

No. 7a, Jan. 1 - Feb. 10 1921.

EARTHQUAKE RECORDS:

Jan. 2, 7h; 3, 22h; 4, 14h; 5, 23h; 6, 12h, 23h; 7, 1h, 3h, 10h; 8, 7h, 16h;
 9, 13h, 15h, 19h; 13, 22h; 14, 7h; 17, 0h; 19, 15h, 18h; 20, 21h; 23, 16h;
 27, 11h, 14h; 29, 21h; 30, 19h.
 Feb. 3, 19h; 4, 8h; 5, 9h; 6, 4h; 9, 20h; 10, 20h.

No.	DATE	PHASE	TIME	PERIOD	AMPLITUDE		REMARKS
					AN	AE	
1	1921. Jan. 2	(P)	7 19 16				(D=8060 K.M.) (O: 7h 7m 52s).
		S	28 39				
		eLE	47				
		eLN	50				
		M	51 27	26		+12	
		M	52 11	26		-13	
		M	54 12	24		+12	
F	8 30						
2	,, 5	eL	23 14				
		F	35				
3	,, 6	eE	12 31.1				
		eN	32.9				
		e	49.9				
		eLE	13 3				
		eLN	4				
		M	13 19	23		-17	
		M	14 7	22		-19	
F	14 15						
4	,, 9	e(S)E	13 19 4				Ottawa: D=6480 K.M. O: 12h 55m 3s. Parc St. Maur: e 13h 18m 45s.
		eN	19 37				
		eLN	38				
		eLE	40				
		M	44 23	24		-16	
		M	45 14	22		+13	
	F	14 35					
	,, 19	eLN	15 39				
		eLE	40				
		M	41 19	22		-14	
		M	43 5	18		+15	
M		48 37	17		-13		
M	50 52	16		-14			
F	16 20						
6	Feb. 4	P	8 35 1				D=9000 K.M. O: 8h 22m 49s. Condensation. Principal phase in EW. much stronger than in N.S. Destructive earth- quake on the Isthmus of Tehuantepec. (Mexico).
		PR ₁ E	38.3				
		S	45 11				
		LE	9 1.6				
		M	3 12	34		+170	
		M	5 29	28		-193	
		M	6 28	24		-56	
		M	8 5	22		+96	
		M	11 32	19		+95	
		F	11 20				
		7	,, 6	(eN)	4 41.5		
eLE	5 8						
eLN	10						
M	17 54			17		-16	
F	6 15						

No.8. Feb.11 - Feb.27, 1921. **DE BILT.**
ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.
SEISMOLOGICAL BULLETIN.
 $\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand,

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and EW-components.

EARTHQUAKE RECORDS:

 Feb. 11, 0h, 18h, 23h; 12, 6h; 13, 21h; 14, 1h, 12h; 17, 3h;
18, 12h; 19, 14h, 18h; 20, 16h; 21, 2h, 12h, 16h, 19h; 27, 18h.

	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
8	1921. Feb.11	e	0	21				Distant earthquake.	
		e		26.7					
		eL		41				La Paz: D=16850 K.M.	
		M	47	48	27	-13		O 23h 53m 28s.	
		M	48	28	26		-13	Hamburg: ePz 0h11m35s.	
		M	59	9	21		+12	eL 0h46m.	
		M	59	36	21	-14			
		F	2	15					
9	,, 14	(e)	1	25.5				Distant earthquake.	
		eE		26 45					
		eLN		53.3				La Paz: P 1h20m55s.	
		eLE		54.7				S ? 1h31m5s.	
		M	55	54	25	-16		Parc St.Maur: e 1h25m	
		M	56	42	23		+12	46s.	
		M	59	20	22	-16			
		F	4	0					
10	,, 19	e(PR ₁)	14	53 30				Distant earthquake.	
		e(L)	15	33.9				La Paz: D=16670 K.M.	
		M		34 15	21		+11	O 14h 33m 55s.	
		M		34 25	20	+10			
		M		39 9	19		-11		
		F	17	15					
11	,, 19	e	18	34 38				Distant earthquake.	
		eL	19	12				Parc St.Maur: e 18h34m	
		M		16 52	29		-41	59s. Algiers: eP 18h35m	
		M		21 33	18	+36		36s, Ottawa: eE18h35m	
		M		22 41	21		+35	44s, eL 19h11m, La Paz:	
		M		28 28	19	-39		D=15000 KM, O 18h15m39s.	
		F	21	25					
12	,, 20	e	16	18.5				Felt in South-Limburg	
		F		19.3				(Netherlands) and East-	
								Belgium.	
13	,, 27	i(P)N	18	43 18		-		Azimuth about N.	
		e(P)E		43 19				Distant earthquake.	
		iN		46 43		-		Origin: Pacific	
		eLE	19	42				Ocean ?	

EARTHQUAKE RECORDS:

March 1, 7h; 3, 5h, 8h; 5, 6h; 6, 7h; 10, 21h; 11, 17h; 12, 10h; 15, 20h;
19, 9h; 21, 4h, 7h; 22, 13h; 23, 23h; 24, 2h, 10h, 14h; 25, 1h; 28, 8h;
29, 22h.

No.	DATE	PHASE	TIME	PERIOD	AMPLITUDE		REMARKS
					AN	AE	
	1921. Feb. 27	eLN	19 45 ^{s.}	s.	"	"	
		M	47 5	23	-77		
		M	48 5	23		-74	
		M	52 18	21		+77	
		M	53 17	20	-67		
		M	20 14 3	20		+68	
		F	22 35				
14	March 3	e(S)E	3 24 48				Distant earthquake. Algiers: D=9250 K.M. O 3h 2m 32s.
		e(S)N	24 56				
		eLE	40				
		eLN	42				Paris St. Maur: D=9700 KM. O 3h 15m 3s.
		M	47 36	25	-29		
		M	49 44	27		-44	La Paz: D=15750 KM. O : 3h 3m 7s.
		M	54 17	19	-35		
		M	54 56	18		-40	
		F	4 45				
15	" 6	SN	7 48 10				Ottawa: D=3740 KM. O 7h 24m 52s.
		SE	48 15				
		eL	8 3				La Paz: D=6550 KM. O: 7h 25m 9s.
		M	15 1	16		+34	Origin: NW-Mexico ?
		F	9 5				
16	" 19	eL	9 3				Sheets changed 9h 8.9m - 19.8 m.
		M	7 0	18		+19	Algiers : eL 9h7m.
		M	7 1	19	-27		
		M	8 34	15		-15	
		M	8 35	14	+23		
		F	40				
17	" 24	PN	14 53 22				D=8240 KM. O: 14h 41m 58s.
		SN	15 3 4				Azimuth about N.
		eE	3 24				Ottawa: D=8040 K.M. O: 14h 41m 58s.
		e(SR ₁)	7 55				La Paz: D=15730 KM. O: 14h42m8s.
		eLE	15				
		eLN	18				
		M	23 37	29	+74		Origin (from Ottawa and de Bilt): In or near South-Kamchatka.
		M	24 9	25		+52	
		M	27 51	22	-76		
		M	30 26	19		+65	
		M	33 26	17	+77		
		F	17 35				
18	" 28	PL	8 1 39				D=8850 KM. O: 7h49m34s
		S	11 42				
		eL	(28)				
		M	28 37	31	-151		Azimuth about W.
		M	29 4	34		-280	Ottawa: D=3600 KM.
		M	30 8	28		-237	O: 7h49m17s.
		M	33 30	22	-121		La Paz: D=3730 KM. O: 7h49m12s.
		M	36 9	20		+143	Origin: Central-America (Nicaragua ?).
		M	36 22	19	-80		
		F	11 10				

No.9. March 30 - April 11, 1921.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\Phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

 INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG; NS- and E W-components.

EARTHQUAKE RECORDS:

 March 30, 10h, 15h, 15h;

 April 1, 4h, 12h; 2, 3h, 9h; 3, 3h; 8, 5h; 10, 13h;

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS		
			h.	m.	s.		AN	AE			
	1921.						μ	μ			
19	March 30	(e) eLN eLE F	10 11 12	56 3 5	0				20. Origin in or near Greece ? Strassburg: D=1530 K.M. O: 15h 5m 29s. Algiers: D=1660 K.M. O: 15h 5m 54s. Coimbra: D=2480 K.M. O: 15h 5m 56s. F in next quake.		
20	" 30	L M M F	15 14 15	13 39 43	50	11 9	+47	+51			
21	" 30	eE eE M M F	15 16 16 17	21 31 3 3 40	55 27	21 19	-46	+31	Distant earthquake. Ottawa: iP 15h 21m 21s. La Paz: PV 15h 21m 50s. Strassburg: e 15h 21m 49s. Algiers eP 15h 21m 3s.		
22	April 1	(PE) SE eN eL M M M F	4	19 30 30 50 3 4 5 6	9 24 37 50 30 54 30 50	18 21 17	-39	+37	-38	Destructive earthquake in North-Sumatra. (PE) from Wiechert. (D=9400 KM, 0 4h 7.3 m)	
23	" 2	e S eL M M M F	9 10 10 12	49 0 17 25 50 40 29 47 25	56 10 17 40 50 40 47 25	23 22 18	-86	-106	-68	-69	23. Hamburg: D=9370 K.M. O 9h 36m 53s. Strassburg: D=9800 K.M. O: 9 h 36m 51s. Algiers: D=10130 K.M. O: 9h 36m 54s. Felt in Penang I, Malacca Strait ?
24	" 10	PN S eLE eLN F	13 14 13 14 15	51 0 13 14 35	24 39					24. D=7900 K.M. O: 13h 40m 8s. Ottawa: D=4100 K.M. O: 13h 40m 5s. Origin, from Ottawa and De Bilt: 5095 N, 13196W; Pacific Ocean, near Vancouver I.	

EARTHQUAKE RECORDS:

April 12, 7h, 9h, 23h; 13, 5h; 15, 21h; 17, 22h; 19, 0h; 20, 16h, 19h; 22, 6h, 16h, 21h; 25, 17h; 27, 2h, 10h; 28, 10h, 20h.
 May 1, 4h, 5h; 3, 11h; 4, 5h, 17h, 21h; 10, 5h; 12, 4h; 13, 13h, 20h, 21h; 14, 11h, 13h, 20h, 22h; 16, 15h.

No.	DATE	PHASE	TIME h. m. s.	PERIOD s.	AMPLITUDE		REMARKS
					AN	AE	
25	1921. April 12	e(P)N S eL F	7 40 26 49 28 8 6 45				(D=7640 KM). (O: 7h29m24s.) Parc.St.Maur: e 7h 40m43s, D=8100 K.M.
26	" 12	e(S) eL F	9 55 25 10 9 11 10				
27	" 20	e(S) F	16 14 31 41				
28	" 20	e(S) eLN eLE M F	19 0 52 5 6 7 37 50	28		+7	29. Very distant earthquake. 30. D=1990 KM. O: 16h3m45s. Algiers: D=1880 KM. O: 16h3m48s. Hamburg: D=2360 KM. O: 16h3m41s. Origin, from Algiers and De Bilt: Atlantic Ocean 42°8N, 17°6W.
29	" 22	(eN) eE eE eL F	6 45,9 7 0 37 6 7 47 9 20				
30	" 22	P S LN LE M F	16 7 56 11 18 12.0 12.2 13 58 40	14		+8	31. From Wiechert. (D=9410 KM). (O: 5h39m24s) Ottawa: D=3980 KM, O: 5h38m43s, Origin 18°5N, 104°5W. (approximate). Origin: S-E-Europe ?
31	May 1	P S eL F	5 51(57) 6 2(28) 30 8 40				
32	" 10	e(S) L F	5 3 28 5.4 31				Distant earthquake.
33	" 14	e eE eL M M F	11 36 16 42 31 12 11 15 20 17 52 13 30	25 23		+18 -15	
34	" 14	(eN) eE eLN eLE	20 38 28 21 2 6 38 41				Distant earthquake. F in next quake.
35	" 14	e(L)N e(L)E M F	22 48 52 23 0 9 0 5	22		+12	Distant earthquake.
	" 15						

No.10. May 17 - May 28, 1921

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$
 $\lambda = 5^{\circ} 11' E$ of Gr.

h = 3 m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

 May 17, 23h; 18, 9h; 19, 19h; 20, 0h, 13h, 14h, 21h; 21, 5h, 8h, 11h
 20h, 22h; 22, 0h, 18h, 21h; 23, 4h; 25, 2h, 16h; 26, 5h, 11h, 16h;
27, 6h; 28, 19h.

	DATE	PHASE	TIME			PERIOD s.	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
36	1921. May 17	eE	23	40	2				
		e(S)E		50	28				37.D=4970 KM.
	" 18	eL	0	12					0:0h43m15s
		M	18	32		16	-18		Azimuth about E.
		M	18	39		18		-12	Condensation
		F	1	0					Strassburg:D=4830KM,
									0:0h43m15s.
									Algiers:D=5570 KM.
37	" 20	iP	0	51	41		-	-	0:oh43m14s.
		iS		58	22		+	-	Coimbra:D=6370 KM.
		(eLE)	1	2.6					0:0h43m19s.
		M		2	46	14		-47	Origin, from Algiers
		M		9	28	10	-50		and De Bilt:3799N,
		F	2	35					6794 E, South-Turkestan
38	" 21	eE	8	55	9				Zikawei:eP 8h46m30s,
		e(PR ₁)		59	45				eS 8h49m54s;Tokio:P
		iS	9	6	23		+	+	8h48m0s.S 8h53m20s,off
		eL		35					the E-coast of Is.Ma-
		M		36	20	22		+31	nira;Hamburg:eP:8h55m
		M		36	43	22	-35		32s,iS 9h6m7s,D=9500
		M		41	11	19	-34		KM.F in next quake.
		M		42	22	19	-38		
		M		42	43	22		-49	
		F							
39	" 21	P	22	37	44				D=8570 KM.
		S		47	33				0:22h25m53s.
		eL	23	4					Origin:Kurile Islands
		M		15	33	19	+25		Tokio:D=1950 KM.
		M		16	37	19		-19	0:22h25m54s.
		M		17	18	16	+22		Zikawei:D=3200 KM.
		M		17	50	18		-19	0:22h26m2s.
		F							F in next quake.
40	" 28	e	19	44	10				Distant earthquake.
		eL	20	12					(Tokio:e 19h30m, prob-
		M		18	44	22	-8		ably near Marshall-
		M		21	35	21			Islands).
		F	21	0				-10	

EARTHQUAKE RECORDS:

May 28, 21h; 30, 5h.

June 1, 9h, 13h, 19h; 2, 7h; 4, 2h, 17h; 5, 19h; 6, 0h; 8, 5h; 10, 1h; 14, 1h; 16, 10h; 17, 8h; 20, 0h; 23, 2h, 7h, 11h, 14h, 18h; 25, 2h, 7h, 11h; 26, 3h; 28, 14h; 29, 11h, 23h; 30, 2h, 8h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
41	1921. May 28	e	21	14	32				Distant earthquake. Hamburg:ez:21h5m22s. Ottawa:eN:21h6m22s.
		eL		30					
		M		37	26	16	+7		
		M		37	53	16		+5	
		F	22	25					
42	June 1	eL	19	56	18				Hamburg:ePz 19h46.8m (Tokio: e 19h40m41s).
		eL	20	(9)					
		F		50					
43	,, 14	(eP)N	1	45	52				Strassburg:e 1h46m. Hamburg: e 1h46m.
		SE		50	19				
		L		52	2				
		M		53	22	15	+7		
		M		53	22	16		+4	
44	,, 23	e(S)	18	44	35				Tokio:eP 18h24m32s,eS 18h25m47s,felt at Is. Nase,Rin-kiu Islands. Zikawei: e 18h23m15s. Taihoku: e 18h23m27s.
		eL	19	6					
		M		10	5	19		+7	
		M		10	48	16	+14		
		M		12	2	15		-8	
		M		12	9	15	-15		
		F		50					
45	,, 26	P	3	44	48				45.D=1840 K.M. O: 3h40m54s. Strassburg:D=1480 KM. O: 3h40m36s. Algiers:D=1620 KM, O:3h40m45s. Parc St.Maur:e3h44m35s, D=1830 KM. Origin in or near N.W.Greece.
		S		47	57				
		L		49					
		M		51	2	15		-8	
		M		51	9	16	+9		
		M		51	48	11	-11		
		F	4	25				-12	
46	,, 28	e	14	19	45				Very distant earthquake. Hamburg:ePz 14h18m41s, Ottawa:e 14h17m45s, Tokio:eP 14h10m20s.
		e		23	31				
		eL	15	9					
		M		33	24	34	+19		
		M		34	19	26		-11	
47	,, 29	(e)	11	43	50				Hamburg: D=2620 KM, O:11h38m3s. Origin:Asia Minor or Caucasus ?
		e(S)		48	36				
		LN		51.6					
		LE		52.4					
		M		54	38	14	+13		
		M		54	44	12		-8	
		F	12	25					
48	,, 30	P	2	15	20				D=2540 KM. O:2h10m9s. Ottawa: D=3190 KM. O:2h10m8s Origin:North Atlantic Ocean.
		S		19	28				
		L		21					
		M		24	8	14		-16	
		M		25	2	12	+12		
		F	3	1-20					

No.11.July 1 - July 17,1921

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., h = 3 m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

July 3, 5h,15h; 4,14h; 5,17h; 7, 10h; 8, 11h,14h,20h; 10,2h;
13, 10h,14h; 15,6h,18h; 17,21h.

No.	DATE	PHASE	TIME			PERIOD s.	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
49	1921. July 3	P	15	5	45				D=9400 KM.
		S		16	15				O: 14h53m12s.
		eL		39					Zikawei: D=830 KM.
		M		49	14	18		+4	O: 14h52m57s.
		M		49	15	18	+5		Taihoku: e 14h54m43s.
		F	16	20					Origin: Riu-kiu Islands?
50	„ 4	e(P)E	14	30	56				(D=9510 KM.)
		e(P)N		31	2				(O: 14h18m18s)
		PR ₁		35	2				Zikawei: D=1950 KM.
		iS		41	32		+	+	O: 14h18m14s.
		eL	15	7					Taihoku: P14h22m12s,
		M		10	38	24	+11		L14h25m23s.
		M		12	26	17		-9	Origin: Pacific
		F	16	15					Ocean, near Japan?
51	„ 7	e	10	53	44				La Paz: D=3500 KM.
		e(PR)		59	14				O: 10h33m10s.
		e	11	3	27				Sydney: D=2740 KM.
		eL		33					O: 10h45m55s.
		M		37	5	26		-7	Origin: South Pacific
		M		45	35	19	-7		Ocean?
		M		48	9	18		-6	
		F	14	20					
52	„ 13	(e)	10	31.7					Uccle: D=9900 KM.
		e(S)		39	49				O: 10h16.0m
		e(SR ₁)		45	43				
		eL		53					
		M	11	0	5	22		-7	
		F	12	10					
53	„ 15	e(PR)	18	24	53				Zikawei: D=3100 KM.
		i		30	55		+	+	O: 18h6m8s
		eL		59					Sydney: D=4860 KM.
		M	19	5	43	25	-5		O: 18h5m35s.
		M		7	28	27		+6	Origin (from Sydney)
		F		55					Sangir-Islands.

NO. 118. July 10 - Aug. 10, 1921.

EARTHQUAKE RECORDS:

 July 18, 13h, 17h; 20, 5h; 21, 1h, 10h; 22, 19h; 24, 19h, 20h, 22h;
 25, 2h, 19h, 21h; 26, 11h; 29, 0h; 31, 10h.
 Aug. 1, 0h; 2, 3h; 3, 0h; 5, 1h; 6, 2h; 9, 10h; 10, 14h; 13, 13h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		A ^N	A ^E	
54	1921. July 18	SE	17	26	32				Taihoku: P17h3m45s. D=174 KM. Zikawei: D=900 KM. O: 17h3m2s. Origin: in or near Formosa.
		SN		26	40				
		eLN		46					
		eLE		47					
		M		51	9	19	+15		
		M		51	9	20		-17	
		F	18	40					
55	,, 20	PN	5	30	17				D=2160 KM. O: 5h25m47s. Uccle: D=2340 KM. O: 5h25m31s. Origin: North Atlantic Ocean.
		SE		33	54				
		eL		36					
		M		38	34	13		-1.5	
		F		52					
56	,, 24	e(S)	19	28	26				56. Belgrad: ePN 19h21m33s, D=320 KM. Origin: in or near Balkan Peninsula.
		eL		30,0					
		M		31	23	15		+4	
		M		31	30	14	-7		
		F		47					
57	,, 25	eS	2	4	2				Taihoku: P 1h41m8s. D=141 KM. Zikawei: D=940 KM. O: 1h40m23s. Origin: in or near Formosa.
		eL		25					
		M		35	33	18		+5	
		M		36	52	15	-5		
		F	3	5					
58	,, 25	eN	19	48	58				Taihoku: P 19h27m43s. D=174 KM. Zikawei: D=800 KM. O: 19h27m17s. Origin: in or near Formosa.
		eE		52	41				
		eLN	20	11					
		eLE		13					
		M		15	9	19		+20	
		M		15	20	19		+19	
59	,, 31	(e)	10	10	35				59. (Sydney: D=2620 KM. O: 10(9?)h50m50s) Honolulu: iP 10h16.8m. Origin: Pacific Ocean?
		e		13	59				
		eLE	11	3					
		eLN		4					
		M		5	1	27		+8	
		M		12	37	21		+9	
60	Aug. 9	(eP)	10	50	9				60. Zikawei: D=2530 KM. O: 10h37m59s. Uccle: D=8840 KM. O: 10h38m15s. (Hamburg: D=8400 KM. O: 10h38m16s Origin: in or near Northern Japan.
		eS	11	0	9				
		eL		17					
		M		21	3	30		-7	
		M		28	10	21		-5	
		F	12	0					
61	,, 10	P	14	14	13				61. D=1690 KM. O: 14h10m37s, Condensation. Algiers: D=1700 KM. O: 14h10m40s. Origin: Balkan Peninsula.
		S		17	8				
		L		19.0					
		M		21	0	9		+34	
		F	15	15				-38	

No.12.Aug.14 - Aug.31, 1921. **DE BILT.**

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG; NS- and EW-components.

EARTHQUAKE RECORDS:

Aug. 14, 10h, 13h; 15, 15h; 16, 5h; 18, 0h, 1h; 19, 8h; 21, 1h; 22, 4h, 13h, 14h, 21h; 23, 5h, 10h, 20h; 24, 16h; 25, 13h; 28, 19h, 20h; 29, 9h; 31, 21h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		s.	AN	
62	1921. Aug.14	P	13	23	56				D=4980 KM. O:13h15m29s. Algiers:D=4300 KM. Destructive earthquake in Eritrea(Massawa)
		S		30	37				
		SR1		34	5				
		M		44	1	21		+12	
		M		45	2	18	-10		
63	,, 21	M		47	42	16		-13	Uccle:D=5280 KM. O:1h9m22s. Ottawa:e1h21.8m. Origin:Atlantic Ocean?
		F	15	20					
		e(S)	1	25	20				
		e		30	12				
		eL		31					
64	,, 22	M		35	45	22	+2		Zikawei:eP 4h8m51s. Taihoku:e 4h10m, Honolulu:LE 4h29m49s. Origin:In or near West-Pacific Ocean?
		M		34	47	13		+2.5	
		F	2	10					
		e(S)	4	27	56				
		eL		50					
65	,, 23	M		56	18	16		-5	D=2550 KM. O:5h11m51s. Uccle:D=2590 KM. O:5h11m49s. Origin:North Atlantic Ocean?
		M	5	1	52	13	+6		
		F	6	0					
		P	5	17	3				
		S		21	12				
66	,, 23	L		23	2				D=2200 KM. O 20h17m16s. Dilatation Azimat about N320W. Origin in or near Iceland.
		M		25	31	15		+6	
		M		25	43	14	+4		
		F	6	0					
		P	20	21	51				
67	,, 31	iS		25	31				(Zikawei:Pz 21h7m15s, felt in Kansu.)
		L		25	9				
		M		28	19	20	+205		
		M		28	36	18		+275	
		F	23	50					
67	,, 31	eL	21	34					(Zikawei:Pz 21h7m15s, felt in Kansu.)
		M		37	3	18	-7		
		M		37	14	18		-7	
		F	22	20					

EARTHQUAKE RECORDS:

 Sept. 1, 10h, 15h; 2, 9h; 3, 1h, 9h; 5, 0h, 18h, 20h; 6, 4h; 7, 21h; 8, 19h;
9, 12h; 11, 4h; 12, 5h; 13, 2h, 9h.

SEISMOLOGICAL BULLETIN

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AB	
68	1921. Sept. 1	e	10	24	52		"	"	Hamburg: e 10h24m.
		eL		34					Uccle: (eS) 10h24.8m.
		F	11	10					
69	,, 1	eE	15	21	57				Hamburg: e 15h24.1m,
		e		25	3				Uccle: (eS) 15h25.2m.
		eL		35					
		M		36	12	18	+3		
		M		40	20	16		-3	
70	,, 3	S	9	21	13				Zikawei: D=2110 KM.
		eL		44					O: 8h57m41s.
		M		50	30	19		+5	
		M		53	56	14	+8		
		F	10	50					Origin near Japan?
71	,, 5	P	20	8	53				D=8520 KM.
		S		18	39				O: 19h57m.5s.
		eLE		37					Zikawei: D=3100 KM.
		M		41	30	19		-66	
		M		41	38	20	-36		
		M		44	2	15		+73	
		M		46	51	14	-34		
F	23	15					Strasbourg: D=9120 KM. O: 19h56m49s. Origin: Kurile Islands.		
72	,, 11	eE	4	16	10				Sydney: D=4680 KM.
		PR ₁ E		20	25				O: 4h1m25s, Taihoku: D=
		e		27	19				4210KM, O: 4h1m27s.
		eL		50					Hamburg: ez 4h15m49s.
		M	5	11	48	22		+315	
		M		13	17	20	-215		Felt in Java, Bali and
M		16	42	18			Lombok Is, origin in In-		
F	8	30				+205	dian Ocean, from Sydney: 13°S, 111°E.		
73	,, 13	(eN)	2	56	8				The times of O at dif-
		e	3	2	7				ferent stations are dis-
		e		5	44				cordant. Ottawa: D=4370 KM
		eE		11	50				O: 2h48m0s; Hamburg: D=
		eLE		22					8500 KM, O: 2h44m31s;
		eLN		24					Sydney: D=9240 KM, O:
		M		38	41	20	+70		2h37m38s; Algiers: D=9500
		M		40	44	19		+45	KM. O: 2h37m47s.
F	5	40							
74	,, 13	e(S)E	9	7	37				Athens: D=260 KM.
		L		8.9					Origin: Gulf of Arta
		M		11	22	14	+28		(Greece).
		M		11	45	12		+40	
F		30							

No.13. Sept.14 - Sept.26,1921.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$,

 $\lambda = 5^{\circ} 11' E$ of Gr.,

h = 3 m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

 Sept. 14, 3h, 22h; 15, 19h; 16, 21h; 19, 4h, 23h; 20, 19h; 21, 6h, 11h; 22, 7h, 10h; 23, 3h; 26, 9h.

No.	DATE	PHASE	TIME			PERIOD s.	AMPLITUDE		REMARKS
			h.	m.	s.		AN μ	AE μ	
75	1921. Sept.14	e(S)	3	35	8				Athens:D=300 K.M. O:3h27m34s,Origin: NW of Leucadia (Santa Maura)
		L		37.0					
		M		39	11	16	-9		
		M		39	20	14		+16	
		F		52					
76	,, 19	e	4	28	15				Honolulu:eF 4h18m51s Victoria: L? 4h17m37s. Sitka:eE 4h20m58s. Origin:N.E.Pacific Ocean?
		e(L)E		39					
		e(L)N		42					
		M		54	14	20		+9	
		M		55	11	20	-8		
		M		56	30	18		-10	
		M		59	41	18		-9	
		M	5	2	19	16	+7		
		F	6	0					
77	,, 19	eN	23	36	35				eN from Wiechert Strassburg: iP23h36m29s; Sydney:D=4050KM, O: 23h14m29s, Honolulu:D= 5050KM. O:23h16m34s. Origin:South Pacific Ocean.
		e		58	27				
		e(L)	0	15					
		M		34	37	27		+12	
		M		36	24	24		+14	
		M		42	1	21		+14	
78	,, 21	e(P)	6	33	19				78.From Wiechert Explosion in Oppau (Germany).
		F		36					
		S	11	16	46				
		SR ₁		20	14				
79	,, 21	eL ₁		(23)					Destructive earthquake in Eritrea. Same origin as 62(Aug. 14), difference of time (from Sand SR ₁)37d21h 46m9s. Algiers:D=4300 KM, O:11h1m26s.
		M		30	3	21		+9	
		M		30	56	19	+7		
		M		33	54	19		+10	
		M	13	10					
		P	9	31	13				
		S		35	23				
m		35	33	12		-25	D=2560 Km. O:9h26m0s Origin:Asia Minor.		

No.13a.Sept.26 - Oct.13,1921

EARTHQUAKE RECORDS:

 Sept.26, 21h; 27, 16h; 28, 18h; 29, 13h.
 Oct.1, 16h, 21h; 4, 5h, 22h; 5, 2h, 5h; 6, 16h, 22h; 7, 16h; 9, 0h, 5h; 10,
 2h; 12, 8h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS	
			h.	m.	s.		AN	Ae		
81	1921. Sept.26	m	9	35	40	10	-20		Athens:D=880 KM. 0:9h25m45s.	
		eL		37						
		M		39	30		13	-24		Algiers:D=2600 KM. 0:9h25m55s.
		M		41	32		12		+29	
		F		10	25					
81	,, 27	e(S)	16	43	40				Zikawei:D=2300 KM. 0:16h20m45s.	
		eL	17	4						Hamburg:(D=8800 KM, 0:16h21m6s).
		M		8	47		22		-7	
		M		10	1		21		-6	
		M		13	43		17		-9	Origin near Japan?
82	,, 29	F	18	30					Zikawei:D=3190 KM. 0:13h9m19s.	
		S	13	30	46					Belgrad:D=8850 KM. 0:13h8m0s.
		e(SR ₁)		35	58					
		eL		47						
		M		52	58		25		-10	
		M		54	52		22		+7	Strassburg:D=9330 KM. 0:13h8m50s
		M		57	43		20		+8	Origin:near Kurile Islands?
83	Oct. 1	F	14	1	2	17		+6		
		F	15	5						
		e(S)	21	26	(0)					La Par:D=2930 KM. 0:21h2m1s.
		eLN		43						Washington W:e 21h19m Ottawa:eLE 21h20m.
		eLE		44						
		M		47	39		25		+5	Origin near Central America?
84	,, 9	M		49	37		22		-1.5	
		M		50	19		20		-3	
		F	22	25						
		e(S)N	0	40	5					Batavia:D=1780 KM. 0:0h12.8m
		eE		41	33					
		eLN		1	(8)					
		eLE		(11)						
85	,, 10	M	15	5		22		-6		
		M	17	2		19		-9		
		M	17	8		18		-9		
		M	19	29		14		-9		
		F	2	20						
		e(PR ₁)	2	26	9					Batavia:e 2h12m54s, (felt at)Dobo(Aru)Isle and New Guinea.
		eE		33	45					Sydney:D=3250 KM, 0:2h6m12s.
86	,, 12	eN		33	52					
		e		35	50					
		eL		58						
		M	3	6	3		28		+25	Taihoku: e 2h12m41s.
		M		7	40		23		-22	
		M		12	37		24		+19	
		M		20	51		19		-13	
86	,, 12	F	4	45						
		e(P)	8	13	47					La Paz:D=5350 KM. 0:8h4m3s.
		eL		57						
		M	9	5	57		19		-7	Sydney:eP 8h25.1m.
		M		7	9		17		-4	
86	,, 12	F	10	30						
		F								

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$,

$\lambda = 5^{\circ} 11' E$ of Gr., h = 3 m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

Oct. 14, 17h; 15, 2h, 5h; 16, 8h; 17, 16h; 18, 1h, 13h; 20, 6h, 11h; 21, 2h, 22h; 23, 22h; 25, 1h, 15h, 16h, 21h; 26, 0h, 7h, 23h; 31, 0h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
87	1921. Oct. 14	e(S)	17	3	3				Hongkong: D=2510 KM. 0:16h43m48s.
		eLN		10	10				Zikawei: D=2960 KM.
		eLE		14					0:16h43m41s.
		M		20	43	19	-93		Strassburg: e 16h54m41s
		M		20	53	17		-43	Origin (from H. and Z.):
		M		21	18	17	-85		29°9' N, 90°4' E.
		F	18	30					(South Tibet).
88	,, 15	eLN	2	15					88. Same origin as 87?
		eLE		16					Difference of time:
		M		18	4	19	-5		8h57m20s.
		M		18	13	18		-3	
		M		18	38	18	-5		
		F		30					
89	,, 15	e(P)	5	17	44				Sydney: D=2920 KM.
		e		20	43				0:4h57m36s, origin:
		eL	6	2					11°S, 165°E (near
		M		12	16	26		-35	Solomon Islands).
		M		15	5	24	+43		Batavia: P 5h8m18s.
		M		16	58	25	-44		Zikawei: D=6820KM.
		M		19	40	22		+28	0:4h58m17s.
		M		20	5	21	+46		La Paz: eP5h17m19s.
		M		27	48	19		+24	Hamburg: ez 5h17m(29)s.
		(M')		53	17	21		+25	
		(M')	7	0	1	19	-23		90. Coimbra: D=8960KM.
		F	8	50					0:6h3m13s. Ottawa: D=
90	,, 20	e	6	17	15				(7140)KM, 0:6h(3m15s)
		e(PR1)		20	25				Balboa Heights: D=
		iS		27	3				3200KM, 0:6h 2m59s
		eL		(50)					Felt at Iquique, Chile
		M		57	51	19		-19	
		M		58	0	21	+15		
		F	8	40					91. Athens: D=310KM, 0:
91	,, 21	e	2	14	18				2h6m10s. Belgrad: D=
		M		16	59	11		-6	520KM, P: 2h7m15s.
		M		17	5	12			Felt in the western
		F		26					part of Balkan Peninsula
									(Kozani, Dibra).

EARTHQUAKE RECORDS:

Nov. 2, 4h, 8h, 9h; 6, 18h; 7, 16h; 10, 19h; 11, 1h, 7h, 14h, 18h; 13, 9h,
 14h; 14, 8h; 15, 3h, 20h; 16, 15h; 17, 8h; 18, 3h; 22, 20h, 22h;
 24, 19h; 27, 13h; 29, 3h, 19h, 22h; 30, 0h.

No.	DATE	PHASE	TIME		PERIOD	AMPLITUDE		REMARKS	
			h.	m.		AN	Ae		
92	1921. Nov. 2	e(S)N	8	21 53				92.Chicago:D=5500KM, 0: 7h57m45s. Algiers: e 8h14m39s. F in next quake. Sheets: changed 9h8.7m- 14.3m. 92 and 93.Felt in Lima, Peru,origin near Ica?	
		eE		23 21					
		eLN		38					
		eLE		39					
		M		41 16	26	+11			
		M		48 20	20	- 8			
		M		48 23	24		-16		
93	,, 2	M	9	14 53	19		- 7		
		M		18 44	19		-12		
		F		35					
94	,, 7	e(PR ₁)	16	18 4				Zikawei:D=2600KM. 0:15h59m59s.Batavia: D=2610 KM.0:15h59m46s. Manila:D=1390 KM. 0:15h59m4s(origin) S.E.of Mindanao.	
		eLN		47					
		eLE		49					
		M		55 11	29	-48			
		M		56 15	25		-34		
		M		59 6	23	+36			
		M		59 37	25		+40		
		M	17	3 23	21		-36		
95	,, 11	M		8 10	19		-29	(D=9600 KM) (0:18h37m38s) Taihoku:D=2080KM. 0:18h36m5s.Batavia: eP18h41m46s,(felt at) Menado and Taruna,tide waves at Great Sangir Island.Manila:(D=1520 KM),(0:18h35m17s),(ori- gin) S.E.of Mindanao.	
		F	18	40					
		e(P)	18	50 20					
		e(PR ₁)		54 32					
		e(S)	19	1 0					
		eL		22					
		M		31 51	31	-215			
		M		32 29	27		-163		
96	,, 13	M		40 22	23		+193	Balboa Heights:D= 885KM.0:8h41m1s. Felt in Nicaragua (Central America)?	
		M		42 24	18		+130		
		M		44 35	23		+175		
		M		44 37	21		+150		
		F	22	30					
		e(S)	9	2 1					
		eL		14					
97	,, 15	M		15 3	24		+8	D=4970 KM. 0:20h36m32s. Condensation. Same origin as No.37, (May 20),South-Turke- stan	
		M		18 42	22		-16		
		M		23 26	18		+7		
		M		24 11	19		+12		
		F	10	15					
		iP	20	44 58					
		iS		51 39					
98	,, 17	e(L)		55, 5				Manila:D=1300 KM. 0:7h48m57s,aftershock of No.95.	
		M		56 4	18		-124		
		M	21	2 49	10		-198		
		F	23	50					
99	,, 17	eL	8	44					
		M		48 17	19		-7		
		M		48 18	19		+8		
		F	9	20					

No.15.Dec.1 - Dec.31,1921.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$,

 $\lambda = 5^{\circ} 11' E$ of Gr., h = 3 m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS and E W-components.

EARTHQUAKE RECORDS:

Dec. 1, 11h, 18h; 6, 13h; 7, 17h, 19h; 8, 12h; 12, 2h; 16, 3h; 18, 15h 23h; 21, 10h; 22, 21h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS			
			h.	m.	s.		AN	AE				
99	1921. Dec. 1	e(S)N	11	11	47	-	-	-	Felt in Kiang-su, China? Zikawei: iPN 10h50m32s, Taihoku: e 10h53m41s, Hongkong: P 10h55m48s, Manila: e 10h54m30s, Batavia: eE 10h57m58s.			
		e(S)E		11	50							
		eL		29								
		M		33	51					18		
		M		34	48					15		
		M		35	10					14	+43	
		F	12	15								
100	,, 7	e(S)	17	52	34	-	-	-	Manila: eP 17h31m0s. Batavia: iE 17h32m16s. (felt at) Menado and Taruna, (Gr. Sangir Isles). Cf. No. 95.			
		eL	18	20								
		M		24	37					24	-11	
		M		25	0					22	+12	
		M		29	29					29	-12	
		M		35	4					25	+9	
101	,, 8	SE	12	54	17	-	-	-	Felt in Tokyo (Japan). Origin (from Seism. Notes, No. 2): 35° 56' N 140° 21' E Zikawei: D=1800 KM. O: 12h31m33s			
		SN		54	19							
		eL	13	14								
		M		27	56					19	-14	
		M		28	5					16	+22	
		F	14	15								
102	,, 18	iPE	15	41	9	-	-	-	(D=8280 KM). (O: 15h29m33s) La Paz: D=1170 KM. O: 15h29m44s, Ottawa: D=4620 KM, O: 15h29m27s. Origin doubtful; northern part of South America?			
		eE		50	34							
		e(S)N		50	43							
		e		54	44							
		m		54	52					19	+103	
		m		54	55					19	+85	
		e(L)	16	0								
		M		0	13					19	+65	
M		0	43	28	-113							
103	,, 18	eL	23	57		-	-	-	Hamburg: e 23h(49) ^m Parc St. Maur: L 0h0m. Zikawei: e 23h49m32s. Origin in Asia?			
		M		57	45					20	+14	
		M		0	1					47	16	+8
		F		10								
103	,, 19	M		0	1	47	16	+8				
		F		10								

No.15a. Jan.1 - Jan.21, 1922 EARTHQUAKE RECORDS:

Jan. 1, 20h; 6, 14h, 19h; 7, 10h; 8, 2h; 9, 5h; 10, 14h; 12, 10h; 14, 21h; 17, 4h; 19, 18h, 22h.

No.	DATE	PHASE	TIME h. m. s.	PERIOD s.	AMPLITUDE		REMARKS
					AN	Ae	
1	1922. Jan. 1	eE	20 28 9				Strassburg:P 20h6m18s. Honolulu:D=4810KM. O:19h46m12s. Hongkong:D=8340KM. O:19h46m49s. Origin:Pacific Ocean, near Fiji-Islands?
		eN	29 10				
		eE	45.0				
		e(L)N	55				
		e(L)E	59				
		M	21 4 27	26		-23	
		M	9 59	21		-20	
		M	12 7	21		-18	
		M	12 23	20		-20	
		M	27 29	16		+15	
		F	22 15				
2	,, 6	e(P)E	14 24 42				Balboa Heights:D= 3100 KM,O:14h10m40s. Washington:D=6200 KM. O:14h10m50s. Origin near or in South-Peru?
		e(S)	35 24				
		eL	53				
		M	15 3 39	21		-33	
		M	7 17	19		-51	
		M	8 7	18		-34	
		M	8 30	19		+52	
3	,, 9	PE	5 18 16				D=5250 KM. O: 5h9m32s. Vieques:D=2210 KM. O:5h9m34s,Ottawa: D=3440 KM,O:5h9m32s. Coimbra:D=3600 KM. O:5h9m43s. Origin:North Atlantic Ocean;Zürich gives: 23°5 N,43°5 W.
		SE	25 12				
		SN	25 15				
		eLN	30				
		eLE	31-				
		M	31 39	25		+127	
		M	33- 6	23		-210	
		M	33 16	19		+162	
4	,, 10	F	7 40				Taihoku:P13h41m38s,D= 137 KM.Zikawei:D= 770KM,O:13h41m19s. Hongkong:P13h42m45s. Origin:near North Formosa.
		eLN	14 25				
		eLE	28				
		M	29 30	20		+18	
		M	30 10	20		-17	
		M	36 12	16		+17	
5	,, 17	F	15 10				Heavy microseisms. (D=8320 KM) (O:3h50m39s) La Paz:D=1360 KM. O:3h50m31s.Ottawa: D=4780KM,O:3h50m17s. Same origin as no.102, 1921,Dec.18,South America?
		P	4 2 (17)				
		eE	11 37				
		i(S)N	11 53				
		eN	15 59				
		e(L)	21				
		M	21 27	21		-236	
6	,, 19	M	21 48	28		-194	
		M	25 54	22		-162	
		F	6 40				
		eN	22 41.2				
		eL	57+				
,, 20		M	23 3 25	23		-41	
		M	3 40	22		-39	
		F	0 40				

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No.15a. Jan.1 - Jan.21, 1922 EARTHQUAKE RECORDS:

Jan.1, 20h; 6, 14h, 19h; 7, 10h; 8, 2h; 9, 5h; 10, 14h; 12, 10h; 14, 21h; 17, 4h; 19, 18h, 22h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS	
			h.	m.	s.		AN	Ag		
1	1922. Jan. 1	eE	20	28	9				Strassburg:P 20h6m18s. Honolulu:D=4810KM. O:19h46m12s. Hongkong:D=8340KM. O:19h46m49s. Origin:Pacific Ocean, near Fiji-Islands?	
		eN		29	10					
		eE			45.0					
		e(L)N			55					
		e(L)E			59					
		M	21	4	27	26		-23		
		M		9	59	21	-20			
		M		12	7	21	-18			
2	,, 6	e(P)E	14	24	42				Balboa Heights:D= 3100 KM,O:14h10m40s. Washington:D=6200 KM. O:14h10m50s. Origin near or in South-Peru?	
		e(S)		35	24					
		eL			53					
		M	15	3	39	21	-33			
		M		7	17	19		-51		
		M		8	7	18	-34			
		M		8	30	19		+52		
		F	17	40						
3	,, 9	PE	5	18	16				D=5250 KM. O: 5h9m32s. Vieques:D=2210 KM. O:5h9m34s,Ottawa: D=3440 KM,O:5h9m32s. Coimbra:D=3600 KM. O:5h9m43s. Origin:North Atlantic Ocean;Zürich gives: 23°5 N, 43°5 W.	
		SE		25	12					
		SN		25	15					
		eLN			30					
		eLE			31					
		M		31	39	25	+127			
		M		33	6	23		-210		
		M		33	16	19	+162			
F	7	40		16		+148				
4	,, 10	eLN	14	25					Taihoku:P13h41m38s,D= 137 KM.Zikawei:D= 770KM,O:13h41m19s. Hongkong:P13h42m45s. Origin:near North Formosa.	
		eLE			28					
		M		29	30	20		+18		
		M		30	10	20	-17			
		M		36	12	16		+17		
		M		37	19	17	-21			
		F	15	10						
5	,, 17	P	4	2	(17)				Heavy microseisms. (D=8320 KM) (O:3h50m39s) La Paz:D=1360 KM. O:3h50m31s.Ottawa: D=4780KM,O:3h50m17s. Same origin as no.102, 1921,Dec.18,South America?	
		eE		11	37					
		i(S)N		11	53					
		eN		15	59					
		e(L)			21					
		M		21	27	21	-236			
		M		21	48	28		-194		
F	6	40		22		-162				
6	,, 19	eN	22	41.2					Zikawei:eP 22h7m0s. Honolulu:PN22h18m8s. La Paz:e(P)22h19m7s. Origin:Pacific Ocean?	
		eL			57					
		M	23	3	25	23		-41		
		M		3	40	22				
		F	0	40				-39		
	,, 20									

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

MARKS $\Phi = 52^{\circ} 6' N$,

AMPLITUDE $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS and E W-components.

EARTHQUAKE RECORDS:

No.	DATE	PHASE	TIME	PERIOD	AMPLITUDE	REMARKS	
					AN	AE	
-83					21	27	M M M
-80					21	29	M M M

No.	DATE	PHASE	TIME	PERIOD	AMPLITUDE	REMARKS	
					AN	AE	
+82					19	30	M M M
-81					19	24	M M M
-84					18	29	M M M
-83					21	39	M M M
-82					21	44	M M M
+82					23	33	M M M
+168					19	31	M M M
+167					23	39	M M M
+18					20	30	M M M
+17					18	24	M M M
-86					21	27	M M M
-194					28	48	M M M
-162					23	34	M M M
-41					23	41	M M M

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SEISMOLOGICAL BULLETIN.

REMARKS: $\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., h = 3 m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

Jan. 22, 4h, 21h; 24, 13h; 26, 10h; 28, 11h, 19h; 29, 4h; 31, 13h.
 Feb. 2, 3h; 5, 4h, 11h, 11h; 10, 0h; 13, 17h, 19h; 14, 0h, 12h, 12h, 13h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
7	1922. Jan. 22	e	4	11					7. Origin: Pacific Ocean Honolulu: i P 3h 38m 8s. Zikawei: e 3h 35m. La Paz: e P 3h 42m 29s.
		eE		23	8				
		eLN		31					
		eLE		35					
		M		46	57	22	-25		
		M		48	56	20	+23		
		M		49	38	22		+24	
8	,, 26	M		52	25	19		-23	8. Origin off the coast of Oregon? Tucson: D=2050 K.M. O: 9h 30m 45s. Victoria: P 9h 32m 33s.
		F	6	0					
		eL	10	9					
		M		16	7	22		-20	
		M		17	28	18		+13	
9	,, 31	F		25					9. Pand (SE) from Wie- chert. Felt in Oregon and California (Cape Mendocino). Origin in the Pacific Ocean. Tucson: D=1830 K.M. O: 13h 17m 6s. Honolulu: D=3670 K.M. O: 13h 17m 17s. Victoria: P 13h 18m 0s.
		P	13	29	29				
		(SE)		39	27				
		eL		52					
		M		56	8	31		-360	
		M		57	23	27		+310	
10	Feb. 14	M		58	4	27		-240	10. F in next quake. Göttingen: e 12h 23m.
		M	14	1	4	18		+220	
		F	17	45					
11	,, 14	eL	12	20					11. Same origin as 10?
		M		23	11	12		-6	
		F							
12	,, 14	e	12	32	54				12. Distant earthquake: Zagreb: e 12h 57.1m Algiers: e P 12h 57m 17s. Manila: e P 12h 55m 39s. Zikawei: e 12h 53m 50s. La Paz: i (P) 12h 57m 36s.
		eL		35					
		M		36	3	18		+5	
		M		36	38	18		+8	
		M		38	13	12		-11	
		M		38	24	13		-6	
12	,, 14	F		50					
		e(L)	13	8	27				
		F		21.0					
		F	14	50					

EARTHQUAKE RECORDS:

Feb. 15, 9h, 15h; 16, 3h, 3h; 19, 22h; 24, 5h; 26, 9h; 27, 21h.
 March 2, 10h, 14h; 4, 13h; 7, 17h, 23h; 8, 17h; 10, 11h, 17h; 12, 17h;
 15, 3h, 5h; 16, 15h, 19h; 18, 7h; 21, 4h, 17h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		A ^N	A ^E	
13	1922. Feb. 16	e(S) eL M M F	3	0	6		+8	-11	13. Coimbra: D=930 KM. O 2h53m1s; Strassburg: D=2700 KM. O 2h50m59s. Origin: Atlantic Ocean?
14	„ 16	S eLN M eLL M M M M F	3	37	9		+20	+18	14. Destructive earth- quake in Nicaragua. Balboa Heights: D= 640 KM, O 3h14m55s, La Paz: D=4420 KM, O 3h14m57s, Ottawa: D=3720 KM, O 3h13m40s; Cartuja: D=3380 KM. O 3h14m36s.
15	„ 19	S eL M M M M F	22	4	47		-30	-19	15. La Paz: D=6640 KM, O 2h52m39s; Ottawa: eS? E 22h4m19s; Coimbra: D=(1750) KM. Cartuja: D=(2960) KM. Origin: North At- lantic Ocean?
16	March 4	P iS i m M F	13	18	48		+20	+22	16. D=7720 KM., O 13h7m42s. Honolulu: D=4720 KM. O 13h7m45s. Origin near Kamcha- tka, Coimbra gives: 57°6N, 171°E, Bering Sea.
17	„ 10	(eS) eL M M M M F	11	44	6		+12	+13	17. Felt in California.
18	„ 10	i eN eE F	17	11	24		-14		18. Distant earthquake Hongkong: D=7820 KM. O 16h52m27s. Manila: e 17h2m45s. Honolulu: i 17h6m27s. Königsberg: Pz 17h11m3s.
19	„ 12	e e eL M M M F	17	11.5			+60	-73	19. Distant earthquake. Rio de Janeiro: D= 3240 KM, O 16h51m45s; Coimbra: D=10040 KM. O 16h54m38s; Chicago: D=(9970) KM, O 16h(50m9s)

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SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$,

$\lambda = 5^{\circ} 11' E$ of Gr.,

$h = 3$ m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG; NS- and EW-components.

EARTHQUAKE RECORDS:

March 24, 12h; 26, 15h; 28, 4h; 29, 8h, 13h; 31, 10h, 21h.

April 1, 23h; 2, 4h, 17h, 19h; 3, 19h, 20h, 21h; 5, 10h; 6, 3h, 8h; 7, 16h.

DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
		h.	m.	s.		AN	AE	
1922.								
20 March 24	P	12	25	13				20. Felt in Belgrad (Servia), origin south of Belgrad. Zürich gives: 012h22m11s+3s. Zagreb: 012h23m4s.
	L		29.7					
	M		30	7	10	+53		
	M		30	16	9		+57	
	M		30	49	9	-103		
	M		30	56	8		-87	
	M		31	54	8		-83	21. Rio de Janeiro: D=2340 KM., 03h58m6s; Balboa Heights: D=3200 KM., 03h58m3s; Vieques: D=3900 KM., 03h58m0s. Origin: South America; Coimbra gives: 1992 S, 67°W.
	M		32	3	8	-59		
21 ,, 28	e(P)	4	11	19				22. Azimuth about N, D=8240 KM., 019h17m54s. Chicago: D=5600 KM., 019h17m43s; Zikawei: D=6150 KM., 019h17m40s. Origin: Aleutian Islands (Fox Islands).
	i(S)		21	47				
	F	6	45					
22 April 2	PN	19	29	28				23. Zikawei: D=3800 KM., 09h59m30s; Hongkong: D=(3290) KM., 09h59m44s; Manila: D=3070 KM., 09h58m34s. Origin in or near New Guinea?
	S		39	0				
	e(SR ₁)N		44	30				
	eLE		50					
	eLN		52					
	M	20	3	4	22	+22		
	M		6	42	17		+19	
	M		8	13	18		+25	
	M		8	44	16	+23		
	F	22	15					24. Zikawei: D=850 KM., 015h58m28s. Taihoku: 015h59m0s. Manila: eP 16h0m42s. Zagreb: e 16h10.7m. Origin in or near Formosa?
23 ,, 5	e(PR ₁)	10	13.4					
	e(S)		28.9					
	e(SR ₁)		35.5					
	eLN		54					
	eLE		56					
	M	11	6	4	20	+29		
	M		7	30	22		-31	
	M		14	31	18	+27		
	M		14	42	18		-27	
	F	13	15					
24 ,, 7	eL	16	44					25. Zikawei: D=850 KM., 015h58m28s. Taihoku: 015h59m0s. Manila: eP 16h0m42s. Zagreb: e 16h10.7m. Origin in or near Formosa?
	M		46	44	21		+11	
	M		46	45	21			
	F	17	20			-11		

EARTHQUAKE RECORDS:

April 8, 4h, 20h; 9, 13h; 10, 4h; 11, 0h, 4h, 8h, 16h; 13, 15h, 16, 13h; 23, 22h; 25, 21h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		A ^N	A ^E	
25	1922. April 8	P	20	47	5	-	+		25. Azimuth about NNW, D=2330 KM. 0 20h42m16s, Condensation. Felt on Jan Mayen Land. Upsala: D=1830 KM. 0 20h42m16s. Ottawa: D=4450 KM. 0 20h42m14s.
		S		50	56				
		L		52	5				
		M		53	50	24	-120		
		M		54	44	19		-106	
		M		56	52	14	+126		
		M		57	38	12		+117	
		M		58	34	13		+104	
26	,, 9 ,, 11	F	0	15				26. Zikawei: D=6800 KM. 0 0h18m38s. Manila: e 0h28m15s. Honolulu: e 0h35m2s. Strassburg: eP 0h38m2s. Origin: Pacific Ocean.	
		e	0	41	0				
27	,, 11	eL	1	25				27. Felt in Lecce and in Corfu, origin: Ionian Sea. Athens: D=420 KM. 0 4h35m24s. (i) from Wiechert	
		M		37	10	21	-8		
		M		46	57	18			+8
		F		3	10				
		(i)	4	42	7				
		eE		42	34				
		eN		42	48				
		L		43	52				
28	,, 16	M		45	1	16	+42		28. Distant earthquake Helwan: e 13h14m8s, Zagreb: e 13h16m10s. Toronto: eL 14h6.9m
		M		45	1	15		+29	
		M		46	12	11		-30	
		M		46	46	9	+28		
		F		5	15				
		eN	13	25	36				
		eLE		41					
29	,, 23	eLN		43				29. Felt in S.E. Luzon and Visayas. Manila: eP 21h31m38s. Zikawei: D=2100 KM. 0 21h30m40s.	
		M		48	51	15			-10
		M		51	32	12			-9
		F		14	40				
		eL	22	20					
		M		22	32	27			-11
30	,, 25	M		24	4	22		-10	30. Two quakes, origin Pacific Ocean? Zikawei: D=6600 KM. 0 21h19m13s; D=3300 KM. 0 22h20m29s. Manila: e 21h28m35s. e 21h49m26s. Hamburg: ez 21h38.4m (iz 22h33m1s) Honolulu: SN 21h33m18s.
		M		24	15	20		-9	
		M		31	24	20		-10	
		F		55					
		eN	21	41	22				
		eE		42	8				
		eL	22	25					
		M		33	44	22		+8	
,, 26	,, 26	M		37	23	24		-11	
		M		42	25	19		+12	
		M		48	6	18		+11	
		M	23	7	19	19		-11	
		M		10	44	19		-10	
		F	0	30					

No.18.April 26 - May 10, 1922.

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ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

AMPLITUDE
 $\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand. DATE
 TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG: NS- and EW-components.

EARTHQUAKE RECORDS:

April 26, 1h, 4h; 27, 9h; 28, 7h; 30, 14h, 23h.
 May 1, 11h, 13h; 2, 11h; 3, 4h; 4, 9h; 5, 0h; 6, 3h, 12h, 23h; 9, 4h, 7h, 14h; 10, 10h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
31	1922. April 26	S	1	34	17				31. Destructive earthquake in Japan (Tokio, Yokohama) Zikawei: D=1700 KM., 0 1h11m30s; Manila: D=2940 KM, 0 1h11m39s.
		eLE			55				
		eLN			58				
		M	2	0	54	23		.18	
		M		4	7	20		-12	
32	,, 26	M		4	46	16		-11	32(D=8670 KM, 0 3h59m18s). Zikawei: D=3120 KM, 0 3h59m3s; Königsberg: D=8060 KM, 03h59m5s. Origin: Kurile Islands?
		F		30					
		e(P)N	4	11	14				
		S		21	8				
		SR ₁		27	7				
33	May 2	eL		49					33. Hongkong: D=1740 KM, 0 1h10m48s; Zikawei: D=2550 KM, 0 1h10m48s. Taihoku: e1h19m47s. Origin: Burma (British India)?
		M		53	27	26		+29	
		M		54	20	19		-32	
		M		56	9	16		-26	
		M		58	42	18		-24	
34	,, 4	F	13	10					34. D=8710 KM, 09h12m58s. Zikawei: D=3100 KM, 09h12m43s. Honolulu: D=5100 KM. 09h12m46s. Ottawa: D=8680 KM. 09h12m59s. Origin: Kurile Islands.
		P	9	24	56				
		S		34	52				
		SR ₁		40	20				
		eLE		48					
35	,, 9	M		55	36	31		-24	35. Helwan: D=9250 KM, 013h51m12s. Taihoku: e13h57m14s, Hongkong: P13h58m0s. Origin near East-Asia?
		M		56	48	23		+21	
		M		58	12	20		+25	
		M	10	8	12	16		-26	
		F	11	40					

No.19. June 1 - June 26, 1922.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

 INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG; NS- and EW-components.

EARTHQUAKE RECORDS:

June 1, 17h; 2, 20h; 3, 4h, 5h; 4, 17h; 5, 4h, 14h, 16h; 8, 7h; 9, 15h, 16h;
12, 5h, 11h, 15h; 13, 5h; 16, 21h; 17, 3h; 18, 13h; 19, 0h, 15h; 20, 10h;
22, 0h, 21h, 23h; 24, 17h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
43	1922. June 2	e(PR ₁)	20	30	5				43. Zikawei: D=2640 KM. O 20h11m42s. Taihoku: D=(1990)KM. O 20h(11m56s). Hongkong: P20h16m10s. Origin: Philippine Is. (in or near Mindanao)
		e(S)		36	24				
		eL	21	0					
		M		8	20	27		+12	
		M		9	10	21	-13		
		M		18	23	16		-18	
		F	23	0		17	+17		
44	,, 5	P	4	36	2			44. D=2280 KM. O 4h31m18s. Athens: D=400 KM. O 4h31m3s; Helwan: D=900 KM. 04h31m18s. Algiers: D=1800 KM. O 4h31m7s. Origin: Mediterranean Sea (near Crete).	
		S		39	49				
		L		42.5					
		M		43	29	23	-23		
		M		43	30	23			-17
		M		44	40	14	-31		
		F	5	15		13			-21
45	,, 5	e(S)	14	20	22			45. Zikawei: D=2440 KM. O 13h57m55s. Origin: in or near East- Asia (North Japan)?	
		eLE		38					
		eLN		40					
		M		42	14	26			+9
		M		42	25	25	+5		
		F	15	35		20			+7
46	,, 12	P	5	0(37)				D=(9020)KM. O 4h(48m23s). Tucson: D=1210 KM. O 4h47m8s. Chicago: D=2800 KM. O 4h47m24s. Origin: Western North- America.	
		S		10	49				
		eL		26					
		M		35	54	18	-43		
		M		38	0	22			+67
		M		38	8	16	+44		
		F	7	50		16			-77
47	,, 12	e(S)	11	6	20			47. Chicago: D=2800 KM. O 10h42m51s. Origin: Western North- America, same as 46?	
		eL		24					
		M		37	21	16			-11
		M		38	8	16			-7
		F	12	20					

EARTHQUAKE RECORDS:

June 27, 15h; 29, 5h, 10h, 17h, 21h.
July 2, 8h, 13h; 3, 5h; 5, 18h, 20h; 10, 9h; 11, 14h; 12, 5h; 13, 2h, 5h, 11h, 17h,
21h; 14, 4h; 19, 13h; 22, 4h, 13h, 16h; 24, 0h; 26, 6h; 28, 8h, 19h, 23h;
29, 20h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AB	
48	1922. June 27	eL	15	25					48. Hongkong: D=2270 KM. 014h29m36s; Zikawei: D=(2720)KM. 014h(30m.14s) Honolulu: D=8100 KM. 014h29m54s; Strassburg: D=11300 KM. 014h29m48s. Origin: near (or in) East-Mindanao.
		M	27	39	22	-10			
		M	28	1	22		+9		
		M	34	13	20		-10		
		M	39	0	17		-10		
		M	41	44	18	+11			
		M	44	26	19	-11			
F	16	20							
49	July 2	PN	13	47	30				49. Azimuth about N. D= 8080 KM. 013h36m5s. Honolulu: D=3580 KM. 0 13h35m47s, Chicago: D=5200 KM. 013h35m59s. Zikawei: D=6550 KM. 0 13h35m51s. Origin: Pacific Ocean, south of Alaska Peninsu- la
		S		56	54				
		e(SR ₁)	14	1.8					
		eL		12					
		M	13	42	25		+44		
		M	16	15	28	+48			
		M	19	29	20		+42		
M	21	11	21	-49					
M	28	8	19		+49				
F	16	40							
50	,, 5	S	20	42(48)					50. Zikawei: D=2040 KM. 020h20m14s Strassburg: D=9880KM. 0 20h19m48s. Origin near Japan? 51. Ottawa: D=6380KM. 0 9h38m0s. Coimbra: D=7730 KM. 09h38m4s. Origin: West-Brazil.
		eL		59					
		M	21	7	11	25		-9	
		M	10	51	22	+9			
		M	12	4	19		-9		
		M	12	24	19				
		F	45						
51.	,, 10	i(S)	9	59	59				
		eL	10(14)						
		F	40						
52	,, 13	(eE)	5	22	6				52. Zikawei: D=2600KM. 04h57m56s, Taihoku: D=(1980)KM, 04h(58m20s) Helwan: D=9930 KM. 04h58m6s. Origin: Pacific Ocean, W. of Philippine Islands?
		eN	23	49					
		eL	47						
		M	51	17	33		+17		
		M	51	32	29	+18			
		M	54	45	22	+17			
		M	55	7	22		-18		
F	7	0							
53	,, 19	eL	13	38					53. Zikawei: D=800 KM. 012h54m39s, Taihoku: P=12h55m8s D=79KM. Origin: Formosa
		M	43	49	18		+8		
		M	43	50	17	-9			
		M	49	18	16		-6		
		M	50	12	17	-9			
F	14	15							
54	22	P	16	31	43				54. D=2390 KM. 0 16h26m47s. Athens: D=460KM. 016h26m43s, Algiers: D=1840 KM, 016h26m43s. Origin: near Crete.
		S	35	39					
		L	38.5						
		M	39	18	22	-13			
		M	39	29	22		+12		
		M	41	45	18		-17		
		F	17	30					

EARTHQUAKE RECORDS:

Aug. 14, 11h, 21h; 15, 14h; 16, 9h, 16h; 17, 0h, 15h, 17h; 18, 5h, 18h, 20h, 21h;
 19, 23h; 20, 4h; 21, 20h; 23, 4h, 6h; 25, 11h, 12h, 19h; 26, 3h, 7h; 27, 12h;
 29, 3h, 17h; 30, 10h, 23h.
 Sept. 1, 13h, 19h; 2, 5h, 17h, 21h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
60	1922. Aug. 14	P	11	51	50		(+)	(+)	60.D=7200 KM. O 11h41m12s. Zikawei: D=2850 KM. O 11 ^h 41 ^m 13 ^s ! Origin: East-Siberia (near Sea of Okhotsk)?
		e(PR ₁)		54	29				
		S	12	0	29				
		eE		3	45				
61	,, 16	F		55					61.D=8070 KM. O 15h56m35s, Azimuth about NNE, Condensation Zikawei: D=3750 KM. O 15h56m22s; Chicago: D=7700 KM, O 15h56m33s. Origin in or near South-Kamchatka.
		P	16	8	0				
		S		17	23				
		eLN		32					
		eLE		33					
		M		38	39	27		+60	
		M		40	10	23		-55	
		M		43	15	18		-42	
62	,, 25	M		45	26	20	+48		62. Destructive earth quake in Algeria (Ca- vaignac). Algiers: D= 180 KM., O 11h47m21s.
		M		46	22	21	-50		
		F	19	10					
		LE	11	55.4					
		LN		56.5					
		M		56	35	14		-6	
63	,, 25	M		59	5	10	-5		63.D=5530 KM. O 19h29m47s. Ottawa: D=9200 KM. O 19h29m55s. Zikawei: eP19h35m49s. Origin in or near NW-Mongolia (China).
		F	12	15					
		P	19	38	49				
		PR ₁		40	42				
		S		46	0				
		SR ₁		49	48				
		LN		54.2					
		LE		55.1					
64	,, 29	M		58	28	17	+63		64. Zikawei: D=2200 KM. O 17m0m57s; Hamburg: D=(9900)KM, O 17h(1m33s) Hongkong: P17h4m4s, Helwan: S 17h24m4s. Origin: Philippine Islands?
		M		58	30	18	-97		
		M	20	2	14	15	+61		
		M		2	15	14		+79	
		F	21	30					
		e(S)E	17	25	43				
		e(S)N		25	50				
65	Sept. 1	eLN		46					65.D=9470 KM. O 19h16m11s, Azimuth N 54°2E, Condensation. Athens: D=9040KM. O 19h16m6s. Origin in or near Formosa.
		eLE		48					
		M		54	14	23	-46		
		M		54	34	23		+41	
		M	18	1	22	17		+52	
		F	19	45					
		iP	19	28	47				
		PR ₁		32	8				
		PR ₂		34	23				
		PR ₃		35	47				
		S		39	21				
SR ₁		45	17						
65	Sept. 1	eL		55					65.D=9470 KM. O 19h16m11s, Azimuth N 54°2E, Condensation. Athens: D=9040KM. O 19h16m6s. Origin in or near Formosa.
		M	20	3	39	22	+315		
		M		10	5	21		+330	
		M		12	1	17		-295	
		F	23	50					

No.20. Aug.1 - Aug.13, 1922.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$,

 $\lambda = 5^{\circ} 11' E$ of Gr.,

h = 3 m,

foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

 Aug. 1, 1h; 2, 2h, 6h; 3, 10h; 4, 10h; 5, 4h; 6, 1h, 7h; 7, 8h, 12h; 8, 3h, 15h; 11, 8h, 10h, 11h, 13h; 13, 0h, 12h.

No.	DATE	PHASE	TIME			PERIOD s.	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
55	1922. Aug. 6	e(S)E	1	19	32				55. Strassburg: D=(9500) KM. O oh(56m38s). Zikawei: e 1h3m41s. Origin in or near East-Asia?
		eL		42					
		M		48	22	15	-6		
		M		51	54	14		-6	
		M		53	55	13	-6		
56	,, 8	F	2	50					56. D=2140 KM. O 3h49m15s. Condensation. Athens: i P3h49m19+1s, D=60KM. Destructive earthquake in Methana(Greece).
		P	3	53	43		+	-	
		S		57	18				
		L		59.5					
		M	4	2	9	12	-14		
57	,, 11	M		2	21	17		-21	57. D=2590 KM. O 8h19m31s. Athens: D=580 KM. O 8h19m20s; Helwan: D=640 KM, 08h19m47s. Origin: Mediterranean Sea near Asia Minor.
		F		35					
		P	8	24	47	(+)	(-)		
		S		28	59	-	-		
		L		29.6					
58	,, 13	M		32	51	17	+135	+107	58. D=2540 KM. O oh9m48s. Athens: D=435 KM. O Oh9m56s; Helwan: D=650 KM, O Oh10m0s. Felt throughout Egypt, (+330) in Crete and Naxos. Origin: Mediterranean Sea, near Asia Minor; same as (57)? Maxima from Bosch.
		M		34	38	12	-84		
		M		35	11	13		-129	
		F	10	30					
		eP	0	14	59				
		i		15	9				
		S		19	7				
		L		19.9					
		M		23(11)		13	(-290)		
59	,, 13	M		23(12)		17	(-600)		59. Athens: D=435 KM. O 12h46m8s, Helwan. D=600 KM, O 12h46m23s. Origin: Mediterranean Sea, same as 57 and 58?
		M		24(12)		14	(+330)		
		M		24(50)		14	(-460)		
		M		25(27)		12	(+680)		
		M		26(0)		12	(-310)		
		F	4	0					

No. 21. Sept. 3 - Sept. 16, 1922.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and EW-components.

EARTHQUAKE RECORDS:

Sept. 3, 3h, 4h; 4, 3h, 17h, 18h; 5, 3h, 16h; 6, 22h; 7, 20h; 8, 6h, 14h;
11, 13h, 15h, 21h; 12, 11h; 14, 19h; 15, 7h; 16, 23h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h	m	s		AN	AE	
66	1922. Sept. 4	P S F	17	18	27			66.D=5550 KM. O 17h9m24s. Origin: Atlantic Ocean?	
67	,, 4	eL M M F	18	34		16 16	+22	67. Felt in N. Formosa. Taihoku: P17h54m4s, Zikawei: P17h55m22s. Hongkong: P17h56m7s. Manila: e 17h56m28s.	
68	,, 6	eLN eLE M M F	22	53		16 15	+16 -18	68. Same origin as 67; Diff. of time: 2d4h18m 32s (from M). Zikawei: P 22h13m52s, Hongkong P 22h14m18s; Manila: e 22h15m12s.	
69	,, 8	e(S) eL F	16	22				69. Origin: Atlant. Ocean? Uccle: D=5200 KM., La Paz: D=4430 KM.	
70	,, 11	e(P)N F	13	1	15				
71	,, 11	e eL M F	15	10	38	26	+9	71. Origin: N. Celebes. Manila: eP 14h48m3s; D=1440 KM. Batavia: eP 14h48m21s. D=1780 KM.	
72	,, 12	e F	11	56	29				
73	,, 14	S eL M M F	19	54	46	19 19	-166 -143	73. Felt in N. Formosa. Taihoku: P 19h31m48s, Zikawei: P 19h33m4s, Hongkong: P19h33m20s, Manila: eP19h34m2s.	
74	,, 16	eL M M	23	25		18	-55	74. Felt in N. Formosa. Taihoku: P22h44m33s. Zikawei: eP22h46m0s, Manila: eP22h47m4s.	
	,, 17	F	0	25					



No. 21a. Sept. 17 - Oct. 10, 1922.

EARTHQUAKE RECORDS:

Sept. 17, 2h, 7h, 8h, 10h; 22h; 18, 7h; 19, 4h; 22, 18h, 21h; 24, 12h; 28, 22h; 29, 19h, 22h.
Oct. 3, 13h; 4, 1h; 5, 5h; 6, 5h, 19h; 7, 1h, 14h; 8, 17h; 10, 22h.

Table with columns: No., DATE, PHASE, TIME (h, m, s), PERIOD (s), AMPLITUDE (AN, Ae), and REMARKS. It contains 10 rows of earthquake data from 1922, including details like origin (e.g., N. Formosa, Algiers, Menado), distance (D), and specific time measurements (e.g., P7h22m38s).

EARTHQUAKE RECORDS:

Oct. 24, 21h; 27, 14h; 28, 17h.

Nov. 1, 0h; 3, 13h, 19h, 23h; 4, 3h, 4h, 19h; 6, 0h; 7, 23h; 8, 23h; 9, 1h; 10, 13h; 11, 4h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	Ae	
89	1922. Oct. 24	iP	21	32	54		+	+	89.D=8400 KM. 021h21m12s. Azimuth N26°E. Dilatation Origin: Kurile Islands. Osaka: (PS) 21h25m11s, D= 1780 KM. Zikawei: D= 2930 KM, 021h21m8s.
		iS		42	34				
		eL		57					
		M	22	3	54	31	+114		
		M		5	7	22		-100	
		M		5	48	23	+76		
		M		6	12	19		+68	
	25	F	1	0					
90	27	Pz	14	35	23				90.D=9350 KM. Felt in N. Formosa. Taihoku: P14h23m19s. Hongkong: P14h24m30s. Zikawei: P14h24m32s. cf. 87 etc.
		S		45	51				
		eL	15	3					
		M		17	45	19		-28	
		M		19	2	17	+34		
		M		19	11	17		-24	
91.	28	e	17	3	45				91. Explosion at Olde- broek
		F		3	48				
92.	Nov. 4	P	4	24	36				92.D=2050 KM, 04h20m18s, condensation. Felt in Zante, Jonian Sea. Athens: P4h21m5s.
		S		28	4				
		L		30	0				
		M		30	53	19	-29	-34	
		M		33	51	15		+42	
		M		33	58	13	-39		
93.	7	(ePz)	23	14	22				93. La Paz: D=1320 KM. 023h0m19s. Rio de Janeiro: D=2980 KM., 023h0m17s. Origin: Pacific Ocean, near Chile.
		e(PR ₁)z		18	35				
		e(S)		25	0				
		eL		(45)					
		M		58	28	20	+50		
		M		59	7	20		+75	
94.	8	F	2	10				94.D=6800 KM, 0 23h33m41s. Algiers: D=5040 KM. La Paz: D=5930 KM. Origin: Atlantic Ocean, off Ascension.	
		Pz	23	43	58				
		S		52	17				
95	10	eL	0	4				95. Felt in N. Luzon. Manila: eP12h30m15s.	
		F		35					
96	11	eL	13	17				96. Azimuth S64°9W, condensation. Destructive earthquake in Chile (Coquimbo), Tidal wave.	
		M		26	8	16	+5		
		M		26	25	15			+5
96	11	P	4	46	42				96. Azimuth S64°9W, condensation. Destructive earthquake in Chile (Coquimbo), Tidal wave.
		e(S)		57	56				
		eL	5	16					
		F	10	35					

No record Galtzin: Oct. 24, 8.42-15.41, 25,

8.32-15.29, 26, 8.27-15.31, 30, 8.20-14.55,

Nov. 7, 8.9-15.32, 8, 8.35-15.39, 9, 8.25-15.45.

No. 22. Oct. 11 - Oct. 23, 1922.

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

$\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., h = 3 m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, M = 200 KG, two Bosch horizontal pendulums, M = 25 KG; NS- and E W-components.

EARTHQUAKE RECORDS:

Oct. 11, 13h, 15h; 14, 1h, 4h, 8h, 23h; 16, 2h, 4h, 16h; 17, 6h; 20, 20h; 23, 8h.

No.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		AN	AE	
84	1922. Oct. 11	PE PR ₁ E S eL M M M F	15	3	12				84.D=9410 KM. Destructive earthquake in Peru(Arequipa) La Paz:iP14h51m0s. D=430 KM.
				6	38				
				13	43				
				35					
				39	22	27		+200	
				41	7	23	+130		
				43	37	19		-131	
			18	20					
85	" 14	eLN eLE M F	1	1					85.Felt in NW-Luzon. Manila:eP0h15m59s. Hongkong:POh16m31s.
				2					
				12	16	16		-6	
				25					
86	" 14	eL M M F	4	40					86.Felt in N.Formosa. Taihoku:P3h56m40s. cf.80 etc.
				45	56	17		-12	
				46	5	16	-10		
				5	15				
87	" 14	Pz	23	59	26				87.D=9330 KM. Felt in N.Formosa. Taihoku:P23h47m5s. Zikawei:P23h48m26s. Hongkong:P23h48m30s. cf.86,80,etc.
	" 15	SE	0	9	53				
		SR ₁		16	1				
		eL		28					
		M		34	33	19	-64		
		M		34	44	19		-52	
		M		36	30	17	-63		
		M		36	30	16		+57	
		M		42	40	17		+49	
		M		43	12	14	+48		
		F	2	40					
88	" 17	Pz e(S) eL M M F	6	50	18				88.D=(8900)KM. O:6h(38m11s) Hongkong:D=2470KM. O:6h38m33s. Origin:Bay of Bengal (Andaman Islands)?
				7	0	23			
				20					
				27	22	23	+12		
				32	44	19		-14	

No record Galitzin: 16, 8.44-17.40; 17, 7.46-15.55;
18, 8.20-16.45; 19, 7.52-15.49.

No. 23. Nov. 11 - Nov. 25, 1922

DE BILT.

ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

SEISMOLOGICAL BULLETIN.

 $\phi = 52^{\circ} 6' N$, $\lambda = 5^{\circ} 11' E$ of Gr., $h = 3$ m, foundation: diluvial sand.

TIME: Mean Greenwich, midnight to midnight.

 INSTRUMENTS: Two Galitzin horizontal seismographs with galvanometric registration, one astatic Wiechert seismograph, $M = 200$ KG, two Bosch horizontal pendulums, $M = 25$ KG; NS- and EW-components.

EARTHQUAKE RECORDS:

Nov. 11, 11h, 18h, 21h, 22h, 23h; 12, 0h, 7h, 18h; 13, 4h, 5h; 14, 5h;
17, 11h; 18, 19h; 19, 13h, 17h; 20, 4h, 15h, 22h; 21, 4h;
22, 14h, 16h; 24, 2h.

N.	DATE	PHASE	TIME			PERIOD	AMPLITUDE		REMARKS
			h.	m.	s.		s.	AN	
	1922.						μ	μ	
97	Nov. 11	Pz	18	23	40				97. Origin near Chile, cf. 93 and 96.
		PR ₁		27	57				La Paz: D=1160 KM.
		e		34	23				O 18h9m57s.
		eL		37	13				Rio de Janeiro: D=2900
		M	19	8	0	21	-25		KM. O 18h9m13s.
		M		10	18	21		+28	
		F	21	10					98. D=2130 KM.
98	„ 11	Pz	22	17	31				O 22h13m4s.
		S		21	6				Athens: iP22h13m34s.
		L		22.8					D=120 KM, origin:
		F		30					Gulf of Corinth.
99	„ 13	Pz	4	0	20				99. D=2020 KM.
		S		3	45				O 3h56m5s.
		L		5.6					Hamburg: ePz 4h0m21s.
		F		25					Origin: near or in
									Iceland.
100	„ 17	e(PR ₁)z	11	21	36				100. Origin near Chile,
		e(S)		28	58				cf. 93, 96 and 97.
		eL		47					La Paz: D=1490 KM.
		M		55	37	27		-43	O 11h2m37s.
		M	12	6	26	17	+34		Rio de Janeiro: D=3150
		M		9	6	16		-42	KM. O 11h2m9s.
		F	14	15					
101	„ 18	eL	19	41					101. Felt in N. Formosa.
		M		45	48	15	-8		Taihoku: P18h56m52s.
		M		45	55	16		-8	Zikawei: eP18h58m13s.
		F	20	0					cf. 90, etc.
102	„ 20	e(S)	15	47	7				102. Uccle: e(L) 15h53m.
		eL		57					(La Paz: P15h36m59s).
		F	16	15					
103	„ 24	e(S, L)	2	21	54				103. Felt at Brindisi:
		M		23	15	9		-12	(Italy).
		F		29					

No. 23a. Nov. 26 - Dec. 31, 1922.

EARTHQUAKE RECORDS:

Nov. 26, 13h; Dec. 2, 0h, 3h; 3, 0h, 17h; 4, 2h, 7h; 5, 8h; 6, 14h; 7, 15h, 16h, 17h, 21h, 22h, 23h; 8, 0h, 2h, 6h, 7h, 8h, 16h, 19h, 22h; 9, 8h; 13, 14h; 14, 23h; 16, 11h; 17, 0h; 18, 13h; 19, 18h; 20, 16h; 23, 18h, 23h; 24, 0h, 19h; 25, 4h; 28, 13h; 29, 12h; 31, 7h.

No.	DATE	PHASE	TIME	PERIOD	AMPLITUDE		REMARKS
					AN	AB	
104	1922. Nov. 26	e(S)N eLE eLN F	13 55 52 14 21 26 15 20				104. Origin near Chile, cf. 100 etc. La Paz: D=1390 KM, O 13h30m11; D=1220 KM, O 14h6m12s.
105	Dec. 2	Pz PR ₁ S eL M F	3 59 26 4 2 47 9 55 28 35 41 5 30	17	+29	-22	105. D=9370 KM. O 3h46m55s. Felt in N. Formosa. Taihoku: P3h47m53s. Zikawei: P3h48m31s. Hongkong: P3h48m30s
106	6	iPz iPE PR ₁ S e m F	14 3 55 3 57 5 52 10 40 14 19 15 5 15 20	18		-63	106. D=5050 KM. O 13h55m24s. Azimuth about E. Condensation. Origin: Central Asia (Pamir?) Zikawei: iP14h3m8s, D=4200 KM.
107	7	eL F	16 29 17 0				107. Earthquake in S.W. Servia.
108	7	e(SR ₁) e(SR ₂) eL M M F	17 18 35 22 55 31 38 52 39 4 18 40	14 16	-63	+53	108. Strong earthquake in Shimabara, South Japan Osaka: (PS) 16h51m49s.
109	8	iPz S eL M M F	22 45 23 55 24 23 10 20 59 22 41 1 15	22 23	+38	+38	109. D=8820 Km. O 22h31m20s. Osaka: (PS) 22h35m26s. Felt in North-Japan (Aomori, Hakodate)?
110	17	iPz iPE PR ₁ e m F	0 59 39 59 41 1 1 35 10 26 10 47 40	17		-20	110. Same origin as 106. Difference of time (from P, PR and m): 10d 10h55m43s. Zikawei: P 0h58m54s.
111	29	e F	12 28, 5 32				111. Earthquake in Central Italia (Abruzzi)
112	31	P S SR ₁ eL M M F	7 32 5 42 5 47 44 56 8 4 23 12 30 10 0	24 15	+70	-79	112. D=8800 KM. O 7h20m3s. Zikawei: D=2850 KM. O 7h20m10s. Origin: Kurile Islands.