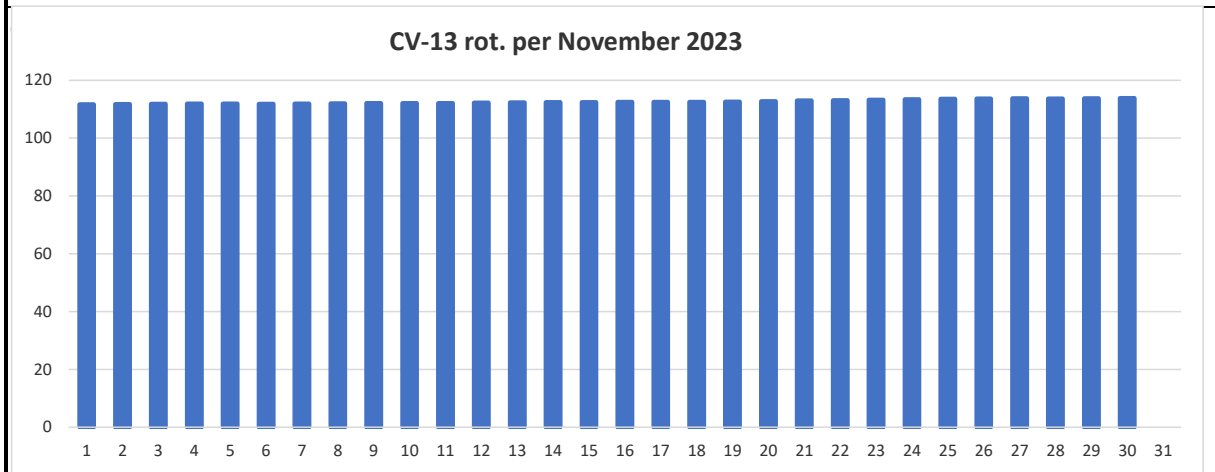
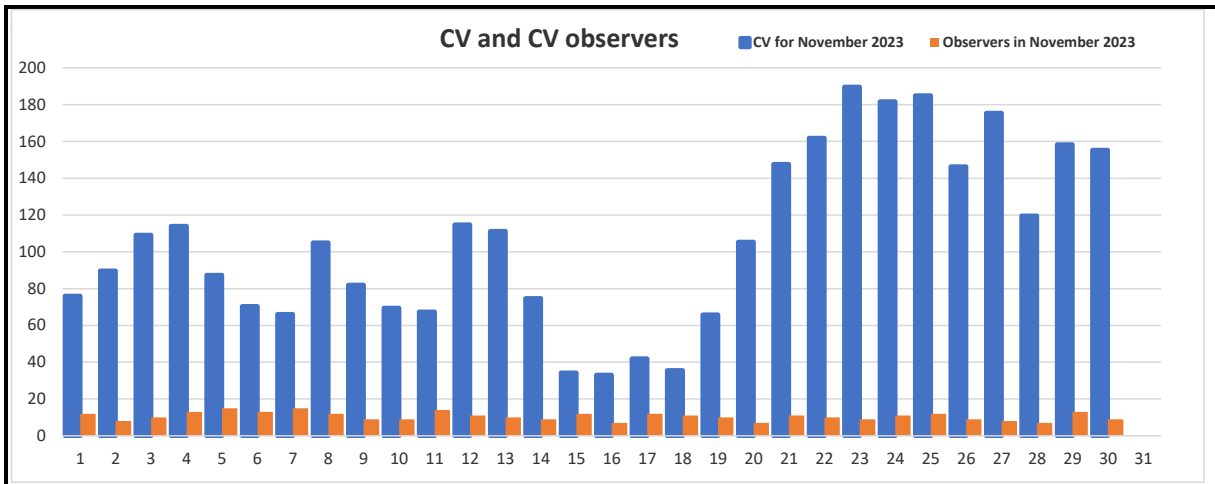


Results						
Date	CV	Obsrvrs	Regions 6 rot.	CV-USAF 6-rot.	CV-6 rot.	CV-13 rot.
1	76,08	12	7,60	110,71	117,41	111,64
2	89,67	8	7,62	110,91	117,37	111,75
3	109,10	10	7,62	111,15	117,45	111,84
4	113,92	13	7,63	111,07	117,44	111,87
5	87,33	15	7,63	110,67	117,14	111,87
6	70,38	13	7,61	110,19	116,73	111,84
7	66,13	15	7,60	109,65	116,26	111,86
8	105,00	12	7,59	109,01	116,08	111,97
9	82,00	9	7,57	108,62	115,65	112,06
10	69,56	9	7,54	108,01	115,29	112,10
11	67,36	14	7,51	106,96	114,73	112,10
12	114,82	11	7,48	106,70	114,28	112,21
13	111,30	10	7,46	106,71	113,89	112,34
14	74,67	9	7,45	106,52	113,55	112,36
15	34,25	12	7,43	105,81	112,96	112,40
16	33,14	7	7,39	105,24	112,67	112,49
17	41,92	12	7,35	104,50	112,14	112,48
18	35,64	11	7,31	103,96	111,43	112,49
19	65,80	10	7,27	103,44	111,02	112,54
20	105,43	7	7,27	103,50	110,83	112,70
21	147,64	11	7,29	103,84	111,05	112,95
22	161,90	10	7,30	104,32	111,42	113,09
23	189,67	9	7,33	105,24	111,94	113,25
24	181,73	11	7,37	106,23	112,56	113,41
25	184,92	12	7,40	106,55	113,01	113,58
26	146,30	9	7,41	106,82	113,24	113,61
27	175,38	8	7,44	107,15	113,50	113,70
28	119,57	7	7,46	107,32	113,50	113,66
29	158,31	13	7,49	107,51	113,64	113,76
30	155,33	9	7,48	107,51	113,53	113,78
Totals/ Avrgs	3,96	27,3	0,97	4,83	114,06	112,59



Latest sunspot regions developments

Reg.-First-Last-Lat.-Long.-Rot.-Area-Lgth.-CV-max.

It now seems that prediction mix of 6 and 13 rotation averages may indicate maximum 14.08.202: as a time of maximum for the CV-1 (but still, may be one rotation later). Updates will come.

00.01.1900

We reckon there have passed 1456 days of the new cycle by this issue.

00.01.1900

We may see a continued production of smaller regions for a while

but by the end of year and January we expect more active periods!

00.01.1900

Solar Flux onset: OCCURED 30 September 2022. Stay tuned and observe the solar disk from now on!

Reg.-First-Last-Lat.-Long.-Rot.-Area-Lgth.-CV-max.

00.01.1900

Please remember you are always welcome to contribute with drawing

00.01.1900

Need for new members! Do you know any amateur solar astronomer

Then please pass the information about CV-Helios Network's work

00.01.1900

Supergroups-catalogue:

CV-Helios Network is currently working on a catalogue with drawing

:Product: Weekly Highlights and Forecasts

Highlights of Solar and Geomagnetic Activity
04 - 10 December 2023

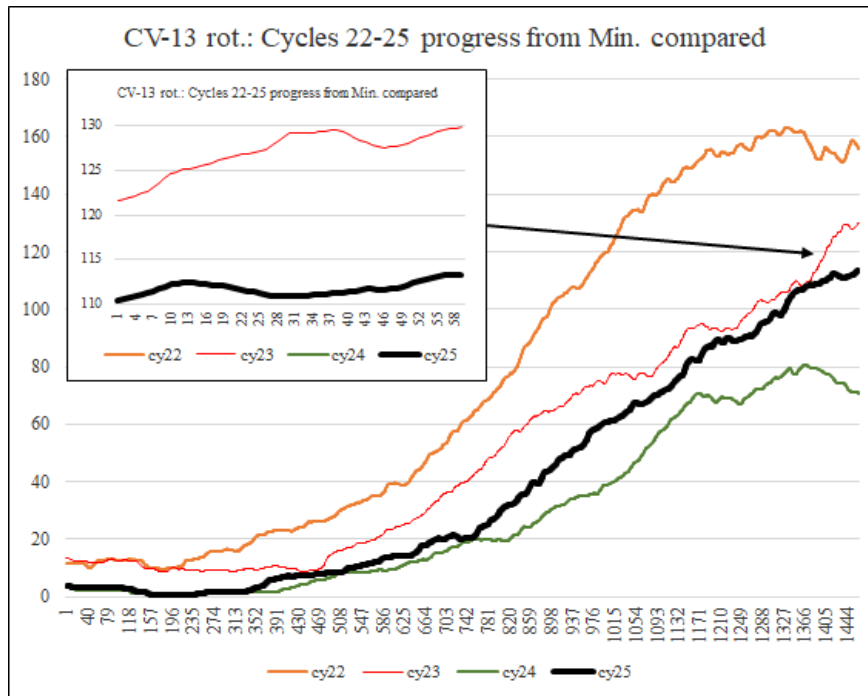
<http://services.swpc.noaa.gov/text/weekly.txt>

Solar activity ranged from low to high levels this period with Regions 3511 (S22, L=216, class/area=Fsi/180 on 09 Dec) and 3513 (N19, L=220, class/area=Eai/220 on 10 Dec) being the primary sources of flare activity. The largest event observed was an M5.4/1b flare (R2/Moderate) at 08/2307 UTC from Region 3511. In addition to the M5.5 event, Region 3511 produced four R1 (Minor) events over 08-10 Dec. Region 3513 produced five R1 (Minor) events over 05-06 Dec. Despite the flare activity and a number of filament eruptions observed throughout the week, no Earth-directed CMEs were detected.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels 08-09 Dec, with normal to moderate levels observed on 04-07 and 10 Dec.

Progress Solar Cycle no. 25



The above graphic show CV-Int. levels solar cycle 25 compared to same stage previous cycles 21-24.

It is apparent that the stage and rise of solar cycle 25 now can be compared to solar cycle 23 (1996-2008).

At the time of issue CV-I for last day of November 2023 we can still compete with solar cycle 23, though we are now about 16,5 CV-I units below!

See enlarged view. Solar cycle 25 has now long gone superseded solar cycle 24 (2008-2019) at the same stage of development.

Further updates in the following issues of MPR.

Highlights November 2023

The solar activity in November 2023 has perhaps slowly come out of pause, though the solar activity is rising slowly and many regions have been of very modest sizes.

The 6 rot. average was set 28 CV-units by end November, but the 13 rot. average was set about 16,5 CV-units by last month end. Report-end this MPR 508 for November show we may still manage to approach cycle 23. A total of 766 regions this cycle per end November 2023 (381 regions North and 385 regions South). At the same time solar cycle 24 produced 595 regions (245 north and 350 south).

It now seems that prediction mix of 6 and 13 rotation averages may indicate maximum 14.08.2025 (+/- 2 rot.) as a time of maximum for the CV-I (but still, may be one rotation later). Updates will come.

We reckon there have passed 1456 days of the new cycle by this issue.

We may see a continued production of smaller regions for a while but by the end of year and January we expect more active periods!

Solar Flux onset: OCCURED 30 September 2022. Stay tuned and obser

Please remember you are always welcome to contribute with drawings ar

Need for new members! Do you know any amateur solar astronomer that know or like to learn classifications? Then please pass the information about CV-Helios Network's work and contact cvhelios@gmail.com

Supergroups-catalogue:

CV-Helios Network is currently working on a catalogue with drawings or photos of the, currently 858, 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 sometime next year! Stay tuned!

TAKE A SURVEY:

Here is a Survey of hmiigr SOHO solar images 2022.

<https://www.cv-helios.net/helios/cv/web/2022/Video2022.mov>

Pictures from last month - Observer contributions, etc.

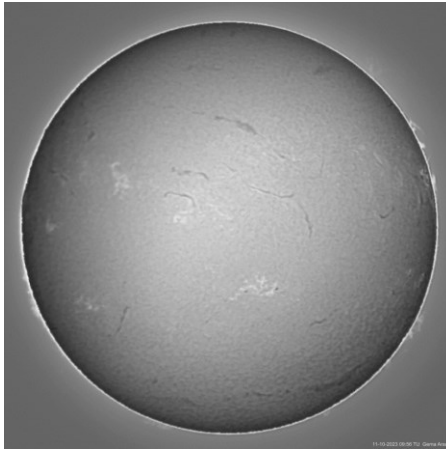
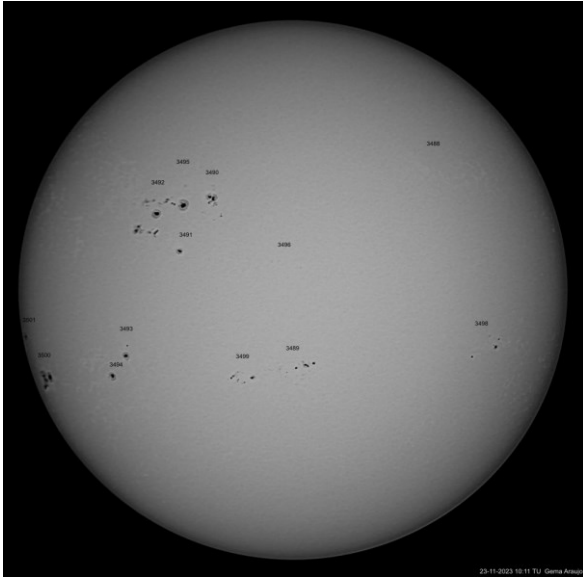
Photo courtesy: Thanks to CV-135 Gema Araujo, Spain

Highlights November 2023

Thank you, Gema Araujo, for giving us access to your large collection of solar images

Left: Photo from CV-135 Gema Araujo, Spain from 23 November 2023.

Picture below in H-alpha taken on 23 November 2023.



Awards this month

1

Award no.: 162 to CV-136 FAUSTINO GARCIA date 21 November 2023 milestone 4000 CV-obs.!
CONGRATULATIONS!



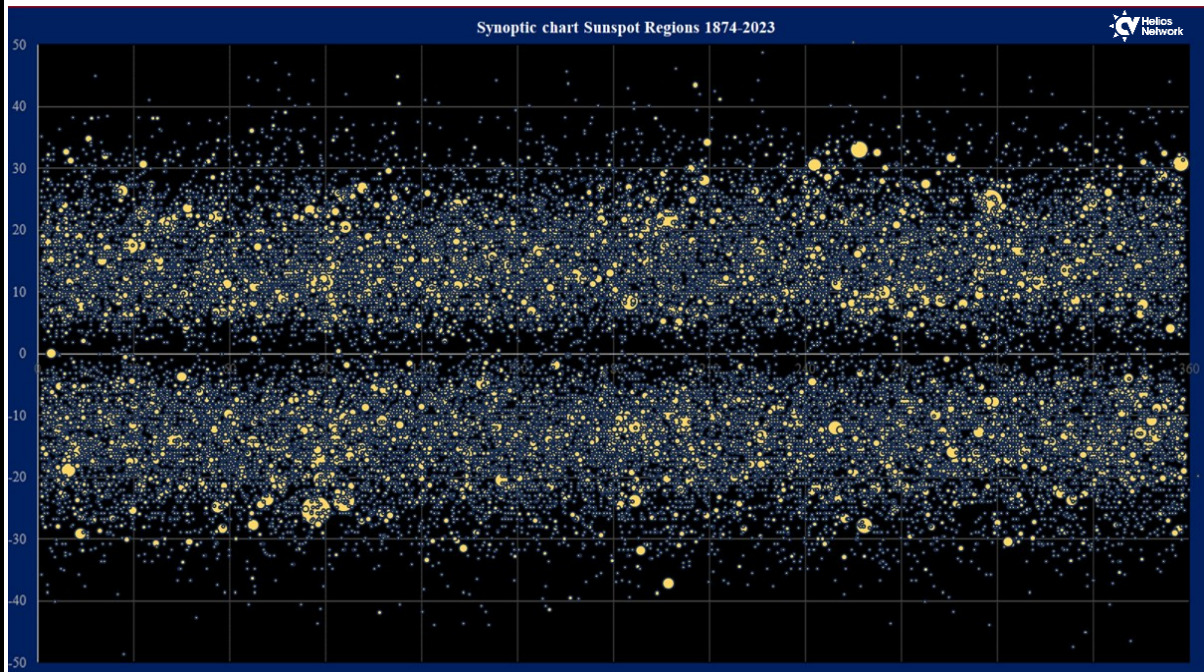
New members:

Welcome to:

0

We are now 52 active members (last 12 mo.)

RGO-USAF synoptic chart overlay of Sunspotgroups 1874-2023



OVER 2000 SOLAR ROTATIONS

Upon calculating the result from the RGO (Royal Greenwich Observatory) - USAF (US Air Force stations) from their daily listing of sunspot regions from May 1874 until now.

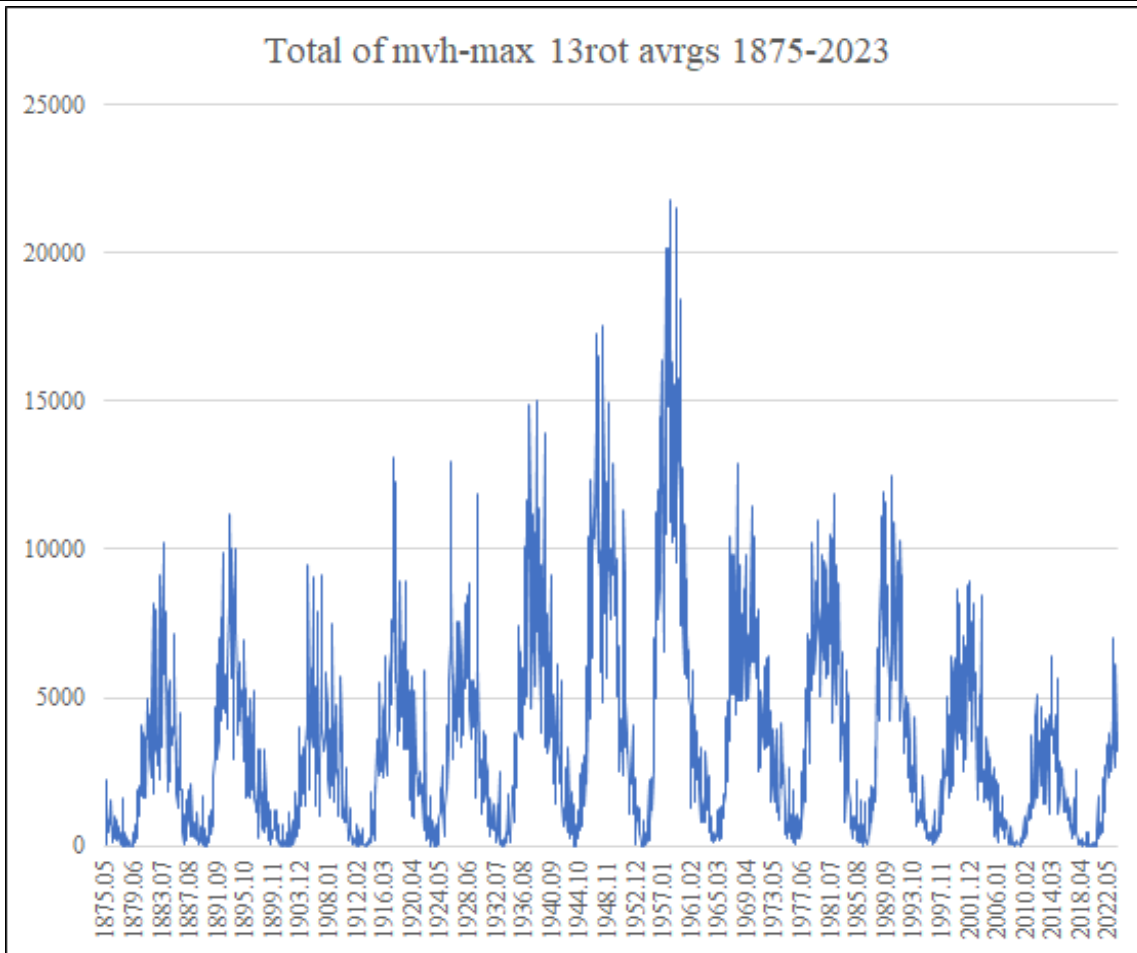
The graphic above show 34135 sunspot regions on the RGO-USAF listing from 5th May 1874 until 2nd October 2023 illustrated with their respective maximum achieved sizes. All sunspot regions have been placed from 0 to 360 degrees longitude regardless of rotation numbers.

The sun had rotated 2003 times since that first date mentioned above. The result of the above graphic was made using an excel macro that took many many hours to complete!

For example, the largest sunspot region recorded in this time period, region 14886, had its maximum on 8th April 1947 with 6132 mvh at lat. S24 and long. 82 on rotation no. 1252. You can see the big one in the square third from the left and third from the bottom in the graphic above.

Data from the RGO/USAF.

Monthly totals MVH max RGO-USAF 1874-2023

**Results of exploring solar cycles 1874-2023:**

The graphic above show the total mvh achieved per month for all 34135 unique sunspot regions in that period. The highest total came in March 1958 with 21555 mvh, while in the current cycle 25 we had the highest total mvh so far in July 2023 with 6110 total mvh.

The figure from March 1958 is then more than 3,5 times higher!

We can only stay and hope for some good sunspot regions coverage this solar cycle!

Data from the RGO/USAF

[Discover the Sun! \(solarcyclescience.com\)](http://solarcyclescience.com) (Dr. Lisa Upton and Dr. David Hathaway.)

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,

NEW form (beta) for classifications released!

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

the Monthly Input Form, which you can use for all of your next reportings!

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 about 10:00 UTC until local midnight.

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>

for checking of Entries Summary

<https://www.cv-helios.net/helios/cv/web/cvobsmonth.htm>

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](http://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>

[Classification Help](#)

login

solaris

password

cvheliosobs

[Monthly Input Form as excel](#)

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 23 hours 23 minutes
and average macrotime used for one registration is 38,70 seconds**

CV-Helios Network

- over 42 years in solar amateur astronomy service!

There are now 13128 registrations made, containing 211714 CV-observations!

Last 12 months 5613 CV-observations from 40 observers originating from 17 countries

Editorial close: 15.12.2023 13:45 UTC

Merry Christmas



CV-Helios Network

Happy New Year