



SUNSPOT BULLETIN
Supported by UNESCO and ICSU through the FAGS.

1988 , N° 9

Provisional Sunspot-Numbers for SEPTEMBER 1988

Dependent on observations at LOCARNO Specola Solare
complemented by an international network and
determined at the Observatoire Royal de Belgique.
Thirty five coop. stations on OCTOBER 1988, 1st, 1000UT

Day	R' i	Day	R' i
1	137	16	97
2	153	17	79
3	129	18	97
4	148	19	113
5	128	20	153
6	93	21	168
7	97	22	168
8	88	23	190
9	74	24	166
10	76	25	143
11	87	26	151
12	83	27	157
13	91	28	148
14	94	29	111
15	89	30	117

Mean = 120 . 8

Predictions of the smoothed monthly Sunspot Numbers

Classical Method		S.I.D.C Adjusted values	
1988 Oct.116(±29)	1989 Apr.155(±51)	1988 Oct.111(±29)	
Nov.122	May 160	Nov.122	
Dec.130	Jun.165	Dec.130	
1989 Jan.137	Jul.174	1989 Jan.139(±34)	
Feb.143	Aug.177	Feb.146	
Mar.149(±37)	Sep.177(±58)	Mar.153(±38)	
Forecasted values on the basis of the latest provisional monthly smoothed Sunspot Number:1988 March = 71. 2 ± 5%			
Provisional smoothed values:			
1988 Apr. 76(±11)	1988 Jun. 89(±13)	1988 Aug.103	
May 82	Jul. 96(±14)	Sep.110(±17)	

The SIDC-News n° 8-9-10 will be published during 1988
October and will contain the definitive Area for the years
1985-1986 and 1987.

Brussels, 1988 October ,1st

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

1988 SEPTEMBER R' = 120 . 8
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Date	R'	PSI	600	2800	COS	XFI	XI	Ak	SEA
1	137	188	57	189	933	10	0/0	22	
2	153	115	57	176	938	3	0/0	14	
3	129	195	52	174	937	11	0/0	10	1316(max1322)
4	148	152	54	163	941	9	0/0	8	
5	128	130	52	163	946	4	0/0	6	
6	93	42	51	150	949	9	0/0	5	
7	97	35	50	143	948	0	0/0	4	
8	88	26	52	136	947	7	2/0	8	1232(max1243);sn(1840)
9	74	25	52	126	952	1	0/0	5	+ten!
10	76	16	51	114	954	1	0/0	7	1538(max1551);mgst(1815)!
11	87	18	51	120	952	5	0/0	49	
12	83	23	53	125	955	3	0/0	20	
13	91	55	54	122	956	5	0/0	12	
14	94	63	51	129	957	7	0/0	13	
15	89	59	48	125	958	3	0/0	14	
16	97	46	48	127	954	1	0/0	6	
17	79	42	49	133	950	0	0/0	20	SSC(1815)
18	97	42	49	139	949	6	0/0	31	
19	113	62	49	138	950	12	1/0	25	
20	153	67	54	149	943	14	0/0	12	
21	168	101	55	156	930	7	0/0	14	1342 +SEA(1412)
22	168	108	-	178	931	32	1/0	19	Sf(0804)+ten+sid
23	190	95	55	180	933	35	0/0	10	
24	166	96	55	179	937	19	0/0	10	
25	143	93	56	177	938	19	1/0	14	2b(0030)+ten+II+IV!
26	151	117	54	172	943	13	0/0	8	+sid!
27	157	81	56	173	942	45	2/0	4	1611 2f(0948);2b(1605)+!
									ten+sid;2b(1938)!
28	148	75	56	171	947	20	1/0	6	3b(2304)
29	111	77	60	173	939	19	1/0	3	
30	117	88	-	172	942	22	1/0	10	2n(1859)+II+ten

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 subtract 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 atmospheric from Uccle & Humain (Belgium).
 Remarks:sii(sudden ionospheric disturbance);ssc(sudden storm commencement)
 mgst(magnetic storm);s-1-2-3/n(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

SEPTEMBRE 1988

DATE	UT	NOMBRE DE GROUPE'S	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB PEL ZONE CENTRALE	PSI 10-6 WM-2	QUAL	OPS
2	0632	7	99	169	112	1435.	2	VI
4	0715	8	89	169	42	1455.	4	PC
6	1131	8	41	121	26	380.	2	VI
7	0631	7	28	98	17	369.	2	VI
8	0631	8	19	99	0	376.	3	VI
9	0711	5	20	70	22	372.	2	VI
11	0900	6	17	77	25	99.	2	CG
12	0748	7	20	90	24	156.	1	VI
13	0646	9	38	128	52	621.	2	VI
14	0745	7	29	99	24	730.	1	VI
15	0752	5	25	75	19	675.	1	VI
19	1140	10	32	132	17	786.	1	VI
20	1436	13	71	201	26	1130.	2	AK
21	0825	12	57	177	70	1009.	1	VI
22	0712	12	73	193	71	1231.	2	VI
23	0715	13	93	223	49	1110.	1	VI
27	1317	9	69	159	22	881.	1	VI
29	0808	6	56	116	53	769.	2	VI
30	0841	6	77	137	54	673.	3	AK

LE SOLEIL A ETE OBSERVE 19 JOURS SUR 30 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 133.3

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U* = K*U FOR 1988 SEPTEMBER

		K* = .884 (*)					
1	***	7	86	13	113	19	116
2	149	8	87	14	87	20	177
3	***	9	61	15	66	21	156
4	149	10	***	16	***	22	170
5	***	11	68	17	***	23	197
6	106	12	79	18	***	24	***
						25	***
						26	***
						27	140
						28	***
						29	102
						30	121
						31	***

THE SUN WAS OBSERVED 19 DAYS ON 30 POSSIBLE
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 117

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

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

UCCLE EAST LIMB NO	DATE	IST OBS	DATE AND TYPE CMP	LAST OBS	WEST LIMB DATE
4-1806	8 24.8	26 A	8 31.6	4 G	9 7.3
7-1806	8 26.4	28 E	9 2.2	9 G	9 8.9
9-1806	8 24.2	29 E	8 31.0	4 H	9 6.7

PROBABLE RETURN OF MAJOR GROUPS FOR 1988 OCTOBER

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
7	9 23.8	9 30.6	10 7.3
9	9 20.5	9 27.2	10 4.0