

SUNSPOT - BULLETIN

1981 , No. 12

Provisional Sunspot - Numbers for December 1981

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Dependent on observations at Locarno Specola Solare ,  
 complemented by an international network and  
 determined at the Observatoire Royal de Belgique.  
 Fifteen cooperating stations on 1982 Jan . 2d , 10 h UT.

Day	RI	Day	RI
1	162	16	66
2	197	17	80
3	212	18	79
4	201	19	74
5	200	20	57
6	232	21	72
7	244	22	73
8	249	23	86
9	247	24	76
10	271	25	62
11	249	26	100
12	209	27	104
13	185	28	136
14	159	29	122
15	113	30	102
		31	140

Mean = 147 .1

Predictions of the smoothed  
 monthly Sunspot - Numbers

1982 January	121 (-4)	1982 April	114 (-5)
February	119 (-4)	May	112 (-5)
March	117 (-4)	June	110

Brussels , January 2d , 1982

A . Koeckelenbergh .

Reproduction permitted if the source is mentioned .

S.I.D.C. SUMMARY OF URSIGRAMS

1981 DECEMBER

$R'_{Im} = 147.1$

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
$R'_I$	162	197	212	201	200	232	244	249	247	271	249	209	185	159	113
PPSI	191	120	90	-	114	192	245	385	411	505	282	221	194	-	106
10,7cm	237	241	246	249	268	270	288	297	305	287	278	260	226	199	178
XFI	63	15	29	6	9	12	46	37	50	21	14	18	16	12	21
XI	4/0	0/0	0/0	0/0	0/0	0/0	3/0	3/0	3/0	0/0	0/0	2/0	1/0	0/0	1/0
$A_K$	8	10	8	10	10	5	3	16	10	8	15	10	27	6	8
	SSC					SSC		SID		P		SSC			

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
$R'_I$	66	80	79	74	57	72	73	86	76	62	100	104	136	122	102	140
PPSI	46	33	25	34	19	67	53	55	87	75	91	89	109	101	94	83
10,7cm	163	149	142	134	138	147	151	158	163	168	172	183	189	190	192	187
XFI	4	5	4	1	1	1	6	3	7	5	7	8	20	6	11	1
XI	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	1/0	0/0	0/0	0/0
$A_K$	5	9	16	10	8	7	3	8	10	10	6	6	13	28	24	20
	SSC															

- $R'_{Im}$  : provisional International monthly Sunspot-Number from S.I.D.C.
- $R'_I$  : provisional International daily Sunspot-Number from S.I.D.C.
- PPSI : Prompt Photometric Sunspot Index from S.I.D.C. in  $10^{-5} \text{ W.m}^{-2}$ .
- 10,7 cm: 2800 MHz solar radio flux from Ursigrams in  $10^{-22} \text{ W.m}^{-2} \cdot \text{Hz}^{-1}$ .
- XFI : X-flare Index from S.I.D.C. on the base of Ursigrams.
- XI : X-flare Index on the basis of the group five of the Ursigrams.
- $A_K$  : geomagnetic Index from Ursigrams.

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMBRES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

DECEMBRE 1981

DATE	TU	NOMBRE DE GROUPES	NOMBRE DE TACHES	NOMBRE DE WOLF	PSI 10-6 WM-2	QUALITE	OBSER
9	1310	14	50	190	4333.	1	ST
10	1122	16	92	252	4606.	2	ST
13	0945	13	36	166	3251.	1	CG
15	1035	8	62	142	1312.	2	AK
16	0954	5	17	67	1101.	2	ST
17	1038	6	11	71	305.	1	ST
19	1100	5	11	61	775.	2	CG
28	1245	9	34	124	1145.	2	ST
30	0852	7	14	84	795.	1	ST

LE SOLEIL A ETE OBSERVE 9 JOURS SUR 31 POSSIBLES  
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 128.6  
EDITEUR RESPONSABLE  
A. KOECKELENRERGH  
OBSERVATOIRE ROYAL DE BELGIQUE  
UCCLE BELGIUM

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U\*EK\*U FOR 1981 DECEMBER

K\* = .966 (\*)

1 ***	7 ***	13 160	19 58	25 ***
2 ***	8 ***	14 ***	20 ***	26 ***
3 ***	9 183	15 137	21 ***	27 ***
4 ***	10 243	16 64	22 ***	28 119
5 ***	11 ***	17 68	23 ***	29 ***
6 ***	12 ***	18 ***	24 ***	30 81
				31 ***

THE SUN WAS OBSERVED 9 DAYS ON 31 POSSIBLE  
THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 123

\* K\* IS THE MEAN OF THE MONTHLY K'S FOR THE LAST FIVE YEARS

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1981 DECEMBER  
E AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB DATE	DATE AND TYPE	WEST LIMB DATE
		IST OBS CMP LAST OBS	
3-1716	12 1.9	9 F 12 8.7	12 15.4
5-1716	12 2.2	9 E 12 8.9	12 15.7
13-1716	12 5.7	9 D 12 12.5	12 19.2

PROBABLE RETURN OF MAJOR GROUPS FOR 1981 JANUARY

UCCLE NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
3	12 29.1	1 4.9	1 11.6
5	12 29.2	1 5.0	1 11.7
13	1 1.7	1 8.4	1 15.2