Monthly Preliminary Report

MPR

Kjell Inge Malde, Director/Editor
Hunsteinstien 42A, N-4083 Hundvaag NORWAY
Web: http://www.cv-helios.net
Email: cvhelios@gmail.com

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CV-Helios Network

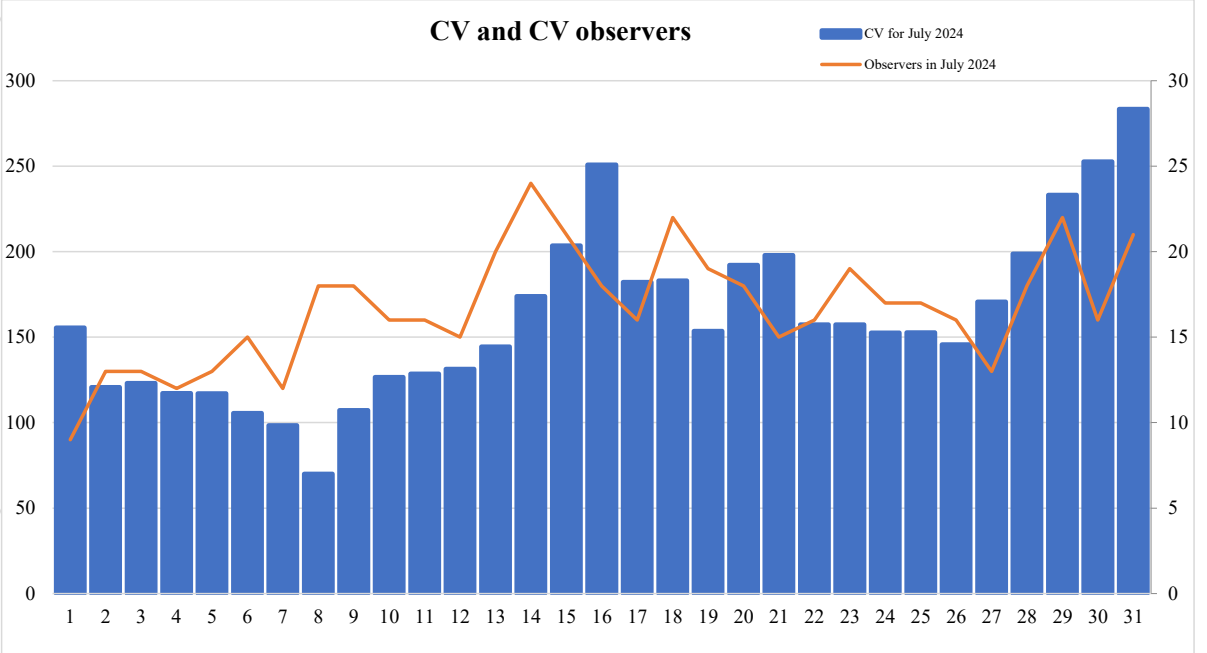
Monthly Preliminary Report for July 2024
Solar Cycle 25: Month no. 56
Report id.: cv2407 - CV-report no.: 516

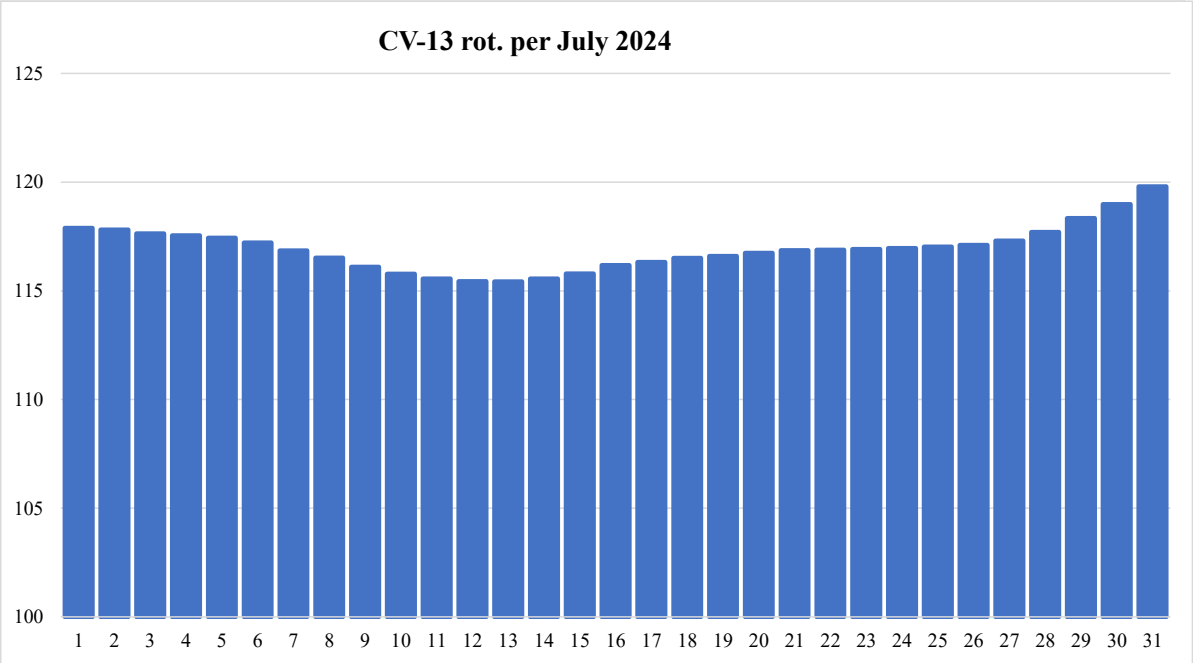
Memno.	Name	Country	CV	Obs	K	Obs. Tot.
CV-001	KJELL INGE MALDE	NORWAY	144,8	22	0,935	9488
CV-010	FRANKY DUBOIS	BELGIUM	157,1	18	0,892	9872
CV-019	ELMAR JUNKER	GERMANY	260,8	8	1,418	3904
CV-023	HARTMUT BRETSCHNEIDER	GERMANY	128,2	24	0,766	6091
CV-040	ROBERTO BATTAIOLA	ITALY	185,8	4	1,106	2177
CV-041	JENS ROTHERMEL	GERMANY	238,5	6	1,379	1485
CV-044	GERD SCHROEDER	GERMANY	143,7	28	0,919	4684
CV-068	SVEN OVE THIMM	DENMARK	106,8	20	0,621	4416
CV-077	ANDREW JOHNSTON	UNITED KINGDOM	137,5	20	0,854	3820
CV-080	JAN JANSSENS	BELGIUM	111,5	2	0,917	1242
CV-082	PIOTR URBANSKI	POLAND	128,0	26	0,870	5722
CV-086	TOS POLAND	POLAND	155,9	31	0,975	8966
CV-091	GRZEGORZ DALEK	POLAND	163,1	29	1,002	4922
CV-102	PAULO ROBERTO MOSER	BRAZIL	132,1	26	0,820	3340
CV-105	ALEXEY RYBACK	RUSSIA	146,2	16	0,964	3617
CV-122	VLASTISLAV FEIK	CZECH REPUBLIC	172,5	11	1,076	3279
CV-135	GEMA ARAUJO	SPAIN	207,9	24	1,226	7788
CV-136	FAUSTINO GARCIA	SPAIN	139,4	18	0,777	4094
CV-151	JEFFREY CARELS	BELGIUM	145,2	5	0,962	3356
CV-171	WALTER JOSE MALUF	BRAZIL	331,2	22	1,983	3216
CV-181	ADAM DERDZIKOWSKI	POLAND	166,6	21	1,010	1294
CV-198	DENIS WALLIAN	FRANCE	236,0	8	1,176	651
CV-204	STEFAN MEISTER	SWITZERLAND	159,7	6	1,067	851
CV-205	TOM MANGELSDORF	UNITED STATES	60,5	2	0,402	59
CV-207	ONDREJOV OBS. (AI CAS)	CZECH REPUBLIC	196,7	29	1,205	4010
CV-208	JOHAN NEYS	BELGIUM	214,5	13	1,097	837
CV-209	CAIO CRESPO MORAES	BRAZIL	163,5	2	0,741	595
CV-214	IGOR GRAGEDA MENDEZ	BOLIVIA	166,0	30	1,038	1538
CV-215	ARNAUD MENGUS	FRANCE	215,2	5	1,146	399
CV-219	KANDILLI OBSERVATORY	TURKEY	153,3	30	0,942	1186
CV-220	MICHEL FRANGEUL	FRANCE	142,7	12	0,807	277
CV-222	MILENA NIEMCZYK	POLAND	127,6	17	0,781	177

Totals	Observers	Days	CV	No	K
	32	**31**	**166,82**	**535**	**0,996**

Month Results for July 2024

Date	CV	Obsrvrs	Regions 6 rot.	CV-USAF 6-rot.	CV-6 rot.	CV-13 rot.
1	155,56	9	7,98	124,52	125,03	117,89
2	120,64	13	7,99	124,55	125,08	117,81
3	123,08	13	8,01	124,46	125,01	117,64
4	117,15	12	8,00	124,35	124,88	117,55
5	117,00	13	8,01	124,65	124,85	117,43
6	105,50	15	8,02	124,87	124,80	117,21
7	98,33	12	8,04	124,96	124,81	116,86
8	70,06	18	8,04	124,73	124,64	116,51
9	107,22	18	8,07	124,84	124,92	116,10
10	126,65	16	8,09	125,21	125,34	115,78
11	128,59	16	8,13	125,83	125,78	115,55
12	131,40	15	8,15	126,29	126,30	115,43
13	144,43	20	8,19	126,87	126,65	115,43
14	173,92	24	8,21	127,50	127,38	115,55
15	203,57	21	8,24	128,05	128,09	115,79
16	250,84	18	8,28	128,75	128,98	116,18
17	182,24	16	8,34	129,07	129,21	116,32
18	183,04	22	8,38	129,29	129,61	116,51
19	153,50	19	8,43	129,49	129,79	116,60
20	192,11	18	8,45	129,60	130,22	116,74
21	197,88	15	8,46	130,07	130,65	116,86
22	157,38	16	8,48	130,49	130,93	116,88
23	157,40	19	8,49	130,88	131,24	116,91
24	152,59	17	8,51	130,76	131,35	116,96
25	152,71	17	8,53	130,58	131,40	117,03
26	145,71	16	8,56	130,58	131,39	117,11
27	170,64	13	8,58	130,65	131,53	117,31
28	198,83	18	8,58	131,35	131,87	117,70
29	233,13	22	8,60	132,15	132,94	118,34
30	252,65	16	8,63	133,30	133,96	118,98
31	283,43	21	8,67	134,79	135,42	119,80
Totals/ Avrgs	**160,88**	**16,7**	**8,29**	**128,18**	**128,52**	**116,93**





:Product: Weekly Highlights and Forecasts

Highlights of Solar and Geomagnetic Activity
05 - 11 August 2024

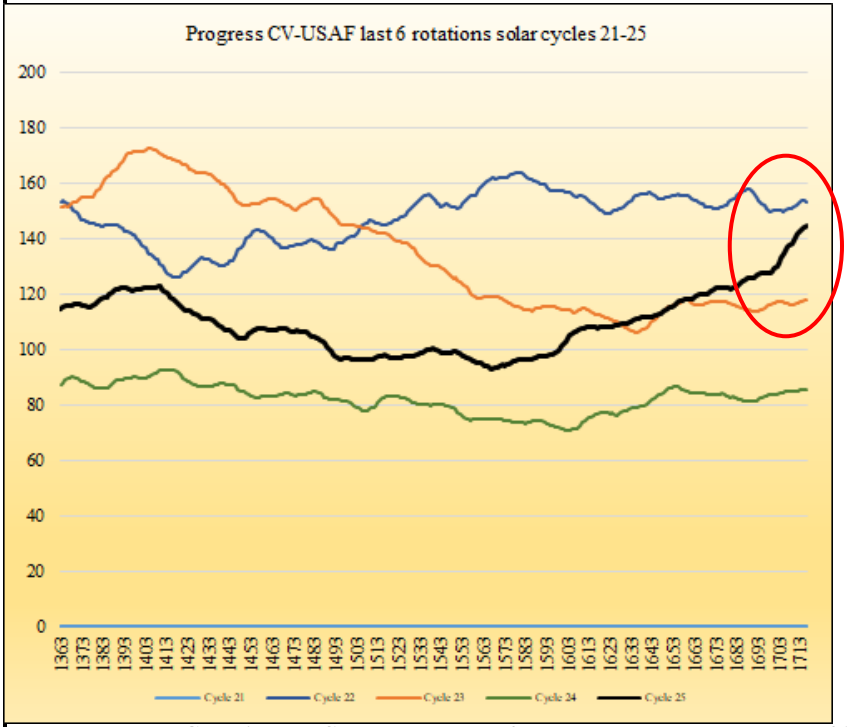
Solar activity was ranged from moderate to high levels. 34 events, which ranged from R1-R3 (Minor-Strong), were observed during the week. Region 3767 (S10, L=318, class/area=Dso/beta on 27 Jul) produced the strongest flare of the period, an X1.7/Sf at 05/1340 UTC. Two other regions produced X-class activity with an X1.1/2b at 05/1527 UTC from Region 3780 (S12, L=173, class/area=Fkc/1280 on 09 Aug) and an X1.3/2b flare at 08/1935 UTC from Region 3777 (S09, L=209, class/area=Ekc/460 on 09 Aug).

CME activity observed over 07-08 Aug from multiple sources were analyzed and considered likely to be Earth-directed with a transit time of 3-4 days. An additional CME associated with an M5 (R2-Moderate) flare at 10/0237 UTC produced a faint halo signature first observed in SOHO/LASCO C2 imagery at 10/0312 UTC. Analysis and modeling suggested arrival on 12 Aug.

Solar activity is expected to reach moderate (R2-Moderate) conditions, with a chance for R3-Strong events, over 12-18 Aug due to multiple complex regions on the visible disk. R1 (Minor) conditions remain likely on most days through the end of the outlook period due to the anticipated return of multiple complex regions from the Sun's farside.

Click on link below
to read the full weekly
http://services.swpc.noaa.gov/text/weekly.txt

Progress Solar Cycle no. 25



The left graphic show the progress last 13 rotations for CV 6 rotations averages.

By the issue of this MPR we are now 26,7 CV-units over solar cycle 23 (!) (orange), and only about 9 CV-units to reach cycle 22 (blue) at the same stage. We are excited whether this solar cycle 25 (thick black) at some point may supersede solar cycle 23 at maximum.
The three competing cycles are in the red circle.

Solar cycle 24, however, is now definately much lower at the same stage of progress.

Further updates in the following issues of MPR.

Graphic show CV-Int. levels cycle 25 compared to same stage cycles 21-24 per 14Aug 2024.

Highlights July 2024

The solar activity in July 2024 was a highly active month with large regions.
Regions worth mentioning are 3733, 3738, 3751, 3761, 3762, 3765 and 3770.
On the 14th July region 3738 reached 1140 mvh and then became SuperSunspotregion no. 863 since 1874.
In August another one came! On the 9th August region 3780 reached 1280 mvh and became SSG-number 864.
The total list of SSG can be found at https://www.cv-helios.net/specialreports/regionlisting-SSG.txt
Daily updates of regions: Hit https://www.cv-helios.net/cvmisc3.html for daily updates!
The 6 rot. average for solar cycle 25 now supersedes cycle 23 by numbers,
and 13 rot. average is not far behind either.
A total of 1034 regions this cycle per end August 2024 (505 regions North and 529 regions South).
At the same time solar cycle 24 produced 774 regions .(344 north and 430 south)
Latest prediction indicate maximum is beginning of August 2025.
Norhtern hemisphere may even have had its maximum in November 2023!.
We see a fairly flat maximum where spring and summer 2025 may have max.-activity. Updates will come.

We reckon there have passed 1725 days of the new cycle by this issue by 15 August 2024.

MVH: Total 3260 mvh on 09.08.2024 highest since 03.11.2003: 20,8 years ago.
Regions, number of regions on 18.07.2024: 18, highest number since 09.05.2002: 22,2 years ago.
One member, CV-204 Stefan Meister, reported 21 regions on the 18th July!
CV-Int. 31.07.2024 highest since 28.09.2001: 22,8 years ago.
CV-USAF 19.04.2024 highest since 23.08.1991: 32,7 years ago
and the fourth highest CV-USAF in CV-HN history!
FLUX adj. solar flux: 30.07.2024 highest since 08.04.1947: 77,3 years ago,
3rd highest on record since start Flux measurements on 14.02.1947.

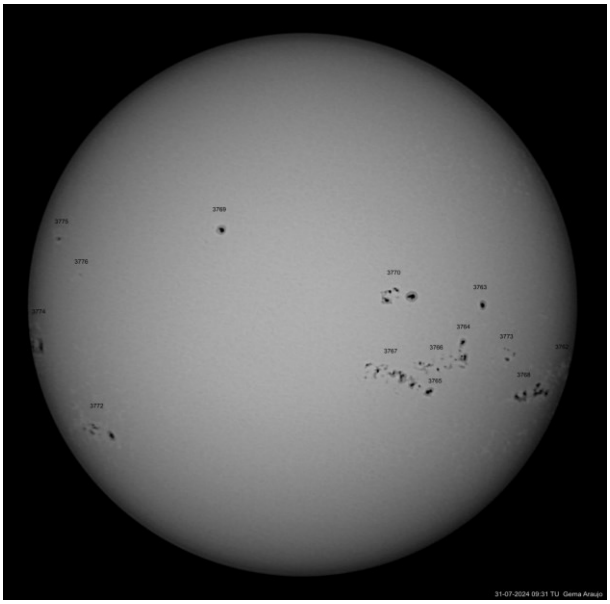
It seems that Maximum for the Northern hemisphere occurred 05 November 2023!
(Southern hemisphere Maximum expected 10 September 2025).

Co-worker/assistant at CV-Helios Network? Please contact CV-Helios Network if this is something for you!

Supergroups-catalogue:
CV-Helios Network is currently working on a catalogue with drawings or photos
of the, currently 863 sunspot regions that exceeded 1000 mvh
in the period of RGO-USAF tables, that is, from 1874 to the current year.
Drawings or photos will be collected from the archives of wellknown different observatories!
Hopefully this catalogue will be published in 2025! Stay tuned!

Pictures from last month - Observer contributions, etc.

Photo courtesy: Thanks to CV-135, Gema Araujo, Spain



Highlights July 2024

31st July 2024, record day:

The highest CV-I number in nearly 23 years!

On the 31st July CV-Helios Network had an average of 283,75 for that day, being the highest CV since 28 September 2001.

Here is a photo thankfully reproduced here from photographer CV-member CV-135 Gema Araujo, Spain.
Link to image:
http://www.astrosurf.com/obsolar/grupos/2024/310724sollb.jpg

The highest number of sunspot regions came on the 18th.
Member CV-204 Stefan Meister in Switzerland reported 21 regions that day!

All members are welcome to sending in their photos!

Awards this month 0

none

New members:

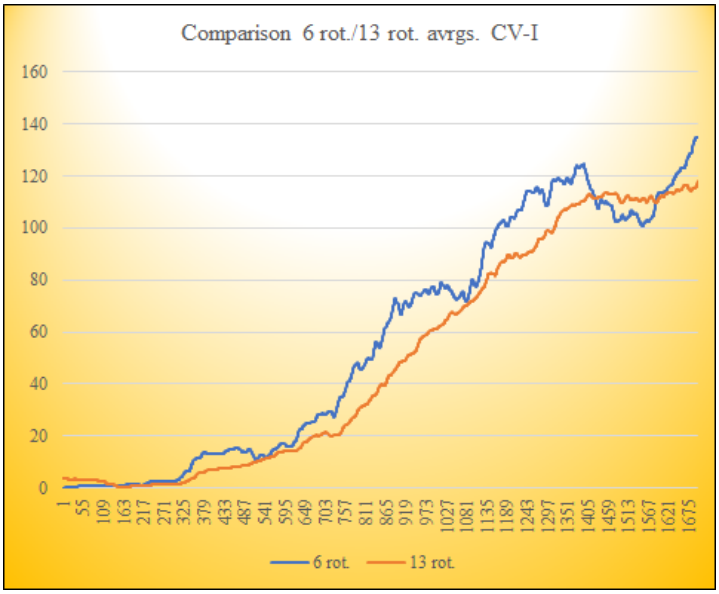
Welcome to:

We are now 51 active members (last 12 mo.)

Sunspot regions of July 2024

Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV	Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV
3732,28.06.24,6,-19,358,0,DAO,19	3752,14.07.24,7,22,94,0,HAX,7
3733,29.06.24,9,5,333,0,DKC,55	3753,15.07.24,5,12,170,0,DAI,22
3734,29.06.24,10,9,293,0,EAI,23	3754,15.07.24,7,24,78,0,EAO,20
3736,03.07.24,12,-19,240,0,DSO,25	3755,16.07.24,10,3,75,0,DAO,19
3737,04.07.24,2,-14,8,0,DSO,25	3756,16.07.24,13,-18,68,0,HSX,10
3738,05.07.24,12,-7,212,0,FKC,57	3757,16.07.24,12,17,60,0,HAX,7
3739,06.07.24,4,4,282,0,BXO,2	3758,17.07.24,3,-7,158,0,CSO,11
3740,06.07.24,6,-18,272,0,CRO,5	3759,17.07.24,7,-6,117,0,DAO,19
3741,07.07.24,4,9,192,0,AXX,1	3760,18.07.24,5,20,112,0,CRO,5
3742,09.07.24,9,-21,172,0,ESO,26	3761,19.07.24,8,-10,83,0,DKI,46
3743,09.07.24,11,-9,164,0,DAI,22	3762,20.07.24,12,-12,19,0,FKC,57
3744,09.07.24,13,16,149,0,DSO,25	3763,22.07.24,13,4,343,0,CSO,11
3745,10.07.24,12,-19,156,0,CAO,8	3764,22.07.24,13,-3,341,0,CSO,11
3746,11.07.24,1,23,223,0,BXO,2	3765,23.07.24,13,-11,330,0,DKC,55
3747,11.07.24,11,-25,154,0,HSX,10	3766,24.07.24,11,-7,332,0,EAI,23
3748,12.07.24,8,15,132,0,BXO,2	3767,25.07.24,11,-9,319,0,DSO,25
3749,13.07.24,6,-33,106,0,CSO,11	3770,28.07.24,8,7,328,0,DHO,49
3750,13.07.24,7,-20,108,0,CSO,11	3771,29.07.24,2,2,6,0,AXX,1
3751,13.07.24,13,-8,95,0,EKC,56	3773,30.07.24,3,-6,353,0,CRO,5

Progress of Solar Cycle 25 (6rot. & 13 rot. averages)



Progress for Solar Cycle 25

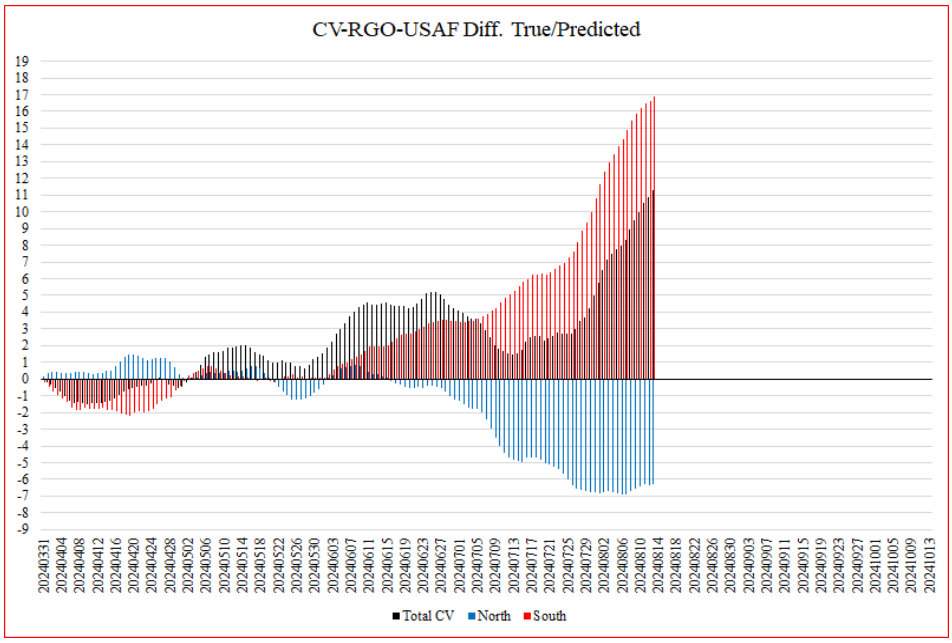
CV-I: 6-rotation averages compared: Status at the end of July 2024 but extended help from CV-USAF towards issue of MPR 516 indicates that we have for a long time had niveaus over solar cycle 24. Now, we are competing with solar cycle 23 from which we have distanced that cycle with about 28 CV-units and have just passed the levels of solar cycle 21 even! This leaves the current stage of solar cycle 25 on rank 2 only superseeded by solar cycle 22!

CV-I: 13-rotation averages compared: Now, for the 13 rotation averages situation is different. We are just a bit under average for solar cycles 21 to 23, but way above same stage in solar cycle 24. The reason for the gap between these two averages is mainly due to the sudden activity we experienced during July 2024.

Progress for Solar Cycle 25

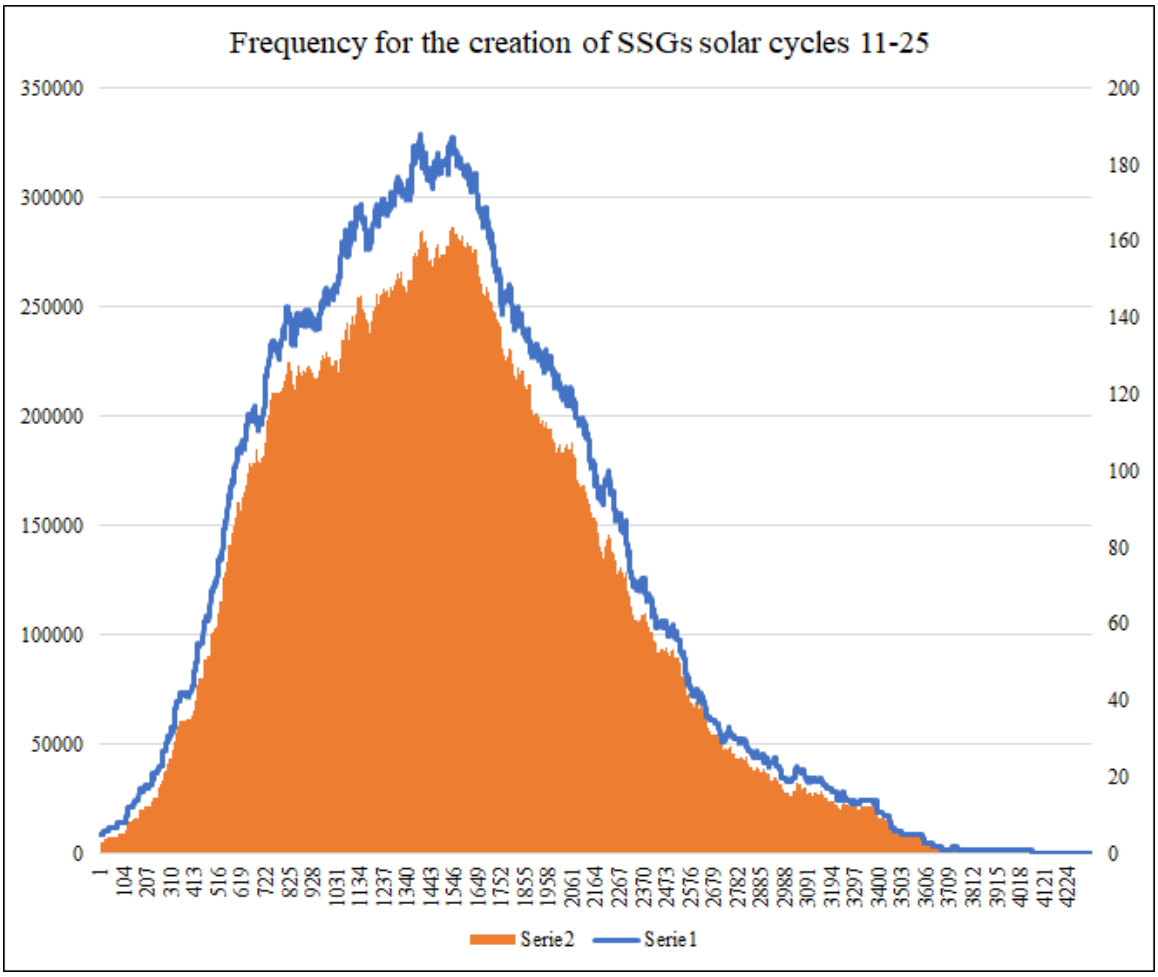
The predictions for solar cycle 25 towards maximum next year has in fact failed a lot, but one the positive side the evolution has been rather surprising, including lots of events, solar flares and storms, and early season auroras.
The below figure show that the northern hemisphere has developed to about 6 CV-units lower than predicted in March 2024, while the southern hemisphere has overgone expectations by about 16 CV-units. In total this is good news for a much stronger solar cycle than earlier expected!

The 6 rotation CV at same stage of solar cycle: Solar cycle 23: 117,20 Solar Cycle 25: 132,42
The 13 rotation CV at same stage of solar cycle: Solar cycle 23: 140,84 Solar Cycle 25: 117,81



The average frequency for the creation of "SuperSunspotGroups"

Below is a graphic illustration of Frequency for the creation of SSGs solar cycles 11-25



The frequency of SuperSunspotRegions
The y-axis is an accumulated mvh total over 13 rotations for cycle 11 to 25.
The x-axis is time from solar cycle minimum.
On this graph the maximum appearance should then peak approximately between cycle day 1720 and 1927. The maximum is expected around day number 1893.
In this case that should point to the very last day of January 2025!

This all means that we are now right at the start of the offing of higher frequency of SuperSunspotGroups (exceeding 1000 mvh).

Bare in mind that a SSG of the lowest, ie. 1000 mvh, corresponds to nearly 12 Earths!
A small HSX spot, for instance, should normally correspond to one Earth-size!

Solar Coordinates

Daily list of Solar Ephemeris available at:

Daily list of Solar Ephemeris and SDO on grid

Here you can see Today's Po, Bo, Lo, Rotation no., RA and Dec. and adjusted SOHO-picture on grid.

Calculating CV

For your convenience and security, use the mif2021,

https://www.cv-helios.net/mif2021.xlsx

The Monthly Input Form, used for all of your next reportings!

NEW form for classifications released!

CLASS-FORM 2024

Monitor MPR daily progress

CV-Helios Network: Monitor MPR progress as entries are made!

Monitor your submissions as they are registered:

https://cv-helios.net/helios/cv/web/mprpost.html

The data are available fresh from approx. 10:00 UTC until local midnight. List later.

Content comprises CV-Report for latest month, CV-Report for latest month

individual results, Extracts from NOAA on forecasts/discussion,

Extracts from NOAA warehouse on SRS and other activity,

Last 24 months CV-data, This month CV acc. to USAF

Registration data

Check if your CV-observations have been registered (please allow up to 24 hrs):

https://www.cv-helios.net/helios/cv/web/datlist.htm

https://www.cv-helios.net/helios/cv/web/cvobsmonth.htm for checking of Entries Summary

CONTRIBUTE WITH YOUR PHOTOS AND OTHER OF INTEREST!

We would like YOU to contribute with drawings or photos from last month

Also any other contribution that may have an interest for our observers.

Please send by email to:

cvhelios@gmail.com

Please check out www.cv-helios.net/cvrep2.html for updates of files!

SUBMISSIONS OF CV-OBSERVATIONS

Log on to:

https://www.cv-helios.net/observations/index.html

login	solaris
password	cvheliosobs

Submission before 15th of proceeding month 18:00 UTC. (password: cvhelios)

MPR issue 15th of proceeding month 2000 UTC. Good luck CV-observing!

Average received to registered time: 0 day 18 hours 30 minutes
and average macrotime for one registration is 13,45 seconds

CV-Helios Network
- over 43 years in solar amateur astronomy service!

There are now 13382 registrations made, containing 215429 CV-observations!
Last 12 months 5633 CV-observations from 40 observers originating from 17 countries

Editorial close: 21.08.2024 10:03 UTC

CV-Helios Network

CV-Helios Network 43 years old 15 August 2024