

10 OCT 1968

Bulletin of the  
Urakawa Seismological Observatory

No. 3

January-March

1968

Urakawa Seismological Observatory  
Faculty of Science, Hokkaido University

Japan

Urakawa Seismological Observatory

Station: Kamikineusu (KMU)

Location Latitude: 42°14'14" N, Longitude: 142°58'01" E, Height: 180 m.

Instruments

	Abbr.	Comp.	T <sub>S</sub> (sec)	h <sub>S</sub>	T <sub>G</sub> (sec)	h <sub>G</sub>	σ <sup>2</sup>	V <sub>max</sub> *
Film-recording Seismograph	N	N-S	0.94	0.70	0.28	3.1	0.003	15,000
	E	E-W	0.93	0.73	0.25	3.0	0.003	15,000
	Z	U-D	0.91	0.70	0.34	1.8	0.003	19,000
	ZX	U-D	0.89	2.02	0.30	1.4	0.018	120,000
	Abbr.	Comp.	T <sub>S</sub> (sec)	h <sub>S</sub>	Velocity-Sensitivity #			
Tape-recording Seismograph	T-1	U-D	1.0	1.4	0 ~ 4 mm/mkine (Tripartite)			
	T-2	U-D	1.0	1.4	0 ~ 4 " (Array)			
	T-3	U-D	1.0	1.4	0 ~ 4 "			

\* When measured on a film-viewer of magnification 6.

# When reproduced using a Sanei FR-201 visigraph with 500 cps galvanometers.

Magnification curves are shown on the next page.

Readings

(1) All earthquakes with maximum trace amplitude 0.5 mm or larger on the Z record measured on the X6 film-viewer are interpreted in this bulletin.

(2) All times are based on the Japanese Standard Time (JST).

JST = GMT + 9 hours.

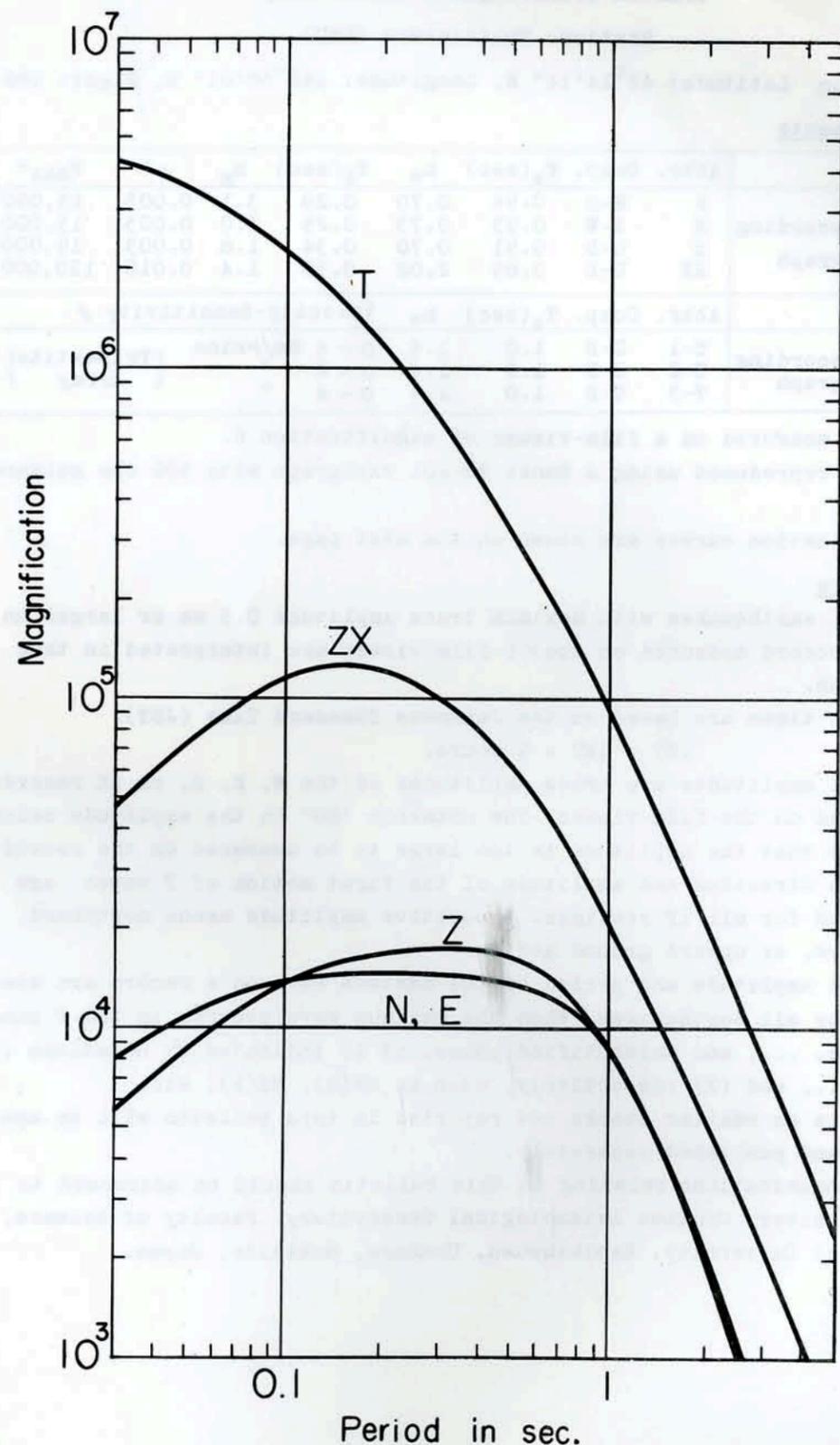
(3) All amplitudes are trace amplitudes of the N, E, Z, or ZX records measured on the film-viewer. The notation "SO" in the amplitude column denotes that the amplitude is too large to be measured on the record.

(4) The direction and amplitude of the first motion of P waves are measured for all iP readings. A positive amplitude means northward, eastward, or upward ground motion.

(5) The amplitude and period of the maximum wave on a record are measured for all earthquakes. When the maximum wave occurs in the P phase, S phase, ..., and unidentified phase, it is indicated by notations (P), (S), ..., and (X) respectively, such as MN(S), MZ(P), etc.

(6) Data on smaller shocks not reported in this bulletin will be analyzed and published separately.

(7) Communications relating to this bulletin should be addressed to the director, Urakawa Seismological Observatory, Faculty of Science, Hokkaido University, Kamikineusu, Urakawa, Hokkaido, Japan.



Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec		
1	ePZX	15 <sup>h</sup> 12 <sup>m</sup> 39.6 <sup>s</sup>			4	ePZX	11 <sup>h</sup> 38 <sup>m</sup> 18.2 <sup>s</sup>				
	eSZX	13 53.1		eSZX		39 34.2					
	MZ(P)		0.9	0.5		eXN	39 45.9				
	MN(S)		1.4	0.6		MZ(X)		5.6	0.9		
	ME(S)		0.5	0.7		MN(X)		7.3	0.8		
P-S: 1m 13.5s, P-F: 2m 20s					ME(X)					5.4	0.9
2	ePZX	00 52 39.0			P-S: 1m 16.0s, P-F: 3m 35s						
	eSN	53 20.4			4	ePZX	12 24 04.9				
	MZ(S)		1.5	0.4		eSZX	25 15.5				
	MN(S)		2.5	0.3		MZ(S)		0.6	0.8		
	ME(E)		2.0	0.4		MN(S)		0.8	0.8		
P-S: 41.4s, P-F: 1m 35s						ME(S)		0.6	0.8		
2	ePZX	16 31 42.6			P-S: 1m 10.6s, P-F: 2m 20s						
	eSN	32 57.1			4	ePZX	14 55 27.8				
	iXN	33 16.0				eSN	55 47.5				
	MZ(X)		12.6	1.0		MZ(S)		1.0	0.6		
	MN(X)		21.3	0.9		MN(S)		2.4	0.5		
ME(X)		25.7	1.0	ME(S)			1.6	0.5			
P-S: 1m 14.5, P-F: 4m 25s					P-S: 19.7, P-F: 55s						
2	ePZX	20 46 42.1			4	ePZX	18 48 07.4				
	iSN	47 11.8				eX1ZX	48 15.7				
	MZ(S)		6.0	0.6		eX2ZX	48 28.5				
	MN(S)		9.6	0.4		eX3ZX	50 09.6				
	ME(S)		5.9	0.6		MZ(X1)		1.4	0.6		
P-S: 29.7s, P-F: 3m 10s					MN(X1)		1.8	0.5			
3	ePZX	22 07 51.3			ME(X1)		1.6	0.6			
	eSX	08 29.9			5	ePZX	17 24 02.7				
	MZ(S)		0.5	0.7		eSN	25 06.1				
	MN(S)		1.0	0.4		MZ(S)		1.4	0.7		
	ME(S)		0.4	0.3		MN(S)		2.8	0.5		
P-S: 38.6s, P-F: 1m 10s						ME(S)		1.7	0.3		
4	ePZX	05 57 01.5			P-S: 1m 03.4s, P-F: 2m 40s						
	eSZX	57 20.6			5	ePZX	23 45 33.1				
	MZ(S)		0.6	0.7		eSZ	45 55.6				
	MN(S)		0.7	0.6		MZ(S)		0.8	0.6		
	ME(S)		0.5	0.8		MN(S)		1.2	0.7		
P-S: 19.1s, P-F: 1m 45s						ME(S)		0.8	0.7		
4	ePZX	06 07 01.5			P-S: 22.5s, P-F: 1m 35s						
	eSZX	07 27.1			6	ePZ	06 05 54.7				
	MZ(S)		0.5	0.5		eSZ	06 21.7				
	MN(S)		1.0	0.4		MZ(S)		0.5	1.1		
	ME(S)		0.8	0.5		MN(S)		1.0	0.9		
P-S: 25.6s, P-F: 1m 55s						ME(S)		0.7	1.1		
4	ePZX	10 04 08.6			P-S: 27.0s, P-F: 1m 30s						
	ePPN	09 21.0			6	ePZ	13 34 57.3				
	eSKSN	14 53.0				eSZ	36 14.3				
	MZ(P)		6.1	0.8		eXZ	36 45.3				
	MN(P)		3.2	0.7		MZ(X)		0.5	1.1		
ME(P)		2.8	0.8	MN(X)			1.0	0.9			
					ME(X)		0.7	1.1			
					P-S: 1m 17.0s, P-F: 3m 10s						
					7	ePZ	03 47 06.1				
						MZ(P)		1.6	1.6		
						MN(P)		1.0	1.3		
						ME(P)		1.1	1.0		

## Kamikireusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
7	ePZ iSN MZ(S) MN(S) ME(S)	15 <sup>h</sup> 13 <sup>m</sup> 24.5 <sup>s</sup> 13 34.3	3.3 7.9 6.6	0.4 0.4 0.5	10	iPZX eSZX MZ(S) MN(S) ME(S)	23 <sup>h</sup> 08 <sup>m</sup> 06.5 <sup>s</sup> 08 11.4	+1.6 0.8 1.2 1.2	sec 0.4 0.3 0.4
	P-S: 09.8s, P-F: 1m 10s					P-S: 04.9s, P-F: 24s			
7	ePZ iSZ MZ(S) MN(S) ME(S)	16 43 47.3 45 05.5	4.4 8.0 5.5	0.6 0.5 0.7	11	iPZX iSN MZ(S) MNE(S)	21 42 15.8 42 28.0	+8.0 44.8 SO	
	P-S: 1m 18.2s, P-F: 3m 25s					P-S: 12.2s, P-F: 3m 55s			
7	ePZ eSZ MZ(S) MN(S) ME(S)	20 14 34.3 16 08.2	1.4 1.9 1.8	0.7 0.9 1.1	12	iPZX eSZX MZ(S) MN(S) ME(S)	01 14 37.1 16 04.6	-0.8 3.5 6.0 5.1	0.9 0.8 0.8
	P-S: 1m 33.9					P-S: 1m 27.5s, P-F: 4m 10s			
8	ePZ eSZ MZ(S) MN(S) ME(S)	03 30 44.1 31 03.8	3.5 3.4 2.5	1.6 1.4 1.4	12	ePZX eSZX MZ(S) MN(S) ME(S)	03 10 33.5 12 10.8	2.2 3.5 2.7	1.4 1.8 1.3
	P-S: 19.7s, P-F: 3m 20s					P-S: 1m 37.3s, P-F: 3m 45s			
8	ePZ eSZ MZ(S) MN(S) ME(S)	06 40 28.1 41 38.1	2.5 4.8 2.4	0.9 0.6 0.7	13	ePZX eSZX MZ(S) MN(S) ME(S)	11 30 10.7 30 33.8	0.8 1.7 1.0	0.7 0.6 0.4
	P-S: 1m 10.0s, P-F: 3m 30s					P-S: 23.1s, P-F: 1m 40s			
8	ePZ eSZ MZ(S) MN(S) ME(S)	10 03 17.5 04 37.0	0.7 0.8 0.5	0.5 0.4 0.5	13	iPZX iSN MZ(P) MN(S) ME(S)	13 30 55.3 31 48.7	-3.4 4.7 4.6 3.0	0.7 0.2 0.7
	P-S: 19.5s, P-F: 2m 05s					P-S: 53.4s, P-F: 2m 40s			
8	ePZX eSZX MZ(S) MN(S) ME(S)	22 52 43.4 54 18.3	4.2 7.8 5.1	0.5 0.8 0.8	13	ePZX eXZX MZ(P) MN(P) ME(P)	16 09 02.1 21 58	0.8 0.8 0.6	1.5 1.4 1.0
	P-S: 1m 34.9s, P-F: 4m 20s								
10	ePZX eSZX MZ(S) MN(S) ME(S)	00 39 38.5 40 38.7	1.4 2.0 1.4	0.7 0.3 0.7	14	ePZX iXZX MZ(P) MN(P) ME(P)	01 26 32.4 27 22.4	3.1 1.9 1.7	1.4 1.0 0.9
	P-S: 1m 00.2s, P-F: 3m 15s								
10	iPZ eSN MZ(P) MN(S) ME(S)	04 20 20.9 20 30.7	4.5 4.4 2.2	0.5 0.3 0.3	14	iPZX iSN MZ(S) MN(S) ME(S)	05 47 45.0 48 02.7	-4.2 >25 >30 >25	
	P-S: 09.8s, P-F: 1m 25s					P-S: 17.7s, P-F: 3m 20s			

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
14	ePZX eSZX MZ(S) MN(S) ME(S)	12 <sup>h</sup> 45 <sup>m</sup> 03.9 <sup>s</sup> 45 26.2	0.7 1.8 1.1	0.7 0.4 0.5	17	ePZX eSZX eXZX MZ(X) MN(X) ME(X)	17 <sup>h</sup> 06 <sup>m</sup> 53.2 <sup>s</sup> 08 17 08 36.6	1.2 1.6 1.3	0.9 0.7 0.8
	P-S: 22.3s, P-F: 47s					P-S: 1m 24s, P-F: 3m 20s			
14	iPZX eSZX MZ(S) MN(S) ME(S)	15 39 05.3 39 30.7	+0.4 0.9 1.1 1.5	0.6 0.6 0.6 0.7	17	ePZX eSZX MZ(S) MN(S) ME(S)	21 21 23.8 21 44.5	0.7 0.9 0.7	0.8 0.3 0.4
	P-S: 25.4s, P-F: 1m 25s					P-S: 20.7s, P-F: 1m 35s			
14	ePZX eSZX MZ(S) MN(S) ME(S)	21 04 02.1 04 20.4	0.9 1.9 1.3	0.2 0.4 0.4	18	ePZX eSZX MZ(S) MN(S) ME(S)	02 57 54.2 59 08.1	1.2 1.2 1.0	0.7 0.5 0.6
	P-S: 18.3s, P-F: 1m 10s					P-S: 1m 13.9s, P-F: 3m 05s			
14	ePZX MZ(P) MN(P) ME(P)	21 34 06.2	3.1 2.1 1.7	0.7 0.7 0.6	18	iPZX iSZX MZ(S) MN(S) ME(S)	03 58 29.4 58 35.5	+1.6 0.8 2.5 1.4	0.4 0.4 0.4 0.2
**						P-S: 06.1s, P-F: 23s			
15	ePZX eSZX MZ(S) MN(S) ME(S)	23 13 24.0 13 45.9	0.5 0.8 0.5	0.5 0.4 0.3	18	ePZX eSZX MZ(S) MN(S) ME(S)	05 43 04.4 44 07.7	0.6 0.9 0.6	0.7 0.8 0.8
	P-S: 21.0s, P-F: 1m 10s					P-S: 1m 03.3s, P-F: 2m 10s			
16	ePZX MZ(P) MN(P) ME(P)	04 38 44	0.5 0.5 0.4	1.1 1.2 1.0	18	ePZX eXZ eSN MZ(S) MN(S) ME(S)	11 53 53.9 54 06.5 55 06.6	6.6 6.1 4.8	0.9 0.8 1.0
	P-S: 16.6s, P-F: 48s					P-S: 1m 12.7s, P-F: 3m 10s			
16	ePZX eSZX MZ(P) MN(S) ME(S)	17 21 34.0 23 46.0	0.6 0.7 0.5	0.4 0.4 0.9	18	ePZ eSN MZ(S) MN(S) ME(S)	20 06 14.1 07 08.3	0.8 2.6 1.4	0.9 1.0 1.0
	P-S: 2m 12s					P-S: 54.2s, P-F: 2m 50s			
17	ePZX eSZX MZ(S) MN(S) ME(S)	15 51 07.2 52 09.7	0.5 0.6 0.4	1.0 1.1 1.5	19	iPZ iSN MZ(S) MN(S) ME(S)	08 36 42.2 36 57.4	+0.4 50.4 45.7 >40	0.5
	P-S: 1m 02.5s, P-F: 2m 20s					P-S: 15.2s, P-F: 4m 45s			
					Addendum **15	eXZX 02 49 38 MZ(X) 0.8 1.0 MN(X) 0.5 1.3 ME(X) 0.6 1.5			

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
19	ePZ	12 <sup>h</sup> 41 <sup>m</sup> 32.6 <sup>s</sup>			21	iPZ	06 <sup>h</sup> 33 <sup>m</sup> 03.6 <sup>s</sup>	-2.6	0.7
	iSN	42 05.1				MZ(P)		4.3	1.4
	MZ(S)		0.8	0.4		MN(P)		2.5	1.2
	MN(S)		3.0	0.3		ME(P)		2.1	1.4
	ME(S)		1.1	0.3					
	P-S: 32.5s, P-F: 1m15s				21	ePZ	13 28 10.4		
19	ePZ	15 13 57.3				eSN	29 41.3		
	MZ(P)		1.2	1.9		MZ(S)		1.6	0.7
	MN(P)		1.1	1.9		MN(S)		1.9	0.7
	ME(P)		0.8	1.5		ME(S)		1.4	0.7
	P-S: 1m 30.9s, P-F: 3m 30s				22	ePZ	11 28 16.6		
20	ePZ	00 54 18.2				eSZ	30 28.2		
	eSN	55 14.2				MZ(S)		0.7	0.7
	eXN	55 43.9				MN(S)		0.8	0.6
	MZ(X)		3.6	0.8		ME(S)		0.5	0.6
	MN(X)		6.7	0.8		P-S: 2m 11.6s,			
	ME(X)		3.9	0.7	24	ePZX	22 40 20.4		
	P-S: 56.0s, P-F: 3m 35s					eXN	40 41.3		
20	ePZ	01 06 12.9				MZ(X)		1.0	0.7
	eSN	07 07.8				MN(X)		1.3	1.0
	eXN	07 32.0				ME(X)		1.0	1.1
	MZ(X)		0.8	1.0	25	iPZX	04 56 44.4	-3.0	
	MN(X)		2.9	1.0		iSZX	56 51.4		
	ME(X)		1.9	1.0		MZ(S)		1.9	0.6
	P-S: 54.9s, P-F: 3m 20s					MN(S)		3.6	0.5
20	iPZ	03 26 26.3	-1.6	0.8		ME(S)		2.0	0.6
	MZ(P)		1.5	1.5		P-S: 07.0s, P-F: 1m 25s			
	MN(P)		0.9	1.5	26	ePZX	13 55 12.5		
	ME(P)		0.7	1.3		eXZX	55 50.2		
20	ePZ	08 02 53.9				MZ(X)		0.8	1.2
	iSN	03 06.2				MN(X)		0.7	1.4
	MZ(S)		6.1	0.6		ME(X)		0.6	1.2
	MN(S)		9.2	0.6	26	iPZX	15 44 01.8	+2.2	
	ME(S)		4.6	0.5		iSN	44 13.3		
	P-S: 12.3s, P-F: 1m 25s					MZ(S)		1.6	0.5
20	iPZX	09 45 29.0	-1.6			MN(S)		4.9	0.3
	iSN	45 32.1				ME(S)		2.3	0.2
	MZ(S)		0.7	0.4		P-S: 11.5s, P-F: 45s			
	MN(S)		2.2	0.3	26	ePZX	16 57 04.2		
	ME(S)		2.0	0.2		eXN	58 38		
	P-S: 03.1s, P-F: 28s					MZ(P)		1.1	0.9
21	ePZ	00 14 45.3				MN(P)		1.1	1.0
	eSZ	16 18.0				ME(P)		0.8	1.2
	MZ(S)		0.7	1.1	27	ePZX	13 08 47.9		
	MN(S)		0.9	1.0		iSZX	08 54.1		
	ME(S)		0.7	1.4		MZ(P)		0.6	0.1
	P-S: 1m 32.7s, P-F: 3m20s					MN(S)		1.0	0.2
21	ePZ	00 46 23.4				ME(S)		0.8	0.2
	iSN	46 36.4				P-S: 06.2s, P-F: 19s			
	MZ(S)		1.4	0.5					
	MN(S)		4.6	0.6					
	ME(S)		2.3	0.6					
	P-S: 13.0s, P-F: 1m 22s								

\* Observation was interrupted from 16h 58m, January 22 to 17h 03m, January 24.

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
27	ePZX	16 <sup>h</sup> 21 <sup>m</sup> 09.5 <sup>s</sup>			29	ePZX	19 <sup>h</sup> 38 <sup>m</sup> 21 <sup>s</sup>		
	iX1ZX	21 12.5				eSN	39 02		
	iX2ZX	21 15.0				MZ(S)		4.5	1.1
	eSN	21 38.9				MN(S)		6.8	1.0
	MZ(X2)		2.9	0.5		ME(S)		6.9	1.0
	MN(X2)		3.1	0.5		P-S: 41s,			
	ME(X2)		2.8	0.6	29	eSN	19 40 28		
	P-S: 29.4s, P-F: 2m 15s					MZ(S)		1.5	0.7
27	ePZX	23 01 53.9				MN(S)		2.9	1.0
	MZ(P)		1.0	1.3		ME(S)		2.4	1.2
	MN(P)		0.7	1.0	29	ePZX	19 43 00.8		
	ME(P)		0.6	1.1		eSN	43 40.7		
28	ePZX	17 22 21.7				MZNE(S)		5.0	
	eSZX	22 34.0				P-S: 39.9s			
	MZ(S)		0.5	0.5	29	ePZ	19 49 53.3		
	MN(S)		0.7	0.6		eSN	50 34.1		
	ME(S)		0.7	0.7		MZ(S)		3.8	0.8
	P-S: 12.3s, P-F: 1m 10s					MN(S)		6.1	1.0
28	ePZX	21 20 44.7				ME(S)		5.2	0.9
	eSZX	21 53.0				P-S: 40.8s,			
	MZ(P)		0.5	0.4	29	eSN	19 51 28.6		
	MN(P)		0.7	0.8		MZ(S)		3.2	0.8
	ME(P)		0.4	0.5		MN(S)		6.4	0.8
	P-S: 1m 08.3, P-F: 2m 40s					ME(S)		3.5	0.7
28	ePZX	21 52 33.4			29	ePZX	19 53 43.4		
	eSZX	52 57.9				eSZX	54 34.6		
	MZ(S)		0.8	0.6		MZ(S)		0.8	0.8
	MN(S)		0.9	0.5		MN(S)		1.1	0.7
	ME(S)		0.7	0.6		ME(S)		1.1	1.2
	P-S: 24.5, P-F: 1m 55s					P-S: 51.2s,			
29	ePZX	09 12 23.2			29	ePZX	19 55 07		
	iXZX	12 24.5				eSN	55 46.6		
	iSZX	12 36.3				MZ(P)		0.7	0.4
	MZ(P)		1.1	0.2		MN(S)		1.0	0.5
	MN(S)		2.8	0.4		ME(S)		0.6	0.5
	ME(S)		1.2	0.3		P-S: 40s,			
	P-S: 13.1s, P-F: 50s				29	iPZX	14 09 18.4	+2.0	1.0
29	iPZX	14 09 18.4	+2.0	1.0		eXZX	10 09		
	eXZX	10 09				MZ(P)		0.7	0.7
	MZ(P)		0.7	0.7		MN(P)		0.4	0.5
	MN(P)		0.4	0.5		ME(P)		0.4	0.6
	ME(P)		0.4	0.6	29	iPZX	19 19 51.9	-4.8	0.9
29	iPZX	19 19 51.9	-4.8	0.9		MZNE(P,S)		5.0	
	MZNE(P,S)		5.0		29	eSZ	19 32 19		
29	eSZ	19 32 19				MZ(S)		2.7	1.1
	MZ(S)		2.7	1.1		MN(S)		6.5	0.8
	MN(S)		6.5	0.8		ME(S)		2.3	0.7
	ME(S)		2.3	0.7	29	ePZ	19 33 50		
29	ePZ	19 33 50				eSN	34 43.3		
	eSN	34 43.3				MZ(S)		11.6	0.6
	MZ(S)		11.6	0.6		MN(S)		17.1	0.8
	MN(S)		17.1	0.8		ME(S)		15.1	1.0
	ME(S)		15.1	1.0		P-S: 53s			

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
29	ePZX	20 <sup>h</sup> 07 <sup>m</sup> 13 <sup>s</sup>			29	ePZX	21 <sup>h</sup> 08 <sup>m</sup> 01.2 <sup>s</sup>		
	eSN	07 48.2				eSZX	08 47.5		
	MZ(S)		3.1	1.3		MZ(S)		16.4	1.0
	MN(S)		5.2	1.0		MN(S)		26.5	1.0
	ME(S)		3.1	1.3		ME(S)		18.2	1.6
	P-S: 35s					P-S: 46.3s,			
29	ePZ	20 24 04.2			29	ePZX	21 28 34.4		
	eSN	24 42.4				eSN	29 13.1		
	MZ(S)		1.8	1.1		MZ(S)		0.8	1.0
	MN(S)		3.5	0.7		MN(S)		1.2	0.9
	ME(S)		2.1	0.9		ME(S)		0.8	1.3
	P-S: 38.2s					P-S: 38.7s			
29	ePZX	20 26 16.1			29	ePZX	21 39 15.2		
	eSN	26 57.4				eSN	39 52.7		
	MZ(S)		5.2	0.9		MZ(S)		0.7	1.0
	MN(S)		9.5	1.1		MN(S)		1.0	0.6
	ME(S)		6.3	1.6		ME(S)		0.8	0.6
	P-S: 41.3s,					P-S: 37.5s			
29	eSN	20 28 59			29	ePZX	21 41 05.7		
	MZ(S)		3.0	1.1		eSN	41 44.2		
	MN(S)		5.1	0.9		MZ(S)		3.1	0.9
	ME(S)		5.3	1.2		MN(S)		4.5	0.9
29	ePZ	20 29 54.0				ME(S)		2.9	0.8
	eSZ	30 32.0				P-S: 38.5s			
	MZ(S)		5.5	0.7	29	ePZX	21 54 34.2		
	MN(S)		10.8	0.7		eSN	55 10.7		
	ME(S)		7.5	0.6		MZ(S)		1.6	1.0
	P-S: 38.0s,					MN(S)		2.3	0.7
29	ePZX	20 37 23.0				ME(S)		1.9	0.9
	eSN	38 04.1				P-S: 36.5s			
	MZ(S)		14.4	0.7	29	ePZX	22 08 13.5		
	MN(S)		33.7	0.7		eSZX	08 47.1		
	ME(S)		16.9	1.0		MZ(S)		0.9	1.0
	P-S: 41.1s,					MN(S)		1.2	1.0
29	ePZX	20 57 50.4				ME(S)		0.9	1.1
	MZNE(S)		50			P-S: 33.6s			
29	ePZX	20 56 30.6			29	ePZX	22 28 20.9		
	eSN	57 10.9				eSN	29 02.7		
	MZ(S)		1.0	0.8		MZ(S)		0.8	1.0
	MN(S)		1.5	0.9		MN(S)		1.0	0.7
	ME(S)		1.4	0.7		ME(S)		0.9	0.6
	P-S: 40.3,					P-S: 41.8s			
29	ePZ	20 57 50.4			29	ePZX	22 31 15.7		
	eSN	58 26.4				eSN	31 54.6		
	MZ(S)		2.1	0.9		MZ(S)		0.6	0.9
	MN(S)		3.7	0.8		MN(S)		0.8	0.8
	ME(S)		3.0	0.9		ME(S)		0.6	1.3
	P-S: 36.0s					P-S: 38.9s			
29	ePZ	21 05 44.4			29	ePZX	22 52 36.4		
	eSN	06 30.9				eSN	53 20.0		
	MZ(S)		1.5	1.1		MZ(S)		5.1	1.1
	MN(S)		2.5	0.6		MN(S)		8.8	0.9
	ME(S)		2.1	0.9		ME(S)		5.9	0.8
	P-S: 46.5s					P-S: 43.6s			

\* cf. page 36

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
29	ePZX	23 <sup>h</sup> 02 <sup>m</sup> 27.4 <sup>s</sup>			29	ePZX	23 <sup>h</sup> 59 <sup>m</sup> 36.6 <sup>s</sup>		
	iX1ZX	02 29.8				eSN	00 00 18.4		
	iSN	03 06.8				MZ(S)		2.9	0.8
	eX2N	03 21.7				MN(S)		8.0	0.8
	MZ(X2)		12.4	0.9		ME(S)		4.5	
	MN(X2)		17.9	0.7		P-S: 41.8s			
	ME(X2)		9.3	1.0		30	ePZX	00 13 39.5	
	P-S: 39.4s					eSN	14 18.2		
29	ePZX	23 11 23.8				MZ(S)		0.6	0.5
	eSN	12 01.5				MN(S)		1.3	0.6
	MZ(S)		6.2	0.7		ME(S)		0.8	0.6
	MN(S)		12.0	1.2		P-S: 38.7s			
	ME(S)		7.5	1.4		30	ePZX	00 17 33.4	
	P-S: 37.7s					eSN	18 13.0		
29	ePZX	23 15 27.8				MZ(S)		0.9	0.8
	eSN	16 07.9				MN(S)		1.9	0.8
	MZ(S)		0.7	1.0		ME(S)		1.0	0.9
	MN(S)		1.5	0.8		P-S: 39.6s			
	ME(S)		0.9	1.1		30	ePZX	00 49 05.4	
	P-S: 40.1s					iX1ZX	49 07.3		
29	ePZX	23 30 16.8				eSN	49 47.6		
	eSN	30 58.2				eX2N	50 05.2		
	MZ(S)		0.8	0.8		MZ(X2)		1.4	0.8
	MN(S)		1.4	1.0		MN(X2)		2.4	0.9
	ME(S)		1.4	1.1		ME(X2)		1.8	0.9
	P-S: 41.4s					P-S: 42.2s			
29	ePZX	23 32 37.5			30	ePZX	00 57 34.5		
	eSN	33 17.0				eSN	58 14.1		
	MZ(S)		2.9	0.9		MZ(S)		1.4	0.7
	MN(S)		4.1	0.8		MN(S)		2.5	0.7
	ME(S)		2.5	0.8		ME(S)		2.0	0.8
	P-S: 39.5s					P-S: 39.6s			
29	ePZX	23 40 27.8			30	eSN	00 59 09		
	eSN	41 17.3				MZ(S)		0.7	0.6
	MZ(S)		5.3	1.0		MN(S)		1.9	0.8
	MN(S)		13.7	0.9		ME(S)		1.2	0.6
	ME(S)		7.0	0.8		30	ePZX	01 05 00.1	
	P-S: 49.5s					iX1ZX	05 03.0		
29	ePZX	23 43 36.9				iSN	05 41.6		
	eSN	44 19.0				iX2N	05 53.0		
	MZ(S)		7.5	0.8		MZ(X2)		11.7	0.7
	MN(S)		8.7	0.8		MN(X2)		16.2	0.7
	ME(S)		5.4	1.0		ME(X2)		11.4	0.7
	P-S: 42.1s					P-S: 41.5s			
29	eSN	23 45 28.4			30	ePZX	01 07 23		
	ePZX	23 52 48.5				eSN	08 01.3		
	eSN	53 28.0				eXN	08 21.9		
	MZ(S)		0.9	0.7		MZ(X)		4.9	1.0
	MN(S)		1.5	0.7		MN(X)		8.5	0.9
	ME(S)		1.1	0.8		ME(X)		5.9	1.1
	P-S: 39.5s					P-S: 38s			
29	ePZX	23 52 48.5			30	ePZX	01 11 23.9		
	eSN	53 28.0				eSN	12 04.0		
	MZ(S)		0.9	0.7		MZ(S)		0.7	0.7
	MN(S)		1.5	0.7		MN(S)		1.2	0.7
	ME(S)		1.1	0.8		ME(S)		0.8	0.8
	P-S: 39.5s					P-S: 40.1s			

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
30	ePZX	01 <sup>h</sup> 16 <sup>m</sup> 22.0 <sup>s</sup>			30	ePZX	03 <sup>h</sup> 25 <sup>m</sup> 45.9 <sup>s</sup>		
	eSN	17 06.5				eSN	26 28.3		
	MZ(S)		4.0	0.9		iXN	26 39.5	3.0	0.6
	MN(S)		>4.5			MZ(X)		4.5	0.8
	ME(S)		4.6	0.8		MN(X)		3.5	0.7
						ME(X)			
	P-S:	44.5s				P-S:	42.5s		
30	ePZX	01 29 20.7			30	ePZX	03 39 26.4		
	eSN	30 01.8				eSN	40 09.5		
	eXN	30 19.3				MZ(S)		1.2	1.0
	MZ(X)		1.9	0.9		MN(S)		1.6	0.8
	MN(X)		3.1	1.0		ME(S)		1.4	0.9
	ME(X)		2.4	0.9					
	P-S:	41.1s				P-S:	43.1s		
30	ePZX	01 37 03.4			30	ePZX	03 50 40		
	iXZX	37 05.1				eSN	50 18		
	eSN	37 45.1				MZ(S)		0.6	0.6
	MZ(S)		0.8	0.7		MN(S)		1.2	1.1
	MN(S)		1.1	0.8		ME(S)		1.0	0.9
	ME(S)		0.6	1.0					
	P-S:	41.7s				P-S:	38s		
30	iPZX	01 43 41.1	+3.0		30	ePZX	04 14 10		
	eSN	44 25.7				eSN	14 57		
	MZNE(S)		50			iXN	15 08.3		
	P-S:	44.6s,				MZ(X)		1.4	1.1
30	ePZX	02 02 55.4				MN(S)		2.8	0.8
	eSN	03 36.7				ME(X)		2.4	0.9
	MZ(S)		0.7	0.6					
	MN(S)		1.5	1.0		P-S:	47s		
	ME(S)		0.8	0.8	30	ePZX	04 29 58.8		
	P-S:	41.3s				eSN	30 36.9		
30	ePZX	02 14 58.4				MZ(S)		1.9	0.8
	eSN	15 42.1				MN(S)		3.3	0.7
	P-S:	43.7s				ME(S)		1.7	0.6
30	ePZX	02 31 31.3			30	ePZX	04 37 30.5		
	iXZX	31 33.3				eSN	38 21.3		
	eSN	32 14.7				MZ(S)		1.8	0.8
	MZ(S)		0.6	0.8		MN(S)		3.3	0.7
	MN(S)		1.2	0.5		ME(S)		1.9	0.8
	ME(S)		0.7	0.8					
	P-S:	43.4s				P-S:	50.8s		
30	ePZX	02 53 10.5			30	ePZX	04 40 11.4		
	eSN	53 51.3				iSN	40 54.2		
	MZ(S)		0.7	0.7		eXN	41 07.7		
	MN(S)		1.1	0.7		MZ(X)		15.8	1.1
	ME(S)		0.7	0.8		MN(X)		19.9	1.2
	P-S:	40.8s				ME(X)		20.4	1.2
30	ePZX	03 04 19.3							
	eSN	04 59.7				P-S:	42.8s		
	MZ(S)		0.9	0.9	30	ePZX	04 49 28.5		
	MN(S)		1.9	0.8		eSN	50 09.4		
	ME(S)		1.4	0.8		MZ(S)		0.6	0.9
	P-S:	40.4s				MN(S)		0.9	0.7
						ME(S)		0.9	1.0
						P-S:	40.9s		

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
30	ePZX	04 <sup>h</sup> 55 <sup>m</sup> 25.6 <sup>s</sup>			30	eSN	06 <sup>h</sup> 34 <sup>m</sup> 28.5 <sup>s</sup>		
	eSN	56 04.4				MZ(S)		1.0	0.7
	MZ(S)		0.6	0.9		MN(S)		2.0	0.7
	MN(S)		0.8	0.8		ME(S)		1.5	0.7
	ME(S)		0.7	0.7	30	eSN	06 35 07.1		
	P-S:	38.8s				MZ(S)		1.0	0.7
30	ePZX	05 26 09.0				MN(S)		2.1	0.7
	eSN	26 50.3				ME(S)		1.7	0.7
	MZ(S)		1.7	0.9	30	ePZX	06 49 47.2		
	MN(S)		2.3	0.8		iX1Z	49 49.6		
	ME(S)		1.9	1.1		iX2Z	49 59.6		
	P-S:	41.3s				eSN	50 31.0		
30	ePZX	05 44 53.7				eX3N	50 54.6		
	eXZX	44 57.0				eX4Z	51 53.0		
	eSN	45 39.5				MZ(X4)		4.6	0.8
	eXN	46 03.4				MN(X3)		12.5	0.9
	MZ(X)		>15			ME(X3)		6.0	0.9
	MN(X)		>25						
	ME(X)		>15			P-S:	43.8s		
	P-S:	45.8s			30	eSN	06 53 29		
30	ePZX	05 50 25.3				MZ(S)		1.1	0.9
	eSN	51 08.2				MN(S)		2.1	0.8
	eXN	51 22.9				ME(S)		1.4	0.8
	MZ(X)		1.2	0.9	30	ePZX	06 59 43.6		
	MN(X)		2.0	0.9		eSN	07 00 22.8		
	ME(X)		1.4	0.9		MZ(S)		1.3	0.8
	P-S:	42.9s				MN(S)		1.7	0.8
30	iPZX	06 00 15.0	+1.6			ME(S)		1.4	0.9
	MZ(P)		0.6	1.3					
	MN(P)		0.5	1.5		P-S:	39.2s		
	ME(P)		0.3	1.0	30	ePZX	07 16 02		
30	ePZX	06 14 40.1				eSN	16 54.4		
	eSN	15 28.0				MZ(S)		0.6	1.0
	MZ(S)		2.8	1.1		MN(S)		1.2	0.8
	MN(S)		3.6	0.9		ME(S)		1.1	0.8
	ME(S)		2.9	0.7					
	P-S:	47.9s				P-S:	52s		
30	eSN	06 16 45			30	iPZX	07 28 26.3	-1.2	
	MZ(S)		1.6	0.9		iX1ZX	28 28.6		
	MN(S)		3.4	0.7		iSN	29 08.9		
	ME(S)		1.4	0.8		eX2N	29 29.0		
	P-S:	42.6s				MZ(X2)		9.4	0.9
30	ePZX	06 26 00.3				MN(X2)		17.4	1.1
	iXZX	26 02.3				ME(X2)		12.8	1.3
	eSN	26 41.1							
	MZ(S)		1.3	0.8		P-S:	42.6s		
	MN(S)		2.7	0.7	30	ePZX	07 34 08.7		
	ME(S)		2.5	0.9		eSN	34 50.4		
	P-S:	40.8s				MZ(S)		1.3	0.9
30	ePZX	06 32 11.5				MN(S)		3.9	0.8
	eSN	32 49.6				ME(S)		1.4	0.7
	MZ(S)		1.2	0.8					
	MN(S)		1.7	0.8		P-S:	41.7s		
	ME(S)		1.3	0.8	30	ePZX	07 38 57.0		
	P-S:	38.1s				iX1ZX	38 59.5		
						eSN	39 35.3		
						eX2N	39 48.1		
						MZ(X2)		16.9	1.1
						MN(X2)		26.0	0.8
						ME(X2)		15.7	0.9
						P-S:	38.3s		

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
30	eSN	07 <sup>h</sup> 42 <sup>m</sup> 38 <sup>s</sup>			30	ePZX	10 <sup>h</sup> 49 <sup>m</sup> 23 <sup>s</sup>		
	MZ(S)		1.9	0.7		iSN	50 08.6		
	MN(S)		2.9	0.8		MZ(S)		36.7	
	ME(S)		3.4	0.9		MNE(S)		50	
						P-S:	46s		
30	ePZX	08 09 53.6			30	ePZX	11 08 15.1		
	eSN	10 30.3				eSN	08 50.2		
	MZ(S)		1.3	1.1		MZ(S)		0.5	0.7
	MN(S)		2.0	0.7		MN(S)		1.3	0.8
	ME(S)		1.8	0.9		ME(S)		1.1	0.8
						P-S:	35.1s		
30	ePZX	09 11 24.1			30	ePZX	11 13 16.7		
	iXZX	11 26.9				eSN	13 58.6		
	eSN	12 04.0				MZ(S)		1.1	0.8
	MZ(S)		9.9	1.0		MN(S)		1.7	0.6
	MN(S)		14.5	0.9		ME(S)		1.0	0.9
	ME(S)		10.2	0.7		P-S:	41.9s		
30	ePZX	09 31 30.8			30	ePZX	11 21 27.8		
	eSN	32 10.9				iSN	22 12.6		
	MZ(S)		0.6	0.9		MZ(S)		>25	
	MN(S)		0.8	0.8		MN(S)		>45	
	ME(S)		0.6	0.9		ME(S)		44.5	1.1
						P-S:	44.8s		
30	ePZX	09 33 21			30	eXZX	11 25 08		
	eSN	34 01.9				MZ(X)		2.8	1.2
	MZ(S)		4.7	0.7		MN(X)		4.4	1.5
	MN(S)		8.5	0.7		ME(X)		2.7	1.2
	ME(S)		5.9	0.7					
						P-S:	41s		
30	ePZX	09 37 37.2			30	ePZX	11 26 15.2		
	eSN	38 14				eSN	26 58.2		
	MZ(S)		0.6	1.0		MZ(S)		3.7	0.7
	MN(S)		0.5	0.8		MN(S)		7.0	0.9
	ME(S)		0.5	1.2		ME(S)		5.8	0.8
						P-S:	43.0s		
30	ePZX	09 47 05.5			30	ePZX	11 28 36		
	eSN	47 47.3				eSN	29 23		
	MZ(S)		0.5	0.9		MZ(S)		3.5	1.0
	MN(S)		1.2	0.8		MN(S)		4.7	0.7
	ME(S)		0.9	0.8		ME(S)		3.2	0.9
						P-S:	47s		
30	ePZX	10 31 03.8			30	ePZX	11 39 08.0		
	eSN	31 45.0				iSN	39 53.5		
	MZNE(S)		50			MZ(S)		>25	
						MNE(S)		50	
						P-S:	45.5s		
30	ePZX	10 45 57			30	ePZX	11 43 22.0		
	eSN	46 34.7				eSN	44 07.9		
	MZ(S)		0.8	1.1		eXN	44 23.2		
	MN(S)		1.5	0.7		MZ(S)		>25	
	ME(S)		1.1	0.8		MN(S)		>30	
						ME(S)		>20	
						P-S:	41.9s		
30	ePZX	11 54 45.2			30	ePZX	11 54 45.2		
	eSN	55 27.3				eSN	55 27.3		
						P-S:	42.1s		

## Kamikimeusu, January 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
30	ePZX	11 <sup>h</sup> 58 <sup>m</sup> 51.3 <sup>s</sup>			30	ePZX	13 <sup>h</sup> 03 <sup>m</sup> 59.6 <sup>s</sup>		
	eSN	59 32.7				iXZ	03 02.0		
	MZ(P)		1.2	0.5		iSN	03 42.1		
	MN(S)		2.2	0.9		MZ(S)		> 12.5	
	ME(S)		1.3	0.6		MN(S)		> 20	
						ME(S)		> 20	
						P-S:	42.5s		
30	ePZX	12 02 35.5			30	ePZX	13 06 59.2		
	MZNE(S)		50			eSN	07 39.4		
						MZ(S)		0.7	0.5
						MN(S)		1.2	0.6
						ME(S)		0.8	0.7
						P-S:	40.2s		
30	eSN	12 22 24.5			30	ePZX	13 11 24.1		
	MZ(S)		1.2	1.0		iX1ZX	11 26.9		
	MN(S)		1.9	0.9		iSN	12 10.3		
	ME(S)		1.4	0.8		eX2N	12 22.8		
						MZNE(X2)		50	
30	eXN	12 23 16.5				P-S:	46.2s		
	MZ(X)		1.0	0.6	30	ePZX	13 34 26.5		
	MN(X)		1.6	0.5		eX1ZX	34 28.5		
	ME(X)		0.9	0.6		eSN	35 10.9		
						eX2N	35 34.1		
						MZ(X2)		2.4	1.2
						MN(X2)		2.6	0.8
						ME(X2)		2.5	1.1
						P-S:	44.4s		
30	ePZX	12 24 36.3			30	ePZX	13 58 32.1		
						eSN	59 14.5		
						MZ(S)		0.6	0.6
						MN(S)		1.0	0.7
						ME(S)		0.8	0.7
						P-S:	42.4s		
30	ePZ	12 28 06.5			30	ePZX	13 59 42		
	eSN	28 49				eSN	14 00 22.9		
	MZ(S)		> 15			MZ(S)		2.4	1.2
	MN(S)		> 25			MN(S)		2.6	0.8
	ME(S)		> 20			ME(S)		1.0	0.9
						P-S:	41s		
30	ePZ	12 30 47.5			30	ePZX	14 06 14.8		
	eSN	31 30.3				iXZX	06 17.3		
	eXN	31 49.2				eSN	06 58.9		
	MZ(X)		13.3	0.8		MZ(X)		0.8	0.5
	MN(X)		21.5	0.3		MN(X)		1.8	0.8
	ME(X)		12.2	1.0		ME(X)		0.9	0.8
						P-S:	44.1s		
30	ePZX	12 35 32.2			30	ePZX	14 16 52.8		
	eSN	36 16				eSN	17 16.2		
	MZ(S)		1.9	0.9		MZ(S)		3.0	0.8
	MN(S)		2.5	0.9		MN(S)		5.8	0.7
	ME(X)		2.0	1.1		ME(S)		2.8	0.8
						P-S:	23.4s, P-F: 1m 20s		
30	ePZX	12 53 03.8			30	ePZX	12 56 14.3		
	MZ(P)		14.2			eSN	56 58.7		
	MN(P)		1.8	0.6		MZ(S)		16.1	1.2
	ME(P)		1.4	0.8		MN(S)		28.8	1.2
			1.0	0.7		ME(S)		17.2	1.3
						P-S:	44.4s		
30	ePZX	12 53 28.4							
	iSN	54 10.6							
	MZ(S)		18.6	1.1					
	MN(S)		35.9	1.8					
	ME(S)		26.5	1.4					

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
30	ePZX eSN MZ(S) MN(S) ME(S)	14 <sup>h</sup> 28 <sup>m</sup> 18.7 <sup>s</sup> 28 57.5	1.6 3.0 2.2	1.0 1.0 1.3	30	ePZX eSN MZ(S) MN(S) ME(S)	17 <sup>h</sup> 47 <sup>m</sup> 48.5 <sup>s</sup> 48 32.3	0.6 1.2 0.6	0.9 0.9 0.9
	P-S:	36.8s				P-S:	43.8s		
30	ePZX eSN MZ(S) MN(S) ME(S)	14 35 57 36 46.5	0.6 1.3 1.0	1.0 0.7 0.8	30	ePZX eSN MZ(S) MN(S) ME(S)	18 07 16.6 07 54.9	7.2 11.1 11.3	1.1 1.3 1.5
	P-S:	50s				P-S:	38.3s		
30	ePZX eSN MZ(S) MN(S) ME(S)	14 48 10.5 48 52.4	1.3 2.6 1.3	0.7 0.5 0.8	30	ePZX eSN MZ(S) MN(S) ME(S)	18 14 40.7 15 27.5	2.4 3.8 3.0	0.7 0.8 0.8
	P-S:	41.9s				P-S:	46.8s		
30	ePZX iSN MZNE(S)	15 09 27.7 10 10.6	SO		30	ePZX eSZX eXN MZ(X) MN(X) ME(X)	19 57 33.8 58 11.1 58 28.7	0.9 2.0 1.0	1.1 0.8 0.7
	P-S:	42.9s				P-S:	37.3s		
30	ePZX eSN MZ(S) MN(S) ME(S)	15 13 40.1 14 24.4	0.6 0.7 0.6	1.1 0.8 1.0	30	ePZX eSN MZ(S) MN(S) ME(S)	20 03 44 04 22.7	1.2 2.2 1.7	1.1 1.1 1.0
	P-S:	44.3s				P-S:	39s		
30	ePZX iX1ZX eSN eX2N MZ(S) MN(X2) ME(X2)	16 07 16.9 07 19.3 08 01.0 08 24.8	2.7 4.0 2.4	0.5 1.0 1.1	30	ePZX iX1ZX eSN iX2N MZ(X2) MN(X2) ME(X2)	20 35 28.5 35 31.1 36 09.7 36 22.4	12.4 19.0 14.2	0.8 1.0 0.8
	P-S:	44.1s				P-S:	41.2s		
30	ePZX eSN eXN MZ(X) MN(X) ME(X)	16 28 26.9 29 05.6 29 30.3	4.7 7.3 5.1	1.1 1.3 1.2	30	ePZX eSN MZ(S) MN(S) ME(S)	21 17 15.5 17 56.5	1.4 1.9 1.3	0.8 0.8 1.0
	P-S:	38.7s				P-S:	41.0		
30	ePZX iXZX eSN MZ(S) MN(S) ME(S)	16 43 22.6 43 25.3 44 14.4	6.3 4.5 6.3	0.8 0.7 0.8	30	ePZX eSN MZ(S) MN(S) ME(S)	22 02 25.9 03 04.9	0.8 1.5 1.0	0.9 0.9 1.3
	P-S:	51.8s				P-S:	39.0s		
30	ePZX eSN MZ(S) MN(S) ME(S)	17 36 35.4 37 15.7	2.9 7.0 4.3	0.9 0.9 0.8					
	P-S:	40.3s							

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
30	ePZX iX1ZX eSN eX2N MZ(X2) MN(X2) ME(X2)	23 <sup>h</sup> 00 <sup>m</sup> 24.6 <sup>s</sup> 00 27.3 01 03.8 01 18.3	4.5 10.1 3.9	0.8 0.7 0.7	31	ePZX iX1ZX iSN eX2N MZ(X1) MN(X2) ME(X2)	01 <sup>h</sup> 58 <sup>m</sup> 42.8 <sup>s</sup> 58 45.6 59 27.9 59 46.9	2.8 4.6 3.3	0.5 1.3 0.8
	P-S:	39.2s				P-S:	45.1s		
30	ePZX iXZX eSN MZ(S) MN(S) ME(S)	23 10 06.4 10 09.2 10 46.7	12.2 20.5 17.9	0.8 0.8 1.5	31	ePZX eSN eXN MZ(X) MN(X) ME(X)	02 18 25.2 19 06.5 19 20.1	2.2 3.6 3.2	1.0 1.2 0.8
	P-S:	40.3s				P-S:	41.3s		
30	ePZX eSN MZ(S) MN(S) ME(S)	23 32 08.9 32 51.8	2.5 4.5 4.5	0.7 0.9 0.9	31	ePZX iXZX eSN MZ(S) MN(S) ME(S)	03 21 50.7 21 52.6 22 35.0	1.1 1.3 0.9	1.1 0.8 1.1
	P-S:	42.9s				P-S:	44.3s		
31	ePZX iXZX eSN MZ(S) MN(S) ME(S)	00 05 07.7 05 09.6 05 51.9	1.6 1.8 1.2	1.1 0.9 1.0	31	eSN MZ(S) MN(S) ME(S)	03 23 59.3	0.8 1.0 0.8	1.0 1.1 0.9
	P-S:	44.2s				P-S:	44.3s		
31	ePZX eSN MZ(S) MN(S) ME(S)	00 17 09.3 17 55.8	0.6 1.0 0.6	1.0 0.7 0.8	31	iPZX iX1ZX eSN iX2N MZ(X2) MN(X2) ME(X2)	03 35 52.1 35 54.8 36 34.2 36 49.4	23.5 42.8 42.5	1.2 1.0 1.2
	P-S:	46.5s,				P-S:	42.1s		
31	ePZX eSN MZ(S) MN(S) ME(S)	00 24 09.3 24 49.5	0.5 1.0 0.8	0.8 0.8 0.9	31	ePZX iXZX eSN MZ(S) MN(S) ME(S)	03 51 12.3 51 14.2 51 56.4	1.3 2.5 1.4	0.7 0.6 1.5
	P-S:	40.2s				P-S:	44.1s		
31	ePZX iX1ZX iSN eX2N MZ(X1) MN(X2) ME(X2)	00 38 10.8 38 13.4 38 54.3 39 13	1.9 3.6 1.9	0.5 1.0 1.0	31	ePZX eSN MZ(S) MN(S) ME(S)	04 43 24.5 44 05.2	1.8 3.0 2.4	0.9 1.0 0.9
	P-S:	43.5s				P-S:	40.7s		
31	ePZX iXZX eSN MZ(S) MN(S) ME(S)	01 47 21.9 47 24.1 48 05.9	1.6 3.0 1.8	0.6 1.0 1.1	31	ePZX iXZX MZ(P) MN(X) ME(P)	05 32 11.8 32 43.2	0.8 0.5 0.7	0.9 0.9 1.2
	P-S:	44.0s							

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
31	ePZX	06 <sup>h</sup> 23 <sup>m</sup> 03.0 <sup>s</sup>			31	ePZX	12 <sup>h</sup> 07 <sup>m</sup> 18.8 <sup>s</sup>		
	eSN	23 45.9				eSN	08 11.7		
	MZ(S)		1.1	0.8		MZ(S)		0.8	0.8
	MN(S)		1.5	0.8		MN(S)		1.7	0.7
	ME(S)		1.2	1.0		ME(S)		0.9	0.8
	P-S: 42.9s					P-S: 52.9s			
31	ePZX	06 55 23.4			31	ePZX	12 39 51.9		
	eSN	56 00.4				eSN	40 35.1		
	MZ(S)		1.1	0.8		MZ(S)		0.6	0.8
	MN(S)		1.8	0.6		MN(S)		1.2	1.0
	ME(S)		1.1	0.7		ME(S)		0.6	0.9
	P-S: 37.0s					P-S: 43.2s			
31	ePZX	07 50 51.1			31	ePZX	13 22 12.8		
	eSN	51 32.4				iX1ZX	22 15.0		
	iXN	51 42.9				eSN	22 55.3		
	MZ(X)		3.0	1.1		eX2N	23 21.4		
	MN(X)		6.3	0.8		MZ(S)		1.4	0.6
	ME(X)		4.2	1.1		MN(X2)		3.4	0.9
	P-S: 41.3s					ME(S)		1.9	0.6
						P-S: 42.5s			
31	ePZX	08 55 12.0			31	ePZX	13 31 33.6		
	iXZX	55 13.9				eSN	32 11.1		
	eSN	55 57.3				MZ(S)		1.3	0.8
	MZ(S)		2.5	0.8		MN(S)		2.7	0.9
	MN(S)		4.0	1.0		ME(S)		2.0	0.9
	ME(S)		3.3	0.8		P-S: 37.5s			
	P-S: 45.3s								
31	ePZX	09 21 00.3			31	ePZX	13 56 38.3		
	eSN	21 40.6				iX1ZX	56 41.1		
	MZ(S)		2.0	0.8		iSN	57 23.9		
	MN(S)		2.9	1.1		iX2N	57 44.8		
	ME(S)		2.2	1.4		MZ(X2)		18.5	1.2
	P-S: 40.3s					MN(X2)		25.9	1.0
						ME(X2)		24.0	1.0
						P-S: 45.6s			
31	ePZX	09 32 45.4			31	ePZX	14 31 35.1		
	iXZX	32 48.2				eSN	32 19.7		
	iSN	33 33.9				MZ(S)		0.8	1.0
	MZ(S)		2.5	1.2		MN(S)		1.2	0.7
	MN(S)		4.1	1.4		ME(S)		0.7	1.1
	ME(S)		2.8	1.4		P-S: 44.6s			
	P-S: 48.2s								
31	ePZX	10 07 50.0			31	ePZX	14 48 57.4		
	eSN	08 31.1				eSN	49 41.0		
	iXN	08 46.9				MZ(S)		0.6	0.9
	MZ(X)		3.6	1.0		MN(S)		1.5	0.9
	MN(X)		8.1	0.9		ME(S)		0.8	0.9
	ME(X)		4.8	0.8		P-S: 43.6s			
	P-S: 41.4s								
31	ePZX	11 34 01.6			31	ePZX	15 22 34.3		
	eSN	34 46.4				iX1ZX	22 37.2		
	MZ(S)		0.8	1.1		iX2ZX	22 45.4		
	MN(S)		0.9	0.8		eSN	23 14.5		
	ME(S)		0.8	1.2		iX3N	23 28.3		
	P-S: 44.8s					MZ(X3)		5.3	0.7
						MN(X3)		12.3	1.2
						ME(X3)		6.2	1.3
						P-S: 40.2s			

## Kamikineusu, January 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
31	ePZX	15 <sup>h</sup> 42 <sup>m</sup> 46.5 <sup>s</sup>			31	ePZX	20 <sup>h</sup> 09 <sup>m</sup> 09.5 <sup>s</sup>		
	eSN	43 21.7				eSN	09 45.1		
	MZ(S)		2.4	0.6		MZ(S)		1.3	0.6
	MN(S)		6.4	0.8		MN(S)		3.5	0.7
	ME(S)		3.2	1.0		ME(S)		1.8	0.9
	P-S: 35.7s					P-S: 35.6s			
31	ePZX	18 32 02.2			31	eXZX	20 53 13.5		
	iXZX	32 04.0				MZ(X)		0.7	1.3
	eSN	32 47.5				MN(X)		0.6	1.2
	MZ(S)		2.5	1.1		ME(X)		0.4	1.1
	MN(S)		3.1	1.3					
	ME(S)		2.2	1.2	31	ePZX	22 45 36.5		
	P-S: 45.3s					eSN	46 34.6		
						eXN	46 55.2		
						MZ(X)		1.7	1.0
						MN(X)		3.0	0.9
						ME(X)		1.6	0.8
						P-S: 58.1s			

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
1	ePZX	00 <sup>h</sup> 11 <sup>m</sup> 43.8 <sup>s</sup>			1	ePZX	03 <sup>h</sup> 24 <sup>m</sup> 29.6 <sup>s</sup>		
	eSN	12 25.1				eSN	25 08.9		
	MZ(S)		0.5	0.6		iXN	25 22.6		
	MN(S)		1.0	0.7		MZ(X)		4.4	0.7
	ME(S)		0.6	0.6		MN(X)		6.9	0.6
	P-S: 41.3s					ME(X)		5.0	0.6
						P-S: 37.3s			
1	ePZX	01 08 27.0			1	ePZX	04 22 49.2		
	eSN	09 07.2				iSN	23 22.0		
	MZ(S)		0.6	0.8		MZ(S)		17.6	0.9
	MN(S)		1.0	0.7		MN(S)		27.5	0.8
	ME(S)		0.8	0.8		ME(S)		22.0	0.7
	P-S: 40.2s					P-S: 32.9s, P-F: 3m 20s			
1	ePZX	01 20 12.9			1	ePZX	04 55 46.6		
	iX1ZX	20 15.6				eSN	56 23.7		
	eSN	20 58.3				MZ(S)		0.5	0.7
	iX2N	21 08.8				MN(S)		1.1	0.6
	MZ(X2)		21.5	1.0		ME(S)		0.7	1.0
	MN(X2)		28.1	0.8		P-S: 37.1s			
	ME(X2)		20.3	0.7					
	P-S: 45.4s				1	ePZX	05 05 24.6		
						eSN	06 05.8		
1	ePZX	02 16 54.0				MZ(S)		3.1	1.3
	iSN	17 33.0				MN(S)		6.7	1.0
	MZ(S)		1.3	0.6		ME(S)		4.0	1.2
	MN(S)		3.4	0.7		P-S: 41.2s			
	ME(S)		2.0	0.8					
	P-S: 39.0s				1	ePZX	05 58 27.0		
						eSN	59 15.0		
1	ePZX	02 37 25.6				MZ(S)		1.4	1.1
	eSN	38 04.3				MN(S)		1.5	0.8
	MZ(S)		1.0	0.6		ME(S)		1.1	0.8
	MN(S)		1.9	0.3		P-S: 48.0s			
	ME(S)		1.4	0.4					
	P-S: 38.7s								

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
1	iPZX	06 <sup>h</sup> 59 <sup>m</sup> 19.7 <sup>s</sup>	-1.6		1	ePZX	10 <sup>h</sup> 22 <sup>m</sup> 25.5 <sup>s</sup>		
	eSN	07 00 04.4				eSN	23 03.7		
	eX1N	00 44.6				MZ(S)		1.7	1.1
	MZ(P)		7.0	0.7		MN(S)		2.8	1.0
	MN(X1)		9.5	1.4		ME(S)		2.2	0.9
	ME(S)		7.1	1.1			P-S: 38.2s		
		P-S: 44.7s			1	ePZX	11 59 08.8		
1	ePZX	07 05 11.2				eSN	59 48.6		
	eSN	06 53.5				MZ(S)		0.7	0.8
	MZ(S)		1.1	1.0		MN(S)		1.4	0.6
	MN(S)		2.0	1.0		ME(S)		0.9	0.7
	ME(S)		1.3	0.7			P-S: 39.8s		
		P-S: 42.3s			1	ePZX	15 57 15.9		
1	ePZX	07 49 39.4				eSN	57 59.9		
	eSN	50 20.0				MZ(S)		0.7	0.9
	MZ(S)		1.9	0.8		MN(S)		1.3	0.9
	MN(S)		2.9	0.7		ME(S)		1.1	1.2
	ME(S)		2.2	0.7			P-S: 44.0s		
		P-S: 40.5s			1	ePZX	16 00 45.4		
1	ePZX	07 54 44.3				eSN	01 18.7		
	iX1ZX	54 46.8				MZ(S)		5.0	0.9
	eSN	55 22.8				MN(S)		13.3	0.8
	iX2N	55 36.0				ME(S)		6.8	0.8
	MZ(X2)		2.7	0.9			P-S: 33.3s		
	MN(X2)		5.4	0.9	1	ePZX	17 51 33.1		
	ME(X2)		4.6	0.8		eSN	12.8		
		P-S: 51.7s				MZ(S)		0.7	0.8
1	ePZX	08 05 31.1				MN(S)		1.2	0.7
	iXZX	05 33.2				ME(S)		1.3	0.8
	eSN	06 12.5					P-S: 39.7s		
	MZ(S)		4.2	0.9	1	ePZX	18 41 05.9		
	MN(S)		6.0	0.7		eSN	41 46.7		
	ME(S)		4.5	0.6		MZ(P)		1.6	0.5
		P-S: 41.4s				MN(S)		3.4	0.9
1	ePZX	08 44 40.9				ME(S)		1.3	0.8
	eSN	45 19.5					P-S: 40.8s		
	MZ(S)		0.7	1.0	1	ePZX	19 19 39.7		
	MN(S)		1.2	0.8		eSN	20 18.2		
	ME(S)		0.8	0.8		MZ(S)		2.3	0.9
		P-S: 38.6s				MN(S)		3.2	0.8
1	ePZX	09 20 32.2				ME(S)		2.8	0.9
	eSN	21 10.5					P-S: 38.5s		
	MZ(S)		0.8	1.3	1	ePZX	19 22 11.6		
	MN(S)		1.5	1.0		eSN	22 52.7		
	ME(S)		1.2	1.2		MZ(S)		2.3	0.9
		P-S: 38.3s				MN(S)		4.1	1.0
1	ePZX	09 46 09.3				ME(S)		3.2	0.8
	eSN	46 51.9					P-S: 41.1s		
	MZ(S)		3.8	0.8	1	ePZX	21 25 44.4		
	MN(S)		6.2	1.0		eSN	26 25.5		
	ME(S)		6.3	0.7		MZ(S)		1.2	0.9
		P-S: 42.6s				MN(S)		2.7	0.7
						ME(S)		1.4	1.0
							P-S: 41.1s		

## Kamikineusu, February

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
1	ePZX	21 <sup>h</sup> 48 <sup>m</sup> 11.1 <sup>s</sup>			2	iPZX	17 <sup>h</sup> 11 <sup>m</sup> 07.2 <sup>s</sup>	-0.6	
	MZNE(S)		50			iSZX	11 39.6		
		P-S: 43s				MZ(S)		1.7	1.1
2	ePZX	01 30 09.1				MN(S)		3.0	0.6
	eSN	30 53.1				ME(S)		2.5	0.6
	MZ(S)		0.5	0.9			P-S: 32.4s, P-F: 4m 15s		
	MN(S)		0.9	0.9	2	ePZX	22 28 21.6		
	ME(S)		0.5	0.9		eSN	29 10.8		
		P-S: 44.0s				MZ(S)		0.9	0.7
2	ePZX	03 53 43.6				MN(S)		1.2	0.9
	eSZX	54 28.8				ME(S)		1.0	0.7
	MZ(S)		4.0	0.7			P-S: 49.2s		
	MN(S)		6.1	0.7	2	ePZX	23 58 27.1		
	ME(S)		5.2	1.0		eSN	59 06.8		
		P-S: 45.2s				MZ(S)		2.3	0.6
2	ePZX	04 02 58.5				MN(S)		3.6	0.7
	MZ(S)		24.3	1.0		ME(S)		2.5	1.0
	MN(S)		41.5	1.3			P-S: 39.7s		
	ME(S)		34.4	1.1	3	ePZX	00 02 00.3		
		P-S: 45s				eSN	02 39.9		
2	ePZX	04 29 16.1				MZ(S)		6.0	1.0
	eSZX	29 34.3				MN(S)		16.1	0.8
	MZ(S)		0.9	0.3		ME(S)		7.6	0.9
	MN(S)		2.3	0.4			P-S: 39.6s		
	ME(S)		1.7	0.4	3	ePZX	00 37 45.1		
		P-S: 18.2s, P-F: 1m 20s				iSN	38 24.9		
2	ePZX	04 32 46.4				MZ(S)		8.1	0.9
	eSN	33 32.2				MN(S)		16.9	1.0
	MZNE(S)		>10			ME(S)		13.0	1.3
		P-S: 45.8s					P-S: 39.8s		
2	ePZX	11 28 39.3			3	ePZX	04 23 25.9		
	eSZX	29 23.2				eSN	24 14.7		
	MZ(S)		1.2	0.8		MZ(S)		1.9	1.1
	MN(S)		2.2	0.9		MN(S)		2.9	1.0
	ME(S)		1.3	0.9		ME(S)		2.2	1.1
		P-S: 43.9s					P-S: 48.8s		
2	ePZX	12 24 05.4			3	ePZX	05 16 15.1		
	eSN	24 46.3				eSN	17 05.0		
	MZ(S)		1.4	0.7		MZ(S)		9.8	1.0
	MN(S)		2.2	1.0		MN(S)		15.9	1.0
	ME(S)		1.5	0.8		ME(S)		10.6	0.9
		P-S: 40.9s					P-S: 49.9s		
2	ePZX	14 04 11.6			3	ePZX	06 05 52.4		
	eSZX	04 53.3				eSN	06 16.1		
	MZ(S)		0.6	0.8		MZ(S)		2.7	1.0
	MN(S)		1.0	0.9		MN(S)		3.6	1.2
	ME(S)		0.7	0.7		ME(S)		2.7	0.9
		P-S: 41.7s					P-S: 23.2s, P-F: 3m 55s		
					3	ePZX	11 15 26.3		
						eSN	16 03.2		
						MZ(S)		0.6	0.6
						MN(S)		1.0	0.7
						ME(S)		0.6	0.7
							P-S: 36.9s, P-F: 1m 30s		

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
3	ePZX	11 <sup>h</sup> 48 <sup>m</sup> 43.6 <sup>s</sup>			4	ePZX	02 <sup>h</sup> 46 <sup>m</sup> 51.1 <sup>s</sup>		
	eSN	49 27.7				eSZX	47 10.4		
	MZ(S)		0.5	0.7		MZ(S)		1.7	0.6
	MN(S)		0.7	0.8		MN(S)		3.1	0.6
	ME(S)		0.5	0.8		ME(S)		1.8	0.8
	P-S: 44.1s					P-S: 19.3s, P-F: 1m 20s			
3	ePZX	12 28 13.7			4	ePZX	03 45 44.9		
	eSN	29 44.5				eSN	46 28.7		
	MZNE(S)		SO			MZ(S)		1.0	0.7
	P-S: 1m 30.8s					MN(S)		2.0	0.8
						ME(S)		0.9	0.9
	P-S: 44.9s					P-S: 43.8s			
3	ePZX	16 10 21.6			4	ePZX	04 54 43.6		
	eSZX	11 06.5				eSZX	55 12.1		
	MZ(S)		1.4	1.0		MZ(S)		1.3	0.7
	MN(S)		2.9	0.8		MN(S)		1.8	0.7
	ME(S)		1.3	1.0		ME(S)		2.1	0.6
	P-S: 44.3s					P-S: 28.5s, P-F: 2m 20s			
3	ePZX	19 00 58.9			4	ePZX	05 04 16.4		
	eSN	01 40.2				eSN	04 43.8		
	MZ(S)		2.7	1.0		MZ(S)		0.6	0.5
	MN(S)		4.0	1.2		MN(S)		0.9	0.4
	ME(S)		2.6	0.8		ME(S)		0.6	0.8
	P-S: 41.3s					P-S: 27.4s			
3	ePZX	20 17 57.4			4	ePZX	14 08 58.3		
	eSN	18 40.1				iX1ZX	09 01.2		
	MZ(S)		0.5	1.1		eSN	09 42.2		
	MN(S)		0.8	1.0		iX2N	09 59.4		
	ME(S)		0.5	0.8		MZ(X2)		6.3	0.8
	P-S: 42.7s					MN(X2)		9.0	0.7
						ME(X2)		7.1	0.7
3	iPZX	20 31 32.1	+1.8			P-S: 43.8s			
	eSN	32 09.8			4	ePZX	16 06 04.7		
	MZNE(S)		SO			iSN	06 47.8		
	P-S: 37.7s, P-F: 7m 20s					eXN	07 05.1		
						MZ(X)		5.5	0.8
3	ePZX	21 32 05.5				MN(Y)		6.9	0.6
	eSN	32 44.3				ME(X)		6.2	0.9
	MZ(S)		1.1	0.8		P-S: 43.1s			
	MN(S)		1.4	0.8	4	ePZX	17 51 46.9		
	ME(S)		1.8	0.8		iXZX	51 49.4		
	P-S: 38.8s					iSN	52 27.0		
						MZ(S)		2.9	0.8
3	ePZX	22 00 05.2				MN(S)		5.1	0.9
	eSN	00 49.0				ME(S)		3.6	0.9
	MZ(S)		1.6	0.6		P-S: 40.1s			
	MN(S)		2.3	1.2	4	iPZX	18 11 16.5	-3.4	
	ME(S)		2.2	0.8		eSN	12 01.7		
	P-S: 43.8s					eXZ	12 22		
						MZNE(X)		SO	
3	ePZX	22 07 56.1				P-S: 45.2s			
	eSN	08 35.4							
	MZ(S)		8.5	0.8					
	MN(S)		20.0	0.8					
	ME(S)		9.2	0.8					
	P-S: 39.3s								

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
4	ePZX	19 <sup>h</sup> 59 <sup>m</sup> 36.2 <sup>s</sup>			4	ePZX	23 <sup>h</sup> 22 <sup>m</sup> 31.3 <sup>s</sup>		
	eSN	20 00 17.7				eSN	23 11.3		
	MZ(S)		1.1	0.8		MZ(S)		4.3	1.0
	MN(S)		1.5	1.1		MN(S)		4.7	0.8
	ME(S)		1.3	0.9		ME(S)		2.8	0.9
	P-S: 41.5s					P-S: 40.0s			
4	ePZX	20 01 38.6			4	ePZX	23 58 00.8		
	MZNE		SO			eSN	58 38.5		
	P-S: 40.0s					MZ(S)		1.0	0.6
4	ePZX	20 07 12.4				MN(S)		2.0	0.6
	eSN	07 52.4				ME(S)		1.5	0.6
	MZNE(S)		SO			P-S: 37.7s			
	P-S: 40.0s				5	ePZX	00 12 44.4		
4	ePZX	20 18 35.3				eSN	13 22.7		
	eSN	19 17.1				MZ(S)		0.8	0.9
	MZ(S)		2.9	0.9		MN(S)		1.4	0.9
	MN(S)		4.7	0.9		ME(S)		0.9	0.7
	ME(S)		3.0	0.8		P-S: 38.3s			
	P-S: 41.8s				5	ePZX	00 49 04.9		
4	eX1ZX	20 46 50.5				eSN	49 45.4		
	eY2ZX	47 30.7				MZ(S)		0.5	0.8
	MZ(X1)		1.5	1.6		MN(S)		0.9	0.8
	MN(X1)		0.5	1.1		ME(S)		0.6	0.8
	ME(X1)		0.5	1.0		P-S: 40.5s			
	P-S: 41.8s				5	ePZX	01 18 25.6		
4	ePZX	21 05 15.1				eSZX	19 12.1		
	eSN	05 54.6				MZ(S)		1.0	1.0
	MZ(S)		0.5	1.0		MN(S)		1.7	0.6
	MN(S)		0.8	1.0		ME(S)		1.3	0.9
	ME(S)		0.4	1.1		P-S: 46.5s			
	P-S: 39.5s				5	ePZX	01 52 45.2		
4	ePZX	21 22 28.7				eSZX	53 27.5		
	eSN	23 10.6				MZ(S)		1.4	0.8
	MZ(S)		1.4	0.8		MN(S)		2.3	0.7
	MN(S)		2.1	0.8		ME(S)		1.5	0.9
	ME(S)		1.7	0.8		P-S: 42.3s			
	P-S: 41.9s				5	ePZX	02 44 19.1		
4	ePZX	21 30 02.3				eSN	45 02.8		
	eSN	30 42.5				iXN	45 20.9		
	MZ(S)		0.6	1.1		MZ(X)		10.5	1.1
	MN(S)		0.6	1.1		MN(X)		21.3	1.0
	ME(S)		0.4	0.8		ME(X)		12.8	1.0
	P-S: 40.2s					P-S: 43.7s			
4	ePZ	22 02 03.5			5	ePZX	02 56 07.8		
	eSN	02 44.3				eSN	56 52.2		
	MZ(S)		1.4	0.8		MZ(S)		0.5	0.6
	MN(S)		3.0	0.9		MN(S)		1.4	0.7
	ME(S)		2.4	0.9		ME(S)		0.8	0.7
	P-S: 40.8s					P-S: 44.4s			
4	ePZX	22 55 36.9			5	ePZX	04 37 49.4		
	eSN	56 16.5				eSZX	38 32.1		
	eXN	56 28.6				MZ(S)		1.3	1.2
	MZ(X)		13.5	1.1		MN(S)		1.7	0.9
	MN(X)		19.3	1.4		ME(S)		1.8	0.8
	ME(X)		14.0	1.3		P-S: 42.7s			
	P-S: 39.6s								

## Kamikireusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec	
5	ePZX	05 <sup>h</sup> 15 <sup>m</sup> 55.8 <sup>s</sup>			5	ePZX	14 <sup>h</sup> 14 <sup>m</sup> 53.6 <sup>s</sup>			
	iXZX	15 58.6				eSN	15 31.4			
	iSN	16 34.4				MZ(S)		0.8	1.0	
	MZ(S)		3.0	0.8		MN(S)		1.5	0.8	
	MN(S)		5.4	0.9		ME(S)		1.1	0.8	
	ME(S)		4.0	0.8						
		P-S: 38.6s								
5	ePZX	05 40 09.0			5	ePZX	14 35 52.3			
	eSN	40 51.0				eSN	36 36.4			
	MZ(S)		0.5	0.8		MZ(S)		0.5	0.5	
	MN(S)		0.9	1.0		MN(S)		0.8	0.6	
	ME(S)		0.6	0.9		ME(S)		0.5	0.6	
			P-S: 42.0s							
5	ePZX	06 17 16.5			5	ePZX	15 13 42.2			
	eSN	17 57.0				eSN	14 21.9			
	MZ(S)		7.4	1.1		MZ(S)		7.2	0.9	
	MN(S)		7.7	0.9		MN(S)		8.0	0.9	
	ME(S)		8.6	1.0		ME(S)		7.7	1.0	
			P-S: 40.5s							
5	ePZX	08 32 43.5			5	ePZX	20 45 52.4			
	eSZX	33 54.2				eSN	46 31.0			
	MZ(S)		0.7	1.0		MZ(S)		0.7	0.8	
	MN(S)		0.8	1.0		MN(S)		0.8	0.7	
	ME(S)		0.8	1.1						
			P-S: 1m 10.7s, P-F: 2m 45s							
5	ePZX	08 53 46.5			5	ePZX	21 21 29			
	eSN	54 29.3				eSX	22 07.7			
	MZ(S)		0.8	0.8		MZ(S)		1.4	1.1	
	MN(S)		1.5	1.0		MN(S)		2.5	1.0	
	ME(S)		1.0	0.8						
			P-S: 42.8s							
5	ePZX	09 19 27.3			5	ePZX	21 59 53.2			
	iXZX	19 25.3				eSN	22 00 31.6			
	eSZX	20 08.3				MZ(S)		2.6	0.8	
	MZ(S)		3.6	0.9		MN(S)		>5		
	MN(S)		5.2	0.7						
	ME(S)		4.8	0.9						
		P-S: 41.0s								
5	ePZX	11 49 34.3			6	ePZX	01 04 50.6			
	eSN	49 57.5				eSN	05 32.7			
	MZ(S)		>7			MZ(S)		0.5	0.8	
	MN(S)		7.5	0.5		MN(S)		0.7	0.7	
	ME(S)		6.3	0.5						
			P-S: 23.2s, P-F: 2m 15s							
5	ePZX	13 05 45.1			6	ePZX	05 16 14.1			
	iSN	06 29.0				eSZX	16 55.6			
	MZ(S)		4.1	1.4		MZ(S)		1.2	0.9	
	MN(S)		7.0	1.4		MN(S)		1.3	0.9	
	ME(S)		4.7	1.0						
			P-S: 43.9s							

## Kamikireusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
6	ePZX	07 <sup>h</sup> 49 <sup>m</sup> 02.6 <sup>s</sup>			7	ePZX	07 <sup>h</sup> 43 <sup>m</sup> 01.0 <sup>s</sup>		
	eSZX	49 19.4				iSN	43 17.0		
	MZ(S)		0.6	0.6		MZ(S)		2.9	0.5
	MN(S)		0.7	0.4		MN(S)		7.0	0.3
			P-S: 16.8s			ME(S)		3.4	0.3
6	ePZX	11 38 35.8			7	ePZX	09 26 46.5		
	eSN	39 16.1				eSN	30 48		
	MZ(S)		2.3	0.8		MZ(P)		0.8	0.7
	MN(S)		>4			MN(S)		1.0	0.6
			P-S: 40.3s			ME(S)		0.6	1.4
6	ePZX	11 40 04			7	ePZX	13 04 42.3		
	eSZX	40 51.2				eSN	05 34.0		
	MZ(S)		1.5	0.6		MZ(S)		1.2	0.9
	MN(S)		>3			MN(S)		3.3	0.7
			P-S: 47s			ME(S)		2.2	0.8
6	ePZX	13 11 21.5			7	ePZX	13 12 29.3		
	eSZX	12 45.3				eSN	13 25.4		
	MZ(P)		0.9	0.5		iXN	13 50.1		
	MN(S)		>1			MZ(X)		4.8	0.7
			P-S: 1m 23.8s, P-F: 2m 30s			MN(X)		12.7	0.7
						ME(X)		5.1	0.6
6	ePZX	14 13 11.0			7	ePZX	13 16 39.1		
	eSN	13 51.6				eSZX	17 25.2		
	MZ(S)		0.5	0.9		MZ(S)		0.6	0.7
	MN(S)		0.7	1.0		MN(S)		1.0	1.1
			P-S: 40.6s			ME(S)		0.8	1.4
6	ePZX	15 49 45.1			7	ePZX	13 33 46.3		
	eXZX	49 54.4				eSN	34 47.9		
	eSZX	52 52.4				MZ(S)		0.7	1.0
	MZ(X)		1.3	0.5		MN(S)		1.2	0.7
	MN(X)		0.7	0.5		ME(S)		0.7	0.8
			P-S: 3m 07.3s						
6	ePZX	18 51 57			7	ePZX	14 07 15.1		
	eSZX	55 15				eSN	07 54.2		
	MZ(P)		0.5	0.6		MZ(S)		0.5	0.7
	MN(P)		0.8	0.9		MN(S)		1.3	0.9
			P-S: 3m 17s			ME(S)		0.8	0.8
6	iPZX	20 39 11.0	+1.0		7	ePZX	16 29 41.3		
	MZ(P)		0.8	1.7		eSN		0.5	1.1
	MN(P)		0.5	1.8		MZ(X)		0.7	1.2
	ME(P)		0.4	1.3		MN(X)		0.5	1.2
						ME(X)			
6	ePZX	20 45 37.0			7	ePZX	17 05 11.5		
	eSN	46 15.0				eSN	05 51.7		
	MZ(S)		0.7	0.5		MZ(S)		1.2	0.8
	MN(S)		1.2	0.6		MN(S)		2.0	0.7
	ME(S)		1.0	0.7		ME(S)		1.9	1.0
			P-S: 38.0s						
6	ePZX	21 10 42.9			7	ePZX	17 05 11.5		
	iSZX	10 52.3				eSN	05 51.7		
	MZ(S)		0.8	0.3		MZ(S)		1.2	0.8
	MN(S)		1.9	0.5		MN(S)		2.0	0.7
	ME(S)		1.4	0.4		ME(S)		1.9	1.0
			P-S: 09.4s, P-F: 1m 05s						

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
7	ePZX	19 <sup>h</sup> 37 <sup>m</sup> 03.2 <sup>s</sup>			8	ePZX	17 <sup>h</sup> 35 <sup>m</sup> 24 <sup>s</sup>		
	iSZX	37 12.7				eSZX	36 26.1		
	MZ(S)		0.8	0.4		MZ(S)		0.7	0.8
	MN(S)		1.7	0.5		MN(S)		1.8	0.9
	ME(S)		1.2	0.3		ME(S)		1.0	0.8
	P-S: 09.5s, P-F: 45s					P-S: 1m 02s, P-F: 2m 25s			
7	ePZX	21 16 03.9			8	ePZX	18 00 21.3		
	iXZX	16 06.7				eSZX	00 55.9		
	iSE	16 51.5				MZ(S)		0.8	1.0
	MZ(S)		37.6			MN(S)		1.3	0.8
	MN(S)		36.2	1.4		ME(S)		1.2	0.7
	ME(S)		30.4	1.1		P-S: 34.6s, P-F: 2m 25s			
	P-S: 47.6s				8	iPZX	20 10 08.8	-1.2	
8	ePZX	00 33 05.4				iSN	10 33.9		
	eSN	33 48.7				MZ(S)		11.9	1.1
	MZ(S)		0.8	0.7		MN(S)		20.4	0.8
	MN(S)		1.7	0.8		ME(S)		11.2	0.7
	ME(S)		1.3	0.8		P-S: 25.1s, P-F: 3m 25s			
	P-S: 43.3s				8	iPZX	21 05 01.8	+1.0	
8	ePZX	02 34 25.4				eSN	05 52.4		
	eSN	35 10.4				MZ(S)		>35	
	eXN	35 33				MN(S)		58.5	1.0
	MZ(X)		1.1	0.7		ME(S)		>45	
	MN(X)		1.5	1.1		P-S: 50.6s, P-F: 7m 50s			
	ME(X)		1.2	0.8	8	ePZX	22 21 44.7		
	P-S: 45.0s, P-F: 2m 45s					eSN	22 27.6		
8	ePZX	02 43 37.8				MZ(S)		13.5	1.1
	eSN	44 26.1				MN(S)		23.4	0.9
	eXN	44 48.9				ME(S)		22.2	1.1
	MZ(X)		0.7	0.9		P-S: 42.9, P-F: 5m 50s			
	MN(X)		1.2	1.0	8	ePZX	22 31 52.8		
	ME(X)		0.9	1.0		eSN	32 33.1		
	P-S: 48.3s, P-F: 2m 55s					MZ(S)		0.9	0.8
8	ePZX	10 04 30				MN(S)		1.8	0.8
	eSN	05 16.8				ME(S)		1.0	0.7
	eXN	05 38				P-S: 40.3s, P-F: 2m 20s			
	MZ(X)		0.5	1.0	8	ePZX	22 34 59.6		
	MN(X)		0.9	1.3		eSN	35 38.1		
	ME(X)		0.6	1.2		MZ(S)		0.7	0.8
	P-S: 47s, P-F: 2m 20s					MN(S)		1.5	0.8
8	ePZX	15 39 25.4				ME(S)		1.1	0.9
	eSN	40 05.4				P-S: 38.5s, P-F: 1m 50s			
	MZ(S)		1.2	0.8	8	ePZX	23 40 42.5		
	MN(S)		1.8	0.7		eSN	41 28.2		
	ME(S)		1.3	0.7		MZ(P)		0.7	0.2
	P-S: 40.0s					MN(S)		0.9	0.6
8	ePZX	16 10 12.6				ME(P)		0.6	0.2
	eSZX	10 51.3				P-S: 45.7s, P-F: 1m 50s			
	MZ(S)		0.7	0.8	9	ePZX	02 24 27.5		
	MN(S)		0.8	1.1		iXZX	24 30.0		
	ME(S)		0.6	1.6		eSN	25 22.6		
	P-S: 38.7s, P-F: 1m 50s					MZ(S)		2.9	1.0
						MN(S)		5.3	1.1
						ME(S)		5.3	1.0
	P-S: 55.1s, P-F: 3m 30s								

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
9	ePZX	06 <sup>h</sup> 34 <sup>m</sup> 02.5 <sup>s</sup>			11	ePZX	02 <sup>h</sup> 22 <sup>m</sup> 39.3 <sup>s</sup>		
	eSN	34 42.9				eSN	23 16.1		
	MZ(S)		0.9	0.8		MZ(S)		0.6	0.6
	MN(S)		1.8	0.8		MN(S)		1.3	0.7
	ME(S)		1.0	0.9		ME(S)		0.9	0.7
	P-S: 40.4s, P-F: 2m 20s					P-S: 36.8s, P-F: 2m 20s			
9	ePZX	07 50 49.1			11	ePZX	06 39 12.4		
	eSN	51 30.6				eSN	40 01.1		
	MZ(S)		0.5	0.7		MZ(S)		0.7	0.6
	MN(S)		0.8	0.5		MN(S)		1.2	1.2
	ME(S)		0.5	0.7		ME(S)		1.0	0.9
	P-S: 41.5s, P-F: 1m 35s					P-S: 48.7s, P-F: 2m 35s			
9	ePZX	08 02 10.0			11	ePZX	15 34 50.4		
	eSN	03 26.9				eSZX	35 31.1		
	MZ(S)		2.0	0.6		MZ(S)		0.5	0.9
	MN(S)		3.8	0.6		MN(S)		0.7	0.8
	ME(S)		2.9	0.7		ME(S)		0.4	0.8
	P-S: 1m 16.9s, P-F: 3m 25s					P-S: 40.7s, P-F: 1m 55s			
9	ePZX	20 25 33.2			11	iPZX	21 17 14.6	+2.2	
	iSZX	25 50.3				eSZX	19 59.3		
	MZ(S)		0.8	0.4		MZ(P)		3.6	0.7
	MN(S)		2.9	0.3		MN(S)		2.3	0.7
	ME(S)		0.8	0.2		ME(S)		3.0	1.0
	P-S: 17.1s, P-F: 1m 00s					P-S: 2m 45.2s, P-F: 6m 15s			
10	ePZX	06 56 47.6			12	ePZX	00 55 39.2		
	eSN	57 29.1				iSZX	55 44.4		
	MZ(S)		0.9	0.8		MZ(S)		0.5	0.3
	MN(S)		1.8	0.8		MN(S)		0.9	0.3
	ME(S)		1.0	0.9		ME(S)		0.8	0.2
	P-S: 41.5s, P-F: 2m 20s					P-S: 05.2s, P-F: 25s			
10	iPZX	10 50 55.3	+0.6		12	ePZX	03 04 59.1		
	eSN	51 10.9				eSZX	05 10.9		
	MZ(S)		0.7	0.4		MZ(S)		0.5	0.3
	MN(S)		1.6	0.3		MN(S)		1.3	0.2
	ME(S)		1.0	0.3		ME(S)		0.6	0.2
	P-S: 15.6s, P-F: 1m 10s					P-S: 11.8s, P-F: 25s			
10	ePZX	18 57 23.9			12	ePZX	03 24 06.5		
	eSN	58 04.2				eSN	24 51.1		
	MZ(S)		2.0	1.0		MZ(S)		0.6	0.9
	MN(S)		2.5	0.9		MN(S)		1.1	1.0
	ME(S)		2.2	1.0		ME(S)		0.7	0.8
	P-S: 40.3s, P-F: 2m 55s					P-S: 44.6s, P-F: 1m 30s			
10	ePZX	19 01 51.3			12	ePZX	05 36 49.8		
	eSE	03 16.0				eSN	37 31.1		
	MZ(S)		>10			MZ(S)		0.5	0.6
	MN(S)		>13			MN(S)		0.9	0.6
	ME(S)		9.0	1.0		ME(S)		0.5	0.8
	P-S: 1m 24.7s, P-F: 10m 50s					P-S: 41.3s, P-F: 1m 50s			
11	iPZX	02 13 43.2	-1.0		12	ePZX	10 10 59		
	eSZX	13 51.4				eSN	11 40.2		
	MZ(S)		0.5	0.7		MZ(S)		0.9	0.6
	MN(S)		0.8	0.3		MN(S)		1.1	0.7
	ME(S)		0.4	0.5		ME(S)		0.7	0.7
	P-S: 08.2s, P-F: 42s					P-S: 41s, P-F: 1m 45s			



## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
18	iPZX MZ(P) MN(P) ME(P)	02 <sup>h</sup> 27 <sup>m</sup> 00.7 <sup>s</sup>	-0.5		20	ePZX eSZX MZ(S) MN(S) ME(S)	04 <sup>h</sup> 51 <sup>m</sup> 33.9 <sup>s</sup> 52 12.9		
			0.9 0.6 0.4	0.8 1.0 0.6			1.4 3.1 1.5	0.7 0.7 0.9	
18	ePZX MZ(P) MN(P) ME(P)	18 37 51.0	0.5 0.4 0.3	0.8 0.9 0.6					
18	ePZX eSN MZ(S) MN(S) ME(S)	19 19 23.5 20 13.7	0.7 1.5 0.7	0.6 0.8 0.6	20	iPZX ePPZX eSZX eLgZXX MZ(P) MN(P) ME(P)	07 58 01.7 08 01 03.2 08 10 28 11	+2.6	
							2.1 2.1 0.9	2.9 2.6 1.8	
19	ePZX eSN MZ(S) MN(S) ME(S)	01 40 20.9 40 57.7	0.8 1.7 1.0	0.6 0.6 0.7	20	ePZX MZ(S) MN(S) ME(S)	16 16	0.9 0.9 0.8	0.7 0.7 0.6
19	ePZX eSZX MZ(S) MN(S) ME(S)	07 26 42.7 27 42.7	0.7 0.8 0.3	0.9 0.7 1.0	20	ePZX eSN MZ(S) MN(S) ME(S)	21 00 17.4 01 03.6	1.3 2.3 1.6	0.7 1.0 0.8
19	ePZX eSN MZ(S) MN(S) ME(S)	18 18 18.0 18 53.4	2.0 4.5 2.5	0.6 0.8 1.0	21	ePZX eSN MZ(S) MN(S) ME(S)	02 30 55.4 31 09.0	39.1 76.7 >50	0.8 0.8
19	ePZX eSN MZ(S) MN(S) ME(S)	19 48 51.4 49 29.0	7.2 11.1 6.6	0.7 0.9 1.0	21	ePZX eSN MZ(S) MN(S) ME(S)	08 17 21.8 17 50.5	1.3 2.9 2.0	0.7 0.6 0.7
19	ePZX MZ(P) MN(P) ME(P)	23 03 48.7	0.5 0.5 0.4	1.2 1.7 1.4	21	eXZX MZ(X) MN(X) ME(X)	08 55 02	0.5 0.5 0.3	1.0 1.2 1.1
19	ePZX eSN iXN MZ(X) MN(X) ME(X)	23 49 24.1 50 13.0 50 31.6	4.1 6.9 5.0	0.9 0.8 0.8	21	ePZX MZ(P) MN(P) ME(P)	10 48 16.5	0.9 0.8 0.5	1.4 1.4 1.3
20	eX1ZX eX2ZX MZ(X1) MN(X1) ME(X1)	01 19 17 25 13	0.8 1.8 1.0	1.9 2.2 2.3	21	iPZX eSN MZ(S) MN(S) ME(S)	13 25 38.0 26 05.5	-1.2 1.8 4.0 1.6	0.8 0.8 0.3 0.4

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
21	ePZX MZ(P) MN(P) ME(P)	15 <sup>h</sup> 24 <sup>m</sup> 18.5 <sup>s</sup>	0.8 0.3 0.3	0.8 0.8 0.9	23	ePZX iXZX eSN MZ(S) MN(S) ME(S)	19 <sup>h</sup> 16 <sup>m</sup> 55.3 <sup>s</sup> 16 57.4 17 38.5		
21	ePZX MZ(P) MN(P) ME(P)	15 26 58.9	2.0 0.8 0.9	0.8 0.9 0.7					
21	ePZX eSN MZ(S) MN(S) ME(S)	15 39 01.9 39 45.8	3.1 5.0 3.3	0.8 0.9 0.9	23	iPZX eSZX MZ(P) MN(P) ME(P)	20 05 26.9 10 05.8	-1.0	
21	ePZX MZ(P) MN(P) ME(P)	18 06 28.4	0.6 0.4 0.4	0.9 1.0 1.0	23	ePZX eSZX MZ(S) MN(S) ME(S)	23 25 09.5 25 42.7	0.8 1.5 0.7	0.7 0.7
21	iPZX MZ(P) MN(P) ME(P)	21 41 59.1	+1.2 0.7 0.6 0.4	1.1 1.2 1.5	24	ePZX eSZX MZ(S) MN(S) ME(S)	01 08 19.6 08 57.3	0.7 1.0 0.8	0.8 0.8
22	ePZX eSZX MZ(S) MN(S) ME(S)	00 04 05.2 05 01.4	0.8 1.2 0.7	0.9 0.8 0.6	24	ePZX eSZX MZ(P) MN(S) ME(S)	07 49 01.2 50 22.5	0.7 0.9 0.4	0.4 0.3
22	iPZX MZ(P) MN(P) ME(P)	00 41 32.6	+1.4 1.2 0.5 0.4	0.8 0.8 1.5	24	iPZX MZ(P) MN(P) ME(P)	10 23 36.0	+0.6 0.6 0.4 0.3	1.5 1.3 1.7
22	ePZX eSN MZ(S) MN(S) ME(S)	10 04 09.2 04 31.5	1.1 1.7 1.7	0.9 0.9 0.9	24	iPZX iSN MZ(S) MN(S) ME(S)	21 51 06.9 51 12.9	+0.8 3.1 13.8 7.5	0.4 0.4 0.2
23	iPZX MZ(P) MN(P) ME(P)	02 52 53.7	+0.6 0.8 0.4 0.3	1.0 1.1 1.0	25	ePZX eSZX MZ(P) MN(P) ME(S)	00 26 31.3 28 08.1	0.5 1.0 1.0	0.9 0.9 1.4
23	iPZX eSZX MZ(P) MN(S) ME(S)	12 08 47.9 10 01.5	-1.2 1.0 1.9 0.9	0.6 0.6 0.3 0.5	25	ePZX eSZX MZ(P) MN(P) ME(S)	00 36 20.5 37 59.4	0.8 0.8 0.7	0.9 1.2 1.2

## Kamikineusu, February 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
25	ePZX	01 <sup>h</sup> 03 <sup>m</sup> 35.4 <sup>s</sup>			26	iPZX	22 <sup>h</sup> 38 <sup>m</sup> 59.9 <sup>s</sup>	+50	
	eSZX	05 03.3				MZNE		50	
	MZ(P)		0.5	0.7			P-F: 6m 45s		
	MN(P)		0.8	0.9	27	ePZX	08 16 55.9		
	ME(P)		0.4	0.7		MZ(P)		0.7	0.8
		P-S: 1m 27.9s, P-F: 2m 20s				MN(P)		0.3	1.2
25	ePZX	03 09 17.4				ME(P)		0.3	0.7
	iSN	09 40.5			27	iPZX	08 41 04.0	+0.9	
	MZ(S)		1.1	0.5		eSN	41 21.2		
	MN(S)		2.0	0.7		MZ(S)		0.6	0.3
	ME(S)		1.6	0.5		MN(S)		1.5	0.5
		P-S: 23.1s, P-F: 1m 40s				ME(S)		0.8	0.6
25	ePZX	04 56 05.5					P-S: 17.2s, P-F: 55s		
	iSN	56 40.9			27	ePZX	11 54 47.4		
	MZ(S)		2.4	0.5		iXZX	54 50.0		
	MN(S)		4.5	0.7		eSN	55 28.3		
	ME(S)		2.9	0.7		MZ(S)		6.4	0.9
		P-S: 35.4s, P-F: 2m 00s				MN(S)		11.2	0.7
25	iPZX	19 26 48.6	-1.8			ME(S)		7.1	0.7
	eSN	27 29.2					P-S: 40.9s, P-F: 4m 25s		
	MZ(S)		16.7	0.8	27	ePZX	12 15 37.1		
	MN(S)		>35			eSZX	16 15.8		
	ME(S)		>25			MZ(S)		0.5	0.7
		P-S: 40.6s, P-F: 6m 00s				MN(S)		0.9	0.7
26	iPZX	03 14 17.1	+0.8			ME(S)		0.6	0.7
	MZ(P)		0.6	0.9			P-S: 38.7s, P-F: 2m 20s		
	MN(P)		0.3	0.9	27	ePZX	14 25 10.7		
	ME(P)		0.3	0.8		MZ(P)		0.5	1.5
26	ePZX	05 01 39.5				MN(P)		0.6	1.3
	eSN	02 31.4				ME(P)		0.4	1.4
	MZ(S)		11.9	0.6	28	ePZX	21 10 20.5		
	MN(S)		18.9	0.5		eSN	12 09.3		
	ME(S)		15.9	0.8		eScSZX	22 23		
		P-S: 51.9s, P-F: 6m 55s				MZNE(S)		S0	
26	iPZX	06 19 07.8	+0.4				P-S: 1m 48.8s, P-F: 13m		
	iSZX	19 46.5			29	ePZX	01 17 29.3		
	MZ(S)		2.5	0.6		eSN	18 11.8		
	MN(S)		4.6	0.5		MZ(S)		0.6	0.8
	ME(S)		2.9	0.6		MN(S)		1.4	0.7
		P-S: 38.7s, P-F: 3m 25s				ME(S)		0.9	0.8
26	iPZX	14 32 54.3	-0.9				P-S: 42.5s, P-F: 2m 45s		
	eSZX	34 22.6			29	iPZX	06 11 11.4	+0.9	
	MZ(P)		1.4	0.5		MZ(P)		0.9	0.8
	MN(P)		0.9	0.6		MN(P)		0.5	1.0
	ME(S)		0.6	0.6		ME(P)		0.3	0.6
		P-S: 1m 28.3s, P-F: 2m 25s			29	ePZX	16 32 59.3		
26	iPZX	19 55 55.1	-0.5			eSZX	34 59.2		
	eSN	20 00 27.0				MZ(S)		0.5	0.8
	eLg2ZX	06 04				MN(S)		0.6	0.5
	MZ(P)		6.8	1.4		ME(S)		0.4	0.7
	MN(P)		4.5	1.4			P-S: 1m 59.9s, P-F: 2m 45s		
	ME(P)		5.8	1.7					
		P-S: 4m 31.9s							

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
1	ePZX	00 <sup>h</sup> 49 <sup>m</sup> 30.7 <sup>s</sup>			3	ePZX	03 <sup>h</sup> 42 <sup>m</sup> 39.4 <sup>s</sup>		
	eSN	51 57.3				iSN	42 50.4		
	MZ(P)		5.5	0.6		MZ(S)		1.4	0.6
	MN(P)		4.2	0.6		MN(S)		4.7	0.3
	ME(P)		4.8	0.6		ME(S)		1.5	0.6
		P-S: 2m 26.6s, P-F: 4m 15s					P-S: 11.0s, P-F: 55s		
1	ePZX	01 22 05.7			3	ePZX	06 09 31.4		
	eSZX	23 26.2				eSN	09 39.7		
	MZ(S)		1.0	1.1		MZ(S)		0.8	0.6
	MN(S)		1.0	1.4		MN(S)		1.8	0.3
	ME(S)		0.8	1.2		ME(S)		0.8	0.2
		P-S: 1m 20.5s, P-F: 2m 45s					P-S: 08.3s, P-F: 35s		
1	ePZX	01 39 56.5			3	iPZX	08 44 43.3	+2.2	
	eSZX	41 28.8				MZ(P)		2.2	0.9
	MZ(S)		0.8	1.2		MN(P)		1.3	1.0
	MN(S)		1.0	1.1		ME(P)		0.7	1.1
	ME(S)		0.7	1.1			P-S: 52.3s, P-F: 3m 40s		
		P-S: 1m 32.3s, P-F: 3m 00s			4	ePZX	01 16 15.6		
1	ePZX	03 43 00.2				eSN	17 07.9		
	eSZX	43 31.1				MZ(S)		0.9	0.7
	MZ(S)		1.1	0.7		MN(S)		1.7	0.8
	MN(S)		1.6	0.6		ME(S)		0.9	0.7
	ME(S)		1.2	0.9			P-S: 32.7s, P-F: 1m 45s		
		P-S: 30.9s, P-F: 2m 05s			4	ePZX	06 14 20.4		
1	iPZX	07 07 45.1	+2.8			eSZX	14 53.1		
	eSN	07 53.3				MZ(S)		0.8	0.6
	MZ(S)		2.1	0.6		MN(S)		2.0	0.6
	MN(S)		3.9	0.5		ME(S)		2.0	0.7
	ME(S)		1.9	0.3			P-S: 32.7s, P-F: 1m 45s		
		P-S: 08.2s, P-F: 1m 15s			4	iPZX	08 03 08.6	-1.6	
2	ePZX	08 11 20.4				epPZX	04 35		
	eSN	11 38.5				eX1ZX	05 33		
	iXN	12 00.4				eSN	09 10		
	MZ(X)		4.8	1.0		eX2N	09 31		
	MN(X)		7.3	0.7		MZ(F)		3.9	1.1
	ME(S)		4.0	0.4		MN(P)		2.1	1.0
		P-S: 18.1s, P-F: 2m 15s				ME(P)		1.4	1.1
2	iPZX	08 30 33.5	-0.3				P-S: 6m 01s		
	iXZX	30 33.9			4	ePZX	12 32 06.3		
	eSN	30 41.2				eSZX	33 07.4		
	MZ(S)		6.8	0.8		MZ(S)		0.5	0.7
	MN(S)		14.4	0.5		MN(S)		0.5	0.6
	ME(S)		13.0	0.5		ME(S)		0.4	0.8
		P-S: 07.7s, P-F: 2m 25s					P-S: 1m 01.1s, P-F: 2m 10s		
2	ePZX	23 54 17.9			4	ePZX	18 21 54.9		
	eSN	54 55.0				eSN	22 23.9		
	iXN	55 10.9				MZ(S)		4.2	0.8
	MZ(X)		7.1	0.7		MN(S)		6.8	1.0
	MN(X)		12.5	0.6		ME(S)		3.6	0.8
	ME(X)		8.7	0.6			P-S: 29.0s, P-F: 4m 25s		
		P-S: 37.2s, P-F: 2m 55s			4	ePZX	18 32 00.2		
3	ePZX	03 31 30.2				eSZX	32 39.1		
	eSZX	32 19.5				MZ(S)		1.4	0.6
	MZ(S)		0.8	0.8		MN(S)		1.9	0.7
	MN(S)		1.5	0.7		ME(S)		1.5	0.6
	ME(S)		0.7	0.6			P-S: 38.9s, P-F: 2m 05s		
		P-S: 48.3s, P-F: 2m 15s							

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
		h <sup>m</sup> s <sup>s</sup>	mm	sec			h <sup>m</sup> s <sup>s</sup>	mm	sec
4	iPZX	19 <sup>h</sup> 04 <sup>m</sup> 31.9 <sup>s</sup>	-0.5		6	ePZX	13 <sup>h</sup> 26 <sup>m</sup> 42.6 <sup>s</sup>		
	eSZX	04 46.5				eSZX	27 26.1		
	MZ(S)		0.9	0.4		MZ(S)		1.2	0.4
	MN(S)		1.3	0.5		MN(S)		2.9	0.7
	ME(S)		0.7	0.5		ME(S)		1.0	0.4
	P-S: 14.6s,					P-S: 43.5s, P-F: 1m 45s			
4	ePZX	19 05 03.0			6	ePZX	16 12 36.1		
	eSN	05 21.2				eSZX	12 43.9		
	MZ(S)		2.8	0.9		MZ(S)		0.5	0.3
	MN(P)		2.9	0.3		MN(S)		2.4	0.3
	ME(S)		2.3	1.0		ME(S)		1.0	0.3
	P-S: 18.2s, P-F: 3m 50s					P-S: 07.8s, P-F: 25s			
4	ePZX	20 53 07.5			6	ePZX	23 28 07.4		
	eSN	53 36.8				eSZX	28 48.5		
	MZ(S)		0.7	0.8		MZ(S)		0.9	0.7
	MN(S)		1.2	0.8		MN(S)		1.9	0.9
	ME(S)		0.6	0.6		ME(S)		1.4	0.8
	P-S: 28.3s, P-F: 2m 50s					P-S: 41.1s, P-F: 2m 20s			
5	ePZX	09 29 16.3			7	iPZX	01 52 50.0	-2.4	
	MZ(P)		0.6	0.8		eSZX	54 04.3		
	MN(P)		0.3	0.8		MZ(P)		10.9	0.5
	ME(P)		0.2	0.8		MN(S)		16.8	0.6
	P-S: 27.1s, P-F: 2m 45s					ME(S)		9.3	0.7
5	ePZX	16 41 47.1				P-S: 1m 14.3s, P-F: 4m 25s			
	eSN	42 14.2			7	ePZX	11 56 22.3		
	MZ(S)		1.0	0.7		eSN	57 40.0		
	MN(S)		1.4	0.6		MZ(S)		2.6	1.1
	ME(S)		1.2	0.8		MN(S)		2.5	1.3
	P-S: 27.1s, P-F: 2m 45s					ME(S)		2.5	1.1
6	ePZX	03 23 34.4				P-S: 1m 17.7s, P-F: 4m 20s			
	MZ(P)		0.9	1.1	7	ePZX	12 02 08		
	MN(P)		0.8	1.0		eSZX	03 08.3		
	ME(P)		0.6	1.3		MZ(S)		1.0	0.8
6	ePZX	03 45 02.5				MN(S)		1.4	0.7
	MZ(P)		0.7	1.0		ME(S)		0.6	0.8
	MN(P)		0.7	1.0		P-S: 1m 00s, P-F: 1m 55s			
	ME(P)		0.4	1.0	7	ePZX	17 44 34.8		
6	iPZ	05 09 40.2	+4.0			eXZX	44 44.5		
	iPN	40.2	-0.4			eSZX	45 30.6		
	iPE	40.3	+1.0			MZ(S)		0.6	0.6
	iSN	09 49.8				MN(S)		1.4	0.8
	MZ(P)		6.1	0.5		ME(S)		0.8	0.6
	MN(S)		15.0	0.5		P-S: 55.8s, P-F: 1m 40s			
	ME(S)		6.5	0.4	7	ePZX	21 42 15.9		
	P-S: 09.6s, P-F: 2m 15s					eSN	42 31.5		
6	ePZX	09 09 12.4				MZ(S)		1.4	0.6
	eSZX	09 52.7				MN(S)		2.2	0.4
	MZ(S)		0.8	1.0		ME(S)		1.7	0.3
	MN(S)		0.9	0.8		P-S: 15.6s, P-F: 1m 45s			
	ME(S)		0.7	0.7	7	eXZX	22 30 57		
	P-S: 40.3s, P-F: 2m 20s					MZ(X)		0.5	2.8
6	ePZX	09 14 07.7				MN(X)		0.6	2.2
	eSZX	15 26.7				ME(X)		0.5	2.3
	MZ(S)		3.7	1.1		P-S: 14.9s, P-F: 2m 35s			
	MN(S)		4.0	1.2					
	ME(S)		4.4	1.2					
	P-S: 1m 19.0s, P-F: 4m 20s								

## Kamikineusu, March

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.	
		h <sup>m</sup> s <sup>s</sup>	mm	sec			h <sup>m</sup> s <sup>s</sup>	mm	sec	
7	ePZX	23 <sup>h</sup> 57 <sup>m</sup> 05.7 <sup>s</sup>			12	ePZX	20 <sup>h</sup> 14 <sup>m</sup> 34.9 <sup>s</sup>			
	eSN	57 47.6				eSZX	15 18.2			
	MZ(S)		0.6	0.7		MZ(S)		0.6	0.5	
	MN(S)		1.2	0.7		MN(S)		1.5	0.7	
	ME(S)		0.9	0.8		ME(S)		0.8	0.8	
	P-S: 41.9s, P-F: 1m 55s					P-S: 43.3s, P-F: 2m 15s				
8	iPZX	13 43 55.7	-2.6		12	ePZX	22 30 10.6			
	eSZX	44 02.1				eSZX	31 37.8			
	MZ(S)		1.0	0.3		MZ(P)		0.5	0.5	
	MN(S)		2.2	0.2		MN(S)		1.0	0.4	
	ME(S)		1.2	0.2		ME(S)		0.5	0.5	
	P-S: 06.4s, P-F: 58s					P-S: 1m 27.2s, P-F: 2m 05s				
8	ePZX	14 14 39.9			13	ePZX	05 03 44.2			
	eSN	15 30.2				iXZX	03 47.6			
	MZ(S)		0.7	0.7		eSZX	03 58.3			
	MN(S)		1.6	0.7		MZ(S)		3.8	0.9	
	ME(S)		1.0	0.9		MN(S)		4.6	0.7	
	P-S: 50.3s, P-F: 2m 45s					ME(S)		3.6	0.5	
9	ePZX	12 28 02.7				P-S: 14.1s, P-F: 1m 50s				
	MZ(P)		0.6	0.9	13	iPZX	20 40 02.3	+0.6		
	MN(P)		0.4	0.9		eSN	40 18.1			
	ME(P)		0.4	0.8		eXN	40 27.5			
	P-S: 43.8s, P-F: 1m 25s					MZ(P)		4.1	0.3	
11	ePZX	01 25 25.2				MN(S)		3.6	0.3	
	eSZX	26 09.0				ME(S)		2.4	0.4	
	MZ(S)		0.5	0.4		P-S: 15.8s, P-F: 1m 55s				
	MN(S)		1.0	0.4	14	ePZX	05 12 00.9			
	ME(S)		0.5	0.5		eSN	13 30.6			
	P-S: 43.8s, P-F: 1m 25s					eRN	13 51			
11	ePZX	06 26 13.8				MZ(R)		1.6	1.2	
	eSN	26 52.2				MN(R)		2.5	0.9	
	MZ(S)		1.5	1.0		ME(R)		2.3	1.7	
	MN(S)		2.1	1.1		P-S: 1m 29.7s, P-F: 4m 10s				
	ME(S)		1.9	1.0	14	ePZX	05 36 05.5			
	P-S: 38.4s, P-F: 2m 55s					MZ(P)		0.8	1.9	
11	ePZX	14 00 03.3				MN(P)		0.5	1.3	
	eSN	00 41.5				ME(P)		0.5	1.3	
	MZ(S)		0.7	0.7	14	ePZX	08 30 37.9			
	MN(S)		1.3	0.7		eXZX	32 02.2			
	ME(S)		0.9	0.6		eSZX	32 04.4			
	P-S: 38.2s, P-F: 2m 10s					MZ(S)		1.5	0.4	
11	iPZX	17 37 36.8	-2.2			MN(S)		4.1	0.3	
	MZ(P)		0.9	0.9		ME(S)		2.0	0.4	
	MN(P)		0.8	1.4		P-S: 1m 26.5s, P-F: 3m 15s				
	ME(P)		0.6	1.2	14	ePZX	11 18 03.8			
11	ePZX	20 29 08.6				MZ(P)		0.6	0.7	
	iSN	29 23.5				MN(P)		0.4	0.8	
	MZ(S)		4.6	0.6		ME(P)		0.3	0.6	
	MN(S)		6.1	0.6		14	ePZX	22 33 43.5		
	ME(S)		4.6	0.6		eSZX	34 03.2			
	P-S: 14.9s, P-F: 2m 35s					MZ(S)		0.5	0.5	
						MN(S)		0.7	0.4	
						ME(S)		0.5	0.4	
	P-S: 19.7s, P-F: 45s									

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
15	eXZX MZ(X) MN(X) ME(X)	03 <sup>h</sup> 57 <sup>m</sup> 15.9 <sup>s</sup>	0.6 0.6 0.4	1.5 1.4 1.4	17	ePZX eSN MZ(P) MN(S) ME(S)	00 <sup>h</sup> 22 <sup>m</sup> 23.5 <sup>s</sup> 22 39.7	1.3 2.1 0.9	0.2 0.4 0.5
						P-S: 16.2s			
15	ePZX iX1ZX eSN iX2N MZ(X2) MN(X2) ME(X2)	05 05 54.4 05 53.4 06 32.8 06 46.4	4.0 9.4 6.2	0.6 0.6 0.5	17	ePZX eSN MZ(S) MN(S) ME(S)	09 34 19.3 34 54.9	7.2 9.7 8.2	0.9 0.8 1.0
						P-S: 35.6s, P-F: 3m 35s			
						P-S: 38.4s, P-F: 2m 55s			
15	ePZX eSN iXN MZ(X) MN(X) ME(X)	16 20 55.0 21 54.4 21 22.4	9.9 21.8 16.4	0.9 0.9 0.9	18	iPZX MZ(P) MN(P) ME(P)	05 22 13.2 3.0 1.9 1.2	+1.2 3.0 1.9 1.2	1.5 1.4 1.3
						P-S: 28.8s, P-F: 1m 15s			
						P-S: 59.4s, P-F: 6m 25s			
15	ePZX eSZX MZ(S) MN(S) ME(S)	22 28 18.0 29 49.5	0.6 0.3 0.5	0.5 0.5 0.6	18	ePZX eSN MZ(S) MN(S) ME(S)	10 33 08.1 33 36.9	0.9 0.9 0.6	0.6 0.5 0.6
						P-S: 28.8s, P-F: 1m 15s			
						P-S: 1m 31.5s, P-F: 2m 25s			
15	ePZX eSN MZ(S) MN(S) ME(S)	22 30 48 31 33.0	2.2 3.5 3.0	1.1 1.2 1.1	18	iPZX eSN MZ(P) MN(S) ME(S)	14 23 26.5 23 32.6	-4.2 0.5 2.0 0.7	0.2 0.3 0.3
						P-S: 06.1s, P-F: 25s			
						P-S: 45s, P-F: 3m 20s			
16	ePZX eSN MZ(S) MN(S) ME(S)	03 05 39.0 06 35.5	1.3 2.2 1.3	0.7 0.7 0.8	18	ePZX eSN MZ(S) MN(S) ME(S)	16 20 16.1 20 54.9	0.9 1.6 1.2	0.8 0.6 0.6
						P-S: 38.8s, P-F: 2m 20s			
						P-S: 56.5s			
16	eSN MZ(S) MN(S) ME(S)	03 07 11	1.8 3.5 1.9	0.6 0.7 0.9	18	ePZX eSN MZ(S) MN(S) ME(S)	17 45 00.5 45 08.1	1.6 4.8 3.1	0.4 0.3 0.3
						P-S: 07.6s, P-F: 1m 05s			
16	ePZX iSN MZ(S) MN(S) ME(S)	15 18 40.1 18 57.4	15.2 31.4 19.6	0.6 0.6 0.7	19	ePZX eSN MZ(S) MN(S) ME(S)	02 20 21.7 20 42.8	3.5 3.3 2.8	0.7 0.6 0.7
						P-S: 21.1s, P-F: 3m 15s			
						P-S: 17.3s, P-F: 3m 10s			
17	iPZX eSN MZ(S) MN(S) ME(S)	00 22 19.4 22 33.5	0.7 1.8 0.9	0.3 0.2 0.3	19	ePZX eSN MZ(S) MN(S) ME(S)	04 22 12.5 23 17.5	0.5 0.8 0.6	0.6 0.6 0.5
						P-S: 1m 05.0s, P-F: 2m 40s			
						P-S: 14.1s			

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
19	ePZX eSZX MZ(S) MN(S) ME(S)	04 <sup>h</sup> 29 <sup>m</sup> 46.6 <sup>s</sup> 31 14.9	0.5 0.5 0.5	0.7 0.8 0.9	21	ePZX eSZX MZ(S) MN(S) ME(S)	09 <sup>h</sup> 42 <sup>m</sup> 31.9 <sup>s</sup> 43 47.9	0.9 1.0 1.7	1.0 0.9 1.2
						P-S: 1m 16.0s, P-F: 4m 50s			
						P-S: 1m 28.3s, P-F: 3m 15s			
19	ePZX MZ(P) MN(P) ME(P)	10 47 14.8	0.5 0.5 0.3	1.8 1.3 1.3	21	ePZX eSZX MZ(S) MN(S) ME(S)	22 45 54.1 46 33.1	0.6 1.9 0.7	0.6 0.7 0.7
						P-S: 39.0s, P-F: 2m 05s			
20	ePZX eSZX MZ(S) MN(S) ME(S)	07 31 02.2 32 36.5	0.9 2.2 1.4	0.9 0.8 0.9	22	ePZX iSN MZ(S) MN(S) ME(S)	03 37 11.6 37 17.6	0.5 2.3 1.2	0.3 0.2 0.1
						P-S: 06.0s, P-F: 24s			
						P-S: 1m 34.3s, P-F: 3m 45s			
20	ePZX eSN MZ(S) MN(S) ME(S)	08 50 55.5 51 07.8	1.0 1.9 1.1	0.7 0.7 0.4	22	iPZX MZ(P) MN(P) ME(P)	11 15 12.0	-1.8 2.0 1.0 0.8	1.0 1.0 0.7
						P-S: 12.3s, P-F: 1m 25s			
20	iPZX eSN MZ(S) MN(S) ME(S)	13 05 56.5 06 01.7	4.0 12.7 5.2	0.5 0.3 0.5	23	ePZX eSN MZ(S) MN(S) ME(S)	05 35 57.3 36 51.8	17.3 27.5 24.1	0.7 1.2 1.2
						P-S: 54.5s, P-F: 11m			
						P-S: 05.2s, P-F: 2m 05s			
20	ePZX eSN iXN MZ(X) MN(X) ME(X)	20 36 05.9 36 54.3 37 18.8	10.4 31.5 16.1	0.6 1.0 0.9	23	ePZX MZ(P) MN(P) ME(P)	09 07 28.4	0.6 0.3 0.3	0.6 0.4 0.5
						P-S: 48.4s, P-F: 4m 25s			
21	ePZX eSN MZ(S) MN(S) ME(S)	01 17 37.6 18 33.8	1.4 2.2 1.2	0.8 0.7 0.6	23	ePZX eSZX eXZX MZ(X) MN(X) ME(X)	15 09 56.6 10 25.3 10 38	1.5 3.0 1.5	0.6 0.6 0.6
						P-S: 28.7s, P-F: 1m 20s			
						P-S: 15.0s, P-F: 1m 45s			
21	ePZX eSN MZ(S) MN(S) ME(S)	04 01 13.3 01 36.6	1.5 4.2 2.5	0.8 0.8 0.8	23	ePZX eSN MZ(S) MN(S) ME(S)	20 38 13.3 38 33.4	3.8 6.5 5.2	0.9 0.8 1.2
						P-S: 20.1s, P-F: 3m 20s			
						P-S: 56.2s, P-F: 2m 45s			
21	ePZX eSZX MZ(S) MN(S) ME(S)	06 51 24.8 51 41.9	0.5 0.7 0.5	0.5 0.4 0.5					
						P-S: 17.1s, P-F: 1m 25s			
						P-S: 23.3s, P-F: 2m 55s			

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
23	iPZX	23 <sup>h</sup> 12 <sup>m</sup> 38.1 <sup>s</sup>	+3.6		26	iPZ	04 <sup>h</sup> 25 <sup>m</sup> 48.4 <sup>s</sup>	-1.9	
	iSN	12 44.1				iPN	48.4	+0.3	
	MZ(S)		1.2	0.6		iPE	48.4	-0.5	
	MN(S)		2.4	0.3		iSN	23 55.5		
	ME(S)		2.4	0.4		MZ(S)		4.2	0.4
	P-S: 06.0s, P-F: 55s					MN(S)		13.4	0.3
24	iPZX	05 27 01.1	+2.0			ME(S)		5.6	0.5
	eSN	27 06.9				P-S: 07.1s, P-F: 1m 35s			
	MZ(S)		1.2	0.5	26	iPZ	09 50 37.1	-2.0	
	MN(S)		1.8	0.3		iPN	37.2	-0.7	
	ME(S)		3.4	0.3		iPE	37.2	-0.4	
	P-S: 05.8s, P-F: 43s					eXZX	51 32.0		
24	ePZX	11 13 58				iSN	57 33.0		
	eSZX	15 11.8				MZ(P)		3.2	0.9
	MZ(S)		0.9	0.8		MN(P)		2.0	0.9
	MN(S)		1.6	0.8		ME(P)		1.2	0.9
	ME(S)		1.0	1.5		P-S: 6m 55.8s			
	P-S: 1m 14s, P-F: 3m 10s				26	ePZX	15 23 06.1		
24	ePZX	16 36 08.3				eSN	23 19.7		
	eSZX	36 49.0				MZ(S)		0.8	0.6
	MZ(S)		1.3	0.7		MN(S)		1.6	0.6
	MN(S)		2.8	0.7		ME(S)		0.9	0.6
	ME(S)		2.0	0.6		P-S: 13.6, P-F: 1m 10s			
	P-S: 40.7s, P-F: 2m 25s				26	iPZX	16 01 55.4	+1.4	
24	ePZX	20 01 55.9				iSN	02 00.6		
	eSN	02 11.3				MZ(S)		0.6	0.3
	MZ(P)		0.8	0.4		MN(S)		4.8	0.2
	MN(S)		3.4	0.5		ME(S)		>2	
	ME(S)		2.1	0.6		P-S: 05.2s, P-F: 33s			
	P-S: 15.4s, P-F: 1m 30s				26	ePZX	19 44 10.4		
24	ePZX	21 11 01.4				eSZX	45 54.0		
	MZ(P)		3.5	0.3		MZ(S)		1.0	0.9
	MN(P)		2.5	0.4		MN(S)		1.2	0.8
	ME(P)		2.4	0.5		ME(S)		0.7	0.8
	P-S: 1m 43.6s, P-F: 3m 55s				27	iPZX	04 47 47.2	-2.0	
24	ePZX	21 11 13.2				iXZX	48 08.1		
	eSN	11 25.9				eSN	53 24		
	MZ(S)		22.8	1.2		MZ(X)		2.7	1.0
	MN(S)		39.0	0.9		MN(X)		5.8	1.0
	ME(S)		33.8	1.1		ME(X)		3.4	1.1
	P-S: 12.7s, P-F: 4m 10s					P-S: 5m 37s			
25	iPZX	06 46 54.5	-2.4		27	ePZX	10 28 00.2		
	iSZX	47 00.4				eSN	29 43.9		
	MZ(S)		2.4	0.4		MZ(P)		0.9	0.4
	MN(S)		7.9	0.4		MN(P)		0.9	0.5
	ME(S)		5.9	0.4		ME(P)		0.6	0.4
	P-S: 05.9s, P-F: 58s					P-S: 1m 43.7s, P-F: 2m 55s			
25	iPZX	16 48 15.8	-7.2		27	ePZX	11 00 27.4		
	eSN	48 24.0				eSZX	01 05.6		
	MZ(P)		1.7	0.4		MZ(S)		1.0	0.6
	MN(S)		2.2	0.6		MN(S)		2.1	0.8
	ME(S)		1.4	0.4		ME(S)		1.5	0.6
	P-S: 08.2s, P-F: 1m 30s					P-S: 38.2s, P-F: 2m 25s			

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp.	Per.	Date	Phase	Time(JST)	Amp.	Per.
			mm	sec				mm	sec
27	ePZX	13 <sup>h</sup> 55 <sup>m</sup> 02.6 <sup>s</sup>			28	iPZX	16 <sup>h</sup> 00 <sup>m</sup> 43.9 <sup>s</sup>	+1.4	
	iXZX	55 05.1				eSZX	00 56.2		
	eSN	56 55.6				MZ(P)		1.6	0.3
	MZ(S)		14.9	1.1		MN(S)		1.5	0.2
	MN(S)		24.4	1.1		ME(S)		0.8	0.3
	ME(S)		14.4	1.0		P-S: 12.3s, P-F: 45s			
	P-S: 1m 53.0s, P-F: 7m 50s				29	ePZX	07 31 42.6		
27	ePZX	15 11 49.9				eSZX	31 53.5		
	eSN	11 59.8				MZ(S)		0.8	0.6
	MZ(S)		0.8	0.7		MN(S)		1.3	0.4
	MN(S)		0.8	0.6		ME(S)		0.7	0.5
	ME(S)		0.9	0.6		P-S: 10.9s, P-F: 1m 15s			
	P-S: 09.9s, P-F: 45s				29	ePZX	11 10 58.7		
27	ePZX	16 17 07.1				eSZX	11 41.8		
	eSZX	17 43.8				MZ(S)		0.8	0.8
	MZ(S)		0.9	0.6		MN(S)		1.8	0.6
	MN(S)		2.1	0.9		ME(S)		0.8	0.7
	ME(S)		1.4	0.9		P-S: 43.1s, P-F: 2m 05s			
	P-S: 36.7s, P-F: 2m 50s				29	iPZX	13 34 16.6	+9.2	
27	iPZ	20 15 23.5	+2.0			iSN	34 22.2		
	iPN	23.5	-0.6			iXN	34 24.4		
	iPE	23.5	+0.4			MZ(X)		7.5	0.7
	iXN	15 38.3				MN(X)		16.3	0.3
	iSN	15 41.7				ME(X)		9.3	0.5
	MZ(S)		>10			P-S: 05.6s, P-F: 2m 30s			
	MN(S)		>25		29	ePZX	17 18 01.3		
	ME(S)		>10			eSZX	19 18.6		
	P-S: 18.2s, P-F: 3m 20s					MZ(S)		0.5	0.8
28	ePZX	00 06 58.9				MN(S)		0.5	0.8
	eSZX	07 39.3				ME(S)		0.3	0.7
	MZ(S)		0.6	0.6		P-S: 1m 17.3s, P-F: 2m 20s			
	MN(S)		1.2	0.5	29	ePZX	17 28 07.3		
	ME(S)		1.0	0.7		eSZX	28 57.0		
	P-S: 40.4s, P-F: 1m 50s					MZ(S)		0.6	0.8
28	ePZX	02 07 48.4				MN(S)		0.7	0.6
	eSZX	09 16.4				ME(S)		0.4	0.8
	MZ(S)		0.5	0.8		P-S: 49.7s, P-F: 2m 20s			
	MN(S)		0.9	0.8	29	ePZX	22 07 51.1		
	ME(S)		0.5	0.7		eSZX	08 21.2		
	P-S: 1m 28.0s, P-F: 3m 05s					MZ(S)		0.6	0.8
28	iPZX	03 54 31.1	-0.6			MN(S)		1.0	0.4
	eSN	55 21.7				ME(S)		0.5	0.6
	MZ(S)		1.5	1.4		P-S: 30.1s, P-F: 1m 40s			
	MN(S)		2.4	1.2	29	iPZ	23 30 42.4	+6.8	
	ME(S)		2.1	1.4		iPN	42.4	+2.6	
	P-S: 50.6s, P-F: 5m 40s					iPE	42.4	-1.2	
28	ePZX	07 45 20				iSN	31 09.5		
	MZ(P)		0.5	0.6		MZNE(S)		SO	
	MN(P)		0.3	0.9		P-S: 27.1s, P-F: 6m 40s			
	ME(P)		0.3	0.6	30	ePZX	03 26 24.0		
	P-S: 08.0s, P-F: 1m 00s					eSZX	27 56.8		
28	iPZX	10 24 39.7	+0.6			MZ(S)		0.7	0.7
	iSN	24 47.7				MN(S)		0.9	0.8
	MZ(P)		0.9	0.2		ME(S)		0.6	0.7
	MN(S)		3.9	0.3		P-S: 1m 32.8s, P-F: 3m 30s			
	ME(S)		1.4	0.3					

## Kamikineusu, March 1968

Date	Phase	Time(JST)	Amp. mm	Per. sec	Date	Phase	Time(JST)	Amp. mm	Per. sec
31	ePZX	07 <sup>h</sup> 32 <sup>m</sup> 28.1 <sup>s</sup>			31	ePZX	19 <sup>h</sup> 56 <sup>m</sup> 45.7 <sup>s</sup>		
	iXZX	32 30.4				eSN	57 30.7		
	eSN	33 05.2				MZ(S)		2.0	1.1
	MZ(X)		0.9	0.3		MN(S)		2.5	1.0
	MN(S)		1.4	0.4		ME(S)		1.7	1.1
	ME(S)		0.7	0.4					
	P-S: 37.1s, P-F: 1m 35s					P-S: 45.0s, P-F: 2m 30s			
31	ePZX	16 06 59.1			31	iPZX	22 36 49.5	-3.4	
	eSZX	07 45.1				iSN	36 56.8		
	MZ(S)		1.6	1.1		MZ(P)		1.0	0.4
	MN(S)		1.7	0.9		MN(S)		2.0	0.4
	ME(S)		1.5	1.0		ME(S)		1.4	0.4
	P-S: 46.0s, P-F: 2m 15s					P-S: 07.3s, P-F: 55s			

## \* Addenda

## January

29	ePZX	21 19 01.1		
	eSN	19 42.5		
	MZ(S)		0.5	0.7
	MN(S)		0.9	0.8
	ME(S)		0.6	0.7
	P-S: 41.4s			
29	ePZX	21 23 55.4		
	eSN	24 34.0		
	MZ(S)		2.5	1.0
	MN(S)		4.2	1.0
	ME(S)		2.7	1.0
	P-S: 38.6s			

## February

4	ePZX	21 10 14.3		
	eSN	10 51.1		
	MZ(S)		3.3	1.0
	MN(S)		5.7	1.1
	ME(S)		4.9	0.9
	P-S: 36.8s			
4	ePZX	21 19 54.0		
	eSN	20 34.1		
	MZ(S)		0.5	1.1
	MN(S)		0.6	0.8
	ME(S)		0.5	0.7
	P-S: 40.1s			

Errata to Nos. 1 and 2 of this bulletin:

All signs indicating the direction of the first motion should be reversed.



12 MAY 1969

Bulletin of the  
Urakawa Seismological Observatory

No. 4

April - September

1 9 6 8

Urakawa Seismological Observatory  
Faculty of Science, Hokkaido University

Japan

Urakawa Seismological Observatory

Station: Kamikineusu (KMU)

Location Latitude:  $42^{\circ}14'19''$  N, Longitude:  $142^{\circ}58'02''$  E, Hight: 185 m.

Instruments

	Abbr.	Comp	$T_S$ (sec)	$h_S$	$T_g$ (sec)	$h_g$	$\delta^z$	$V_{max}^*$
Film-recording Seismigraph	N	N-S	0.94	0.70	0.28	3.1	0.003	15,000
	E	E-W	0.93	0.73	0.25	3.0	0.003	15,000
	Z	U-D	0.91	0.70	0.34	1.8	0.003	19,000
	ZX	U-D	0.89	2.02	0.30	1.4	0.018	120,000
Tape-recording Seismograph	T-1	U-D	1.0	1.4	} forming a tripartite array			
	T-2	U-D	1.0	1.4				
	T-3	U-D	1.0	1.4				

\* When measured on a film-viewer of magnification 6.

For magnification curves see No. 3 of this bulletin.

Readings

(1) All earthquakes with maximum trace amplitude 0.5 mm or larger on the Z records measured on the X6 film-viewer are interpreted and listed in this bulletin, though many smaller shocks are recorded clearly on the ZX records and the magnetic tapes.

(2) Times of P and other phases except S are indicated using the Japanese Standard Time (JST).

$$JST = GMT + 9 \text{ hours.}$$

Times of S phases can be obtained by adding P-S to times of P. A mark i attached to the figures indicating P-S means that the corresponding S phase is iS.

(3) Amplitudes are the trace amplitudes for the maximum waves in the Z, N, and E records measured on the film-viewer. When the maximum waves appear in P or other phases except S, the names of the phases are attached to the figures indicating the periods of the maximum waves.

(4) Figures in the column "Initial motion" indicate the directions and amplitudes of the initial motions of P waves in the ZX records measured on the film-viewer. A plus sign means upward or compressional motion.

(5) Communications relating to this bulletin should be addressed to the director, Urakawa Seismological Observatory, Kamikineusu, Urakawa, Hokkaido, Japan.

Note

The data on earthquakes on May 16 and 17 are not complete due to overlapping of numerous aftershocks of a large earthquake off the southern coast of Hokkaido. These are attached to the end of this number.

Kamikineusu, April 1968

Date	Phase	Time(JST)			P-S		Amplitude(mm) • Period(sec)						Initial motion:(mm)
		h	m	s	m	s	Z	N	E				
1	iPZX	09	26	13.9			3.0	0.9	3.6	0.5	2.9	0.6	+0.4
1	ePZX	09	45	05.5									
	eX1N		45	22.7									
	eX2N		48	30	2	27	12.4	15.4X2	22.3	15.5X2			(+)
1	iPZX	11	03	38.1		23.9i	>30		>40		>25		+3.8
1	iPZX	12	44	48.5		09.6	1.0	0.4	1.5	0.3	1.3	0.6	+1.8
1	ePZX	13	31	58.6									
	iXZX	33	21.9			57.6	1.7	0.7X	1.5	0.7X	1.1	0.6X	
1	ePZX	14	40	16.1									
	iXZX	40	19.0			10.6i	0.7	0.3	2.3	0.4	1.6	0.3	
1	ePZX	16	16	25.3									
	eX1ZX	16		37.5									
	eX2ZX	20	30		1	48	1.9	1.3X1	1.8	1.3X1	1.3	1.4X1	
2	ePZX	07	21	37.6		21.3	0.9	0.6	1.9	0.4	1.6	0.4	
2	ePZX	20	50	25.8	1	02.7	0.6	1.5	0.7	1.0	0.7	1.3	
2	ePZX	22	34	02.3		30.5	0.8	0.6	1.3	0.5	0.8	0.6	
2	iPZ	23	26	56.1		08.1	>10		>15		>10		+6.2
3	ePZX	01	29	24.3		23.9i	2.3	0.5	2.5	0.7	3.7	0.4	
3	iPZX	02	54	49.9		16.9i	22.4	0.8	31.9		21.0		+0.6
3	iPZ	06	46	49.4		09.0i	>25		>30		>25		-3.0
3	ePZX	07	02	39.6	1	04.0	0.5	0.8	0.8	0.7	0.6	0.7	
4	ePZX	01	29	51			0.7	1.3P	0.7	1.2P	0.7	1.2P	
4	ePZX	19	55	58.5			0.5	1.0P	0.5	1.0P	0.3	1.0P	
5	ePZX	07	38	57.1		28.7i	2.2	0.6	3.0	0.7	2.4	0.7	
5	ePZX	08	15	21.6	1	49.0	0.7	0.6P	0.6	0.6P	0.5	0.7S	
6	ePZX	01	55	00.8	1	39.6	2.1	0.9	3.6	0.9	2.7	1.0	
6	ePZX	02	37	15.7		32.0	2.4	0.6	4.9	0.4	3.0	0.5	
6	ePZX	04	01	54.4	1	43.2	0.5	0.7	0.7	0.9	0.5	0.8	
6	ePZX	05	23	55.7		21.2	0.9	0.7	1.4	0.4	1.1	0.8	
6	ePZX	07	08	38.2	2	18.5	0.8	0.8	1.0	0.7	1.1	1.0	
6	iPZX	07	37	05.7		06.0	0.5		0.8	0.3	0.5	0.5	
6	iPZX	12	57	12.2		11.2	0.9	0.5	1.9	0.5	1.4	0.7	+0.6
6	ePZX	17	30	18.5		08.9	4.9	0.5	16.7	0.4	8.4		
6	iPZX	18	42	03.5		14.7	1.3	0.4	2.5	0.4	1.1	0.3	(+)
7	ePZX	03	29	11.2		55.2	1.9	1.0	1.8	1.1	1.4	1.2	
7	ePZX	11	48	41.3		47.6	8.9	0.8	11.7	0.7	9.2	0.7	
7	ePZX	12	37	39.9		11.6	3.3	0.6	6.1	0.4	3.4	0.6	
7	ePZX	13	45	37.4			0.8	0.8P	0.8	1.2P	0.8	0.8P	
7	ePZX	15	29	50.2									
	eXZX	31	59.8		1	36.1	0.7	0.9X	1.3	0.9X	0.7	1.0X	
7	ePZX	20	01	00.6	1	03.8	0.8	1.0	1.0	0.8	0.8	0.9	
7	ePZX	20	10	09.8		38.9	1.8	0.5	3.9	0.5	1.8	0.5	
8	ePZX	09	24	47.9		34.9	0.8	0.8	1.5	0.7	0.8	0.7	
9	ePZX	04	40	04.6		47.5	0.5	0.7	1.4	0.6	0.7	0.6	
9	ePZX	09	18	44.4		37.8	7.6	0.6	15.1	1.0	>8		
9	iPZX	11	40	45.8			0.8	0.9P	0.5	1.6P	0.5	1.8P	+1.0
9	ePZX	21	47	57.3		40.6i	2.2	0.3	8.8	0.4	>3		
9	ePZX	23	23	59.5		37.2	2.8	0.8	2.6	0.8	2.6	0.7	
10	ePZX	04	02	54.2		55.8	0.9	0.8	2.0	0.8	1.6	0.8	
11	ePZX	01	17	52.0		32.3	1.7	0.8	2.0	0.7	1.6	0.7	
11	iPZ	05	36	59.4		07.3i	8.9	0.5	15.3	0.3	6.1		-4.0
11	ePZX	06	55	02.3		12.4	0.5	0.9	0.7	0.6	0.4	0.8	
11	ePZX	09	29	47.1		43.0	1.0	0.7	1.9	0.8	1.1	0.7	
11	ePZX	12	25	56.2		22.0	0.5	0.6	0.8	0.5	0.5	0.7	
11	ePZX	14	34	53.6		38.8	0.5	0.6	0.6	0.7	0.3	0.8	
11	iPZX	15	48	34.3									
	eXZX	50	07.0		1	38.9i	7.4	0.7P	5.0	0.8P	3.6	1.3S	-1.9
12	ePZX	10	56	21.8		32.3	0.6	0.6	1.2	0.6	0.7	0.7	
12	ePZX	21	13	31.4									
	eXZX	15	22.3		1	36.1	0.6	0.9X	0.9	1.2X	0.6	1.3X	
12	eXZX	22	06	44.5			0.5	1.0X	0.5	1.0X	0.3	1.1X	































Kamikineusu, May 1968

Date	Phase	Time(JST) h m s	P-S m s	Amplitude(mm) · Period(sec)			Initial motion(mm)
				Z	N	E	
24	ePZX	10 44 26.2	11.5i	1.3 0.5	2.4 0.6	1.5 0.2	
24	ePZX	10 52 46.7	15.3	0.6 0.5	0.8 0.3	0.4 0.4	
24	iPZX	10 53 16.0	11.0i	2.5 0.5	5.4 0.3	4.1 0.5	+3.8
24	iPZX	11 11 25.6	08.0	1.0 0.5	2.5 0.3	1.5 0.3	+0.8
24	ePZX	11 23 34.3	11.1	0.8 0.5	1.2 0.5	0.7 0.2	
24	iPZX	11 27 33.3	12.8	1.5 0.7	2.9 0.4	1.7 0.5	-1.0
24	ePZX	11 30 13.7	18.4	5.7 0.7	5.6 0.4	3.3 0.6	
24	iPZX	11 33 22.0	13.0i	1.7 0.5	3.4 0.6	2.0 0.5	-0.8
24	ePZX	11 40 32.1	53.2	3.5 0.8	9.2 0.7	3.4 0.8	
24	eX1ZX	11 57 06.7					
24	eX2X	58 10.1		0.6 0.6	0.7 0.7	0.4 0.5	
24	iPZX	12 36 31.5	11.8	11.5 0.5	10.7 0.7	6.7 0.5	-3.6
24	eXZX	13 25 52.4		0.6 0.5	0.9 0.7	0.5 0.4	
24	iSN	26 23.9					
24	eX1ZX	13 36 33.8		2.1 0.5	2.4 0.7	3.1 0.5	
24	iX2ZX	36 36.9		1.2 0.5	2.3 0.6	1.8 0.5	+0.6
24	iPZX	13 46 16.0	10.7	2.3 0.7	2.8 0.4	2.8 0.3	-3.0
24	iPZX	14 03 13.8	10.5i	0.9 0.5	1.2 0.5	0.8 0.8	
24	ePZX	14 09 00.3	11.4	1.2 0.5	2.4 0.3	1.0 0.5	
24	ePZX	14 27 14.2	09.6	1.4 0.6	2.3 0.2	1.2 0.5	+0.8
24	iPZX	14 49 47.7	10.9	3.4 0.8	5.2 0.6	4.5 0.6	-1.4
24	iPZX	14 58 33.9	10.3	0.6 0.6	0.6 0.6	0.5 0.7	
24	ePZX	15 08 03.2	27.0	1.7 0.6	2.1 0.6	1.8 0.5	
24	iPZX	15 16 53.6	11.1	1.1 0.5	2.7 0.5	1.9 0.2	+0.8
24	iPZX	15 21 38.4	09.9i	0.7 0.7	1.0 0.3	1.1 0.5	+0.4
24	iPZX	15 32 07.1	09.5i	1.1 0.8	1.4 0.5	1.0 0.5	-0.6
24	iPZX	15 41 37.0	12.1	2.1 0.5	5.5 0.2	3.0 0.2	-1.1
24	iPZX	16 05 09.3	09.1i	0.8 0.6	1.4 0.4	0.9 0.6	
24	ePZX	16 19 34.8	11.5i	2.2 0.5	2.8 0.5	2.5 0.8	
24	ePZX	16 20 35.3	14.3i	0.7 0.5	1.3 0.2	0.6 0.5	
24	ePZX	16 38 20.4	10.2	0.5 0.7	1.4 0.3	0.5 0.6	-0.2
24	iPZX	17 31 00.3		0.6 0.6	1.5 0.5	0.6 0.6	
24	iXZX	31 12.7	14.1	0.9 -0.5	1.2 0.3	0.8 0.5	
24	eXZX	17 31 47.		0.8 0.5	0.8 0.2	0.7 0.5	
24	eXZX	17 35 15.5	13.4	1.3 0.5	2.1 0.6	1.5 0.5	+1.2
24	ePZX	17 37 51.4	12.5i	5.8 0.6	11.0 0.3	5.3 0.4	-1.7
24	iPZX	18 01 55.4	11.2i	1.2 0.5	2.3 0.5	1.8 0.4	
24	ePZX	18 30 39.8	10.9i	1.0 0.5	1.7 0.7	1.3 0.5	-0.5
24	iPZX	18 34 46.0	16.6	0.6 0.6	0.7 0.7	0.9 0.7	+0.2
24	iPZX	18 59 42.3	15.4	1.3 1.4	1.6 1.0	1.0 0.8	
24	ePZX	19 14 58.7		2.6 0.6X2	3.2 0.5X2	2.7 1.0X2	
24	eXZ	15 13.6		3.8 0.6X	4.2 0.7X	3.8 0.8X	
24	eX1ZX	19 25 17.8		0.9 0.7X	1.5 1.0X	1.0 1.0X	
24	eX2X	25 47.4		1.7 0.7	1.6 0.6	1.3 0.7	
24	ePZX	19 47 51.7	21.2	1.7 0.4	3.5 0.2	2.0 0.3	
24	eXN	49 12.2		0.6 0.4	0.8 0.4	0.6 0.5	
24	ePZX	19 48 57.4	09.5i	0.8 0.5	1.2 0.5	0.7 0.6	
24	ePZX	19 58 33.1	11.9	7.5 0.6X	14.2 0.9X	9.2 1.2X	
24	ePZX	20 06 20.3	11.3	1.3 0.6	2.0 0.9	1.2 1.2	+0.9
24	ePZX	20 09 13.9	11.3	3.3 0.9X	5.0 1.0X	3.2 1.1X	
24	ePZX	20 28 17.0		0.7 0.5	1.4 0.3	1.1 0.3	-0.4
24	eXN	28 32.1		0.9 0.3	1.6 0.4	1.7 0.3	+1.0
24	iPZX	20 32 15.5	14.0				
24	ePZX	20 57 10.5					
24	eXN	57 20.8					
24	iPZX	21 06 37.0					
24	iXZX	06 48.2	13.0				
24	iPZX	21 21 35.9					
24	iXZX	21 42.6	08.9i				

Kamikineusu, May 1968

Date	Phase	Time(JST) h m s	P-S m s	Amplitude(mm) · Period(sec)			Initial motion(mm)
				Z	N	E	
24	iPZX	21 30 03.7	14.4	0.9 0.7	1.7 0.6	1.7 0.5	-0.7
24	iPZY	21 41 39.6					
24	iXN	41 58.4		8.4 1.0X	12.9 0.9X	8.5 1.2X	-1.0
24	iPZX	21 59 44.5		7.9 0.7X	8.7 1.0X	6.0 1.1X	-0.8
24	eXZ	22 00 06.5					
24	ePZY	22 32 59.6		6.9 0.9X	7.5 0.9X	6.7 1.2X	
24	eXZ	33 17.3		33.1 1.0	24.5 1.0	17.0 1.3	+2.0
24	iPZX	22 55 05.5	20.0				+11.4
24	iPZX	23 06 47.0					
24	iPZX	23 32 09.7					
24	eXZ	32 21.0	25.3i	4.5 0.6	9.6 0.6	9.9 0.8	+2.8
24	ePZX	23 34 03.5					
24	eXZ	34 23		6.9 0.8X	12.5 1.2X	6.6 1.1X	
24	ePZX	23 36 36.7	25.2	0.9 0.5	1.5 0.5	0.7 0.6	
24	ePZX	23 44 29.5					
24	eXZ	44 55.3		0.6 0.5X	0.8 0.6X	0.5 0.5X	
24	iPZX	23 46 59.8	09.6i	5.5 0.6	7.5 0.6	8.6 0.5	-3.6
24	ePZX	23 59 09.9	17.0	0.5 0.5	0.6 0.5	0.4 0.5	
25	ePZX	00 27 41.8		0.6 0.6	1.3 0.9	0.7 0.6	
25	eXZ	27 56.5		10.0 0.6	14.8 0.7	9.2 0.5	-3.0
25	iPZX	00 29 09.7	13.2				
25	eXZ	00 30 36		2.4 0.5	3.5 0.5	2.6 0.6	
25	eSN	31 00.2					
25	ePZX	00 43 45.5		0.5 0.9	0.6 0.5	0.4 0.6	
25	eXZ	44 48.5		13.7 0.7	17.7 0.9	10.5 1.0	-2.0
25	iPZX	00 49 12.4	25.3	1.7 1.4P	0.8 1.0P	0.7 1.5P	-3.0
25	iPZX	00 52 20.7					
25	iPcPZX	53 18.2					-1.9
25	iPZX	01 07 55.1	23.9	2.1 0.6	4.0 0.6	2.1 0.9	+1.0
25	iPZX	01 12 14.6	09.0i	0.6 0.3	1.3 0.2	0.8 0.3	-1.6
25	iPZX	01 21 03.8	08.7i	0.6 0.3	1.5 0.2	0.9 0.2	-0.7
25	ePZX	01 49 52					
25	eXN	50 13.5		0.8 0.6X	0.7 0.7X	0.5 0.6X	
25	eX1ZX	02 04 50					
25	eX2X	05 19.5		0.7 0.9X2	0.8 0.5X1	0.8 1.1X2	
25	ePZX	03 10 46.3					
25	eX1N	10 58.2		2.4 1.0X2	2.0 1.1X2	1.4 0.8X2	
25	eX2N	11 15.5		21.1 0.7	21.5 1.0	22.4 0.9	
25	ePZX	04 48 18.6	29.1				
25	ePZX	05 40 19.1					
25	iXZX	40 29.5	12.5i	0.5 0.5	1.4 0.2	1.1 0.6	
25	iPZ	06 34 54.5					
25	iXN	35 05.0		29.1 1.2X	38.2 1.2X	34.4 1.2X	+3.5
25	ePZX	06 38 53.3	16.5	1.7 0.6	2.2 0.3	2.4 0.6	
25	eXZX	06 41 58.5		1.3 0.8X	0.9 0.8X	0.7 0.8X	
25	iPZX	06 45 01.6					
25	eX1N	45 12.6					
25	eX2N	45 24.6		9.0 1.6X2	10.9 0.8X2	7.3 0.7X2	+3.4
25	iPZX	06 46 31.2	10.8i	(25) 0.6	32.2 0.6	21.0 0.8	-4.4
25	ePZX	06 49 28.6	12.5	0.6 0.5	0.9 0.6	0.7 0.5	
25	iPZX	06 50 28.1	08.2	2.5 0.3	6.4 0.5	3.0 0.3	-2.3
25	ePZX	06 55 52.5	11.3	1.0 0.5	1.0 0.4	1.1 0.8	
25	iPZX	07 00 39.5	13.3				-3.0
25	iXZX	00 51.2		1.5 0.6	2.4 0.4	1.4 0.5	
25	ePZX	07 16 26.5	13.6	0.5 0.5	0.6 0.6	0.4 0.5	
25	ePZX	07 18 32.8					
25	eXN	18 46		0.6 0.7X	0.8 1.1X	0.7 1.1X	
25	iPZX	07 45 17.7	08.8i	0.7 0.6	2.3 0.3	1.4 0.5	+0.6
25	iPZX	07 49 27.0	10.8i	1.0 0.5	1.6 0.5	1.4 0.2	+1.4
25	iPZ	08 37 42.9	10.1	(42) 0.5	(76)	(50) 0.6	(+)
25	eX1ZX	08 50 50.3					
25	eX2N	51 52.1		0.5 0.5X2	0.8 0.3X2	0.5 0.4X2	
25	ePZX	09 21 49.7					
25	eXN	21 58.5		3.3 0.8X	3.0 0.7X	2.8 0.7X	







Kamikineusu, May 1968

Table with columns: Date, Phase, Time(JST) (h m s), P-S, Amplitude(mm) (Z, N, E, SO), Period(sec), Initial motion(mm). Contains data for dates 28, 29, and 30.

Kamikineusu, May 1968

Table with columns: Date, Phase, Time(JST) (h m s), P-S, Amplitude(mm) (Z, N, E, SO), Period(sec), Initial motion(mm). Contains data for dates 29 and 30.



























Kamikineusu, July 1968

Table of seismic data for Kamikineusu, July 1968. Columns include Date, Phase, Time (JST), P-S (m, s), Amplitude (mm) in Z, N, E, and Initial motion (mm). Rows list events from 7/7 to 9/9.

Kamikineusu, July 1968

Table of seismic data for Kamikineusu, July 1968. Columns include Date, Phase, Time (JST), P-S (m, s), Amplitude (mm) in Z, N, E, and Initial motion (mm). Rows list events from 9/9 to 11/11, including an Addenda section for 9/9.



























Kamikineusu, May 16, 1968

Phase	Time(JST)			P-S	Amplitude(mm) · Period(sec)							
	h	m	s		Z	N	E	Z	N	E		
ePZ	19	28	48.5	08.7i	1.6	0.6	2.5	0.7	1.5	0.4		
eXZ	19	33	16.5		0.9	0.6X	1.0	0.2X	0.8	0.6X		
ePZ	19	34	10.5		0.9	0.5	1.5	0.4	0.9	0.2		
ePZ	19	36	44.5		SO	SO	SO	SO	SO	SO		
iPE	19	39	16.2		SO	SO	SO	SO	SO	SO		

Phase	Time(JST)			P-S	A(mm) T(sec)		Phase	Time(JST)			P-S	A(mm) T(sec)	
	h	m	s		Z	T(sec)		h	m	s		Z	T(sec)
iPZ	21	34	39.0	08.5	SO		ePZ	23	14	42.0	13.0	1.3	0.6
+iPZ	21	38	18.7		SO		iPZ	23	16	34.1		8	
iPZ	22	10	41.2		SO		ePZ	23	19	38.4		8	
eXZ	22	25	22.5		1.2	0.5X	iPZ	23	20	24.0		0.8	0.5
ePZ	22	26	06.7		SO		ePZ	23	23	08.9		2.5	

Kamikineusu, May 17, 1968

Phase	Time(JST)			P-S	Amplitude(mm) · Period(sec)						Initial motion(mm)	
	h	m	s		Z	N	E	Z	N	E		
ePZ	00	41	58.5	11.2	2.2	0.6						
ePZ	00	43	36.5	09.3	3.5	0.5						
iPZ	00	45	06.7		SO							+
ePZ	00	48	16	14	2.1	0.6						
ePZ	00	50	33.5									
iXZ	00	50	46.5		8							
iPZ	00	55	50.5		4							-
eSZ	00	58	47.0		0.9	0.6	1.4	0.3	1.2	0.4		
ePZ	01	00	07		9							
iPZ	01	03	02.7		4.5							
ePZ	01	04	51	07.5	2.7	0.5	2.5	0.7				
ePZ	01	06	03.2	18.3	5.0	0.5						
ePZ	01	08	08.4	14.5	1.0	0.5	1.2	0.4	1.2	0.4		
ePZ	01	09	14.9	10.6	5.8	0.7						
iPZ	01	11	32.3		SO							
ePZ	01	14	22.8		SO							
eSZ	01	20	09.5		0.8	0.5						
ePZ	01	21	39.8		2.0	0.4						
ePZ	01	22	34		SO							
ePZ	01	27	00.2	11.5	4	0.4						
eXZ	01	29	54.5		1.3	0.7X						
ePZ	01	30	38.0	08.3	5							
eSZ	01	33	09.3		0.8	0.6						
ePZ	01	34	11.7	08.9i	3.1	0.6			5.0	0.5		
eXZ	01	35	01.0		1.2	0.5X						
eX1Z	01	35	13.0		8							
eX2Z	01	35	27.2		4.2	0.5X			4.2	0.2X		
eXZ	01	36	32.5		2.3	0.5X						
ePZ	01	38	26.2	15.3	10	0.4						
ePZ	01	39	11.8		5							
iPZ	01	41	35.6		SO							
eSZ	01	42	58		5.5	0.5						
iSN	01	45	03.1		1.4	0.6	2.1	0.3	1.4	0.4		
iPZ	01	45	51.6	09.2	SO							
ePZ	01	48	06	25	1.7	0.5						
ePZ	01	49	36.9		SO							
ePZ	01	52	05		2.6							
eSE	01	52	43		3.4	0.5						
eSZ	01	55	21.5		0.9	0.6						
ePZ	01	56	00.3	10.2	2.7	0.4						
eXZ	01	56	50		2.7	0.6X						
ePZ	01	57	17.5	09.0i	9.0	0.6						
iPZ	01	59	34.0	08.3i	3.5	0.4	3.9	0.3	3.3	0.3		+
eSZ	02	03	02.0		0.9	0.7	1.0	0.4	0.9	0.5		
ePZ	02	04	49.2	12.8	1.8	0.5			2.0	0.5		
ePZ	02	06	27.1	12.2	2.7	0.7			1.7	0.3		
ePZ	02	07	47.9	08.1	1.5	0.4						
eXZ	02	08	53		1.0	0.7X						
eXZ	02	10	54.5		0.9	0.5						
iPZ	02	12	08.2		7							
ePZ	02	14	32.5	16.0	1.3	0.6	1.6	0.3	1.1	0.8		
ePZ	02	15	33.6	14.4	1.6	0.5						
ePZ	02	16	11.6	09.4	1.9	0.5			3.0	0.5		
ePZ	02	17	20		8							
ePZ	02	20	02.9	09.9	7.2	0.6						
ePZ	02	21	27.0	08	3.5							
eXZ	02	21	58		SO							
ePZ	02	27	45.0	11.0	3.6	0.5	6.5	0.5	3.8	0.5		
iPZ	02	28	25.9		SO							
ePZ	02	32	10.4	14.7	3.2	0.5	8.3	0.4	4.0	0.4		
ePZ	02	33	27.3	09.7	1.1	0.5	1.2	0.3	1.0	0.3		
iPZ	02	33	53.4	08.1	5.4	0.6						
ePZ	02	36	08.5		12							
eXZ	02	38	29		1.0	0.9X	1.7	0.7X	1.1	0.7X		

Kamikineusu, May 17, 1968

Phase	Time(JST)			P-S	Amplitude(mm) · Period(sec)						Initial motion(mm)	
	h	m	s		Z	N	E	Z	N	E		
ePZ	00	01	08.6	09.8	3.5	0.5						
ePZ	00	03	00		3.3	0.5						
eXZ	00	04	13.5		1.5	0.3X						
eXZ	00	04	28		2.7	0.5X						
iPZ	00	05	51.7		20							
ePZ	00	07	11.5	8								
iPZ	00	11	39.2		4.8	0.5						
eSZ	00	12	35		3.0	0.5						
ePZ	00	15	05.8		4.5	0.5						
eSZ	00	17	19.5		1.3	0.5						
ePZ	00	19	45	14	1.7	0.5						
iPZ	00	20	38.5		SO							
ePZ	00	24	01.0	11.4	2.9	0.5						
ePZ	00	25	02.5	12.0	0.8	0.5						
ePZ	00	26	09.3	07.4	1.7	0.8						
eSZ	00	27	27		1.4	0.7						
iPZ	00	28	24.7	10.6i	4.0	0.3						
ePZ	00	28	51		10							
ePZ	00	32	47.5	08.6i	6.3	0.6						
eXN	00	33	11		15X							
ePZ	00	35	11.0	09.0	2.2	0.7	2.2	0.5	1.8	0.5		
ePZ	00	37	35.0	11.3i	5.7	0.7						
ePE	00	39	20.0	11.3	1.9	0.5	2.5	0.5	2.2	0.7		
iSN	00	40	20.1		0.8	0.6	1.7	0.5	0.7	0.6		
ePZ	00	40	34.2	07.8i	2.8	0.5	5.9	0.5	3.0	0.5		
eS	00	41	07.5		2.1	0.6	2.8	0.3	2.1	0.5		

Kamikineusu, May 17, 1968

Phase	Time(JST)			P-S	Amplitude(mm) · Period(sec)			Initial motion(mm)
	h	m	s		Z	N	E	
iPZ	02	38	58.2	09.5i	1.8 0.6	3.8 0.5	2.0 0.5	+
eSZ	02	39	57.2		0.9 0.6	2.0 0.4	1.6 0.5	
ePZ	02	41	14.6	16.0	8			
eXZ	02	43	29		4.2 1.1X			
ePZ	02	45	27.8	16.4	3.4 0.7			
ePZ	02	47	32	10.5	0.7 0.9		0.6 0.4	
iPZ	02	48	51.7	09.1i	3.4 0.5			
iPZ	02	50	46.8		8			+
iPZ	02	51	47.1		7			-
ePZ	02	53	26.6		3			-
iPZ	02	54	28.8		SO			-
ePZ	02	58	58.0	07.3	0.8 0.6			
eXZ	03	00	22		0.8 0.6X		0.7 0.4X	
eXZ	03	00	48.5		0.6 0.4X	1.4 0.5X	0.9 0.4X	
ePZ	03	01	11.0	09.7	1.1 0.7	3.3 0.2	1.3 0.6	
ePZ	03	04	20.3	20.2	0.8 0.5	1.6 0.5	1.2 0.4	
ePZ	03	05	02.6	09.3	2.4 0.6	4.4 0.2	2.5 0.3	
ePZ	03	05	30.7	08.8	1.2 0.8	2.1 0.6	1.3 0.5	
ePZ	03	06	09.1	08.9	1.8 0.4		3.1 0.5	
ePZ	03	07	00.5	13.5	1.0 0.5	2.4 0.5	1.2 0.4	
eSZ	03	08	23.5		0.7 0.6	1.8 0.3	0.7 0.2	
eXZ	03	11	27.1		8X			
eXZ	03	13	15		1.9 0.6X			
ePZ	03	15	12.1	22.6	5.8 0.4			
eXZ	03	16	52		1.6 0.6X			
ePZ	03	18	28.6		2.8			
ePZ	03	19	48.7	11.1	1.7 0.5			
ePZ	03	22	22.4	15.8	0.8 0.6	1.2 0.3	0.7 0.5	
ePZ	03	23	32.7	08.1	1.3 0.5			
eXZ	03	23	53.3		1.9 0.5			
ePZ	03	24	49.3	09.2	3.0 0.5			
ePZ	03	28	23.5	28.0	5.9 0.8		7.4 1.2	
ePZ	03	31	20.7	09.7i	2.7 0.7		2.4 0.3	
ePZ	03	32	31.7	08.6	1.3 0.5	2.4 0.2	3.0 0.2	
ePZ	03	33	11.2	07.7	0.7 0.6	2.0 0.2	1.2 0.4	
eSZ	03	34	42.7		0.9 0.5	1.4 0.8	1.4 0.8	
ePZ	03	36	51.3	15.2	1.2 0.6	1.4 0.3	1.0 0.5	
ePZ	03	39	08.2	11.8	2.1 0.5	2.3 0.6	1.8 1.0	
eSE	03	39	56.0		1.1 0.6	1.7 0.3	0.7 0.3	
ePZ	03	40	54.9	16.7	1.6 0.6	2.0 0.8	1.7 0.5	
ePZ	03	41	29.7	09.8	3.4			
iPZ	03	43	48.5		SO			-
eXZ	03	49	28.1		1.6 0.7X			
ePZ	03	53	44.1		4.8 1.0X			
ePZ	03	56	00.0	10.0	1.1 0.3			
ePZ	04	03	40.5	11.0	1.1 0.7	1.3 0.6	0.8 0.8	
iPZ	04	07	05.3	09.2i	2.3 0.3			+
eXZ	04	07	58.5		0.6 0.5X			
eXZ	04	09	52.3		0.8 0.5X			
ePZ	04	12	26.0					
eXN		12	44		3.4 0.8X	4.2 0.7X	2.5 0.7X	
eSZ	04	13	31		2.3 0.3			
iPZ	04	13	54.3		SO			-
ePZ	04	15	55.4	10.9	1.2 0.5			
iPZ	04	17	03.6		SO			-
ePZ	04	21	55.0		SO			-
ePZ	04	24	36.4	09.0	1.4 0.5			
iPZ	04	25	49.3	13.2	3.4 0.5			
ePZ	04	27	37.5	12.4	2.2 0.5		2.0 0.5	
eSZ	04	28	23		4.0 0.5			
ePZ	04	30	37.8	11.3	1.1 0.4	1.8 0.2	1.5 0.4	
ePN	04	31	03.2	10.1	1.8 0.5	3.0 0.4	1.5 0.5	
eXE	04	31	37		1.0 0.8X	1.8 0.7X	1.1 0.4X	
ePE	04	32	44.5	09.7i	1.0 0.6	1.5 0.5	0.9 0.6	
ePZ	04	33	42.5	12.5	1.7 0.5			
ePZ	04	36	43.0	18.8	1.7 0.7	2.4 0.9	1.6 0.7	
ePZ	04	40	02.3	15.9	1.5 0.5	2.4 0.5	1.7 0.6	

Kamikineusu, May 17, 1968

Phase	Time(JST)			Amplitude(mm) · Period(sec)	Initial motion(mm)	
	h	m	s			
ePZ	04	42	03.1	08.7	0.8 0.6 1.4 0.3 0.9 0.5	
iPZ	04	44	09.5		SO	+
ePZ	04	47	30.1	03.4	7	
eXZ	04	48	39		1.9 0.7X	
ePZ	04	51	09.3	21.7	3.5 0.6	
ePZ	04	54	37.5	11.2	2.2 0.7	
ePZ	05	00	17.7	13.9	1.6 0.7 2.8 0.6 1.6 0.5	
ePZ	05	02	38.7	10.8	0.9 0.6 0.8 0.4 0.9 0.4	
eSZ	05	03	13		2.3 0.6 2.9 0.5 1.4 0.5	
iPZ	05	03	57.7		SO	+
iPZ	05	10	28.4	10.1i	16.0 0.5	+
ePZ	05	12	26.8	10.6i	4.4 0.5	
ePZ	05	13	02.0	17.7	13	
ePZ	05	16	16			
eXZ		16	29.3		3	
eSE	05	18	51.7		0.7 0.6	
iSE	05	19	17.0		1.1 0.5	
ePZ	05	20	43.3	11.1	0.9 0.4 2.4 0.6 1.7 0.5	
iPZ	05	22	28.5		SO	-
ePZ	05	28	46.9	10.7	6.5 0.6	
ePZ	05	30	16.3	15.4	1.5 0.5 2.2 0.4	
ePZ	05	32	57.8	09.2	1.0 0.5 1.9 0.4 1.9 0.5	
ePZ	05	34	09.0			
eXZ		34	25.4		7X	
iPZ	05	36	50.1	09.3	2.1 0.2P 1.8 0.5S	+
iPZ	05	37	50.3	17.0	22	-
ePZ	05	39	57.2	11.3i	3.0 0.5	
ePE	05	40	53.6	10.4	2.0 0.6	
ePZ	05	41	14.7		SO	
ePZ	05	45	28.2	10.4	0.8 0.5	
ePZ	05	46	23.0			
eXZ		46	36.5	30.0	5	
eXZ	05	47	51		4.7 0.6	
eSN	05	50	00.7		0.6 0.6 0.9 0.6	
ePZ	05	51	19.1	11.7	0.9 0.6 0.5 0.7	
ePZ	05	52	36.0	11.0	1.3 0.6	
ePZ	05	54	49.2		4	
eXZ	05	55	28		2.5 0.4X	
eSZ	05	57	05.1		0.7 0.5 0.7 0.5	
ePZ	05	59	00.2	08.5	1.8 0.3	
ePZ	06	00	27.2	10.0	1.6 0.7 1.6 0.5	
iPZ	06	03	43.1		SO	-
ePZ	06	06	25.4	19.9	15.3 0.6	
eSZ	06	09	07		1.7 0.5	
eX1Z	06	09	40			
eX2Z		10	11		5.8 0.5X2	
iPZ	06	13	30.9	10.3	2.4 0.4	
ePZ	06	16	10.5	10.8	3.4 0.5	
ePZ	06	17	02.6	12.9	1.5 0.5	
iPZ	06	18	41.0	13.0	3.3 0.5	
iPZ	06	20	35.9	10.0	2.5 0.5 3.7 0.5 2.7 0.5	+
ePZ	06	22	27.0	13.5	6.9 0.5	
ePZ	06	23	38.0	20.0	11.5	
iPZ	06	26	20.0		SO	+
eXZ	06	29			13X	
ePZ	06	31	48.2	08.2	7.1 0.6	
eXZ	06	33	39		1.0 0.6X	
iPZ	06	34	05.0		24	-
eXZ	06	35	45		0.9 0.5X	
ePZ	06	37	23.8	27.2	2.8 0.7 2.5 0.6	
ePZ	06	40	09	17.2	1.9 1.2	
iPZ	06	40	57.3	07.4	17	
eSE	06	44	26.8		0.8 0.7 1.5 0.7 0.8 0.7	
ePZ	06	49	01.2	11.6	1.1 0.5 1.4 0.5 0.9 0.5	
ePZ	06	50	54.0	14.0	4.5 0.8	
ePZ	06	53	23.0	10.1	0.7 0.6 1.0 0.2 0.7 0.5	
iPZ	06	57	02.5	11.5	1.8 0.5 2.7 0.5 1.7 0.5	
eXE	06	58	15.4		0.8 0.5X 0.5 0.4X	

Kamikineusu, May 17, 1968

Phase	Time(JST) h m s	P-S s	Amplitude(mm) · Period(sec)			Initial motion(mm)
			Z	N	E	
		10.8	4.1	0.5		
iPZ	07 01 37.2					
ePZ	07 03 21.3					
eXE	07 03 33.0		2.7	0.8X	2.8	0.8
ePZ	07 05 16.5	12.7	0.8	0.5		
ePZ	07 05 52.5	09.7	1.7	0.4	2.1	0.2
ePZ	07 07 23.4	10.2	0.7	0.7	1.7	0.5
ePZ	07 10 54.8	07.7	0.7	0.5	1.8	0.2
iPZ	07 15 59.6	09.9i	9	0.5		
eSE	07 17 26.0		0.8	0.5	1.3	0.5
eSE	07 18 24.6		1.0	0.7	1.4	0.5
ePZ	07 19 02.7	11.5	1.5	0.5	1.5	0.4
ePZ	07 27 19.0	10.1	15			
ePZ	07 29 27.5	10.3	2.2	0.6		
ePZ	07 30 49.0	09.0	3.9	0.5	4.2	0.3
ePZ	07 32 23.3		0.6	0.5		
ePZ	07 33 25.2	08.8	1.6	0.4		
ePZ	07 34 03.2	07.4	1.8	0.6	2.1	0.6
ePZ	07 39 05.6	10.7	1.3	0.7	2.3	0.7
ePZ	07 43 19.6	14.4	1.9	0.5	2.4	0.3
ePZ	07 44 51.4	13.5	1.4	0.5	1.5	0.5
ePZ	07 49 18.5	09.5i	0.5	0.7	1.1	0.8
ePZ	07 52 10.2	15.5i	1.1	0.6	1.5	0.2
eXZ	07 52 43.7		1.7	0.6X	2.4	0.5X
iPZ	07 53 10.8	09.5	7			
ePZ	07 56 29.5	12.4	1.2	0.7	1.8	0.7
ePE	07 57 34.0					
eXZ	07 57 56		4.3	1.2X		
ePZ	08 03 00.7	08.6	9.3	0.6		
ePZ	08 05 32.4		SO			
eXZ	08 15 12		0.6	0.6X		
eXZ	08 18 30		1.5	0.7X		
ePZ	08 19 55.3	10.7	0.8	0.6		
eSE	08 20 41.5		0.9	0.6		
iPZ	08 21 14.8	10.8i	1.9	0.5		
iPZ	08 23 24.8	08.7	2.7			
ePE	08 27 20.1	14.4	0.5	0.7		
ePZ	08 28 22.5	11.5	1.3	0.3		
eXZ	08 32 13		1.9	0.5	2.7	0.7
eXZ	08 34 28		0.5	0.5		
ePZ	08 36 50.0	13.0i	8.8	0.5		
ePZ	08 38 56.3					
eXE	08 39 06.3		7.0	0.7		
ePZ	08 43 04.1	13.5	0.9	0.5	1.9	0.3
ePZ	08 46 53.7	11.6	1.7	0.5	2.4	0.7
ePZ	08 48 54.3	08.7i	1.4	0.5	1.7	0.3
eXZ	08 49 38		0.8	0.6X		
eXZ	08 50 55.5		3.9	0.6X	4.7	0.8X
ePZ	08 52 18.2				3.2	0.7X
eXZ	08 52 29.5		11.5	1.5		
eX1Z	08 57 00					
eX2Z	08 57 26.6		17.8	1.0		
ePZ	09 00 48.8	11.2	4.4	0.5	4.9	0.5
eSE	09 02 14		1.2	0.3		
eXZ	09 02 29.5		1.0	0.8X		
eXZ	09 03 04		1.7	0.6X		
eXZ	09 03 29		0.8	0.6		
ePZ	09 04 12.8		1.9	0.5	1.9	0.4
iPZ	09 05 18.1		SO			
ePZ	09 06 24.1	09.4	8.2			
eSE	09 11 02.4		0.5	0.2	1.1	0.2
ePZ	09 13 26.6	14.2	1.3	0.5	2.7	0.6
eXZ	09 15 09		0.8	0.7X	1.4	0.5X
ePZ	09 16 07.3	08.1	3.3	0.5		
eX1Z	09 17 14.2					
eX2Z	09 17 34.5		1.7	0.6x2	2.4	0.8X2

Kamikineusu, May 1968

Date	Phase	Time(JST) h m s	P-S s	Amplitude(mm) · Period(sec)			Initial motion(mm)
				Z	N	E	
17	ePZ	09 19 52.4	09.6	1.4	0.5	1.9	0.4
17	eXZ	09 22 45		0.9	0.6X	1.3	0.5X
17	ePZ	09 23 36.3	12.2	2.0	0.3		
17	ePZ	09 24 58.5	21.7	7.5	1.0	11.3	0.3
17	eXE	09 28 45		2.7	0.6X		
17	eSZ	09 29 33.5		7.8	0.3		
17	ePE	09 35 06.5	14.5	3.2	0.9		2.5
17	iPZ	09 36 19.6	08.9	2.0	0.6		2.0
17	ePZ	09 37 44.6	11.9i	1.7	0.5		1.8
17	eSE	09 40 23.8		0.6	0.5	1.4	0.7
17	eSE	09 45 02.0		0.5	0.5	0.8	0.5
17	ePZ	09 45 53.2	13.3	15	0.5		
** Addenda May 1968							
** 19	iPZX	12 26 24.5	21.3i	10.7	1.7	13.8	1.0
19	eSN	12 29 04.0		0.7	0.5	0.8	0.3
19	eX1ZX	12 33 01.0					
	eX2N	33 40.4					
	iX3N	34 39.9		3.2	0.7X3	4.1	0.7X3
19	ePZX	12 44 40.5	22.8	1.4	0.7	2.3	0.5
** 19	iPZX	13 21 52.3	11.7i	0.7	0.5	2.7	0.4
19	eX1ZX	13 23 34.3					
	eX2Z	24 07.0		0.8	0.7X2	1.2	1.0X2
19	iPZX	13 34 24.9	12.6	3.5	0.6	3.7	0.5
19	ePZX	13 36 04.3	24.2	1.5	0.9	1.5	0.9
** 21	ePZX	06 06 00.1	10.6i	1.0	0.5	2.4	0.2
21	iPZ	06 11 11.0					
	eXN	11 45.5		SO		SO	
21	eFN	06 20 22.2	34.5	0.9	0.8	1.5	0.8
21	ePZX	06 23 18.7					
	eXN	23 55.5		1.3	0.7X	3.4	0.3X
** 22	ePZX	08 05 00.6	16.8	3.7	0.6	3.3	0.6
22	eXZX	08 10 36.8	24.2	0.5	0.5	1.1	0.5
22	iPZX	08 12 11.7	10.9i	4.6	0.7	9.2	0.6