

16 JUN 1961

RHODESIA METEOROLOGICAL SERVICESSEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CIK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WWSS Station: SP magnification 100,000
 IP magnification 1,500
- CHIREDDZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
 P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL. The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BUL	P'	05	13	12	e	2.2	CGS 04 53 38 52.1N 170.0W	4.6
		pP'		13	24	e		Fox Is., Aleutians Is.	
01	KRR	P'	09	26	20	e	0.1	CGS 09.07 04 51.2N 179.4W	5.4
	BHA	P'		26	26	e	0.1	Andreanof Is., Aleutians. Is.	
	BUL	P'		26	29	e	0.2		
01	BUL	Pn	12	18	36	e		BUL 12 17 04 26.3S 27.4E	2.8
		Sn		19	44	e		Witwatersrand.	
		Sg		20	17	i	0.3		
	CIR	Pn		18	39	e			
		Sn		19	49	e			
		Sg		20	22	i	0.3		
	KRR	Pn		19	19	e			
		Sn		21	06	e			
		Sg		22	02	i	0.3		
	BHA	L		23	10	e	0.1		
01	BUL	P	13	04	22	e	0.4	CGS 12 53 36 49.0S 8.9W	4.0
	CIR	P		01	30	iC	0.4	S. Atlantic Ridge.	
	KRR	P		01	46	e	0.2		
01	BHA	P	16	19	20	e	0.1	CGS 16 12 02 14.2N 53.7E	3.6
	KRR	P		19	26	e	0.1	Arabian Sea.	
	CIR	P		19	54	e	0.1		
	BUL	P		19	54	iC	0.3		
02	BHA	Pn	07	36	45	e		BUL 07 36 13 13.4S 26.8E	2.5
		Sg		37	13	e	3.4	Kasempa Area, Zambia.	
	KRR	Pn		37	19	e			
		Sn		38	08	e			
		Sg		38	26	e	0.6		
	BUL	L		39	50	e	0.2		
	KRR	L		40	47	e	0.2		
02	BHA	P'	14	26	01	iC	0.2	CGS 14 07 05 53.9N 160.6E	4.9
	KRR	P'		26	02	iC	0.3	Near E. Coast of Kamchatka.	
	CIR	P'		26	08	iC	0.3		
	BUL	P'		26	10	iC	0.3		
02	BUL	P'	16	05	52	iC	0.2	CGS 15 47 55 12.9S 169.1E	4.7
		pP'		08	20	i		Santa Cruz Is. Region.	
	KRR	P'		05	57	e	0.1		
		pP'		08	23	e			
	BHA	P'		06	02	e	0.1		
		pP'		08	32	e			
02	BUL	Pn	16	37	13	iR		BUL 16 35 42 26.3S 27.5E	2.7
		Sg		38	53	i	0.3	Witwatersrand.	
	CIR	Sg		38	58	e	0.3		
	KRR	L		40	40	e	0.1		
02	BHA		16	44	21	e	0.1	Distant.	
	BUL			44	30	e	0.2		
02	BUL	P	18	00	09	iC	4.0	CGS 17 50 47 56.0S 27.5W	5.9
		pP		00	31	e		S. Sandwich Is. Region.	
		S		07	41	i			
		ScS		09	58	i			
	CIR	P		00	15	iC	3.0		
		pP		00	35	i			
	KRR	P		00	32	iC	2.7		
		pP		01	00	i			
	BHA	P		00	42	iC	1.8		
		pP		01	42	i			
		ScS		10	34	i			

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral Data; Remarks	Mag
03	BHA	P	03	26	36	iE	0.3	CGS 03 16 38 37.1N 57.9E Iran - USSR Border Region.	5.6
	KRR	P		26	43	e	0.6		
	CIR	P		27	05	e	0.7		
	BUL	P		27	08	e	0.5		
03	BUL	Pn	10	25	22	e		BUL 10 23 52 26.3S 27.8E Witwatersrand.	2.8
		Sn		26	29	e			
		Sg		27	01	i	0.4		
	CIR	Pn		25	26	e			
		Sn		26	34	e			
		Sg		27	07	e	0.4		
	KRR	L		28	48	e	0.2		
03	BHA	P'	11	38	01	iC	0.2	CGS 11 19 14 14.5N 91.7W Guatemala.	5.0
		pP'		38	19	icR	0.7		
	BUL	P'		38	02	e	0.2		
		pP'		38	19	icR	0.5		
	KRR	P'		38	04	e	0.3		
		pP'		38	21	icR	0.7		
	CIR	P'		38	10	e	0.1		
	pP'		38	24	icR	0.3			
03	KRR	P'	13	47	30	e	0.5	CGS 13 28 13 51.2N 179.4W Andreanof Is., Aleutian Is.	5.8
	CIR	P'		47	39	e	0.5		
	BUL	P'		47	39	e	0.6		
03	BUL	Pn	13	35	59	iC	-	BUL 13 34 31 26.2S 27.8E Witwatersrand.	3.4
		Sn		37	05	e			
		Sg		37	36	i	1.5		
	CIR	Pn		36	02	e			
		Sn		37	10	e			
		Sg		37	38	e	1.3		
	KRR	Pn		36	46	e			
	Sg		39	20	e	0.7			
BHA	L		40	45	e	0.3			
03	CIR	P	19	05	40	e	0.2	CGS 18 59 50 49.1S 31.0E S. of Africa.	4.5
	BUL	P		05	46	e	0.4		
	BHA	P		06	37	e	0.1		
03	CIR	P	19	21	38	e	0.2	CGS 19 10 05 6.3S 104.6E Sunda Strait.	5.2
	KRR	P		21	42	e	0.1		
		IcP		21	56	e			
	BUL	P		21	43	e	0.2		
		PcI		21	57	e			
	BHA	P		21	46	e	0.1		
	PcP		21	59	e				
04	BUL	Pn	02	27	05	e		BUL 02 25 39 26.3S 27.7E Witwatersrand.	2.9
		Sn		28	11	e			
		Sg		28	44	e	0.7		
	CIR	Pn		27	08	e			
		Sn		27	17	e			
		Sg		27	50	e	0.4		
	KRR	Sg		30	32	e	0.3		
BHA	L		31	45	e	0.1			
04	CIR	P	18	17	41	iC	0.6	CGS 18 10 55 26.0S 68.8E S. Indian Ocean.	5.1
	BUL	P		18	06	iC	0.3		
	KRR	P		18	08	iC	0.3		
	BHA	P		18	25	iC	0.2		
04	BHA	Pn	19	09	20	e		BUL 19 06 49 5.2S 34.2E Central Tanzania.	3.9
		Sn		11	11	e			
		L		12	21	e	2.2		
	KRR	Sn		11	50	e			
		L		13	13	e	0.5		
	CIR	L		15	05	e	0.3		
	BUL	L		15	09	e	0.3		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
04	CIR	P	22	50	02	iC	0.5	CGS 22 36 48 6.8S 129.8E Banda Sea.	5.7
	KRR	P		50	13	e	0.5		
	BUL	P		50	14	iC	0.4		
	BHA	P		50	19	icR	0.2		
05	CIR	P	01	46	25	e	0.2	CGS 01 32 57 1.1N 125.9E Molucca Passage	5.3
	KRR	P		46	47	e	0.1		
	BUL	P		46	29	e	0.2		
	BHA	P		46	31	e	0.1		
05	BHA	Pn	02	57	51	e		BUL 02 56 48 13.3S 24.3E Kabompo Area, Zambia. Felt MM V Kabompo.	3.1
		Sn		58	40	e			
		Sg		59	01	e	1.6		
	KRR	Pn		58	20	e			
		Sn		59	25	e			
	BUL	L		00	03	e	0.7		
		Pn		58	42	e			
		Sn		00	04	e			
		SgSg		00	52	e	0.5		
	CIR	Pn		59	15	e			
Sn			01	02	e				
		SgSg	01	04	e	0.4			
05	BUL	Pn	09	12	44	iC	0.3	BUL 09 11 11 26.4S 27.5E Witwatersrand.	3.2
		Sn		13	53	e			
		Sg		14	25	e	0.8		
	CIR	Pn		12	49	e			
		Sn		14	00	e			
	KRR	Sg		14	32	e	0.7		
		Pn		13	31	e			
		Sn		15	14	e			
		Sg		16	10	e	0.4		
	BHA	L		17	39	e	0.2		
05	BHA	Pn	10	32	40	iR	1.1	BUL 10 30 56 7.7S 31.2E Marungu Mts, Congo.	4.2
		Sn		33	56	e			
		Sg		34	25	e	6.0		
	KRR	Pn		33	09	e			
		Sn		34	47	e			
	BUL	Sg		35	42	e	2.7		
		Pn		33	53	e			
		Sn		36	04	e			
		L		37	31	e	2.1		
	CIR	Pn		34	05	e			
Sn			36	25	e				
	L		37	52	e	1.2			
05	CIR	P'	13	45	30	iC	1.1	CGS 13 26 40 8.0S 158.9E Solomon Is.	6.4
		pP'		45	51	e			
		PKKP		55	35	e			
		SKKS		59	35	e			
				03	04	e			
	BUL	P'		45	35	iC	3.1		
		pP'		45	56	e			
				50	11	e			
		S'S		52	37	i			
		PKKP		55	23	i			
		S'S		59	15	i			
	KRR			02	43	e			
		P'		45	36	iC	1.5		
		pP'		45	56	e			
	BHA	PKKP		55	22	e			
		P'		45	50	e	1.1		
	pP'		45	58	e				
			50	38	e				
	SKS		52	42	e				
	PKKP		55	15	i				
	SKKS		59	07	e				
			02	38	e				

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
05	CIR	P	16	27	55	e	0.2	CGS 16 14 30 1.6N 126.6E	5.4
	KRR	P		28	05	e	0.1	Molucca Passage	
	BUL	P		28	06	e	0.2		
	BHA	P		28	07	e	0.1		
05	CIR	P	17	03	37	e	0.6	CGS 16 50 43 8.9S 123.5E	5.6
	KRR	P		03	48	e	0.6	Flores Is. Region	
	BUL	P		03	50	e	1.2		
	BHA	P		03	55	e	0.6		
05	KRR	Pg	21	16	22	e		BUL 21 15 48 15S 31E	2.2
		Sg		16	45	e	2.1	Lower Luangwa Valley, Mocambique	
	BHA	Pg		16	28	e			
		Sg		16	56	e	1.4		
	BUL	Sg		18	34	e	0.2		
06	KRR	P'	06	06	43	e	0.1	CGS 05 47 18 53.8N 163.4W	4.6
	BUL	P'		06	54	icR	0.9	Unimak Is. Region	
	CIR	P'		06	55	icR	0.5		
06	BHA		07	16	52	iR	0.2	Distant	
	KRR			16	56	e	0.2		
	BUL			17	00	e	0.1		
	CIR			17	09	e	0.1		
06	BUL	P'	09	43	09	iR	0.3	CGS 09 24 23 11.4N 87.2W	4.8
	BHA	P'		43	10	iR	0.1	Near Coast of Nicaragua	
	KRR	P'		43	11	e	0.2		
	CIR	P'		43	15	e	0.1		
06	BUL	SKP	12	49	40	iR	0.2	CGS 12 29 13 22.5S 179.2E	4.5
	KRR	SKP		49	47	e	0.2	S. of Fiji Is.	
	BHA	SKP		49	55	e	0.3		
06	CIR	P'	15	49	10	e	0.7	CGS 15 30 30 30.2S 178.0W	5.2
	BUL	P'		49	13	e	1.4	Kermadec Is. Region	
	KRR	P'		49	18	e	1.8		
	BHA	P'		49	24	e	1.3		
06	CIR	P'	15	58	00	e	0.6	CGS 15 39 01 10.5S 164.5E	6.2
	BUL	P'		5	04	iR	1.2	Santa Cruz Is. Region	
	KRR	P'		58	7	e	0.5		
	BHA	P'		58	11	e	0.5		
06	CIR	P'	17	52	39	e	0.1	CGS 17 33 41 10.7S 164.4E	5.4
	BUL	P'		52	44	e	0.1	Santa Cruz Is. Region	
	BHA	P'		52	50	e	0.1		
06	BUL	P	20	31	34	iR	0.5	CGS 20 19 31 18.4S 70.7W	4.9
	BHA	P		31	45	e	0.1	Near Coast of N. Chile	
	KRR	P		31	45	e	0.1		
	CIR	P		31	46	iR	0.2		
06	CIR	P'	21	08	59	iR	0.2	CGS 20 50 25 30.2S 178.2W	4.5
				09	13	i		Kermadec Is. Region	
	BUL	P'		09	02	iR	0.6		
	KRR	P'		09	07	iR	0.7		
	BHA	P'		09	14	e	0.4		
07	BUL	P'	01	32	45	e	0.2	CGS 01 14 14 6.2S 146.4E	5.3
	BHA	P'		32	49	e	0.1	E. New Guinea Region	
07	CIR	P'	04	59	14	e	0.3	CGS 04 40 21 16.0S 167.5E	4.7
	BUL	P'		59	20	e	0.4	New Hebrides Is.	
	KRR	P'		59	23	e	0.4		
	BHA	P'		59	27	e	0.1		

Dy	Stn	Phase	h	m	s	GM	D/	Epicentral data; Remarks	Mag
07	BHA	P	08	57	50	e		BUL 08 55 27 4.5S 27.5E S. Kivu Prov., Congo.	3.9
		S		59	32	e			
		L		00	40	e	1.4		
	KRR	P		58	22	e			
		S		00	33	e			
		L		01	53	e	0.6		
	BUL	P		59	04	e			
		S		01	44	e			
		L		03	40	e	0.3		
	CIR	P		59	22	e			
	S		02	16	e				
	L		04	23	e	0.3			
08	BHA	P	06	11	28	e	0.1	CGS 06 03 17 17.4N 60.3E Arabian Sea.	4.7
	KRR	P		11	35	e	0.3		
	CIR	P		11	51	e	0.2		
	BUL	P		11	59	e	0.3		
08	BHA	Pg	13	47	38	e		BUL 13 47 03 13S 27E Kasempa Area, Zambia.	2.6
		Sg		48	03	e	4.0		
	KRR	Pn		48	11	e			
		Sn		49	00	e			
		Sg		49	21	e	0.5		
	BUL	L		50	41	e	0.2		
CIR	L		51	50	e	0.2			
09	BUL	P'	12	06	51	IG	0.3	CGS 11 43 47 18.8S 179.4E Fiji Is.	4.5
	KRR	P'		06	57	e	0.1		
	BHA	P'		07	01	e	0.1		
09	CIR	P'	14	01	45	e	0.1	CGS 13 43 08 6.6S 148.0E New Britain Region.	5.0
	BUL	P'		01	45	IR	0.4		
	KRR	P'		01	45	e	0.1		
09	KRR		20	41	32	e	0.1	Distant.	
	BUL			41	40	e	0.2		
	CIR			42	02	e	0.1		
09	CLK	Pg	21	45	23	e		BUL 21 45 03 14.6S 35.4E Lake Malombe Area, Malawi.	2.3
		Sg		45	36	e	3.1		
	KRR	Pg		46	48	e			
		Sn		47	33	e			
		Sg		48	03	e	0.2		
	BHA	Sg		48	30	e	0.2		
	CIR	Sg		48	49	e	0.1		
BUL	Sg		49	22	e	0.1			
09	BHA	Pn	23	32	31	e		BUL 23 31 18 9.4S 28.2E Lake Mweru Area, Katanga.	3.2
		Sn		33	24	e			
		Sg		33	49	e	2.1		
	KRR	Pn		33	08	e			
		Sn		34	25	e			
		Sg		35	05	e	0.6		
	CLK	Pn		33	30	e			
		Sn		35	09	e			
		L		36	10	I	0.5		
	BUL	Pn		33	47	e			
		L		36	53	e	0.3		
	CIR	Pn		34	06	e			
		Sn		36	09	e			
	L		37	28	e	0.2			

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
10	BHA	Pn	00	33	13	e		BUL 00 31 46 8.7S 29.2E	3.6
		Sn		34	12	e		Lake Mweru Area, Zambia.	
		Sg		34	43	e	4.5		
	KRR	Pn		33	43	iC	0.8		
		Sn		35	09	e			
		Sg		35	55	e	1.2		
	CLK	Pn		33	53	e			
		Sn		35	26	e			
		L		37	28	e	0.5		
	BUL	Pn		34	28	e			
		Sn		36	24	e			
		L		37	42	e	0.5		
	CIR	Pn		34	40	e			
	Sn		36	49	e				
	L		38	11	e	0.5			
10	BUL		01	33	16	e	0.2	Distant.	
	CIR			33	20	e	0.1		
10	CIR	P	06	06	29	iC	0.2	Distant.	
	BUL	P		06	45	iF	0.2		
	KRR	P		06	50	e	0.5		
	BHA	P		6	56	iC	0.1		
10	KRR	P'	0	43	21	iC	0.3	CGS 08 21 39 5.0S 153.6E	5.2
	BUL	P'		43	25	e	0.3	New Ireland Region,	
	BHA	P'		43	30	e	0.1		
10	CIR	Pg	18	36	39	e		BUL 18 36 09 22.2S 33.0E	2.3
		Sg		37	00	e	1.5	Sol du Save Prov., Mocambique.	
	BUL	Sn		38	04	e			
		Sg		38	25	e	0.4		
	KRR	Sn		38	44	e			
		Sg		39	13	i	0.3		
10	BHA	P	23	25	33	e	0.1	CGS 23 16 37 32.5N 118.7E	4.6
	KRR	P		25	45	e	0.1	W. Iran.	
	BUL	P		26	10	e	0.2		
	CIR	P		26	10	e	0.2		
11	BUL	P	04	39	52	iR	0.3	Distant.	
	KRR	P		40	04	e	0.1		
	CIR	P		40	14	iR	0.3		
	CLK	P		40	48	e	0.1		
11	CIR	P'	04	45	20	e	0.3	CGS 04 26 27 28.4S 177.0W	5.4
	BUL	P'		45	23	iP	0.5	Kermadec Is Region.	
	KRR	P'		45	28	e	0.2		
	BHA	P'		45	34	e	0.1		
11	CIR	P'	05	06	36	e	0.2	CGS 04 47 43 28.5S 176.8W	5.1
		pp'		06	48	e		Kermadec Is. Region.	
	BUL	P'		06	39	e	0.2		
		pp'		06	52	e			
	KRR	P'		06	43	e	0.1		
		pp'		06	56	e			
	BHA	P'		06	51	e	0.1		
		pp'		07	03	e			
11	BUL	P'	05	21	50	e	0.1	CGS 05 02 56 28.5S 176.7W	5.2
	CIR	P'		22	03	e	0.1	Kermadec Is. Region.	
	KRR	P'		22	07	e	0.2		
	BHA	P'		22	13	e	0.1		
11	BUL	P'	06	45	47	e	0.2	CGS 06 27 29 17.7S 178.8W	4.6
	KRR	P'		45	50	e	0.3	Fiji Is. Region	
	BHA	P'		45	58	e	0.1		

7.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
11	BHA	Pg	11	06	35	i		BUL 11 06 00 13.2S 26.9E Kasempa Area, Zambia.	3.1
		Sg		07	00	i	-		
	KRR	Pn		07	07	iR			
		Sn		07	57	i			
		Sg		08	17	1.3			
	BUL	Pn		07	41	e			
		Sn		08	58	e			
		L		09	41	e	0.6		
	CIR	Pn		08	07	e			
		Sn		09	41	e			
11	BHA	P	12	06	28	iR	0.3	CGS 11 58 47 10.2S 13.2W Ascension Is. Region.	4.9
		PcP		08	20	e			
	BUL	P		06	31	iR	0.6		
		PcP		08	28	e			
	KRR	P		06	36	iR	0.3		
				08	25	e			
	CIR	P		06	55	iR	0.4		
		PcP		08	44	e			
	CLK	P		07	18	iR	0.3		
		PcP		09	03	e			
11	CIR	Pg	22	04	03	e		BUL 22 03 15 19.2S 33.8E Vila Pery Area, Mocambique.	2.5
		Sn		04	27	e			
		Sg		04	36	e	0.9		
	KRR	Sn		05	11	e			
		Sg		05	34	e	0.9		
BUL	Sg		05	49	e	0.6			
12	BUL	SKP	04	29	49	e	0.3	CGS 04 09 24 23.3S 179.6E S. of Fiji Is.	4.2
	KRR	SKP		29	57	iR	0.5		
	BHA	SKP		30	07	iR	0.4		
12	BUL	P	14	26	08	iR	0.8	CGS 14 22 53 14.1S 72.7W Peru.	5.2
	CIR	P		26	10	e	0.1		
	KRR	P		26	17	e	0.1		
	BHA	P		26	17	iR	0.2		
12	BHA	P	17	41	20	e	0.2	CGS 17 31 31 0.5N 27.1W Central Mid-Atlantic Ridge.	4.5
	BUL	P		41	27	e	0.3		
	KRR	P		41	29	e	0.3		
	CIR	P		41	46	e	0.3		
13	BUL	P	00	06	25	e		BUL 00 05 34 26S 17E Schwarzrand Mts, S.W. Africa.	3.8
		S		08	35	e			
		L		09	56	e	0.6		
	CIR	P		06	58	e			
		S		09	29	e			
		L		11	13	e	0.5		
	KRR	P		07	02	e			
		S		09	42	e			
		L		11	24	e	0.4		
	BHA	L		11	59	e	0.2		
13	CIR	P'	03	12	14	e	0.2	CGS 03 53 22 30.5S 177.8W Hermadec Is. Region.	4.6
	BUL	P'		12	18	iC	0.4		
	KRR	P'		12	23	e	0.3		
	BHA	P'		12	29	e	0.2		
13	KRR	P	05	56	12	e	0.2	CGS 05 46 41 30.3N 22.6E Greece.	4.7
	BUL	P		56	35	e	0.3		
	CIR	P		56	44	e	0.3		
13	BUL	P	06	49	24	e	0.3	CGS 06 36 37 37.1S 73.6W Near Coast of Central Chile.	4.9
	CIR	P'		49	31	e	0.5		
	BHA	P		49	41	e	0.4		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	BHA	P	08	06	08	e	0.2	CGS 07 57 07 34.7N 25.2E Crete.	4.6
	KRR	P		06	09	e	0.1		
	BUL	P		06	33	e	0.2		
	CIR	P		06	41	e	0.2		
13	CIR	P'	09	13	52	e	0.3	CGS 09 55 04 8.0S 158.9E Solomon Is.	5.7
		pp'		14	06	e			
	BUL	P'		13	55	iC	0.5		
		pp'		14	11	i			
	KRR	P'		13	59	e	0.2		
	BHA	P'		14	04	e	0.1		
		pp'		14	17	e			
13	CLK	P	10	46	25	iR	0.2	CGS 10 39 41 5.7S 68.3E Chagos Archipelago Region.	4.6
	CIR	P		47	04	e	0.3		
	KRR	P		47	09	e	0.2		
	BHA	P		47	16	e	0.2		
	BUL	P		47	24	iR	0.3		
13	BUL	Pn	13	57	56	e		BUL 13 56 22 26.5S 27.2E Witwatersrand.	2.8
		Sn		59	05	e			
		Sg		59	39	i	0.3		
	CIR	Pn		58	02	e			
		Sn		59	13	e			
		Sg		59	44	i	0.4		
	KRR	Pn		58	39	e			
	Sn		00	26	e				
		Sg		01	22	e	0.2		
13	BUL	P	14	31	04	iC	0.3	Distant.	
	CIR	P		31	08	iC	0.3		
	KRR	P		31	56	e	0.1		
	BHA	P		32	00	iR	0.2		
13	BUL		20	59	40	e	0.2	Distant.	
	CIR		21	00	05	iR	0.2		
14	BHA	Pn	02	42	43	e		BUL 02 40 58 7.4S 30.2E S. Lake Tanganyika Area.	3.9
		Sn		43	59	e			
		L		44	44	e	7.		
	KRR	Pn		43	12	e			
		Sn		44	51	i			
		L		45	52	e	2.0		
	CIR	Pn		43	12	e			
		Sn		44	52	e			
		L		45	57	e	0.9		
	BUL	Pn		43	56	e			
	Sn		46	08	e				
	L		47	37	e	0.7			
	CIR	In		44	00	e			
		Sn		46	27	e			
		L		47	01	e	0.4		
14	BHA	Pn	09	06	17	e		BUL 09 05 33 12.8S 26.0E Kasempa Area, Zambia.	2.8
		Sg		06	52	e			
		Sg		06	59	e			
	KRR	Pn		06	52	e			
		Sn		07	46	e			
		Sg		08	18	e	0.6		
	BUL	Sg		09	24	e	0.3		
	L		10	36	e	0.2			
14	CIR		15	38	31	iR	0.3	Distant.	
	KRR			38	45	iR	0.2		
	BHA			38	54	e	0.1		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
14	BUL	Pn	20	23	22	iC		BUL 20 21 52.126.4S 28.1E	3.5
		S*		24	32	e		Witwatersrand.	
		Sg		24	59	e	1.7		
	CIR	Pn		23	24	e			
		Pg		23	42	e			
		Sg		24	56	e	2.2		
	ERR	Pn		24	09	iC			
		Sn		25	51	e			
		Sg		26	14	e	1.0		
	BHA	Pn		24	39	iC			
	Sn		26	48	i				
	Sg		28	01	e	0.3			
	GLK	Sg		28	09	e	0.3		
14	BHA	P	23	21	04	iP	2.9	CGS 23 12 03 36.2N 29.2E	5.5
		S		28	17	e		Turkey.	
	GLK	P		21	15	iP	2.9		
		S		28	35	e			
	KRR	P		21	22	iP	6.9		
	BUL	P		21	45	iP	3.5		
	S		29	32	i				
	CT	P		21	53	iP	6.2		
				25	08	i			
15	BVA	P	08	56	23	iC	0.3	CGS 08 46 29 45.6N 26.4E	4.5
	GLK	P		56	33	iC	0.6	Rumania.	
	KRR	P		56	31	iC	0.8		
	BUL	P		56	59	iC	0.6		
	CT	P		57	07	iC	1.5		
15	BUL	Pn	10	24	15	e		BUL 10 22 45 26.3S 28.1E	3.9
		Sn		25	20	e		Witwatersrand.	
		Sg		25	54	i	5.5		
	CT	Pn		24	16	e			
		Sn		25	21	e			
		Sg		25	49	i	3.0		
	ERR	Pn		25	01	e			
		SH		26	40	e			
		L		27	43	i	2.3		
	BVA	Pn		25	32	e			
	Sn		27	38	e				
	L		28	58	e	0.6			
	GLK	Sg		29	00	e	0.6		
15	CT	P	11	11	32	iC	0.4	Distant	
	CIR	P		11	43	iC	0.6		
	KRR	P		11	58	iC	0.3		
	BUL	P		12	01	iC	0.5		
	BHA	P		12	03	e	0.2		
15	CT	P	13	11	33	eC	0.4	CGS 12 59 07 3.2S 113.9E	5.5
	CIR	P		11	48	eC	0.6	Celebes.	
	KRR	P		11	57	e	0.4		
	BUL	P		12	00	iC	0.8		
		S		22	50	e			
BHA	P		12	03	e	0.2			
	S		22	55	e				
15	CT	P	14	17	12	e		BUL 14 16 24 23.9S 31.1E	2.7
		Sg		17	52	e	1.7	Phalberwa, Transvaal.	
	BUL	Pg		17	43	e			
		Sg		18	19	e	0.8		
	KRR	Sg		20	01	e	0.4		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
15	BUL	Pn	15	00	51	iC		BUL 14 59 18 26.6S 27.1E Witwatersrand.	3.6	
		Sn		02	03	e				
			Sg		02	36	e	2.0		
	CIR	Pn		00	58	e				
		Sn		02	11	e				
			Sg		02	44	i	1.2		
	KFR	Pn		01	40	e				
		Sn		03	24	e				
			SgSg		04	25	e	1.0		
	BHA	Pn		02	11	e				
Sn			04	20	e					
		L		05	36	e	0.3			
CIR		Sg		05	50	e	0.3			
15	KFR	Pg	16	52	20	e		BUL 16 52 02 16.7S 28.6E Kariba.	2.1	
		Sg		52	32	e	1.5			
	BHA	Pn		52	38	e				
		Sg		53	10	i	1.0			
	BUL	Pg		53	04	e				
		Sg		53	48	e	0.8			
CIR		Sg		54	39	i	0.4			
15	BHA	Pp	17	04	00	iR		BUL 17 03 22 13.2S 26.7E Basempa Area, Zambia.	3.2	
		Sg		04	26	e	-			
	KFR	Pn		04	30	e				
		Sn		05	21	e				
			Sg		05	43	e	2.0		
	BUL	In		05	04	e				
		Sn		06	21	e				
			I		07	05	e	0.6		
	CIR	Pn		05	30	e				
		Sn		07	05	e				
		I		08	04	e	0.5			
CIR	Sn		07	00	e					
	Sg		07	43	e	0.4				
15	BHA	P'	19	49	35	e	0.2	CGS 19 30 00 37.2N 116.2E	5.3	
	KFR	P'		49	35	iR	0.6	S. Nevada. (Nevada Test Site-Wineskin.)		
	BUL	P'		49	37	e	1.4			
	CIR	P'		49	44	e	0.7			
	CIR	P'		49	49	e	0.6			
15	CIR	P	23	02	57	iP	0.3	CGS 22 51 40 7.2S 107.0E	4.9	
	CIR	P		03	16	iR	0.2	Java.		
	KFR	P		03	26	iP	0.2			
	BUL	P		03	30	iP	0.7			
	BHA	P		03	34	iR	0.5			
16	CIR	P	07	24	56	e	0.1	CGS 07 13 14 0.5N 98.7E	5.2	
	CIR	P		25	16	e	0.1	N. Sumatra.		
	KFR	P		25	24	e	0.1			
	BHA	P		25	31	e	0.1			
	BUL	P		25	33	e	0.1			
16	CIR	P'	11	25	40	iP	0.3	CGS 11 06 36 23.6S 176.1W	5.1	
	BUL	P'		25	42	e	0.3	E. of Fiji Is.		
	KFR	P'		25	47	e	0.3			
	BHA	P'		25	54	e	0.2			
16	CIR	Pg	13	14	47	e		BUL 13 13 52 24.1S 31.1E Phalaborwa, Transvaal.	2.4	
		Sg		15	27	e	0.9			
	BUL	Sn		15	30	e				
		Sg		16	14	e	0.4			
KFR	Sg		17	34	e	0.2				

Day	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
16	CIR	P ^a	17	25	10	e	0.1	CGS 17 06.55 20.8N 144.9E Mariana.	4.5
	KPR	P ^a		25	11	e	0.2		
	BUL	P ^a		25	13	iR	0.3		
17	CIR		05	02	06	e	0.1	Distant.	
	BUL			02	17	iR	0.2		
	BHA			02	33	e	0.1		
17	BUL	P	22	55	27	e	0.3	Distant.	
	CIR	P		55	31	iC	0.3		
	KPR	P		55	48	e	0.1		
18	BUL	P	03	11	53	e	4.4	CGS 03 02 39 56.8S 26.8W S. Sandwich Is. region.	5.9
		pP		12	27	i			
		S		19	20	i			
	CIR	P		12	00	e	6.2		
		pP		12	34	i			
		S		19	35	e			
	KPR	P		12	16	e	1.5		
		pP		12	50	i			
		S		20	04	e			
	BHA	P		12	28	iP	2.1		
		pP		13	01	i			
		S		20	42	i			
	GLK	P		12	44	e	1.6		
		pP		13	18	i			
		S		20	58	e			
18	GLK	P	04	02	21	e	0.3	CGS 03 49 55 3.0S 118.9E Celebes	5.3
	CIR	P		02	36	e	0.6		
	KPR	P		02	45	e	0.2		
	BUL	P		02	49	e	0.5		
	BHA	P		02	52	e	0.2		
18	GLK	P	04	08	09	iC	0.4	CGS 03 55 44 3.0S 118.9E Celebes.	5.3
	CIR	P		08	25	iC	0.8		
	KPR	P		08	34	e	0.2		
	BUL	P		08	38	iC	0.6		
	BHA	P		08	41	e	0.3		
18	CIR	Pg	05	07	22	i		BUL 05 06 37 19.5S 33.7E N. Manica Prov., Mocambique.	3.4
		Sg		07	53	i	14.		
	GLK	Pn		07	36	e			
		Sn		08	20	i			
		Sg		08	38	e	2.6		
	KPR	Pn		07	47	e			
		Sn		08	40	i			
		Sg		08	58	i	7.5		
	BUL	Pn		07	51	e			
		Sn		08	42	e			
		Sg		09	06	i	4.4		
	BHA	Pn		08	22	e			
		Sn		09	38	e			
		Sg		10	17	e	1.7		
	18	GLK	Pn	05	46	55	e		
		Sg		47	25	i	1.2		
KPR		Sg		48	30	e	0.6		
BUL		Sg		48	37	e	0.4		
18	BUL	Pn	13	51	40	e		BUL 13 50 05 26.5S 27.1E Witwatersrand.	3.3
		Sn		52	49	e			
		Sg		53	23	e	1.1		
	CIR	Pn		51	45	e			
		Sn		52	56	e			
		Sg		53	30	e	0.6		
	KPR	Pn		52	25	e			
		Sn		54	10	e			
		Sg		55	09	e	0.4		

Dy	Stn	Phase	h	m	s	Q _z	DA	Epizentral data: Remarks	Mag
19	CLK	Pn	03	37	20	e		BUL 03 36 05 11.0S 32.8W Chinsali Area, Zambia.	3.0
		Pg	37	36	e				
		Sn	38	15	e				
		Sg	38	40	e	1.0			
	BFA	Pn	37	25	e				
		Pg	37	43	e				
		Sn	38	23	e				
		Sg	38	50	e	2.1			
	KPP	Sg	39	26	e	0.5			
	BUL	L	41	13	e	0.2			
GIR	L	41	17	e	0.2				
19	CLK	Pn	03	39	50	e		BUL 03 38 35 11.0S 32.9W Chinsali Area, Zambia.	3.2
		Sn	40	47	e				
		Sg	41	10	e	1.6			
	BFA	Sn	40	54	e				
		Sg	41	22	e	2.8			
	KPP	Sg	41	59	e	0.7			
	BUL	L	43	48	e	0.3			
	GIR	L	43	48	e	0.3			
19	CLK	P	07	16	30	iP	0.4	GGS 07 02 04 45.0N 143.2W Hokkaido Japan Region.	6.4
		P'	20	22	iP	1.5			
		PP	21	18	i				
		SKS	26	45	i				
		SKKS	27	51	i				
		SP	30	18	e				
		PMP	31	07	e				
		KRR	P	16	11	iP	0.2		
			P'	20	46	e	2.4		
		GIR	PP	21	44	e			
	SKP		23	38	e				
	PMP		30	48	e				
	P		16	56	iP	0.2			
	P'		20	30	e	2.4			
	PP		21	55	e				
	SKP		23	45	e				
	PMP		30	43	e				
	BUL	P	17	03	e	0.2			
		P'	20	33	e	7.4			
		PP	22	04	i				
SKP		23	17	e					
SKS		27	09	e					
SKKS		28	38	e					
PMP		30	38	e					
SP		31	22	e					
19	CLK	P	07	39	12	e	0.2	GGS 07 26 06 1.9N 126.7W Molucca Passage.	5.6
		GIR	P	39	27	e	0.2		
	KPP	P	39	34	e	0.2			
	BUL	P	39	40	iP	0.3			
19	BFA	Pg	14	57	40	e		BUL 14 57 03 12.7S 27.2W W. Copperbelt, Zambia.	2.6
		Sg	58	06	e	3.2			
	KPP	Pn	58	12	e				
		Sn	59	05	e				
		Sg	59	26	e	0.5			
BUL	Sg	15	00	50	e	0.2			
GIR	L	01	58	e	0.2				
19	BUL	F	15	00	36	iC	1.0	GGS 18 47 59 35.6S 71.9W Central Chile.	4.7
		GIR	F	00	44	e	0.3		
	KRR	P	00	15	iC	0.5			
	GIR	P	01	11	e	0.1			

13.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag	
19	CIR	P'	19	09	38	iC	3.0	CGS 18 50 52	14.9S 167.2E	6.2 New Hebrides Is.	
		pP'		09	49	i					
		PP		11	31	e					
		S-P		12	43	e					
	CIR	SAS		16	37	e					
		P'		09	30	e	5.3				
		pP'		09	49	e					
	UL	PP		11	34	e					
		P'		09	43	iC	8.0				
	KRR	pP'		09	54	i					
		PP		11	40	i					
		SKP		12	51	e					
		SKS		16	41	e					
P'			09	44	iC	5.9					
pP'			09	56	i						
20	CIR	PP		11	44	e					
		SKP		12	54	i					
		Pn	12	19	27	e		BUL 12 17 52. 26.5S 28.0E	3.5		
		Eg		19	47	e		Witwatersrand.			
	KRR	Sn		20	34	e					
		Sg		21	08	e	1.8				
		Pn		20	11	e					
	BHA	Sn		21	57	e					
		Sg		22	51	e	0.9				
		Pn		20	43	e					
	CIR	Sn		22	55	e					
		L		24	12	e	0.3				
	20	GLK	Sg		24	12	e	0.2			
CIR		P'	12	43	36	e	0.1	CGS 12 24 35	10.3S 164.6E	5.6 Santa Cruz Is. Region.	
CIR		P'		43	37	e	0.2				
BUL		P'		43	42	e	0.2				
KRR		P'		43	42	e	0.1				
BHA		P'		43	49	e	0.2				
20		GLK	P'	14	39	11	iC	1.1	CGS 14 20 11		54.9N 166.0E
	BHA	P'		39	17	iC	0.9				
	KR	P'		39	17	iC	0.6				
	CIR	PE		41	26	e					
		P'		39	23	e	0.6				
	BHA	PP		41	51	e					
P'			39	25	e	0.7					
20	BUL	PP		41	49	e					
		SKP		42	54	e					
	Pn	16	15	02	e		BUL 16 13 27 26.5S 27.2E	3.2			
	CIR	Sg		16	44	i	1.0	Witwatersrand.			
		Pn		15	05	e					
	KRR	Sg		16	51	e	0.6				
		Pn		15	47	e					
L			18	30	e	0.4					
20	BUL	P'	22	23	33	e	0.2		Distant.		
	CIR	P		25	39	e	0.5				
	KRR	P		25	55	e	0.2				
	BHA	P		26	07	e	0.2				
21	GLK	P	01	58	13	e			Distant.		
		pP		58	29	i					
	CIR	P		58	34	e	0.1				
		pP		58	50	i					
	KRR	P		58	43	e	0.2				
		pP		59	00	i					
	BUL	P		58	50	iC	0.3				
		pP		59	01	e					
BHA	P		58	52	iC	0.3					
	pP		59	08	i						

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
21	CLK	P	02	00	26	i	0.4	CGS 01 47 30 7.3S 128.3E Banda Sea.	5.6
	CLK	P		00	37	e	0.5		
	KRR	P		00	48	e	0.2		
	BUL	P		00	51	i	0.7		
21	BHA	P	08	17	58	iC	0.2	CGS 08 05 40 28.7N 43.6W N. Atlantic Ridge.	5.2
	KRR	P		18	08	iC	0.2		
	BUL	P		18	14	e	0.2		
	CLK	P		18	26	e	0.1		
	CIR	P		18	28	iC	0.3		
21	CLK	Pn	12	06	07	e		BUL 12 04 59 11.6S 34.8E Central Lake Malawi.	3.1
		Sn		06	55	e			
		Sg		07	16	e	0.7		
	BHA	Pn		06	35	e			
		Sn		07	47	e			
		Sg		08	24	e	1.0		
	KRR	Sn		08	02	e			
		Sg		08	44	e	0.6		
	CIR	L		10	12	e	0.2		
	BUL	L		10	25	e	0.3		
21	CLK	P	14	47	36	e	0.1	CGS 14 37 15 38.3N 69.7E Tadzhik. S.S.R.	5.1
	BHA	P		47	55	e	0.1		
	KRR	P		48	00	e	0.2		
	CIR	P		48	10	e	0.1		
	BUL	P		48	22	i	0.4		
21	BUL	Pn	15	12	28	e		BUL 15 10 57 26.3S 27.4E Witwatersrand.	3.3
		Sn		13	37	e			
		Sg		14	10	e	1.2		
	CIR	Pn		12	32	e			
		Sg		14	16	e	0.8		
	KRR	Pn		13	14	e			
	Sn		14	56	e				
	Sg		15	50	e	0.3			
21	CLK	Pg	20	32	13	iP		BUL 21 32 05 (1.8) Suspected Meteorite impact 030 to 040 km S.E. of Chileka.	
		S*		32	18	e			
		Sg		32	19	i			
22	CLK	P'	01	01	26	iC	0.7	CGS 00 42 30 55.9N 163.0E Off E. Coast of Kamchatka.	
	BHA	P'		01	31	iR	0.5		
	KRR	P'		01	33	iR	0.7		
	CIR	P'		01	38	e	0.5		
	BUL	P'		01	39	e	0.4		
22	BUL	Pn	01	06	34	e		BUL 01 05 06 26.6S 27.6E Witwatersrand.	3.3
		Sn		07	40	e			
		Sg		08	10	e	1.2		
	CIR	Pn		06	38	e			
		Sn		07	45	e			
		Sg		08	13	e	1.0		
	KRR	Pn		07	21	e			
		Sn		09	03	e			
	Sg		09	50	e	0.5			
22	BUL	Pn	04	03	09	i		BUL 04 01 35 26.5S 27.3E Witwatersrand.	3.5
		Sn		04	20	i			
		Sg		04	51	i	1.9		
	CIR	Pn		03	14	i			
		Sn		04	25	e			
		Sg		04	58	i	1.6		
	KRR	Pn		03	56	e			
		Sn		05	40	e			
		Sg		06	38	e	0.9		
	BHA	Pn		04	26	e			
	Sn		06	35	e				
	L		07	54	e	0.2			
	CLK	Sg		08	12	e	0.3		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
22	BUL	P'	18	19	08	iR	1.4	CGS 17 59 33 53.7N 164.4W	Unimak Is. Region.	4.6
	CIR	P'		19	09	iR	0.4			
22	BHA	P	19	52	37	e	0.1	CGS 19 42 22 32.2N 70.0E	W. Pakistan.	4.7
	KRR	P		52	42	iP	0.2			
	BUL	P		53	06	iP	0.4			
22	BHA	Pg	20	07	31	i		BUL 20 07 06 14.9S 27.1E	Mumbwa Area, Zambia.	2.8
		Sg		07	49	i				
	KRR	Pn		07	53	e				
		Pg		08	01	i				
		Sn		08	26	i				
		Sg		08	37	e	3.1			
	BUL	Pg		08	43	e				
		Sn		09	23	e				
		Sg		09	52	e	0.6			
	CIR	Sn		10	08	e				
		L		10	54	e	0.4			
	CLK	L		11	05	e	0.2			
23	KRR	P	05	24	02	iC	0.2	CGS 05 16 35 14.2S 14.5W	S. Atlantic Ridge.	4.8
	BUL	P		24	22	iR	0.3			
	CIR	P		24	44	iR	0.4			
23	BHA	Pg	09	50	59	e		BUL 09 50 34 14.9S 27.1E	Mumbwa Area, Zambia.	2.2
		Sg		51	17	e				
	KRR	Pg		51	28	e				
		Sn		51	54	e				
		Sg		52	05	i	1.0			
	BUL	Sg		53	21	e	0.2			
24	BUL		02	50	48	e		CGS 02 33 03 21.9S 179.6W	Fiji Is. Region.	5.9
		P'		51	08	iR	5.7			
		pP'		53	26	i				
		SKP		53	36	i				
				54	12	e				
		PKS		54	35	i				
		SKS		57	23	i				
		SKKS		59	25	i				
				59	46	i				
		CLK		50	50	e				
		P'		51	07	iP	2.3			
		pP'		53	25	e				
		SKP		53	36	i				
	KRR			50	54	e				
		P'		51	12	i	7.3			
		pP'		53	30	e				
		SKP		53	45	i				
BHA			51	02	e					
	P'		51	19	e	5.0				
	SKP		53	32	i					
	PKS		54	57	i					
	SKKS		59	52	i					
			00	15	e					
24	BUL	P	03	26	53	e	0.6	Distant.		
	CLK	P		26	54	e	0.1			
	KRR	P		27	04	e	0.4			
	BHA	P		27	15	e	0.3			
24	CLK	P	04	06	04	e	0.2	Distant.		
	BUL	P		06	08	iC	0.4			
	BHA	P		06	39	iC	0.3			

Day Stn Phase h m s GM DA Epicentral data; Remarks Mag

24	BHA	Pg	04	25	40	e			BUL 04 25 00 13.0S 26.7E	2.5
		Sg		26	07	e	2.0		Kasempa Area, Zambia.	
	KRR	Pg		26	23	e				
		Sn		27	01	e				
		Sg		27	22	e	0.4			
	BUL	Sn		28	03	e				
		L		28	47	e	0.2			
24	BUL	Pn	15	11	40	i			BUL 15 09 59 26.9S 26.6E	3.6
		Sn		12	56	i			Klerksdorp Area, Transvaal.	
		Sg		13	31	e	1.6			
	KRR	Pn		12	27	e				
		Sn		14	14	e				
		L		15	24	e	0.7			
	BHA	Pn		12	56	e				
		Sn		15	11	e				
		Sg		16	27	e	0.3			
	CLK	Sn		15	37	e				
		Sg		16	59	e	0.3			
25	CLK	P	05	32	22	e	0.5		CGS 05 19 17 0.8N 126.1E	5.9
		PKKP		49	49	e			Molucca Passage.	
	KRR	P		32	46	e	0.5			
		PP		36	38	e				
		PKKI		49	38	e				
	BUL	P		32	50	e	1.0			
		PP		36	45	e				
		SKS		43	30	e				
		P KP		49	34	e				
	BHA	P		32	51	e	0.6			
		PP		36	48	e				
		SKS		43	30	e				
		PKKP		49	34	e				
25	CLK	Pn	07	52	34	iC	0.5		BUL 07 49 49 3.5S 35.5E	4.9
		Sn		54	41	e			Lake Nyasi Area, Tanzania.	
		L		56	03	e	12.			
	BHA	Pn		52	46	iC	0.3			
		Sn		55	03	e				
		Sg		56	23	e				
	KRR	Pn		53	07	e				
		Sn		55	36	e	3.7			
	CIR	Pn		53	50	iR	0.3			
		L		58	59	i	2.1			
	BUL	Pn		53	50	e				
		I		59	11	i	3.2			
25	CLK	Pn	13	04	19	iR			BUL 12 59 44 17.6S 41.5E	3.4
		Sn		02	29	e	1.7		C. Mocambique Channel.	
	CIR	Pn		02	04	e				
		Sn		03	49	e	0.6			
	BHA	Pn		02	46	iR				
	FUL	Sn		04	52	e	0.2			
25	CLK	P	13	24	08	e	0.2		CGS 13 12 38 7.6S 109.0E	4.8
	CIR	P		24	23	e	0.2		Java.	
	KRR	P		24	35	e	0.1			
	BUL	P		24	40	iC	0.6			
	BHA	P		24	43	e	0.1			

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag			
25	CLK	Pn	14	24	05	e		BUL 14 21 20 3.9S 36.0E	Lake Eyasi Area, Tanzania.	4.1			
		Sg		27	28	e	1.2						
	BHA	Pn		24	21	e							
		Sn		26	35	e							
		L		28	02	e	1.9						
	KRR	Pn		24	46	e							
		L		28	57	e	0.5						
	CIR	Pn		25	21	e							
		L		30	25	e	0.4						
	BUL	Pn		25	25	e							
	L		30	37	e	0.5							
25	BUL	Pn	15	05	06	e		BUL 15 03 36 26.2S 27.4E	Witwatersrand.	3.1			
		Pg		05	23	e							
		Sn		06	11	e							
		Sg		06	44	e	0.7						
	CIR	Pn		05	08	e							
		Pg		05	26	e							
		Sn		06	15	e							
		Sg		06	41	e	0.8						
	KRR	Pn		05	51	e							
		Sg		08	24	e	0.4						
25	CLK	Pn	15	50	39	iR	5.1	BUL 15 49 03 17.6S 41.6E	C. Mozambique Channel.	3.3			
		Sn		51	49	e	2.2						
	CIR	Pn		51	23	e							
		Sn		53	09	e	0.4						
	KRR	Pn		51	43	e							
		Sn		53	46	e	0.2						
	BHA	Pn		52	05	iP							
	BUL	Sn		54	10	e	0.2						
	25	CLK	P	23	45	26	iP	0.3			CGS 23 34 28 22.9N 92.3E	India-Pakistan Border Region.	5.2
			pP		45	50	i						
BHA		P		45	54	e	1.0						
		pP		46	09	i							
KRR		P		45	55	iR	0.5						
		pP		46	09	i							
CIR		P		46	00	e	0.2						
		pP		46	14	i							
BUL	P		46	10	e	0.4							
	pP		46	25	i								
26	CIR	P	00	05	17	e	0.2	CGS 23 52 42 54.4S 143.8E	W. of Macuarie Is.	-			
	CLK	P		05	23	e	0.1						
	BUL	P		05	29	e	0.1						
	KRR	P		05	40	e	0.1						
26	CIR	Pn	00	16	34	e		BUL 00 15 07 26.2S 28.3E	Witwatersrand.	2.6			
		Sn		17	38	e							
		Sg		18	09	e	0.3						
	BUL	Sn		17	39	e							
		Sg		18	09	e	0.3						
26	CLK	P	02	35	26	e	0.2	CGS 02 55 56 36.8N 54.5E	Iran.	4.8			
	CIR	P		36	09	e	0.2						
	BUL	P		36	14	e	0.2						

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
26	CIR	Pn	03	43	10	iC		BUL 03 42 45 20.2S 32.9E Chipinga Area, Rhodesia. Felt MMIII	3.3
		Sg		43	30	i			
	BUL	Pn		43	46	e			
		Sn		44	30	e			
	KRR	Sg		44	42	i	3.0		
		Pn		43	51	e			
		Sn		44	44	e			
	CIR	Sg		45	06	e	5.5		
		Pn		43	55	e			
		Sn		44	43	e			
BHA	Sg		45	08	e	1.7			
	Pn		44	27	e				
	Sn		45	44	e				
		Sg		46	21	e	1.2		
26	CIR	P	04	42	42	e	0.2	CGS 04 30 26 8.3S 119.0E Flores Is. Region.	4.8
	CIR	P		42	55	e	0.1		
	KRR	P		43	06	iC	0.3		
	BUL	P		43	09	iC	0.5		
	BHA	P		43	13	e	0.1		
26	CIR	P'	05	17	33	e	0.1	CGS 04 50 46 10.2S 161.5E Solomon Is.	5.2
	BUL	P'		17	37	iP	0.3		
	KRR	P'		17	39	e	0.1		
26	CIR	P	06	19	22	iC	0.2	CGS 06 06 06 6.6N 127.4E Philippine Is. Region.	5.4
	CIR	P		19	37	e	0.2		
	KRR	P		19	44	e	0.3		
	BHA	P		19	49	iC	0.3		
	BUL	P		19	49	iC	0.4		
26	BUL	P	13	33	15	iC	1.4	CGS 13 23 47 56.3S 27.2W S. Sandwich Is. Region.	5.1
	CIR	P		33	22	iC	1.0		
	KRR	P		33	38	iC	0.3		
	BHA	P		33	49	e	0.6		
26	BHA	P	14	35	43	e	0.1	CGS 14 26 17 35.6N 6.0E Algeria.	4.7
	KRR	P		36	01	iP	0.2		
	BUL	P		36	19	iC	0.3		
	CIR	P		36	33	e	0.1		
26	BHA	P'	15	24	36	e	0.2	CGS 15 05 33 55.8N 162.9E Near E. Coast of Kamchatka.	5.5
	KRR	P'		24	38	iR	0.4		
	CIR	P'		24	44	e	0.2		
	BUL	P'		24	47	e	0.2		
27	CIR	P'	03	13	32	e	0.1	CGS 02 54 40 30.6S 177.2W Ternadec Is. Region.	5.0
	BUL	P'		13	34	e	0.1		
	KRR	P'		13	40	e	0.1		
27	CIR	P'	10	19	22	e	0.2	CGS 10 01 06 30.9S 179.7E Ternadec Is. Region.	4.9
		P'		20	31	e			
		SKP		22	12	e			
	BUL	P'		19	26	iR	0.4		
		P'		20	36	e			
	KRR	SKP		22	17	e			
		P'		19	33	e	0.3		
		P'		20	42	e			
	BHA	SKP		22	12	e			
		P'		19	38	e	0.2		
	SKP		22	26	e				
27	KRR	P	11	10	14	e	0.3	CGS 10 58 27 37.3N 71.5E Afghanistan- U.S.S.R. Border Region.	5.2
	CIR	P		10	28	e	0.2		
	BUL	P		10	32	iC	0.5		
27	CIR	P'	13	33	56	e	0.2	CGS 13 15 24 8.8N 137.7E W. Caroline Is.	5.5
	BUL	P'		34	01	e	0.2		

Day	Sta	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
27	CLK	P	14	52	25	iC	0.5	CGS 14 39 58 12.5N 114.4E S. China Sea.	5.3
	CIR	P		52	47	e	0.4		
	KRR	P		52	50	e	0.1		
	BHA	P		52	53	e	0.2		
	BUL	P		52	58	e	0.4		
27	CIF	P'	18	43	08	iC	0.2	CGS 18 24 23 13.2S 166.9E New Hebrides Is. Region.	5.1
	CIR	P'		43	09	iC	0.5		
	BUL	P'		43	13	iC	0.0		
	KRR	P'		43	17	iR	0.5		
	BHA	P'		43	22	e	0.7		
28	BUL	Pn	00	42	42	i		BUL 00 41 00 26.4S 27.1E Witwatersrand	3.4
		Sn		43	52	i			
		Sg		44	24	i	1.8		
	CIR	Pn		42	46	e			
		Sn		43	58	e			
		Sg		44	30	e	1.1		
	KRR	Pn		43	29	e			
		Sn		45	13	e			
		Sg		46	13	e	0.8		
	BHA	Pn		43	58	e			
		Sn		46	07	e			
		Sg		47	20	e	0.2		
CLK	Sg		47	41	e	0.2			
28	BUL	Pn	03	51	56	i		BUL 03 50 24 26.4S 27.2E Witwatersrand.	3.6
		Sn		53	06	e			
		Sg		53	37	i	2.3		
	CIR	Pn		52	00	e			
		Sn		53	12	e			
		Sg		53	45	i	1.5		
	KRR	Pn		52	43	e			
		Sn		54	28	e			
		Sg		55	24	e	1.0		
	BHA	Pn		53	12	e			
Sn			55	21	e				
L			56(40)		e	0.3			
28	BUL		11	50	13	iP	0.8	Distant.	
	KRR			50	23	e	0.5		
	BHA			50	30	e	0.2		
28	CLK	P	19	41	30	iC	0.2	CGS 19 30 22 7.7S 106.7E Java	5.3
	CIR	P		41	47	iC	0.2		
	KRR	P		41	59	e	0.1		
	BUL	P		42	02	iC	0.4		
	BHA	P		42	05	e	0.2		
29	CIF	Pg	14	23	57	e		BUL 14 23 37 16.7S 35.4E Chiromo Area, Malawi-Mocambique.	2.8
		Sg		24	11	e	11.		
	KRR	Pn		24	56	e			
		Sn		25	56	e			
		Sg		26	24	e	0.7		
	CIR	Pn		24	58	e			
		Sn		25	57	e			
		Sg		26	25	e	0.3		
BUL	Sn		26	35	e				
	Sg		27	17	e	0.4			
29	CIR	Pn	14	52	45	e		BUL 14 50 22 30.4S 27.6E S.E. Orange Free State.	3.2
		Sn		54	30	e			
		Sg		55	26	e	0.2		
	BUL	Sn		54	35	e			
		Sg		55	38	e	0.3		
	ERR	L		57	23	e	0.2		

Dy	Stn	Phase	h	m	s	CM	DA	Epicentral data; Remarks	Mag
29	CIR	P'	18	03	42	e	0.1	CGS 17.44 344.17.2S 171.6W Tonga Is. Region.	6.0
	BUL	P'		03	51	e	0.1		
	KRR	P'		03	51	e	0.1		
	BHA	P'		03	54	e	0.1		
29	CLK	P'	19	49	11	iR	0.2	CGS 19 50 27 11.4S 166.4W Santa Cruz Is. Region.	5.0
	CIR	P'		49	12	iR	0.4		
	BUL	P'		49	16	iR	0.7		
	KRR	P'		49	18	iP	0.4		
	BHA	P'		49	22	iR	0.5		
30	CLK	P	02	46	40	e	0.2	CGS 02 33 34 4.1N 126.4E Talaud Is.	5.5
	CIR	P		46	55	iC	0.3		
	KRR	P		47	02	iC	0.3		
	BHA	P		47	06	iC	0.4		
	BUL	P		47	07	iC	0.5		
30	CLK	P	10	42	52	e	-	CGS 10 29 40 4.8N 127.4E Talaud Is.	5.9
	CIR	P		43	07	e	-		
		oP		43	21	e	-		
				43	39	e	-		
	KRR	P		43	14	e	-		
				43	48	e	-		
	BHA	P		43	19	e	-		
				43	52	e	-		
		SKS		54	02	e	-		
	BUL	P		43	19	c	-		
	oP		43	50	c	-			
			43	59	e	-			
	SKS		54	05	e	-			
30	BHA	PN	13	07	30	e		BUL 13 02 46 3S 297E N. Lake Tanganyika.	4.1
		Sn		07	31	e			
		L		08	46	e	3.0		
	KRR	Pn		05	58	e			
		Sn		08	32	e			
		Sg		09	58	c	0.7		
	CLK	Pn		06	04	e			
		Sn		08	35	e			
		L		10	10	e	0.7		
	BUL	Sn		09	45	e			
		L		11	43	e	0.6		
	CIR	P		06	56	e			
	L		12	18	e	0.7			
30	KRR	P'	15	19	35	iC	0.2	CGS 15 00 00 37.1N 116.0W S. Nevada (Nevada Test Site)	4.8
	BUL	P'		19	38	iC	0.3		
	CIR	P'		19	48	iC	0.2		
30	CIR	P	16	53	24	e	0.1	CGS 16 39 59 5.0N 127.1E Philippine Is. Region.	5.0
	BUL	P		53	36	iP	0.2		
	KRR	P		53	36	e	0.1		
30	CLK	P	17	32	45	e	0.1	CGS 17 19 35 4.9N 127.5E Talaud Is.	5.3
	CIR	P		33	02	e	0.2		
	KRR	P		33	09	e	0.2		
	BUL	P		33	14	e	0.2		
	BHA	P		33	15	e	0.1		
30	CLK	P	18	48	38	iR	0.3	CGS 18 36 37 4.0N 123.0E Celebes Sea.	5.3
	CIR	P		48	55	iR	0.6		
	KRR	P		49	01	iR	0.9		
	BUL	P		49	06	iR	0.9		

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data, Remarks	Mag
31	CLK	P	00	57	31	e	0.2	CGS 00 44 13 4.2N 128.1E N. of Halmahera.	5.7
		PP		01	26	e			
	CIR	P		57	47	e	0.3		
		PP		01	52	e			
	KRR	P		57	53	e	0.1		
		PP		02	05	e			
	BHA	P		57	58	e	0.2		
		S		08	38	e			
	BUL	P		57	58	e	0.3		
	PP		02	04	e				
	S		08	49	e				
31	BHA	Pg	04	17	00	i		BUL 04 16 28 13.4S 30.0E S. Muchinga Mts, Zambia.	2.5
		Sg		17	24	i	-		
	KRR	Pg		17	28	e			
		Sn		17	54	e			
		Sg		18	08	e	1.0		
	CIR	Pn		18	22	e			
		Sn		19	42	e			
		Sg		20	23	i	0.2		
	CLK	Sg		19	09	e	0.3		
	BUL	Sn		19	22	e			
		Sg		19	59	e	0.3		
	31	CLK	P'	04	29	06	iC		
BHA		P'		29	11	iC	0.3		
KRR		P'		29	13	iC	0.7		
CIR		P'		29	18	iC	0.2		
BUL		P'		29	19	iC	0.2		
31	BHA	Pn	04	41	45	e		BUL 04 40 52 10.9S 27.7E Lake Retenue Area, Congo.	2.8
		Sg		42	39	e	-		
	KRR	Sn		43	27	e			
		Sg		43	59	e	0.5		
	CLK	Sg		45	11	e	0.2		
	BUL	L		45	40	e	0.2		
CIR	Sg		46	16	e	0.1			
31	CLK	P	09	10	03	e	0.1	CGS 08 56 43 4.3N 128.1E N. of Halmahera.	5.4
	CIR	P		10	15	e	0.2		
	KRR	P		10	22	e	0.1		
	BUL	P		10	28	e	0.3		
31	CLK	P	09	42	51	e	0.1	Distant.	
	BHA	P		43	18	e	0.1		
	BUL	P		43	22	iC	0.2		
31	CIR	P	14	01	57	e	0.3	CGS 13 48 22 4.3N 128.1E N. of Halmahera.	5.4
	KRR	P		02	04	e	0.1		
	BHA	P		02	07	e	0.1		
	BUL	P		02	10	e	0.4		
31	BHA	P	14	48	47	e	0.1	CGS 14 40 04 34.3N 26.3E Crete.	5.1
	KRR	P		49	05	iR	0.2		
	BUL	P		49	29	iR	0.3		
	CIR	P		49	37	iR	0.2		
31	CIR	P'	15	18	12	e	0.1	CGS 14 59 34 15.5S 175.0W Tonga Is.	5.4
				18	27	i			
	BUL	P'		18	17	e	0.1		
				18	29	i			
	KRR	P'		18	24	e	0.1		
				18	29	i			
	BHA	P'		18	25	e	0.1		
				18	34	e			

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
31	GIR	P'	23	49	20	iR	0.7	CGS 23 31 16	32.1S 179.6E	5.2
	BUL	P'		49	24	i'	2.4	S. of Kermadec Is.		
	CIK	P'		49	25	iR	0.5			
	KRR	P'		49	29	iR	2.2			
	BHA	P'		49	34	iR	1.5			

23 JUL 1969

RHODESIA METEOROLOGICAL SERVICES
SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CIK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WWSS Station: SP magnification 100,000
 LP magnification 1,500
- CHIRENDEZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
 F. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network ($17S 30E$).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

SEISMOLOGICAL BULLETIN: FEB. 1969 - 1

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BHA	Pg	01	26	12	e		BUL 01 25 12 13.7S 31.8E	2.2
		Sn		26	40	e		Luangwa Valley, Zambia	
		Sg		26	54	e	0.6		
	KRR	Pg		26	18	e			
		Sn		26	49	e			
		Sg		27	03	e	0.5		
	CLK	Sn		26	48	e			
		Sg		27	04	i	0.3		
	BUL	Sg		28	52	e	0.1		
	CIR	Sg		28	53	e	0.2		
01	CLK	SKP	04	39	17	e	0.1	CGS 04 18 45 21.7S 179.3W	4.3
	BUL	SKP		39	17	e	0.3	Fiji Is. Region	
	KRR	SKP		39	28	e	0.2		
	BHA	SKP		39	34	e	0.1		
01	BUL	Pn	13	48	25	e		BUL 13 46 28 28.0S 26.6E	3.5
		Sn		49	50	e		O.F.S. Goldfields	
		Sg		50	35	e	1.3		
	CIR	Pn		48	27	e			
		Sn		49	55	e			
		Sg		50	40	e	0.9		
	KRR	Pn		49	10	e			
		Sn		51	10	e			
		L		52	25	e	0.5		
	BHA	Pn		49	36	e			
	L		53	30	e	0.2			
CLK	Sg		53	50	e	0.2			
01	CLK	P	16	32	32	e	0.1	CGS 16 19 13 4.0N 128.1E	5.2
	CIR	P		32	46	e	0.2	N. of Halmahera	
	KRR	P		32	55	e	0.1		
	BHA	P		32	56	e	0.1		
	BUL	P		32	59	e	0.2		
01	BHA	P	20	14	10	e	0.1	CGS 20 03 27 7.2N 34.0W	4.8
	KRR	P		14	22	e	0.1	Central Mid-Atlantic Ridge	
	CIR	P		14	36	e	0.2		
	CLK	P		14	50	e	0.1		
01	CIR	Pg	22	00	46	i		BUL 22 00 11 20.6S 33.5E	2.5
		Sg		01	10	i	4.0	Manica Province, Mocambique	
	BUL	Sg		02	30	e	0.3		
	KRR	Sg		02	53	e	0.5		
01	BHA	Pn	23	01	14	iR	0.8	BUL 22 58 46 4.1S 26.6E	4.0
		Sn		03	02	e		Kibombo Area, Congo	
		L		04	15	e	1.8		
	KRR	Pn		01	49	e	0.4		
		Sn		04	07	e			
				05	33	e	0.6		
	BUL	Pn		02	29	e	0.3		
		Sn		05	16	e			
		L		07	10	e	0.4		
	CIR	Pn		02	47	e	0.4		
		Sn		05	50	e			
				07	51	e	0.3		
	CLK	Sn		04	34	e			
			06	12	e	0.5			
01	CIR	P	23	11	53	iC	0.3	CGS 22 59 16 62.5S 155.3E	-
	BUL	P		12	02	e	0.2	Ballyny Is. Region	
	CLK	P		12	11	e	0.1		
	KRR	P		12	15	e	0.1		

SEISMOLOGICAL BULLETIN: FEB 1969 - 2

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
02	CLK	P	01	52	03	e	0.1	CGS 01 38 44 3.9N 128.2E N. of Halmahera	5.4
	CIR	P		52	17	e	0.2		
	KRR	P		52	27	e	0.1		
	BUL	P		52	30	e	0.3		
	BHA	P		52	30	e	0.2		
02	CLK	P	02	20	18	e	0.1	CGS 02 07 01 4.0N 128.3E N. of Halmahera	5.3
	CIR	P		20	34	e	0.2		
	KRR	P		20	44	e	0.1		
	BUL	P		20	47	e	0.2		
	BHA	P		20	47	e	0.1		
02	CIR	P	05	35	00	e	0.2	CGS 05 21 26 3.9N 128.3E N. of Halmahera	5.5
	BUL	P		35	12	e	0.3		
	BHA	P		35	12	e	0.1		
02	KRR	Pn	05	58	25	e		BUL 05 56 12 7.5S 30.0E Marungu Mts., Congo	3.4
		Sn		00	08	e			
		Sg		00	59	e	0.4		
	CLK	Pn		58	26	e			
		Sn		00	05	e			
	BHA	L		01	07	e			
		Sg		59	46	e	1.3		
	BUL	Sn	06	01	22	e			
		L		02	48	e	0.4		
	CIR	Sn		01	43	e			
L			03	14	e	0.2			
02	CLK	P	20	00	04	iC	1.2	CGS 19 53 54 17.2S 66.5E Mascarene Is. Region	5.2
	CIR	P		00	33	iC	0.4		
	KRR	P		00	47	iC	1.3		
	BUL	P		00	53	iC	1.3		
	BHA	P		00	59	iC	2.2		
02	BHA	P	23	36	04	iR	-	BUL 23 35 25 14.4S 25.9E Busango Swamp, Zambia	3.9
		KRR	Pn		36	31	iR		
	BUL	Sn		37	18	e			
		Sg		37	39	e	14.		
		Pn		37	01	iC			
	CIR	Sn		38	12	i			
		L		38	51	i	3.1		
		Pn		37	28	e			
	CLK	Sn		38	59	e			
		L		39	55	e	2.2		
Pn			37	31	e				
03	CIR	P'	08	09	12	eC	1.0	CGS 07 51 25 25.8S 178.1E S. of Fiji Is.	5.3
		PP		11	01	e			
	BUL	P'		09	17	iC	2.0		
		PP		11	06	e			
	CLK	P'		09	17	e	0.4		
		SKKS		17	13	e			
	KRR	P'		09	21	e	2.0		
		PP		11	43	i			
	BHA	P'		09	25	e	1.3		
		PP		11	54	i			
		SKKS		17	42	e			

SEISMOLOGICAL BULLETIN: FEB 1969 - 3

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks
03	CIR	P'	08	31	34	e	0.1	CGS 08 13 44 25.6S 178.1E S. of Fiji Is.	4.9
	BUL	P'		31	37	e	0.2		
		SKP		33	56	e			
	KRR	P'		31	42	e	0.5		
		SKP		34	03	i			
	BHA	P'		31	46	e	0.2		
		SKP		34	13	i			
03	CIR	P'	08	36	01	iC	0.7	CGS 08 18 15 25.7S 178.3E S. of Fiji Is.	5.3
		SKP		37	56	e			
	BUL	P'		36	05	iC	1.6		
		SKP		38	20	i			
		SKKS		43	58	i			
	CLK	P'		36	05	iC	0.3		
		SKP		38	19	e			
	KRR	P'		36	08	iC	2.6		
		SKP		38	27	i			
	BHA	P'		36	13	e	1.2		
		SKP		38	38	i			
		SKKS		44	25	e			
03	CIP		11	04	17	e	0.1	Distant	
	BUL			04	25	iR	0.2		
	BHA			04	29	e	0.1		
03	BUL	Pn	15	31	17	e		BUL 15 29 44 26.3S 27.1E Witwatersrand	3.0
		Sn		32	27	e			
		Sg		33	00	e	0.8		
	CIR	Pn		31	22	e			
		Sn		32	33	e			
		Sg		33	06	e	0.4		
KRR	Sn		33	49	e				
		Sg		34	47	e	0.2		
03	CLK	P	19	14	46	e	0.1	CGS 19 01 29 4.4N 128.1E N. of Halmahera	5.2
	CIR	P		15	01	e	0.1		
	KRR	P		15	09	e	0.1		
	BHA	P		15	15	e	0.1		
	BUL	P		15	15	e	0.2		
03	CLK	P	21	54	57	eC	1.0	CGS 21 41 42 4.9N 127.4E Talaud Is.	6.1
		PP		58	42	e			
		SKS		05	30	i			
		S		06	01	i			
		PS		07	15	e			
	CIR	P		55	13	eC	1.2		
		PP		59	10	e			
		SKS		05	51	e			
		PS		07	53	i			
	BHA	P		55	21	eC	1.6		
		SKS		06	03	e			
		S		06	53	e			
	KRR	P		55	21	e	1.4		
		PP		59	20	e			
	BUL	P		55	25	e	1.7		
		PP		59	30	e			
	SKS		06	02	i				
	S		06	54	i				
	PS		08	20	e				

SEISMOLOGICAL BULLETIN: FEB 1969 - 4

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
03	CIR	Pn	23	48	09	e		BUL 23 46 27	2.5
		Sn		49	28	e		Witwatersrand	
		Sg		50	04	e	0.2		
	BUL	Sg		49	54	e	0.2		
04	CLK	P	01	51	07	e	0.4	CGS 01 38 26 0.6S 127.1E	4.8
	CIR	P		51	24	e	0.3	N. Celebes	
	KRR	P		51	33	e	0.1		
	BUL	P		51	35	e	0.7		
	BHA	P		51	37	e	0.2		
04	CIR		04	39	59	iR	0.5	Distant	
	KRR			40	02	e	0.1		
	BHA			40	04	e	0.2		
	BUL			40	05	e	0.2		
04	CIR	P'	11	46	45	e	0.2	CGS 11 28 45 19.8S 178.9W	5.0
		SKP		49	14	e		Fiji Is. Region	
	BUL	P'		46	49	e	0.4		
		SKP		49	21	e			
	CLK	P'		46	50	e	0.1		
		SKP		49	21	e			
	KRR	P'		46	54	e	0.2		
		SKP		49	28	e			
BHA	P'		47	01	e	0.2			
	SKP		49	39	e				
04	CIR	Pn	17	20	29	iR	0.9	BUL 17 18 37	3.2
		Sn		21	51	i		Mocambique Channel	
	BUL	Sn		22	57	e	0.2		
05	CIR	Pn	15	53	51	e		BUL 15 52 17	2.7
		Sn		55	00	e		Witwatersrand	
	BUL	Sg		55	32	e	0.3		
		Sg		55	26	e	0.4		
05	BUL	Pn	23	47	04	e		BUL 23 45 32 26.4S 27.2W	2.8
		Sn		48	14	e		Witwatersrand	
	CIR	Sg		48	45	e	0.4		
		Pn		47	11	e			
	Sg		48	55	e	0.3			
05	BHA	P	23	55	24	e	0.3	CGS 23 45 21 0.7N 29.7W	4.9
	BUL	P		55	34	e	0.3	Central Mid-Atlantic Ridge	
	KRR	P		55	34	e	0.3		
	CIR	P		55	50	e	0.3		
	CLK	P		56	04	e	0.1		
06	BUL		03	19	31	e	0.2	Distant	
	CIR			19	33	e	0.2		
	BHA			19	36	e	0.1		
06	CIR	P'	07	51	46	e	0.3	CGS 07 33 01 21.8N 145.7E	5.2
		P'		51	47	e	0.2	Mariana Is. Region	
	BUL	P'		51	49	e	0.4		
06	CLK	P'	09	53	03	e	0.2	CGS 09 33 46 51.6N 176.2W	5.0
		P'		53	08	e	0.2	Andreanof Is. Aleutian Is.	
	KRR	P'		53	09	e	0.5		
	CIR	P'		53	10	e	0.2		
	BUL	P'		53	11	e	0.6		

SEISMOLOGICAL BULLETIN: FEB 1969 - 5

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
06	KRR	P'	15	01	32	e	0.1	CGS 14 42 02 55.2N 160.4W Alaska Peninsula	4.7
	BUL	P'		01	34	iC	0.9		
	CIR	P'		01	35	iC	0.3		
06	BUL	Pn	14	53	26	e		BUL 14 51 54 26.4S 27.3E Witwatersrand	3.2
		Sn		54	35	e			
		Sg		55	07	e	0.9		
	CIR	Pn		53	30	e			
		Sn		54	41	e			
		Sg		55	13	e	0.5		
	KRR	Pn		55	12	e			
		Sn		55	56	e			
		Sg		56	52	e	0.4		
06	CLK	P	19	47	40	e	0.2	CGS 19 41 30 17.6S 66.4E Mascarene Is. Region	-
	CIR	P		48	04	e	0.1		
	KRR	P		48	23	e	0.3		
	BUL	P		48	30	e	0.3		
	BHA	P		48	33	e	0.3		
07	CLK	P	01	11	56	e	0.1	CGS 01 03 07 32.6N 48.1E W. Iran	4.7
	BHA	P		12	05	e	0.1		
	KRR	P		12	18	e	0.1		
	BUL	P		12	40	e	0.3		
07	BUL	P		12	41	e	0.2		
	BUL		03	47	52	iR	0.4	Distant	
	CIR			47	58	iR	0.2		
BHA			48	24	e	0.1			
07	KRR	P	05	07	40	e	0.1	CGS 04 54 10 0.7N 125.8E Molucca Passage	4.9
	BUL	P		07	44	e	0.1		
07	BHA	P'	21	45	22	e	0.2	CGS 21 25 45 40.4N 124.5E Near Coast of N. California	5.2
	KRR	P'		45	32	e	0.3		
	CLK	P'		45	34	e	0.2		
	BUL	P'		45	36	e	0.2		
	CIR	P'		45	42	e	0.2		
07	CLK	Pn	23	08	47	e		BUL 23 06 33 7.3S 39.1E Dar es Salaam Area, Tanzania	3.6
		Sn		10	21	e			
		Sg		11	12	e	1.1		
	BHA	Pn		09	31	e			
		Sn		11	49	e			
		L		13	07	e	0.2		
	KRR	Pn		09	39	e			
		Sn		12	00	e			
		L		13	30	e	0.4		
	CIR	Pn		10	07	e			
		Sn		12	53	e			
		L		14	50	e	0.2		
	BUL	Pn		10	17	e			
Sn			13	10	e				
L			14	59	e	0.3			
08	BUL	Pn	14	43	02	e		BUL 14 41 34 26.3S 28.3E Witwatersrand	2.9
		Sn		44	07	e			
		Sg		44	38	e	0.6		
	CIR	Pn		43	04	e			
		Sg		44	37	e	0.6		

SEISMOLOGICAL BULLETIN: FEB 1969 - 6

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
08	CLK	P	23	32	09	iR	0.9	CGS 23 23 35 29.9N 51.0E	5.1
	BHA	P		32	20	ecR	1.2	S. Iran	
	KRR	P		32	31	ecR	0.5		
	BUL	P		32	55	e	1.1		
	CIR	P		32	56	ecR	2.1		
08	BUL	P	23	45	08	e	0.4	CGS 23 35 44 57.9S 25.4W	5.0
	CIR	P		45	14	e	0.3	S. Sandwich Is. Region	
	KRR	P		45	32	e	0.1		
	BHA	P		45	43	e	0.1		
	CLK	P		45	59	e	0.1		
09	KRR	P	15	46	52	e	0.1	CGS 15 34 44 21.6N 101.3E	5.0
	BUL	P		47	05	e	0.2	Burma-China Border Region	
09	KRR	P	18	36	11	e	0.1	CGS 18 29 04 5.5N 0.1W	4.9
	BUL	P		36	22	iC	0.4	N.W. Africa	
	CIR	P		36	45	iC	0.2		
09	BUL	P'	22	56	44	e	0.2	CGS 22 37 19 30.4N 113.0W	4.7
	KRR	P'		56	44	e	0.2	Gulf of California	
10	BHA	Pn	02	22	21	e		BUL 02 20 12 5.5S 30.1E	4.2
		Sn		23	55	e		Central Lake Tanganyika	
		L		24	53	e	5.		
	KRR	Pn		22	51	e			
		Sn		24	50	e			
		L		26	01	e	1.6		
	BUL	Pn		23	34	e			
		L		27	45	e	1.1		
	CIR	Pn		23	50	e			
		L		28	24	e	0.7		
	10	CLK	P	07	26	44	e	0.1	
CIR		P		27	10	iR	0.3	N. Sumatra	
KRR		P		27	15	iR	0.1		
BHA		P		27	21	e	0.2		
BUL		P		27	26	iC	0.3		
10	CIR	P'	08	18	24	iC	0.4	CGS 07 59 42 14.9S 167.5E	4.6
	CLK	P'		18	27	e	0.1	New Hebrides Is.	
	BUL	P'		18	30	iC	0.5		
	KRR	P'		18	33	e	0.4		
	BHA	P'		18	38	e	0.2		
10	CIR	Pn	09	48	56	e		BUL 09 47 20 26.3S 27.0E	2.8
		Sn		50	08	e		Witwatersrand	
		Sg		50	43	e	0.3		
	KRR	Pn		49	35	e			
		L		52	20	e	0.2		
	BUL	Sg		50	32	e	0.3		
10	CIR	P	14	33	08	e	0.2	CGS 14 19 52 2.7N 125.3E	5.1
	KRR	P		33	15	e	0.1	Talau Is.	
	BUL	P		33	20	iR	0.3		
10	KRR	P'	17	56	53	e	0.3	CGS 17 37 19 29.7N 113.3W	4.8
	BUL	P'		56	53	e	0.3	Gulf of California	
	CIR	P'		57	00	e	0.2		
10	CIR	Pn	18	10	05	e		BUL 18 08 28 26.5S 27.1E	2.7
		Sn		11	18	e		Witwatersrand	
		Sg		11	52	e	0.3		
	BUL	Sg		11	42	e	0.3		

SEISMOLOGICAL BULLETIN: FEB 1969 - 7

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
10	CIR	P'	23	15	55	e	7.0	CGS 22 58 06 22.7S 178.6E S. of Fiji Is.	6.0
		SKP		18	13	i			
		PKKP		25	34	e			
	CLK	P'		16	00	e	2.6		
		SKP		18	21	i			
		SKKS		24	05	i			
	BUL			24	29	i			
		PKKP		25	29	e			
		P'		16	01	e	7.8		
		SKP		18	22	i			
		SKS		22	10	i			
	KRR			23	15	i			
		SKKS		24	06	i			
				24	27	i			
		PKKP		25	24	e			
P'			16	05	e	12.2			
BHA	SKP		18	29	i				
			23	22	i				
	PKKP		25	18	i				
	P'		16	07	e	3.8			
	SKP		18	37	i				
10			23	30	i				
	SKKS		24	33	i				
	PKKP		24	55	e				
	CLK	P	23	37	31	iC	0.7	Distant	
	CIR	P		37	40	iC	0.3		
KRR	P		37	47	e	0.4			
BUL	P		37	53	iR	0.3			
BHA	P		37	56	e	0.2			
11	CIR	Pg	02	15	03	iC		BUL 02 14 32 20.3S 33.3E Manica Province, Mocambique	2.9
		Sg		15	25	i	8.		
	BUL	Pg		15	51	e			
		Sn		16	24	e			
	KRR	Sg		16	46	e	1.3		
		Sn		16	37	e			
	CLK	Sg		17	03	i	3.0		
		Sg		17	01	e	0.9		
	BHA	Sg		18	16	e	0.3		
	11	CIR	P	13	42	03	e	0.2	CGS 13 29 38 8.3S 118.8E Sumbawa Is. Region
KRR		P		42	15	iC	0.7		
BUL		P		42	17	iC	0.8		
BHA		P		42	23	iR	0.2		
11	CLK	P	22	20	04	e	1.5	CGS 22 08 55 41.4N 79.2E Kirgiz-Sinkiang Border Region	5.8
	BHA	P		20	21	e	2.4		
	KRR	P		20	28	e	3.9		
	CIR	P		20	40	e	1.6		
	BUL	P		20	47	e	4.3		

SEISMOLOGICAL BULLETIN: FEB 1969 - 8

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
11	CLK	P	22	28	24	iR	9.3	CGS ^N 22 16 13 6.7S 126.8E Banda Sea	6.0	
		pP		30	13	i				
		PP		32	06	e				
		SKS		38	14	e				
		S		58	41	i				
	CIR	P	28	36	e		7.5			
		pP		30	28	e				
		PP		32	25	i				
	KRR	P	28	47	e		4.3			
		pP		30	40	e				
		PP		32	40	e				
	BUL	P	28	49	e		9.0			
		pP		30	41	i				
		PP		32	48	i				
		SKS		38	43	i				
	BHA	P	28	53	e		4.3			
pP			30	45	e					
PP			32	55	i					
SKS			38	49	i					
12	BHA	P	00	34	10	e	0.1	CGS 00 22 37 41.4N 79.2E Kirgiz-Sinkiang Border Region	5.8	
		KRR	P		34	16	e			0.2
		BUL	P		34	30	e			0.3
12	BUL		12	08	14	iC	0.3	Distant		
		CIR		08	20	e	0.5			
		KRR		08	39	e	0.1			
		BHA		08	56	e	0.1			
12	CIR	P	16	20	02	iR	0.3	CGS 16 08 50 5.8S 107.8E Java	4.8	
		KRR	P		20	12	eC			0.9
		BUL	P		20	17	eC			0.9
		BHA	P		20	20	iC			0.4
13	KRR	P'	01	55	24	e	0.2	CGS 01 35 52 52.2N 169.9W Fox Is. , Aleutian Is.	5.1	
		CIR	P'		55	27	eC			0.7
		BUL	P'		55	29	iC			3.1
		pP'		55	41	i				
13	CLK	P	02	53	55	e	0.1	CGS 02 42 18 7.4S 107.0E Java	5.3	
		KRR	P		54	06	e			0.1
		CIR	P		54	07	e			0.2
		BHA	P		54	12	e			0.1
		BUL	P		54	12	e			0.3
13	CIR	P'	10	21	49	e	0.3	CGS 10 02 58 30.1S 178.0W Kermadec Is. Region	4.9	
		BUL	P'		21	53	e			0.6
		CLK	P'		21	56	e			0.2
		KRR	P'		22	05	e			0.3
		BHA	P'		22	05	e			0.3
13	CLK	P	10	35	51	e	0.1	CGS 10 22 31 5.0W 126.9E Mindanao, Philippine Is.	4.9	
		CIR	P		35	59	iR			0.3
		KRR	P		36	05	e			0.1
		BUL	P		36	11	iR			0.2
		BHA	P		36	11	e			0.1

SEISMOLOGICAL BULLETIN: FEB 1969 - 9

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	CLK	P	11	20	09	iC	0.6	CGS 11 11 25 25.0N 62.9E W. Pakistan	5.2
	BHA	P		20	31	e	0.2		
	KRR	P		20	39	iC	0.3		
	CIR	P		20	55	e	0.2		
	BUL	P		21	01	e	0.4		
13	BUL	Pn	19	36	48	e		BUL 19 35 32 25.3S 28.7E Pretoria Area, Transvaal	3.1
		Sn		37	41	e			
		Sg		38	09	e	1.1		
	CIR	Pn		36	50	e			
		Sn		37	40	e			
		Sg		38	06	e	1.2		
	KRR	Sn		39	03	e			
		L		39	58	e	0.5		
	BHA	Sn		39	58	e			
		Sg		41	03	e	0.3		
	CLK	Sg		40	14	e	0.2		
13	BUL		21	40	14	e	0.3	Distant	
	KRR			40	20	e	0.3		
	BHA			40	27	e	0.1		
14	BHA		00	44	09	e	0.1	Distant	
	BUL			44	30	e	0.2		
	CIR			44	30	e	0.1		
14	CIR	Pn	01	08	27	e		BUL 01 07 00 26.2S 28.3E Witwatersrand	3.3
		Pg		08	47	e			
		Sn		09	30	e			
		Sg		10	01	e	1.6		
	BUL	Pn		08	28	e			
		Pg		08	49	e			
		Sn		09	36	e			
		Sg		10	04	e	1.5		
	KRR	Pn		09	15	e			
		Sn		10	57	e			
		Sg		11	48	e	0.8		
	BHA	Pn		09	44	e			
		Sn		11	52	e			
		L		13	09	e	0.2		
	CLK	Sg		13	13	e	0.2		
14	KRR	Pg	02	59	00	e		BUL 02 58 40 16.5S 28.5E N. Kariba Area	2.0
		Sg		59	14	i	3.1		
	BHA	Pg		59	16	e			
		Sg		59	43	e	0.9		
	BUL	Sg	03	00	32	e	0.3		
	CIR	Sg		01	20	e	0.2		
14	BUL	P'	03	23	27	e	0.2	CGS 03 04 04 16.1S 173.0W Tonga Is.	5.3
	KRR	P'		23	30	e	0.1		
	BHA	P'		23	35	e	0.1		
14	CLK	P	06	23	42	e	0.2	CGS 06 14 53 17.8S 87.3E S. Indian Ocean	5.3
	CIR	P		24	06	iC	0.3		
	KRR	P		24	24	e	0.2		
	BUL	P		24	26	iC	0.2		
	BHA	P		24	35	e	0.1		
14	CLK	P'	08	53	03	e	0.2	CGS 08 33 36 48.9N 123.1W Vancouver Is. Region	4.2
	BUL	P'		53	03	e	0.2		
	CIR	P'		53	10	iC	0.3		

SEISMOLOGICAL BULLETIN: FEB 1969 - 10

Dy	Sta	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
14	CLK	Pn	12	59	59	e		BUL 12 58 50 11.OS 34.6E N. Lake Malawi	4.3
		Sg		01	12	e	-		
	BHA	Pn	13	00	32	e			
		Sn		01	43	e			
		Sg		02	21	e	10.		
	KRR	Pn		00	39	e			
		Sn		02	01	e			
		Sg		02	42	e	10.		
	CIR	Pn		01	16	e			
		Sn		03	02	e			
L			04	12	e	2.7			
BUL	Pn		01	20	e				
	Sn		03	12	i				
	L		04	21	e	2.7			
14	BUL	Pn	14	41	45	e		BUL 14 39 43 26.3S 27.1E Witwatersrand	3.1
		Sn		42	25	e			
		Sg		42	59	e	0.6		
	CIR	Pn		44	21	e			
		Sn		42	32	e			
		Sg		43	03	e	0.6		
	KRR	Pn		42	03	e			
		Sn		43	42	e			
		Sg		44	42	e	0.3		
	15	CIR	Pn	06	41	38	e		BUL 06 40 08 26.3S 28.1E Witwatersrand
Pg				41	59	e			
Sn				42	46	e			
Sg				43	18	e	1.5		
BUL		Pn		41	40	e			
		Pg		42	01	e			
		Sn		42	47	e			
KRR		Pn		42	18	e	1.1		
		Pn		42	25	e			
		Sn		44	06	e			
		Sg		45	00	e	0.7		
15	CIR	P'	09	01	36	e	0.3	CGS 08 43 34 24.1S 180.0W S. of Fiji Is.	5.0
		pP'		04	05	e			
	BUL	P'		01	40	e	0.4		
		pP'		04	11	e			
	KRR	P'		01	44	e	0.4		
		pP'		04	20	i			
BHA	P'		01	49	e	0.2			
	pP'		04	29	e				
15	CIR	P'	14	07	50	iC	1.8	CGS 13 49 14 13.6S 167.2W New Hebrides Is.	5.3
		P'		07	50	iC	0.9		
	BUL	P'		07	55	iC	2.6		
		P'		07	58	iR	2.3		
	BHA	P'		08	02	iC	1.8		
		PP		11	09	i			
15	BUL	Pn	14	30	30	e		BUL 14 28 59 Witwatersrand	2.7
		Sn		31	39	e			
		Sg		32	08	e	0.4		
	CIR	Pn		30	31	e			
		Sn		31	43	e			
		Sg		32	17	e	0.3		
15	BUL	P'	15	21	00	iC	0.4	CGS 15 03 12 26.0S 178.1E S. of Fiji Is.	4.6
		P'		21	04	e	0.4		
		P'		21	10	e	0.2		

SEISMOLOGICAL BULLETIN: FEB 1969 - 11

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
16	BHA	P	00	10	45	e	0.4	CGS 23 59 11 41.5N 79.5E Kirgiz-Sinkiang Border Region	5.0
	KRR	P		10	48	e	0.2		
	CIR	P		10	59	e	0.2		
	BUL	P		11	05	e	0.2		
16	KRR	P	15	15	59	e	0.2	CGS 15 08 59 16.9S 67.0E Mid-Indian Rise	5.1
	BUL	P		16	03	e	0.3		
	BHA	P		16	07	e	0.2		
16	CLK	P	15	31	45	e	0.1	CGS 15 20 19 10.0S 107.8E S. of Java	4.6
	KRR	P		32	05	e	0.1		
	BUL	P		32	09	e	0.2		
	BHA	P		32	14	e	0.1		
17	CLK	P	00	56	20	e	0.3	CGS 00 42 59 3.8N 128.4E N. of Halmahera	5.6
				00	08	e			
	CIR	P		56	35	e	0.3		
	KRR	P		56	43	e	0.6		
				00	45	e			
	BUL	P		56	48	e	0.3		
				00	55	e			
	BHA	P		56	49	iC	0.5		
				00	56	i			
17	CLK	P	01	29	12	e	0.2	CGS 01 15 55 3.9N 128.6E N. of Halmahera	5.4
	CIR	P		29	29	e	0.3		
	KRR	P		29	31	e	0.1		
	BUL	P		29	40	e	0.4		
	BHA	P		29	40	e	0.2		
17	CIR	Pn	12	35	38	e		BUL 12 34 09 26.0S 27.6E Witwatersrand	2.8
		Sn		36	43	e			
	BUL	Sg		37	13	e	0.4		
		Sn		36	40	e			
	Sg		37	10	e	0.4			
17	BUL	Pn	15	41	07	e		BUL 15 38 51 Cape Plateau, Griqualand West	3.1
		Sn		42	47	e			
		Sg		43	40	e	0.3		
	CIR	Pn		41	21	e			
		Sn		43	13	e			
	Sg		44	14	e	0.2			
18	BHA	P'	02	16	04	e	0.1	CGS 01 56 39 29.8N 113.3W Gulf of California	4.8
	BUL	P'		16	09	iC	0.2		
	KRR	P'		16	10	e	0.3		
	CIR	P'		16	17	e	0.2		
	CLK	P'		16	21	e	0.1		
18	CIR	P'	05	33	50	iR	0.2	CGS 05 14 56 24.0S 176.7W S. of Fiji Is.	5.4
	BUL	P'		33	53	e	0.3		
	KRR	P'		33	58	e	0.2		
	BHA	P'		34	04	e	0.2		
18	CLK	P	20	01	00	e	0.1	CGS 19 51 27 29.7N 68.4E W. Pakistan	4.6
	BHA	P		01	20	e	0.1		
	KRR	P		01	28	e	0.1		
	CIR	P		01	43	e	0.1		
	BUL	P		01	49	e	0.2		

SEISMOLOGICAL BULLETIN: FEB 1969 - 12

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
18	CIR		21	01	13	e	0.1	CGS 20 43 14 17.9S 178.6W Fiji Is. Region	5.2
		P'		01	23	e	0.3		
		SKP		03	45	e			
	CLK		01	13	e	0.1			
		P'	01	26	e	0.1			
		SKP	04	01	e				
	BUL		01	16	e	0.1			
		P'	01	27	e	0.5			
		SKP	04	03	e				
	KRR		01	21	e	0.1			
		P'	01	31	e	0.6			
		SKP	04	10	e				
BHA		01	26	e	0.3				
	P'	01	38	e	0.3				
	SKP	04	18	e					
18	CLK	P	21	14	41	iC	0.7	CGS 21 03 38 24.5N 95.4E Burma	5.0
		pP		15	19	e			
	BHA	P		15	08	iC	1.5		
		pP		15	48	i			
	KRR	P		15	09	iC	0.7		
		pP		15	49	e			
	CIR	P		15	13	iC	0.3		
		pP		15	53	e			
BUL	P		15	24	iC	0.8			
	pP		16	03	e				
19	BHA	P	04	08	51	iC	0.2	CGS 03 56 41 16.7N 46.7W N. Atlantic Ridge	4.7
		KRR	P	09	01	iC	0.2		
	BUL	P	09	08	iC	0.2			
		CIR	P	09	16	iC	0.2		
19	BUL	P	14	00	18	iR	0.4	CGS 13 47 59 33.3S 68.9W Mendoza Province, Argentina	4.5
		CIR	P	00	28	iR	0.2		
	KRR	P	00	32	iR	0.5			
	BHA	P	00	34	iR	0.3			
	CLK	(pP)	01	16	e	0.1			
20	CLK	P	10	08	53	e	0.3	CGS 09 55 34 3.5N 128.2E N. of Halmahera	5.7
		PP		12	43	e			
		SKS		19	29	e			
	CIR	P		09	06	e	0.5		
		PP		13	07	e			
	KRR	P		09	12	e	0.3		
		PP		13	13	e			
	BUL	P		09	17	e	0.6		
		PP		13	21	e			
		SKS		20	01	e			
	BHA	P		09	19	e	0.5		
PP			13	31	e				
SKS			20	04	e				
20	CLK	P	10	43	35	e	0.3	CGS 10 30 22 3.5N 128.4E N. of Halmahera	6.0
		PP		47	20	e			
		SKS		54	09	e			
	CIR	P		43	50	eC	0.3		
		PP		47	47	i			
	KRR	P		43	57	e	0.2		
		PP		47	59	i			
	BUL	P		44	02	iC	0.5		
		PP		48	03	e			
		SKS		54	41	e			
	BHA	P		44	03	e	0.3		
		PP		48	09	e			
		SKS		54	42	e			

SEISMOLOGICAL BULLETIN: FEB 1969 - 13

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
20	CLK	Pg	13	51	02	e		BUL 13 49 18 10.3S 37.2E	3.6
		Sn		51	42	e		S. Province, Tanzania	
		Sg		52	14	e	-		
	BHA	Pn		51	33	e			
		Sn		53	14	e	0.8		
	KRR	Pn		51	37	e			
		Sn		53	21	e			
		L		54	26	e	0.4		
	CIR	Pn		52	06	e			
		Sn		54	09	e			
	L		55	27	e	0.5			
	BUL	Pn		52	16	e			
		Sn		54	28	e			
		L		55	54	e	0.4		
20	CLK	P	17	11	34	e	0.2	CGS 16 58 14 3.7N 128.2E	5.3
	CIR	P		11	50	e	0.2	N. of Halmahera	
	BUL	P		11	56	e	0.2		
	BHA	P		12	02	e	0.1		
20	BUL	Pn	17	18	34	e		BUL 17 17 00 26.5S 27.2E	3.1
		Sn		19	45	e		Witwatersrand	
		Sg		20	17	e	0.5		
	CIR	Pn		18	38	e			
		Sn		19	50	e			
		Sg		20	23	e	0.4		
	KRR	Pn		19	20	e			
	Sn		21	03	e				
	L		22	04	e	0.4			
20	BUL	P	20	15	43	iC	0.4	Distant	
	KRR	P		15	46	iC	0.2		
	CIR	P		16	08	iC	0.2		
	CLK	P		16	26	e	0.1		
20	BUL	P	20	52	08	iC	0.2	Distant	
	KRR	P		52	10	e	0.1		
	CIR	P		52	31	e	0.1		
20	BUL	Pn	23	38	23	e		BUL 23 36 26 28.2S 26.9E	3.1
		Sn		39	49	e		Orange Free State Goldfields	
		Sg		40	35	e	0.4		
	CIR	Pn		38	26	e			
		Sn		39	55	e			
		Sg		40	40	e	0.3		
	KRR	Pn		39	08	e			
		Sn		41	12	e			
	L		42	22	e	0.2			
21	CIR	Pn	00	05	37	e		BUL 00 03 52	2.9
		Sn		06	55	e		Klerksdorp Area, Transvaal	
		Sg		07	34	e	0.3		
	BUL	Sg		07	21	e	0.3		
21	BUL	P	06	43	45	iR	1.2	CGS 06 32 24 62.9S 60.2W	5.2
	CIR	P		43	49	iR	0.4	S. Shetland Is.	
	KRR	P		44	06	e	0.4		
	BHA	P		44	15	e	0.4		
	CLK	P		44	27	iR	0.3		

SEISMOLOGICAL BULLETIN: FEB 1969 - 14

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
21	KRR	Pn	07	52	19	iC		BUL 07 52 02 16.4S 28.7E	2.8
		Sg		52	33	i	17.	N. Kariba	
	BHA	Pn		52	34	e			
		Sg		53	00	e	6.		
	BUL	Pg		53	06	e			
		Sg		53	50	e	1.8		
	CIR	Pn		53	20	e			
		Sn		54	18	e			
		Sg		54	42	e	1.7		
		CLK	Pn		53	29	e		
		Sn		54	37	e			
		Sg		55	14	e	0.5		
21	BHA	Pg	10	46	50	e		BUL 10 45 43 12.4S 31.7E	2.6
		Sn		47	20	e		Mpika Area, Zambia	
		Sg		47	37	e	1.4		
	KRR	Pn		46	55	e			
		Sn		47	48	e			
		Sg		48	10	e	0.4		
		CLK	Pg		46	58	e		
		Sn		47	36	e			
		Sg		47	55	e	1.2		
21	BUL	Pn	12	50	50	iC	0.4	CGS 12 49 17 26.5S 27.3E	3.7
		Sn		52	00	e		Witwatersrand	
		Sg		52	31	e	3.2		
	CIR	Pn		50	55	e	0.4		
		Sn		52	06	i			
		Sg		52	41	e	2.4		
	KRR	Pn		51	37	e			
		Sn		53	21	i			
		Sg		54	17	e	1.0		
		BHA	Pn		52	06	e		
		Sn		54	16	i			
		Sg		55	29	e	0.4		
21	KRR	Pg	21	31	04	e		BUL 21 30 46 16.4S 28.6E	2.4
		Sg		31	18	e	6.8	Lake Kariba Area	
	BHA	Pg		31	19	e			
		Sg		31	44	e	2.6		
	BUL	Pg		31	51	e			
	Sn		32	18	e	0.5			
	CIR	Sn		33	03	e			
		Sg		33	28	e	0.5		
21	BUL	P	22	55	50	e	0.3	CGS 22 48 10 50.5S 6.1W	-
	CIR	P		56	00	iR	0.2	S. Atlantic Ridge	
	KRR	P		56	18	e	0.1		
	BHA	P		56	27	e	0.1		
22	CIR	P'	00	49	20	e	0.1	Distant	
	BUL	P'		49	25	iC	0.5		
	KRR	P'		49	26	e	0.1		
	BHA	P'		49	29	e	0.1		
22	CIR	P	18	07	17	e	0.1	CGS 17 53 51 3.5N 128.2E	5.2
	KRR	P		07	24	e	0.1	N. of Halmahera	
	BUL	P		07	29	e	0.2		
	BHA	P		07	30	e	0.1		
22	CIR	P'	18	29	51	iR	0.3	CGS 18 11 01 24.8S 177.0W	5.0
	BUL	P'		29	55	iR	0.7	S. of Fiji Is.	
	CLK	P'		29	55	e	0.1		
	KRR	P'		29	59	e	0.7		
	BHA	P'		30	04	e	0.4		

SEISMOLOGICAL BULLETIN: FEB 1969 - 15

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
22	CLK	P	20	48	14	e	0.4	CGS 20 37 01 26.6N 92.4E Eastern India	4.8
	BHA	P		48	42	iR	0.3		
	KRR	P		48	43	e	0.2		
	CIR	P		48	49	iR	0.2		
	BUL	P		48	57	iR	0.3		
23	CLK	P	23	10(50)		e	0.2	CGS 22 58 44 6.9S 124.9E Banda Sea	5.5
		pP		12	41	e			
	CIR	P		10	51	iC	0.2		
		pP		12	46	e			
	BUL	P		11	04	iC	0.2		
		pP		13	03	e			
		pP		13	05	e			
23	CLK	P	00	49	24	e	2.3	CGS 00 36 57 3.1S 118.9E Celebes	6.1
		S		59	47	i			
	CIR	P		49	40	e	4.1		
		S		00	19	e			
	KRR	P		49	51	e	1.3		
		S		00	38	e			
	BUL	P		49	53	e	5.0		
BHA	P		49	56	e	1.6			
	S		00	49	e				
23	BUL	Pn	01	16	43	e		BUL 01 13 44 27.7S 17.5E Schwarzrand Area, South West Africa	3.7
		Sn		18	55	e			
		Sg		20	09	e	0.4		
	CIR	Pn		17	07	e			
		Sn		19	40	e			
		Sg		21	07	e	0.4		
	KRR	Pn		17	18	e			
	L		21	46	e	0.3			
23	CLK	P	01	25	39	e	0.3	CGS 01 13 15 3.3S 119.1E Celebes	5.3
	CIR	P		25	57	e	0.8		
	KRR	P		26	07	e	0.2		
	BUL	P		26	10	e	0.5		
	BHA	P		26	13	e	0.1		
23	CLK	P	02	29	25	e	0.2	CGS 02 17 01 3.1S 118.8E Celebes	5.4
	CIR	P		29	41	e	0.5		
	KRR	P		29	51	e	0.2		
	BUL	P		29	54	e	0.5		
	BHA	P		29	57	e	0.1		
23	CIR	Pn	02	33	21	e		BUL 02 31 55 26.2S 28.4E Witwatersrand	2.8
		Sn		34	25	e			
		Sg		34	54	e	0.5		
BUL	Sg		34	55	e	0.4			
23	CIR		02	39	13	e	0.2	Distant	
	BUL			39	26	e	0.2		
23	CLK	P	03	03	21	e	0.1	CGS 02 50 54 3.4S 119.1E Celebes	5.2
	CIR	P		03	36	e	0.4		
	KRR	P		03	47	e	0.2		
	BUL	P		03	51	e	0.6		
	BHA	P		03	53	e	0.2		

SEISMOLOGICAL BULLETIN: FEB 1969 - 16

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
23	CLK	P	06	16	16	e	0.3	CGS 06 03 47 3.4S 119.0E Celebes	5.3
	CIR	P		16	33	e	0.6		
	KRR	P		16	44	e	0.3		
	BUL	P		16	46	e	0.6		
	BHA	P		16	49	e	0.3		
23	CIR	P	10	38	43	iR	0.3	CGS 10 26 03 3.2S 118.6E Celebes	-
	KRR	P		38	54	e	0.1		
	BUL	P		38	55	e	0.2		
23	BUL	Pn	11	11	46	e		BUL 11 10 16 26.2S 28.0E Witwatersrand	3.7
		Sn		12	55	e			
		Sg		13	22	e	2.4		
	CIR	Pn		14	46	e			
		Sn		12	54	e			
		Sg		13	22	e	4.0		
	KRR	Pn		12	32	e			
		Sn		14	42	e			
		Sg		15	08	e	1.6		
	BHA	L		16	22	e	0.8		
CLK	Sg		16	26	e	0.4			
23	BUL	P	14	45	05	eR	0.3	CGS 14 35 30 60.4S 26.5W S. Sandwich Is. Region	5.0
	CIR	P		45	09	eR	0.3		
	KRR	P		45	28	eR	0.6		
	BHA	P		45	39	e	0.2		
	CLK	P		45	52	e	0.1		
23	BHA	Pg	16	55	42	e		BUL 16 54 45 13.0S 27.8E Copperbelt, Zambia	2.1
		Sg		55	31	e	2.6		
	KRR	Sn		56	35	e	0.3		
	Sg		56	52	e	0.3			
24	CLK	P	00	22	00	e	0.2	CGS 00 08 46 6.2S 131.0E Tanimbar Is. Region	5.8
	CIR	P		22	43	e	0.3		
	KRR	P		22	24	e	0.3		
	BUL	P		22	26	e	0.3		
	BHA	P		22	31	e	0.2		
24	KRR	Pg	01	50	08	e		BUL 01 49 19 15.3S 31.7E Upper Mocambique Zambesi Valley	2.4
		Sg		50	42	e	2.0		
	CLK	Pg		50	22	e			
		S*		50	57	e			
		Sg		51	05	e	1.4		
	BHA	Pg		50	23	e			
S*			50	57	e				
	Sg		51	05	e	1.2			
24	CLK	P	04	30	28	e	0.1	CGS 04 18 04 3.2S 119.0E Celebes	5.1
	CIR	P		30	44	e	0.2		
	KRR	P		30	55	e	0.1		
	BUL	P		30	58	e	0.2		
	BHA	P		31	01	e	0.1		
24	BHA	Pn	15	41	11	iR		BUL 15 39 23 10.2S 34.8E N. Lake Malawi Area	4.1
		Sg		43	11	e	5.8		
	KRR	Pn		41	22	e			
		Sn		42	51	e			
		Sg		43	35	e	3.4		
	CIR	Pn		42	02	e			
		Sn		44	02	e			
		Sg		45	07	e	1.4		
	BUL	Pn		42	06	iC			
		Sg		45	15	e	1.0		

SEISMOLOGICAL BULLETIN: FEB 1969 - 17

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
25	KRR	P	01	37	51	e	0.1	CGS 01 30 08 14.3N 56.3E	-
	CIR	P		38	03	e	0.1	Arabian Sea	
	BUL	P		38	11	e	0.2		
25	CIR	P	01	48	26	iR	0.2	CGS 01 35 03 5.2N 126.3E	5.5
	BUL	P		48	39	iR	0.3	Mindanao, Philippine Is.	
25	CIR	P'	04	09	56	iR	0.5	CGS 03 51 46 32.4S 180.0E	5.1
	BUL	P'		10	00	iC	1.5	S. of Kermadec Is	
	KRR	P'		17	56	e			
25	CIR	P'	05	14	08	iR	0.1	CGS 04 55 28 6.1S 154.7E	4.9
	KRR	P'		14	13	e	0.1	Solomon Is.	
	BUL	P'		14	13	iR	0.6		
25	BHA	P'	07	57	50	e	0.1	CGS 07 39 01 15.2N 87.5W	5.4
	BUL	P'		57	51	iC	0.5	Honduras	
	KRR	P'		57	52	iC	0.4		
	CIR	P'		57	57	iC	0.4		
25	BUL	P'	10	54	29	iR	0.3	CGS 10 35 26 25.8S 176.3W	5.0
	KRR	P'		54	35	e	0.1	S. of Fiji Is.	
25	CIR	P'	13	52	43	iR	0.5	CGS 13 33 58 15.0S 167.4E	5.0
	BUL	P'		52	48	iR	0.7	New Hebrides Is.	
	KRR	P'		52	51	iR	0.7		
25	BUL	P	14	13	17	iC	1.7	CGS 14 06 00 19.3S 12.1W	5.3
	KRR	P		13	30	iC	0.3	S. Atlantic Ridge	
	CIR	P		13	40	iC	2.2		
25	CIR	P'	15	02	15	eC	1.4	CGS 14 42 30 15.0S 167.4E	5.0
	BUL	P'		01	19	eC	1.9	New Hebrides Is.	
	KRR	P'		01	22	eC	1.5		
25	KRR	Pg	16	24	00	i		BUL 16 23 29 15.2S 30.0E	4.2
		Sg		24	20	e	-	Lower Luangawa Valley, Zambia	
	BUL	Pn		24	45	e			
		Pg		25	02	e			
		Sn		25	41	e			
		Sg		26	05	e	16.		
	CIR	Pn		24	56	e			
		Sn		26	00	e			
	Sg		26	31	e	16.			
25	CIR	Pn	19	54	31	iC		BUL 19 54 02 21.2S 33.5E	2.5
		Pg		54	34	i		Manica Province, Mocambique	
		Sn		54	52	e			
		Sg		54	57	e	2.6		
	BUL	Sn		55	56	e			
		Sg		56	20	e	0.7		
	KRR	Sn		56	28	e			
	Sg		56	55	e	0.5			
26	CIR	Pn	00	01	05	iC		BUL 00 00 35 21.2S 33.5E	2.6
		Pg		01	08	i		Manica Province, Mocambique	
		Sn		01	26	e			
		Sg		01	30	e	4.3		
	BUL	Sn		02	35	e			
		Sg		02	58	e	0.7		
	KRR	Sn		03	02	e			
	Sg		03	29	e	0.5			

SEISMOLOGICAL BULLETIN: FEB 1969 - 18

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data ; Remarks	Mag
26	BHA	Pn	05	58	40	i		BUL 05 56 03 4.7S 34.8E	4.6
		Sg		01	41	e	-	Wembere Swamp, Tanzania	
	KRR	Pn		59	02	i			
		Sn		01	16	e			
		Sg		02	36	e	2.6		
	BUL	Pn		59	46	e			
		L		04	30	e	2.3		
	CIR	Pn		59	49	e			
		L		04	33	e	2.2		
26	BUL	P	06	50	34	e	0.2	Distant	
	CIR	P		50	56	e	0.3		
26	KRR	P	12	45	06	e	0.1	CGS 12 35 48 36.6N 27.2E	4.8
	BUL	P		45	30	e	0.1	Dodecanese Is.	
	CIR	P		45	37	e	0.3		
26	CIR		22	40	43	e	0.2	Distant	
	BUL			40	56	e	0.2		
27	BUL	P	05	22	53	iC	0.5	CGS 05 09 31 13.9S 74.3W	5.2
	CIR	P		23	03	iC	0.2	Peru	
27	BUL	Pn	13	07	42	e		BUL 13 06 10 26.3S 27.4E	3.9
		Sn		08	50	e		Witwatersrand	
		Sg		09	23	e	3.6		
	CIR	Pn		07	45	e			
		Sn		08	55	i			
		Sg		09	30	i	3.2		
	KRR	Pn		08	28	e			
		Sn		10	11	e			
		L		11	12	i	2.1		
	BHA	Pn		08	57	e			
		Sn		11	05	e			
	L		12	20	e	0.7			
27	CIR	P	22	46	02	e	0.2	CGS 22 33 24 12.1S 121.5E	4.7
	KRR	P		46	14	e	0.1	S. of Timor	
	BUL	P		46	16	iC	0.4		
	BHA	P		46	26	e	0.1		
28	BHA	P	02	50	55	iC	12.	CGS 02 40 33 36.0N 10.6W	7.3
		S		59	23	e		N. Atlantic Ocean	
		L		03	12	43	e		
		P'P'		20	03	e			
	KRR	P	02	51	11	iC	31.		
		L		03	14	17	i		
		P'P'		19	55	e			
	BUL	P	02	51	25	iC	19.		
		S		03	00	17	i		
		L		15	05	e			
	P'P'		19	48	e				
CIR	P	02	51	40	iC	23.			
	L		03	16	07	e			
	P'P'		19	33	e				
28	BHA	P	04	35	59	e	0.6	CGS 04 25 37 36.2N 10.5W	5.7
	KRR	P		36	15	e	0.8	N. Atlantic Ocean	
	BUL	P		36	29	e	1.6		
	CIR	P		36	44	e	0.9		
28	KRR	P'	05	15	55	e	0.1	CGS 04 56 12 34.6N 118.1W	4.6
	BUL	P'		15	57	iR	0.2	S. California	

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
28	CLK	Pn	06	01	17	e		BUL 05 59 54 11.0S 38.0E	3.3
		Pg		01	38	e			
		Sn		02	17	e			
		Sg		02	47	e	3.7		
	KRR	Sn		04	00	e			
		L		05	06	e	0.3		
	BHA	Sn		04	01	e			
		L		05	08	e	0.4		
	CIR	L		05	58	e	0.3		
	BHL	L		06	36	e	0.2		
28	BHA	P	10	10	10	e	0.1	CGS 09 59 48 35.9N 10.8W	4.6
	KRR	P	10	27		e	0.2	N. Atlantic Ocean	
	BUL	P	10	40		iR	0.4		
	CIR	P	10	55		e	0.2		
28	CIR	P	13	30	46	iR	0.7	CGS 13 18 07 3.4S 119.0E	5.3
	KRR	P		30	56	e	0.2	Celebes	
	BUL	P		31	00	iR	0.4		
	BHA	P		31	00	e	0.3		
28	BHA	P'	14	06	08	iR	0.2	CGS 13 47 12 51.7N 158.0E	5.0
	KRR	P'		06	10	e	0.5	Near E. Coast of Kamchatka	
	CIR	P'		06	14	e	0.2		
	BUL	P'		06	17	e	0.2		
28	CIR	Pn	21	09	03	e		BUL 21 07 37 26.2S 28.3E	3.9
		Pg		09	23	e			
		Sn		10	09	e			
		Sg		10	37	e	6.3		
	BUL	Pn		09	04	e			
		Pg		09	26	e			
		Sn		10	13	e			
	KRR	Sg		10	41	e	5.0		
		Pn		09	50	e			
		Sn		11	29	e			
	BHA	Sg		12	27	e	2.0		
		Pn		10	20	e			
		Sn		12	26	e			
	L		13	39	e	0.7			
28	CIR		21	52	17	e	0.2	Distant	
	BUL		52	18		iR	0.2		

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RHODESIA METEOROLOGICAL SERVICES

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA): $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
Litho. foundation: Dolomite and shales of the Middle Katanga System.
Authority: Zambia Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- CHILEKA (CIK): $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
Litho. foundation: Charnockitic granulites of the Basement Complex.
Authority: Malawi Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- KAROI (KRR): $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
Litho. foundation: Granitic gneisses of the Zambesi type.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.
- BULAWAYO (BUL): $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
Litho foundation: Hornblend schists of the Bulawayan System.
Authority: Rhodesia Meteorological Service.
Instruments: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
WSS Station: SP magnification 100,000
LP magnification 1,500
- CHIRWEDZI (CIR): $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
Litho foundation: Gneisses or Charnockites of the Limpopo belt.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentre; Remarks	Mag CGS
01	CIR		00	50	56	e	0.2	Distant	
	BHA			51	00	iC	0.3		
	BUL			51	10	iC	0.3		
01	CIR	P	02	53	07	iC	0.3	Distant	
	KRR	P		53	18	iC	0.6		
	BUL	P		53	23	iC	0.5		
	BHA	P		53	26	iC	0.2		
01	CIR	P'	21	22	28	e	0.2	CGS 21 03 50 19.2S 169.1E New Hebrides Is.	4.5
	BUL	P'		22	33	e	0.4		
	KRR	P'		22	37	iC	0.4		
	BHA	P'		22	41	e	0.2		
02	CLK	Pn	02	47	57	e		BUL 02 47 13 13.0S 34.1E Central Malawi	2.6
		Pg		48	06	e			
		Sn		48	29	e			
		Sg		48	38	e	1.3		
	BHA	Sn		49	37	e			
		Sg		50	05	e	0.6		
	KRR	Sg		50	12	e	0.3		
	CIR	L		51	32	e	0.2		
	BUL	Sg		51	(40)	e	0.2		
02	CIR	P	14	10	01	e	0.4	CGS 13 57 25 13.2S 118.8E Celebes	5.1
	BUL	P		10	16	e	0.5		
	BHA	P		10	16	e	0.4		
*									
02	BHA	P	18	11	19	e	0.1	CGS 18 00 55 36.0N 10.9W N. Atlantic Ocean	4.4
	BUL	P		11	50	e	0.3		
	CIR	P		12	04	e	0.2		
03	BHA	P	01	08	39	iC	0.5	CGS 00 59 11 40.1N 27.4E Turkey	5.6
		PoP		09	44	i			
	KRR	P		08	56	iC	0.5		
	BUL	P		09	19	iC	1.8		
	CIR	P		09	26	iC	1.5		
03	BHA	P	06	31	08	e	0.2	CGS 06 20 22 30.2N 79.9E Tibet-India Border Region	5.3
	KRR	P		31	14	e	0.2		
	BUL	P		31	35	iC	0.4		
03	BUL	Pn	12	23	30	e		BUL 12 22 15 19.9S 23.3E Okavango Swamp, Botswana	3.1
		Pg		23	48	e			
		Sg		24	50	i	1.2		
	CIR	Pn		24	07	e			
		Sn		25	29	e			
		Sg		26	14	i	0.6		
	KRR	Sg		25	39	e	0.5		
03	BHA	P'	15	08	31	e	0.3	CGS 14 49 28 51.6N 159.3E Off E Coast of Kamchatka	5.3
	KRR	P'		08	33	e	0.3		
	BUL	P'		08	36	e	0.2		
	CIR	P'		08	38	e	0.2		
04	BHA	P	01	56	22	e	0.2	CGS 01 47 25 37.0N 31.1E Turkey	5.0
		pP		56	48	e			
	BUL	P		57	02	e	0.2		
		PoP		57	56	e			
	CIR	P		57	09	e	0.3		
	pP		57	36	e				
04	BUL	P	03	27	54	e	0.3	CGS 03 18 32 57.7S 25.3W S. Sandwich Is.	5.2
	CIR	P		28	00	e	0.3		
	KRR	P		28	18	e	0.2		
		pP		28	31	e			
	BHA	P		28	29	e	0.2		
		pP		28	42	e			

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentre; Remarks	Mag CGS
04	BUL		12	06	05	e	0.2	Distant	
	CIR			06	11	e	0.2		
04	CIR	P	15	52	48	e	0.2	CGS 15 40 20 9.5S 117.9E	4.9
	BUL	P		53	01	e	0.3	Sumbawa Is. Region	
	KRR	P		53	02	e	0.2		
	BHA	P		53	07	e	0.2		
04	BUL	Pn	19	06	17	e		BUL 19 03 49 30.1S 25.9E	4.0
		Sn		08	07	e		S. Orange Free State	
		Sg		09	09	e	1.6		
	CIR	Pn		06	20	e			
		Sn		08	13	e			
		Sg		09	12	e	1.5		
	KRR	Pn		07	02	e			
		Sn		09	29	i			
		L		10	59	e	0.8		
	BHA	Pn		07	33	e			
		Sn		10	20	e			
		L		12	11	e	0.4		
04	BUL	Pn	21	33	37	e		BUL 21 32 03 26.4S 27.0E	3.2
		Sn		34	47	e		Witwatersrand	
		Sg		35	20	i	0.9		
	CIR	Pn		33	41	e			
		Sn		34	53	e			
		Sg		35	26	i	0.6		
	KRR	Pn		34	22	e			
		Sg		37	01	e	0.3		
05	CLK	P	14	05	21	e	0.3	CGS 13 52 05 4.0N 128.2E	5.7
	CIR	P		05	35	e	0.4	N of Halmahera	
		pP		05	46	e			
		PP		09	36	e			
	KRR	P		05	40	e	0.2		
	BUL	P		05	48	e	0.5		
		pP		05	58	e			
		PP		09	55	e			
	BHA	P		05	48	e	0.3		
		PP		09	55	e			
05	BHA	P	14	50	40	e	0.3	CGS 14 41 16 40.0N 27.5E	4.7
	CLK	P		50	52	e	0.2	Turkey	
	KRR	P		50	58	e	0.2		
	BUL	P		51	21	iC	0.4		
	CIR	P		51	29	iC	0.3		
05	CLK	P	16	24	22	e	0.2	CGS 16 11 12 4.1N 128.4E	5.1
	CIR	P		24	41	e	0.2	N of Halmahera	
		PP		28	41	e			
	KRR	P		24(44)		e	0.2		
	BUL	P		24	46	e	0.3		
		PP		28	53	e			
	BHA	P		24(53)		e	0.1		

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentre; Remarks	Mag CGS	
05	CLK	P	19	43	22	iR	6.0	CGS 19 33 23 36.4N 70.7E Hindu Kush Region	5.9	
		pP		44	11	i				
		S		51	31	i				
	BHA	P	20	12	27	e	2.8			
		S		52	01	i				
		P'P'		20	12	17				e
	KRR	P	19	43	46	iR	5.7			
		pP		44	36	i				
	CIR	P		44	02	iR	2.9			
		pP		44	51					
		S		52	46	e				
	BUL	P	20	12	05	e	7.6			
P'P'			20	12	05	e				
P		19	44	07	iR					
pP			44	54	i					
sP			45	15	i					
06	CLK	P	01	19	24	e	0.2	CGS 01 06 01 4.2N 128.3E N of Halmahera	5.1	
		pP		19	38	e				
	CIR	P		19	27	e	0.2			
		pP		19	40	e				
	BUL	P		19	47	e	0.2			
		pP		20	01	e				
	BHA	P		19	50	e	0.2			
	06	BUL	Pg	01	30	03	e		BUL 01 29 02 18.8S 25.3E NE Botswana	2.3
			Sn		30	30				
			Sg		30	44	i			
		KRR	Sg		31	18	e	0.3		
BHA		Sg		31	43	e	0.3			
CIR		Sg		32	11	e	0.2			
06	CLK	P	01	37	(50)	e	0.1	Distant		
	CIR	P		38	(16)	e	0.2			
	BUL	P		38	30	e	0.3			
06	BHA	P	19	34	03	e	0.2	CGS 19 23 44 36.0N 10.6W N Atlantic Ocean	4.8	
		KRR	P		34	20				e
	CLK	P		34	(35)	e	0.2			
	BUL	P		34	35	e	0.6			
		pP		34	50	e				
	CIR	P		34	49	e	0.3			
07	BUL	Pn	02	17	49	e		BUL 02 16 15 26.5S 27.2E Witwatersrand	3.7	
		Sn		19	00	e				
		Sg		19	31	i				1.8
	CIR	Pn		17	53	e	2.4			
		Sn		19	06	e				
		Sg		19	39	i				
	KRR	Pn		18	35	e	1.3			
		Sn		20	18	e				
		SgSg		21	19	e				
	BHA	Pn		19	05	e	0.4			
		Sn		21	13	e				
		Sg		22	24	e				
07	CLK	P	08	38	44	iC	0.8	CGS 08 26 57 49.8N 78.1E	5.5	
	BHA	P		38	56	iC	0.8	E Kazakh SSR		
	KRR	P		39	03	e	1.1			
	CIR	P		39	20	iC	0.5			
	BUL	P		39	22	iC	0.9			

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentre; Remarks	Mag CGS
07	BUL	P	12	34	52	e	0.2	CGS 12 22 24 31.8S 69.6W San Juan Prov.; Argentina.	4.2
		pP		35	25	e			
	CIR	P		35	02	e	0.2		
		pP		35	35	e			
07	BHA	Pn	20	29	05	e		BUL 20 26 09 1.9S 27.9E Congo-Rwanda Border Region	5.0
		Sn		31	12	i			
		Sg		32	(30)	e	8.		
	CLK	Pn		29	34	e			
		Sn		32	10	i			
		Sg		33	38	i			
	KRR	L		33	51	i	9.0		
		Pn		29	35	e			
		Sn		32	13	e			
	BUL	Sg		33	42	i			
		L		33	57	i	4.6		
		Pn		30	17	e			
	BUL	Sg		35	22	e			
		L		35	32	i	3.2		
		Pn		30	27	e			
	CIR	L		36	00	e	3.1		
08	BHA	P'	10	38	32	e	0.2	CGS 10 20 09 41.3N 139.6E Hokkaido, Japan Region	5.7
		PKKP		49	14	i	.3		
	KRR	P'		38	32	iC	0.3		
		PKKP		49	03	e	0.2		
	CIR	P'		38	35	e	0.2		
		PKKP		49	02	e			
	BUL	P'		38	38	iC	0.6		
*	PKKP		48	58	e				
08	BUL	P	15	32	22	e	0.2	Distant	
	CIR	P		32	29	e	0.3		
	KRR	P		32	44	e	0.2		
08	CIR	P'	18	27(53)		e	0.2	CGS 18 09 02 15.6S 173.7W Tonga Is.	5.1
				28	07	e			
	BUL	P'		27	55	e	0.3		
	BHA	P'		28	09	e			
		P'		28	00	e	0.2		
KRR	P'		28	14	e				
09	KRR	P	13	18	55	e	0.3	CGS 13 08 17 32.2N 10.5W N Atlantic Ocean	4.5
		BUL	P		19	10	e		
	CIR	(PcP)		20	00	e			
		P		19	24	e	0.2		
09	CIR	P	14	01	59	e	0.2	CGS 13 47 59 4.1S 135.5E W New Guinea Region	5.5
		PP		06	03	e			
	BUL	P		02	12	e	0.2		
	BHA	PP		06	26	e			
		P		02	15	e	0.2		
PP		06	37	e					
10	CIR	P	07	08	36	e	0.2	CGS 06 54 18 5.6S 147.2E E New Guinea Region	5.8
	BUL	P		08	49	e	0.1		

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentral data; Remarks	Mag CGS
10	CIR	P'	07	12	29	e	1.0	CGS 06 54 17 5.6S 147.2E E New Guinea Region	5.8
		pF'		13	14	e			
		PKKP		23	24	e			
	BUL	P'		12	35	e	2.8		
		pF'		13	28	e			
		PKKP		23	13	e			
	KRR	P'		12	35	e	1.2		
		PKKP		23	08	e			
	BHA	P'		12	39	e	0.8		
PKKP			23	04	e				
10	BUL	P'	08	33	51	e	0.4	CGS 08 15 08 12.3N 87.5W Near Coast of Nicaragua	5.3
	BHA	P'		33	51	e	0.4		
	KRR	P'		33	53	e	0.8		
	CIR	P'		33	57	e	0.2		
	CLK	P'		34	03	e	0.7		
10	BHA		15	00	09	e	0.1	Distant	
	BUL			00	26	e	0.2		
10	CIR	Pn	15	04	19	e		BUL 15 03 21 24.5S 29.5E Upper Olifants River, Transvaal	2.7
		Pg		04	30	e			
		Sg		05	18	i	0.9		
	BUL	Pg		04	37	e			
		Sn		05	16	e			
	KRR	Sg		05	33	i	1.2		
		Sg		07	12	e	0.3		
10	CLK	P	19	14	04	iC	0.3	CGS 19 04 03 36.4N 71 0E Afghanistan-USSR Border Region	5.1
	BHA	P		14	20	e	0.3		
	KRR	P		14	28	iC	0.6		
	CIR	P		14	44	e	0.2		
	BUL	P		14	49	iC	0.7		
11	CLK	Pn	10	04	13	e		BUL 10 02 49 9.9S 34.1E N Lake Malawi	3.8
		Sn		05	13	e			
		Sg		05	45	e	2.4		
	BHA	Pn		04	32	e			
		Sn		05	46	e			
		Sg		06	25	e	2.2		
	KRR	Pn		04	46	e			
		Sg		06	56	i	1.7		
	CIR	Pn		05	28	e			
		Sg		08	34	e	0.8		
	BUL	Sg		08	36	e	1.1		
11	CLK	P	10	43	05	e	0.4	CGS 10 30 24 8.9S 124.0E Timor	5.0
	CIR	P		43	16	e	0.1		
	KRR	P		43	28	e	0.2		
	BUL	P		43	30	e	0.2		
	BHA	P		43	34	e	0.2		
12	CLK	P	17	52	08	e	0.2	CGS 17 43 34 28.3N 53.1E S Iran	4.5
	KRR	P		52	32	e	0.2		
	CIR	P		52	54	e	0.2		
	BUL	P		52	57	e	0.2		

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data:	Remarks	Mag CGS	
13	CLK	Pn	11	04	58	e		BUL 11 03 06 8.4S 37.6E Southern Province, Tanzania		3.9	
		Sn		06	17	i					
		Sg		07	05	i	3.0				
	BHA	Pn		05	38	e					
		Sn		07	33	e					
		Sg		08	30	e	1.0				
	KRR	Pn		05	49	e					
		Sn		07	50	e					
		Sg		08	56	e	0.7				
	CIR	Pn		06	18	e					
		Sn		08	53	e					
		L		10	13	e	0.5				
	BUL	Pn		06	34	e					
		Sn		09	04	e					
		Sg		10	29	e	0.5				
13	CLK	Pn	18	11	36	e		BUL 18 07 45 0.6N 30.6E Ruwenzori area, Uganda		4.0	
		L		16	30	e	0.5				
	BHA	L		15	37	e	0.5				
	KRR	L		16	41	e	0.3				
	BHA	L		18	36	e	0.3				
	CIR	L		19	03	e	0.3				
13	CLK	P	20	51	00	iC	0.5	CGS 20 40 13 5.5S 110.4E Java Sea		5.2	
		CIR	P		51	18	e				0.9
		KRR	P		51	28	e				1.6
		BUL	P		51	33	iC				3.0
		BHA	P		51	34	iR				0.8
14	BHA	P	09	05	41	iC	0.7	CGS 08.47 16 12.9N 86.8W Nicaragua		5.6	
		SKP		09	01	i					
		PKKP		16	07	e	0.3				
	BUL	P		05	42	iC	0.7				
		SKP		09	03	e					
		PKKP		16	05	i	0.8				
	KRR	P		05	43	iC	1.2				
		SKP		09	04	i					
		PKKP		16	01	e	0.2				
	CIR	P		05	48	e	0.5				
		SKP		09	09	e					
		PKKP		15	55	e	0.3				
	CLK	P		05	54	iC	0.8				
		SKP		09	14	e					
		PKKP		15	43	e	0.2				
14	BUL	Pn	14	27	17	iC		BUL 14 25 45 26.3S 27.5E Witwatersrand		3.3	
		Sn		28	25	i					
		S*		28	40	i					
		Sg		28	56	i	1.3				
		CIR	Pn		27	21	e				
	CIR	Sn		28	29	e					
		Sg		29	00	i	1.0				
		KRR	Pn		28	02	e				
	KRR	Sn		29	45	e					
		L		30	45	e	0.5				
14	BUL		14	51	51	e	0.2	Distant.			
	KRR		52	01	e	0.2					
14	BHA	Pn	15	09	55	e		BUL 15 08 14 7.8S 30.4E S Lake Tanganyika		3.2	
		Sn		11	08	e					
		L		11	52	e	1.4				
	KRR	Sn		12	00	e					
		Sg		12	52	e	0.3				
	CLK	L		13(00)	e	0.2					

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentral data:	Remarks	Mag CGS
14	CLK	P	22	15	58	e	0.4	CGS 22 02 59 7.0S 129.7E	Banda Sea	5.3
	CIR	P		16	10	e	0.3			
	KRR	P		16	21	iC	0.3			
	BUL	P		16	23	e	0.3			
	BHA	P		16	27	e	0.3			
14	BHA	Pn	23	13	32	e		BUL 23 10 18 0.7S 29.7E	S Lake Edward Area	4.3
		Sn		15	55	e				
		Sg		17	21	i				
		L		17	32	i	2.2			
	CLK	Pn		13	57	e				
		Sg		18	16	i				
		L		18	28	i	1.7			
	KRR	Pn		14	07	e				
		Sg		18	36	e				
		L		18	50	e	0.8			
	BUL	Pn		14	47	e				
		L		20	20	i	0.5			
	CIR	Pn		14	59	e				
		L		20	48	e	0.5			
15	CLK	P	11	57	45	iR	0.6	CGS 11 44 42 2.8S 126.5E	Ceram Sea	5.6
		PKKP	12	15	12	e				
	CIR	P	11	57	58	iR	0.5			
		PKKP	12	15	05	e				
	KRR	P	11	58	08	e	0.4			
		PKKP	12	14	59	e				
	BUL	P	11	58	12	iR	0.7			
		PKKP	12	14	57	e				
	BHA	P	11	58	14	e	0.5			
	PKKP	12	14	56	e					
15	BHA	P'	13	54	52	e	0.2	CGS 13 35 35 51.2N 179.1W	Andreanof Is., Aleutian Is.	5.6
	KRR	P'		54	53	e	0.3			
	CIR	P'		54	57	e	0.3			
	BUL	P'		54	59	e	0.5			
				56	45	e				
		PP		58	12	e				
15	CIR	P	15	09	52	e	0.3	CGS 14 58 06 49.5S 125.0E	S of Australia	5.0
	BUL	P		10	09	e	0.2			
15	CLK	P	19	11	49	e	0.1	Distant		
	KRR	P		12	26	e	0.2			
	CIR	P		12	44	e	0.2			
	BUL	P		12	52	e	0.3			
16	BUL	P	04	53	16	iC	0.3	CGS 04 40 44 22.4S 67.5W	Chile-Bolivia Border Region	
	KRR	P		53(25)		e	0.1			
16	CLK	P	14	17(35)		e	0.2	CGS 14 10 52 9.8N 57.8E	Carlsberg Ridge	4.9
		PcP		20	10	e				
	BHA	P		18	04	e	0.2			
	KRR	P		18	09	e	0.2			
		PcP		21	16	e				
	CIR	P		18	16	e	0.3			
		PcP		21	11	i				
BUL	P		18	32	e	0.3				

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data:	Remarks	Mag CGS				
16	CLK	P'	16	12	52	e	0.2	CGS 15 54 17 38.5N 142 7E Near E Coast of Honshu Japan		5.4				
		PP									13	41	e	
	BHA	P'	16	22	e	0.3								
		SKP					13				01	e		
	KRR	P'	16	22	e	0.2								
		SKP					13				01	e		
	CIR	P'	16	24	e	0.3								
		SKP					13				02	e		
	BUL	P'	16	29	i	1.1								
		PF					13				07	e		
SKP		14					35	i						
16	CIR	Pn	18	01	52	e		BUL 18 01 19 20.0S 33.6E Manica Province, Mocambique		2.6				
		Pg									02	01	i	
		Sn									02	17	e	
		Sg									02	22	i	2.7
	KRR	Pn	16	29	i	1.3								
		Sg									02	31	e	
	CLK	Sg	16	29	i	0.3								
		Sg									03	47	i	
	BUL	Sg	16	29	i	0.6								
		Sg									03	39	e	
BHA	Sg	16	29	i	0.3									
	Sg					03	41	i						
17	CIR	P*	00	38	00	e		BUL 00 36 20 26.4S 28.2E E Witwaters rand		3.3				
		Sg									39	23	i	1.0
	KRR	Pn									16	29	i	0.5
		L												
	BUL	Sg									16	29	i	1.3
Sg		41	13	e										
17	CIR	P'	01	14	11	e	0.4	CGS 00 56 06 17.7S 179.9E Fiji Is.		5.4				
		SKP									39	23	i	1.0
	CLK	P'									16	29	i	0.2
		SKP												
	BUL	P'									16	29	i	0.6
		SKP												
	KRR	P'									16	29	i	0.6
		SKP												
	BHA	P'									16	29	i	0.3
		SKP												
17	CIR	P'	01	19	58	e	0.2	CGS 01 01 56 17.8S 180.0E Fiji Is.		4.5				
		SKP									20	00	e	0.1
	CLK	P'									16	29	i	0.4
		SKP												
	BUL	P'									16	29	i	0.6
		SKP												
	KRR	P'									16	29	i	0.2
		SKP												
	BHA	P'									16	29	i	0.2
		SKP												
17	CIR	P'	01	48	10	e	0.3	CGS 01 30 07 17.6S 179.8E Fiji Is.		4.8				
		SKP									22	49	e	
	CLK	P'									16	29	i	0.2
		SKP												
	BUL	P'									16	29	i	0.5
		SKP												
	KRR	P'									16	29	i	0.6
		SKP												
	BHA	P'									16	29	i	0.3
		SKP												
BUL	P'	16	29	i	0.3									
	SKP					50	48	e						
	SKP					48	19	e						
	SKP					50	56	i						
BHA	P'	16	29	i	0.3									
	SKP					48	24	e						
BUL	P'	16	29	i	0.3									
	SKP					51	02	e						

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data; Remarks	Mag CGS
17	CLK	Pn	19	17	14	iC	5.8	BUL 19 15 26 21.7S 39.6E Mocambique Channel	4.5
		Sn		18	33	i			
	BUL	Pn		17	54	e	3.3		
		Sn		19	41	e			
	KRR	Pn		17	57	iC	2.2		
		Sn		19	48	i			
BHA	Pn		18	27	e	2.5			
	Sn		20	41	e				
18	CLK	P	03	39(37)	e	0.1	Distant		
	BUL	P		40	07	e			0.3
				44	36	e			
18	CLK	P'	03	51	50	e	0.2	CGS 03 32 51 21.4S 170.9E Loyalty Is. Region	5.3
	BUL	P'		51	50	e	0.4		
	KRR	P'		51	51	e	0.2		
	BHA	P'		52	02	e	0.2		
18	BUL	P	04	37	09	e	0.4	CGS 04 24 17 25.8S 70.8W Near Coast of N Chile	5.2
		pP		37	24	e			
	KRR	P		37	21	e	0.3		
		pP		37	36	e			
18	DUL	Pn	06	26	30	e		BUL 06 25 00 26.4S 27.7E Witwatersrand.	3.6
		Sg		28	08	e	2.5		
	KRR	Pn		27	16	e			
		Sn		28	57	e			
	BHA	Sg		29	55	i	1.6		
		Pn		27	47	e			
		Sn		29	54	e			
		Sg		31	02	e	0.4		
	CLK	Sg		31	14	e	0.4		
	18	BHA	Pn	11	55(10)	e			
Sn				56	15	e			
L			56	53	i	1.5			
KRR		Pn		55(37)	e				
		Sn		57	06	e			
CLK		L		57	59	e	0.4		
		L		57	56	e	0.5		
BUL		L		59	45	e	0.3		
18	CLK	P'	16	35	25	e	0.3	CGS 16 16 40 44.1N 151.0E Kurile Is. Region	5.4
	KRR	P'		35	34	e	0.4		
	BHA	P'		35	34	iR	0.4		
	BUL	P'		35	40	iR	0.7		
		PP		37	32	e			
18	BUL	P'	20	51	04	iR	0.6	CGS 20 31 27 50.1N 130.0W Vancouver Is. Region	5.0
18	BUL	Pg	23	36	33	iC		BUL 23 36 12 19.5S 27.5E W Rhodesia	2.2
		Sg		36	48	i	3.8		
	KRR	Pg		37	11	e			
		Sg		37	49	e	0.8		
18	BUL	Pg	23	40	23	iC		BUL 23 40 02 19.5S 27.5E W Rhodesia	2.8
		Sg		40	38	i	10.		
	KRR	Pn		40	52	e			
		Pg		41	02	e			
		S*		41	38	e			
	BHA	Sg		41	43	e	3.2		
		Pn		41(17)	e				
		Sn		42	16	i			
		L		42	44	e	0.6		
	CLK	Sn		43	22	e			
		Sg		44	07	e	0.4		

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data; Remarks	Mag CGS
19	CLK	Pn	00	22	53	e		BUL 00 22 08 12.8S 34.1E Central Malawi	3.0
		Sn		23	27	i			
		Sg		23	39	i	2.2		
	BHA	Sn		24	34	e			
		Sg		25	01	e	1.0		
	KRR	Sn		24	37	e			
		Sg		25	08	e	0.7		
BUL	Sg		26	37	e	0.3			
19	CLK	P	14	12	54	iR	0.9	CGS 13 59 23 28.8N 128.2E Ryukyu Is.	5.8
		pP		13	37	e			
	KRR	P		13	16	e	0.3		
	BHA	P		13	17	e	0.4		
19	BUL	Pn	14	11	26	e		BUL 14 09 51 Witwatersrand	3.4
		Sg		13	10	e	1.2		
	KRR	Sg		14	52	e	0.5		
19	BHA	Pn	15	39	51	e		BUL 15 37 26 4.2S 28.7E N Lake Tanganyika Area	4.3
		Sn		41	37	e			
		S*		41	53	e			
	KRR	L		42	47	i	6.8		
		Pn		40	25	e			
		Sn		42	35	e			
	CLK	L		43	59	e	1.7		
		Pn		40	32	e			
		Sn		42	45	e			
	BUL	L		44	09	i	1.4		
		Pn		41	09	e			
Sn			43	48	e				
L			45	43	e	1.0			
			45	58	i	1.6			
19	BHA	Pn	20	04	25	e		BUL 20 02 33 6.9S 30.2E S Lake Tanganyika	3.8
		Sn		05	47	i			
		Sg		06	30	i	3.0		
	KRR	Pn		04	55	e			
		Sn		06	40	i			
		Sg		07	37	i	1.2		
	CLK	Pn		04	56	e			
		Sn		06	40	e			
		Sg		07	39	e	0.9		
	BUL	Pn		05	41	e			
		Sn		07	58	e			
Sg			09	22	e	0.4			
20	BHA	Pn	08	37	08	e	0.5	CGS 08 17 56 31.3N 114.3W Gulf of California	5.4
		P'		37	17	i			
	KRR	Pn		37	08	e	0.8		
		P'		37	17	i			
	BUL	Pn		42	32	e			
		P'		37	17	e	1.0		
	CLK	Pn		42	34	e			
		P'		37	24	e	1.8		
			42	43	e				
20	KRR	P'	09	18	25	e	0.2	CGS 08 58 54 31.3N 114.2W Gulf of California	4.7
	BUL	P'		18	28	e	0.4		
	CLK	P'		18	37	e	0.5		

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data; Remarks	Mag CGS
20	KRR	P	16	32(37)		e	0.2	CGS 16 18 56 8.7N 127.3E Philippine Is. Region	6.1
		PP		36 42		e			
	BHA	P		32(39)		e	0.3		
		SKS		43 21		i			
	BUL	PKKP		49 00		e			
		P		32 43		iR	0.7		
		PP		36 50		i			
		SKS		43 24		e			
20	BUL	P'	18	35 33		iC	0.7	CGS 18 16 06 51.6N 174.9W	4.8
	KRR	PP'		35 45		e	0.2	Andreanof Is., Aleutian Is.	
21	KRR	P'	03	27 05		e	0.3	CGS 03 07 32 31.3N 114.7W	4.9
	BUL	P'		27 07		e	0.5	Gulf of California	
21	KRR	P'	03	28 52		e	0.3	BUL	
	BUL	P'		28 57		e	0.5	Gulf of California	
21	BHA	P'	03	40 08		e	0.2	BUL	
	KRR	P'		40 10		e	0.3	Gulf of California	
	BUL	P'		40 12		e	0.4		
21	KRR	P'	03	43 30		e	0.2	BUL	
	BUL	P'		43 31		e	0.3	Gulf of California	
21	KRR	P'	03	51 52		e	0.3	BUL	
	BUL	P'		51 55		e	0.4	Gulf of California	
21	KRR	P'	03	54 14		e	0.2	BUL	
	BUL	P'		54 16		e	0.2	Gulf of California	
21	KRR	P'	03	54 23		e	0.2	BUL	
	BUL	P'		54 25		e	0.2	Gulf of California	
21	KRR	P'	03	56 00		e	0.2	BUL	
	BUL	P'		56 02		e	0.2	Gulf of California	
21	KRR	P'	04	00 03		e	0.2	BUL	
	BUL	P'		00 05		e	0.2	Gulf of California	
21	KRR	P'	04	04 18		e	0.2	BUL	
	BUL	P'		04 20		e	0.2	Gulf of California	
21	BHA	P'	04	13 12		e	0.3	CGS 03 53 42 31.2N 114.3W	5.3
	KRR	P'		13 14		e	0.6	Gulf of California	
	BUL	P'		13 16		e	0.9		
21	BHA	P'	04	15 44		e	0.1	BUL	
	KRR	P'		15 47		e	0.3	Gulf of California	
	BUL	P'		15 49		e	0.4		
21	KRR	P'	04	23 04		e	0.2	BUL	
	BUL	P'		23 06		e	0.3	Gulf of California	
21	KRR	P'	04	31 58		e	0.3	CGS 04 12 27 31.2N 114.2W	5.0
	BUL	P'		32 00		e	0.4	Gulf of California	
21	KRR	P'	04	41 47		e	0.2	CGS 04 21 54 31.3N 114.3W	
	BUL	P'		41 50		e	0.2	Gulf of California	
21	KRR	P'	04	45 55		e	0.2	CGS 04 26 24 31.2N 114.4W	4.9
	BUL	P'		45 57		e	0.3	Gulf of California	
21	KRR	P'	04	58 19		e	0.2	CGS 04 38 45 31.3N 114.2W	4.6
	BUL	P'		58 21		e	0.2	Gulf of California	
21	KRR	P'	04	58 58		e	0.2	BUL	
	BUL	P'		59 00		e	0.2	Gulf of California	
21	KRR	P'	05	04 02		e	0.3	CGS 04 44 29 31.0N 114.5W	4.8
	BUL	P'		04 04		e	0.4	Gulf of California.	

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data;	Remarks	Mag CGS
21	KRR	P ¹	05	06	36	e	0.3	CGS 04 47 04	31.2N 114.2W	4.8
	BUL	P ¹		06	37	e	0.3	Gulf of California		
21	KRR	P ¹	05	09	17	e	0.2	BUL		
	BUL	P ¹		09	20	e	0.2	Gulf of California		
21	BHA	P ¹	05	15	48	e	0.4	CGS 04 56 20	31.2N 114.1W	5.4
	KRR	P ¹		15	50	e	1.4	Gulf of California		
	BUL	P ¹		15	52	e	1.8			
21	KRR	P ¹	05	28	04	e	0.2	BUL		
	BUL	P ¹		28	06	e	0.2	Gulf of California		
21	KRR	P ¹	05	33	57	e	0.2	CGS 05 14 23	31.1N 114.5W	4.7
	BUL	P ¹		33	58	e	0.3	Gulf of California		
21	KRR	P ¹	05	59	27	e	0.5	CGS 05 39 56	31.4N 114.3W	4.8
	BUL	P ¹		59	29	e	0.4	Gulf of California		
	CLK	P ¹		59	39	e	0.5			
21	KRR	P ¹	06	10	15	e	0.3	CGS 05 50 44	31.3N 114.3W	4.7
	BUL	P ¹		10	17	e	0.3	Gulf of California		
	CLK	P ¹		10	27	e	0.3			
21	KRR	P ¹	06	18	50	e	0.5	CGS 05 59 19	31.4N 114.2W	5.0
	BUL	P ¹		18	51	e	0.6	Gulf of California		
	CLK	P ¹		19	01	e	0.8			
21	KRR	P ¹	06	24	49	e	0.3	CGS 06 05 17	31.3N 114.0W	4.8
	BUL	P ¹		24	51	e	0.3	Gulf of California		
	CLK	P ¹		25	02	e	0.5			
21	BHA	P ¹	06	53	54	e	0.4	CGS 06 34 22	31.1N 114.3W	5.5
	KRR	P ¹		53	58	e	0.7	Gulf of California		
	CLK	P ¹		54	11	e	1.1			
21	KRR	P ¹	07	31	43	e	0.2	BUL		
	CLK	P ¹		31	54	e	0.3	Gulf of California		
21	BHA	P ¹	07	40	40	e	0.3	CGS 07 21 12	31.3N 114.2W	5.1
	KRR	P ¹		40	42	e	0.5	Gulf of California		
	CLK	P ¹		40	54	e	1.0			
21	KRR	P ¹	07	44	02	e	0.2	BUL		
	CLK	P ¹		44	14	e	0.5	Gulf of California		
21	KRR	P ¹	07	57	01	e	0.3	CGS 07 37 30	31.3N 114.1W	4.3
	CLK	P ¹		57	12	e	0.4	Gulf of California		
21	BHA	P ¹	08	13	44	e	0.1	CGS 07 54 11	31.0N 114.4W	4.8
	KRR	P ¹		13	47	e	0.2	Gulf of California		
	CLK	P ¹		13	57	e	0.4			
21	BHA	P ¹	08	23	48	e	0.2	CGS 08 04 23	31.5N 114.0W	4.7
	KRR	P ¹		23	52	e	0.3	Gulf of California		
	CLK	P ¹		24	03	e	0.4			
21	KRR	P ¹	08	25	11	e	0.2	BUL		
	CLK	P ¹		25	20	e	0.3	Gulf of California		
21	BHA	P ¹	08	58	20	e	0.2	CGS 08 38 53	31.1N 114.2W	4.8
	KRR	P ¹		58	25	e	0.4	Gulf of California		
	CLK	P ¹		58	34	e	0.7			
21	KRR	P ¹	09	02	28	e	0.2	BUL		
	CLK	P ¹		02	39	e	0.3	Gulf of California		
21	KRR	P ¹	09	07	02	e	0.2	CGS 08 47 32	31.1N 114.2W	4.4
	CLK	P ¹		07	13	e	0.3	Gulf of California		
21	KRR	P ¹	09	09	42	e	0.2	CGS 08 50 13	31.3N 114.2W	4.6
	CLK	P ¹		09	54	e	0.3	Gulf of California		

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Day	Stn	Phase	G	M	T	R C	DA& mm	Epicentral data;	Remarks	Mag CGS
21	KRR	P'	09	15	47	e	0.2	CGS 08 56 16	31.2N 114.2W	4.9
	CLK	P'		15	57	e	0.3	Gulf of California		
21	KRR	P'	09	39	14	e	0.2	BUL		4.7
	CLK	P'		39	25	e	0.2	Gulf of California		
21	KRR	P'	09	55	36	e	0.3	CGS 09 36 04	31.2N 114.0W	4.7
	CLK	P'		56	47	e	0.5	Gulf of California		
21	KRR	P'	10	21	07	e	0.2	CGS 10 01 35	31.3N 114.0W	4.7
	CLK	P'		21	17	e	0.3	Gulf of California.		
21	BHA	P'	10	29	42	e	0.3	CGS 10 10 11	31.2N 114.3W	5.4
	KRR	P'		29	46	e	0.8	Gulf of California		
	CLK	P'		29	56	e	1.7			
21	BHA	P'	12	24	12	e	0.2	CGS 12 05 16	49.6N 155.6E	5.3
	KRR	P'		24	14	e	0.2	Kurile Is.		
21	KRR	P'	12	39	26	e	0.3	CGS 12 19 54	31.2N 114.3W	4.7
	CLK	P'		39	37	e	0.3	Gulf of California		
21	KRR	P'	12	43	33	e	0.4	CGS 12 24 00	31.2N 114.2W	5.1
	CLK	P'		43	45	e	0.6	Gulf of California		
21	KRR	P'	16	17	18	e	0.4	CGS 15 57 42	31.2N 114.3W	5.1
	CLK	P'		17	29	e	0.7	Gulf of California		
21	KRR	P'	16	49	11	e	0.3	CGS 16 29 40	31.3N 114.1W	4.7
	CLK	P'		49	20	e	0.4	Gulf of California		
21	BHA	P'	18	15	16	e	0.2	CGS 17 55 47	31.3N 114.1W	4.7
	KRR	P'		15	18	e	0.3	Gulf of California		
	CLK	P'		15	30	e	0.5			
21	KRR	P'	18	19	52	e	0.2	CGS 18 00 21	31.1N 114.3W	5.2
	CLK	P'		20	03	e	0.3	Gulf of California		
22	KRR	P	04	18	03	e	0.2	Distant		
	BHA	P		18	23	e	0.2			
22	CLK	P	05	03	06	e	0.4	CGS 04 52 33	38.9N 70.6E	5.3
	BHA	P		03	22	e	0.2	Afghanistant-USSR Border Region		
	KRR	P		03	29	e	0.3			
22	BHA	P'	07	45	04	e	0.2	CGS 07 25 36	31.4N 114.1W	5.1
	KRR	P'		45	06	e	0.6	Gulf of California		
	BUL	P'		45	09	e	0.5			
	CLK	P'		45	(18)	e	0.9			
22	CLK	P	17	43	52	e	0.4	CGS 17 31 07	0.7S 122.5E	5.2
	KRR	P		44	15	e	0.2	N Celebes		
	BHA	P		44	16	e	0.3			
	BUL	P		44	18	e	0.4			
22	KRR	P'	18	42	33	e	0.3	CGS 18 23 02	31.5N 114.2W	4.8
	BUL	F'		42	35	e	0.2	Gulf of California		
				45	20	e				
	CLK	P'		42	44	e	0.4			
22	CLK	Pn	19	55	00	e		BUL 19 54 29	17.6S 35.0E	2.8
		Sg		55	27	i	3.7	Zambesi-Shire Confluence		
	KRR	Sg		57	08	e	0.9			
	BUL	Sg		57	46	e	0.5			
23	KRR	P'	11	51	52	e	0.3	CGS 11 32 22	31.4N 115.0W	4.9
		pP'		52	03	e		Baja, California		
	BUL	P'		51	55	e	0.3			
		pP'		52	05	e				

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentral data:	Remarks	Mag CGS
23	BHA	P	12	10	39	e	0.3	CGS 12 01 01	0.9N 26.0W	4.9
	KRR	P		10	49	e	0.2	Central Mid-Atlantic Ridge		
	BUL	P		10	49	e	0.2			
23	KRR	P'	15	58	33	e	0.3	CGS 15 39 01	31.5N 114.1W	4.7
	BUL	P'		58	35	e	0.3	Gulf of California		
23	BHA	P	21	13	03	iR	0.6	CGS 21 08 43	39.2N 28.5E	5.6
		ScS		28	01	e		Turkey		
	KRR	P		18	20	iR	0.7			
	BUL	P		18	44	iR	2.1			
23	BUL	P'	23	19	51	iR	0.4	CGS 23 01 03	6.5S 154.7E	5.0
	KRR	P'		19	51	e	0.2	Solomon Is.		
	BHA	P'		19	56	e	0.3			
24	BHA	P	02	08	51	e	0.2	CGS 01 59 31	39.1N 28.5E	5.0
	KRR	P		09	09	e	0.2	Turkey		
	BUL	P		09	33	iR	0.5			
24	BHA	P	12	02	07	e	0.3	CGS 11 54 15	27.5N 33.8E	5.2
	CLK	P		02	12	e	0.2	United Arab Republic		
	KRR	P		02	23	e	0.2			
	BUL	P		02	48	e	0.2			
24	BUL	Pn	12	58	36	e		BUL 12 55 12	19.7S 13.1E	4.6
		Sn	13	01	19	i		South West Africa		
		Sg		02	39	i				
		L		02	49	i	3.7			
	BHA	Pn	12	58	47	e				
		Sn	13	01	29	e				
		L		03	16	i	2.3			
				03	27	i				
	KRR	Pn	12	58	53	e				
		Sn	13	01	41	e				
		L		03	33	e	1.1			
	CLK	L		06	33	e	1.0			
25	BUL		04	27	32	e	0.2	Distant		
	KRR			27	40	e	0.2			
	BHA			27	47	e	0.2			
25	BHA	P	13	30	28	e	0.4	CGS 13 21 10	39.0N 28.5E	
	CLK	P		30	37	e	0.3	Turkey		
	KRR	P		30	45	e	0.4			
	BUL	P		31	10	e	1.0			
25	BHA	P	13	30	50	e	0.7	CGS 13 21 32	39.2N 28.4E	5.6
		PcP		31	58	e		Turkey.		
	CLK	P		31	04	e	0.5			
	KRR	P		31	09	e	0.7			
	BUL	P		31	32	e	2.2			
25	BHA	P	14	28	11	e	0.1	CGS 14 18 51	39.2N 28.4E	4.9
		PcP		29	17	e		Turkey.		
	KRR	P		28	28	e	0.2			
		PcP		29	20	e				
	BUL	P		28	50	e	0.3			
		PcP		29	40	e				
25	BUL	Pg	20	12	55	e		BUL 20 11 27	19.0S 23.6E	2.8
		Sg		13	56	i	1.2	Okavango Swamp		
	KRR	Sn		13	57	e				
		L		14	35	e	0.4			
	BHA	L		14	54	e	0.3			

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Day	Stn	Phase	G	M	T	$\frac{R}{C}$	DA mm	Epicentral data; Remarks	Mag CGS
25	BHA	P*	21	14	58	e		BUL 21 13 35 12.6S 33.2E Malawi-Zambia Border	2.9
		Sn		15	41	i			
		L		16	12	i	1.2		
	CTK	Sn		14	07	e			
		Sg		14	22	e	2.5		
	KRR	Sg		16	20	i	0.7		
BUL	Sg		17	59	e	0.3			
26	BUL	P'	04	47	52	iC	0.8	CGS 04 29 09 6.4S 154.9E	5.1
	KRR	P'		47	53	iC	0.4	Solomon Is.	
	BHA	P'		47	57	e	0.5		
26	CLK	P'	17	48	23	e	0.2	CGS 17 30 11 33 1S 178.9W	4.8
	BUL	P'		48	59	e	0.3	S of Kermadec Is.	
	KRR	P'		49	04	e	0.4		
	BHA	P'		49	10	e	0.3		
27	KRR	Pg	03	40	33	iR		BUL 03 40 12 16.6S 28.4E Kariba	2.5
		Sg		40	48	i	8.5		
	BHA	P*		40	50	e			
		Pg		40	53	e			
		Sg		41	21	i	2.3		
	BUL	Pg		41	18	e			
		Sn		41	49	e			
		S*		42	00	e			
Sg		42	03	e	1.1				
27	KRR	P'	08	41	18	e	0.4	CGS 08 23 14 19.5N 144.6E	4.6
	BHA	P'		41	19	e	0.2	Mariana Is.	
	BUL	P'		41	22	e	0.5		
27	KRR	P	11	30	27	e	0.3	CGS 11 19 29 39.0N 71.9E	4.9
	BUL	P		30	48	e	0.4	Tadzhik SSR	
27	KRR	P	12	55	14	e	1.2	CGS 12 41 36 4.8N 127.5E	6.1
		pP		55	35	i		Talaud Is.	
	BHA	P		55	16	e	1.2		
		pP		55	36	i			
		PP		58	34	e			
	BUL	SKS	13	05	58	e			
		P	12	55	20	e	1.8		
		PP		59	28	e			
		SKS	13	06	00	e			
		S		06	27	e			
27	CLK	Pn	15	10	51	e		BUL 15 09 22 13.4S 40.9E Offshore N Mocambique	4.7
		Sn		11	54	i			
		L		12	30	i	20.		
	KRR	Pn		12	03	e	1.2		
		Sn		14	03	e			
		L		15	18	i	4.3		
	BHA	Pn		12	12	e	1.1		
		Sn		14	21	e			
		L		15	39	e	7.0		
	BUL	Pn		12	30	e	0.8		
		Sn		14	55	e			
		Sg		16	15	i			
28	BHA	P	01	57	45	e	1.9	CGS 01 48 30 38.6N 28.4E	6.0
		PcP		58	57	e		Turkey	
		S	02	05	15	e			
	KRR	ScS		07	46	i			
		P	01	58	04	e	1.9		
	BUL	PcP		59	05	e			
		P		58	26	e	6.7		
		S	02	06	30	e			

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Day	Stn	Phase	G	M	T	R C	DA mm	Epicentral data; Remarks	Mag CGS
28	KRR	Pg	08	20	41	iC		BUL 08 20 20 15.8S 29.0E	2.7
		Sg		20	56	i	9.8	Kafue-Zambesi Confluence	
	BHA	Pg		20	46	e			
		Sg		21	04	i	7.		
	BUL	Pg		21	37	i			
Sg			22	29	i	2.0			
28	CLK	P	10	11	46	e	0.2	CGS 10 02 17 39.1N 28.4E	4.9
	KRR	P		11	55	e	0.2	Turkey	
	BUL	P		12	15	e	0.3		
28	BUL	P	11	24	06	iC	0.7	CGS 11 11 15 25.9S 70.2W	4.9
		pP		24	20	i		Near Coast of N Chile	
	KRR	P		24	18	e	0.3		
		pP		24	32	e			
	BHA	P		24	20	e	0.2		
28	BHA	P'	15	39	09	e	0.2	CGS 15 19 40 31.5N 114.3W	5.0
	KRR	P'		39	10	e	0.5	Gulf of California	
	BUL	P'		39	12	e	0.4		
	CLK	P'		39	22	e	0.7		
28	BHA	Pn	18	40	55	e		BUL 18 39 55 12.3S 31.8E	3.0
		Sn		41	39	i		Luangwa Valley, Zambia	
		Sg		41	57	i	2.9		
	CLK	Pn		41	03	e			
		Pg		41	20	e			
		Sn		41	51	i			
	KRR	Sg		42	15	i	2.3		
		Pn		41	08	e			
	Sg		42	25	e	0.8			
28	BUL	P	18	52	20	iC	0.4	CGS 18 39 40 32.5S 71.6W	4.6
	KRR	P		52	34	iC	0.4	Near Coast of Central Chile	
	BHA	P		52	36	iR	0.5		
29	BHA	P	09	21	53	e	0.5	BUL 09 15(54) 12.ON 41.4E	5.3
		L		30	52	i		Ethiopia	
	KRR	P		22	08	e	0.4		
		L		31	52	e			
	BUL	P		22	38	iR	1.7		
PP		23	52	i					
29	BHA	P	11	10	52	e	0.5	BUL 11 04(53) 12.ON 41.4E	5.2
		L		19	52	e		Ethiopia	
	KRR	P		11	07	e	0.4		
		L		20(55)	e				
	BUL	P		11	37	iR	1.7		
PP		13	00	e					
L		22	46	i					
29	BHA	P	11	13	30	e	0.3	BUL 11 07(30) 12.ON 41.4E	5.3
	KRR	P		13	45	e	0.3	Ethiopia	
	BUL	P		14	14	e	1.1		
29	BHA	P	13	14(16)	e	0.2	BUL 13 08(14) 12.ON 41.4E	5.1	
	KRR	P		14	30	e	0.2		Ethiopia
	BUL	P		15	01	iC	0.4		
29	BHA	P	13	56	10	iC	2.7	CGS 13 48 58 10.4N 56.8E	5.6
		pP		56	31	i		Carlsberg Ridge	
	KRR	P		56	16	iC	2.8		
		pP		56	35	i			
	BUL	P		56	40	iC	5.0		
30	BHA	P	03	04	55	e	0.3	CGS 02 53 41 8.1N 38.8W	4.6
	KRR	P		05	04	e	0.2	Central Mid-Atlantic Ridge	
	BUL	P		05	04	e	0.3		

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Day	Stn	Phase	G	M	T	R	DA	Epicentral data;	Remarks	Mag
						\bar{C}	mm			CGS
30	CLK	P	08	08	23	e	0.2	CGS 07 55 07	4.4N 128.0E	5.4
	BHA	P		08	50	e	0.3	N of Halmahera		
	KRR	P		08	50	e	0.2			
	BUL	P		08	51	e	0.3			
30	KRR		09	54	52	e	0.2	Distant		
	BUL			55	02	e	0.4			
	BHA			55	03	e	0.3			
30	BUL	P	11	03	05	iC	0.3	CGS 10 50 11	27.6S 70.9W	5.1
	KRR	P		03	17	e	0.2	Near Coast of N Chile		
31	BHA	P	07	23	43	e	3.6	CGS 07 15 54	27.7N 34.0E	6.0
		L		37	42			Red Sea		
	CLK	P		23	50	iR	5.5			
				29	41	e				
		S		30	28	e				
		L		38	(02)	e				
	KRR	P		24	09	e	6.1			
		L		33	(27)	e				
	BUL	P		24	27	iR	10.			
31	BHA		12	34	54	iC	0.7	Distant		
	KRR			34	54	iC	0.9			
	BUL			35	07	e	0.7			
31	BUL	Pn	18	15	51	e		BUL 18 14 21		3.0
		Sg		17	28	e	0.6	Witwatersrand		
	KRR	Pn		16	34	e				
		L		19	10	e	0.3			
31	CLK	P	19	39	00	e	0.4	CGS 19 25 27	38.3N 134.6E	5.9
				42	16	e		Sea of Japan		
		P'		43	10	e				
		PP		43	30	i				
		SKS		49	02	i				
		PKKP		54	28	i				
	KRR	P		39	18	e	0.4			
		P'		43	15	e				
		PP		44	03	i				
		SKP		46	11	i				
		PKKP		54	21	i				
	BHA	P		39	20	e	0.4			
				42	42	e				
		P'		43	17	e				
		PP		44	05	i				
		SKP		46	13	i				
		SKS		49	20	i				
		SKKS		50	20	i				
		PKKP		54	15	i				
	BUL	P		39	33	e	0.2			
		P'		43	23	iR				
		PP		44	24	e				
		SKP		46	19	i				
		SKS		49	30	i				
		SKKS		50	40	i				
		PKKP		54	04	e				
31	BHA	P	21	52	22	iC	0.3	CGS 21 44 27	27.5N 34.0E	5.0
	CLK	P		52	29	iC	0.4	Red Sea		
	KRR	P		52	39	e	0.2			
	BUL	P		53	05	e	0.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks.	Mag
* <u>Addendum.</u>									
02	CIR	P	06	35	23	e	0.3	CGS 06 25 15 47.4S 100.1E	5.0
	BUL	P		35	41	e	0.4	S.E. Indian Rise.	
	KRR	P		35	59	e	0.2		
	BHA	P		36	16	e	0.2		
08	BUL	PKKP	10	48	58	e	0.2	Distant	
	CIR	PKKP		49	02	e	0.2		
	KRR	PKKP		49	03	e	0.2		
	BHA	PKKP		49	14	iC	0.5		

RHODESIA METEOROLOGICAL SERVICES

16 SEP 1969

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CIK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WWSS Station: SP magnification 100,000
 LP magnification 1,500
- CHIREDDZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
 P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network ($17S \ 30E$).
- MM Intensity on the Modified Mercalli scale. |
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of M_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag			
01	BHA	Pn	02	44	22	e		BUL 02 43 09 9.6S 27.5E Kundelungu Mts, Congo.	3.1			
		Sn		45	17	e						
		L		45	44	e	1.3					
	KRR	Pn		45	00	e						
		Sn		46	18	e						
	CLK	L		47	01	e	0.5					
			48	(15)	e	0.2						
01	CLK	P	16	46	02	e	0.3	CGS 16 36 23 30.ON 67.4E W. Pakistan.	4.9			
	BHA	P		46	18	e	0.2					
	KRR	P		46	25	e	0.2					
	BUL	P		46	47	e	0.3					
01	KRR	P	20	41	(00)	e	0.2	CGS 20 29 42 1.7S 100.0E S. Sumatra.	5.2			
	BHA	P		41	01	e	0.4					
		pP		41	15	i						
	BUL	P		41	03	e	0.2					
01	BHA	P'	21	38	38	iC	0.5	CGS 21 19 54 12.7N 88.2W Off Coast of Central America.	4.9			
		pP'		38	53	e						
	BUL	P'		38	38	iR	0.6					
	KRR	P'		38	39	e	0.4					
		pP'		38	53	e						
	CLK	P'		38	50	iR	0.6					
		pP'		39	04	e						
02	BUL	SKP	00	44	46	e	0.3	CGS 00 24 15 20.7S 178.7W Fiji Is. Region.	4.5			
	CLK	SKP		44	46	e	0.2					
	KRR	SKP		44	53	e	0.3					
	BHA	SKP		45	01	e	0.2					
02	BHA	P	01	47	06	e	0.2	CGS 01 38 02 39.ON 15.3E S. Italy.	4.8			
	KRR	P		47	23	iC	0.4					
	CLK	P		47	26	iC	0.3					
	BUL	P		47	54	iC	0.4					
02	BUL	Pn	06	47	23	iC		BUL 06 45 53 26.3S 28.2E Witwatersrand.	4.0			
		Sn		48	30	i						
		S*		48	44	i						
		Sg		48	59	i	4.1					
	KRR	Pn		48	08	e						
		Sn		49	51	i						
		S*		50	28	i						
		Sg		50	50	i	2.4					
	BHA	Pn		48	39	iC						
		Sn		50	45	i						
		L		52	00	i	1.3					
	CLK	Pn		48	49	e						
		Sn		51	03	e						
		Sg		52	10	e	1.4					
	02	CLK	P	07	35	31	iC			1.6	CGS 07 24 06 8.0S 110.4E Java.	5.6
			pP		35	56	i					
KRR		P		36	00	iC	0.8					
		pP		36	26	e						
BUL		P		36	04	iC	2.5					
		pP		36	29	i						
BHA		P		36	09	iC	1.6					
		pP		36	34	i						
02	KRR	P'	20	43	11	e	0.2	CGS 20 24 45 15.8S 176.6W Fiji Is. Region.	4.7			
		BUL	P'		43	22	e			0.2		
	BUL	P'		43	16	e	0.2					
	BHA	P'		43	20	e	0.3					

APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
03	BHA	P'	11	15	(20)	e	0.2	CGS 10 55 53 31.6N 114.1W Gulf of California.	4.6
	KRR	P'		15	23	e	0.2		
	BUL	P'		15	26	e	0.2		
03	BHA	P'	22	21	55	e	0.2	CGS 22 12 24 40.7N 19.9E Albania.	5.1
	CLK	P		22	11	iC	0.7		
	KRR	P		22	(12)	e	0.4		
	BUL	P		22	(32)	e	0.7		
04	CLK	P'	09	04	29	iR	0.5	CGS 08 45 19 51.2N 173.7E Near Is., Aleutian Is.	5.6
	BHA	P'		04	36	e	0.6		
	KRR	P'		04	37	e	0.7		
		PP		07	12	e			
	BUL	P'		04	43	e	0.3		
		PP		07	33	e			
04	BUL	P	12	02	55	iC	0.3	CGS 11 53 38 56.1S 27.2W S. Sandwich Is. Region.	4.9
	KRR	P		03	18	iC	0.4		
	BHA	P		03	29	e	0.3		
	CLK	P		03	45	e	0.2		
04	BHA	P	12	26	40	e	0.4	CGS 12 18 47 27.7N 34.1E Red Sea.	4.7
	CLK	P		26	47	e	0.4		
	KRR	P		26	57	e	0.2		
	BUL	P		27	24	e	0.3		
04	BUL	P'	16	35	39	e	0.5	CGS 16 16 17 24.4N 109.8W Gulf of California.	5.6
	BHA	P'		35	40	e	0.5		
	KRR	P'		35	40	e	0.3		
	CLK	P'		35	54	iR	3.7		
04	CLK	P'	23	16	20	e	0.6	CGS 22 57 17 54.4N 169.4E Komandorsky Is. Region.	5.4
	BHA	P'		16	26	e	0.3		
	KRR	P'		16	29	iR	0.7		
	BUL	P'		16	35	e	0.3		
05	BHA		01	42	18	e	0.2	Distant.	
	BUL			42	41	e	0.3		
05	CLK	P	02	24	23	e	1.5	CGS 02 18 30 12.2N 41.2E Ethiopia.	6.2
		S		29	37	e			
		L		33	15	e			
	BHA	P		24	33	e	1.0		
		PcP		27	28	i			
		L		33	43	i			
	KRR	P		24	45	e	0.6		
	BUL	P		25	15	e	3.0		
		PP		26	24	e			
		L		36	28	e			
05	BUL	P	07	06	30	e	0.2	CGS 06 53 39 54.7S 143.8E W. of Macquarie Is.	5.2
	CLK	P		06	(30)	e	0.3		
	KRR	P		06	39	e	0.2		
05	BUL	P'	12	53	03	e	0.3	Distant.	
	KRR	P'		53	20	e	0.7		
		SKP		56	11	e			
	BHA	P'		53	(26)	e	0.2		
		SKP		56	15	e			

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APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
05	BUL	Pn	13	44	14	e		BUL 13 42 32 24.8S 34.4E Offshore S. Mocambique.	3.7	
		Pg		44	39	i				
		Sn		45	29	i				
			Sg		46	05	i			2.1
	KRR	Pn		44	41	e				
		Sn		46	16	i				
		Sg		47	08	i	1.5			
	BHA	Pn		45	(18)	e				
		Sn		47	21	e				
L			48	37	e	0.6				
05	BHA	Pn	15	28	13	e		BUL 15 23(41) 5.4N 31.3E Uganda-Sudan Border Region.	4.7	
		L		34	09	i	2.0			
	CLK	Pn		28	(25)	e				
		L		34	37	i	1.4			
	KRR	Pn		28	36	e				
		L		35	07	e	0.7			
	BUL	P		29	08	e				
		L		36	53	i	0.6			
05	BUL		22	39	14	e	0.3	Distant.		
	KRR			39	15	e	0.3			
	BHA			39	20	e	0.3			
06	BHA	P	03	58	49	iR	0.5	CGS 03 49 33 38.5N 26.4E Agean Sea.	5.5	
		CLK		59	02	iR	1.2			
			pP		59	07	i			
	KRR	P		59	06	iR	4.5			
				pP		59	11			i
	BUL	P		59	30	iR	2.4			
			pP		59	35	i			
06	KRR	Pg	13	03	25	iC		BUL 13 03 02 16.7S 28.2E Kariba.	2.4	
		Sg		03	41	i	5.2			
	BHA	Pg		03	42	e				
		Sg		04	10	i	2.5			
	BUL	Pg		04	03	e				
Sg			04	45	i	1.5				
06	CLK	P	16	57	(43)	e	0.3	CGS 16 51 45 12.0N 41.1E Ethiopia.	5.2	
		BHA		57	(45)	e	0.2			
	KRR		58	(04)	e	0.1				
	BUL		58	31	e	0.4				
06	BUL	P	20	17	52	iC	0.8	CGS 20 08 32 53.3S 26.9W S. Sandwhich Is. Region.	5.8	
				pP		18	17			i
	KRR	P		18	15	iC	0.6			
		BHA		18	25	iC	0.9			
	CLK			pP		18	44			i
P			18	42	e	0.4				
06	BUL	Pg	22	09	23	e		BUL 22 08 35 18.2S 26.5E Deka Fault, N.W. Rhodesia.	2.2	
		Sg		09	56	i	0.7			
	KRR	Pg		09	34	e				
		Sg		10	16	e	1.1			
	BHA	Pn		09	38	e				
Sg			10	41	e	0.5				
06	BUL	P'	23	38	01	e	0.3	CGS 23 19 46 20.9S 178.5W Fiji Is. Region.	4.8	
		KRR		38	06	iC	0.4			
		BHA		38	(10)	e	0.3			
07	BHA	P	01	01	10	i	7.	BUL 01 00 55 14.7S 28.4E Kabwe Area, Zambia.	2.1	
		KRR		01	33	e				
			Sn		02	01	i			
			Sg		02	06	i			1.0
	BUL		Sg		03	37	e			0.2

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
08	BHA	Pn	04	47	30	e		BUL 04 44 17 0.6S 29.3E	4.3
		L		51	29	i	2.2	Uganda.	
	KRR	Pn		48	03	e			
		L		52	40	i	0.6		
	BUL	Pn		48	47	e			
		L		54	26	i	0.5		
08	BUL	P	10	35	22	e	0.3	CGS 10 21 52 1.4N 126.3E	5.3
	BHA	P		35	26	e	0.2	Molucca Passage.	
08	BHA	P	10	39	45	e	0.7	CGS 10 31 52 27.5N 33.7E	5.2
	CLK	P		39	51	e	0.6	United Arab Republic.	
	KRR	P		40	02	e	0.3		
	BUL	P		40	27	e	0.4		
08	BUL	Pg	11	00	46	e		BUL 10 59 56 18.3S 26.4E	2.4
		S*		01	17	i		Deka Fault, N.W. Rhodesia.	
		Sg		01	21	i	1.7		
	KRR	Pg		00	58	e			
		Sn		01	28	e			
		Sg		01	42	e	0.8		
08	BHA	P	15	58	31	e	0.2	CGS 15 48 52 40.7N 19.8E	5.1
	KRR	P		58	43	e	0.2	Albania.	
	CLK	P		58	45	e	0.3		
	BUL	P		58	58	e	0.2		
08	BHA	P'	19	57	00	e	0.2	CGS 19 37 22 44.1N 128.6W	4.8
	KRR	P'		57	02	e	0.2	Off coast of Oregon.	
	BUL	P'		57	04	e	0.3		
09	BUL	Pn	08	31	58	iC		BUL 08 30 29 26.1S 28.1E	3.8
		S*		33	14	i		Witwatersrand.	
		Sg		33	35	i	3.4		
	KRR	Pn		32	43	e			
		Sn		34(25)		e			
		Sg		35	17	e	1.5		
	BHA	Pn		33	14	e			
		L		36	33	e	0.7		
CLK	Sg		36	38	e	0.8			
09	BUL	P	11	49	46	iC	3.7	CGS 11 43 48 49.1S 30.8E	5.8
	KRR	P		50	14	iC	1.2	S. of Africa.	
	CLK	P		50	27	iC	1.5		
		PP		51	48	i			
	BHA	P		50	36	iC	3.8		
	pP		50	55	i				
09	KRR	P'	13	15	54	e	0.1	CGS 12 57 25 36.8N 139.6E	5.5
		pP'		16	26	e		Honshu, Japan.	
		PKKP		26	26	e			
	BUL	P'		15	59	e	0.2		
		pP'		16	29	e			
		PKKP		26	22	e			

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APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
09	CLK	Pn	16	49	42	iR		BUL 16 48 35	11.2S 34.6E	4.3
		Pg		49	55	i			N. Lake Malawi.	
		Sn		50	29	i			Felt MMIII at Mzuzu. ✓	
	BHA	Sg		50	51	i	21.			
		Pn		50	14	e				
		Sn		51	27	i				
	KRR	Sg		52(05)		i	-			
		Pn		50	23	e				
		Sn		51	39	i				
	BUL	Sg		52	21	i	10.4			
		Pn		51	04	e				
		Sn		52	52	i				
Sg			53	51	e					
	L		54	02	i	3.3				
10	KRR	Pg	09	04	35	e		BUL 09 03 52	17.5S 27.1E	2.4
		Sg		05	03	i	2.5		Kandabwe Area, Zambia.	
	BUL	Pg		04	47	i				
		S*		05	19	i				
	BHA	Sg		05	25	i	1.2			
		Pg		04	56	e				
	Sg		05	40	i	0.9				
10	KRR	Pg	09	53	11	e		BUL 09 52 30	17.6S 27.2E	2.7
		Sg		53	39	i	4.8		Kandabwe Area, Zambia. ✓	
	BUL	Pn		53	16	e			Felt MMIV at Binga.	
		Pg		53	22	i				
		Sn		53	49	i				
	BHA	S*		53	54	i				
		Sg		53	59	i	4.8			
		Pg		53	33	e				
		Sg		54	17	i	1.2			
	10	CLK	P	15	07	10	e	0.2	CGS 14 54 04	
pP				09	15	e			E. Russia-N.E. China Border Region.	
			10	28	e					
BHA		FP		11	34	i				
		P		07	31	e	0.2			
BUL		PP		10	49	e				
		P		07	44	e	0.2			
			12	11	i					
KRR		PP		12	31	i				
		PP		11	52	e	0.3			
10	KRR	Pg	20	10	48	e		BUL 20 10 07	17.6S 27.2E	2.0
		Sg		11	16	i	1.3		Kandabwe Area, Zambia. ✓	
	BUL	Pg		10	58	e			Felt MMIV at Binga.	
		Sg		11	37	i	0.8			
	BHA	Pg		11	08	e				
		Sg		11	51	e	0.4			
10	KRR	Pg	21	35	57	e		BUL 21 53 13	17.6S 27.2E	2.0
		Sg		36	25	i	1.0		Kandabwe Area, Zambia. ✓	
	BUL	Pg		36	09	e			Felt MMIII at Binga.	
		Sg		36	46	i	0.5			
	BHA	Sg		37	01	e	0.2			
10	KRR	P	22	08	40	e	0.3	CGS 21 57 04	7.4S 105.9E	5.1
		pP		08	54	e			Java.	
	BUL	P		03	44	e	0.4			
		pP		08	59	e				
	BHA	P		08	48	e	0.3			
	pP		09	01	e					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag
10	CLK	P	23	30	(40)	e	0.2		Distant.	
	KRR	P		31	23	e	0.2			
	BUL	P		31	41	e	0.3			
11	CLK	P	04	16	11	e	0.2		Distant.	
	KRR	P		16	(47)	e	0.2			
	BHA	P		16	(54)	e	0.2			
	BUL	P		17	08	e	0.3			
11	CLK	P	13	46	(40)	e	0.1		Distant.	
	BUL	P		47	(09)	e	0.2			
11	CLK	Pn	17	06	22	e		BUL 17 05 44	13.4S 35.0E	3.5
		Sn		06	47	i			S. Lake Makawi.	
		Sg		06	56	e	12.			
	KRR	Pn		07	(15)	e				
		Sn		08	23	i				
		L		08	59	i	1.6			
	BHA	Pn		07	(20)	e				
		Sn		08	29	i				
		L		09	08	i	1.9			
	BUL	Sn		09	25	e				
	L		10	21	i	0.7				
11	BUL	Pn	18	21	36	e		BUL 18 20 02	26.6S 28.6E	2.9
		Sg		23	18	i	0.6		Witwatersrand.	
	KRR	Pn		22	22	e				
		Sg		25	01	i	0.2			
12	BUL	Pn	18	03	30	e		BUL 18 01 57	26.6S 27.1E	3.3
		Sn		04	41	e			Witwatersrand.	
		Sg		05	14	i	1.1			
	KRR	Sn		06	02	e				
		Sg		07	00	e	0.5			
	BHA	L		08	18	e	0.2			
CLK	Sg		08	30	e	0.2				
12	BHA	P	20	48	44	e	0.1	CGS 20 38 40	45.3N 25.0E	5.2
	CLK	P		48	59	e	0.2		Rumania.	
	KRR	P		49	00	e	0.3			
	BUL	P		49	23	e	0.3			
13	CLK	SKP	07	35	14	e	0.1	CGS 07 14 26	17.3S 179.3W	4.3
	BUL	SKP		35	16	e	0.2		Fiji Is. Region.	
	KRR	SKP		35	23	e	0.3			
	BHA	SKP		35	30	e	0.2			
13	BUL	P'	07	51	58	e	0.2	CGS 07 33 49	20.9S 178.8W	4.3
	KRR	P'		52	02	e	0.3		Fiji Is. Region.	
13	CLK	Pn	11	50	52	e		BUL 11 50 14	13.3S 35.2E	2.5
		Sn		51	20	i			S. Lake Malawi Area.	
		Sg		51	27	i	2.4			
	BHA	Sn		53	00	e				
		Sg		53	37	e	0.3			
	KRR	Sg		53	28	e	0.2			
13	CLK	P	14	43	40	e	0.2	CGS 14 37 20	20.3S 67.7E	-
	KRR	P		44	21	e	0.3		Mid-Indian Rise.	
	BUL	P		44	25	e	0.3			
	BHA	P		44	36	e	0.3			
13	CLK	P	15	34	33	iC	3.6	CGS 15 24 56	17.9N 80.6E	5.3
		pP		34	38	i			India.	
	BHA	P		35	05	e	1.2			
	KRR	P		35	05	e	0.5			
	BUL	P		35	24	e	1.4			
13	BUL	P	17	36	12	e	0.3	CGS 17 24 17	7.8S 111.4E	4.7
	BHA	P		36	17	e	0.2		Java.	

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APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	BUL	P	18	19	14	e	0.2	CGS 18 06 38 45.6S 76.6W Off Coast of Central Chile.	4.9
	BHA	P		19	37	e	0.2		
13	CLK	P	23	46	14	e	0.8	CGS 23 23 15 6.1S 129.9E Banda Sea.	5.9
		SKS		56	31	i			
	KRR	P		46	35	e	0.6		
		PKKP	24	03	10	e			
	BUL	P	23	46	57	e	0.7		
		pP		47	17	e			
		SKS		56	59	i			
		PKKP	24	03	10	e			
	BHA	P	23	46	43	e	0.5		
		SKS		57	06	i			
	PKKP	24	03	07	e				
14	BHA	Pn	01	09	32	e		BUL 01 07 09 4.7S 31.2E Sagara Swamp, Tanzania.	3.5
		Sn		11	18	e			
		Sg		12	15	e	0.5		
	CLK	Pn		09	50	e			
		L		13	18	e	0.3		
	KRR	Sg		13	25	e	0.3		
	BUL	L		15	27	e	0.2		
14	BUL	P	02	27	19	e	0.2	CGS 02 14 36 36.3S 72.8W Near Coast of Central Chile.	4.1
	KRR	P		27	33	e	0.2		
14	BHA	P	05	21	04	e	0.2	CGS 05 11 46 39.1N 21.8E Greece.	4.6
	CLK	P		21	20	e	0.3		
	KRR	P		21	22	e	0.3		
	BUL	P		21	44	e	0.4		
14	CLK	P	07	10	57	e	0.5	CGS 07 00 02 5.2S 104.3E S. Sumatra.	5.7
		pP		11	16	e			
	KRR	P		11	27	e	0.4		
		pP		11	46	i			
	BUL	P		11	33	e	0.7		
		pP		11	53	i			
	BHA	P		11	34	e	0.6		
	pP		11	54	i				
14	BHA	Pn	11	38	42	e		BUL 11 37 10 8.4S 30.3E S. Lake Tanganika Area.	3.6
		Sn		39	48	i			
		L		40	27	i	3.2		
	KRR	Pn		39	10	e			
		Sn		40	40	e			
		L		41	35	i	0.7		
	BUL	Pn		39	54	e			
		Sn		41	56	e			
		L		43	14	e	0.4		
	CLK	Sn		40	45	e			
	L		41	44	e	0.6			
14	CLK	P	13	21	53	iC	0.9	CGS 13 13 22 27.8N 54.7E S. Iran.	5.0
	BHA	P		22	08	iC	0.4		
	KRR	P		22	19	iC	0.7		
	BUL	P		22	43	iC	0.5		
14	BHA	Pn	16	48	05	e		BUL 16 45 49 5.0S 30.1E N. Lake Tanganika.	5.0
		Sn		49	44	e			
	KRR	Pn		48	35	e			
		L		51	58	i	9.8		
	BUL	Pn		49	19	e			
		Sn		51	52	e			
	L		52	39	i	7.3			
14	BHA	P	18	17	34	e	0.2	CGS 18 07 11 36.1N 71.0E Afghanistan-U.S.S.R. Border Region.	4.5
	KRR	P		17	42	e	0.3		
	BUL	P		18	03	e	0.3		

APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
14	BHA	Pn	18	56	00	e		BUL 18 53 38 4.9S 30.4E Sagara Swamp, Tanzania.	5.1
		Sn		56	44	e			
	KRR	Pn		56	30	e			
		Sn		58	37	i			
	BUL	Sg		59	49	i	11.6		
		Pn		57	14	e			
Sn			59	53	i				
		Sg	19	01	33	i	7.3		
15	KRR	P'	17	49(45)		e	0.1	CGS 17 30 56 39.8N 143.3E Off E. Coast of Honshu, Japan.	5.3
	BUL	P'		49	46	e	0.2		
15	BHA	P'	18	08	55	e	0.2	CGS 17 50 21 6.5S 143.0E New Guinea.	5.3
		SKP		12	04	e			
	KRR	P'		08	56	e	0.1		
	BUL	PP		09	13	e	0.2		
15	BUL	P	21	40	41	e	0.2	Distant.	
	KRR	F		41	07	e	0.2		
	BHA	P		41(15)		e	0.1		
15	CLK	P	22	26	05	iR	3.9	CGS 22 15 10 5.9S 113.2E Java Sea.	5.6
		pP		28	07	i			
		S		35	07	i			
	KRR	P		26	32	iR	3.3		
		pP		28	35	i			
	BUL	P		26	36	iR	9.2		
		pP		28	40	i			
		SKS		35	59	i			
	BHA	P		26	39	iR	5.0		
		pP		28	42	i			
SKS			36	02	i				
S			36	10	i				
16	KRR	P'	01	41	38	e	0.3	CGS 01 22 47 3.5S 151.0E New Ireland Region.	5.7
		BUL	P'		41	39	e		
		PP		43	02	e			
	BHA	P'		41	43	e	0.3		
		PP		43	08	e			
	CLK	PP		42	18	e	0.2		
16	BHA	P	05	03	01	e	0.2	CGS 04 54 06 35.2N 27.9E Dodecanese Is.	4.8
	CLK	P		03	13	iC	0.4		
	KRR	P		03	18	e	0.3		
	BUL	P		03	42	e	0.2		
16	CLK	P'	12	38	23	iC	1.2	CGS 12 19 40 13.6S 166.9E New Hebrides Is.	5.7
		BUL	P'		38	28	iC		
		pP'		39	00	e			
		SKP		41	40	e			
	KRR	P'		38	30	iC	1.6		
		pP'		39	02	e			
		SKP		41	44	e			
	BHA	P'		38	35	iC	2.3		
		pP'		39	07	e			
		SKP		41	49	i			
16	BHA	P	23	04	28	e	0.3	CGS 22 55 37 35.3N 27.9E Dodecanese Is. Region.	5.2
		CLK	P		04	40	iR		
	KRR	P		04	46	e	0.6		
		BUL	P		05	10	iR		
16	BHA	P	23	29	53	e	0.4	CGS 23 21 05 35.3N 27.8E Dodecanese Is. Region.	5.2
		CLK	P		30	05	e		
	KRR	P		30	11	e	0.6		
		BUL	P		30	34	e		

APR 1969.

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
17	BUL	Pn	10	29	03	e		BUL 10 27 04 28.2S 26.7E O.F.S. Goldfields.	3.9
		Sn		30	29	e			
	KRR	Sg		31	17	i	1.7		
		Pn		29	49	e			
	BHA	Sn		31	49	e			
		L		33	04	i	0.8		
		Pn		30	18	e			
CLK	Sn		32	41	e				
	L		34	14	i	0.5			
	Sg		34	29	e	0.5			
17	BUL	P	17	50	00	e	0.4	CGS 17 37 22 28.3S 68.8W La Rioja Prov., Argentina.	5.0
	KRR	P		50	12	e	0.3		
	BHA	P		50	14	e	0.2		
18	BHA	Pn	01	03	30	e		BUL 01 02 29 12.2S 24.9E N.W. Zambia.	2.7
		Sn		04	16	e			
	KRR	Sg		04	33	i	0.8		
		Pn		04	03	e			
	BUL	Sn		05	12	e			
		Sg		05	45	e	0.4		
		Sg		06	54	e	0.2		
18	BHA	Pn	08	20	49	e		BUL 08 19 44 12.2S 24.7E N.W. Zambia.	3.5
		Sn		21	36	e	3.3		
	KRR	Pn		21	19	e			
		Sn		22	29	i	1.7		
	BUL	Pn		21	51	e			
		Sn		23	23	e			
18	CLK	Pn	16	15	01	e		BUL 16 12 04 3.2S 37.0E Kilimanjaro Area, Tanzania.	4.6
		Sn		17	12	e			
		L		18	38	i			
	BHA	Pn		18	45	i	3.5		
		Sn		15	18	e			
		Sg		17	44	i			
	KRR	Pn		19	11	i	5.0		
		Sg		15	39	e			
	BUL	Sg		19	58	e	0.8		
		Pn		16	22	e			
18	BHA	Pn		21	42	i	1.4	CGS 17 43 54 24.3N 109.7W Gulf of California.	5.0
		SgSg							
	BUL	P'	18	03	13	e	0.3		
	KRR	P'		03	15	e	0.2		
	CLK	P'		03	18	e	0.2		
19	BUL	P		03	32	iR	1.6	Distant.	
		P		00	07	40	e		
	KRR	P		08(01)		e	0.1		
	CLK	P		08	22	e	0.9		
BHA	P		08	26	e	0.2			
19	CLK	P	08	56	13	e	0.5	CGS 08 45 16 6.2S 103.9E S.W. of Sumatra.	5.7
		pP		56	26	i			
	KRR	P		56	43	e	0.4		
		pP		56	57	i			
	BUL	P		56	49	iR	1.3		
		pP		57	03	i			
	BHA	P		56	51	e	0.7		
19	BUL	P	11	35	33	e	0.2	Distant.	
		BHA	P		35	53	e		
	KRR	P		35	56	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
19	BUL	Pn	12	26	45	e		BUL 12 25 12 26.3S 27.0E W. Witwatersrand.	3.1
		Sg		28	26	i	0.6		
	KRR	Pn		27	30	e			
		Sg		30	09	e	0.4		
20	CLK	P	08	00	49	e	0.2	Distant.	
	KRR	P		01	28	e	0.1		
	BUL	P		01	52	iC	0.5		
20	BHA	P	18	51	39	e	-	BUL 18 53 31 12.5S 24.2E N.W. Zambia.	4.3
		KRR	Pn		55	09	iR		
		Sn		56	20	i			
		Sg		56	57	i	9.		
	BUL	Pn		55	39	e			
		Sn		57	13	i			
		S*		57	28	i			
		Sg		58	04	i			
	CLK	L		58	14	i	4.9		
		Pn		56	01	e			
		Sn		57	50	e			
		L		59	00	e	3.3		
20	BHA	Pn	19	41	27	e		BUL 19 40 20 12.4S 24.4E N.W. Zambia.	3.1
		Sn		42	15	i			
		Sg		42	35	e	2.0		
	KRR	Pn		41	57	e			
		Sn		43	07	e			
		Sg		43	43	e	0.6		
	BUL	Sg		44	51	e	0.3		
	20	BUL	Pn	20	55	13	iC		
Sn				56	27	i			
Sg				57	05	i	4.7		
KRR		Pn		55	57	e			
		Sn		57	48	e			
		L		58	52	i	2.0		
BHA		Pn		56	27	e			
		Sn		58	41	i			
		Sg		59	55	i	0.7		
CLK		Pn		56	41	e			
	Sn		59	03	e				
	Sg		21	00	25	i	1.4		
20	BUL	Pn	22	03	57	e		BUL 22 02 50 21.4S 33.3E Save Valley, Mocambique.	3.0
		Pg		04	10	e			
		Sn		04	50	e			
		Sg		05	07	i	1.5		
	KRR	Pn		04	12	e			
		Sn		05	14	e			
		Sg		05	43	i	1.7		
	BHA	Pn		04	49	e			
		Sn		06	15	e			
		Sg		07	03	e	0.4		
	CLK	Sg		05	49	e	0.3		
	20	BUL	Pn	23	52	54	iC		
Pg				53	07	i			
Sn				53	43	i			
Sg				54	01	i	30.		
KRR		Pn		53	09	iR			
		Sn		54	10	i			
		Sg		54	36	i	30.		
CLK		Pn		53	13	e			
		Sn		54	16	i			
		Sg		54	46	i	8.8		
BHA		Pn		53	43	e			
		Sn		55	12	i			

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Dy	Stn	Phase	h	m	s	CM	DA	Epicentral data; Remarks	Mag
21	BUL	Pg	02	07	26	e		BUL 02 06 04 21.4S 33.3E Save Valley, Mocambique.	2.8
		Sn		08	05	e			
		Sg		08	24	e	0.8		
	KRR	Sg		09	00	e	0.9		
21	BHA	P'	02	37	54	iC	1.2	CGS 02 19 07 14.1N 91.0W Guatemala.	5.5
	BUL	P'		37	54	e	0.8		
		pP'		38	11	e			
		PP		39	51	e			
	KRR	P'		37	56	e	0.8		
		pP'		33	13	i			
	CLK	P'		38	06	e	0.7		
	pP'		38	23	e				
	SKP		41	21	e				
21	BHA	P	07	33	58	e	0.2	CGS 07 19 27 32.2N 131.9E Kyushu, Japan.	6.1
	BUL	P		34	13	e	0.2		
21	CLK	P	18	05	11	e	0.2	CGS 17 58 57 14.4S 66.5E Mid-Indian Rise.	4.8
	KRR	P		05	54	e	0.2		
	BUL	P		06	02	e	0.2		
	BHA	P		06	04	e	0.3		
21	CLK	P	20	46(22)		e	0.1	CGS 20 36 43 39.5N 25.2E Aegean Sea.	4.8
	KRR	P		46	24	e	0.2		
	BUL	P		46	45	e	0.2		
22	BUL	P'	07	56	57	e	0.3	CGS 07 37 51 15.4S 174.1W Tonga Is.	5.0
	KRR	P'		56	59	e	0.3		
	BHA	P'		57	01	e	0.2		
22	BHA	P'	08	30	06	e	0.3	CGS 08 11 22 39.8N 143.0E Off E. Coast of Honshu, Japan.	5.5
	KRR	P'		30	06	e	0.3		
	BUL	P'		30	12	iR	0.6		
				31	36	e			
22	BHA	Pn	22	03	02	iC		BUL 21 59(10) 1.9N 31.5E Lake Albert Area, Uganda.	5.0
		Sn		05	57	e			
		S*		06	50	i			
		Sg		07	46	i	6.2		
	KRR	Pn		03	29	e			
		Sn		06	47	e			
		Sg		08	49	e	1.7		
	BUL	Pn		04	07	iC			
		L		10	37	i			
				10	50	i	2.2		
22	BHA	P	22	42	12	iR	0.9	CGS 22 34 38 13.0N 58.2E Arabian Sea.	5.7
		pP		42	22	i			
	KRR	P		42	18	iR	2.2		
		pP		42	28	i			
	BUL	P		42	43	iR	4.5		
		pP		42	53	i			
	S		49	13	i				
23	KRR		08	28	33	e	0.2	Distant.	
	BHA			28	38	e	0.3		
	BUL			28	44	e	0.5		
23	BUL	P	08	39	38	e	0.2	CGS 08 27 05 35.1S 71.1W Central Chile.	4.5
	KRR	P		39	53	e	0.2		
	BHA	P		39	56	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
21	BUL	Pg	02	07	26	e		BUL 02 06 04 21.4S 33.3E Save Valley, Mocambique.	2.8
		Sn		08	05	e			
	KRR	Sg		08	24	e	0.8		
		Sg		09	00	e	0.9		
21	BHA	P'	02	37	54	iC	1.2	CGS 02 19 07 14.1N 91.0W Guatemala.	5.5
	BUL	P'		37	54	e	0.8		
		pP'		38	11	e			
	KRR	PP		39	51	e			
		P'		37	56	e	0.8		
		pP'		33	13	i			
	CLK	P'		38	06	e	0.7		
pP'			38	23	e				
SKP		41	21	e					
21	BHA	P	07	33	58	e	0.2	CGS 07 19 27 32.2N 131.9E Kyushu, Japan.	6.1
	BUL	P		34	13	e	0.2		
21	CLK	P	18	05	11	e	0.2	CGS 17 58 57 14.4S 66.5E Mid-Indian Rise.	4.8
	KRR	P		05	54	e	0.2		
	BUL	P		06	02	e	0.2		
	BHA	P		06	04	e	0.3		
21	CLK	P	20	46	(22)	e	0.1	CGS 20 36 43 39.5N 25.2E Aegean Sea.	4.8
	KRR	P		46	24	e	0.2		
	BUL	P		46	45	e	0.2		
22	BUL	P'	07	56	57	e	0.3	CGS 07 37 51 15.4S 174.1W Tonga Is.	5.0
	KRR	P'		56	59	e	0.3		
	BHA	P'		57	01	e	0.2		
22	BHA	P'	08	30	06	e	0.3	CGS 08 11 22 39.8N 143.0E Off E. Coast of Honshu, Japan.	5.5
	KRR	P'		30	06	e	0.3		
	BUL	P'		30	12	iR	0.6		
				31	36	e			
22	BHA	Pn	22	03	02	iC		BUL 21 59(10) 1.9N 31.5E Lake Albert Area, Uganda.	5.0
		Sn		05	57	e			
		S*		06	50	i			
	KRR	Sg		07	46	i	6.2		
		Pn		03	29	e			
		Sn		06	47	e			
	BUL	Sg		08	49	e	1.7		
		Pn		04	07	iC			
		L		10	37	i			
				10	50	i	2.2		
22	BHA	P	22	42	12	iR	0.9	CGS 22 34 38 13.0N 58.2E Arabian Sea.	5.7
		pP		42	22	i			
	KRR	P		42	18	iR	2.2		
		pP		42	28	i			
	BUL	P		42	43	iR	4.5		
		pP		42	53	i			
S		49	13	i					
23	KRR		08	28	33	e	0.2	Distant.	
	BHA		28	38	e	0.3			
	BUL		28	44	e	0.5			
23	BUL	P	08	39	38	e	0.2	CGS 08 27 05 35.1S 71.1W Central Chile.	4.5
	KRR	P		39	53	e	0.2		
	BHA	P		39	56	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
23	BHA	Pn	12	02	42	iC		BUL 12 01 10 8.8S 26.0E Lake Upemba, Congo.	3.9	
		Sn		03	46	i				
		Sg		04	20	i	3.8			
	KRR	Pn		03	16	e				
		Sn		04	49	i				
	CLK	L		05	45	i	2.0			
		Pn		03	47	e				
		Sn		05	45	e				
	BUL	L		06	59	e	1.4			
Pn			03	54	e					
Sn			05	56	e					
		L		07	10	i	0.7			
23	BHA	P	13	45	13	e	0.3	CGS 13 37 21 27.6N 33.9E United Arab Republic.	5.0	
	CLK	P		45	19	e	0.4			
		pP		45	29	e				
	KRR	F		45	30	e	0.2			
		pP		45	37	e				
	BUL	P		45	57	e	0.3			
23	BUL	Pn	17	37	22	e		BUL 17 35 27 27.9S 26.9E O.F.S. Goldfields.	3.6	
		Sn		38	47	i				
		Sg		39	34	i	1.0			
	KRR	Pn		38	06	e				
		Sn		40	10	e				
	BHA	L		41	22	e	0.7			
		Pn		38	38	e				
		Sn		41	01	e				
	CLK	L		42	30	e	0.4			
		Sg		42	45	e	0.3			
23	CLK	P'	21	12	05	e	0.1	CGS 20 52 38 52.2N 167.1W Fox Is., Aleutian Is.	4.7	
	BHA	P'		12	06	e	0.1			
	KRR	P'		12	07	e	0.2			
	BUL	P'		12	15	e	0.4			
24	CLK	P'	02	37	53	e	0.3	CGS 02 18 44 52.8N 172.5W Andreanof Is., Aleutian Is.	5.2	
		SKP		41	14	i				
	BHA	P'		37	56	e	0.3			
	KRR	SKP		41	19	i				
		P'		38	00	e	0.4			
	BUL	SKP		41	23	i				
		P'		38	02	e	0.8			
PP			39	13	e					
		SKP		41	28	i				
24	BUL	SKP	07	48	11	e	0.2	CGS 07 26 20 21.2S 177.0W Fiji Is. Region.	4.9	
	KRR	SKP		48	17	e	0.2			
24	CLK		13	19	49	e	0.2	Distant.		
	KRR			20	20	e	0.2			
	BHA			20	22	iC	0.3			
	BUL			20	33	e	0.2			
25	CLK	SKP	01	52	59	e	0.2	CGS 01 32 23 22.2S 197.5W S. of Fiji Is.	4.6	
	BUL	SKP		53	00	iR	0.7			
	KRR	SKP		53	08	e	0.3			
	BHA	SKP		53	17	e	0.3			
25	KRR	P	03	30	01	e	0.2	Distant.		
	BHA	P		30	06	iC	0.7			
25	CLK	P	05	03	41	e	0.2	CGS 04 52 58 5.0N 97.9E N. Sumatra.	4.9	
	KRR	P		04	13	e	0.2			
	BHA	P		04	19	iC	1.7			
	BUL	P		04	25	e	0.3			
25	BUL	P'	09	33	06	iC	0.3	CGS 09 13 41 56.6N 156.7W Alaska Peninsula.	4.6	

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Dy	Stn	Phase	h	m	s	GM	DA	Episentral data;	Remarks	Mag
25	BHA	P'	17	05	32	iC	0.3	CGS 16 46 31	13.3N 89.2W	4.3
	BUL	P'		05	32	iC	0.3	El Salavador.		
	CLK	P'		05	44	e	0.3			
25	BUL	P	21	11	(10)	e	0.2	CGS 21 00 15	60.6S 51.1W	4.6
	KRR	P		11	(28)	e	0.1	Scotia Sea.		
25	CLK	P	21	33	00	e	0.3	CGS 21 20 23	1.3N 120.4E	5.2
	KRR	P		33	(19)	e	0.1	N. Celebes.		
	BHA	P		33	30	e	0.3			
	BUL	P ^p		33	36	e				
		BUL	P		33	30	e	0.4		
		pF		33	36	e				
26	BUL	P	06	11	40	iC	2.0	CGS 05 58 49	30.6S 71.4W	5.6
	KRR	P		11	52	e	1.0	Near Coast of Central Chile.		
	BHA	P		11	54	e	0.9			
	CLK	P		12	16	e	0.2			
26	BUL	P	06	15	38	iC	1.6	CGS 06 02 49	30.6S 71.5W	5.9
	KRR	P		15	50	e	1.2	Near Coast of Central Chile.		
	BHA	P		15	52	e	1.5			
	CLK	P		16	(14)	e	0.2			
26	CLK	Pg	09	17	07	iC		BUL 09 16 36	15.3S 32.9E	2.5
		Sg		17	33	i	4.3	Tete Prov., Mocambique.		
	KRR	Pn		17	(30)	e		Explosion?		
		Pg		17	43	e				
		Sn		18	09	e				
		Sg		18	25	e	0.8			
	BHA	Sn		18	31	e				
		Sg		18	50	i	0.7			
	BUL	Sn		19	18	e				
		Sg		19	51	e	0.3			
26	KRR	P	11	34	59	e	0.1	CGS 11 23 44	3.9S 102.8E	5.2
	BUL	P		35	06	e	0.2	S. Sumatra.		
	BHA	P		35	07	e	0.2			
26	KRR	P	20	28	25	e	0.2	CGS 20 17 10	3.0S 102.3E	5.1
	BUL	P		28	32	e	0.3	S. Sumatra.		
	BHA	P		28	32	e	0.3			
27	KRR	Pg	01	41	24	iC		BUL 01 41 04	16.5S 28.5E	2.2
		Sg		41	38	i		Kariba.		
		Sn		41	42	i	4.4			
	BHA	Pg		41	42	e				
		Sg		42	08	i	1.3			
	BUL	Pg		42	10	e				
	Sn		42	39	i					
	Sg		42	57	i	0.7				
27	CLK	P	01	49	53	e	0.3	CGS 01 37 15	0.9N 120.1E	5.4
	KRR	P		50	18	e	0.2	N. Celebes.		
	BUL	P		50	22	e	0.5			
	BHA	P		50	22	e	0.4			
27	BUL	P	13	08	29	e	2.1	CGS 12 59 07	57.7S 25.4W	5.7
	KRR	P		08	53	iC	1.3	S. Sandwich Is. Region.		
	BHA	P		09	04	iC	1.7			
	CLK	P		09	20	e	0.6			
27	BUL	P	20	26	41	e	0.2	CGS 20 13 52	30.8S 71.7W	4.5
	KRR	P		26	53	e	0.2	Near Coast of Central Chile.		
	BHA	P		26	57	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
28	KRR	Pg	00	26	10	e		BUL 00 25 45 15.3S 29.8E	2.3
		Sg		26	30	e	2.6	Lower Kafue Valley, Zambia.	
	BHA	Pg		26	10	e			
		Sg		26	30	e	3.0		
	BUL	Sg		28	19	e	0.3		
28	BHA	P'	01	05	08	e	0.1	CGS 00 46 26 13.3N 145.1E	5.3
	BUL	P'		05	11	e	0.2	Mariana Is.	
28	CLK	P'	07	44	06	e	0.3	CGS 07 25 30 22.4S 177.7W	5.9
		SKP		47	05	i		S. of Fiji Is.	
	BUL	P'		44	06	e	0.5		
		SKP		47	05	i			
	KRR	P'		44	12	e	0.8		
		SKP		47	13	i			
	BHA	P'		44	17	e	0.4		
	SKP		47	22	e				
28	CLK	P'	07	44	14	e	0.3	BUL 07 25 38 22.4S 177.7W	6.1
		SKP		47	15	i		S. of Fiji Is.	
	BUL	P'		44	14	e	0.7		
		SKP		47	15	i			
	KRR	P'		44	19	e	1.2		
		SKP		47	23	i			
	BHA	P'		44	25	e	0.6		
	SKP		47	32	i				
28	CLK	P	13	01	33	e	0.7	CGS 12 50 15 25.9N 95.3E	5.2
		pP		01	53	e		Burma-India Border Region.	
	BHA	P		02	01	iR	0.6		
		pP		02	21	i			
	KRR	P		02	02	e	0.5		
	BUL	P		02	17	e	0.4		
	pP		02	36	e				
28	BUL	Pn	16	49	19	e		BUL 16 47 50 26.2S 28.6E	3.1
		Sg		50	55	i	0.7	Witwatersrand.	
	KRR	Sg		52	35	e	0.3		
28	BUL	P'	19	57	55	e	0.8	CGS 19 39 05 7.9S 158.8E	5.7
		pP'		58	13	e		Solomon Is.	
	KRR	P'		57	57	e	0.4		
	BHA	P'		58	02	e	0.4		
28	BHA	P'	23	40	19	e	0.4	CGS 23 20 43 33.4N 116.4W	5.7
		pP'		40	45	e		S. California.	
	KRR	P'		40	26	iC	1.3		
	BUL	P'		40	28	iC	1.0		
	CLK	P'		40	35	e	0.7		
29	CLK	P	04	46	16	e	0.8	CGS 04 37 41 29.6N 51.5E	5.6
		S		53	11	e		S. Iran	
	BHA	P		46	27	iR	0.5		
	KRR	P		46	39	iR	0.5		
	BUL	P		47	04	e	0.6		
		S		54	39	e			
29	BHA	Pn	05	22	22	e		BUL 05 20 34 7.8S 32.1E	3.4
		Sn		23	41	e		Lake Rukwa, Tanzania.	
		L		24	28	i	2.2		
	CLK	Sn		24	00	e			
		L		24	50	e	0.5		
	KRR	Sn		24	25	e			
		L		25	30	e	0.5		
	BUL	L		27	12	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag	
29	CLK	P	09	42	06	e	0.3		Distant.		
	BUL	P		42	20	e	0.6				
	KRR	P		42	32	e	0.2				
	BHA	P		42	47	e	0.5				
29	KRR	P	18	19	05	iC			BUL 18 18 45 16.7S 28.4E	3.1	
		S		19	18	i	18.				Kariba.
	BHA	Pn			19	21	e				
		P*			19	24	i				
		Sn			19	48	i	6.			
	BUL	Pn			19	38	e				
		Pg			19	48	i				
		Sn			20	20	i				
		Sg			20	33	i	4.3			
	CLK	Pn			20	20	e				
		Sn			21	28	e				
		Sg			22	08	i	2.0			
	29	BHA	Pn	19	57	59	e			BUL 19 54 50 1.1S 30.7E	4.8
Sn			20	00	(25)	e		S. Uganda.			
		L		01	52	i	4.7				
CLK		Pn	19	58	21	e					
		Sn	20	01	02	e					
		L		02	14		3.7				
KRR		Pn	19	58	30	e					
		L	20	03	03	i	1.4				
BUL		Pn	19	59	12	e					
		Sn	20	02	29	e					
	L		04	48	e	1.8					
29	BHA	P'	21	37	05	e	0.3	CGS 21 18 09 46.5N 153.1E	Kurile Is.	5.1	
	KRR	P'		37	06	e	0.4				
	BUL	P'		37	13	e	0.2				
30	CLK	P	01	20	54	e	0.2	CGS 01 08 46 9.4S 118.5E	Sumbawa, Is. Region.	5.1	
	KRR	P		21	17	e	0.2				
	BUL	P		21	23	e	0.3				
	BHA	P		21	28	e	0.2				
30	CLK	P	16	45	06	e	0.2	CGS 16 34 45 8.2N 93.0E	Nicobar Is. Region.	5.0	
	CIR	P		45	37	e	0.2				
	KRR	P		45	38	e	0.2				
	BHA	P		45	43	iC	0.8				
	BUL	P		45	51	iC	0.3				
30	BHA	P'	17	19	28	e	0.3	CGS 17 00 00 37.1N 116.0W	S. Nevada (Underground explosion.)	5.3	
		pP'		19	36	e					
	KRR	P'		19	35	e	0.8				
	BUL	P'		19	38	iC	1.1				
	CLK	P'		19	43	e	1.3				
	CIR	P'		19	47	iC	0.9				
30	BHA	Pn	17	51	27	e			BUL 17 48 36 4.3S 35.4E	4.1	
		Sn		53	36	e					MT. Hanang Area, Tanzania.
		S*		54	25	i					
		L		54	57	i	2.2				
	BUL	Pn			52	33	e				
		L			57	34	e	0.4			
	CLK	L		54	29	e	1.3				
	KRR	L		55	43	e	0.4				
	CIR	L		57	23	e	0.4				
	30	BHA	P	20	29	54	e	0.3	CGS 20 20 32 39.2N 28.6E	Turkey	5.1
CLK		P		30	05	e	0.3				
KRR		P		30	10	e	0.3				
BUL		P		30	34	e	0.6				
CIR		P		30	41	e	1.1				

RHODESIA METEOROLOGICAL SERVICES

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CIK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WWSS Station: SP magnification 100,000
 LP magnification 1,500
- CHIREDDZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
 P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

SEISMOLOGICAL BULLETIN: MAY 1969 - 1

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag																																																																																																																																																																																																																																																																																																																																																																																																																									
01	CIR	P	04	11	59	e	0.2	CGS 04 00 09 44.0N 77.9E E. Kazakh, S.S.R.	4.9																																																																																																																																																																																																																																																																																																																																																																																																																									
	BUL	P		12	04	e	0.3			01	BUL	P	09	28	46	e	0.3	CGS 09 09 14 55.0N 156.7W S. of Alaska	4.3	CIR	P		28	50	e	0.2	01	CLK	P	12	05	11	e	0.3	CGS 11 52 30 5.1N 125.2E Mindanao, Philippine Is.	5.2	CIR	P		05	29	e	0.7					10	10	e		KRR	P		05	37	e	0.7					10	13	e		BHA	P		05	40	e	0.2					10	15	e			BUL	P		05	41	iC	1.0							10	15	e				01	CLK	Pg	17	21	02	e		BUL 17 19 43 11.5S 34.4E Lake Malawi	2.7		Sg		21	54	i	1.0	BHA	Pn		21	17	e			Sn		22	26	i			L		23	11	i	0.3	KRR	L		23	25	e	0.2	CIR	L		24	50	e	0.2	BUL	L		25(00)		e	0.1	01	BHA	P	18	11	05	e	0.1	CGS 18 02 15 35.4N 27.7E Dodecanese Is.	5.2	CLK	P		11	17	i	0.7	KRR	P		11	23	e	0.3	BUL	P		11	46	iC	0.4	CIR	P		11	55	iC	0.7								01	CIR	P ¹	19	24	21	iC	0.9	CGS 19 05 25 16.8S 174.7W Tonga Is.	6.0		SKP		27	35	e			SKKP		36	47	e		BUL	P ¹		24	25	iR	1.6		pP ¹		25	19	e			SKP		27	42	i			SKKP		36	27	e		CLK	P ²		24	26	e	0.9	KRR	P ¹		24	28	i	1.5		SKP		27	45	e		BHA	P ¹		24	29	e	2.0		pP ¹		25	20	i		01	BHA	P	20	15	32	e	0.1	CGS 20 06 41 35.3N 27.6E Dodecanese Is.	4.7	CLK	P		15	45	e	0.9	KRR	P		15	50	e	0.6	BUL	P		16	14	e	0.3	CIR	P		16	21	e	0.4		pP		16	27	e		01	CIR	Pg	22	43	53	e		BUL 22 43 04 19.1S 33.9E Manica Province, Mocambique	2.6		Sn		44	20	i			Sg		44	28	i	1.5	CLK	Sg		44	49	e	0.9	KRR	Sn		45	05	e			L		45	33	i	1.6	BUL	Sn		45	16	e			Sg		45	44	i	0.7	BHA	L		46	43	e	0.3	02	BUL	P	12	51	08	eIC	0.9	CGS 12 38 35 22.4S 67.5W Chile - Boliva Border Region	4.4	KRR	P		51	19
01	BUL	P	09	28	46	e	0.3	CGS 09 09 14 55.0N 156.7W S. of Alaska	4.3																																																																																																																																																																																																																																																																																																																																																																																																																									
	CIR	P		28	50	e	0.2			01	CLK	P	12	05	11	e	0.3	CGS 11 52 30 5.1N 125.2E Mindanao, Philippine Is.	5.2	CIR	P		05	29	e	0.7						10	10	e				KRR	P		05	37	e	0.7					10	13	e		BHA	P		05	40	e	0.2					10	15	e			BUL	P		05	41	iC	1.0							10	15	e				01	CLK	Pg	17	21	02	e		BUL 17 19 43 11.5S 34.4E Lake Malawi	2.7		Sg		21		54	i	1.0	BHA	Pn		21			17	e			Sn		22	26	i			L		23	11	i	0.3	KRR	L		23	25	e	0.2	CIR	L		24	50	e	0.2	BUL	L		25(00)		e	0.1	01	BHA	P	18	11	05	e	0.1	CGS 18 02 15 35.4N 27.7E Dodecanese Is.	5.2	CLK		P		11	17	i	0.7	KRR			P		11	23	e	0.3	BUL	P		11	46	iC	0.4	CIR	P		11	55	iC	0.7								01	CIR	P ¹	19	24	21	iC	0.9		CGS 19 05 25 16.8S 174.7W Tonga Is.	6.0		SKP		27	35			e			SKKP		36	47	e		BUL	P ¹		24	25	iR	1.6		pP ¹		25	19	e			SKP		27	42	i			SKKP		36	27	e		CLK	P ²		24	26	e	0.9	KRR	P ¹		24	28	i	1.5		SKP		27	45	e		BHA	P ¹		24	29	e	2.0		pP ¹		25	20	i		01	BHA	P	20	15		32	e	0.1	CGS 20 06 41 35.3N 27.6E Dodecanese Is.	4.7	CLK	P				15	45	e	0.9	KRR	P		15	50	e	0.6	BUL	P		16	14	e	0.3	CIR	P		16	21	e	0.4		pP		16	27	e		01	CIR		Pg	22	43	53	e		BUL 22 43 04 19.1S 33.9E Manica Province, Mocambique			2.6		Sn		44	20	i			Sg		44	28	i	1.5	CLK	Sg		44	49	e	0.9	KRR	Sn		45	05	e			L		45	33	i	1.6	BUL	Sn		45	16	e			Sg		45	44	i	0.7	BHA	L		46	43	e	0.3	02	BUL	P	12	51	08	eIC	0.9	CGS 12 38 35 22.4S 67.5W Chile - Boliva Border Region	4.4	KRR	P		51
01	CLK	P	12	05	11	e	0.3	CGS 11 52 30 5.1N 125.2E Mindanao, Philippine Is.	5.2																																																																																																																																																																																																																																																																																																																																																																																																																									
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	CIR	P		11	55	iC	0.7																																																																																																																																																																																																																																																																																																																																																																																																																											
01	CIR	P ¹	19	24	21	iC	0.9	CGS 19 05 25 16.8S 174.7W Tonga Is.	6.0																																																																																																																																																																																																																																																																																																																																																																																																																									
		SKP		27	35	e																																																																																																																																																																																																																																																																																																																																																																																																																												
		SKKP		36	47	e																																																																																																																																																																																																																																																																																																																																																																																																																												
	BUL	P ¹		24	25	iR	1.6																																																																																																																																																																																																																																																																																																																																																																																																																											
		pP ¹		25	19	e																																																																																																																																																																																																																																																																																																																																																																																																																												
		SKP		27	42	i																																																																																																																																																																																																																																																																																																																																																																																																																												
		SKKP		36	27	e																																																																																																																																																																																																																																																																																																																																																																																																																												
	CLK	P ²		24	26	e	0.9																																																																																																																																																																																																																																																																																																																																																																																																																											
	KRR	P ¹		24	28	i	1.5																																																																																																																																																																																																																																																																																																																																																																																																																											
		SKP		27	45	e																																																																																																																																																																																																																																																																																																																																																																																																																												
	BHA	P ¹		24	29	e	2.0																																																																																																																																																																																																																																																																																																																																																																																																																											
	pP ¹		25	20	i																																																																																																																																																																																																																																																																																																																																																																																																																													
01	BHA	P	20	15	32	e	0.1	CGS 20 06 41 35.3N 27.6E Dodecanese Is.	4.7																																																																																																																																																																																																																																																																																																																																																																																																																									
	CLK	P		15	45	e	0.9																																																																																																																																																																																																																																																																																																																																																																																																																											
	KRR	P		15	50	e	0.6																																																																																																																																																																																																																																																																																																																																																																																																																											
	BUL	P		16	14	e	0.3																																																																																																																																																																																																																																																																																																																																																																																																																											
	CIR	P		16	21	e	0.4																																																																																																																																																																																																																																																																																																																																																																																																																											
		pP		16	27	e																																																																																																																																																																																																																																																																																																																																																																																																																												
01	CIR	Pg	22	43	53	e		BUL 22 43 04 19.1S 33.9E Manica Province, Mocambique	2.6																																																																																																																																																																																																																																																																																																																																																																																																																									
		Sn		44	20	i																																																																																																																																																																																																																																																																																																																																																																																																																												
		Sg		44	28	i	1.5																																																																																																																																																																																																																																																																																																																																																																																																																											
	CLK	Sg		44	49	e	0.9																																																																																																																																																																																																																																																																																																																																																																																																																											
	KRR	Sn		45	05	e																																																																																																																																																																																																																																																																																																																																																																																																																												
		L		45	33	i	1.6																																																																																																																																																																																																																																																																																																																																																																																																																											
	BUL	Sn		45	16	e																																																																																																																																																																																																																																																																																																																																																																																																																												
		Sg		45	44	i	0.7																																																																																																																																																																																																																																																																																																																																																																																																																											
	BHA	L		46	43	e	0.3																																																																																																																																																																																																																																																																																																																																																																																																																											
02	BUL	P	12	51	08	eIC	0.9	CGS 12 38 35 22.4S 67.5W Chile - Boliva Border Region	4.4																																																																																																																																																																																																																																																																																																																																																																																																																									
	KRR	P		51	19	e	0.2																																																																																																																																																																																																																																																																																																																																																																																																																											

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
02	BUL	Pn	20	50	45	e		BUL 20 49 03 27.1S 27.0E Klerksdorp Area, Transvaal	3.4
		Sn		52	02	e			
		Sg		52	38	i	1.0		
	CIR	Pn		50	50	e			
		Sn		52	07	e			
		Sg		52	46	e	0.7		
KRR	Pn		51	31	e				
	Sg		54	22	e	0.6			
03	BUL	Pn	07	28	55	e		BUL 07 38 12 18.2S 26.3E Wankie area, Rhodesia	2.3
		Pg		39	02	e			
		Sg		39	56	e	1.0		
	BHA	Pn		39	45	e			
		Pg		39	27	e			
		Sg		40	20	e	0.5		
	KRR	Sg		39	58	e	0.6		
	CIR	Sg		41	07	e	0.4		
	03	CIR	P ¹	08	42	07	eiR	0.6	CGS 08 22 15 8.3N 175.6W N. Pacific Ocean
BUL		P ¹		42	13	e	0.3		
BHA		P ¹ ₂		42	34	e	0.1		
03	BUL	P ¹	13	11	32	eiC	0.4	CGS 12 53 26 23.5S 180.0E S. of Fiji Is.	4.8
		SKP		14	03	e			
	KRR	P ¹		11	38	e	0.5		
	SKP		14	12	e				
	BHA	P ¹		11	42	eiC	0.2		
SKP		14	20	e					
03	KRR	P	19	03	25	e	0.4	Distant	
	BUL	P		03	28	e	0.4		
	BHA	P		03	30	e	0.2		
03	BUL	P ¹	19	09	39	e	0.6	CGS 18 50 10 52.4N 171.2W Fox Is, Aleutian Is.	4.7
	CIR	P ¹		09	42	e	0.1		
03	BUL	P	19	21	39	eiR	0.5	Distant	
		pP		21	45	e			
	CIR	P		21	44	e	0.3		
	pP		21	50	e				
	KRR	P		22	02	e	0.6		
	pP		22	08	e				
	BHA	P		22	10	e	0.1		
	pP		22	14	e				
03	BUL	P ¹	21	40	31	eiR	0.6	CGS 21 21 02 51.8N 173.8W Andreanof Is, Aleutian Is.	4.1
04	KRR	P	03	32	40	e	0.2	CGS 03 22 04 36.4N 71.5E Afghanistan - U.S.S.R. Border Region	4.6
	BUL	P		33	00	e	0.3		
04	CIR	P ¹	07	26	11	e	0.3	CGS 07 08 01 17.6S 178.9W Fiji Is. Region	5.0
		SKP		28	46	e			
	BUL	P ¹		26	17	eiC	0.7		
	SKP		28	52	e				
	KRR	P ¹		26	20	e	0.9		
	SKP		28	58	e				
	CLK	SKP		28	51	e	-		
	BHA	SKP		29	07	e	-		
04	CIR	P ¹	12	55	34	e	0.6	CGS 12 36 33 17.4S 168.9E New Hebrides Is.	5.5
		PP		57	10	e			
	BUL	P ¹		55	39	eiR	0.9		
	PP		57	32	e				
	CLK	P ¹		55	39	e	0.3		
	KRR	P ¹		55	43	eiC	0.5		
	PP		57	41	e				
	BHA	P ¹		55	46	eiC	0.3		
PP		58	00	e					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
04	CLK	P	15	24	38	e	0.3	CGS 15 12 08 8.6S 121.4E Flores Is. Region	5.1	
		pP		25	06	e				
	CIR	P		24	50	e	0.2			
		pP		25	19	e				
	KRR	P		25	00	e	0.2			
		pP		25	33	e				
	BUL	P		25	03	e	0.2			
	pP		25	33	e					
	BHA	P		25	05	e	0.1			
		pP		25	38	e				
04	BUL	P	17	15	10	e	0.3	Distant		
	CIR	P		15	18	e	0.3			
	KRR	P		15	34	eiC	0.3			
	BHA	P		15	45	e	0.1			
04	CLK	P	17	31	15	e	0.9	CGS 17 18 39 0.ON 123.3E N. Celebes	5.5	
	CIR	P		31	30	eiR	0.6			
	KRR	P		31	39	iC	2.0			
	BUL	P		31	43	eiC	3.3			
		pP		32	23	e				
	BHA	P		31	44	iR	1.9			
05	CLK	P	02	51	35	e	0.3	CGS 02 45 39 11.9N 41.3E Ethiopia	5.2	
		L		03	00(30)	e				
	BHA	P		02	51	37	e			0.1
		L		03	00	50	e			
	KRR	P		02	52	00	e			0.2
		L		03	02(40)	e				
	BUL	P		02	52	23	eiR			0.5
		L		03	03	35	e			
		L			04	20	e			
	CIR	P		02	52	28	e			0.4
	L		03	03	49	e				
05	BHA	Pn	04	27	51	e		BUL 04 27 20 15.4S 26.8E Kafue Flats, Zambia	2.1	
		Sg		28(15)		i	1.0			
	KRR	Pn		28	07	e				
		Pg		28	15	e				
		Sn		28	42	e				
		S*		28	49	eiC				
		Sg		28	54	e	1.2			
	BUL	Pn		28	50	e				
	Sg		29	55	e	0.2				
05	BHA	P	05	44	44	iR	0.7	CGS 05 34 23 36.ON 10.4W N. Atlantic Ocean	5.5	
		pP		45	05	e				
	KRR	P		45	00	eiR	0.7			
		pP		45	20	e				
	BUL	P		45	15	iR	1.2			
		pP		45	30	e				
	CIR	P		45	29	iR	0.6			
	pP		45	48	e					
05	BUL	P	14	05	30	eiR	0.9	CGS 13 52 40 30.8S 71.8W Near Coast of Central Chile	5.3	
		pP		05	42	e				
		PP		06	38	e				
	CIR	P		05	40	iR	0.9			
		pP		05	49	e				
	KRR	P		05	42	e	0.3			
		pP		05	52	e				
		PP		06	41	e				
	BHA	P		05	44	e	0.2			
		pP		05	52	e				
				06	01	e				
CLK	P		06	07	e	0.4				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
05	CIR	P	14	28	10	eiR	0.6	CGS 14 15 17 44.2S 141.4E S. of Australia	-
		pP		28	17	eiC			
	BUL	P		28	22	eiR	0.6		
		pP		28	30	e			
	KRR	P		28	30	e	0.2		
		pP		28	38	e			
05	CLK	Pn	20	59	36	e		BUL 20 58 11 14.2S 40.7E Offshore N. Mocambique	4.3
		Pg		59	57	e			
		Sn	21	00	36	e			
		Sg		01	10	e	25.		
	CIR	Pn		00	47	e			
		Sn		02	50	e			
		Sg		04	00	e	1.0		
	L			04	10	e			
		KRR	Pn		00	48	e		
		Sn		02	40	e			
		S*		03	22	e			
	L			03	58	e	2.0		
		BHA	Pn		00	58	e		
		Sn		03	02	e			
		S*		03	47	e			
	L			04	18	e	2.5		
		BUL	Pn		01	12	e		
		Sn		03	28	e			
		S*		04	20	e			
		L		04	55	e	2.0		
06	BHA	Pn	21	47	56	e		BUL 21 46 54 12.5S 24.8E Kafue Catchment Area	2.7
		Sn		48	40	e			
		Sg		49	00	e	1.0		
	KRR	Pn		48	26	e			
		Sn		49	37	e			
		L		50	12	e	0.5		
BUL	L		51	21	e	0.2			
07	CIR	P'	09	39	48	e	0.2	CGS 09 21 18 31.2S 179.2W Kermadec Is.	4.9
	BUL	P'		39	56	e	0.6		
	CLK	P'		39	57	e	0.3		
	KRR	P'		39	59	e	0.6		
	BHA	P'		40	07	e	0.2		
07	BHA	P'	14	04	28	e	0.2	CGS 13 45 00 37.3N 116.5W S. Nevada (Underground Explosion)	5.8
		KRR	P'		04	36	e		
	BUL	P'		04	40	e	0.2		
	CLK	P'		04	44	e	0.2		
	CIR	P'		04	48	e	0.2		
07	BUL	Pn	14	57	24	e		BUL 14 55 51 26.6S 27.8E Witwatersrand	2.8
		Sn		58	33	e			
		Sg		59	07	e	0.3		
	CIR	Pn		57	29	e			
		Sn		58	40	e			
		Sg		59	13	e	0.3		
	KRR	Pn		58	10	e			
		Sg		15	00	49	e	0.2	
07	CIR	Pn	21	21	31	e		BUL 21 21 05 21.4S 33.1E Save River, Mocambique	2.6
		Pg		21	34	e			
		Sg		21	52	e	3.0		
	BUL	Sn		22	58	e			
		Sg		23	20	e	0.6		
	KRR	Sn		23	27	e			
		Sg		23	55	e	1.0		
	BHA	Sn		24	30	e			
		Sg		25	18	e			
		L		25	25	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
07	BUL	P'	22	36	21	e	0.2	CGS 22 17 35 5.2S 152.7E New Britain Region	5.1
	BHA	P'		36	25	e	0.1		
	KRR	P'		36	28	e	0.2		
08	KRR	P	02	04	38	e	0.2	CGS 01 50 03 13.3N 144.9E Mariana Is.	5.1
		P'		08	46	e			
	BUL	P		04	41	e	0.3		
		P'		08	49	e			
	BHA	P		04	45	e	0.1		
		P'		08(50)		e			
	CIR	P'		08	43	e	-		
08	CIR	P	17	56	35	e	0.3	CGS 17 50 07 19.8S 66.1E Mascarene Is. Region	5.3
	KRR	P		56	57	e	0.2		
	BUL	P		57	00	e	0.3		
	BHA	P		57	10	e	0.2		
09	CLK	P	13	42	36	e	0.3	CGS 13 29 53 8.9S 124.0E Timor	5.2
	KRR	P		42	58	e	0.2		
	BUL	P		43	00	e	0.4		
09	KRR	P'	19	46	26	e	0.1	CGS 19 26 58 53.4N 166.8W Fox Is., Aleutian Is.	4.0
	BUL	P'		46	28	e	0.9		
	CIR	P'		46	28	e	0.3		
10	KRR	Pg	01	20	35	e		BUL 01 20 06 17.0S 28.1E Kariba, Rhodesia	2.3
		Sg		20	54	e	3.0		
	BHA	Pn		20	46	e			
		Pg		20	52	e			
		Sn		21	15	e			
		Sg		21	23	e	0.8		
	BUL	Pg		21	04	e			
		Sn		21	32	e			
		Sg		21	46	e	1.0		
	CIR	Sn		22	15	e			
	L		22	43	e	0.5			
10	BHA	Pn	02	22	58	e		BUL 02 20 10 2.9S 28.3E Kivu Province, Congo	3.8
		Sn		24	59	e			
		S*		25	33	e			
		Sg		26	11	e			
		L		26	18	e	1.0		
	KRR	Pn		23	30	e			
		Sn		26(04)		e			
		L		27	34	e	0.6		
	CLK	Pn		23	34	e			
		Sn		26	10	e			
		S*		26	51	e			
		L		27	40	e	0.4		
	BUL	Pn		24	14	e			
		Sn		27(32)		e			
		L		29	10	e	0.3		
CIR	L		29	48	e	0.2			
10	CLK	P	03	51	41	e	0.1	CGS 03 40 27 7.8S 108.0E Java	5.2
	CIR	P		51	58	e	0.1		
	KRR	P		52	10	e	0.1		
	BUL	P		52	15	e	0.2		
10	BHA	P	09	35	49	e	0.4	CGS 09 27 57 27.5N 34.2E Red Sea	3.8
	CLK	P		35	55	e	0.6		
	KRR	P		36	05	e	0.2		
	BUL	P		36	29	e	0.3		
	CIR	P		36	37	e	0.3		
10	CIR	P'	12	25	02	e	0.1	CGS 12 06 27 28.1S 178.1W Kermadec Is.	4.7
	BUL	P'		25	06	e	0.2		
	KRR	P'		25	11	e	0.4		
	BHA	P'		25	17	e	0.1		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
10	KRR	Pg	18	27	53	e		BUL 18 27 13 18.8S 27.3E Binga Area, Rhodesia	2.1
		Sg		28	20	e	1.5		
	BUL	Pn		28	02	e			
		Sn		28	28	e			
	BHA	Sg		28	33	e	0.6		
		Pg		28	19	e			
	CIR	Sn		28	45	e			
		Sg		28	58	e	0.3		
	CIR	Sn		29	24	e			
		Sg		29	51	e	0.4		
10	CLK	Pn	21	19	04	e		BUL 21 16 08 3.6S 35.5E Serengeti Plain, Tanzania	4.4
		Sn		21	12	e			
		S*		21	51	e			
		L		22	33	e	4.0		
	BHA	Pn		19	16	e			
		Sn		21	38	e			
		Sg		22	50	e	4.0		
	KRR	Pn		19	38	e			
		S*		22	58	e			
		Sg		23	46	e	1.0		
	BUL	Pn		20	20	e			
		S*		24	25	e			
		L		25	45	e	0.9		
	CIR	Pn		20	20	e			
		S*		24	20	e			
		L		25	25	e	0.6		
11	CLK	P	00	25	49	e	0.2	CGS 00 18 42 14.3N 56.7E Arabian Sea	5.1
		pP		25	54	e			
	BHA	P		26	18	e	0.1		
				26	45	e			
	KRR	P		26	23	e	0.2		
		pP		26	28	e			
	CIR	P		26	45	e	0.1		
	BUL	P		26	49	e	0.2		
		pP		26	54	e			
	11	CIR	P'	00	57	59	e	0.1	CGS 00 39 12 30.4S 177.9W Kermadec Is. Region
BUL		P'		58	06	e	0.5		
KRR		P'		58	12	e	0.4		
BHA		P'		58	18	e	0.2		
11	BUL	Pn	09	22	39	e		BUL 09 21 16 26.0S 27.4E Witwatersrand	3.0
		Sn		23	47	e			
		Sg		24	19	e	0.7		
	CIR	Sn		23	51	e			
		Sg		24	25	e	0.4		
	KRR	Sn		25	12	e			
Sg		26	05	e	0.3				
11	CIR	P'	12	28	38	e	0.2	CGS 12 10 05 17.8N 145.9E Mariana Is.	4.9
	KRR	P'		28	40	e	0.7		
	BHA	P'		28	41	e	0.1		
	BUL	P'		28	44	e	0.4		
11	BUL	P	13	19	04	e	0.3	CGS 13 09 42 56.3S 25.7W S. Sandwich Is. Region	5.4
		CIR	P		19	20	e		
	KRR	P		19	37	e	0.1		
	BHA	P		19	38	e	0.1		
11	KRR	P	13	27	08	e	0.1	CGS 13 16 33 36.2N 71.3E Afghanistan - U.S.S.R. Border Region	4.5
	BUL	P		27	30	e	0.2		
11	BUL	P'	14	36	25	e	0.3	CGS 14 17 12 21.8S 175.1W Tonga Is.	5.1
	KRR	P'		36	30	e	0.1		
	BHA	P'		36	42	e	0.1		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
11	BHA	Pn	23	08	03	e		BUL 23 06 17 8.0S 31.6E Lake Rukwa Area, Tanzania	3.7
		Sn		09	20	e			
		Sg		10	00	e	2.0		
	CLK	Pn		08	19	e			
		Sn		09	47	e			
	KRR	L		10	43	e	1.0		
		Pn		08	30	e			
		Sn		10	06	e			
	BUL	Sg		11	01	e	1.0		
		Sn		11	25	e			
CIR	L		12	49	e	0.6			
	Sn		11	45	e				
	Sg		13	07	e	0.3			
12	BUL	P	01	40	59	e	0.2	CGS 01 31 03 57.7S 25.3W S. Sandwich Is. Region	4.6
	CIR	P		40	40	e	0.2		
	KRR	P		40	50	e	0.1		
	BHA	P		41	13	e	0.1		
12	BUL	Pn	07	55	16	e		BUL 07 53 44 26.4S 27.4E Witwatersrand	3.9
		Sn		56	26	e			
		S*		56	38	e			
	CIR	Sg		56	58	e	3.0		
		Pn		55	20	e			
		Sn		56	28	e			
	KRR	S*		56	47	e			
		Sg		57	00	e	3.0		
		Pn		56	03	e			
	BHA	Sn		57	45	e			
		L		58	48	e	2.0		
		Pn		56	33	e			
	CLK	Sn		58	41	e			
		L		59	59	e	0.7		
		Pn		56	44	e			
		Sn		59	06	e			
	S*		59	30	e				
			00	20	e	1.2			
12	BUL		12	01	59	e	0.1	Distant	
	CIR		02	09	e	0.4			
12	BUL	P	17	23	44	e	0.3	CGS 17 16 28 22.2S 12.1W S. Atlantic Ridge	4.6
	KRR	P		24	03	e	0.2		
	CIR	P		24	06	e	0.6		
13	BUL	Pn	06	39	47	e		BUL 06 38 16 26.5S 27.2E Witwatersrand	3.2
		Sn		41	00	e			
		S*		41	13	e			
	CIR	Sg		41	33	e	0.8		
		Pn		39(55)		e			
		Sn		41	03	e			
	KRR	Sg		41	43	e	0.6		
		Pn		40	38	e			
	Sg		43	15	e	0.4			
13	BHA	P'	14	35	32	e	0.6	CGS 14 16 53 11.5N 86.4W Near Coast of Nicaragua	5.6
		pP'		35	45	e			
	BUL	P'		35	32	e	0.5		
		pP'		35	45	e			
	KRR	P'		35	32	e	1.5		
		pP'		35	46	e			
	CIR	P'		35	38	e	0.5		
		pP'		35	51	e			
	CLK	P'		35	43	e	0.8		
		pP'		35	57	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	CLK	P	14	41	49	iR	5.6	CGS 14 30 20 7.2S 120.9E Flores Sea	5.6
		pP		44	03	e			
		PP		45	17	e			
		SKS		51	16	e			
		PKKP	15	00	00	e			
	CIR	P	14	41	59	iR	2.3		
		pP		44	15	e			
		PP		45	37	e			
		S		51	50	e			
		PKKP		59	55	e			
	KRR	P		42	12	iC	1.6		
		pP		44	26	e			
		PP		45	55	e			
		S		52	10	e			
		PKKP		59	48	e			
	BUL	P		42	15	iR	6.0		
pP			44	30	e				
SKS			51	48	e				
S			52	16	e				
PKKP			59	44	e				
BHA	P		42	19	iR	2.0			
	pP		44	32	e				
	PP		46	08	e				
	SKS		51	53	e				
	S		52	20	e				
	PKKP		59	45	e				
13	BUL	P'	18	30	19	e	0.2	CGS 18 11 39 11.5N 86.5W Near Coast of Nicaragua	4.6
	BHA	P'		30	19	e	0.1		
	KRR	P'		30	20	e	0.3		
	CLK	P'		30	31	e	0.2		
13	BUL	Pn	21	59	30	e		BUL 21 57 56 26.4S 27.2E Witwatersrand	2.9
		Sg		01	11	e	0.6		
	CIR	Pn		59	32	e			
		Sg		01	18	e	0.4		
	KRR	Pn		00	16	e			
		Sg		02	58	e	0.2		
14	KRR	P	00	51	11	e	0.2	CGS 00 38 07 0.3N 124.0E N. Celebes	5.0
	BUL	P		51	14	e	0.4		
	BHA	P		51	15	e	0.2		
14	BUL	P	08	57	13	e	0.3	CGS 08 52 17 41.9S 33.8E Prince Edward Is. Region	4.6
	KRR	P		57	42	e	0.2		
	BHA	P		58	05	e	0.1		
14	BHA	P	10	14	06	e	0.2	CGS 10 05 16 35.3N 27.8E Dodecanese Is.	5.1
	CLK	P		14	09	e	0.8		
	KRR	P		14	24	iR	0.5		
	BUL	P		14	49	e	0.7		
14	CLK	Pg	18	20	52	e		BUL 18 20 24 17.3S 35.0E Zambezi - Shire Confluence	3.7
		Sg		21	12	e	15.		
				21	42	e			
	KRR	Pn		21	42	e			
		Sn		22	40	e			
		Sg		23	05	e	8.0		
	BUL	Pn		22	02	e			
		Sn		23	13	e			
		Sg		23	48	e	10.		
	BHA	Pn		22	06	e			
		Sn		23	23	e			
		L		24	05	e	2.0		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
14	CLK		19	52	04	e		CGS 19 32 54 51.3N 179.9W	6.2	
		P'		52	14	e	1.6	Andreanof Is., Aleutian Is.		
		PP		54	38	e				
	BHA	SKP		55	49	e				
				52	06	e	0.2			
		P'		52	21	i				
		PP		54	49	e				
		SKP		55	53	e				
		SKKP	20	04	20	e				
	KRR			19	52	11	e			
		P'		52	23	i	2.4			
		PP		55	00	e				
		SKP		55	55	e				
		SKKP	20	04	15	e				
BUL	P'		19	52	24	e	3.0			
			54	14	i					
	SKKP	20	03	28	e					
14	KRR	P'	23	51	06	e	0.3	Distant		
		pP'		51	14	e				
	BUL	P'		51	09	e	0.3			
		pP'		51	15	e				
	BHA	P'		51	12	e	0.2			
		pP'		51	18	e				
15	CLK	P	08	06	06	e	0.2	CGS 07 53 04 16.1N 121.9E	5.2	
	CIR	P		06	26	e	0.1	Luzon, Philippine Is.		
	BHA	P		06	32	e	0.2			
	BUL	P		06	33	e	0.2			
15	CLK	P	12	14	59	e	0.3	CGS 12 05 55 35.4N 27.8E	4.9	
	KRR	P		15	04	e	0.2	Dodecanese Is.		
	BUL	P		15	26	e	0.2			
	CIR	P		15	35	e	0.3			
15	BUL	Pn	14	53	57	e		BUL 14 51 59 28.3S 26.6E	3.1	
		Sn		55	26	e		O.F.S. Goldfields		
		Sg		56	12	e	0.4			
	CIR	Pn		54	00	e				
		Sn		55	28	e				
	KRR	Sg		56	14	e	0.3			
		Pn		54	42	e				
		Sg		57	54	e	0.2			
15	CLK	P	20	49	58	e	0.9	CGS 20 39 46 34.6N 70.9E	5.6	
	BHA	P		50	16	iC	1.3	Afghanistan		
	KRR	P		50	23	iC	2.5			
	CIR	P		50	38	e	0.4			
	BUL	P		50	43	iC	0.8			
15	BHA	P	20	56	48	e	1.2	CGS 20 43 33 16.8N 61.3W	5.7	
		pP		57	08	e		Leeward Is.		
	BUL	P		56	55	e	0.6			
		pP		57	20	e				
	KRR	P		56	56	e	0.3			
	CIR	P		57	10	e	0.3			
		pP		57	26	e				
CLK	P		57	25	e	0.2				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
15	CLK	P	22	50	03	e	0.3	CGS 22 38 23 7.2S 120.3E Flores Sea	5.3	
			50	32	e					
	CIR	P	51	35	e	0.4				
			50	16	e					
	BUL	P	50	30	iR	0.7				
			51	02	e					
	KRR	P	52	02	e	0.2				
			50	30	e					
	BHA	P	52	05	e	0.2				
			50	34	e					
		pP	52	06	e					
15	BUL	Pn	23	13	26	e		BUL 23 11 56 27.1S 27.6E Klerksdorp Area, Transvaal	3.5	
			14	39	e					
			15	16	i	1.1				
	CIR	Pn	13	31	e	1.0				
			15	29	e					
	KRR	Pn	14	13	e	0.8				
			16	04	e					
			17	02	e					
	BHA	Pn	14	42	e	0.5				
			16	54	e					
Sg		18	13	e						
		L	18	24	e					
16	CLK	P	04	14	44	e	0.2	CGS 04 02 57 49.8N 78.1E E. Kazakh S.S.R.	5.3	
				14	55	e				0.3
	KRR	P	15	04	e	0.4				
			15	22	e	0.4				
16	CLK	P	05	18	38	e	0.2	CGS 05 09 33 34.9N 24.4E Crete	4.6	
				18	40	e				0.6
				19(13)	e	0.1				
16	CIR	P'	07	22	19	e	0.2	CGS 07 03 22 27.5S 176.6W Kermadec Is.	5.4	
				22	43	e				
	BUL	P'	22	22	e	0.3				
			22	46	e					
	KRR	P'	22	26	e	0.3				
			22	32	e		0.3			
16	CLK	P	07	36	35	e	0.3	CGS 07 26 59 39.2N 21.8E Greece	5.2	
				36	39	e				0.8
	BUL	P	37	00	e	0.2				
			37	10	e		0.4			
16	CIR	P	16	29	49	e	0.2	CGS 16 18 47 0.5S 99.4E S. Sumatra	5.1	
				30	06	e				
	KRR	P	30	00	e	0.1				
			30	16	e					
	BHA	P	30	05	e	0.1				
			30	21	e					
	BUL	P	30	06	e	0.2				
30			24	e						
17	BUL	P	05	58	54	e	0.2	CGS 05 51 30 28.3S 12.9W S. Atlantic Ridge	4.9	
				59	08	e				0.8
				59	10	e				0.2
17	KRR	P	08	48	37	e	0.2	CGS 08 36 57 6.0S 105.4E Sunda Strait	4.9	
				48	40	e				0.2
				48	43	e				0.2
17	BUL	P	14	23	19	e	0.2	Distant		
				23	21	e				0.1
17	BUL	P	15	35	07	iC	1.2	CGS 15 22 13 27.3S 71.0W Near Coast of N. Chile	4.7	
				35	16	iC				0.8
				35	19	iC				0.5
				35	20	e				0.3

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
18	CIR	P'	00	34	24	e	0.2	CGS 00 15 31 9.0S 158.4E Solomon Is.	5.6
	BUL	P'		34	26	e	0.4		
		pP'		34	37	e			
	KRR	P'		34	(31)	e	0.1		
		pP'		34	38	e			
	BHA	P'		34	36	e	0.1		
		pP'		34	43	e			
18	CIR	P	03	08	07	e	0.3	Distant	
	BUL	P		08	22	e	0.2		
	KRR	P		08	31	e	0.1		
	CLK	P		08	39	e	0.3		
	BHA	P		08	47	e	0.1		
18	BHA	P'	09	03	(06)	e	0.1	CGS 08 44 04 60.3N 146.0W S. Alaska	5.4
		pP'		03	25	e			
		SKP		06	53	e			
	CLK	P'		03	07	e	0.1		
		pP'		03	26	e			
		PP		05	00	e			
	KRR	P'		03	15	e	0.1		
		pP'		03	29	e			
		SKP		07	05	e			
	BUL	P'		03	25	e	0.2		
		pP'		03	41	e			
		PP		06	18	e			
		SKP		07	09	i			
	CIR	P'		03	(30)	e	0.1		
18	CLK	P	13	36	01	e	0.2	CGS 13 29 55 19.5S 66.0E Mascarene Is. Region	5.1
	CIR	P		36	24	e	0.3		
		PoP		39	11	e			
	KRR	P		36	43	e	0.3		
	BUL	P		36	48	iR	0.3		
		PoP		39	20	e			
	BHA	P		36	58	iR	0.2		
		PoP		39	22	e			
18	BHA	P	18	37	05	e	0.1	Distant	
	CIR	P		37	20	e	0.2		
	BUL	P		37	30	e	0.2		
19	CIR	Pg	12	49	30	iG		BUL 12 49 05 20.1S 32.8E Eastern Border, Rhodesia. Felt MM III at Chisengu	2.5
		Sg		49	47	i	4.3		
	KRR	P*		50	16	e			
		Sn		50	58	e			
		Sg		51	20	e	1.0		
	BUL	Sn		50	46	e			
		Sg		51	05	e	0.7		
	CLK	Sn		51	11	e			
		Sg		51	36	i	0.8		
	BHA	Sg		52	40	e	0.2		
19	BUL	P	18	24	(13)	e	0.3	CGS 18 14 24 37.8N 35.1E Turkey	4.6
	CIR	P		24	20	e	0.3		
19	CLK	Pn	23	00	35	e		BUL 22 58 49 8.5S 33.2E S. Lake Rukwa Area	3.5
		Sn		01	53	e			
		Sg		02	32	e	0.7		
	BHA	Pn		00	38	e			
		Sn		01	57	e			
		Sg		02	37	i	1.1		
	KRR	Sn		02	32	e			
		L		03	35	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
19	CIR	Pn	23	36	18	e		BUL 23 34 43 23.5S 38.0E Mocambique Channel	3.6
		Sn		37	29	e	0.8		
	CLK	Pn		36	41	e		0.8	
		Sn		38	07	e			
	BUL	Pn		36	57	e		0.6	
		Sn		38	38	e			
KRR	Pn		37	07	e		0.3		
	Sn		38	59	e				
20	CIR	P'	01	20	10	e	0.2	CGS 01 01 16 30.7S 177.8W Kermadec Is. Region	4.9
	BUL	P'		20	14	iR	0.5		
		pP'		20	31	e			
	CLK	P'		20	16	e	0.1		
	KRR	P'		20	20	e	0.3		
		pP'		20	36	e			
	BHA	P'		20	25	e	0.3		
pP'			20	41	e				
20	BHA	P'	15	18	32	e	0.1	CGS 14 59 39 43.4N 147.5E Kurile Is.	4.9
		pP'		18	41	e			
	KRR	P'		18	34	e	0.1		
		pP'		18	43	e			
	CLK	pP'		18	34	e	0.2		
	BUL	P'		18	39	e	0.3		
pP'			18	48	i				
20	BHA	Pg	17	10	51	iR		BUL 17 10 29 14.9S 27.3E S. Lukanga Swamp, Zambia	2.5
		Sg		11	06	i	3.0		
	KRR	Pg		11	20	e			
		Sn		11	47	i			
	BUL	Sg		11	56	i	2.5		
		Pn		11	47	e			
		Sn		12	43	e			
		Sg		13	13	e	0.4		
	CIR	Sn		13	31	e			
		Sg		14	11	e	0.3		
CLK	Sn		13(40)		e				
	L		14	19	e	0.2			
20	CLK	P	19	21	45	e	0.1	CGS 19 15 37 19.6S 66.2E Mascarene Is. Region	4.8
	CIR	P		22	05	e	0.2		
	KRR	P		22	25	e	0.2		
	BUL	P		22	30	e	0.3		
	BHA	P		22	40	e	0.2		
21	BUL	P	11	44	49	e	0.3	Distant	
	CIR	P		44	54	e	0.4		
	KRR	P		45	12	e	0.2		
	BHA	P		45	21	e	0.1		
	CLK	P		45	39	e	0.2		
21	CLK	P	15	41	56	e	0.8	CGS 15 32 00 36.4N 70.2E Hindu Kush Region	5.0
	BHA	P		42	11	e	0.3		
	KRR	P		42	19	iR	1.2		
	CIR	P		42	35	e	0.3		
	BUL	P		42	40	iR	1.1		
21	BUL	P	16	14	56	e	0.3	CGS 16 07 13 50.1S 7.2W S. Atlantic Ridge	-
	CIR	P		15	03	e	0.3		
	KRR	P		15	22	iC	0.3		
	BHA	P		15	34	e	0.2		
21	BUL	Pn	17	57	35	e		BUL 17 56 03 26.4S 27.4E Witwatersrand	3.4
		Sn		58	44	e			
		Sg		59	18	e	1.6		
	CIR	Pn		57	39	e			
		Sn		58	45	e			
		Sg		59	23	e	1.0		
	KRR	Pn		58	20	e			
		Sn	18	00	05	e			
L		01	05	e	0.6				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
22	CIR	Pn	03	11	45	e		BUL 03 10 54 23.1S 38.2E Mocambique Channel	2.7
		Sn		11	58	i			
		Sg		12	37	i	1.2		
	KRR	Pn		12	33	e			
		Sn		13	47	e			
		Sg		14	22	e	0.7		
	CLK	Sg		13	26	e	0.2		
	BUL	Sn		13	34	e			
		Sg		14	07	e	0.4		
	BHA	L		15	38	e	0.2		
22	BHA	Pn	10	56	43	e		BUL 10 53 33 3.1S 28.9E N. Lake Tanganyika	3.9
		Sn		58	09	e			
		Sg		59	17	e	1.0		
	CLK	Pn		56	50	e			
		Sg	11	00	35	e			
		L		00	48	e	0.9		
	KRR	Pn	10	56(50)		e			
		Sn		59	05	e			
		Sg	11	00	38	e	0.4		
	BJL	Pn	10	57	26	e			
		Sn	11	00(30)		e			
		L		02	22	e	0.4		
	CIR	Pn	10	57	38	e			
		L	11	02	48	e	0.4		
	22	CIR	P'	12	39	21	e	0.2	CGS 12 24 24 23.5S 179.9W S of Fiji Is.
BUL		P'		39	26	e	0.3		
KRR		P'		39	31	e	0.2		
22	BHA	Pn	21	18	33	e		BUL 21 15 57 3.5S 29.1E N. Lake Tanganyika	4.4
		Sn		20	35	e			
		L		21	42	e	4.0		
	KRR	Pn		19	04	e			
		Sn		21	27	e			
		L		22	57	e	1.6		
	CLK	Pn		19	08	e			
		Sn		21	31	e			
		L		22	58	e	2.6		
	BUL	Pn		19	47	e			
		Sn		22	41	e			
		L		24	45	e	1.0		
	CIR	Pn		20	59	e			
		S*		24	06	e			
		L		25	13	e	1.0		
22	CLK	P	22	41(27)		e	0.1	CGS 22 30 30 5.7S 103.2E S. Sumatra	5.4
	CIR	P		41	44	e	0.2		
	BUL	P		41	55	e	0.2		
		pP		42	03	i			
	BHA	P		41	59	e	0.1		
		pP		42	09	i			
	KRR	P		42	00	i	0.2		
23	BUL	Pn	02	37	29	e		BUL 02 35 04 26.0S 28.0E Witwatersrand	2.9
		Sn		38	30	e			
		Sg		39	02	e	0.5		
	CIR	Pn		37	32	e			
		Sg		39	06	e	0.6		
	KRR	Pn		38	15	e			
	L		40	49	e	0.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
23	BHA	P'	13	23	58	e	0.3	CGS 13 04 37 53.4N 160.2W S. of Alaska	5.6
		pP'		24	09	e			
	CLK	P'		23	59	e	0.3		
	KRR	P'		24	04	e	0.7		
		pP'		24	11	e			
	CIR	P'		24	14	e	1.1		
		pP'		24	24	e			
BUL	P'		24	15	e	4.4			
	pP'		24	24	i				
23	BHA	Pg	16	34	11	e		BUL 16 33 37 14.8S 26.6E Kafue Flats, Zambia	2.9
		Sg		34	35	e	6.0		
	KRR	Pn		34	34	e			
		Pg		34	43	e			
		Sn		35	14	e			
		Sg		35	28	e	2.0		
	BUL	Pn		35	02	e			
		Sn		36	05	e			
		Sg		36	36	e	1.0		
	CIR	Pn		35	30	e			
		Sn		36	57	e			
	Sg		37	44	e	0.4			
CIK	Sg		37	48	e				
	L		37	54	e	0.4			
23	CIK	P	17	18	08	e	0.2	CGS 17 07 42 3.7N 95.7E off W. Coast of N. Sumatra	5.2
		pP		18	20	e			
	CIR	P		18	34	e	0.2		
		pP		18	49	e			
	KRR	P		18	39	e	0.3		
		pP		18	53	e			
	BHA	P		18	45	iR	1.1		
	pP		18	59	i				
BUL	P		18	50	e	0.2			
	pP		19	01	e				
23	CIR	P'	22	13	01	e	0.4	CGS 21 54 21 14.6S 167.4E New Hebrides Is.	4.7
	CIK	P'		13	03	e	0.2		
	BUL	P'		13	06	e	0.6		
	KRR	P'		13	08	e	0.9		
	BHA	P'		13	14	e	0.2		
23	CLK	Pn	23	09	53	e		BUL 23 08 22 13S 41E Offshore N. Mocambique	3.7
		Sn		11	02	e			
		Sg		11	34	iR	3.0		
	BHA	Pn		11	17	e			
		L		14	48	e	0.8		
	KRR	L		14	32	e	0.4		
	CIR	Sg		14	15	e	0.3		
	BUL	Sg		15	24	e	0.5		
23	BHA	Pn	23	47	09	e		BUL 23 44 42 4.5S 31.0E Sagara Swamp	3.5
		Sn		48	56	e			
		S*		49	14	i			
		Sg		49	57	e	0.4		
	CLK	Pn		47	33	e			
		L		51	06	e	0.4		
	KRR	Sn		49	49	e			
		L		51	11	e	0.3		
	BUL	L		52	57	e	0.2		
	CIR	L		53	12	e	0.2		
24	CIR	pP'	16	46	52	e	0.1	CGS 16 27 39 10.1S 161.3E Solomon Is.	5.2
	BUL	pP'		46	53	e	0.3		
	KRR	pP'		46	56	e	0.2		
	BHA	pP'		46	59	e	0.1		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
25	CLK	Pn	01	13	27	e		BUL 01 10 38 03.7S 35.8E Serengeti Plain, Tanzania	4.3
		Sn		15	35	e			
		L		16	57	iC	3.0		
	BHA	Pn		13	40	e			
		Sn		15	57	e			
		L		17	24	e	2.0		
	KRR	Pn		14	01	e			
		Sn		16	29	e			
		L		18	15	e	1.0		
	BUL	Pn		14	47	e			
L			20	09	e	1.0			
CIR	L		19	55	e	0.6			
25	BUL	Pn	03	44	34	e		BUL 03 43 00 26.5S 27.6E Witwatersrand	3.3
		Sn		45	45	e			
		Sg		46	17	e	1.0		
	CIR	Pn		44	39	e			
		Sn		45	52	e			
		Sg		46	24	e	1.0		
	KRR	Pn		45	21	e			
		Sn		47	03	e			
		L		48	06	e	0.7		
	25	BUL	P'	15	18	51	iC		
CIR		P'		18	51	e	0.3		
25	CIR	P'	20	37	14	iR	0.4	CGS 20 18 30 32.0S 178.8W S. of Kermadec Is.	5.4
		pP'		37	32	i			
	CLK	P'		37	16	e	0.2		
	BUL	P'		37	17	e	1.1		
		pP'		37	36	i			
	KRR	P'		37	23	iR	2.0		
		pP'		37	41	i			
	BHA	P'		37	28	iC	0.6		
pP'			37	47	i				
25	CIR	Pn	22	09	34	e		BUL 22 08 04 26.3S 28.1E Witwatersrand	3.4
		Sg		11	12	i	1.8		
	BUL	Pn		09	34	e			
		Sn		10	38	e			
		Sg		11	12	i	1.3		
	KRR	Pn		10	18	e			
		Sg		12	53	e			
L		12	59	i	0.7				
25	BUL	P	22	40	06	e	0.5	CGS 22 30 43 57.7S 25.2W S. Sandwich Is. Region	5.6
		CIR	P		40	12	e		
	pP		40	26	i				
	KRR	P		40	30	e	0.3		
	BHA	P		40	41	iC	0.3		
pP			40	54	i				
26	BUL	P'	06	13	24	e	0.3	CGS 05 54 18 15.8N 94.4W Near Coast of Oaxaca, Mexico	5.1
	KRR	P'		13	25	e	0.2		
26	CIR	P	15	51	02	e	0.3	CGS 15 37 17 11.8N 125.8E Samar, Philippine Is.	5.2
		pP		51	09	i			
	BHA	P		51	08	e	0.1		
	BUL	P		51	13	e	0.2		
pP			51	20	e				
27	BUL	Pn	02	27	11	e		BUL 02 25 39 26.4S 27.3E Witwatersrand	3.5
		Sn		28	21	i			
		Sg		28	51	i	2.5		
	CIR	Pn		27	16	e			
		Sn		28	28	i			
		Sg		29	00	i	1.1		
	KRR	Pn		27	58	e			
		Sn		29	40	e			
		Sg		30	35	i	0.7		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag		
27	CLK	P	09	40	02	e	0.3	CGS 09 27 04 0.2S 125.0E Molucca Sea	5.3		
	CIR	P		40	17	e	0.3				
	KRR	P		40	25	e	0.3				
		pP		40	33	e					
	BUL	P		40	29	iR	0.7				
	BHA	P		40	37	i					
	BHA	P		40	(35)	e	0.4				
27	BUL	P	12	28	21	e	0.4	CGS 12 18 46 59.9S 26.5W S. Sandwich Is. Region	5.1		
		pP		28	26	i					
				28	32	i					
	CIR	P		28	26	e	0.3				
		pP		28	32	i					
				28	38	i					
	KRR	P		28	44	e	0.3				
		pP		28	49	i					
				28	55	i					
	BHA	P		28	57	e	0.1				
		pP		29	04	i					
				29	08	i					
	CLK	pP		29	14	e	0.2				
27	CLK	P	16	42	15	e	0.8	CGS 16 29 31 8.8S 124.1E Timor	5.3		
				42	45	e					
	CIR	P		42	27	e	0.2				
				42	57	e					
	KRR	P		42	37	e	0.3				
	BUL	P		42	39	e	0.8				
				43	05	e					
	BHA	P		42	45	iR	0.3				
				43	10	i					
27	BHA	Pn	18	29	12	e		BUL 18 27 49 9.1S 32.0E Tanzania - Zambia Border	3.2		
		Sn		30	20	i					
		L		30	58	i	2.2				
	CLK	Pn		29	21	e					
		Sn		30	36	e					
		L		31	19	i	0.7				
	KRR	Sn		31	01	e					
		Sg		31	44	e	0.3				
	BUL	L		33	35	e	0.3				
	CIR	L		33	45	e	0.2				
	28	CIR	P	03	54	46	e			0.2	CGS 03 41 02 11.8N 125.8E Samar, Philippine Is.
BUL		P		54	58	e	0.2				
28	BUL	P	11	50	44	e	0.2	CGS 11 41 12 55.5S 28.6W S. Sandwich Is. Region	4.9		
	CIR	P		50	50	e	0.3				
	KRR	P		51	07	e	0.2				
28	CLK	P	13	20	26	e	0.1	CGS 13 08 10 10.9S 118.4E S. of Sumbawa Is.	5.5		
	CIR	P		20	38	e	0.2				
	KRR	P		20	50	e	0.2				
	BUL	P		20	53	e	0.2				
28	BUL	P	13	43	55	e	0.2	CGS 13 30 09 2.1S 76.9W Peru - Ecuador Border Region	5.5		
		PP		48	08	i					
		PKKP		59	42	i					
	BHA	P		44	06	e	0.1				
		PP		48	11	e					
	KRR	P		44	16	e	0.1				
		PP		48	18	i					
		PKKP		59	39	e					
	CIR	PP		48	28	e	0.2				
		PKKP		59	35	e					
	CLK	PP		49	00	e	0.2				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag			
29	CIR	P'	10	40	51	e	0.2	CGS 10 22 38 20.3S 177.7W Fiji Is. Region	4.6			
		SKP	43	25	e							
	BUL	P'	40	55	e	0.3						
		SKP	43	36	i							
	KRR	P'	40	57	e	0.2						
SKP		43	43	i								
29	CLK	Pg	21	18	16	e		BUL 21 18 14 15.9S 34.9E Shire Valley, Malawi Felt MM IV at Bvumbwe Felt MM III at Limbe	2.8			
		Sg	18	19	i	10.						
	KRR	Pn	19	29	e							
		Sn	20	23	e							
		Sg	20	43	i	0.7						
	CIR	Sn	20	37	e							
		Sg	21	09	i	0.5						
	BHA	Sn	20(58)	e								
		Sg	21	26	i	0.5						
	BUL	Sn	21	09	e							
		Sg	21	49	i	0.5						
	30	KRR	Pn	00	24	06	e				BUL 00 23 32 17.1S 27.4E Kandabwe Area, Zambia	3.9
			P*	24	07	i						
Pg		24	09	i								
		24	31	i	29.							
		24	17	e								
BHA		Pn	24	17	e							
		Pg	24	26	e							
		Sn	24(52)	i	-							
BUL		Pn	24	22	e							
		Pg	24	29	i							
		S*	25	02	i							
		Sg	25	10	i	16.						
CIR		Pn	24	52	iR							
		Pg	25	10	i							
		Sn	25	49	i							
		Sg	26	15	i	8.						
CLK		Pn	25	18	e							
		Pg	25	24	e							
		Sn	26	36	i							
	Sg	27	16	i	3.8							
30	BUL		03	34	49	e	0.3	Distant				
	CIR		34	55	e	0.2						
30	CLK	P	06	08	53	e	0.2	CGS 05 56 38 9.7S 118.7E Sumbawa Is. Region	5.1			
		CIR	P	09	12	e	0.2					
		pP	09	21	e							
	KRR	P	09	22	e	0.2						
	BUL	P	09	26	e	0.2						
		pP	09	38	i							
30	CIR	Pn	12	32	23	e		BUL 12 31 35 24.0S 31.1E Phalaborwa Area, Transvaal	2.5			
		Pg	32	30	i							
		Sg	33	08	i	1.2						
	BUL	Pg	32	57	e							
		Sg	33	55	i	0.5						
	KRR	Sg	35	17	e	0.3						
30	CIR		14	20	28	e	0.2	Distant				
	BUL		20	38	e	0.2						
30	CIR		15	36	45	e	0.2	Distant				
	CLK		36	52	e	0.3						
	BUL		36	53	e	0.5						
	KRR		37	01	e	0.3						

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag			
30	CIR	P'	16	14	29	e	0.2	CGS 15 55 37 32.2S 178.1W S. of Kermadec Is.	5.2			
	BUL	P'		14	30	e	0.3					
	CLK	P'		14	32	e	0.2					
	KRR	P'		14	35	e	0.9					
	BHA	P'		14	41	e	0.2					
30	CIR	P'	16	41	28	e	0.2	CGS 16 22 48 32.3S 178.1W S. of Kermadec Is.	5.5			
		PP		43	03	e						
	BUL	P'		41	40	e	0.4					
		PP		43	12	e						
	CLK	P'		41	45	e	0.2					
		PP		43	19	e						
	KRR	P'		41	45	e	0.3					
		pP'		41	55	i						
	BHA	P'		41	53	e	0.1					
		pP'		42	08	e						
30	CLK	Pn	22	51	13	e		BUL 22 48 36 4.5S 35.7E Mt. Hanang Area	4.3			
		Sn		53	08	e						
		L		54	24	i	2.7					
	BHA	Pn		51	31	e						
		Sn		53	40	e						
		L		55	00	i	3.					
	KRR	Pn		51	50	e						
		Sn		54(20)		e						
		L		55	47	i	0.9					
	CIR	Pn		52	40	e						
		Sn		55	24	e						
		L		57	24	i	0.9					
	BUL	L		57	28	i	1.0					
	31	CLK	P	05	13	44	iR			0.8	CGS 05 01 57 50.0N 77.7E E. Kazakh S.S.R. (Underground Explosion)	6.0
		BHA	P		13	56	e			0.5		
KRR		P		14	04	iR	1.0					
BUL		P		14	21	e	0.7					
CIR		P		14	21	e	0.4					
31	BUL	Pn	17	00	55	e		BUL 16 59 21 26.5S 27.3E Witwatersrand	3.2			
		Sn		02	05	e						
		Sg		02	38	i	0.9					
	CIR	Pn		01	01	i						
		Sn		02	13	e						
		Sg		02	45	i	0.7					
	KRR	Pn		01(45)		e						
		Sn		03(25)		e						
	Sg		04	22	i	0.4						
31	CLK	P	22	09	49	e	0.2	CGS 21 59 42 36.3N 70.9E Hindu Kush Region	4.6			
	BHA	P		10	08	e	0.1					
	KRR	P		10	14	e	0.2					
	CIR	P		10	30	e	0.1					
	BUL	P		10	33	e	0.2					
31	BUL	P'	22	44	02	e	0.2	CGS 22 24 32 16.0S 172.9W Samoa Is. Region	5.2			
	KRR	P'		44	03	e	0.2					
	BHA	P'		44	05	e	0.2					

31 OCT 1969

RHODESIA METEOROLOGICAL SERVICES

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA): $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
Litho. foundation: Dolomite and shales of the Middle Katanga System.
Authority: Zambia Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- CHILEKA (CIK): $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
Litho. foundation: Charnockitic granulites of the Basement Complex.
Authority: Malawi Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- KAROI (KRR): $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
Litho. foundation: Granitic gneisses of the Zambesi type.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.
- BULAWAYO (BUL): $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
Litho foundation: Hornblend schists of the Bulawayan System.
Authority: Rhodesia Meteorological Service.
Instruments: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
WSS Station: SP magnification 100,000
LP magnification 1,500
- CHIREZI (CIR): $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
Litho foundation: Gneisses or Charnockites of the Limpopo belt.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

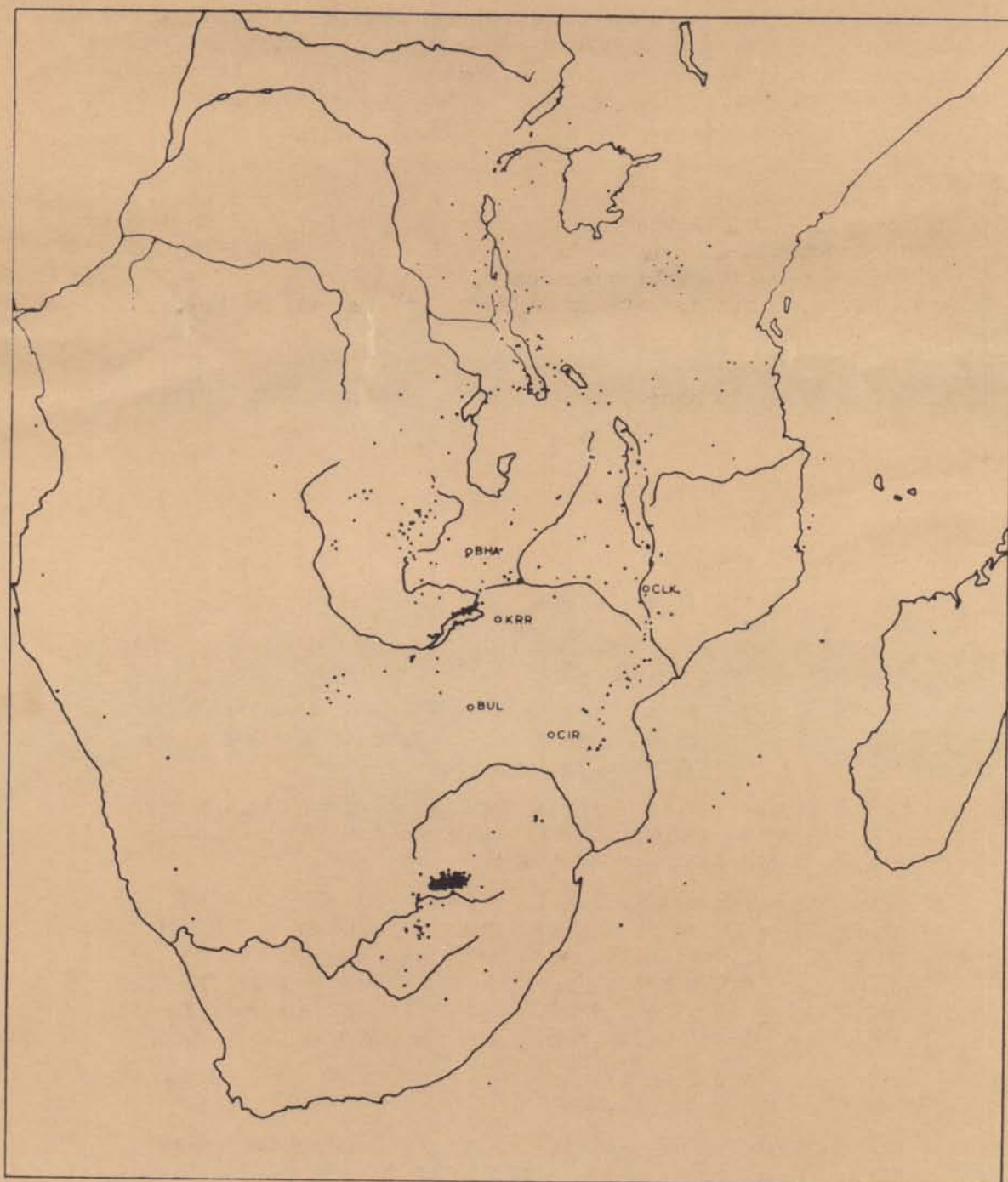
Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).



EPICENTRES OF LOCAL EARTHQUAKES: JULY 1968 TO JUNE 1969

EARTHQUAKES OF MAGNITUDE m_b 5.0 OR GREATER :

DATE	G. M. T.	LAT.	LONG.	MAG.
68 NOV 13	16 44 19	1.8 N	31.5 E	5.0
68 DEC 02	02 33 42	14.2 S	23.7 E	5.3
68 DEC 09	18 32 54	8.7 S	32.6 E	5.0
69 MAR 07	20 26 09	1.9 S	27.9 E	5.0
69 APR 14	16 45 49	5.0 S	30.1 E	5.0
69 APR 14	18 53 38	4.9 S	30.4 E	5.1
69 APR 22	21 59 11	1.9 N	31.5 E	5.0
69 JUN 08	16 52 35	5.6 S	30.6 E	5.2

SEISMOLOGICAL BULLETIN: JUN 1969 - 1

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BUL	P	00	06	36	e	0.4	CGS 23 54 17 22.8S 66.4W Jujuy Prov; Argentina.	4.6
	KRR	P		06	46	e	0.2		
	CIR	P		06	48	e	0.2		
01	CIR	P'	00	14	23	e	0.4	CGS 23 56 22 4.9S 154.2E Solomon Is.	5.5
	BUL	P'		14	28	iR	0.9		
	KRR	P'		14	29	iR	0.5		
	BHA	P'		14	33	e	0.5		
01	BHA	Pn	02	09	40	e		BUL 02 09 16 14.8S 27.1E S. Lukanga Swamp, Zambia.	2.2
		Sn		09	58	i			
		Sg		10	00	i	5.		
	KRR	Pg		10	12	e			
		Sg		10	49	e	0.6		
	BUL	Sg		12	03	e	0.2		
01	KRR	P'	02	15	50	e	0.3	CGS 01 58 03 27.5N 139.8E Bonin Is. Region.	4.9
	BHA	P'		15	51	e	0.1		
	CIR	P'		15	51	e	0.2		
	BUL	P'		15	54	e	0.5		
01	CLK	P	08	46	27	iC	0.8	CGS 08 35 22 25.8N 91.8E India-E. Pakistan Border Region.	5.0
		pP		46	33	e			
	BHA	P		46	55	iC	0.9		
		pP		47	01	i			
	KRR	P		46	56	e	0.4		
		pP		47	02	e			
	CIR	P		47	02	e	0.2		
	BUL	P		47	12	iC	0.4		
pP			47	18	e				
01	CLK	P	14	02	13	e	0.2	CGS 13 45 07 3.3N 126.6E Talaud Is.	5.3
		CIR	P		02	30	e		
		pP		02	45	e			
	KRR	P		02	37	e	0.2		
	BUL	P		02	43	e	0.4		
	BHA	P		02	43	e	0.2		
		pP		02	56	e			
01	CIR	P'	20	12	(12)	e	0.2	CGS 19 53 24 31.7S 178.2E Kermadec Is Region.	5.0
	BUL	P'		12	(15)	e	0.3		
	KRR	P'		12	15	e	0.2		
	BHA	P'		12	24	e	0.3		
02	BUL	Pn	10	09	08	iR		BUL 10 07 30 26.7S 26.7E Klerksdorp Area, Transvaal.	4.0
		Sn		10	23	i			
		Sg		10	55	i	3.3		
	CIR	Pn		09	14	e			
		Sn		10	32	e			
	KRR	Sg		11	10	i	2.6		
		Pn		09	54	e			
	BHA	Sn		11	42	e			
		L		12	47	i	2.1		
	CLK	Pn		10	23	e			
		Sn		12	36	i			
		Sg		13	46	i	1.0		
	CLK	Pn		10	37	e			
Sg			14	16	e	0.9			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
02	BUL	Pn	17	55	59	e		BUL 17 54 31 26.2S 27.9E	3.0
		Sg		57	34	e	0.8	Witwatersrand.	
	CIR	Fn		56	03	e			
		Sg		57	40	e	0.7		
	KRR	Fn		56	46	e			
		Sg		58	29	e			
			59	23	e	0.4			
02	CLK	P	18	03	03	e	0.2	CGS 17 53 05 36.3N 71.2E	4.8
	BHA	P		03	20	e	0.2	Afghanistan-U.S.S.R. Border Region.	
	KRR	P		03	27	e	0.2		
	CIR	P		03	43	e	0.1		
	BUL	P		03	48	e	0.3		
02	CLK	P'	18	37	37	e	0.1	CGS 18 26 26 4.8S 102.7E	4.7
	CIR	P'		37	37	e	0.2	S. Sumatra.	
	KRR	P'		37	47	e	0.2		
	BUL	P'		37	54	iC	0.5		
	BHA	P'		37	55	iC	0.4		
02	BUL	P'	22	50	20	e	0.2	CGS 22 31 31 15.6S 167.7E	-
	KRR	P'		50	22	e	0.2	New Hebrides Is.	
03	CLK	P	10	29	34	iC	0.4	CGS 10 19 16 6.7N 94.8E	4.5
	CIR	P		30	03	iC	0.7	Nicobar Is. Region.	
	KRR	P		30	07	iC	1.1		
	BHA	P		30	12	iC	4.3		
	BUL	P		30	18	iC	1.1		
03	BUL	Pn	14	26	22	e		BUL 14 24 53 26.2S 28.3E	3.0
		Sg		27	58	e	0.7	E. Witwatersrand.	
	CIR	Pn		26	22	e			
		Sg		27	58	e	0.7		
	KRR	L		29	42	e	0.3		
03	BHA	Pn	17	03	(27)	e		BUL 17 00 26 1.5S 29.9E	4.0
		Sn		05	40	e		Mt. Karasimbi Area, Rwanda.	
		Sg		06	57	e			
	L			07	09	i	1.0		
		CLK	Pn		04	(00)	e		
	L			08	11	e	0.7		
		CIR	Pn		04	55	e		
	L			10	40	e	0.4		
		KRR	L		08	17	e	0.4	
	BUL	L		10	00	e	0.3		
04	BHA	P	00	51	31	e	0.1	CGS 00 39 47 41.4 79.5E	4.9
	KRR	P		51	34	e	0.2	Kirgiz-Sinkiang Border Region.	
	CIR	P		51	49	e	0.2		
	BUL	P		51	50	e	0.2		
04	CIR	P'	04	57	33	e	0.2	CGS 04 38 39 32.3S 177.8W	4.7
	BUL	P'		57	33	e	0.4	S. of Kermadec Is.	
	KRR	P'		57	37	e	0.4		
	CLK	P'		57	37	e	0.2		
	BHA	P'		57	48	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
04	BHA	Pn	09	19	25	e		BUL 09 17 34 7.1S 30.4E Lake Tanganyika.	4.3
		Sn		20	41	i			
		Sg		21	26	i	8.0		
	CLK	Pn		19	53	e			
		Sn		21	36	i			
		Sg		22	34	i			
	KRR	L		22	41	i	2.7		
		Pn		19	54	e			
		Sn		21	35	i			
	BUL	Sg		22	34	i	2.5		
		Pn		20	38	e			
		Sn		22	52	e			
	CIR	L		24	25	i	1.3		
		Pn		20	48	e			
Sn			23	10	e				
	L		24	41	e	0.9			
04	CLK	P	16	54	22	e	0.5	CGS 16 41 17 7.0S 129.9E Banda Sea.	5.1
	CIR	P		54	32	e	0.4		
	KRR	P		54	42	e	0.3		
	BUL	P		54	44	e	0.2		
	BHA	P		54	50	e	0.2		
04	BHA	P	20	46	59	e	0.3	CGS 20 35 10 11.9N 43.8W N. Atlantic Ridge	4.9
		pP		47	05	e			
	BUL	P		47	06	e	0.4		
	KRR	P		47	08	e	0.4		
		pP		47	15	e			
	CIR	P		47	23	e	0.6		
04	CLK	P		47	33	e	0.3		
	BHA	Pn	22	25	16	e		BUL 22 23 29 7.3S 30.0E Lake Tanganyika.	3.5
		Sn		26	32	e			
		L		27	20	e	1.2		
	KRR	Pn		25(48)		e			
		Sn		27	25	e			
		L		28	30	i	0.5		
CLK	Sn		27	24	e				
	L		28	29	e	0.4			
	BUL	L		30	14	e	0.3		
05	CIR	Pn	08	15	25	e		BUL 08 13 56 26.4S 28.2E Witwatersrand.	3.5
		Pg		15	47	e			
		Sn		16	33	e			
		Sg		17	01	i	1.6		
	BUL	Pn		15	26	e			
		Sn		16	34	e			
		Sg		17	03	i	2.0		
	KRR	Pn		16	12	e			
	Sn		17	48	e				
05		L		18	48	i	1.0		
	CLK	P	10	56	17	e	0.6	CGS 10 45 43 4.9N 96.3E N. Sumatra.	5.3
	CIR	P		56	45	e	0.5		
	KRR	P		56	50	e	0.5		
	BHA	P		56	55	iC	6.5		
BUL	P		57	00	e	0.6			
05	BHA	P	20	51	30	iR	0.9	CGS 20 40 00 10.7N 41.0W N. Atlantic Ridge.	5.2
	BUL	P		51	38	e	0.4		
	KRR	P		51	40	iR	0.4		
	CIR	P		51	56	iR	0.8		
	CLK	P		52	06	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
05	CIR	Pn	22	19	32	e		BUL 22 17 23 29.9S 30.3E Richmond Area, Natal.	3.4	
		Sg		21	59	e	0.5			
	BUL	Pn		19	44	e		0.5		
		Sg		22	27	e				
	KRR	Pn		20	(26)	e		0.2		
L			24	11	e					
05	KRR	Pn	23	22	34	e		BUL 23 22 08 15.3S 29.9E Lower Luangwa Valley, Zambia.	2.2	
		Pg		22	38	i				
		Sg		22	54	i	3.1			
	BHA	Pg		22	36	e		1.8		
		Sg		22	57	i				
	BUL	Sg		24	43	e	0.3			
	CIR	Sg		25	07	i	0.3			
06	CIR	Pn	00	04	52	e		BUL 00 03 25 26.4S 28.4E Witwatersrand.	3.4	
		Sg		06	26	i	1.2			
	BUL	Pn		04	(55)	e		1.6		
		Sg		06	32	i				
	KRR	Pn		05	37	e		0.6		
Sg			08	09	e					
06	CIR	Pn	01	54	58	e		BUL 01 53 10 26.4S 37.0E S. Mocambique Channel.	3.1	
		Sg		56	58	e	0.4			
	BUL	Sg		58	11	e	0.3			
	KRR	Sg		59	12	e	0.2			
06	CIR	Pn	08	55	36	e		BUL 08 54 05 Witwatersrand.	3.1	
		Sg		57	13	e	0.8			
	BUL	Sg		57	13	e	0.7			
	KRR	L		58	59	e	0.3			
06	BUL	Pn	11	42	03	e		BUL 11 40 29 Witwatersrand.	3.2	
		Sg		43	46	i	0.7			
	CIR	Pn		42	(10)	e		0.5		
		Sg		43	55	e				
	KRR	Pn		42	49	e		0.5		
		Sn		44	32	e				
	Sg		45	31	e					
06	BUL	P	12	21	55	e	0.3	CGS 12 12 25 60.3S 25.3W S. Sandwich Is. Region.	5.3	
		CIR		22	00	e	0.3			
		KRR		22	19	iR	0.3			
06	BUL	P	22	38	29	e	0.7	CGS 22 25 37 22.6S 68.4W N. Chile.	5.0	
		pP		38	49	e				
	BHA	P		38	31	e	0.2			
	CIR	P		38	32	e	0.4			
		pP		38	51	e				
	KRR	P		38	33	e	0.2			
07	BUL	P	04	14	28	e	0.2	CGS 04 03 01 61.4S 62.3W Drake Passage.	5.3	
		KRR		14	48	e	0.2			
		BHA	P		14	56	e			0.2
		CLK	P		15	10	e			0.2
07	BUL	P'	05	42	55	e	0.2	CGS 05 24 11 35.4S 179.9W E. of N. Is., New Zealand.	4.7	
		pP'		43	11	e				
	KRR	P'		43	02	e	0.3			
		pP'		43	17	e				
	BHA	P'		43	05	e	0.3			
	pP'		43	20	e					
07	KRR	PP	08	46	16	e	0.2	CGS 08 27 33 2.2S 79.8W Near Coast of Ecuador.	4.5	
		BUL	PP		46	20	e			0.3

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
07	CIR	P	08	48	42	e	0.4	CGS 08 43 04 30.7S 59.5E Atlantic Indian Rise.	4.6
	CLK	P		48	44	e	0.6		
	BUL	P		49	08	iR	0.6		
	KRR	P		49	15	e	0.2		
07	BUL	P*	09	56	46	e		BUL 09 55 50 23.6S 28.3E N.W. Transvaal.	3.2
		Pg		56	52	e			
		S*		57	28	i			
		Sg		57	33	i	2.8		
	CIR	Pn		56	50	e			
		Sn		57	32	i			
		S*		57	45	i			
		Sg		57	51	i	4.4		
	KRR	Pn		57	29	e			
		Sn		58	38	e			
	Sg		59	13	e	1.2			
07	KRR	P	15	40	45	e	0.2	CGS 15 31 12 38.0N 20.1E Greece.	4.6
	BUL	P		41	07	e	0.2		
07	KRR	P	19	22	48	e	0.2	Distant.	
	BHA	P		22	49	e	0.2		
	BUL	P		23	12	e	0.2		
07	BHA	P'	23	06	(29)	e	0.1	CGS 22 47 15 52.5N 169.1W Fox Is., Aleutian Is.	5.2
		pP'		06	40	e			
	KRR	P'		06	40	e	0.3		
		pP'		06	51	i			
	BUL	P'		06	49	iC	1.5		
		pP'		07	01	i			
07	CIR	P'		06	49	iC	0.6		
		pP'		07	04	i			
08	KRR		01	04	07	e	0.2	Distant.	
	CIR			04	08	e	0.2		
				04	29	e			
	BHA			04	14	e	0.1		
	BUL			04	22	e	0.3		
08	BHA	Pn	01	04	44	e		BUL 01 02 52 6.9S 30.2E Lake Tanganyika.	3.7
		Sn		06	07	i			
		L		06	54	i	2.6		
	KRR	Pn		05	(16)	e			
		Sn		07	00	e			
		Sg		08	01	i	0.8		
	CLK	L		08	05	e	0.7		
	BUL	L		09	47	e	0.3		
	CIR	L		10	08	e	0.3		
	08	BUL	P	15	05	05	e		
CIR		P		05	12	e	0.2		
KRR		P		05	19	e	0.2		
BHA		P		05	19	e	0.2		
08	CLK	P'	15	08	23	iC	1.0	CGS 14 49 32 53.3N 159.7E Near E. Coast of Kamchatka.	5.4
		pP'		08	38	e			
	BHA	P'		08	28	iC	1.0		
		pP'		08	42	e			
	KRR	P'		08	30	e	1.2		
		pP'		08	45	e			
	CIR	P'		08	35	e	0.6		
		pP'		08	50	e			
	BUL	P'		08	36	e	0.7		
		pP'		08	51	e			
	SKP		11	55	e				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
08	BHA	Pn	15	42	12	e		BUL 15 40 03 5.9S 30.6E N. Lake Tanganyika. Area.	4.3	
		Sn		43	47	i				
		Sg		44	37	i	6.3			
	CLK	Pn		42	36	e				
		Sn		44	31	e				
		Sg		45	34	i	2.8			
	KRR	Pn		42	41	e				
		Sn		44	40	e				
		Sg		45	42	i	2.0			
	BUL	Pn		43	25	e				
		Sn		45	57	e				
		Sg		47	30	i	1.7			
	CIR	Pn		43	35	e				
		Sg		47	46	e	1.1			
08	BHA	Pn	16	54	44	e		BUL 16 52 35 5.8S 30.6E N. Lake Tanganyika.	5.2	
		Sn		56	18	i				
		Sg		57	08	i	30.			
	CLK	Pn		55	08	iR				
		Sn		57	03	i				
		S*		57	34	i				
	KRR	Sg		58	05	i	22.			
		Pn		55	13	e				
		Sn		57	13	i				
	BUL	Sg		58	15	e	14.			
		Pn		55	57	e				
				56	09	i				
		Sn		58	29	i				
				58	45	i				
	CIR	Sg		17	00	02	i			9.2
		Pn		16	56	06	e			
		Sn		58	44	e				
Sg			17	00	19	i	7.3			
08	BHA	Pn	17	19	05	e		BUL 17 16 56 5.6S 30.6E N. Lake Tanganyika	3.7	
		Sn		20	40	i				
		Sg		21	30	i	1.2			
	CLK	Pa		19	29	e				
		Sn		21	25	e				
		Sg		22	27	i	0.8			
	KRR	Pn		19	37	e				
		Sn		21	38	e				
		Sg		22	39	e	0.5			
	BUL	L		24	27	e	0.3			
	CIR	L		24	49	e	0.3			
08	KRR	Pg	17	26	13	e		BUL 17 25 53 16.5S 28.5E Kariba	2.0	
		Sg		26	27	i	2.4			
	BHA	Pg		26	31	e				
		Sg		26	56	e	1.2			
	BUL	Sg		27	45	e	0.3			
	CIR	Sg		28	34	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag			
08	BHA	Pn	19	31	54	e		BUL 19 29 46 5.7S 30.6E N. Lake Tanganyika.	3.9			
		Sn		33	28	i						
		Sg		34	18	i	2.2					
	CLK	Pn		32	18	e						
		Sn		34	13	e						
	KRR	Sg		35	15	i	1.3					
		Pn		32	22	e						
	BUL	Sn		34	19	e						
		SgSg		35	28	i	1.0					
		Pn		33(06)		e						
	CIR	Sg		37	03	e						
		L		37	12	e	0.5					
Pn			33(17)		e							
Sn			35	56	e							
08	CIR	Sg		37	26	e						
		L		37	38	i	0.4					
	CIR	P'	21	58	26	e	0.3	CGS 21 40 13 25.3S 179.6W S. of Fiji Is.	5.0			
		SKP	22	01	04	e						
	BUL	P'	21	58	30	e	0.6					
		SKP	22	01	10	e						
	KRR	P'	21	58	35	e	1.0					
		SKP	22	01	18	i						
	BHA	P'	21	58	40	e	0.4					
		SKP	22	01	27	i						
	09	CLK	P	00	40	41	e			0.2	Distant.	
			BHA		41	09	e			0.6		
KRR				41	10	e	0.3					
BUL				41	24	e	0.2					
09	BHA		07	20	50	e	0.2	Distant.				
		BUL		20	55	e	0.2					
		CIR		21	10	e	0.2					
09	BHA	P	09	43	21	e	0.3	CGS 09 35 38 7.0S 12.7W Ascension Is. Region.	4.9			
		BUL		43	30	e	0.4					
		KRR		43	32	e	0.4					
		CIR		43	52	iC	0.5					
		CLK		44	12	e	0.3					
09	CIR	P'	22	12	09	e	0.4	CGS 21 53 02 23.5S 175.0W Tonga Is. Region.	5.5			
		PP'		12	29	e						
	CLK	P'		12	12	e	0.2					
		SKP		16	08	e						
	BUL	P'		12	13	e	0.8					
		PP'		12	32	e						
	KRR	P'		12	18	e	0.8					
		PP'		12	37	e						
		SKP		16	15	e						
	BHA	P'		12	23	e	0.6					
		PP'		12	41	e						
		SKP		16	24	e						
09	CIR	Pn	22	35	22	e		BUL 22 34 41 19.5S 33.7E Manica Prov, Mocambique.	2.3			
		Pg		35	26	e						
				35	30	e						
				35	47	e						
			S*		35	54	i					
	KRR	Sg		36	00	i	1.2					
		Sn		36	39	e						
		Sg		37	03	i	1.0					
	CLK	Sg		36	40	e	0.3					
	BUL	Sg		37	09	e	0.3					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
09	BUL	P'	23	28	40	e	0.2	CGS 23 09 44 44.ON 148.9E Kurile Is.	5.1
		pP'		28	56	e			
	BHA	pP'		28	49	e	0.2		
	KRR	pP'		28	49	e	0.2		
	CIR	pP'		28	52	e	0.2		
10	CLK	Pn	02	54	53	e		BUL 02 53 45 11.1S 34.6E N. Lake Malawi.	3.5
		Pg		55	12	e			
		Sn		55	42	e			
		Sg		56	06	i	2.7		
	BHA	Fn		55	25	e			
		Sn		56	37	e			
		Sg		57	14	i	2.5		
	KRR	Pn		55	(33)	e			
		Sn		56	54	e			
		Sg		57	33	e	1.0		
	BUL	Pn		56	(18)	e			
		Sn		58	09	e			
		Sg		59	06	e			
		L		59	18	e	0.4		
	CIR	Sg		59	01	e	0.5		
10	KRR	P'	04	01	21	e	0.2	CGS 03 41 33 31.6N 116.2W Baja, California.	4.8
	BUL	P'		01	23	e	0.2		
10	CLK	P	17	28	35	e	0.2	CGS 17 15 29 13.2N 121.4E Mindoro, Philippine Is.	5.4
	CIR	P		28	48	e	0.2		
	BUL	P		29	02	e	0.2		
	KRR	P		29	(05)	e	0.2		
	BHA	P		29	05	e	0.2		
10	CLK	P	23	02	11	e	0.8	CGS 22 52 12 36.4N 70.7E Hindu Kush Region.	5.4
		pP		02	59	e			
		S		10	20	i			
	BHA	P		02	29	e	1.1		
		pP		03	17	i			
		S		10	51	e			
	KRR	P		02	37	e	1.5		
		pP		03	24	i			
	CIR	P		02	52	e	0.5		
		pP		03	39	i			
	BUL	P		02	57	e	1.2		
		PcP		03	21	i			
	pP		03	44	i				
	S		11	44	e				
10	CLK	P	23	40	50	e	2.8	CGS 23 30 54 36.3N 70.4E Hindu Kush Region.	5.2
		pP		41	43	e			
				42	03	i			
	BHA	P		41	08	iC	1.2		
				42	25	e			
	KRR	P		41	15	iC	4.0		
		pP		42	06	e			
	CIR	P		41	30	iC	1.2		
				42	35	e			
	BUL	P		41	36	iC	3.6		
		PcP		42	00	i			
	pP		42	27	i				
11	BHA	P'	01	17	30	e	0.2	CGS 00 58 10 59.6N 144.8W Gulf of Alaska.	5.3
		PP		21	05	e			
	CLK	P'		17	31	e	0.2		
	KRR	P'		17	(36)	e	0.2		
	BUL	P'		17	42	e	0.2		
	CIR	P'		17	43	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
11	BUL	P	03	45	59	e	0.4	CGS 03 36 22 55.2S 30.2W S. Sandwich Is. Region.	5.0
	CIR	P		46	05	e	0.4		
	KRR	P		46	21	e	0.3		
	BHA	P		46	31	e	0.2		
	CLK	P		46	50	e	0.2		
11	CIR	P	04	59	24	e	0.2	CGS 04 48 20 1.1N 98.8E N. Sumatra.	5.3
		pP		59	45	e			
	KRR	P		59	31	iR	0.3		
	BHA	P		59	37	iR	1.1		
		pP		59	59	e			
	BUL	P		59	40	e	0.3		
	pP		05	00	02	e			
11	BUL	P	06	59	14	e	0.4	CGS 06 51 11 2.5S 12.2W N. of Ascension Is.	5.0
	KRR	P		59	14	e	0.4		
	CIR	P		59	37	e	0.4		
	CLK	P		59	51	e	0.2		
11	CLK	P'	15	28	(53)	e	0.1	CGS 15 11 17 27.4N 139.9E Bonin Is Region.	4.8
	CIR	P'		29	02	e	0.6		
	KRR	P'		29	03	iR	0.5		
	BHA	P'		29	03	e	0.3		
	BUL	P'		29	07	iR	1.1		
12	BUL		01	40	35	e	0.2	Distant.	
	KRR			40	41	e	0.1		
12	BHA	P	15	22	15	e	1.3	CGS 15 13 31 34.4N 25.1E Crete.	5.8
		S		29	17	e			
	CLK	P		22	30	e	2.6		
		S		29	44	e			
	KRR	P		22	32	e	4.0		
	BUL	P		22	56	e	1.9		
		S		30	34	e			
	CIR	P		23	06	e	2.5		
12	BHA	P	15	27	29	e	0.6	Distant.	
	CLK	P		27	38	e	0.3		
	KRR	P		27	40	e	0.3		
	BUL	P		27	54	e	0.7		
	CIR	P		27	59	e	0.5		
12	BUL	P	15	54	14	iC	1.3	CGS 15 46 42 32.4S 14.0W S. Atlantic Ridge.	5.1
	CIR	P		54	32	iC	0.5		
	KRR	P		54	34	iC	0.6		
	BHA	P		54	37	iC	0.4		
	CLK	P		55	15	iC	0.8		
12	CLK	Pg	17	37	34	iC		BUL 17 37 13 15.8S 36.2E Zambezia Prov., Mocambique.	2.5
		Sg		37	49	i	5.5		
	KRR	Sg		40	28	e	0.2		
	CIR	Sg		40	38	e	0.2		
	BHA	Sg		41	06	e	0.2		
	BUL	Sg		41	29	e	0.2		
12	CLK	P	18	16	51	e	0.2	CGS 18 10 17 8.2N 58.3E Carlsberg Ridge.	4.8
	BHA	P		17	27	e	0.2		
	KRR	P		17	30	e	0.2		
	CIR	P		17	44	e	0.2		
	BUL	P		17	55	iC	0.9		
12	BUL	P	20	37	55	e	0.8	CGS 20 28 32 56.5S 25.3W S. Sandwich Is. Region.	5.5
	CIR	P		38	02	e	0.9		
	KRR	P		38	18	e	0.3		
	BHA	P		38	30	e	0.4		
	CLK	P		38	47	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	CLK	P'	09	07	17	iC	0.6	CGS 08 48 29 49.4N 155.5E Kurile Is. Region.	5.9
		PP		08	52	e			
	BHA	P'		07	24	iC	1.1		
	KRR	P'		07	25	iC	0.7		
	CIR	P'		07	29	iC	1.4		
	BUL	P'		07	31	iC	1.3		
		PKS		10	54	i			
13	BHA	Pn	18	39	12	e		BUL 18 37 55 10S 26E Manika Plateau, Congo.	2.7
		Sn		40	07	e			
		Sg		40	33	i	0.6		
	KRR	Pn		39	45	e			
		L		41	53	e	0.2		
	CLK	L		43	20	e	0.2		
13	BUL	Pn	18	54	24	e		BUL 18 52 50 26.5S 27.1E Witwatersrand.	3.2
		Sn		55	33	e			
		Sg		56	07	i	0.9		
	CIR	Pn		54	28	e			
		Sn		55(38)		e			
		Sg		56	13	i	0.8		
	KRR	Pn		55	10	e			
		Sn		56	53	e			
	Sg		57	54	i	0.4			
14	CLK	P	03	40	04	e	0.3	CGS 03 28 30 31.7N 94.6E Tibet.	5.3
	BHA	P		40	28	iR	0.3		
	KRR	P		40	30	iR	0.3		
	CIR	P		40	37	e	0.3		
	BUL	P		40	46	iR	0.8		
14	CIR	P'	03	41	44	e	0.5	CGS 03 22 57 7.9S 159.0E Solomon Is.	6.0
		pP'		41	59	e			
	KRR	P'		41	49	iC	2.0		
		pP'		42	05	i			
	BUL	P'		41	49	iC	1.4		
		pP'		42	05	i			
	BHA	P'		41	54	e	0.9		
		pP'		42	10	i			
14	BHA	P	03	51	28	e	0.1	Distant.	
	BUL	P		51	36	e	0.3		
	CIR	P		51	50	e	0.2		
14	CIR		09	44	32	e	0.2	CGS 09 26 11 5.6S 145.5E E. New Guinea Region.	5.2
	KRR			44	35	e	0.2		
	BUL			44	37	iC	0.3		
14	CIR	Pn	13	24	34	e	1.4	BUL 13 22 48 22.7S 39.2E Mocambique Channel.	3.7
		Sn		25	53	e			
	CLK	Pn		24	46	e	1.5		
		Sn		26	11	e			
	BUL	Pn		25	13	e	0.5		
		Sn		27	04	e			
	KRR	Pn		25	19	e	1.0		
		Sn		27	15	e			
BHA	Pn		25	55	e	0.3			
14	BHA	P	13	56	10	e	0.2	CGS 13 47 24 34.3N 25.1E Crete.	5.0
	CLK	P		56	26	e	0.4		
	KRR	P		56	28	e	0.7		
	BUL	P		56	47	e	0.4		
	CIR	P		57	00	e	0.4		
14	CLK	P	14	41	54	e	0.2	CGS 14 32 56 34.3N 25.1E Crete.	4.4
	KRR	P		41	57	e	0.2		
	BUL	P		42	20	e	0.2		
	CIR	P		42	30	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
14	CLK	P	17	54	(47)	e	0.2	CGS 17 45 20	41.4N 43.2E	4.7
	BUL	P		55	26	e	0.2	Turkey-U.S.S.R. Border Region.		
	CIR	P		55	31	e	0.2			
15	CLK	P	04	37	45	e	0.2	CGS 04 25 02	8.6S 124.0E	5.1
	CIR	P		37	56	e	0.2	Timor.		
	BUL	P		38	10	e	0.2			
		pP		38	39	e				
	KRR	P		38	11	e	0.1			
	BHA	P		38	15	e	0.2			
15	CLK	P	06	07	41	e	0.2	CGS 05 58 42	34.3N 25.2E	4.5
	KRR	P		07	45	e	0.5	Crete.		
	BUL	P		08	08	e	0.2			
	CIR	P		08	17	e	0.2			
15	CLK	P	17	07	21	e	0.2	CGS 16 56 32	4.7S 102.2E	5.3
		pP		07	37	e		S. Sumatra.		
	CIR	P		07	41	e	0.2			
		pP		07	57	e				
	KRR	P		07	51	e	0.3			
		pP		08	07	e				
	BUL	P		07	58	e	0.6			
	BHA	P		07	59	e	0.5			
	pP		08	15	e					
16	BUL	P	04	41	45	e	0.2	Distant.		
	CIR	P		41	54	e	0.2			
	KRR	P		42	12	e	0.2			
	BHA	P		42	25	e	0.2			
16	BUL	P	04	43	17	e	0.2	Distant.		
	CIR	P		43	23	e	0.2			
	KRR	P		43	42	e	0.2			
16	CLK	P	15	58	(50)	e	0.2	CGS 15 45 53	4.9S 125.7E	5.4
	CIR	P		59	06	e	0.3	Banda Sea.		
	KRR	P		59	(12)	e	0.2			
	BHA	P		59	(15)	e	0.2			
	BUL	P		59	20	e	0.4			
16	BUL	P	20	00	42	e	0.5	CGS 19 53 00	50.1S 7.0W	4.6
	CIR	P		00	49	e	0.5	S. Atlantic Ridge.		
	KRR	P		01	09	e	0.3			
	BHA	P		01	20	e	0.4			
17	CIR	P'	01	06	49	e	0.2	CGS 0C 47 59	30.8S 178.0W	4.8
	BUL	P'		06	54	iR	0.6	Kermadec Is. Region.		
	KRR	P'		06	59	iR	0.6			
	BHA	P'		07	05	e	0.3			
17	CLK	P'	19	44	45	e	1.4	CGS 19 26 29	19.0N 145.5E	5.8
	CIR	P'		44	53	iC	5.5	Mariana Is.		
	BHA	P'		44	56	iC	1.3			
		SKS		51	29	i				
		SKKS		52	57	i				
	KRR	P'		44	56	iC	8.3			
		PP		45	43	i				
	BUL	P'		44	58	iC	8.8			
17	BHA	Pn	22	04	14	e		BUL 22 02 33	12.3S 21.4E	3.1
		Sn		05	27	i		E. Angola.		
		L		06	14	e	0.6			
	KRR	Sn		06	27	e				
		L		07	34	e	0.3			
	BUL	Sn		06	47	e				
		L		07	55	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
17	CLK	P	23	34	46	e	0.8	CGS 23 24 42	43.2N 45.3E	5.1
	BHA	P		34	47	e	0.2	E. Caucasus.		
	KRR	P		35	01	e	0.7			
	BUL	P		35	22	iC	2.3			
	CIR	P		35	25	e	1.4			
18	CIR	P	00	11	27	e	1.0	CGS 23 58 10	52.6S 159.7E	6.1
	BUL	P		11	32	e	0.7	Macquarie Is. Region.		
	PP			15	19	e				
	CLK	P		11	(42)	e	0.2			
	PP			15	40	e				
	KRR	P		11	48	e	0.3			
	pP			11	56	e				
	PP			15	54	e				
	BHA	P		12	03	e	0.2			
	PP			16	10	i				
18	CIR	P	04	10	49	e	0.3	CGS 04 04 18	52.7S 20.2E	-
	BUL	P		10	53	e	0.3	South of Africa.		
	KRR	P		11	24	e	0.2			
	BHA	P		11	41	e	0.2			
	pP			11	49	e				
18	CLK	P	17	18	48	e	0.2	CGS 17 11 48	1.6N 66.7E	5.0
	pP			18	55	e		Carlsberg Ridge.		
	BHA	P		19	33	e	0.2			
	pP			19	40	e				
	BUL	P		19	49	e	0.3			
pP			19	56	e					
18	CLK	P'	20	56	(40)	e	0.1	CGS 20 43 19	0.5N 126.1E	5.3
	CIR	P'		56	44	e	0.1	Molucca Passage.		
	KRR	P'		56	45	e	0.1			
	BUL	P'		56	55	e	0.3			
	BHA	P'		56	56	e	0.3			
19	BHA	P'	00	03	35	e	0.3	CGS 23 44 11	52.6N 167.9W	5.4
	pP'			03	49	e		Fox Is., Aleutian Is.		
	CLK	P'		03	37	e	0.3			
	pP'			03	54	e				
	BUL	P'		03	48	iC	5.1			
	pP'			04	03	i				
	CIR	P'		03	48	iC	1.5			
	pP'			04	03	i				
19	CLK	Pn	00	53	43	e		BUL 00 53 01	13.9S 32.8E	3.4
	Pg			53	52	i		Fort Jameson Area, Zambia.		
	Sg			54	23	i	11.			
	BHA	Pn		54	03	e				
	P*			54	12	i				
	S*			54	53	e				
	Sg			55	05	i	5.8			
	CIR	Pn		54	45	e				
	Sn			56	00	e				
	Sg			56	39	e	1.2			
	BUL	Sn		56	05	e				
	Sg			56	43	i	1.4			
19	CIR	P'	05	06	(00)	e	0.1	CGS 04 46 27	52.7N 167.8W	4.5
	pP'			06	20	e		Fox Is., Aleutian Is.		
	BUL	P'		06	02	e	0.4			
	pP'			06	22	i				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
19	CLK	Pn	07	09	03	e		BUL 07 08 18 13.9S 32.6E Fort Jameson Area, Zambia.	2.5
		Pg		09	08	e			
		Sg		09	43	i	1.7		
	BHA	Pg		09	30	e			
		Sn		10	04	e			
		Sg		10	21	e	1.0		
		CIR	Sg		11	55	e		
	BUL	Sg		12	01	e	0.2		
19	CIR	P'	13	54	57	e	0.2	CGS 13 36 46 18.0S 178.3W Fiji Is. Region.	5.0
	BUL	P'		55	02	e	0.4		
	BHA	P'		55	02	e	0.3		
19	BUL		20	37	10	e	0.2	Distant.	
	BHA			37	12	e	0.2		
19	BHA	P'	20	44	24	e	0.1	CGS 20 25 00 54.2N 164.0W Unimak Is. Region.	5.0
	CIR	P'		44	34	iC	1.4		
	BUL	P'		44	34	iC	3.9		
19	CIR	P'	21	52	53	e	0.4	CGS 21 33 17 52.7N 167.8W Fox Is., Aleutian Is.	5.0
		pP'		53	08	i			
	BUL	P'		52	54	iR	1.1		
		pP'		53	09	i			
20	CLK	P'	02	57	07	e	0.5	CGS 02 37 51 53.2N 162.4W S. of Alaska.	5.7
		pP'		57	17	e			
		PP		03	00	10	e		
				00	24	i			
	BHA	P'	02	57	10	e	0.5		
		pP'		57	21	e			
		PP		03	00	15	e		
		SKP		00	57	i			
	BUL	P'	02	57	27	iC	5.6		
		pP'		57	40	i			
		pP' ²		57	53	i			
		PP ²		03	00	44	e		
	CIR	P'	02	57	28	iC	4.0		
pP'			57	41	i				
PP			03	00	47	e			
20	BUL	P	04	47	00	iR	0.4	CGS 04 34 17 22.1S 68.1W N. Chile.	4.3
	CIR	P		47	11	e	0.1		
20	CIR	P'	06	59	45	e	0.1	CGS 06 41 06 38.6N 141.8E Near E. Coast of Honshu, Japan.	5.4
	BUL	P'		59	48	iR	0.7		
20	BHA	Pn	13	17	27	e		BUL 13 14(28) 4.2S 35.9E N. Highlands, Tanzania.	4.2
		L		21	05	i	2.3		
	CLK	Sn		19	04	e			
		L		20	30	i	1.8		
	BUL	P		18	25	e			
		L		23	32	e	0.6		
	CIR	L		23	28	e	0.5		
	20	BHA	P'	15	56	30	e		
CIR		P'		56	33	e	0.3		
BUL		P'		56	36	e	0.4		
21	CIR	P	06	50	10	iR	0.5	CGS 06 36 43 11.3N 125.3E Samar Is., Philippine Is.	5.3
	BUL	P		50	21	iR	0.4		
21	CIR	P	08	00	54	e	0.2	CGS 07 47 24 13.3N 122.8E Luzon, Philippine Is.	5.2
	BUL	P		01	06	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
21	BUL	Pn	11	40	23	e		BUL 11 38 55	26.2S 27.9E	3.3
		Sn		41	30	e		Witwatersrand,		
		Sg		42	00	i	1.5			
	CIR	Pn		40	26	e				
		Sn		41	32	e				
		Sg		42	05	i	1.4			
21	BHA	Pn	12	17	52	e		BUL 12 16 03	6.9S 30.2E	3.8
		Sn		19	13	i		Lake Tanganyika,		
		L		20	00	i	2.5			
	CLK	Pn		18	22	e				
		Sn		20	06	e				
		L		21	11	e	1.4			
	BUL	Pn		19	12	e				
		Sn		21	25	e				
		L		23	00	i	0.4			
	CIR	Pn		19(20)		e				
		L		23	26	e	0.3			
	21	CLK	P	15	22	49	iR	1.3	CGS 15 12 10	
CIR		P		23	02	iR	2.2	Java Sea,		
BUL		P		23	21	iR	5.8			
		S		32	37	i				
BHA		P		23	24	e	3.5			
		S		32	42	i				
21	CLK	P	16	43	44	e	1.1	CGS 16 35 08	27.4N 57.5E	5.3
		pP		43	59	e		S. Iran.		
	BHA	P		44(00)		e	0.4			
	CIR	P		44	30	e	1.0			
		pP		44	43	e				
	BUL	P		44	34	e	1.0			
		pP		44	48	i				
21	BHA	Pn	20	29	27	e		BUL 20 27 27	6.6S 30.9E	4.0
		Sn		30	56	i		Katavi Swamp, Tanzania,		
		Sg		31	42	i	4.4			
	CLK	Pn		29	50	e				
		Sn		31	34	e				
		Sg		32	36	e				
	BUL	L		32	45	i	1.3			
		Pn		30	41	e				
		Sn		33	06	e				
	CIR	L		34	36	e	0.7			
		Pn		30	49	e				
		Sn		33	26	e				
		L		35	00	e	0.6			
	21	BUL	Pn	23	17	17	e		BUL 23 15 48	
Sn				18	22	e		Witwatersrand,		
Sg				18	54	e	0.6			
CIR		Pn		17	21	e				
		Sn		18	25	e				
		Sg		18	58	e	0.7			
21	CIR	Pg	23	43	45	e		BUL 23 42(37)		2.2
		Sg		44	33	i	0.5	S. Mocambique,		
	BUL	Sg		46	01	e	0.2			
22	CLK	P	01	43	48	e	0.4	CGS 01 33 24	30.6N 79.4E	5.4
		pP		43	55	e		Tibet-India Border Region,		
	BHA	P		44	11	e	0.4			
		pP		44	18	i				
	CIR	P		44	34	e	0.3			
	BUL	P		44	36	e				
	pP		44	42	i	1.3				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
22	CLK	P'	02	52	48	e	0.5	CGS 02 33 53 49.2N 158.5E Kurile Is. Region.	5.6
	BHA	P'		52	55	iC	0.4		
	CIR	P'		53	00	iC	0.4		
	BUL	P'		53	02	e	0.3		
22	BUL	Pn	09	59	24	e		BUL 09 57 52 26.4S 27.4E Witwatersrand.	2.9
		Sg	10	01	04	e	0.5		
	CIR	Pn	09	59	27	e			
		Sg	10	01	11	e	0.4		
22	BUL	P	10	57	26	e	1.0	CGS 10 47 52 55.3S 29.4W S. Sandwich Is. Region.	5.2
	CIR	P		57	33	e	1.0		
	BHA	P		57	58	e	0.3		
	CLK	P		58	16	e	0.3		
22	CLK	P'	11	04	31	e	0.3	CGS 10 45 25 51.5N 179.9W Andreanof Is., Aleutian.Is.	6.1
		pP'		04	39	iR	1.6		
		PP		07	10	i			
		SKP		08	05	i			
	BHA	P'		04	34	e	0.4		
		pP'		04	44	i	1.7		
		PP		07	17	e			
		SKP		08	10	i			
	CIR	P'		04	42	e	0.8		
		pP'		04	52	iC	2.0		
		PP		07	51	e			
	BUL	P'		04	44	e	1.4		
	pP'		04	54	iC	2.4			
			06	49	i				
22	BUL	Pn	11	58	52	e		BUL 11 57 16 26.6S 27.1E W. Witwatersrand.	3.2
		Sg	12	00	37	i	0.8		
	CIR	Pn	11	58	56	e			
		Sg	12	00	47	e	0.6		
22	BHA	pP'	14	49	30	e	0.2	CGS 14 30 11 16.9N 93.6W Chiapas, Mexico.	5.1
	BUL	pP'		49	31	e	0.2		
	CLK	pP'		49	41	e	0.2		
	CIR	pP'		49	(47)	e	0.1		
23	BUL		01	37	02	e	0.2	Distant.	
	CIR			37	(03)	e	0.1		
23	CIR	P'	06	15	(50)	e	0.1	CGS 05 57 07 37.4N 141.5E Near E. Coast of Honshu, Japan.	5.0
	BUL	P'		15	54	e	0.6		
23	BUL	P	08	03	40	e	0.2	CGS 07 54 46 0.9S 17.5W N. of Ascension Is.	4.6
	CIR	P		04	02	e	0.2		
23	BUL	Pn	13	33	52	e		BUL 13 32 19 Witwatersrand.	3.0
		Sn		35	02	e			
		Sg		35	34	e	0.6		
	CIR	Pn		33	57	e			
		Sg		35	44	e	0.6		
23	BHA	Pn	15	20	52	e		BUL 15 19 04 11.4S 21.6E E. Angola.	3.6
		Sn		22	11	e			
		Sg		22	52	e	1.5		
	BUL	Pn		21	41	e			
		Sn		23	39	e			
		L		24	49	e	0.5		
	CIR	Pn		22	16	e			
		Sn		24	36	e			
		L		26	12	e	0.3		
	CLK	L		26	10	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
23	BHA	Pn	15	36	58	e		BUL 15 36 18 16.0S 30.7E Zambesi Valley.	2.7
		Pg		37	03	i			
		Sg		37	33	i	2.4		
	CLK	F*		37	24	e			
		Sg		38	21	e	0.6		
	BUL	Sn		38	09	e			
		Sg		38	30	i	1.3		
CIR	Sn		38	20	e				
	Sg		38	44	e	1.0			
23	BUL		23	18	21	e	0.1	Distant.	
	CIR			18	35	e	0.2		
24	BUL	P'	00	53	38	e	0.3	CGS 00 35 05 11.7N 85.7W Nicaragua.	5.3
	CIR	P'		53	44	e	0.4		
	CLK	P'		53	50	e	0.3		
24	CIR	P'	03	47	40	e	0.7	CGS 03 29 17 5.8S 146.8E E. New Guinea Region.	5.6
		PKKP		58	47	e			
	BUL	P'		47	46	e	1.9		
		PKKP		58	34	e			
24	CLK	P	11	11	19	e	0.2	CGS 10 58 07 13.3N 123.0E Luzon, Philippine.Is.	5.1
	CIR	P		11	37	e	0.3		
	BUL	P		11	(45)	e	0.2		
25	CLK	P	00	21	48	e	0.2	CGS 00 08 55 13.5N 120.3E Mindoro, Philippine Is.	5.1
	CIR	P		22	08	e	0.2		
	BHA	P		22	14	e	0.2		
	BUL	P		22	31	e	0.2		
25	CLK	P	07	35	24	e	0.4	CGS 07 24 49 4.5N 96.7E N. Sumatra.	5.3
	CIR	P		35	52	iC	0.6		
	BHA	P		36	02	iC	3.1		
	BUL	P		36	07	e	0.5		
25	BUL	Pn	21	45	58	e		BUL 21 44 25 26.5S 27.2E Witwatersrand.	3.2
		Sg		47	40	i	1.1		
	CIR	Pn		46	02	e			
		Sn		47	12	e			
		Sg		47	48	e	0.8		
25	BHA	Pn	22	37	10	e		BUL 22 34 29 3.1S 29.7E Burundi.	3.9
		Sn		39	09	e			
		L		40	25	i	0.8		
	CLK	Pn		37	42	e			
		L		41	33	e	0.5		
	BUL	Pn		38	(25)	e			
		L		43	21	e	0.3		
26	CLK	Pn	11	54	53	iC		BUL 11 54 28 14.2S 35.0E S. Lake Malawi.	4.1
		Pg		54	56	i			
		Sn		55	09	i			
		Sg		55	14	i	50.		
	BHA	Pn		56	01	e			
		Pg		56	24	i			
		Sn		57	10	e			
		Sg		57	39	i	9.		
	CIR	Pn		56	18	e			
		Sn		57	37	e			
				58	10	i			
		Sg		58	19	i	3.1		
	BUL	Pn		56	28	e			
			57	11	i				
	Sn		57	56	e				
	L		58	43	i	3.8			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
26	BUL	Pn	14	27	03	e		BUL 14 25 33 26.3S 28.1E Witwatersrand.	3.6	
		Sn		28	09	e				
		Sg		28	41	i	2.7			
	CIR	Pn		27	03	e				
		Sn		28	10	e				
		Sg		28	41	i	2.2			
27	CIR	P'	02	34	33	e	0.1	CGS 02 15 46 42.4N 142.9E	4.9	
	BUL	P'		34	36	e	0.2	Hokkaido, Japan Region.		
27	CLK	P	07	22	06	e	0.4	CGS 07 15 42 9.5S 67.0E	4.9	
	CIR	P		22	42	e	0.5	Mid-Indian Rise.		
	BUL	P		23	03	e	0.8			
27	CLK	P'	08	00	19	e	0.2	CGS 07 41 22 14.7S 167.7E	5.3	
	CIR	P'		00	19	e	0.3	New Hebrides Is.		
	BUL	P'		00	22	e	0.3			
27	BUL	P	09	07	45	e	0.4	CGS 09 00 33 21.0S 11.6W	5.0	
	BHA	P		08	00	e	0.2	S. Atlantic Ridge.		
	CIR	P		08	07	e	0.6			
		pP		08	14	i				
27	CIR	P'	15	49	15	e	0.3	CGS 15 31 08 19.9S 178.3W	5.0	
		SKP		51	46	i		Fiji Is., Region.		
	CLK	P'		49	19	e	0.2			
		SKP		51	53	e				
	BUL	P'		49	19	e	0.5			
		SKP		51	54	e				
	KRR	P'		49	22	e	0.7			
		SKP		52	00	e				
	BHA	P'		49	28	e	0.2			
27	BUL		16	28	21	e	0.4	Distant.		
	CIR			28	21	e	0.2			
27	KRR	Pn	17	57	22	e		BUL 17 57 03 16.5S 28.6E Kariba.	2.6	
		Pg		57	24	i				
		Sn		57	36	i				
		Sg		57	41	i	6.2			
	BHA	Pg		57	38	e				
		Sg		58	05	i	5.3			
	BUL	Pn		57	57	e				
		Pg		58	08	e				
		Sn		58	39	e				
		Sg		58	53	i	1.2			
	CIR	P		58(20)		e				
		Sn		59	22	e				
		Sg		59	46	i	0.6			
	CLK	L	18	00	21	e	0.3			
	28	BHA	P'	04	53	32	e			0.2
KRR		P'		53	34	e	0.4	Off Coast of Central America.		
BUL		P'		53	38	e	0.3			
CLK		P'		53	44	e	0.3			
CIR		P'		53	44	e	0.3			
28	CLK	Pn	07	22	54	e		BUL 07 22 28 14.2S 35.0E S. Lake Malawi.	2.6	
		Pg		22	56	i				
		Sn		23	10	i				
		Sg		23	15	i	4.5			
	KRR	Sg		25	25	e	0.3			
	BHA	Sg		26	12	e	0.2			
	BUL	Sg		26	44	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA :	Epicentral data; Remarks	Mag	
28	BUL	Pn	12	35	47	e		BUL 12 34 12 26.5S 27.1E Witwatersrand.	3.7	
		Sn		36	57	i				
		S*		37	11	i				
			Sg		37	30	i	2.6		
	CIR	Pn		35	51	e				
		Sn		37	02	e				
		Sg		37	37	e		1.7		
	KRR	Pn		36	34	e				
		Sn		38	17	e				
Sg			39	12	e		0.8			
28	BUL	Pn	12	54	29	e		BUL 12 52 59 26.4S 28.0E Witwatersrand.	3.9	
		Pg		54	46	i				
		Sn		55	39	i				
			Sg		56	07	i	4.3		
	CIR	Pn		54	29	e				
		Pg		54	49	i				
		Sn		55	38	i				
			Sg		56	02	i			
	KRR	Pn		56	06	i		4.0		
		Sn		55	16	e				
		Sg		56	55	e				
	BHA	Pn		57	51	e		1.8		
		Sn		55	46	e				
		Sg		57	56	e				
			Sg		59	00	e	0.8		
28	CLK	Pn	13	08	57	e		BUL 13 08 30 14.2S 35.0E S. Lake Malawi.	2.7	
		Pg		09	00	i				
		Sn		09	13	i				
			Sg		09	18	i	4.7		
	KRR	Sn		11	02	e				
		Sg		11	25	e		0.4		
	BHA	Sn		11	15	e				
		Sg		11	46	e		0.4		
	CIR	Sg		12	17	e		0.3		
	BUL	Sg		12	46	e		0.2		
28	CIR	P	14	35	35	e	0.3	CGS 14 22 15 6.7N 126.6E Mindanao, Philippine Is.	5.2	
		P		35	42	e	0.1			
	BHA	P		35	47	e	0.2			
	BUL	P		35	48	e	0.4			
	CLK	P	22	41	24	e	0.2	CGS 22 32 16 32.3N 56.1E Iran.	4.7	
28	BHA	P		41	37	e	0.2			
	KRR	P		41	48	e	0.2			
	CIR	P		42	(07)	e	0.2			
	BUL	P		42	11	e	0.2			
	29	KRR	P	03	51	34	e	0.2	CGS 03 40 13 41.1N 75.8E Kirgiz, S.S.R.	5.1
P				51	52	e	0.2			
29	CIR	P	05	48	55	e	0.3	Distant.		
		P		49	10	e	0.2			
		P		49	20	e	0.2			
29	CIR	P'	08	15	19	e	0.4	CGS 07 57 11 17.7S 178.7W Fiji Is. Region.	5.1	
		SKP		17	43	e				
		PKS		18	57	e				
	CLK	P'		15	22	e	0.2			
		SKP		17	58	e				
	BUL	P'		15	24	iC	0.7			
		SKP		18	00	e				
	KRR	P'		15	17	iC				
		P'		18	28	i	1.2			
		SKP		18	07	i				
	BHA	PKS		19	20	e				
		P'		15	26	e	0.4			
		SKP		18	14	e				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
29	CIR	P'	10	52	57	iR	0.9	CGS 10 34 07 30.5S 178.2W Kermadec Is. Region.	5.6
		pP'		53	13	i			
	BUL	P'		53	00	iR	3.4		
		pP'		53	17	i			
	CLK	P'		53	02	iR	0.4		
		pP'		53	19	i			
	KRR	P'		53	06	iR	2.7		
29	BHA	P'		53	11	iR	1.5		
		pP'		53	29	i			
	BUL	P	11	02	49	e	0.2	Distant.	
	CIR	P		03	14	e	0.2		
29	CIR	P'	11	41	11	e	0.1	CGS 11 23 12 24.0S 179.7E S. of Fiji Is.	4.7
	BUL	P'		41	16	e	0.3		
	KRR	P'		41	20	e	0.4		
29	CLK	P	12	54	01	e	0.2	CGS 12 44 05 36.3N 70.6E Hindu Kush Region.	4.8
	KRR	P		54	26	e	0.6		
	CIR	P		54	38	e	0.1		
	BUL	P		54	46	e	0.3		
29	C.	P	17	22	08	iR	0.6	CGS 17 09 14 62.8S 166.3E Balleny Is. Region.	5.5
	BUL	P		22	14	e	0.3		
	CLK	P		22	26	e	0.2		
	KRR	P		22	28	e	0.2		
	BHA	P		22	40	e	0.3		
29	CIR	P	18	14	45	e	0.3	CGS 18 01 52 62.7S 166.4E Balleny Is. Region.	5.3
	BUL	P		14	52	e	0.2		
	BHA	P		15	18	e	0.2		
29	KRR	Pg	08	54	08	e	2.4	BUL 08 53 48 16.5S 28.6E Kariba.	2.0
		Sg		54	22	i			
	BHA	Pg		54	28	e			
		Sg		54	56	e	0.6		
	BUL	Pg		54	54	e			
		Sg		55	38	i	0.5		
	CIR	Sg		56	27	e	0.3		
30	CLK	P	09	03	04	e	0.4	CGS 08 51 57 26.9N 92.6E Eastern India.	5.1
	KRR	P		03	33	e	0.2		
	CIR	P		03	38	e	0.2		
	BUL	P		03	47	e	0.5		
30	KRR	Pg	10	55	28	iC		BUL 10 55 08 16.6S 28.6E Kariba.	2.7
		Sg		55	42	i	9.3		
	BHA	Pn		55	46	e			
		Pg		55	49	e			
		Sn		56	13	i	2.5		
	BUL	Pg		56	14	e			
		Sn		56	42	e			
		Sg		56	58	i	2.3		
	CIR	Pn		56	25	e			
		Sn		57	23	e			
		Sg		57	47	i	1.3		
	CLK	L		58	28	e	0.3		
30	CLK	P	18	34	00	e	0.3	CGS 18 21 37 9.3S 120.1E Sumba Is. Region.	5.2
	CIR	P		34	14	iR	0.3		
	KRR	P		34	24	e	0.3		
	BUL	P		34	27	iR	0.8		
30	CLK	P	20	18	22	e	0.2	CGS 20 12 37 34.0S 57.8E S. Indian Ocean.	4.6
	CIR	P		18	23	e	0.2		
	BUL	P		18	37	e	0.4		
	KRR	P		18	48	e	0.1		
	BHA	P		19	11	e	0.1		

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RHODESIA METEOROLOGICAL SERVICESSEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA): $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
Litho. foundation: Dolomite and shales of the Middle Katanga System.
Authority: Zambia Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- CHILFEKA (CLK): $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
Litho. foundation: Charnockitic granulites of the Basement Complex.
Authority: Malawi Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- KAROI (KRR): $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
Litho. foundation: Granitic gneisses of the Zambesi type.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.
- BULAWAYO (BUL): $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
Litho foundation: Hornblend schists of the Bulawayan System.
Authority: Rhodesia Meteorological Service.
Instruments: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
WWSS Station: SP magnification 100,000
LP magnification 1,500
- CHIREDDZI (CIR): $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
Litho foundation: Gneisses or Charnockites of the Limpopo belt.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	CLK	P	06	09	26	e	0.4	CGS 06 00 55 28.2N 55.4E S. Iran	4.8
	KRR	P		09	52	e	0.2		
	CIR	P		10	12	e	0.2		
	BUL	P		10	16	e	0.2		
01	BUL	P	07	34	09	e	0.2	CGS 07 21 46 23.8S 66.7W Jujuy Province, Argentina	4.2
	KRR	P		34	21	e	0.1		
01	BUL	Pn	13	23	48	e		BUL 13 22 21 26.1S 28.1E Witwatersrand	3.2
		Sn		24	54	e			
		Sg		25	23	i	1.0		
	CIR	Pn		23	48	e			
		Sg		25	23	i	1.0		
	KRR	Pn		24	34	e			
		Sg		27	09	e	0.5		
01	BUL	P'	18	41	35	e	0.3	CGS 18 22 53 15.9S 175.1W Tonga Is.	4.8
				41	46	e			
	KRR	P'		41	41	e	0.3		
				41	52	e			
BHA	P'		41	50	e	0.6			
01	CIR	P	21	15	30	e	0.2	CGS 21 07 31 37.5S 78.0E Mid-Indian Rise	4.9
				15	34	e	0.2		
				15	54	iC	0.5		
				16	02	e	0.2		
				16	20	e	0.2		
01	BUL	P	23	49	28	e	0.2	Distant	
				49	30	e	0.1		
				49	50	e	0.2		
02	BHA	P	00	18	03	e	0.2	CGS 00 10 28 6.8S 11.6W Ascension Is. Region	4.8
				18	09	e			
	BUL	P		18	11	e	0.7		
				18	17	e			
	KRR	P		18	14	e	0.7		
				18	20	e			
	CIR	P		18	34	e	0.6		
				18	40	e			
	CLK	P		18	53	e	0.3		
			19	00	e				
02	BHA	P	00	35	56	e	0.1	CGS 00 28 13 7.1S 12.0W Ascension Is. Region	4.8
				35	59	e	0.5		
				36	03	e	0.4		
				36	23	e	0.3		
				36	37	e			
CLK	P		36	42	e	0.2			
02	CLK	P	10	11	(20)	e	0.3	CGS 09 59 53 20.7N 99.4E Burma	5.0
				11	52	e	0.4		
				11	53	e	0.3		
				11	55	e	0.3		
				12	04	e	0.4		
02	KRR	P	16	04	57	e	0.3	CGS 15 58 01 16.7S 66.7E Mid - Indian Rise	-
				05	03	e	0.3		
				05	10	e	0.3		
02	BUL	P'	17	46	20	e	0.3	CGS 17 27 16 28.3S 176.5W Kermadec Is.	4.8
				46	(24)	e	0.2		
				46	30	e	0.2		
				46	33	e	0.2		
02	BUL	P	21	34	56	e	0.4	Distant	
				35	22	e	0.2		

JLY 1969 - 2

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
03	BUL		00	04	34	e	0.2	Distant	
	KRR			04	35	e	0.2		
03	BUL	P	04	07	38	e	0.2	Distant	
	CIR	P		07	43	e	0.2		
	KRR	P		08	04	e	0.2		
03	CIR	P	06	48	10	e	0.2	CGS 06 34 46 7.1N 126.7E Mindanao, Philippine Is.	5.0
	BUL	P		48	21	e	0.2		
03	CIR		07	21	28	e	0.2	Distant	
	KRR			21	40	e	0.3		
	BUL			21	42	iC	0.4		
03	KRR	Pg	11	52	43	iC		BUL 11 52 24 16.5S 28.6E Kariba	2.5
		Sg		52	57	i	8.		
	BHA	Pg		53	04	e			
		Sg		53	29	i	2.7		
	BUL	Pg		53	29	e			
		Sg		54	12	i	0.9		
	CIR	Pn		53	42	e			
		Sn		54	38	e			
	Sg		55	02	i	0.6			
03	BUL	Pn	15	04	26	e		BUL 15 02 52 26.6S 27.1E Witwatersrand	2.9
		Sg		06	09	e	0.5		
	CIR	Pn		04	34	e			
		Sg		06	22	e	0.4		
	KRR	Pn		05	13	e			
	Sg		07	57	e	0.3			
03	CLK	P'	18	20	57	e	0.2	CGS 18 01 49 51.7N 178.0E Rat Is., Aleutian Is.	5.1
		SKP		24	19	i			
	BHA	P'		21	02	e	0.2		
		SKP		24	26	e			
	KRR	P'		21	03	e	0.2		
		SKP		24	30	e			
	CIR	P'		21(04)		e	0.2		
		SKP		24	38	e			
	BUL	P'		21	04	e	0.2		
		SKP		24	39	e			
03	CIR	P'	19	39	58	e	0.1	CGS 19 21 08 30.4S 178.3W Kermadec Is. Region	4.5
	BUL	P'		40	02	e	0.2		
	CLK	P'		40	03	e	0.1		
	KRR	P'		40	08	e	0.4		
		pP'		40	25	e			
	BHA	P'		40	14	e	0.2		
03	BUL	Pn	21	22	03	e		BUL 21 20 30 26.4S 27.4E Witwatersrand	3.6
		Sn		23	12	e			
		Sg		23	45	i	2.2		
	CIR	Pn		22	07	e			
		Sn		23	18	e			
		Sg		23	52	i	1.4		
	KRR	Pn		22	49	e			
		Sn		24	33	i			
	Sg		25	33	i	0.8			
04	CLK	P	02	58	44	e	0.2	CGS 02 46 57 49.7N 78.2E E. Kazakh S.S.R.	5.3
	BHA	P		58	56	iC	0.3		
	KRR	P		59	03	e	0.3		
	CIR	P		59	18	e	0.2		
	BUL	P		59	21	e	0.3		

JLY 1969 - 3

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
04	CIR	SKP	07	10	02	iC	0.6	CGS 06 49 35 20.0S 178.6W	4.9
	CLK	SKP		10	09	e	0.2	Fiji Is. Region	
	BUL	SKP		10	10	e	0.3		
	KRR	SKP		10	16	e	0.3		
	BHA	SKP		10	25	e	0.2		
04	BUL		18	58	43	e	0.2	Distant	
	KRR			58	50	e	0.2		
04	CIR	P	23	06	56	e	0.4	CGS 22 54 18 55.9S 147.2E	4.9
	BUL	P		07	15	e	0.2	W. of Macquarie Is.	
	CLK	P		07	(20)	e	0.2		
	KRR	P		07	(20)	e	0.3		
	BHA	P		07	33	e	0.2		
04	KRR	Pg	23	25	54	e		BUL 23 25 38 16.5S 28.7E	2.0
		Sg		26	05	i	2.2	Kariba	
	BHA	Pg		26	14	e			
		Sg		26	39	i	1.5		
	BUL	Pg		26	43	e			
		Sg		27	30	e	0.4		
05	CLK	P	01	57	22	e	0.2	CGS 01 44 01 3.8S 131.5E	5.5
	CIR	P		57	35	iC	0.4	W. New Guinea Region	
	KRR	P		57	45	e	0.2		
	BUL	P		57	48	iC	0.3		
	BHA	P		57	52	e	0.2		
05	BUL	Pn	02	30	46	e		BUL 02 28 48 28.1S 26.6E	3.4
		Sn		32	10	e		O.F.S. Goldfields	
		Sg		32	57	e	0.7		
	CIR	Pn		30	49	e			
		Sn		32	16	e			
		Sg		33	02	e	0.7		
	KRR	Pn		31	31	e			
Sn			33	31	e				
	SgSg		34	42	e	0.4			
05	KRR	Pg	06	18	52	iC		BUL 06 18 31 16.5S 28.6E	2.1
		Sg		19	06	i	2.4	Kariba	
	BHA	Pg		19	12	e			
		Sg		19	40	i	1.0		
	BUL	Pg		19	37	e			
		Sg		20	22	e	0.5		
	CIR	Sg		21	10	e	0.4		
05	CLK	SKP	06	29	33	e	0.1	CGS 06 08 42 21.2S 178.8W	4.7
	BUL	SKP		29	34	e	0.3	Fiji Is. Region	
	KRR	SKP		29	42	e	0.2		
	BHA	SKP		29	51	e	0.2		
05	CIR	P'	11	31	31	e	0.2	CGS 11 12 44 18.6N 147.0E	5.0
		pP'		31	51	e		Mariana Is. Region	
	KRR	P'		31	33	e	0.3		
		pP'		32	00	e			
	BUL	P'		31	36	e	0.3		
05	BUL	P'	11	53	36	e	0.3	CGS 11 33 59 53.7N 162.2W	4.5
	CIR	P'		53	38	e	0.2	S. of Alaska	
05	CLK	P	17	06	58	e	0.2	CGS 16 55 46 7.6S 108.0E	5.0
	CIR	P		07	16	e	0.2	Java	
	BUL	P		07	31	e	0.4		
	KRR	P		07	(33)	e	0.1		
	BHA	P		07	35	e	0.2		

JLY 1969 - 4

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
06	CIR	P'	04	00	29	e	0.2	CGS 03 41 52 6.4S 154.9E Solomon Is.	4.6
		pP'		00	46	i			
	BUL	P'		00	34	e	0.5		
		pP'		00	51	i			
	BHA	P'		00	40	e	0.2		
		pP'		00	57	e			
06	BUL	SKP	11	11	04	e	0.3	CGS 10 50 31 25.4S 179.6E S. of Fiji Is.	4.8
	BHA	SKP	11	11	23	e	1.3		
06	CLK	Pg	11	56	17	iG		BUL 11 55 53 44.3S 35.0E S. Lake Malawi	2.6
		Sg		56	34	i	5.		
	BHA	Sg		59	17	e	0.4		
	KRR	Sg		59	38	e	0.2		
	BUL	Sg	12	00	10	e	0.2		
06	BUL	P'	14	50	(32)	e	0.2	CGS 14 31 17 15.3S 173.4W Tonga Is.	5.3
	BHA	P'		50	48	e	0.6		
07	BUL		00	59	19	e	0.2	Distant	
	CIR			59	43	e	0.3		
07	BUL	P	02	53	35	e	0.4	CGS 02 41 08 24.2S 66.9W Salta Province, Argentina	4.5
	BHA	P		53	48	e	0.2		
07	BUL	P	03	51	28	e	0.3	CGS 03 37 55 1.8S 126.4E Molucca Passage	5.1
	BHA	P		51	29	e	0.1		
07	CLK	P'	05	01	55	e	0.1	CGS 04 43 15 16.5N 147.3E Mariana Is. Region	5.5
	CIR	P'		02	03	iR	0.8		
	BUL	P'		02	08	iR	1.2		
	BHA	P'		02	08	e	0.3		
07	CIR		09	06	41	e	0.2	Distant	
	BHA			06	54	e	0.3		
				07	02	e			
	BUL			06	57	e	0.2		
07	CLK	Pn	15	54	11	e		BUL 15 52 24 11.6S 41.2E Offshore N. Mocambique	3.7
		Sn		55	25	e			
		Sg		56	08	i			
		L		56	18	i	2.2		
	BHA	Pn		55	24	e			
		Sn		57	38	e			
		L		59	04	e			
				59	13	e	0.4		
	BUL	Pn		55	52	e			
		SgSg	16	00	04	e	0.3		
08	CLK	P	04	19	45	e	0.2	CGS 04 06 40 21.N 126.6E Molucca Passage	5.5
	CIR	P		20	05	e	0.3		
	BUL	P		20	17	e	0.6		
08	BUL	P	07	28	15	e	0.4	CGS 07 19 03 56.3S 27.6W S. Sandwich Is. Region	5.1
				28	46	i			
	CIR	P		28	22	e	0.4		
				28	46	e			
	KRR	P		28	38	e	0.3		
				29	02	e			
	CLK	P		29	(04)	e	0.2		
				29	(24)	e			
08	CLK	P	08	18	45	e	1.3	CGS 08 09 17 37.6N 20.3E Ionian Sea	5.4
		SKS		28	37	e			
	KRR	P		18	46	e	1.2		
	BUL	P		19	09	iR	1.8		
	CIR	P		19	19	iR	1.5		
		pP'		19	39	i			

JLY 1969 - 5

Dy	Sta	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
08	BUL	P	14	15	29	e	0.4	CGS 14 02 46 40.3S 74.8W Off Coast of S. Chile	4.9
	KRR	P		15	44	e	0.3		
	CLK	P		15	48	e	0.2		
08	BUL	Pn	14	31	13	e		BUL 14 29 43 Witwatersrand	3.5
		Sg		32	50	e	2.1		
	CIR	Pn		31	13	e			
		Sn		32	20	e			
		Sg		32	50	i	2.2		
	KRR	Pn		32	00	e			
		Sn		33	44	e			
	Sg		34	33	e	0.8			
08	KRR	P	16	36	36	e	0.2	CGS 16 27 22 23.6N 64.4E Near Coast of W. Pakistan	5.2
	CIR	P		36	50	e	0.1		
	BUL	P		37	00	e	0.3		
08	BUL	P'	17	03	57	e	0.3	CGS 16 44 26 54.6N 163.8W Unimak Is. Region	4.3
	CIR	P'		03	59	e	0.2		
08	CIR	Pg	17	56	32	iC		BUL 17 56 06 20.2S 32.9E Rhodesia - Mocambique Border	2.2
		Sg		56	50	i	2.8		
	BUL	Sg		58	11	e	0.3		
	KRR	Sg		58	24	e	0.6		
09	BUL	P'	03	21	(47)	e	0.1	CGS 03 02 58 34.2S 178.9W S. of Kermadec Is. Region	5.1
	KRR	P'		21	53	e	0.2		
09	CIR	P	22	46	23	e	0.3	Distant	
	BUL	P		46	45	e	0.2		
	KRR	P		46	48	e	0.1		
09	CLK	P	23	04	54	e	0.4	CGS 22 52 11 8.8S 124.0E Timor	5.2
	CIR	P		05	07	e	0.2		
		pP		05	15	e			
	KRR	P		05	17	e	0.3		
		pP		05	24	e			
				05	43	e			
	BUL	P		05	20	e	0.3		
		pP		05	26	e			
			05	45	e				
09	CLK	P	23	11	53	e	0.3	Distant	
	KRR	P		12	20	e	0.2		
	BUL	P		12	35	e	0.2		
10	CIR	P	04	36	32	iR	1.5	CGS 04 31 37 39.6S 45.8E Atlantic - Indian Rise	4.6
	BUL	P		37	12	e	0.2		
	KRR	P		37	12	e	0.2		
	CLK	P		37	35	iR	1.3		
10	BUL	P	08	55	21	e	1.4	CGS 08 42 29 23.6S 69.7W N. Chile	5.4
		pP		55	39	i			
	CIR	P		55	32	e	0.5		
		pP		55	50	e			
	KRR	P		55	33	e	0.4		
	pP		55	50	i				
11	KRR	Pn	00	35	24	e		BUL 00 34 16 13.1S 26.9E Upper Kafue Catchment, Zambia	2.7
		Sn		36	12	e			
		Sg		36	36	e	0.6		
	BUL	Sg		37	57	e	0.3		
	CLK	L		38	35	e	0.2		
	CIR	L		38	56	e	0.2		

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Dy	Stn	Phase	' h m s	GM	DA	Epicentral data; Remarks	Mag
11	KRR		01 18 13	e	0.1	Distant	
	BUL		18 2	e	0.2		
11	CLK	Pn	01 49 28	e		BUL 01 47 34 9.8S 40.4E Offshore S. Tanzania	3.7
		Sn	50 54	e			
		Sg	51 35	e	1.5		
	KRR	Pn	50(33)	e			
		Sn	52 49	e	0.9		
	CIR	Pn	50 52	e			
		L	54 57	e	0.2		
	BUL	Pn	51 08	e			
	Sn	53 53	e				
	Sg	55 29	e	0.2			
11	BUL		03 01 45	e	0.2	Distant	
	CIR		01 52	e	0.2		
			02 03	e			
	KRR		02 10	e	0.3		
11	BUL	Pn	05 33 14	e		BUL 05 31 40 26.4S 27.0E Witwatersrand	3.3
		Sn	34 24	e			
		Sg	34 56	i	1.2		
	CIR	Pn	33 17	e			
		Sn	34 28	e			
		Sg	35 02	e	0.7		
11	KRR	Sn	35 41	e			
		SgSg	36 40	e	0.4		
11	CIR		07 01 41	e	0.2	Distant	
	BUL		01(54)	e	0.2		
11	BUL	P'	08 09 44	e	0.3	CGS 07 51 04 10.3N 85.4W Costa Rica	5.0
	KRR	P'	09 49	e	0.5		
	CIR	P'	09 50	e	0.2		
11	CLK		21 00 03	e	0.3	Distant	
	CIR		00(03)	e	0.2		
	BUL		00 23	e	0.2		
	BHA		00(52)	e	0.1		
12	BUL	Pn	01 17 47	e		BUL 01 16 12 26.6S 27.2E Witwatersrand	3.4
		Sn	18 57	e			
		Sg	19 30	e	1.4		
	CIR	Pn	17 51	e			
		Sn	19 02	e			
		Sg	19 35	e	0.8		
	KRR	Pn	18 35	e			
		Sn	20 15	e			
	Sg	21 13	e	0.4			
12	BHA	P	03 15 48	e	0.1	CGS 03 05 45 44.8N 37.1E W. Caucasus	4.4
	KRR	P	16 02	e	0.2		
	BUL	P	16 24	iC	0.9		
	CIR	P	16 27	iC	0.6		
12	CLK	P	06 04 18	iR	2.0	CGS 05 57 11 6.0S 71.4E Chagos Archipelago Region	5.3
	CIR	P	04 55	iR	1.4		
	KRR	P	05 01	iR	1.3		
	BHA	P	05 09	iR	1.7		
	BUL	P	05 15	iR	1.3		
12	BUL	SKP	06 13 25	e	0.3	CGS 05 52 49 22.8S 179.5W S. of Fiji Is.	4.5
	KRR	SKP	13 33	e	0.2		
	BHA	SKP	13 42	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
12	CIR	Pn	11	15(46)		e		BUL 11 14 39 17.9S 34.9E N. Manica Province, Mocambique	3.2	
		Pg		16	00	i				
		Sn		16	35	e				
		Sg		16	56	i	1.0			
	KRR	Pn		15	54	e				
		Sn		16	51	i				
		Sg		17	18	i	3.0			
	BHL	Sg		17	54	e	1.1			
BHA	Sg		18	22	e	0.6				
12	CIR	P	11	56	36	e	0.3	CGS 11 44 12 7.9S 117.8E Bali Sea	5.1	
		KRR	P		56	47	iC			0.3
		BUL	P		56	50	iC			0.7
		BHA	P		56	55	iC			0.4
12	BUL	Pn	12	41	10	e		BUL 12 39 36 26.5S 27.2E Witwatersrand	2.9	
		Sg		42	53	e	0.6			
	CIR	Pn		41(16)		e				
		Sg		43	00	e	0.3			
12	BHA	P'	13	19	37	e	0.5	CGS 13 00 37 46.5N 153.3E Kurile Is.	5.3	
		KRR	P'		19	38	e			0.5
		CIR	P'		19	41	e			0.4
		BUL	P'		19	44	e			0.6
12	CIR	P'	13	34	44	e	0.2	CGS 13 16 55 26.1S 178.3E s. of Fiji Is.	5.0	
		pP'		34	54	e				
		PP		34	50	e				
		PKKP		44	38	e				
	BUL	P'		34	50	e	0.4			
		pP'		35	00	e				
		SKP		37	19	e				
		PKKP		44	29	e				
	KRR	P'		34	54	e	0.5			
		SKP		37	27	i				
		PKKP		44	21	e				
	BHA	P'		35	01	e	0.3			
SKP			37	39	i					
PKKP			44	13	e					
12	KRR	P'	19	35(20)		e	0.1	CGS 19 16 32 39.7N 143.5E Off E. Coast of Honshu, Japan	5.2	
	BUL	P'		35	24	e	0.2			
12	BUL	P	22	52	05	e	0.3	Distant		
		KRR	P		52	22	e			0.1
		CIR	P		52	28	e			0.6
12	BUL	Pn	23	52	02	e		BUL 23 52 28 26.4S 27.2E Witwatersrand	3.6	
		Sn		53	13	e				
		Sg		53	44	i	1.7			
		CIR	Pn		52	06	e			
	KRR	Sn		53	18	e				
		Sg		53	51	e	1.3			
		Pn		52	48	e				
		Sn		54	30	e				
	BHA	SgSg		55	32	e	0.8			
		Pn		53	17	e				
		Sn		55	27	e				
		Sg		56	36	e	0.4			
13	CIR	P'	00	31	09	e	0.2	CGS 00 11 36 53.2N 167.5W Fox Is. Aleutian Is.	4.5	
	BUL	P'		31	10	e	0.9			
13	BUL	P	01	35	10	e	0.2	Distant		
		CIR	P		35	34	e			0.3

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
13	BUL	Pn	02	29	00	e		BUL 02 27 31	3.4
		Sg		30	36	i	1.6	Witwatersrand	
	CIR	Pn		29	01	e			
		Sg		30	38	e	1.1		
	KRR	Pn		29	43	e			
		SgSg		32	16	e	0.5		
13	BUL	Pn	03	00	40	e		BUL 02 59 10 26.4S 28.1E	3.2
		Sn		01	47	e		Witwatersrand	
		Sg		02	17	e	1.0		
	CIR	Pn		00	40	e			
		Sg		02	16	e	1.2		
	KRR	Pn		01	27	e			
		Sg		04	02	e	0.7		
13	KRR		10	03	40	e	0.1	Distant	
	BUL			03	42	e	0.2		
14	KRR	P	05	06	37	e	0.2	CGS 04 54 59 6.5S 107.3E	-
	BUL	P		06	43	e	0.2	Java	
		PcP		07	01	e			
14	KRR	Pg	12	00	30	iC		BUL 12 00 09 16.5S 28.4E	2.4
		Sg		00	45	i	6.7	Kariba	
	BHA	Pg		00	51	e			
		Sg		01	18	e	1.4		
	BUL	Pg		01	14	e			
		Sg		01	57	e	1.0		
	CIR	Sn		02	25	e			
		Sg		02	48	e	0.6		
14	CIR	P'	14	37	44	e	0.1	CGS 14 19 46 23.3S 179.8E	4.7
	BUL	P'		37	48	e	0.2	S. of Fiji Is. Region	
		SKP		40	21	e			
	KRR	P'		37	52	e	0.3		
		SKP		40	27	e			
15	BUL	Pn	11	43	39	e		BUL 11 42 04 26.5S 27.4E	3.3
		Sn		44	48	e		Witwatersrand	
		S*		45	04	i			
		Sg		45	21	i	1.1		
	CIR	Pn		43	43	e			
		Sg		45	26	e	0.7		
	KRR	Pn		44	25	e			
		Sn		46	10	e			
		Sg		47	04	e	0.4		
15	KRR	Pn	12	58	46	e		BUL 12 55 26 3.0S 33.6E	4.0
		Sn	13	01	05	e		S. of Lake Victoria	
		Sg		02	30	e	0.7		
	BUL	Pn	12	59	(20)	e			
		Sn	13	02	26	e			
		L		04	28	e	0.3		
	BHA	Sn		00	22	e			
		Sg		01	37	i	1.7		
	CLK	Sg		01	44	e	0.6		
	CIR	L		04	(30)	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
15	BHA	Pn	16	37	41	e		BUL 16 33 30 3.4N 32.1E	4.7
		L		43	03	i	2.5	N. Uganda	
	CLK	Pn		37	55	e			
		L		43	35	i	2.2		
	KRR	Pn		38	04	e			
		L		43	59	e	0.6		
	BUL	Pn		38	42	e			
		L		45	42	i	0.7		
	CIR	Pn		38	47	e			
		L		46	08	e	1.0		
15	BHA	P	20	42	03	e	0.2	CGS 20 30 03 14.5N 45.1W	4.4
	KRR	P		42	11	e	0.3	N. Atlantic Ridge	
	BUL	P		42	11	e	0.2		
	CIR	P		42	27	e	0.1		
15	CIR	P'	21	31	23	e	0.1	CGS 21 12 33 30.4S 178.0W	4.3
	BUL	P'		31	26	e	0.3	Kermadec Is. Region	
	KRR	P'		31	32	e	0.3		
	BHA	P'		31	38	e	0.2		
15	BHA	P	21	47	46	e	0.2	CGS 21 35 47 14.5N 45.1W	4.7
	KRR	P		47	55	e	0.3	N. Atlantic Ridge	
	BUL	P		47	56	e	0.2		
	CIR	P		48	11	e	0.2		
16	CLK	P	05	00	43	e	0.2	CGS 04 47 37 5.3N 126.8E	5.4
	CIR	P		01	00	e	0.4	Mindanao, Philippine Is.	
	KRR	P		01	07	e	0.3		
	BHA	P		01	11	e	0.2		
	BUL	P		01	13	e	0.5		
16	CLK	P	05	28	22	e	0.3	CGS 05 22 13 17.6S 66.3E	5.1
	CIR	P		28	48	e	0.3	Mascarene Is. Region	
	KRR	P		29	03	e	0.5		
		pP		29	15	e			
	BUL	P		29	12	e	0.5		
		pP		29	22	e			
16	CLK	P'	08	35	43	iC	1.8	CGS 08 16 53 52.2N 159.0E	5.8
		pP'		36	05	e		Off E. Coast of Kamchatka	
	BHA	P'		35	49	iC	1.4		
	KRR	P'		35	50	e	1.5		
		pP'		36	12	e			
	CIR	P'		35	55	iC	2.3		
		pP'		36	15	i			
		SKP		39	15	i			
	BUL	P'		35	58	iC	2.0		
	SKP		39	18	i				
16	KRR	Pg	11	24	56	iR		BUL 11 24 24 15.2S 30.4E	2.8
		Sg		25	18	i	7.2	Lower Iuangua Valley	
	BHA	Pg		25	00	i			
		Sg		25	25	i	5.		
	BUL	Pn		25	40	e			
		Sn		26	37	e			
		Sg		27	02	e	0.6		
	CIR	Pn		25	53	e			
		Sn		26	56	e			
		Sg		27	27	i	1.0		
CLK	Sg		26	42	i	1.7			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
16	CIR	P'	12	58	04	e	0.4	CGS 12 39 26 4.7S 153.1E New Ireland	4.6
		pP'		58	18	e			
	KRR	P'		58	10	e	0.9		
		pP'		58	28	e			
	BUL	P'		58	10	iC	1.4		
		pP'		58	28	i			
16	BHA	P'		58	15	iC	0.4		
		pP'		58	32	i			
	BHA	Pn	13	08	35	e		BUL 13 05 36 01.7S 26.7E	4.1
		Sn		10	50	e		Kivu Province, Congo	
		Sg		12	03	i	2.0		
	KRR	Pn		09	08	e			
	Sn		11(53)		e				
	Sg		13	21	i	0.6			
16	BUL	Pn		09	54	e			
		Sg		15	02	e	0.4		
	CIR	Pn		10	06	e			
16		Sn		13(40)		e			
		Sg		15	38	e	0.4		
	KRR	P	13	22	04	e	0.2	CGS 13 02 30 37.1N 116.1W	4.7
BUL	P		22	08	e	0.2	S. Nevada		
CIR	P		22	17	e	0.2			
16	BHA	P'	15	14	30	e	0.2	CGS 14 55 00 37.1N 116.6W	5.6
	KRR	P'		14	34	iR	0.6	S. Nevada	
	BUL	P'		14	39	iC	1.5		
	CLK	P'		14	43	e	0.8		
	CIR	P'		14	46	e	0.7		
16	BUL		19	21	32	e	0.3	Distant	
16	BUL	P	22	06	45	iC	0.6	CGS 21 59 20 32.2S 13.1W	4.9
	CIR	P		07	03	iC	0.4	S. Atlantic Ridge	
	KRR	P		07	04	iC	0.3		
	BHA	P		07	08	iC	0.3		
	CLK	P		07	45	e	0.2		
16	BUL	P	23	08	35	e	0.5	CGS 22 59 09 59.2S 25.3W	4.8
	CIR	P		08	39	e	0.7	S. Sandwich Is. Region	
		pP		08	47	i			
	KRR	P		08	59	e	0.6		
		pP		09	11	i			
	BHA	P		09	17	e	0.2		
17	KRR	P'	04	23	01	e	0.2	CGS 04 03 36 51.4N 179.9W	4.9
	BUL	P'		23	02	e	0.1	Andreanof Is. Aleutian Is.	
17	CIR		20	41	54	e	0.1	Distant	
	KRR			41	55	e	0.2		
	BHA			41	58	e	0.3		
17	CLK	P'	21	10	47	e	0.2	CGS 20 51 37 64.1N 147.6W	4.9
	KRR	P'		10	50	e	0.2	Central Alaska	
	BUL	P'		10	55	e	0.2		
17	BUL	P	21	20	48	e	0.2	CGS 21 11 15 59.3S 26.5W	-
	CIR	P		20	53	e	0.2	S. Sandwich Is. Region	
	KRR	P		21	12	e	0.2		
18	BHA	P	00	13	05	e	0.2	CGS 00 00 47 29.7N 42.9W	5.0
	KRR	P		13	17	e	0.2	N. Atlantic Ridge	
	BUL	P		13	22	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
18	BHA	P	05	38	31	e	2.5	CGS 05 24 48 38.3N 119.4E N. E. China	6.2
		PP		42	38	e			
	KRR	P		38	31	e	0.4		
	CIR	P		38	36	e	0.6		
		PP		42	(55)	e			
	BUL	P		38	40	e	0.8		
		pP		38	53	e			
18	BUL	Pn	14	01	16	e		BUL 13 59 40 26.6S 27.1E Witwatersrand	4.0
		Sn		02	27	i			
		Sg		03	00	i	4.2		
	CIR	Pn		01	20	e			
		Sn		02	35	e			
		Sg		03	(10)	e			
	KRR	Pn		02	01	e			
		Sn		03	46	i			
		Sg		04	44	i	2.7		
	BHA	Pn		02	32	e			
		Sn		04	40	e			
		Sg		05	54	e	1.0		
	CLK	Pn		02	42	e			
		Sg		06	14	i	1.1		
18	BUL	P	14	23	27	iR	1.5	CGS 14 13 55 60.5S 26.0W S. Sandwich Is. Region	5.7
		pP		23	44	i			
	CIR	P		23	32	iR	1.2		
	KRR	P		23	50	iR	1.4		
	BHA	P		24	02	iR	0.6		
	CLK	P		24	15	e	0.3		
18	BUL	P	15	31	41	iR	0.3	CGS 15 18 59 38.5S 73.6W Near Coast of Central Chile	4.4
	CIR	P		31	49	e	0.4		
	BHA	P		31	58	e	0.2		
18	CIR		17	51	07	e	0.1	Distant	
	BUL			51	11	e	0.2		
18	BHA	Pn	21	39	27	e		BUL 21 37 56 8.5S 29.9E Mweru Swamp	4.5
		Sn		40	31	i	12.		
	KRR	Pn		39	57	e			
		Sn		41	25	i			
		L		42	19	i	7.8		
	CLK	Pn		40	03	e			
				40	13	i			
		Sn		41	35	i			
		L		42	35	i	8.0		
	BUL	Pn		40	40	e			
		Sn		42	41	i			
		L		44	02	i	3.6		
	CIR	Pn		40	53	e			
		Sn		43	04	i			
	L		44	34	i	2.7			
18	BUL	P	23	29	50	iC	2.1	CGS 23 17 11 18.2S 63.3W Bolivia	5.6
		pP		29	56	i			
	BHA	P		29	59	iC	0.4		
	KRR	P		30	00	iC	0.7		
	CIR	P		30	01	iC	0.8		
	CLK	P		30	25	iC	0.5		
18	BUL	P	23	57	23	e	0.2	CGS 23 44 45 18.2S 63.2W Bolivia	4.6
	KRR	P		57	(33)	e	0.1		
	BHA	P		57	37	e	0.1		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
19	BUL	P	05	08	09	iC	2.2	CGS 04 54 54 17.3S 72.5W Near Coast of Peru	5.9	
		pP		08	27	i				
		FP		11	48	i				
					25(21)	e				
	BHA	P		08	17	iC	0.5			
					25	21	e			
	KRR	P		08	18	e	0.5			
		pP		08	34	e				
	CIR	P		08	19	iC	0.6			
		pP		08	36	e				
				25(21)	e					
19	CIR	P'	05	29	38	e	0.4	CGS 05 11 43 21.5S 179.5W Fiji Is. Region	5.0	
		SKP		32	03	i				
	BUL	P'		29	43	iR	1.1			
	KRR	P'		29	47	e	1.6			
		SKP		32	18	i				
	BHA	P'		29	54	e	0.8			
	SKP		32	28	i					
19	KRR	Pg	05	43	41	iC	10.	BUL 05 43 16 15.5S 29.9E Lower Luangwa Valley	3.0	
		Sg		43	58	i				
	BHA	Pg		43	46	e				
		Sg		44	08	i	6.			
	CIR	Pn		44	38	e				
		Sn		45	40	e				
		Sg		46	10	i	1.6			
	BUL	Sn		45	20	e				
		Sg		45	46	i	1.0			
	19	BUL	P	09	12	33	e	0.5	CGS 09 03 06 59.2S 25.1W S. Sandwich Is. Region	4.7
CIR		P		12	38	e	0.4			
KRR		P		12	56	iC	0.5			
19	BUL	P'	20	07	39	e	0.1	CGS 19 48 50 14.6N 92.7W Near Coast of Chipas, Mexico	4.8	
	BHA	P'		07	39	e	0.2			
	KRR	P'		07	41	e	0.2			
19	CIR	Pg	21	07	39	iC	11.	BUL 21 07 16 21.1S 32.9E Manica Province, Mocambique	3.5	
		Sg		07	55	i				
	BUL	Pn		08	20	e				
		Pg		08	31	i				
		Sn		09	05	i				
		Sg		09	22	i	4.4			
		Sg		09	57	e	4.3			
	KRR	Pn		08	34	e				
		Sn		09	31	e				
		Sg		09	57	e	4.3			
	CLK	Pn		08	42	e				
		Sn		09	42	i				
		Sg		10	11	i	3.3			
	BHA	Pn		09	09	e				
		Sn		10	30	e				
Sg			11	20	e	1.2				
19	CIR	Pg	22	15	46	iC	4.7	BUL 22 15 23 21.1S 32.9E Manica Province, Mocambique	2.9	
		Sg		16	02	i				
	BUL	Pg		16	36	e				
		Sg		17	28	e	1.0			
	KRR	Sg		18	04	e	1.1			
	CLK	Sg		18	19	e	0.7			
	BHA	Sg		19	21	e	0.3			
	20	CIR	Pg	06	20	44	iC	3.3	BUL 06 20 22 21.1S 32.9E Manica Province, Mocambique	2.6
			Sg		21	00	i			
		BUL	Sg		22	26	i	0.5		
KRR		Sn		22	34	e				
		Sg		22	58	e	0.6			
CLK	Sg		23	17	e	0.3				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
20	CLK	P	07	17	51	e	0.3	CGS 07 07 51 36.5N 71.1E Afghanistan - U.S.S.R. Border Region	4.9
	BHA	P		18	08	iC	0.3		
	KRR	P		18	16	iR	0.5		
	BUL	P		18	36	iC	0.6		
20	BUL	P	10	12	48	e	0.1	CGS 10 00 14 30.1S 69.6W Chile - Argentina Border Region	3.9
		pP		13	19	e			
	KRR	P		13	01	e	0.2		
		pP		13	31	e			
20	BUL	P	12	25	21	e	0.4	CGS 12 13 43 60.0S 65.3W Drake Passage	5.1
	CIR	P		25	27	e	0.5		
20	BHA	P	16	01	09	e	0.1	CGS 15 51 54 37.9N 20.2E Ionian Sea	4.7
	KRR	P		01	27	e	0.2		
	BUL	P		01	48	e	0.3		
	CIR	P		01	59	e	0.2		
20	CIR	Pn	16	29	00	e		BUL 16 27 30 23.6S 37.7E Offshore S. Mocambique	3.7
		Sn		30	06	e	0.8		
	BUL	Pn		29	39	e			
		Sn		31	15	e	0.4		
	KRR	Pn		29	53	e			
		Sn		31	39	e	0.5		
	BHA	Pn		30	26	e			
	Sn		32(36)		e	0.3			
20	CIR	Fg	17	45	56	e		BUL 17 45 06 19.4S 34.1E Manica Province, Mocambique	2.9
		Sg		46	31	i	2.3		
	KRR	P*		46	28	e			
		Sn		47	14	e			
		Sg		47	41	i	1.5		
	BUL	Sg		47	44	e	0.9		
	BHA			48	14	e			
	Sg		48	46	e	0.3			
20	CIR	Pn	19	24	12	e		BUL 19 22 40 23.6S 37.7E Offshore S. Mocambique	3.7
		Sn		25	19	e	0.8		
	BUL	Pn		24	50	e			
		Sn		26	26	e	0.4		
	KRR	Pn		25	05	e			
		Sn		26	50	e	0.7		
	BHA	Pn		25	39	e			
	Sn		27	51	e	0.2			
20	CIR	Pn	20	10	42	iC		BUL 20 09 11 23.6S 37.7E Offshore S. Mocambique	4.0
		Sn		11	48	i	2.6		
	BUL	Pn		11	21	e			
		Sn		12	56	i	1.1		
	KRR	Pn		11	34	e			
		Sn		13	21	i	1.8		
	BHA	Pn		12	06	e			
	Sn		14	18	i	0.9			
20	CIR	P'	20	23	23	e	0.2	CGS 20 04 47 15.6S 167.8E New Hebrides Is.	5.3
	BUL	P'		23	27	e	0.3		
	KRR	P'		23	30	e	0.3		
	BHA	P'		23	36	e	0.3		
		SKP		26	39	i			
20	CIR	Pn	20	33	28	e		BUL 20 31 55 23.6S 37.8E Offshore S. Mocambique	3.7
		Sn		34	35	e	0.8		
	BUL	Pn		34	06	e			
		Sn		35	43	e	0.4		
	KRR	Pn		34	20	e			
		Sn		36	06	e	0.6		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
20	CIR	Pn	20	53	33	iC		BUL 20 52 00 23.6S 37.8E	4.1	
		Sn		54	40	i	2.8	Offshore S. Mocambique		
	BUL	Pn		54	11	e				
		Sn		55	47	i	1.2			
	KRR	Pn		54	25	e				
		Sn		56	10	i	2.0			
BHA	Pn		54	59	e					
	Sn		57	12	e	0.8				
20	CIR	Pn	21	19	33	e		BUL 21 18 00 23.6S 37.7E	3.5	
		Sn		20	39	i	0.6	Offshore S. Mocambique		
	KRR	Pn		20	25	e				
		Sn		22	10	e	0.4			
	BUL	Sn		21	45	e	0.3			
20	BHA	P	22	46	(29)	e	0.1	CGS 22 37 30 28.2N 57.3E	4.9	
		pP		46	41	e		S. Iran		
	KRR	P		46	37	e	0.4			
		pP		46	51	e				
	BUL	P		47	09	e	0.3			
	CIR	P		47	(10)	e	0.2			
21	CIR	Pn	02	19	59	e		BUL 02 18 28 23.6S 37.7E	3.7	
		Sn		21	06	i	1.1	Offshore S. Mocambique		
	BUL	Pn		20	37	e				
		Sn		22	13	e	0.4			
	KRR	Pn		20	51	e				
Sn		22	37	e	0.7					
21	BHA	P	07	22	(33)	e	0.1	CGS 07 10 18 21.0N 45.7W	4.7	
		KRR	P		22	44	e	0.4		N. Atlantic Ridge
		BUL	P		22	(50)	e	0.2		
21	CIR	Pn	07	50	22	e		BUL 07 48 51 23.6S 37.7E	4.1	
		Sn		51	29	i	3.0	Offshore S. Mocambique		
	BUL	Pn		50	59	e				
		Sn		52	37	i	1.3			
	KRR	Pn		51	14	e				
Sn		53	00	i	2.0					
21	CIR	Pn	08	46	42	e		BUL 08 45 11 23.6S 37.7E	3.6	
		Sn		47	(50)	e	1.3	Offshore S. Mocambique		
	BUL	Pn		47	22	e				
		Sn		48	58	e	0.6			
	KRR	Pn		47	35	e				
Sn		49	22	i	0.6					
21	BUL	Pn	09	41	07	e		BUL 09 39 34 26.5S 27.7E	3.1	
		Sn		42	17	e		Witwatersrand		
		S*		42	30	e				
		Sg		42	48	e				
	CIR	Sn		42	23	e				
		Sg		42	54	i	0.6			
	KRR	Sn		43	36	e				
		Sg		44	31	e	0.4			
21	CIR	P	10	43	50	iC	0.4	CGS 10 35 49 35.3S 78.6E	5.2	
		BUL	P		44	14	iC	1.1		Mid - Indian Rise
		KRR	P		44	20	e	0.4		
21	CIR	Pn	11	59	24	e		BUL 11 57 51 23.6S 37.8E	3.6	
		Sn		12	00	32	i	0.7		Offshore S. Mocambique
	BUL	Pn		00	02	e				
		Sn		01	38	e	0.5			
	KRR	Pn		00	16	e				
Sn		02	03	e	0.6					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
21	CIR	P	22	19	51	iR	1.2	CGS 22 06 57 2.9N 124.7E Celebes Sea	5.6	
	KRR	P		19	58	iR	0.4			
	BHA	P		20	04	iR	0.5			
	BUL	P		20	04	iR	1.9			
22	BUL	P'	11	10	51	e	0.2	CGS 10 52 41 18.3S 177.7W Fiji Is. Region	4.5	
	KRR	P'		10	56	e	0.2			
22	BUL	Pn	12	47	28	e		BUL 12 45 54 26.5S 27.4E Witwatersrand	3.6	
		Sn		48	37	e				
		Sg		49	11	i	2.3			
	CIR	Pn		47	30	e				
		Sn		48	40	e				
		Sg		49	13	i	1.6			
	KRR	Pn		48	15	e				
		Sn		49	58	i				
		Sg		50	54	e	0.8			
22	CIR	P'	17	32	58	iC	1.7	CGS 17 14 13 11.8S 166.5E Santa Cruz Is.	5.4	
	BUL	P'		33	02	iC	3.5			
	KRR	P'		33	05	iC	2.7			
	BHA	P'		33	10	iC	2.5			
22	CIR	P'	20	14	19	e	0.2	CGS 19 55 37 26.1S 177.5W S. of Fiji Is.	5.1	
	BUL	P'		14	21	e	0.7			
	KRR	P'		14	27	iR	0.7			
		SKP		17	36	e				
	BHA	P'		14	33	iC	0.5			
23	CIR	P	02	51	36	e	0.2	Distant		
	BUL	P		51	54	e	0.3			
23	BHA	P	02	58	57	iC	0.5	CGS 02 46 58 49.9N 78.3E E. Kazakh S.S.R.	5.5	
	KRR	P		59	05	iC	0.6			
		PP		03	02	04	e			
	CIR	P		02	59	20	e			0.3
	BUL	P		59	21	iC	0.7			
23	BHA		03	03	36	iC	0.3	Distant		
	KRR			03	37	e	0.2			
	BUL			03	51	e	0.2			
23	CIR	P'	08	19	51	iR	0.6	CGS 08 01 51 23.7S 179.2E S. of Fiji Is.	5.0	
	BUL	P'		19	54	iR	0.8			
	KRR	P'		20	00	iR	0.9			
		SKP		22	34	i				
23	CIR	P'	13	33	10	e	0.2	CGS 13 14 35 37.3N 141.5E Near E. Coast of Honshu, Japan	5.2	
	KRR	P'		33	17	e	0.2			
	BUL	P'		33	22	e	0.4			
23	BUL	Pn	13	53	05	e		BUL 13 51 22 W. Witwatersrand	3.2	
		Sg		54	58	e	0.5			
	CIR	Pn		53	09	e				
		Sn		54	30	e				
		Sg		55	07	e	0.4			
	KRR	Pn		53	50	e				
		SgSg		56	44	e	0.4			
23	CIR	Pn	15	43	32	e		BUL 15 42 03 23.4S 37.6E Offshore S. Mocambique	3.5	
		Sn		44	37	i				
		L		45	13	i	0.6			
	CLK	Pn		43	59	e				
		Sn		45	25	e	0.7			
	BUL	Pn		44(12)		e				
		Sn		45	48	e				
		L		46	44	e	0.3			
	KRR	Pn		44	25	e				
		Sn		46	10	e	0.4			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
24	BUL	P	03	13	08	e	0.4	CGS 02 59 21 11.9S 75.1W	5.9
	CIR	P		13	19	e	0.2	Peru	
24	CLK	P	05	16	32	e	0.3	CGS 05 03 27 1.6N 126.5E	5.4
	CIR	P		16	48	e	0.3	Molucca Passage	
		PF		20	36	e			
	KRR	P		16	56	e	0.3		
	BUL	P		17	05	e	0.5		
24	BUL	P	12	10	57	iC	0.5	CGS 11 58 29 24.3S 67.1W	4.1
	KRR	P		11	08	e	0.3	Chile - Argentina Border Region	
24	CIR	P	12	46	57	iC	6.2	CGS 12 41 40 45.4S 35.0E	5.7
				51	36	e		Prince Edward Is. Region	
				52	36	i		(Possibly two events)	
	BUL	P		47	08	iC	5.3		
				47	44	i			
				52	01	e			
	KRR	P		53	04	i			
				47	35	iC	2.7		
				48	17	iC			
	CLK	P		53	11	e			
				54	44	i			
				47	44	iC	1.3		
	BHA	P		48	46	e			
			47	59	iC	2.8			
			48	49	i				
			54	12	e				
			55	48	e				
24	CLK	P	16	32	18	e	0.2	CGS 16 24 26 33.5S 77.7E	4.7
	CIR	P		32	22	e	0.3	Mid - Indian Rise	
	BUL	P		32	43	iC	0.8		
	KRR	P		32	49	e	0.2		
	BHA	P		33	07	e	0.5		
24	BHA	P ¹	16	38	06	e	0.2	CGS 16 19 07 49.5N 155.7E	5.3
	KRR	P ¹		38	08	e	0.2	Kurile Is.	
	BUL	P ¹		38	13	e	0.2		
24	CLK	P	18	24	13	e	0.4	Distant	
	KRR	P		24	52	e	0.3		
24	BHA	P	23	30	05	e	0.1	CGS 23 21 17 34.9N 26.0E	4.3
	KRR	P		30	23	e	0.2	Crete	
	BUL	P		30	(50)	e	0.2		
	CIR	P		30	(53)	e	0.3		
25	CIR	P	04	50	(50)	e	0.2	CGS 04 37 36 0.2S 125.1E	5.3
	KRR	P		50	52	iC	0.3	Molucca Passage	
	BUL	P		50	55	e	0.4		
	BHA	P		50	57	e	0.3		
25	BUL	P	06	18	09	iR	17.	CGS 06 06 42 25.6S 63.3W	5.5
				20	14	e		Salta Province, Argentina	
				27	37	e			
	CIR	P		18	21	iR	4.0		
				20	27	e			
				27	47	e			
	KRR	P		18	22	iR	8.6		
				20	28	e			
				27	54	e			
	BHA	P		18	22	iR	4.7		
			27	54	e				
CLK	P		18	46	iR	2.9			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
25	CLK	P'	13	13(42)		e	0.2	CGS 12 54 28 53.3N 167.0W Fox Is., Aleutian Is.	5.0
	KRR	P'	13	50		e	0.2		
		SKP	17	39		e			
	BUL	P'	14	00		iC	3.4		
	CIR	P'	14	01		iC	1.3		
25	CLK	P	13	47	17	e	0.3	CGS 13 34 10 2.6N 126.6E Molucca Passage	5.6
	CIR	P	47	35		iR	0.6		
	KRR	P	47	42		e	0.4		
	BHA	P	47	46		e	0.3		
	BUL	P	47	47		iR	0.7		
25	CLK	Pn	14	52	30	e		BUL 14 50 41 11.4S 41.4E Offshore N. Mocambique	3.8
		Sn	53	50		e			
		T	54	23		i			
		L	54	35		i	2.1		
	KRR	Pn	53	38		e	0.6		
		Sn	55	52		e	0.7		
	BUL	Pn	54	12		e	0.3		
		L	58(35)			e	0.4		
	CIR	L	57(36)			e	0.2		
	25	BHA	P	21	42	10	iC		
KRR		P	42	19		iC	0.5		
BUL		P	42	21		e	0.3		
CIR		P	42	37		e	0.2		
25	CLK	P	23	02	09	e	0.4	CGS 22 49 41 21.6N 111.9E E. China	5.4
		pP	02	31		e			
	BHA	P	02	35		e	0.3		
		pP	02	59		e			
	KRR	P	02	40		e	0.3		
	CIR	P	02	40		e	0.5		
	BUL	P	02	44		e	0.4		
	pP	03	01		e				
26	BHA	Pn	06	52	12	e		BUL 06 50 58 13.0S 23.6E N. Barotseland	3.1
	KRR	Pn	52	39		e			
		Sn	53	53		e	0.5		
	BUL	Pn	53	00		e			
		Sn	54	30		e			
		L	55	29		e	0.3		
	CIR	Sn	55	25		e			
	L	56	44		e	0.2			
26	CIR	P	07	33	43	e	0.2	Distant	
	BUL	P	34	07		iR	0.7		
	KRR	P	34	08		e	0.2		
26	BUL	P'	07	39	41	e	0.2	CGS 07 21 00 12.6N 87.8W Near Coast of Nicaragua	4.8
	KRR	P'	39	43		e	0.2		
26	KRR	P	12	35	56	e	0.2	CGS 12 24 29 43.7N 14.6W N. Atlantic Ocean	4.8
	BUL	P	36	09		e	0.6		
26	KRR	P	15	51	30	e	0.2	CGS 15 32 10 53.3N 167.1W Fox Is., Aleutian Is.	4.7
		pP	51	34		e			
			51	50		e			
		SKP	55	15		e			
	CIR	P	51	39		iR	0.5		
		pP	51	43		i			
	BUL	P	51	39		e	1.5		
	pP	51	43		i				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
26	BUL	P	17	26	37	e	0.7	CGS 17 17 16 56.4S 25.9W S. Sandwich Is. Region	5.5
		pP		26	58	i			
	CIR	P		26	43	e	0.8		
		pP		27	02	e			
	KRR	P		27	(05)	e	0.4		
		pP		27	26	e			
26	BHA	P		27	11	e	0.3		
		pP		27	29	e			
	26	CLK	Pg	22	55	24	e	BUL 22 54 30 18.6S 35.6E	3.1
		Sn		55	49	e		N.E. Manica Province, Mocambique	
		S*		55	55	i			
		Sg		56	01	i	1.4		
CIR	Sn		56	33	e	0.9			
	Sg		56	54	i				
26	KRR	Sn		56	58	e			
		S*		57	20	i			
		Sg		57	29	i	1.3		
	BUL	Sn		57	30	e			
		Sg		57	55	e	0.8		
	27	CLK	Pn	02	18	40	e		BUL 02 17 51 12.8S 33.7E
				18	53	e		Central Malawi	
		T		19	09	e		Felt MM III at Kasungu	
		Sg		19	27	i	1.7		
BHA		Pn		19	11	e			
		Sn		20	09	e			
		L		20	40	i	1.2		
KRR		Sn		20	16	e			
				20	42	i			
		L		20	53	i	0.7		
CIR		L		22	09	e	0.2		
BUL		Sg		22	18	e			
	L		22	26	e	0.2			
27	CIR	P'	02	33	17	iR	0.4	CGS 02 14 28 19.4S 160.8E	5.4
	CLK	P'		33	18	e	0.2	New Hebrides Is.	
	BUL	P'		33	22	iR	0.7		
	KRR	P'		33	25	iR	0.6		
	BHA	P'		33	29	iR	0.3		
27	CIR	P'	09	07	50	e	0.2	CGS 08 49 38 17.6S 178.3W	4.0
	BUL	P'		07	53	e	0.3	Fiji Is. Region	
	KRR	P'		07	57	e	0.2		
27	CIR	P	09	32	34	e	0.3	Distant	
	BUL	P		32	50	e	0.3		
	KRR	P		32	54	e	0.2		
27	BHA	Pn	16	12	17	i		BUL 16 11 52 13.2S 27.6E	2.8
		Sn		12	36	i	5.	Kitwe Area, Zambia	
	KRR	Pn		12	53	e			
		Sn		13	(37)	e			
		Sg		13	55	i	1.5		
	BUL	Pn		13	34	e			
		Sn		14	48	e			
		Sg		15	23	e	0.4		
	CIR	Sg		16	13	e	0.3		
27	KRR	P'	19	46	25	e	0.1	CGS 19 27 04 57.6N 153.6W	4.6
	BUL	P'		46	27	e	0.2	Kodiak Is. Region	
	CIR	P'		46	30	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
27	CIR	Pn	20	34	36	i		BUL 20 34 02 19.7S 33.6E	2.5
		Pg		34	41	i		Manica Province, Mocambique	
		Sn		35	00	e			
		S*		35	04	e			
		Sg		35	08	i	1.8		
		KRR Sg		36	25	e	1.3		
		BUL Sg		36	28	e	0.3		
BHA Sg		37	38	e	0.2				
27	BHA	P'	21	40	58	e	0.2	CGS 21 21 41 59.4N 145.3W	5.3
		BUL P'		41	01	e	0.2	Gulf of Alaska	
		KRR P'		41	04	e	0.2		
		CIR P'		41	09	e	0.2		
27	CIR	P	22	40	25	e	0.1	CGS 22 26 54 24.9N 122.5E	5.4
		KRR P		40	25	e	0.2	Taiwan Region	
		BHA P		40	26	e	0.2		
		BUL P		40	35	e	0.2		
28	CIR	Pn	01	47	43	e		BUL 01 46 14 23.6S 37.7E	3.1
		Sn		48	49	e		Offshore S. Mocambique	
		L		49	23	e	0.5		
		BUL Pn		48	23	e			
		Sn		49	58	e			
		L		50	57	e	0.3		
		KRR Pn		48	36	e			
		Sn		50	23	e	0.3		
		BHA Pn		49	11	e			
		Sn		51	25	e	0.2		
28	KRR	P'	06	49	13	e	0.2	CGS 06 29 54 57.5N 153.9W	5.3
		pP'		49	22	e		Kodiak Is. Region	
				49	41	e			
		BUL P'		49	22	e	0.5		
		pP'		49	27	i			
				49	36	i			
		CIR P'		49	23	e	0.4		
		49	49	e					
28	CIR	Pn	09	16	35	e		BUL 09 16 04 21.7S 33.6E	2.5
		Pg		16	41	i		N. Save Province, Mocambique	
		Sn		16	59	i			
		Sg		17	02	i	2.0		
		BUL Sn		18	05	e			
		Sg		18	33	e	0.4		
		KRR Sg		19	09	e	0.6		
28	BUL	Pn	09	49	08	e		BUL 09 47 35 26.4S 27.1E	3.0
		Sn		50	17	e		Witwatersrand	
		Sg		50	49	e	0.5		
		KRR Pn		49	54	e			
		Sn		51	37	e			
		Sg		52	33	e	0.4		
28	BUL	SKP	14	25	22	e	0.4	CGS 14 04 49 21.8S 179.6W	4.5
		KRR SKP		25	30	e	0.3	Fiji Is. Region	
28	KRR	P'	15	56	40	e	0.2	CGS 15 37 56 24.1N 142.7E	5.2
		BUL P'		56	44	e	0.1	Volcano Is. Region	
28	KRR		19	44	(15)	e	0.1	Distant	
		BUL		44	18	e	0.2		
29	CIR	P'	06	43	06	iC	2.4	CGS 06 24 22 14.8S 167.2E	5.4
		pP'		43	25	e		New Hebrides Is.	
		BUL P'		43	11	iC	3.6		
		KRR P'		43	14	iC	5.4		
		SKP		46	22	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag			
29	BHA	Pn	19	34	03	e		BUL 19 32 23 S.E. Congo	3.3			
		Sn		35	16	e						
		L		35	58	e	0.9					
	KRR	Pn		34	42	e						
		Sn		36	14	e						
		Sg		37	11	e	0.5					
BUL	Pn		35	27	e							
	L		38	58	e	0.2						
30	BUL	Pn	02	54	10	e		BUL 02 52 40 26.3S 28.2E Witwatersrand	3.2			
		Sg		55	48	i	1.0					
	CIR	Pn		54	11	e						
		Sg		55	49	e	1.1					
	KRR	Sg		57	31	e	0.4					
	30	KRR	P'	04	37	30	e	0.2		CGS 04 18 45 28.5N 142.6E Bonin Is. Region	5.1	
pP'				37	42	e						
BUL		P'		37	34	e	0.2					
30	KRR	Pn	08	51	38	i		BUL 08 48 50 11.2S 40.4E Offshore N. Mocambique	4.6			
		T		51	49	i						
		Sn		53	42	i						
		L		55	12	i	1.8					
	BHA	Pn		51	41	e						
		L		55	19	e	4.5					
	CIR	Pn		51(55)		e						
		Sn		54	04	e						
		L		55	37	i	1.5					
	BUL	Pn		52	10	e						
Sn			54	38	e							
S*			55	33	i							
L			56	17	i	2.4						
30	CIR	Pn	09	57	30	e		BUL 09 56 38 18.3S 33.6E N. Manica Province, Mocambique	3.1			
		Pg		57	37	i						
		Sn		58	08	i						
		Sg		58	23	i	2.1					
	KRR	Pn		57	40	i						
		Pg		57	53	i						
		Sn		58	24	i						
		Sg		58	42	i	2.3					
	BUL	Sn		58	48	e						
		Sg		59	13	i	2.6					
		31	CIR	P	02	48	25	e		0.2	CGS 02 35 00 0.1S 127.1E Halmahera	5.0
				KRR		48	30	e		0.2		
BUL				48	34	e	0.3					
BHA	P		48	36	e	0.3						
31	CIR	P	05	11	28	e	0.2	CGS 05 05 04 27.6S 66.2E S. Indian Ocean	5.3			
		PaP		14	19	e						
	BUL	P		11	54	e	0.3					
		PaP		14	28	e						
	KRR	P		11	58	iR	0.3					
	BHA	P		12	15	e	0.3					
		PaP		14	36	i						

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
31	CIR	Pn	06	30	32	e		BUL 06 28 59 23.6S 38.0E Offshore S. Mocambique	4.3
		Sn		31	41	i			
		Sg		32	12	i	9.5		
	BUL	Pn		31	14	e			
		Sn		32	50	e			
	KRR	Sg		33	45	i	2.5		
		Pn		31	26	e			
	BHA	Sn		31	35	i			
				33	14	i			
		S*		33	52	i	3.7		
Pn			32	00	e				
Sn			32	09	i				
			34	13	i	1.6			
31	CIR	Pn	08	19	04	e		BUL 08 17 40 23.5S 37.6E Offshore S. Mocambique	3.3
		Sn		20	06	e			
		L		20	41	e	0.5		
	BUL	Pn		19	52	e			
		Sn		21	25	e			
	KRR	L		22	24	e	0.3		
		Pn		20	02	e			
		Sn		21	49	i			
		S*		22	19	i			
		L		22	52	i	0.5		
31	BUL	P'	11	11	25	e	0.2	CGS 10 52 01 27.1N 111.3W Gulf of California	4.9
	KRR	P'		11	32	e	0.2		
	CIR	P'		11	36	iC	0.5		
		pP'		11	41	i			
31	BHA	P'	11	42	25	e	0.3	CGS 11 23 01 53.0N 170.1W Fox Is., Aleutian Is.	5.3
	KRR	P'		42	29	e	0.6		
	BUL	P'		42	31	e	0.6		
		PKKP		51	46	e			
	CIR	P'		42	34	e	0.5		
31	CIR	P'	13	45	39	e	0.1	CGS 13 27 44 25.6S 179.4E S. of Fiji Is.	4.7
	BUL	P'		45	45	e	0.4		
	KRR	P'		45	50	e	0.6		
		SKP		48	22	i			
	BHA	P'		45	55	e	0.2		
	31	CIR	P'	20	38	21	e		
BUL		P'		38	27	e	0.4		
KRR		P'		28	30	e	0.2		
31	BUL	Pn	20	39	31	e		BUL 20 37 54 W. Witwatersrand	2.9
		Sg		41	17	e	0.4		
	CIR	Pn		39	38	e			
		Sg		41(26)		e	0.3		
	KRR	L		43	07	e	0.2		

5 FEB 1970

RHODESIA METEOROLOGICAL SERVICES
SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BWA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CLK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WSSS Station: SP magnification 100,000
 LP magnification 1,500
- CHIRINDZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Coetz Observatory, Meteorological Service,
 P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
01	CIR	Pn	02	42	14	e		BUL 02 40 45 23.4S 37.5E Offshore S. Mocambique.	3.0	
		Sn		43	18	e				
	L		44	00	e	0.5				
	KRR	Pn		43	04	e				
		Sn		44	52	e	0.3			
	BUL	Sn		44	27	e				
L			45	28	e	0.2				
01	CIR	Pn	03	23	48	e		BUL 03 22 17 23.3S 37.7E Offshore S. Mocambique.	3.1	
		Sn		24	53	e				
		L		25	37	e	0.5			
	KRR	Pn		24	38	e				
		Sn		26	26	e	0.3			
	BHA	Pn		25	16	e				
		Sn		27	35	e	0.2			
	BUL	Sn		26	03	e				
L			26	57	e	0.3				
01	BUL	P	07	28	03	iC	0.3	Distant.		
	CIR	P		28	09	e	0.2			
	KRR	P		28	27	iC	0.7			
01	CIR	P'	12	24	20	e	0.2	CGS 12 05 35 23.4S 177.5W S. of Fiji Is.	5.0	
				24	26	i				
	BUL	SKP		27	24	e				
		P'		24	24	iC	0.7			
			24	31	i					
	SKP		27	30	i					
		PKS		27	41	i				
	KRR	P'		24	28	eiC	1.0			
				24	35	i				
	SKP		27	38	i					
PKS			27	49	i					
BHA	P'		24	35	iC	0.2				
			24	40	i					
01	BUL	Pn	12	59	31	e		BUL 12 58 00 26.5S 27.7E Witwatersrand.	3.0	
		Sn	13	00	41	e				
		Sg		01	13	i	0.4			
	CIR	Pn	12	59	35	e				
		Sn	13	00	(50)	e				
	Sg		01	19	i	0.5				
		KRR	Pn		00	19	e			
	Sn			02	00	e				
Sg		03	00	e	0.3					
01	BUL	Pn	13	07	30	i		BUL 13 05 47 26.9S 26.6E W. Witwatersrand.	3.6	
		Sn		08	45	i				
		Sg		09	20	i	1.5			
	CIR	Pn		07	35	i				
		Sn		08	(57)	e				
	Sg		09	31	i	1.1				
		KRR	Pn		08	17	i			
	Sn			10	06	e				
	L		11	10	i	1.0				
	BHA	L		12	18	e	0.3			
01	BUL	Pn	14	16	09	e		BUL 14 14 13 28.1S 26.5E Orange Free State Goldfields.	3.4	
		Sn		17	35	e				
		Sg		18	18	i	1.0			
	CIR	Pn		16	13	e				
		Sn		17	40	e				
	Sg		18	28	i	0.7				
		KRR	Pn		16	55	e			
	Sn			18	55	e				
Sg		20	05	i	0.3					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data	Remarks	Mag	
01	CIR	Pn	23	23	32	e		BUL 23 22 01 23.6S 37.7E	Offshore S. Mozambique.	2.9	
		Sn		24	39	i					
		L		25	21	i	0.4				
	BUL	Sn		25	47	e					
		L		26	45	e	0.2				
KRR	Sn		26	10	e						
		S*		26	42	e	0.3				
02	BHA	P'	00	02	39	e	0.3	CGS 23 43 45 45.6N 150.9E	Kurile Is.	5.6	
		pP'		03	48	i					
		PP		04	03	e					
	KRR	P'		02	39	e	0.6				
		pP'		02	54	e					
				03	53	e					
	CIR	PP		04	06	e					
		P'		02	43	iR	0.4				
		pP'		02	55	i					
	BUL	PP		04	29	i					
		P'		02	45	e	0.7				
		pP'		02	57	i					
		PP		04	39	i					
02	BHA	P'	00	53	14	e	0.2	CGS 00 34 17 45.3N 151.1E	Kurile Is.	5.3	
		pP'		53	38	i					
	KRR	P'		53	15	e	0.4				
	CIR	P'		53	19	e	0.2				
	BUL	P'		53	20	e	0.3				
02	BUL	Pn	02	32	49	e		BUL 02 31 19 26.3S 27.6E	Witwatersrand.	3.5	
		Sn		33	55	e					
		Sg		34	25	i	1.5				
	CIR	Pn		32	52	e					
		Sn		34	01	e					
		S*		34	07	i					
	KRR	Sg		34	29	i	1.4				
		Pn		33	35	e					
		Sn		35(12)		e					
	BHA	Sg		36	07	i	1.0				
L			37	35	i	0.3					
02	CIR	P	04	55	11	e	0.1	CGS 04 43 51 5.6S 104.5E	S. Sumatra	5.4	
		pP		55	23	e					
	KRR	P		55	19	e	0.2				
		pP		55	35	e					
		sP		55	44	e					
	BUL	P		55	24	e	0.4				
		pP		55	37	i					
		sP		55	49	e					
BHA	P		55	26	e	0.2					
	pP		55	43	e						
02	BUL	P	05	05	40	e	0.3	Distant.			
		KRR	P		05	45	e	0.2			
		CIR	P		06	02	e	0.2			
02	BUL		07	53	45	e	0.2	Distant.			
		CIR		53	52	e	0.2				
02	BHA	P'	17	58	22	e	0.2	CGS 17 39 22 56.2N 162.4E	Near E. coast of Kamchatka.	4.7	
		KRR	P'		58	25	e	0.2			
		CIR	P'		58	30	e	0.2			
		BUL	P'		58	32	e	0.1			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
02	CIR	P	20	26	03	e	0.3	CGS 20 12 44 2.6S 126.6E Ceram Sea.	5.6	
		pP		26	13	i				
	KRR	P		26	15	e	0.2			
		pP		26	22	i				
	BUL	P		26	17	e	0.3			
pP			26	25	i					
BHA	P		26	19	e	0.1				
	pP		26	28	e					
03	KRR	P'	08	07	11	e	0.2	CGS 07 48 11 45.4N 151.8E Kurile Is.	5.3	
		pP'		07	25	e				
	BUL	P'		07	18	e	0.2			
		pP'		07	30	e				
		PP		09	17	e				
04	CIR	P	03	04	29	e	0.3	CGS 02 53 02 7.1S 117.2E Bali Sea.	4.7	
		pP		04	40	iR	1.0			
	BUL	P		04	44	iR	2.1			
		P		04	47	e	0.3			
04	BHA	P'	10	42	50	e	0.1	CGS 10 23 29 51.4N 179.6W Andreanof Is. Aleutian Is.	5.3	
		SKP		46	28	e				
	KRR	P'		42	53	e	0.2			
		SKP		46	25	e				
	CIR	P'		42	55	e	0.2			
	BUL	P'		42	55	e	0.3			
		SKP		44	40	e				
		SKP		46	24	e				
04	BUL	Pn	14	06	24	e		BUL 14 04 50 26.5S 27.7E Witwatersrand.	2.7	
		Sg		08	07	i	0.3			
	CIR	Pn		06	27	e				
		Sg		08	12	e	0.2			
	KRR	Pn		07	09	e				
Sg			09	44	e	0.2				
04	CIR	P	17	31	31	iR	3.0	CGS 17 19 20 5.7S 125.3E Banda Sea.	6.2	
		pP		31	45	i				
	PP		33	25	e					
	PKKP		35	12	i					
	KRR	P		48	50	e	0.8			
		P		31	42	iR	5.0			
			P		31	56	i			
			pP		33	42	e			
			PP		35	33	e			
			PKKP		48	45	iC			0.9
	BUL	P		31	44	iR	2.6			
		pP		33	43	i				
			PP		35	38	i			
			PKKP		48	43	iC			1.1
	BHA	P		31	50	iR	3.5			
pP			33	48	i					
PP			35	47	e					
04	BHA	P'	17	56	45	e	0.2	Distant.		
		P'		59	40	e				
	KRR	P'		56	50	e	0.2			
		P'		59	40	e				
CIR	P'		56	51	e	0.2				
BUL	P'		56	52	e	0.2				
04	BUL	P	22	02	58	e	1.4	CGS 21 50 02 26.9S 70.9W Near Coast of N. Chile.	5.3	
		pP		03	09	i				
	CIR	P		03	08	iR	0.8			
	KRR	P		03	09	iR	0.5			
		PP		06	45	e				
	BHA	P		03	11	e	0.3			
pP			03	21	e					
*		PKKP		48	42	iC	1.5			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
04	CIR		22	10	00	e	0.2	Distant.	
	BUL			10	07	e	0.2		
05	BUL	Pn	00	42	33	e		BUL 00 41 03 26.3S 27.8E Witwatersrand.	2.8
		Sn		43	40	e			
		Sg		44	10	i	0.4		
	CIR	Pn		42	34	e			
		Sg		44	11	e	0.4		
	KRR	Pn		43	18	e			
		Sg		45	51	e	0.2		
05	BUL	P	02	03	45	e	0.3	CGS 01 50 50 26.9S 70.8W Near Coast of N. Chile.	4.3
	KRR	P		03	55	e	0.2		
	CIR	P		03	55	e	0.1		
05	CIR	P	02	26	30	iC	3.0	CGS 02 13 10 1.3S 126.2E Molucca Passage.	6.1
		PP		30	19	e			
		PKKP		43	40	e			
	KRR	P		26	38	e	3.0		
		PKKP		43	23	e			
	BUL	P		26	43	iC	6.2		
		PP		30	40	e			
		SKS		37	24	e			
		PKKP		43	20	e			
	BHA	P		26	44	e	3.0		
		SKS		37	25	e			
		PKKP		43	26	e			
05	BUL	P	02	39	48	iR	1.0	Distant.	
	CIR	P		39	58	e	0.2		
	KRR	P		39	59	e	0.2		
05	BUL	P	06	21	15	e	0.8	CGS 06 13 27 55.2S 1.5W Bouvet Is. Region.	5.2
	CIR	P		21	20	e	0.8		
	KRR	P		21	43	iC	0.7		
	BHA	P		21	58	e	0.4		
05	KRR	P	07	05	03	e	0.2	CGS 06 51 33 1.3N 126.3E Molucca Passage.	5.2
	BUL	P		05	05	e	0.2		
	BHA	P		05	07	e	0.1		
05	CIR	P	13	16	50	e	0.2	CGS 13 03 23 1.3N 126.4E Molucca Passage.	5.2
		PP		20	35	e			
	KRR	P		16	56	e	0.2		
		PP		20	54	e			
	BUL	P		17	00	e	0.2		
		PP		20	54	e			
05	CIR	Pn	16	43	24	e		BUL 16 41 53 23.6S 37.8E Offshore S. Mocambique.	3.4
		Sn		44	29	e			
		Sg		45	05	i	0.7		
	BUL	Pn		44	04	e			
				45	05	e			
		Sn		45	38	i	0.5		
	KRR	Pn		44	17	e			
		Sn		46	04	e	0.5		
	BHA	Pn		44	50	e			
		Sn		47	04	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
05	CIR	P'	16	51	06	eiR	2.0	CGS 16 32 26 5.2S 153.8E New Ireland Region.		5.4
				51	15	i				
		pP'		51	21	i				
			PKKP	17	01	33	e			
	BUL	P'	16	51	11	eiR	5.7			
				51	19	i				
		pP'		51	25	i				
			PP	52	50	e				
			PKKP	17	01	19	e			
	KRR	P'	16	51	12	eiR	2.0			
			51	19	i					
pP'			51	25	i					
		PKKP	17	01	16	e				
BHA	P'	16	51	15	e	3.0				
			51	30	i					
	pP'		51	30	i					
		PKKP	17	01	12	e	0.3			
05	KRR	P*	23	02	13	e		BUL 23 01 26 17.9S 26.7E Deka Fault, Zambesi River.		2.6
				02	17	i				
				02	23	i				
			Sg	02	51	i	1.5			
	BUL	Pn	02	12	e					
		Pg	02	16	i					
		S*	02	50	i					
			Sg	02	52	i	1.5			
	BHA	Pn	02	24	e					
		Pg	02	35	i					
		Sn	03	07	e					
			Sg	03	22	i	1.0			
	CIR	Sn	03	47	e					
				04	16	i	1.0			
		Sg	04	16	i	1.0				
06	BUL	P	15	08	45	e	0.2	CGS 14 59 24 58.0S 25.4W S. Sandwich Is. Region.		4.6
				09	03	e				
	CIR	P	08	51	e	0.3				
				09	07	e				
	BHA	P	09	02	e	0.2				
				09	20	e				
06	BHA	P	15	53	35	e	0.5	CGS 15 41 50 10.8N 43.2W N. Atlantic Ridge.		5.2
				53	45	i				
				56	20	e				
	BUL	P	53	42	e	0.5				
				53	53	i				
				56	34	i				
	KRR	P	53	44	e	0.7				
				53	55	e				
				56	34	e				
	CIR	P	53	59	e	0.7				
				54	09	i				
	06	BUL	P'	17	35	30	e	0.2	CGS 17 15 40 7.5S 148.3W Line Is. Region.	
				35	35	e				
CIR		P' ₂	35	45	e	0.2				
06	KRR	Pg	23	22	07	iR		BUL 23 21 44 17.1S 28.1E S. Lake Kariba.		2.3
				22	19	i	9.0			
	BHA	Pn	22	25	e					
		Sn	22	56	e					
		Sg	23	05	i	0.8				
	BUL	Pg	22	38	e					
		Sn	23	05	e					
		Sg	23	17	i	0.8				
	CIR	Sn	23	53	e					
				24	18	i	0.5			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
07	CIR		00	22	59	e	0.2	Distant.	
	KRR			23	(05)	e	0.1		
	BHA			23	04	e	1.0		
					23	15	e		
					23	34	e		
07	CIR	P'	02	08	10	e	0.1	CGS 01 49 33 5.3S 154.1E Solomon Is.	5.2
		pP'		08	35	e			
	BUL	P'		08	13	e	0.2		
		pP'		08	40	i			
	KRR	P'		08	13	e	0.2		
		pP'		08	40	e			
	BHA	P'		08	17	e	0.1		
	pP'		08	45	e				
07	KRR	P'	07	05	07	e	0.3	CGS 06 46 08 52.2N 158.9E Near E. Coast of Kamchatka.	5.1
	CIR	P'		05	11	e	0.2		
	BUL	P'		05	14	e	0.2		
08	BUL	P	05	24	54	e	0.4	CGS 05 12 02 21.2S 68.6W Chile - Bolivia Border Region.	5.4
	KRR	P		25	06	e	0.1		
	CIR	P		25	15	e	0.2		
08	BHA	P	06	41	14	iC	8.0	CGS 06 30 57 36.4N 70.9E Hindu Kush Region.	5.8
	KRR	P		41	22	iC	11.2		
	CIR	P		41	37	e	8.5		
	BUL	P		41	42	iC	21.0		
08	KRR	Pn	06	53	(25)	e		BUL 06 52 15 18.0S 33.9E Central Mocambique.	2.6
		Sn		54	(07)	e			
		Sg		54	25	i	1.0		
	CIR	Sn		53	52	e			
		Sg		54	08	e	0.9		
	BUL	Sn		54	(32)	e			
	Sg		54	59	i	0.6			
08	CIR		07	27	(22)	e	0.1	Distant.	
				27	27	e			
	BUL			27	43	e	0.1		
				27	47	e			
08	BUL	P	11	16	27	e	11.0	CGS 11 08 15 47.7S 15.8W S. Atlantic Ridge.	5.9
	CIR	P		16	37	e	6.5		
	KRR	P		16	52	e	1.2		
	BHA	P		17	01	e	3.0		
08	BUL	P	12	55	00	e	0.2	CGS 12 46 47 47.5S 15.7W S. Atlantic Ridge.	5.0
	CIR	P		55	11	e	0.6		
	KRR	P		55	23	e	0.4		
08	BUL	P	13	01	20	e	0.6	CGS 12 53 09 47.7S 15.8W S. Atlantic Ridge.	4.8
	CIR	P		01	30	e	0.9		
	KRR	P		01	42	e	0.2		
08	BUL	P	16	23	53	iC	0.8	CGS 16 10 59 26.6S 70.8W Near Coast of N. Chile.	4.8
	CIR	P		24	03	e	0.3		
	KRR	P		24	05	e	0.3		
	BHA	P		24	12	e	0.1		
08	CIR	Pn	18	46	(17)	e		BUL 18 44 48 26.1S 27.9E Witwatersrand.	3.4
		Sn		47	17	e			
		Sg		47	50	i	1.2		
	BUL	Pn		46	18	e			
		Sn		47	25	e			
		Sg		47	55	i	1.0		
	KRR	Pn		47	02	e			
		L		49	45	i	0.9		
	BHA	Pn		47	35	e			
		Sg		50	50	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
08	CIR	P	20	57	25	e	1.1	CGS 20 44 21 6.1S 129.7E Banda Sea.	5.9	
				57	38	i				
		pP		58	13	e				
			SKS	21	07	45	e			
			PKKP		14	18	e			
	KRR	P	20	57	35	e	0.9			
		SKS	21	07	53	i				
		PKKP		14	12	e				
	BUL	P	20	57	38	e	1.0			
		pP		58	24	e				
		SKS	21	07	55	e				
			PKKP		14	10	e			
BHA	P	20	57	43	e	0.7				
	SKS	21	08	03	i					
	PKKP		14	08	e					
09	BUL	P	05	38	15	e	0.1	Distant.		
	CIR	P		38	15	e	0.3			
	KRR	P		38	35	e	0.2			
09	BUL		12	40	07	e	0.3	Distant.		
	CIR			40(07)		e	0.2			
09	BHA	P	13	47	22	e	0.2	CGS 13 40 01 4.6N 62.5E Carlsberg Ridge.	5.2	
		pP		47	29	i				
	KRR	P		47	23	e	0.9			
		pP		47	30	e				
	CIR	P		47	30	e	0.4			
		pP		47	37	e				
	BUL	P		47	45	e	0.9			
	pP		47	52	i					
09	KRR	P	16	35	39	e	0.4	CGS 16 25 35 42.4N 19.4E Yugoslavia.	5.0	
	BUL	P		36	01	e	0.3			
	CIR	P		36	10	e	0.2			
09	BUL	P	18	37	40	e	0.2	CGS 18 28 02 57.4S 25.8W S. Sandwich Is. Region.	-	
	CIR	P		37	36	e	0.2			
	KRR	P		37	53	e	0.2			
	BHA	P		38	05	e	0.1			
09	CIR	P	22	30	20	e	0.3	Distant.		
	BUL	P		30	58	e	0.2			
		PcP		32	40	e				
	KRR	P		31	13	e	0.3			
		PcP		33	02	e				
	BHA	P		31	49	e	0.1			
10	BHA	Pn	01	04	33	iC		BUL 01 02 51 7.6S 30.4E S. Lake Tanganyika.	4.9	
		KRR	Pn		05	02				iC
		P*		05	12	i				
		Sn		06	36	i				
		L		07	37	i	20.0			
	BUL	Pn		05	47	iR				
		P*		05	57	i				
		Sn		07	58	i				
		L		09	25	i	8.5			
	CIR	Pn		05	58	iC				
		P*		06	11	i				
		Sn		08	20	i				
L			09	50	i	5.0				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
10	BHA	Pn	04	57	54	e		BUL 04 56 20	11.1S 34.0E	3.3
		Sn		59	01	e		N. Lake Malawi.		
	KRR	Sg		59	35	i	1.0			
		Sn		59	18	e				
	BUL	Sg		59	58	i	0.9			
		Sn	05	00	35	e				
CIR	Sg		01	35	e	0.3				
	Sg		01	31	i	0.3				
10	BHA	P	15	48	57	e	0.2	CGS 15 41 49	8.4N 57.8E	5.0
		KRR	P		49	01	e	0.3	Carlsberg Ridge.	
	CIR	P		49	08	e	0.2			
		pP		49	15	e				
	BUL	P		49	25	e	1.1			
		pP		49	31	i				
11	BUL	P	03	56	31	e	0.6	CGS 03 43 50	23.6S 68.4W	4.7
		PcP		56	35	i		N. Chile.		
	KRR	P		56	43	e	0.2			
	CIR	P		56	43	e	0.2			
	BHA	P		56	45	e	0.1			
11	CIR	Pn	06	28	10	e		BUL 06 27 11	18.4S 34.8E	3.3
		Pg		28	23	i		Central Mocambique.		
		Sn		28	55	i				
		Sg		29	10	i	2.0			
	KRR	Pn		28	27	e				
		Pg		28	44	i				
		Sn		29	22	i				
	BUL	Sg		29	43	i	4.2			
		Sn		29(41)		e				
		Sg		30	15	i	-			
BHA	Sn		30	10	e					
	Sg		30	50	i	1.0				
11	BHA	P	13	43	00	e	0.5	CGS 13 33 04	1.0N 28.5W	5.0
		BUL	P		43	08	e	0.2	Central Mid-Atlantic Ridge.	
	KRR	P		43	09	e	0.8			
	CIR	P		43	27	e	0.3			
11	BUL	P	14	53	05	e	0.3	Distant.		
		CIR	P		53	32	e	0.2		
11	BUL	P	20	30	09	e	0.6	CGS 20 16 35	20.1N 64.3W	4.9
		KRR	P		30	23	e	0.2	N. Atlantic Ocean.	
	CIR	P		30	34	iC	0.7			
		pP		30	46	i				
11	BUL	P	20	33	13	e	0.6	Distant.		
		pP		33	25	i				
	PP		36	18	e					
	KRR	P		33(20)		e	0.2			
	BHA	P		33	24	e	0.2			
	CIR	P		33	35	e	0.6			
		pP		33	48	i				
		PP		36	40	e				
11	BUL	P	20	59	49	e	0.3	CGS 20 46 55	17.2S 70.0W	3.9
				02	32	e		Near Coast of Peru.		
	BHA	P		59	59	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag	
11	BHA	P'	21	46	17	e		CGS 21 27 39	43.5N 147.3E	7.1	
		pP'		46	28	i	3.0	Kurile Is.			
		SKKP		59	42	e					
	KRR	P'		46	21	iR					
		pP'		46	35	e	3.8				
		SKKP		59	47	e					
	CIR	P'		46	24	iR					
		pP'		46	38	e	4.0				
		PP		48	32	i					
	BUL	SKKP		59	49	e					
		P'		46	25	e					
		pP'		46	40	i	8.0				
		PP		48	29	i					
		SKKP		59	52	i					

Aftershocks from this event are listed as follows:-

11			22	14				CGS 21 55 35		5.5
			22	20				CGS 22 01 18		5.3
			23	00				CGS 22 42 00		5.1
			23	12				CGS 22 54 00		5.4
			23	21				CGS 23 02 54		5.0
			23	38				CGS 23 19 00		5.1
			23	40				CGS 23 21 43		5.2
			23	53				CGS 23 34 08		5.1
		23	58				CGS 23 39 29		5.0	
12			00	01				CGS 23 42 03		5.6
12	CIR	P	00	06	19	iR	1.0	CGS 23 52 57	1.7N 126.5E	6.1
				08	08	e		Molucca Passage.		
		PP		10	12	i				
	KRR	P		06	27	e	1.9			
		BUL	P		06	32	iR	2.0		
				08	25	i				
		PP		10	31	i				
		SKS		17	11	i				
	BHA	P		06	32	iR	1.8			
			SKS		17	11	i			
12	KRR	P	01	00	58	e	0.2	CGS 00 47 30	1.8N 126.2E	4.9
	BUL	P		01	01	e	0.2	Molucca Passage.		
	BHA	P		01	03	e	0.1			
12	BHA	P	01	04	55	e	0.1	CGS 00 53 45	32.3N 83.0E	4.7
	KRR	P		05	01	e	0.2	Tibet.		
	BUL	P		05	16	e	0.3			
12	CIR	P	01	54	10	e	0.3	Distant.		
				54	20	e				
	KRR	P		54	16	e	0.2			
		pP		54	25	i				
	BHA	P		54	21	e	1.3			
			pP		54	30	i			
	BUL	P		54	25	e	0.3			
			pP		54	36	i			
12	CIR	P	02	35	17	e	0.2	CGS 02 21 53	1.7N 126.3E	5.0
				35	18	e	0.2	Molucca Passage.		
	BUL	P		35	23	e	0.3			
	BHA	P		35	24	e	0.2			
12	BHA	P'	02	55	42	e	0.1	CGS 02 36 41	43.9N 148.3E	5.1
	BUL	P'		55	49	e	0.2	Kurile Is. Region.		
		PP		57	47	e				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
12	BUL	P	04	18	11	e	0.7	CGS 04 10 00 47.6S 15.2W S. Atlantic Ridge.	4.8
		pP		18	27	i			
	CIR	P		18	23	e	0.7		
		pP		18	37	i			
	KRR	P		18	35	e	0.2		
		pP		18	50	e			
BHA	P		18	46	e	0.3			
	pP		19	01	e				
12	BUL	Pn	04	32	08	e		BUL 04 30 27 27.0S 27.1E Witwatersrand.	3.1
		Sg		34	00	i	0.7		
	CIR	Pn		32	10	e			
		L		34	12	e	0.4		
	KRR	Pn		32	56	e			
		Sg		35	46	e	0.2		
12	KRR	P'	05	07	20	e	0.2	CGS 04 48 25 43.0N 147.8E Kurile Is.	5.0
	BUL	P'		07	25	e	0.2		
12	BHA	P'	05	12	28	e	0.5	CGS 04 53 37 43.3N 147.5E Kurile Is.	5.7
		pP'		12	40	i			
	KRR	P'		12	30	e	0.2		
		pP'		12	42	e			
	CIR	P'		12	32	e	0.2		
		pP'		12	45	e			
BUL	P'		12	35	e	0.8			
	pP'		12	47	i				
12	BHA	P'	05	22	19	e	0.4	CGS 05 03 27 43.6N 148.0E Kurile Is. Region.	6.0
		FP		23	48	e			
	KRR	P'		22	20	e	0.3		
		pP'		22	29	e			
	CIR	P'		22	24	iR	0.7		
		pP'		22	33	i			
	BUL	P'		22	03	e			
		pP'		22	25	e	1.2		
	BHA	PP		22	34	i			
		SKP		24	06	e			
SKP			25	57	e				
12	BHA	P'	06	12	20	e	0.2	CGS 05 53 28 43.7N 148.5E Kurile Is. Region.	5.4
		KRR	P'		12	22	e		
	CIR	P'		12	25	e	0.3		
		BUL	P'		12	27	e		
12	KRR	P'	07	29	35	e	0.2	CGS 07 10 41 43.7N 147.9E Kurile Is.	5.3
		BUL	P'		29	41	e		
	CIR	pP'		29	53	e			
		pP'		29	51	e	0.2		
12	CIR	P'	09	44	35	e	0.2	CGS 09 25 39 43.1N 147.6E Kurile Is.	5.3
		pP'		44	47	e			
	BUL	P'		44	38	e	0.4		
		pP'		44	49	i			
PP			46	15	e				
12	KRR	P'	09	52	35	e	0.2	CGS 09 33 43 43.6N 147.5E Kurile Is.	5.6
		pP'		52	47	e			
	CIR	PP		54	18	e			
		P'		52	38	e	0.2		
	PP			52	51	e			
				54	25	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
12	KRR	P'	11	40	19	e	0.2	CGS 11 21 22 43.9N 148.7E	Kurile Is. Region.	5.4
		pP'		40	34	e				
		PP		42	03	e				
	CIR	P'		40	19	e	0.3			
		pP'		40	32	e				
		PP		42	13	e				
BUL	P'		40	22	e	0.6				
	PP		42	15	e					
12	CIR	P	12	34	41	e	0.6	CGS 12 21 19 1.7N 126.3E	Molucca Passage.	5.8
		PP		38	31	e				
	KRR	P		34	50	e	0.8			
		PP		38	44	e				
	BUL	P		34	54	e	0.9			
		PP		38	50	e				
BHA	P		34	55	e	0.3				
12	CIR	P'	13	37	04	e	0.2	CGS 13 18 08 43.5N 148.0E	Kurile Is. Region.	5.6
		pP'		37	16	e				
	BUL	P'		37	08	e	0.9			
		pP'		37	19	i				
	KRR	P'		37	08	e	0.2			
		pP'		37	16	i				
12	BHA	P'	21	35	03	e	0.2	CGS 21 16 11 42.9N 146.5E	Off Coast of Hokkaido, Japan.	5.4
		pP'		35	15	i				
	CIR	P'		35	06	e	0.2			
		pP'		35	19	e				
	BUL	P'		35	09	e	0.6			
		pP'		35	22	i				
PP		36	52	e						
12	BHA	P'	23	24	52	e	0.1	CGS 23 05 57 43.3N 147.4E	Kurile Is.	5.0
		pP'		25	05	e				
	BUL	P'		24	56	e	0.2			
		pP'		25	09	e				
13	BHA	P'	03	48	05	e	0.2	CGS 03 29 14 43.5N 147.4E	Kurile Is.	5.5
	BUL	P'		48	12	e	0.6			
13	BHA	P'	04	47	04	e	0.1	CGS 04 28 18 43.5N 148.0E	Kurile Is. Region.	5.2
	CIR	P'		47(05)	e	0.2				
	BUL	P'		47	18	e	0.5			
13	BUL	Pn	04	54	37	e	1.0	BUL 04 53 03 26.5S 27.4E	Witwatersrand.	3.3
		Sn		55	46	e				
		Sg		56	19	i				
	CIR	Pn		54(38)	e	1.0				
		Sn		55	50		e			
		Sg		56	24		i			
	BHA	Pn		55	53	e	0.3			
		Sg		57	29	e				
13	KRR	P'	08	50	21	e	0.3	CGS 08 31 32 44.0N 147.7E	Kurile Is.	5.6
		P'		50	28	e				
	pP'		50	40	e					
	BUL	P'		50	31	e	0.8			
		pP'		50	44	i				
13	BHA	P'	16	31	40	e	0.1	CGS 16 12 17 48.5N 126.5W	Vancouver Is. Region.	4.6
	KRR	P'		31	47	e	0.2			
	BUL	P'		31	53	iR	1.0			
	CIR	P'		32	00	e	0.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
13	CIR	Pn	19	03	35	e		BUL 19 02 07 26.2S 28.0E Witwatersrand.	3.9	
		P*		03	39	i				
		Sn		04	32	i				
		Sg		05	07	i	4.5			
	BUL	Pn		03	35	e				
		P*		03	38	i				
		Sn		04	40	i				
	KRR	Sg		05	13	i	5.0			
		Pn		04	19	e				
		P*		04	22	i				
	BHA	Sn		06	(00)	e				
		L		06	57	i	3.0			
		Pn		04	51	e				
		P*		04	55	i				
13	CIR	P	22	48	54	e	0.2	CGS 22 37 03 49.7S 126.1E S. of Australia.	4.4	
		BUL		49	(05)	e	0.2			
13	BHA	P'	23	16	00	e	0.2	CGS 22 57 07 44.0N 148.1E Kurile Is.	5.6	
		PP		17	35	e				
	KRR	P'		16	01	e	0.3			
		PP'		16	16	e				
	CIR	PP		17	34	e				
		P'		16	03	e	0.3			
	BUL	PP'		16	18	i				
		P'		16	06	e	0.3			
	14	CIR	P	00	42	55	e	0.2	CGS 00 29 32 1.6N 126.3E Molucca Passage.	5.4
			KRR		43	04	e	0.2		
14	BUL	P		43	07	e	0.2			
		BHA		43	08	e	0.2			
14	BUL	Pn	00	45	23	e		BUL 00 43 49 26.5S 27.3E Witwatersrand.	3.3	
		Sn		46	33	i				
		Sg		47	05	i	1.0			
	CIR	Pn		45	26	e				
		Sn		46	38	e				
		S*		46	54	i				
	KRR	Sg		47	11	i	1.0			
		Pn		46	09	e				
		Sn		47	49	e				
	BHA	Sg		48	49	e	0.6			
		Pn		46	40	e				
		Sn		48	49	e				
	14	KRR	L		50	(15)	e	0.2		
P			05	35	10	e	0.5	Distant.		
14	BUL	P		35	46	e	0.2			
		P'	11	16	44	e	0.2	CGS 10 58 02 5.4S 152.0E New Britain Region.	5.6	
14	BUL	P'		16	48	e	0.3			
		14	BUL	Pn	14	23	39	e		BUL 14 23 00 19.6S 26.1E Rhodesia-Botswana Border Region.
Pg				23	44	i				
Sn				24	08	i				
KRR	Sg			24	15	i	5.0			
	Pg			24	17	i				
	Sg			25	11	i	2.5			
CIR	Pn			24	17	e				
	Sn			25	15	i				
	Sg			25	40	i	1.5			
BHA	Pg			24	43	e				
	Sn			25	24	e				
	Sg			25	50	i	1.0			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
14	CIR	P'	14	37	56	e	0.2	CGS 14 19 02 43.1N 147.5E Kurile Is.	6.1
		pP'		38	02	i			
	KRR	P'		37	55	e	0.8		
		pP'		38	00	i			
				38	14	i			
	BHA	PP		39	40	e			
		P'		37	55	e	0.3		
		pP'		38	00	i			
				38	(12)	e			
	BUL	PP		39	(30)	e			
P'			37	51	e				
			38	02	e	0.6			
	pP'		38	05	i				
			38	18	i				
14	BUL	P	14	47	45	e	0.2	Distant.	
		PP		51	50	e			
	CIR	P		47	(55)	e	0.2		
		PP		51	(50)	e			
	KRR	P		47	56	e	0.2		
		PP		51	(55)	e			
	BHA	P		48	00	e	0.5		
PP			48	16	i				
			51	(50)	e				
14	BUL	P	22	01	09	e	0.2	CGS 24 51 04 39.6N 27.8E	4.6
	CIR	P		01	16	e	0.2	Turkey.	
15	CIR	P'	03	56	29	e	0.3	CGS 03 37 53 3.5S 144.4E	5.4
	BUL	P'		56	32	e	0.3	Near coast of New Guinea.	
15	KRR	P'	04	50	55	e	0.3	CGS 04 32 00 43.0N 147.9E Kurile Is.	5.6
		pP'		51	07	i			
				52	32	e			
	BHA	P'		50	55	e	0.3		
		pP'		51	08	i			
				52	33	e			
	CIR	P'		50	57	e	0.4		
		pP'		51	50	i			
				52	45	e			
	BUL	P'		51	00	e	0.8		
pP'			51	12	i				
			52	46	e				
15	KRR	P	07	27	36	e	0.2	CGS 07 15 37 30.2N 95.0E Tibet.	5.2
		CIR	P		27	42			
	BUL	P		27	51	e	0.3		
				28	06	e			
			28	51	e				
15	CIR	P'	09	00	03	iC	5.0	CGS 08 41 55 21.6N 143.0E Mariana Is. Region.	6.1
		pP'		00	23	i			
				01	07	e			
				10	36	e			
	KRR	P'		00	05	iC	5.0		
		PP		01	23	i			
				10	30	e			
	BHA	P'		00	08	e	2.0		
		PP		01	25	i			
	BUL	P'		00	02	iC	10.0		
PP			01	40	e				
PKKP			10	22	e				
15	CIR	P'	19	22	12	e	0.1	CGS 19 04 09 23.5S 180.0W S. of Fiji Is.	5.0
		BUL	P'		22	19			
		SKP		24	50	i			
	KRR	P'		22	22	e	0.3		
		SKP		24	58	iC			
	BHA	P'		22	28	e	0.2		
SKP			25	06	i				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
15	CIR	Pn	22	55	33	e		BUL 22 54 09 26.2S 28.4E Witwatersrand.	3.5	
		Pg		55	55	i				
		Sn		56	40	i				
	BUL	Sg		57	08	i	1.7			
		Pn		55	33	e				
		Sn		56	43	i				
	KRR	Sg		57	11	i	2.0			
		Pn		56	20	e				
		Sn		58	01	e				
	BHA	Sg		58	53	i	0.8			
Pn			56(53)		e					
Sn			59	00	e					
16	CIR	P'	01	32	53	e	0.1	CGS 01 14 03 17.0N 147.3E Mariana Is. Region.	5.0	
		KRR		32	54	e	0.1			
		BUL		32	58	e	0.2			
	BHA	Pn	02	54	54	e		BUL 02 52 20 4.5S 33.0E Tabora Area., Tanzania.		
		Sn		56	47	e				
		Sg		57	50	i	0.4			
	BUL	L	03	00	40	e	0.1			
		CIR	L		01(00)	e	0.1			
	16	CIR	P	10	12(00)	e	0.2	CGS 10 05 07 24.0S 69.6E Mid-Indian Rise.		5.5
			BUL		12	20	e			
KRR				12(26)	e	0.1				
16	CIR	Pg	11	19	37	i		BUL 11 19 05 22.3S 32.9E Save Province., Mocambique.	2.2	
		Sg		19	59	i	1.7			
	BUL	Sg		21	25	e	0.5			
	KRR	Sg		22	17	e	0.2			
16	BHA	P'	15	34(20)	e	0.2	CGS 15 15 33 43.3N 147.6E Kurile Is.	5.7		
		KRR		34	22	e			0.2	
	BUL	FP		36	05	e				
		P'		34	27	e			0.4	
	CIR	FP		36	22	e				
16	BHA	P'	17	32	42	e	0.1	CGS 17 13 44 43.2N 147.7E Kurile Is.	5.4	
		KRR		32	43	e	0.1			
		BUL		32	48	e	0.2			
16	BUL	P	18	40	38	iC	2.5	CGS 18 27 54 22.7S 68.5W N. Chile.	5.0	
		FP		41	09	i				
				41	21	i				
	CIR	P		40	49	iC	0.5			
		KRR	P		40	50	iR			0.5
	BHA	P		40	50	e	0.5			
	16	BHA	Pn	22	14	03	e			
Sn				15	17	e				
Sg				15	58	i	1.1			
KRR		Sg		16	25	i	0.8			
CIR		L		18	00	e	0.5			
BUL	L		18	13	e	0.3				
17	BUL	P	07	33	00	iC	0.4	CGS 07 20 12 29.5S 71.1W Near coast of Central Chile.	4.9	
				34	01	e				
		CIR	P		33	10	e			0.3
KRR	P		33	12	e	0.3				
17	KRR	P'	08	44	32	e	0.2	CGS 08 25 08 54.2N 164.3W Unimak Is. Region.	4.4	
		BUL		44	40	iR	1.0			
	CIR	pP'		44	50	i				
		P'		44	40	iR	0.6			
	pP'		44	51	i					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
17	CIR	P'	10	29	12	e	0.2	CGS 10 10 30 7.0S 155.6E Solomon Is.	5.1
	BUL	P'		29	17	iC	0.7		
	KRR	P'		29	18	e	0.1		
	BHA	P'		29	23	e	0.2		
17	BHA	P'	12	13	25	e	0.2	CGS 11 54 55 42.7N 141.4E Hokkaido, Japan Region.	5.6
	KRR	P'		13	26	iC	0.4		
	CIR	P'		13	27	e	0.2		
	BUL	P'		13	31	iR	0.6		
17	BHA	Pn	15	18	00	e		BUL 15 16 30 10.1S 33.0E N.E. Zambia.	3.5
		Sn		19	07	i			
		Sg		19	37	i	3.3		
	KRR	Pn		18	19	e			
		Sn		19	40	i			
		L		20	26	i	0.7		
	CIR	L		22	13	e	0.3		
	BUL	L		22	15	e	0.3		
17	CIR	SKP	16	28(19)		e	0.1	CGS 16 07 44 18.0S 178.5W Fiji Is. Region.	4.9
	BUL	SKP		28	29	e	0.2		
	KRR	SKP		28	36	e	0.2		
	BHA	SKP		28	43	e	0.1		
17	BHA	P'	20	32	29	e	0.6	CGS 20 13 08 25.3N 109.2W Gulf of California.	5.7
		pP'		32	41	e			
	KRR	P'		32	32	e	0.2		
	BUL	P'		32	32	e	0.4		
	CIR	P'		32	38	e	0.5		
17	BHA	P'	20	34	23	e	0.7	CGS 20 14 59 25.0N 109.5W Gulf of California.	6.1
	BUL	P'		34	26	e	0.5		
	CIR	P'		34	35	e	0.8		
17	BHA	P'	20	46	44	e	0.2	CGS 20 27 25 25.4N 109.2W Gulf of California.	5.4
	BUL	P'		46	46	e	0.2		
	KRR	P'		46	48	e	0.2		
	CIR	P'		46	57	e	0.3		
17	KRR		21	58	12	e	0.2	Distant.	
	BUL			58	16	e	0.3		
18	BHA	P'	03	41(11)		e	0.2	CGS 03 21 54 24.9N 109.1W Gulf of California. (Very emergent event.)	5.3
	KRR	P'		41(20)		e	0.2		
	BUL	P'		41(21)		e	0.1		
	CIR	P'		41(27)		e	0.2		
18	BUL	P'	04	14(10)		e	0.1	CGS 03 54 50 24.8N 109.1W Gulf of California. (Very emergent event.)	5.3
	KRR	P'		14(14)		e	0.1		
	BHA	P'		14(15)		e	0.2		
	CIR	P'		14(23)		e	0.2		
18	CIR	P'	07	56	24	iC	1.0	CGS 07 37 41 14.8S 167.3W New Hebrides Is.	5.0
	BUL	P'		56	30	iR	1.4		
		pP'		57	04	e			
	KRR	P'		56	32	iR	1.5		
		pP'		57	07	e			
18	CIR	P'	14	28	36	e	0.3	CGS 14 09 46 29.1S 177.6W Kermadec Is. Region.	5.3
	BUL	P'		28	41	iR	1.0		
	KRR	P'		28	46	iR	0.9		
	BHA	P'		28	52	e	0.8		
18	BHA	P	15	07	52	e	0.2	CGS 14 57 57 29.9N 109.2E W. Pakistan.	5.0
	KRR	P		07	59	e	0.3		
	BUL	P		08	21	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
18	BUL	Pn	15	41	49	e		BUL 15 39 50 28.3S 26.7E	3.5
		Sn		43	18	e		Orange Free State Goldfields	
		Sg		44	03	i	0.8		
	CIR	Pn		41	52	e			
		Sn		43	22	e			
	KRR	Sg		44	08	e	0.8		
Pn			42	34	e				
18	CIR	P	17	26	29	e	0.1	CGS 17 15 25 2.4S 102.2E	5.2
		P		26	39	e	0.2	S. Sumatra.	
	BUL	P		26	45	iC	0.3		
	BHA	P		26	46	iC	0.4		
19	BUL	Pn	00	30	13	e		BUL 00 28 38 26.5S 27.1E	3.1
		Sn		31	24	e		Witwatersrand.	
		Sg		31	56	i	0.8		
	CIR	Pn		30	17	e			
		Sn		31	29	e			
	KRR	Sg		32	03	e	0.5		
Pn			31	00	e				
19	BUL	SKP	01	25	59	iC	0.7	CGS 01 05 30 21.8S 179.7W	4.4
		SKP		26	07	e	0.4	Fiji Is. Region.	
	BHA	SKP		26	16	e	0.3		
19	CIR	P	01	50	33	e	0.5	CGS 01 39 08 6.1S 105.3E	5.1
		P		50	45	e	0.4	Sunda Strait.	
	BUL	P		50	50	iR	1.2		
		P		50	52	iR	0.6		
19	BUL	P'	02	31	40	e	0.2	CGS 02 12 48 10.4S 161.5E	5.0
		P'		31	41	e	0.1	Solomon Is.	
19	KRR	P'	09	08	46	e	0.2	CGS 08 49 55 43.8N 148.2E	5.7
		P'		08	49	e	0.3	Kurile Is. Region.	
		P'		08	52	iC	0.6		
19	BUL	P	15	53	10	iR	0.6	CGS 15 40 40 41.9S 71.2W	5.0
		P		53	19	iR	0.4	S. Chile - Argentina Border Region.	
		PP		53	25	iR	0.3		
19	CIR	P	17	40	06	e	0.1	CGS 17 26 07 56.7S 142.1W	4.4
		PP		44	22	e		S. Pacific Cordillera.	
	BUL	P		40	10	e	0.1		
		PP		44	27	e			
	KRR	PP		44	49	e	0.2		
		PP		45	06	e	0.1		
19	BHA	Pn	18	18	46	iC		BUL 18 17 37 13.1S 23.9E	3.2
		Sn		19	36	i		N. Barotseland.	
		L		20	00	e	1.3		
		KRR	Pn		19	13	e		
	Sn			20	22	i	0.7		
	BUL	Pn		19	38	e			
		Sn		21	06	e			
	CIR	L		22	02	e	0.5		
Sn			22	02	e				
19	BHA	Pn	22	29	47	e		BUL 22 28 54 13.6S 25.0E	2.6
		Sn		30	25	i		N.W. Province, Zambia.	
		Sg		30	40	i	1.1		
	KRR	Pn		30	15	e			
		Sn		31	12	e	0.4		
	BUL	Pn		30	40	e			
Sn			32	01	e				
L			32	46	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
20	GIR	Pg	07	37	01	e		BUL 07 36 19 19.9S 33.7E Manica Province, Mocambique.	2.5	
				37	07	e				
		Sg		37	29	i	1.3			
	BUL	Sg		38	47	e	0.4			
	KRR	Sg		38	51	i	0.8			
20	KRR	P'	08	08	58	e	2.0	CGS 07 50 05 47.9N 153.6E Kurile Is.	5.8	
		pP'		09	12	i				
		PP		10	45	e				
	BHA	P'		08	59	e	0.9			
		PP		10	45	e				
	CIR	P'		09	03	iR	0.6			
		PP		11	01	e				
	BUL	P'		09	05	e	0.7			
PP			11	08	e					
20	BUL	P'	08	30	18	e	0.2	CGS 08 10 43 53.3N 164.0W Unimak Is. Region.	4.1	
		CIR	P'		30	19	e			0.2
20	CIR	P	12	33	42	e	0.2	CGS 12 22 14 7.5S 106.7E Java.	-	
		KRR	P		33	54	e			0.2
		BUL	P		33	58	iC			0.3
20	KRR	Pg	19	44	57	i		BUL 19 44 36 16.6S 28.4E Kariba.	2.4	
		Sg		45	11	i	4.8			
	BHA	Pg		45	16	i				
		Sg		45	42	i	1.5			
	BUL	Pg		45	39	e				
				45	42	i				
	CIR	Sg		46	24	i	1.0			
		Sn		46	52	e				
Sg			47	16	i					
	L		47	21	i	0.6				
20	BUL	P*	22	48(23)		e		BUL 22 46 50 20.2S 22.6E Okavango Swamp.	3.0	
		Sn		49	14	e				
		Sg		49	44	i	1.0			
	KRR	Pn		48	38	e				
		Sn		49	54	e				
		L		50	43	e	0.3			
	CIR	Pn		48	51	e				
		Sn		50	20	e				
		L		51	11	e	0.4			
	BHA	L		51	04	e	0.2			
20	KRR	Pg	23	17	10	i		BUL 23 16 51 16.6S 28.5E Kariba.	2.2	
		Sg		17	23	i	3.1			
	BHA	Pg		17	32	e				
		Sg		17	48	i	1.0			
	BUL	Pg		17	55	e				
		Sg		18	40	e	0.7			
	CIR	Sg		19	27	e				
	L		19	33	e	0.5				
21	CIR	Pn	00	02	40	e		BUL 00 01 11 22.8S 37.8E Offshore S. Mocambique.	2.8	
		Sn		03	45	e				
		L		04	19	e	0.4			
	KRR	Pn		03	55	e				
		Sn		05	12	e	0.2			
BUL	Sn		04	52	e	0.1				
21	CIR	P	10	37	04	iR	0.6	CGS 10 27 31 59.9S 27.7W S. Sandwich Is. Region.	5.1	
		pP		37	34	i				
	KRR	P		37	21	iR	0.6			
		pP		37	52	i				
	BHA	P		37	33	e	0.3			
	pP		38	03	e					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag	
21	BUL	Pn	14	39	17	e		BUL 14 37 36	27.1S 26.7E	3.7	
		Sn		40	32	e		W. Witwatersrand.			
	CIR	Sg		41	09	i	2.0				
		Pn		39	23	e					
	KRR	Sn		40	42	e		2.2			
		Pn		40	02	e	0.3				
21	KRR	Pg	14	41	46	iC		BUL 14 41 26	16.5S 28.5E	3.3	
		Sg		42	00	i	25.	Kariba.			
	BHA	Pg		42	03	i					
		Sg		42	32	i	11.				
	BUL	Pn		42	22	e					
		P*		42	28	i					
		Pg		42	33	i					
	CIR	S*		43	12	i					
		Sg		43	17	i	7.8				
		Pn		42	43	e					
		Sn		43	40	i					
Sg			44	06	i	6.3					
21	BHA	P'	20	46	21	e	0.2	CGS 20 26 56	52.8N 169.8W	4.8	
		KRR		46	24	e	0.2	Fox Is., Aleutians.			
	BUL		46	24	e	0.2					
	CIR		46	32	e	0.2					
21	BHA	P'	21	29	15	e	0.1	CGS 21 09 46	22.9N 110.8W	4.7	
		KRR		29	18	e	0.2	Off W. coast of Baja California.			
	CIR		29	19	e	0.3					
21	KRR	Pg	22	08	57	i		BUL 22 08 30	17.0S 28.0E	2.3	
		T		09	02	i		Central Lake Kariba.			
	BHA	Sg		09	16	i	4.3				
		Pn		09	12	e					
		Pg		09	18	e					
	BUL	Sn		09	43	e					
		Sg		09	53	i	1.3				
		P*		09	27	e					
	CIR	Sn		09	57	i					
		Sg		10	10	i	0.8				
		Pg		10	04	e					
Sn			10	45	e						
	Sg		11	12	e	0.4					
22	BUL	SKP	08	01	55	e	0.3	CGS 07 41 17	20.9S 178.7W	4.8	
		KRR		01	58	e	0.2	Fiji Is. Region.			
22	BHA	P'	10	24	03	e	0.5	CGS 10 04 36	23.3N 110.4W	5.1	
		BUL		24	03	e	0.3	Baja California.			
	KRR		24	06	e	0.3					
	CIR		24	13	e	1.4					
22	BUL	P	10	31	03	e	0.3	CGS 10 23 15	6.8S 12.2W	4.7	
		KRR		31	07	e	0.3	Ascension Is. Region.			
	CIR		31	25	e	0.3					
22	CIR	P'	16	03	45	e	0.2	CGS 15 45 05	7.6S 156.0E	5.1	
		BUL		03	53	e	0.5	Solomon Is.			
	KRR		03	54	e	0.1					
	BHA		03	58	e	0.1					
22	CIR	P'	17	53	15	e	0.2	CGS 17 34 20	16.1S 174.1W	4.9	
		BUL		53	16	e	0.4	Tonga Is.			
	KRR		53	23	e	0.2					
23	CIR	Pn	00	08	29	e		BUL 00 06 54	26.3S 27.3E	3.1	
		Sn		09	40	e		Witwatersrand.			
	KRR	Sg		10	13	i	0.5				
		Pn		09	11	e					
	L		11	55	e	0.4					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
23	BUL	P'	02	02	07	e	0.2	CGS 01 42 53 15.5S 173.0W	5.0
	CIR	P'		02	(10)	e	0.1	Tonga Is.	
	KRR	P'		02	14	e	0.2		
	BHA	P'		02	23	e	0.5		
23	KRR		02	35	(35)	e	0.1	Distant.	
	BHA			35	41	e	0.3		
	BUL			35	46	e	0.1		
23	KRR		02	47	52	e	0.2	Distant.	
				48	01	e			
	BHA			47	59	e	0.2		
	BUL			48	04	e	0.2		
23	KRR	P'	06	58	12	e	0.2	CGS 06 39 25 39.8N 144.2E	5.2
	BUL	P'		58	17	e	0.3	Off E. coast of Honshu, Japan.	
		pP'		58	28	e			
23	BUL	P'	08	13	17	iR	0.4	CGS 07 54 28 7.6S 156.3E	5.0
	KRR	P'		13	18	e	0.2	Solomon Is.	
23	BHA	Pn	16	10	(10)	e	0.4	BUL 16 06(50) 0.0 29.5E	4.3
		L		14	16	i	1.2	N. Tanzania.	
	KRR	Pn		10	34	e	0.2		
		L		15	20	e	0.7		
	BUL	Pn		11	09	e	0.4		
		L		17	07	e	0.6		
	CIR	Pn		11	18	e	0.3		
		L		17	29	e	0.6		
23	CIR	P	19	11	43	e	1.0	CGS 19 05 12 53.5S 25.9E	5.2
	BUL	P		11	48	iC	1.7	South of Africa.	
	KRR	P		12	16	e	0.9		
	BHA	P		12	37	e	1.4		
23	BHA	P	19	25	58	e	0.1	CGS 19 16 18 33.9N 58.9E	5.1
	KRR	P		26	07	e	0.2	Iran.	
	CIR	P		26	27	e	0.2		
	BUL	P		26	30	e	0.2		
24	CIR	Pg	02	29	52	e		BUL 02 28 53 19.3S 34.6E	2.6
		Sg		30	33	i		Manica Province, Mocambique.	
	KRR	Pg		30	24	e			
		Sn		31	07	e			
		Sg		31	30	i	0.9		
	BUL	Sg		31	44	i	0.6		
24	BHA	L		32	43	e	0.2		
24	CIR	P	09	44	08	e	0.2	CGS 09 31 26 61.3S 154.2E	5.1
	KRR	P		44	34	e	0.1	Balleny Is. Region.	
24	CIR	P	13	49	58	e	0.4	CGS 13 40 09 45.5S 96.3E	-
	BUL	P		50	17	e	0.5	S.E. Indian Rise.	
	BHA	P		50	44	e	0.2		
25	BUL	P	02	50	45	e	0.5	CGS 02 38 08 39.2S 71.9W	4.7
	CIR	P		50	53	e	0.2	S. Chile - Argentina Border Region.	
	KRR	P		51	01	e	0.2		
	BHA	P		51	06	e	0.1		

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Iy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag	
25	KRR	Pg	20	31	31	e		BUL 20 31 10 16.6S 28.4E	Kariba.	2.1	
				31	35	i					
	BHA	Pg			31	45	i	3.3			
					31	48	e				
	BUL	Pg			31	53	i	1.2			
					32	17	i				
		Sg			32	14	e				
					32	44	e				
	CIR	Sg			33	00	i	0.6			
					33	27	e				
	Sg			33	50	e					
				33	55	i	0.5				
25	KRR	P	21	45	40	e	0.2	CGS 21 32 13 0.4N 126.0E	Molucca Passage.	5.1	
				45	44	e	0.3				
	BHA	P			45	55	i				
					45	46	e	0.2			
		pP			46	01	e				
26	BHA	P	02	25	19	e	0.1	CGS 02 15 39 41.8N 20.1E	Albania.	4.9	
				25	35	e	0.3				
	KRR	P			25	41	i				
					25	57	e	0.3			
	BUL	P			26	06	e	0.4			
CIR	P			26	12	i					
26	KRR	Pn	13	05(31)		e	0.2	BUL 13 01 35 0.2S 33.8E	Kenya.	4.1	
				10	31	e	0.3				
	BUL	Pn			06(10)		e	0.3			
					12	21	i	0.4			
	CIR	Pn			06(23)		e	0.2			
					12	52	e	0.4			
	BHA	L			09	31	e	1.1			
26	CIR	P'	17	16	39	e	0.7	CGS 16 58 02 5.8S 151.2E	New Britain Region.	5.6	
				16	44	iC	1.5				
	BUL	P'			16	55	i				
					16	44	iC	0.5			
	KRR	P'			17	00	e				
					16	48	iC	0.5			
BHA	P'			17	02	i					
26	BUL	P'	19	31	46	e	0.2	CGS 19 13 13 6.1S 148.0E	New Britain Region.	4.9	
				31	48	e	0.2				
				31	51	e	0.2				
26	KRR	P'	20	47	26	e	0.2	CGS 20 28 06 15.4S 173.3W	Tonga Is.	5.4	
				47	27	e	0.2				
	BHA	P'			47	55	e				
					47	34	e	0.4			
					48	04	e				
27	KRR	P'	03	45	05	e	0.2	CGS 03 26 16 43.7N 147.6E	Kurile Is.	5.0	
				45	10	e	0.3				
27	BUL	P	04	07	18	iC	2.2	CGS 03 57 59 57.4S 26.3W	S. Sandwich Is. Region.	5.4	
				07	42	i					
	CIR	P			07	25	iC	2.2			
					07	49	i				
	KRR	P			07	42	iC	1.6			
					08	06	i				
	BHA	P			07	53	e	0.6			
					08	17	i				
27	KRR		06	53	53	e	0.2	Distant.			
				54	07	e	0.2				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
27	KRR	Pg	12	12	17	iR		BUL 12 11 54	16.9S 28.2E	2.4
		Sg	12	33		i	7.	Kariba.		
	BUL	Pg	12	50		e				
		Sn	13	18		e				
		Sg	13	33		e	0.6			
27	CIR	Sn	14	05		e				0.4
		Sg	14	29		e				
27	CIR	P	13	34	21	iR	1.3	CGS 13 23 13	4.3S 104.6E	5.6
	KRR	P	34	31		iR	3.9	S. Sumatra.		
	BUL	P	34	37		iR	6.0			
27	BUL	P	16	08	38	iC	1.2	CGS 15 55 44	17.3S 70.1W	4.9
	BHA	P	08	46		e	0.2	Near Coast of Peru.		
	KRR	P	08	47		e	0.2			
	CIR	P	08	48		e	0.3			
27	BUL	Pn	18	31	44	e		BUL 18 30 10	26.5S 27.3E	3.4
		Sg	33	28		i	1.4	Witwatersrand.		
	CIR	Pn	31	47		e				
		Sg	33	32		i	1.4			
	KRR	Pn	32	29		e				
27		Sn	34	11		e				
		L	35	14		i	0.7			
	CIR	Pn	19	07	58	iC		BUL 19 07 29	21.3S 33.4E	4.0
		Sn	08	18		i	-	S. Manica Province, Mocambique.		
	BUL	Pn	08	38		e				
		Sn	09	27		i				
		Sg	09	45		i	13.2			
KRR	Pn	08	51		e					
	Sn	09	55		i					
27		Sg	10	21		i	13.5			
	BHA	Pn	09	28		e				
		Sn	10	57		i				
27		Sg	11	42		i	4.2			
	CIR	P'	19	41	59	e	0.2	CGS 19 23 11	28.7N 143.8E	5.4
	KRR	P'	42	00		e	0.3	Bonin Is. Region.		
	BUL	P'	42	04		e	0.4			
27	KRR	P'	20	09	40	e	0.1	CGS 19 51 07	34.9N 141.1E	
	BUL	P'	09	45		iC	0.3	Off coast of Honshu, Japan.		
27	CIR	Pg	20	16	27	iC		BUL 20 15 59	21.3S 33.3E	3.2
		Sg	16	47		i	-	S. Manica Province, Mocambique.		
	BUL	Pg	17	23		e				
		Sn	17	58		e				
		Sg	18	16		i	1.8			
	KRR	Pn	17	22		e				
		Sn	18	22		e				
27		Sg	18	50		i	2.5			
	BHA	Pn	17	58		e				
		Sn	19	26		e				
27		Sg	20	12		e	0.4			
	CIR	Pn	21	30	13	iC		BUL 21 29 47	21.3S 33.3E	2.5
		Pg	30	16		i		S. Manica Province, Mocambique.		
		Sg	30	33		i	2.0			
	BUL	Sg	32	02		e	0.4			
KRR	Sg	32	36		e	0.7				
28	BHA	P	04	09	38	e	0.4	CGS 03 58 35	39.1N 73.6E	5.1
	KRR	P	09	40		e	0.6	Tadzhik - Sinkiang Border Region.		
	CIR	P	10	00		e	0.4			
	BUL	P	10	03		e	1.0			
28	KRR	P	04	17	28	e	0.2	CGS 04 06 22	39.2N 73.9E	5.1
	BUL	P	17	48		e	0.2	Tadzhik - Sinkiang Border Region.		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
28	BUL		04	58	39	e	0.1	Distant.	
	CIR			58	43	e	0.2		
28	BHA	Pn	05	29	(50)	e		BUL 05 28(16) 10.6S 33.7E Zambia - Malawi Border Region.	3.2
		Sn		30	59	e			
		Sg		31	32	i	1.2		
	KRR	Sg		32	03	e	0.5		
	CIR	Sg		33	37	e	0.3		
	BUL	Sg		33	43	e	0.2		
28	CIR	Pn	09	30	14	i		BUL 09 29 47 21.3S 33.3E S. Manica Province, Mocambique.	2.5
		Pg		30	17	i			
		Sg		30	35	i	3.0		
	BUL	Sg		32	03	e	0.6		
	KRR	Sg		32	38	e	0.6		
28	CIR	P'	14	13	(07)	e	0.2	CGS 13 54 11 31.5S 177.9W Kermadec Is.	5.3
	BUL	P'		13	09	e	0.4		
				13	35	e			
	KRR	P'		13	(14)	e	0.3		
28	BUL	P'	17	08	52	e	0.3	CGS 16 49 57 31.7S 177.8W Kermadec Is.	5.1
	KRR	P'		08	58	e	0.2		
	BHA	P'		09	04	e	0.2		
		pP'		09	16	e			
28	CIR	Pn ⁷	20	18	44	i		BUL 20 18 18 21.3S 33.3E S. Manica Province, Mocambique.	2.6
		Pg		18	47	i			
		Sg		19	05	i	2.8		
	BUL	Sg		20	33	i	0.8		
	KRR	Sg		21	07	i	0.9		
29	BHA	Pn	00	17	10	e		BUL 00 15 28 7.5S 30.5E S. Lake Tanganyika.	3.3
		Sn		18	25	e			
		L		19	09	i	0.8		
	KRR	L		20	17	e	0.3		
	CIR	L		22	24	e	0.2		
29	BHA	P	10	14	38	iC	3.6	CGS 10 02 50 26.3N 96.1E Burma.	5.4
		S		24	16	e			
	KRR	P		14	39	iC	6.5		
	CIR	P		14	43	iC	3.3		
	BUL	P		14	53	iC	4.8		
		S		24	47	e			
29	BUL	P	11	10	32	e	0.3	CGS 10 58 23 10.3S 111.9E S. of Java.	-
		pP		10	46	e			
	KRR	P		10	43	e	0.2		
29	BHA	P'	14	11	53	e	0.2	CGS 13 53 09 14.5N 91.0W Guatemala.	4.3
	BUL	P'		11	54	e	0.2		
	KRR	P'		11	55	e	0.2		
29	CIR	P	15	33	31	e	0.2	CGS 15 22 29 5.9S 110.7E Java Sea.	5.2
	KRR	P		33	42	e	0.2		
	BUL	P		33	46	iC	0.6		
	BHA	P		33	49	iC	0.3		
29	CIR	P	15	37	07	iR	0.3	CGS 15 26 02 5.7S 110.6E Java Sea.	5.2
	KRR	P		37	18	iR	0.8		
	BUL	P		37	22	iR	0.9		
	BHA	P		37	26	iR	0.5		
30	BHA	P'	07	30	32	e	0.8	CGS 07 11 39 43.7N 147.8E Kurile Is.	5.4
		FP		32	00	e			
	KRR	P'		30	32	e	0.6		
	CIR	P'		30	34	e	0.4		
	BUL	P'		30	37	e	1.1		
		FP		32	17	e			

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Dy	Stn	Phase	h	h	m	s	GM	DA	Epicentral data; Remarks	Mag
30	BHA	P'	08	00	26		e	0.2	CGS 07 41 43 43.7N 147.9E Kurile Is.	5.0
	KRR	P'		00	35		e	0.2		
	CIR	P'		00	37		e	0.2		
	BUL	P'		00	40		e	0.3		
30	BHA	P'	08	13	18		e	0.3	CGS 07 54 29 43.7N 147.7E Kurile Is.	5.5
	KRR	P'		13	18		e	0.3		
	CIR	P'		13	18		e	0.3		
	BUL	P'		13	25		iC	0.6		
30	BHA	P'	08	46	58		e	0.3	CGS 08 28 07 43.6N 147.8E Kurile Is.	5.4
	KRR	P'		46	58		e	0.2		
	BUL	P'		47	03		e	0.3		
	CIR	P'		47	06		e	0.2		
30	CIR	P'	13	10	11		e	0.2	CGS 12 51 58 5.7S 148.3E New Britain Region.	5.2
		pP'		10	49		e			
				11	36		i			
	KRR	P'		10	21		e	0.3		
	BUL	P'		10	22		e	0.2		
	BHA	P'		10	26		e	0.2		
30	CIR	Fg	15	30	54		i		BUL 15 30 37 20.8S 32.4E Rhodesia - Mocambique Border.	2.2
		Sg		31	05		i	2.7		
	BUL	Sg		32	29		i	0.6		
	KRR	Sg		33	05		e	0.5		
30	BUL	Pn	15	54	11		i		BUL 15 52 29 27.0S 27.0E W. Witwatersrand.	4.3
		Sn		55	24		i	8.7		
		Sg		56	03		i			
	CIR	Pn		54	16		e			
		Sn		55	34		i			
		Sg		56	10		i	5.8		
	KRR	Pn		54	56		iC			
		Sn		56	46		i			
		SgSg		57	48		i	4.7		
	BHA	Pn		55	26		iR			
	Sn		57	40		i				
	SgSg		58	59		i	2.4			
30	BUL	Pn	16	21	53		e		BUL 16 20 12 27.0S 27.0E W. Witwatersrand.	3.0
		Sg		23	44		i	0.4		
	CIR	Pn		21	58		e			
		Sg		23	52		e	0.4		
	KRR	SgSg		25	31		e	0.2		
30	BUL	P	19	04	50		iR	3.2	CGS 18 53 24 27.2S 63.2W Santiago del Estero Province, Argentina.	4.2
	CIR	P		05	00		iR	0.4		
	KRR	P		05	02		iR	0.7		
	BHA	P		05	03		e	0.6		
30	BUL	Pn	21	24	03		e		BUL 21 22 28 26.5S 27.2E Witwatersrand.	3.4
		Sn		25	14		e			
		Sg		25	45		i	1.5		
	CIR	Pn		24	08		e			
		Sn		25	20		e			
		Sg		25	52		e	0.8		
	KRR	Pn		24	50		e			
		Sg		27	32		e	0.6		
30	BUL		22	14	29		e	0.1	Distant.	
	CIR			14	36		e	0.2		
31	BUL	P	10	02	22		e	0.3	CGS 09 52 57 55.2S 24.9W S. Sandwich Is. Region.	4.3
	CIR	P		02	29		e	0.3		
		pP		02	47		e			
	KRR	P		02(41)			e	0.2		
	pP		03	00		e				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
31	CIR	P	13	16	17	e	0.4	CGS 13 05 09 4.5S 102.3E S. Sumatra.	5.5
		pP		16	35	i			
	KRR	P		16	28	iC	0.5		
		pP		16	45	i			
	BUL	P		16	34	iC	1.0		
		pP		16	51	e			
BHA	P		16	36	iC	1.1			
	pP		16	53	i				
31	BHA	Pn	13	29	43	e		BUL 13 27 47 6.5S 30.0E Lake Tanganyika.	4.1
		Sn		31	09	i			
		L		31	58	i	4.2		
	KRR	Pn		30	14	e			
		Sn		32	02	e			
		L		33	11	i	1.9		
	BUL	Pn		30	55	e			
		Sn		33	19	e			
		L		34	57	i	0.8		
	CIR	Pn		31	12	e			
		L		35	21	e	0.8		
	31	CIR	P'	21	06	47	e	0.3	CGS 20 48 23 19.8S 177.9W Fiji Is. Region.
SKP				09	34	e			
BUL		P'		06	51	e	0.5		
		SKP		09	42	e			
KRR		P'		06	57	e	0.2		
		SKP		09	52	e			
BHA		P'		07	03	e	0.2		
		SKP		09	57	e			

31 MAR 1970

RHODESIA METEOROLOGICAL SERVICESSEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA): $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
Litho. foundation: Dolomite and shales of the Middle Katanga System.
Authority: Zambia Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- CHILEKA (CLK): $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
Litho. foundation: Charnockitic granulites of the Basement Complex.
Authority: Malawi Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
- KAROI (KRR): $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
Litho. foundation: Granitic gneisses of the Zambesi type.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.
- BULAWAYO (BUL): $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
Litho foundation: Hornblend schists of the Bulawayan System.
Authority: Rhodesia Meteorological Service.
Instruments: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
WWSS Station: SP magnification 100,000
LP magnification 1,500
- CHIREDDZI (CIR): $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
Litho foundation: Gneisses or Charnockites of the Limpopo belt.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emersio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

SEISMOLOGICAL BULLETIN: OCT 1969 - 1

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BHA	P	04	14	57	e	0.3	CGS 04 02 58 49.8N 78.2E E. Kasakh S.S.R.	5.3
	KRR	P		15	06	e	0.3		
	CIR	P		15	19	e	0.2		
	BUL	P		15	21	e	0.3		
01	BUL	Pn	04	23	(25)	e		BUL 04 19 53 32.7S 19.9E S.W. Cape Province, S. Africa.	3.9
		S*		26	27	i			
		L		27	33	e	0.7		
	CIR	Pn		23	30	e			
				23	36	i			
		S*		26	45	e			
		L		28	11	i	0.5		
	KRR	S*		27	50	e			
		L		29	15	e	0.3		
	BHA	L		30	11	e	0.2		
01	BUL	P	05	19	25	e	0.9	CGS 05 05 43 11.9S 75.1W Peru.	5.9
		PP		23	23	e			
	BHA	P		19	40	e	0.1		
		PP		23	34	e			
	KRR	P		19	41	e	0.2		
		PP		23	35	e			
	CIR	P		19	41	e	0.2		
	PP		23	40	e				
01	BUL	P	06	11	54	e	0.5	CGS 05 58 13 11.7S 75.1W Peru.	5.7
04	BUL	PKP	06	45	14	e	0.5	CGS 06 26 45 11.8S 167.5E Santa Cruz Is.	5.0
		SKP		48	05	e			
01	BUL	P	08	41	55	e	0.3	CGS 08 28 14 11.8S 75.0W Peru,	5.8
01	BUL		15	00	32	e	0.3	Distant.	
	KRR			00	(42)	e	0.2		
01	BUL	Pn	15	04	(03)	e		BUL 15 02 32 26.4S 27.3E Witwatersrand.	2.8
		Sn		05	15	ee			
		Sg		05	48	i	0.5		
	CIR	Pn		04	08	e			
		Sn		05	20	e			
		Sg		05	53	i	0.3		
	KRR	Sg		07	34	e	0.2		
01	BUL	Pn	15	54	07	e		BUL 15 52 27 27.0S 27.0E O.F.S. Goldfields.	3.3
		Sn		55	20	e			
		Sg		55	56	e	0.8		
	CIR	Pn		54	12	e			
		S*		55	32	i			
		Sg		56	05	i	0.7		
	KRR	Pn		54	53	e			
		S*		56	57	e			
		Sg		57	44	e	0.5		
	01	BHA	PKP	17	29	32	e		
		PP		30	18	e			
		PKKP		40	23	e			
KRR		PKP		29	23	e	0.4		
		PP		30	40	e			
		PKKP		40	20	e			
BUL		PP		30	14	e	0.2		
		PKKP		40	22	e			
CIR		PP		30	34	e	0.3		
		PKKP		40	16	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BUL	PKP	17	30	49	i	1.3	CGS 17 11 11 48.5N 126.5W Vancouver Is. Region.	4.7
01	BUL	P	17	46	14	e	0.5	Distant.	
	CIR	P		46	18	e	0.2		
	KRR	P		46	(35)	e	0.2		
01	KRR	P	17	55	(15)	e	0.2	CGS 17 46 29 0.0 17.4 W	5.0
	BUL	P		55	18	e	0.3	N. of Ascension Is.	
	CIR	P		55	38	e	0.3		
01	BUL	P	20	02	28	e	1.3	CGS 19 53 16 60.8S 19.7W	5.6
	CIR	P		02	33	e	4.0	S.W. Atlantic Ocean.	
	KRR	P		02	53	e	2.5		
	BHA	P		03	06	e	0.7		
01	CIR	P	20	23	59	e	0.3	CGS 20 12 01 49.1S 127.2E	4.7
	BUL	P		24	13	e	0.2	S. of Australia.	
	KRR	P		24	22	e	0.2		
01	CIR	pPKP	20	49	(28)	e	0.3	CGS 20 30 23 27.3S 176.5W	5.2
	KRR	pPKP		49	(29)	e	0.1	Kermadec Is.	
				49	(49)	i	0.5		
	BUL	pPKP		49	(32)	e	0.2		
				49	43	i	0.5		
01	KRR	P	22	58	26	iC	0.9	CGS 22 48 13 36.5N 70.9E	4.9
	CIR	P		58	50	e	0.3	Hindu Kush Region.	
	BUL	P		58	56	iC	1.0		
02	BUL	PKP	04	18	23	e	0.2	CGS 04 00 18 21.8S 179.4W	4.9
		SKP		20	52	iR		Fiji Is. Region.	
	KRR	PKP		18	29	e	0.4		
		pPKP		20	40	e			
		SKP		21	00	iR			
	CIR	pPKP		20	26	e	0.1		
		SKP		20	44	e			
	BHA	SKP		21	08	iR	0.8		
02	BHA	PKP	05	16	29	e	0.2	CGS 04 56 45 38.5N 122.7W	5.2
	KRR	PKP		16	35	e	0.3	N. California.	
	BUL	PKP		16	(37)	e	0.3		
	CIR	PKP		16	(45)	e	0.2		
02	KRR	PKP	06	39	(46)	e	0.2	CGS 06 19 56 38.5N 122.7W	5.1
	BUL	PKP		39	46	e	0.3	N. California.	
	CIR	PKP		39	(52)	e	0.2		
02	CIR	Pn	16	11	23	e		BUL 16 07 45 33.0S 20.1E	4.1
		Sn		14	14	i		S.W. Cape Province, S. Africa.	
		L		15	55	i	0.7		
	BUL	Sn		13	(50)	e			
		S*		14	17	e			
		L		15	30	i	0.6		
	KRR	Sn		15	(30)	e			
		L		17	16	e	0.3		
02	KRR	PKP	22	25	16	e	1.1	CGS 22 06 00 51.4N 179.2E	6.5
		pPKP		25	26	iC		Rat Is., Aleutian Is.	
		PP		28	15	iR		(E. Amchitka Is. 'Milrow')	
		SKP		29	01	i			
		SKKS		37	23	e			
	BUL	PKP		25	22	e	4.0		
		pPKP		25	31	iR			
		SKP		29	10	i			
		SKKS		37	06	i			
	CIR	PKP		25	22	e	3.2		
		SKP		29	11	i			
		SKKS		37	10	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
03	CIR	PKP	01	52	10	e	0.2	CGS 01 33 20 32.9S 178.0W S. of Kermadec Is.	5.7
		pPKP		52	29	e			
	BUL	PKP		52	12	e	0.4		
		pPKP		52	31	e			
	KRR	PKP		52	21	e	0.7		
03		pPKP		52	33	e			
	BHA	PKP		52	25	e	0.3		
		pPKP		52	35	e			
03	KRR	PP	07	54	33	e	0.2	CGS 07 35 45 31.4N 131.4E Kyushu, Japan.	4.6
		SKP		57	23	e			
	BUL	PP		54	33	e	0.3		
03	CIR	Pn	14	16	07	e		BUL 14 12 26 32.8S 19.7E S.W. Cape Province, S. Africa.	4.1
		Sn		19	16	i			
		S*		19	30	i			
		Sg		20	36	i	0.7		
		L		20	43	e			
	BUL	Sn		18	40	e			
		L		20	14	i	0.7		
	KRR	S*		20	42	e			
		Sg		21	51	i			
		L		21	57	e	0.3		
	03	CIR	P	15	50	48	iC		
KRR		P		50	59	iC	1.5		
		pP		51	16	i			
BUL		P		51	05	iC	2.2		
		pP		51	22	iC			
03	BUL	Pn	17	27	03	e		BUL 17 23 34 32.9S 20.0E S.W. Cape Province, S. Africa.	4.7
		Sn		29	47	i			
		S*		30	13	i			
		L		31	21	i	2.5		
	CIR	Pn		27	14	e			
		Sn		30	05	e			
		L		31	45	i	3.0		
	KRR	Pn		27	44	e			
		Sn		31	22	i			
		S*		31	42	i			
		L		33	00	i	1.8		
	BHA	Pn		28(05)		e			
		Sn		32	07	e			
		S*		32	28	i			
		L		34(00)		i	1.5		
04	KRR	Pn	16	38	38	e		BUL 16 36 10 27.7S 27.2E O.F.S. Goldfields.	2.8
		Sn		40	41	e			
		Sg		41	48	e	0.2		
	BUL	Sn		39	20	e			
		Sg		40	02	e	0.2		
	CIR	Sn		39	22	e			
04		Sg		40	05	e	0.2		
	KRR	Pg	22	56	02	e		BUL 22 55 52 17.0S 27.9E Lake Kariba.	2.4
		Sg		56	22	i	4.0		
	BHA	Pg		56	30	e			
		S*		56(46)		i	-		
	BUL	Pg		56	31	e			
		S*		57	03	e			
		Sg		57	13	i	1.0		
	CIR	Sn		57	45	e			
		S*		58	02	e			
	Sg		58	13	i	0.4			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral Data; Remraks	Mag			
05	BUL	Pn	05	04	56	e		BUL 05 01 28 33.1S 20.1E S.W. Cape Province, S. Africa.	5.1			
			05	04	i							
			07	40	i							
		Sn	S*	08	09	i						
	09			15	i	7.5						
	05			07	e							
	CIR	Pn	L	05	15	e						
				08	00	e						
				08	20	i						
	KRR	Pn	L	09	40	i	7.0					
				05	37	e						
				05	46	i						
	BHA	Pn	S*	09	01	i						
				09	32	i						
				11	02	i	5.5					
BHA	Pn	L	05	59	e							
			09	54	i							
			10	32	i							
BUL	L	L	11	54	i	2.0						
			05	BUL	P	15	35	30	e	0.4	CGS 15 22 46 22.5S 68.2W N. Chile.	4.6
						36	02	e				
KRR	P	L	35	40	e	0.2						
			05	CIR	P	16	47	35	e	0.2	CGS 16 34 16 7.1N 123.7E Mindanao, Philippine Is.	5.4
47	38	e				0.2						
47	45	e				0.2						
47	47	e				0.4						
05	CIR	PKP	21	05	16	e	0.3	CGS 20 46 33 21.8S 170.7E Loyalty Is. Region.	5.3			
			BUL	PKP	05	20	e			1.0		
			KRR	PKP	05	22	iC			1.0		
05	KRR	Pn	22	46	50	e		BUL 22 44 13 13.5S 40.5E Offshore N. Mocambique.	4.3			
			48	48	i							
			49	40	i							
	CIR	Pn	Sg	49	50	i						
				50	00	i	2.5					
				46	53	eiC						
	BHA	Pn	L	48	54	i						
				49	45	e						
				50	12	i	1.0					
	BHA	Pn	L	47	01	e						
				49(07)	e	-						
				47	19	e						
	BUL	Pn	L	50	39	i						
				51	07	i	2.5					
				06	CIR	P	04	43	43	e	0.5	CGS 04 33 17 48.1S 104.1E S.E. Indian Rise.
43	48	i										
BUL	P	L	44	00	e	0.4						
			44	10	e	0.1						
			44	27	e	0.2						
06	CIR	Pn	09	13	26	e		BUL 19 12 43 20.3S 34.3E Central Mocambique.	2.8			
			13	31	i							
			14	05	i	2.0						
	BUL	Pn	Sg	14	01	e						
				15	00	e						
				15	20	i	0.6					
	KRR	Pn	L	14	05	e						
				15	07	i						
				15	35	i	1.2					
06	BUL	PKP	10	20	35	e	0.3	CGS 10 01 40 30.3S 177.9W Kermadec Is. Region.	4.5			
			20	51	e							
			KRR	PKP	20	40	e			0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag		
06	CIR	Pn	10	27	01			BUL 10 26 26 20.0S 33.7E Central Mocambique.	2.2		
				27	18	i					
		Sn		27	26	e					
		Sg		27	32	i	1.0				
	KRR	Sn		28	(30)	e					
		Sg		28	59	i	0.4				
	BUL	Sg		28	50	e	0.3				
06	CIR	P	13	01	18	iR	0.3	CGS 12 48 05 15.0N 120.1E Luzon, Philippine Is.	5.6		
	KRR	P		01	22	iR	0.3				
				06	08	e					
	BUL	P		01	29	e	0.8				
				06	(02)	e					
06	BUL	Pn	13	14	44	e		BUL 13 12 45 28.1S 26.4E O.F.S. Goldfields.	3.5		
		Sn		16	10	e					
		Sg		16	55	i	1.0				
	CIR	Pn		14	47	e					
		Sn		16	15	e					
		Sg		17	01	i	0.7				
	KRR	Pn		15	30	e					
		Sn		17	33	i					
		Sg		18	41	i	0.4				
	06	KRR	Pn	13	34	(35)	e			BUL 13 33 58 17.2S 27.0E Kandabwe Area, Zambia.	2.3
			Pg		34	42	e				
Sn				35	05	e					
Sg				35	11	i	1.6				
BUL		Pg		34	56	iR					
		Sg		35	36	e	0.6				
CIR		P*		35	30	e					
		Sg		36	48	e					
		L		36	52	e	0.3				
06	BUL	Pn	20	30	(03)	e		BUL 20 26 31 32.9S 19.8E S.W. Cape Province, S. Africa.	3.9		
		S*		33	01	e					
		L		34	15	i	0.7				
	CIR	Pn		30	13	e					
		Sn		33	05	e					
		Sg		34	41	i					
		L		34	49	e	0.5				
	KRR	S*		34	35	e					
		L		36	00	e	0.3				
	BHA	S*		35	55	e					
		Sg		36	50	i	0.2				
	06	CIR	Pn	21	29	27	e			BUL 21 28 02 26.2S 28.6E Witwatersrand.	3.0
			S*		30	39	i				
Sg				30	59	i	0.8				
BUL		Sn		30	(35)	e					
		Sg		31	02	i	0.8				
KRR		S*		32	14	e					
		Sg		32	47	e	0.3				
BHA		Sg		33	59	e	0.2				
06		BUL	Pn	22	08	53	e		BUL 22 05 25 33.2S 20.4E S.W. Cape Province, S. Africa.	4.4	
			Sn		11	47	i				
	L			13	12	i	2.0				
	CIR	Pn		09	03	e					
				09	09	i					
		Sn		11	55	e					
		L		13	37	i	1.0				
	KRR	Pn		09	35	e					
		Sn		13	12	e					
		L		14	54	i	0.8				
	BHA	Pn		09	55	e					
		Sn		13	56	e					
		S*		14	18	i					
L			15	50	e	0.4					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
07	CIR	P	02	05	32	e	0.2	CGS 01 55 06 48.1S 104.1E S.E. Indian Rise.	-
		pP		05	37	iC			
	BUL	P		05	49	e	0.2		
	KRR	P		06	03	e	0.2		
	BHA	P		06	20	e	0.2		
07	CIR	P	03	59	27	e	0.2	CGS 03 47 52 6.1S 104.2E Sunda Strait.	5.2
	KRR	P		59	(27)	e	0.2		
		pP		59	41	i			
	BUL	P		59	30	e	0.2		
		pP		59	45	iR			
	BHA	P		59	(41)	e	0.2		
07	BHA	P	05	18	37	e	0.2	CGS 05 09 11 39.2N 28.4E Turkey.	5.0
	KRR	P		18	54	e	0.5		
		PcP		19	51	i			
	BUL	P		19	13	e	0.6		
		PcP		20	06	i			
		CIR	P		19	21	e		
		pP		19	31	i			
08	BUL	P	02	56	13	e	0.3	CGS 02 43 25 20.0S 68.9W Chile - Bolivia Border Region.	4.9
				56	22	i			
		pP		56	43	e			
	CIR	P		56	24	e	0.2		
		pP		56	54	e			
	KRR	P		56	25	e	0.2		
		BHA	P		56	34	e		
		pP		57	04	i			
08	BUL	Pn	07	29	41	e		BUL 07 27 48 27.7S 26.4E O.F.S. Goldfields.	3.6
		Sn		31	07	e			
		L		31	54	i	1.5		
	CIR	Pn		29	46	e			
		Sn		31	(15)	i			
		Sg		31	57	i	1.0		
		KRR	Pn		30	28	e		
		Sn		32	27	i			
		Sg		33	42	i	0.6		
08	CIR	Pn	09	33	01	e		BUL 09 32 36 21.3S 33.1E Central Mocambique.	3.5
	BUL	Pn		33	42	e			
		Sn		34	30	e			
		Sg		34	49	i	5.5		
	KRR	Pn		33	56	e			
		Sn		34	57	i			
		Sg		35	22	i	5.0		
08	KRR	PKP	14	49	34	iR	1.0	CGS 14 30 00 37.3N 116.4W S. Nevada. (Underground Explosion.)	5.5
	BUL	PKP		49	39	iR	2.1		
	CIR	PKP		49	47	iR	0.5		
08	CIR	Fh	17	57	29	e		BUL 17 53 54 32.4S 19.9E S.W. Cape Province, S. Africa.	3.9
		S*		01	07	i			
		L		01	58	i	0.3		
	BUL	Sn		00	17	e			
		L		01	32	e	0.4		
		KRR	Sn		01	(30)	e		
		L		03	13	e	0.3		
08	CIR	P	22	10	33	e	0.6	CGS 21 57 52 55.8S 147.4E W. of Macquarie Is.	5.2
	BUL	P		10	42	e	0.3		
	KRR	P		10	55	e	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
08	CIR	Pn	23	18	46	e		BUL 23 15 10 32.5S 19.9E S.W. Cape Province, S. Africa.	4.1	
		S*		22	02	i				
		L		23	18	i	0.6			
	BUL	Sn		21	(11)	e				
		L		22	50	e	0.8			
	KRR	Sn		22	51	e				
L			24	30	e	0.4				
09	BUL	Pn	00	22	31	e		BUL 00 20 34 28.0S 26.4E O.F.S. Goldfields.	3.4	
		Sn		23	56	e				
		Sg		24	43	i	1.0			
	CIR	Pn		22	33	e				
		Sn		24	03	i				
		Sg		24	49	i	0.4			
	KRR	Pn		23	16	e				
		Sn		25	12	e				
		L		26	32	i	0.4			
	09	KRR	PKP	08	05	(00)	e	0.3	CGS 07 45 16 43.7N 127.4W Off Coast of Oregon.	4.8
		BUL	PKP		05	09	e	0.3		
		CIR	PKP		05	13	e	0.1		
09	KRR	PKP	08	19	09	e	0.3	CGS 07 59 41 52.3N 169.5W Fox Is, Aleutian Is.	5.1	
		CIR	PKP		19	18	iC			0.4
		pPKP		19	31	iC				
	BUL	PKP		19	18	iC	2.0			
		pPKP		19	32	iC				
10	CIR	P	02	46	43	e	0.2	CGS 02 36 56 46.0S 95.8E S.E. Indian Rise.	5.2	
		BUL	P		47	04	e			0.3
		KRR	P		47	(15)	e			0.1
10	BUL	P	05	26	25	e	0.3	Distant. Scandinavian Region ?		
		CIR	P		26	34	e			0.4
		KRR	P		26	47	e			0.2
10	KRR	Pn	12	08	03	e		BUL 12 05 59 15S 21E S.E. Angola.	3.6	
		Sn		09	33	i				
		Sg		10	21	i	1.0			
	BUL	Pn		08	(07)	e				
		Sn		09	44	e				
		Sg		10	34	i	0.9			
	CIR	Pn		08	(45)	e				
		Sn		10	50	e				
		Sg		11	58	e	0.4			
	10	BUL	Pn	18	38	30	e		BUL 18 35 00 33.0S 19.9E S.W. cape Province, S. Africa.	4.8
			Sn		41	28	i			
			S*		41	43	i			
L				42	52	i	2.5			
CIR			Pn		38	41	e			
KRR		Sn		38	45	i				
		S*		41	49	i				
		L		41	58	i				
		L		43	18	i	3.5			
		Pn		39	12	e				
CIR		Sn		42	48	i				
		S*		43	12	i				
		L		44	31	i	2.0			
		Pn		39	55	e				
		S*		44	40	e				
11	CIR	Pn	11	31	25	e	0.2	CGS 11 12 35 27.0S 176.5W Kermadec Is.	4.6	
		BUL	Pn		31	32	e			0.2
		KRR	Pn		31	(48)	e			0.2
	L		46	23	i	1.8				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag
11	BUL	Pn	13	28	58	e		BUL 13 27 24 26.4S 27.2E Witwatersrand,		3.1
		Sn		30	09	e				
		Sg		30	40	i	1.0			
	CIR	Pn		29	02	e				
		S*		30	34	e				
	KRR	Pn		29	(56)	e				
Sg			32	(37)	e		0.3			
11	BUL	Pn	13	38	38	e		BUL 13 37 10 26.3S 28.2E Witwatersrand.		3.0
		Sn		39	45	e				
		Sg		40	15	i	0.8			
	CIR	Pn		38	(41)	e				
		Sn		39	(43)	e				
		Sg		40	15	e	0.4			
	KRR	Pn		39	(33)	e				
		Sn		41	(17)	e				
		Sg		42	(13)	e	0.3			
11	CIR	Pn	21	08	40	e		BUL 21 04 57 33.0S 19.5E S.W. Cape Province, S. Africa.		4.1
		Sn		11	44	e				
		S*		12	00	e				
	BUL	Sg		13	10	i	0.5			
		Sn		11	15	e				
	KRR	L		12	50	i	0.8			
		S*		12	(54)	e				
		Sg		14	(37)	e	0.4			
11	CIR	Pn	23	05	29	e		BUL 23 03 56 26.4S 28.0E Witwatersrand.		3.2
		Sn		06	36	e				
		S*		06	45	e				
		Sg		07	08	e	0.8			
	BUL	Sn		06	32	e				
		Sg		07	05	i	1.0			
	KRR	Sn		08	(00)	e				
L		08	(59)	i	0.4					
12	BUL	P	00	05	53	e	1.0	CGS 23 53 25 24.3S 67.1W		4.6
	KRR	P		06	10	e	0.5	Chile - Argentina Border Region.		
12	CIR	P	03	44	06	e	0.2	CGS 03 31 13 0.1N 123.7E		5.4
		KRR	P		44	(17)	iR	1.3	N. Celebes.	
	BUL	pP		44	(46)	i				
		P		44	18	iR	1.9			
12	BUL	P	13	44	25	e	0.6	CGS 13 34 16 39.7N 20.4E		5.1
	CIR	P		44	33	e	0.3	Greece - Albania Border Region.		
12	CIR	P	16	16	42	iR	1.0	CGS 16 05 37 5.9S 112.0E		5.3
		KRR	P		16	58	i		Java Sea.	
	KRR	P		16	(52)	iR	2.3			
		P		17	(07)	i				
		BUL	P		16	57	e	3.0		
13	KRR	P	01	12	(15)	e	0.7	CGS 01 02 29 39.9N 20.6E		5.6
		pP		12	(21)	i		Greece - Albania Border Region.		
	BUL	P		12	38	e	1.2			
	CIR	P		12	46	iR	0.6			
		pP		12	52	i				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data:	Remarks	Mag
13	CIR	PKP	07	14	29	e	0.8	CGS 06 56 02	18.9S 169.3E	5.9
		pPKP		14	33	iC				
		PP		16	15	e				
		PKKP		24	22	e				
		SKKP		28	08	e				
	BUL	PKP		14	35	e	1.5			
		pPKP		14	40	i				
		PP		16	27	e				
		SKS		21	21	e				
		PKKP		24	13	e				
	KRR	PKP		14	40	iC	1.4			
		pPKP		14	44	iC				
		PP		16	40	e				
		SKP		17	37	i				
PKKP			24	08	e					
	SKKP		28	(05)	e					
14	KRR	P	07	13	(25)	iC	3.3	CGS 07 00 06	73.4N 54.8E	6.1
		PP		17	(02)	e				
	BUL	P		13	30	iC	6.0			
		pP		13	37	i				
	CIR	P		16	30	i	0.9			
				13	33	iC				
			16	51	i					
14	KRR		10	46	(20)	e	0.2		Distant.	
				46	(50)	i				
	BUL		46	27	e	0.4				
14	BUL	P	14	39	13	e	0.7		Distant.	
		CIR	P	39	43	e	0.2			
14	CIR	PKP	19	15	28	e	0.1	CGS 18 56 39	30.6S 178.1W	4.5
		BUL	PKP	15	30	e	0.4			
	KRR	PKP		15	(44)	e	0.3		Kermadec Is. Region.	
		pPKP		16	(00)	i				
14	KRR	PKP	23	05	(40)	e	0.2	CGS 22 46 05	52.6N 162.7W	5.1
		BUL	PKP	05	45	e	1.1			
			pPKP	05	55	i				
	CIR	PKP		05	46	e	0.4			
		pPKP		05	55	i				
14	KRR	PKP	23	25	13	e	0.1	CGS 23 05 57	52.4N 171.5W	4.7
		BUL	PKP	25	23	e	0.2			
		CIR	PKP	25	24	e	0.1			
14	BUL	P	23	58	10	e	0.1		Distant.	
		CIR	P	58	23	e	0.2			
15	KRR	PKP	07	16	15	e	0.3	CGS 06 58 21	13.0S 169.3E	4.3
		pPKP		18	40	i				
	BUL	PKP		16	18	e	0.3		New Hebrides Is. Region.	
		pPKP		18	42	i				
15	KRR	P	21	20	35	e	0.2	CGS 21 08 56	5.7S 105.7E	-
		BUL	P	20	39	e	0.3			
16	KRR	P	12	13	52	e	0.3	CGS 12 02 38	4.3S 102.8E	4.8
		BUL	P	13	57	e	0.3			
16	CIR	P	14	46	04	e	0.6	CGS 14 40 51	35.5S 53.5E	4.8
		CLK	P	46	20	e	1.6			
	BUL	P		46	28	e	0.9		Atlantic Indian Rise.	
		KRR	P		46	43	e			

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Dy	Stm	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
17	CLK	P	01	36	10	iR	42.	CGS 01 25 12 23.1N 94.7E Burma - India Border Region.	6.0
		pP		36	47	i			
		PS		45	10	e			
		SKS		46	00	e			
	KRR	P		36	41	iR	18.		
		pP		37	16	i			
	CIR	P		36	42	iR	4.0		
		PP		37	17	i			
BUL	S		46	14	e				
	P		36	53	iC	15.			
	pP		37	32	i				
		S		46	32	e			
17	CIR	PKP	13	54	16	e	0.5	CGS 13 35 33 30.4S 178.1W Kermadec Is. Region.	4.6
		KRR		54	25	e	0.6		
18	BUL	PKP	09	06	12	e	0.9	Distant.	
		pPKP		06	54	i			
	CIR	PKP		06	15	e	0.1		
19	CIR		06	55	09	e	0.1	Distant.	
		BUL		55	11	e	0.3		
19	CLK	P	12	39	(20)	e	0.1	CGS 12 25 45 7.7N 126.0E Mindanao, Philippine Is.	5.4
		CIR		39	(20)	e	0.1		
		BUL		39	25	e	0.2		
19	BUL	PKP	12	48	13	e	0.2	CGS 12 29 27 39.7N 139.3E Near E. coast of Honshu, Japan.	4.5
		CIR		48	18	e	0.1		
19	CIR	P	19	39	00	iR	2.0	CGS 19 33 36 46.2S 33.6E Prince Edward Is. Region.	5.0
		BUL		39	09	iR	0.9		
20	CIR	PKP	01	31	08	e	0.1	CGS 01 12 23 5.6S 153.1E New Ireland Region.	4.6
		pPKP		31	22	e			
	BUL	PKP		31	11	e	0.3		
		pPKP		31	25	e			
20	BUL	PKP	15	39	30	iC	0.6	CGS 15 20 37 17.3N 95.2W Oaxaca, Mexico.	5.4
		CIR		39	35	e	0.2		
21	CLK	PKP	21	12	57	e	0.2	CGS 20 53 47 51.3N 179.2W Andreanof Is, Aleutian Is.	5.9
		pPKP		13	05	i			
		KRR	PKP		13	05	e		
		pPKP		13	12	i			
		SKP		16	50	e			
	CIR	PKP		13	09	e	0.6		
		pPKP		13	15	i			
		SKP		16	50	e			
	BUL	PKP		13	11	e	1.9		
		pPKP		13	19	i			
	22	BUL	PKP	03	30	05	e		
pPKP				30	17	i			
CIR			PKP		30	06	e	0.3	
		pPKP		30	18	i			
22	BUL	PKP	07	30	51	iR	0.9	CGS 07 12 08 4.8S 152.5E New Britain Region.	5.3
22	BUL	P	10	35	05	iR	1.5	CGS 10 21 52 18.1S 71.5W Off coast of N. Chile.	5.4
		pP		35	14	iR			
	KRR	P		35	16	e	0.3		
		pP		35	25	i			
	CIR	P		35	17	iR	0.9		
		pP		35	27	i			
CLK	P		35	40	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
22	CLK	PKP	12	30	47	e	0.2	CGS 12 11 21	52.2N 169.5W	5.1
	KRR	PKP		30	54	e	0.3	Fox Is., Aleutian Is.		
		pPKP		31	07	e				
	BUL	PKP		30	55	iR	2.5			
		pPKP		31	04	i				
	CIR	PKP		30	56	iR	1.1			
		pPKP		31	09	i				
22	BUL	P	13	05	36	e	0.3	CGS 12 52 22	10.9N 62.6W	5.4
		pP		05	59	i		Near Coast of Venezuela.		
	KRR	P		05	40	e	0.3			
		pP		06	00	i				
	CIR	P		05	49	e	0.3			
22	BUL	PKP	23	11	20	eiR	2.2	CGS 22 51 33	34.8N 121.3W	5.9
	KRR	PKP		11	20	eiR	1.5	Off coast of California.		
	CIR	PKP		11	24	eiR	0.4			
	CLK	PKP		11	24	eiR	1.3			
22	CIR	P	23	31	05	e	0.2	Distant.		
	KRR	P		31	15	e	0.2			
	BUL	P		31	22	e	0.2			
23	BUL	P	01	48	42	e	0.8	CGS 01 39 22	56.1S 27.3W	5.3
		pP		49	15	i		S. Sandwich Is. Region.		
	CIR	P		48	49	iR	1.0			
		pP		49	21	i				
	KRR	P		49	07	iR	1.0			
		pP		49	39	e				
	CLK	P		49	33	e	0.3			
23	CLK	PKP	03	11	50	e	0.2	CGS 02 52 55	14.9S 166.8E	4.8
	CIR	PKP		11	51	e	0.3	New Hebrides Is.		
	BUL	PKP		11	55	e	0.3			
	KRR	PKP		12	01	e	0.4			
23	CLK	Pn	13	59	37	e		BUL 13 57 40	10.0S 41.2E	4.2
		Sn		01	02	i		Offshore N. Mocambique.		
		Sg		01	48	i	6.2			
	KRR	Pn		00	46	iC				
		Sn		03	02	i	2.1			
	CIR	Pn		00	59	e				
		Sn		03	26	e				
		S*		04	22	e				
		Sg		04	54	i	0.7			
	BUL	Pn		01	18	iC				
	Sn		04	04	i	0.5				
24	CIR	PKP	00	45	00	e	0.6	CGS 00 27 09	25.2S 178.4E	4.8
	BUL	PKP		45	05	iC	1.0	S. of Fiji Is.		
		pPKP		47	25	e				
	KRR	PKP		45	10	iC	1.2			
		pPKP		47	36	i				
24	KRR	PKP	01	05	45	e	0.2	CGS 00 46 15	52.5N 168.6W	5.2
	BUL	PKP		05	49	e	1.3	Fox Is., Aleutian Is.		
		pPKP		05	57	i				
	CIR	PKP		05	49	e	0.6			
		pPKP		05	58	i				
24	KRR	PKP	08	49	00	e	0.9	CGS 08 29 12	33.3N 119.2W	5.1
	BUL	PKP		49	03	e	1.0	S. California.		
24	CIR	P	10	19	40	e	0.2	CGS 10 12 42	11.9N 44.9E	4.8
	BUL	P		19	41	e	0.2	W. Gulf of Aden.		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag		
24	CLK	P	11	55	24	e	0.3	CGS 11 45 53 24.8N 72.4E N. India.	5.3		
		pP		55	31	e					
	KRR	P		55	52	e	0.2				
		pP		56	02	e					
	CIR	P		56	04	iC	0.5				
		pP		56	14	e					
BUL	P		56	12	iC	1.0					
	pP		56	22	i						
24	BUL	Pn	14	37	30	e		BUL 14 35 57 26.5S 27.3E Witwatersrand.	3.5		
		Sn		38	41	e					
		Sg		39	12	i	1.5				
	CIR	Pn		37	33	e					
		Sn		38(45)		e					
		Sg		39	17	i	1.0				
		KRR	Pn		38	17	e				
	Sn			40	01	e					
	Sg			40	58	i	0.8				
	24	BUL	PKP	20	46	35	e	0.2		CGS 20 26 43 33.3N 119.1W S. California.	4.9
			KRR		46	35	e	0.2			
	25	CLK	P	05	30	07	e	0.2		CGS 05 17 07 0.9N 125.7E Molucca Passage.	5.1
pP				30	16	i					
KRR		P		30	28	e	0.1				
		pP		30	35	i					
BUL		P		30	33	e	0.2				
		pP		30	41	i					
25	CLK	Pn	09	00	13	e		BUL 08 59 17 19.4S 34.9E Central Mocambique.	3.0		
		Sn		00	54	i					
		Sg		01	10	i	1.0				
	CIR	P*		00	16	e					
		Sg		01	05	i	4.0				
	KRR	P*		00	44	e					
		Sn		01	39	i					
		Sg		02	06	i	2.0				
	BUL	Sn		01	48	e					
		Sg		02	19	i	0.9				
	25	KRR	PKP	12	22	40	e	0.2		CGS 12 03 48 44.1N 147.8E Kurile Is.	5.3
			BUL		22	44	e	0.3			
25	BUL	Pn	13	02	45	e		BUL 13 01 11 26.5S 27.5E Witwatersrand.	3.2		
		Sn		03	51	e					
		S*		04	03	e					
		Sg		04	27	i	0.8				
		CIR	Pn		02	49	e				
	Sn			04	02	e					
		Sg		04	31	i	0.6				
		KRR	Pn		03	30	e				
	Sn			05(15)		e					
	L		06	16	i	0.5					
	25	BUL		13	19	09	e	0.2		Distant.	
			CIR		19	22	e	0.2			
25	CLK	Pn	14	45	37	e		BUL 14 44 35 11.5S 34.5E Lake Malawi.	3.2		
		Sn		46	22	i					
		Sg		46	40	i	2.0				
	KRR	Sn		47(35)		e					
		Sg		48	09	e	1.0				
	BUL	Sn		48(45)		e					
		Sg		49	50	e	0.3				
	CIR	S*		49	05	e					
		Sg		49	37	e	0.4				

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Dy	Stn	Phase	h	m	s	CM	DA	Epicentral data:	Remarks	Mag
26	CIR	PKP	04	03	48	e	0.2	CGS 03 44 50	27.0S 176.5W	5.3
	BUL	PKP		03	53	e	0.2	Kermadec Is.		
	KRR	PKP		04	01	e	0.2			
26	BUL	PKP	04	34	47	e	0.2	CGS 04 15 50	21.7S 169.9E	4.8
	KRR	PKP		34	55	e	0.2	Loyalty Is. Region.		
26	CIR		06	57	02	e	0.2	CGS 06 38 03	16.2S 173.9W	5.8
		PKP		57	13	i		Tonga Is.		
		PP		59	(50)	e				
	BUL			57	06	e	0.2			
		PKP		57	16	i				
		pPKP		57	50	e				
		PP		00	01	e				
		PKS		00	52	e				
	CLK	PKP		57	17	e	0.6			
	KRR			57	11	e	0.2			
	PKP		57	24	i					
26	CLK	P	15	47	11	e	0.6	CGS 15 36 52	44.9N 17.3E	5.3
	KRR	P		47	13	e	0.7	Yugoslavia.		
	BUL	P		47	33	e	0.6			
	CIR	P		47	41	e	0.5			
26	KRR	PKP	19	34	46	e	0.2	CGS 19 15 51	43.6N 148.2E	5.0
		pPKP		34	59	e		Kurile Is. Region.		
	BUL	PKP		34	49	e	0.2			
		pPKP		35	02	i				
26	BUL	Pn	21	07	44	e		BUL 21 06 14	26.3S 27.5E	3.3
		Sn		08	54	e		Witwatersrand.		
		Sg		09	25	i	1.0			
	CIR	Pn		07	48	e				
		Sn		09	(00)	e				
		Sg		09	31	i	0.8			
	KRR	Pn		08	32	e				
		Sn		10	16	e				
		L		11	16	i	0.6			
	26	CIR	P	21	45	51	iC	8.4	CGS 21 39 21	
		PP		47	20	e		S. of Africa.		
BUL		P		45	46	iC	6.1			
KRR		P		46	25	iC	4.0			
CLK		P		46	44	iC	3.1			
	PP		48	25	e					
26	CIR	P	22	01	03	e	0.2	Distant.		
	BUL	P		01	08	e	0.2	S. of Africa.		
	KRR	P		01	(35)	e	0.2			
	CLK	P		01	(55)	e	0.2			
26	CIR	P	23	20	05	e	0.5	Distant.		
	BUL	P		20	10	e	0.5	S. of Africa.		
	KRR	P		20	40	e	0.3			
	CLK	P		20	56	e	0.2			
26	CLK	Pg	23	31	23	e		BUL 23 20 44	17.9S 34.9E	2.5
		Sg		21	50	i	4.0	Central Mocambique.		
	CIR	Sg		23	00	e	0.3			
	KRR	Sg		23	21	e	0.5			
	BUL	Sg		23	59	e	0.3			
27	CIR	P	06	55	32	e	0.2	Distant,		
	BUL	P		55	38	e	0.2	S. of Africa		
27	CIR	P	07	00	48	e	0.2	CGS 06 54 16	53.2S 23.3E	4.4
	BUL	P		00	52	e	0.2	S. of Africa.		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data	Remarks	Mag
27	KRR	Pg	07	31	05	i		BUL 07 30 58 16.7S 28.8E	Kariba.	2.5
		(Sn)		31	18	i	7.0			
	BUL	Pg		31	54	e				
		Sn		32	24	e				
		Sg		32	38	i	0.8			
	CIR	Sn		33	(04)	e				
		Sg		33	27	i	0.8			
27	KRR	P	08	21	20	eiC	1.8	CGS 08 10 58 44.9N 17.2E	Yugoslavia.	5.3
	CLK	P		21	20	eiC	1.1			
	BUL	P		21	40	eiC	1.6			
	CIR	P		21	49	eiC	1.5			
27	KRR	P	09	04	05	e	0.2	CGS 08 53 43 44.9N 17.2E	Yugoslavia.	4.8
	CLK	P		04	05	e	0.2			
	BUL	P		04	25	e	0.3			
	CIR	P		04	34	e	0.3			
28	CLK	Pn	07	33	44	e		BUL 07 32 58 18.7S 34.5E	Central Mocambique.	3.7
		Sn		34	18	i				
		Sg		34	29	i	11.			
	CIR	Pn		33	55	e				
		Sn		34	36	i				
		Sg		34	50	i	12.0			
	KRR	Pn		34	15	e				
		Pg		34	32	i				
		Sn		35	08	i				
		Sg		35	34	i	9.0			
	BUL	Pn		34	23	e				
	Sn		35	25	i					
	L		35	59	i	8.0				
28	BUL	Pn	10	26	10	e		BUL 10 24 35 26.5S 27.4E	Witwatersrand.	3.1
		Sn		27	20	e				
		Sg		27	50	i	0.6			
	CIR	Pn		26	13	e				
		Sn		27	26	e				
		Sg		27	56	i	0.7			
	KRR	L		29	40	e	0.3			
28	CLK	P*	10	28	30	e		BUL 10 27 41 18.8S 34.5E	Central Mocambique.	3.4
		Sn		29	01	i				
		S*		29	06	i				
		Sg		29	11	i	4.0			
	CIR	Pg		28	47	e				
		Sn		29	17	i				
		Sg		29	31	i	3.0			
	BUL	Pn		29	05	e				
		Sn		30	04	e				
		L		30	40	i	3.0			
	KRR	Pg		29	12	e				
	Sn		29	40	i					
	Sg		30	16	i	4.0				
28	BUL	Pn	13	44	52	e		BUL 13 43 19 26.4S 27.4E	Witwatersrand.	3.4
		Sn		46	02	e				
		Sg		46	32	i	1.0			
	CIR	Pn		44	56	e				
		Sn		46	08	e				
		Sg		46	40	i	1.0			
	KRR	Pn		45	39	e				
		Sn		47	20	e				
		Sg		48	18	i	0.8			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
28	CLK	P	18	55	09	e	0.9	CGS 18 45 11 36.5N 70.9E Hindu Kush Region.	5.0
		sP		56	28	e			
	KRR	P		55	34	iC	1.1		
		pP		56	28	i			
	CIR	P		55	49	e	0.3		
	BUL	P		55	54	iC	1.1		
		PcP		56	17	i			
		pP		56	47	i			
		sP		57	13	e			
28	CLK	P	21	40	17	e	0.6	Distant.	
	CIR	P		40	(20)	e	0.2		
	BUL	P		40	42	e	0.3		
	KRR	P		40	48	e	0.2		
29	CLK	Pn	08	15	28	e		BUL 08 14 42 18.6S 34.5E Central Mocambique.	3.0
		Sn		16	00	i			
		Sg		16	10	i	4.0		
	CIR	Pn		15	38	e			
		Pg		15	47	i			
		Sn		16	15	i			
		S*		16	19	i			
		Sg		16	30	i	2.0		
	KRR	Pn		16	(00)	e			
		Sn		16	49	e			
	Sg		17	14	i	2.5			
BUL	Pn		16	(10)	e				
	Sn		17	09	e				
	S*		17	20	i				
	Sg		17	37	i	2.0			
29	BUL	P	16	37	03	e	0.6	CGS 16 24 17 38.0S 73.5W Near coast of Central Chile.	4.7
	CIR	P		37	12	e	0.4		
	KRR	P		37	16	e	0.2		
29	CIR	P	16	51	(20)	e	0.2	CGS 16 40 07 1.5N 126.2E Molucca Passage.	5.0
	KRR	P		53	35	e	0.2		
	BUL	P		53	39	e	0.2		
29	KRR	PKP	22	21	26	e	1.0	CGS 22 01 54 37.1N 116.1W S. Nevada. (Nuclear Test.)	5.7
	BUL	PKP		21	29	iC	2.2		
	CLK	PKP		21	35	iC	1.1		
	CIR	PKP		21	38	iC	1.1		
30	BUL	P	12	19	09	e	0.3	Distant.	
	CIR	P		19	15	e	0.2		
	KRR	P		19	35	e	0.2		
	CLK	P		20	00	e	0.2		
30	KRR	P	12	30	16	e	0.3	CGS 12 17 22 52.3N 95.8E Central Russia.	4.8
	CIR	P		30	27	e	0.2		
	BUL	P		30	31	e	0.3		
30	BUL	Pn	13	58	48	e		BUL 13 57 07 26.9S 26.7E O.F.S. Goldfields.	3.4
		Sn		00	05	e			
		Sg		00	38	i	1.0		
	CIR	Pn		58	55	e			
		Sn		00	15	e			
		Sg		00	50	i	0.6		
	KRR	Pn		59	34	e			
		Sn		01	33	e			
	Sg		02	21	e	0.6			
30	KRR	Pg	23	45	32	iC		BUL 23 45 11 16.6S 28.4E Kariba.	2.5
		Sg		45	47	i	7.0		
	BUL	Pg		46	13	iC			
		Sg		46	58	e	0.7		
	CIR	Pg		46	(52)	e			
		Sn		47	26	e			
	Sg		47	51	i	0.5			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
31	CLK	P	09	02	20	e	0.2	CGS 08 53 26 33.2N 47.9W W. Iran.	5.0
	KRR	P		02	40	e	0.2		
	CIR	P		03	04	e	0.6		
	BUL	P		03	04	e	0.5		
31	KRR	PKP	10	59	16	e	0.4	CGS 10 39 29 33.4N 119.1W S. California.	4.9
	BUL	PKP		59	18	e	0.5		
	CLK	PKP		59	21	e	0.2		
31	CLK	PKP	11	52	11	e	0.5	CGS 11 33 05 51.3N 179.0W Andreanof Is., Aleutian Is.	6.0
		pPKP		52	26	i			
		PP		55	01	e			
		SKP		55	53	e			
	KRR	PKP		52	20	e	0.8		
		pPKP		52	31	i			
		SKP		56	10	i			
	CIR	PKP		52	26	e	1.0		
		SKP		56	15	e			
	BUL	PKP		52	29	e	2.0		
		pPKP		52	40	i			
				54	16	i			
				55	05	i			
	SKP		56	20	i				
31	CLK	Pg	12	52	03	iC		BUL 12 51 38 17.0S 35.3E Central Mocambique.	3.0
		Sg		52	21	i	20.		
	CIR	Pn		52	57	e			
		Sn		53	53	e			
		Sg		54	21	i	0.5		
	KRR	Sn		54(00)		e			
		Sg		54	23	i	1.0		
	BUL	Sn		54	37	e			
	Sg		55	14	i	0.5			
31	BUL	Pn	22	11	50	e		BUL 22 09 51 28.1S 26.7E O.F.S. Goldfields.	4.1
		Sn		13	15	e			
		Sg		14	02	i	2.5		
	CIR	Pn		11	53	e			
		Sn		13	20	e			
		Sg		14	09	i	3.0		
	KRR	Pn		12	36	e			
		Sn		14	39	i			
		S*		15	09	i			
		Sg		15	48	i	2.0		
31	KRR	Pn	22	57	58	e		BUL 22 54 26 2S 27E Kivu Province, Congo.	3.9
		S*		01(00)		e			
		Sg		02	08	i	0.4		
	CLK	Pn		58	05	e			
		S*		01	25	e			
		Sg		02	26	i	0.3		
	BUL	Pn		58	35	e			
		Sg		03	29	i			
		L		03	50	i	0.4		
	CIR	Pn		58	47	e			
		L		04	26	i	0.3		

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RHODESIA METEOROLOGICAL SERVICES

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

KABWE (BHA): 14° 26.8' S; 28° 28.1' E; Alt. 1206 m.
Litho. foundation: Dolomite and shales of the Middle Katanga System.
Authority: Zambia Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.

CHILWA (CIK): 15° 40.8' S; 34° 58.6' E; Alt. 781 m.
Litho. foundation: Charnockitic granulites of the Basement Complex.
Authority: Malawi Meteorological Service.
Instrument: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.

KAROI (KRR): 16° 51.1' S; 29° 37.1' E; Alt. 1380 m.
Litho. foundation: Granitic gneisses of the Zambesi type.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

BULAWAYO (BUL): 20° 08.6' S; 28° 36.8' E; Alt. 1341 m.
Litho foundation: Hornblend schists of the Bulawayan System.
Authority: Rhodesia Meteorological Service.
Instruments: Three-component Willmore one-second seismograph.
Nominal magnification 20,000.
WSS Station: SP magnification 100,000
IP magnification 1,500

CHIRENDEZI (CIR): 21° 00.8' S; 31° 34.8' E; Alt. 430 m.
Litho foundation: Gneisses or Charnockites of the Limpopo belt.
Authority: Rhodesia Meteorological Service.
Instrument: Vertical Willmore one-second seismograph.
Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

SEISMOLOGICAL BULLETIN: SEP 1969 - 1

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
01	CIR	P	03	07	38	e	0.2	Distant		
	KRR	P		08	04	e	0.3			
	BHA	P		08	21	e	0.2			
01	BHA	Pn	03	36	33	e		BUL 03 34 23 5.4S 29.4E Lake Tanganyika	4.3	
		Sn		38	06	i				
		Sg		38	59	i	4.8			
	KRR	Pn		37	04	e				
		Sn		39	01	i				
		Sg		40	11	i				
	BUL	L		40	22	i	2.3			
		Pn		37	46	e				
		Sn		40	18	e				
	CIR	L		42	00	i	1.2			
		Pn		38	01	e				
Sn			40	39	e					
		SgSg		42	26	i	0.8			
01	CIR	P	08	27	31	e	0.3	CGS 08 14 55 58.9S 149.1E W. of Macquarie Is.	5.1	
	BUL	P		27	44	e	0.1			
	BHA	P		28	10	e	0.2			
01	BUL	P'	10	51	16	e	0.2	CGS 10 32 22 30.5S 177.6W Kermadec Is. Region	4.8	
	KRR	P'		51	23	e	0.2			
01	CIR	P'	12	28	(21)	e	0.1	CGS 12 09 25 30.6S 177.5W Kermadec Is. Region	4.7	
	BUL	P'		28	22	e	0.2			
	KRR	P'		28	26	e	0.2			
01	BHA	P	23	25	10	e	0.2	CGS 23 16 10 30.9N 49.8E W. Iran	4.9	
	BUL	P		25	37	e	0.3			
	CIR	P		25	38	iC	0.5			
02	CIR	P'	02	25	10	e	0.3	CGS 02 06 18 31.4S 177.0W Kermadec Is. Region	5.2	
	BUL	P'		25	13	e	0.3			
	KRR	P'		25	20	iC	0.4			
	BHA	P'		25	25	e	0.3			
02	BUL	P	03	59	28	iR	24.0	CGS 03 47 09 27.7S 66.5W Catamarca Province, Argentina	5.5	
		pP		04	00	10	i			
		SKS		09	41	i				
	CIR	P	03	59	39	iR	5.1			
		pP		04	00	22	i			
		S		10	06	e				
	KRR	P	03	59	41	iR	1.8			
		pP		04	00	24	i			
		BHA	P	03	59	42	iR	3.6		
			pP		04	00	25	i		
			S		10	11	e			
02	BUL	P	05	12	09	e	0.4	Distant		
	CIR	P		12	11	e	0.2			
	BHA	P		12	39	e	0.2			
02	BHA	P	11	49	33	e	0.3	CGS 11 41 46 7.1S 13.1W Ascension Is. Region	4.9	
	BUL	P		49	39	e	0.6			
	KRR	P		49	43	e	0.5			
	CIR	P		50	03	e	0.8			
02	CIR	P	12	57	57	e	0.1	Distant		
	BUL	P		58	21	e	0.1			
02	KRR	P	13	39	27	e	0.2	CGS 13 30 03 30.2N 57.7E Iran	5.3	
	CIR	P		39	48	e	0.2			
	BUL	P		39	51	e	0.2			
		PcP		40	40	e				
02	BUL	P	16	48	55	e	0.4	CGS 16 35 41 17.8S 72.1W Near Coast of Peru	5.0	
	BHA	P		49	03	e	0.2			
	CIR	P		49	31	e	0.1			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
02	BUL	P	20	49	05	e	0.5	CGS 20 39 40 55.6S 26.9W	5.4
	CIR	P		49	10	e	0.3	S. Sandwich Is. Region	
	KRR	P		49	28	e	0.4		
	BHA	P		49	38	e	0.2		
02	KRR	Pg	22	17	11	i		BUL 22 16 51 15.7S 29.6E	2.7
		Sg		17	24	i	6.6	Zambesi Valley	
	BHA	Pg		17	21	i			
		Sg		17	41	i	2.9		
	BUL	Pg		18	14	e			
				18	42	e			
		S*		19	03	i			
		Sg		19	09	i	1.1		
	CIR	Sn		19	11	e			
		Sg		19	41	e	0.7		
03	BUL	Pg	02	31	11	e		BUL 02 29 50 17.6S 24.6E	3.0
		Sn		31	44	e		Chobe Swamp, Caprivi Strip	
		Sg		32	06	e			
		L		32	11	i	1.8		
	BHA	Pg		31	16	e			
		Sn		31	55	e			
		L		32	24	e	1.0		
	KRR	Sn		31	52	e			
		Sg		32	17	i	1.2		
	CIR	Sn		32	52	e			
	L		33	39	e	0.7			
03	CIR	P	05	07	30	e	0.5	CGS 04 56 25 1.5N 98.0E	4.8
		pP		07	37	i		N. Sumatra	
	KRR	P		07	36	e	0.3		
		pP		07	43	i			
	BHA	P		07	42	iC	0.7		
		pP		07	49	i			
BUL	P		07	45	e	0.3			
	pP		07	51	e				
04	BHA	P	03	07	35	e	0.2	CGS 02 57 19 36.5S 70.9E	4.8
		pP		08	27	e		Hindu Kush Region	
	KRR	P		07	37	e	0.3		
		pP		08	31	e			
	CIR	P		07	57	e	0.2		
BUL	P		08	02	e	0.4			
04	BHA	P'	03	27	50	iR	0.5	CGS 03 08 52 46.6N 153.3E	5.4
		pP'		28	02	e		Kurile Is.	
		FP		29	44	e			
	KRR	P'		27	51	e	0.4		
		pP'		28	03	i			
	CIR	P'		27	54	iR	0.6		
		pP'		28	07	i			
		FP		29	52	e			
	BUL	P'		27	56	e	0.8		
		FP		30	00	e			
04	BHA	P'	06	44	14	e	0.4	CGS 06 25 28 13.2N 88.4W	4.6
		pP'		44	28	i		El Salvador	
	BUL	P'		44	15	e	0.5		
		pP'		44	29	i			
	KRR	P'		44	16	e	0.7		
	pP'		44	29	i				
04	BUL	P	17	28	23	e	0.3	CGS 17 18 49 35.3N 39.1E	4.7
	CIR	P		28	29	e	0.2	Jordan - Syria Region	
04	BHA	P'	21	31	27	e	0.6	CGS 21 12 39 43.8N 147.4E	5.6
	KRR	P'		31	28	e	0.3	Kurile Is.	
	CIR	P'		31	31	e	0.3		
	BUL	P'		31	33	iC	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
04	KRR	Pg	22	13	23	iC		BUL 22 13 00 16.8S 28.2E Kariba	2.3
				13	36	e			
		Sg		13	40	i	5.5		
	BHA	Pg		13	45	e			
		Sn		14	09	e			
		Sg		14	15	i	1.3		
	BUL	Pg		14	06	e			
Sg			14	46	e	0.5			
	CIR	Sg		15	41	i	0.4		
05	CIR	P	11	55	48	e	0.2	CGS 11 42 14 22.7N 121.7E Taiwan Region	5.6
	BHA	P		55	50	e	0.2		
	BUL	P		55	57	e	0.3		
05	BHA	Pn	15	46	37	e		BUL 15 44 30 6.3S 31.3E Sagara Swamp, Tanzania	4.0
		Sn		48	11	e			
		Sg		49	00	i	2.6		
	KRR	Pn		46	58	e			
		Sn		48	54	e			
		L		50	01	i	1.5		
	BUL	Pn		47	48	e			
		L		51	53	i	0.6		
	CIR	Pn		47	58	e			
		L		52	20	i	0.6		
	05	BHA	Pn	18	57	34	e		
Sn				59	40	i			
L				19	01	05	i	2.1	
KRR		Pn		18	58	10	e		
		Sg		19	02	16	e		
		L		02	24	i	0.7		
BUL		Pn		18	58	51	e		
		SgSg		19	04	03	e		
		L		04	16	e	0.5		
		CIR	L		04	27	e	0.4	
05	BUL	P'	21	19	42	e	0.2	CGS 21 00 55 30.6S 178.3W Kermadec Is. Region	4.6
	KRR	P'		19	47	e	0.2		
	BHA	P'		19	(52)	e	0.2		
06	CIR	Pg	03	26	04	i		BUL 03 25 48 21.0S 32.4E Rhodesia - Mocambique Border	2.7
		Sg		26	16	i	7.		
	BUL	Pg		26	54	e			
		Sn		27	26	i			
		Sg		27	49	e	1.4		
	KRR	Sn		27	55	e			
		Sg		28	19	i	1.6		
06	KRR	P'	12	00	28	iC	0.6	CGS 11 41 51 49.5N 153.3E Kurile Is.	4.9
	BHA	P'		00	31	iC	0.4		
	CIR	P'		00	35	e	0.3		
	BUL	P'		00	37	e	0.2		
		PP		02	41	e			
06	BUL	Pn	13	21	11	e		BUL 13 19 35 26.5S 27.2E Witwatersrand	3.1
		Sg		22	55	e	0.7		
	CIR	Pn		21	14	e			
		Sg		23	01	e	0.6		
	KRR	Pn		21	53	e			
		Sg		24	31	e	0.3		
06	BHA	P	14	41	11	iR	1.2	CGS 14 30 39 36.9N 11.9W N. Atlantic Ocean	5.7
	KRR	P		41	27	e	2.3		
	BUL	P		41	39	iR	4.4		
	CIR	P		41	54	iR	1.4		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
06	CIR	P ¹	15	08	48	e	0.3	CGS 14 49 56	8.8S 157.8E	5.8
	BUL	P ¹		08	52	e	0.8	Solomon Is.		
		PP		10	31	e				
	KRR	P ¹		08	54	e	0.4			
		PP		10	39	e				
	BHA	P ¹		08	59	e	0.2			
		PP		10	46	e				
06	CIR	P ¹	17	26	(54)	e	0.2	CGS 17 08 03	8.9S 157.9E	5.8
	BUL	P ¹		27	00	e	0.6	Solomon Is.		
	KRR	P ¹		27	02	e	0.3			
	BHA	P ¹		27	06	e	0.2			
06	BHA	P	20	39	38	e	0.3	CGS 20 30 40	36.8N 28.4E	5.1
	KRR	P		39	54	iC	0.7	Dodecanese Is.		
		PP		40	12	i				
	BUL	P		40	19	iC	0.7			
	CIR	P		40	27	iC	0.4			
			PP		40	44	i			
06	BUL	P ¹	22	28	05	e	0.4	CGS 22 09 31	18.7S 169.2E	4.9
	KRR	P ¹		28	08	e	0.3	New Hebrides Is.		
	BHA	P ¹		28	14	e	0.3			
07	BUL	P	01	28	26	e	0.2	CGS 01 15 47	28.7S 69.7W	4.6
	KRR	P		28	38	iR	0.3	Chile - Argentina Border Region		
	BHA	P		28	44	e	0.1			
07	CIR	P ¹	03	24	30	e	0.2	CGS 03 06 02	8.9S 157.7E	5.6
	KRR	P ¹		24	56	e	0.2	Solomon Is.		
	BUL	P ¹		24	56	iR	0.4			
	BHA	P ¹		25	06	e	0.2			
07	CIR	P ¹	08	59	03	e	0.2	CGS 08 40 34	6.6S 155.8E	5.3
		PP ¹		59	14	e		Solomon Is.		
	BUL	P ¹		59	08	e	0.6			
		PP ¹		59	50	e				
	KRR	P ¹		59	10	e	0.2			
		PP ¹		59	51	e				
BHA	P ¹		59	15	e	0.3				
		PP ¹		59	56	e				
07	BUL	Pg	16	00	42	e		BUL 15 59 21	18.4S 23.6E	2.7
		Sg		01	45	e	0.5	Chobe Swamp, Caprivi Strip		
	KRR	Pg		01	01	e				
		Sn		01	42	e				
		Sg		02	15	e	0.4			
	CIR	Sn		02	27	e				
		Sg		03	13	e	0.3			
	BHA	Sg		02	30	e	0.3			
08	BHA	P	05	11	41	e	0.1	CGS 04 59 56	57.4N 55.1E	4.9
	KRR	P		11	52	e	0.3	Ural Mountains Region		
	BUL	P		12	10	e	0.3			
	CIR	P		12	11	e	0.2			
08	CIR	P ¹	13	04	17	e	0.8	CGS 12 45 35	5.1S 153.4E	5.2
	BUL	P ¹		04	23	e	2.3	New Ireland Region		
		PP ¹		04	45	i				
	KRR	P ¹		04	24	e	1.2			
		PP ¹		04	46	e				
	BHA	P ¹		04	27	e	1.0			
09	KRR	P ¹	05	34	21	e	0.2	CGS 05 15 38	35.7N 137.0E	5.5
	BUL	P ¹		34	23	e	0.2	Honshu, Japan		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
09	BHA	Pn	06	17	13	e		BUL 06 15 36 11.4S 34.7E Lake Malawi	3.8	
		Sn		18	23	i				
		L		19	05	i	4.			
	KRR	Pn		17	22	e				
		Sn		18	37	i				
		Sg		19	19	i				
	L			19	27	i	2.6			
		CIR	Pn		17	56	e			
			Sn		19	40	e			
	Sg			20	45	i	0.9			
	BUL	Pn		18	04	e				
		Sn		19	50	e				
Sg			20	55	i					
L			21	12	i	1.0				
09	KRR	Pg	12	26	07	e		BUL 12 25 49 16.6S 28.4E Kariba	2.3	
		Sg		26	20	i				
				26	24	i	5.3			
	BHA	Pg		26	35	e				
		Sg		27	04	e	1.2			
	BUL	Pg		26	55	e				
		Sn		27	24	e				
		Sg		27	40	i	1.0			
	CIR	Sg		28	31	e	0.7			
		09	BHA	Pn	16	49	40	e		BUL 16 46 44 2.5S 24.7E Congo River Valley
	Sn				51	50	i			
	L				53(15)	e	7.			
KRR	Pn			50	15	e				
	Sn			52	54	i				
	L			54	43	e	3.3			
BUL	Pn			50	52	e				
	Sn			54	02	e				
	L			56	10	e				
CIR	Pn			56	22	i	2.1			
	L			51	11	e				
				56	55	e	1.9			
10	KRR	P'	08	05	47	e	0.2	CGS 07 46 58 44.ON 148,1E Kurile Is.	4.9	
		BUL	P'		05	55	e			0.2
10	BHA	P	12	23	29	e	0.3	CGS 12 14 00 39.2N 41.4E Turkey	5.2	
		KRR	P		23	38	e			0.5
		BUL	P		24	05	iC			0.7
		CIR	P		24	08	iR			0.9
10	BHA	Pg	13	27	24	e		BUL 13 26 17 11.7S 25.9E Upper Lualaba Valley, Congo	3.6	
		S*		27	59	e	-			
	KRR	Pn		27	47	e				
		P*		27	54	i				
		Sn		28	53	i				
		L		29	30	i	2.3			
	BUL	Pn		28	24	e				
		Sn		29	54	e				
		Sg		30	43	i	0.8			
	CIR	Pn		28(50)	e					
		Sg		31	45	e	0.6			
	10	BUL	Pn	14	44	41	e		BUL 14 42 59 27.1S 26.9E W. Witwatersrand	3.4
S*				46	08	e				
Sg				46	33	e	1.0			
CIR		Pn		44	47	e				
		Sg		46	43	i	0.8			
KRR		Pn		45	26	e				
11	CIR	P	04	14	18	e	0.1	CGS 04 01 57 49.7N 78.1E E. Kazakh S.S.R.	5.0	
		BUL	P		14	21	e			0.2

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
11	BUL	Pn	08	47	49	e		BUL 08 45 48	3.1
		Sn		49	18	e		O.F.S. Goldfields	
	Sg		50	04	e	0.4			
	CIR	Pn		47	50	e			
Sg			50	03	e	0.3			
11	CIR	P'	09	20(45)		e	0.2	CGS 09 01 16 53.9N 164.5W	4.1
	BUL	P'		20	49	e	0.6	Unimak Is. Region	
11	CIR	P	10	49	55	e	0.2	Distant	
	BUL	P		50	20	e	0.2		
	KRR	P		50	26	e	0.2		
11	BUL	Pn	21	48	42	e	2.5	BUL 21 45 15 33.4S 22.0E	5.2 ✓
		Sn		51	23	i		Heidelberg Area, Cape Province	
		Sg		52	59	i	8.2	Felt Widely in the S. Cape.	
	CIR	Pn		48	51	e	2.8	Some Damage Reported from Heidelberg	
		Sn		51	36	e			
		Sg		53	22	i	8.0	(Sn wave; unusually slow travel)	
	KRR	Pn		49	23	e	1.8		
		Sn		52	39	e			
		Sg		54	44	i			
		L		54	58	i	5.7		
BHA	Pn		49	49	e	1.3			
	Sn		53	24	e				
	Sg		55	41	i	2.5			
12	KRR	Pn	00	09	00	e		BUL 00 07 53 16.7S 34.3E	4.2 ✓
		Pg		09	12	i		Lower Zambesi Valley, Mocambique	
		Sn		09	48	e		Felt MM V at Cholo, Malawi	
		Sg		10	09	i	25.		
	CIR	Pn		09	08	e			
		Pg		09	23	e			
		Sn		10	03	e			
		Sg		10	28	e			
	BHA	Pn		09	22	e			
		Sn		10	29	e			
		L		11	05	e	-		
	BUL	Pn		09	25	e			
				09	30	i			
		Sn		10	32	i			
L			11	09	i	14.			
12	KRR	Pg	01	52	37	iC		BUL 01 52 20 15.8S 29.5E	2.7
		Sg		52	49	i	11.	Zambesi Valley	
	BHA	Pg		52	49	e	8.		
		Sg		53	10	i			
	BUL			54	09	e			
		Sg		54	37	e	0.8		
		CIR	Sg		55	12	e	0.8	
12	CIR	P'	03	33	47	e	0.1	CGS 03 14 45 18.6S 174.9W	5.1
	BUL	P'		33	49	e	0.2	Tonga Is.	
	KRR	P'		33	50	e	0.1		
	BHA	P'		33(52)		e	0.1		
12	BHA	P	05	18	20	e	0.6	CGS 05 08 02 36.4N 70.9E	5.1
		KRR	P		18	25	iC	1.3	
	CIR	P		18	42	iC	0.5		
	BUL	P		18	47	iC	1.6		
12	KRR	P'	08	19	40	e	0.2	CGS 08 00 17 51.1N 179.3W	5.2
	BUL	P'		19(42)		e	0.2	Andreanof Is. Aleutian Is.	
	CIR	P'		19	47	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
12	BHA	P'	09	16	20	e	0.8	CGS 08 57 07 51.2N 179.2W Andreanof Is., Aleutian Is.	6.0	
		pP'		16	32	i				
		FP		19	25	e				
	KRR	SKP		20	04	e				2.3
		P'		16	25	e				
		pP'		16	38	e				
	CIR	P'		20	05	e				0.8
		pP'		16	44	e				
	BUL	P'		16	35	e				2.6
				16	55	i				
FP			18	19	e					
		SKP		20	12	e				
12	BUL	Pn	14	08	51	e		BUL 14 07 21 26.3S 28.0E Witwatersrand	3.3	
		Sn		10	(00)	e				
		Sg		10	29	e	0.9			
	CIR	Pn		08	52	e				1.3
		Sg		10	29	e				
	KRR	Sg		12	10	e	0.4			
12	BHA	P'	15	19	28	e	0.2	CGS 15 00 19 51.3N 179.2W Andreanof Is., Aleutian Is.	5.6	
		pP'		19	41	e				
	KRR	P'		19	32	e	0.3			
	CIR	P'		19	40	e	0.3			
	BUL	P'		19	41	e	1.0			
13	BUL	P	11	05	41	iR	1.7	CGS 10 52 58 22.9S 68.4W N. Chile	5.4	
		pP		06	10	i				
	KRR	P		05	52	e	0.3			
	BHA	P		05	53	e	0.3			
		pP		06	23	e				
13	KRR	P'	11	37	46	e	0.2	CGS 11 19 03 33.8N 141.6E Off E. Coast of Honshu, Japan	5.0	
	CIR	P'		37	46	e	0.2			
	BUL	P'		37	49	e	0.2			
14	BUL	Pn	11	53	42	e		BUL 11 52 01 W. Witwatersrand	3.3	
		Sg		55	34	i	0.9			
	CIR	Pn		53	49	e				0.6
		Sn		55	09	e				
		Sg		55	48	i				
	KRR	Pn		54	29	e				0.4
		SgSg		57	22	e				
14	BUL	SKP	14	48	28	e	0.8	CGS 14 27 55 22.1S 179.7W S. of Fiji Is.	4.7	
	KRR	SKP		48	36	e	0.2			
	BHA	SKP		48	44	e	0.2			
14	BHA	P	14	57	26	iC	0.7	CGS 14 46 21 39.6N 74.9E S. Sinkiang Province, China	5.1	
		pP		57	39	i				
	KRR	P		57	35	iC	1.5			
		pP		57	47	i				
	CIR	P		57	47	e	0.5			
		pP		57	59	i				
	BUL	P		57	52	iC	1.8			
		pP		58	05	i				
	S		15	07	35	e				
14	BHA	P	16	26	29	iC	1.5	CGS 16 15 25 39.7N 74.9E S. Sinkiang Province, China	5.5	
		KRR	P		26	37	iC			1.4
	CIR	P		26	51	iC	0.8			
	BUL	P		26	55	iC	2.3			
		S		36	27	e				
15	KRR	P'	07	00	39	e	0.1	CGS 06 41 10 54.5N 164.4E Unimak Is. Region	4.5	
	BUL	P'		00	42	e	0.6			
	CIR	P'		00	43	e	0.2			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data ; Remarks	Mag
15	BUL	P	07	27	10	e	0.2	CGS 07 14 26 18.6S 69.0W	5.2
		pP		27	42	e		N. Chile	
	CIR	P		27	25	e	0.1		
	KRR	P		27	27	e	0.1		
15	BHA	P'	15	04	56	e	0.4	CGS 14 45 42 51.9S 175.5E	5.2
	KRR	P'		04	59	e	0.5	Rat Is., Aleutian Is.	
		SKP		08	28	e			
	BUL	P'		05	05	e	0.5		
		SKP		08	36	e			
	CIR	P'		05	06	e	0.3		
		SKP		08	35	e			
15	BUL	P'	18	19	33	iC	0.8	CGS 18 00 01 53.3N 167.1W	4.0
	CIR	P'		19	34	e	0.2	Fox Is., Aleutian Is.	
15	BUL	P'	19	06	42	e	0.2	CGS 18 47 41 45.5N 151.6E	5.3
	KRR	P'		06	(49)	e	0.1	Kurile Is.	
15	BHA	Pn	23	37	58	e		BUL 23 35 46 5.3S 29.5E	4.1
		Sn		39	34	i		Lake Tanganyika	
		Sg		40	29	i	3.6		
	KRR	Pn		38	31	e			
		Sn		40	32	i			
		L		41	47	i	1.4		
	BUL	Pn		39	14	e			
		Sn		41	46	e			
		L		43	27	i	0.8		
	CIR	Pn		39	29	e			
	Sn		42	11	e				
	Sg		43	53	e	0.4			
16	BUL	P'	14	44	33	e	0.2	CGS 14 25 42 15.5N 93.1W	5.0
		pP'		44	53	e		Near Coast of Chiapas, Mexico	
	KRR	P'		44	33	e	0.2		
		pP'		44	54	e			
16	KRR	P'	14	49	34	iC	3.5	CGS 14 30 00 37.3N 116.5W	6.2
	BUL	P'		49	38	iC	9.3	S. Nevada (Underground Explosion)	
	CIR	P'		49	45	e	2.1		
16	KRR	P	21	30	39	e	0.2	CGS 21 19 27 39.8N 75.1E	4.9
	CIR	P		30	55	e	0.1	S. Sinkiang Province, China	
	BUL	P		30	59	e	0.2		
17	BUL	P	01	33	18	e	0.4	CGS 01 23 54 59.0S 24.8W	5.1
		pP		33	28	e		S. Sandwich Is. Region	
	CIR	P		33	24	e	0.3		
		pP		33	34	i			
	KRR	P		33	40	e	0.3		
		pP		33	51	i			
17	CIR	Pg	08	25	38	iC		BUL 08 25 06 21.2S 33.4E	2.7
		Sg		26	00	i	3.5	S. Manica Province, Mocambique	
	BUL	Sg		27	27	e	0.6		
	KRR	Sg		28	02	i	0.8		
17	BUL	P	18	53	16	iR	0.4	CGS 18 43 49 56.2S 27.1W	4.9
	CIR	P		53	23	e	0.3	S. Sandwich Is. Region	
	KRR	P		53	39	e	0.2		
17	BUL	Pn	20	18	12	e		BUL 20 16 30 27.1S 27.0E	3.4
		Sg		20	04	e	0.8	W. Witwatersrand	
	CIR	Pn		18	19	e			
		Sn		19	37	e			
		Sg		20	15	i	0.9		
	KRR	Pn		18	57	e			
	L		21	53	e	0.4			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
18	BUL	P'	05	25	40	e	0.1	CGS 05 07 36 25.3S 179.6E S. of Fiji Is.	4.1
		SKP		28	08	e			
	KRR	P'	25	45		e	0.3		
		SKP		28	17	e			
18	CIR	Pn	07	37	19	e		BUL 07 35 42 W. Witwatersrand	3.4
		Sn		38	31	i			
		Sg		39	05	i	1.4		
	KRR	Pn		38	02	e			
		Sn		39	45	e			
		Sg		40	40	e	0.6		
18	KRR	Pg	22	43	08	i		BUL 22 42 48 16.5S 28.5E Kariba	2.2
		Sg		43	22	i	4.7		
	BUL	Sg		44	39	e	0.3		
	CIR	Sg		45	30	e	0.4		
19	CIR	P	01	42	53	e	0.3	CGS 01 29 37 6.1N 125.4E Mindanao, Philippine Is.	5.7
		PP		46	44	e			
	KRR	P		42	58	e	0.2		
		PP		47	04	e			
	BUL	P		43	04	e	0.6		
		PP		47	05	e			
19	BUL	P	03	49	22	iR	0.8	CGS 03 39 57 55.9S 27.8W S. Sandwich Is. Region	5.4
	CIR	P		49	29	e	0.2		
	KRR	P		49	44	iR	1.0		
19	BUL	P	05	13	09	e	0.3	CGS 05 00 17 24.7S 70.0W Near Coast of N. Chile	4.7
		pP		13	32	e			
	CIR	P		13	19	e	0.1		
	KRR	P		13	20	e	0.2		
19	BUL	P	11	25	09	e	0.1	Distant	
	CIR	P		25	19	e	0.2		
	KRR	P		25	33	e	0.2		
19	BUL	SKP	12	44	18	iC	1.2	CGS 12 23 46 22.5S 179.8W S. of Fiji Is.	4.7
	KRR	SKP		44	25	e	0.3		
19	CIR	Pn	14	23	20	e		BUL 14 21 52 26.3S 28.3E E. Witwatersrand	3.1
		Sg		24	54	e	0.8		
	BUL	Sg		24	57	e	0.7		
	KRR	Sg		26	43	e	0.4		
20	BHA	P	05	21	47	e	0.6	CGS 05 08 58 58.3N 32.2W N. Atlantic Ocean	5.6
	KRR	P		21	58	e	0.2		
	BUL	P		22	10	e	0.2		
	CIR	P		22	18	e	0.2		
20	KRR	Pg	08	00	47	i		BUL 08 00 28 16.6S 28.5E Kariba	2.6
		Sg		01	00	i	5.4		
	BUL	Pg		01	34	e			
		Sg		02	16	i	1.3		
	CIR	Sg		03	05	e	0.6		
20	BUL	Pn	12	15	03	e		BUL 12 13 27 26.7S 27.0E Witwatersrand	3.4
		Sn		16	16	e			
		Sg		16	47	i	1.0		
	CIR	Pn		15	09	e			
		Sn		16	20	e			
		Sg		16(59)		e	0.9		
	KRR	Pn		15	50	e			
		Sg		18	31	e	0.6		
20	KRR	P	14	18	45	e	0.3	CGS 14 07 58 38.4N 69.8E Tadzhik S.S.R.	5.1
	BUL	P		19	05	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
20	CIR	Pn	17	51	(22)	e		BUL 17 50 00 22.9S 37.1E	2.8
		Pg		51	42	e		Offshore S. Mocambique	
		Sn		52	20	e			
		L		52	54	e	0.4		
		BUL Sn		53	29	e	0.2		
	KRR	Sn		53	53	e	0.3		
21	BUL	P	02	13	33	iR	1.5	CGS 02 00 54 23.6S 68.1W	5.5
		pP		14	04	i		N. Chile	
		S		24	06	i			
		CIR P		13	45	iR	0.5		
21	CIR	P'	07	30	45	e	0.2	CGS 07 11 54 17.5S 174.7W	5.5
		BUL P'		30	47	e	0.2	Tonga Is.	
		KRR P'		30	48	e	0.4		
		BHA P'		30	52	e	0.3		
21	CIR	Pn	11	47	25	i		BUL 11 46 58 21.3S 33.2E	2.4
		Pg		47	28	i		S. Manica Province, Mocambique	
		Sg		47	46	i	2.7		
		BUL Sg		49	13	e	0.4		
		KRR Sg		49	47	e	0.6		
21	CIR	P	21	40	15	e	0.3	CGS 21 29 22 2.7N 95.8E	4.9
		pP		40	22	i		Off W. Coast of N. Sumatra	
		KRR P		40	(24)	e	0.2		
		pP		40	30	e			
		BHA P		40	26	e	0.5		
	BUL P		40	31	e	0.2			
21	CIR	P	21	45	00	e	0.2	CGS 21 34 07 2.7N 95.9E	5.2
		pP		45	07	e		Off W. Coast of N. Sumatra	
		KRR P		45	05	e	0.2		
		pP		45	12	e			
		BHA P		45	11	e	0.4		
	BUL P		45	15	e	0.2			
22	CIR	P	01	47	45	e	0.4	CGS 01 40 21 5.6S 68.1E	5.1
		KRR P		47	51	e	0.3	Chagos Archipelago Region	
		BHA P		47	57	e	0.5		
		BUL P		48	04	e	0.5		
22	CIR	P	01	57	05	e	1.5	CGS 01 46 13 2.9N 95.9E	5.3
		KRR P		57	11	e	1.0	Off W. Coast of N. Sumatra	
		BHA P		57	16	e	2.7		
		BUL P		57	19	e	1.6		
22	CIR	P	04	03	30	e	0.9	CGS 03 52 37 2.9N 95.9E	5.3
		pP		03	37	i		Off W. Coast of N. Sumatra	
		KRR P		03	36	e	0.3		
		BHA P		03	41	e	1.4		
		BUL P		03	44	e	0.7		
	pP		03	52	e				
22	BUL	P	09	26	59	iR	0.3	CGS 09 14 31 21.7S 66.8W	4.8
		KRR P		27	10	e	0.2	S. Boliva	
		CIR P		27	11	e	0.2		
22	BUL	Pn	10	58	59	e		BUL 10 57 25 26.5S 27.3E	3.3
		Sn		11	00	09	e	Witwatersrand	
		Sg		00	42	i	1.1		
		CIR Pn		10	59	02	e		
		Sn		11	00	14	e		
		Sg		00	46	i	0.7		
		KRR Pn		10	59	45	e		
Sg		11	02	25	e	0.4			
22	BHA	P	13	58	18	e	0.9	CGS 13 47 52 5.0N 32.6W	5.7
		BUL P		58	29	e	0.5	Central Mid - Atlantic Ridge	
		KRR P		58	30	e	0.5		
		CIR P		58	49	e	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
22	BHA	P	16	27	03	iC	1.2	CGS 16 14 59 41.4N 88.3E S. Sinkiang Province, China	5.1
	KRR	P		27	09	iC	2.8		
	CIR	P		27	19	iC	0.4		
	BUL	P		27	24	iC	1.2		
22	BHA	P	22	11	48	e	0.2	CGS 22 02 08 0.5N 26.2W Central Mid - Atlantic Ridge	4.8
	BUL	P		11	56	e	0.2		
	KRR	P		12	03	e	0.2		
	CIR	P		12	17	e	0.2		
24	BHA	P	04	11	29	e	0.4	CGS 03 58 57 52.5N 31.8W N. Atlantic Ridge	5.2
	KRR	P		11	45	e	0.2		
	BUL	P		11	55	e	0.2		
	CIR	P		12	08	e	0.2		
24	BHA	P	04	33	28	e	1.0	CGS 04 20 53 52.6N 31.8W N. Atlantic Ridge	5.2
		pP		33	35	i			
	KRR	P		33	40	e	0.4		
		pP		33	47	i			
	BUL	P		33	50	e	0.5		
		pP		33	56	i			
24	CIR	P		34	02	e	0.3	BUL 09 02 27 19.7S 33.3E Manica Province, Mocambique	2.8
		pP		34	08	i			
		Pn	09	02	59	e			
		Pg		03	04	i			
24		Sn		03	22	e		BUL 14 20 16 27.5S 27.1E Witwatersrand	3.3
		Sg		03	27	i	3.4		
	BUL	Sn		04	21	e			
		Sg		04	44	i	1.0		
	KRR	Sn		04	24	e			
		Sg		04	48	i	4.5		
24	BUL	Pn	14	21	50	e		BUL 14 33 08 21.6S 28.8E Shashi - Tuli Confluence Area, Rhodesia	2.4
		Sn		23	00	e			
		Sg		23	34	i	0.9		
	CIR	Pn		21	55	e			
		Sn		23	06	e			
		Sg		23	38	i	1.0		
	KRR	Pn		22	38	e			
		Sn		24	22	e			
24		Sg		25	18	e	0.7	CGS 18 03 19 15.2N 45.8W N. Atlantic Ridge	5.8
	BUL	Pn	14	33	34	e			
		Pg		33	37	i			
		Sg		33	53	i	3.8		
	CIR	Pg		33	55	e			
		Sg		34	27	i	2.0		
24	KRR	Sn		35	14	e		Distant	0.2
		Sg		35	34	i	0.7		
	BUL	P	18	15	33	iC	1.5		
24	KRR	P		15	33	e	3.6	Distant	0.2
	CIR	P		15	48	e	1.1		
24	CIR		23	25	35	e	0.2	Distant	0.2
	BUL			25	50	e	0.2		
25	BUL	Pn	12	55	56	e		BUL 12 54 25 26.5S 28.0E Witwatersrand	3.0
				56	43	e			
		S*		57	15	e			
		Sg		57	35	i	0.6		
	CIR	Pn		55	58	e			
		Sn		57	06	e			
		Sg		57	39	i	0.3		
	KRR	Pn		56	40	e			
	Sn		58	24	e				
	Sg		59	18	e	0.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag		
25	CIR	P ⁱ	21	52	55	i	0.3	CGS 21 33 17 52.2N 169.4W	4.5		
	BUL	P ⁱ		52	56	i	0.8	Fox Is., Aleutian Is.			
25	BHA	P	23	23	15	e	0.2	CGS 23 10 28 32.5N 102.2E	5.0		
	BUL	P		23	17	e	0.2	Szechwan Province, China			
26	CIR	P ⁱ	01	29	17	i	0.3	CGS 01 09 40 52.3N 169.3W	4.6		
	BUL	P ⁱ		29	18	i	0.8	Fox Is., Aleutian Is.			
		pP ⁱ		29	30	i					
	KRR	pP ⁱ		29	24	e	0.1				
26	BHA	P	05	01	15	iR	0.3	CGS 04 54 45 16.4N 41.0E	5.1		
	KRR	P		01	25	e	0.3	Red Sea			
	BUL	P		01	59	eiC	0.4				
	CIR	P		02	01	eiC	0.6				
26	KRR	P	07	10	23	iC	1.0	CGS 06 59 56 45.9N 42.5E	5.6		
		pP		10	40	i		S.W. Russia			
	BUL	P		10	50	iC	4.6				
	CIR	P		10	54	iC	4.0				
26	KRR	P	08	39	21	e	0.3	CGS 08 26 34 1.0N 123.8E	4.8		
	BUL	P		39	30	e	0.3	N. Celebes			
26	BHA	Pn	19	07	15	e		BUL 19 04 46 6S 22E	3.5		
		Sn		09	10	e		Kasai Province, Congo			
		Sg		10	17	i	0.6				
	KRR	Pn		07	56	e					
		Sn		10	16	e					
		Sg		11	48	e	0.3				
	BUL	Pn		08	27	e					
		Sg		12	53	e	0.2				
	26	BUL	P ⁱ	21	08	40	e	0.3		CGS 20 49 06 52.9N 167.0W	4.2
		CIR	P ⁱ		08	40	e	0.2		Fox Is., Aleutian Is.	
26	BHA	Pn	21	55	13	e		BUL 21 52 41 4.5S 24.0E	4.1		
		Sn		57	07	e		Kasi Province, Congo			
		L		58	10	i	3.0				
	KRR	Pn		55	49	e					
		Sn		58	09	i					
		L		59	38	i	1.0				
	BUL	Pn		56	26	e					
		Sn		59	14	e					
		L	22	01	06	e	0.4				
	CIR	Pn	21	56	45	e					
Sn			59	44	e						
L		22	01	50	e	0.4					
27	BUL	P	09	15	12	iR	5.5	CGS 09 04 03 60.9S 56.0W	5.8		
		S		24	20	e		S. Shetland Is.			
		SKS		25	00	e					
	CIR	P		15	17	iR	3.0				
		S		24	30	e					
	KRR	P		15	26	iR	1.5				
		S		24	51	e					
	BHA	SKS		25	32	e					
BHA	P		15	42	iR	2.5					
27	CIR	Pg	15	48	43	e		BUL 15 47 44 19.3S 34.4E	2.6		
		S*		49	13	e		Central Mocambique			
		Sg		49	22	i	0.9				
	KRR	Sn		49	58	e					
		Sg		50	24	i	1.0				
	BUL	Sg		50	35	e	0.5				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
27	CIR	P	19	25	22	iR	0.5	CGS 19 13 49 9.4S 107.8E S. of Java	5.6
		pP		25	32	i			
	KRR	P		25	39	iR	0.8		
		pP		25	49	i			
	BUL	P		25	(43)	iR	1.9		
		pP		25	(53)	i			
BHA	P		25	43	iR	0.7			
	pP		25	53	i				
28	BUL	Pn	00	53	08	e		BUL 00 51 37 26.5S 27.7E Witwatersrand	3.3
		Sn		54	19	e			
		Sg		54	49	i	1.2		
	CIR	Pn		53	12	e			
		Sn		54	23	e			
		Sg		54	56	i	0.9		
	KRR	Pn		53	58	e			
		Sn		55	41	e			
		Sg		56	37	e	0.6		
	BHA	Pn		54	24	e			
		Sn		56	34	e			
		Sg		57	48	e	0.2		
28	CIR	P	01	19	45	e	0.3	CGS 01 09 05 48.4S 107.4E S.E. Indian Rise	-
		BUL		20	03	e	0.2		
		KRR		20	17	e	0.1		
		BHA		20	28	e	0.1		
28	BHA	P'	07	38	09	e	0.3	CGS 07 20 09 23.3N 144.2E Volcano Is. Region	4.5
		KRR		38	28	e	0.2		
		CIR		38	31	e	0.2		
		BUL		38	37	e	0.2		
28	CIR	P'	10	36	06	e	0.1	CGS 10 17 08 23.8S 176.7W S. of Fiji Is.	5.0
		KRR		36	09	e	0.2		
		BUL		36	11	e	0.2		
		BHA		36	18	e	0.2		
28	KRR	P'	14	17	48	e	0.2	CGS 13 58 28 52.4N 169.6W Fox Is. Aleutian Is.	4.3
		CIR		18	02	e	0.2		
		BUL		18	03	e	0.5		
28	CIR	P	18	12	04	e	0.2	CGS 17 58 42 1.9N 126.4E Molucca Passage	5.1
		KRR		12	16	e	0.3		
		BHA		12	18	e	0.3		
		BUL		12	25	e	0.3		
28	BHA	P	19	04	27	e	0.2	CGS 18 53 29 39.3N 73.6E Tadzhik - Sinkiang Border Region	5.0
		KRR		04	(37)	e	0.3		
		BUL		04	50	e	0.3		
		CIR		04	52	e	0.2		
28	CIR	P'	20	08	49	e	0.2	CGS 19 50 24 13.1N 143.7E S. of Mariana Is.	5.3
		BUL		08	51	e	0.3		
		BHA		08	54	e	0.2		
		KRR		08	(56)	e	0.3		
28	BUL	P	21	46	02	e	0.3	CGS 21 33 01 2.5N 124.3E Celebes Sea	4.8
		KRR		46	04	e	0.2		
		BHA		46	05	e	0.1		
28	BHA	P	23	02	51	e	0.4	CGS 22 54 07 34.3N 25.1E Crete	5.4
		pP		03	09	i			
	KRR	P		03	13	e	1.5		
		BUL		03	32	e	1.0		
	CIR	P		03	42	iR	0.6		
		pP		04	01	iR			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
28	DHA	P _h	23	37	16	e		BUL 23 35 20 6.7S 29.0E W. Lake Tanganyika Area	4.1	
		Sn		38	40	i				
		Sg		39	24	i	3.			
	KRR	Pn		37	51	e				
		Sn		39	39	e				
	CIR	Sg		40	40	i	1.7			
		Pn		38	40	e				
	BUL	Sn		41	11	e				
		Sg		42	42	i	0.7			
		L		40	48	e				
29	KRR	P	10	40	30	e	0.3	CGS 10 27 49 65.1N 6.6E Norwegian Sea	4.8	
		BUL	P		40	36	e			0.3
29	CIR	Pn	11	34	56	e		BUL 11 33 22 26.4S 27.7E Witwatersrand	3.1	
		Sn		36	08	e				
		Sg		36	39	i	0.5			
	BUL	Sn		36	01	e				
		Sg		36	34	e	0.5			
	KRR	Sn		37	28	e				
29	CIR	P	16	33	04	e	0.3	CGS 16 20 00 7.2S 128.8E Banda Sea	5.7	
		BUL	P		33	17	e			0.3
		BHA	P		33	23	e			0.3
29	CIR	P'	18	17	26	e	0.1	CGS 17 58 39 43.4N 147.7E Kurile Is.	5.4	
		BHA	P'		17	31	e			0.2
		BUL	P'		17	42	e			0.3
29	BUL	Pn	20	07	02	e		BUL 20 03 29 33.1S 19.6E S.W. Cape Province, S. Africa Felt widely in Cape Province. Felt MM IX at Tulbagh, Ceres and Wolsely. 12 dead, 1000 homeless	6.1 X	
		Sn		09	51	i				
		Sg		11	(30)	e	50.			
	CIR	Pn		07	13	e	-			
	BHA	Pn		08	05	e	-			
29	CIR	Pn	21	52	37	e		BUL 21 48(52) 33S 20E S.W. Cape Province, S. Africa	3.8	
		Sg		57	11	e	0.3			
	BUL	Sg		56	49	e	0.3			
29	BUL	Pn	23	38	33	e		BUL 23 35 00 33.1S 19.0E S.W. Cape Province, S. Africa	4.2	
		S*		41	40	e				
		Sg		42	51	i	0.9			
	CIR	Pn		38	46	e				
		S*		42	07	e				
	BHA	Sg		43	19	i	1.0			
		L		45	35	e				
30	CIR	Pn	04	24	12	e		BUL 04 20 27 33.5E 19.5E S.W. Cape Province, S. Africa	3.9	
		S*		27	21	e				
		Sg		28	40	e	0.4			
BUL	Sg		26	54	e					
			28	16	e	0.4				
30	CIR	Pn	05	24	32	e		BUL 05 20 41 33.8S 19.4E S.W. Cape Province, S. Africa	3.8	
		Sg		29	08	e	0.3			
	BUL	S*		27	35	e				
		Sg		28	44	e	0.3			
30	BUL	Pn	07	10	01	e		BUL 07 06 20 33.7S 19.8E S.W. Cape Province, S. Africa	3.9	
		S*		13	10	e				
		Sg		14	22	i				
	CIR	L		14	33	i	0.5			
		Pn		10	11	e				
	KRR	Sg		13	(15)	e				
		Sg		14	48	i	0.4			
	Sg		15	48	e	0.3				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
30	BUL	Pn	09	52	29	e		BUL 09 48 53 33.3S 19.0E S.W. Cape Province, S. Africa	4.2	
		Sg		55	24	e				
	CIR	Pn		56	50	e	0.7			
		Sg		52	42	e				
	KRR	Sg		55	41	e				
		Sn		57	16	i	0.9			
	BHA	L		56	19	e				
		L		58	24	e				
		L		58	33	i	0.7			
		L		59	35	e	0.3			
30	CIR	Pn	10	52	12	e		BUL 10 48 20 33.3S 19.1E S.W. Cape Province, S. Africa	3.9	
		Sg		55	15	i				
	BUL	L		56	45	i				
		Sg		57	00	i	0.4			
	KRR	L		54	31	e				
		L		56	19	e	0.4			
		Sg		56	06	e				
		Sg		57	56	i	0.3			
	30	BUL	Pn	11	44	16	e		BUL 11 40 42 33.2S 19.2E S.W. Cape Province, S. Africa	4.3
			Sn		47	00	e			
CIR		Sg		48	33	i				
		L		48	47	i	1.3			
KRR		Pn		44	28	e				
		Sg		47(38)	e					
BHA		Pn		49	02	i	2.0			
		Sg		44(50)	e					
		L		48	11	i				
		Sg		50	04	i	1.0			
	Sg		51	04	e	0.4				
30	CIR	P ³	18	10	33	e	0.2	CGS 17 51 42 31.9S 178.0W Kermadec Is.	5.4	
		PP		12	04	e				
	BUL	P ¹		10	34	e	0.7			
		PP		12	16	e				
	KRR	P ¹		10	44	i	0.8			
		PP		12	33	e				
30	BHA	Pn	21	53	58	e		BUL 21 51 44 5.5S 31.4E E. Lake Tanganyika	4.1	
		Sn		55	39	e				
	KRR	Sg		56	31	e	2.5			
		Pn		54	28	e				
	CIR	S*		57	07	i				
		L		57	44	i	1.1			
	BUL	Pn		55	20	e				
		S*		58	49	i				
		L		59	49	i	0.9			
		Pn		56	09	e				
	S*		58	04	e					
	L		59	31	e	0.8				
30	BHA	P	23	25	15	e	0.3	CGS 23 13 29 25.6N 94.7E Burma - India Border Region	5.4	
		pP		25	30	i				
	KRR	P		25	18	e	0.3			
		pP		25	34	i				
	BUL	P		25	31	e	0.2			
		pP		25	45	e	0.2			

RHODESIA METEOROLOGICAL SERVICES

SEISMOLOGICAL BULLETIN

The following stations contribute records for analysis and publication in this Bulletin:

- KABWE (BHA):** $14^{\circ} 26.8' S$; $28^{\circ} 28.1' E$; Alt. 1206 m.
 Litho. foundation: Dolomite and shales of the Middle Katanga System.
 Authority: Zambia Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- CHILEKA (CIK):** $15^{\circ} 40.8' S$; $34^{\circ} 58.6' E$; Alt. 781 m.
 Litho. foundation: Charnockitic granulites of the Basement Complex.
 Authority: Malawi Meteorological Service.
 Instrument: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
- KAROI (KRR):** $16^{\circ} 51.1' S$; $29^{\circ} 37.1' E$; Alt. 1380 m.
 Litho. foundation: Granitic gneisses of the Zambesi type.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.
- BULAWAYO (BUL):** $20^{\circ} 08.6' S$; $28^{\circ} 36.8' E$; Alt. 1341 m.
 Litho foundation: Hornblend schists of the Bulawayan System.
 Authority: Rhodesia Meteorological Service.
 Instruments: Three-component Willmore one-second seismograph.
 Nominal magnification 20,000.
 WWSS Station: SP magnification 100,000
 LP magnification 1,500
- CHIREDDZI (CIR):** $21^{\circ} 00.8' S$; $31^{\circ} 34.8' E$; Alt. 430 m.
 Litho foundation: Gneisses or Charnockites of the Limpopo belt.
 Authority: Rhodesia Meteorological Service.
 Instrument: Vertical Willmore one-second seismograph.
 Nominal magnification 20,000.

Analysis Centre: Goetz Observatory, Meteorological Service,
 P. O. Box 562, Bulawayo, Rhodesia.

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or P' phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or P'.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- ei The phase shows an emergent beginning, followed by a sharp increase in amplitude.
- R The first motion is downwards, or towards the epicentre; the motion is rarefactional. A lower case r indicates a weakly rarefactional first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or P' in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U. S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (17S 30E).
- MM Intensity on the Modified Mercalli scale.
- ? Indicates an uncertain statement.
- () The estimated uncertainty in the quantity in brackets is between 4 and 10 units of the last digit quoted. E.g., a latitude given as (16.4S) is thought to be uncertain by between 0.4 and 1.0 degree.
- Mag Magnitude. Locally-determined magnitudes are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	KRR	P	08	27	34	e	0.6	Distant	
	CIR	P		27	47	e	0.2		
	BUL	P		27	57	e	0.5		
01	KRR	PKP	11	27	46	e	0.3	CGS 11 08 21 23.1N 109.7W	5.6
		PP		30	(50)	e		Gulf of California	
	BUL	PKP		27	47	e	0.6		
		PP		30	45	e			
	CIR	PKP		27	55	e	1.0		
01	KRR	P*	17	50	32	e		BUL 17 48 25 12.1S 23.5E	3.4
		Sn		51	35	i		Angola - Zambia Border	
		Sg		52	17	i	1.0		
	BUL	Pn		50	39	e			
		Sn		52	15	e			
		Sg		53	10	i	0.6		
	CIR	Sn		55	16	e			
		Sg		54	21	e	0.3		
02	CIR	SKP	02	53	55	e	0.2	CGS 02 33 35 22.1S 179.8W	4.7
	BUL	SKP		54	04	e	2.0	S. of Fiji Is.	
	KRR	SKP		54	11	e	1.0		
02	KRR	Pg	03	56	28	iC		BUL 03 56 07 16.6S 28.4E	2.3
		Sg		56	43	i	4.8	Kariba	
	CIR	Sn		58	23	e			
		Sg		58	48	e	0.3		
02	CIR	P	14	56	50	e	0.2	Distant	
		pP		57	13	e			
	BUL	P		57	04	e	0.3		
		pP		57	25	i			
02	CLK	P	19	04	23	e	0.2	CGS 18 53 07 6.5S 107.1E	5.4
	CIR	P		04	40	e	0.3	Java	
	KRR	P		04	51	e	0.8		
	BUL	P		04	56	e	1.0		
02	CLK	P	20	05	19	e	0.2	CGS 19 53 59 6.6S 107.0E	5.2
	CIR	P		05	21	e	0.2	Java	
	KRR	P		05	44	e	0.4		
	BUL	P		05	46	e	0.9		
02	CLK	P	23	04	39	e	0.2	CGS 22 51 43 0.9N 125.2E	5.2
	CIR	P		04	55	e	0.2	Molucca Passage	
	KRR	P		05	03	e	0.4		
	BUL	P		05	07	e	0.7		
03	CIR	P	01	34	23	e	0.4	Distant	
	BUL	P		34	49	e	0.2		
03	KRR	Pg	01	38	28	iC		BUL 01 38 16 16.8S 28.8E	2.9
		Sn		38	40	i	17.0	Kariba	
	BUL	P*		39	08	e			
		Pg		39	14	i			
		S*		39	45	i			
		Sg		39	56	i	2.0		
	CIR	P*		39	32	e			
		Sn		40	24	i			
		Sg		40	46	i	2.0		
	CLK	Pn		39	45	e			
	Sn		40	50	e				
	Sg		41	20	i	0.7			
03	CIR	P	03	42	07	iR	1.0	CGS 03 30 19 45.8S 123.2E	5.2
		pP		42	21	i		S. of Australia	
	BUL	P		42	30	iR	0.8		
	KRR	P		42	31	e	0.5		
		pP		42	45	i			

Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
03	BUL		06	03	46	e	0.4	Distant	
	KRR			03	52	e	0.2		
03	CIR	P	07	45	30	e	0.3	CGS 07 33 42 45.6S 122.9E S. of Australia	-
	CLK	P		45	40	e	0.2		
	BUL	P		45	45	e	0.3		
	KRR	P		45	54	e	0.2		
03	CIR	PKP	11	06	(00)	e	0.2	CGS 10 47 19 29.8S 178.2W Kermadec Is. Region	5.1
	BUL	PKP		06	03	e	0.2		
	CLK	PKP		06	08	e	0.2		
	KRR	PKP		06	10	e	0.2		
03	BUL	PKP	17	14	04	e	0.3	CGS 16 55 19 5.8S 154.0E Solomon Is.	5.1
03	BUL	P	20	16	16	iR	0.8	CGS 20 06 59 59.0S 26.0W S. Sandwich Is. Region	4.6
	CIR	P		16	21	iR	0.7		
		pP		16	56	i			
	KRR	P		16	39	e	0.7		
		pP		17	16	e			
	CLK	P		17	05	e	0.2		
03	CLK	P	22	01	41	e	0.2	CGS 21 53 16 26.7N 53.7E S. Iran	5.0
	KRR	P		02	27	e	0.2		
	CIR	P		02	30	e	0.3		
	BUL	P		02	(35)	e	0.2		
04	CIR		01	29	28	e	0.1	Distant	
	BUL			29	31	e	0.4		
04	BUL		09	19	27	e	0.3	Distant	
	KRR			19	32	e	0.2		
04	CIR	PKP	14	49	40	e	0.2	CGS 14 30 06 52.3N 169.6W Fox Is., Aleutian Is.	4.4
	BUL	PKP		49	49	iR	0.7		
		pPKP		50	03	i			
04	CLK	P	20	27	35	e	0.3	CGS 20 17 48 40.3N 50.3E Caspian Sea	5.0
	KRR	P		27	53	e	0.2		
	CIR	P		28	16	iC	0.7		
		pP		28	32	i			
	BUL	P		28	17	iC	0.3		
		pP		28	32	i			
04	CIR	P	21	59	23	e	0.7	CGS 21 53 00 52.8S 27.2E S. of Africa	4.8
	BUL	P		59	28	e	0.9		
	KRR	P		59	58	e	0.7		
	CLK	P	22	00	15	e	0.5		
04	CLK	P	22	17	10	e	0.7	CGS 22 04 12 0.1S 125.0E Molucca Sea	5.4
		pP		17	18	i			
	CIR	P		17	25	e	0.3		
	KRR	P		17	35	e	0.2		
	BUL	P		17	38	e	0.9		
		pP		17	47	i			
04	CIR	PKP	23	58	21	e	0.3	CGS 23 40 23 22.2S 179.7W S. of Fiji Is.	5.1
		PP		00	30	e			
	BUL	PKP		58	25	iC	0.9		
		SKP		00	58	iC			
	KRR	PKP		58	30	e	1.0		
		SKP		01	03	i			
05	CLK	SKP		00	53	e	0.2	CGS 04 38 37 27.5S 63.1W Santiago del Estero Province, Argentina.	4.4
	BUL	P	04	50	03	iR	2.9		
		pP		52	05	e			
	CIR	P		50	14	e	0.3		
	KRR	P		50	15	e	0.9		
	CLK	P		50	40	e	0.2		
				50	46	i			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
05	BUL	Pn	05	11	(25)	e		BUL 05 09 36 27.9S 27.0E Orange Free State Goldfields	3.2
		Sn		12	54	e			
		Sg		13	37	i	0.4		
	CIR	Pn		11	29	e			
		Sn		12	(58)	e			
		Sg		13	40	e	0.3		
	KRR	Pn		12	(11)	e			
		Sn		14	16	e			
		Sg		15	25	e	0.3		
05	KRR	P	07	58	12	e	0.2	CGS 07 47 34 35.9N 10.7W N. Atlantic Ocean	4.6
	BUL	P		58	25	e	0.4		
	CIR	P		58	40	e	0.1		
05	KRR	PKP	18	13	58	c	2.5	CGS 17 54 14 34.8N 121.2W Off Coast of California	5.8
	BUL	PKP		13	59	eiR	2.4		
	CLK	PKP		14	05	e	2.0		
	CIR	PKP		14	05	e	1.0		
05	BUL	Pn	19	06	10	e		BUL 19 02 39 33.0S 19.8E Cape Province, South Africa	5.3
		L		08	58	i			
	CIR	Pn		10	29	i	10.0		
		Sn		06	20	e			
	KRR	Pn		09	17	i			
				09	29	i			
		L		10	56	i	11.0		
		Pn		06	52	e			
	CLK	Pn		10	36	e			
				12	14	i	8.0		
			07	36	e				
			11	56	e				
	L		14	05	i	4.0			
06	BUL	Pn	00	36	52	e		BUL 00 35 18 26.4S 27.3E Witwatersrand	3.2
		Sn		38	01	e			
		Sg		38	32	e	1.0		
	CIR	Pn		36	55	e			
		Sn		38	08	e			
		Sg		38	39	i	0.8		
	KRR	Pn		37	(37)	e			
		Sn		39	22	e			
		Sg		40	17	e	0.3		
06	BUL		02	39	45	e	0.3	Distant	
	KRR			39	52	e	0.3		
06	CLK	P	04	44	23	e	0.3	CGS 04 36 01 26.3N 53.7E S. Iran	5.0
	KRR	P		44	49	e	0.7		
	CIR	P		45	11	e	0.3		
	BUL	P		45	14	e	0.2		
06	CLK	P	06	39	40	e	0.3	BUL 06 31 18 26.3N 53.7E S. Iran	4.5
	KRR	P		40	05	e	0.2		
	CIR	P		40	26	e	0.3		
	BUL	P		40	30	e	0.2		
06	BUL	PKP	13	20	05	e	0.2	CGS 13 01 20 15.7N 92.5W Mexico - Guatemala Border	5.0
	KRR	PKP		20	06	e	0.4		
	CLK	PKP		20	16	e	0.4		
06	BUL	P	13	31	55	e	0.2	CGS 13 21 21 3.9N 32.4W Central Mid - Atlantic Ridge	5.0
	KRR	P		31	55	e	0.2		
	CIR	P		32	15	e	0.3		
	CLK	P		32	28	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
06	BUL	Pn	15	13	26	iC		BUL 15 12 00 26.7S 28.0E Witwatersrand	4.0
		Sn		14	35	i			
		Sg		15	10	i	5.0		
	CIR	Pn		15	30	e			
		Sn		15	44	e			
	KRR	Pn		15	42	i	2.8		
		Sn		14	13	e			
	Sg		15	57	e				
	Sg		16	54	i	2.0			
06	CIR	P	19	02	(30)	e	0.2	CGS 18 57 08 34.6S 55.2E	5.1
	BUL	P		02	52	e	0.3	Atlantic - Indian Rise	
06	BUL	Pn	20	09	09	e		BUL 20 05 45 32.9S 20.3E Cape Province, South Africa	4.2
		L		11	59	i			
	CIR	Pn		13	25	i	0.9		
		Sn		09	21	i			
	KRR	L		12	30	i			
		Sg		13	50	i			
		L		13	40	e			
		Sg		14	51	i			
		L		15	08	i	0.8		
	06	CLK	PKP	20	39	20	e	0.2	CGS 20 20 19 51.5N 178.9W
KRR		PKP		39	34	e	0.2	Andreanof Is., Aleutian Is.	
		pPKP		39	48	i			
BUL		PKP		39	43	e	1.1		
CIR		pPKP		39	44	e	0.3		
07	CLK	P	02	47	32	e	0.2	CGS 02 35 06 6.9N 124.6E	5.1
	CIR	P		47	46	iC	0.7	Mindanao, Philippine Is.	
	KRR	P		47	51	e	0.2		
	BUL	P		47	59	iC	0.9		
07	BUL	P	04	10	54	iR	0.9	CGS 03 58 31 24.1S 66.9W	4.9
		PcP		10	58	i		Salta Province, Argentina	
		pP		11	43	e			
	CIR	P		10	04	e	0.3		
		PcP		10	07	i			
	KRR	P		10	05	e	0.2		
		PcP		10	09	i			
CLK	P		11	33	e	0.3			
07	CLK	P	04	42	08	e	0.2	CGS 04 30 58 6.3S 105.3E	5.8
	CIR	P		42	23	e	0.2	Sunda Strait	
	KRR	P		42	34	e	0.2		
	BUL	P		42	39	e	0.3		
07	BUL		07	33	45	e	0.2	Distant	
	KRR			33	47	e	0.2		
07	BUL		12	12	51	e	0.2	Distant	
	KRR			12	52	e	0.2		
07	BUL	P	12	19	45	e	1.0	CGS 12 11 47 3.1S 12.0W	4.9
				22	54	e		N. of Ascension Is.	
	KRR	P		19	45	e	0.9		
				22	54	e			
	CIR	P		20	09	e	0.3		
CLK	P		20	23	e	0.2			
07	BUL	P	12	53	34	e	1.0	CGS 12 45 35 2.9S 12.0W	5.2
		pP		53	39	i		N. of Ascension Is.	
	PP		55	13	e				
	KRR	P		53	34	e	0.9		
		pP		53	40	i			
	CIR	P		53	57	e	0.7		
		pP		54	03	i			
	CLK	P		54	13	e	0.3		
pP			54	18	e				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
07	BUL	P	13	12	24	e	0.8	CGS 13 04 25 2.9S 12.0W N. of Ascension Is.	5.0
		pP		12	30	i			
	KRR	P		12	25	e	0.9		
		pP		12	32	i			
	CIR	P		12	45	e	0.5		
		pP		12	51	i			
07	CLK	P	13	27	04	e	0.2	CGS 13 18 44 26.6N 53.3E S. Iran	4.6
	KRR	P		27	53	e	0.3		
		sP		28	12	i			
		PcP		29	07	e			
	CIR	P		27	53	e	0.3		
		sP		28	15	i			
	BUL	P		27	(55)	e	0.2		
		PcP		29	06	e			
07	CIK	P	15	24	25	e	0.2	CGS 15 16 04 26.6N 53.7E S. Iran	5.0
	KRR	P		24	51	e	0.4		
	CIR	P		25	13	e	0.2		
	BUL	P		25	16	e	0.3		
07	BUL	P	16	07	59	e	0.2	Distant	
	KRR	P		07	59	e	0.2		
	CIR	P		08	21	e	0.2		
07	CLK	P	16	38	48	e	0.2	CGS 16 30 29 26.6N 53.3E S. Iran	5.0
		pP		38	57	i			
	KRR	P		39	14	e	0.4		
		pP		39	21	i			
	CIR	P		39	36	e	0.3		
		pP		39	44	i			
	BUL	P		39	39	e	0.4		
	pP		39	46	i				
07	BUL	P	16	49	05	e	1.0	CGS 16 41 07 2.8S 12.1W N. of Ascension Is.	5.3
		pP		49	11	iC			
	KRR	P		49	06	e	0.9		
		pP		49	12	iC			
	CIR	P		49	28	e	0.2		
		pP		49	34	iC			
	CLK	P		49	44	e	0.2		
	pP		49	50	iC				
07	BUL	P	18	28	35	e	0.6	CGS 18 20 36 2.9S 12.0W N. of Ascension Is.	5.2
		pP		28	40	i			
	KRR	P		28	36	e	0.3		
		pP		28	42	i			
	CIR	P		28	58	e	0.2		
		pP		29	05	i			
	CLK	P		29	15	e	0.2		
		pP		29	20	i			
07	CLK	P	18	42	50	iR	10.0	CGS 18 33 59 27.9N 60.1E S. Iran	6.1
		S		49	52	e			
	KRR	P		43	18	iR	16.0		
	CIR	P		43	35	iR	11.5		
	BUL	P		43	40	iR	8.9		
		S		51	25	e			
07	BUL		19	20	56	e	0.2	Distant	
	KRR			21	05	e	0.1		
07	KRR	P	19	33	31	e	0.2	Distant	
	CIR	P		33	(55)	e	0.2		
	BUL	P		33	56	e	0.2		
07	BUL	P	22	01	53	e	0.2	Distant	
	KRR	P		01	54	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
08	CLK	P	00	47	(10)	e	0.2	CGS 00 38 48	26.7N 53.7E	-
	KRR	P		47	35	e	0.2	S. Iran		
	CIR	P		47	58	e	0.2			
08	BUL	P	01	26	52	e	0.3	Distant		
	KRR	P		26	53	e	0.2			
	CIR	P		27	12	e	0.2			
	CLK	P		27	38	e	0.2			
08	CIR	PKP	02	00	38	e	0.5	CGS 01 41 41	16.2S 167.5E	5.7
		PP		02	16	e		New Hebrides Is,		
	CLK	PKP		00	39	e	0.3			
		PP		02	20	e				
	BUL	PKP		00	43	e	1.0			
		PP		02	33	e				
	KRR	PKP		00	45	e	0.5			
	PP		02	37	e					
08	BUL		02	19	36	e	0.2	Distant		
	KRR			19	41	e	0.2			
08	CLK	PKP	07	39	53	e	0.2	CGS 07 24 30	45.5N 150.1E	5.3
	KRR	PKP		40	22	e	0.2	Kurile Is.		
	CIR	PKP		40	25	e	0.2			
	BUL	PKP		40	27	e	0.3			
08	BUL	Pn	12	27	29	e		BUL 12 24 03	32.9S 20.0E	4.2
		Sn		30	08	e		Cape Province, South Africa		
		L		31	49	i	1.0			
	CIR	Pn		27	42	e				
		Sn		30	32	e				
		L		30	50	e				
		L		32	17	i	1.0			
	KRR			31	47	e				
		L		32	12	e				
	L		33	33	e	0.4				
08	BUL	Pn	13	56	37	e		BUL 13 53 09	33.0S 19.9E	4.2
				59	32	i		Cape Province, South Africa		
			14	00	03	i				
		L		00	57	i	0.9			
	CIR	Pn	13	56	52	e				
			14	00	10	i				
		Sg		01	20	i				
		L		01	32	i	1.0			
	KRR			00	58	e				
		Sg		02	24	i				
	L		02	45	i	0.6				
08	BUL	P	15	47	11	e	0.2	CGS 15 39 13	2.8S 11.9W	4.7
		pP		47	17	iC		N. of Ascension Is.		
	KRR	P		47	11	e	0.2			
		pP		47	17	iC				
	CIR	P		47	34	e	0.2			
		pP		47	40	i				
	CLK	pP		47	55	e	0.4			
08	CLK	Pn	19	51	25	e		BUL 19 47 34	0.5N 30E	3.8
		Sn		54	19	i		Congo-Uganda Border		
		L		56	19	i	0.4			
	KRR	Pn		51	(40)	e				
		S*		55	21	e				
		L		56	39	e	0.2			
	BUL	L		58	17	e	0.2			
08	BUL	P	20	36	23	iR	1.2	CGS 20 28 24	3.0S 12.1W	5.2
	KRR	P		36	25	iR	1.0	N. of Ascension Is.		
	CIR	P		36	48	iR	1.0			
	CLK	P		37	02	e	0.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag		
08	BUL	PKP	21	18	(19)	e	0.2	CGS 21 00 16 22.1S 179.7W S. of Fiji Is.	4.6		
		SKP		20	(49)	i					
	KRR	PKP		18	24	e	0.7				
		SKP		20	57	i					
08	CLK	P	22	08	(20)	e	0.2	CGS 21 55 09 1.1S 127.0E Halmahera Event 18 secs. earlier from same area, at 21 54 51	-		
		pP		08	30	i					
		PP		12	(10)	e					
	CIR	P		08	31	e	0.3				
		PP		12	30	e					
		KRR	P		08	(35)		e	0.1		
		pP		08	47	i					
		PP		12	39	e					
	BUL	P		08	(37)	e	0.2				
		pP		08	(50)	i					
08	CLK	P	23	39	12	e	0.3	CGS 23 26 00 1.0S 127.0E Halmahera	5.3		
		CIR	P		39	(27)				e	0.2
	KRR	P		39	(30)	e	0.2				
		BUL	P		39	(32)				e	0.2
09	CLK	Pn	00	06	59	e		BUL 00 06 00 11.8S 34.0E Lake Malawi	3.1		
		Pg		07	10	e					
		Sn		07	43	i					
		Sg		08	00	i				1.7	
	KRR	Pg		07	47	e					
		Sn		08	48	e					
		Sg		09	20	i	1.0				
	CIR	Sg		10	47	e	0.3				
	BUL	Sg		11	(58)	e	0.4				
	09	BUL	P	00	14	(16)	e	0.6	Distant		
KRR			P		14	16	e				0.2
CIR			P		14	40	e				
CLK			P		14	54	e				0.2
09	CLK	P	01	22	35	e	0.2	CGS 01 09 24 1.0S 127.1E Halmahera	5.2		
		pP		22	42	i					
	CIR	P		22	52	e	0.2				
	KRR	P		23	(00)	e				0.2	
		pP		23	05	e					
	BUL	P		23	(06)	e	0.2				
09	BUL	Pn	01	46	33	e		BUL 01 43 00 33.1S 19.9E Cape Province, South Africa	4.5		
			Sn		49	15				i	
				49	28	i					
				49	45	i					
		L		50	52	i				1.8	
	CIR	Pn		46	40	e					
				43	34	i					
			49	55	i						
		L		51	15	i	2.0				
	KRR	Pn		47	12	e					
				50	45	e					
			Sg		52	12	i				
	CLK	Pn		52	35	i	1.0				
				48	01	e					
			52	(32)	e						
L			54	33	i	1.0					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
09	BUL	Pn	05	03	36	e		BUL 05 00 07 33.0S 20.0E	4.5	
		L		06	33	i		Cape Province, South Africa		
	CIR	Pn			07	55	i	1.5		
					05	47	e			
					03	58	i			
					06	40	i			
					06	58	i			
					07	09	i			
	KRR	Pn	L		08	22	i	2.0		
					04	18	e			
					07	52	e			
	CLK	Pn			08	33	i			
			L		09	39	i	1.0		
					05	03	e			
	L		11	29	i	1.0				
09	BUL	Pn	07	02	33	e		BUL 06 59 02 33.1S 20.1E	4.2	
		L		05	30	e		Cape Province, South Africa		
	CIR	Pn			05	45	i			
			L		06	50	i	1.0		
					02	42	e			
	KRR	Pn			02	49	i			
			L		05	36	i			
					07	18	i	1.0		
					07	25	e			
	CLK	L	Sg		08	18	e			
			L		08	37	i	0.6		
		L		10	25	e	0.5			
	09	CIR	PKP	09	26	29	iR	1.0	CGS 09 07 51 16.3S 167.9E	5.3
			L		26	47	i		New Hebrides Is,	
CLK		PKP			29	25	e			
					26	29	e	0.2		
BUL		PKP			29	29	e			
					26	33	iR	1.6		
KRR		PKP			26	50	i			
					28	26	e			
					29	30	e			
					26	36	iR	1.5		
		L		29	38	e				
09		BUL	Pn	11	41	52	e		BUL 11 38 21 32.9S 19.9E	4.3
			L		44	33	e		Cape Province, South Africa	
		CIR	Pn			44	43	e		
					44	59	e			
	L				46	08	i	1.0		
					42	01	i			
					44	52	i			
					45	11	i			
	KRR	Pn	L		46	36	i	1.0		
					46	23	e			
			Sg		47	30	i			
	CLK	L			47	50	i	1.0		
					49	45	e	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
09	BUL	Pn	20	50	30	e		BUL 20 47 00 33.1S 19.9E Cape Province, South Africa	4.5
						i			
	Sn		53	13		e			
			53	28		i			
			53	42		i			
			54	43		i			
	Sg	L	54	52		i	2.0		
	CIR	Pn	50	40		e			
			50	52		i			
	Sn		53	34		i			
			53	52		i			
			54	05		i			
			55	18		i	2.0		
KRR	Pn		51	13	e				
			51	20	i				
		54	46	i					
L		55	27		i				
		56	35		i	1.0			
		52	03		e				
CLK		56	(20)		e				
	L	58	21		i	1.0			
10	CLK	Pn	03	23	55	e		BUL 03 21 28 6.3S 30.8E J. Lake Tanganyika	3.6
			25	38		e			
	Sg		26	39		i			
		L	26	47		i	0.6		
	KRR	Pn	24	(00)		e			
			25	47		e			
	Sg		26	48		e	0.7		
		L	28	43		e	0.3		
	BUL	L	28	55		e	0.2		
	CIR	Sg	28	55		e	0.2		
	10	BUL	Pn	05	09	42	e		
			12	26		i			
Sn			12	39		i			
			14	03		i	6.0		
CIR		Pn	09	53		e			
			09	57		i			
Sn			12	46		i			
			13	07		i			
			14	27		i	1.0		
KRR		Pn	10	24		e			
			14	21		i			
Sg			15	27		i			
		L	15	42		e			
CLK		Pn	11	07		e			
		17	07		i				
L		17	34		i	4.0			
10	BUL	Pn	06	57	36	e		BUL 06 56 05 26.4S 27.3E Witwatersrand	3.4
			58	45		e			
	Sg		59	16		i	1.3		
			57	40		e			
	CIR	Pn	57	40		e			
			58	50		i			
	Sg		59	33		i	1.0		
			58	23		e			
	KRR	Pn	58	23		e			
			07	00	10	e			
	Sg		01	01		i	0.7		
10	CIR	P	11	39	45	e	0.2	CGS 11 27 57 8.7S 112.1E Java	5.1
			39	55		e	0.3		
	BUL	P	40	00		e	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
10	CIR	Pn	11	58	49	e		BUL 11 57 22 26.2S 28.3E Witwatersrand	3.4
		Pg		59	08	i			
		S*		59	59	i			
	BUL	Sg	12	00	23	i	1.5		
		Pn		58	50	e			
	KRR	S*	12	00	00	e	1.5		
		Sg		00	24	i	1.5		
Pn		11	59	36	i				
10	KRR	S*	12	01	(30)	e			
		Sg		02	09	i	1.0		
		BUL	13	46	14	e	0.2	Distant	
10	CIR	P		46	20	e	0.2		
		P		46	26	e	0.2		
10	KRR	P	14	07	00	e	0.2	Distant	
		P		07	06	e	0.6		
		P		07	22	e	0.3		
10	BUL	Pn	17	01	(50)	e		BUL 16 58 17 32.9S 19.9E Cape Province, South Africa	3.8
		Sn		04	50	e			
		Sg		06	03	e	0.3		
	CIR	Pn		01	57	e			
		Sn		05	00	e			
	KRR	L		06	31	i	0.5		
		Sn		06	08	e			
11	CLK	L		07	49	e	0.3		
		L		09	35	e	0.2		
11	KRR	P	00	39	45	e	0.4	CGS 00 30 35 33.4N 55.0E Iran	5.0
		P		40	08	e	0.4		
		P		40	30	e	0.7		
		P		40	31	e	0.3		
11	BUL	P	07	08	28	e	0.6	CGS 06 55 33 24.9S 70.6 Near Coast of N. Chile	5.1
		P		08	52	i			
		P		08	39	e	0.5		
11	KRR	P		08	40	e	0.3		
		P		09	05	i			
		Pn	12	46	05	e		BUL 12 42 42 2.3S 29.5E Rwanda	3.9
Sn		49	11	i					
Sg		49	27	e					
11	CIR	L		50	02	i			
		L		50	17	e			
		Sn		50	10	e			
11	BUL	L		52	25	e	0.2		
		L		51	56	e	0.3		
		L		51	56	e	0.3		
11	CIR	PKP	15	42	35	e	0.3	CGS 15 23 59 5.7S 151.4E New Britain Region	5.3
		pPKP		42	52	i			
	BUL	PKP		42	40	e	0.7		
		pPKP		42	58	i			
	KRR	PKP		42	40	e	0.2		
11	KRR	pPKP		42	57	i			
		P	16	10	16	e		BUL 16 09 56 16.6S 28.5E Lake Kariba	2.1
		S		10	30	i	2.5		
Sg		11	43	e	0.4				
11	CIR	Sg		12	35	e	0.3		
		P	20	04	25	e	0.5	CGS 19 52 01 28.1S 66.6W Catamarca Province, Argentina	3.9
P		04	(27)	e	0.1				
KRR	P		04	41	e	0.1			
12	CIR	SKP	01	11	30	e	0.3	CGS 00 50 57 21.8S 179.6W Fiji Is. Region	4.5
		SKP		11	(30)	e	0.1		
		SKP		11	37	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
12	BUL	Pn	01	58	24	e		BUL 01 56 51 26.4S 27.3E Witwatersrand	3.4	
		Sn		59	35	e				
		Sg	02	00	06	i	1.7			
	CIR	Pn	01	58	27	e				
		Sn		59	38	e				
		Sg	02	00	10	i	1.0			
	KRR	Pn	01	59	09	e				
		Sn	02	00	52	e				
		Sg		01	49	i	1.0			
12	KRR	PKP	12	48	31	e	0.2	CGS 12 29 43 42.4N 144.9E Hokkaido, Japan Region	5.2	
		pPKP		48	44	i				
	BUL	PKP		28	36	e	0.2			
		pPKP		48	49	i				
12	KRR	PKP	15	58	50	e	0.3	CGS 15 40 15 6.0S 148.8E New Britain Region	5.0	
				59	50	e				
	BUL	PKP		58	50	e	0.2			
				59	51	i				
12	KRR	PKP	19	28	23	e	0.5	CGS 19 09 02 53.0S 168.3W Fox Is., Aleutian Is.	5.4	
		pPKP		28	59	e				
		SKP		32	03	e				
	CLK	PKP		28	26	e	0.2			
		SKP		31	57	i				
	BUL	PKP		28	33	iR	8.3			
		SKP		32	11	e				
	CIR	PKP		28	33	iR	3.2			
		pPKP		29	12	e				
	SKP		32	10	e					
12	BUL		21	38	25	e	0.2	Distant		
	CIR			38	26	e	0.2			
13	BUL	PKP	05	16	37	e	0.3	CGS 04 58 31 23.7S 179.9E S. of Fiji Is.	5.0	
		SKP		19	10	e				
	KRR	PKP		16	42	e	0.3			
		SKP		19	16	i				
	CIR	SKP		19	03	e	0.2			
13	BUL	P	08	04	27	iC	1.0	CGS 07 51 29 27.8S 71.6W Near Coast of N. Chile	5.8	
		pP		04	33	i				
				04	40	i				
	CIR	PP		08	07	e				
		P		04	37	iC	1.0			
		pP		04	42	i				
	KRR	P		04	38	iC	0.9			
		pP		04	43	i				
		PP		04	51	i				
	PP		08	15	e					
13	CIR	Pn	11	06	59	e		BUL 11 03 26 59.0E 20.0E Cape Province, South Africa	4.1	
		Sn		09	51	e				
				10	08	e				
				10	19	i				
	BUL	L		11	29	i	0.8			
		Pn		07(00)		e				
		Sn		09	28	e				
				09	55	e				
		Sg		10	49	e				
		L		11	05	i	0.8			
	KRR	Pn		07	30	e				
		Sn		10	58	e				
				11	29	e				
	CLK	L		12	47	i	0.4			
L			14	42	e	0.4				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag	
13	BUL	Pn	15	36	30	e		BUL 15 33 02 32.9S 19.9E Cape Province, South Africa	3.9	
				39	27	e				
		L	40	50	e	0.5				
	CIR	Pn		36	(45)	e				
				39	30	e				
		L	40	04	i					
		L	41	16	i	0.5				
KRR	S*		41	33	e					
			L	42	32	e	0.3			
14	CIR	PKP	07	56	35	e	0.3	CGS 07 37 46 19.7S 175.9W Tonga Is.	5.5	
				56	44	e				
		PP	59	05	i					
		SKP	59	46	iC					
	BUL	PKP		56	40	e	1.0			
				56	49	i				
		pPKP	57	38	i					
		PP	59	08	e					
		SKP	59	50	i					
	CLK	PKP		56	41	e	0.2			
				57	39	e				
		SKP	59	51	e					
	KRR	PKP		56	45	e	0.2			
				PP	59	20	e			
	SKP	59	55	i						
14	CIR	PKP	12	26	49	e	0.2	CGS 12 07 19 53.ON 168.3W Fox Is., Aleutian Is.	4.5	
				BUL	PKP	26	50			e
15	CIR	Pn	05	05	35	e		BUL 05 04 45 19.3S 33.7E Central Mocambique	2.4	
				Sn	06	03	e			
		Sg	06	13	e	1.0				
	KRR	Sg	07	10	e	0.8				
	BUL	Sg	07	25	e	0.5				
15	CIR		07	56	33	e	0.2	Distant		
				BUL		56	42			e
15	BUL	Pn	16	24	59	e		BUL 16 23 25 26.4S 27.1E Witwatersrand	3.4	
				Sn	26	10	e			
				Sg	26	41	i			1.3
	CIR	Pn		25	04	e				
				Sn	26	17	e			
		Sg	26	48	i	1.0				
	KRR	Pn		25	44	e				
				Sn	27	29	e			
		Sg	28	24	e	0.7				
15	KRR	Pn	21	26	19	e		BUL 21 24 12 8S 31E E. Lake Tanganyika	3.3	
				Sn	27	51	e			
				L	28	40	i			0.5
	CIR	Pn		27	(10)	e				
				L	30	53	e	0.3		
	CLK	Sn		27	50	e				
				L	28	42	i	0.3		
BUL	L	30	43	e	0.3					
15	KRR	P	21	43	21	iC		BUL 21 43 01 16.6S 28.5E Kariba	2.5	
				S	43	34	i			5.7
	BUL	Pg		44	02	e				
				Sg	44	46	e	0.7		
	CIR	Sn	45	(15)	e					
	Sg	45	38	i	0.9					
16	CLK	P	00	07	12	e	0.3	CGS 23 58 52 26.8N 53.5E S. Iran	4.9	
				KRR	P	07	36			e
		CIR	P	08	00	e	0.4			
		BUL	P	08	03	e	0.4			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
16	BUL	PKP	10	48	47	e	0.3	CGS 10 30 02 13.4N 89.7W El Salvador	4.9
	KRR	PKP		48	48	e	0.6		
	CIR	PKP		48	53	e	0.3		
	CLK	PKP		49	00	e	0.3		
16	CIR	Pn	13	47	(35)	e		BUL 13 46 04 26.4S 28.4E Witwatersrand	3.2
		Sn		48	43	e			
		Sg		49	11	i	1.0		
	BUL	Pn		47	35	e			
		Sg		49	12	i	1.2		
	KRR	Pn		48	19	e			
	Sg		50	50	i	0.4			
16	CLK	PKP	20	27	39	e	0.1	CGS 20 09 10 6.2S 147.9E E. New Guinea Region	4.9
	CIR	PKP		27	41	e	0.2		
		pPKP		27	52	i			
	KRR	PKP		27	45	e	0.4		
		pPKP		27	58	i			
	BUL	PKP		27	46	e	0.9		
	pPKP		27	58	i				
16	CIR	Pn	22	35	35	e		BUL 22 31 57 32.9S 19.9E Cape Province, South Africa	3.9
		L		38	40	e			
		L		40	05	e	0.4		
	BUL	L		38	23	e			
		L		39	43	e	0.4		
	KRR	L		41	31	e	0.3		
	L		43	21	e	0.2			
17	CIR	PKP	01	01	35	e	0.2	CGS 00 43 20 28.9S 179.1W Kermadec Is.	4.9
	BUL	PKP		01	38	e	0.4		
	KRR	PKP		01	43	e	0.2		
17	BUL	Pn	19	16	31	e		BUL 19 15 00 26.4S 27.6E Witwatersrand	3.1
		Sn		17	40	i			
		Sg		18	11	e	0.4		
	CIR	Pn		16	33	e			
		Sn		17	47	i			
		Sg		18	17	i			
		L		18	21	i	1.0		
	KRR	Sn		19	02	e			
	Sg		20	00	e	0.3			
18	CIR	P	11	12	58	e	0.2	BUL 11 07(30) 47S 40E Prince Edward Is. Region	3.9
		pP		13	02	i			
		S		17	35	e			
	BUL	P		13	10	e	0.2		
		pP		13	15	i			
		S		17	55	e			
		SS		18	54	e			
	KRR	P		13	45	e	0.2		
		PP		14	15	i			
	SS		19	10	e				
18	BUL	Pn	17	18	41	e		BUL 17 17 10 26.2S 27.5E Witwatersrand	3.1
		S*		19	51	e			
		Sg		20	17	i			
		L		20	24	i	0.8		
	CIR	Pn		18	45	e			
		S*		19	(58)	e			
		Sg		20	26	e	0.7		
	KRR	Sn		21	05	e			
	L		22	07	e	0.3			
18	BUL	PKP	21	04	54	e	0.2	CGS 20 45 42 22.3S 175.3W Tonga Is. Region	4.9
	KRR	PKP		04	59	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
19	CIR	Sg	06	42	10	i	15.0	BUL 06 41 26 19.6S 32.1E	3.0
	BUL	Pn		42	(20)	e		Sabi Valley, Rhodesia	
		Pg		42	28	e			
		Sn		42	55	e			
		Sg		43	10	i	10.0		
	CIR	Pn		42	35	e			
		Pg		42	52	i			
		Sn		43	27	e			
		Sg		43	49	i	2.0		
	19	BUL		07	54	10	e	0.2	
KRR				54	13	e	0.2		
19	BUL	Pn	12	26	58	e		BUL 12 25 30 26.2S 27.7E	3.1
		Sn		28	05	e		Witwatersrand	
		S*		28	17	i			
		Sg		28	32	i	0.7		
	CIR	Pn		27	(04)	e			
		Sn		28	(10)	e			
		Sg		28	37	i	0.5		
	KRR	Pn		27	45	e			
		Sn		29	(28)	e			
		Sg		30	19	i	0.4		
19	CLK	P	13	22	20	e		CGS 13 11 46 0.9N 97.8E	5.3
		pP		22	20	e		N. Sumatra	
	CIR	P		22	47	iC	1.0		
		pP		22	57	i			
	KRR	P		22	53	iC	0.6		
		pP		23	03	i			
	BUL	P		23	02	iC	1.0		
		pP		23	12	i			
19	CIR	Pn	13	28	(25)	e		BUL 13 24 42 33.0S 20.0E	3.7
		L		32	55	e	0.3	Cape Province, South Africa	
	BUL			31	(10)	e			
		L		32	30	i	0.3		
	KRR	L		34	21	e	0.2		
	CLK	L		36	05	e	0.2		
19	BUL	Pn	14	08	28	e		BUL 14 06 59 26.2S 28.0E	3.4
		Sn		09	06	e		Witwatersrand	
		Sg		10	03	i	1.5		
	CIR	Pn		08	30	e			
		Sn		09	40	i			
		Sg		10	05	e	1.0		
	KRR	Pn		09	12	e			
		Sn		10	53	e			
		Sg		11	45	i	1.0		
	19	KRR	Pn	15	54	01	e		
		P*		54	10	i		Angola - Zambia Border	
		Sn		55	27	i			
		L		56	15	i	1.0		
CIR		P*		55	05	e			
		Sn		57	07	e			
		L		58	30	e	0.3		
BUL		Sg		56	55	e			
		L		58	03	e	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
20	BUL	Pn	03	21	10	e		BUL 03 19 42 26.2S 28.0E N. Witwatersrand	3.7
		S*		22	21	i			
		Sg		22	45	i	3.0		
	CIR	Pn		21	12	e			
		Pg		21	30	i			
		Sn		22	20	e			
		S*		22	24	i			
	KRR	Sg		22	44	i	2.5		
		Pn		21	57	e			
		Sn		23	39	e			
S*			23	54	e				
	Sg		24	30	i	1.5			
20	BUL	Pn	08	49	26	e		BUL 08 47 52 26.5S 27.1E Witwatersrand	3.1
		Sn		50	35	i			
		S*		50	48	i			
		Sg		51	07	i	0.9		
	CIR	Pn		49	30	e			
		Sn		50	40	e			
		Sg		51	14	e	0.5		
	KRR	Pn		50	12	e			
		Sn		51	58	e			
		Sg		52	53	e			
20	BUL	Pn	15	41	(55)	e		BUL 15 40 26 26.2S 28.1E Witwatersrand	3.1
		Sg		43	29	i	0.6		
	CIR	Pn		41	55	e			
		Sg		43	29	e	0.9		
	KRR	Pn		42	23	e			
		Sn		44	20	e			
	Sg		45	20	e	0.4			
20	KRR	P	20	47	44	iR		BUL 20 47 21 17.1S 28.1E Kariba	2.6
		S		48	01	i	9.0		
	BUL	Pg		48	18	i			
		Sn		48	43	i			
		Sg		48	57	i	1.5		
	CIR	Sn		49	32	e			
		Sg		49	54	i	0.7		
	CLK	Sn		50	10	e			
		Sg		50	15	e	0.3		
	20	KRR	PKP	21	19	32	e	0.2	
BUL		PKP		19	37	e	0.2	Kurile Is.	
21	CLK	PKP	00	05	(30)	e	0.1	CGS 23 46 12 56.6S 153.2W	5.1
		KRR	PKP		05	(33)	e	0.2	
	BUL	PKP		05	40	e	0.3		
		pPKP		05	45	i			
	CIR	PKP		05	06	i			
		pPKP		05	46	i	0.2		
			06	15	i				
21	CLK	PKP	00	33	(35)	e	0.1	CGS 00 14 13 56.3N 153.4W	5.1
		KRR	PKP		33	(40)	e	0.2	
	BUL	PKP		33	43	e	0.6		
	CIR	PKP		33	45	e	0.3		
21	BUL	PKP	00	49	23	e	0.2	CGS 00 29 50 56.4N 153.6W	5.2
		CIR	PKP		49	26	e	0.3	

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
21	BUL	Pn	02	00	13	e		BUL 01 58 34 26.9S 26.9E Witwatersrand	3.5
		Sn		01	29	e			
		S*		01	45	i			
		Sg		02	00	i			
		L		02	06	i	1.0		
	CIR	Pn		00	19	e			
		Sn		01	38	e			
		Sg		02	15	i	1.0		
	KRR	Pn		00	59	e			
		Sn		02	50	e			
Sg			03	46	i	0.8			
21	CLK	P	02	15	53	iC	11.0	CGS 02 05 35 2.1N 94.6E Off W. Coast of N. Sumatra	6.4
		PS		24	20	e			
	CIR	P		16	20	iC	25.0		
		SP		25	10	e			
	KRR	P		16	27	iC	25.8		
		SP		25(35)		e			
	BUL	P		16	37	iC	26.6		
		S		25	40	e			
	21	CLK	P	02	35(30)	e	0.1	Distant	
		CIR	P		36	11	e	0.2	
KRR		P		36	27	e	0.2		
BUL		P		36	39	e	0.2		
21	CLK	P	02	39	40	e	0.2	CGS 02 29 27 1.7N 94.5E Off Coast of N. Sumatra	-
	CIR	P		40	10	e	1.0		
	KRR	P		40	17	e	0.2		
	BUL	P		40	26	e	0.8		
21	BUL	Pn	04	45	39	e		BUL 04 44 01 Witwatersrand	3.0
		Sn		46	55	e			
		Sg		47	28	i	0.4		
	CIR	Pn		45	44	e			
		Sn		47(07)		e			
		Sg		47	40	e	0.3		
	KRR	Pn		46	25	e			
		L		49	16	e	0.3		
21	CIR	P	11	49	50	e	0.8	CGS 11 44 37 43.6S 41.3E Prince Edward Is., Region	4.9
	BUL	P		50	05	e	0.3		
	KRR	P		50	30	e	0.2		
21	KRR	PKP	15	11	35	e	0.3	CGS 14 52 00 37.0N 116.0W S. Nevada (Underground Explosion)	5.0
	BUL	PKP		11	39	e	0.3		
	CIR	PKP		11	48	e	0.2		
	CLK	PKP		11	48	e	0.2		
22	CIR	PKP	05	19	33	iR	0.2	CGS 05 00 40 28.2S 177.2W Kermadec Is.	5.2
	BUL	PKP		19	35	iR	0.5		
	KRR	PKP		19	41	e	0.4		
22	CIR	P	08	00	11	e	0.2	CGS 07 49 29 1.5N 94.4E Off W. Coast of N. Sumatra	4.7
	KRR	P		00	16	e	0.3		
	BUL	P		00	26	e	0.3		
22	CLK	pP	15	16	21	e	0.2	CGS 15 02 23 6.9S 127.4E Banda Sea	5.3
	KRR	pP		16	41	e	0.2		
	BUL	pP		16	44	e	0.2		
22	CIR	P	16	20	23	e	0.2	Distant	
	CLK	P		20	32	e	0.2		
	BUL	P		20	44	e	0.2		
22	CIR	P	17	21	11	e	0.5	Distant	
	CLK	P		21	25	e	0.4		
	BUL	P		21	35	e	0.6		
	KRR	P		21	59	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
22	CLK	PKP	23	28	31	eiR	1.3	CGS 23 09 37 57.8N 163.5E Near E. Coast of Kamohatka	6.3
		PP		30	19	e			
	KRR	PKP		28	39	e	0.9		
		PP		30	40	e			
	CIR	PKP		28	45	iR	1.5		
		PP		31	00	iC			
	BUL	PKP		28	46	iR	1.5		
		PP		31	05	iC			
	SKP		32	15	i				
23	CIR	PKP	04	28	(15)	e	0.2	CGS 04 09 17 27.0S 176.4W Kermadec Is.	4.9
	BUL	PKP		28	20	e	0.2		
23	CLK	P	11	50	29	e	0.3	CGS 11 40 45 38.3N 55.5E Iran - U.S.S.R. Border Region	4.9
	KRR	P		50	50	e	0.2		
	CIR	P		51	12	e	0.4		
	BUL	P		51	12	e	0.2		
24	CLK	P	02	13	02	e	0.2	CGS 02 01 09 30.6N 98.9E Tibet	4.6
	BUL	P		13	38	e	0.2		
24	CIR	PKP	04	01	57	e	0.2	CGS 03 43 17 4.2S 152.8E New Britain Region	4.8
	BUL	PKP		02	02	e	0.4		
	KRR	PKP		02	03	e	0.2		
24	BUL	P	04	40	25	e	0.2	CGS 04 31 41 58.2S 13.8W S.W. Atlantic Ocean	4.8
	CIR	P		40	31	iR	0.9		
	KRR	P		40	51	iR	0.5		
24	CLK	P	17	33	35	iR	1.5	CGS 17 23 20 37.2N 71.7E Afghanistan - U.S.S.R. Border Region	5.6
		pP		34	07	i			
				35	07	i			
	KRR	P		33	59	iR	1.9		
				35	22	i			
	CIR	P		34	14	iR	0.9		
		pP		34	44	e			
	BUL	P		34	20	iR	2.0		
		pP		34	51	i			
				34	51	i			
24	CIR	PKP	21	49	(10)	e	0.1	CGS 21 31 18 18.0S 178.4W Fiji Is. Region	5.4
				49	25	e			
		SKP		51	50	e			
	CLK	PKP		49	15	e	0.1		
				49	30	e			
		SKP		52	03	i			
	BUL	PKP		49	17	e	0.2		
				49	29	i			
		SKP		52	04	e			
	KRR	PKP		49	19	e	0.8		
			49	32	i				
	SKP		52	10	e				
24	CLK	P	23	11	15	e	0.3	CGS 22 51 50 56.2N 153.6W Kodiak Is. Region	5.5
	KRR	P		11	18	e	0.2		
	BUL	P		11	18	iR	1.1		
		pP		11	30	i			
		PP		14	30	e			
	CIR	P		11	24	iR	1.2		
		pP		11	37	i			
		PP		14	40	e			
25	CIR	PKP	01	51	02	e	0.3	CGS 01 32 54 18.0S 178.4W Fiji Is. Region	4.6
	BUL	PKP		51	06	e	0.2		
	KRR	PKP		51	08	e	0.6		
25	CIR	PKP	05	06	33	e	0.3	CGS 04 47 41 30.5S 177.9W Kermadec Is. Region	5.0
	BUL	PKP		06	38	e	0.3		
	CLK	PKP		06	40	e	0.2		
	KRR	PKP		06	42	e	0.6		
				06	42	e	0.6		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
25	CIR	Pn	13	19	19	e		BUL 13 17 46 26.5S 27.5E Witwatersrand	2.9
		Sn		20	30	e			
		Sg		21	02	e	0.3		
	KRR	Pn		20	(00)	e			
		Sg		22	40	e	0.3		
BUL	Sn		20	(50)	e				
		Sg		20	56	e	0.5		
25	CLK	Pg	18	37	04	e	B	BUL 18 36 39 17.1S 35.3E Central Mocambique	2.3
		Sg		37	22	i	3.5		
	CIR	Sg		39	20	e	0.2		
	KRR	Sg		39	25	e	0.4		
	BUL	Sg		40	15	e	0.2		
25	CIR	PKP	22	49	47	e	0.3	CGS 22 31 07 5.0S 153.5E New Ireland Region	4.8
	BUL	PKP		49	53	iR	1.1		
	KRR	PKP		49	53	iR	0.5		
26	BUL	Pn	01	05	40	e		BUL 01 04 05 26.5S 27.1E Witwatersrand	3.2
		Sn		06	49	e			
		Sg		07	22	i	0.6		
	CIR	Pn		05	45	e			
		Sn		06	55	e			
		Sg		07	28	e	0.5		
KRR	Sn		08	11	e				
	Sg		09	09	i	0.8			
26	CIR	P	10	01	56	e	0.2	Distant	
	KRR	P		02	06	e	0.4		
	BUL	P		02	12	e	0.5		
26	CIR	PKP	13	03	02	e	0.4	CGS 12 44 05 16.8S 167.7E New Hebrides Is.	5.4
		pPKP		03	05	i			
	BUL	PKP		03	06	e	0.9		
		pPKP		03	11	i			
	KRR	PKP		03	10	e	0.3		
		pPKP		03	14	i			
26	BUL	P	14	49	27	e	0.2	CGS 14 40 05 58.8S 25.2W S. Sandwich Is. Region	4.9
		pP		49	32	e			
	CIR	P		49	32	e	0.2		
		pP		49	57	i			
	KRR	P		49	50	e	0.2		
		pP		49	55	i			
26	BUL	P	17	45	02	e	0.3	CGS 17 35 39 58.8S 24.5W S. Sandwich Is. Region	4.9
	CIR	P		45	09	e	0.3		
	KRR	P		45	27	e	0.2		
26	BUL	P	18	24	36	e	0.7	CGS 18 15 13 58.8S 24.9W S. Sandwich Is. Region	5.1
	CIR	P		24	40	e	0.4		
	KRR	P		24	59	e	0.4		
	CLK	P		25	27	e	0.2		
26	BUL	P	18	33	29	e	0.3	CGS 18 24 05 58.8S 24.7W S. Sandwich Is. Region	4.9
	CIR	P		33	34	e	0.2		
	KRR	P		33	56	e	0.2		
26	BUL	P	18	35	32	e	1.9	CGS 18 26 09 58.8S 24.7W S. Sandwich Is. Region	5.4
	CIR	P		35	38	i	1.4		
		pP		35	45	i			
	KRR	P		35	57	e	1.1		
	CLK	P		36	18	e	0.2		
		pP		36	28	i			
26	CIR	PKP	21	36	(45)	e	0.2	CGS 21 17 56 16.9S 167.8 New Hebrides Is.	5.0
	BUL	PKP		36	58	e	0.2		
	KRR	PKP		37	02	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
26	CLK	P	22	43	55	e	0.2	CGS 22 37 56 17.9S 65.4E	5.0
	CIR	P		44	26	e	0.2	Mascarene Is. Region	
	KRR	P		44	42	e	0.3		
	BUL	P		44	47	e	0.8		
27	CIR	PKP	03	26	22	e	0.2	CGS 03 07 42 19.6S 169.3E	5.0
		pPKP		26	58	e		New Hebrides Is. Region	
	BUL	PKP		26	28	e	0.2		
		pPKP		27	02	e			
	KRR	PKP		26	31	e	0.2		
		pPKP		27	06	e			
27	CLK	Pn	17	28	01	e		BUL 17 26 00 8.1S 31.1E	4.2
		Sn		29	30	e		S. Lake Tanganyika	
		Sg		30	20	i	3.0		
	KRR	Pn		28	05	e			
		Sn		29	36	i			
		Sg		30	27	i	4.5		
	BUL	Pn		28	53	e			
		S*		31	10	i			
		Sg		32	14	e	1.2		
	CIR	Pn		29	01	e			
	Sn		31	10	i				
	Sg		32	29	i	1.5			
27	CIR	PKP	20	06	50	e	0.2	CGS 19 47 54 16.9S 167.7E	5.0
	BUL	PKP		06	54	e	0.2	New Hebrides Is.	
	KRR	PKP		06	56	e	0.2		
27	CIR	PKP	20	14	02	e	0.2	CGS 19 55 11 16.9S 167.8E	4.8
	BUL	PKP		14	12	e	0.2	New Hebrides Is.	
	KRR	PKP		14	15	e	0.2		
27	KRR	Pn	22	28	37	e		BUL 22 25 29 8.6S 26.3E	3.3
		Sn		30	10	i		Lake Upemba Area, Congo	
		L		31	08	i	0.6		
	CLK	Sn		31	01	e			
		Sg		32	02	e	0.3		
	BUL	L		32	36	e	0.2		
	CIR	Sg		33	15	e	0.2		
27	CIR	P	23	51	31	e	0.4	Distant	
	KRR	P		51	58	e	0.8		
	BUL	P		51	48	e	0.5		
28	BUL	P	01	39	25	e	0.2	CGS 01 29 28 36.7N 45.2E	4.7
	CIR	P		39	30	e	0.2	Iran - Iraq Border Region	
28	CLK	P	14	00	16	e	0.2	CGS 13 47 09 6.9S 129.7E	5.6
	CIR	P		00	26	e	0.6	Banda Sea	
	KRR	P		00	37	e	0.3		
	BUL	P		00	39	e	0.5		
29	BUL	Pn	10	37	42	e		BUL 10 35 47 27.9S 26.5E	3.6
		Sn		39	08	i		O.F.S. Goldfields	
		Sg		39	50	i			
		L		39	55	i	1.0		
	CIR	Pn		37	46	e			
		Sn		39	14	e			
		Sg		39	59	i			
		L		40	06	i	0.9		
	KRR	Pn		38	28	e			
		Sn		40	29	e			
	S*		40	42	i				
	L		41	43	i	0.7			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
29	BUL	Pn	23	38	07	e		BUL 23 36 33 26.4S 27.6E	3.3
		S*		39	20	e		Witwatersrand	
		Sg		39	44	i			
			L		39	48	i	0.8	
	CIR	Pn		38	08	e			
		Sn		39	17	e			
			Sg		39	46	i	1.0	
	KRR	Pn		38	55	e			
		Sg		41	30	e		0.7	
	30	CLK	P	03	44	47	iR	7.0	CGS 03 32 57 49.9N 79.0E
pP				44	52	i		E. Kazakh S.S.R. (Underground Explosion)	
KRR		P		45	06	iR	5.0		
		pP		45	09	i			
CIR		P		45	21	iR	5.5		
		pP		45	26	i			
BUL		P		45	26	iR	9.0		
		pP		45	30	i			

ABRACADABRA

CRITERIA FOR PUBLICATION

To qualify for publication an earthquake must be of magnitude 2 or more. Also, in the case of local earthquakes (nearer than about 30°) at least one station must record a clear P phase. In the case of distant earthquakes, at least two stations must record clear P or PKP phases.

DISTANCES

Distances of local earthquakes are determined by means of travel-time curves developed at this Centre. For distant earthquakes, the standard Jeffreys-Bullen tables are used.

Where given, distances are in degrees ($1^\circ = 111.11 \text{ Km}$).

TIMES

Times are given in hours, minutes and seconds of GMT (UT).

GLOSSARY

- GM Character of phase, and direction of the first ground motion of P or PKP.
- e Emergio; the phase emerges gradually from the background.
- i Impetus; the phase is impulsive and clearly defined.
- D The first motion is downwards, or towards the epicentre; the motion is dilatational. A lower case d indicates a weakly dilatational first motion.
- C The first motion is upwards, or away from the epicentre; the motion is compressional. A lower case c indicates a weakly compressional first motion.
- DA The double-amplitude (peak-to-peak) of the record in millimetres. The double-amplitude is written on the same line as the phase to which it refers; usually P or PKP in distant earthquakes, and the S-L complex (the "maximum amplitude") in local earthquakes. In some cases a double-amplitude is given for more than one phase.
- BUL The epicentral and magnitude data are determined by Goetz Observatory, Bulawayo.
- CGS The epicentral and magnitude data are determined by the U.S. Coast and Geodetic Survey (USCGS).
- Distant The epicentre is more than about 30° from the approximate centre of the local station network (175 30E).
- MM Intensity on the Modified Mercalli Scale.
- ? Indicates an uncertain statement.
- () The quantity in brackets is uncertain.
- Mag Magnitude. Locally-determined magnitude are based on the double-amplitude of the S-L complex, after Richter (1935). However, the station constants and distance-amplitude relationship have been slightly adjusted to make the local magnitudes agree as closely as possible with magnitudes published by USCGS. The local magnitudes can therefore be taken as being estimates of m_b of Gutenberg and Richter (1956).

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
01	BUL	Pn	15	02	44	e		BUL 15 01 10 26.5S 27.2E Witwatersrand.	3.3
		Sn		03	53	e			
		Sg		04	27	e	1.1		
	CIR	Pn		02	49	e			
		Sg		04	37	e	0.8		
	KRR	Pn		03	29	e			
		Sg		06	10	e	0.4		
01	CLK	P	20	27	07	e	0.6	CGS 20 18 06 35.0N 24.3E Crete.	5.0
	KRR	F		27	09	e	0.4		
	CIR	F		27	42	e	0.3		
01	BUL	P	20	44	30	iR	7.0	CGS 20 35 05 60.0S 28.5W S. Sandwich Is. Region.	5.6
		pP		45	04	i			
		PcP		45	29	e			
		S		52	08	i			
		ScS		54	14	i			
	CIR	P		44	36	iR	6.9		
		pP		45	10	i			
		S		52	26	e			
	KRR	P		44	37	iR	6.7		
		pP		45	11	i			
		PcP		45	30	e			
		S		52	27	e			
	CLK	P		45	19	e	1.2		
		pP		45	52	e			
01	CIR	Pn	22	18	10	e	0.6	BUL 22 16 38 23.6S 37.8E Mocambique Channel.	3.3
		Sn		19	17	e	0.7		
	CLK	Pn		18	40	e	0.7		
		Sn		20	06	e	0.8		
	BUL	Sn		20	26	e	0.3		
	KRR	Sn		20	51	e	0.4		
01	BUL	P	22	27	16	e	0.8	CGS 22 13 53 16.7N 60.8W Leeward Is.	5.6
		pP		27	35	e			
	KRR	P		27(20)	e	0.5			
		pP		27	35	e			
CIR	pP		27	44	e				
02	BUL	Pn	00	39	51	e		BUL 00 38 18 26.4S 27.4E Witwatersrand.	3.2
		Sn		41	00	e			
		Sg		41	32	e	1.2		
	CIR	Pn		39	54	e			
		Sg		41	39	e	0.8		
KRR	Pn		40	37	e				
		Sg		43	16	e	0.3		
02	BUL	P	09	00	24	iC	0.4	Distant.	
	KRR	P		00	41	e	0.4		
	CIR	P		00	44	e	0.2		
02	CLK	P	18	10	08	e	0.3	CGS 17 57 04 8.2N 126.3E Mindanao, Philippine Is.	5.7
		PP		14	01	e			
	CIR	P		10	26	e	1.0		
		pPP		15	04	e			
	KRR	P		10	30	e	0.3		
		pPP		15	09	e			
	BUL	P		10	38	e	0.8		
	pPP		15	08	e				
02	CLK	P	18	26	59	e	0.2	CGS 18 17 01 36.5N 70.6E Hindu Kush Region.	5.1
		pP		27	18	e			
	KRR	P		27	04	e	0.3		
		pP		27	24	e			
BUL	pP		27	43	e	-			

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Dy	Stn	Phase	h	m	s	CM	DA	Epicentral data:	Remarks	Mag
02	BUL	Pn	20	15	15	e		BUL 20 13 42 26.4S 27.4E	Witwatersrand.	3.6
		Sn		16	25	e				
		Sg		16	56	i	2.7			
	CIR	Pn		15	19	e				
		Sg		17	02	e	2.0			
KRR	Pn		16	00	e					
	Sg		18	38	e	1.1				
02	BUL	P	21	07	30	e	0.7	BUL	S. Atlantic Ridge.	
	KRR	P		07	48	iC	0.8			
	CIR	P		07	51	iC	0.5			
	CLK	P		08	30	e	0.3			
02	CLK	Pn	23	58	40	e		BUL 23 56 23 7.2S 30.4E	Lake Tanganyika.	3.7
		Sn		00	20	e				
		Sg		01	17	i	1.0			
	KRR	Pn		58	(40)	e				
		Sn		00	21	e				
		Sg		01	20	i	1.2			
	BUL	Pn		59	(33)	e				
		L		03	06	e	0.4			
	CIR	L		03	28	e	0.3			
03	CLK	Pn	00	26	19	e		BUL 00 23 29 3.9S 35.9E	Lake Eyasi Area, Tanzania.	4.8
		Sn		26	30	i				
		Sg		28	24	e				
	KRR	Pn		29	35	e	11.7			
		L		26	50	e				
		L		30	58	e	2.3			
	BUL	Pn		27	31	e				
		L		32	44	i	1.5			
	CIR	L		32	37	e	2.2			
	03	CLK	P	02	40	42	e	0.2		
sP				40	58	e				
KRR		P		41	(10)	e	0.1			
BUL		P		41	34	e	0.2			
CIR		sP		41	43	e	0.2			
03	BHA	PKP	12	53	52	e	0.3	CGS 12 34 52 54.7N 161.4E	Near E. coast of Kamchatka.	4.9
	KRR	PKP		53	54	e	0.4			
	BUL	FKP		54	00	e	0.2			
03	CIR	Pn	15	26	18	e		BUL 15 25 32 19.8S 34.3E	Manica Province, Mocambique.	3.8
		Pg		26	24	i				
		Sn		26	52	e				
		Sg		26	59	i	21.			
	KRR	Pn		26	52	e				
		Sn		27	51	e				
		Sg		18	18	i	12.7			
		BUL	Pn		26	53	e			
	BUL	Pg		27	10	i				
		Sn		27	51	i				
		Sg		28	19	i	5.5			
		BHA	Pn		27	26	e			
BHA	Sn		28	49	e					
	Sg		29	29	i	3.0				
03	BHA	P	16	54	37	e	0.1	CGS 16 44 20 36.4N 71.1E	Afghanistan - U.S.S.R. Border Region.	4.7
	BUL	P		55	04	e	0.3			
04	CIR	P	00	46	06	iR	1.8	CGS 00 34 59 12.4N 93.7E	Andaman Is. Region.	5.3
		KRR	P		46	07	iR			
	BHA	PcP		46	32	e				
		P		46	09	iR	8.0			
	BUL	FcP		46	34	i				
		P		46	19	iR	2.7			
	PcP		46	44	e					

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
04	CIR	PKP	03	21	37	e	0.1	CGS 03 02 57	12.1N 143.6E	5.3
	BHA	PKP		21	(41)	e	0.1	S. of Mariana Is.		
	BUL	PKP		21	42	e	0.2			
04	CIR	Pn	07	03	44	e		BUL 07 02 19	26.0S 28.5E	3.6
		Sg		05	16	e	2.3	E. Witwatersrand.		
	BUL	Pn		03	(46)	e				
				04	55	e				
		Sg		05	19	e				
		L		05	25	i	2.9			
	KRR	Pn		04	30	e				
		L		07	03	e	1.2			
04	KRR	PKP	09	09	11	e	0.3	CGS 08 50 22	40.7N 144.7E	5.7
	BHA	PKP		09	12	e	0.3	Off E. Coast of Honshu, Japan.		
	CIR	PKP		09	14	e	0.5			
	BUL	PKP		09	16	e	0.9			
04	BHA	Pn	10	55	01	e		BUL 10 53 26	11.8S 14.6E	3.8
		Sn		56	11	i		Lake Malawi.		
		L		56	50	i	4.0			
	KRR	Pn		55	05	e				
		Sn		56	(20)	e				
		L		57	02	i	2.4			
	CIR	Pn		55	43	e				
		Sn		57	25	e				
		L		58	26	e	1.3			
	BUL	Pn		55	47	e				
	Sn		57	34	e					
	L		58	41	e	1.2				
05	CIR	P	11	46	24	e	0.3	CGS 11 38 40	14.5N 53.3E	4.8
	BUL	P		46	29	e	0.2	Arabian Sea.		
05	KRR	PKP	17	19	34	e	0.3	CGS 17 00 00	37.2N 116.2W	5.0
	BUL	PKP		19	38	e	0.4	S. Nevada. (Underground explosion.)		
	CIR	PKP		19	48	e	0.1			
05	BUL		17	57	54	e	0.3	Distant.		
	KRR			57	59	e	0.3			
	BHA			58	04	e	0.2			
05	BUL	Pn	20	37	34	e		BUL 20 35 41	27.9S 26.7E	3.5
		Sn		38	59	e		O.F.S. Goldfields.		
		Sg		39	44	e	0.8			
	CIR	Pn		37	39	e				
		Sn		39	05	e				
		Sg		39	51	e				
		L		39	59	i	0.8			
	KRR	Pn		38	20	e				
	L		41	35	e	0.4				
06	CIR	PKP	02	04	35	e	0.2	CGS 01 45 05	53.2N 166.8W	4.4
	BUL	PKP		04	35	e	0.5	Fox Is., Aleutian Is.		
06	KRR	PKP	06	19	14	e	0.1	CGS 05 59 44	54.4N 163.3W	4.6
	CIR	PKP		19	17	e	0.6	Unimak Is. Region.		
	BUL	PKP		19	17	iR	1.1			
06	BHA	P	07	13	27	iC	0.8	CGS 07 02 57	43.8N 54.8E	5.8
	KRR	P		13	38	iC	0.6	W. Kazakh, S.S.R. (Nuclear Test.)		
	BUL	P		14	00	iC	1.5			
	CIR	P		14	00	iC	1.6			
06	BUL	P	15	03	25	iC	0.8	CGS 14 54 01	58.7S 25.1W	5.3
	CIR	P		03	31	iC	0.7	S. Sandwich Is. Region.		
		pP		03	43	e				
	KRR	P		03	49	e	0.4			
		pP		03	59	e				
	BHA	P		04	00	e	0.4			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
06	BUL	Pn	15	42	02	e		BUL 15 40 07 27.9S 26.5E O.F.S. Goldfields.	3.7
		Sn		43	27	e			
		Sg		44	10	i	1.5		
	CIR	Pn		42	06	e			
		Sn		43	34	e			
	KRR	Pn		42	47	e	1.4		
	L		45	50	e	0.8			
06	CIR	P	19	55	41	iC	0.4	CGS 19 44 59 1.6N 94.5E Off W. coast of N. Sumatra.	5.3
		KRR		55	47	iC	0.4		
		BHA		55	52	iC	1.3		
		BUL		55	56	iC	0.4		
06	BUL	P	20	34	21	e	0.2	Distant.	
	CIR	P		34	44	e	0.2		
06	BHA	Pn	21	29	04	e		BUL 21 27 44 9.1S 29.9E Mweru Swamp. Zambia.	3.8
		Sn		30	05	i			
		Sg		30	32	i	6.7		
	KRR	Pn		29	35	e			
		Sn		30	59	e			
		Sg		31	37	e	2.4		
	BUL	Pn		30	20	e			
		Sn		32	16	e			
		L		33	28	e	0.8		
	CIR	L		34	00	e	0.7		
06	BHA	Pn	23	04	09	e		BUL 23 01 51 4.9S 30.2E N. Lake Tanganyika.	4.2
		Sn		05	50	i			
		L		06	53	i	3.0		
	KRR	Pn		04	38	e			
		L		08(00)	e	1.3			
	BUL	Pn		05(21)	e				
		Sn		08 03	e				
		L		09 41	e	0.8			
	CIR	L		10 18	e	0.9			
	07	CIR	PKP	04	14	24	iR		
BUL				14	28	iR	0.7		
KRR		PKP		14	30	iR	0.3		
BHA		PKP		14	33	e	0.2		
07	KRR	Pg	10	36	15	e		BUL 10 35 55 16.6S 28.5E Kariba.	2.7
		Sg		36	27	i	7.4		
	BHA	Pg		36	38	e			
		S*		37	05	e			
		Sg		37	09	i	3.3		
	BUL	Pg		37	01	e			
		Sn		37	33	e			
		S*		37	43	e			
		Sg		37	47	i	2.2		
	CIR	Pg		37	31	e			
Sg			38	34	i	1.1			
07	BUL	Pn	15	00	02	e		BUL 14 58 28 26.5S 27.2E Witwatersrand.	3.6
		Sn		01	12	e			
		S*		01	27	i			
		Sg		01	45	i	2.3		
	CIR	Pn		00	06	e			
		Sn		01	17	e			
		Sg		01	50	e	1.8		
	KRR	Pn		00	49	e			
		Sn		02	31	e			
			Sg		03	28	e		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
08	CIR	P	05	17	35	e	0.1	CGS 05 04 20 1.7N 127.3E Halmahera.	5.5
		FP		21	28	e			
	KRR	P		17	45	e	0.2		
	BUL	P		17	49	e	0.3		
		FP		21	50	e			
	BHA	P		17	50	e	0.2		
FP			21	53	e				
08	BUL	P	09	50	36	e	0.5	CGS 09 37 39 0.1S 122.8E N. Celebes.	5.1
	BHA	P		50	37	e	0.3		
08	CLK	P	14	15	26	i	40.	BUL 14 15 16 15.3S 34.7E Kirk Range, Malawi.	3.7
		KRR	Pn		16	32	e		
		Pg		16	48	e			
		Sn		17	29	i			
		Sg		17	53	i	5.3		
	CIR	Pn		16(48)		e			
		Sn		17	54	e			
		Sg		18	26	i	2.7		
	BHA	Pn		16	48	iR			
		Sn		17	53	e			
		Sg		18	27	e	3.6		
	BUL	Pn		17	03	e			
		Sn		18	20	i			
		Sg		18	59	i	2.6		
09	BUL	P	03	39	17	e	0.3	CGS 03 25 52 0.9N 126.2E Molucca Passage.	5.1
	BHA	P		39	18	e	0.2		
09	BUL	Pn	14	03	44	e		BUL 14 02 12 26.5S 27.7E Witwatersrand.	3.6
		Sn		04	53	e			
		Sg		05	26	i	2.2		
	CIR	Pn		03	47	e			
		Sn		04	58	e			
		Sg		05	33	e	1.5		
10	BUL	SKP	00	20	16	iR	0.4	CGS 23 59 40 22.1S 179.5W S. of Fiji Is.	4.3
	BHA	SKP		20	33	e	0.1		
10	CLK	P	10	03	56	iC	4.7	BUL 10 03 33 16.1S 36.3E Zambezia Province, Mocambique.	3.2
		S		04	12	i	20.		
	BHA			06	27	e			
		Sg		07	29	e	0.9		
		Sg		06	58	e	0.5		
	BUL	Sn		07	06	e			
		Sg		07	50	e	0.6		
10	BUL	P	17	42	19	e	0.2	CGS 17 32 49 59.1S 25.1W S. Sandwich Is. Region.	4.5
	BHA	P		42(53)		e	0.1		
10	CIR	Pn	19	09	51	e		BUL 19 08 21 16.7S 36.2E Zambezia Province, Mocambique.	3.7
		Sn		10	58	e			
		Sg		11	28	i	1.6		
	BHA	Pn		10	15	e			
		Sn		11	40	e			
		Sg		12	20	i	1.4		
	BUL	Pn		10	16	e			
		Sn		11	42	e			
		Sg		12	24	e	1.9		
10	CIR	PKP	20	12	49	e	1.0	CGS 19 53 58 14.8S 167.0E New Hebrides Is.	5.4
		PP		14	52	e			
	BUL	PKP		12	57	e	1.4		
		PP		15	05	e			
	BHA	PKP		13	09	e	1.1		
		SKP		16	38	e			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
10	CIR	PKP	22	10	59	e	0.2	CGS 21 52 02 14.7S 166.5E	4.9
	BUL	PKP		11	03	e	0.3	New Hebrides Is.	
	BHA	PKP		11	10	e	0.3		
		SKP		14	39	e			
11	CIR	Pg	03	01	00	e		BUL 03 00 28 21.7S 33.2E	2.6
		Sg		01	22	i	4.5	Save Province, Mocambique.	
	BUL	Pg		01	51	e			
		Sg		02	48	e	0.9		
11	BHA	Sg		04	46	e	0.2		
	BUL	P	17	09	10	iR	0.5	CGS 16 56 25 21.2S 68.5W	4.7
BHA	P		09	21	e	0.1	Chile Bolivia Border Region.		
12	BUL	Pn	18	55	46	e		BUL 18 55 00 18.4S 26.1E	3.2
		Pg		55	54	i		Deka Fault, Rhodesia.	
		Sn		56	18	i			
		Sg		56	30	i	6.4		
	BHA	Pn		56(08)		e			
		Sn		56	58	e			
		Sg		57	20	i	2.0		
	CIR	Pn		56	23	e			
		Sn		57	21	i			
		Sg		57	54	i	1.7		
	CLK	Sn		58	38	e			
		Sg		59	28	e	0.5		
13	BHA	P	03	29	49	iC	1.1	CGS 03 19 58 1.ON 28.OW	5.6
		pP		29	58	i		Central Mid - Atlantic Ridge.	
	BUL	P		29	58	iC	0.8		
	CIR	P		30	18	iC	1.5		
		pP		30	26	i			
	CLK	P		30	32	iC	0.4		
	pP		30	40	i				
13	BUL	P	04	17	27	e	0.3	CGS 04 03 56 1.3N 126.4E	5.3
	BHA	P		17	28	e	0.3	Molucca Passage.	
13	BUL	P	21	45	53	e	0.8	CGS 21 33 22 32.7S 70.OW	5.6
	CIR	P		46	04	e	0.5	Chile - Argentina Border Region.	
		pP		46	17	e			
	BHA	P		46	08	iR	1.2		
		pP		46	22	i			
	CLK	P		46	30	e	0.4		
	pP		46	46	i				
13	CLK	P	22	20	04	e	0.2	CGS 22 06 55 4.2N 126.3E	5.6
	CIR	P		20	22	e	0.1	Tahaud Is.	
	BHA	P		20	31	e	0.2		
	BUL	P		20	32	e	0.2		
14	CLK	P	02	55	18	e	0.7	CGS 02 42 09 2.ON 126.9E	6.0
		PKKP		12	34	e		Molucca Passage.	
	CIR	P		55	36	e	0.6		
				59	50	e			
		PKKP		12	27	e			
	BUL	P		55	45	iC	1.0		
		PKKP		12	24	e			
	BHA	P		55	45	iC	0.5		
		PKKP		12	24	e			
14	BHA	Pn	06	59	05	e	0.1	BUL 06 55 35 0.7S 34.8E	4.5
		Sn		01	44	e		Kenya.	
		L		03	25	i	2.3		
	BUL	Pn		00	11	e	0.2		
		L		06	09	e	0.7		
	CIR	Pn		00(15)		e			
		L		06	14	e	0.5		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
14	BHA	Pn	12	21	37	e		BUL 12 21 01 16.6S 28.8E Kariba.	2.5
		S*		22	05	i			
		Sg		22	08	i	2.0		
	BUL	Pg		22	02	e			
		Sn		22	31	e			
		S*		22	42	i			
	Sg		22	46	i	1.4			
CIR	Sg		23	33	e	0.5			
14	CLK	P	18	43	46	e	-	CGS 18 37 09 8.2N 58.5E	6.0
	BHA	P		44	20	e	1.5	Carlsberg Ridge.	
		PP		45	43	e			
		S		50	13	e			
	CIR	P		44	39	iC	4.1		
		PP		46	07	i			
	BUL	P		44	48	i	12.6		
		S		51	04	e			
14	BUL	Pn	20	04	46	e		BUL 20 03 18 26.3S 28.1E	3.4
		Sn		05	50	e		Witwatersrand.	
		Sg		06	22	i	1.6		
	CIR	Pn		04	48	e			
		Sn		05	54	e			
	Sg		06	26	i	1.5			
14	BHA	Pn	23	27	11	e		BUL 23 26 34 16.7S 28.8E	2.6
		Sn		27	39	e		Kariba.	
		Sg		27	43	i	2.0		
	BUL	Pg		27	36	e			
		Sn		28	05	e			
		S*		28	16	e			
		Sg		28	20	i	1.6		
CIR	Sg		29	08	e	0.7			
15	BHA	P	00	00	30	e	0.1	CGS 23 53 56 12.4N 48.1E	4.7
		pP		00	37	e		E. Gulf of Aden.	
	CIR	P		01	07	e	0.2		
	BUL	P		01	09	e	0.4		
pP			01	16	e				
16	BHA	Pg	01	33	07	e		BUL 01 32 26	2.2
		Sg		33	36	i	1.1	Kariba.	
	BUL	Pg		33	30	e			
Sg			34	16	e	0.7			
16	BUL	P	09	15	36	e	0.3	Distant.	
				15	50	e			
	CIR	P		15	45	e	0.2		
	KRR	P		16(00)	e	0.1			
16	KRR	P	23	40	44	iC	32.	BUL 23 40 22 16.5S 28.3E	3.3
		S		40	59	i	44.	Kariba.	
	BHA	Pn		40	58	e			
		Pg		41	02	i			
		Sg		41	28	i	10.		
	BUL	Pn		41	17	e			
		P*		41	22	e			
		Pg		41	30	i			
		Sn		41	57	e			
		S*		42	09	i			
		Sg		42	14	i	5.5		
		CIR	Pn		41	41	e		
		Sn		42	39	i			
		Sg		43	03	i			
	Sg		43	06	i	6.8			
CLK	Pn		41	57	e				
	Sn		43	07	e				
	Sg		43	39	i	1.3			

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
17	CLK	P	02	40	23	e	0.2	CGS 02 39 42 2.9N 98.6E N. Sumatra.	4.9
	CIR	P		40	48	e	0.5		
	KRR	P		40	54	e	0.6		
	BHA	P		40	59	iR	3.4		
	BUL	P		41	07	e	0.5		
17	CIR	PKP	07	49	06	e	0.6	CGS 07 30 22 15.4S 167.6E New Hebrides Is.	4.9
	CLK	PKP		49	06	e	0.3		
	BUL	PKP		49	11	iC	0.8		
	KRR	PKP		49	14	e	1.0		
	BHA	PKP		49	18	e	0.4		
17	BHA	P	08	12	45	e	0.2	CGS 08 00 01 18.ON 116.6E Hainan Is	5.0
	KRR	P		12	45	e	0.2		
	BUL	P		12	(53)	e	0.2		
17	BHA	PKP	15	19	26	e	0.3	CGS 15 00 00 37.1N 116.0W S. Nevada. (Underground Explosion.)	5.5
	KRR	PKP		19	34	iC	0.9		
	BUL	PKP		19	38	iC	1.5		
	CLK	PKP		19	44	e	1.4		
	CIR	PKP		19	46	e	1.2		
17	BUL	PKP	15	34	38	e	0.2	CGS 15 15 00 37.ON 116.0W S. Nevada. (Nuclear Test.)	4.8
	CLK	PKP		34	46	e	0.2		
17	CIR	PKP	21	00	17	e	0.2	CGS 20 42 14 30.9S 179.9W Kermadec Is.	4.4
	BUL	PKP		00	22	iR	0.8		
	CLK	PKP		00	24	e	0.2		
	KRR	PKP		00	27	iR	0.8		
	BHA	PKP		00	32	iC	0.4		
18	BUL	SKP	01	56	54	e	0.2	CGS 01 36 08 19.6S 177.7W Fiji Is. Region.	4.6
	KRR	SKP		57	02	e	0.2		
	BHA	SKP		57	07	e	0.1		
18	CLK	PKP	13	50	03	e	0.7	CGS 13 32 05 46.3N 142.5E Sakhalin Is.	5.9
		PP		51	00	e			
		PKKP		00	49	e			
	KRR	PKP		50	12	e	2.8		
		PP		51	29	e			
		PKKP		00	38	e			
	CIR	PKP		50	16	e	1.2		
		PP		51	41	e			
		PKKP		00	30	e	1.7		
	BUL	PKP		50	17	iC	1.7		
	PP		51	50	e				
	SKS		56	42	e				
	PKKP		00	26	i				
18	CLK	P	18	36	57	e	0.2	CGS 18 25 59 5.7S 104.0E S. Sumatra.	5.2
	BUL	P		37	33	e	0.4		
	KRR	P		37	38	e	0.2		
18	KRR	PKP	19	19	34	e	0.4	CGS 19 00 00 37.1N 116.0W S. Nevada. (Nuclear Test.)	5.2
	BUL	PKP		19	38	e	0.7		
	CLK	PKP		19	43	e	0.5		
	CIR	PKP		19	47	e	0.4		
18	KRR	Pn	21	41	46	iC		BUL 21 41 20 16.5S 28.1E Kariba.	2.5
		Sn		42	02	i			
		S _g		42	05	i	6.0		
	BUL	Pg		42	27	e			
		Sg		43	13	e	0.9		
	CIR	Pn		42	42	e			
		Sn		43	40	e			
	Sg		44	06	e	0.9			

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Dy	Stn	Phase	h	m	s	CM	DA	Epicentral data; Remarks	Mag
19	CLK	pP	14	52	35	e	0.3	CGS 14 41 9 24.4N 93.6E Burma - India Border Region.	4.7
	BHA	pP		53	10	e	0.3		
	KRR	pP		53	11	e	0.3		
	BUL	pP		53	31	e	0.3		
		PP		55	51	e			
20	CLV	P	01	21	31	i		BUL 01 21 15 14.9S 34.9E S. of Lake Malawi.	3.0
		S		21	42	i	15.		
	KRR	Sn		23	35	e			
		Sg		24	03	e	0.8		
	BHA	Sn		23	54	e			
		L		24	33	e	0.7		
	BUL	Sn		24	34	e			
	Sg		25	20	e	0.5			
	CIR	Sg		24	44	e	0.5		
20	CLK	P	02	21	31	e	0.2	CGS 02 09 13 18.4N 110.6E Hainan Is.	5.0
	CIR	P		21	57	e	0.2		
	KRR	P		21	57	e	0.2		
	BHA	P		22	00	e	0.3		
	BUL	P		22	07	e	0.2		
20	CLK	P	13	18	19	e	0.6	CGS 13 05 29 7.2S 129.2E Banda Sea.	5.3
	CIR	P		18	31	iC	0.8		
	KRR	P		18	41	e	0.7		
	BUL	P		18	44	iC	0.5		
	BHA	P		18	48	iC	0.3		
21	CIR	PKP	00	48	12	e	0.3	CGS 00 29 50 29.7S 179.1W Kermadec Is.	4.9
	BUL	PKP		48	17	e	0.9		
	CLK	PKP		48	17	e	0.2		
	KRR	PKP		48	21	e	0.8		
	BHA	PKP		48	26	e	0.4		
		SKP		51	19	e			
21	BUL	P	13	17	08	e	0.3	CGS 13 03 53 16.4S 72.8W Near Coast of Peru.	5.0
		pP		17	36	e			
21	CLK	P	14	39	12	i		BUL 14 39 05 15.7S 34.7E Shire Valley, Malawi.	2.4
		S		39	16	i	8.		
	KRR	Sg		41	37	e	0.3		
	BHA	Sg		42	11	e	0.3		
	BUL	Sg		42	46	e	0.2		
21	CLK	P	15	22	20	e	0.3	CGS 15 11 18 6.5S 108.3E Java.	5.0
	CIR	P		22	38	e	0.4		
	KRR	P		22	50	e	0.7		
	BUL	P		22	54	iC	0.6		
	BHA	P		22	56	e	0.4		
21	CIR	PKP	16	51	18	e	0.3	CGS 16 32 33 15.3S 167.7E New Hebrides Is. Region.	4.6
	BUL	PKP		51	23	iP	0.3		
	KRR	PKP		51	26	e	0.5		
21	BHA	P	22	10	04	e	0.1	CGS 22 04 07 36.7N 28.4E Dodecanese Is.	4.7
	CLK	P		10	12	e	0.2		
	KRR	P		10	21	e	0.2		
	BUL	P		10	45	e	0.2		
	CIR	P		10	53	e	0.5		
22	BUL	P	00	19	21	e	0.5	CGS 00 06 04 16.9S 72.9W Near Coast of Peru.	5.2
	BHA	P		19	30	e	0.1		
22	BUL	P	06	35	08	iR	1.0	CGS 06 25 40 55.9S 27.4W S. Sandwich Is. Region.	5.4
	CIR	P		35	15	iR	0.6		
	KRR	P		35	30	iR	0.8		
	BHA	P		35	41	iR	0.4		
	CLK	P		35	58	e	0.3		

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Dy	Stn	Phase	h	m	s	Cl.	DA	Epicentral Data; Remarks	Mag
22	KRR	PKP	11	38	50	e	0.3	CGS 11 19 19 52.5N 168.1W Fox Is., Aleutian Is.	5.2
	CIP	PKP		38	54	iC	0.7		
		PMP		39	09	i			
	BUL	PKP		38	54	iC	1.8		
		PMP		39	09	i			
23	CLK	PKP	13	41	48	e	0.8	CGS 13 22 54 57.4N 163.1E Near W. coast of Kamchatka.	5.4
	BHA	PKP		41	54	iC	0.6		
	KRR	PKP		41	55	e	0.9		
	CIR	PKP		42	01	e	0.4		
	BUL	PKP		42	02	e	0.3		
23	BUL	Pn	14	00	21	e		BUL 13 58 48 26.5S 27.3E Witwatersrand.	4.1
		Sn		01	31	i			
		Sg		02	04	i	6.3		
	CIR	Pn		00	26	c			
		Sn		01	37	e			
		Sg		02	11	i	4.7		
	KRR	Pn		01	07	e			
		Sn		02	46	e			
		Sg		03	43	i	2.9		
	BHA	Pn		01	38	iC			
		Sn		03	47	i			
		Sg		05	00	i	1.3		
	CLK	Pn		01	49	e			
		Sn		04	06	e			
		Sg		05	21	e	2.3		
23	CLK	P	14	20	48	e	0.5	CGS 14 08 01 13.8N 120.6E Mindoro, Philippine Is.	4.7
		sP		21	15	c			
	CIR	P		21	05	e	0.4		
		sP		21	35	c			
	BHA	P		21	14	e	0.3		
BUL	P		21	10	e	0.3			
	sP		21	46	c				
24	BHA	Pn	17	16	00	e		BUL 17 13 44 4.7S 29.0E N. Lake Tanganyika.	4.0
		Sn		17	43	i			
		L		18	42	c	1.5		
	KRR	Pn		16	35	e			
		SgSg		19	55	e	0.8		
	CLK	Pn		16	38	e			
		SgSg		20	04	e	0.8		
BUL	L		21	46	e	0.4			
25	CIR	PKP	16	41	16	e	0.3	CGS 16 22 37 21.2S 170.2E Loyalty Is. Region.	4.8
	CLK	PKP		41	20	e	0.2		
	BUL	PKP		41	22	e	0.5		
		pPKP		41	56	e			
	KRR	PKP		41	25	e	0.3		
	BHA	PKP		41	32	e	0.2		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag	
25	BHA	P	21	45	40	iR	6.0	CGS 21 32 27 15.8N 59.7W	Leeward Is. Felt widely throughout Carribean.	6.4	
		FP		49	14	e					
		SKS		56	15	i					
		PKKP		02	57	e					
	BUL	P		45	46	e	9.5				
		pP		46	09	i					
		FP		49	34	e					
		SKS		56	22	e					
		PKKP		02	53	e					
	KRR	P		45	47	e	6.9				
		FP		49	30	e					
		PKKP		02	53	e					
CIR	P		45	59	e	5.3					
	FP		49	57	e						
	PKKP		02	45	e						
CLK	P		46	07	e	1.5					
	FP		50	11	e						
	PKKP		02	12	e						
25	BHA	P	22	39	24	iR	0.5	CGS 22 26 12 15.8N 59.7W	Leeward Is.	5.5	
	BUL	P		39	30	iR	0.4				
	KRR	P		39	30	e	0.3				
25	BHA	P	22	44	15	e	2.4	CGS 21 31 02 16.1N 59.8W	Leeward Is.	6.0	
	BUL	P		44	21	e	2.4				
		FP		48	12	e					
	KRR	P		44	23	iC	2.1				
	CIR	P		44	35	e	1.4				
		pP		44	52	e					
		FP		48	31	e					
CLK	P		44	(45)	e	0.3					
26	CLK	P	00	37	(38)	e	0.2	CGS 00 18 21 55.2N 160.4W	Alaska Peninsula.	5.3	
	BHA	P		37	38	e	0.2				
	KRR	P		37	43	e	0.4				
	CIR	P		37	53	e	1.3				
	BUL	P		37	53	iC	4.9				
	SKP		41	20	e						
26	BHA	P	08	59	25	e	0.2	CGS 08 46 15 15.8N 59.6W	Leeward Is.	5.2	
	BUL	P		59	31	e	0.3				
	KRR	P		59	32	e	0.3				
	CIR	P		59	45	e	0.2				
26	CLK	Pn	17	26	50	e		BUL 17 23 46 2.5S 36.3E	Lake Natron Area, Tanzania.	4.5	
		Sn		29	04	i					
		Sg		30	26	i	2.8				
	BHA	Pn		27	03	e					
		Sn		29	29	i					
		Sg		30	55	i	4.4				
	KRR	Pn		27	23	e					
		Sg		31	45	e	1.0				
	BUL	Pn		28	06	e					
		SgSg		33	31	e	0.9				
	CIR	Pn		28	06	e					
	SgSg		33	32	e	0.6					
26	BHA	P	20	16	38	iR	0.5	CGS 20 03 29 15.8N 59.6W	Leeward Is.	5.4	
	BUL	P		16	43	iR	0.6				
	KRR	P		16	44	iR	0.6				
	CIR	P		16	57	iR	0.3				
27	KRR	P	07	41	32	e	0.2	CGS 07 31 57 39.1N 23.9E	Aegean Sea.	4.6	
	CIR	P		42	(00)	e	0.2				

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
27	CIR	P	09	23	53	e	0.3	CGS 09.11 20 10.0S 118.9E S. of Sumbawa Is.	5.1
	CLK	P		23	(55)	e	0.3		
	KRR	P		24	03	e	0.3		
	BUL	P		24	04	e	0.5		
	BHA	P		24	12	e	0.3		
27	BHA	P	14	16	14	e	0.3	CGS 14 03 04 16.2N 59.6W Leeward Is.	5.5
	KRR	P		16	20	e	0.3		
	BUL	P		16	20	1R	0.4		
	CIR	P		16	33	e	0.2		
27	KRR	P	15	57	11	e	0.2	CGS 15 43 55 16.2N 59.7W Leeward Is.	5.4
	BUL	P		57	11	e	0.3		
27	BUL	Pn	18	51	58	e		BUL 18 48 18 33.7S 19.4E Cape Province, S. Africa.	4.5
		Sn		54	48	e			
		Sg		56	19	i	1.2		
	CIR	Fn		52	08	e			
		Sn		55	01	e			
	KRR	Sg		56	44	e	1.7		
		Sg		57	57	e	1.0		
	BHA	Sg		58	54	e			
	CLK	L		59	05	e	0.3		
		L		59	49	e	0.7		
	28	CLK	P	03	58	45	1C	2.7	CGS 03 46 58 50.0N 77.8E E. Kazakh, S.S.R. (Nuclear Test.)
BHA		P		58	56	1C	2.3		
KRR		P		59	04	1C	3.6		
CIR		P		59	20	1C	1.9		
BUL		P		59	22	1C	3.0		
28	CLK	Fn	04	58	07	e		BUL 04 57 27 18.6S 35.0E Manica Province, Mocambique.	2.9
		Pg		58	15	e			
		Sn		58	39	e			
	CIR	S*		58	45	i			
		Sg		58	51	i	1.5		
		Fn		58	24	e			
		Sn		59	10	e			
	KRR	Sg		59	28	i	1.4		
		Sn		59	43	e			
		Sg		00	05	i	1.7		
	BUL	Sg		00	33	i	1.6		
BHA	Sg		01	07	e	0.3			
28	BHA	PKP	05	12	01	e	0.2	CGS 04 53 09 43.5N 147.9E Kuril Is.	5.3
	KRR	PKP		12	01	e	0.2		
	BUL	PKP		12	08	e	0.3		
28	CLK	P	10	37	13	i		BUL 10 37 06 15.4S 34.9E Shire Valley, Malawi.	2.6
	S			37	18	i	17.		
	BHA	Sg		40	17	e	0.3		
BUL	Sg		40	54	e	0.2			
28	BUL	P	18	58	57	1R	0.4	Distant.	
	CIR	P		59	01	e	0.3		
	KRR	P		59	19	e	0.3		
	BHA	P		59	30	e	0.2		
28	BUL	PKP	20	21	43	1C	1.2	CGS 20 02 11 53.8N 165.8W Fox Is., Aleutian Is.	4.7
	CIR	PKP		21	43	e	0.2		
28	CLK	SKP	21	46	09	e	0.2	CGS 21 25 28 22.3S 179.4W S. of Fiji Is.	4.5
	BUL	SKP		46	12	e	0.7		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag		
28	CIR	Pg	23	37	40	10	15.	BUL 23 37 08	21.2S 33.4E	3.6		
		Sg				i	33.				Manica Province, Mocambique.	
	BUL	Pn	38	00	e							
		Sn	38	13	e							
		Sg	39	10	i	6.0						
		KRR	Pn	39	29	e						
		Sn	39	34	i							
		Sg	40	03	i	5.6						
	CLK	Pn	38	33	e							
		Sn	39	36	e							
		Sg	40	07	e	2.1						
		BHA	Pn	39	09	e						
	Sn	40	36	i								
	Sg	44	23	i	2.3							
29	BHA	P	01	04	59	e	0.3	CGS 00 51 47	16.2N 59.7W	5.6		
	BUL	P	05	06	e	0.3	Leeward Is.					
	KRR	P	05	07	e	0.3						
	CIR	P	05	20	e	0.2						
29	BUL	Pn	08	43	49	e		BUL 08 44 54	28.0S 26.5E	3.6		
		Sn				e						
		Sg				e	1.1					
	CIR	Pn	43	49	e							
		Sn	45	19	e							
		Sg	46	05	e	0.9						
		KRR	Pn	44	35	e						
		Sn	46	35	e							
Sg		47	47	e	0.6							
29	BUL	PKP	09	41	45	e	0.5	CGS 09 22 11	54.3N 163.1W	4.7		
	CIR	PKP				41	46	e	0.3		Unimak Is. Region.	
29	BHA	P	14	08	(43)	e	0.2	CGS 13 55 38	16.0N 59.7W	5.4		
	KRR	P				08	54	e	0.2		Leeward Is.	
	BUL	P				08	54	e	0.3			
	CIR	P				08	59	e	0.1			
29	BHA	P	14	26	42	e	0.2	CGS 14 13 30	16.2N 59.7W	5.2		
	KRR	P				26	43	e	0.2		Leeward Is.	
	BUL	P				26	43	e	0.2			
29	CLK	Pn	22	25	06	e		BUL 22-20 24	4.8S 38.8E	4.7		
		Sn				e						
		L				26	22				i	5.8
	BHA	Pn	25	42	e							
		Sg	27	37	i	5.0						
	KRR	Pn	25	53	e							
		Sn	26	28	e							
		L	28	10	e	1.4						
		CIR	Pn	24	26	e						
		L	29	33	e	1.2						
		BUL	Pn	24	33	e						
		L	29	55	i	1.6						
30	BHA	P	05	17	56	e	0.2	CGS 05 10 03	27.5N 33.9E	4.9		
	CLK	P				18	02	e	0.3		United Arab Republic.	
	BUL	P				18	38	e	0.3			
	CIR	P				18	(45)	e	0.2			
30	BUL	Pn	06	24	01	e		BUL 06 22 29	26.3S 27.9E	3.1		
		Sn				e						
		Sg				e	0.8					
	CIR	Pn	24	02	e							
		Sg	25	40	e	0.5						
	KRR	Sg	27	23	e	0.3						

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Dy.	Stn	Phase	h	m	s	GM	DA	Epicentral data; Remarks	Mag
30	CLK	P	11	30	18	e	0.6	CGS 11 17 32 0.1S 124.1E Molucca Passage.	5.2
	CIR	P		30	33	e	0.5		
	KRR	P		30	42	iC	1.4		
	BUL	P		30	46	iC	2.1		
	BHA	P		30	50	iC	0.9		
30	BUL	P	17	49	06	iR	1.0	BUL S. Sandwich Is. Region.	
	CIR	P		49	12	iR	1.9		
	KRR	P		49	28	iR	0.6		
	BHA	P		49	41	iC	0.3		
	CLK	P		49	55	e	0.2		
30	BUL	Pn	19	55	41	e		BUL 19 54 07 26.6S 27.2E Witwatersrand.	3.1
		Sn		56	50	e			
		Sg		57	24	e	0.7		
	CIR	Pn		55	45	e			
		Sn		56	58	e			
		Sg		57	33	e	0.6		
	KRR	Pn		56	26	e			
		Sg		59	15	e	0.4		
31	BUL	Pn	01	52	06	e		BUL 01 50 33 26.5S 27.2E Witwatersrand.	3.3
		Sn		53	15	e			
		Sg		53	47	e	1.1		
	CIR	Pn		52	10	e			
		Sn		53	22	e			
		Sg		53	55	e	0.8		
	KRR	Pn		52	33	e			
		Sg		55	31	e	0.7		
31	CIR	Pn	08	42	45	e		BUL 08 42 17 21.3S 33.5E Manica Province, Mocambique.	3.3
		Sn		43	07	i	18.1		
	BUL	Pn		43	25	e			
		Sn		44	18	e			
		S*		44	32	i			
	KRR	Sg		44	40	i	2.7		
		Pn		43	40	e			
		Sn		44	42	e			
	Sg			45	10	e	3.8		
		Pn		43	41	e			
		Pg		44	02	e			
	Sg			45	14	e	0.8		
Pn			44	17	e				
Sn			45	46	i				
Sg			46	36	i	1.1			
31	CLK	P	19	15	41	e	0.7	CGS 19 01 56 28.5N 129.1E Ryukyu Is.	5.9
		PP		20	03	e			
		PKKP		32	02	e			
	CIR	P		16	04	e	0.4		
		PP		20	18	e			
	KRR	P		16	05	e	0.3		
		PP		20	32	e			
	BHA	P		16	05	e	0.4		
		PKP		20	21	e			
PKKP			31	48	e				
BUL	P		16	17	e	0.3			
	PKP		20	28	e				
	PKKP		31	13	e				
31	BUL	PKP	21	02	33	iC	0.8	CGS 20 43 02 55.2N 160.5W Alaska Peninsula.	5.3
	CIR	PKP		02	35	iC	0.3		

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Dy	Stn	Phase	h	m	s	GM	DA	Epicentral data;	Remarks	Mag
31	CLK	P	23	50	18	iR	4.3	CGS 23 38 52	7.0S 117.8E	5.3
		pP		52	18	i		Bali Sea.		
	CIR	P		50	33	iR	3.4			
		pP		52	24	e				
	KRR	P		50	43	iR	7.4			
		pP		52	34	e				
	BUL	P		50	46	iR	20.2			
		pP		52	36	i				
		SKS		00	24	e				
	BHA	P		50	51	iR	6.0			
	S		00	48	e					
