

Brief Summary of Carrington Rotation CR2243-CR2245

Kim Hay- Acting Assistant Coordinator

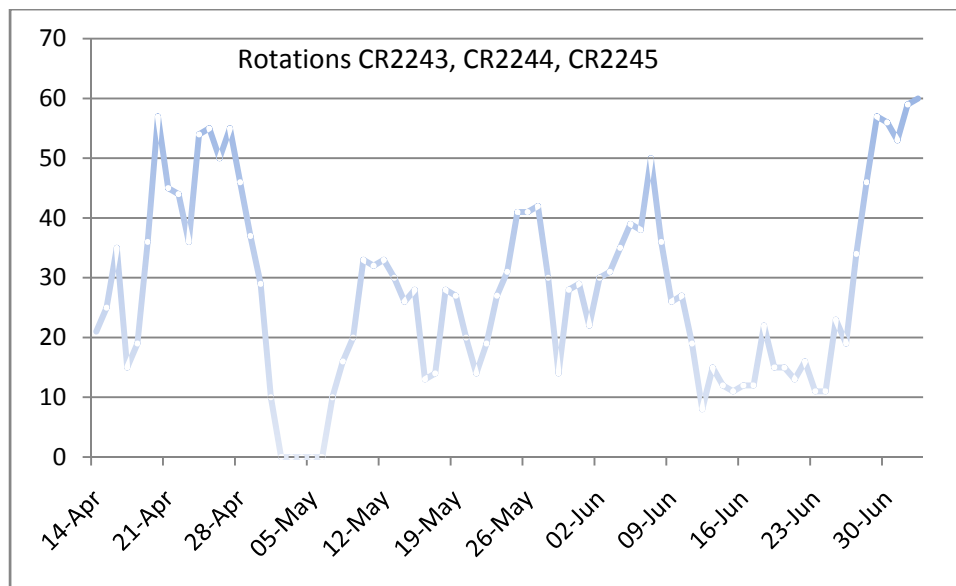
Since its climb to starting Solar Cycle 25 in December 2019, the Sun has certainly been keeping us on our toes to observe. Coming out of CR2242 with low sunspot numbers, it rose rapidly to close to 60 sunspots, then plummeted again to zero at the end April before creating excitement over the last three rotations. Currently at late June/early July we are again up to 60 sunspots. At the same time we also had AR2838 appear and then quickly move off the western limb while producing several C class flares as well as the first X-class flare of 1.59 of Cycle 25 (July 3rd, 2021). There have also been several nights of aurora activity (Geomagnetic Activity) throughout this period. A tipping point was announced by National Center of Atmospheric Research (<https://ncar.ucar.edu/>) on June 12th that we are very close to a Termination event. This is when oppositely charged bands of magnetism meet at the equator of the sun and terminate each other out, which could push the Solar Cycle into high gear.

One particular sunspot, AR2835, was quite large and produced a light bridge. It also had several B-class flares.

There have been two different projections on how this Cycle 25 is going to progress. One based on historical information for the past 100 years shows a lower cycle number, while the last 60 years of solar data from <http://www.sidc.be/silso/datafiles> predicts a stronger cycle (this was also reported in the AAVSO Solar May Bulletin - Rodney Howe). The SIDC graph shows the two possibilities, so we encourage everyone to observe to see the progression of this Solar Cycle 25.

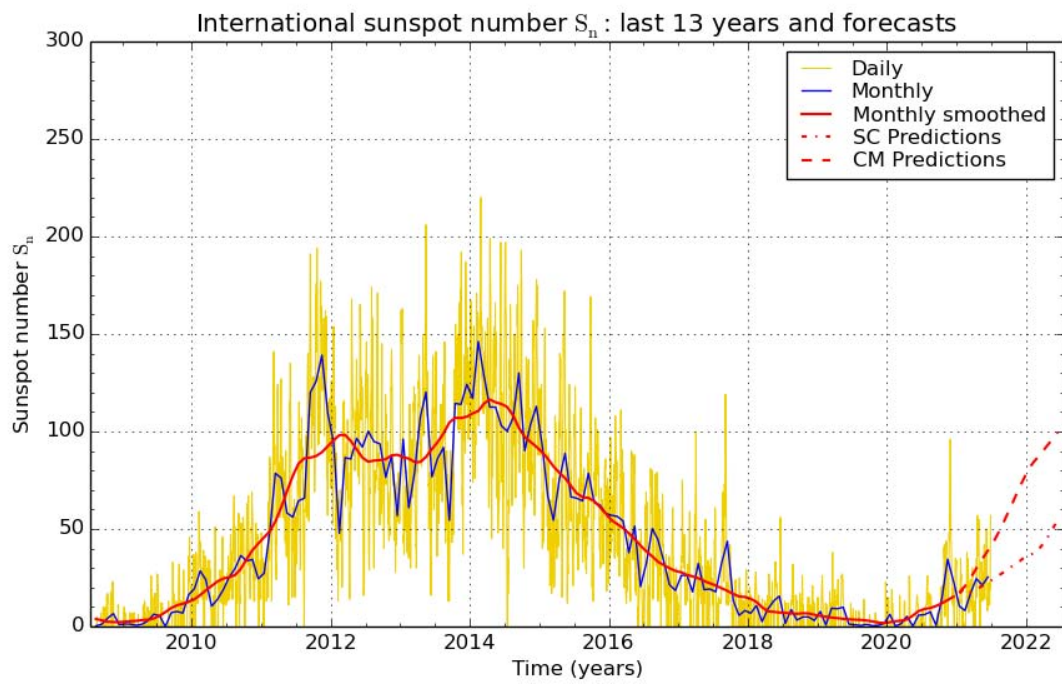
Numbers listed below are from the:

PROVISIONAL INTERNATIONAL NORMALIZED HEMISPHERIC SUNSPOT NUMBERS



- ❖ CR2243 April 14, 2021- May 10, 2021
- ❖ CR2244 May 11, 2021 - June 6, 2021
- ❖ CR2245 June 7, 2021- July 3, 2021

❖ <http://www.sidc.be/images/wolfjmms.png>



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2021 July 2

We have had many submissions of images to the Solar Gallery over the last three rotations. Excellent work by everyone, thank you to all submitters and observers:

Monty Levinthal G. Grassmann Howard Eskildsen David Teske Theo Ramakers Laura Schreiber Frank J. Melillo Vlamir da Silva Junior Geert Vandenbulcke Mário Rui Abade Dave Taylor Jeffery Carels Luigi Morrone Tom Mangelsdore Efrain Morales Rivera Christian Viladrich Paul Andrew Tony Broxton Rik Hill	Number of members in the Solar ALPO Email Group on <i>groups.io</i> <h1 style="text-align: center;">82</h1>
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Carrington Rotation Period	Number of Submissions to Gallery Section
CR2243	407
CR2244	410
CR2245	165
Number of Sunspot Groups on each Hemisphere for CR2243-CR2245	
North Hemisphere	South Hemisphere
12	11
Remember that the Northern Hemisphere was very slow to produce any Sunspot groups. First one showed up in January 23, 2021.	

The images submitted over this time period included examples of prominences (with fantastic work by Paul Andrew), light bridges, the Wilson effect, and Ellerman bombs. Theo Ramakers also provided a Morphology on AR2822 & AR2833 in three wavelengths (540 nm, CaK, and Ha) as shown below. You can see all this great work in the Solar Gallery on the A.L.P.O. website at <http://alpo-astronomy.org>.

