Seismological Observatory,
Rathfarnham Castle,
Dublin, Ireland.

Bulletin: January - March 1959.

Epicentres and origin times are those of U.S.C.G.S. unless otherwise noted.

During winter months January - March seismographs are on a reduced magnification.

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Jan. 1	Z	i	07 56 58	C	
2	Z	iPn	05 21 04		D 570 km
	Z	iPg?	21 23		47.7N 4W
	Z	iSn	22 06		H05 19 45
	Z	i	23 50		
	Z	e	25 34		
3	NE	eL	11 54 30		Microseisms
5	Z	iPKP1	10 06 31	C	22S 171.5E
	Z	iPKP2	06 43		H 09 46 42
	Z	i	07 27	D	
6	Z	e	04 15 10		
	Z	i	17 56		
Jan. 6	08 to	Jan. 10th	08 no Z record		
11	NE	eL	04 41 -		
	Z	eP	07 34 01		
	Z	ipP	34 47		
	Z	e	39 27		
13	NE	eL	09 07 00		

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Jan.16	Z	iP	01 42 59		
	Z	eL	02 03 -		
	NZ	eL	17 22 -		
	Z	eP	18 11 (41)		Doubtful initial phase
	Z	i	12 42		
	Z	iL	14 03		D:930 km. 49.2N 6W H 18 09 16 13 C 1 S
17	Z	i	09 04 06		Seismic?
18	Z	i	06 29 06		Seismic?
	Z	i	29 28		
	Z	iP	07 41 07	D	57.5N 35W
	Z	i	41 15		H07 37 20
	Z	e	48 11		Microseisms
	Z	iPKP	22 42 12		
22	NZ	iP	05 23 08	C	D:9700 km
	N	ePP	25 58		34N 142E
	N	i	26 25		H05 10 25
	N	ePPP	28 36		
	NE	eSKS	33 30		
	NE	iS	33 43		
	NE	eSS	39 11		
	E	eLQ	49 25		
	N	eLR	54 30		
	NE	M	06 05 30		14S 180μ
24	N	eP	05 21 10		
	NE	eL	51 -		
	Z	i	19 53 59		
	EZN	iP	20 59 55	C	2S 3.5μ(Z)
	Z	iPcP	21 00 49		H19 55 14
	NE	iS	03 49		37.5N 24.5W
	NE	eSS	04 56		D:2350 km
	N	eLQ	05 50		
	E	eLR	06 10		
	N	M	07 00		13S 70μ
	E	M	07 30		10S 40μ

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Jan. 29	Z	eP	06 50 (11)		Microseisms
	Z	iP	23 28 53	D	71N 8E
	Z	i	29 03		H23 24 30
	Z	iPP	29 12	D	D:2150 km
	Z	iS	32 27		
30	Z	iPKP	18 28 56	D?	31S 179W
	Z	i	29 31	C	H 18 09 02
	Z	iP	20 51 13	C?	
	Z	i	51 47		
	Z	iPP	54 47		
	Z	eP	22 29 04		
	N	eL	22 49 -		
Feb. 1	Z	e	03 22 00		Seismic? microseisms
5	Z	iP	01 15 40	C	
	Z	e	11 06 38		Seismic?
6	Z	e	14 46 10		
7	Z	iP	09 49 27	C	4S 81.5W
	Z	iPP	52 49		H 09 36 51
	Z	e	53 08		D 9500 km
	NE	iSKS	59 47		
	N	eS	10 00 20		
	NE	eSS	05 40		
	NE	e	11 45		
	NE	eL	13 20		
	N	M	14 30		38S. 100μ
	Z	i	10 52 42		
8	ZN	iP	01 05 51	C	49N 28.5W
	Z	iPP	05 59	D	H01 02 26
	Z	i	06 48	D	D 1600 km
	N	eLQ	08 25		
	ZN	eLR	09 30		
	N	M	10 10		13S. 30μ
	E	M	10 40		12S. 30μ

		Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
Feb. 9	Z	iP	04	54	30	D	
	Z	i		55	01	C	
11	Z	iP	14	04	23	C	
14	Z	e	22	38	16		Microseisms
15	Z	e	04	15	34	D	Microseisms
	ZN	e		24	09		
16	Z	eP	00	52	(12)		Microseisms
17	Z	iP	12	14	51	D	
	Z	i		16	20		
	Z	e		25	22		
19	Z	iP?	04	29	26		
20	Z	eP	18	28	(10)		Microseisms
23	Z	i	00	01	40		Seismic?
	Z	i		02	24		
	Z	iP	10	42	44		
	Z	iP?	16	16	38		Doubtful
24	Z	i	10	31	48		
25	Z	i	05	49	22		
27	Z	e	21	10	-		Microseisms
28	Z	iP	01	44	(15)		Microseisms
	Z	e	09	02	53		Seismic?
Mar. 1	Z	iP	00	36	25	C	74.5N 9E
	Z	e		36	37		H00 31 20
	Z	i		37	14		D 2550 km
	Z	eL		43	-		
	Z	iPP	17	09	31		1.5S 134E
	N	e		11	15		H16 49 13
	NE	eS		17	08		D:1300 km
	NE	eSS		25	40		h:100 km
	NE	eLQ		42	-		

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Mar. 1	NE	eLR	46 -		
	NE	M	51 10		25S 50
	N	M	18 01 00		22S 50
	N	M	18 11 30		
	Z	e	19 10 56		
	Z	i	23 27 53		
2	Z	P	16 01 -		In hour mark
	Z	i	01 39		
5	Z	eP	14 21 50		Microseisms
9	Z	i	22 16 43		
	Z	i	18 11		
10	Z	i	21 48 54		Seismic?
		i	50 07		
11	Z	e	04 29 10		
13	Z	ePKP	16 59 (45)		Microseisms
	Z	eP	19 14 36		"
16	Z	i	21 49 44		Seismic?
17	N	eL	09 13 00		
	NE	M	09 26 20		
18	Z	e	00 54 (30)		Microseisms
19	Z	iP	08 31 30		35N 36W
	Z	i	31 37		H08 25 32
	Z	e	37 41		D 3100 km
20	Z	i	16 35 44		
	Z	e	17 57 08		
21	Z	iPKP	04 45 56		
	Z	e	51 33		
	Z	i	13 36 16		Seismic?
	Z	i	36 31		

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Mar. 22	Z	iPn	22 38 21		46.3N 3.7W
	Z	iSn	39 43		H22:36:36
	Z	i	39 54		D780 km
	Z	iSg?	40 21		
	Z	iL	40 33		
	Z	i	40 55		
	Z	i	41 16		
24	Z	e	17 33 00		
25	Z	e	06 44 10		
		14 hrs.			
	Rep[illegible]rs to Observatory. No full records until April 8th.				

R. E. Ingram, S.J.

Seismological Observatory,
Rathfarnham Castle,
Dublin, Ireland.

Bulletin: April - June 1959.

Epicentres and origin times are those of U.S.C.G.S. unless otherwise noted.

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
March 25th to April 8th, repairs in observatory, no full records.					
Apr. 5	Z	iP	10 51 01		44·6N 6·8E
	Z	i	51 18		H = 10 47 54
	Z	i	52 36		D = 1400 km
	Z	eP	20 12 (20)		
9	Z	iP?	17 20 50		Microseisms
	Z	iP	17 48 13		
	NE	eL	18 10 -		
10	Z	iPKP	06 06 40	C	25S 178·5E
	Z	$ipPKP_1$	09 02		H = 05 47 34
	Z	$ipPKP_2$	09 20		h = 600 km
12	Z	iP	10 06 28		D = 8300 km
	Z	ipP	06 51		17·5N 95W
	Z	i	08 04		H = 09 54 51
	NE	eS	16 12		
	Z	ePKP	21 13 54		
	Z	i	14 52		
14	Z	iP	07 31 13	C	
15	Z	eP?	00 27 58		
18	Z	iPKP	06 37 01	C	
21	Z	iPKP	01 46 30		
	Z	i	46 36		
	Z	i	15 46 58		
22	Z	i	05 31 35		
	Z	i	10 31 02		Seismic?
	Z	iP	11 06 31	C	
	Z	i	06 47		

Date	Comp.	Phase	G. M. T. h.	m.	s.	Type	Remarks
1959							
Apr.22	Z	i	12	33	28		Seismic?
(contd.)	Z	i	12	59	13		
	Z	i	13	17	08		
	Z	e	20	47	41		
24	Z	$iPKP_1$	18	17	59	D?	Microseisms
	Z	$iPKP_2$		18	30	D?	31S 178W
	Z	iPP		22	05		H = 17 57 58
25	ZE	iP	00	32	43	D	28·5E 37·0N
	Z	i		32	49		H = 00 26 41
	E	eS		37	50		D = 3200 km
	N	eLQ		41	25		
	E	eLR		42	30		
	N	M		43	30		14s. 25μ
	Z	e	01	12	09		
26	NZE	iP	20	53	28	C	24N 122·5E
	Z	ipP		54	02		H = 20 40 38
	NZE	iPP		57	01		h = 150 km
	N	i		57	45		D = 10400 km
	NE	iPPP		59	50		
	NE	e		01	35		
	N	iSKS		03	49		
	E	iS		04	15		
	NE	e		06	10		
	NE	eSS		10	50		
	NE	eSSS		16	15		
	N	eLQ		21	30		
	NE	eLR		24	10		
	NE	M		30	00		45s. 100μ
	NE	M		33	20		
	NE	M		38	30		
28	Z	iP	11	21	18	C	15N 93W
	Z	i		22	40		H = 11 09 30
30	Z	i	02	30	42		
	Z	iPKP	13	44	40		
May 1	Z	iP	08	31	58	C	36·5N 52E
	Z	iPP		33	18	C	H = 08 23 57
	Z	i		38	10	C	

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
May 4	N	iP	07	27	11	C	25s.
	N	i		27	25		52·5N 159·5E
	NE	ePP		30	06		H = 07 15 42
	NE	iS		36	36		D = 8100 km
	NE	eL		50	-		Changing Z
5	Z	iP	19	15	47		
6	Z	iPKP	17	48	00	C	
7	NE	eL	00	55	10		
8	Z	iP	11	46	14	C	
	Z	i		46	32		
	Z	e		50	01		
	Z	i	15	27	12		Seismic?
9	Z	iP?	13	49	49		
10	Z	iP	00	09	16		
	Z	e		09	30		
11	Z	iP	16	40	21	D	53·5N 160E
	Z	i		40	30	D	H = 16 28 49
	Z	ipP?		41	03	D	
12	Z	iP	05	09	03	D	54·5N 168E
	Z	i		09	10		H = 04 57 35
	Z	ePP		11	47		D = 7950 km
	N	eS		18	20		
	NE	i		19	46		
	NE	eSS		23	05		
	N	eL		32	30		
	N	M		37	30		
	Z	i	08	21	28		Seismic?
	Z	iP	10	00	00	C	23·5S 64·5W
	Z	i		00	14		H = 09 46 51
	Z	iPP		03	39	C	D = 10200 km
	Z	iPPP		05	51	D	
	NE	eSKS		10	25		
	NE	eL		48	00		
	Z	iP	21	52	10	C	
	Z	i		53	06		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
May 12 (contd.)	Z	iP	22	11	45	D	
	Z	i		11	58		
	Z	i		12	24		
14	Z	e	01	00	(11)		Doubtful beginning in hour mark.
	Z	iP	06	32	55		
	Z	iP	06	42	52	D	D = 3200 km
	Z	iPP		43	39		33·6N 24·4E
	N	iS		47	56		H = 06 36 59
	N	eIQ		51	55		D = 3100 km (BCIS)
	E	eIR		53	00		
	N	M		53	50		20s. 50μ
	Z	$iPKP_1$	09	53	03	D	19S 170E
	Z	$iPKP_2$		53	06		H = 09 33 22
	Z	i		53	25		
	Z	$iPKP_1$	11	01	31	D	19S 170E
	Z	$iPKP_2$		01	34		H = 10 41 56 h = 100km
	Z	i		01	45		
	Z	ipPKP		01	54		
	Z	iPKP	12	08	53	D	Repetition
	Z	i		09	00		H = 11 49 20
	Z	ipPKP		09	17	D	
	Z	i		09	36		
	Z	$iPKP_1$	13	39	00	D	19S 170E
	Z	$iPKP_2$		39	06	D	H = 13 19 32
	Z	i		39	21		h = 150 km
	Z	ipPKP		39	38		
	Z	iP	14	54	45		
	Z	i		54	56		
16	Z	ePKP	06	35	29		
	Z	i		36	26		
	Z	ePP		37	35		
18	Z	iP	07	35	51		
	Z	i		35	57		
19	Z	eP	15	27	20		
20	Z	eP	16	43	(01)		Doubtful beginning
	Z	eP	19	47	36		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
May 20	Z	iP	19	56	08		
(contd.)	Z	i		56	51		
21	Z	i	07	33	12		
	NE	eL	12	18	00		
22	Z	e	04	30	56		
24	Z	iPKP	04	57	59		20·5S 179W
	Z	i		58	03		H = 04 39 27
	Z	i		58	17		h = 700 km
	Z	i	10	30	05		
	Z	e	11	40	06		
	Z	iP	13	23	56	C	36·3N 4·8E
	Z	iPP		24	18	D?	H = 13 19 32 (BCIS)
	Z	iPPP		24	39		D = 2200 km
	NE	eL		30	00		
	EZ	iP	19	29	25	D	17·5N 97W
	Z	ipP		29	47		H = 19 17 40
	Z	i		30	15		h = 100 km
	Z	i		32	13		D = 8500 km
	Z	i		33	24	C	
	NZ	iS		39	08		
	N	eLQ		54	20		
	E	eLR		56	-		
	Z	iPKPPKP?		56	34		
	N	M		57	-		28s. 50
	E	M		59	30		22s. 30
25	Z	iPKP	05	22	47	D	
	Z	i	13	25	46		Seismic?
	Z	i	14	26	07		
26	Z	iP	04	25	54	C?	27·5N 126·5E
	Z	i		26	08		H = 04 13 01
	Z	ipP		26	16		h = 100 km
	Z	i		27	40		
	Z	iP	05	37	21	C	
	Z	i		37	37		
27	Z	eP	06	45	28		Small
	Z	i	23	03	43		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
May 29	Z	iPKP	11	02	21		19S 169·5E
	Z	ipPKP		02	44		H = 10 42 48
	Z	iSPKP		03	07		h = 100 km
	NE	eL		51	-		
31	Z	i	06	13	39		
	Z	iP	12	20	50		46·5N 27E
	Z	i		21	00		H = 12 15 51
	Z	i		22	06		
	Z	e		26	30		
	Z	e	13	27	53		
June 1	Z	e	17	27	52		
2	Z	e	00	59	23		Small
	Z	e	03	04	41		
	Z	iPKP	03	43	11		
	Z	i		43	55		
	Z	iPKP	03	51	51		
	Z	i		52	01		
	Z	i	05	53	32	D	
	Z	i	06	28	54		
3	Z	iP	05	55	02		
4	Z	iP	12	42	22	C	
	Z	iP?	13	31	04		
6	Z	i	02	53	49		
7	Z	i	02	08	59		
	NE	eP	13	49	(00)		Microseisms
	NE	eL	14	02	-		
10	Z	iP	04	21	42		Microseisms
	Z	iPP		22	29		36N 23E
							H = 04 16 03
11	Z	iPKP	01	29	22	D	
	Z	iP	21	14	54	D	
	Z	e		19	28		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
Jun. 12	Z	iP	00	57	38	C	51·5N 175W
	Z	i		57	52		H = 00 45 56
13	Z	iP	12	08	27	D	36N 32E
	Z	e		08	32		H = 12 02 00
	Z	iPP		09	20		
	Z	iP	22	00	05	C	46·3N 12·5E
	Z	iPP		00	14·5	D?	H = 21 56 45
	Z	e		02	34		D = 1600 km
	Z	e		03	27		
	Z	eLR		04	18		
14	ZN	iP	00	25	00	D?	20·5S 68W
	Z	ipP		25	29		H = 00 11 57
	ZN	iPP		28	30		h = 100 km
	NE	iSKS		35	22		D = 10200 km
	N	iS		35	50		
	NE	iSS		41	47		
	NE	eLQ		48	20		
	Z	iPKPPKP		50	34		
	N	eLR		55	-		
	NE	M	01	01	-		20s. 40μ
	Z	i	02	27	14		
	Z	i	02	56	04		
	Z	iPKP	15	16	39	D	
	Z	i	16	24	50		
	Z	iPKP	21	21	57	D	
	Z	e		23	46		
17	Z	i	10	58	04		Microseisms
18	Z	eP	15	43	00		
	Z	e		43	37		54N 161E
	Z	ePP		46	41		H = 15 58 38
	NE	eS		52	20		D = 8000 km
	E	eLQ		02	20		
	N	eLR		06	30		
	NE	M		12	20		
	NE	M		16	30		
23	NE	eL	15	06	-		
25	Z	iP	06	50	14	D	62N 27·5W

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Jun. 25	Z	i	06 50 22		H = 06 46 55
(contd.)	Z	i	50 33		D = 1680 km
	Z	e	51 36		
	Z	eLR	54 28		
	Z	M	57 30		
27	Z	iP	19 21 10	C	42N 80E
	Z	i	21 15		H = 19 11 23
	Z	i	21 27		
	Z	ePP	23 30		
	Z	$iPKP_1$	19 24 18	D?	33S 179W
	Z	i	24 28		H = 19 04 27
	Z	$iPKP_2$	24 59		h = 100 km
	Z	iPP	28 39		D = 17800 km
28	Z	iP	04 26 35	D?	
	Z	ePKP	20 02 17		
	Z	i	04 17		
29	NE	eL	08 30 -		

R. E. Ingram, S.J.

Seismological Observatory,
Rathfarnham Castle,
Dublin, Ireland.

Bulletin: July - September 1959.

Epicentres and origin times are those of U.S.C.G.S. unless otherwise noted.

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
July 1	Z	iP	02 37 18	C	28N 139·5E
	Z	i	39 48	C	H = 02 27 46
2	Z	ePKP	11 46 18		
	Z	i	11 47 12	C	
	Z	iPKP	11 52 56		
	Z	i	53 39		
	Z	i	12 00 05		
3	Z	iPKP	18 14 45	D?	
	Z	i	14 50		
4	Z	iPKP?	05 14 14	C	
5	Z	iP	14 19 18	C	
6	Z	iP	09 22 33	D	26·5S 64·5W
	Z	i	22 42	D	H = 09 10 17
	Z	ipP	24 50	C	h = 600 km
	Z	iSP	25 41	D	D = 10450 km
	Z	i	25 46		
	Z	iPP	26 23		
	Z	iSKS	32 17		
	Z	iP	09 35 43	C	
	Z	i	36 38	C	Repetition
	Z	ipP	37 58	D	
	Z	iSP	38 42	C	H = 09 23 27
	Z	iPP	41 53		
	Z	iSKS	45 19		
7	Z	iP?	13 42 47		Small
8	Z	iP	02 08 16	C	71·5N 19W
	Z	e	08 43		H = 02 04 00

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
July 9	Z	iP	16	18	16	?	20·5S 68W
	Z	ipP		18	46	?	H = 16 05 18
	Z	i		19	26		D = 10100 km
	Z	iPP		21	52		h = 100 km
	Z	i		22	46		
	NE	eSKS		28	37		
	NE	e		29	30		
	NE	eSS		34	36		
10	Z	i	12	05	38		Seismic?
	Z	iP?	12	31	24		
	Z	i		37	54		
11	Z	ePKP	05	11	20		
	Z	i		11	42		
	Z	iP	18	35	16		
	Z	i		35	31		
12	Z	iPKP	00	43	22		
13	Z	iP	12	40	27	C	
	Z	i		40	40		
16	Z	iP	15	29	16	D	
	Z	i		33	23		
	Z	$iPKP_1$	19	33	37		
	Z	$iPKP_2$		33	44		
17	Z	i	14	27	03		Seismic?
18	Z	iP	20	08	23		15·5N 120·5E
	Z	i		11	32		H = 19 54 45
	Z	iPP		12	14		D = 10850 km
19	NEZ	iP	15	18	38	D	17S 70·5W
	NEZ	ipP		19	31	C	H = 15 06 10
	Z	iSP		19	51	D	h = 200 km
	Z	i		20	05		D = 9800 km
	NEZ	iPP		22	10		
	Z	ipPP		22	59		
	NEZ	iSKS		28	34		
	NEZ	iS		29	02		
	NE	iPS		30	19		
	NE	eSS		35	10		
	NE	G		43	20		
	Z	iPKPPKP		44	33		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
July 20	Z	e	02	58	53		
21	Z	e	08	11	10		
	Z	e	12	41	18		
	Z	i	13	15	29		
22	Z	iP	19	34	44	D	
	Z	iPcP		34	57	D	53N 153E
	Z	i		35	33		H = 19 24 17
	Z	i		36	00		h = 650 km
	Z	ipP		37	03	C	D = 8100 km
	Z	iPP		37	57	D	
	Z	e		38	42		
	Z	iPKP	23	21	34	D	
23	Z	iP	03	49	55	C	
	Z	iPKP	15	16	28	D	24.5S 176W
	Z	i		16	36		H = 14 56 45
	Z	i	15	34	53	D	Tonga Is.
24	Z	iP	01	34	39	C	41N 125W
	Z	ePP		37	13		H = 01 23 09
	Z	i	07	28	12		
	Z	iP	16	29	27	C?	
	Z	e	23	18	20		
25	Z	iP	21	33	05	C	
26	Z	i	17	12	45	C	Very small
29	Z	e	15	29	38		Doubtful
31	Z	eP	20	02	18		Disturbed
Aug. 4	Z	iPKP	08	20	57	C	
	Z	i		21	12		
7	Z	eP	10	54	42		
	Z	e		57	29		
	Z	iP	21	56	24	D	56.5N 154W
	Z	i		56	33		H = 21 45 26
8	Z	eP	00	59	03	D?	55N 162.5E

Date	Comp.	Phase	G. M. T.			Type	remarks
1959			h.	m.	s.		
Aug. 8	Z	i	00	59	11	D?	55N 162·5E
(contd.)	Z	i		59	11		H = 00 47 38
	Z	i		59	23		D = 8000 km
	NE	eS	01	08	32		
10	Z	i	01	15	47		
	Z	i		15	54		
	Z	iP	23	19	20	C	
	Z	i		19	24		
11	Z	e	15	36	42		Small
	Z	e	23	33	12		
12	Z	eP	02	13	35		
	Z	eP	04	16	51		15S 28E
	Z	i		17	18		H = 04 05 20
	Z	ePKP	10	18	08		Microseisms
	Z	i		18	40		
	NEZ	e		41	56		
13	Z	iP	00	40	35	C?	First movement may be
	Z	i		40	43	C	small D followed by strong C.
15	Z	iP	09	10	12	D	23N 121E
	ZE	iPP		13	58	C	H = 18 57 04
	NE	eSKS		20	35		D = 10100 km
	NE	eSS		27	40		
	E	eLQ		39	30		
	NE	eLR		43	-		
	NE	M		51	-		20s. 200 μ
	NE	M		55	-		15s. 150 μ
	Z	i	13	01	49		
	Z	iPKP	13	34	09	D	
	Z	iP	18	53	22		
16	Z	iPKP	01	11	27	D??	
	Z	iP?	02	08	40	C	
	Z	ePKP	10	12	36		
	Z	ipPKP		14	03		
	Z	iP	18	47	44	D?	Small
17	Z	iP	01	38	06	D?	41N 19·8E
	Z	i		38	16		H = 01 33 14

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
Aug.17 (contd.)	Z	eL	01	45	01		(BCIS) D = 3100 km. First movement is small D followed by large C.
	Z	ePKP	21	24	01		7·5S 156E
	Z	ePP		27	04		H = 21 04 40
18	Z	iP	00	46	53	C	Formosa
	Z	i		50	39		
	ZNE	iP	06	47	49	D?	15s. 10μ
	ZE	i		49	53		44·5N 111W
	ZN	iPP		50	14		H = 06 37 13
	NE	iS		56	16		D = 7000 km
	NE	iSS	07	00	25		Yellowstone Park
	NE	eSSS		03	08		
	N	eLQ		04	42		
	NE	eLR		06	45		
	N	M		09	30		32s. 200μ
	NE	M		14			12s. 350μ
	Z	iP	11	13	40		Small
	Z	iP	15	36	39	C	
	NE	eL		55	-		
	Z	iP	22	08	53	D	41N 19·8E
	Z	i		09	36	D	H = 22 04 00
	Z	iP?	22	28	39	C	
19	Z	iP?	03	08	21	C	
	Z	i		09	34		
21	Z	$iPKP_1$	08	23	09	D	
	Z	$iPKP_2$		23	31	D	
	Z	i		24	29		
	Z	i		25	55		
			10 hrs - 12 hrs				Disturbance on records.
23	Z	e	03	08	40		
	Z	iP?	03	11	29	C	
	Z	iP	22	25	41	D	36N 3·5W
	Z	i		25	45	C	H = 22 21 35
	Z	eL		30	-		
24	Z	e	21	52	48		
	Z	e		54	42		

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Aug.25	Z	i	11 56 26		Seismic?
26	Z	iP	08 37 12	C	18N 94·5W
	Z	i	37 22	C	H = 08 25 30
	N	eS	46 45		D = 8300 km
	N	e	48 30		
	N	eLQ	57 20		
	NE	M	09 06 -		
	Z	eP	10 38 40		D = 7400 km
	N	eS	47 33		51N 132W
	N	e	11 00 00		H = 10 27 41
	NE	M	11 05 -		20s. 40 μ.
	Z	eP	11 05 45		
28	Z	e	00 04 35		Small
	Z	iPKP	02 57 57	D	
	Z	i	58 23		
	No record 12 hrs - 19 hrs.				
29	Z	iP	17 13 26	D	52N 106·5E
	Z	i	13 33		H = 17 03 10
	Z	i	15 40		D = 6700 km
	NE	eS	21 46		
	NE	e	23 10		
	NE	eSS	25 40		
	NE	eSSS	28 30		
	NE	eL	35 20		
	NE	iL	41 10		
	NE	M	43 15		15s. 50 μ.
30	Z	iP	03 29 07	C?	35·5N 3W
	Z	i	29 46		H = 03 24 54
	Z	e	23 09 -		
Sep. 1	Z	e	02 01 17		
	Z	e	03 25		
	Z	e	10 10 00		Seismic?
	Z	e	10 16		
	EZ	iP	11 42 32	C	41N 19·7E
	Z	i	42 48		H = 11 37 40 (BCIS)
	Z	i	43 28		D = 2450 km
	NZ	eS	46 37		
	N	eLQ	49 05		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
Sep. 1	N	iL	11	49	35		
(contd.)	N	M		50	30		30s. 70μ
	NE	M		53	00		16s. 30μ
3	Z	eP	04	06	58		Very small
	Z	e	06	50	-		Indistinct
4	Z	e	18	23	42		
	Z	iP	18	36	22		1S 24W
	Z	i		36	36		H = 18 26 41
5	Z	iP	21	40	29	D	
	Z	$iPKP_1$	23	23	36	C	
	Z	$iPKP_2$		23	43	D	
	Z	e		30	06		
8	Z	eP	10	16	04		
9	Z	eP	05	53	42		
	Z	e		54	12		
	Z	iPn	14	08	20		51·3N 3·2E Explosion
	Z	i		08	42		H = 14 06 46·2
	Z	i		10	21		D = 700 km
	Z	i		10	39		(BCIS)
10	Z	iP?	15	01	37		
	Z	iP	23	08	37	C	
11	Z	e	12	22	27		
	Z	e		25	54		
	Z	eP	12	35	19		
	Z	e		40	49		
	Z	iP	14	22	25		
	Z	i	15	37	32		Seismic?
12	Z	e	12	30	13		Very faint
	Z	e	21	30	09		
14	Z	$iPKP_1$	13	35	34	C	24S 176·5W
	Z	$ePKP_2$		35	44		H = 13 15 49
	Z	i		36	03		
	ZNE	$ePKP_1$	14	29	37	C	D = 17400 km
	Z	e		29	48	C	H = 14 09 39

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Sep.14 (contd.)	Z	$ePKP_2$	14 30 07	C	28·5S 177W
	Z	iPP	33 45		
	N	e	43 30		
	E	eSS	53 45		
	NE	eLR	15 23 -		
	NE	M	31		20s. 50μ
	NE	M	41		15s. 80μ
	Z	ePKP	17 26 12		
	Z	iPKP or P	17 34 32		
	Z	iPKP	22 43 56		
15	N	ePKP	06 19 45		
	N	ePP	23 31		
	E	e	43 11		
	N	eLR	07 18 -		
	N	M	30 20		20s. 30μ
	Z	$iPKP_1$	17 24 17	?	21·5S 179·5W
	Z	$iPKP_2$	24 22	?	H = 11 05 33
	Z	ipPKP	26 36		h = 600 km
	Z	i	27 11		
16	Z	e(P)	05 20 (00)		Microseisms
	Z	ePKP	16 16 55		"
17	Z	e	14 56 (00)		"
19	Z	iP?	15 50 20		
	Z	e	58 53		
20	Z	e	02 25 28		
23	Z	iP	22 41 33	C	
	Z	i	42 30		
	Z	iP	23 31 37	D	
	Z	i	34 41		
25	Z	eP	02 50 01		22N 122E
	Z	i	50 17		H = 02 36 48
	Z	ePP	53 58		
	N	eL	03 24 -		
	NZ	M	36 -		22s. 80μ
26	Z	e	08 32 24		Microseisms

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Sep.29	Z	e	15 52 26		
	Z	i	53 09		
30	Z	iPKP	20 45 40	D?	
	Z	e	46 09		

R. E. Ingram, S.J.

Seismological Observatory,
Rathfarnham Castle,
Dublin, Ireland.

Bulletin: October - December 1959

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Oct. 1	Z	i	03 02 22		Seismic?
5	Z	e	18 37 (00)		Microseisms
7	ZE	iP	08 35 31	C	41N 19·7E (BCIS)
	N	iS	39 31		H = 08 30 41
	N	eLQ	42 15		D = 2400 km
	E	eLR	43 30		
	N	M	44 10		13s. 20μ
	E	M	46 20		15s. 20μ
8	Z	i	00 22 53		Seismic?
	Z	iPKP	00 23 11		
	Z	i	23 33		
	Z	e	24 15		
12	Z	e	01 42 19		Seismic?
	Z	iP	03 35 29	C	
	Z	i	40 09		
14	Z	e	22 30 34		
18	Z	iP	17 18 05	C	
	Z	e	23 20 39		
	Z	iP?	23 36 01		
		i	36 39		
19	Z	iP	02 59 09	D	
	Z	iP?	04 21 07		
	Z	i	22 09		
	NE	eL	09 45 -		
	Z	e	16 15 05		Small

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Oct. 24	Z	eP	23 49 37		Microseisms
	Z	e	49 41		
25	Z	eP	06 55 18		Azores
	Z	i	55 26		
26	Z	iP	07 47 49	C	D = 9700 km
	Z	i	48 01	C	37·5N 142·5E
	Z	e	53 36		H = 07 35 12
	NE	eS	58 26		
	Z	iP(?)	10 39 25		
		e	40 35		
27	Z	eP	07 04 41		Microseisms
	Z	e	05 21		
29	Z	eP	10 47 46		Small
	Z	P	14 41 (23)		First reading in minute
	Z	i	42 09		mark (∓ 1 sec.)
	Z	i	44 47		
	Z	i	45 18		
31	Z	iPKP	04 45 55	D?	
	Z	i	45 59		
	Z	i	46 58		
Nov. 2	Z	ePKP	20 21 (59)		
	NS	eL	57 -		
4	Z	iPKP	18 42 29	D?	
5	Z	e	11 12 03		Seismic?
6	Z	iP	07 42 08	C	Albania
	Z	i	43 28		
	Z	iPKP	12 03 00	C	24S 174·5W
	Z	i	03 31		H = 11 43 06
	Z	i	03 46		
7	Z	i	01 31 29		
	Z	iP	02 36 23	C	36·5N 2·5E H = 02 32 07
	Z	i	36 48		D = 1950 km

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Nov. 7	N	eL	02 40 00		
(contd.)	Z	ePKP	22 35 (39)		
8	Z	iP	14 07 05		D = 8900 km
	Z	i	09 24		44N 140·5E
	N	eS	17 06		H = 13 54 55
10	Z	e	21 07 (08)		Microseisms
12	Z	i	07 20 42		
15	Z	iP	10 34 47	D?	38N 74·5E
	Z	i	36 09		H = 10 25 03
	ZE	iP	17 14 04	C	
	E	i	14 26		D = 2600 km
	N	iS	18 15		37·8N 20·3E
	NE	iS	18 21		H = 17 08 43
	N	eLQ	21 00		(BCIS)
	E	eLR	21 40		
	NE	M	23 30		10s. 150μ
	Z	iP	17 36 53	D	
	Z	i	37 53		
16	Z	iP	10 30 51	C	1N 26·5W
	Z	i	30 57		H = 10 21 17
	Z	e	32 07		D = 6300
17	Z	e	00 37 52		
	Z	e	01 15 52		Seismic?
18	Z	i	01 36 24	C	Seismic?
	Z	i	05 56 55	D	"
19	Z	ePKP	11 28 (02)		Microseisms
	Z	i	28 12		
	Z	e	32 40		
	Z	eP	14 06 (24)		
21	Z	i	15 31 19		Local disturbance?
	Z	i	31 43		
	Z	i	32 10		

Date	Comp.	Phase	G. M. T.			Type	Remarks
1959			h.	m.	s.		
Nov. 24	NE	eL	20	29	00		Microseisms
28	Z	ePKP	03	06	11		Microseisms
	Z	iP?	12	50	16		Small
29	Z	i	22	15	27		
	Z	i	23	56	02		
	Z	i		56	21		
30	Z	i	01	32	05		
	Z	e	11	27	25		Microseisms
	Z	i	15	29	59	D	
Dec. 1	Z	iP	12	44	03	C	38N 21·5E
	Z	i		44	08		H = 12 38 46
	Z	i		44	31		
	NE	eL		51	40		
2	Z	i	01	12	15		Seismic?
	Z	i	01	27	57		"
	Z	i	01	51	45		"
	Z	i	01	58	13		"
	Z	i	02	02	15		"
	Z	i	02	11	25		"
	Z	e	09	55	10		
4	Z	e	01	26	18		Microseisms
8	Z	e	13	40	(28)		Microseisms
	Z	e		41	00		
10	Z	e	04	22	19		
11	Z	e	01	59	27		Small
13	Z	i	14	23	06		Seismic?
14	Z	iP	22	12	28	D	Microseisms
	Z	e		13	05		
	Z	e	23	10	37		"

Date	Comp.	Phase	G. M. T.	Type	Remarks
1959			h. m. s.		
Dec.14	Z	e(PKP)	23 40 (36)		Microseisms
(contd.)	Z	e	41 37		
15	Z	i(P?)	23 06 00		
	Z	e	23 30 00		
18	NE	eL	16 59 00		Microseisms
21	No records 08 - 20 hrs.				
22	Z	e	00 19 43		
25	Z	i	10 33 (49)		Microseisms
	Z	i	35 12		
26	Z	iP	22 14 12	D	Microseisms
	Z	i	14 58		53N 160E H = 22 02 35
27	Z	e	05 29 41		
	Z	iP	12 06 (19)		Microseisms
	Z	i	12 53 07		
	Z	iP	16 04 13	C	56N 162E
	Z	i	04 26		H = 15 52 55
	ZN	eS	13 39		D = 8000 km
	NE	eL	25		
28	Z	iP	07 32 25		
			32 41		
	Z	i	11 46 21		
	Z	e(P)	13 16 (20)		Microseisms
29	Z	i	21 08 28		
31	Z	iP	20 57 37	D	37·5N 25W
	Z	i	57 43	C	H = 20 52 55
	Z	ePP	58 05		D = 2300 km
	Z	e	21 02 45		

R. E. Ingram, S.J.