

## Summary CR2246-CR2248

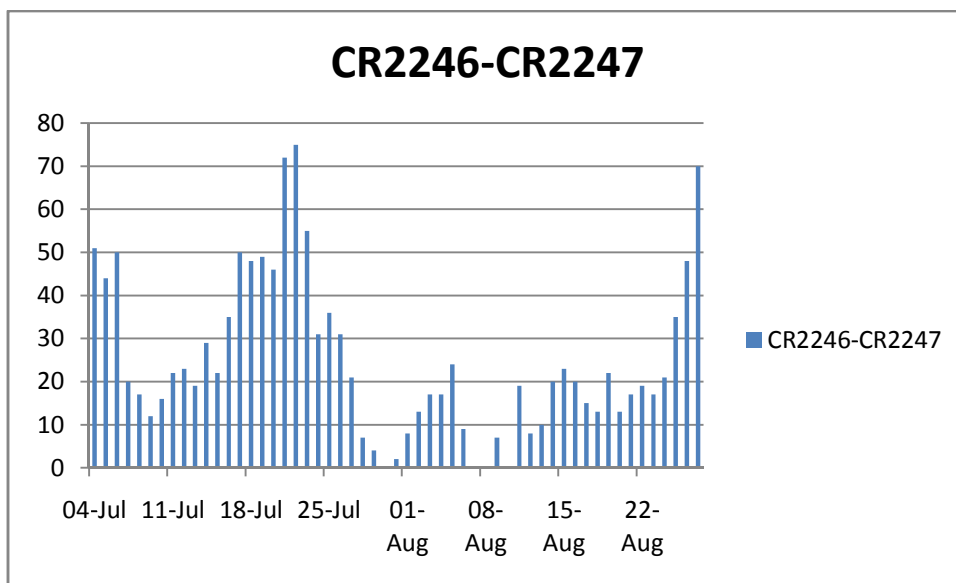
Kim Hay

Acting Assistant Coordinator

CR2246 started on July 4, 2021 and ended on July 31, 2021. CR2247 started on August 1, 2021 and ended on August 27, 2021. CR2248 started on August 28, 2021 and ended on September 24, 2021

These two Rotations saw quite a bit of activity with the highest number of sunspots in CR2246 on July 22nd (75 spots) with 6 active groups, with Groups AR2842, AR2848, AR2846 in the North Hemisphere and AR2849, AR2847 and AR2845 in the Southern Hemisphere.

CR2247 had 70 sunspots on August 27th with AR2861, AR2859, AR2853, AR2851, AR2855, AR2856, AR2857, AR2858 in the Northern Hemisphere and AR2850, AR2852, AR2854, AR2860 in the Southern Hemisphere. By looking at the graph it was a roller coaster of events. On August 19th there was a large dark filament which was 350,000 kms from end to end, and can cause Hyder flares that go into space.



Many CME's were hurled towards Earth, with aurora in the Northern High Latitudes. On August 26th, an eruption from AR2859 (N) produced a "Solar Tsunami". See the video from [www.spaceweather.com](http://www.spaceweather.com) on August 27th, 2021 and watch the shadow go across the Sun.

Now CR2248 (August 28- Sept 23) - continued on with CME's towards Earth producing more aurora. and on September 9th there was a SAR (Stable Red Arc) photographed in Alberta, Canada. This is generally caused by heated energy that leaks into the upper atmosphere. There were also three CMEs that missed Earth during this rotation.

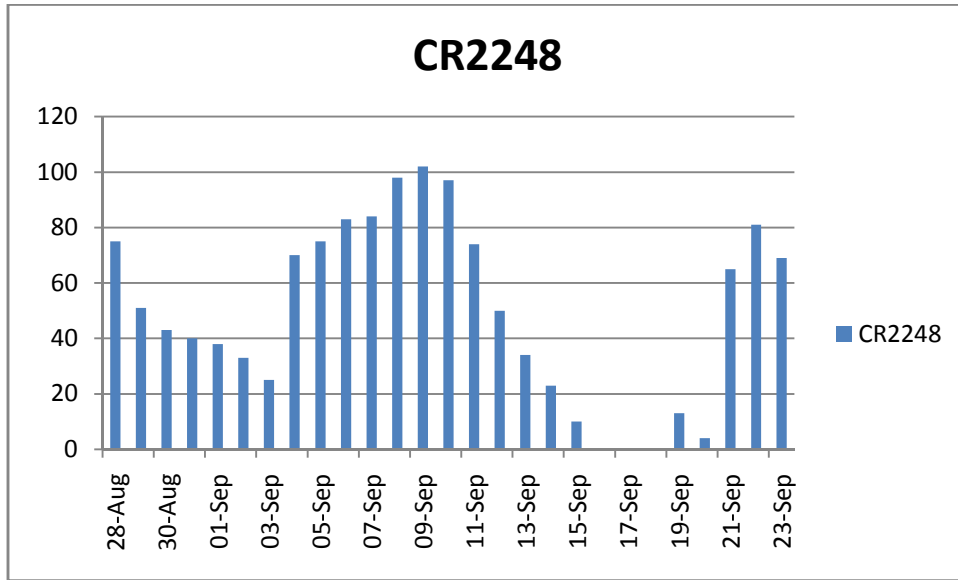
The Sunspot Groups for CR2248 were AR2861, AR2859, AR2864, AR2865, AR2872, AR2871 in the Northern Hemisphere. The Southern Hemisphere had AR2860 (which when it started was 100,000 kms wide and had Beta-Gamma magnetics that are capable of producing possible M class Flares. There

were also groups AR2862, AR2863, AR2866, AR2863, AR2867, AR2868, AR2869, AR2870, AR2871, AR2874, and AR2875.

**Sunspot Groups for Carrington Rotations 2246,2247,2248**

CR Number	CR2246	CR2247	CR2248	Average
N Groups	3	8	6	17
S Groups	3	4	12	19

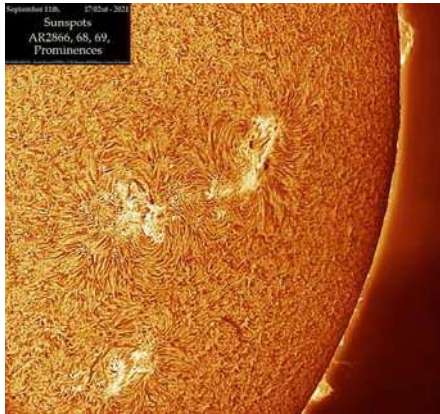
By the look of Sunspot Groups, the North is still trying to catch up to the South Hemisphere in the number of average group totals, but it's pretty close!



We have had the following observers upload their images to the ALPO Solar Gallery for the following Carrington Rotations. Some also uploaded to the SOLAR A.L.P.O email list on *groups.io*

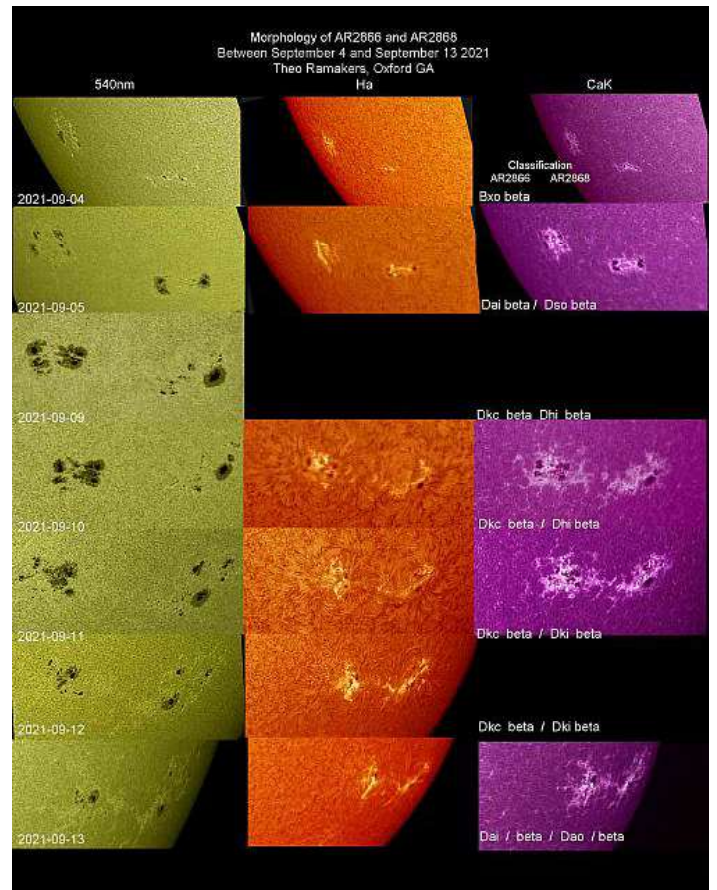
CR2246 -385 images	CR2247- 250 images	CR2248- 524 images
<b>Name</b>	<b>Name</b>	<b>Name</b>
Monty Leventhal	Monty Leventhal	Monty Leventhal
Guilherme Grassmann	Guilherme Grassmann	Guilherme Grassmann
Howard Eskildsen	Howard Eskildsen	Howard Eskildsen
David Teske	David Teske	David Teske
Theo Ramakers	Theo Ramakers	Theo Ramakers
Frank J. Mellilo	Frank J. Mellilo	Geert Vandenbulcke
Geert Vandenbulcke	Christian Viladrich	Christian Viladrich
Christian Viladrich	Paul Andrew	Paul Andrew
Paul Andrew	Efrain Morales	Efrain Morales
Dave Tyler	Luigi Morrone	Luigi Morrone
Efrain Morales	Richard "Rik" Hill	Anthony Broxton

Luigi Morrone	Randy Tatum	James Kevin Ty
Anthony Broxton	James Kevin Ty	Richard "Rik" Hill
Charles White	Pat Poltevin	Tom Mangelsdorf
James Kevin Ty		Walter Maluf
John O'Neil		Pat Poltevin
		Michael Teoh



Taken by Efrain

Morales AR2866,68,69 and prominences. Such dynamic detail. Very well done. (left) The image on the right is by 2021 Walter Haas Award winner Theo Ramakers. Theo did a morphology on Sunspot Groups AR2866 & AR2865. This is just an example of what images are in the A.L.P.O Solar Gallery. Please go visit the Gallery and see the fantastic work that is being done.



## References

SILSO- Solar Influences Data analysis Center

Spaceweather.com

A.L.P.O Solar Gallery- CR2246, AR2247, CR2248

WWw.spaceweatherlive.com- Hyder Flares

<https://www.spaceweatherlive.com/community/topic/684-what-is-a-hyder-flare/>