OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by
prof. Massimo Cimino, director

NOTICE

Beginning January 1, 1965 some additions and modifications have been introduced in our Monthly Bulletin.

The data published are described in the following:

Daily total areas of sunspot–groups (v. Circular n. 1, January 1958).

Heliographic position, classification and area of sunspot–groups (v. Circular n. 1, January 1958).

Sunspot magnetic fields.

Data on sunspot magnetic fields observed at the 34 m Solar Tower of the Rome Observatory are presented.

The measurement are made on the 26 cm solar image by employing a Hale–Nicholson grid. The λ 6302.5 Å line of the Fe I is used.

The autocollimating 18 m spectrograph is provided with a Bausch & Lomb grating with 600 grooves/mm (121.800 grooves in total), blazed in the third order. The dispersion is 0.26 Å/mm for $\lambda \simeq 6000$ Å.

Sudden Cosmic Noise Absorption and Sudden Enhancement of Atmospherics (v. Circular n. 64, Aprile 1963).

Daily photographs of the solar chromosphere (H_α and K line).

Publication of this table will start in the next future.

The photographs are obtained by a regular routine patrol of Calcium plages and H_α chromospheric phenomena. The devices used are supported by the same spar, and are provided respectively with a Halle K–line filter (pass–band 0.3 Å) and a Halle H_α–line filter (passband 0.5 Å) and cinecameras. The survey are done with one minute exposure interval.

Daily total areas of sunspot-groups,

by M. Torelli and U. Bartolini

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
January 1	0820	1	18	541	270	308	154	4
4	0915	2	10	324	124	448	169	2
5	0900	3	8	318	121	400	145	3
6	0855	1	6	201	73	143	52	3
7*	0745	1	4	—	—	—	—	—
9*	0810	1	3	—	—	—	—	—
10	1050	0	0	0	0	0	0	—
16	0745	1	1	13	0	7	0	4
17	0840	1	1	19	0	11	0	3
20	0810	1	8	143	67	135	62	3
22	0805	1	2	44	0	28	0	2
23	1025	1	5	175	98	286	163	3
24	0815	1	6	197	92	198	95	3
25	0950	1	11	328	150	254	114	2
26	0840	1	8	213	140	138	90	3
27	1210	3	8	239	99	166	57	4
30	0835	2	7	372	89	387	99	4
31	0920	1	3	382	93	290	70	4
Mean value:				**219**	**88**	**200**	**79**	

* Visual observations.

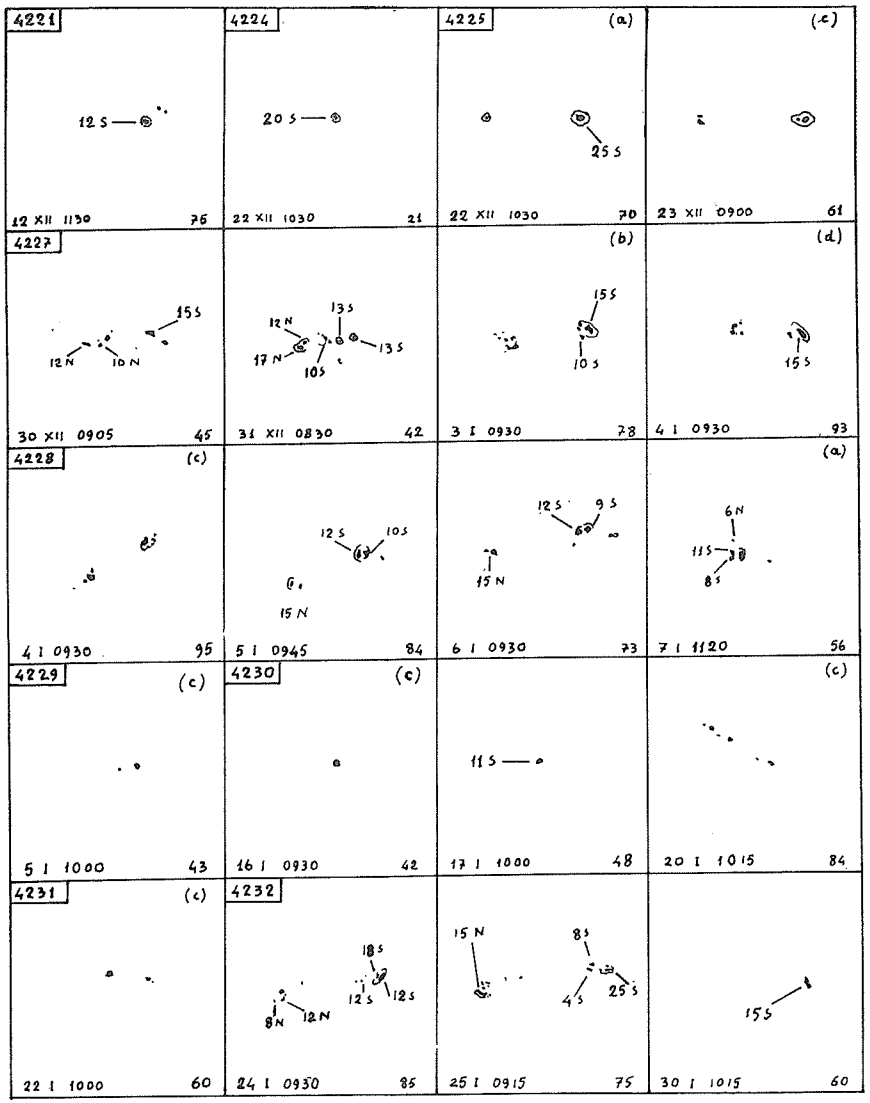
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4227	Dec. 30	0835	22	263	18	47	64	32	36	18			
			23	256	25	44	80	32	44	18			
							144	64	80	36	6	D	3
	Dec. 31	0920	22	263	356	43	143	64	79	35			
			23	256	3	42	111	80	61	44			
							254	144	140	79	8	D	4
	Jan. 1	0820	22	263	330	49	286	143	164	82			
			23	256	339	47	255	127	144	72			
							541	270	308	154	18	E	4
	Jan. 4	0915	22	263	297	91	48	16	57	19			
			23	256	293	94	95	32	140	47			
							143	48	197	66	6	G	2
	Jan. 5	0900	22	263	292	97	95	32	197	65	2	H	3
4228	Jan. 4	0915	24	144	63	91	127	48	154	58			
			22	135	67	96	54	28	97	45			
							181	76	251	103	4	G	2
	Jan. 5	0900	24	144	57	81	143	64	122	54			
			22	135	62	87	80	25	81	26			
							223	89	203	80	4	G	3
	Jan. 6	0855	24	144	48	69	153	57	106	40			
			22	135	56	76	48	16	37	12			
							201	73	143	52	6	G	3
	Jan. 7	0745	24	144	—	—	—	—	—	—			
			22	135	—	—	—	—	—	—			
							—	—	—	—	4	G	—
	Jan. 9	0810	24	144	—	—	—	—	—	—			
			22	135	—	—	—	—	—	—			
							—	—	—	—	3	G	—
4229	Jan. 5	0900	—	—	—	—	—	—	—	—	2	—	3
4230	Jan. 16	0745	19	44	1	42	13	0	7	0	1	A	4
	Jan. 17	0840	19	44	333	48	19	0	11	0	1	A	3
	Jan. 20	0810	18	48	288	87	67	32	68	32			
			19	42	293	82	76	35	67	30			
							143	67	135	62	8	D	3

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



Sudden Cosmic Noise Absorption S.C.N.A. (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
Jan. 3	1 –	(*)	3	1010	1011	1022	5,4	(*) S.E.A. temporarily out of operation
Jan. 3	1 –		3	1117	1118	1122	2,5	

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
φ = Heliografic latitude
λ = Heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeemann effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeemann effect recorded
(d) Zeemann effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

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Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
	*	*						(*) Out of operation February 16-28
		NO EVENTS RECORDED						

EXPLANATIONS

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OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by
prof. Massimo Cimino, director

Recd JVL 17 JUN '65

Daily total areas of sunspot-groups

by M. Torelli and U. Bartolini

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
February 1	0045	1	3	461	96	287	59	4
2	0750	1	2	446	111	244	61	4
3	0832	1	5	445	95	229	49	4
4	1230	1	4	382	64	199	33	4
5	1010	1	3	274	48	153	27	3
6	1007	2	2	191	32	124	21	3
8	0955	2	2	222	51	224	50	4
11	0935	2	2	184	80	128	58	4
12	0747	2	2	191	64	133	44	3
13	0835	2	2	238	70	136	44	3
16	0955	1	1	79	22	75	21	4
17	0755	1	1	57	16	83	23	4
18	0950	1	1	38	10	80	24	3
19	0800	0	0	0	0	0	0	—
20	0800	0	0	0	0	0	0	—
21	0900	0	0	0	0	0	0	—
22	0800	0	0	0	0	0	0	—
23	0730	0	0	0	0	0	0	—
25	0800	2	2	85	29	111	42	3
26	0900	2	3	73	22	60	21	4
27	1040	3	3	146	64	90	40	3
28	0945	2	5	121	57	66	31	2
Mean Value:				**165**	**42**	**110**	**29**	

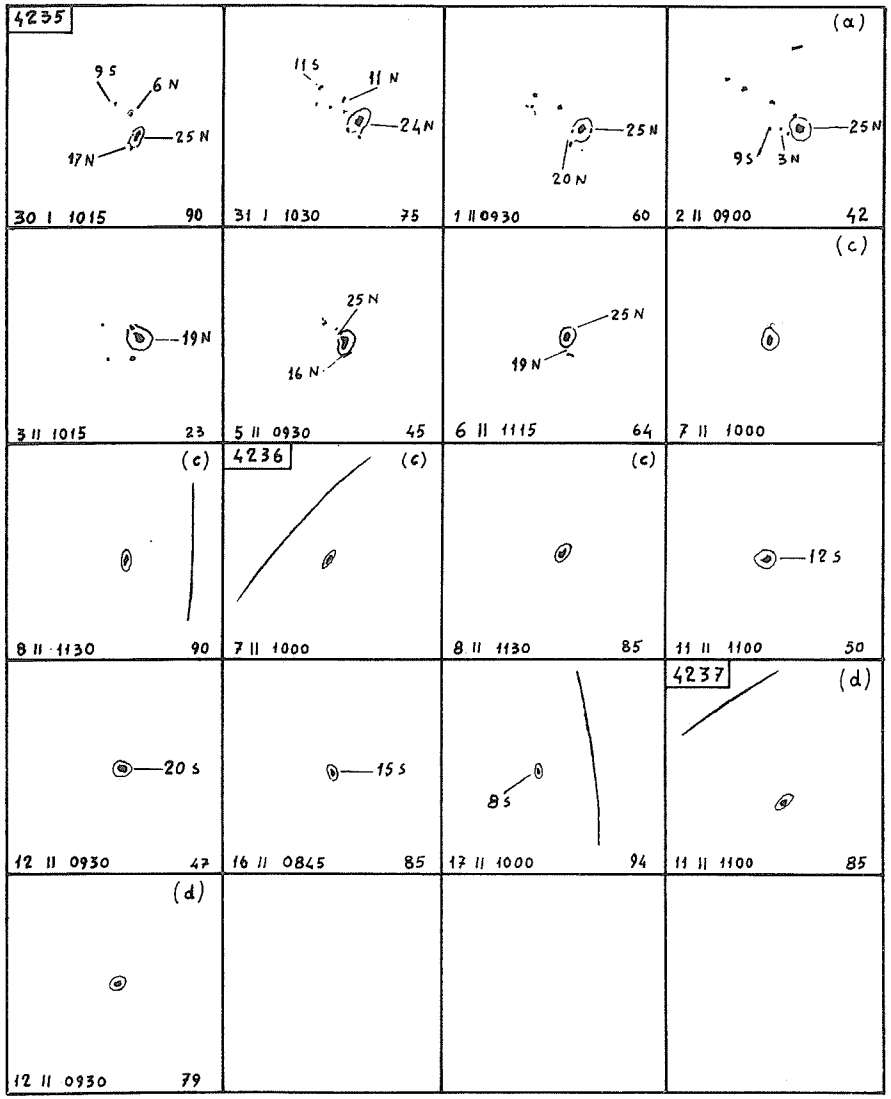
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4231	Jan. 22	0805	30	336	340	60	22	0	14	0			
			30	332	345	61	22	0	14	0			
							44	0	28	0	2	B	2
4232	Jan. 23	1025	24	254	47	92	95	51	122	65			
			22	244	51	97	80	47	164	98			
							175	98	286	163	5	E	3
	Jan. 24	0815	24	254	44	82	102	38	89	33			
			22	244	51	90	95	54	109	62			
							197	92	198	95	6	E	3
	Jan. 25	0950	24	254	37	71	153	80	108	56			
			22	244	47	80	175	70	146	58			
							328	150	254	114	11	G	2
	Jan. 26	0840	24	254	19	59	111	70	69	43			
			22	244	33	67	102	70	69	47			
							213	140	138	90	8	G	3
	Jan. 27	1210	24	254	344	50	51	35	29	20			
			22	244	1	50	137	64	79	37			
							188	99	108	57	4	G	4
	Jan. 30	0835	24	254	304	68	48	0	32	0	2	J	4
4233	Jan. 27	1210	26	314	293	89	32	0	35	0	2	B	4
4234	Jan. 27	1210	30	204	41	91	19	0	23	0	2	A	4
4235	Jan. 30	0835	6	162	68	88	238	54	251	57			
			8	158	67	91	86	35	104	42			
							324	89	355	99	5	E	4
	Jan. 31	0920	6	162	64	74	302	64	225	47			
			8	158	63	79	80	29	65	23			
							382	93	290	70	3	H	4
	Feb. 1	0845	6	162	63	59	382	64	236	39			
			8	158	63	63	79	32	51	20			
							461	96	287	59	3	H	4
	Feb. 2	0750	6	162	45	40	414	95	226	52			
			8	158	45	45	32	16	18	9			
							446	111	244	61	2	H	4
	Feb. 3	0832	7	162	358	23	445	95	229	49	5	H	4
	Feb. 4	1230	7	162	308	28	382	64	199	33	4	H	4
	Feb. 5	1010	7	162	283	46	255	48	143	27			
			9	158	297	41	19	—	10	—			
							274	48	153	27	3	H	3
	Feb. 6	1007	7	162	275	64	191	32	124	21	1	H	3
	Feb. 8	0955	7	162	267	91	111	19	115	19	1	H	4

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



OSSERVATORIO ASTRONOMICO DI ROMA

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Sudden Enhancement of Atmospherics S.E.A: (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs. %	Remarks
	SCNA	SEA		Begin.	Max.	End.		
		NO EVENTS RECORDED						

EXPLANATIONS

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SOLAR PHENOMENA

by
prof. Massimo Cimino, director

Daily total areas of sunspot-groups

by M. Torelli and U. Bartolini

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
March 3	1230	0	0	0	0	0	0	—
4	0805	1	4	74	45	50	30	3
6	0820	2	7	—	—	—	—	—
7 (1)	0825	3	10	146	61	145	53	3
8	0320	1	2	—	—	—	—	2
9	0800	0	0	0	0	0	0	—
10	1245	1	5	127	48	79	30	3
11	0735	1	3	74	41	61	35	4
13	0750	1	8	350	172	300	148	5
16	0807	1	4	159	60	104	39	3
19 ( )	1100	1	10	—	—	—	—	—
20	0735	1	7	156	73	157	73	5
21	0755	1	2	67	38	108	60	3
22	0735	0	0	0	0	0	0	—
23	0720	0	0	0	0	0	0	—
24	0730	0	0	0	0	0	0	—
25	0720	2	3	—	—	—	—	3
26	0715	1	5	207	64	169	52	3
27	0928	1	2	64	48	39	23	3
28	0737	1	4	—	—	—	—	1
29	0815	1	3	—	—	—	—	2
30 (2)	0740	1	4	—	—	—	—	—
31 (2)	0855	1	2	—	—	—	—	—
Mean Value:				**91**	**42**	**76**	**35**	

(1) Area of the very small group 4244 is missing; The values of Ad, A'_d, A_H and A'_H reported (partial values) are omitted in the valutation of the mean monthly values.
(2) Observation only visual.

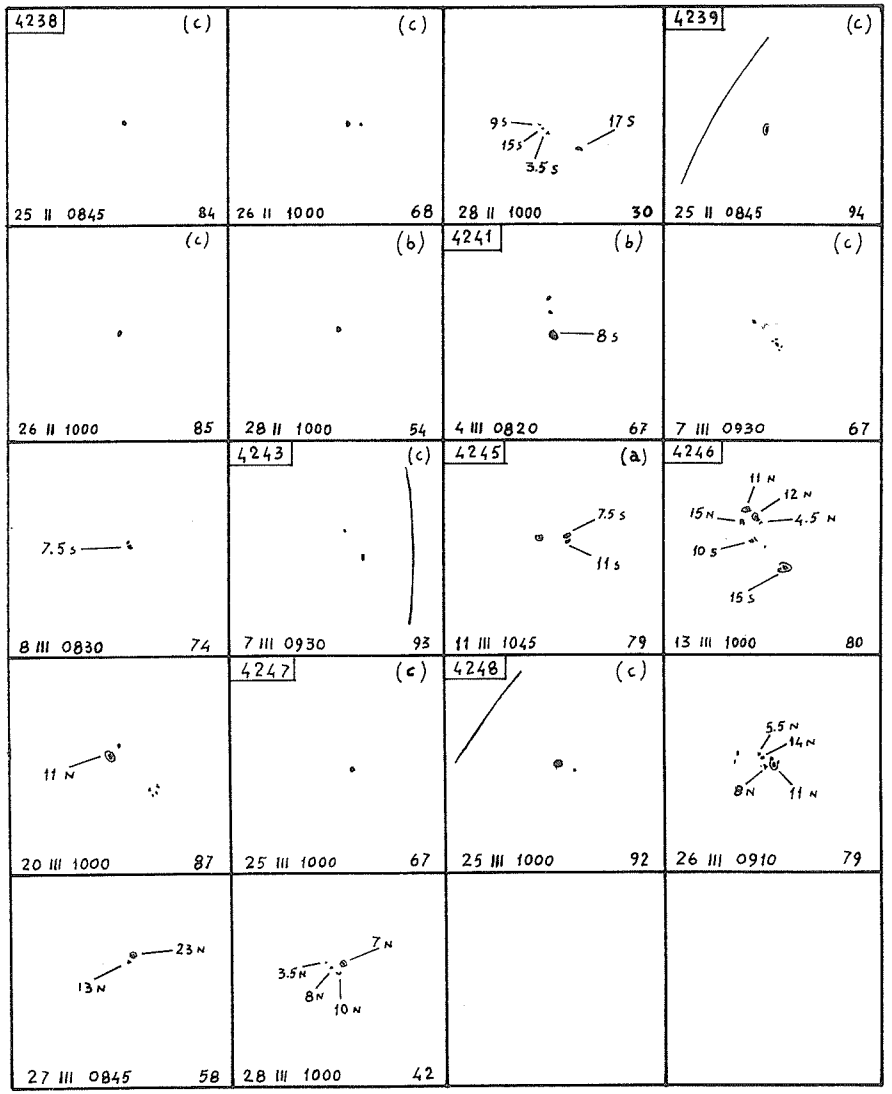
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4236	Feb. 6	1007	+20	49	54	98	—	—	—	—	1	—	3
(≡4230)	8	0955	+20	49	46	86	111	32	109	31	1	H	4
	11	0935	+20	49	12	51	127	48	74	28	1	H	4
	12	0747	+20	49	350	47	127	32	81	18	1	H	3
	13	0825	+20	49	322	49	143	32	82	18	1	H	3
	16	0955	+20	49	282	85	79	22	75	21	1	H	4
	17	0755	+20	49	283	94	57	16	83	23	1	H	4
	18	0950	+20	49	275	98	38	10	80	24	1	H	3
4237	Feb. 11	0935	+29	14	35	85	57	32	54	30	1	H	4
	12	0747	+29	14	26	79	64	32	52	26	1	H	3
	13	0835	+29	14	14	68	95	38	54	26	1	H	3
4238	Feb. 25	0800	— 4	184	70	84	25	0	23	0	1	A	3
	26	0900	— 4	184	67	68	35	0	24	0	2	A	4
	27	1040	— 4	184	63	48	60	32	34	18	1	C	3
	28	0935	— 4	184	50	28	32	16	16	8			
			— 3	181	51	32	48	16	25	8			
							80	32	41	16	4	D	2
4239	Feb. 25	0800	+ 8	170	59	94	60	29	88	42	1	J	3
(≡4235)	26	0900	+ 8	170	55	85	38	22	36	21	1	J	4
	27	1040	+ 8	170	50	70	48	32	33	22	1	J	3
	28	0935	+ 8	170	35	54	41	25	25	15	1	J	2
4240	Feb. 27	1040	—16	178	87	58	38	0	23	0	1	A	3

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



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by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
	*	*						(*) Out of operation February 16-28
		NO EVENTS RECORDED						

EXPLANATIONS

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SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date		U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
April	1	1200	0	0	0	0	0	0	—
	2	1200	0	0	0	0	0	0	—
	3	1200	0	0	0	0	0	0	—
	4	0815	0	0	0	0	0	0	—
	5	1200	0	0	0	0	0	0	—
	6	1530	0	0	0	0	0	0	—
	7	0730	0	0	0	0	0	0	—
	8	0945	0	0	0	0	0	0	—
	9	1125	0	0	0	0	0	0	—
	10	0900	0	0	0	0	0	0	—
	13	0855	1	2	89	32	85	30	4
	14	0745	1	2	83	25	60	18	4
	15	0915	2	7	139	48	87	30	3
	16	1130	1	6	—	—	—	—	2
	17	0919	1	1	32	26	16	13	3
	19	0830	0	0	0	0	0	0	—
	21	0750	1	2	54	35	30	20	3
	24	0837	1	1	54	32	34	20	4
	25 (*)	0920	1	1	—	—	—	—	—
	26	0955	1	4	—	—	—	—	1
	28 (*)	1020	1	3	—	—	—	—	—
	29	0810	0	0	0	0	0	0	—
	30	0730	0	0	0	0	0	0	—
		Mean value:			**24**	**10**	**16**	**7**	

(*) Observations only visual.

Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ̄	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4241	Mar. 4	0805	+ 29	129	3	66	48	32	13	21			
			+ 31	127	3	69	26	13	18	9			
							74	45	50	30	4	D	3
	Mar. 6	0840	+ 29	129	---	---	---	---	---	---			
			+ 31	127	---	---	---	---	—	---			
							—	---	—	—	3	D	—
	Mar. 7	0825	+ 29	129	308	67	57	32	39	21			
			+ 31	127	311	67	22	10	15	6			
							79	42	54	27	7	D	3
	Mar. 8	0820	+ 29	129	—	—	—	---	—	---			
			+ 31	127	---	---	—	—	---	—			
							—	—	—	---	2	G	2
4242	Mar. 6	0840	—	---	—	—	—	---	—	---			
			—	—	—	—	---	---	---	—			
							—	---	---	—	4	D	-
4243	Mar. 7	0825	+ 18	173	269	94	35	10	51	14			
			+ 19	169	271	92	32	9	40	12			
							67	19	91	26	2	D	3
4244	Mar. 7	0825	+ 21	115	322	48	---	---	---	---	1	A	3
4245	Mar. 10	1245	+ 20	100	286	60	60	32	38	20			
			+ 18	98	285	58	67	16	41	10			
							127	48	79	30	5	C	3
	Mar. 11	0735	+ 20	100	279	80	64	38	53	32			
			+ 18	98	280	78	10	3	8	3			
							74	41	61	35	3	J	4
4246	Mar. 13	0750	+ 28	352	17	77	121	51	95	40			
			+ 31	344	19	83	229	121	205	108			
							350	172	300	148	8	D	4
	Mar. 16	0807	+ 28	352	329	58	25	22	16	14			
			+ 31	344	343	65	134	38	88	25			
							159	60	104	39	4	G	3
	Mar. 19	1100	+ 28	352	—	—	—	—	—	—			
			+ 31	344	---	—	---	---	—	---			
							—	—	—	—	10	D	—
	Mar. 20	0735	+ 28	352	193	89	38	13	42	14			
			+ 31	344	197	86	118	60	115	59			
							156	73	157	73	7	D	5
	Mar. 21	0755	+ 28	352	278	97	16	6	33	13			
			+ 31	344	281	94	51	32	75	47			
							67	38	108	60	---	D	3

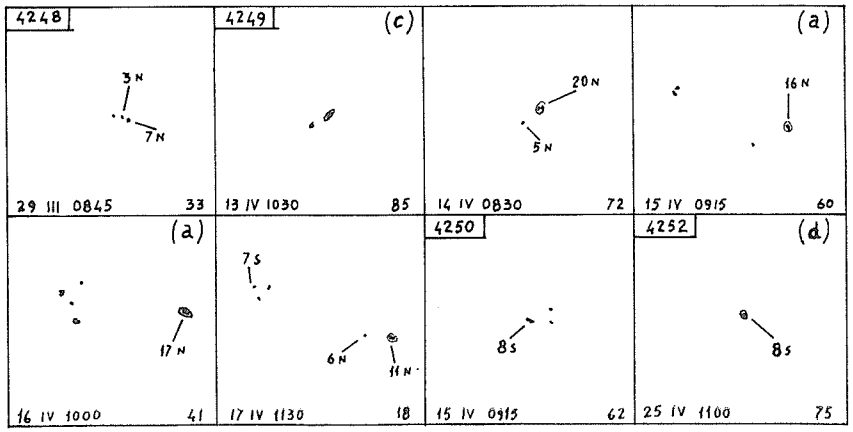
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4247	Mar. 25	0720	+23	203	16	67	28	0	19	0	1	A	3
4248	Mar. 25	0720	+10	171	52	92	—	—	—	—	2	C	3
(4239)	Mar. 26	0715	+10	171	45	79	207	64	169	52	5	C	3
	Mar. 27	0928	+10	171	34	58	64	48	39	23	2	C	3
	Mar. 28	0737	+10	171	19	42	---	—	—	—	4	C	1
	Mar. 29	0815	+10	171	348	33	—	—	—	—	3	C	2
	Mar. 30	0740	+10	171	---	---	---	---	---	---	4	C	1
	Mar. 31	0855	+10	171	—	---	—	—	—	—	2	C	1
4249	April 13	1005	+ 4	283	54	85	89	32	85	30	2	C	4
	April 14	0745	+ 4	283	48	72	83	25	60	18	2	C	4
	April 15	0915	+ 4	283	46	53	60	19	36	11			
			+ 2	272	52	68	22	10	15	7			
							82	29	51	18	4	G	3
	April 16	1103	+ 4	283	34	31	64	35	33	18			
			+ 2	272	49	41	—	—	—	—			
							—	—	—	—	6	G	2
	April 17	0919	+ 4	283	349	18	32	26	16	13	1	J	3

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
May 2	1+		4	1210	1214	1226	15.2	
May 2		1	3	1211	1214	—		

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
φ = Heliografic latitude
λ = Heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeemann effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeemann effect recorded
(d) Zeemann effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
1	0740	0	0	0	0	0	0	—
3	0800	0	0	0	0	0	0	—
4	0815	1	—	—	—	—	—	1
5 (*)	1245	1	2	—	—	—	—	—
6	0830	0	0	0	0	0	0	—
7	1005	1	2	80	45	79	44	3
8	0815	1	3	80	29	111	39	2
9	0818	1	2	57	26	134	60	2
10	0800	0	0	0	0	0	0	—
11	0800	0	0	0	0	0	0	—
12	0740	1	1	25	0	19	0	3
13	0755	1	4	149	54	92	33	3
14	0750	1	3	32	0	18	0	2
15	0959	2	15	490	230	885	318	5
16	0857	2	12	694	239	731	224	4
17	0820	3	25	983	328	1118	442	3
18	0800	4	23	1358	344	861	238	4
19	1139	3	33	1289	379	826	255	4
20	0930	3	42	1082	305	675	194	4
23	1006	4	25	774	233	493	144	3
24	0914	3	14	470	166	343	119	4
25	0744	2	11	111	48	113	48	4
26	0914	2	4	112	64	154	84	3
27	0930	0	0	0	0	0	0	—
28	0830	0	0	0	0	0	0	—
29	0800	0	0	0	0	0	0	—
30	0800	0	0	0	0	0	0	—
Mean Value:				**311**	**99**	**266**	**89**	

(*) Observations only visual.

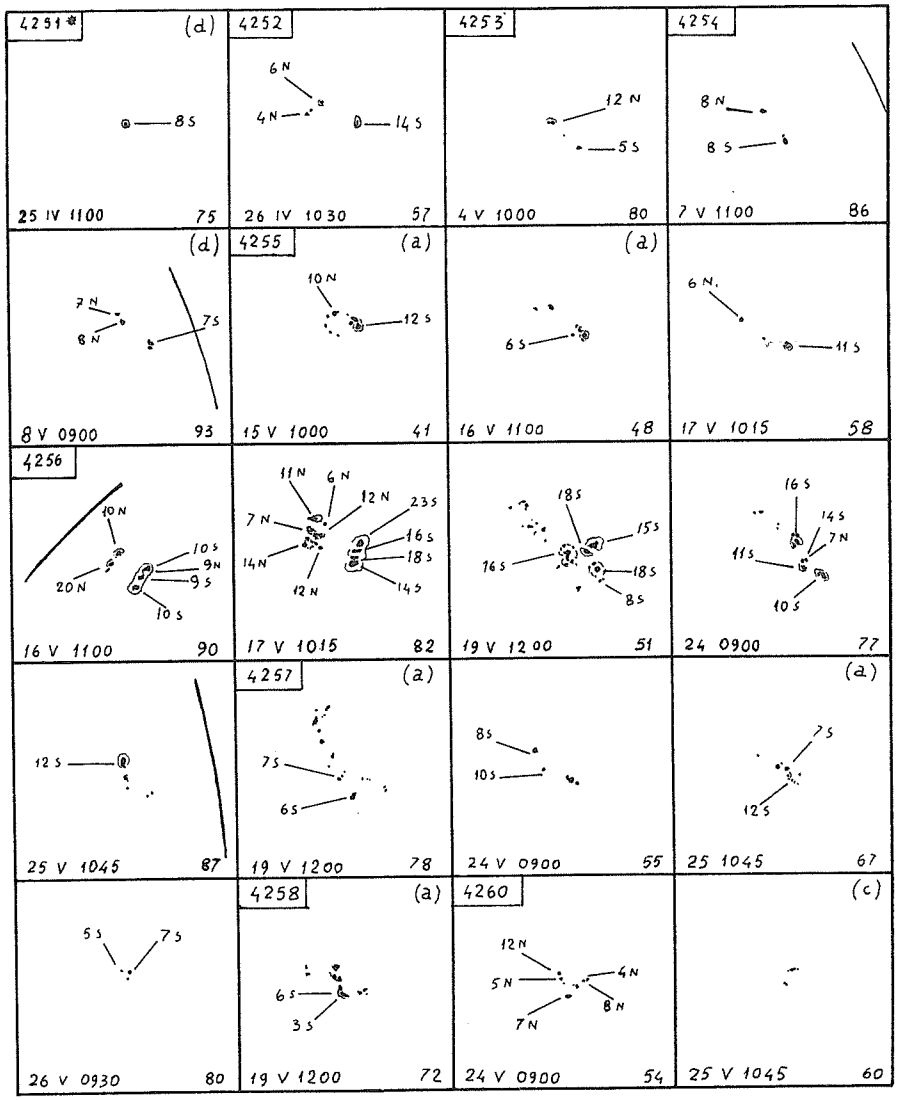
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4250	April 15	0915	—30	282	107	61	35	6	22	4			
			—31	280	107	64	22	13	14	8			
							57	19	36	12	3	C	3
4251	April 21	0750	21	221	2	44	29	19	16	11			
			22	218	6	47	25	16	14	9			
							54	35	30	20	2	G	3
	April 24	0837	16	224	283	60	54	32	34	20	1	J	4
	April 25	0920	16	224	274	75	—	—	—	—	1	J	—
4252	April 26	0955	— 3	200	250	57	—	—	—	—	5	C	1
	April 28	1020	— 3	200	245	89	—	—	—	—	3	C	—
4253	May 4	0805	28	20	26	80	—	—	—	—	2	C	1
	May 5	1245	28	20	12	67	—	—	—	—	2	C	—
4254	May 7	1005	36	73	292	87	48	29	48	29			
			37	67	296	86	32	16	31	15			
							80	45	79	44	2	G	3
	May 8	0815	36	73	287	94	48	16	70	23			
			37	67	289	92	32	13	41	16			
							80	29	111	39	3	G	2
	May 9	0818	36	73	283	98	35	16	88	40			
			37	67	285	97	22	10	46	20			
							57	26	134	60	2	G	2
4255	May 12	0740	21	278	33	73	25	—	19	—	1	A	3
	May 13	0755	21	278	23	57	111	32	68	19			
			21	274	25	59	38	22	24	14			
							149	54	92	33	4	D	3
	May 14	0750	21	278	2	44	16	—	9	—			
			21	274	9	48	16	—	9	—			
							32	—	18	—	3	G	2
	May 15	0758	21	278	341	41	70	54	38	30			
			21	274	346	41	111	80	61	44			
							181	134	99	74	9	D	5
	May 16	0959	21	278	309	48	102	64	58	36			
			21	274	316	47	51	32	29	18			
							153	96	87	54	5	G	4
	May 17	0820	21	278	290	60	41	32	26	20			
			21	274	297	57	35	10	21	6			
							76	42	47	26	4	G	3
	May 18	0800	21	278	281	74	35	10	26	7			
			21	274	285	70	13	0	9	0			
							48	10	35	7	5	G	4

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



* The spot group 4252 appeared in the Monthly Bulletin n. 88, is reported again in this Table, but with his just number of classification, 4251.

OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
			NO EVENTS RECORDED					

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
φ = Heliografic latitude
λ = Heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeemann effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeemann effect recorded
(d) Zeemann effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
1	1156	1	5	159	70	97	43	3
2	0835	1	10	245	118	134	65	4
3	0819	1	18	524	228	268	118	3
4	1053	2	23	764	317	425	172	3
5	0848	2	18	653	255	401	158	4
6	0915	2	11	436	201	324	151	4
7	0920	3	5	296	93	337	107	3
8	1005	2	4	169	58	205	70	4
9	0755	2	5	175	60	285	97	3
10	0812	1	2	—	—	—	—	1
11	0800	0	0	0	0	0	0	—
12	0800	0	0	0	0	0	0	—
13	0800	0	0	0	0	0	0	—
14	0800	0	0	0	0	0	0	—
15	0800	0	0	0	0	0	0	—
16	0800	0	0	0	0	0	0	—
18	0752	1	10	216	99	129	61	4
19	0828	1	7	181	102	128	68	4
20	0802	1	9	150	96	130	83	2
21	0842	2	6	120	61	129	63	4
22	0800	0	0	0	0	0	0	—
23	0800	0	0	0	0	0	0	—
24	0800	0	0	0	0	0	0	—
25	0800	0	0	0	0	0	0	—
26 (*)	0800	1	1	—	—	—	—	—
27	0925	1	1	32	16	31	16	3
28	0724	1	3	—	—	—	—	1
30	0835	1	3	137	57	80	34	4
Mean Value:				**170**	**73**	**124**	**52**	

(*) Observations only visual.

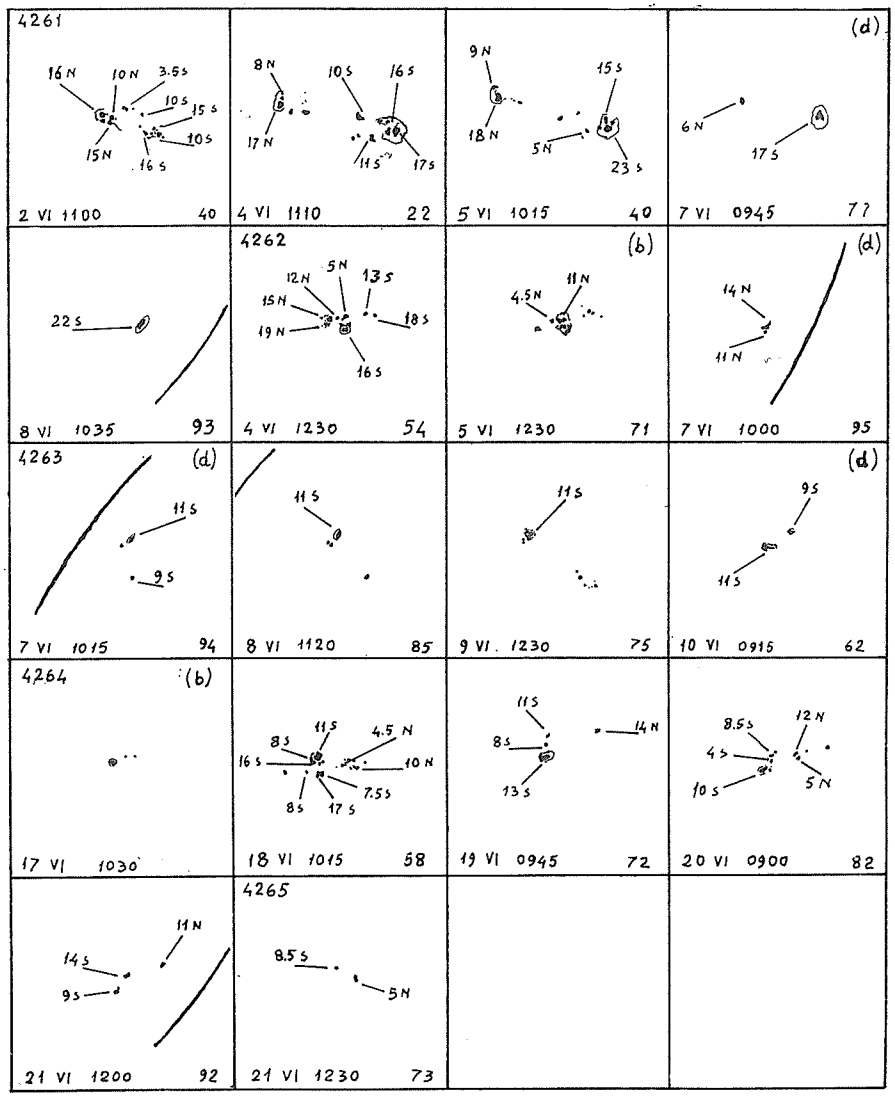
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4256	May 15	0758	+21	204	47	97	207	64	425	131			
			+22	199	48	99	102	32	361	113			
							309	96	786	244	6	E	5
	May 16	0959	+21	204	42	89	350	95	384	105			
			+22	199	43	93	191	48	260	65			
							541	143	644	170	7	E	4
	May 17	0820	+21	204	38	79	414	95	338	78			
			+22	199	39	84	318	89	293	82			
							732	184	631	160	16	E	3
	May 18	0800	+21	204	30	66	414	110	275	74			
			+22	199	32	70	557	118	390	82			
							971	228	665	156	11	H	4
	May 19	1139	+21	204	16	49	382	95	219	55			
			+22	199	21	53	445	80	262	47			
							827	175	481	102	14	H	4
	May 20	0830	+21	204	354	42	350	80	193	44			
			+22	199	2	47	366	95	207	54			
							716	175	400	98	23	H	4
	May 23	1006	+21	204	289	67	318	64	214	43			
			+22	199	294	64	223	64	145	41			
							541	128	359	84	12	H	3
	May 24	0914	+21	204	281	78	175	57	140	46			
			+22	199	285	76	159	48	122	37			
							334	105	262	83	4	H	4
	May 25	0744	+22	199	278	87	111	48	113	48	5	H	4
	May 26	0914	+22	199	275	96	64	32	114	57	2	J	3
4257	May 17	0820	+23	179	42	98	175	102	440	256	5	C	3
	May 18	0800	+23	179	41	89	127	48	112	54			
			+24	174	40	94	102	32	149	47			
							229	80	261	101	7	D	4

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
June 8	1		3	0707	0711	—	14	

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
φ = Heliografic latitude
λ = Heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

Field strength in 100 gauss

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeeman effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeeman effect recorded
(d) Zeeman effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
1	0820	1	2	70	38	39	21	4
2	0910	2	6	86	67	51	4	3
3	0810	2	7	105	64	59	35	3
4	0900	0	0	0	0	0	0	—
5	0900	0	0	0	0	0	0	—
6	0818	1	4	143	80	91	51	3
7	0930	1	10	261	168	145	93	4
8	0915	1	12	573	140	300	73	4
9	0900	1	19	509	191	266	99	4
10	1147	2	13	484	160	274	91	4
11	0827	1	14	478	191	288	115	2
12	0805	1	14	359	143	268	106	4
13	0908	1	5	255	124	255	122	3
14	0758	1	3	137	74	231	126	3
15	0753	1	1	70	32	38	17	3
17	0908	1	1	29	0	22	0	3
18	0715	0	0	0	0	0	0	—
19	0800	0	0	0	0	0	0	—
20	0800	0	0	0	0	0	0	—
21	0800	0	0	0	0	0	0	—
22	0800	0	0	0	0	0	0	—
23	0800	0	0	0	0	0	0	—
24	0800	0	0	0	0	0	0	—
25	0800	0	0	0	0	0	0	—
26	0800	0	0	0	0	0	0	—
27	0800	0	0	0	0	0	0	—
28	0800	0	0	0	0	0	0	—
29	0800	0	0	0	0	0	0	—
30	1107	1	2	64	35	53	29	3
31 (*)	0720	1	1	—	—	—	—	—
Mean Value:				**125**	**52**	**82**	**35**	

(*) Observation only visual. The spot 4272 is a pore that vanishes at 0830 U. T.

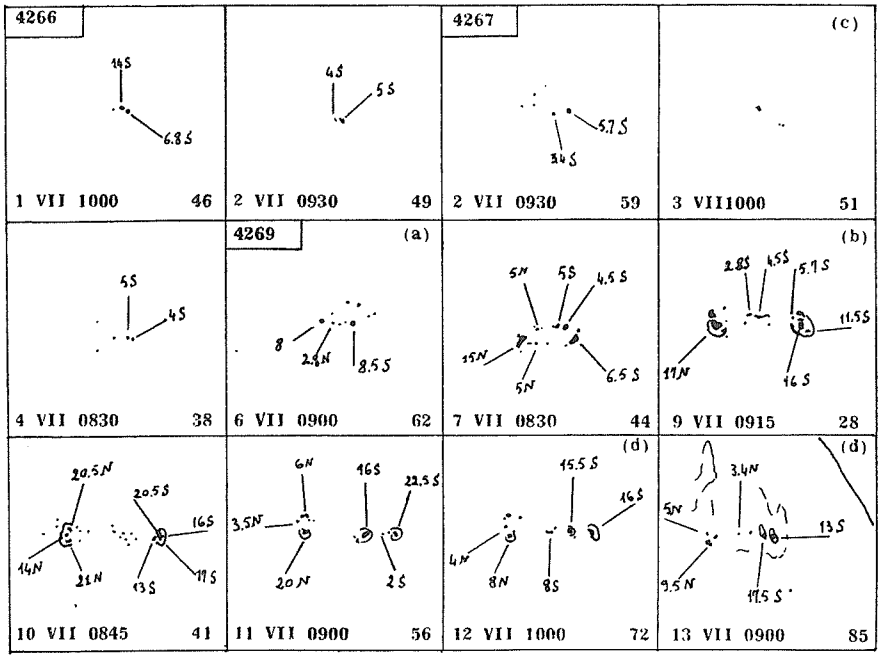
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4257	May 19	1139	+23	179	38	75	127	80	96	60			
			+24	174	37	83	80	35	71	31			
							207	115	167	91	12	D	4
	May 20	0830	+23	179	29	61	102	38	64	24			
			+24	174	31	69	57	35	39	24			
							159	73	103	48	8	D	4
	May 23	1006	+23	179	322	46	70	38	39	21			
			+24	174	325	44	45	0	25	0			
							115	38	64	21	8	G	3
	May 24	0914	+23	179	302	54	35	13	21	8			
			+24	174	308	53	9	0	6	0			
							44	13	27	8	4	G	4
	May 25	0744	+23	179	290	67	—	—	—	—	6	H	4
	May 26	0914	+23	179	281	80	48	32	40	27	2	H	3
4258	May 18	0800	+19	260	294	52	110	26	65	15	2	C	3
	May 19	1139	+19	260	284	70	255	89	178	62	7	C	4
	May 20	0830	+19	260	277	80	207	57	172	48	11	C	4
4259	May 23	1006	+26	194	304	59	48	19	30	12	2	C	3
4260	May 23	1006	+26	168	343	49	70	48	40	27	3	C	3
	May 24	0914	+26	168	322	52	92	48	54	28	6	C	4
4261	June 1	1156	−11	24	89	57	159	70	97	43	5	C	3
	June 2	0835	−11	24	102	37	70	48	38	26			
			−10	15	97	42	175	70	96	39			
							245	118	134	65	10	D	4
	June 3	0819	−11	24	141	18	238	95	121	49			
			−10	15	120	23	286	133	147	69			
							524	228	268	118	18	E	3
	June 4	1053	−11	24	219	27	286	111	149	58			
			−10	15	190	17	207	95	105	48			
							493	206	254	106	14	E	3
	June 5	0848	−11	24	232	47	271	80	153	45			
			−10	15	222	32	127	64	67	34			
							398	144	220	79	11	G	4
	June 6	0915	−11	24	241	65	207	64	136	42			
			−10	15	238	53	70	51	41	30			
							277	115	177	72	6	G	4
	June 7	0920	−11	24	242	82	166	61	145	53			
			−10	15	240	72	22	0	16	0			
							188	61	161	53	1	H	3
	June 8	1005	−11	24	246	93	95	32	130	43	1	H	4
	June 9	0755	−11	24	248	98	86	28	216	72	2	J	3

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
			(NO EVENTS RECORDED)					

ERRATA:
The S.C.N.A. reported in the Monthly Bulletin 91
Regards July 8 instead that June 8.

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT–GROUPS.

N = Rome Group Number
φ = Heliografic latitude
λ = Heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

Field strength in 100 gauss

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeeman effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeeman effect recorded
(d) Zeeman effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date		U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
August	1	1200	0	0	0	0	0	0	—
	2	1200	0	0	0	0	0	0	—
	3	0915	2	3	73	19	75	12	3
	4	0715	1	1	—	—	—	—	—
	5	1200	0	0	0	0	0	0	—
	6	1125	1	4	—	—	—	—	2
	7	1105	1	1	51	19	51	19	3
	8	1155	2	4	—	—	—	—	—
	9	1210	1	4	73	38	47	24	3
	10	1030	1	3	64	35	41	22	3
	11	0945	1	7	134	60	91	41	3
	12	0945	1	5	96	61	75	48	2
	13	1120	1	1	29	9	28	10	3
	14	1200	0	0	0	0	0	0	—
	15	1200	0	0	0	0	0	0	—
	16	1200	0	0	0	0	0	0	—
	17	1200	0	0	0	0	0	0	—
	19	1200	0	0	0	0	0	0	—
	20	1200	0	0	0	0	0	0	—
	21	1200	0	0	0	0	0	0	—
	22	1200	0	0	0	0	0	0	—
	23	1200	0	0	0	0	0	0	—
	24	1200	0	0	0	0	0	0	—
	25	1200	0	0	0	0	0	0	—
	26	1200	0	0	0	0	0	0	—
	27	1015	1	9	147	99	83	47	3
	28	0815	1	6	93	57	54	34	3
	29	0835	1	3	38	32	21	17	3
	30	0845	1	2	—	—	—	—	2
Mean Value:					**32**	**17**	**23**	**11**	

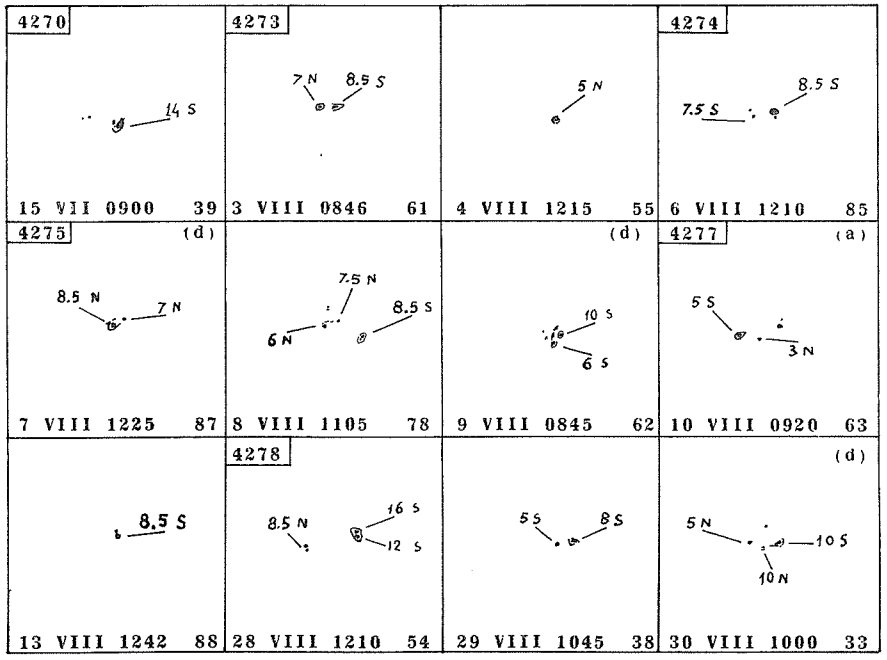
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4262	June 4	1053	—11	42	236	54	271	111	171	66	9	C	3
	June 5	0848	—11	42	239	71	255	111	181	79	7	H	4
	June 6	0915	—11	42	243	84	159	86	147	79	5	H	4
	June 7	0920	—11	42	243	95	48	13	76	20	2	J	3
4263	June 7	0920	+21	267	53	92	16	0	20	0			
(4258)			+23	261	51	96	44	19	80	34			
							60	19	100	34	2	D	3
	June 8	1005	+21	267	51	81	10	0	8	0			
			+23	261	50	88	64	26	67	27			
							74	26	75	27	3	G	4
	June 9	0755	+21	267	45	68	19	0	13	0			
			+23	261	46	78	70	32	56	25			
							89	32	69	25	3	G	3
	June 10	0812	+22	264	42	62	—	—	—	—	2	—	1
4264	June 18	0752	—26	211	207	59	111	35	69	22			
			—27	207	203	58	105	64	60	39			
							216	99	129	61	10	D	4
	June 19	0828	—26	211	222	73	38	32	28	23			
			—27	207	217	70	143	70	100	45			
							181	102	128	68	7	D	4
	June 20	0802	—26	211	228	83	48	32	43	29			
			—27	207	225	81	102	64	87	54			
							150	96	130	83	9	D	2
	June 21	0842	—26	211	233	93	22	13	30	17			
			—27	207	230	91	57	22	69	27			
							79	35	99	44	4	D	4
4265	June 21	0842	+31	102	40	73	41	26	30	19	2	C	4
4266	June 26	0745	+30	12	—	—	—	—	—	—	1	A	—
	June 27	0925	+30	12	309	86	32	16	31	16	1	A	3
	June 28	0724	+30	12	—	—	—	—	—	—	3	—	1
4266	June 30	0835	+30	12	23	52	89	32	52	19			
			+30	8	28	54	48	25	28	15			
							137	57	80	34	3	D	4
	July 1	0820	+30	12	3	46	70	38	39	21	2	J	4
	July 2	0910	+30	12	341	49	29	19	16	11	2	J	3
4267	July 2	0910	+31	338	32	59	57	48	35	30	4	C	3
	July 3	0810	+31	338	14	51	48	16	28	9	4	C	3
4268	July 3	0810	+24	350	353	37	57	48	31	26	3	C	3

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
			(NO EVENTS RECORDED)					

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
φ = Mean heliografic latitude
λ = Mean heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
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A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELD

Field strength in 100 gauss

A	(D)
B	C

A: Rome Group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeeman effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeeman effect recorded
(d) Zeeman effect uncertainly measured

TABLES: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
September 2	0820	1	4	57	39	84	56	4
4	0950	2	7	106	70	117	82	3
5	0902	1	9	83	51	53	33	2
6	0820	1	8	127	80	72	45	4
7	0740	1	10	190	112	102	60	4
8	0805	1	12	270	143	144	77	4
9	0820	1	10	207	96	116	53	2
13	0853	2	3	86	57	109	73	3
14	0740	1	1	83	25	61	19	3
15	0854	1	1	89	32	62	22	3
16	1218	1	2	93	32	51	18	3
17	0848	1	1	35	16	18	8	3
18	0855	1	3	—	—	—	—	1
19	0700	0	0	0	0	0	0	—
20	0700	0	0	0	0	0	0	—
21	0700	0	0	0	0	0	0	—
22	0700	0	0	0	0	0	0	—
24	0750	1	9	159	96	106	63	4
25	0720	1	5	150	73	125	61	4
27(*)	0807	1	2	92	35	135	51	4
29	0837	2	19	684	293	518	202	5
30	0900	1	28	1202	479	754	299	4
Mean Value:				**177**	**82**	**125**	**58**	

(*) Area of small and ephimeral group 4284 is missing.

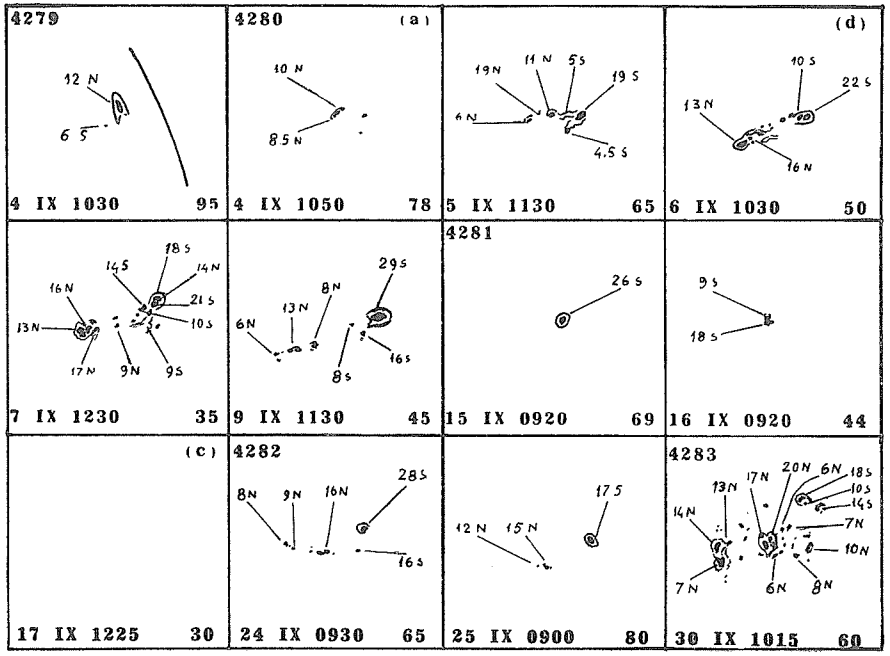
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4269	July 6	0818	+19	274	66	62	143	80	91	51	4	C	3
	July 7	0930	+19	277	48	41	159	95	87	52			
			+19	271	53	47	102	73	58	41			
							261	168	145	93	10	D	4
	July 8	0915	+19	277	15	28	318	70	166	36			
			+19	271	31	32	255	70	134	37			
							573	140	300	73	12	D	4
	July 9	0900	+19	277	327	29	286	111	150	58			
			+19	271	348	27	223	80	116	41			
							509	191	266	99	19	D	4
	July 10	1147	+19	277	304	46	223	64	125	36			
			+19	271	316	37	223	80	120	43			
							446	144	245	79	11	D	4
	July 11	0827	+19	277	—	52	255	111	149	65			
			+19	271	—	60	223	80	139	50			
							478	191	288	115	14	D	2
	July 12	0825	+19	277	294	76	238	86	184	66			
			+19	271	298	69	121	57	84	40			
							359	143	268	106	14	D	4
	July 13	0908	+19	277	290	88	191	80	201	84			
			+19	271	292	81	64	44	54	38			
							255	124	255	122	5	D	3
	July 14	0758	+19	277	292	96	111	64	199	114			
			+19	271	293	92	26	10	32	12			
							137	74	231	126	3	D	3
4270	July 10	1147	+20	208	71	76	38	16	29	12	2	C	4
	July 15	0753	+20	208	315	39	70	32	38	17	1	J	3
	July 17	0908	+20	208	296	75	29	0	22	0	1	A	3
4271	July 30	1107	+32		63	80	64	35	53	29	2	C	3
	July 31	0715	+32		—	—	—	—	—	—	1	—	—
4272	August 3	0815	+28	336	340	96	25	0	45	0	1	—	3
4273	August 3	0815	+38	277	38	61	48	19	30	12	2	C	3
	August 4	0715	+38	277	—	—	—	—	—	—	1	A	—
4274	August 6	1025	−25		—	—	—	—	—	—	4	—	2

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
			(NO EVENTS RECORDED)					

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome Group Number
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ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
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n = Number of the observed spots
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1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
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A_d, A'_d in millionths of the solar disk
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TABLE: SUNSPOT MAGNETIC FIELD

Field strength in 100 gauss

A	(D)
B	C

A: Rome Group number
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OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
October 1	0800	1	24	1002	270	552	149	4
2	0737	1	32	954	446	497	231	3
4	0725	3	26	1066	433	633	257	4
5	1139	3	24	894	385	690	296	5
6	0942	2	11	445	182	469	181	2
7 (*)	0725	2	6	182	108	193	112	2
8	0840	1	1	—	—	—	—	2
9	0740	1	1	64	25	131	52	4
10	0905	1	1	—	—	—	—	—
11	0735	1	1	80	32	89	35	4
12	0810	1	2	—	—	—	—	—
13	0905	1	1	48	28	27	16	3
14	0915	1	1	19	13	10	7	2
15	0700	0	0	0	0	0	0	—
17	0730	0	0	0	0	0	0	—
19	0920	0	0	0	0	0	0	—
20	0732	1	2	89	45	46	24	2
21	0755	1	2	159	80	88	44	3
23	0720	2	7	277	102	307	103	3
24	0800	2	2	169	67	175	71	4
25	0813	1	1	191	76	193	52	4
26	0731	1	1	159	80	98	49	2
27	0800	1	2	143	48	77	26	3
28	0750	1	1	127	44	67	24	3
29	0747	1	1	127	48	69	26	3
30	1015	1	1	95	32	56	19	3
31	0809	1	1	70	29	46	19	3
Mean Value:				**265**	**107**	**185**	**75**	

(*) Area of sumspot groug 4287 is missing.

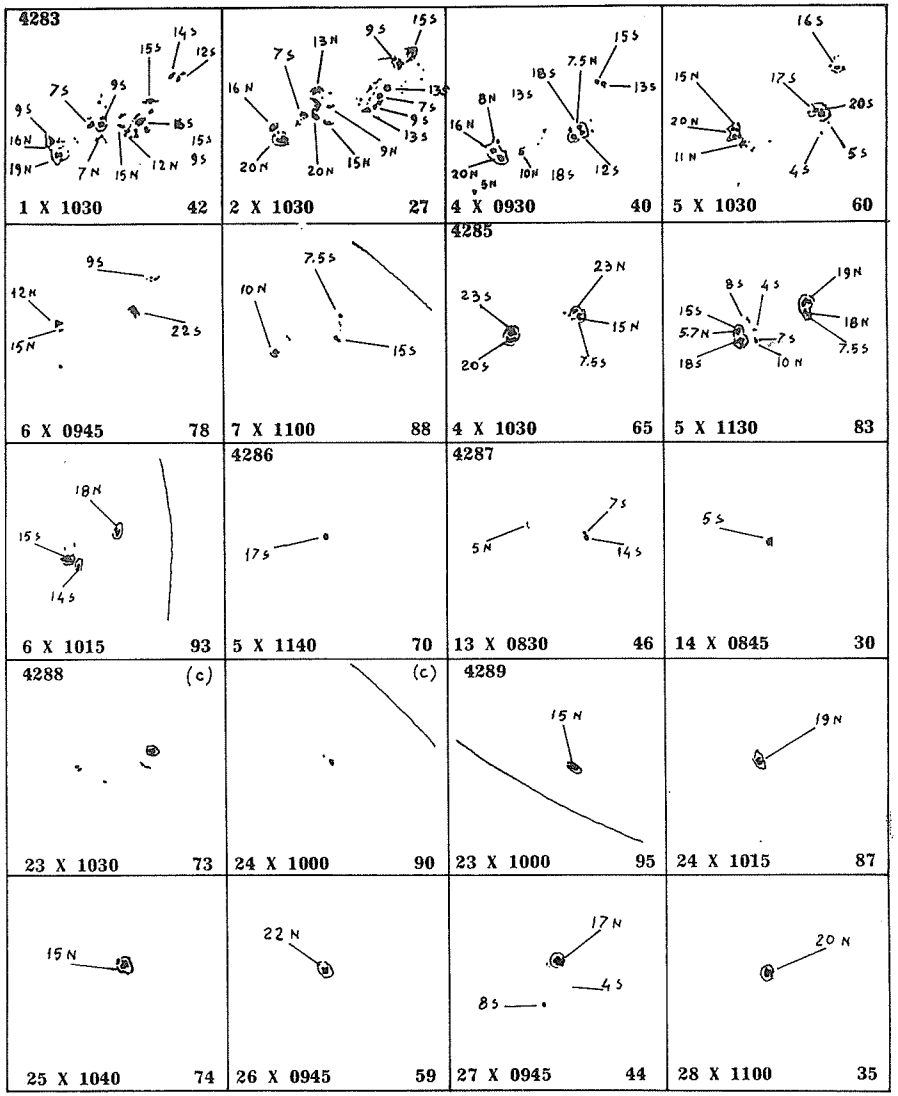
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4275	August 7	1105	+36	190	64	87	51	19	51	19	1	J	3
	August 8	1155	+36	190	—	—	—	—	—	—	3	C	—
	August 9	1210	+36	190	49	62	73	38	47	24	4	C	3
4276	August 8	1155	—	—	—	—	—	—	—	—	1	A	—
4277	August 10	1030	−30	211	203	63	64	35	41	22	3	C	3
	August 11	0845	−30	211	219	68	134	60	91	41	7	D	3
	August 12	0845	−29	214	—	79	48	29	39	23			
			−30	209	—	76	48	32	36	25			
							96	61	75	48	5	D	2
	August 13	1120	−29	214	247	88	19	6	20	7			
			−30	209	243	84	10	3	8	3			
							29	9	28	10	2	D	3
4278	August 27	1025	—	—	—	64	86	64	41	23			
			—	—	—	69	61	35	42	24			
							147	99	83	47	9	D	3
	August 28	0815	—	—	—	51	64	35	37	20			
			—	—	—	57	29	22	17	14			
							93	57	54	34	6	D	3
	August 29	0835	—	—	—	38	38	32	21	17	3	J	3
	August 30	0845	—	—	—	—	—	—	—	—	2	J	2
4279	September 2	0820	+ 3	307	286	72	19	13	14	9			
			+ 3	302	286	65	38	26	25	17			
							57	39	39	26	4	D	4
	September 4	0950	+ 3	305	293	94	64	38	84	56	3	C	3
4280	September 4	0950	+26	187	84	77	16	13	12	10			
			+26	183	83	80	26	19	21	16			
							42	32	33	26	4	D	3
	September 5	0902	+26	187	79	62	64	38	40	24			
			+26	183	80	68	19	13	13	9			
							83	51	53	33	9	D	2

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
November 7	1		4	0715	0718	0731	12.5	
November 7		1+	4	0715	0720	0805		
November 9	1+		4	1501	1505	1516	23.3	
November 9		1−	3	1503	1510	—		
November 9	1		4	1524	1527	1531	18.2	
November 9		1−	3	1525	1530	—		
November 9	1−		4	1546	1548	1554	13.8	

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT – GROUPS.

N = Rome group number
φ = Mean heliografic latitude
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A_d = Apparent total area
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A_d, A'_d in millionths of the solar disk
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TABLE: SUNSPOT MAGNETIC FIELD

Field strength in 100 gauss

A	(D)
B	C

A: Rome group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
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TABLE: S.C.N.A. AND S.E.A.

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Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
November 1	0740	2	8	219	108	128	63	3
5	0800	0	0	0	0	0	0	—
6	0810	2	11	243	99	162	54	2
9	0836	2	19	652	273	266	112	3
11	0910	2	22	748	333	658	280	3
13	1120	1	6	216	93	132	56	3
14	1206	1	7	239	111	163	76	3
15	0745	1	3	95	32	81	28	2
16	0750	1	2	51	25	58	29	4
17	0750	1	1	29	13	59	26	3
18	0800	0	0	0	0	0	0	—
20	0800	0	0	0	0	0	0	—
21	0800	0	0	0	0	0	0	—
22	0710	0	0	0	0	0	0	—
23	0818	0	0	0	0	0	0	—
24	0731	0	0	0	0	0	0	—
25	0726	0	0	0	0	0	0	—
26	1000	0	0	0	0	0	0	—
27	0730	0	0	0	0	0	0	—
28	0745	1	1	—	—	—	—	—
29	0813	1	1	67	25	81	35	4
Mean Value:				233	100	181	69	

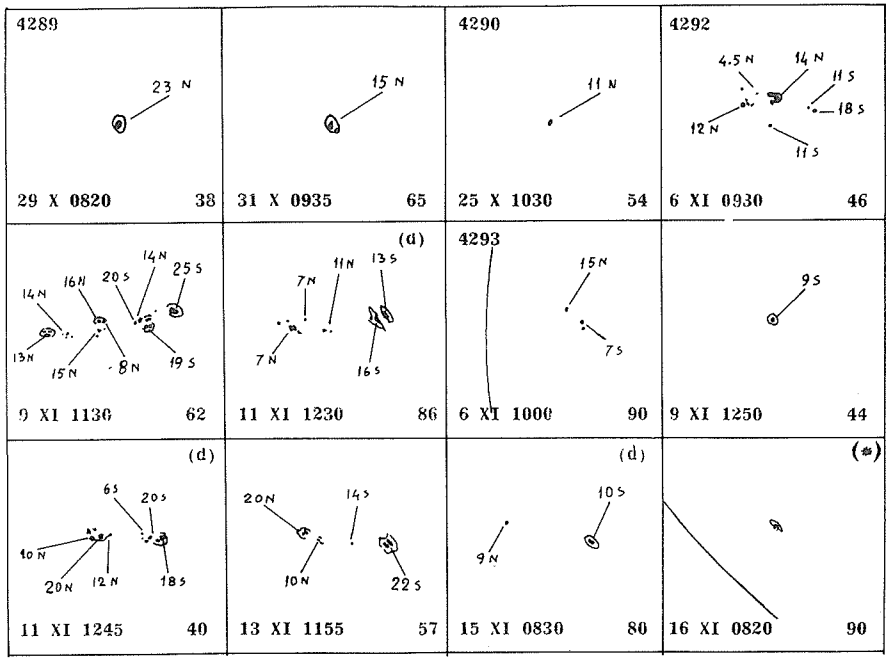
Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4280	September 4	0950	+26	187	84	77	16	13	12	10			
			+26	183	83	80	26	19	21	16			
							42	32	33	26	4	D	3
	September 5	0902	+26	187	79	62	64	38	40	24			
			+26	183	80	68	19	13	13	9			
							83	51	53	33	9	D	2
	September 6	0820	+26	187	65	46	70	48	39	27			
			+26	183	71	51	57	32	33	18			
							127	80	72	45	8	D	4
	September 7	0740	+26	187	39	35	111	64	59	34			
			+26	183	51	39	79	48	43	26			
							190	112	102	60	10	D	4
	September 8	0805	+26	187	5	35	159	79	85	43			
			+26	183	20	33	111	64	59	34			
							270	143	144	77	12	D	4
	September 9	0845	+26	187	340	47	143	64	81	36			
			+26	183	352	40	64	32	35	17			
							207	96	116	53	10	D	2
	September 13	0853	+26	187	320	94	48	32	70	47	2	C	3
4281	September 13	0853	+23	56	92	87	38	25	39	26	1	J	3
	September 14	0740	+23	56	88	74	83	25	61	19	1	J	3
	September 15	0854	+23	56	83	69	89	32	62	22	1	J	3
	September 16	1218	+23	56	72	43	61	32	33	18			
			+22	53	80	46	32	0	18	0			
							93	32	51	18	2	J	3
	September 18	0855	+23	56	6	30	—	—	—	—	—		
			+22	53	15	27	—	—	—	—			
							—	—	—	—	3	—	1
4282	September 24	0750	+26	11	328	68	111	64	76	43			
			+26	6	330	60	48	32	30	20			
							159	96	106	63	9	D	4
	September 25	0720	+26	11	323	83	80	38	71	34			
			+26	6	324	76	70	35	54	27			
							150	73	125	61	5	G	4

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce



(*) The magnetic data for this day are not yet elaborated.

Sudden Cosmic Noise Absorption S.C.N.A (18 Mc/s)
Sudden Enhancement of Atmospherics S.E.A. (27 Kc/s)

by U. Bartolini

Date	Importance		D	Time (U.T.)			SCNA Abs.%	Remarks
	SCNA	SEA		Begin.	Max.	End.		
November 7	1		4	0715	0718	0731	12.5	
November 7		1+	4	0715	0720	0805		
November 9	1+		4	1501	1505	1516	23.3	
November 9		1–	3	1503	1510	–		
November 9	1		4	1524	1527	1531	18.2	
November 9		1–	3	1525	1530	–		
November 9	1–		4	1546	1548	1554	13.8	

EXPLANATIONS

TABLES: { DAILY TOTAL AREAS OF SUNSPOT–GROUPS. HELIOGRAPHIC POSITION, CLASSIFICATION AND AREA OF SUNSPOT–GROUPS.

N = Rome group number
φ = Mean heliografic latitude
λ = Mean heliografic longitude
ω = Positions angle of the spot
ρ = Spot distance from the center in centymes of the solar radius
T = Group type
G = Number of the observed groups
n = Number of the observed spots
Q = Quality of the solar image:
1. – Very poor; 2. – Fair; 3. – Good; 4. – Very good; 5. – Excellent
A_d = Apparent total area
A'_d = Apparent umbra area
A_H = Corrected total area
A'_H = Corrected umbra area
A_d, A'_d in millionths of the solar disk
A_H, A'_H in millionths of the solar hemisphere

TABLE: SUNSPOT MAGNETIC FIELDS

Field strength in 100 gauss

A	(D)
B	C

A: Rome group number
B: Date and time U.T.
C: Heliographic mean distance in centymes of $R_\odot$
D: eventual remarks:
(a) Zeeman effect incompletely recorded
(b) interrupted observation for clouding
(c) no Zeeman effect recorded
(d) Zeeman effect uncertainly measured

TABLE: S.C.N.A. AND S.E.A.

Importance: Subjective importance given on a scale of 1 minus (less important) to 3 plus

D = definiteness: 5. – definite; 4. – reasonably definite; 3. – reasonable; 2. – fair; 1. – possible.

OSSERVATORIO ASTRONOMICO DI ROMA

SOLAR PHENOMENA

by

prof. Massimo Cimino, director

Daily total areas of sunspot-groups

by U. Bartolini and M. Torelli

Date	U.T.	G	n	A_d	A'_d	A_H	A'_H	Q
December 1	0828	1	1	67	25	50	19	3
2	0928	1	1	80	32	51	20	2
4	0815	1	2	48	19	27	11	4
5	1006	1	1	44	16	26	9	2
7	1240	1	2	32	10	23	7	3
8	0745	0	0	0	0	0	0	–
11	0735	0	0	0	0	0	0	–
12	0730	0	0	0	0	0	0	–
13	0730	0	0	0	0	0	0	–
14	0730	0	0	0	0	0	0	–
15	0752	1	9	130	48	71	26	3
16	0802	1	11	191	108	113	64	3
17	1120	2	17	356	143	253	103	4
*18	0807	2	12	302	127	273	115	3
19	0808	2	6	176	64	221	83	4
22	0845	1	5	54	32	38	23	2
23	0750	1	6	102	64	89	56	2
25	0900	1	5	159	57	81	29	2
26	1015	1	16	239	96	129	52	3
27	1205	2	48	906	271	566	173	4
29	1125	4	37	447	61	358	77	3
30	0836	4	25	477	59	507	43	3
31	0755	2	6	149	32	85	18	2
Mean Value:				172	55	129	40	

* Area of group 4296 is missing in the total value.

Heliographic position, classification and area of sunspot-groups

by M. Torelli

N	Date	U.T.	φ	λ	ω	ρ	A_d	A'_d	A_H	A'_H	n	T	Q
4283	September 27	0807	21	224	97	94	72	35	135	51	5	C	4
	September 29	0837	21	224	96	70	175	80	122	56			
			20	218	96	74	191	86	142	54			
			20	213	98	78	318	127	254	92			
							684	293	518	202	18	E	5
	September 30	0900	21	224	85	54	184	95	110	57			
			20	218	91	58	573	225	351	137			
			20	213	92	65	445	159	293	105			
							1202	479	754	299	28	E	4
	October 1	0800	21	224	71	36	127	38	68	20			
			20	218	81	40	620	143	339	78			
			20	213	87	48	255	89	145	51			
							1002	270	552	149	24	E	4
	October 2	0737	21	224	31	24	111	64	57	33			
			20	218	50	27	636	318	331	165			
			20	213	69	31	207	64	109	33			
							954	446	497	231	32	E	3
	October 4	0725	21	224	330	49	64	41	36	24			
			20	218	336	37	525	191	282	103			
			20	213	345	31	64	16	33	7			
							653	248	351	135	18	E	4
	October 5	1139	21	224	322	70	80	51	56	36			
			20	218	325	58	302	143	185	88			
			20	213	324	50	16	0	9	0			
							398	194	250	124	15	E	5
	October 6	0942	21	224	320	82	64	16	55	14			
			20	218	322	74	143	80	106	59			
							207	96	161	73	6	E	2
	October 7	0725	21	224	317	91	80	38	96	46			
			20	218	318	85	102	70	97	66			
							182	108	193	112	4	—	2
	October 8	0840	20	221	317	97	—	—	—	—	1	—	2
4284	September 29	0837	—	—	—	—	—	—	—	—	1	A	5
4285	October 4	0725	−18	238	258	69	127	67	88	46			
			−19	229	253	61	238	86	151	54			
							365	153	239	100	5	G	4
	October 5	1139	−18	238	268	87	191	80	193	81			
			−19	229	266	79	286	111	234	91			
							477	191	427	172	8	E	5
	October 6	0942	−18	238	274	94	127	38	186	56			
			−19	229	272	89	111	48	122	52			
							238	86	308	108	5	—	2
	October 7	0725	−18	238	276	98	—	—	—	—			
			−19	229	274	95	—	—	—	—	2	—	2
4286	October 4	0725	−30	173	172	74	35	22	26	17			
			−32	170	171	77	22	10	17	5			
							57	32	43	22	3	C	4
	October 5	1139	−32	170	186	70	19	0	13	0	1	J	5

Longitudinal sunspot magnetic fields

by A. Cacciani and V. Croce