

SERVIÇO METEOROLÓGICO DE ANGOLA
CENTRO GEOFÍSICO DE BILAS

LUANDA

$\phi = 8^{\circ} 55' S$; $\lambda = 13^{\circ} 10' E$; $h = 53 = \phi = 7^{\circ} 11' S$; $\lambda = 80^{\circ} 33' E$

SEPTEMBER 1978

Geomagnetic Bulletin

LUANDA) (LUA)

Scale values of the Askania variometers:

$e_D = 3,6 \gamma / mm$; $e_H = 3,5 \gamma / mm$; $e_Z = 3,4 \gamma / mm$

Time scale of variometers: 20 mm/h.

Range for K = 9,350 γ

INDICES OF GEOMAGNETIC ACTIVITY

GR DAY 1978	K - Indices for three-hour interval									Char. 0.1.2 FULL DAY
	00 ^h 03 ^h	03 ^h 06 ^h	06 ^h 09 ^h	09 ^h 12 ^h	12 ^h 15 ^h	15 ^h 18 ^h	18 ^h 21 ^h	21 ^h 24 ^h	SUM	
1	1	0	1	1	-	-	-	-	-	-
2	-	-	-	-	-	-	2	3	-	-
3	1	1	1	1	2	2	2	1	11	1
4	1	0	0	0	0	2	2	1	6	0
5	0	0	0	0	0	1	1	2	4	0
6	3	3	1	3	2	1	1	0	14	1
7	0	-	1	2	1	1	1	2	-	-
8	3	4	4	3	2	2	2	2	22	1
9	2	3	2	2	4	4	4	3	24	2
10	2	2	1	2	2	2	1	1	13	1
11	1	1	1	2	4	4	3	2	18	1
12	1	2	2	1	2	2	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-
14	-	-	1	2	1	1	0	1	-	-
15	1	0	0	0	1	1	0	1	4	0
16	0	1	2	1	2	2	1	1	10	0
17	1	1	1	1	3	2	2	2	13	1
18	0	0	0	1	1	2	2	1	7	0
19	0	1	0	1	1	0	0	1	4	0
20	2	2	0	2	1	0	1	2	10	0
21	2	1	1	2	2	1	0	0	9	0
22	0	1	2	3	4	3	3	2	18	1
23	2	1	2	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	3	4	4	4	-	-
26	1	2	3	2	4	5	4	5	26	2
27	3	3	4	4	3	3	3	4	27	2
28	2	2	1	3	4	2	2	4	20	1
29	2	3	6	6	7	7	6	5	42	2
30	4	4	3	2	4	4	2	1	24	2



pi , pc							
DAY	T I M E (GMT)		TYPE	QUALITY A,B,C	LARGEST OSCILL.		REMARKS
	Begin	End			Period	Range	
07	10 ^h 38 ^m	11 ^h 00 ^m	Pi2	A			
07	19 06	19 07	Pc3	A			
10	23 31	23 51	Pi2	A			
11	02 00	02 24	Pc4	A			
11	20 20	20 38	Pi2	B			
14	12 30	15 26	Pc4	A			
15/16	23 20	00 33	Pi2	A			
17	21 12	21 33	Pi2	B			
17	22 45	23 12	Pi2	A			
18	16 18	17 50	Pc3	B			
18	21 28	22 54	Pc3	B			
20	19 26	20 21	Pc4	A			
20	21 07	21 24	Pi2	B			
30	18 01	18 12	Pi2	A			

SERVIÇO METEOROLÓGICO DE ANGOLA

CENTRO GEOFÍSICO DE BELAS

LUANDA

$\varphi = 8^{\circ} 55' S$; $\lambda = 13^{\circ} 10' E$; $h = 53 \text{ m}$ $\phi = 7^{\circ} 11' S$; $\Lambda = 80^{\circ} 33' E$

OCTOBER 1978

geomagnetic Bulletin

LUANDA (LUA)

Scale values of the Askania variometers:

$e_D = 3,6 \delta / \text{mm}$; $e_H = 3,5 \delta / \text{mm}$; $e_Z = 3,4 \delta / \text{mm}$

Time scale of variometers : 20 mm/h.

Range for K = 9; 350 δ

INDICES OF GEOMAGNETIC ACTIVITY

GR DAY 1978	K - Indices for three -hour interval									Char 0.1.2 FULL DAY
	00 ^{h-} 03 ^h	03 ^{h-} 06 ^h	06 ^{h-} 09 ^h	09 ^{h-} 12 ^h	12 ^{h-} 15 ^h	15 ^{h-} 18 ^h	18 ^{h-} 21 ^h	21 ^{h-} 24 ^h	SUM	
1	1	1	1	1	2	2	1	3	12	1
2	2	1	1	3	3	2	2	2	16	1
3	1	0	0	0	2	2	1	1	-	-
4	3	2	1	-	2	2	1	2	-	-
5	1	0	0	0	1	1	1	0	4	0
6	2	1	1	-	1	1	1	1	-	-
7	0	1	1	1	2	1	1	1	8	0
8	0	1	0	1	2	1	1	1	7	0
9	1	3	3	3	1	1	2	4	18	1
10	2	2	0	2	1	1	1	1	10	0
11	0	2	1	2	2	1	0	1	9	0
12	1	1	1	3	3	2	2	2	15	1
13	2	2	2	2	3	2	3	2	18	1
14	0	0	0	0	1	1	1	1	4	0
15	1	1	1	1	2	1	1	0	8	0
16	1	0	0	1	1	1	1	0	5	0
17	0	1	1	1	1	1	1	2	8	0
18	3	-	-	-	2	3	3	3	-	0
19	1	0	1	2	2	0	2	3	11	0
20	2	1	1	2	1	1	2	0	10	0
21	1	0	1	2	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	2	2	1	2	-	-
24	1	0	1	1	0	0	1	0	4	0
25	0	0	2	2	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-
27	-	-	-	1	1	2	0	2	-	-
28	1	1	1	1	2	2	1	2	11	1
29	2	1	1	2	3	4	4	2	19	1
30	1	1	1	-	-	4	4	3	-	-
31	2	1	1	1	1	4	4	2	16	1



OCTOBER 1978

DAILY MEAN

DAY	D	H	Z
1	- 09° 34,0	23 267	-22 715
2	33,3	280	717
3	34,1	285	717
4	34,5	280	721
5	35,5	290	724
6	33,7	299	724
7	33,8	301	724
8	34,4	310	723
9	34,3	317	727
10	33,3	292	730
11	33,8	300	727
12	32,8	311	731
13	34,0	307	732
14	33,7	309	732
15	34,0	312	728
16	33,4	317	734
17	33,3	324	733
18	33,2	272	743
19	33,0	276	737
20	33,5	299	742
21	33,7	303	739
22	-	-	-
23	-09° 31,3	23 293	- 22 735
24	32,5	302	733
25	34 1	333	731
26	-	-	-
27	-09° 32,1	23 250	-22 739
28	32,9	274	740
29	32,2	274	744
30	32,4	236	754
31	32,7	259	754

SUDDEN COMMENCEMENTS AND BAYS

DAY	TIME (GMT)	TYPE	QUALITY A.B.C.	Sense of chief Movement		
				D.	H	Z
02	23 ^h 36 ^m	bps	A	-	+	-
04	00 49	ssc	A	-	+	-
04	03 24	ssc	A	-	+	-
17	04 30	bs	A	-	+	-
17	23 33	si	B	-	-	+
19	20 21	bps	A	-	+	-
27	21 53	bp	B		+	
28	23 12	bp	A	+	+	-
29	11 16	ssc	A	+	+	-
29	17 21	si	B	+	-	+

International
Seismological
Centre



DAY	TIME (GMT)		TYPE	QUALITY A, B, C	LARGEST OSCILLATIONS		REMARKS
	Begin	End			Period	Range	
01	00 ^h 08 ^m	00 ^h 23 ^m	Pi ₂	B			
02	20 00	21 08	Pc ₄	B			
06	21 12	21 20	Pi ₂	A			
08	03 41	04 34	Pc ₄	B			
08	11 03	11 17	Pi ₂	B			
10	20 15	21 03	Pc ₄	A			
11	21 09	21 21	Pi ₂	B			
12	20 52	21 23	Pc ₄	A			
14	02 33	07 59	Pc ₄	A			
15	12 32	16 45	Pc ₄	A			
16	00 03	05 03	Pc ₄	A			
19	21 08	21 18	Pi ₂	A			
24	02 18	02 29	Pi ₂	A			
25	02 04	06 07	Pc ₄	A			

SOLAR FLARE EFFECTS

$\gamma = 8^{\circ} 55' S$; $\lambda = 13^{\circ} 10' E$; $h = 53 \text{ m}$ $\phi = 7^{\circ} 11' S$; $\Lambda = 80^{\circ} 33' E$

NOVEMBER 1978

geomagnetic Bulletin

LUANDA (LUA)

Scale values of the Askania variometers:

$e_D = 3,6 \text{ } \gamma/\text{mm}$; $e_H = 3,5 \text{ } \gamma/\text{mm}$; $e_Z = 3,4 \text{ } \gamma/\text{mm}$

Time scale of variometers: 20 mm/h.

Range for K = 9; 350 γ

INDICES OF GEOMAGNETIC ACTIVITY

GR DAY 1978	K- Indices for three - hour interval									Char. 0.1.2
	00 ^{h-} 03 ^h	03 ^{h-} 06 ^h	06 ^{h-} 09 ^h	09 ^{h-} 12 ^h	12 ^{h-} 15 ^h	15 ^{h-} 18 ^h	18 ^{h-} 21 ^h	21 ^{h-} 24 ^h	SUM	FULL DAY
1	0	0	2	2	1	1	0	1	7	0
2	0	0	2	3	3	3	2	1	14	1
3	1	2	1	1	2	2	3	3	15	1
4	1	1	1	1	2	2	0	0	8	0
5	1	2	0	1	1	1	0	0	6	0
6	0	1	1	1	2	0	0	0	5	0
7	0	1	0	1	1	1	1	3	8	0
8	3	2	0	2	0	2	1	1	11	1
9	1	1	2	2	2	2	1	1	12	1
10	1	0	0	1	2	4	4	5	17	1
11	3	1	0	1	1	1	2	2	11	1
12	4	4	3	5	5	4	4	4	33	2
13	3	3	3	3	3	4	4	3	26	2
14	2	2	2	2	4	4	3	3	22	1
15	1	1	1	1	0	1	2	1	8	0
16	1	1	0	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-
21	-	-	-	1	2	2	1	1	-	-
22	0	1	2	2	4	4	2	0	15	0
23	0	1	1	1	2	3	1	1	10	0
24	2	1	0	1	3	3	3	3	16	1
25	2	1	2	4	6	7	6	4	32	2
26	3	3	2	2	5	5	4	4	28	2
27	2	2	2	2	4	4	3	1	20	1
28	2	2	1	1	2	2	0	0	10	0
29	0	0	1	1	1	1	0	0	4	0
30	0	0	2	-	-	-	-	-	-	-





pi, pc							
DAY	TIME (GMT)		TYPE	QUALITY A, B, C	LARGEST OSCILLATIONS		REMARKS
	Begin	End			Period	Range	
03	18 ^h 06 ^m	18 ^h 59 ^m	P _{c4}	A			
04	22 30	23 00	P _{i2}	A			
06	15 16	15 36	P _{c4}	B			
10	11 45	12 00	P _{i2}	B			
11	20 06	20 18	P _{i2}	A			
21	10 46	15 20	P _{c4}	A			
22	20 59	21 09	P _{i2}	B			
22/23	23 45	00 03	P _{c4}	A			
23	07 00	12 38	P _{c4}	A			
28	07 36	12 51	P _{c4}	A			
30	01 33	01 58	P _{c4}	A			

SERVIÇO METEOROLÓGICO DE ANGOLA

CENTRO GEOFÍSICO DE BELAS

LUANDA

$\gamma = 8^{\circ} 55' S$; $\lambda = 13^{\circ} 10' E$; $h = 53 \text{ m}$ $\phi = 7^{\circ} 11' S$; $\Lambda = 80^{\circ} 33' E$

DECEMBER 1978

Geomagnetic Bulletin

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Scale values of the Askania variometers:

$e_D = 3,6 \delta / \text{mm}$; $e_H = 3,5 \delta / \text{mm}$; $e_Z = 3,4 \delta / \text{mm}$

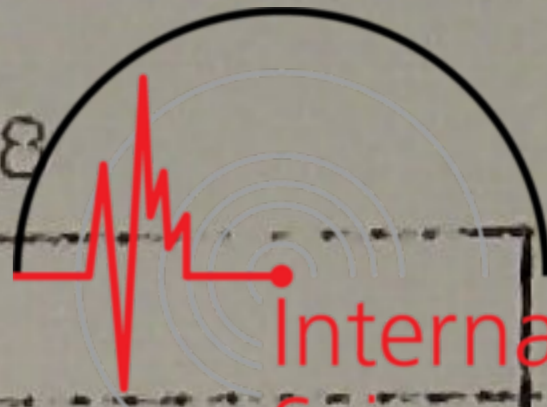
Time scale of variometers : 20 mm/h.

Range for K = 9,350 γ

INDICES OF GEOMAGNETIC ACTIVITY

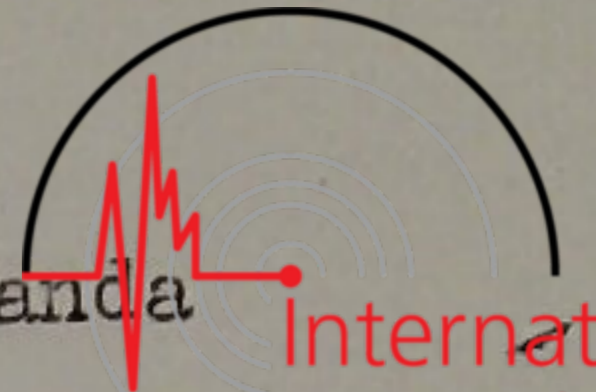
GR DAY	K - Indices for three-hour interval									Char.	
	00 ^{h-} 03 ^h	03 ^{h-} 06 ^h	06 ^{h-} 09 ^h	09 ^{h-} 12 ^h	12 ^{h-} 15 ^h	15 ^{h-} 18 ^h	18 ^{h-} 21 ^h	21 ^{h-} 24 ^h	SUM	FULL	0.1.2.
1	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	0	0	1	1	1	-	-	-
3	1	0	0	1	1	1	1	1	6	0	0
4	2	2	2	3	1	3	2	1	16	0	0
5	2	2	2	1	1	0	1	2	11	1	1
6	2	1	0	1	0	0	0	1	3	0	0
7	1	1	2	2	1	1	1	1	10	0	0
8	1	1	2	2	1	1	1	1	10	0	0
9	0	0	1	1	1	0	0	0	3	0	0
10	0	1	0	0	0	0	1	0	2	0	0
11	1	0	0	-	1	0	1	1	-	-	-
12	1	1	1	2	2	1	1	2	11	1	1
13	2	1	1	1	0	1	1	1	8	0	0
14	4	4	4	4	3	2	1	1	23	2	2
15	3	2	2	-	3	2	1	2	-	-	-
16	1	1	1	2	1	3	4	1	14	1	1
17	2	0	0	1	2	2	1	3	11	1	1
18	4	3	3	3	5	5	5	3	31	2	2
19	1	0	2	1	4	3	4	1	16	1	1
20	1	1	1	2	2	3	3	1	14	1	1
21	0	0	0	1	1	2	2	2	8	0	0
22	2	3	1	3	2	3	2	2	18	1	1
23	1	1	2	2	2	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	2	2	2	1	-	-	-
27	2	2	2	3	3	2	1	1	16	1	1
28	1	2	1	0	2	5	5	3	14	1	1
29	1	1	1	2	1	4	2	3	15	1	1
30	2	2	2	1	2	3	3	3	18	1	1
31	3	1	1	1	2	1	2	1	12	1	1





DAILY MEAN			
DAY	D	H	Z
1			
2	-09° 32.5	-23 304	-22 729
3	33.3	298	734
4	33.3	299	740
5	32.4	296	739
6	32.7	301	745
7	33.4	297	745
8	33.5	304	739
9	34.1	302	742
10	33.6	307	744
11	33.6	318	743
12	34.0	323	742
13	34.1	302	740
14	34.0	281	744
15	33.3	249	752
16	34.2	276	747
17	33.5	285	744
18	32.8	238	750
19	33.3	248	740
20	33.5	260	745
21	34.0	279	745
22	33.5	282	747
23	33.8	286	740
24	-	-	-
25	-	-	-
26	31.8	264	736
27	31.9	264	742
28	32.5	271	746
29	32.5	265	746
30	33.0	272	743
31	32.1	269	747

SUDDEN COMMENCEMENTS AND BAYS				
DAY	TIME (GMT)	TYPE	Quality A. B.C.	Sense of Movement D. H. Z
04	03h 45 ^m	si	A	+ + -
13	10 15	bs	A	+ + +
13	23 06	bp	A	+ + +
14	01 27	si	A	- + -
16	15 58	si	B	- + -
17	12 54	bp	B	+ -
18	00 50	si	B	- - +
18	04 54	si	A	+ - +
27	14 20	b	B	+ + +
28	03 06	b	A	- + -



pi , pc							
DAY	TIME (GMT)		TYPE	QUALITY A,B,C	LARGEST OSCILLATIONS		REMARKS
	Begin	End			Period	Range	
02	22 ^h 30 ^m	23 ^h 42 ^m	P _{c4}	B			
03	16 45	17 54	P _{c4}	B			
05	02 24	07 22	P _{c4}	A			
05	21 26	21 51	P _{i2}	A			
10	16 33	18 24	P _{c4}	A			
11	22 32	22 47	P _{i2}	A			
12	00 24	00 43	P _{i2}	B			
13	01 18	03 39	P _{c4}	B			
23	23 12	23 24	P _{i2}	A			
28	00 59	01 06	P _{i2}	A			

SOLAR FLARE EFFECTS

DAY	TIME (GMT)	Ionospheric Confirmation	REMARKS
09	11 ^h 01 ^m		