS H= 01 54 40.5 22.3S 39.1E
	Kim	iP	58 10	17°		Mozambique Channel h= 25Km
	Win	iP	59 20	22½°	R	
8	Kim	i	21 31 29			
8	Pre	iP	21 43 28	25°		USCGS H= 21 38 35.4 3.4S 29.2E
	Win	(c)iP	31	25°		Congo h= 25Km
8	Win	o(i)	22 00 44			
9	Win	e(i)	00 23 40			
9	Kim	e(i)	00 18 51			
9	Pre	e(i)	00 28 19			
9	Win	e	07 18 25			
		i	32			
9	Win	e	15 19 12			
		i	21 17			
	Pre	e	19 27			
		i	20 48			
	Kim	e	21 54			
		i	22 51			
10	Kim	i	01 25 23		R	
11	Pre	iPKP ₁	15 43 09	151°		USCGS H= 15 23 40.7 52.3N 178.0E
	Win	ePKP ₁	12	152°		Rat Is. h= 135Km
		i	14			
	Kim	iPKP ₁	15	154°		
11	Kim	i	19 37 27			
12	Kim	i	10 00 38			
12	Win	e	11 54 10			
12	Kim	iPKP	11 58 42	111°		USCGS H= 11 40 12.8 8.1N 83.0W Near Coasts of Panama and Costa Rica Mag. 6½ h=58Km
13	Pre	iP	07 06 56½	+196 Km		South African Local Earthquake
		iS	07 11	from Stat.		

MARCH, 1962 (Continued)

Date	Station	Phase	G. M. T.	Arc. Dist.	C/R	Remarks
13	Pre	iP	15 53 14 $\frac{1}{2}$	+200Km		South African Local Earthquake
	Kim	iS	40 $\frac{1}{2}$	From Stat.		
			33			
14	Win	e	10 48 35			
14	Pre	e	12 00 52			
		i	02 39			
	Win	e	04 40			
		i	04 40			
	Kim	(e)i	39			
15	Kim	i	14 45 16			
16	X/ Kim	iPKP	20 01 41	127°		USCGS H= 19 42 39.2 10.8S 165.7E Santa Cruz Is h= 25Km
17	X/ Win	iP	20 58 30	66°		USCGS H= 20 47 31.7 10.6N 43.7W
	X/ Pre	eP	59 32	79°		North Atlantic Ocean h= 25Km
		i	34			
18	Pre	e	06 54 33			
18	X/ Win	iP	15 40 58	65°		USCGS H= 15 30 31.6 40.6N 19.6E
	X/ Kim	iP	41 39	71°		South Albania h= 25Km
19	X/ Kim	(e)iP	06 07 57	106°		USCGS H= 05 54 24.4 0.3N 123.5E Celebes Is. h= 53Km
20	Pre	e	01 29 20			
		i	25			
20	Kim	i	11 11 19			
20	Kim	iP	21 08 29	74°		USCGS H= 20 57 24.2 4.3S 103.1E Near South Coast of Sumatra h=100Km
21	X/ Kim	iP	23 09 30	86°		USCGS H= 22 57 51.2 5.9S 113.0E Java Sea h= 631Km
21	Pre	e	23 31 30			
		i	45			
22	X/ Pre	iP	00 31 08	83°		USCGS H= 00 19 43.1 5.9S 112.9E
	X/ Kim	iP	27	86°		Java Sea h= 611Km
22	X/ Kim	i	00 56 38			
22	Kim	iP	12 19 19	81°	R	USCGS H= 12 07 05.5 32.2S 66.9W San Luis Province, Argentine h= 249Km
22	Kim	(e)i	12 26 49			
22	X/ Kim	iPKP	15 31 41	115°		USCGS H= 15 13 03.9 3.2S 142.3E Near North Coast of New Guinea Mag 5 $\frac{3}{4}$
22	X/ Win	iP	19 10 29	76°		USCGS H= 18 59 00.8 28.1S 67.5W
	X/ Kim	iP	47	80°	C	Catawara Province, Argentine h= 217Km
22	Win	e	19 22 39			
		i	24 14			
23	Pre	iP	08 28 32	+100Km		South African Local Earthquake
	iS		46	From Stat		
23	Win	e	08 57 29			
		i	09 00 40			
	Pre	e	08 58 07			
		i	20			
		i	59 08			
	Kim	i	59 14			
24	Kim	i	01 49 09			
24	X/ Kim	e	13 18 02			
	X/ Win		18			
24	Kim	i	13 28 47			
25	Pre	i	08 15 40			
25	Kim	i	10 01 32			
	Pre	i	44			
26	X/ Win	i	12 12 55			
	X/ Kim	i	13 56		C	
	X/ Pre	(e)i	14 18			
26	X/ Win	i	16 44 31		R	
	X/ Kim	i	40		R	
	X/ Pre	e	45 01			
		i	13			
29	Pre	iP	00 39 00	+105Km		South African Local Earthquake
	iS		15	From Stat.		
29	Pre	e	14 25 05			

MARCH , 1962 (Continued)

Date	Station	Phase	G. M. T.	Arc. Dist.	C/R	Remarks
31	Pre	e	01 52 42			
31	Kim	(e)i	12 10 26			
31	Pre	i ^p	18 05 12	+160Km		South African Local Earthquake.
		iS	35	From Stat.		
	Kim	i	39			

A.A. Attridge
24th June, 1962.

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Date	Station	Phase	G. M. T.	Arc. Dist.	C/R	Remarks
1	X/Kim	iP	00 56 20	71°		USCGS H= 00 45 14.6 33.6N 59.0E Eastern Iran h= 33Km
1	Kim	e	01 08 55			
		i	09 01			
1	Kim	ePKP ₁	12 18 41	155°		USCGS H= 12 00 04.1 53.4N 164.5W Fox Is. h= 36Km
		i	59			
1	X/Kim	i	12 20 20		C	
3	X/Kim	iPKP	16 44 01	127°		USCGS H= 16 24.55.6 10.6S 164.9E Santa Cruz Is. region h= 36Km Mag 5½
4	Kim	iP	21 01 28	66°		USCGS H= 20 51 05.2 34.7N 25.5E Crete h= 27Km
4	X/Kim	iP	21 09 59	66°		USCGS H= 20 59 36.1 34.6N 25.5E Crete h= 25Km
5	Kim	iP	12 36 31	79°	C	USCGS H= 12 24 34.5 44.9S 75.3W Near Coast of Southern Chile h= 25Km
6	Kim	(e)i	10 06 10			
6	Kim	i	12 04 10		C	
10	Kim	iP	04 48 25	81°		USCGS H= 04 36 27.5 28.6S 68.8W Chile-Argentine border h= 130Km
10	Win	iP	12 46 43	79°	C	USCGS H= 12 34 50.8 37.3S 72.6W Near Coast of Southern Chile. h= 67Km
	Kim	iP	53	81°	C	
10	Win	iP	14 21 13	79°		USCGS H= 14 09 18.8 37.5S 73.8W Near Coast of Chile h= 25Km
	Kim	iP	27	81°	R	
10	Win	iP	21 47 19	63°	C	USCGS H= 21 47 12.6 37.9N 20.1E Ionian Sea h= 35Km Mag. 5½
	Kim	iP	59	69°		
11	Pre	iP	14 10 15	+60Km		South African Local Earthquake
		iS	24	From Stat.		
12	Kim	iPKP	01 11 52	130°		USCGS H= 00 52 47 38.2N 142.3E
	Win	e(i)PKP	55	133°		Near East Coast of Honshu h= 68Km Mag 7
12	Pre	e	13 38 28			
		i	37			
12	Kim	iP	16 48 24	84°		USCGS H= 16 36 08.4 28.7S 71.9W Near Coast of Northern Chile h= 34Km
15	X/Kim	iP	18 16 28	44°	C	USCGS H= 18 08 27.3 2.7S 11.6W Ascension Is. region h= 25Km
15	X/Kim	iP	18 53 13	45°		USCGS H= 18 45 17.4 2.9S 11.9W Ascension Is. Region h= 25Km
15	Kim	iP	22 39 17	46°	C	USCGS H= 22 31 06.2 56.6S 26.2W Sandwich Is. h= 25Km
16	X/Kim	i	13 38 58		R	
16	Kim	i	15 16 31		C	
16	Kim	iP	17 59 08	20°		USCGS H= 17 54 49.2 44.8S 37.2E Prince Edward Is h=25Km
16	Kim	e	18 04 38			
		i	05 41			
17	X/Kim	iP	10 15 02	73°	C	USCGS H= 10 03 46.9 42.3N 17.3E Adriatic Sea h= 25Km
17	X/Win	ePcP	11 44 03	63°		USCGS H= 11 33 51 37.8N 19.9E Ionian Sea h= 25Km
17	Win	e	19 01 49			
		i	54			
17	X/Win	iP	22 42 13	40°	C	USCGS H= 22 34 56.7 1.5S 14.9W
	X/Kim	iP	43 25	49°	C	Mid-Atlantic Ocean h= 25Km
	Pre	iP	37	50°		
18	X/Win	(e)iP	19 27 43	94°		USCGS H= 19 14 37.2 10.0S 79.0W
	X/Kim	iP	28 09	99°	C	Off Coast of Peru h= 39Km Mag 6¾
19	Pre	e	06 04(49)			
		i	06 40			
19	Win	eP	12 06 13	69°		USCGS H= 11 55 27.3 38.6N 44.0E Eastern Turkey h= 25Km
19	X/Kim	iPKP	22 33 53	125°	C	USCGS H= 22 15 20.9 15.8S 168.0E New Hebrides Is. h= 213Km
19	X/Win	ePKP	23 35 01	128°		USCGS H= 23 16 04.1 69.8N 138.6E
	X/Kim	iPKP	06	129°		Siberia h=OKm
20	X/Win	iP	06 01 27	99°	C	USCGS H= 05 47 55.3 20.6N 72.2W
	X/Kim	iP	33	106°	R	Near North Coast of Haiti h= 25Km Mag 6¾
20	Kim	i	06 17 43		C	

APRIL, 1962. (Continued)

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Date	Station	Phase	G. M. T.	Arc. Dist.	C/R	Remarks
22	X/Kim	iPKP	05 03 38	127°	C	USCGS H= 04 45 20.3 15.5N 93.1E Near Coast of Chiapas h= 69Km Mag. 5½
22	Kim	i	05 41 09			
22	Pre	e	06 17 04			
22	Kim	i	06 22 15			
23	Win	e	05 17 19			
		i	46			
26	X/Kim	i	07 44 32			
	X/Pre	i	47 05			
	X/Win	e	09			
		i	32			
27	X/Win	iP	06 59 20	78°	C	USCGS H= 06 47 27 44.4S 74.0SW Southern Chile h= 31Km
			24			
28	X/Win	iP	11 28 56	62°	R	USCGS H= 11 18 27.4 36.4N 26.6E
	X/Pre	eP	29 09	65°		Dodecanese Is. h= 40Km
		i	21			
28	Kim	i	12 38 52			
28	X/Win	iP	12 53 46	61°	R	USCGS H= 12 43 49.1 36.3N 26.7E Dodecanese Is. h= 48Km
29	Win	e	11 42 18			
30	Kim	i	14 17 38		C	
30	Kim	e	16 25 13			
30	X/Kim	iPKP	16 35 29	132°		USCGS H= 16 16 47.8 17.9S 176.1W Tonga Is region h= 26Km

A.A. Attridge
10th July, 1962.

F - MAY 1932

SEISMOLOGICAL BULLETIN.

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Long:	28°11.4'E	26°34.5'E.	30°23.8'E.	24°46.8'E.	17°06'E.
Lithologic foundation:	Weathered Shale (Pretoria series)	Dwyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist.
Height:	1350 m.	553 m.	656 m.	1521 m.	1728 m.
Instrument	Willmore S.P. vert- ical and horizontal	Benioff S.P. vertical with short and long period recorders.	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
Seismo. Officer:	The Director	Professor of Physics	Professor of Physics	Rev. Br. T.M. Purcell	Officer in Charge
Observer:	Mr. T.E. Dicker	Mr. A.R. Scanlen	Mr. M.J.R. Hoch	Rev. Br. A.E. Long.	Mr. J.A. Meyer
Institution:	Geological Survey Office	Rhodes University	Natal University	Christian Brothers College	Weather Office

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All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

Address:

Bernard Price Institute of Geophysical Research,
 University of the Witwatersrand,
 Johannesburg,
 South Africa.

H.O. Oliver.

Seismological Officer.

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MAY, 1962

Date	Station	Phase	G. h.	M. m.	T. s.	Arc Distance Degrees	C/R	Remarks
1	Pre	e	09	08	13			
1	Pre	e	12	46	-			
2	Pre	e	03	43	(40)			
2	X Kim	iP	09	08	23	80	C	USCGS H=08 56 29. 23.6S 65.9W Jujuy Province, Argentine.
3	X Kim	iP	03	43	46	50	C	USCGS H=033449 60.0S 32.9W Sandwich Islands N=6 h±20km.
3	Kim	iP	17	09	23	48		USCGS H = 17 00 33. 60.5S, 33.2W Sandwich Islands region h±33 Km
3	Kim	i	22	52	31			
6	X Kim	iP	19	09	06	50	C	USCSG H = 19 00 10.2,
	X Grh	iP			14	46	R	60.0 S, 32.8 W, Sandwich Islands
	X Win	iP			13	47	C	region M = 7, h ± 25 km.
7	Kim	i	14	14	02		R	
7	X Win	ePKP ¹	17	58	(35)	152		US CGS H = 17 39 50.3,
	X Kim	iPKP ¹		59	07	133		45.3 N, 146.7 E, Kurile Islands, M = 7, h ± 25 km.
7	Kim	iP	19	11	59	46		USCGS H = 19 03 32.1, h ± 25 km.
10	X Grh	ePKP ¹	00	22	51	152		59.5S, 25.6 W, Sandwich Islands
		i ¹			57		R	U S C G S H = 00 03 40.2, h ± 72 km
10	Win.	i	18	44	19		C	62.0 N, 150.1 W, Alaska M = 6.
10	Win	i	19	31	45			
11	Pre	e	00	13	00			
11	Kim	i	14	03	57			
11	X Win	e	14	30	47			
		i		32	14			
11	Win	iP	20	06	58	28	R	USCGS H = 20 01 06.9, h ± 25 km
	Kim	iP		07	48	33	C	27.5 S, 13.7 W, South Atlantic Ocean.
12	Kim	e	00	07	06			
		i		19	22			
	Win	e	00	17	50			
		i		19	40			
14	Pre	eP	04	12	08	90 Km.		South African Earthquake
		eS			17.5			
15	X Kim	iPKP	19	51	37	141		USCGS H = 19 32 22.5, h ± 30 km. 53.4 N, 159.6 E, near East coast of Kamchatka
16	Pre	eP	08	31	46	97		USCGS H = 08 18 31, h ± 34 km
	Kim	eP		32	22	100		0.9 S, 127.0 E, Spice Islands
16	Pre	i	11	34	51			
17	Kim	iP	16	09	03	44	C	USCGS H = 16 00 37.4, h ± 23 km. Sandwich Islands
19	Pre	iP	05	03	30			B P I H = 07 03 05, 24 S, 29 E, Potgietersrust Area, Northern Transvaal
	Kim	e(i)		05	30			
19	X Win	ePKP	15	17	08	121		USCGS H = 14 58 13.3 h ± 20 km
	X Kim	iPKP			18	128		Near Coast of Mexico M = 7½
21	X Pre	e -	12	14	52	-		USCGS H = 12 02 50.6, h ± 25 km
	X Kim	iP		16	07	93		37.3 N, 96.0 E, Chinghai Province
	X Win	iP			15	97	C	China. M = 7.
21	X Kim	iPKP	21	33	55	128	R	USCGS H = 21 15 31, h ± 379 km
	X Pre	ePKP			57	130		20.0 S, 177.5 W, Fiji Islands
	X Win	ePKP		34	(03)	137		Region M = 7.
		i			11			
		i -			(46)			
22	X Grh	i -	08	25	25	126	R	USCGS H = 08 06 38.7, h ± 151 Km, 12 3 S, 166.6 E, Santa Cruz Islands, M = 6½
	X Kim	iPKP		25	25			
22	Pre	e	08	35	25			
22	Pre	e	23	56	22			
		i			38			
22	Pre	e	04	10	11			
24	Pre	iP	20	58	46.5	210 Km from Station,		S. A. Local Earthquake
		iS		59	08			

May, 1962 (Continued)

Date	Station	Phase	G. M. T. Arc			C/R	Remarks
			h.	m.	s.		
25	Pre	eP	03	17	42		E. F. I H = 03 15 21, 19 S, 35 E, Mozambique
		iP ⁿ ₁		18	21		
	Kim	iP ⁿ ₁			35		
		iS ⁿ ₁		22	29		
25	Kim	i	07	45	20		
26	Kim	i	12	03	05		
26	Kim	iP	19	56	07	75	R USCGS H = 19 44 17.5, h ± 60 km. 6.7 N, 94.6 E, Nicobar Islands
29	Win	i	00	00	37		R
29	Win	i	08	05	03		
29	Kim	ePKP ₁	21	20	04	155	USCGS H = 21 00 16.4, h ± 25 km. 51.8 N, 177.1 W, Andreanof Islands
		i			09		
30	Win	e	06	56	(33)		
		i		57	06		
30	Kim	e	08	53	42		
		i		54	09		
30	Pre	e	08	55	59		
		i		56	45		
31	Pre	iP	02	56	29		200 Km. from Station, S. A. Local earthquake.
		iS			49		
	Kim	e(i)			43		
31	Kim	e(i)PKP	06	46	56	125	USCGS H = 06. 28 26.2, h ± 257 km. 22.1 N, 142.6 E, Volcano Islands region. M = 6½
	Win	e		49	(34)		
		i		51	05		
31	Kim	i	21	31	04		R

A. A. Attridge,

17th September, 1962.

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SEISMOLOGICAL BULLETIN.

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Long:	28°11.4'E	26°34.5'E.	30°23.8'E.	24°46.8'E.	17°06'E.
Lithologic foundation:	Weathered Shale (Pretoria series)	Dwyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist.
Height:	1350 m.	553 m.	656 m.	1321 m.	1728 m.
Instrument	Willmore S.P. vert- ical and horizontal	Benioff S.P. vertical with short and long period recorders.	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
Seismo. Officer:	The Director	Professor of Physics	Professor of Physics	Rev. Br. T.N. Purcell	Officer in Charge
Observer:	Mr. T.E. Dicker	Mr. A.R. Scanlan	Mr. M.J.R. Hoch	Rev. Br. A.E. Long.	Mr. J.A. Meyer
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All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

Address:

Bernard Price Institute of Geophysical Research,
 University of the Witwatersrand,
 Johannesburg,
 South Africa.

H.O. Oliver.

Seismological Officer.

JUNE, 1962.

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance ^o	C/R	Remarks.
1	Win	i	14 11 21		R	
3	Kim	i	15 14 56		C	
3	Kim	i	19 10 55		R	
3	Kim	e	23 54 29			
			56 56			
4	Win	i	18 17 34		C	
	Kim	e	18 45			
		i	20 07			
	Pre	e	36			
		i	21 25			
	Pie	(e)i	23 29			
6	Kim	i	05 55 28		R	
9 X ✓	Kim	i	20 16 09			
10	Kim	i	00 03 09			
10	Pie	i	09 25 21			
11 X ✓	Kim	iP	07 27 04	75	C	USCGS H = 07 15 37.6 43.5N, 18.3E Yugoslavia h=21 km Mag 5 $\frac{1}{4}$
13	Kim	i	14 50 00			
14 X ✓	Kim	i	08 10 52		R	
15 X ✓	Kim	iP	06 43 07	86	R	USCGS H = 06 30 37 20.4S 70.9W Near coast of N. Chile h=60 km. Mag.5
15	Kim	i	12 14 58			
15	Pre	iP	18 55 07			
		iS	27			
17 X ✓	Pre	iP	04 32 21	23	R	S.A. Local Earthquake ± 200 km from station. USCGS H = 04 27 38.2 40.1S 45.7E Indian Ocean north of Crozet Is. h=15 km.
20	Kim	i	13 02 49			
23 X ✓	Kim	iPKP	10 03 16	114		USCGS H = 09 44 37.7 25.7N 128.5E Ryukyu Is. Mag.5 $\frac{3}{4}$ h=36 km.
23	Kim	i	11 01 22			
23	Kim	i	14 12 52			
23	Kim	i	20 14 10			
24	Pie	e	23 48 (50)			
		i	49 50			
25	Pre	e	00 47 33			
		i	40 03			
		i	48			
25 X ✓	Kim	i	06 32 51		R	
26	Kim	i	17 02 28			
		i	56			
26	Pre	e	17 24 34			
		i	25 13			
26	Kim	e(i)	24 55			
26	Kim	i	18 47 45			
		i	48 13			
27	Kim	i	12 28 (33)			
27	Kim	iP	13 45 24	81		USCGS H = 13 33 21.5 39.1S 74.9W Off coast of Chile h = 40 km.
27	Kim	e	13 48 33			
27	Kim	i	14 16 33			
27	Kim	e	18 19 42			

Contd. /.....

JUNE, 1962 (Contd)

<u>Date</u>	<u>Station</u>	<u>Phase</u>	<u>G. M. T.</u> <u>h. m. s.</u>	<u>Arc</u> <u>Distance^o</u>	<u>C/R</u>	<u>REMARKS.</u>
27	Kim	i	19 59 26		R	
28	X ✓ Kim	iP	19 04 06	100		USCGS H = 18 50 27.5 0.2S 124.3E Northern Celebes h=58 km.
28	X ✓ Kim	iPKP	21 06 16	133	C	USCGS H = 20 47 30.6 17.6S 175.2W Tonga Is region h=244 km.
29	Kim	i	03 38 09			
29	X ✓ Kim	iPKP ₁	18 47 42	150	C	USCGS H = 16 28 04.4 62.3N 152.4W Alaska Mag. 5 h=39 km.
30	Kim	i	22 35 00		C	

A.A. Attridge.

October, 1962.

Copied 2/5

JUL 1962

Geological Survey Office,
Department of Mines,
Union of South Africa.

SEISMOLOGICAL BULLETIN.

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Lithologic foundation	Weathered Shale (Pretoria series)	Dwyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist
Height:	1350 m.	558 m.	656 m.	1321 m.	1728 m.
Instrument:	Willmore S.P. vert- ical and horizontal.	Benioff S.P. vertical with short and long period recorders	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
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Johannesburg.
South Africa.

H.O. Oliver.

Seismological Officer.

JULY, 1962.

Date	Station	Phase	G. M. T. h. m. s.	- 375 - Ard Distance °	C/R	Remarks.
2	Kim	iPKP	08 51 33	125°	R	USCGS H= 08 32 37.9 10.3S 165.9E Santa Cruz Is. h= 50km Mag. 6½
	Pre	ePKP	35	125°		
	Grh	iPKP	56	122°		
4	Kim	i	16 16 44			
5	Pre	e	02 21 06			
5	Kim	i	12 12 56			
6	Pre	ePcP	09 27 15	64°		USCGS H= 09 16 15 38.ON 20.2E Ionian Sea h= 30km Mag. 5
6	Pre	iP	23 16 34	74°		USCGS H= 23 05 32.2 36.6N
	Grh	iP	17 23	80°	R	70.4E Hindu Kush h= 203km
6	Pre	i	23 26 23			
7	Pre	iPKP ₂	06 32 55	150°		USCGS H= 06 12 48.9 51.3N 178.6E Rat Is. h= 60km
7	Kim	iPKP ₂	07 35 25	153°	R	USCGS H= 07 14 34.6 51.3N 178.8E Rat Is. h= 60km
7	Kim	i	09 10 37			
7	Kim	i	09 19 15			
7	Kim	i	11 36 07			
8	Kim	i	00 37 49		C	
8	Pre	iPKP ₁	03 41 38	150°		USCGS H= 03 22 03.8 51.5N 178.5E Rat Is. h= 60km
8	Pre	e	04 07 02			
9	Pre	e	11 43 (32)			
	Kim	i	45 52			
10	Pre	e	20 13 49			
	Kim	i	14 (14)			
11	Kim	iP	01 15 (27)	77°		USCGS H= 01 03 59.3 38.1N 66.9E Afganistan h= 25km
11	Kim	i	10 09 22			
12	Kim	i	14 15 53			
13	Kim	iPKP	22 38 40	141°		USCGS H= 22 19 23.3 56.2N 164.0E Komanderskie Is. region h= 59km
14	Pre	iP	10 45 42	+310km from station		S.A. local Earthquake.
		iS	46 13			
14	Kim	(e)iPKP	20 57 07	138°		USCGS H= 20 38 01.3 50.2N 155.8E Kurile Is.
15	Kim	i	09 07 35			
16	Kim	iP	02 17 11	82°		USCGS H= 02 04 52.6 52.1S 138.9E South of Tasmania h= 14km
16	Kim	i	13 14 19			
17	Kim	i	04 44 05		R	
17	Kim	i	12 17 48			
17	Kim	i	15 18 54			
18	Kim	i	10 33 09			
19	Kim	i	06 08 20			
19	Kim	i	13 33 22			
20	Kim	i	11 24 08			
22	Kim	i	20 58 45			
		i	23 01 07			
	Pie	e	20 59 19			
		i	21 01 16			
	Grh	e	21 00 --			
		i	04 35			
23	Pie	e	19 33 27			
		i	34 18			
	Kim	e	33 28			
		i	34 18			
24	Kim	iPKP	21 27 01	120°		USCGS H= 21 08 22.6 15.5N 92.5W Mexico-Guatemala border h= 129 m Mag 5½
24	Kim	i	22 19 16			
	Pie	(e)i	20 28			
25	Kim	i	08 48 18			
	Pie	e	26			
		i	28			
25	Kim	i	15 28 46			

JULY, 1962. (Continued)

Date	Station	Phase	G. M. T. h. m. s.	Distance	C/R	Remarks.
26	Kim	e	06 53 11			
26	Kim	i	54 02			
26	Kim	iPKP	08 32 48	103°		USCGS H= 08 14 41.8 7.5N 82.7W South of Panama h= 21Km Mag. 6 $\frac{3}{4}$
27	Kim	i	12 58 30		R	
27	Kim	i	14 52 10		R	
27	Kim	iPKP	19 45 06	125°	R	USCGS H= 19 26 34.6 13.2S 167.1E Santa Cruz Is. region h= 28Km
28	Kim	i	00 24 25		C	
30	Kim	e	16 21 01			
		i	10			
		i	32			
30	Kim	iP	17 35 29	101°		USCGS H= 20 18 49.3 Western Colombia h= 45Km Mag 6 $\frac{3}{4}$
30	Kim	iPKP	20 32 44	114°		USCGS H= 17 16 44.4 3.3S 143.9E Near North Coast of New Guinea h= 25Km
31	Kim	e	22 11 29			
		i	12(19)			

A.A. Attridge
October, 1962.

SEP 1962
OCT 1962

Copies

Geological Survey Office,
Department of Mines,
Union of South Africa.

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Stations	Pretoria (PRE)	Grahamstown (GRH)	Pietermaritz- burg (PIE)	Kimberley (KIM)	Windhoek (WIN)
Lat:	25°45.2'S	33°18.6'S	29°37.2'S	28°45.1'S	22°34'S
Long:	28°11.4'E	26°34.5'E	30°23.8'E	24°46.8'E	17°06'E
Lithologic foundation	Weathered Shale (Pretoria series)	Dvyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist
Height:	1350 m.	558 m.	656 m.	1321 m.	1723 m.
Instrument:	Willmore S.P. vert- ical and horizontal.	Benioff S.P. vertical with short and long period recorders	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
Seismo. Officer:	The Director	Professor of Physics	Professor of Physics	Rev. Br. T.N. Purcell	Officer in Charge
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All times given are G.M.T.

The supervision of this network and bulletin is at present in the hands of the undersigned, to whom all inquiries should be addressed.

Address:

Bernard Price Institute of Geophysical Research,
University of the Witwatersrand,
Johannesburg.
South Africa.

H.O. Oliver.

Seismological Officer.

SEPTEMBER, 1962.

Date	Station	Phase	G. M. T.		Arc Distance	C/R	Remarks
			h. m. s.	Degrees			
1	X/Kim	ePKP ₁	04 05 49	155			USCGS H = 03 46 05; 51.3N 179.7W
		i	56				Rat Is. h = 25km Mag 6½
1	X/Win	iPKP ₁	04 18 10	156	C		
	Kim	(e)iPKP ₁					USCGS H = 03 58 21.5; 51.1N 180
							Rat Is. h = 33km
1	X/Kim	ePKP ₁	05 01 24	155			USCGS H = 04 41 41.5; 51.3N 179.7W
		i	30		(R)		Rat Is. h = 25km
1	Kim	ePKP ₁	08 01 57	156			USCGS H = 07 42 07.4; 51.2N 180
		i	59		R		Rat Is. h = 33km
1	X/Win	iPKP ₁	08 10 54	156	C		USCGS H = 07 51 08.2; 51.3N 179.7W
	X/Kim	iPKP ₁	57	155	C		Rat Is. h = 42km
1	X/Kim	iPKP ₁	09 06 57	155			USCGS H = 08 47 06.9; 51.4N 179.8W
							Rat Is. h = 29km
1	X/Kim	i P	15 11 49	66	R		USCGS H = 15 01 04.6; 25.8N 65.3E
							Near coast of West Pakistan h = 46km
1	X/Win	i P	19 31 25	67	R		USCGS H = 19 20 38.5; 35.6N 50.0E
	X/Pie	i P	34	68	R		North-West Iran h = 21km Mag 7¼
	X/Kim	i P	39	69			
4	X/Win	(e)iP	13 40 56	67			USCGS H = 13 30 10.9; 35.6N 49.7E
							North-West Iran h = 24km
4	X/Kim	iPKP ₁	17 37 20	155			USCGS H = 17 17 27.6; 41.0N 124.0W
							Near coast of Northern California
							h = 48km Mag 5
4	Kim	i	20 47 20		R		
5	Kim	e	15 44(40)				
		i	47 34				
5	Pie	(e)i	20 07 45				
10	X/Kim	iPKP	16 01 51	122			USCGS H = 15 43 59.4; 21.1S 179.2W
	X/Grh	iPKP	52	120			Fiji Is. h = 640km Mag 6½
	X/Win	ePKP	55	123			
		i	02 07				
		i	04 38				
11	Kim	i	10 04 52				
11	Kim	i	15 04 44				
11	Kim	(e)i	22 30 44				
12	Kim	i	05 57 56		R		
12	X/Pie	i P	21 08 39	74	R		USCGS H = 20 57 00.4; 36.5N 69.2E
	X/Win	i P	45	76	R		Hindu Kush h = 50km Mag 6½
	X/Kim	i P	48	77	C		
	X/Grh	i P	09 03	79	C		
13	X/Win	(e)i P	14 47 37	91			USCGS H = 14 35 02; 11.6N 61.3W
	X/Kim	i P	48 15	85			North of Trinidad h = 73km
14	X/Kim	iPKP	18 38 07	122			USCGS H = 18 17 52.1; 19.9S 177.6W
							Fiji Is. h = 350km
15	Kim	e	01 02 37				
		i	42				
15	Kim	e	06 56 01				
16	Kim	e	07 13(38)				
		i	14(53)				
16	X/Kim	i P	19 18 45	80	C		USCGS H = 19 06 29.2; 16.7N 94.2E
							Near coast of Burma h = 33km
17	X/Kim	iPKP	18 13 39	117	R		USCGS H = 17 55 45.4; 21.0S 179.1W
	X/Win	(e)iPKP	54	120			Fiji Is h = 601km
17	Win	(e)i	18 16 36				
	Kim	(e)i	56				
18	X/Win	e P	00 42 59	98			USCGS H = 00 29 05.2; 7.5N 82.3W
							South of Panama h = 33km Mag 7
18	Kim	e(i)	00 47 21				
18	Pie	i	01 41 27				
19	X/Kim	iPKP ₁	01 41 48	153			USCGS H = 01 22 35.5; 52.3N 173.4W
	X/Win	iPKP ₁	42 18	155			Andreanof Is. h = 33km
19	Kim	i	14 47 11				
20	Kim	i	19 18 18		R		
21	Win	i P	22 49 27	67			USCGS H = 22 38 51.7; 57.7S 64.1W
	Kim	i P	36	63	C		Drake Passage h = 51km
22	X/Kim	i P	07 04 22	84	C		USCGS H = 06 51 32.3; 26.5N 97.0E
							North Burma h = 33km
22	Kim	(e)i	11 51 54				

SEPTEMBER, 1962.

Date	Station	Phase	G. M. T.		Arc Distance Degrees	C/ R	Remarks
			h.	m. s.			
23	X/ Kim	iPKP ₁	16	10 24	148		USCGS H = 15 50 46.4; 60.1N 151.2W Kenai Peninsula, Alaska h = 86km
24	Kim	e(i)	12	47 30			
24	Kim	i	13	58 45			
25	Kim	i P	04	53 46	22		USCGS H = 04 48 40.9; 7.4S 34.9E Central Tanganyika h = 33km
	Win	e P		47	21		
		i		56			
26	Kim	i	01	09(46)			
26	Kim	i P	01	36 35	58		USCGS H = 01 26 41.2; 0.9N 27.6W Mid-Atlantic Ocean h = 33km
26	X/ Kim	iPKP	13	03 39	123	R	USCGS H = 12 44 48.9; 27.5S 176.4W Kermadec Is. region h = 33km
27	Kim	i P	06	57 51	⁺ 20	C	USCGS H = 06 53 30; 47.4S 34.3E Prince Edward Island region h = 33km
27	X/ Win	e	06	59 34			
27	Win	i	12	08 44		C	
28	Kim	(e)i	20	22 53			
29	Pie	i	13	07 52			
29	X/ Win	i P	15	28 14	73	C	USCGS H = 15 17 47.7; 27.0S 63.6W Santiago Del Estero Province; Argentine h = 575km Mag 6½
	X/ Kim	i P		37	76	R	
30	Kim	i	03	43 59			

A.A. Attridge
December, 1962.

OCTOBER, 1962.

Date	Station	Phase	G. M. T. h. m. s.	Arc Distance Degrees	C/ R	Remarks.
1	✓ Pie	e P	12 24 17	61		USCGS H = 12 13 57.4; 27.9N 54.9E Southern Iran h = 16km
		i	21		C	
	✓ Win	i P	20	62	C	
	Kim	i P	26	63	C	
2	Kim	e	08 37 17			
		i	27			
		i	38 05			
		i	11			
2	Win	e	09 25(12)			
		i	21			
3	Kim	i	10 11 41			
3	Kim	e	12 22 54			
		i	23 19			
3	Win	e(i)	15 30 38			
3	Kim	i P	18 57 11	46		USCGS H = 18 48 52.4; 57.5S 26.7W Sandwich Is. h = 33km
6	Kim	e	07 32 02			
6	Kim	i	08 15 15			
6	Win	e	08 26 13			
6	✓ Kim	iPKP	11 19 31	126		USCGS H = 11 00 53; 13.3S 167.3E New Hebrides Is. h = 209km
	✓ Win	iPKP	48	135		
6	Win	i	11 23 00			
6	Kim	i	14 08 01		R	
		i	09			
		i	24			
		i	28			
	Pie	e	40			
		i	48			
6	Kim	e	15 44 25			
6	Kim	i	18 33 41		R	
6	✓ Kim	i	23 50 19		R	
6	✓ Win	e	23 54 03			
7	Kim	i P	16 08 37	45		USCGS H = 16 00 20.2; 57.8S 25.5W Sandwich Is. h = 33km
10	Kim	i P	13 45 30	81		USCGS H = 13 33 11.6; 08.9S 110.4E Near south coast of Java h = 41km
10	Win	i P	21 05 09	75		USCGS H = 20 53 34.5; 34.9S 70.1W Mendoza Province, Argentine h = 137km
	Kim	i P	22	77		
12	Kim	i	15 12 25			
12	Kim	i P	17 05 52	76		USCGS H = 16 53 33.6; 38.0S 70.6W Near coast of north Chile. h = 25km
13	✓ Kim	i P	10 34 35	69	R	USCGS H = 10 23 38.2; 35.5N 49.8E N. W. Iran h = 33km
13	✓ Kim	iPKP	19 06 42	126		USCGS H = 18 47 44.5; 12.6S 166.6E Santa Cruz Is. region h = 33km
16	Kim	i P	07 22 06	34	R	
16	Kim	i	12 24 51			
16	Kim	e(i)	14 53 08			
16	✓ Win	ePKP ₁	18 22 17	152		USCGS H = 18 02 32.9; 51.6N 175.8W Near Is. (Aleutians) Mag 5½ h = 27km
		i	21			
	✓ Kim	iPKP ₁	22	155		
18	Kim	i	16 02 35			
20	Kim	e	09 48 13			
20	Kim	e	09 58 26			
21	✓ Kim	iPKP ₁	02 24 59	150	R	USCGS H = 02 05 22.7; 61.1N 149.7W Near Anchorage (Alaska) h = 80km
21	Kim	i	07 20 16			
	Pie	e	23			
		i	21 05			
22	✓ Kim	i	15 42 55			
23	Kim	i	14 24 16		R	
25	Kim	e	07 47 46			
25	✓ Kim	i	09 48 03		C	
25	✓ Kim	i P	20 18 24	84		USCGS H = 20 06 10; 61.4S 154.9E S. W. of Macquarie Is. h = 33km
26	✓ Kim	iPKP	07 39 16	123		USCGS H = 07 20 25.8; 17.7S 167.5E New Hebrides Is. h = 33km

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<u>Date</u>	<u>Station</u>	<u>Phase</u>	<u>G. M. T.</u> <u>h. m. s.</u>	<u>Arc</u> <u>Distance</u> <u>Degrees</u>	<u>C/</u> <u>R</u>	<u>Remarks</u>
26	X/ Kim	i	11 46 29			
26	Kim	i P	16 06 43	44		USCGS H = 15 58 34.8; 55.5S 26.5W Sandwich Is. h = 33km
27	X/ Kim	i	08 14 05			
28	Kim	i	13 10 34			
28	X/ Kim	iPKP	23 11 44	123		USCGS H = 22 53 01.3; 16.0N 93.6W Chiapas, Mexico h = 110km
29	Kim	i	07 27 28		R	
29	Kim	e	13 15 46			
		i	56 06		C	
30	X/ Kim	i	01 52 16		C	
	X/ Pie	i	27		R	
30	Kim	i	14 55 30			
31	Pie	e	13 29 19			
		i	30 37			
	Kim	i	27		R	
31	Kim	e(i)	13 42 28			
31	Kim	i	16 37 08			
31	Kim	e	20 36 54			

A.A. Attridge
January, 1963.

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- NOV 1962

Geological Survey Office,
 Department of Mines,
 Union of South Africa.

SEISMOLOGICAL BULLETIN.

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Lithologic foundation	Weathered Shale (Pretoria series)	Dwyka Shale	Soft Ecca Shale	Dolerite boulders embedded in decayed dolerite	Mica Schist
Height:	1350 m.	558 m.	656 m.	1321 m.	1728 m.
Instrument:	Willmore S.P. vertical and horizontal.	Benioff S.P. vertical with short and long period recorders	Benioff S.P. vertical	Benioff S.P. vertical	Benioff S.P. vertical
Seismo. Officer:	The Director	Professor of Physics	Professor of Physics	Rev. Br. T.W. Purcell	Officer in Charge
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 University of the Witwatersrand,
 Johannesburg.
 South Africa.

H.O. Oliver.

Seismological Officer.

November, 1962.

Date	Station	Phase	G. M. T.	Arc Dist	C/R	Remarks.
2 X	Kim	iP	14 59 30	89°		USCGS. H=14 - 46 - 39.2; 10.0 S, 117.8 E. South of Sunbawe h = 33 km.
2	Kim	e	18 31 18			
3	Kim	i	20 31 03			
4 X	Kim	iP	23 05 31	79°	C	USCGS. H = 22 - 53 - 34; 43.2 S, 75.6 W. Off coast of South Chile - Mag. 6. h = 33 km.
6 X	Kim	iP	00 20 18	64°		USCGS. H = 00 - 09 - 47.2; 28.0 N, 55.6 E. South Iran. h = 33 km.
6	Grh	iP	40	67°	C	
6	Kim	e	13 01 (53)			
6	Kim	i	15 33 06			
7	Kim	i	04 09 06			
7 X	Kim	iP	16 15 51	90°	R	USCGS. H = 16 - 03 - 04.1; 7.8 S, 119.8 E. Floreo Sea. h = 156 km.
7	Kim	i	17 54 06		R	
7	Kim	iPKP ₁	22 46 17	154°		USCGS. H = 22 - 26 - 33.8; 51.5 N, 176.1 E. Rat Is. h = 43 km.
8	Kim	i	16 10 48			
9 X	Kim	i	01 21 45		R	
10 X	Kim	i	01 54 42			
10	Kim	i	55 19			
10	Kim	i	08 26 57			
11 X	Kim	i	15 24 11		R	
11	Grh	i	16 28 43			
11 X	Kim	i	51			
11 X	Grh	eP	22 26 05	77°		USCGS. H = 22 - 14 - 18.7; 43.2 S, 76.0 W. Off coast of South Chile. Mag. 6½ h = 33 km.
11 X	Kim	iP	07 16	78°		
12	Kim	i	21 47 41			
12	Kim	i	21 47 41			
13	Kim	i	12 41 29			
13	Kim	i	12 54 19			
13	Kim	e	21 56 16			
15	Grh	e	16 03 41			
15	Kim	i	56			
15	Grh	i	16 21 13		R	
15	Kim	i	26			
15 X	Kim	i	23 38 48			
16	Kim	i	10 10 35			
16	Kim	i	20 11 09			
16 X	Pie	iP	21 21 38	74°	C	USCGS. H = 21 - 10 - 01.8; 13.5 N, 93.2 E. Andaman Is. Mag. 6. h = 33 km.
16 X	Kim	iP	22 00	78°		
16 X	Grh	iP	23	79°	R	
16	Kim	iP	22 57 38	79°		USCGS. H = 22 - 45 - 43.5; 14.0 N, 92.8 E. Andaman Is. region. h = 33 km.
17	Kim	i	07 34 23			
17	Kim	i	16 01 (46)			
17	Kim	i	22 22 29			
18	Kim	i	06 06 32			
18	Kim	i	22 31 20			
19	Kim	i	14 20 04			
20	Pie	i	14 41 18			
20	Pie	i	30			
20	Pie	i	42 04			
20	Grh	i	16 42 13			
20	Grh	i	58			
20	Grh	i	43 05			
21	Kim	i	13 59 55			
21	Kim	i	14 06 44			
22	Kim	i	20 07 18			
22	Kim	i	08 12			
23 X	Kim	i	00 43 10			
24 X	Pie	i	10 46 28			
24 X	Kim	iP	16 31 22	74°		USCGS. H = 16 - 19 - 44.9; 9.8 N, 40.7 W. Mid-Atlantic Ocean h = 33 km.
24	Kim	i	20 04 23			
24	Kim	i	27			
26 X	Kim	iPKP	16 17 45	126°		USCGS. H = 15 - 58 - 46.2; 23.3 S, 175.8 W. Tonga Is. h = 19 km.

No.

<u>Date</u>	<u>Station</u>	<u>Phase</u>	<u>G. M. T.</u>	<u>Arc Dist</u>	<u>C/R</u>	<u>Remarks.</u>
27	Kim	i	10 09 28			
28	Kim	iP	05 15 43	32°	C	USCGS. H = 05 - 09 - 15; 22.5 S, 10.7 W. South Atlantic Ocean. h = 33 km.
29	Kim	iPKP	09 22 50	127°	C	USCGS. H = 09 - 03 - 51.1; 22.3 S, 175.9 W. Tonga Is. h = 33 km.
29	Grh	i	13 14 21			
	Kim	i	16 18			
*11	Kim	i	01 24 24			

A.A. Attridge.
February 1963.

Copied 4/5

DEC 1962

Geological Survey Office,
Department of Mines,
Union of South Africa.

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Johannesburg.
South Africa.

H.O. Oliver.

Seismological Officer.

DECEMBER, 1962

Date	Station	Phase	G. M. T.	Arc Dist.	C/R	Remarks.
1	X/ Kim	iPKP ₁	02 10 09	156°		USCGS H= 01-50-20.4 52.4N 170.1W Fox Is. h = 38km.
2	Kim	i	22 04 47		C	
4	X/ Grh	iP	07 34 41 A	80°	C	USCGS H= 07-23-04.2 21.8S, 65.6W Southern Bolivia
6	Grh	i	07 01 37		C	
7	X/ Kim	iPKP	14 21 42	125°		USCGS H= 14-03-37.0 29.2N, 139.2E
	X/ Grh	iPKP	48	125°	C	Bonin Is. region Mag. 7 h= 411km.
8	Kim	iP	18 12 52	84°	C	USCGS H= 18-00-41.1 23.6S, 69.4W Near coast of N. Chile h= 100km.
8	X/ Kim	i	18 37 42 K		R	
8	Grh	e	19 14 13			
8	X/ Grh	iP	21 37 (39) K	81°	R	USCGS H= 21-27-22.2 25.8S, 63.4W Galta
	X/ Kim	iP	38 10 K	80°	R	Garbago Del Estro Provinces, Argentine h=620k
	Kim	i	22 08 38			
8	X/ Kim	iPKP ₁	23 14 50	154°		USCGS H= 22-55-01.2 50.5N, 176.8W Andreanof Is. h= 33km
10	X/ Kim	iP	05 02 54	34°	R	USCGS H= 04-56-19.4 28.3S, 62.7E Indian Ocean
10	X/ Kim	iPKP	17 14 48	124°		USCGS H= 16-56-04.5 27.2S, 176.8W Kermadec Is. region h= 88km
11	Kim	i	13 17 17		R	
12	Kim	i	10 26 30			
12	Kim	i	13 45 45			
12	Kim	eP	14 04 46	43°		USCGS H= 13-56-32.4 60.3S, 25.9W Sandwich Is. region h= 33km
		i	59			
12	X/ Grh	iP	23 08 14	77°		USCGS H= 22-56-45.8 4.6N, 96.5E
	X/ Kim	iP	16	76°		Sumatra h=138km.
13	X/ Kim	iPKP ₁	15 17 01 K	152°	R	USCGS H=14-57-28 61.4N, 147.2W Kenai Peninsular, Alaska h= 69km
13	X/ Kim	eP	22 55 57	64°		USCGS H= 22-45-28 35.2N, 28.3E Iodecaneso Is. h= 39km
14	Kim	i	18 04 29		R	
17	Kim	(e)i	15 38 01		R	
17	Kim	i	19 24 49		C	
18	X/ Kim	iPKP	10 52 24 A	120°	C	USCGS H= 10-33-58.4 28.3S, 178.2W Kermadec Is. h=214km.
18	Kim	e	23 07 01			
21	X/ Grh	iP	00 56 33 A	83°	C	USCGS H= 00-44-19.7 9.0S, 112.4E Near
	X/ Kim	iP	42 K	84°	R	South coast of Java h=64km
21	X/ Kim	i	06 48 39		C	
21	Kim	i	08 29 48			
21	X/ Kim	iPKP ₁	09 02 38	156°	R	USCGS H= 08-42-48.3 52.4N, 168.5W Fox Is. Mag 6½ h=23km
21	X/ Kim	iPKP ₁	09 20 32 K	156°	R	USCGS H= 09-00-41.4 52.4N, 168.5W Fox Is. h=33km
21	X/ Kim	(e)i	09 52 10		C	
21	Kim	e	12 48 17			
21	Kim	iP	17 56 20	50°	R	USCGS H= 17-47-30.8 14.2N, 51.7E Gulf of Aden h= 27km
22	Kim	(e)i	01 11 09	120°		USCGS H= 00-52-23.4 22.0S, 170.1 E Loyalty Is. Mag 6½ h=33km
22	X/ Kim	iP	02 12 13 K	84°	R	USCGS H= 01-59-50.3, 9.2S, 112.4E Near South Coast of Java. h= 69km
22	X/ Kim	iPKP ₁	15 40 12	157°		USCGS H= 15-20-31.0 52.5N, 168.8W Fox Is. Mag. 6½ h=47km
23	Kim	i	00 32 13		C	
25	Kim	i	13 50 16		R	
26	X/ Grh	iPKP ₁	22 44 (25)	150°	C	USCGS H= 22-25-15.5 53.9N, 168.7E
	X/ Kim	iPKP ₁	47	147°	R	Komandorskie Is. Mag. 6½ h=33km
26	X/ Grh	i	23 35 41			
	X/ Kim	i	55		R	
27	Kim	i	00 05 45		R	
27	Kim	iP	11 25 40	78°	R	USCGS H= 11-13-38.2 28.6S, 67.4W Near coast of central Chile
27	X/ Kim	i	18 37 44			
28	X/ Kim	iP	21 46 20	39°	R	USCGS H= 21-39-07.9 17.1S, 14.1W S. Atlantic Ocean h=33km

December 1963. (Cont.)

Date	Station	Phase	G. M. T.	Arc Dist.	C/R	Remarks
29	X ✓ Kim	iP	10 53 35	84°		USCGS H= 10-41-04.1 20.05, 69.9W Northern Chile Mag. 6½ h = 46km
	X ✓ Grh	iP	✓ 36	84°		
30	Kim	i	15 34 26			
31	X ✓ Kim	(e)i	11 12 57		C	
31	Kim	(e)i	16 01 53		R	
31	X ✓ Kim	iPKP	19 58 59	121°	C	USCGS H= 19-40-10.5 22.75, 171.4E Loyalty Is. region h = 39km

A.A. Attridge
3rd April, 1963