



SUNSPOT BULLETIN

Supported by UNESCO and ICSU through the FAGS

1988 , N° 6

Provisional Sunspot-Numbers for JUNE 1988

 Dependent on observations at Locarno Specola Solare
 complemented by an international network and
 determined at the Observatoire Royal de Belgique.
 Thirty eight coop. stations on July 1988, 1st, 0900 UT

Day	R'	Day	R'
	i		i

 ERRATUM : on 1988 May 31, read R' = 86 in place of 88

1	101	16	87
2	96	17	76
3	100	18	67
4	105	19	70
5	114	20	77
6	145	21	95
7	141	22	92
8	151	23	91
9	173	24	87
10	144	25	111
11	108	26	107
12	77	27	111
13	47	28	116
14	53	29	121
15	65	30	127

 MEAN = 101.8

 Predictions of the smoothed monthly Sunspot Numbers
 Classical Method S.I.D.C. Adjusted values
 1988 Jul. 88(±22) 1989 Jan. 126(±38) 1988 Jul. 84(±21)
 Aug. 94 Feb. 133 Aug. 88
 Sep. 101(±25) Mar. 139(±42) Sep. 95
 Oct. 108 Apr. 146 Oct. 105(±26)
 Nov. 114 May 154 Nov. 117
 Dec. 120(±30) Jun. 160(±48) Dec. 124(±31)

Forecasted values on the basis of the latest provisional
 monthly smoothed Sunspot Number: 1987 December = 53.1 ± 5%
 Provisional smoothed values:

1988 Jan. 55 (± 9) 1988 Mar. 63 (± 9) 1988 May 75 (±11)
 Feb. 59 Apr. 69 Jun. 81

Now, our predictions are based on the trend of the observed
 cycle from 1986 september (minimum) to 1987 december (R'=53)

 Brussels, 1988 July 1st,

A. Koeckelenbergh.

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S.I.D.C. SUMMARY OF THE URSIGRAMS

1988 JUNE R = 101 .8
im

Date	Ri	PPSI	600	2800	COS	XFI	XI	Ak	SEA
1	101	73	47	150	952	13	0/0	10	
2	96	82	48	144	961	10	0/0	6	
3	100	114	49	145	961	12	0/0	3	
4	105	109	50	147	958	22	1/0	4	
5	114	101	48	147	957	12	0/0	12	
6	145	108	50	154	950	23	0/0	8	
7	141	123	51	160	952	15	0/0	7	
8	151	164	49	163	954	20	0/0	9	
9	173	134	49	165	954	9	0/0	13	1639(slow SEA)
10	144	108	48	145	958	6	0/0	12	
11	108	69	46	134	966	9	0/0	9	
12	77	64	46	122	968	14	0/0	4	
13	47	50	44	112	966	1	0/0	6	SSC(0104)
14	53	45	44	108	965	0	0/0	21	
15	65	45	43	111	970	3	0/0	12	
16	87	36	42	111	969	10	0/0	6	
17	76	46	43	121	964	10	0/0	13	ten(0336)+IV
18	67	70	44	122	959	14	0/0	18	
19	70	85	41	116	963	15	0/0	28	mgst(0836)
20	77	91	43	115	961	5	0/0	15	
21	95	137	43	121	961	28	1/0	6	
22	92	142	43	119	963	23	1/0	15	//2n(0920),ten,SID
23	91	126	42	125	962	126	1/1	15	0920+1751 V mgst(2126)
24	87	68	44	135	958	316	1/3	20	1602+1642;SSC(0028); 1b(0418)+ten+SID; 2b(1601+1641)+ten+IV!
25	111	36	46	150	941	44	5/0	28	1636 \\SFE+rsw!
26	107	20	48	155	947	23	1/0	22	1056+1342;sb(0018)+ten
27	111	29	49	155	959	41	2/0	14	\\ +SID
28	116	142	51	178	961	83	6/0	11	
29	121	272	..	183	958	53	3/0	26	0733 2b(0731);1b(2015)
30	127	312	..	184		30	1/0	22	0908 P(0901)+3cm;P(1135); +II+SID

Ri ,Rim: provisional international sunspot-numbers from the S.I.D.C.
 PPSI: prompt photometric sunspot-index from the S.I.D.C. in 10-5 w.m-2 :the quantity to substract at the mean solar constant.
 600: 600 Mhz solar flux from Humain station (Belgium).
 2800: 2800 Mhz solar flux from Ottawa (origin:Ursigrams).
 COS: thousands of the cosmic ray counts (origin:Ursigrams).
 XFI: X-flares index from the S.I.D.C.(origin:Ursigrams).
 XI: X-flares index from the Ursigrams (M-flares/X-flares).
 Ak: planetary geomagnetic index from Wingst(Germany from Ursigrams).
 SEA: sudden enhancements of atmospherics from Uccle & Humain(Belgium).
 Remarks: sid(sudden ionospheric disturbance);ssc(sudden storm commencement);
 mgst(magnetic storm);s-1-2-3/n-b(class of flares);II-IV radio-burst;
 ten(ten cm radio-burst);...

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMBRES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

JUIN 1968

DATE	UT	NOMBRE DE GROUPES	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB REL ZONE CENTRALE	PPSI 10-6 WP-2	QUAL	OBS
1	0929	6	48	108	0	915.	1	VI
2	1414	5	54	104	0	881.	2	VI
5	0801	6	38	98	52	891.	3	HB
6	0737	9	86	176	97	1163.	2	VI
7	0640	9	88	178	37	1408.	2	VI
8	0639	7	77	147	20	1641.	2	VI
9	1059	9	82	172	0	1625.	1	VI
10	1550	9	105	195	86	1409.	2	AK
11	0915	4	34	74	33	805.	1	HB
13	0631	3	50	80	69	694.	3	VI
14	0708	3	16	46	20	547.	3	VI
15	1415	5	20	70	21	585.	2	AK
17	0557	6	34	94	11	484.	2	HB
19	0940	5	24	74	23	805.	2	AK
20	1000	6	39	99	41	875.	2	VI
21	1303	6	60	120	46	1651.	2	VI
22	0743	6	52	112	71	1769.	2	VI
23	0755	5	41	91	12	1575.	3	VI
28	0817	5	78	128	13	1233.	1	VI
29	0640	5	86	136	14	1613.	1	VI
30	0743	5	146	196	170	1920.	3	VI

LE SOLEIL A ETE OBSERVE 21 JOURS SUR 30 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 119.0

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U* = K*U FOR 1988						JUNE			
K* = .806 (*)									
1	87	7	143	13	64	19	59	25	***
2	83	8	118	14	37	20	79	26	***
3	***	9	138	15	56	21	96	27	***
4	***	10	157	16	***	22	90	28	103
5	79	11	59	17	75	23	73	29	109
6	141	12	***	18	***	24	***	30	158
								31	***

THE SUN WAS OBSERVED 21 DAYS ON 30 POSSIBLE
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 95

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

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1988 JUNE
 E AND F BRUNNER'S TYPE GROUPS

UCCLE EAST LIMB NO	DATE	IST OBS	DATE AND TYPE			WEST LIMB DATE
				CMP	LAST OBS	
13-1802	5 21.5	22 E	5 28.2	2 H	6 4.0	
18-1802	5 28.8	30 C	6 4.6	10 G	6 11.3	
3-1803	6 4.1	5 H	6 10.9	15 H	6 17.6	
13-1803	6 13.8	14 H	6 20.5	23 F	6 27.3	
23-1803	6 24.9	28 F	7 1.7	30 F	7 8.4	

PROBABLE RETURN OF MAJOR GROUPS FOR 1988 JULY

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
13	6 17.9	6 24.7	7 1.4
13	7 11.2	7 17.9	7 24.7