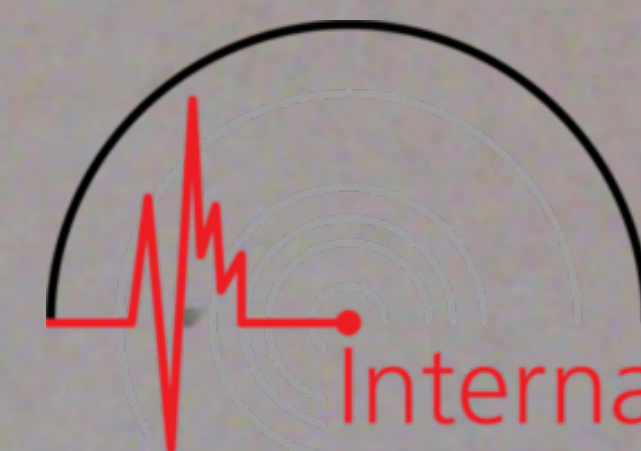


Reluwa



International
Seismological
Centre

SEISMOLOGICAL REPORT
1944

JUN 15 1953

ROYAL OBSERVATORY, HELWAN



Seismological Bulletin

Constants of the Station:

$$\Phi = 29^{\circ} 51' N. \quad \lambda = 31^{\circ} 20' E. \quad h = 115 \text{ m.}$$

NATURE OF STRATA: Limestone rock.

INSTRUMENTS: Galitzin Wilip Aperiodic Seismograph, Photo Galvanometric Registration, Vertical Component.
Milne-Shaw Seismographs, Photographic Registration, two Horizontal Components.

Component	Date from which Constants apply	Pendulum Free Period T	Galvanometer Free Period T ₁	Damping Constant	Transmission Coefficient K	Static Magnification V
		sec.	sec.			
N	Monthly	12.0				250
E	"	12.0				250
Z	9-6-1938	11.16	11.13	+0.05	175	1000

Phases of the Seismogram:

- P (undae primae superiores) Direct P-type waves whose path lies wholly above the first major discontinuity.
- P (undae primae) Normal first preliminary tremor; condensation rarefaction or Longitudinal waves that have passed below the subcrustal or Mohorovičić discontinuity.
- PKP P waves that have traversed the earth's core.
- PP P wave reflected once at the earth's surface.
- PPP P wave reflected twice at the earth's surface.
- pP P wave from a deep focus reflected near the epicentre.
- S (undae secundae superiores) Direct S-type waves whose path lies wholly above the uppermost major discontinuity.
- S (undae secundae) Normal second preliminary tremors, traverse or shear waves which have passed below the Mohorovičić discontinuity.
- PS (undae transformatae) waves transformed from P to S on reflection at the earth's surface.
- sS S Type waves from a deep focus reflected near the epicentre.
- SS S Type waves reflected once at the earth's surface.
- SSS S Type waves reflected twice at the earth's surface.
- SKS S Waves transformed to P-waves on reflection into the core and back to S-waves when leaving the core.
- SKKS S Waves in the mantle reflected and internally reflected as P-waves in the core.
- L (undae longae) Long surface waves of irregular form at the beginning of the "principal phase".
- M (undae maximae) Shorter and more regular waves of large amplitude which follow the L-waves.
- F (finis) End of discernible movement.

Nature of the Motion:—

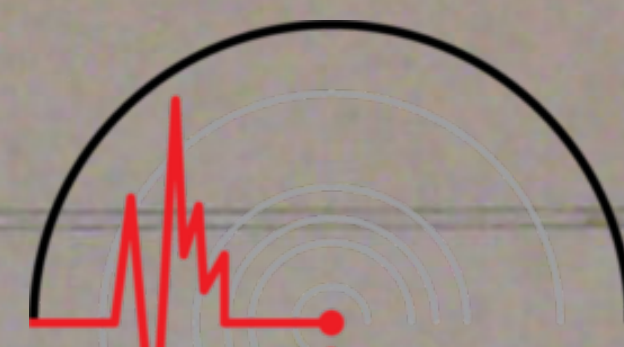
- i (impetus) Sudden beginning of the motion.
- e (emersio) Gradual beginning of the motion.
- T (period) Time of one complete oscillation.
- A Amplitude of the earth motion, measured from the median line in microns.

$$\mu = \frac{1}{1000} \text{ mm.}$$

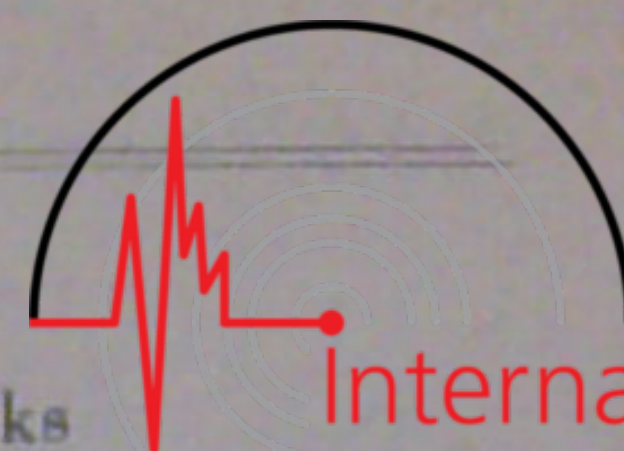
ROYAL OBSERVATORY, HELWAN



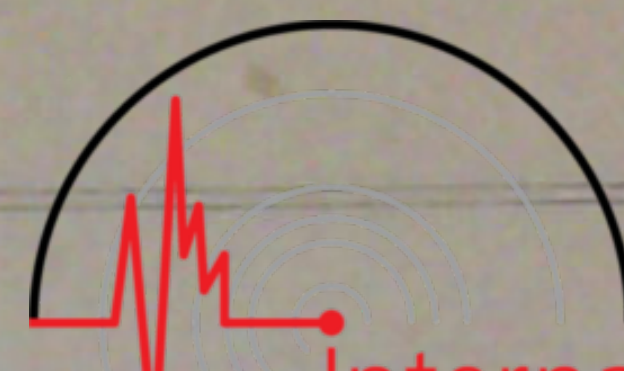
No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H	M.	S.		Sec.	A _e	A _n		
	January							μ	μ	μ	Kms.	
1	2	Z ZE E	e e e F	11 11.4	03 05 09	03 45 12						Very weak
2	5	Z E ZE E Z	ePn e Sn e Sg F	5 5.4	06 08 09	54 10 15 30 00					778	" "
3	5	Z Z Z E E	ePn P* Pg Sn S* F	7 8.4	45 46 47	54 09 25 06 27					710	
4	5	Z Z Z E E E	P PeP PP S PS F F	21 23.0	24 27 33 34 55	21 35 09 48 21 51	18	+ 38			8035	
5	10	E Z E	(PKP) (PKKP) e F	20 21.0	29 39	27 36 12						
6	16	Z EZ E E E E E	e (PP) e (PS) e (SS) M F	00 1 2.5	07 09 15 18 19 25 01	54 12 52 45 33 05 30	15	+166			12545	Destructive in Argentina
7	February 1	Z Z E	eP PPP eS F	3	25 27	13 29 18					1221	Destructive in Anatoli Confused with the succeeding earthquake
8	1	Z Z Z Z	iP i (PPP) i F	5 7.4	28 29	45 51 02 41					1221	Dilatation probably a repic
9	1	Z E E Z	iP e e e F	21 21.8	27 29 30	16 27 37 07						Dilatation very weak
10	2	Z Z E EZ	iP i e e F	3 4.2	35 37 38	47 54 54 29						" " "
11	3	Z Z E	e e e F	12 13.0	27 28 39	47 02 00						Very weak
12	5	EZ EZ E E E	P e e (SKS) (S) F	17 18.7	32 35 42	09 39 06 21 40					9445	
13	10	Z E E	iP (PPP) e	12	08 10	06 48 42						Dilatation



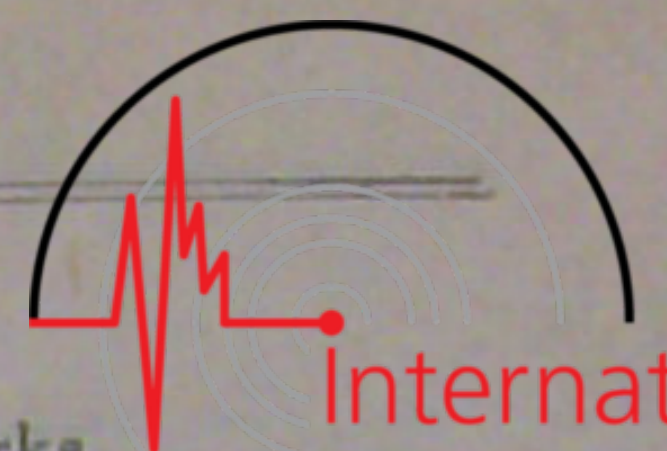
No.	Date	Comp.	Phase	G M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A _e	A _n		
				μ	μ	μ	Kms.					
13	10 (contd.)	E E	e (S) F		11 12	08 36						
				12.7								
14	15	E EZ	eP e F	3	23	28 42						Very weak
				3.7								
15	16	E EZ E	eP e e F	1	13	24 27 45						" "
				1.4								
16	17	E E E	e e e F	17	43 44 46	00 30 30						
				18.1								
17	25	E	e F	00	18	33						Very weak
				0.7								
18	28	E E	e e F	1	06 11	42 00						" "
				3.2								
19	29	Z EZ E E E E E E	eP e (PKP) (SKP) (PPP) i (SKS) (SKKS) F	4	00 01 03 06 07 09 10	(27) 06 45 19 09 27 35 57				12780		
												Lost in changing the paper
20	29	EZ E E E E E	iP PP PPP (S) L M F	16	37 38 39 43 51 59	10 51 29 57 09 54	18	+143		5055		Dilatation
				20.5								
21	March 5	EZ Z Z E E E	iP e e (SKS) i (S) F	17	28 30 32 39 40	48 46 25 15 36 00						Dilatation (Preceded by microseisms)
				18.0								
22	8	E	M F	5	56							
				6.4								
23	9/10	Z Z Z EN ENZ ENZ EN ENZ N	iP e e e (iP) e e e M F	22	11 13 15 18 21 27 31 44	48 35 39 18 02 45 33 00 12	12	+59				Dilatation Probably another choc
				2.0								
24	10	EN N	i M F	7	03 35	10						
				9.3								
25	14	Z	e F	18	12	42						Very weak
				18.5								
26	15	EZ Z	i i	00	02 05	33 30						" "
27	15	Z Z N N	iP PP S M F	5	10 12 16 27	54 18 34 42	12	+ 8		4000		Dilatation
				7.0								
28	15	Z Z	P i	0	08 09	51 18						Very weak



No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A_c	A_n		
								μ	μ	μ	Kms.	
28	15 (contd.)	N	i F	10.0	18	34						
29	16	Z EN Z	Pn Sn i F	9.9	44 45	00 24 27					810	
30	16	Z Z Z	i i i F	12.4	48 52	06 26 00						Very Weak
31	19	EN	M F	20.1	52							
32	21	Z Z EN N	iP i (SKS) (S) F	23.5	22	27 42 48 12					10590	Dilatation
33	22	Z Z EN Z Z	iP PP SKS PS PPS F	3.4	00 1	56 00 06 08 09 28						
34	30	Z Z Z EZ Z EZ E	i e (P) (PPP) e (S) M F	15.4	35 36	10 36 16 33 27 28 30	14	-21				Confused with the succeeding shock Confused with the preceding shock.
35	30	Z Z Z N	e e e e F	16.5	08 09 12	39 36 30 48					10890	h = 600 Kms.
36	31	Z Z Z Z Z EZ N N N	P pP e (PP) e (S) e e e F	5.7	3 05 07 09	30 38 06 36 56 06 25 18 18						
37	April 1	Z N	e M F	11.1	9 10	42 50						Very weak
38	4/5	Z Z NZ NZ NZ N N E	iP PP S e e PcP M M F	0.3	23	06 21 08 57 07 07 47 26 24 16	9 8	-17	-27		1635	Dilatation
39	5	Z Z EZ N N N	P PP S e PcP M F	2.6	2	04 39 07 21 02 45 13					1610	
40	5	Z Z Z N	P e e e F	5.8	4	43 18 51 45 45 50						



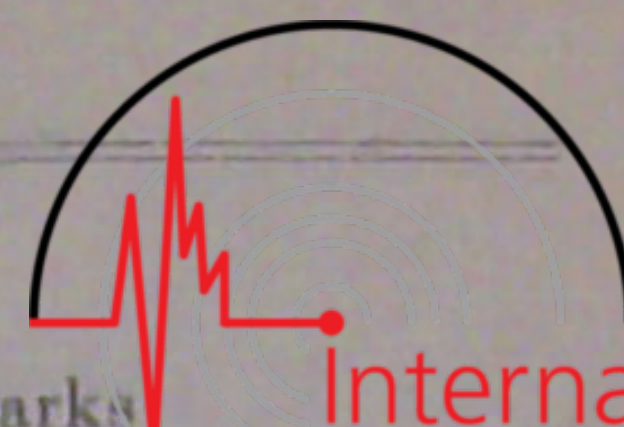
No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A_e	A_n		
								μ	μ	μ	Kms.	
41	5	Z Z Z Z Z NZ	P e e e e F	6 7.7	53 54 55 56 57	51 09 51 27 03 24 40						
42	5	Z Z ENZ N N N	P PP S SS e e F	18	10 11 14 15 16 17	39 06 30 22 25 28				2355		Confused with the succeeding shock
43	5	Z EN	e e F	18 19.0	34 38	22 12						
44	9	NZ N	e e F	18 20.0	27 28	36 24						Very weak
45	10	Z Z N N N N	P PP eS SS e M F	3 4.9	41 42 46 48 49 35	05 06 40 25 28 09	18		-43	3710		Preceded by microseisms
46	13	Z E	e M F	00 1.0	08 37	35						Very weak
47	13	Z E	i M F	12 12.3	02 06	15						" " "
48	17	Z Z Z N	eP e (PP) (S) F	17 19.0	49 50 52 59	54 48 54 58				8835		Preceded by microseisms
49	19/20	N N E	e e M F	22 23 1.0	53 11 54	12 48						
50	20	Z Z EN	e e M F	12 13.2	52 53 55	04 09						" " "
51	22	Z Z Z N N	iP e e (SKS) (E) F	1 3.0	37 38 39 48 49	53 12 18 25 22						Dilatation very weak
52	22	Z Z N E	eP e e e F	2 3.0	34 38 43 48	50 45 17 25						Confused with the succeeding shock.
53	22	Z Z E	P e M F	3 5 5.4	55 56 00	35 02						
54	23	Z NZ Z	P i i F	00 1.1	50 51 52	39 45 28						
55	23	Z Z Z Z	P i i i	11	16 17 18 19	52 13 32 06						



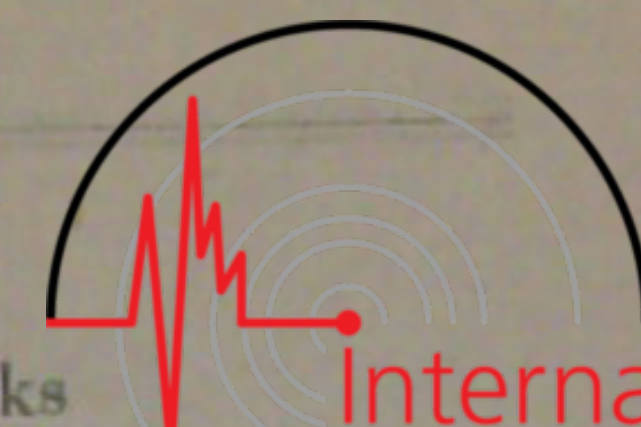
No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		A _e	A _n	A _z		
							Sec.	μ	μ	μ	Kms	
55	23 (contd.)	Z	i F	11	20	45						
56	26	Z	iP	2	08	06					11665	Dilatation
		Z	e		10	57						
		Z	e		11	27						
		Z	PP		12	18						
		Z	PPP		14	42						
		N	SKKS		19	36						
		N	PS		21	28						
		E	PPS		22	18						
			F	5	1							
57	26	N	e	12	45	48						Very weak
		Z	e		46	09						
			F	13	2							
58	27	Z	P	14	52	03					11665	
		Z	e		54	57						
		ZE	PP		56	17						
		E	SKS	15	02	33						
		N	e		03	45						
		N	PS		05	26						
		N	PPS		09	12						
		E	M		35	24	30	-219				
			F	19	1							
59	27	Z	e	19	23	44						Very weak
		N	e		30	30						
			F	22	1							
60	29	Z	e	9	49	39						
		N	e		52	10						
			F	10	2							
61	29	Z	e	11	20	35						
		Z	i		21	54						
			F	11	6							
62	May 2	N	e	12	43	20						" "
		NE	M		50							
			F	13	1							
63	5	Z	e	1	07	39						" "
		N	e		09	12						
			F	1	4							
64	6	Z	iP	00	24	44					7555	Dilatation
		Z	e		25	30						
		Z	e		26	03						
		Z	PP		27	21						
		EN	eS		33	48						
			F	2	1							
65	9	ZN	P	21	34	15						Very weak
		Z	e		35	40						
		N	e		37	54						
			F	22	0							
66	13	Z	iPu	14	01	45					700	Compression (not felt)
		Z	e		02	06						
		Z	Pg			15						
		N	Sn			58						
		N	S*		03	20						
		E	Sg			35						
			F	14	3							
67	18	Z	iP	20	14	56						Dilatation
		Z	e		16	05						
			F	20	4							
68	19	Z	e	00	38	09						Preceded by microseisms
		Z	e		39	21						
		N	i		47	12						
			F	3	3							
69	20	Z	e	13	48	21						Very weak
		N	e		50	15						
		N	e		51	42						
			F	14	0							
70	20/21	Z	iP	23	39	13						Dilatation
		N	e		46	30						



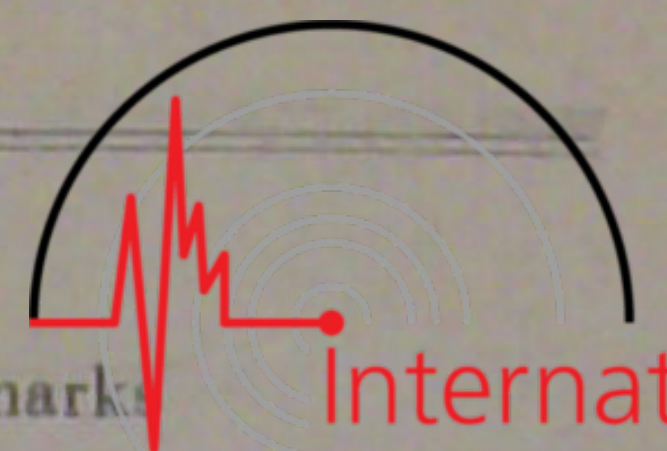
No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A_e	A_n		
				H.	M.	S.	Sec.	μ	μ	μ	Kms.	
70	20/21 (contd.)	N	e F	1.1	49	10						
71	21	Z Z	i e F	4 6.0	53 56	27 06						Very weak
72	25	Z E Z Z EZ Z E E	iPKP PKKP SKP PP e PPP i PSKS F	1 4.2	25 27 29 31 32 34 39	15 33 50 04 24 39 57 17				17055		Compression
73	25	Z Z EN N N N N	ePKP PP e eS e e e F	13	16 18 25 26 30 32 34	59 28 45 30 39 24 42				13555		Confused with the succeeding shock
74	25	Z Z	e i F	14 17.2	30	00 06						very weak
75	27/28	Z Z Z E E E Z E	P PP PPP i S SS i M F	23 0.6	54 55 56 59	12 21 24 29 24 07 46 48				1500		
76	29	Z EN Z	eP e e F	15 16.1	44 45	07 33 48						" "
77	30	Z Z Z	e e e F	18 18.6	16	37 43 54						" "
78	June 3	N	e F	12 13.0	05	06						" "
79	4	Z N	eP e F	13 15.0	38 49	28 06						
80	6	Z Z	iP i F	12 13.0	00	39 54						Dilatation
81	9	N N N N N	e e e e e F	20 21 23.3	58 04 07 08 09	06 36 03 20 24						
82	10	EN	M F	14 16.0	59							
83	14	Z Z E E	P e i i F	1 1.7	18 19 20	55 02 12 18						
84	16	N N N	e e e F	22 24.0	17 18 21	12 27 04						



No.	Date	Comp	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
								A_e	A_n	A_z		
	May			H.	M.	S.	Sec.	μ	μ	μ	Kms.	
85	19	N	e F	19 20.5	48	54						
86	21	N N N N N N	ePKP e PP e e SS F	11 14.5	17 18 21 30 32 39	51 50 24 36 42 24					16445	
87	23	ENZ Z	ePn i F	10 10.3	14	38 51						
88	25	N NZ N NE NE E N N N N	P e e (sP) e (S) (PeP) e e M F	4 6.0	18 19 20 21 22 23 24 27	30 50 36 14 24 48 24 12 42 20	9		+18		2220	h = 400 Kms.
89	25	NZ N N N	eP e e e F	6 7 7.6	59 00 01 02	58 08 29 05						Felt in Turkey
90	25	EN EN E	e e e F	14 15 17.0	38 40 00	42 43 21						
91	25	EN E EN	e e e F	16 17.0	25	19 26 45						Confused with preceding shock
92	25	NE E N N N	P PP S e M F	17 18 20.0	52 54 00 07 15	23 38 44 08 15	12		-27		6710	
93	28	N N Z N	e e e M F	3 4.0	00 01 02 04	54 48 07 52						
94	28	Z Z N N N N	eP PP SKS PS PPS M F	8 9 12.0	13 18 24 27 28 00	30 00 06 24 26 12			-41		12290	Preceded by microseisms
95	30	N N	ePn e F	19 19.9	48	30 42						" " " "
96	July 2	NZ	e	22	42	24						Local tremor
97	3	NZ	e	23	20	10						" "
98	4/5	Z NZ N	eP PP S F	23 0.5	52 56	30 52 18					2280	Preceded by microseisms
99	5	Z N N	(eP) (Z) M F	10 11.3	10 19 35	42 28					6710	" " "
100	10	Z	(gPKP)	13	44	31					17180	Compression



No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks	
				H.	M.	S.		Sec.	A _e	A _n			A _z
								μ	μ	μ	Kms.		
100	10 (contd.)	Z	i			39							
		Z	(PKKP)			50							
		Z	i		45	27							
		Z	(PP)		48	21							
		N	e	14	09	03							
			F	14.5									
101	10	Z	ePKP	16	07	34					17180	Preceded by microseisms	
		Z	(PKKP)			54							
		Z	e		11	31							
		Z	(PP)		12	30							
		N	M	17	12								
			F	18.1									
102	11	Z	i	19	50	51						" " "	
		Z	i		52	27							
			F	21.3									
103	12	Z	e	8	26	00						" " "	
		Z	e		30	15							
		N	M	9.5									
104	13	Z	P	00	34	14							
		Z	i			18							
		Z	e			33							
			F	1.1									
105	13	Z	(eP)	10	58	21					10220		
		Z	e			41							
		Z	e		59	10							
		N	(SKS)	11	08	50							
		NE	e		09	09							
		N	(S)			22							
			F	12.4									
106	15/16	Z	eP	23	39	55						" " "	
		N	M	00	20								
			F	0.4									
107	16	Z	(PKP)	10	38	10					17020	" " "	
		Z	i			16							
		Z	(PKKP)			27							
		Z	i			40							
		Z	e		39	24							
		Z	e		41	11							
		Z	e		44	32							
		Z	(PSKS)		52	24							
		N	e	11	00	36							
			F	11.3									
108	17	Z	iP	10	56	36					1221	Compression	
		Z	i			51							
		Z	i		57	04							
		N	S		58	50							
		N	M	11	01	(48)	(8)		121				
			F										
109	17	Z	eP	12	11	15						Confused with the succeeding shock. Confused with the preceding shock.	
		N	e			33							
		N	(S)		13	42							
			F	13.2									
110	17	Z	eP	14	31	18							
		Z	e			50							
		Z	e		32	36							
			F	14.9									
111	19	Z	eP	10	34	11					10520		
		Z	PPP		40	05							
		N	SKS		44	38							
		N	S		45	24							
		Z	PS		46	35							
		N	PPS		47	15							
		N	M	11	23	18	18		+19				
			F	14.0									
112	20	Z	iP _n	10	39	09					721	Dilatation	
		Z	P*			24							
		Z	e		40	18							
		NE	S _n			24							
		E	S*			49							
		NE	e		41	21							
		NE	e		42	48							
			F	11.2									



No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A_e	A_n		
								μ	μ	μ	Kms.	
113	20	Z Z N N	e e e M F	20 21	19 20 30 05	30 09 34						Very weak
114	22	Z ZN	e e F	17	37 38	33 52						" "
115	23	Z Z Z N N	iP e e S M F	12	02 03 04 07 12	52 15 09 06 00	14		+ 33		2665	Dilatation
116	27	Z Z Z ZN Z Z NE N N	iP e e e PP PPP PPP SKS PS M F	00	17 18 21 22 23 28 29 01	43 00 00 48 07 52 07 36					10890	Compression h=100 Kms.
117	27	Z Z N N N	(iP) e (PP) (S) i F	8	28 29 30 36 38	44 21 54 50 30					6445	Compression
118	30	Z Z Z Z	iP PP PPP iS F	4	03 05	08 18 25 05					1155	Dilatation
119	August 1	Z E	eP M F	12	19 52	42						Preceded by microseisms
120	1	N Z	i e F	13	47 48	00 41						" " "
121	2	Z N N	e e M F	23	04 12 29	06 00						Very weak
122	6	N N	e e F	18	28 40	24 36						" "
123	7	NE N N	(PP) (S) M F	3 4	44 52 32	(30) 18 44	18		+ 33		12220	
124	7	EN EN	e e F	10	00	14 36						" "
125	8	E N	e e F	8	58 59	14 38						" "
126	9	EN NE E	ePn Sn S* F	17	38 39	12 21 42					666	
127	10	N N N	e e M F	2	17 20 55	30 17						" "

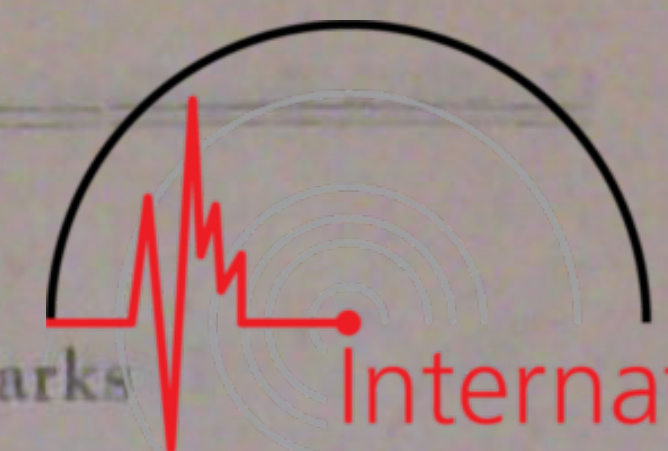


No	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A _e	A _n		
				μ	μ	μ				Kms.		
128	10	N N	e e F	11 13.4	18 21	36 36						Very weak
129	12	N	M F	9 10.2	49							
130	14	N N	e i F	11	30 31	00 20						" "
131	14	Z Z Z Z N	iP e e PP S F	14	34 35 37 44	02 33 09 15 16				9110		Compression
132	15	Z Z N	iP i (S) F	1 2.4	32 33 42	54 18 18						"
133	15	Z Z Z Z Z Z N N	iP (PP) e e (PP) e (SKS) e F	21	01 04 05 07 11 15	21 50 21 12 38 39 48 18				11445		Dilatation h = 100 Kms.
134	17	Z Z EN Z	ePn P* Sn Sg F	13	29 30 31	48 05 00 37				688		Preceded by microseisms
135	18	Z Z NZ N N	iP ipP SKS S sS F	10	45 46 55 56 57	42 15 51 04 06				9665		Compression h = 133 Kms.
136	18	EN	M F	20 21.5	29							
137	21	Z N N	iP (PS) M F	20 21.9	25 35 55	18 24 06	14		+8	8110		Dilatation Very weak
138	22	Z N	P M F	19 20.4	29 59	32						" "
139	24	Z Z Z N	iP e e e F	16	07 08 09	45 57 39 42						Compression
140	24/25	Z N	e i F	23 00 1.2	57 02	08 48						Very weak
141	25	Z Z Z Z	iP i i i i F	12	44 45 46 48	27 49 37 14 22						Compression
142	27	N N	e M F	2 3.0	00 23	18						Very weak
143	28	Z NZ N	e e e F	11	31 32	24 48 18						

No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A_e	A_n		
								μ	μ	μ	Kms.	
144	28 (contd.)	NZ Z Z Z	e i e e F	6 6.2	03 04 50	08 42 15						
145	30	N	e F	1 3.9	54	30						
146	September 3	Z Z Z Z Z Z N Z Z N	iPKP e e e e e (PP) e e e M F	19 20 23.0	31 32 33 34 38 40 41 36	18 32 04 29 06 43 39 05 12 45 36	18		+ 14	16335	Dilatation	
147	3	Z Z ENZ	P PPP S F	23 23.7	02 03	12 28 46				888		
148	5	Z Z Z	e e e F	5 6.2	55 46	24 41 05					Very weak	
149	5	Z Z Z N	e e e e F	14 14.5	11 12 13 15	47 48 45 04					" "	
150	5	Z Z	e e F	15 16.3	49 50	37 13					" "	
151	5	Z N	e M F	17 18.1	05 21	22					" "	
152	6	Z Z Z	iP i i F	6	11 12	54 04 27					Dilatation	Lost in changing the paper
153	6	Z Z Z Z Z N Z ENZ Z N	iP i PP i i S i i SS M F	13 16.2	33 35 36 37 38 41	14 30 42 18 32 45 12 27 (54)	(12)		+ 203	2645	Dilatation	
154	6	Z Z N	eP e e F	19 19.8	43 44	15 45 24					Very weak	
155	11	Z Z Z Z E E E Z	iP e PP e SKS SKKS S PS F	9 10 13.0	58 01 02 08 09 11	43 10 30 36 15 31 53 08				10500	Dilatation	
156	14	Z Z Z Z N	P e e PPP (S) F	6 7 9.2	51 52 55 56 01	21 21 35 27 42					Preceded by microseisms	

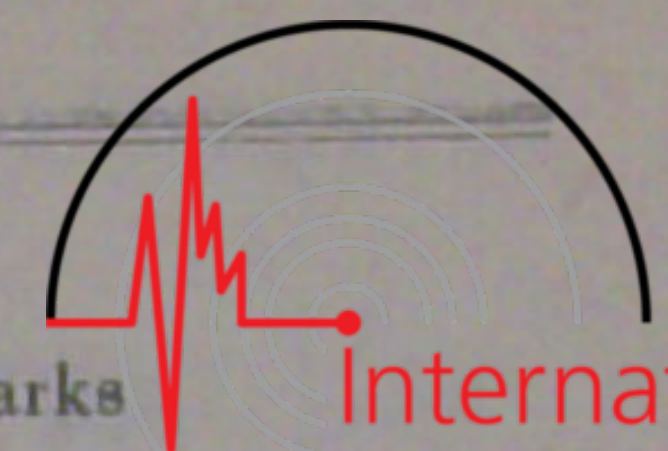


No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A _e	A _n		
								μ	μ	μ	Kms.	
157	19	Z Z N	P e (S) F	13 14.5	18 19 29	45 48 24					9655	
158	23	Z Z Z	e e e	3	31 34	10 24 44						Very weak
159	23	Z N Z Z Z Z EN N N	iP e e PP PPP S PS M F	12 13 16.3	25 26 28 29 31 36 37 05	57 24 10 18 15 30 18 36	21		+51		9500	Compression
160	23	Z Z Z	eP e e F	16 19.0	21 23	10 33 00						Very weak
161	24	Z N	iP (S) F	11 12.3	08 19	25 00						Dilatation
162	25	Z N	P i F	16 17.6	28 39	19 00						
163	27	ENZ Z Z ENZ Z EZ N N	eP e e PP PPP S SS M F	16	32 33	15 29 13 44 02 05 33 50	16		-116			Preceded by microseisms
164	27	N	M F	17 20.2	16							Confused with the succeeding shock.
165	29	Z Z	e e F	18 19.0	46 48	47 05						Very weak
166	30	Z NZ N Z	eP e e e F	4	16	06 36 54 18						Confused with the succeeding shock.
167	30	Z Z N	eP e e F	7 8.7	48 51 58	12 08 00						
168	October 2	ENZ ENZ Z Z Z Z N N N N	iP i e e PP PPP SKS S PPS M F	20 21 23.1	42 43 45 47 52 53 54 22	15 33 33 21 45 39 30 00 21 30	20		+6		9780	Dilatation
169	3	Z Z EN	iP (PcP) (S) F	16 17.7	19 30	32 40 10					9610	Compression
170	5	Z Z Z	e e e F	17	16 17 18	21 18 09						Very weak Confused with the succeeding shock.



No.	Date	Comp.	Phase	G.M.T.			Period Sec.	Amplitude			Δ Kms.	Remarks
				H.	M.	S.		A_e μ	A_n μ	A_z μ		
171	5	Z	iPKP	17	47	51				16290	Dilatation	
		Z	e		48	18						
		Z	e		49	32						
		Z	PP	51	11							
		Z	i	55	39							
		E	SKKS	57	51							
		N	PSKS	18	01	24						
		N	PPS	04	05							
EN	i	09	42									
			F	21'0								
172	6	Z	iP	2	37	10	12		+148	1180	Dilatation Destructive in Turkey	
		Z	PPP									17
		E	S		39	20						
		E	SS			42						
		N	M	6'3	49	24						
			F									
173	6	Z	e	7	30	54					Very weak	
		Z	e		33	23						
		Z	e		34	51						
		Z	e		35	18						
			F	8'0								
174	7	Z	e	10	31	15					Preceded by microseisms	
		NZ	i			32						18
		N	i	10'7		45						
			F									
175	7	Z	P	21	36	52					" " "	
		Z	e		38	40						
		N	i		39	24						
		Z	i		40	25						
			F	22'2								
176	8	Z	eP	22	37	00					" " "	
		Z	e									30
		Z	e									55
			F	23'0								
177	11	Z	iPKP	10	05	00				17710	Dilatation	
		Z	e			13						
		Z	(PKKP)			36						
		Z	(PP)			09						10
		Z	(PPP)			12						52
		Z	e			18						08
		EN	e			19						27
			F	12'4								
178	11	N	e	14	09	06					Very weak	
		Z	e			13						21
			F	14'4								
179	13	Z	P	11	40	08					" "	
		Z	e			44						00
			F	13'5								
180	14	Z	e	2	38	15					" "	
		Z	e		39	06						
		Z	e		51	27						
			F	5'0								
181	14	Z	P	9	27	21					" "	
		Z	i			30						36
			F	12'1								
182	14	Z	i	15	26	45					" "	
		N	i			36						05
183	14	Z	P	16	40	24				9235		
		Z	(PP)			43						37
		Z	e			46						15
			F	18'6								
184	14	Z	e	19	39	46					" "	
185	14	Z	eP	20	39	33				10780	" "	
		Z	e			30						45
		Z	e			32						54
		Z	(PP)			33						24
		E	(SKS)			40						09
		N	(S)									50
			F									

Confused with the succeeding shock.



No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A _e	A _n		
				μ	μ	μ	Kms.					
201	30	Z Z N	e e M F	5 6 7.0	44 47 11	33 13						Very weak
202	31	Z Z ENZ E N	Pn P* Sn e Sg F	14 15.4	44 45 46 47	51 11 15 27 04				810		
203	November 1	Z EN N N	eP (S) (PS) e F	12 13.5	13 22 23	10 52 20 50						
204	6	EN Z EN N N	P e (S) e M F	5 6 7.3	57 59 03 07 19	8 07 54 12 06	12		+16			
205	9	EN N N	e e e F	19 20.3	43 46 47	30 34 45						Very weak
206	14/15	EN N	i i F	23 0.2	29 42	36 14						
207	15/16	E N E N E N	eP SKS SKKS S PPS M F	21 0.3	00 10 11 13 46	12 38 12 27 06 48	24		+40			10510
208	16	Z EN EN EN EN N E N N N	eP (ePKP) e (PP) e e (SKS) e (PSKS) i M F	12 14 16.3	30 33 35 38 39 40 43 45 50 02	18 00 24 42 00 18 00 42 48 18	20		-46			15345
209	20	Z Z	e i	18	17 19	56 05						Very weak
210	20	Z	i	21	42	45						
211	21	Z Z Z	e e e F	10 12.0	22 32	24 40 22						" "
212	24	Z Z Z E Z Z	PKP e e e e e F	5 7.5	08 11 12 16	10 52 23 44 55 15						Preceded by microseisms
213	26	Z Z Z Z	P i e e e F	8 9.0	35 36	22 32 00 44						Very weak
214	28	Z Z N	i e i	19	07 17	06 18 36						" "



No.	Date	Comp.	Phase	G.M.T.			Period	Amplitude			Δ	Remarks
				H.	M.	S.		Sec.	A _e	A _n		
								μ	μ	μ	Kms.	
227	12	Z N Z Z Z N	iP e e e e i F	10	37	48 58 38 39 41 48						Compression
228	15	Z Z E Z Z	eP e (S) e e F	13	08	37 19 12 13 14						Preceded by microseisms
229	16	Z Z Z	e i i F	4	19	06 22 09 52						" " "
230	17	Z Z	iP i F	7	30	57 31 15						Dilatation
231	17	Z Z Z Z	e e e e F	14	29	05 30 06 33 36 34 09						Preceded by microseisms
232	19	Z Z Z Z Z Z EN N	iP e e (PP) (PPP) e e S e F	14	20	29 42 21 03 23 12 24 51 26 44 28 56 29 58 30 52				8055		Dilatation
233	20	Z Z N N	P PPP S e F	00	34	51 35 10 37 40 38 08				1665		Preceded by microseisms
234	20	Z Z Z	e e i F	21	04	54 09 05 36						" " "
235	21	Z Z Z Z Z	PKP PKKP e PP e F	20	33	38 04 34 18 36 39 37 39 20				17380		" " "
236	21/22	Z Z Z	PKP PKKP PP F	22	47	36 02 48 02 51 39				17380		Confused with the succeeding shock. " " "
237	22	Z Z Z	P e e F	5	55	18 27 39						Lost in changing the paper
238	22	Z Z Z	i i i	10	57	54 04 58 04 57						" " "
239	22/23	Z Z Z Z Z EN EN Z	P i e e e e (SKS) (S) F	22	50	43 59 52 21 53 41 55 27 23 00 50 01 10 56						

