Monthly Preliminary Report

MPR

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CV-Helios Network

Monthly Preliminary Report for February 2024

Solar Cycle 25: Month no. 51

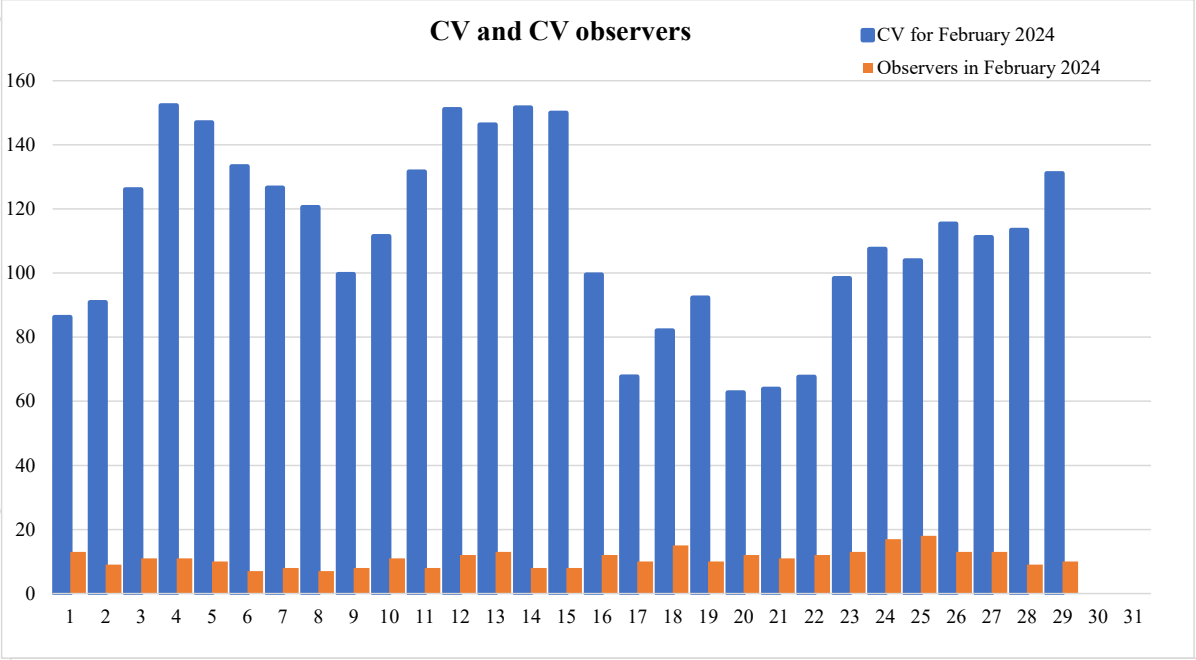
Report id.: cv2402 - CV-report no.: 511

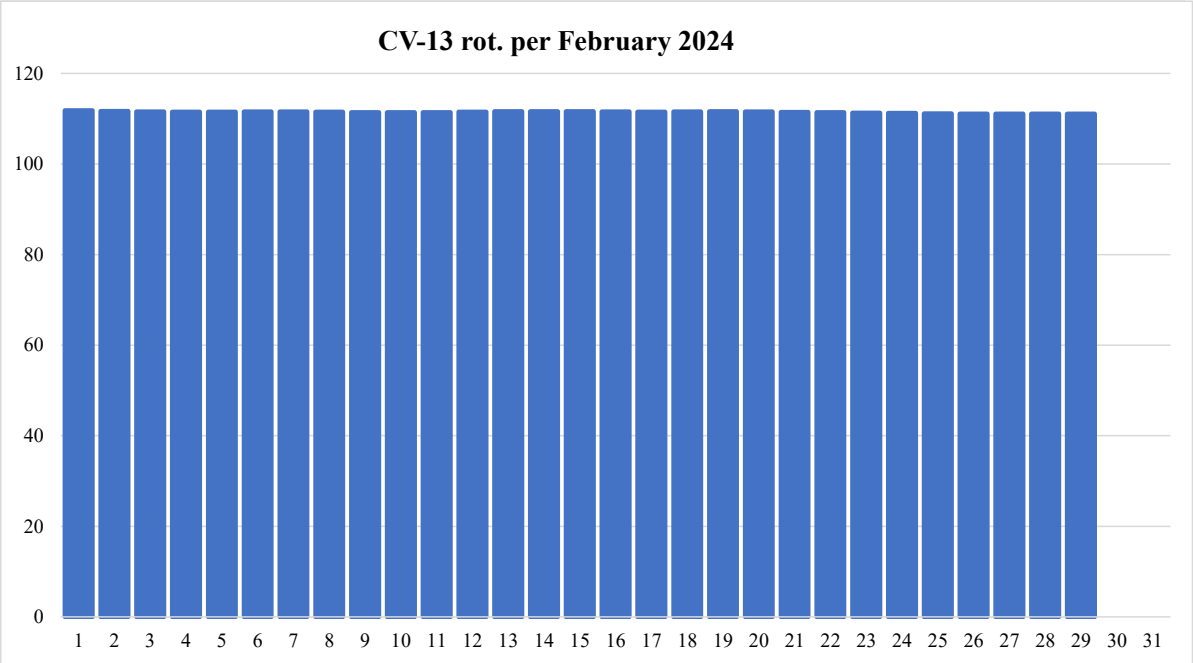
Memno.	Name	Country	CV	Obs	K	Obs. Tot.
CV-001	KJELL INGE MALDE	NORWAY	123,2	14	1,078	9375
CV-010	FRANKY DUBOIS	BELGIUM	97,3	12	0,921	9759
CV-023	HARTMUT BRETSCHNEIDER	GERMANY	92,1	14	0,820	5977
CV-040	ROBERTO BATTAIOLA	ITALY	191,0	1	1,515	2158
CV-068	SVEN OVE THIMM	DENMARK	54,8	12	0,508	4329
CV-077	ANDREW JOHNSTON	UNITED KINGDOM	99,0	10	0,946	3721
CV-080	JAN JANSSENS	BELGIUM	111,0	1	1,068	1232
CV-082	PIOTR URBANSKI	POLAND	104,4	9	1,010	5592
CV-086	TOS POLAND	POLAND	124,7	29	1,109	8843
CV-091	GRZEGORZ DALEK	POLAND	112,6	12	0,966	4823
CV-102	PAULO ROBERTO MOSER	BRAZIL	106,0	26	0,980	3205
CV-105	ALEXEY RYBACK	RUSSIA	109,8	16	1,027	3537
CV-122	VLASTISLAV FEIK	CZECH REPUBLIC	96,6	8	0,890	3223
CV-135	GEMA ARAUJO	SPAIN	136,8	27	1,227	7644
CV-136	FAUSTINO GARCIA	SPAIN	95,8	15	0,888	4039
CV-139	JAVIER ALONSO	SPAIN	136,5	22	1,169	4207
CV-151	JEFFREY CARELS	BELGIUM	104,2	5	0,982	3290
CV-158	JACQUES VAN DELFT	SOUTH AFRICA	87,6	9	0,885	364
CV-171	WALTER JOSE MALUF	BRAZIL	127,2	11	1,298	3103
CV-181	ADAM DERDZIKOWSKI	POLAND	92,3	3	0,902	1214
CV-204	STEFAN MEISTER	SWITZERLAND	104,0	1	0,825	831
CV-206	TADEUSZ FIGIEL	POLAND	90,0	2	1,050	368
CV-207	ONDREJOV OBS. (AI CAS)	CZECH REPUBLIC	114,8	10	1,057	3875
CV-208	JOHAN NEYS	BELGIUM	86,5	2	0,909	786
CV-214	IGOR GRAGEDA MENDEZ	BOLIVIA	102,2	20	0,933	1411
CV-215	ARNAUD MENGUS	FRANCE	152,0	2	1,110	378
CV-219	KANDILLI OBSERVATORY	TURKEY	102,9	22	0,929	1060
CV-220	MICHEL FRANGEUL	FRANCE	113,0	4	0,940	201
CV-222	MILENA NIEMCZYK	POLAND	52,7	3	0,647	93

Totals	Observers	Days	CV	No	K
	29	**29**	**107,62**	**322**	**0,986**

Month Results for February 2024

Date	CV	Obsrvrs	Regions 6 rot.	CV-USAF 6-rot.	CV-6 rot.	CV-13 rot.
1	86,23	13	7,16	96,24	102,38	111,85
2	90,90	9	7,16	96,49	102,35	111,66
3	126,09	11	7,16	96,61	102,53	111,57
4	152,27	11	7,18	96,85	102,81	111,49
5	147,00	10	7,21	96,94	102,97	111,52
6	133,29	7	7,23	97,16	102,91	111,57
7	126,63	8	7,26	97,40	103,02	111,57
8	120,57	7	7,29	97,35	103,18	111,52
9	99,63	8	7,30	97,48	103,17	111,42
10	111,45	11	7,32	97,63	103,24	111,39
11	131,63	8	7,33	97,80	103,38	111,40
12	151,08	12	7,34	98,18	103,77	111,51
13	146,31	13	7,35	98,49	104,33	111,59
14	151,63	8	7,35	99,21	104,90	111,61
15	150,00	8	7,37	99,78	105,50	111,62
16	99,50	12	7,37	99,87	105,83	111,58
17	67,70	10	7,36	99,85	105,85	111,53
18	82,07	15	7,35	100,07	105,68	111,54
19	92,30	10	7,31	99,41	105,74	111,60
20	62,75	12	7,30	99,13	105,61	111,55
21	63,83	11	7,26	98,59	105,07	111,44
22	67,58	12	7,21	98,23	104,59	111,39
23	98,38	13	7,20	98,21	104,25	111,32
24	107,53	17	7,20	98,15	104,23	111,23
25	103,89	18	7,20	98,07	104,17	111,12
26	115,38	13	7,20	98,16	104,38	111,10
27	111,15	13	7,20	98,40	104,74	111,07
28	113,44	9	7,21	98,71	105,00	111,07
29	131,10	10	7,20	98,49	104,99	111,11
Totals/ Avrgs	**3,96**	**27,3**	**0,97**	**4,83**	**104,16**	**111,45**





:Product: Weekly Highlights and Forecasts

Highlights of Solar and Geomagnetic Activity
04 - 10 March 2024

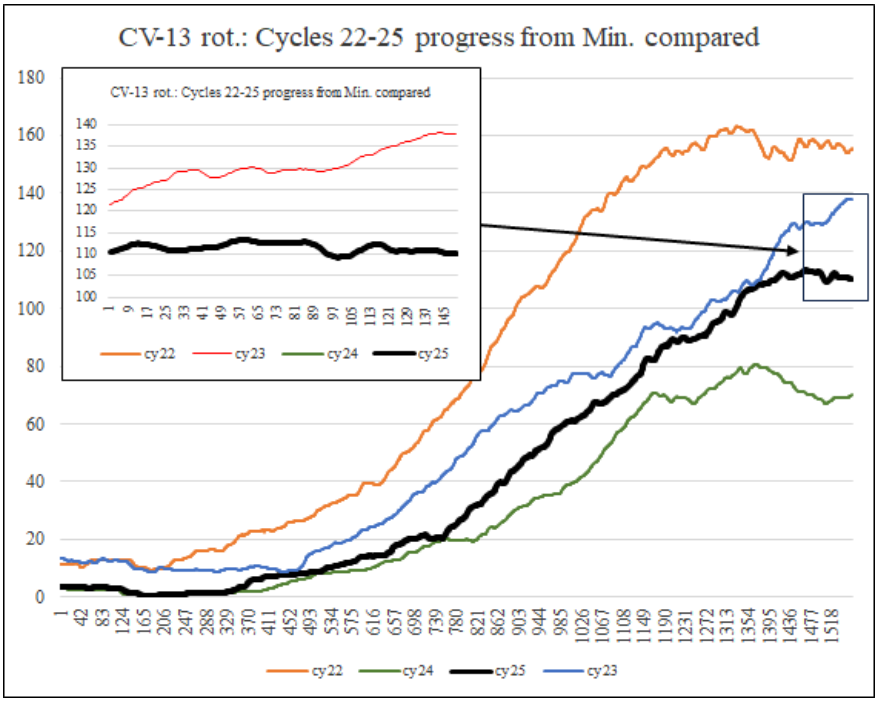
Solar activity was at low to moderate levels. Region 3599 (S13, L=067, class/area Dai/220 on 09 Mar) produced two M-class flares. The first was an impulsive M1.3/Sf at 08/2126 UTC. The second was an M7.4 flare at 10/1213 UTC with an associated 340 sfu Tenflare, a Type II radio sweep (714 km/s), a weak Castelli U radio signature, and a CME directed off the NW limb at 10/1248 UTC. Initial modelling of the CME indicated no Earth-directed component, however further analysis is on-going. A faint partial halo was observed beginning at 10/1812 UTC in coronagraph imagery, likely related to a C6.9/1f flare at 10/1538 UTC from Region 3599. Initial analysis showed a glancing blow around midday on 13 Mar.

No proton events were observed at geosynchronous orbit. A slight enhancement to near 0.4 pfu was observed following the M7.4 flare at 10/1213 UTC.

Solar activity is expected to be at very low to low levels with a chance for M-class (R1-R2/Minor-Moderate) flares on 11-14 Mar due primarily to the flare potential of Region 3599. Quiet to unsettled levels are expected on 15-26 Mar. On 27 Mar-06 Apr, a chance for M-class flares is once again likely as Region 3599 returns to the visible disk.

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

Progress Solar Cycle no. 25



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.

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

Highlights February 2024

The solar activity in February 2024 is going slowly and though nice flare activity, no large groups except for region 3586 which was the largest one since 2014. Other onnly modest sizes.

The 6 rot. average was 105,9 CV-units by end February,
but the 13 rot. average was 110,2 CV-units by last month end.
Report-end this MPR 511 for February show we may still approach cycle 23, though 20,1% behind.
A total of 756 regions this cycle per end March 2024 (375 regions North and 381 regions South).
At the same time solar cycle 24 produced 657 regions .(276 north and 381 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 1572 days of the new cycle by this issue on 15 Mar 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 859, 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 February 2024

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

Photo from Mars Perserverance from 2024, Mar 2nd with a blurred image of 3576, at then visible from Mars.

Click on image to see a larger view.
Photo above from left February 25, 2024.

All members are free to participate in sending in photos!

Awards this month 0

none

New members:

Welcome to:

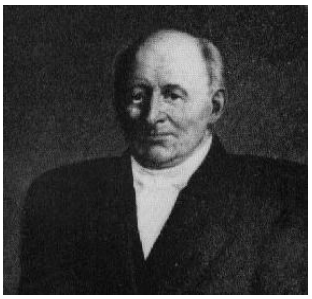
We are now 52 active members (last 12 mo.)

Sunspot regions of February 2024

Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV
3567,30.01.24,7,18,129,2280,DAI,22
3570,01.02.24,5,-4,118,2280,DRO,13
3571,01.02.24,12,-17,104,2280,CSO,11
3572,01.02.24,6,-12,147,2280,HSX,10
3573,01.02.24,6,22,159,2280,CSO,11
3574,01.02.24,10,16,95,2280,DAO,19
3575,02.02.24,6,-37,177,2280,DKC,55
3576,03.02.24,13,-16,57,2280,FKC,57
3577,05.02.24,5,24,93,2280,BXO,2
3578,05.02.24,4,-4,47,2280,CRO,5
3579,07.02.24,6,-11,40,2280,HAX,7
3580,08.02.24,3,22,126,2280,HAX,7
3581,08.02.24,12,-21,6,2280,HSX,10
3582,10.02.24,8,6,34,2280,DAI,22

Region,First date,days,Lat.,Long.,Rot.,Max class,Max CV
3583,10.02.24,9,9,7,2280,FKO,45
3584,10.02.24,10,-15,337,2281,CAO,8
3585,13.02.24,3,14,308,2281,HAX,7
3586,14.02.24,12,27,282,2281,HSX,10
3587,15.02.24,4,-21,305,2281,CRO,5
3588,15.02.24,1,-3,312,2281,BXO,2
3589,15.02.24,3,-7,34,2280,BXI,3
3590,18.02.24,12,18,223,2281,FKC,57
3591,23.02.24,14,-36,160,2281,HSX,10
3592,23.02.24,8,-13,165,2281,DSO,25
3593,23.02.24,1,-7,305,2281,BXO,2
3594,23.02.24,8,5,169,2281,CAO,8
3596,26.02.24,10,19,135,2281,CAO,8
3597,28.02.24,3,7,155,2281,BXO,2

Discovering activities in solar cycles from 1610 to 2023

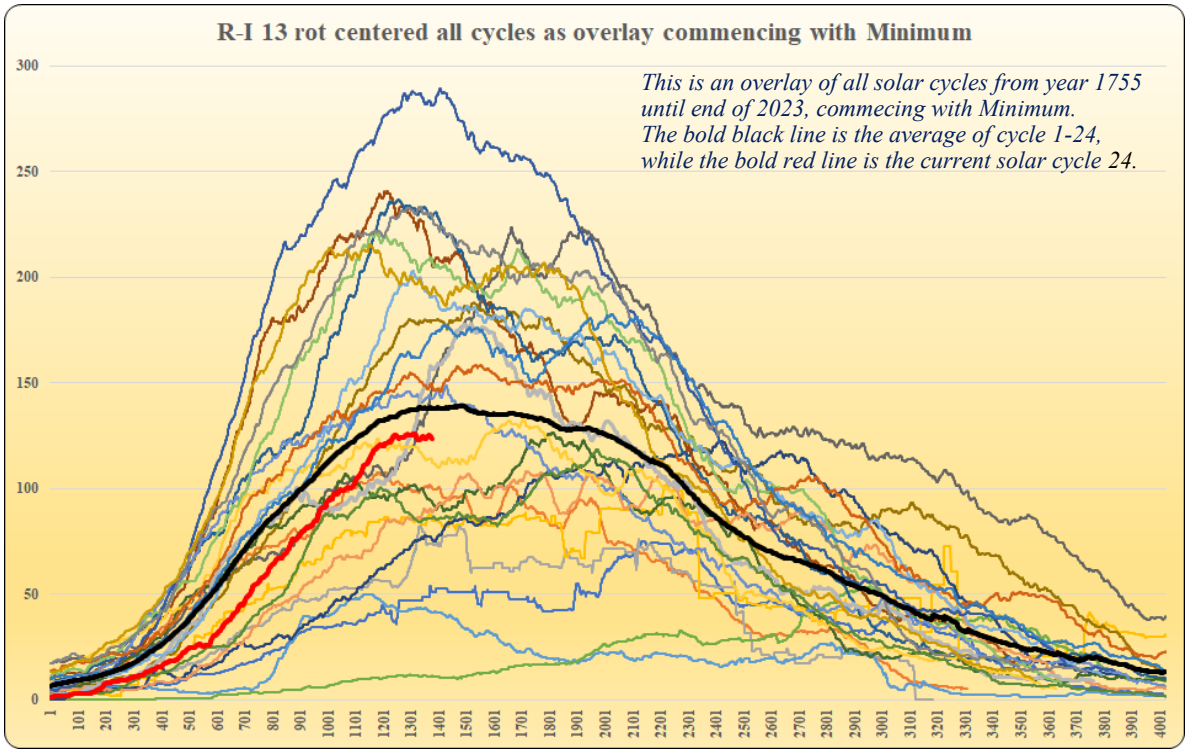


The Grand Cycle:
A fact or an illusion?

Many of us have read about the Gleissberg cycle, or the Grand Cycle. Samuel Heinrich Schwabe (1789–1875). German astronomer, discovered the solar cycle through extended observations of sunspots. A grand cycle is comprising several of the normal solar cycles with a period of about 11 years.
Through the data of calculated relative numbers for the period commencing with the first telescope invented by Galileio Galilei in 1610, a series of files that was found 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

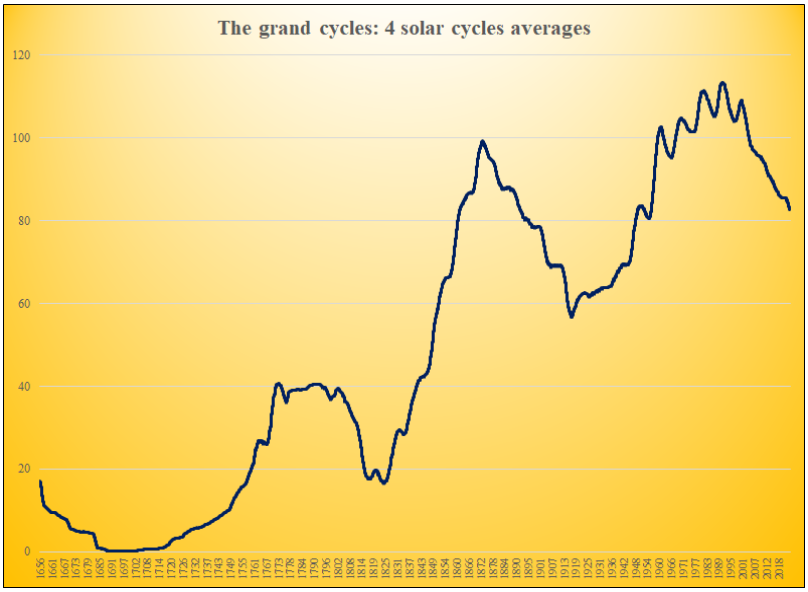
These data have been calculated on with respect to 1-cycle averages and also 4-cycle averages, in order to try finding the cycle lengths and the possible Grand Cycle length.



Abstract
Long-term variations of solar activity significantly affect terrestrial phenomena. Studies have shown cyclic components in solar activity and geophysical phenomena (e.g., the Schwabe, Hale, Gleissberg, and Suess cycles, and a cycle of about 2300 years). In this paper, the wavelet technique is employed to investigate the Gleissberg cycle in solar variations during 5000 BC–1995 AD. Analysis shows time-variable characteristics in the Gleissberg solar cycle over the period; no obvious correlation between the Gleissberg and Suess cycles has been found.
https://www.sciencedirect.com/science/article/abs/pii/S1384107608000511

In this issue we are concentrating on what seems to be another kind of solar cycle length, as it seems we have gone through, more or less, three Grand Cycles from 1610 up until today.

Discovering activities in solar cycles from 1610 to 2023 (continued)



To the left is a graphic illustration of the finds that were made going through and creating 13.rot. centered averages for the solar cycles from 1610 until end 2023.

It seems here we have, apart from the unclear Maunder-minimum, quite clear maxima and minima of the following solar cycles. Let us call them Grand Cycles 1, 2 and 3.

The 4-cycle minimum of the current, Grand Cycle 3, have not yet occurred, but may so within few years.

The Maunder-mimimum is estimated to have occurred 30 June 1678, best estimate.

From the two below tables it may seem we have either a 104,6 year or 108,8 years long Grand Cycle:

1-cycle centered averages (Grand Minima determination)	
1 cycle ctrd avrgs Grand Cycle Minima	
05.01.1695	
04.10.1809	114,74 years
23.06.1901	91,72 years
11.06.2008	106,97 years
Average	
----------	104,48 years
1 cycle ctrd avrgs Grand Cycle Maxima	
20.04.1849	
29.05.1954	105,11 years
Average	105,11 years

AVERAGES	104,63 YEARS

4-cycles averages (Grand Minima determination	
4 cycles ctrd avrgs Grand Cycle Minima	
30.06.1678	
12.12.1802	124,45 years
05.04.1895	92,31 years
Average	
----------	108,38 years
4 cycles ctrd avrgs Grand Cycle Maxima	
07.12.1750	
30.03.1851	100,31 years
01.06.1969	118,17 years
Average	109,24 years

GRAND AVERAGE	108,81 YEARS

The above conclusions may be subject to any discussion in here, which I invite you all to patricipate in.
As mentioned above in this article we may have an even "Grander" cycle that could stretch up to 2300 years long.

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

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 **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 01 hours 24 minutes
and average macrotime used for one registration is 12,80 seconds

CV-Helios Network
- over 42 years in solar amateur astronomy service!

There are now 13215 registrations made, containing 212695 CV-observations!
Last 12 months 5576 CV-observations from 38 observers originating from 17 countries

Editorial close: 15.03.2024 11:58 UTC

CV-Helios Network