BSO Comparative summary of 2015

1. Belgian Solar Observers	2015	2014	2013	2012	2011	2010	2009	2008
Number of observations	3911	4012	4035	4231	4601	4324	5325	5102
Number of observers	28	26	27	28	30	33	34	35
Number of observing days	342	337	340	341	347	341	340	359
k- factor	0,942	0,751	0,771	0,755	0,768	0,713	0,681	0,721
Correlation (%)	86,1	96,7	97,1	97,7	94,5	99,9	95,6	94,3
2. The Wolfnumber or sunspotnumber								
Mean Wolfnumber	62,4	105,8	83,6	76,7	75,5	23,5	4,7	3,8
Highest Wolfnumber	162	203	170,7	157,8	181,8	69	48,6	63
Lowest Wolfnumber	11	4,41	12,3	11	0	0	0	0
Mean Wolfnumber north	34,9	36,2	35,8	39,9	52,2	15,2	3,2	1,3
Mean Wolfnumber south	27,6	69,7	47,8	36,8	23,3	8,3	1,5	2,5
Number of spotless days	0	0	0	0	1	37	230	255
3. The groupnumber								
Mean Groupnumber	4,34	6,94	5,79	5,32	5,01	1,88	0,39	0,36
Mean Groupnumber north	2,43	2,5	2,42	2,78	3,41	1,22	0,26	0,12
Mean Groupnumber south	1,91	4,44	3,37	2,54	1,6	0,67	0,13	0,24
Total number of groups	221	310	293	252	247	101	30	30
Number of groups North	112	193	123	134	156	64	18	10
Number of groups South	109	117	170	118	91	37	12	20
4. The Becknumber								
Mean Becknumber	470,8	881,3	601,9	593	565	138,1	22,2	15,2
Highest Becknumber	2111	2714	2259	2278	3683	1050	421	502
Lowest Becknumber	16	2,7	15	6	0	0	0	0
Number of observations	2121	2205	2297	2537	2646	2648	3021	2431
Number of observing days	339	329	334	336	341	345	340	352
5. Classification Value								
Mean CV	54,2	98,5	78,6	73,2	67,5	21,3	2,65	2,25
Highest value	186	287	175,3	223,8	194,4	78	53	85
Lowest value	3	0,9	2,7	1,5	0	0	0	0
Number of observations	1424	1518	1624	1596	1628	1746	2165	1754
Number of observing days	335	322	321	332	321	325	339	351
5. Pettis index SN								
Mean SN	62,4	110,9	85,25					
Highest value	214,5	357	228					
Lowest value	7,3	0,5	3,5					
Number of observations	824	890	931					
Number of observing days	322	313	310					
5. Intersol index IS								
Gem. IS	28	48,6	36,1					
Highest value	103	136,3	89,7					
Lowest value	1,0	0,5	4					
Number of observations	531	516	585					
Number of observing days	298	296	291					

Observers Wolfnumber

	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Bourgeois J.	9	13	22	24	23	24	19	24	21	11	11	12	213
2	Carels J.	12	12	16	20	20	24	20	21	21	12	11	12	201
3	Claes J.	7	6	12	10	6	10	4					12	67
4	Claeys L.	13	18	23	26	31	26	22	21	21	18	14	18	251
5	Coeckelberghs H.	4	3	3	3	3	5	4	5	3	3	4	4	44
6	De Backer H.	21	24	25	29	30	29	29	29	30	23	22	24	315
7	De Ceuninck E.	14	16	16	21	22	21	15	21	17	13	13	11	200
8	De Laet R.		6	8	11	5	6	4	8					48
9	Demeulenaere I.								13	17	12	12	15	69
10	De Wit J.	12	18	22	26	29	29	25	25	27	17	16	18	264
11	Dezeure R.	14	16	21	24	23	27	21	22	23	16	12	15	234
12	Dubois F.	17	21	24	27	27	24	27	27	28	21	17	22	282
13	Feys F.	9			4	4	7							24
14	Gubbels G.	4	1	1	1	2			6	19	7	7		48
15	Janssens J.	3	4	3	5	8	8	7	14	8	3	3	3	69
16	K S B	16	20	23	24	28	27	25	27	25	16	17	19	267
17	Meeus L.	3	6	11	7	3	4			6	8	2	2	52
18	Neven E.	7	6	13	8	6	8	4	2					54
19	Neys J.						7	14	12	11	5	4	6	59
20	Publ obs Mira		1				5	3	6	3	4	1	2	25
21	Son A.T.	7	7	11	18	10	9	15	17	8	13	6	6	127
22	Steen O.	22	21	27	29	30	30	28	26	28	22	18	24	305
23	Taillieu B.	9	12	17	24	24	26	25	16	22	13	6	7	201
24	Thooris B.	7	16	23	9	4	19	5	25	23	14	13	16	174
25	Van Loo F.			7	13	14	7	10	5	9			2	67
26	Van Hessche D.	7	8	10	12	16	18	16	17	7	5	7	11	134
27	Verbanck G.		2	4	11	14	14	11	15	9	5	7	7	99
28	Verboven R.	6	9										3	18
	# Waarnemingen	223	266	342	386	382	414	353	404	386	261	223	271	3911
	# Waarnemingsdagen	29	26	29	29	31	30	30	30	30	29	24	25	342
	# Waarnemers	22	24	23	24	24	25	23	24	23	22	22	24	

Observers Becknumber Re

	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Bourgeois J.	9	13	22	24	23	24	19	24	21	11	11	12	213
2	Carels J.	12	12	16	20	20	24	20	21	21	12	11	12	201
3	Coeckelberghs H.	4	3	3	3	3	5	4	5	3	3	4	4	44
4	De Backer H.	21	24	25	29	30	29	29	29	30	23	22	24	315
5	De Ceuninck E.	14	16	16	21	22	21	15	21	17	13	13	11	200
6	Dubois F.	17	21	24	27	27	24	27	27	28	21	17	22	282
7	Feys F.	9			4	4	7							24
8	Gubbels G.	4	1	1	1	2			6	19	7	7		48
9	Meeus L.	3	6	11	7	3	4			6	8	2	2	52
10	Neys J.						7	14	12	11	5	4	6	59
11	Son A.T.	7	7	11	18	10	9	15	17	8	13	6	6	127
12	Steen O.	22	21	27	29	30	30	28	26	28	22	18	24	305
13	Van Hessche D.	7	8	10	12	16	18	16	17	7	5	7	11	134
14	Verbanck G.		2	4	11	14	14	11	15	9	5	7	7	99
15	Verboven R.	6	9										3	18
	# Waarnemingen	135	143	170	206	204	216	198	220	208	148	129	144	**2121**
	# Waarnemingsdagen	28	26	28	29	31	30	30	30	30	28	24	25	**339**
	# Waarnemers	13	13	12	13	13	13	11	12	13	13	13	13	

Observers CV

	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Carels J.	12	12	16	20	20	24	20	21	21	12	11	12	201
2	De Backer H.	21	24	25	29	30	29	29	29	30	23	22	24	315
3	Dubois F.	17	21	24	27	27	24	27	27	28	21	17	22	282
4	Gubbels G.	4	1	1	1	2			6	19	7	7		48
5	Janssens J.	3	4	3	5	8	8	7	14	8	3	3	3	69
6	Meeus L.	3	6	11	7	3	4			6	8	2	2	52
7	Steen O.	22	21	27	29	30	30	28	26	28	22	18	24	305
8	Van Hessche D.	7	8	10	12	16	18	16	17	7	5	7	11	134
9	Verboven R.	6	9										3	18
	# Waarnemingen	95	106	117	130	136	137	127	140	147	101	87	101	**1424**
	# Waarnemingsdagen	27	26	27	29	30	30	30	30	30	28	24	24	**335**
	# Waarnemers	9	9	8	8	8	7	6	7	8	8	8	8	

Pettisindex

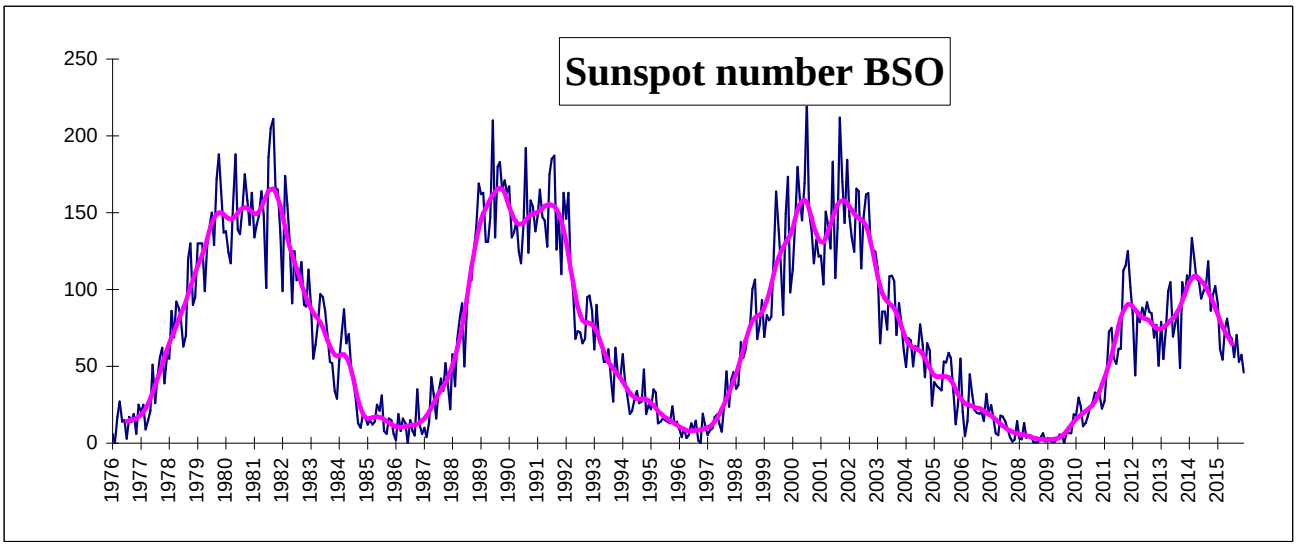
	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Carels J.	12	12	16	20	20	24	20	21	21	12	11	12	201
2	Dubois F.	17	21	24	27	27	24	27	27	28	21	17	22	282
3	Gubbels G.	4	1	1	1	2			6	19	7	7		48
4	Steen O.	22	21	27	29	30	30	28	26	28	22	18	24	305
5	Verboven R.	6	9										3	18
	# Waarnemingen	55	55	68	77	79	78	75	80	96	62	53	58	**854**
	# Waarnemingsdagen	26	24	27	29	30	30	28	29	30	25	20	24	**322**
	# Waarnemers	5	5	4	4	4	3	3	4	4	4	4	4	

Intersol

	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Carels J.	12	12	16	20	20	24	20	21	21	12	11	12	201
2	Dubois F.	17	21	24	27	27	24	27	27	28	21	17	22	282
3	Gubbels G.	4	1	1	1	2			6	19	7	7		48
	# Waarnemingen	33	34	41	48	49	48	47	54	68	40	35	34	**531**
	# Waarnemingsdagen	21	22	25	27	27	27	27	28	30	23	19	22	**298**
	# Waarnemers	3	3	3	3	3	2	2	3	3	3	3	2	

N: Groups North
S: Groups South
N+S: north and south
S: Wolfnumber south
N: Wolfnumber North
RE': Beckgetal
CV: Classification Value
SN; Pettis Index
IS: Intersol Value

2015	N	S	N+S	N	S	N+S	RE'	CV	SN	IS	OBS
1	2,92	1,38	4,31	41,4	19,6	61,0	401,0	45,7	57,1	28,6	266
2	2,92	1,38	4,31	41,4	19,6	61,0	401,0	45,7	57,1	28,6	266
3	2,07	2,24	4,31	22,8	31,6	54,3	345,1	50,9	46,7	22,6	342
4	3,17	2,38	5,55	43,3	30,4	73,8	504,4	70,7	72,9	33,6	386
5	2,32	3,32	5,65	38,6	42,5	81,1	723,5	61,5	86,0	37,9	382
6	2,73	1,67	4,40	45,4	24,3	69,7	636,0	65,7	76,0	35,5	397
7	2,37	2,47	4,83	35,5	32,5	68,0	400,8	58,5	60,4	26,2	354
8	1,93	1,50	3,43	21,8	34,3	56,1	558,6	46,8	59,1	28,7	404
9	2,20	2,30	4,50	32,7	37,7	70,4	537,0	63,5	73,0	33,0	386
10	1,62	2,10	3,72	26,0	26,9	52,9	366,8	47,5	45,2	19,6	260
11	3,38	0,58	3,96	50,6	7,0	57,6	477,0	47,8	70,0	26,9	223
12	1,46	1,62	3,08	18,8	24,4	43,1	298,5	46,1	45,9	14,4	271
	2,43	1,91	4,34	34,9	27,6	62,4	470,8	54,2	62,4	28,0	3911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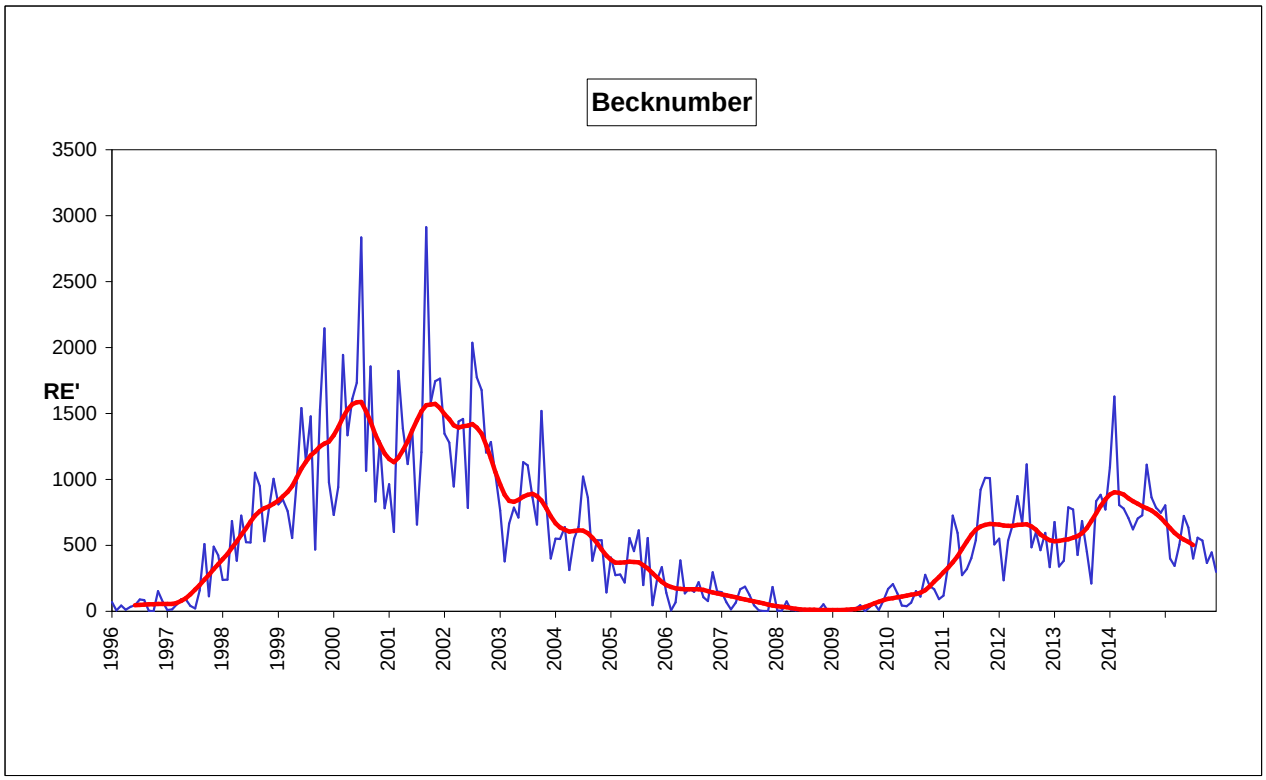
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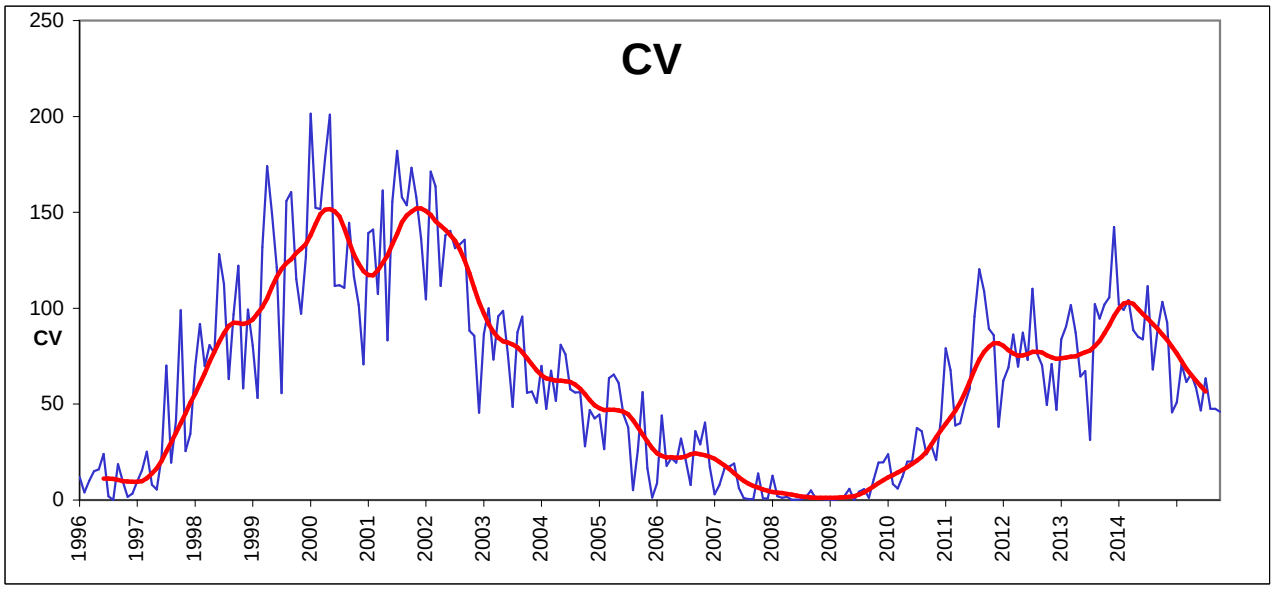
2013
2014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2001
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2007
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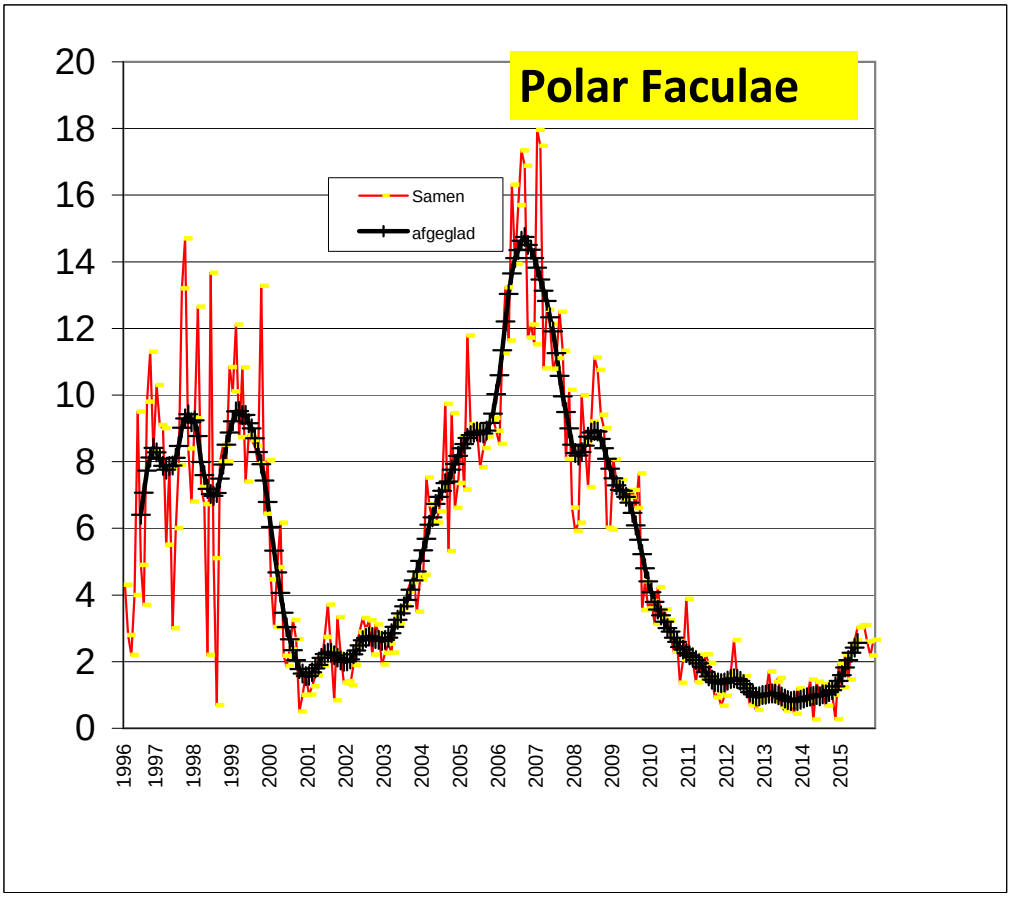
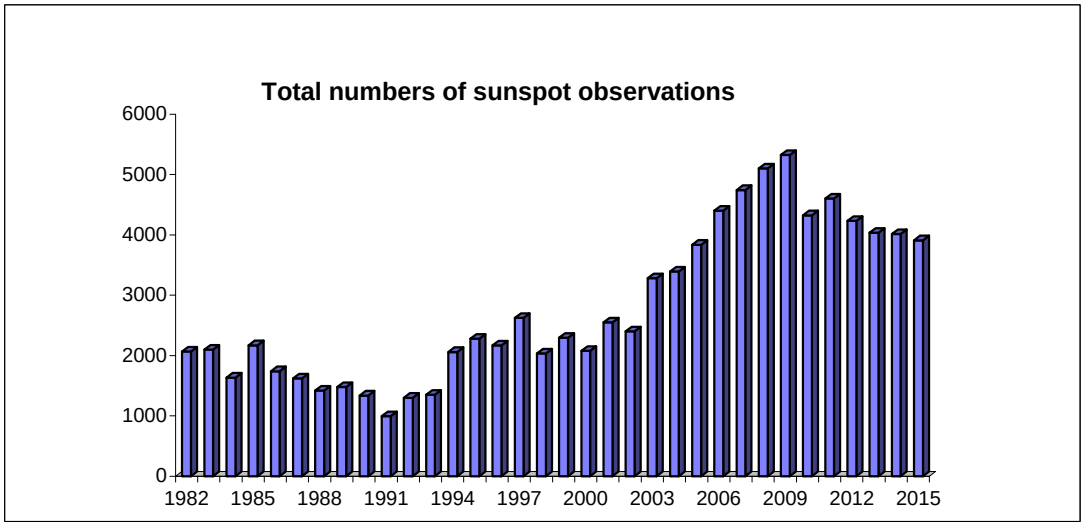
2009
2010
2011
2012
2013
2014

Total of polar faculae observations in 2015

	Waarnemers 2015	jan	febr	mrt	april	mei	june	july	aug	sept	okt	nov	dec	totaal
1	Dubois F.	4	7	6	12	6	9	8	14	13	4	5	2	90
2	Steen O.	6	10	12	16	12	16	14	17	11	8	6	4	132
3	Spaninks T.	0	5	13	11	15	9	0	5	10	6	1	1	76
4	Gubbels G.	4	1	1	1	2	0	0	6	17	7	7	0	46
5	Carels J.	2	3	1	1	4	10	2	7	7	0	1	0	38
6	Janssens J.	3	4	3	6	8	8	6	14	8	2	3	3	68





Top 20 Largest groups in 2015

N.O.A.A.	ZICHTBAAR		N.O.A.A.		MAX	MAX			classificatie					
Regio	van	tot	breedte	lengte	AREA	LENGTE			Macintosh					
12403	18-08-15	30-08-15	S15	193	1190	18	CSO	DKC	EKC	FKC	DAO			
12371	16-06-15	28-06-15	N13	302	1180	17	DSO	EKC	FKC	EKC	CAO			
12422	22-09-15	03-10-15	S20	102	0950	18	BXO	DAO	DAI	EKO	EKC	FKC	DKO	
12339	05-05-15	18-05-15	N12	129	0900	22	EKC	FKC	DSO	HSX				
12396	03-08-15	14-08-15	S17	38	0840	14	HAX	DAI	DKC	EKC	EAC	CAO		
12443	29-10-15	10-11-15	N06	314	0650	18	EHC	EKC	FKC	FHC	FSC	ESO	CSO	HSX
12321	11-04-15	23-04-15	N12	93	0620	14	EAC	EKC	EAC	EAI	CSO	HSX		
12470	12-12-15	25-12-15	N15	80	0610	15	HSX	DKC	DKI	EKO	EHO	CHO	HHX	
12473	21-12-15	02-01-16	S22	332	0590	16	CSO	DAC	EKC	FKC	FHC	EAC	CAO	ESO
12381	04-07-15	15-07-15	N15	74	0550	16	CRO	DAO	EKC	EKO	FKO	ESO		
12268	22-01-15	03-02-15	S10	48	0510	18	DAO	EKC	EKI	FKC	FHC	FKI	FAI	
12277	28-01-15	10-01-15	N09	331	0510	28	HAX	FHC	FKC	FKO	FKI	CSO	HSX	
12257	06-01-15	14-01-15	N07	320	0480	11	DAO	DAI	DKI	EKC	EAC	DAO		
12305	21-03-15	02-04-15	S09	7	0470	15	DAO	EAC	EKC	CKI	DHO	CHO	HSX	
12324	14-04-15	25-04-15	N19	60	0430	11	DKI	DKO	DKC	DKO	CKI	CAI	HSX	AXX
12297	05-03-15	19-03-15	S17	197	0420	16	HRX	DSI	DHC	DKC	EKC	FKC	CKO	
12303	17-03-15	29-03-15	N20	67	0400	08	HKX	DAX	HSX	CAO	DAO			
12367	10-06-15	23-06-15	S20	2	0400	14	DRO	EKI	EKC	EHC	EKI	DAC	EAC	
12259	08-01-15	20-01-15	S16	241	0360	13	EAO	EKO	EKC	DAC	DAI	DAO	CSO	HSX
12335	30-04-15	12-05-15	S16	193	0310	13	HSX	DAO	DAI	DAC	EKC	EAI	CEO	BXO

Top 50 largest groups in solarcycle 24

N.O.A.A.	ZICHTBAAR		N.O.A.A.		MAX	MAX			classificatie					
Regio	van	tot	breedte	lengte	AREA	LENGTE			Macintosh					
12192	17-10-14	30-10-14	S13	248	2750	22	DKI	FKC	DKC					
11967	27-01-14	09-02-14	S13	114	1580	22	DSO	EKI	FKC	EKC				
11944	01-01-14	14-01-14	S09	100	1560	20	DKO	FKC	DAC					
11339	01-11-11	14-11-11	N19	103	1540	17	DAO	DKC	FKC	DAC	DAI			
11520	07-07-12	18-07-12	S16	84	1460	25	FHC	FKC	EKO					
11302	22-09-11	04-10-11	N13	280	1300	18	EKI	EFC	FKC	FKO	DSO			
11429	03-03-12	15-03-12	N18	301	1270	13	DKC	EKC	EKI	DSO				
12403	18-08-15	30-08-15	S15	193	1190	18	CSO	DKC	EKC	FKC	DAO			
12371	16-06-15	28-06-15	N13	302	1180	17	DSO	EKC	FKC	EKC	CAO			
11654	08-01-13	20-01-13	N08	152	1100	22	HHX	EKI	FKI	FKC	FKO			
12209	12-11-14	26-11-14	S15	248	1100	27	HSX	FKC	FKO	FKI	HKX			
12242	14-12-14	23-12-14	S18	237	1080	16	DAC	DKC	EKC	DKC				
11476	05-05-12	17-05-12	N11	182	1050	21	DKO	FHI	FKC	FKI	FKO	FHO	CAO	
11726	19-04-13	26-04-13	N13	322	1000	17	DRO	EAI	EKC	FKC	EKC			
11974	05-02-14	01-02-14	S13	354	0990	17	HSX	DSO	ESC	FSI	FKC	EKC		
11890	02-11-13	15-11-13	S11	170	0950	14	HSX	EHC	EKC	EHC	EAO	AXX		
12422	22-09-15	03-10-15	S20	102	0950	18	BXO	DAO	DAI	EKO	EKC	FKC	DKO	
11515	27-06-12	09-07-12	S17	205	0900	16	CSO	DKC	EKC	EAC	FKC	FHC	FKI	DAO
12253	30-12-14	10-01-15	S07	3	0900	17	DAI	EAC	EKC	FKC	FAC	ESI	CSO	AXX
12339	05-05-15	18-05-15	N12	129	0900	22	EKC	FKC	DSO	HSX				
12108	01-07-14	13-07-14	S08	239	0890	13	DAO	DAI	DKI	EKC	EAI			
12085	06-06-14	14-06-14	S20	255	0840	16	DRI	DAI	EKC	FKI	EAI			
12396	03-08-15	14-08-15	S17	38	0840	14	HAX	DAI	DKC	EKC	EAC	CAO		
12109	02-07-14	14-07-14	S08	218	0830	13	HSX	DKC	EKI	DKC	DHC	DHO	HSX	
11875	17-10-13	29-10-13	N08	27	0790	16	CAO	DAO	EAI	EKC				
11164	25-02-11	09-03-11	N24	164	0770	15	HKX	DAO	ESO	EHC	EKC	DAI		
12222	26-11-14	08-12-14	S20	84	0770	14	HRX	DAI	EKC	EKI	EKC	CKO	HKX	
11166	02-03-11	15-03-11	N10	93	0750	16	HRX	DSO	EAC	EKI	EKC	FKC	EKC	DAI
11504	09-06-12	21-06-12	S17	86	0750	12	CAO	DAI	EKI	EKC	EHO	DHO	DSO	
11968	27-01-14	09-02-14	N10	112	0740	15	DSO	EAO	EAI	EKC				
11263	28-07-11	10-08-11	N16	301	0720	14	DHO	DHI	DKI	EKC	EHC	ESO		
11785	01-07-13	13-07-13	S12	8	0720	16	HAX	FHO	FKC	EKC	EAI	ESO	CAO	
12216	20-11-14	02-12-14	S14	164	0720	10	DKO	DKC	DKI	DAO	HSX			
12241	13-12-14	25-12-14	S10	217	0720	13	DAC	EAC	EKC	EHC	EHI	CKO	HSX	
12443	29-10-15	10-11-15	N06	314	0650	18	EHC	EKC	FKC	FHC	FSC	ESO	CSO	HSX
11402	14-01-12	27-01-12	N29	211	0630	11	HSX	DHO	CKO	EKO	DKO	DHI	DAI	CSO
11899	12-11-13	24-11-13	N05	39	0630	10	HHX	DKI	DKO	CKO	DKO	HHX		
11158	11-02-11	20-02-11	S19	34	0620	13	DSI	EAC	EKC	EHC	DKC	DSI		
11363	29-11-11	11-12-11	S22	108	0620	11	HSX	DSO	DSI	EHI	DHO	HHX		
12321	11-04-15	23-04-15	N12	93	0620	14	EAC	EKC	EAC	EAI	CSO	HSX		
11897	11-11-13	22-11-13	S20	66	0610	19	DAI	EKC	FKC	FAC	FAI	FSO	CSO	CRO
12470	12-12-15	25-12-15	N15	80	0610	15	HSX	DKC	DKI	EKO	EHO	CHO	HHX	
11745	10-05-13	23-05-13	N14	334	0600	13	HRX	DKI	EKC	CKI	DAO	CAO	AXX	
12473	21-12-15	02-01-16	S22	332	0590	16	CSO	DAC	EKC	FKC	FHC	EAC	CAO	ESO
11711	30-03-13	12-04-13	S18	158	0580	12	CAI	CKI	DKO	CKO	DHO	HHX	CKO	HAX
11982	17-02-14	01-03-14	S10	207	0570	15	DAI	DKI	DKC	EKC	ESC	EAC	CAO	
12172	20-09-14	03-10-14	S11	242	0570	17	EKC	FKC	FHC	FAO	ESO	AXX		
11330	22-10-11	03-11-11	N06	249	0560	16	DSO	EAO	EHO	FHO	EHI	EKO	DKO	DSO
11393	05-01-12	11-01-12	N16	54	0560	13	DAO	CRO	DAO	DKI	EKI	EKO		
11734	29-04-13	11-05-13	S18	127	0560	12	DSO	DKO	EKO	EKI	DKO	HKX		