

# SEISMOGRAPH RECORDS.

For the Month of JANUARY, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Director M. R. MADWAR.

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 <u>4</u> .	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . $\mu$ .	REMARKS.
		h.	m.	s.			
January 2	iP iS M F	21	00	43?	14	+ 53	no cutting at the preceding minute.
" 3	iP iS F	9	54	33	18	+ 800	no definite maximum.
" 15	P S M F	8	51	04			difficult to measure
			8	58			out of scale.
				14.0h			
" 28	P S M F	19	29	34	17	+ 23	Record confused with microseisms.
			19	39			
			20	26			
			21.7h				
Smaller tremors were also recorded at :							
D	H	D	H	D	H		
1	22	17	08	21	07		
6	14	19	13	23	05		
12	13	19	19	28	15		
16	05	20	18	30	20		
16	18	20	23	31	11		



## SEISMOGRAPH RECORDS.

For the Month of MARCH, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 4	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . μ.	REMARKS.				
		h.	m.	s.							
March 1	eP	22	05	20							
	S	22	10	50							
	i	22	12	13							
	i	22	13	04							
	i	22	15	03							
	L	22	42	07							
	F	24.0h									
" 5	P	12	06	05			Record confused with microseisms.				
	iPr	12	16	26							
	iS	12	19	52							
	L	12	30	15							
	M1	13	14	22	24	±179					
	M2	13	18	12	20	±124					
	M3	13	24	30	17	± 97					
" 24	eP	13	25	50			Preceded by microseisms. Probably two earthquakes seems to be superposed as shown on the record.				
	S	13	29	15							
	F	17.0h									
" 29	iP	20	10	32							
	iS	20	13	26							
	F	20.8h									
Smaller tremors were also recorded at :											
D	H	D	H	D	H	D	H	D	H		
1	09	1	15	1	20	2	11	2	19	4	06
(5	18, 36m. Local)	6	15	7	23	(8	02, 59m. Local)				
8	12	8	23	9	14	10	02	10	09	11	19
12	08	12	15	12	19	12	22	13	13	13	23
14	05	15	10	15	12	16	14	16	15	18	04
18	10	18	22	18	22	19	03	19	06	20	03
20	23	22	09	22	13	22	21	25	13	27	05



## SEISMOGRAPH RECORDS.

For the Month of APRIL, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 <u>4</u>	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . $\mu$ .	REMARKS.				
		h.	m.	s.							
April 6	P	15	41	08	6	$\pm$ 5	Record confused with microseisms.				
	eS	15	43	27							
	L	15	46	34							
	M	15	47	30							
	F	15.9h									
" 10	iP	10	35	52	21	$\pm$ 254					
	iPr	10	39	22							
	iS	10	47	46							
	M	11	15	30							
	F	12.1h									
" 15	iP	22	28	20	29	$\pm$ 116					
	iS	22	39	02							
	L	23	02	50							
	M1	23	08	42							
	M2	23	17	40							
	F	25.8h									
Smaller tremors were also recorded at :											
D	H	D	H	D	H	D	H	D	H		
2	05	3	08	3	18	3	22	4	13	6	06
6	19	9	15	11	17	11	21	12	03	12	04
12	09	14	03	(14	10,	48m Local)	15	10	15	10	
16	04	16	14	18	13	24	02	24	18	(24	21, 49m Local)
(25	15, 05m Local)	26	05	26	07	26	08	26	08	26	09
26	14	26	21	27	21	28	16				



## SEISMOGRAPH RECORDS.

For the Month of May, 1934

## FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 7884 A. 1933-125 ex.

DATE 1934	PHASE	TIME			PERIOD s.	AMPLITUDE $A_E$ $\mu$	REMARKS				
		h.	m.	s.							
/ May 1	iP	7	15	42			No definite M				
	iS	7	24	27							
	F	8.4h									
/ 4	eP	4	49	03							
	S	4	59	46							
	F	8.0h									
12	eP	16	47	05	very small	+ 10	Very indistinct Probably Local				
	S	16	47	33							
	M	16	48	02							
	F	16.9h									
/ 13	iP	9	22	23	27	+ 16					
	iS	9	32	08							
	M	10	9	18							
	F	11.7h									
Smaller tremors were also recorded at:											
D	H	D	H	D	H	D	H	D	H	D	H
1	3	(3	0, 24m Local)	3	1	5	15	(6	23, 7m Local)	6	3
7	11	8	15	9	16	9	17	9	21	11	3
11	18	12	21	13	15	14	6	14	22	15	0
18	7	19	1	19	11	21	10	21	10	22	1
22	11	23	23	27	13	31	13				



# SEISMOGRAPH RECORDS.

For the Month of June, 1934

FROM HELWAN OBSERVATORY, EGYPT.

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

Director M. R. Heawer

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

Govt. Press 7884 A, 1933-125 ex.

DATE 1933	PHASE	TIME			PERIOD s.	AMPLITUDE	REMARKS
		h.	m.	s.		A <sub>E</sub> $\mu$	
/ June 2	eP	13	51	17			Preceded by microseisms
	is	13	58	13			
	P	15.5h					
/ 13	eP	8	3	27			
	is	8	13	45			
	P	3.5h					
/ 13	P	22	16	07	11	± 84	
	S	22	20	41			
	M	22	30	30			
	F	24.6h					
/ 19	eP	18	45	32	4	± 6	
	S	18	47	00			
	M	18	47	42			
	F	19.5h					
/ 24	eP	6	14	20	17	± 42	indistinct
	Pr <sub>1</sub>	6	18	24			
	Pr <sub>2</sub>	6	24	14			Paper changed probable M
	S	6	28	25			
	M	7	6	14			
	F	8.5h					
/ 29	P	8	37	30			
	S	8	47	05			
	F	10.2h					

tremors  
Smaller/were also recorded at :

D	H	D	H	D	H	D	H	D	H	D	H
2	6	2	21	5	23	6	4	7	16.30m	Local	
8	2	8	4	8	5	8	13	17	4	18	9
18	11	20	6	20	9	20	12	20	14	21	6
23	5	24	2	24	4	25	15	28	1	30	13

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## SEISMOGRAPH RECORDS.

For the Month of J U L Y, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 7884 A. 1933-125 ex.

DATE 1934	PHASE	TIME			PERIOD s.	AMPLITUDE A <sub>E</sub> μ	REMARKS
		h.	m.	s.			
July 18	P	1	50	40			
	Pr	1	55	03			
	S	2	01	30			
	SS	2	04	25			
	L	2	27	07			
	M1	2	40	17	21	± 165	
	M2	2	51	12	16	± 124	
	F	7.2h					
" 18	P	16	37	47			
	S	16	49	38			
	F	confused with the beginning of the following earthquake					
	i	17	18	28			
	i	17	24	38			
	i	17	27	50			
	L	17	50	22			
	M	18	14	40	17	± 23	
	F	confused with the beginning of the following earthquake					
	e	19	59	41			
" 19	i(s)	20	02	02			
	F	confused with the beginning of the following earthquake					
	e	0	28	35			
	i	1	53	00			
	M	2	30	50	22	± 40	
	F	4.7h					
" 21	L	7	26	03			
	M1	7	39	43	21	± 51	P & S lost in changing paper.
	M2	8	09	08	16	± 31	
	F	confused with the beginning of the following earthquake					
	P	10	53	23			
	Pr1	10	57	46			
	Pr2	11	04	10			
	S	11	06	53			
	M	11	42	52	19	± 21	
	F	14.2h					
" 22	iP	20	03	17			
	iPr	20	04	35			
	iS	20	08	26			
	M	20	11	10	8	± 8	
	F	21.0h					



## SEISMOGRAPH RECORDS.

For the Month of J U L Y, 1934

FROM HELWAN OBSERVATORY, EGYPT.

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Director \_\_\_\_\_

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 <u>4</u> .	PHASE.	TIME.			PERIOD. s.	AMPLITUDE	REMARKS.
		h.	m.	s.		A <sub>E</sub> . μ.	
July 28	eP	21	50	03	19	± 16	
	Pr	21	54	22			
	S	22	01	45			
	M	22	44	30			
	F	24.7h					
Smaller tremors were also recorded at :							
D	H	D	H	D	H		
1	20	13	22	20	17		
4	02	15	01	20	18		
5	12	15	08	22	03		
6	23	16	09	23	18		
7	15	18	13	27	14		
10	02	19	06	28	02		
12	10	19	08	28	18		
12	14	19	23	29	09		
13	11	20	03				



## SEISMOGRAPH RECORDS.

For the Month of AUGUST, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 4	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> μ.	REMARKS.
		h.	m.	s.			
August 7	e	3	59	30	20	± 23	
	S	4	02	03			
	M	5	07	16			
	F	6.6h					
" 13	eP	0	02	23	26	± 56	
	S	0	13	15			
	M1	0	44	27			
	M2	0	46	37			
	F	2.3h					
" 21	eP	19	37	37	20	± 26	
	eXS	19	46	41			
	M	20	08	40			
	F	21.4h					
" 31	eP	0	44	26			
	S	0	47	58			
	F	1.4h					
" 31	P	5	13	26			
	S	5	22	13			
	F	7.1h					
" 31	P	15	04	22	15	± 43	
	S	15	09	53			
	M	15	22	14			
	F	17.1h					
Smaller tremors were also recorded at :							
D	H	D	H				
2	03	11	<del>12 22</del>				
2	07	14	09				
4	13	18	03				
6	13	19	00				
7	12	23	23				
8	08,	55m Local.	25	11			
11	08	29	04				



## SEISMOGRAPH RECORDS.

For the Month of SEPTEMBER, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E--W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 1934	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . μ.	REMARKS.
		h.	m.	s.			
Sept. 21	1P	12	49	58	16	±6	
	1S	12	58	53			
	M	13	23	28			
	F	13.7h					
" 26	P	7	38	11	16	±16	Preceded by microseisms.
	S	7	47	05			
	M	8	07	53			
	F	9.0h					
Smaller tremors were also recorded at :							
D	H	D	H	D	H		
1	08	7	03	16	14		
1	11	7	20	22	04		
(1	12, 01m Local).	8	07	23	01		
1	20	8	11	23	04		
1	21	8	12	23	08		
3	12	9	05	23	09		
(4	04, 00m Local).	11	08	24	12		
4	16	12	15	25	19		
5	02	12	17				
6	02	15	07				



## SEISMOGRAPH RECORDS.

For the Month of November, 1934

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

Govt. Press 7884 A. 1933-125 ex.

DATE 193 <u>4</u>	PHASE	TIME			PERIOD s.	AMPLITUDE A <sub>E</sub> μ	REMARKS
		h.	m.	s.			
/ Nov. 4	ep	2	13	20	?	± 16	There appears to be two earthquakes superposed as shown on the record. Lost in changing record.
	es	2	24	51			
	M	3	19	12			
	F	5.8h?					
/ 9	ip	13	42	52	very small	± 27	Felt in Cairo.
	is	13	44	13			
	M	13	44	21			
	F	14.3h					
/ 12	ip	7	22	07	10	± 45	
	pr	7	24	35			
	S	7	25	55			
	M	7	27	45			
	F	9.0h					
/ 18	ep	3	27	43	11	± 6	record confused with microseisms.
	S	3	32	55			
	M	3	45	36			
	F	4.7h.					
/ 18	ep	23	0	21			No definite maximum
	i	23	5	53			
	i	23	7	23			
	e	23	7	52			
	F	25.1h.					
/ 21	P	22	27	51	7	± 7	
	S	22	28	57			
	M	22	33	42			
	F	23.1h.					
/ 26	ip	12	21	30			
	S	12	31	43			
	F	13.6h.					
/ 27	ep	6	27	32			Other details lost in changing the record.
	S	6	37	54			



# SEISMOGRAPH RECORDS.

For the Month of November, 1934

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

Director M. H. M.

Seismograph Milne Shaw recording E—W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 193 <u>4</u>	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . μ.	REMARKS.
		h.	m.	s.			
<u>November</u> 30	e	2	22	26			Probably another quake is superposed.
	p	2	23	22			
	epr <sub>1</sub>	2	24	53			
	epr <sub>2</sub>	2	20	59			
	S	2	24	54	20	± 20	
	M	3	15	10			
	F	5.8h.					
Smaller tremors were also recorded at:							
	D H	D H	D H	D H	D H	D H	
	2 16	2 22	3 13	4 7			
	4 12	5 3	5 23	6 1			
	7 14	9 4	10 9	12 17			
	14 18	14 19	15 23	16 10			
	16 14	16 9	18 14	19 8			
	23 <sup>2</sup> 3	24 13	27 01	27 2			
	27 14	29 15,30m	Local	30 12			

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## SEISMOGRAPH RECORDS.

For the Month of December, 1934.

FROM HELWAN OBSERVATORY, EGYPT.

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

Seismograph Milne-Shaw recording E-W motion.

Theoretical magnification = 250.

Period of undamped pendulum = 12<sup>s</sup>.0.

Times are expressed in Greenwich Civil Mean Time.

DATE 1934.	PHASE.	TIME.			PERIOD. s.	AMPLITUDE A <sub>E</sub> . μ.	REMARKS.
		h.	m.	s.			
/ Dec. 4	eP	17	43	20	22	± 34	Preceded by microseisms
	i	17	49	28			
	i	17	50	04			
	S	17	53	20			
	M	18	29	57			
	F	19.3h					
/ 15	iP	2	6	33	18	± 190	
	Pr	2	8	31			
	S	2	13	30			
	Sr	2	17	41			
	M	2	29	54			
	F	5.7h					
/ 15	P	19	35	28			
	S	19	43	11			
	i	19	46	36			
	F	20.7h					
/ 31	eP	19	4	54	?	± 53	Confused with microseisms
	S	19	16	43			
	L	19	20	33			
	M	19	50	38			
	F	22.7h					
Smaller tremors were also recorded at :							
D	H	D	H	D	H	D	H
1	12	3	2	5	22	7	11
9	11	11	2	12	9	14	2
14	21	14	23	15	10	17	16
22	13	24	15	25	0	25	6
28	4	28	7	30	14		