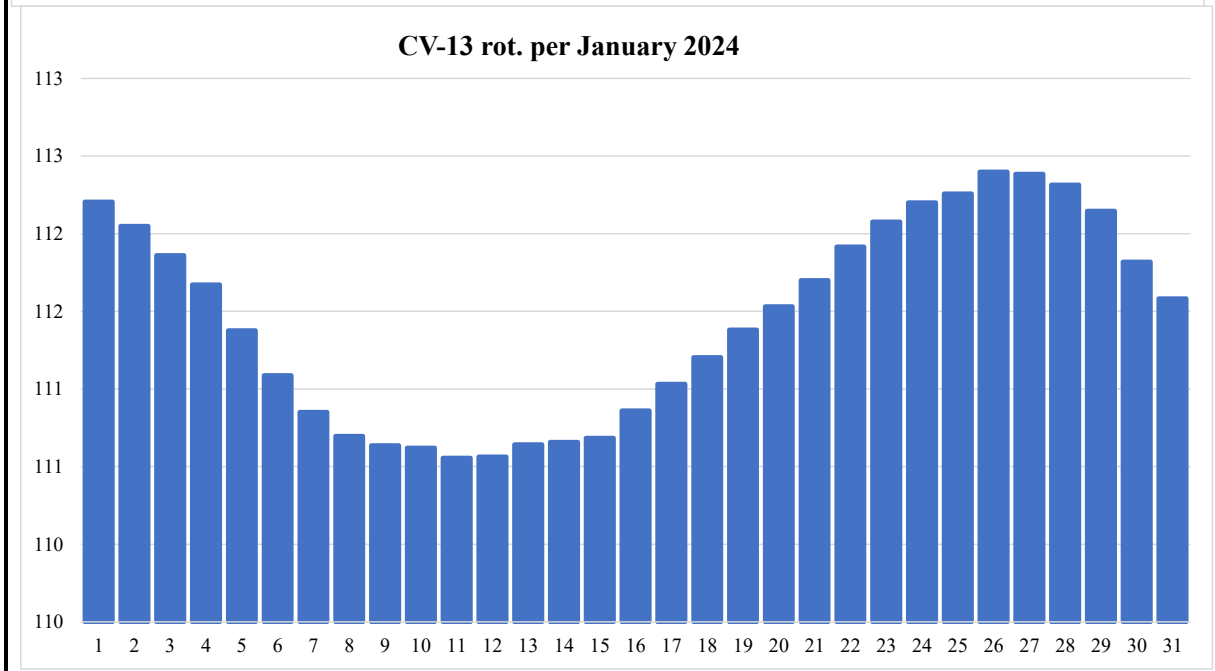
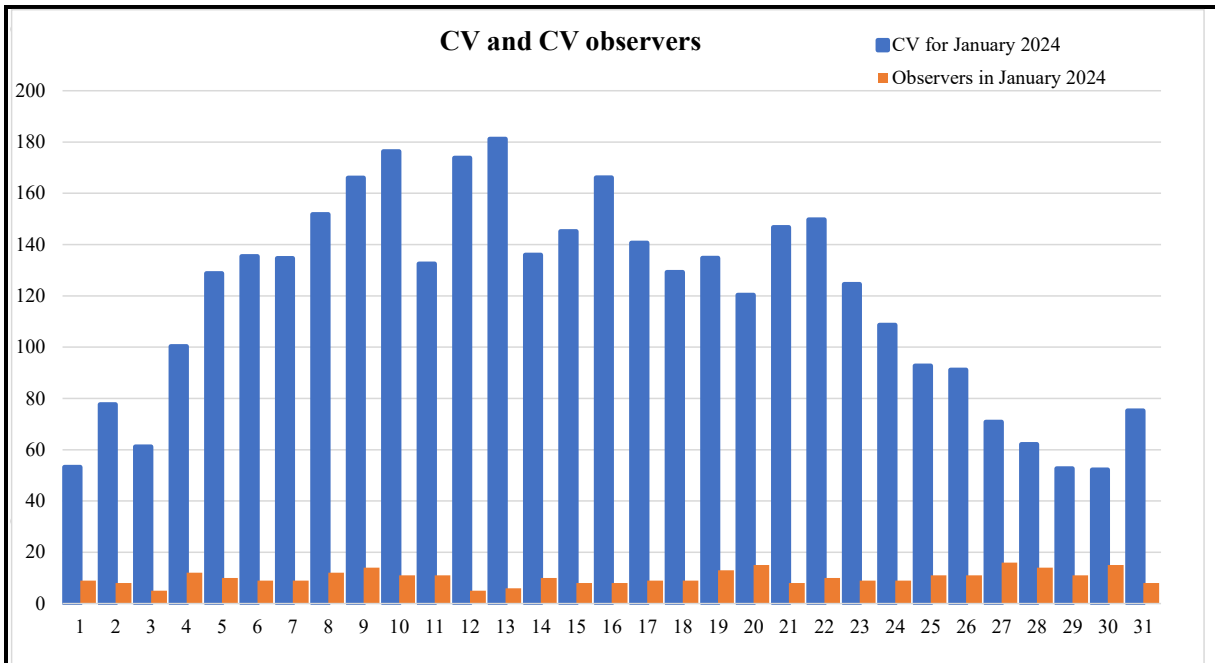


Month Results for January 2024						
Date	CV	Obsrvrs	Regions 6 rot.	CV-USAF 6-rot.	CV-6 rot.	CV-13 rot.
1	53,22	9	7,23	98,71	104,66	112,20
2	77,63	8	7,21	97,75	103,88	112,05
3	61,20	5	7,20	96,99	103,34	111,86
4	100,33	12	7,16	96,40	103,00	111,67
5	128,80	10	7,15	96,15	102,69	111,38
6	135,44	9	7,13	96,30	102,45	111,09
7	134,67	9	7,13	96,46	102,33	110,85
8	151,83	12	7,12	96,60	102,35	110,70
9	166,00	14	7,13	96,54	102,41	110,64
10	176,36	11	7,13	96,46	102,53	110,62
11	132,55	11	7,12	95,92	102,32	110,56
12	173,80	5	7,13	96,14	102,11	110,56
13	181,17	6	7,16	96,28	101,96	110,64
14	136,00	10	7,18	96,34	101,69	110,66
15	145,13	8	7,18	95,99	101,55	110,68
16	166,13	8	7,21	95,91	101,60	110,86
17	140,67	9	7,23	95,82	101,60	111,03
18	129,22	9	7,23	95,80	101,73	111,20
19	134,77	13	7,24	95,83	102,05	111,38
20	120,31	15	7,25	95,79	102,42	111,53
21	146,78	8	7,27	96,26	102,91	111,70
22	149,70	10	7,27	96,69	103,33	111,92
23	124,56	9	7,29	97,11	103,79	112,08
24	108,67	9	7,30	97,34	104,09	112,20
25	92,73	11	7,30	97,41	104,00	112,26
26	91,17	11	7,29	97,58	103,83	112,40
27	70,81	16	7,26	97,16	103,27	112,38
28	62,14	14	7,23	96,94	102,81	112,32
29	52,67	11	7,20	96,52	102,43	112,15
30	52,20	15	7,18	96,27	102,06	111,82
31	75,25	8	7,16	96,29	102,28	111,58
Totals/ Avrgs	3,96	27,3	0,97	4,83	102,69	111,45



Product: Weekly Highlights and Forecasts

Highlights of Solar and Geomagnetic Activity
05 - 11 February 2024

Solar activity ranged from moderate levels to very high levels this period. In total, one X-class flare and 18 M-class flares and were observed. The largest event was an X3.3 flare at 09/1314 UTC from Region 3575 (S36, L=177, class/area=Dkc/270 on 05 Feb), which was beyond the SW limb at the time of the event. Region 3576 (S16, L=057, class/area=Fkc/740 on 11 Feb) was the largest and most active region this week and produced the bulk of the M-class flare activity; most notable was an M9.0 flare at 10/2307 UTC which produced an Earth-directed CME expected to arrive late on 12 Feb/early on 13 Feb. Other notable activity included a filament eruption centered near S37W02 at 08/2000 UTC which resulted in an Earth-directed CME expected to arrive on 12 Feb.

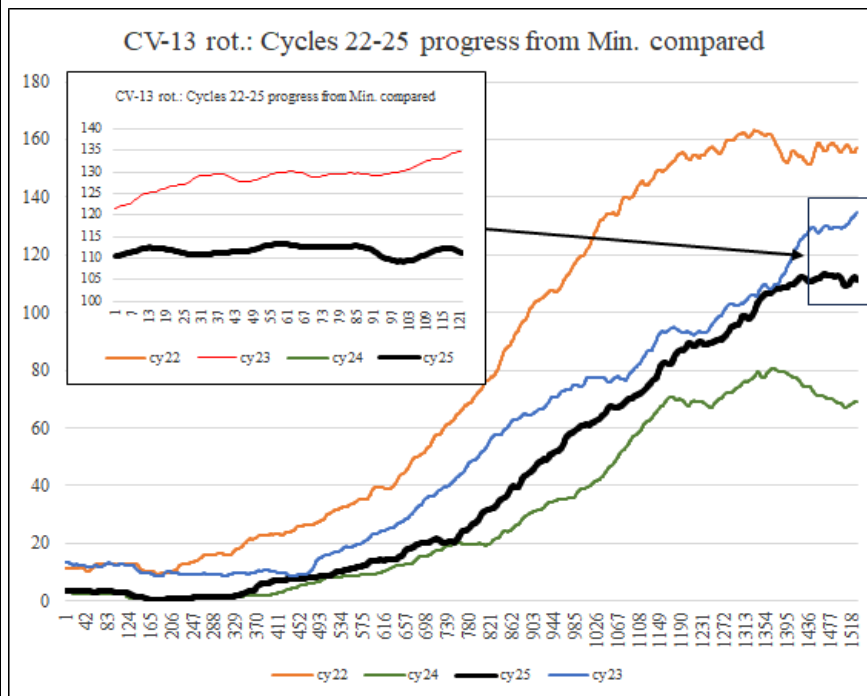
The greater than 10 MeV proton flux reached S1-S2 (Minor-Moderate) levels following the X3.3 flare at 09/1314 UTC. The solar radiation storm began at 09/1530 UTC, reached a peak flux of 187 pfu at 09/2355 UTC, and decreased below event threshold at 11/1805 UTC. The Solar activity is expected to be low to moderate throughout the period with M-class flares likely and a chance for X-class flares.

No proton events are expected at geosynchronous orbit, barring significant flare activity.

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



Progress Solar Cycle no. 25



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

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 January 2024 we can still compete with solar cycle 23, though we are now over 23 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 January 2024

The solar activity in January 2024 have slowly come out of pause with many regions, though the solar activity is rising slowly and many regions have been of very modest sizes.

The 6 rot. average was 103,4 CV-units by end January, but the 13 rot. average was 111,1 CV-units by last month end.

Report-end this MPR 510 for January show we may still approach cycle 23, though 18% behind.

A total of 831 regions this cycle per 14 February 2024 (410 regions North and 421 regions South).

At the same time solar cycle 24 produced 633 regions (264 north and 369 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 (though it may happen a bit earlier). Updates will come.

We reckon there have passed 1543 days of the new cycle by this issue on 15 Feb 2024.

There is a continued production of smaller regions but soon expect more active periods!

The appearance of region 3576 and heavy flare activity show some very active periods to come!

Solar Flux onset occurred 30 September 2022.

Please remember you are always welcome to contribute with drawings and photos!

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.

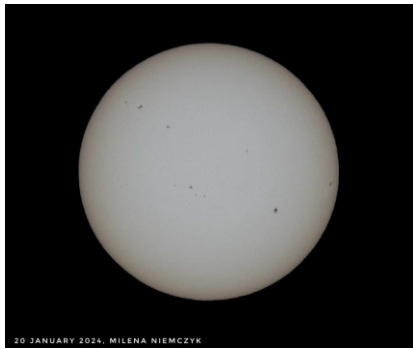
Drawings or photos will be collected from the archives of wellknown different observatories!

Hopefully this catalogue will be published 2024 or 2025! Stay tuned!

Pictures from last month - Observer contributions, etc.

Highlights January 2024

Photo courtesy: Thanks to CV-222 Milena Niemczyk, Poland



Click on each of the images to see a larger view.

Photos above from left January 20, 21 and 26 in 2024.

All members are free to participate in sending in photos!

Awards this month

0

none



New members:

Welcome to:

CV-223 ERROL SIMPSON, UNITED KINGDOM (21 Jan. 2024)

Welcome to our New Member!

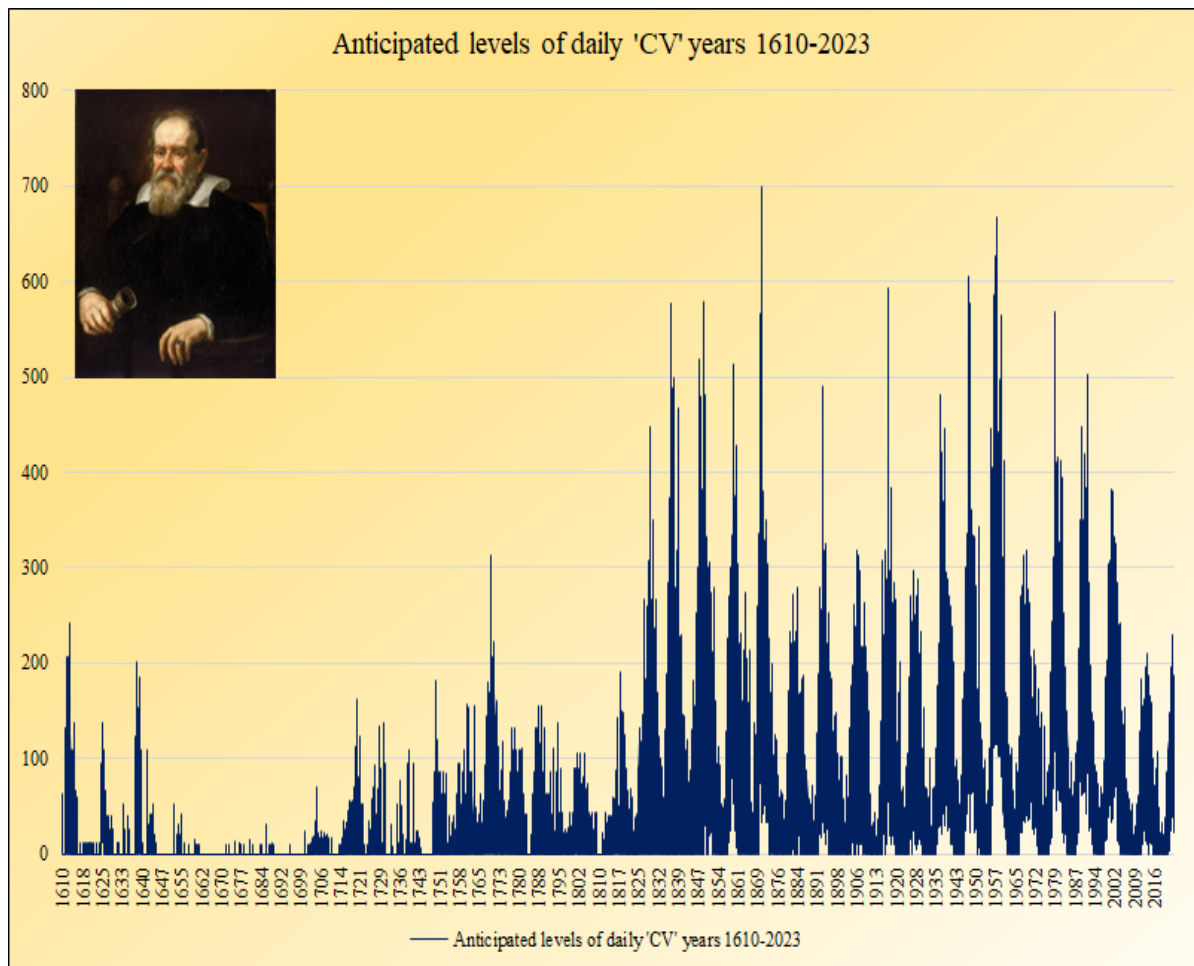
We are now 51 active members (last 12 mo.)

Sunspot regions of January 2024

Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV
3536,31.12.23,12,6,152,2278,EKO,44
3537,02.01.24,9,18,156,2278,CAO,8
3538,03.01.24,8,22,176,2278,CAO,8
3539,05.01.24,10,11,137,2278,DAI,22
3540,05.01.24,12,-18,93,2278,DKI,46
3541,05.01.24,12,-21,92,2278,CAO,8
3542,05.01.24,5,18,150,2278,DAO,19
3543,07.01.24,5,-6,157,2278,DSO,25
3544,07.01.24,7,18,78,2278,HAX,7
3545,09.01.24,13,-6,41,2278,CKO,38
3546,09.01.24,6,-24,60,2278,CAO,8
3547,11.01.24,4,19,65,2278,CSO,11
3548,12.01.24,6,11,29,2278,DSO,25
3549,12.01.24,12,-20,6,2278,CHI,42
3550,12.01.24,4,-18,47,2278,BXO,2
3551,12.01.24,5,26,17,2278,HSX,10
3552,12.01.24,6,-23,83,2278,CAO,8

Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV
3553,13.01.24,10,5,348,2280,HAX,7
3554,15.01.24,5,7,338,2280,HSX,10
3555,15.01.24,12,-13,321,2280,DSO,25
3556,16.01.24,10,16,313,2280,HAX,7
3557,16.01.24,1,-13,57,2280,HAX,7
3558,16.01.24,2,-11,83,2278,CAO,8
3559,18.01.24,12,27,289,0,FKI,48
3560,18.01.24,12,-12,291,0,DAI,22
3561,19.01.24,8,-16,327,0,DAC,31
3562,20.01.24,7,-8,340,0,DAO,19
3563,26.01.24,3,-6,214,0,BXO,2
3564,28.01.24,3,-12,169,0,CAO,8
3565,28.01.24,11,6,155,0,DAO,19
3566,30.01.24,3,-13,254,0,DAO,19
3568,30.01.24,2,-10,230,0,BXO,2
3569,31.01.24,1,-12,189,0,AXX,1

Daily values on "CV" estimated from R-numbers 1610-2023

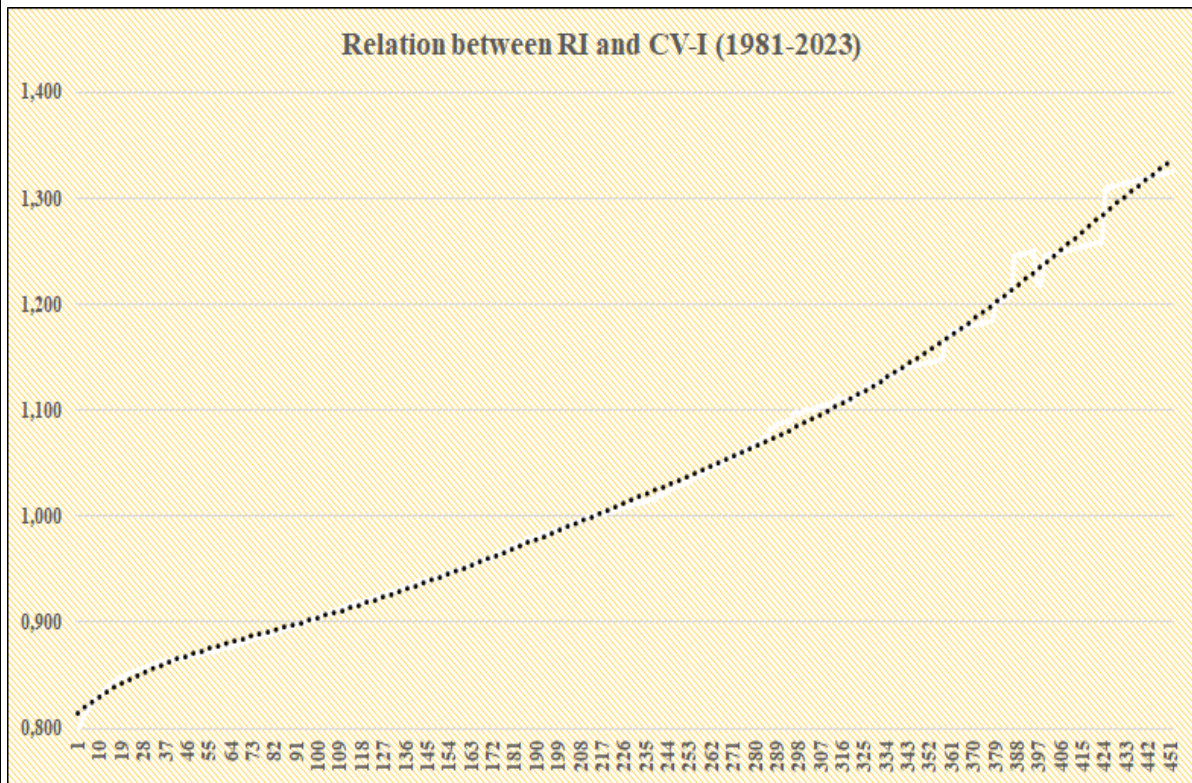
**Relation between RI and CV-I**

The above graphic is a result of downloading of data from [https://www.ngdc.noaa.gov/stp/space-weather/solar-data/solar-indices/sunspot-numbers/group/daily-values-and-means/group-sunspot-numbers_daily-values\(dailyrg\).txt](https://www.ngdc.noaa.gov/stp/space-weather/solar-data/solar-indices/sunspot-numbers/group/daily-values-and-means/group-sunspot-numbers_daily-values(dailyrg).txt) over the period 1610 to 1817 and then from the SIDC archive <https://www.sidc.be/SILSO/datafiles> from 1818 to end of 2023.

These data and the data from sidc.be were then compared with CV-I in the period 1981 to 2023 in order to find a kind of "K-Index" between the two.

The next polynom graphic grade 6 is the ground for estimating how the "CV" could have looked like from 1610 to 2023. The astronomer pictured at upper left corner if of course Galileo Galilei (1564-1642) who was the first person to aim a telescope towards the sun.

Daily values on "CV" estimated from R-numbers 1610-2023

**Relation between RI and CV-I**

Upon investigating the RI-numbers all the way back to Galileo Galilei was made an intended "CV" based on the tables published at [https://www.ngdc.noaa.gov/stp/space-weather/solar-data/solar-indices/sunspot-numbers/group/daily-values-and-means/group-sunspot-numbers-daily-values\(dailyrg\).txt](https://www.ngdc.noaa.gov/stp/space-weather/solar-data/solar-indices/sunspot-numbers/group/daily-values-and-means/group-sunspot-numbers-daily-values(dailyrg).txt)

where the relation RI and CV-I for the time CV-Helios Network has existed were copied and each observed CV-value were used as a "K-Index" between the two,

This experiment was done not only for a guess how the CV could have looked like from year 1610 until today, but to reveal the correlation between RI and CV-I.

The abstract shown in the graphic here should show that any CV-value from 1 until 213, the CV-I will normally be lower than RI, and higher CV than RI from CV 213 and up.

CV=213 is in other words the average crossing point, K=1,000.

This will tell that normally groups are smaller but with more spots in the first scenario (CV 1-213), and more complex groups with perhaps fewer spots in the second case (CV 213-up).

This result is in the heart of CV-Helios Network's intentions indicating that a multispot-group not necessarily have to be a large group and vice versa.

Next issue: The Grand Cycle

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 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: 1 day 05 hours 31 minutes
and average macrotime used for one registration is 12,98 seconds**

CV-Helios Network

- over 42 years in solar amateur astronomy service!

There are now 13186 registrations made, containing 212377 CV-observations!
Last 12 months 5616 CV-observations from 38 observers originating from 16 countries

Editorial close: 15.02.2024 18:59 UTC



CV-Helios Network