

SEISMOGRAPH RECORDS



For the Month of January, 1937

FROM HELWAN OBSERVATORY, EGYPT

$\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E-W motion

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193— <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS	
		h.	m.	s.				
1	P _h	14	05	40				
	S			50				
	(R1 ² S)		06	50				
	F		07	15				
		15.0						
6	eP	21	50	45			Preceded with microseisms	
	iS	22	00	45				
	F	23.2						
7	iP	13	30	13	22	± 358		
	iS		38	00				
	M		58	00				
	F	26.3						
23	e	11	16	12			" " "	
	i		25	36				
	F	13.6						
25	Begining lost in changing the paper							
	i	6	55	40	20	± 26		
	i		56	37				
	M	7	56	15				
F	9.8							
28	e	11	51	05	18	± 10		
	M		57	12				
	F	12.3						
29	i	17	49	42				
Tremors were also recorded at :								
	D	H	D	H	D	H	D	H
	7	7	8	10, 16	20	1, 17	25	12

SEISMOGRAPH RECORDS

For the Month of February, 193—

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director _____

Dr. M. R. Madwar

Seismograph Milne-Shaw recording E—W motion.

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Govt. Press 2955-1936-700 ex.

DATE 193— 7	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
10	oP IS M F	8	19	29 23 26 34 17	10	± 4	
17	P (S) F	Confused with microseisms 9 59 05			10.6		
21	P IS M F	Begining lost in changing the paper 7 26 20			20	± 118	
21	P (S) F	Confused with the preceding earthquake 7 30 (00)			11.2		
21	oP S F	11	04	55 15 20	12.2		Preceded with the last earthquake
21	oP o F	14	46	18 50 20	15.9		
21	o F	22	52	20	23.9		
22	oP (S) F	15	36	45 47 22	15.0		
23	P S M F	1	01	00 11 50 44 55	13	± 6	Lost in the following tremors
23	M F	16	48	58	17.2		

SEISMOGRAPH RECORDS

For the Month of March, 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E—W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
7	o	19	10	00			Preceded with strong microseisms
	o		19	35			
	F	19.4					
9	oP	15	54	(42)			Preceded with microseisms
	PR ₁		59	15			
	S ₁ P ₁ S ₃	16	05	30			
	1		08	15			
	F	16.2					
12	M	9	58	56	20	± 6	
	F	10.5					
14	PR ₁	12	15	16			
	S ₁ P ₁ S ₃		20	57			
	S ₁ P ₁ S ₃		22	00			
	PS		24	42			
	PFS		25	42			
	M	13	06	41	15	± 10	
	F	14.3					
16	P	15	57	53			
	(pP)		58	18			
	PR ₁	16	01	12			
	S ₁		07	56			
	(SS)		08	45			
	F	17.1			18	± 5	
16	1	22	54	42			
	F	23.2					
17	o	14	24	50			
	o		28	00			
	F	15.3					
19	o	18	38	45			
	o		51	50			
	M	19	22	40	15	± 7	
	F	20.1					
21	o	16	29	12			
	F	17.3					

SEISMOGRAPH RECORDS

For the Month of March (cont.), 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

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Dr. M. R. Madwar

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DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
23	O	1	08	59	17	± 4	
	M	2	01	04			
	F	3.0					
23	M	19	40	58	11	± 6	
	F	20.3					
26	M	2	10	59	10	± 2	
	F	2.4					
26	O	10	08	00			
	F	11.2					
29	O	8	14	35			
	O		15	20			
	F	9.4					
30	S	16	36	15			Local (not felt)
	S		24				
	F	39	00				
Tremors were also recorded at:							
		D	H	D	H	D	H
		10	20	21	20	30	15

SEISMOGRAPH RECORDS



For the Month of April, 1937

FROM HELWAN OBSERVATORY, EGYPT

$\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

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Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
3	e	21	22	52			Preceded with microseisms
	i		33	00			
	F	22.2					
5	P	7	10	21	20	+ 29	
	e		13	38			
	PR ₁		14	37			
	S _c P _c S		21	07			
	(PS)		23	50			
	SR ₁		30	35			
	M	8	01	53			
F	10.2						
7	P	18	35	12			
	S		39	42			
	SR ₁		40	48			
	L		42	30			
	F	19.5					
12	e	15	22	06			
	F	15.9					
16	P'	3	20	48	18	+ 38	Lost in changing the paper
	pP'		21	10			
	PR ₁		25	54			
	S _c P _c S		31	00			
	M	4	30	55			
	F						
28	P	2	38	16			Local " not felt "
	S		39	18			
	F	3.0					
29	eP	18	20	50			Confused with the succeeding earthquake
	e		28	15			
	F						
29	(eP)	19	06	20	"	"	preceding
	eS		17	35	"	"	"
	M		51	35	22	+ 21	"
	F				"	"	succeeding

SEISMOGRAPH RECORDS

For the Month of April (Cont.), 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M. R. Madwar

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Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE	REMARKS
		h.	m.	s.		A_E μ	
29		Beginning confused with the preceding earthquake					
	I	20	39	45			
	M	21	10	32	20	+ 9	
	F	22.1					
	Tremors were also recorded at :						
		D	H	D	H	D	H
		1	18, 19	3	5	8	16
		12	12	15	21	16	18
		18	10	23	9	28	15
		29	11	30	20		

SEISMOGRAPH RECORDS



For the Month of May, 1937

FROM HELWAN OBSERVATORY, EGYPT

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Director Dr. M.R. Madwar

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Theoretical magnification = 250.
Period of undamped pendulum = 12^s.
Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
9	eP	14	59	29	15	+ 5	Deep focus (F= 120 Km.)
	pP	15	00	00			
	e		01	25			
	PR ₁		03	35			
	pPR ₁			43			
	S		09	50			
	(SP or S ₁ P ₁ eP ₁ S ₁)		10	18			
	SS ₁ eP ₁ S ₁			45			
M		49	27				
F	16.8						
10	eP ₁	15	44	15	10	+ 2	Preceded with microseisms
	e			20			
	eP ₂			30			
	e		45	15			
	PR ₁		48	00			
	F		53	54			
	F	16.5					
11	e	16	11	55	10	+ 2	" " "</td
	M		18	42			
	F	16.6					
12	e	9	14	24	9.6	+ 3	" " "</td
	S		19	48			
	F	9.6					
12	e	15	29	00	12	+ 3	" " "</td
	M		56	30			
16	eP	11	59	40	12.8	+ 3	" " "</td
	e	12	10	15			
	F	12.8					
21	e	2	18	42	3.3	+ 3	" " "</td
	e		21	00			
	F	3.3					
21	e	22	00	30	22.4	+ 3	" " "</td
	e		04	42			
	F	22.4					

SEISMOGRAPH RECORDS



For the Month of May (cont.), 1937

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$\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E—W motion.
 Theoretical magnification = 250.
 Period of undamped pendulum = 12^s.0.
 Times are expressed in Greenwich Civil Mean Time.

Govt. Press 2955-1936-700 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS	
		h.	m.	s.				
23	e	8	31	22	14	+6	Preceded with microseisms	
	i	8	33	15				
	M		56	42				
	F	10.0						
23	e	11	01	20			" " "	
	i		02	05				
28	F	11.8						
	e	15	54	42				
28	e		55	56				
	i	16	00	30				
	F	16.6						
	eP	20	08	30			Deep focus	
	e		09	25				
	PR ₁		12	26				
29	PR ₂		15	08				
	e		19	00				
	e		20	20				
	PS		22	00				
	F	21.1						
	P	15	24	20			Local (Felt at Choubra; district of Cairo) (F = 25 Km.) (Δ = 420 Km.)	
PH			32					
S		25	24					
F	15.8							
Tremors were also recorded at:								
	D	H	D	H	D	H	D	H
	2	0	7	15	12	3	15	12
	20	13	29	2.8	30	21		

SEISMOGRAPH RECORDS



For the Month of July, 1937

FROM HELWAN OBSERVATORY, EGYPT

$\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12⁰.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 193—7	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
1	P	12	00	35	16	+ 40	Deep focus
	pP		01	17			
	S		09	25			
	e			37			
	PS			56			
	sS		10	35			
	M		29	56			
	F	14.5					
2	e	2	56	35	15	+ 7	
	e		59	16			
	e	3	00	08			
	M	4	01	48			
	F	5.8					
4	e	6	16	54			Confused by two following earthquakes at 7h. & 7h.50
	e		17	32			
	F	10.0					
6	e	15	49	42			
	F	16.0					
10	e	13	45	24			Preceded by microseisms
	F	14.0					
10	e	20	55	00	20	+ 6	" " "
	i	21	07	18			
	M		39	30			
	F	22.1					
11	eP	13	52	27			" " "
	PR ₁		56	08			
	S	14	02	52			
	e		04	17			
	F	15.0					
12	e	0	11	30	17	+ 7	" " "
	e		14	12			
	e		21	52			
	M		43	10			
	F	1.2					

SEISMOGRAPH RECORDS



For the Month of July (Cont.), 1937

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Theoretical magnification = 250.
Period of undamped pendulum = 12^s.0.
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Govt. Press 12532 A, 1936-300 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
14	e	22	43	35			Preceded by microseisms
	e			50			
	e		51	35			
	e		52	00			
	F	24.0					
16	e	10	41	54			" " "
	i		42	09			
	F	11.5					
19	i	9	50	05			" " "
	M	10	49				
	F	11.6					
19	i	19	59	45	15	+ 5	" " "
	i	20	00	35			
	i		02	47			
	i		03	52			
	i		04	14			
	M		40	27			
	F	21.7					
22	P	17	22	15			Deep focus
	pP			30			
	PR ₁		25	40			
	i		30	25			
	iS		32	45			
	isS		33	00			
	PS			33			
	pS		34	00			
	SR ₁		38	25			
	F ¹	21.1					
26	eP	4	02	(00)			Lost in changing the paper.
	epP			17			
	PR ₁		06	10			
	pPR ₁			20			
	(SKS)		12	05			
	SKKS			50			
	iS		13	45			
	sS		14	30			
	PS		15	30			
	PPS		16	27			
	F						

SEISMOGRAPH RECORDS



For the Month of July (cont.), 1937

FROM HELWAN OBSERVATORY, EGYPT

$\phi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

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DATE 193- <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
26	eP	20	09	10	20	<u>+ 14</u>	Deep focus
	i			15			
	pP			36			
	sP			53			
	(PR ₁)	12		34			
	e			50			
	PR ₂	15		00			
	SKS	19		35			
	S	20		10			
	sS	21		00			
	M	50		45			
F	22.7						
31	P	20	46	50			Preceded by microseisms Deep focus
	pP		47	15			
	PR ₁		49	23			
	PR ₂		51	05			
	S		55	55			
	sS		56	40			
	F	23.0					
	Tremors were recorded at:						
	D	H	D	H	D	H	H
	2	15	6	16	9	17, 18	14
	12	12	19	4	21	1	22
	26	10	30	16			

SEISMOGRAPH RECORDS

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DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
1	P	10	52	05		Preceded by microseisms	
	e		55	20			
	PPP		56	20			
	S	11	01	13			
	PS			45			
	F	12.6					
2	P	15	58	30			
	eS	16	09	00			
	F	17.0					
4	eP	23	45	(45)			
	e		46	12			
	e		50	03			
	i			48			
	iS		54	26			
	PS		55	00			
	i		56	15			
F	1.0						
5	e	15	03	23			
	e			45			
	i		04	25			
	e		09	13			
	e		13	28			
	i			50			
	F	16.6					
9	eP	14	53	20			
	e		56	20			
	e	15	03	52			
	e		04	55			
	F	15.9					
10	e	1	06	50			
	e		07	25			
	i			42			
	F	1.2					
11	iP	1	07	50		Large mouvement	
	e		08	12			
	i		10	00			
	(SKS)		17	24			

SEISMOGRAPH RECORDS



For the Month of August (cont.), 1937

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DATE 193- <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E	REMARKS
		h.	m.	s.		μ	
11 (cont.)	iS	1	17	48			Very large mouvement
	i		18	20			
	i			52			
	i		19	20			
	F	3.5					
15	eP	4	39	20			
	iS		49	30			
	e			55			
	F	5.5					
15	e	8	31	42			
	e		33	47			
	F	8.7					
15	e	11	45	48			
	e		53	10			
	F	12.4					
17	e	13	33	50			
	F	13.9					
18	L	15	39				
	F	16.2					
20	iP	6	48	55			
	S		57	(40)			
	PS		58	08			
	F	7.6					
20	iP	12	11	47	18	+ 93	
	i		12	44			
	SKS		22	00			
	iS			20			
	i		23	20			
	i		24	00			
	M		59	18			
	F	16.2					
20	e	16	19	35			
	F	16.8					
20	e	16	58	25			
	F	17.2					

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DATE 193-7	PHASE	TIME			PERIOD s.	AMPLITUDE A _E		REMARKS
		h.	m.	s.		μ		
24	P ₁	18	47	52	12	+	3	Preceded by microseisms
	P ₂		48	18				
	PP		51	52				
	SKKS		58	53				
	PSKS	19	02	07				
	F	21.5						
24	M	23	35	05	10	+	2	
	F	0.0						
26	e	19	17	12	10	+	2	
	F	20.1						
31	iP	14	24	58	10	+	2	
	pP		25	15				
	e		27	50				
	PPP		28	24				
	S		32	48				
	sS		33	12				
	M		54	50				
	F	16.0						
Tremors were recorded at :								
	D	H	D	H	D	H		
	5	11	11	10	13	11	22	0,3
	23	18						

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DATE 193- <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
1	P ₁	8	58	38	20	+ 10	Preceded by microseisms
	i		59	12			
	e	9	01	12			
	e		04	18			
	e		05	34			
	i		09	18			
	M	10	04	45			
1	F	11.5					
	e	22	09	14			" " "
	i		11	44			
	e		17	30			
3	F	24.0					
	eP	19	01	(20)			
	e			45			
	i		05	45			
	i		08	00			
	i		10	05			
	i		11	53			
	i		12	05			
	i			13			
	i			33			
	e		13	25			
4	e		14	05			
	i		14	05			
	i			57			
	e		19	45			
	i						
	F	22.4					
	e	6	34	08			
5	e		38	20			
	F	8.7					
5	e	15	33	52			" " "
	F	15.7					
8	PP	0	57	28			
	SKS	1	04	00			
	S		05	07			
	PS		06	28			
	(PPS)		07	13			
	i			49			
	M		36	00			
8	F	3.7			18	+ 33	

SEISMOGRAPH RECORDS

For the Month of September (cont), 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E-W motion

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
15	P ₁	12	46	38	20	+ 11	
	PP		48	40			
	i		49	06			
	i			20			
	SKP		50	00			
	PPP		51	30			
	SKS		53	36			
	i		58	48			
	i		59	52			
	PPS	13	00	24			
	M		44	54			
F	15.7						
16	eP	0	03	24	19	+ 16	
	PP		07	52			
	SKS		14	00			
	PS		17	18			
	i			48			
	PPS		18	18			
	M		55	24			
17	eP	9	45	(20)	15	+ 25	
	e		46	14			
	e		47	15			
	e		48	15			
	ePP		49	20			
	e		50	00			
	PPP		51	40			
	e		53	25			
	i		54	54			
	SKS		56	06			
	eS		57	00			
	PS		58	06			
	M	10	27	22			
F	12.3						
21	i	8	06	00			
	F	9.0					
21	eP	9	53	04			
	e			20			
	e			42			
	e		56	23			

SEISMOGRAPH RECORDS

For the Month of September (Cont.) 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E-W motion

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 193- <u>7</u>	PHASE	TIME			PERIOD	AMPLITUDE A_E	REMARKS
		h.	m.	s.			
21 cont.	SKS	10	03	36	21	9	
	(S)		04	10			
	PPS		05	42			
	M		36	36			
	F	12.5					
22	eP	3	23	50			
	e		26	20			
	S		34	22			
	e			50			
	PS		35	25			
	e		36	00			
F	4.6						
23	(eP)	13	21	20			
	P₁		25	02			
	e			52			
	PP		26	35			
	e		27	05			
	SKP		28	00			
	PPP		29	10			
	(SKS)		32	10			
	SKKS		33	27			
	e		34	15			
	PS		36	36			
	e		37	00			
	M	14	55	31			
F	17.5						
24	M	14	47				Preceded by microseisms
	F	15.2					
25	e	4	38	12			" " "
	e		40	12			
	e		45	00			
	F	5.8					
27	1P	9	07	51			
	1		08	08			
	1			35			
	PP		11	00			
	1		13	40			
	1		14	18			

SEISMOGRAPH RECORDS

For the Month of September (cont.), 1937

FROM HELWAN OBSERVATORY, EGYPT

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 1937	PHASE	TIME			PERIOD s.	AMPLITUDE A _E μ	REMARKS
		h.	m.	s.			
27 cont.	i	9	04	40	20	+ 46	
	i		15	52			
	iS		18	08			
	i			35			
	i		19	15			
	i			55			
	SS		23	45			
	M		47	54			
F	12.6						
28	e	6	49	22			Preceded by microseisms
	F	8.0					
30	e	21	54	19			
	e	22	00	12			
	F	24.1					
Tremors were also recorded at:							
	D	H	D	H			
	15	2	20	10 (Local), 16			
	27	21	29	00			

SEISMOGRAPH RECORDS



For the Month of October, 1937

FROM HELWAN OBSERVATORY, EGYPT

$\phi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 193 <u>7</u>	PHASE	TIME			PERIOD	AMPLITUDE A_E	REMARKS
		h.	m.	s.			
1	e	19	36	50	15	± 7	Preceded by Microseisms
	e		47	20			
	M	21	10	00			
	F	22.1					
3	e	8	19	25	8.5		" " "
	e		30	10			
	i			21			
	F						
6	e	10	06	30	11.3		
	e		13	35			
	e		16	13			
	F						
6	e	17	25	20	20.0		
	e		35	00			
	i		42	30			
	i		46	00			
	i		51	52			
	F						
6	e	22	02	30	11	± 6	
	M		28	05			
	F	23.1					
7	e	8	21	19	9.6		" " "
	F						
11	e	21	49	18	17	± 7	" " "
	M	22	43	12			
	F	23.3					
12	eP	9	59	(43)			" " "
	e _n			55			
	S _n	10	00	27			
	e			35			
	F	10	04	40			
12	ePP	21	10	21			Felt in Palestine
	i		15	48			
	SKS		16	44			
	i		19	15			
	PPS		20	15			

SEISMOGRAPH RECORDS.

For the Month of October (Cont.), 19 37

FROM HELWAN OBSERVATORY, EGYPT.

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E—W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 19 37	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A _E . μ.	REMARKS.
		h.	m.	s.			
12 cont.	i	21	21	00	15	+ 5	
	SS		25	20			
	M		58	50			
	F	22.7					
14	P	6	41	55			Local (not felt)
	e ^g		42	12			
	e			17			
	e			21			
	F		44				
14	P _n	21	17	14			" "
	P _n			30			
	e ^g			37			
	e			40			
	S _n		18	00			
	e _n			14			
	S			20			
	F ^g		30				
17	eP	4	59	49			Preceded by microseisms
	e	5	00	18			
	PP		03	12			
	e		04	00			
	S		10	20			
	PS		11	12			
20	F				15	+ 5	Lost in changing the paper
	eP	1	31	21			
	PPP		33	10			
	eS		37	35			
	M		51	40			
	F	2.7					
22	iP	18	34	35	20	+ 9	
	i		35	45			
	PPP		36	50			
	M		54	45			
	F	17.4					
23	i	17	27	05			" " "
	e		30	00			
	F	19.0					

SEISMOGRAPH RECORDS.

For the Month of October (Cont.), 1937

FROM HELWAN OBSERVATORY, EGYPT.

 $\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E—W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 1937.	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A_E μ .	REMARKS.	
		h.	m.	s.				
24	I F	11	59	50			Preceded by microseisms	
					13.2			
25	I I I F	11	00	40			"	"
			03	20				
			07	10				
					12.7			
26	I e F	10	05	52			"	"
			06	17				
					10.4			
28	M F	7	48	10	15	+ 7	"	"
					7.9			
Tremors were recorded at :								
	D	H	D	H	D	H	D	H
	1	15,16	4	9	5	7	9	19
	12	17	15	12	22	1	23	15
	24	14	25	8	26	0,1	27	1,17
	29	7						

SEISMOGRAPH RECORDS



For the Month of November, 1937

FROM HELWAN OBSERVATORY, EGYPT

$\varphi = 29^{\circ} 51' N$, $\lambda = 31^{\circ} 20' E$, $h = 115$ m.

Director Dr. M. R. Madwar

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12^s.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 12532 A, 1936-300 ex.

DATE 193— 7	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ	REMARKS
		h.	m.	s.			
1	e	17	46	35			Local not felt Preceded by microseisms
	e			42			
	e			53			
	i		47	12			
	F	17.9					
3	e	23	13	52			" " "
	F	23.6					
5	i	23	00	42			" " "
	F	23.1					
11	eP	0	07	(30)	17	± 13	
	e		08	15			
	PP			40			
	PPP		09	03			
	e			27			
	e		11	48			
	(S)		13	20			
	M		24	37			
	F	1.3					
12	i	12	26	38			" " "
	F	12.9					
13	e	10	10	19			Confused with the preceding earthquake
	e		14	50			
	e		16	53			
	e		17	50			
	e		20	00			
	F						
13	e	12	04	48			
	e		09	36			
	F	12.7					
14	iP	11	04	32			Deep focus $h = 200$ Km. $\Delta = 34^{\circ}$
	pP		05	20			
	i		06	10			
	i		08	40			
	iS		09	42			
	sS		10	50			
	F	14.2					

SEISMOGRAPH RECORDS

For the Month of December 1937

FROM HELWAN OBSERVATORY, EGYPT

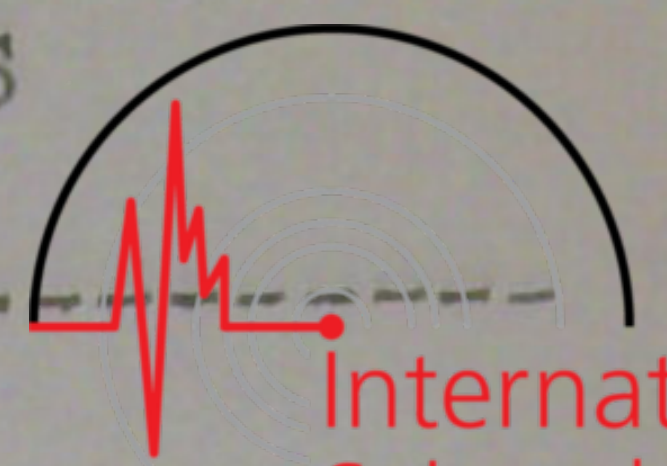
 $\varphi = 29^{\circ} 51' N, \lambda = 31^{\circ} 20' E, h = 115 m.$

Director Dr. M.R. Madwar

Seismograph Milne-Shaw recording E-W motion.
Theoretical magnification = 250.
Period of undamped pendulum = 12s.0.
Times are expressed in Greenwich Civil Mean Time.

DATE 1937	PHASE	TIME			PERIOD s.	AMPLITUDE A_E $\mu.$	REMARKS
		h.	m.	s.			
1	e	11	10	24			Preceded by microseisms
	i		11	15			
	F	11.4					
2	e	23	08	45	10	± 15	
	e		09	10			
	M		12	50			
	F	23.6					
5	e	15	48	09			
	e		55	36			
	F	17.8					
7	i	9	38	07			" " "
	F	10.1					
8	iP	8	44	18	15	± 16	" " "
	PP		47	25			
	PPP		49	15			
	e		54	08			
	iS			26			
	M	9	26	15			
	F	11.6					
10	e	13	41	42			
	e		46	42			
	e		52	08			
	F	15.0					
12	e	8	19	29			
	e		24	35			
	F	10.6					
13	eP	19	06	02	16	± 10	
	PP		09	12			
	S		16	00			
	e			15			
	PS			40			
	M		45	52			
	F	21.6					
13	e	23	09	39			
	e			52			
	e		13	14			
	F	0.3					

DATE 1937	PHASE	TIME			PERIOD s.	AMPLITUDE A_E μ.	REMARKS
		h.	m.	s.			
16	e i F	8	51	30			
		9.6	52	00			
16	Pn e (Sn) (Sg) F	17	37	40			Near Earthquake $\Delta = 891$
			38	35			
			39	12			
			40	04			
		18.2					
17	iP e e PP S M F	9	44	15			
				38			
			45	40			
			47	30			
			54	25			
		10	26	17	15	± 8	
		11.6					
18	iP i i i i i i i F	13	24	46			
			25	36			
			26	00			
			27	07			
			28	36			
			33	34			
			34	20			
			35	00			
		15.1					
22	e e F	4	01	27			
			07	04			
		6.6					
23	eP PP PPP SKS SKKS S PS M F	13	32	47			
			37	20			
			39	50			
			43	18			
			44	24			
			45	10			
			46	48			
		14	24	51	18	± 86	
		18.0					
24		Beginning lost in changing the paper					
	i M F	7	10	00			
			29	27	16	± 30	
		9.0					
25	e e F	10	09	42			
			14	27			
		11.0					



International
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DATE 1937	PHASE	TIME			PERIOD s.	AMPLITUDE A E p.	REMARKS
		h.	m.	s.			
25	e	21	34	06		ms Preceded by microseis	
	e		49	49			
	M	22	34				
	F	23.6					
28	e	3	33	27			
	M	4	06				
	F	4.5					
28	M	Beginning lost in changing the paper			15	± 57	
	F	Confused with the succeeding earthquake					
28	(Pg)	Beginning confused with the preceding earthquake				Local (not felt)	
	e	8	24	06			
	e			30			
	(S*)			40			
	(Sg)			45			
	F			56			
31	F	8	31				
	e	18	00	47			
	e		06	44			
	e		10	30			
	M		48				
F	19.5						

Tremors were also recorded at :-

D	H	D	H	D	H	D	H
4	1	8	3,5	10	18	12	2
17	5,8	25	2	27	1		