

SEP 19 1960

Helwan Observatory, Egypt

Seismological Bulletin

January 1960



No.	date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	2	Z N	eP eS	12	55 46	06 02			10110	Confused with microseisms
2	2	Z	eX	14	46	27.0				Very weak
3	3	Z Z	eX eX	11	52 53	19 20				" "
4	3	Z NEZ	iP S	20	23 25	07.8 56			1835	Compression h = 300 Km.
5	3	Z Z E	eX eX eX	21	32 33 43	46.0 09 06				Very weak
6	4	Z Z NEZ E	eIP eX eX eX	6	12 16 19	42 47 50 18				" "
7	4	Z Z	eX eX	11	47	16 35				" "
8	4	Z Z E	eIP iX iX	12	55	36.7 40 39.8				" "
9	4	Z E	eX eX	22	10 19	50 46				" "
10	6	Z Z EZ	eP PPP S	23	01 02 05	35 05 33			2420	" "
11	7	Z NE	eX M	8	26 54	00				" "
12	7	Z Z Z NE NE	eP eX ePP S M	13 14	42 45 46 53 24	02 42 00 36			10890	Confused with microseisms
13	7	Z N	eP eS	23	28 36	05 50			6890	" " "
14	8	E	eX	11	54	46				Very weak
15	8	E E NE	eX eX M	15	11	24 45 40				" "
16	8	Z	eIP	21	54	53.0				" "
17	9	Z NEZ	iPn Sn	4	00 01	33.0 56			800	Compression
18	9	E E	eX eX	7	34 35	07 20				Beginning lost in changing the paper
19	11	Z	iP	2	40	12.0				Dilatation

No.	Date	Comp	Phase	G. M.		T. Per.	Amplitude	Dist.	Remarks
				h.	m.				
20	11	Z Z	eip ex	3	20	27.0 44		Very weak	
21	12	Z Z N NR	ex ex ex M	3	26 27 33	58 06 50		" "	
22	12	Z NR	ex (ign)	13	43	54 57		" "	
23	13	Z	ex	8	20	21.6		" "	
24	13	Z	ipg	10	13	52.0		Tura Blast	
25	13	Z Z Z ZE N E	eip ex IP SKS is PS	15 16	54 55 59 05 07 08	53 12 09 28 03 36	12110		
26	14	Z Z	ip ex	10	38	31.0 54		Compression	
27	15	Z Z Z N E	eip ex IP S eps	9	44 48 49 57 59	53 35 24 18 06	12520		
28	15	Z NE	ipn ign	10	42 43	34.8 55	766	Compression	
29	16	Z Z	ipKP ex	12	49 50	49.8 00		Dilatation	
30	16	Z Z	eip ix	21	02	05.3 35.0			
31	17	Z NE	eipn ign	2	53 54	22.2 55.5	710		
32	17	Z Z	ex ex	4	31 32	48 04		Very weak	
33	17	Z NE	eipn esn	21	46 47	28.0 50	788		
34	19	Z NE	eipn sn	00	06 07	27.4 50	799		
35	19	Z	ip	2	29	37.0		Compression	
36	19	Z Z Z	ePKP ex ex	9	33 34 36	56.4 07 07		Very weak	
37	19	Z NE	eipn ign	21	28 29	28.0 47.5	755		
38	20	Z NE	epn esn	18	12 13	06 24	744		
39	21	Z Z NE	ep ix ex	11	02	29.0 36.0 12		" "	



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
40	21	Z NE	ePn isn	11	07 09	45.6 06		766		
41	21	Z NE NE	ePn esn ix	11	31 32	19.0 37.8 43.6		755		
42	21	Z NE	eipn sn	14	09 10	38.0 57		755		
43	21	Z NE	eipn sn	19	54 55	06.0 23		853		
44	21	Z NE	ePn sn	22	27 28	19.0 39		766		
45	22	Z NE	ePn esn	9	59 10	41 00		755		
46	23	Z Z N Z	eP (PP) S eX	4	54 58	34.0 30		10945	Very weak	
47	23	Z Z	eipKP ppKP	6	46 48	20 00		16890	h = 400 Km.	
48	23	Z Z Z Z N N	iP eX PP eX eS eX	7	44 48 50 56 57	54.0 32 54 48 18 15		10890	Dilatation	
49	23	Z Z N	eX eX eX	18	14	03.5 31 06			Very weak	
50	24	Z N	eipKP eX	4	41 58	34.0 12			" "	
51	25	Z Z	eipKP eX	16	49 54	19.0 27			" "	
52	25	Z NE	eipn esn	17	21 22	25.0 45		766		
53	25	NEZ	ix	21	44	25.0			" "	
54	26	Z	eX	1	53	21			" "	
55	26	Z NE	eipn sn	3	13 14	35.0 55		766		
56	26	Z	eix	3	27	39.0			" "	
57	26	Z Z NE	eip eX ix	7	51 52	06 32 29			" "	
58	26	Z	Pn	9	55	00			" "	
59	26	Z NE	ipn sn	13	07 08	24.4 44		766	Dilatation	
60	26	Z N	eipn sn	13	15	07.0		788		



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
61	28	Z NE	ePn eSn	13	36 37	09.0 30		778		
62	26	Z NE	eipn sn	20	09 10	14.0 35		778		
63	26	Z Z Z	iP eX eX	20	30 31 33	45.3 46.6 52			Compression Very weak	
64	26	Z NE	ePn eSn	21	41 42	37.0 58		778	" "	
65	26	Z N	eX eX	22	41 42	16 08			" "	
66	27	Z NE	ePn sn	2	30 31	14.0 34		778		
67	27	NEZ	eX	8	04	36			" "	
68	28	Z NE	ePn eSn	00	03 04	10.4 30		778		
69	28	Z NE	eipn sn	4	10 11	22.6 42		778		
70	28	Z NE	eipn sn	4	33 34	09 27		744		
71	28	Z	iPg	10	15	08			Dilatation (Tura Blast)	
72	28	Z NE	ePn sn	16	07 09	51.7 10		744		
73	29	Z NE	ePn sn	3	25 27	43.5 07		799		
74	29	Z Z E	eP iX eS	7 8	58 09	54 03.4 27		9555	Very weak	
75	29	Z NE	eipn sn	16	45 46	35.0 53.8		755		
76	30	Z N	iPn sn	9	58 59	30.8 48		755	Dilatation	
77	31	Z Z E	eip eX eS	5	20 21 31	50 09 12		9265	Very weak	

9/19/60

Helwan Observatory, Egypt

Seismological Bulletin

February 1960



No.	Date	Comp	Phase	G; M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
1	1	Z NE	ePn Sn	4	49 51	53.5 14		778		
2	1	Z N NEZ	ipn ix Sn	12	01 03	50.0 24		889	Dilatation	
3	3	Z Z	eP oX	2	40 41	51 35			Confused with microseisms	
4	3	Z NR	Pg SS	7	45	10 32.8		190	Very weak	
5	3	Z NE N	eX eX ix	12	35 36	06 48 16			" " Local tremor	
6	3	Z Z	eX eX	14	49 50	13.6 00			Confused with microseisms	
7	4	Z Z Z E E	ePKP eX eX PP eX	4	05 06 14	23 38 54 48 20		13220		
8	4	Z Z	eP iPPP	7	11 12	42.0 11		2220		
9	4	Z Z	iP FP	7	17	34.0 53		2220	Compression	
10	4	Z NE	eIP S	17	03 13	13.2 42		9445	Very weak	
11	4	Z	eIP	17	33	37.7			" "	
12	4	Z Z	iP ix	20	57	11.8 22			Dilatation Very weak	
13	5	Z NE	ePn eSn	17	14 16	57.4 17		766	" "	
14	6	Z Z	eIP eX	17	22 23	50.0 09			" "	
15	6	Z NE	eIPn Sn	22	22 24	54.8 12		733		
16	7	Z	iP	10	19	47.0			Dilatation	
17	7	Z Z	iP oX	11	36 37	58.0 08			Dilatation	
18	7	Z N N	ePn Sn S*	17	25 26	08.0 29 52		766		
19	8	Z NE	ePn Sn	1	01 02	15.0 33		755		

No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist. Km.	Remarks
				h.	m.	s.	s.			
20	8	Z NE	ePKP eX	13	05 21	33 48			Very weak	
21	9	NE	sn	7	25	08			" "	
22	10	Z Z E	eP eX eX	00	09 13 20	25.0 21 06			" "	
23	10	Z Z Z	eIPKP eX eX	23	39 40 43	56.8 54 45			" "	
24	11	Z NE	iPn iSn	2	23 24	19.0 15	522		Compression	
25	11	Z Z	eX eX	4	18	29.2 41			Very weak	
26	11	Z	iPg	10	12	21.0			Dilatation (Tura Blast)	
27	11	NE	sn	11	52	35.0				
28	11	Z Z	ePKP PP	21	15 18	32.0 04	14610			
29	13	Z N NE	ePn eX sn	2	02 03	29.0 52 04	311		Not felt	
30	14	NEZ	iX	1	20	25.0			Near earthquake	
31	16	Z Z N N	Pn P* sn SE	11	57	22.8 30 55 06	289		Not felt	
32	16	Z Z	eX eX	13	25	35 43			Very weak	
33	17	Z Z Z	eIPKP eX eX	12	51 52 54	59.0 18 24			" "	
34	18	Z	eIP	19	34	32.0			" "	
35	18	Z	eIP	21	47	56.0			" "	
36	19	Z Z Z NE	iP iX PP iS	10	43 44 48	15.0 00 18 24	3390		Compression	
37	20	N	eX	1	52	48			Very weak	
38	20	Z Z Z	eP eX eX	14	39 43 47	52.0 20 18			" "	
39	21	Z Z	eIPKP iX	1	06	33.0 48			" "	
40	21	Z Z Z	iP PP eX	8	18 19 23	47.0 24 15	2780		Dilatation	



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
41	21	Z	eip	9	32	11.0		1290	Very weak	
		Z	eX			18				
		Z	eX			45				
		Z	eX	35		45				
42	22	Z	eip	1	15	21.0		1290	" "	
		Z	iX			33				
		Z	eX	15		42				
43	22	Z	eP	22	07	14		1290	" "	
		Z	eX			19				
		Z	eX			34				
		E	S	09		27				
44	23	Z	eip	1	34	00		1290	" "	
		Z	PP			10				
		E	S	36		12				
45	23	Z	iX	3	16	13.0		1290	" "	
		Z	iX			18 47				
46	23	Z	eP	7	37	31.0		1290	" "	
		NE	S			39 44				
		Z	eX			40 18				
47	23	Z	eip	7	50	48.0		1290	" "	
		NE	S			53 00				
48	23	Z	eP	11	49	59.0		1290	" "	
		Z	iX			50 05.8				
49	23	Z	ePn	16	13	37.0		778	" "	
		NE	esn			14 57				
50	24	Z	eip	18	58	16.8		1290	" "	
		Z	eX			25				
		Z	eX	19	02	08				
		Z	eX			03 18				
51	24	Z	ePn	20	59	12.0		889	" "	
		NE	sn	21	00	44				
52	24	Z	eipPKP	21	56	04.0		13555	" "	
		Z	eX			57 33				
		Z	PP			41				
		Z	eX			58 02				
		E	eX	22	07	48				
53	25	Z	eX	21	15	32		1290	" "	
		Z	iX			49.5				
54	26	Z	ePn	1	03	20		688	" "	
		NE	esn			04 42				
55	26	Z	eX	5	36	12		1290	" "	
		Z	eX			40 00				
		NE	eX			44 00				
56	26	Z	ePKP	6	52	30		1290	" "	
		Z	iX			48.4				
57	26	Z	eP	21	07	53.0		1290	" "	
		N	eX			11 42				
		N	eX			55				

No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist. Km.	Remarks
				h.	m.	s.	s.			
58	26	Z	P	23	42	51.2		10445		
		Z	eK		43	03				
		Z	IP		46	39				
		Z	SKS		53	24				
		N	eK			39				
59	27	Z	eiP	9	17	21.0			Very weak	
		Z	eK		20	36				
		Z	eK		26	42				
60	28	Z	ePn	1	01	40			" "	
		Z	eK		02	12				
		Z	eK			21				
		E	eK		03	15				
61	29	Z	eP	00	29	21.8			" "	
		Z	eK		33	22				
		Z	eK		37	30				
62	29	Z	eiP	5	35	06.7			" "	
		Z	eK			35				
63	29	Z	eiP	23	47	13.0		3945		
		Z	(PP)		48	27				
		NR	eS		52	50				



9/19/60

Helwan Observatory, Egypt

Seismological Bulletin

March 1960



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist. Km.	Remarks
				h.	m.	s.	s.			
1	1	Z N	iPg isg	4	07 08	55.0 09.8		128	Compression (not felt)	
2	1	Z N	ePn sn	19	38 39	31.8 33		577		
3	1	Z Z	eX eX	20	19	43 52			Very weak	
4	2	Z NE Z	eP eX eX	12	21 25 27	55 14 27			" "	
5	3	Z NE	eX M	11	47 56	16			" "	
6	4	Z Z Z Z N NE	iP pP sP eK S ss	4	05 06 07 15 16	17.0 51 04 05 18 15		9220	Compression h = 140 Km.	
7	4	Z Z	eip eX	20	05 25	39 03			Very weak	
8	4	Z Z NE	iP eX M	21	16 44	16.0 34			Dilatation Very weak	
9	5	Z NE	eX eX	6	56 57	17 54			" "	
10	5	Z N	eX eX	11	28 29	35 48			" "	
11	5	Z Z Z	iP iX iX	11	33	06.8 14 57			Compression	
12	5	Z Z E N	eip pP SKS eX	14	02 06 13 14	50.8 44 24 00		10665		
13	5	NE	(sn)	22	19	59			Very weak	
14	6	NEZ	(sn)	13	58	42			" "	
15	7	Z Z N	iP (PPP) S	00 1	56 57 00	25.0 14 18		2365	Compression	
16	7	Z	eip	5	26	24.4			Very weak	
17	7	Z	eip	6	23	57.0			" "	

No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
18	8	Z	iPKP	16	52	29.0		15335	Compression h = 250 km.	
		E	pPKP		53	30				
		E	FP		55	29				
		E	eX		56	12				
19	10	Z	iX	00	16	15			Very weak	
		Z	eX		18	12				
		E	eX		19	12				
		E	eX		20	12				
20	10	Z	eIPKP	14	04	17.6		16945		
		Z	PKP			36				
		Z	PP		08	10				
21	10	Z	iP	14	45	16.4			Dilatation Very weak	
		Z	eX			43				
22	12	Z	eIP	11	57	26.0		1520		
		Z	iX		58	09				
		NZ	S	12	00	00				
		Z	iX			25				
23	12	Z	iP	20	49	35.0		13555	Compression	
		EZ	iPP		51	00				
		E	SKKS		58	06				
24	14	Z	eP	20	18	41.0		1480	Very weak	
		Z	eS		21	10				
		N	eX		23	34				
		NZ	PoP		24	10				
25	15	Z	eIP	9	54	30.0			" "	
26	15	Z	ePn	21	22	02		733	" "	
		NE	eSn		23	19				
27	16	Z	ePKP	17	59	11.0		17000		
		Z	eX			51				
		Z	PP	18	03	06				
28	17	Z	ePn	2	41	42.0		644	" "	
		N	eSn		42	50				
29	17	Z	ePn	23	43	56.0		688		
		Z	Pg		44	02				
		NE	iSn			48.6				
30	18	Z	ePn	18	32	25.7		722		
		NE	iSn		33	31.7				
31	19	Z	eP	14	56	23				
		Z	eX		57	32				
		N	eX	15	00	06				
		N	eX		04	12				
32	19	Z	ePn	22	11	43		577	" "	
		NE	eSn		12	45				
33	20	Z	eP	1	33	25.6		1280		
		NE	eS		35	36				
34	20	Z	ePn	3	58	05.0		599		
		NE	Sn		59	09				
35	20	Z	eX	10	48	16			" "	
		Z	eX		49	47				



International
Seismological
Centre

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
36	20	Z	eip	13	49	32.4			Very weak	
			eX	14	00	00				
37	20	Z	iP	17	20	11.0		9555	Compression	
		NE	PP		23	36				
		NE	SKS		30	36				
38	20	Z	eP	22	29	18.0		1555	Very weak	
		Z	S		31	54				
		Z	eX		33	00				
39	20	Z	eP	22	36	28.0			" "	
		Z	S		39	02				
40	21	Z	iP	00	47	34.0		9555	Compression	
		Z	PP		51	00				
		NE	SKS		58	00				
41	21	Z	ePKP	2	10	05.8			Very weak	
42	21	Z	eP	3	55	47			" "	
43	21	Z	epn	7	21	55		877	Confused with microseisms	
		NE	esn		23	26				
44	21	Z	iX	9	31	05.0				
		Z	eX			54				
45	23	Z	eip	00	36	05.8		9665		
		Z	PP		39	30				
		NE	is		46	36				
46	23	Z	eP	1	20	00			" " "	
		Z	eX		21	42				
47	23	Z	eipn	7	33	19.0		611		
		NE	ign		34	24				
48	23	Z	iPg	10	14	58.0			Dilatation (Tura Blast)	
49	23	Z	epn	12	12	09		611		
		NE	esn		13	14				
50	23	Z	eip	22	35	22.2		9555		
		Z	eX			52				
		Z	PP		38	44				
		N	SKS		45	44				
		N	S			57				
51	23	Z	eX	23	14	11			Very weak	
52	24	Z	eipn	3	19	43.4		667		
		NE	sn		20	53				
53	24	Z	eip	6	07	14.0			" "	
		Z	eX			34				
54	24	Z	eX	23	30	19			" "	
		Z	eX			49				
		Z	eX		31	12				
		Z	eX			42				
55	25	Z	iPKP	2	48	07.8			Dilatation	
		Z	eX			19				



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks	
				h.	m.	s.	s.				
56	25	Z	eip	9	50	44.0		2645			
		Z	eX		51					45	
		E	S		54					57	
57	27	Z	eipKP	4	07	49.0		14780			
		Z	PP		10					20	
58	27	Z	eipKP	9	17	17.0		15110			
		Z	PP		19					51	
		Z	PKS		20					58	
59	27	Z	eP	17	44	44			Very weak		
60	27	Z	eipKP	23	47	48.0					
		Z	iX		48					46	
		Z	eX		52					10	
61	28	Z	eP	00	32	12			" "		
		Z	eX		35					08	
		E	SKS eX		39					53	
		E	eX		42					36	
62	28	Z	eipKP	6	55	22.0			" "		
		Z	eX							57	
		Z	eX		7					58	57
		Z	eX		7					02	07
63	28	Z	eipKP	12	57	52.0			" "		
		Z	eX		58					06	
64	28	Z	eP	20	57	52.2			" "		
		Z	eX		58					06	
65	29	Z	eP	00	30	48.0			" "		
66	29	Z	eP	6	50	24.0			" "		
		Z	eX		52					30	
		EZ	eX		53					12	
		Z	eX		58					15	
67	30	Z	ePKP	11	09	09		15110			
		Z	eX							45	
		Z	PP		11					52	
		Z	(PKS)		12					52	
68	30	Z	ePKP	15	40	09			" "		
		Z	eX							21	
69	31	Z	epn	15	02	33.6		700			
		NE	esn		03					47.6	

9/19/60

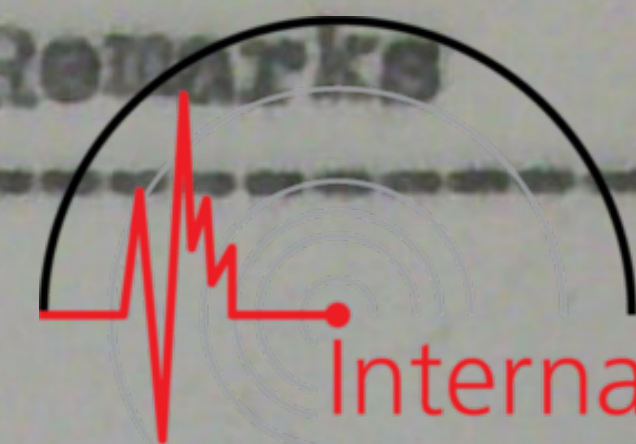
Helwan Observatory, Egypt

Seismological Bulletin

April 1960



No.	date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z	iPKP	3	13	54.6				Dilatation
		Z	iX		16	14.8				Very weak
2	1	Z	ePn	16	48	08			355	Not felt
		NE	eSn			47				
3	1	Z	iP	23	21	28.0				Compression
4	2	Z	eip	22	39	32.0			1745	
		Z	PPP			54				
		Z	iX		40	56				
		NEZ	S		42	28				
		Z	PcP		44	33				
5	2	Z	eip	23	36	45.0			1745	
		Z	PP			55				
		Z	iX		38	24				
		EZ	S		39	39				
6	6	Z	iPg	10	14	27.0			(Tura Blast)	Dilatation
7	7	Z	ePn	00	17	12.0			600	Very weak
		NE	eSn		18	16				
8	7	Z	ePn	1	40	12.0			600	" "
		NE	eSn		41	16				
9	7	Z	ePn	6	19	03.0			688	" "
		NE	eSn		20	15				
10	7	Z	iPKP	14	06	28.6				Dilatation
		Z	eX			40.6				
11	7	Z	ePg	18	26	06.4			110	Not felt
		NE	eSg			19.7				
12	8	Z	eP	00	15	24.8				Very weak
		Z	eX			46				
		Z	eX		16	16				
		Z	eX		19	18				
13	8	Z	ePn	2	46	28.0			778	" "
		NE	eSn		47	49				
14	10	Z	iPn	22	07	29.6			844	Dilatation
		NEZ	Sn		09	58				
15	12	Z	iPn	4	24	42.0			844	Dilatation
		Z	iX			55				
		NE	iSn		26	10				
16	13	Z	ePn	11	29	52.2			821	
		NE	iSn		31	07				
17	15	Z	ePn	3	21	31			544	Very weak
		NE	eSn		22	29				
18	15	Z	eIPKP	3	45	29.0				" "
		Z	eX			50				
		Z	eX		48	21				



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
19	15	Z NE	ePn Sn	11	01	33.0 02 42		655		
20	15	Z Z E	iP iX S	11	51	23.0 47 36		9110	Dilatation Very weak	
21	15	Z NE	ePn Sn	13	12	14.0 13 33		855		
22	15	Z NE	(ePn) Sn	13	19	40 20 49		655		
23	15	Z Z Z	iPKP PP PKS	22	24	30.0 27 06 28 02		14890	Dilatation	
24	17	Z E	eIPn Sn	12	57	48.6 59 00		688		
25	17	Z Z	eIP eX	21	08	29.5 09 46			Very weak	
26	21	E E	eX iX	1	00	35.0 52.5			" "	
27	21	Z E	eIPn eSn	5	21	43.6 22 58		700	" "	
28	22	Z Z Z Z Z	eIPKP PKKP eX PP eX	20	46	00.0 21 47 04 49 57 51 09		17000	h = 200 Km.	
29	23	Z Z Z	(eP) eX eX	6	30	09 35 18 36 30			Very weak	
30	24	Z Z E N N	iP iPP iSKS iS eSS	3	34	08.0 36 15 45 36 50 47 36		9555	Dilatation h = 600 Km.	
31	24	Z Z NEZ	iP iX iS	12	19	06.5 20 14 22 57		2335	Compression	
32	24	Z	iX	14	58	10.0			Very weak	
33	25	Z Z	eX eX	6	51	44 52 20			" "	
34	25	Z Z	eX eX	7	01	46 03 41			" "	
35	25	Z Z Z	eIP iX iX	16	31	01 36 55			" "	
36	26	Z	eIP	21	37	04.4			" "	
37	27	Z N	iPg SG	10	01	18.8 21.0	(Tura Blast)		Dilatation	

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
38	27	Z	iP	17	44	10.0				Very weak
		Z	iX			22				
		NZ	eX			51 12				
39	27	Z	eX	22	56	02				" "
40	28	Z	eX	6	01	43.8				" "
41	28	Z	iPn	11	07	57.0		722		Dilatation
		NR	Sn		09 13					
42	28	Z	ePn	16	34	51		588		
		Z	eX			58				
		NR	Sn			35 54				
43	29	Z	eX	2	31	29.0				Very weak
		Z	eX		32 24					
44	29	Z	eX	13	58	29				" "
		Z	eX			42				
45	29	Z	eip	15	05	29				" "
		Z	eX			40				
46	29	Z	iP	19	45	15.0		10000		Compression
		Z	PP		48 51					
		NR	S		56 12					
47	29	Z	eP	20	57	29				Very weak
		Z	eX		21 01 04					
		Z	iX		27					
48	30	Z	eP	4	14	36		10000		
		Z	PP		18 09					
		N	S		25 30					
49	30	Z	eipn	10	14	33.8		810		
		E	Sn		15 57					



Helwan Observatory, Egypt

Seismological Bulletin

May 1960

9/19/60



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
1	1	Z NE	(ePn) Sn	8	41 42	25 48		700	Very weak	
2	1	Z NE	iX (Sn)	10	19 20	33.0 21			" "	
3	1	Z N	eX eX	17	42 44	10 30			" "	
4	1	Z	eX	18	11	39.0			" "	
5	2	Z	eX	8	42	18.6			" "	
6	2	Z Z	eP eX	8	51 52	54.0 10			" "	
7	2	Z NE	eX eX	11	30 32	55.5 20			" "	
8	2	Z Z NE	Pn eX Sn	12	04 05 06	51.0 06 02			" "	
9	2	Z Z	eX eX	17	41	09 53			" "	
10	2	Z NE Z	iP eX eX	18	39 40 42	30.0 57 12			Dilatation	
11	2	Z Z Z	iP eX eX	22 23	53 00 02	15.0 06 33				
12	3	N Z	eX eX	2	28 29	51 05			Very weak	
13	3	Z Z N	eP eX eX	5	46 47 48	18 07.6 40			" "	
14	3	Z Z Z NE	iP PP eX eS	7	03 04 07	35.0 55 30 20		2220	Compression	
15	3	Z	iP	8	05	07			Dilatation	
16	3	Z Z	eIPKP eX	8	15 17	40.6 46				
17	3	Z	ePKP	8	29	04			Very weak	
18	3	Z	iP	22	35	20.0			Dilatation	
19	4	Z Z	iPKP eX	00	16	29.0 41.0			Dilatation	
20	4	Z N N	eP eX eX	2	33 34	12 11 10			Very weak	

No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
21	4	Z	eIPKP	18	49	17			Very weak	
		Z	eX		50	27				
		Z	eX		51	11				
22	5	Z	iP	11	38	40.0			Dilatation	
23	6	NE	(sn)	18	08	19			Very weak	
24	6	Z	eX	18	30	10			" "	
25	6	Z	iP	19	00	06.5			Compression	
		Z	eX			45				
26	6	Z	ePn	23	00	46		788	Very weak	
		NE	eSn		02	08				
27	9	Z	iP	00	23	39.0			Compression	
28	9	Z	eIP	1	50	38.6				
		N	eX		52	10				
29	10	Z	eX	21	56	24.0			Very weak	
		N	eX	22	01	54				
		Z	eX		02	43				
30	11	Z	eX	18	54	29			" "	
		Z	eX		57	12				
		N	eX	19	01	20				
		Z	eX		02	48				
31	12	Z	eP	22	51	00			" "	
		Z	eX		55	06				
32	13	Z	eIP	16	20	35.0		10555		
		Z	iX			50.0				
		Z	PP		24	27				
		N	SKKS		31	24				
33	14	Z	ePn	3	18	41		733		
		NE	sn		19	58				
34	14	Z	iP	22	32	36.0			Compression	
		Z	eX		34	33				
		Z	eX		39	33				
35	15	NZ	eX	13	42	28			Very weak	
36	15	Z	ePn	13	56	03		833	" "	
		E	(sn)		57	30				
		E	eX			50				
37	16	Z	ePn	18	34	13		778	" "	
		NE	sn		35	34				
38	18	Z	iP	6	47	27.0		9220	Compression	
		Z	PP		50	42			h = 100 Km.	
		Z	PPP		52	42				
		N	eX		58	00				
39	18	Z	iP	7	17	22			Dilatation	
		Z	iX			40				
40	18	Z	iP	8	45	52.0		2155	Dilatation	
		NZ	S		49	04				
		N	eX		51	36				



International
Seismological
Centre

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
41	18	Z	eX	14	29	56			Very weak	
		Z	eX		32	27				
42	19	Z	iP	2	13	29.0		3780	Compression h = 200 Km.	
		Z	iPP		14	06				
		Z	iX			45				
43	19	Z	eP	10	21	51.0		6720		
		Z	iX			58				
		Z	PcP		22	55 35				
		N	S		30	05				
		N	PS			30				
		E	iX		31	54				
44	19	Z	(ePn)	13	24	17.5		810		
		NE	Sn			25	52			
45	19	NEZ	Sn	23	43	39			Very weak	
46	20	Z	iP	4	18	51.0		2220	Dilatation	
		N	S		22	30				
		NZ	eX		24	54				
47	20	Z	(ePn)	6	34	50		455		
		NE	Sn			35	39			
48	20	Z	eIPKP	11	32	00		15220	Very weak	
		Z	PKS		35	30				
		Z	eX		37	00				
		Z	eX		41	18				
49	21	Z	eX	6	40	45.8			" "	
		Z	eX		44	08				
		NE	eX		46	12				
50	21	Z	eP	10	18	00		13055		
		Z	ePKP		21	39				
		NEZ	PP		22	54				
		N	eX		31	36				
		E	PPS		33	55				
51	21	Z	eX	13	20	00			" "	
		Z	eX			17				
52	22	Z	(ePP)	10	50	42.0			" "	
53	22	Z	(ePP)	10	52	45				
		N	eX			58	36			
		NE	eX		11	02	54			
		E	eX			03	06			
54	22	Z	eP	19	11	09		13220		
		Z	eIPKP			14	48			
		NEZ	ePP			16	00			
		NE	eX			21	30			
		NE	eX			38	50			
		NE	(PPS)			37	10			
55	23	Z	ePKP	00	44	37.0			Confused with the preceding earthquake	
		Z	(PP)			46	09			
56	23	Z	(ePP)	3	06	45			Very weak	
		Z	eX			07	29			
57	23	Z	(ePP)	3	16	45			" "	
		Z	eX			19	18			



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
58	23	Z	ePKP	5	32	26.0	13220			
		Z	(iPP)		33	39				
		Z	PKS		36	09				
		N	PS		43	36				
59	23	Z	eX	8	28	16			Very weak	
		Z	eX		29	52				
60	23	Z	eX	11	12	24			" "	
		Z	eX			36				
61	23	Z	eX	11	58	24			" "	
62	23	Z	ePn	15	17	16.4	778			
		NE	Sn		18	37				
		Z	eX			56				
63	24	Z	eIP	16	06	11			" "	
		Z	eX		07	57				
		Z	eX		09	38				
64	24	Z	eX	16	21	09			" "	
		N	eX		28	18				
65	25	Z	ePn	1	31	25.2	400			
		NE	Sn		32	09				
66	25	Z	iPKP	8	53	35.0	13720		Dilatation	
		Z	eX		55	12				
		Z	eX		57	42				
		N	PS		9	05				14
67	25	Z	eIP	12	54	39.0	2335			
		Z	eX			56				
		N	(is)			58				30
		N	eX			13				01
68	25	Z	iPKP	15	18	06.8	17220		Dilatation h = 600 Km.	
		Z	eX			18.8				
		Z	PPKP			20				23
69	26	Z	eIP	5	13	25.2	1445			
		NEZ	is		15	52				
70	26	Z	Pg	9	15	00			(Tura Blast)	
71	26	Z	eX	13	57	13			Very weak	
		Z	eX		58	06				
72	26	Z	ePn	15	13	48.0	588		" "	
		NE	Sn		14	51				
73	26	Z	eIP	20	14	31.0			" "	
		Z	eX		15	04				
		Z	eX			37				
74	27	Z	eIPKP	00	44	39.8			" "	
		Z	eX		45	05				
75	27	Z	eX	1	12	23			" "	
		NE	eX		19	25				
76	27	Z	eX	23	27	27			" "	
		Z	eX		39	40				
		Z	eX		40	45				
77	28	Z	iPn	11	36	44.0	677		Compression	
		NE	iSn		37	55				



No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist.	Remarks
				h.	m.	s.	s.			
78	28	Z	eX	19	25	44.8			Very weak	
		Z	eX		27	53				
		N	iX		28	13				
79	29	Z	ePn	00	50	02.5		744		
		NE	Sn		51	20				
80	29	Z	ePKP	21	42	51			" "	
		Z	eX		44	27				
81	30	NZ	eX	11	21	48.2			" "	
		N	eX		22	05				
82	31	Z	eIP	1	29	29.0			" "	
83	31	Z	eX	4	00	22			" "	
		N	eX		10	36				
84	31	Z	iP	12	14	51.0		9280	Dilatation	
		Z	eX		15	09				
		NE	S		25	12				
85	31	Z	iP	22	12	09.0			Dilatation Very weak	



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z	eipn	6	35	08.0		889		
		NE	sn		36	39.8				
		N	sg		37	31				
2	2	Z	eX	7	27	54.6			Very weak	
		Z	eX		28	52				
		N	eX		36	28				
		N	eX		40	00				
3	2	Z	ePKP	8	06	03.7		13110	" "	
		Z	PP		07	24				
		Z	eX		08	56				
4	2	Z	iP	12	46	17.0		2245	Dilatation	
		Z	PPP			49				
		Z	eX		47	46				
		Z	eX		48	06				
		Z	iX		49	15				
		Z	S		51	08				
5	2	Z	eipKP	19	18	02.4		17220	Very weak h = 550 Km.	
		Z	eX			15				
		Z	PPKP		20	15.7				
6	3	Z	iPKP	13	33	26.0		17780	Dilatation h = 600 Km. Very weak	
		Z	eX			34.4				
		Z	(pPKP)		35	51				
7	3	Z	eipKP	13	42	20.0		16665	" " h = 650 Km.	
		Z	iX			25.2				
		Z	(pPKP)		44	48				
8	3	Z	eip	13	30	31.0			Very weak	
		Z	eX			51				
9	4	Z	eipn	8	52	45.0		610	Dilatation	
		Z	Pg		53	11				
		NE	isn			50				
10	6	Z	eipKP	6	14	41.0		13555		
		Z	eX		15	27				
		Z	PP		16	19				
		NE	SKS		21	40				
		NE	PS		26	10				
		NE	eX			48				
11	6	NEZ	eX	20	11	22.6			Very weak	
		NEZ	eX			28.2				
12	7	Z	ePn	4	59	39.0		677	" "	
		NZ	sn	5	00	50				
		Z	iX		01	18				
13	7	Z	iP	13	09	54.0			Compression	
14	7	Z	eip	15	40	49.5		3220		
		Z	eX		41	36				
		Z	(PP)			45				
		N	eX		47	00				
15	7	Z	eX	22	13	31.0			Very weak	
		Z	eX		19	00				

No.	Date	Comp	Phase	G. M. T. Per.				Amplitude	Dist. Km.	Remarks	
				h.	m.	s.	s.				
16	8	Z	eP	8	33	36.5		1280	Very weak		
		Z	eX							40	
		N	(S)							35	47
17	8	Z	iP	16	29	24.5		6220	Dilatation		
		Z	eX							55	
		Z	eX							33	18
		N	eS							37	12
18	9	Z	eIP	2	47	04.0			Very weak		
		Z	eX							51	45
		Z	eX							52	15
19	9	Z	eP	8	27	17.0		1500			
		Z	PPP							32	
		N	iS							29	47
20	9	Z	iPKP	11	43	27.0		15665	Dilatation		
		Z	PP							46	24
21	9	Z	eIP	17	56	23.0		5335	Very weak		
		Z	(PP)							58	06
		N	S							18	03
22	10	Z	eIPKP	21	32	06.0		17780	" "		
		Z	PKS							35	42
23	11	Z	ePKP	00	53	57			" "		
		Z	eX							56	18
		Z	eX							58	48
24	11	Z	eP	15	29	36		13445			
		Z	eIPKP							33	05
		Z	PP							34	30
		N	eX							42	36
		Z	eX							46	54
25	11	Z	eIPKP	16	56	41.0		13500			
		Z	PP							58	17
		Z	eX								37
26	12	Z	iPKP	4	15	33.6		17220	Dilatation h = 600 Km.		
		Z	iX							43	
		Z	pPKP							17	49
27	12	Z	eIPKP	7	17	43.6			Very weak		
		Z	eX							58	
28	12	Z	ePKP	7	39	27		15780	" "		
		Z	(PKS)							43	06
29	13	Z	ePKP	6	06	04.7			" "		
30	13	NEZ	iPg	13	07	25.0			" "		
31	14	NEZ	eX	00	47	37			" "		
32	15	Z	iP	15	49	28.4		9445	Compression		
		Z	PP							52	48
33	15	Z	ePKP	23	09	44.0			Very weak		
34	15	Z	eP	23	51	18					
		Z	eX							54	54
		Z	eX							56	15
		Z	eX							58	51



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
35	16	Z	iPg	9	15	41.0		(Tura Blast)	Compression	
36	16	Z	eP	10	28	46.8			Very weak	
		Z	eX		32	05				
37	17	Z	iP	3	03	46.0			Dilatation	
		Z	eX			55				
38	17	Z	iPKP	5	21	26.5			Dilatation	
39	17	Z	eP	11	01	50.0			Very weak	
		Z	eX		02	00				
40	17	Z	eX	16	48	54.0			" "	
		Z	eX		49	04				
		Z	eX			14				
41	17	Z NE	ePg iSg	21	58	03.7 10.8		61	Not felt	
42	18	Z NE	eIPn Sn	2	05 06	42.4 48.0		622		
43	19	Z Z E NE E	eIP PP (PPP) S iX	8	36	03.0 10.6 15.6 37 42 38 08		955	Very weak	
44	19	Z Z	iP iX	12	40	52.0 57.8			Compression	
45	19	Z	eP	17	30	41.0			Very weak	
46	20	Z Z NEZ N N	ePKP eX PP PS iX	2	20 21 31 32	04 15 27 17 30		13335		
47	20	Z Z NZ NE NE NE	eP ePKP PP SKS SKKS PS	13	14 18 19 25 26 29	59 27 45 18 48 48		13335		
48	21	Z	eP	21	51	39			" "	
49	22	Z Z Z	eIP eX eX	16	18 19	17.6 20 54			" "	
50	22	Z N N	ePn P* Sn	17	51 52 53	45.0 04 10		810		
51	22	Z	iP	23	42	17.0			Dilatation	
52	23	Z NE	eIPg Sg	00	02 03	55.8 03		61	Not felt	
53	23	N N	eX eX	16	20 21	25 46			Very weak	



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
54	25	Z	eiPn	12	23	41.0		866		
		NE	Sn		25	11				
55	25	Z	eP	15	01	39.0			Very weak	
		Z	eX			53				
		Z	eX			02 07				
56	26	Z	ePn	18	28	22.0		633		
		NE	Sn		29	29				
57	28	Z	eiPn	21	19	11.0		866		
		NE	Sn		20	41				
58	29	Z	eP	2	17	35			" "	
59	29	Z	eiP	4	49	09			"	
		Z	eX			17				
		Z	eX			45				
60	29	Z	eiP	10	31	43.0			" "	
61	30	Z	eiP	20	11	34.0			"	
		Z	eX		12	21				

Helwan Observatory, Egypt

Seismological Bulletin

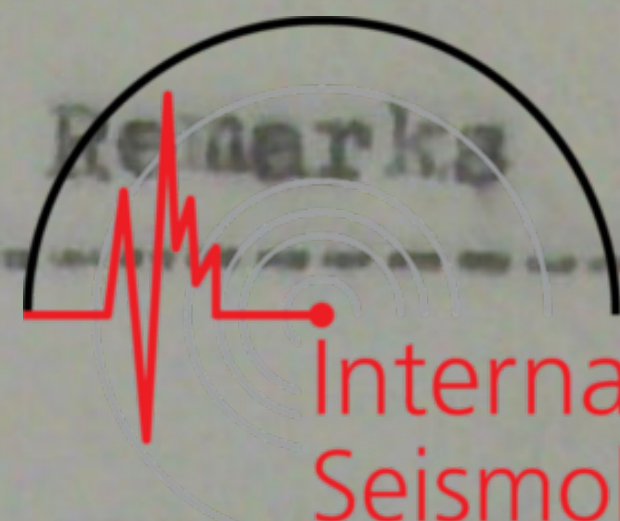
July 1960



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z	eip	8	11	47.0			Very weak	
2	2	Z	eP	12	09	27		11110	" "	
		Z	PP		13	33				
		N	eSKS		19	54				
		NE	is		21	00				
3	2	Z	ePn	13	09	41.0			" "	
		N	eX			46				
4	3	Z	iP	20	34	16.4		10780	Dilatation	
		NEZ	iPP		38	09				
		Z	eX		41	56				
		N	iPS		47	03				
5	4	Z	eP	3	47	45		2110	Very weak	
		Z	eX		48	18				
		Z	eX		49	32				
		Z	(eS)		51	15				
		Z	eX		53	44				
6	4	Z	eip	4	42	12.0		10780		
		Z	PP		46	10				
		N	SKS		52	48				
		N	eS		53	36				
7	4	NE	eX	8	58	43.0			Near earthquake	
8	4	N	eX	11	49	43.7				
		N	eX		51	07				
		Z	iX		55	45				
		Z	eX		58	24				
9	4	NE	eX	12	39	53			" "	
10	6	NEZ	eP	5	23	09		3665	h = 150 Km.	
		Z	iX			45				
		Z	iPP		24	27				
		N	eS		28	18				
11	6	NEZ	iPg	9	14	45.2			(Tura Blast) Dilatation	
12	8	N	eX	9	18	10			Very weak	
		Z	eX			36				
13	8	Z	eip	13	05	44			" "	
14	8	Z	eip	18	41	26		8945		
		Z	eS		51	33				
		Z	iPS		52	17				
		Z	iX		54	45				
15	9	Z	eX	3	44	04			" "	
		Z	eX			53				
		Z	eX		49	12				
16	9	N	(ePn)	4	11	40		667		
		N	eX			57				
		NE	(eSn)		12	50				
		E	iX		13	17				
		E	iX			57				

No.	Date	Comp	Phase	G. M. T.			Par.	Amplitude	Dist.	Remarks
				h.	m.	s.				
17	10	Z	eiP	00	16	32		10520		
		Z	PP		19	10		7665		
		NE	iS		25	39				
		N	eX		26	30				
		NE	M		40					
18	10	Z	eiP	13	53	51.8			2165	
		Z	PP		54	12				
		NE	S		57	26				
19	10	Z	iPg	22	17	10.0			122	Compression
		NE	iSg			23.7				(not felt)
20	10	NEZ	eX	23	07	12				Very weak
21	11	Z	epn	5	08	07.0			710	
		NE	esn		09	22				
		N	iX			40				
22	11	Z	eiPKP	12	15	05.0			17110	
		Z	(iPKP)			29.0				
		Z	PP		19	04				
		NE	(PSKS)		29	24				
23	11	NEZ	eX	14	47	26				Near earthquake
24	13	Z	eiP	8	08	53.3			10110	
		Z	eX		09	36				
		Z	eX		10	18				
		E	eS		19	48				
25	13	Z	eP	10	23	30			1390	
		N	S		25	50				
26	13	Z	eP	13	04	00			1390	
		NZ	S		06	21				
27	16	Z	ePKP	14	47	39				Very weak
		Z	eX		48	04				
		Z	eX		49	33				
28	16	Z	eiP	22	41	32.0			944	
		NE	iS		43	10				
29	17	Z	eP	2	27	57.4				" "
		Z	eX		28	05				
30	17	Z	eP	19	52	34.6				" "
		Z	eX		54	22				
		Z	eX		55	12				
31	18	Z	eiP	1	04	24.5				" "
		Z	iX			32.4				
32	18	Z	eP	1	25	46				" "
		Z	eK			51.6				
33	18	Z	eiP	1	54	31.0			8000	h = 200 Km.
		Z	eX	2	02	04				
		Z	eS		03	26				
		Z	eX			55				
34	18	Z	eP	2	15	52				Very weak

No.	Date	Comp	Phase	G. M. T;			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
35	18	Z	eip	18	58	25.3			Very weak	
		Z	eX			52				
36	20	NEZ	iPg	9	13	03.5		(Tura Blast)	Dilatation	
37	20	Z	eX	9	21	47			Very weak	
		E	eX		23	34				
38	20	Z	eip	9	43	31.2		9610		
		Z	iX			47.8				
		Z	eX		47	12				
		N	eS		54	06				
39	20	Z	ePKP	21	18	40.0			" "	
		Z	eX		21	30				
		Z	eX		22	17				
		N	M	22	20					
40	23	Z	iP	7	50	28.7			Dilatation	
		Z	iX			40				
41	24	Z	eX	3	38	40			Very weak	
		Z	eX			46				
42	24	Z	iP	10	01	36.0		9500	Compression	
		Z	eX		05	12				
		E	S		12	08				
43	25	NEZ	eX	1	13	52			Near earthquake	
44	25	Z	eip	3	53	45.0		9390		
		Z	PP		57	02				
		NE	iS	4	04	12				
		NE	ePS		05	12				
45	25	Z	eip	4	26	40.0			Very weak	
		Z	eX		27	52				
46	25	Z	iP	11	24	27.4		9445	Dilatation	
		Z	iPP		25	12			h = 180 Km.	
		NEZ	iPP		27	48				
		NEZ	PPP		28	34				
		NE	iS		34	36				
		NE	iSS		35	48				
47	25	Z	eP	11	50	39.6			Confused with the preceding shock	
		Z	eX		51	15				
		Z	iX		53	48				
48	25	Z	iP	15	43	02.7			Dilatation	
		Z	eX			39			Very weak	
49	25	Z	eX	16	53	41			" "	
		Z	eX		56	39				
		N	eX		57	41				
		NE	iX			55				
50	25	Z	iP	21	16	34.5		2555	Dilatation	
		Z	eX			49				
		N	eS		20	42				
51	26	Z	eip	12	39	04.3				
		Z	(eS)		41	27				
		Z	eX		43	12				



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
52	27	Z	eP	9	08	11.0			Very weak	
		Z	eX			28				
53	27	Z	ePKP	10	23	51		13665	" "	
		Z	iX			25				
		Z	ePP			39				
		Z	eX			28				
		NE	PS			35				
54	28	Z	eP	1	38	38			" "	
55	28	Z	eip	17	05	03.8			" "	
		Z	eX			41				
		NE	eX			12				
56	29	Z	ePKP	00	43	39		15665		
		Z	PP			46				
		Z	eX			48				
		N	eX	1	05	22				
		N	M			44				
57	29	Z	eX	10	51	51			" "	
		Z	eX			52				
58	29	NEZ	(sn)	13	49	14.8			" "	
59	29	Z	eP	14	39	57			" "	
		Z	eX			40				
		Z	eX			53				
		E	(S)			45				
		N	M			53				
60	29	Z	eP	15	51	15.5			" "	
		Z	eX			39				
61	29	Z	iP	16	50	14.0			Compression	
		NE	eX			57			Very weak	
		N	eX			58				
		N	eX			59				
62	29	Z	iP	17	44	14.0		9335	Compression	
		NEZ	PP			47				
		NE	SKS			54				
		NE	iX			56				
		NE	M	18	25					
63	30	Z	eip	12	42	03.0			Very weak	
		Z	eX			37.5				
64	30	Z	eip	14	25	13.0			" "	
65	31	Z	ePKP	3	14	30		13280	" "	
		Z	ePP			15				
		E	PS			25				
		NE	M	4	05					
66	31	Z	eP	15	15	24.5			" "	
		E	eX			18				
67	31	Z	eip	22	31	30.5			" "	
		NE	(S)			35				
		NE	eX			38				
		N	eX			41				

HELWAN
Helwan Observatory, Egypt (UAR)

Seismological Bulletin

August 1960

OCT 17 1960



No.	Date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z	iP	2	25	21.0			2420	Compression h = 100 Km.
		Z	PP			35				
		Z	FP			56				
		NE	iS		29	12				
		N	iX		32	18				
2	2	Z	iPKP	5	26	45.7			15665	Compression h = 100 Km.
		Z	PPKP		27	17				
		Z	FP		30	00				
		Z	SKP			20				
3	2	Z	iPKP	9	50	28				Very weak
		Z	iX			45				
4	2	NEZ	eX	13	55	30				" "
		NZ	iX			35				
5	2	Z	eX	15	15	27				" "
6	2	Z	eX	21	00	38.4				" "
		Z	iX			44.8				
		Z	eX		01	03				
7	3	Z	ePn	2	28	38			766	
		NE	sn		29	58				
		E	eX		30	18				
8	4	Z	eIP	7	48	09.4			10555	
		Z	FP		52	00				
		N	SKS		58	42				
		E	eS		59	20				
		N	PS	8	00	42				
		N	SS		05	54				
9	7	NE	eX	8	32	10				" "
		NE	eX			42				
10	7	Z	ePg	9	15	56			155	Not felt
		N	SG		16	13.8				
		N	eX			20.4				
11	7	Z	ePn	11	13	07.6			710	
		NE	eSn		14	22.8				
12	8	Z	eIP	12	33	02			2610	
		NE	S		38	12				
13	8	Z	eIPn	20	37	52			644	
		NE	sn		39	00				
14	9	Z	eIP	6	34	36.0				Very weak
15	9	Z	eX	7	10	52				" "
		Z	eX		11	09				
16	9	Z	eX	7	58	15				
		Z	eX	8	01	42				
		NE	eX		08	32				
		NE	eX		09	24				
17	9	Z	eX	15	22	55				" "

No.	Date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
18	9	Z	ePKP	17	06	15				Very weak
		Z	iX			42				
		Z	eX		11	00				
19	9	Z	eP	22	04	22.0				" "
		Z	eX		09	29				
		Z	eX		10	18				
20	10	Z	iPg	9	19	20		(Tura Blast)	9445	Compression
21	11	Z	eP	3	06	22				Very weak
		Z	eX		07	26				
		Z	eX		09	36				
		NE	(s)		17	30				
22	11	Z	iP	5	03	27.0				Compression Very weak
		Z	iX			40				
23	12	Z	iX	1	54	02.6				" "
		E	iX			21.4				
24	12	Z	iP	13	25	16.0			9445	Compression h = 100 Km.
		Z	PP		28	42				
		Z	PPP		29	06				
25	13	Z	iP	7	23	41.0			9555	Compression
		Z	iX		24	21				
		Z	iX		27	24				
		NE	eS		34	24				
26	13	Z	eX	9	08	04.5				Very weak
		Z	eX		12	13				
		Z	eX		15	47				
27	13	Z	eipKP	14	33	47.0			13335	
		Z	iX		34	00				
		Z	iX			48				
		Z	PP		35	16				
		Z	PPP		37	46				
		E	SKKS		42	12				
		NE	iX		45	18				
28	13	Z	eX	20	14	06				" "
		Z	eX			31				
29	13	Z	eX	22	36	37				" "
		Z	eX			55				
		N	eX		37	20				
		E	eX		39	06				
30	14	Z	iPr	12	55	15.8			1110	Compression
		NE	PB			23				
		NE	S		57	00				
31	14	Z	iPg	21	17	44.8			144	Compression Not felt
		N	SG		18	02				
32	14	Z	eip	22	43	40.0				Very weak
33	15	Z	eP	7	08	32			6090	" "
		Z	eX			52				
		NE	eS		16	12				
34	15	Z	eip	14	43	11.0				" "
		Z	eX			23				

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
35	17	Z	eX	9	44	19			Very weak	
36	17	Z	eX	11	34	42			" "	
37	17	Z	eiPg	15	28	58			" "	
38	19	Z	eiPg	1	14	15.0			" "	
39	19	Z	eiP	17	16	20.0			"	
		Z	eX			29.7				
40	20	Z	iP	20	20	40.0	8835		Dilatation	
		Z	PcP			49				
		Z	eX			21				12
		Z	eX			23				55
		NE	ePS			31				26
41	20	Z	eP	21	31	58			Very weak	
		Z	eX			32	07			
42	20	Z	iX	22	46	34			Confused with the preceding shock	
		N	eX			47	00			
43	21	Z	iP	13	02	21.0			Dilatation	
		Z	eX			03	06			
		Z	eX				18			
44	22	Z	ePn	2	33	11	744			
		E	eSn			34		28.6		
45	22	Z	ePn	3	34	35.0	622			
		Z	eX			54				
		NE	isn			35		41		
46	23	Z	eP	4	34	05.0			Very weak	
		Z	eX			16.6				
		NE	M			43				
47	23	Z	eiP	9	03	31.0	2890			
		Z	eX			56				
		Z	eX			05		12		
		NE	eS			08		06		
		Z	eX			11		18		
48	23	Z	eiPn	10	07	54.0	622			
		NE	eSn			09		00		
49	23	Z	eiP	14	18	36.0			" "	
		Z	eX			19	07			
50	23	Z	eiP	23	04	42.5			" "	
		Z	eX			05	55			
51	24	Z	eP	1	56	50	9490			
		Z	eX			57		25		
		E	S			2		07	20	
52	24	NEZ	iX	5	29	47.0				
		NE	iX			30	07			
53	24	Z	eX	6	09	21			" "	
		Z	eX			32				
		Z	eX			13	00			
54	24	Z	eX	19	37	48			" "	
		Z	eX			38	08			



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
55	25	NEZ	eX	5	00	11			Very weak	
56	25	EZ N	iX eX	7	49	03 22			" "	
57	25	EZ Z	eX eX	8	44	30 40			" "	
58	26	NEZ N	eX eX	16	56 57	52.5 10.6			" "	
59	26	Z	eip	18	46	35.0			" "	
60	27	Z NE	eipn sn	10	18 19	49.0 53		600		
61	27	NEZ	eX	10	59	04			" "	
62	27	Z E N N	ePn sn S* sg	12	12 13 14	45 50.8 08.4 23		622		
63	27	Z	iP	13	10	28.0			Dilatation	
64	27	Z Z Z	iP eX eX	18	28 29	33.2 22 55			Dilatation Very weak	
65	28	Z Z	eX eX	9	34 35	18.3 37			" "	
66	28	Z NE	ePn sn	18	02 03	04.0 10		622		
67	28	Z NE	eipn sn	19	25 27	42.8 07		810		
68	28	Z NE	ePn sn	20	25 26	55 56		566		
69	29	NEZ	iX	4	07	31.0			Near	
70	29	NEZ	iX	4	22	09.0			"	
71	29	Z	eP	7	04	59.2			Very weak	
72	30	Z Z	eX eX	15	29 31	36 29			" "	
73	30	Z Z NE	ePn Pg sn	20	27 28	27 51.6 32.5		622		
74	30	Z Z	eP eX	22	37 41	04 26			" "	
75	31	Z Z	eP eX	00	02 03	39 06			" "	
76	31	Z	eip	17	34	19.0			" "	
77	31	Z NE	eip S	22	14 16	19.0 16		1145		

NOV 14 1960



No.	Date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z	eX	7	54	58				Very weak
		Z	eX		55	05				
2	1	Z	eiPKP	9	47	45			15220	" "
		Z	IP		50	33				
		Z	PKS		51	18				
		E	SKKS		57	24				
3	1	Z	eiPKP	10	54	31.0			15335	" "
		Z	PP		57	24				
		Z	PKS		58	06				
4	1	NE	iX	11	10	18			(Near)	" "
		N	eX			27				
		N	eX			45				
5	1	Z	eX	11	34	31				" "
		Z	eX			50				
6	1	Z	eiP	15	50	35.0			10335	
		Z	eX			55				
		Z	PP		54	20				
		Z	eX		57	42				
		N	SKS	16	01	09				
		N	eX			51				
		N	eX		02	18				
		N	eX			50				
		N	eX		03	14				
7	1	Z	eiPKP	19	01	02.0			16000	" "
		Z	PP		04	35				
8	1	Z	ePKP	20	21	39				" "
		Z	iX		22	06				
		Z	eX		24	09				
9	2	Z	eX	7	31	07.0				" "
		Z	eX		32	54				
10	2	Z	eX	9	15	20.6				" "
		Z	eX		16	12.5				
11	2	Z	eX	11	11	29.4				" "
		Z	eX		14	52				
12	2	Z	eP	13	56	02.8			6390	" "
		Z	eX			39				
		N	eS	14	04	00				
13	2	Z	eX	18	52	51.7				" "
14	2	Z	eP	22	16	15.0			10280	" "
		N	SKS		26	48				
		N	FPS		29	06				
15	3	Z	eP	00	03	22.0				" "
		NEZ	(eS)		07	27				
16	3	Z	eiPKP	6	01	55.0				" "
		Z	eX		02	06				

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
17	3	Z NE	ePn sn	11	12 13	26 29		588		
18	3	Z Z N Z N	eIPKP pPKP eX eX eX	12 13	59 01 08 13 17	40.5 25 30 17 24			Very weak h = 450 Km.	
19	3	Z Z	iP eX	15	36	16.0 27.4	(Dilatation)		Very weak	
20	3	Z	eX	16	07	30.0			" "	
21	3	Z Z Z NE	eIP eX eX S	23 24	59 02 09	10 21 06 45		9610	" "	
22	4	NEZ	eIX	11	52	49.5			" "	
23	5	Z N	eX eX	12	05	14 18.7	(Near)		" "	
24	5	Z N N	ePg eX eX	13	37	08 16.8 22.6			" "	
25	5	NEZ	eX	22	15	06		"	" "	
26	6	Z NE	eP S	12	50 52	34.0 23.0		1055		
27	6	Z NE	eP S	13	14 16	50 28		944		
28	6	Z Z	ePKP eX	14	22 25	22.0 41			" "	
29	6	Z Z N	iP eX eX	15	37 58	07.7 21.5 48			Compression	
30	7	Z N	iP S	1	29 39	48.4 54		9000	Compression	
31	7	NEZ	Pg	9	15	17.4			Tura Blast	
32	8	Z	eIP	10	57	04.0			Very weak	
33	8	Z NE	eIP eX	11	20 31	43.0 5.2			" "	
34	8	Z	iP	14	44	40.5			Compression	
35	9	Z	eX	10	11	50			Very weak	
36	9	Z	eX	16	27	40			" "	
37	9	Z Z	eIP eX	20	12 14	58.0 43			" "	
38	10	Z E NE	ePn eX sn	00	20 21	41.8 20 46		600		



International
Seismological
Centre

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
39	10	Z NE	ePn sn	00	41 42	08 12		600		
40	10	Z NE	ePn sn	1	19 20	55 59		600		
41	10	Z Z	eX eX	10	04 05	10.4 34			Very weak	
42	10	Z Z N N	iP pP S ss	10 11	56 58 06 10	46.8 59 48 33		10000	Dilatation h = 600 Km.	
43	10	Z Z N	eIP eX S	15	54 55 56	30.5 24 09		944		
44	11	Z	eX	11	11	44.9			Very weak	
45	11	Z	eP	12	12	40			" "	
46	11	Z E	eX iX	12	20	03.6 59			" "	
47	11	NRZ	(sg)	16	55	36			" "	
48	11	Z Z	eX eX	21	53 58	15 18			" "	
49	12	Z Z Z	eX eX eX	2	52 53 59	27 28 20			" "	
50	12	Z	(eIP)	3	03	06			" "	
51	12	Z	eP	3	18	50			" "	
52	12	Z Z	iP eX	12	29	30.0 52			Compression	
53	12	Z Z	eIP eX	16	16	16.0 42			Very weak	
54	13	NEZ	Pg	9	14	20.5			Tura Blast	
55	14	Z Z	eP eX	00	46 47	59.0 58			" "	
56	14	Z Z E E	eX eX eX eX	1	01 02 03 04	50 23 54.7 11			" "	
57	14	Z Z Z	eIPKP eX eX	5	16 17 20	47.5 05 12			" "	
58	14	Z Z	eP eX	13	03 04	57 03.5			" "	
59	14	Z Z Z	eP eX eX	22	47 53 54	08 25 08			" "	

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
60	14	Z Z	eP iX	23	38	32 58			Very weak	
61	15	Z	eip	18	10	37.0			" "	
62	16	Z NE	eipn sn	1	29 30	30.8 35.5		610		
63	16	Z NE	ePg iSG	11	41	29 32		28	Not felt	
64	17	Z Z Z	eip eX eX	8	05 06	34.6 02 16			Very weak	
65	17	Z Z Z Z N	iP PP PP PPP S	8	18 21 22 28	14.8 41 39 06 36		9555	Compression h = 100 Km.	
66	17	Z Z Z	ePKP eX PP	20	16 20	07 26.5 15		17335	Very weak	
67	18	Z Z	eip eX	9	54 58	28.0 13			" "	
68	19	Z Z NE	eip PP S	3 4	51 54 02	52.0 57 00		9000		
69	19	Z Z	eP eX	4	11 12	08 02			" "	
70	19	NEZ	PG	9	16	05.8			Tura Blast	
71	19	Z Z N	(ePKP) PP SKKS	19	19 20 27	33 21 12		12000		
72	20	Z Z	eip eX	3	24	33 41.6			Very weak	
73	21	NEZ	eX eX	3	33	39 57			" "	
74	21	Z Z Z	iP eX (PP)	16	20	05.0 20 59.7			Dilatation	
75	21	Z N N	eip (S) eX	23	08 12 14	56.0 14 09		2000		
76	22	Z Z N	eip PP eS	5	44 46 50	51.0 08 18		3820		
77	22	Z NE E N N	iP (S) eX eX eX	9	12 17 19 21 23	12.0 33 56 34 12			Dilatation	



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	
				h.	m.	s.				
78	22	Z	eX	22	38	53				Very weak
		Z	eX		39	16				
79	23	Z	eX	18	14	30				" "
		Z	eX		15	28				
80	23	Z NE	eipn sn	20	19	33.0		788		
					20	55				
81	23	Z	eP	23	22	45.0				" "
82	25	Z NE	ePn esn	3	07	59		744		" "
					09	17				
83	25	Z N	eP eX	8	40	48				" "
					47	15				
84	25	Z Z	eP eX	15	59	19				" "
						34				
85	27	Z E NE	ePn eX esn	17	05	51.5		733		
					06	10				
					07	08				
86	28	Z NE	ePn sn	17	11	40		556		
					12	39				
87	28	Z NE Z	eX eX eX	22	26	44.5				" "
					29	07				
						56				
88	29	Z E NE	ipn eX sn	10	49	18.0		677		Compression
						34				
					50	30				
89	29	Z Z Z	eip eX eX	11	31	50.4				
					33	29				
					36	04				

MAR 13 1961

MAT

Helwan Observatory, Egypt

Seismological Bulletin

October 1960



International
Seismological
Centre

No.	Date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
1	1	Z	eP	3	09	29				Very weak
		Z	eX			55				
2	1	Z	eipn	5	32	20.5			688	
		NE	sn		33	33				
3	1	Z	iP	16	24	24.2			10555	Dilatation
		Z	eX		25	06				
		N	SKS		35	00				
		N	eX		38	06				
4	2	Z	ePKP	12	13	04.8				Very weak
		Z	eX		16	24				
5	2	Z	eP	18	18	24				" "
		Z	PP			48				
		Z	eX		19	23				
		Z	eX			45.7				
6	3	NE	M	1	11	27				" "
7	3	Z	ePn	1	40	28.0			788	" "
		Z	eX			39				
		NE	sn		41	50				
8	3	Z	ePn	5	11	21.9			644	" "
		NE	sn		12	30				
9	3	Z	eP	20	02	41.5				" "
		Z	eX		03	07				
		Z	eX			49				
		Z	eX		04	58				
10	4	Z	eX	10	09	56				" "
		Z	eX		10	27				
11	5	Z	eP	2	03	43			2500	" "
		Z	eX			51				
		Z	PP		04	03				
		E	S		07	48				
12	5	Z	eX	15	40	18				" "
		Z	eX			29				
		Z	eX			48				
		Z	eX		41	05				
		Z	eX			17				
13	6	Z	iP	16	29	11.3			Dilatation	" "
		Z	iX			17				
14	6	Z	eip	20	04	44.0			5945	
		Z	eX		05	04				
		Z	PP		06	41				
		NE	S		12	15				
15	7	Z	eip	3	24	37.0			5890	
		Z	eX		25	03.5				
		N	eS		32	06				

No.	Date	Comp	Phase	G.	M.	T.	Per.	Amplitude	Dist.	
				h.	m.	s.				
16	7	Z	eip	15	32	23.0			11220	
		Z	iX			42				
		Z	iX		36	17				
		Z	PP			35				
		NE	sKS		43	00				
		N	(S)			50				
		N	eX		44	30				
		Z	(PS)		45	42				
		E	M	16	20					
16	7	Z	eip	15	21	02.0				Very weak
17	8	Z	iP	6	03	59.0			8665	Dilatation h = 600 Km.
		Z	eX		04	16				
		Z	PP		06	05				
		NEZ	iS		12	58				
		N	eX		15	00				
		N	eX		16	48				
18	8	Z	eP	6	30	23				Very weak
		Z	eX			38				
		Z	eX		31	02				
		Z	eX		33	33				
19	8	Z	eip	6	53	18.0				" "
20	8	Z	iP	20	50	21.6			6935	Compression
		Z	eX			39				
		NE	(S)		58	48				
21	9	Z	iP	9	13	02.5			9445	Dilatation h = 150 Km.
		Z	eX			36				
		NZ	sP			57				
		N	eX		16	18				
		N	S		23	16				
		N	PS		25	53				
		N	SS		24	12				
		N	eX		28	36				
22	9	Z	(eP)	9	52	34				Very weak
23	9	Z	eip	10	11	08.0				" "
		Z	iX			20				
24	10	Z	eip	21	57	30.0				" "
25	11	Z	eX	18	36	19				" "
		Z	eX			33				
26	12	Z	iP	6	55	26.6			Dilatation	" "
		NE	eX		58	09				
		E	eX		59	15				
27	12	Z	eip	10	39	25.0			1180	
		NE	iX			37.8				
		NE	S		41	25				
28	13	Z	eip	2	25	05			1835	
		Z	PP			21.4				
		NE	S		28	06				
29	13	Z	eP	6	10	14				" "
30	13	N	M	15	51					Light interrupted



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
31	14	Z	iP	13	25	08.0			Compression Very weak	
32	14	Z	iP	21	32	38.0		10555	Dilatation	
		Z	iX			54				
		Z	PP		36	30				
		Z	iX		40	18				
		NE	SKS		43	12				
		Z	eX		50	54				
33	14	Z	eIP	23	04	57.5 ✓			Confused with the preceding shock	
34	15	Z	eIP	2	03	26.0 ✓			Very weak	
35	16	Z	ePn	5	21	30		710		
		NE	sn		22	45				
36	17	Z	iP	10	46	32.0			Compression	
37	17	Z	eP	10	57	50.4			Very weak	
		Z	eX		58	02				
		Z	eX			12				
38	17	Z	eP	13	55	46			" "	
39	17	Z	eX	16	04	08			" "	
40	17	Z	iP	18	15	47.4 ✓			Dilatation Very weak	
41	17	Z	eIP	19	12	32.0 ✓			" "	
42	18	Z	iP	00	19	44.0			Dilatation	
43	19	Z	ePn	1	36	59.6 ✓		466		
		Z	eX		37	03				
		N	sn			49 ✓				
44	19	Z	ePn	1	49	56		466		
		N	sn		50	45				
45	19	E	eX	4	50	25			Very weak	
		E	eX		51	02				
46	20	Z	iPKP	11	25	14.0		14665	Compression	
		Z	PP		27	39				
		Z	PKS		28	44				
		Z	iX		32	36				
		Z	PS		37	48				
47	20	Z	ePn	12	25	16 ✓		577		
		Z	eX			32				
		NE	sn		36	20 ✓				
48	22	Z	ePKP	8	41	02		14665	Very weak	
		Z	eX		42	45				
		Z	PP		43	27				
		Z	iX		44	20				
		NE	iX	9	00	30.0				
49	23	Z	eP	6	42	36.0 ✓			" "	
		Z	eX			56				
50	23	Z	eP	19	24	43.8 ✓			" "	
51	24	Z	eP	4	03	42				
		NZE	eX		15	58				
		Z	eX		16	22				

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
52	24	Z	eip	5	31	16.0			Very weak	
53	25	NZE	ipg	13	03	07.8			" "	
54	26	NE E	eX eX	8	45	04 14			" "	
55	27	Z	eip	11	03	20.0			" "	
56	27	Z Z	eP eX	15	47 49	55 41			" "	
57	27	Z Z Z	eipKP eX eX	22	47 48	17.0 24 33				
58	28	Z Z NE	eip PP S	4	27 29 34	15.0 04 06		5210		
59	28	Z N Z NE N N N N	ip PP eX S SS eX eX eX	13	30 31 35 41 42 42 43 50	47.0 15 36 00 42 24 43 54		9390	Dilatation h = 100 Km.	
60	28	Z N N	eip SKS eS	22	42 52 53	13.0 36 00		9890		
61	29	Z	eP	4	28	25.0			Very weak	
62	29	E E	eX eX	7	47 48	27 42			" "	
63	29	Z Z	eP eX	9	57	28.2 38.5			" "	
64	29	NEZ	ePg	13	16	07			Tura Blast	
65	29	Z NE	eP (S)	20	46 49	55.2 02		1280		
66	29	Z E E	ePn Pg Sn	21	46 47	05 38 08		588		
67	30	Z	eP	12	33	52.0			Very weak	
68	30	Z Z Z	eX iX iX	21	51 52	43 49 13			" "	
69	30	Z E	eX eX	21 22	58 01	51 28			" "	

Helwan Observatory, Egypt

Seismological Bulletin

November 1960

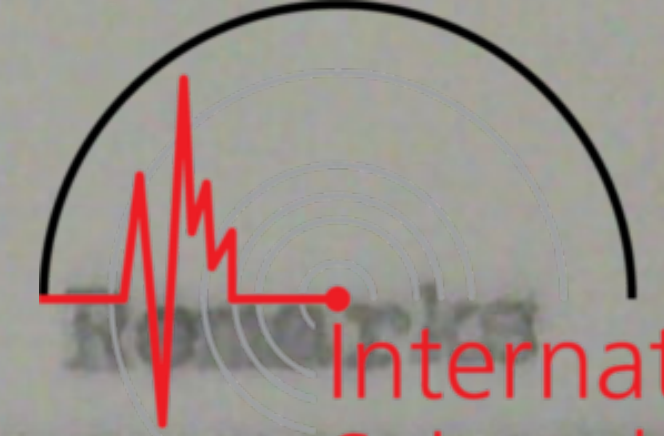
MAY 15 1961



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
1	1	Z	e1P	6	25	31.0			Very weak	
		Z	eX			53				
		Z	eX		26	04				
2	1	Z	e1PKP	9	04	48.7		13555	h = 100 Km.	
		N	eX		05	06				
		N	PP		06	25				
		N	eX			44				
		N	eX		13	24				
		Z	eX		14	58				
3	1	Z	e1P	16	17	13.9		1445		
		Z	eX			39				
		E	eS		19	37.7				
		E	SS			55				
4	1	Z	e1P	19	18	48.0			Very weak	
5	2	Z	1PKP	17	34	05.2		14780	Dilatation	
		Z	FP		36	34				
		Z	PKS		37	37				
6	3	Z	ePn	7	19	45.0		799		
		NE	Sn		21	08				
7	4	Z	eP	16	56	28.5				
		NE	eX	17	03	05				
8	5	Z	e1P	20	23	49.0		1335		
		Z	PP		24	05.7				
		NE	eS		26	05				
9	6	Z	1P	4	50	58.2		9500	Compression	
		N	S	5	01	29				
		N	eX			50				
10	6	Z	e1PKP	6	34	42.7			Very weak	
		Z	eX			52				
		Z	eX		35	07				
11	6	Z	1P	22	23	34.4			Compression	
12	7	Z	e1P	13	35	26.5			Very weak	
13	8	Z	e1P	4	38	56.0			" "	
14	8	Z	e1P	5	34	57.4			" "	
15	8	Z	ePn	17	22	07		633		
		E	1Sn		23	14				
16	9	Z	eP	3	31	56.0		11335	" "	
		Z	eX		32	19				
		Z	ePP		36	02				
17	9	NEZ	1Pg	10	14	54.0			Tura Blast	
18	9	Z	eP	10	53	55.6			Very weak	
		Z	eX		54	40				
19	10	Z	e1P	5	41	54.0			" "	



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
20	10	Z	eiP	14	59	05.0		11780		
		Z	eX			30				
		Z	PP	15	03	31				
21	10	Z	Sn	16	49	52.0			Very weak	
22	10	Z	ePn	18	42	21.0		688		
		NE	Sn		43	34				
23	11	Z	eiP	5	34	24.5		1335		
		Z	PP			34.5				
		Z	PPP			41				
		NE	S		36	39				
24	17	Z	eX	14	45	20			"	
		Z	eX			39				
25	17	Z	eX	16	31	37			"	
		Z	eX		32	04				
26	17	Z	eP	20	00	17.0			"	
27	17	Z	eiP	21	42	26.8			"	
28	18	Z	eX	00	14	37			"	
		N	iX			58				
		N	iX		15	04.75				
29	18	Z	ePn	6	05	00		556		
		NE	Sn			59				
30	19	Z	Sn	14	27	09			"	
31	19	Z	eX	19	29	11			"	
		Z	eX			30				
		NEZ	eX		35	06				
32	20	Z	eX	15	11	12			"	
		Z	eX		12	03				
33	20	Z	eiPn	16	19	56.9		633		
		E	iSn		21	03.5				
34	21	Z	eX	4	47	12			"	
35	21	Z	iP	16	53	53.8			Compression	
36	22	Z	eX	3	52	14			very weak	
		Z	eX			48				
37	22	Z	eiP	6	32	50.8			"	
		Z	iX		33	04				
		E	iX			57				
38	22	Z	eX	7	01	07			"	
		Z	eX			24				
39	22	Z	eX	12	49	15.0			"	
		Z	eX		50	07				
40	23	Z	ePKP	14	32	17.5			"	
		Z	iX			37				
		NEZ	iX			51				
41	23	Z	eP	18	16	29.0			"	
		Z	iX			54.0				



International
Seismological
Centre

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	
				h.	m.	s.				
42	24	Z Z	ePKP PP	5	09 10	00 36		13555	h 100 Km.	
43	24	Z S	eiPKP eX	7	12	20 44			Very weak	
44	24	Z Z E E	eX eX eX eX	20 21	59 00 01	16 45 10 48			" "	
45	25	Z NE N	ePn Sn Sg	1	07 09 10	51.4 21 10		866		
46	25	NE	eSn	10	34	45			" "	
47	25	NE	iSn	13	20	48.6			" "	
48	25	Z Z Z Z	iP eX epP PP	22	06 07 10	40.0 05 16 00		9555	Dilatation h = 150 Km.	
49	27	Z NE	ePn Sn	7	13 14	39.0 53		699		
50	27	Z	eiP	15	29	42.0			Very weak	
51	27	Z	eP	20	44	00			" "	
52	27	Z Z	eX eX	20	55	05 40			" "	
53	28	Z NE	iPn iSn	5	14 15	21.8 28.7		633	Dilatation	
54	29	Z	iP	14	19	07.5			Dilatation	

JUN 28 1961

Helwan Observatory, Egypt

Seismological Bulletin

December 1960



No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
1	1	Z E NE	eiPn eX Sn	4	04	36.0 39 06 06		866		
2	1	N N	eX eX	13	29	34.5 44.5			Very weak	
3	1	E Z NE E E	ePn eX iSn S iX	22	01	42.5 53 03 18 49.5 04 10		921		
4	2	Z Z Z	eP PKP iPP	9	25	35 29 14 30 19		12780		
5	2	ZNE Z	eiPg iX	11	58	30 36			" "	
6	2	Z N N	eiP eX eX	13 14	50 01	00 09 38 9				
6	2	Z Z Z Z	eP eX eX eX	19	34	14 37 32 38 19 53			" "	
7	3	Z N E	eiP S PS	4	34	13.0 42 15 25		6445		
8	3	Z Z Z	iP eX eX	9	24	28 39 25 46			Dilatation	
9	3	Z Z	eiP eX	18	06	25.7 28.7			Very weak	
10	3	Z	eP	20	31	32.0			" "	
11	3	Z Z NE	eP eX eX	22	20	04 23 25 49			" "	
12	5	Z Z Z	iP iX eX	00	14	28.0 40 56			Dilatation	
13	5	Z	eP	8	48	42.5			Very weak	
14	5	Z Z	eiP eX	18	02	21.8 34.8			" "	
15	5	Z Z Z	iP eX eX	18	20	07.4 19.2 45.3			Compression	
16	5	Z Z Z	eP iX eX	21	28	15.0 28.8 30 28				
17	6	Z Z Z Z Z	eP eX eX eX eX	9	10	42 14 57 15 37 25 12 36				
18	6	Z	eX	22	08	00				

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist.	Remarks
				h.	m.	s.				
19	7	Z	iPg	9	58	57.5	s.	(Tura Blast)	9890	Dilatation
20	7	Z	iPg	10	29	19.5		" "		Compression
21	7	Z	eX	13	38	40				Very weak
22	7	Z	eX	15	42	32				" "
23	7	Z	eP	17	40	17.0				" "
24	8	Z	eiPKP	1	43	04.0				" "
		Z	iX			16.6				
25	8	NZE	(iSg)	13	42	26.0				
		Z	eX			34				" "
26	9	Z	eP	00	56	06.0				" "
27	10	Z	eiP	13	52	25.6				
		Z	eX			33.3				
28	11	Z	iP	00	20	30.0				Compression
		Z	iX			38				
		Z	eX		23	42				
29	11	Z	eiP	19	12	24.0				
		Z	eX		14	12				
		Z	eX		16	05				
30	13	Z	ePKP	7	55	57				Confused with microseisms
31	14	Z	eX	21	26	21				Very weak
32	14	Z	(eP)	21	28	46				
		Z	eX			30				
		Z/E	eX			33				
		Z	eX			34				
		Z	iX			35				
		Z	iX			39				
		Z	eX			40				
33	15	Z	iP	00	04	36.0			9890	Compression
		Z	eX			08				
		Z	S			15				
		Z	PPS			16				
34	16	Z	eiPKP	9	11	58.6				
		Z	eX			12				
35	16	Z	eiP	16	53	32.6			2090	
		Z	ePPP			54				
		Z	S			57				
36	17	Z	iP	10	49	11.5				Dilatation
		Z	eX			28				
		Z	iX		50	13				
		Z	eX		59	00				
		Z	eX			51				
37	17	Z	eP	16	57	34.0				Very weak
		Z	eK			35.8				
38	17	Z	eP	18	58	27				
		Z	eX			59				
		Z	bX	19	00	18				
		Z	eX			01				
		Z	eX			57				
		Z	eX			08				
39	17	Z	eP	21	09	07				" "
		Z	eX			27				
40	18	Z	eP	18	33	45			10220	" "
		Z	eX			34				
		Z	PP			37				

No.	Date	Comp	Phase	G. M. T.			Per.	Amplitude	Dist. Km.	Remarks
				h.	m.	s.				
41	21	Z	eiP	14	52	42.0				Very
		Z	iX		53	12.5				
		Z	(pP)			19				
		Z	eX			46				
42	22	Z	eP	3	12	41.0				"
		Z	eX			55				
		Z	eX		13	26				
43	22	Z	ePKP	6	51	39.8				"
		Z	eX		52	07				
44	22	Z	ePKP	21	20	48.8				"
		Z	iX		22	30				
		Z	eX		23	39				
		Z	eX		24	45				
45	23	Z	eX	19	42	05				"
		Z	eX			12				
46	25	Z	eiP	20	40	12.2				"
		Z	eX			24				
47	26	Z	eP	1	57	23.4				"
		Z	iX			29				
		Z	iX			34				
48	26	Z	eX	4	46	22				"
		Z	eX			54.8				
		Z	iX		50	21				
		Z	eX			48				
49	27	Z	ePg	13	28	15				"
		NE	Sg			18.2				
50	28	Z	eP	2	21	25.0		1000		Confused with
		NE	S		23	07				
51	28	Z	eP	5	41	51		1000		"
		E	eS		43	32				
52	29	Z	eP	6	22	00				"
		Z	eX			18				
		Z	eX		23	45				
		Z	eX		25	57				
53	29	Z	eX	10	55	48.9				"
		Z	iX			57				
		Z	eX		11	01				
54	29	Z	eiP	18	21	45.2				"
		Z	eX			22				
		NE	(eS)		23	24				
55	30	Z	(Sg)	13	46	15.8				very weak
56	31	Z	eP	18	28	35.0				"
		Z	iX			29				

P.S. Only vertical components have been working owing to shortage of photographic paper.