alpha

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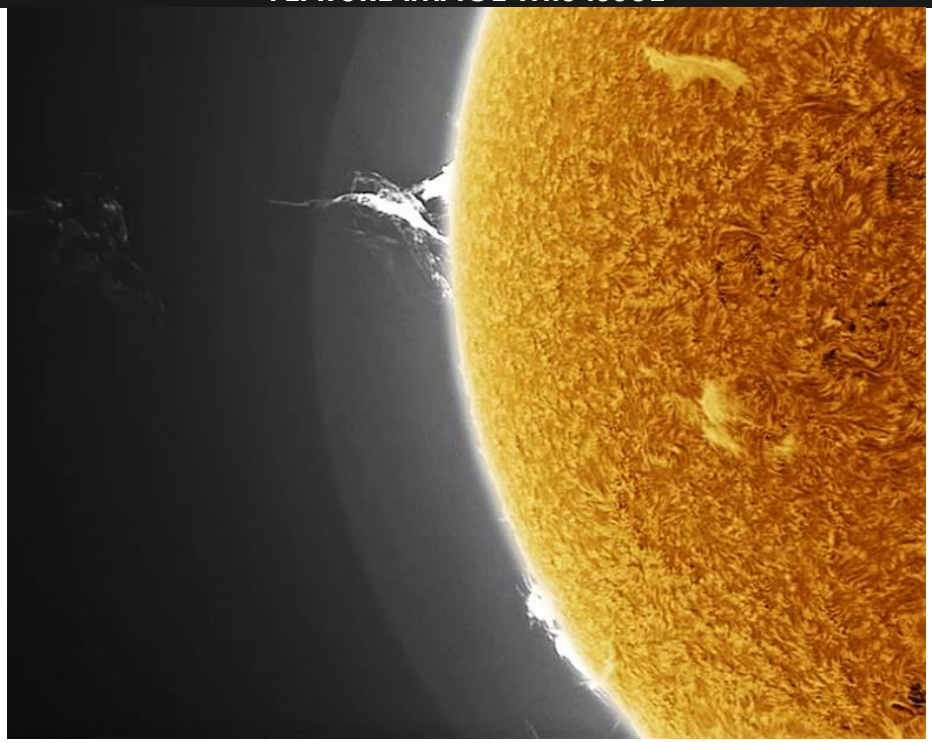
FEATURE IMAGE THIS ISSUE



Dr. Jett Aguilar had the great fortune to catch an eruptive prominence launch solar material into space on May 16. His image was featured in Spaceweather.com. More info on page 87. © Dr Jett Aguilar

CLUB NEWS

April Monthly Meeting

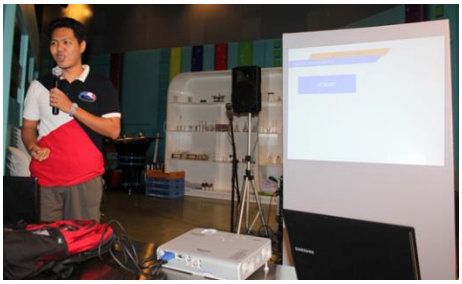
Last May 17, the ALP held its monthly meeting at Exploreum at SM Mall of Asia in Pasay City. Members who attended were ALP President James Kevin Ty, wife Charito and son Kendrick Cole (KC); Treasurer Andrew Ian Chan and Iah Serna; Secretary Christopher Louie Lu, wife Karren and daughter Frances; directors Edge Lat and Peter Benedict Tubalinal; Justine Garcia; and, Norman Marigza. There were also guests from UP Astro Soc and RTU Astro Soc - Orville Pelicano, Poly Magaday, Alfred Soriano, Precious Jara Prestosa, Mark Lenczner Mendoza, and Mic Caldo.

The meeting started at around 3 p.m. with ALP Secretary Christopher Louie Lu discussing Spectroscopy. As astronomers, we always look at stars, and there are a variety of stars in the night sky, a mix of different brightnesses, colors & sizes, but more that these obvious traits, it is also through starlight that we know so much about these beautiful "diamonds in the sky." Unlocking the secret of starlight takes a collection of people with the extraordinary knowhow in various fields of the sciences.

It was Isaac Newton who first discovered that white light is composed of different colors of light and he called it the 'Spectrum'. This was followed by Joseph von Fraunhofer, who discovered that there are dark lines across the spectra and that these lines are different and distinct from other stars. These dark lines would later be called "Fraunhofer absorption lines." The partnership of Gustav Kirchoff & Robert Bunsen uncovered the connection between these absorption lines with the known chemical elements. Both scientists had successfully figured out how to read these absorption lines and actually know the star's chemical composition. Fr. Angelo Secchi, Jesuit priest & astronomer, made the first classification of stars based on their color spectra. Henry Draper first took photographs of various spectra from different stars. Edward Pickering took large numbers of spectra from a wide field telescope and had the stellar spectra analyzed & cataloged. He employed a staff of women to deal with this monumental task, as women were believed to be more patient and thorough in doing them. There were a few women scientists worth noting, such as Annie Jump Canon, who took Fr. Secchi's spectral classification and improved on it. This method of stellar classification is now being used by astronomers since. Henrietta Swan Leavitt, discovered the relation between the luminosity and the period of Cepheid variable stars. This period/luminosity relationship will be used decades on to measure the expansion of the universe. Cecilia Payne was able to figure out the color/temperature and hydrogen fuel relationship inside a star. Combining this with the classification system by Annie Jump Canon, they were able to estimate the hydrogen fuel contents of stars. Data, research and analysis made by these unsung heroines of astronomical science were then gathered and compiled by Ejnar Hertzprung & Henry Norris Russell to create a diagram that showed the brightness/ temperature and size/color relationship of different stars. This diagram is now known as the "Hertzsprung-Russell Diagram" and has since become a powerful tool to astronomers to classify different types of stars.

This understanding of the visual spectrum has opened the way for astronomers to understand the greater parts of the invisible spectrum - gamma, X-ray, ultraviolet, infrared, microwave & radio. Virtually invisible to human eyes, ingenuity and innovation has enabled us to see these various parts of the spectrum. We were able to design, build and send various probes up in our upper atmosphere to continually see the invisible – this has led to the creation of the Chandra X-ray Probe, the Hubble Space Telescope, the Spitzer & Herschel Infrared Telescopes and the WMAP Microwave Telescope. Looking forward to the next generation of telescopes, we anticipate the launch of the James Webb Space Telescope, which is the successor to the Hubble Space Telescope. This telescope will be bigger and could see farther than its predecessor. It could see well into the visible range but could also see most of the infrared portion of the spectrum. Expectations for this telescope are very high (⇨ *p. 78*).

Though this mission is plagued with delays and budget cuts, scientists, designers & engineers push on to make it on its planned launch date on October 2018.



The presentation was followed by another interesting topic on “Measuring Light: Basics of Photometry” by Norman Marigza.

Photometry is the science of measuring light. It is a combination of metrology and optics. Light exists in various forms but photometry's main concern is the measurement of the flux at visual wavelengths. The flux received, combined with measurements from spectroscopy and astrometry, will allow us to deduce various properties of the source.

A demo on how to do photometry was presented using the software Iris. Differential photometry (measurements taken at the same image field) was used with the secondary standard star nu Andromedae and compared against other stars in the field through the magnitude equation m1 - m2 = -2.5 log (b1/b2).

Applications in photometry were also described, such as: light pollution studies; transit and eclipse events, such as those associated with exoplanets and variable star systems; and, limb darkening coefficients to test against stellar atmosphere models. An astronomy program was also introduced, entitled "Philippine Light Map" in which the local amateur astronomy community is invited to take part by providing image data to monitor and determine local light pollution levels.

Lastly, Iah Serna and James Kevin Ty then invited members to join ALP's May 31, 2015 excursion at Canyon Cove in Batangas. The meeting ended at around 5 p.m. - *James Kevin Ty*

Observing Reports

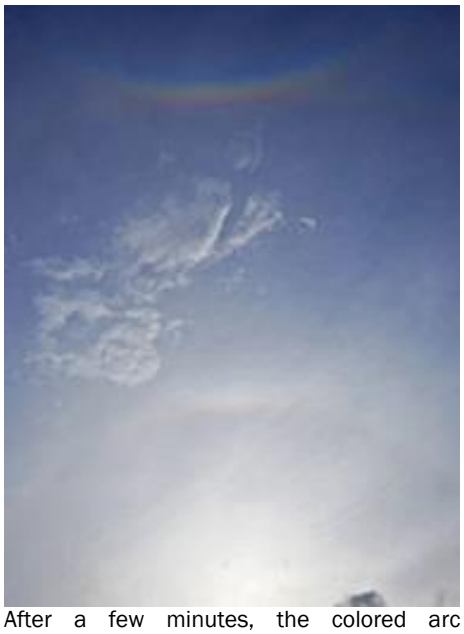
Light and Color in the Sky

May 11. We were on tornado watch until 8 p.m. I was very glad that the severe storms skipped us, but we had rain showers past 8 p.m., then a sudden yellow brightness at around 8:20 p.m. as the setting Sun shone through and lit up the surroundings against a dark sky. What happens with the combination of rain and sunshine? Rainbows!

What was amazing with this rainbow was the presence of bright sun rays - like a colored wheel in the sky!

Clouds near the Sun caused intermittent sunlight passing through to create the rainbow and the lit rays, causing arcs instead of a full bow.

May 25. Ahead of incoming thunderstorms, there were colored displays in the clouds near the sun near sunset - a halo and a colored arc above it.

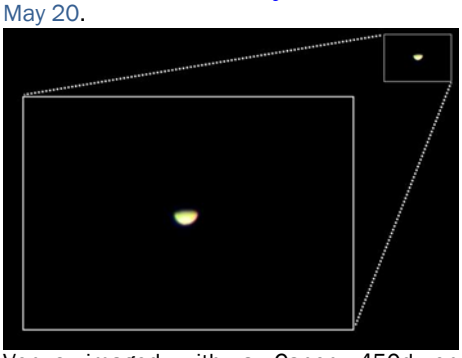


After a few minutes, the colored arc (circumzenithal arc) above it brightened as a passing cloud spread the color around.

- Jun Lao, Mason, Ohio

Moon & Venus Conjunction

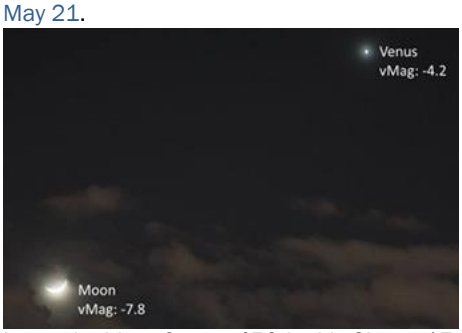
May 20.



Venus imaged with a Canon 450d on Celestron Powerseeker 80EQ. 1/60 second at f/11 and ISO 400.

2 day old waxing crescent Moon with 6.6% illumination. Imaged with a Canon 450d on Celestron Powerseeker 80EQ. 1.3 seconds exposure at f/11 and ISO 800.

May 21.



Imaged with a Canon 450d with Sigma 17-70 mm lens. 4 seconds at f/4 and ISO 400.
- Christopher Louie Lu

Milky Way

At Lago de Oro. 30 seconds exposure at f/4 and ISO 3200, using a Nikon D3 with Nikkor 14 mm lens (⇨ *p. 79*).

Single frame, guided with a Polarie at half speed. Post processed in PhotoShop CC, cropped. – Val Villanueva

Moon

May 5. The sky this evening was partly clear but I proceeded in imaging the waning gibbous Moon using a Canon EOS 500D DSLR with Canon EF100-400 mm f/4.5-5.6 IS L lens set at 400 mm f/11 on sturdy tripod.

- James Kevin Ty

May 5.

16-day old 97.6% illuminated Moon. 1/125 second at f/11 and ISO 200 with a Canon 450d on Celestron Powerseeker 80EQ.

May 6. 17-day old waning gibbous Moon 94% illuminated.

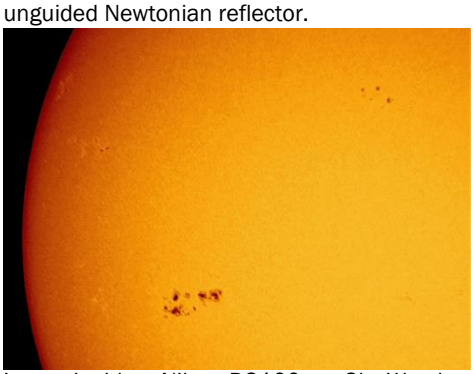
Imaged with a Canon 450d on Celestron Powerseeker 80EQ. 1/100 second on ISO 400 and f/11 with Baader solar filter, density 3.8. – Christopher Louie Lu

May 19. Brother Sun, Sister Moon. 5% illuminated 45-hour old crescent Moon. Moon about 30 degrees high in altitude.

- Jun Lao, Mason, Ohio

Sun

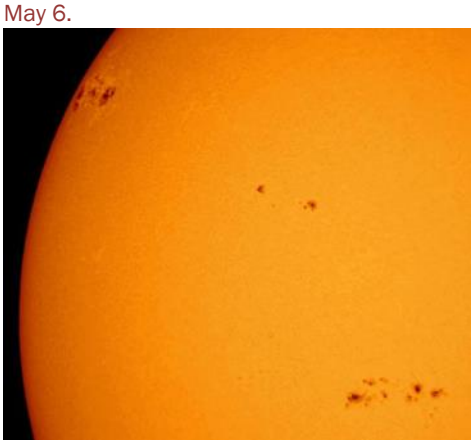
May 4. White light solar image in false-color. Processed in GIMP. Eyepiece projection on unguided Newtonian reflector.



Imaged with a Nikon D3100 on Sky-Watcher Explorer 150 PL and Baader solar filter

May 5.

May 6.

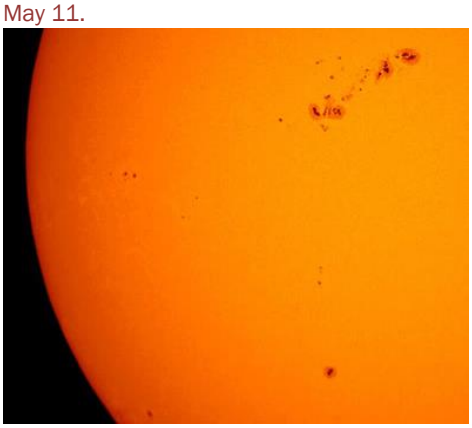


May 7.

May 9.

(⇨ p. 80)

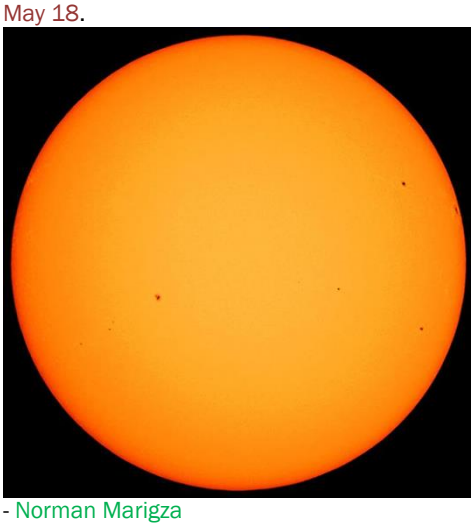
May 11.



May 14.

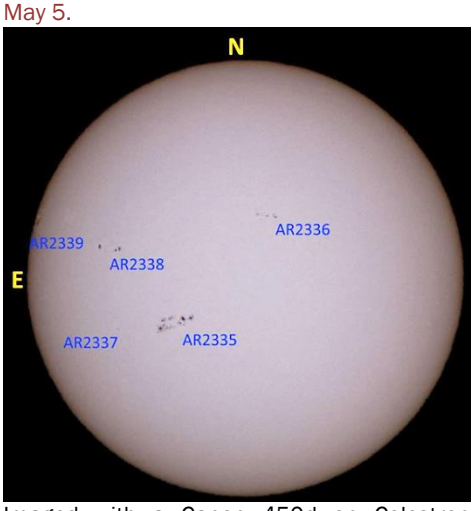
May 16.

May 18.

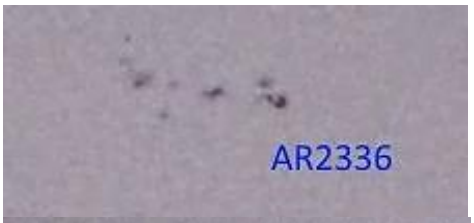


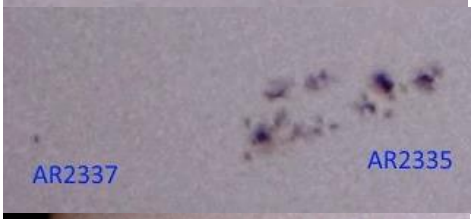
- Norman Marigza

May 5.

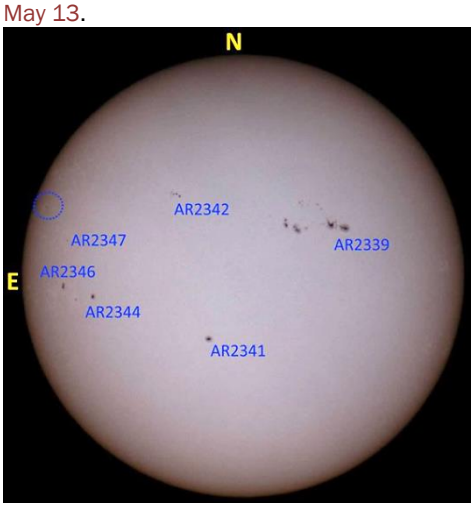


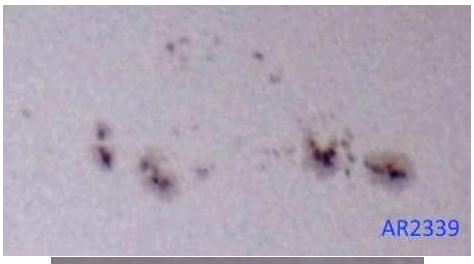
Imaged with a Canon 450d on Celestron Powerseeker 80EQ. 1/4000 second at f/11 and ISO 100 and Baader solar filter, density 3.8

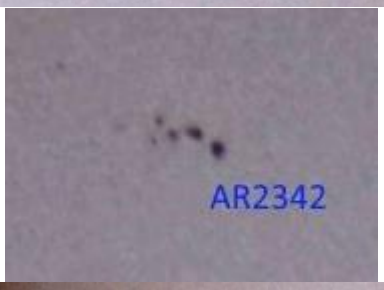




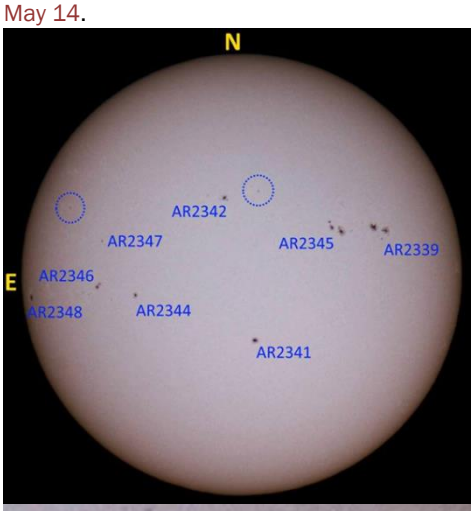
May 13.





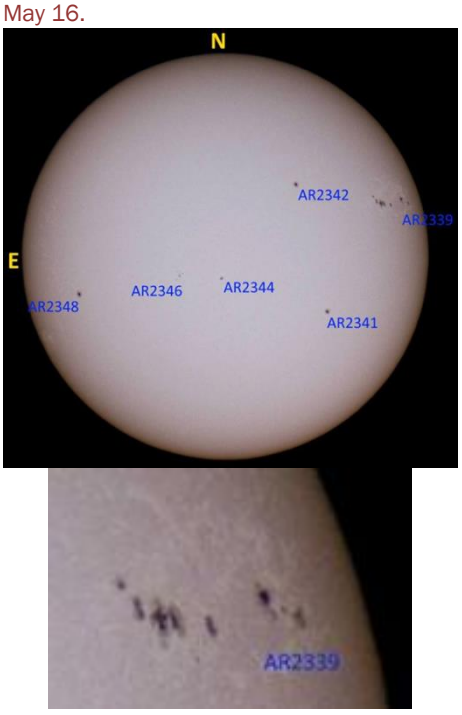


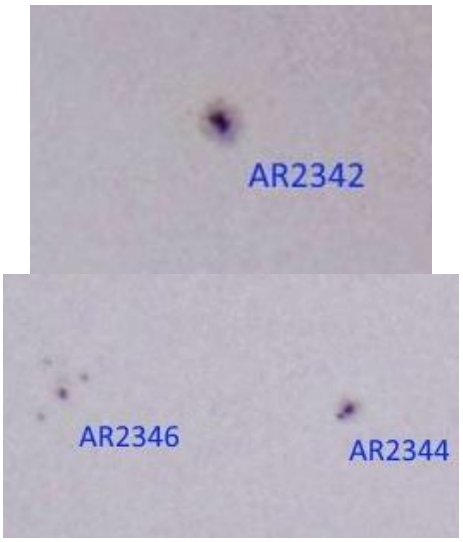
May 14.



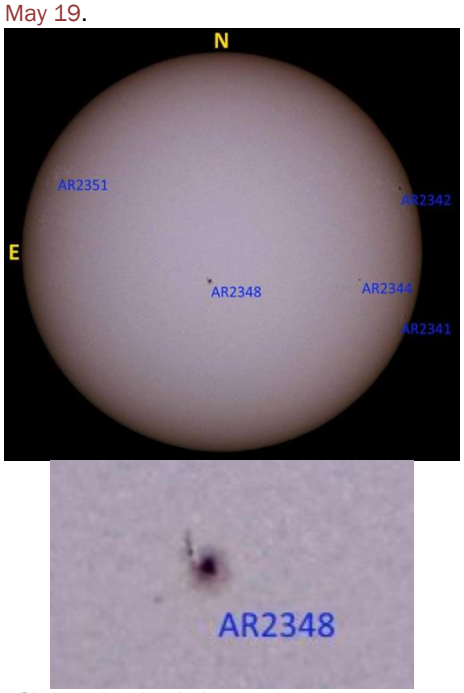
(⇨ *p. 81*).

May 16.



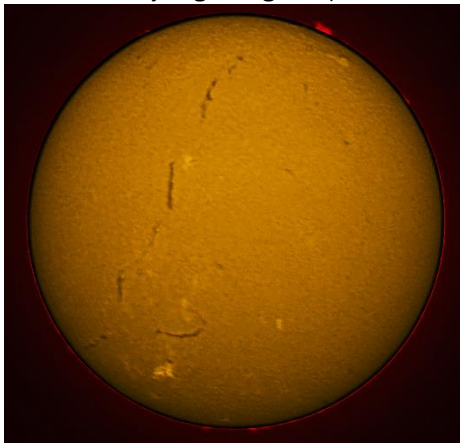


May 19.

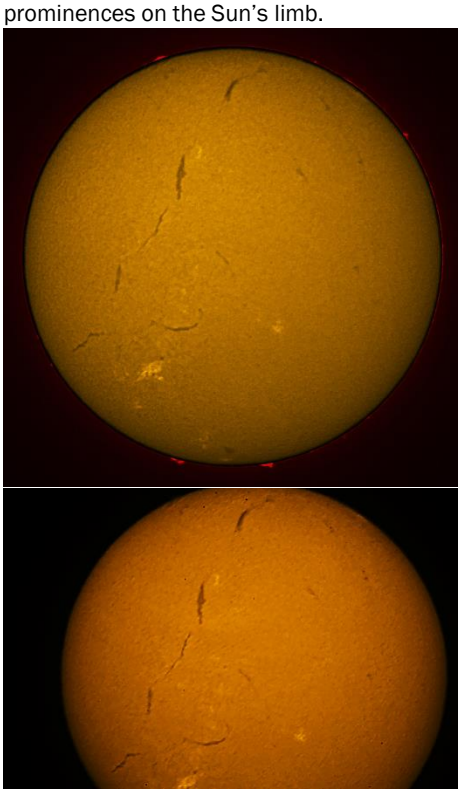


- Christopher Louie Lu

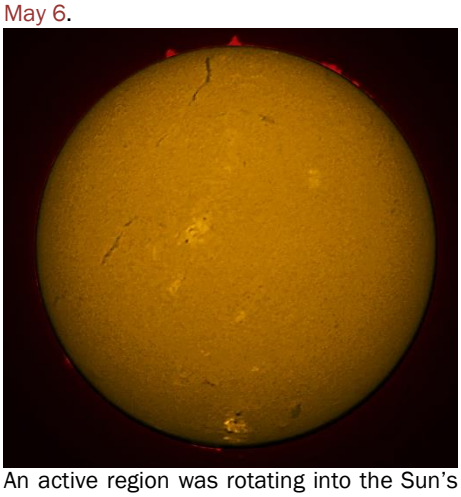
May 2. What dominated the view of the Sun in H-alpha was this long chain of a dark filament crisscrossing the Sun. There was also a relatively large hedgerow prominence.



May 3. The long chain of a dark filament continued to crisscross the Sun's face, while an active region was showing up brightly as it rotated in. There were also a number of prominences on the Sun's limb.



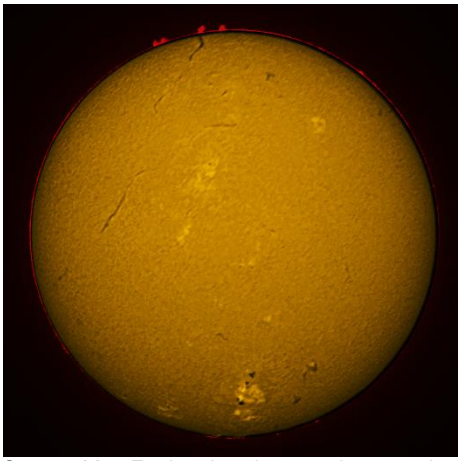
May 6.



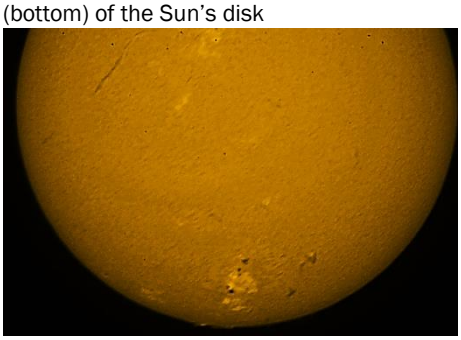
An active region was rotating into the Sun's disk, while remnants of the long dark filament could still be seen, and was likely responsible for one of the eruptive prominences on the Sun's limb.

May 7. The active region that rotated into the Sun's disk continued to call attention to itself in the light of H-alpha, as it was quite bright and it surrounded the dark spots that were sunspots.

There were still dark filaments following the path of the long dark filament, and while disconnected, they seem to be part of the complex. As the dark filament hit the limb, there was an extension into an eruptive prominence on the sun's limb (⇨ *p. 82*).



Sun on May 7, showing the prominent active region AR 2339, having just gotten inside (bottom) of the Sun's disk

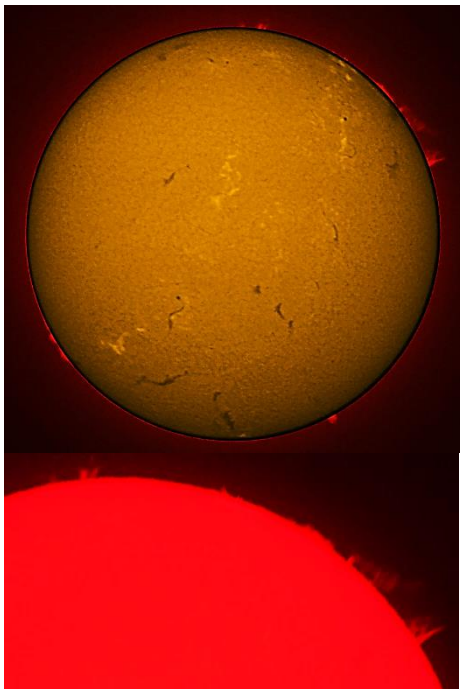


May 12. Wow. There was an amazing large and wide prominence coming in to the Sun's disk. In the meantime, the active regions appeared bright in the light of H-alpha, including AR 2339, to the upper right of center of the Sun's disk.

Aside from the large wide prominence on the limb, there were also a number of bright active regions sporting small spots that likely were the umbrae of sunspots visible in white light. A moderately-sized dark filament could be seen right of center of the disk, above, while a 3D dark filament was to its right.

May 13. The large wide hedgerow prominence on the Sun continued to impress, converting into an eruptive prominence that stretched out even more in terms of height and looking more like it just sent out material into space.

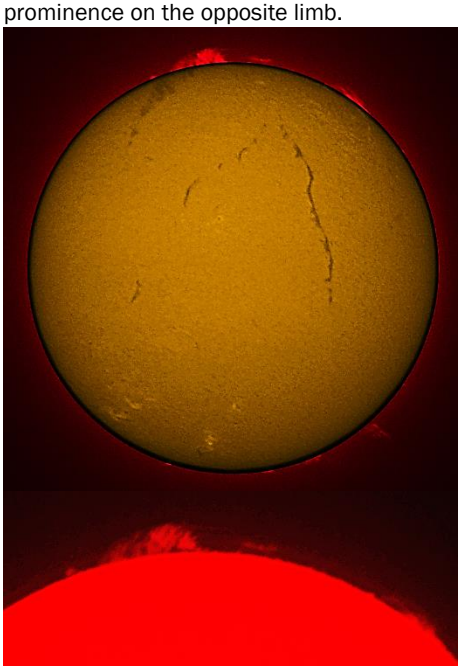
May 17. There were nice spiky detailed eruptive prominences on the Sun's western limb that made for interesting observing, while a number of twisty dark filaments could be seen on the Sun.



May 19.

There were two sets of large eruptive prominences that called attention to the Sun's eastern limb. On the opposite side, there were a number of smaller prominences, but there was a tall and faint complicated eruptive prominence at the 2 o'clock position, that very likely erupted previously and ejected material into space.

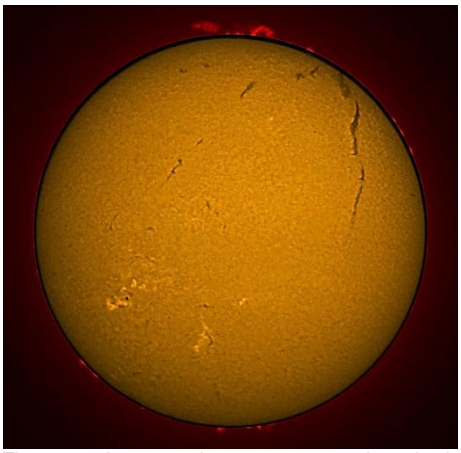
May 28. Had a gap of numerous days when I was out on the road or the early evenings were cloudy, but boy, when the Sun came back, it brought a very nice, large eruptive prominence into view, connected to a 3D dark filament. In addition to this large wide prominence, was another wide, flat prominence that was rotating out of view, while there was a tall, spiky eruptive prominence on the opposite limb.



Aside from the prominences, there was a very large V-shaped dark filament that covered a large expanse of the Sun's disk.

On the opposite side of the Sun's disk were bright active regions that would be rotating into the center of the Sun soon.

May 30. This evening brought another amazing view of the Sun as the complex of large eruptive prominences were still visible on the Sun's limb and looked very interesting. In addition, remnants of the long V-shaped dark filament were still in view, with the vertex reaching the Sun's limb (⇨ *p. 83*).



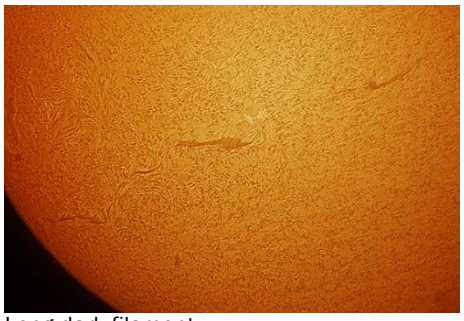
The eruptive prominences seemed to look like a pair of arch prominences - one which was partial, so it looked like there was a fountain on the Sun's limb at first glance, or a flattened McDonald's logo.

- Jun Lao, Mason, Ohio

May 1. The sky was clear and seeing condition fair. There was also a moderate-sized eruptive prominence visible on the northwest limb.

Group of eruptive prominences

The huge long dark filament continued to stretch in length and was about 2/3 of the solar diameter.



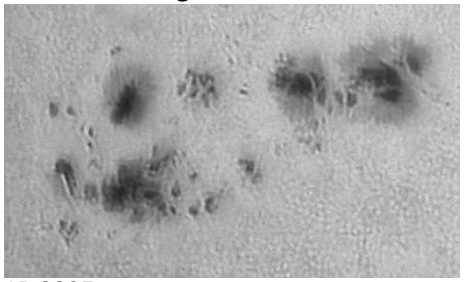
Long dark filament

May 3. The sky was very cloudy and I thought I wouldn't be able to image the Sun. I had to play hide and seek with the Sun whole morning till before noon to capture a 2-pane mosaic of the super long dark filament that stretched almost the entire solar diameter this morning!

I had to use a 2-pane mosaic for the whole dark filament to fill into my ZWO ASI120MM camera field of view! AR2335 was moderate in size but didn't attempt to image it in white light because of clouds.

May 4. The sky was clear but seeing condition was not that good. AR2335 continued to grow while the western section of the long dark filament was nearing the western limb. I was also able to do a white light close up of AR2335 under poor seeing.

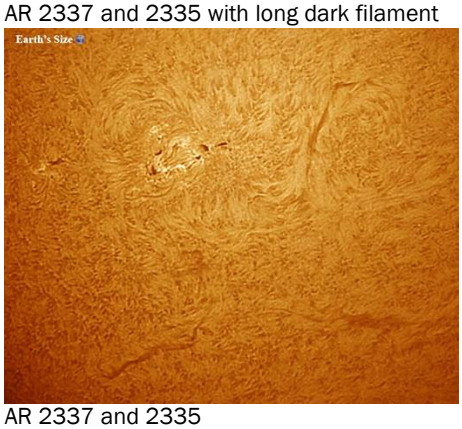
AR 2335 and long dark filament



AR 2335

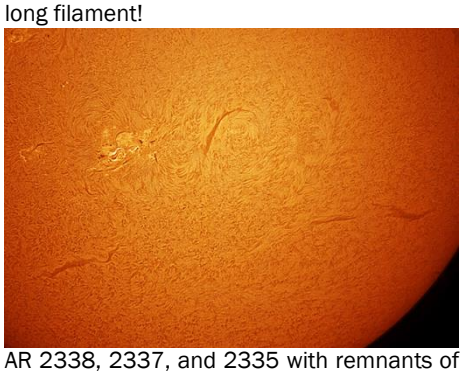
May 5. The sky was partly clear but seeing condition was ok. AR2335 was getting active while the long dark filament was still visible with parts of its western section nearing the western limb already, so parts of it would soon exit the limb.

AR 2337 and 2335 with long dark filament

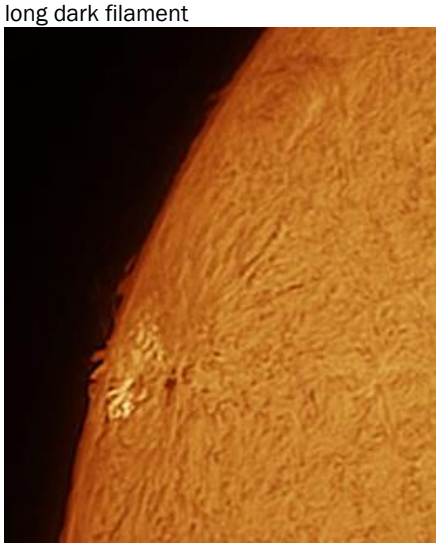


AR 2337 and 2335

May 6. The sky was partly cloudy and hazy. Seeing condition was fair. New AR2339 entered the northeast limb and showed some flaring activity inside its core. AR2335 was also very active. The long dark filament had already snapped in its center section, ending several days of a record-stretching long filament!

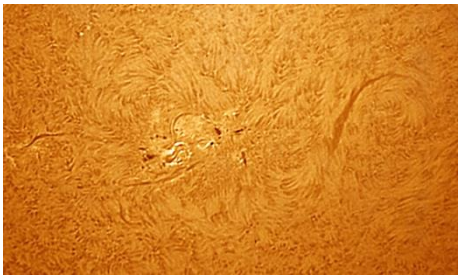


AR 2338, 2337, and 2335 with remnants of long dark filament

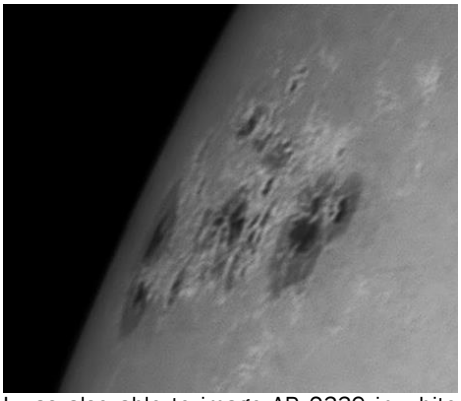


AR 2339

(⇨ *p. 84)*



AR 2338, 2337, and 2335

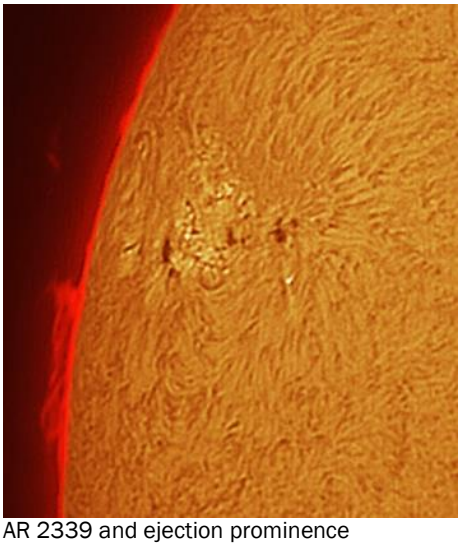


I was also able to image AR 2339 in white light under poor condition (*above*) as it was already partly obstructed by our roof in the middle of my exposure.

May 7. The sky was partly clear but hazy. Seeing condition was good.

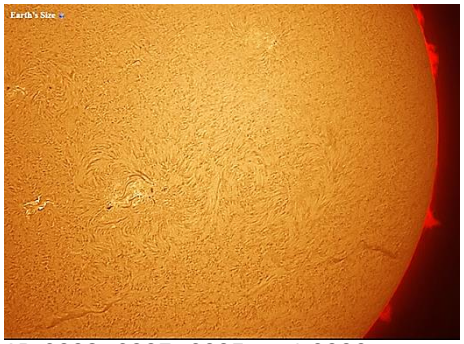
AR 2339 was now the most beautiful object on the Sun both in Hα and white light.

AR 2335 was silent while smaller AR 2337 was showing some flaring activity inside its core.

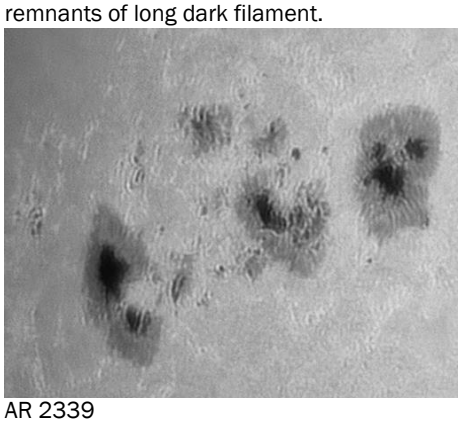


AR 2339 and ejection prominence

There were also two nice groups of eruptive prominences in the southwest limb as well as nice wide hedgerow and ejection prominences in the northeast limb near AR2339.



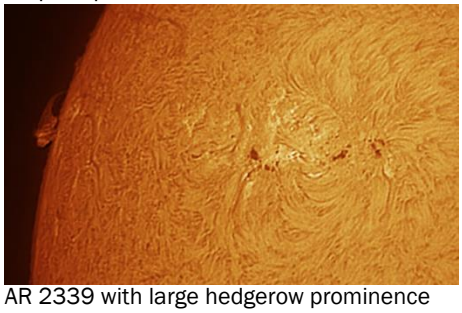
AR 2338, 2337, 2335, and 2336 sunspot groups with eruptive prominences and remnants of long dark filament.



AR 2339

May 9. After last night's short burst of hard rain brought about by Typhoon Dodong, the sky this morning was surprisingly clear and seeing condition was very good. There was a nice large hedgerow prominence in the northeast limb as well as a nice large eruptive prominence in the southwest limb. AR2339 was very beautiful both in Hα and white light wavelength.

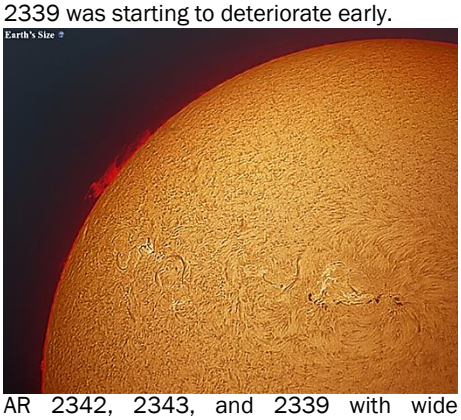
AR 2338, 2337, and 2335 with large eruptive prominence



AR 2339 with large hedgerow prominence

AR 2339

May 11. The sky was partly clear but clouds kept on pestering me during my less than 15 minutes imaging window before I get obstructed by our roof! Luckily, I was still able to at least image in Hα wavelength AR 2339 with wide hedgerow prominence. AR 2339 was starting to deteriorate early.



AR 2342, 2343, and 2339 with wide hedgerow prominence

May 12. The sky was initially clear and seeing was good. AR2339's flaring activity was increasing and the two huge hedgerow prominences in the northeast and northwest limbs added spice to my Hα imaging session.

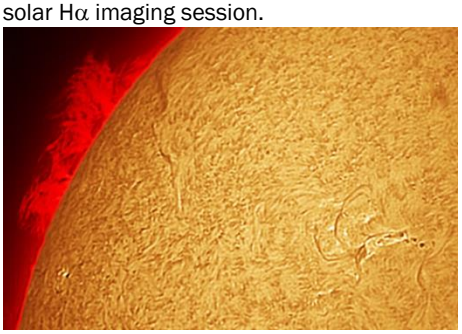
AR 2339 and huge hedgerow prominence

AR 2346, 2347, 2344, 2342, 2343, 2341, 2340, 2345, and 2339 sunspot groups with wide hedgerow prominence (⇨ *p. 85)*.

Unfortunately, because of my very limited observing window time of less than 15 minutes, I had to choose to image Hα or white light, so for today, I had no choice but to prioritize Hα imaging.

May 13. The sky was clear and seeing was fair. AR2339 (*below*) continued to produce flaring activities inside its core, despite the fact that it had deteriorated a lot. The huge northeast wide hedgerow prominence had grown taller and bigger.

AR2342 looked like a spider crawling on the solar surface. Overall, a nice short imaging solar Hα imaging session.

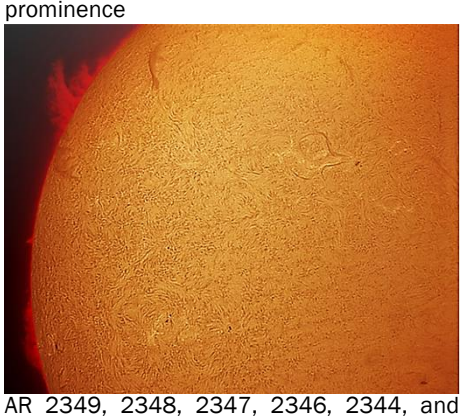


AR 2347 and 2342 with huge hedgerow prominence

May 14. I was able to do some solar imaging after lunch through large passing clouds, but I waited for an hour before I could get a small cloud opening for me to do some Hα solar imaging. The huge northeast hedgerow prominence had grown taller and was a nice object to view. Another huge wide hedgerow prominence could be seen in the southeast limb near possible new sunspot group AR2349 (?). Decaying AR2339 continued to produce flaring inside its core as it started to move closer to the western limb.

AR 2339

Possible sunspot group AR 2349, 2346, 2347, and 2344 with wide hedgerow prominence



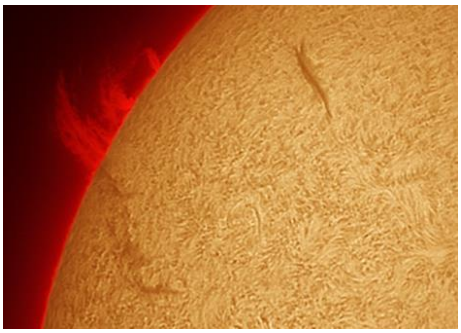
AR 2349, 2348, 2347, 2346, 2344, and 2341 sunspot groups with 2 huge hedgerow prominences

Huge hedgerow prominence

AR 2342, 2345, and 2339 sunspot groups with large faint eruptive prominence

May 15. I was able to get a quickie shot of the huge hedgerow prominence before getting clouded out again.

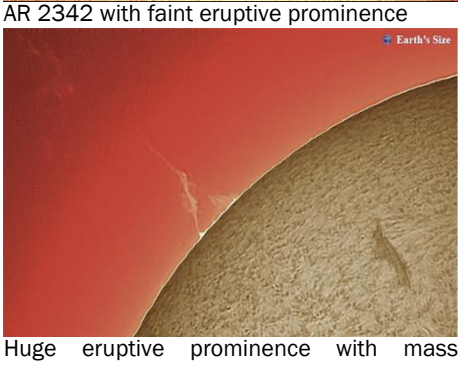
It showed the hedgerow FilaProm entering the northeast limb as well as showing possible ejection scenario in the hours to come....



Huge hedgerow fila prom

May 16. I used the few remaining minutes of my solar observing window to image the Sun. The huge hedgerow FilaProm from yesterday had ejected out of the solar limb! Unfortunately, because of my obstruction now, I was only able to image after the ejection mass had already launched out of the limb by more than 3x its original height from yesterday's session. Also had a hard time getting good quality image because of the limited time but I'm still happy with the results, as I was expecting that I already couldn't image today from roof obstruction.

AR 2342 with faint eruptive prominence



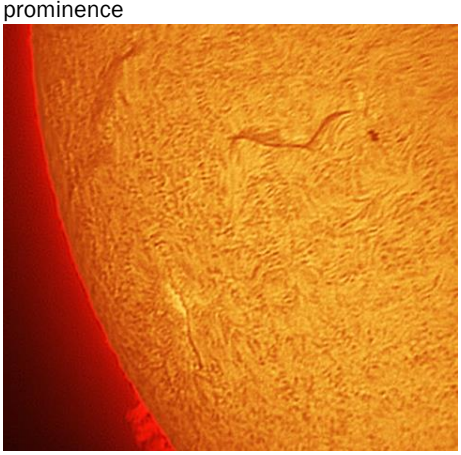
Huge eruptive prominence with mass ejection

Aside from the ejection mass of the northeast huge hedgerow, there was also another huge, fainter eruptive prominence that was visible in the northwest limb.

May 17. The sky was partly cloudy but I wanted to see if there was any time left for me to still image the Sun (⇨ *p. 86*).

From my session today, I got less than 5 minutes left, thus I think tomorrow's session would be my last solar session for the season except on weekends or if I have free time before lunchtime. The huge ejected northeast hedgerow prominence was mostly gone, except for a small eruptive prominence left behind. With such a limited time, I had to choose an interesting frame for me to image before I get obstructed.

AR 2342 and 2339 with huge faint eruptive prominence



AR 2348 with numerous dark filaments

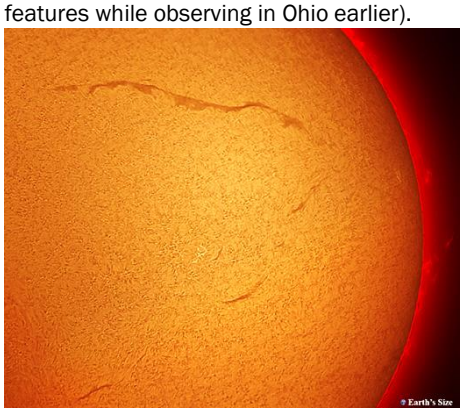
The northwest limb eruptive prominence had grown in size a bit from yesterday and AR2339 was about to exit the western limb. Numerous dark filaments surrounded AR2348 in the southeast limb.

May 19. A futile attempt to try to image the Sun showed a not so good resolution image due to a near-obstructed view.

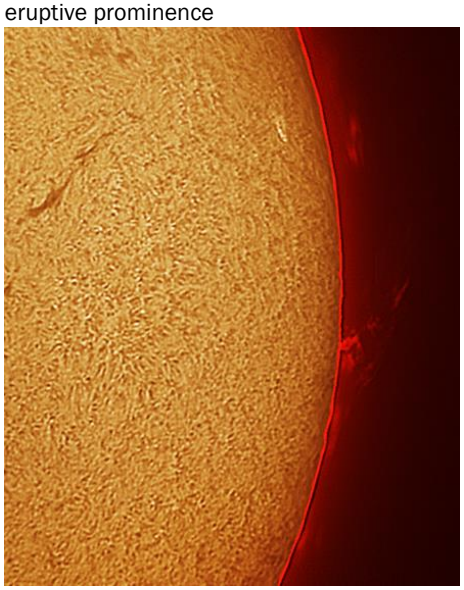
AR 2346 and 2344 with numerous eruptive prominences

The number of minutes left for a clear window was less than 3 minutes with that cramped time. I think the image was fair to show some details on AR2346 and 2344 with some groups of eruptive prominences.

May 29. I got back from Bicol this morning and I was able to get a glimpse of the Sun in the laundry area around lunch time. The V-shaped long dark filament was the most prominent feature on the Sun's surface. There was also a huge eruptive prominence in the southwest limb, but unfortunately, I caught only the remnant of the large eruption this morning, which was very cloudy here in Manila (Jun caught the best of the features while observing in Ohio earlier).

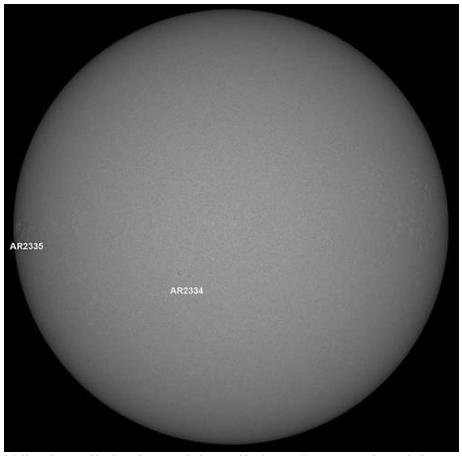


Huge V-shaped dark filament and huge eruptive prominence



There was also a faint huge eruptive prominence faintly visible in the northeast limb (*above*). Anyway, this session could be called my part-time solar imaging session till mid-August before I can assume regular solar imaging session once again. - James Kevin Ty

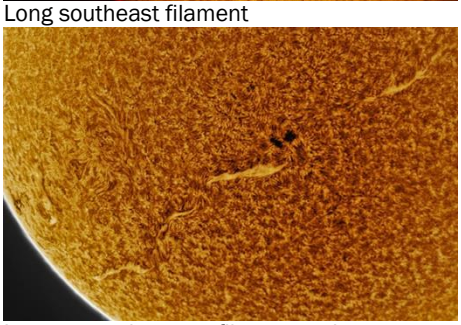
May 1. The Sun only had 2 small sunspots, but in hydrogen alpha light, it showed a very long thin filament on the surface snaking its way to more than two thirds of the Sun's diameter! I used a Lunt 100mm/BF1800 Hydrogen Alpha telescope.



Whole disk in white light. Imaged with a DMK51AU02.AS camera on TMB 92 and Baader Herschel wedge with a 0.5x reducer

Whole disk Sun in the light of Hydrogen alpha. Imaged with a DMK51AU02.AS camera on Lunt 100 mm/BF1800 filter and 0.5x reducer.

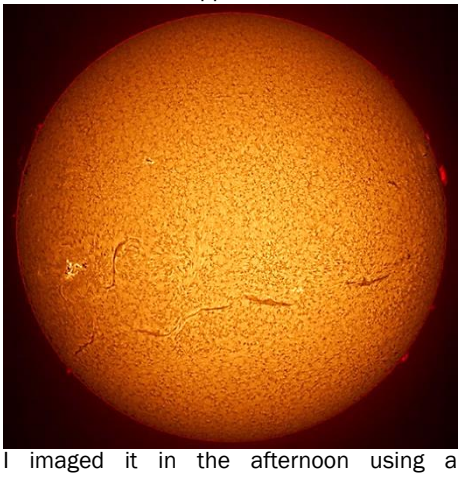
Long southeast filament



Long southeast filament in reverse coloration.

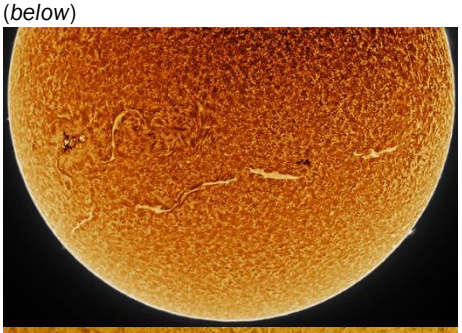
(⇨ *p. 87*).

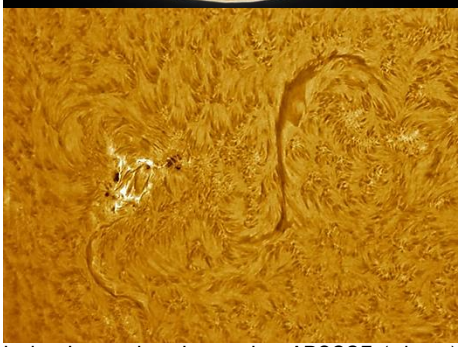
May 3. One of the longest objects in the solar system (more than 1 million kilometers long!) was snaking its way across the Sun's entire disk - a very long solar filament stretching from the Sun's southeast limb and almost to the opposite southwest limb.



I imaged it in the afternoon using a Hydrogen Alpha solar telescope (Lunt 100 mm/BF1800).

Long solar filament and AR 2335 in hydrogen alpha light (*above*) and in inverse (*below*)

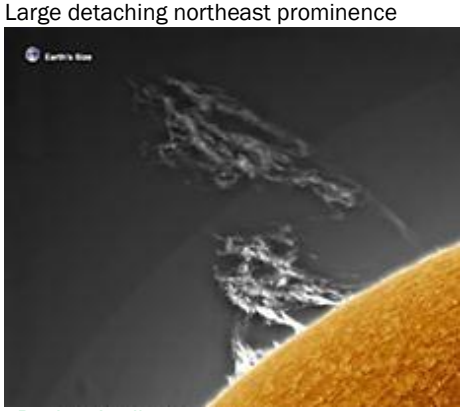




I also imaged active region AR2335 (*above*) with an adjacent S-shaped filament.

May 16. This Saturday morning, around 7:50 to 8:55 a.m., a huge portion of the large northeast solar prominence detached itself. I used a Lunt 100 mm/BF1800 Hydrogen Alpha telescope to image the event.

Large detaching northeast prominence

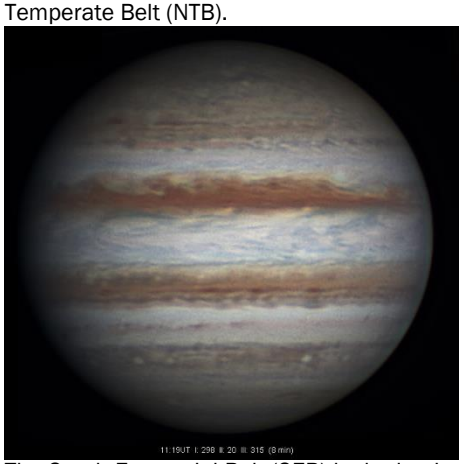


- Dr. Jett Aguilar

Jupiter

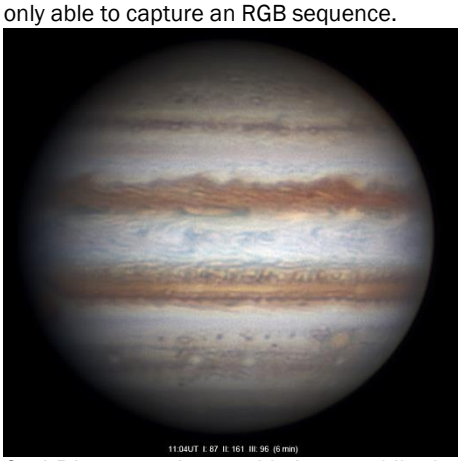
May 3. Seeing was great this evening, but transparency was poor because of clouds.

The White Spot Z was prominent in these images. There were some very dark red spots on the North Equatorial Belt (NEBn). Note the reddish band on the North Temperate Belt (NTB).



The South Equatorial Belt (SEB) looked quiet in this region.

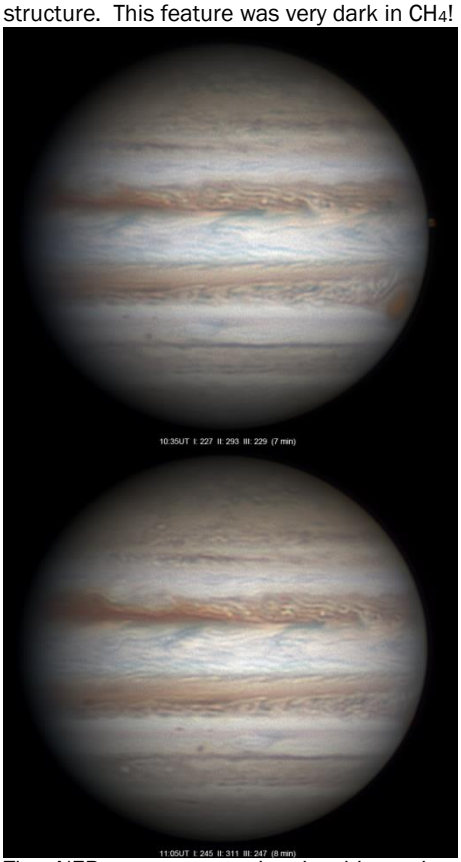
May 4. It was mostly cloudy this evening, but I got a small clearing around Jupiter. I was only able to capture an RGB sequence.



Oval BA was setting on this image while the Great Red Spot (GRS) was rising on the left. The SEB had a lot of activity on its northern edge. There seemed to be some weak rift activity on the NEB in this region.

May 5. Condition was variable. I had some changes in my imaging setup. I was using a Chroma CH_4 (methane) filter. My IR filter was now a Chroma 715nm pass filter.

The GRS was setting. Note the complex wake of the GRS. The South Temperate Belt (STB) Ghost seemed to be developing a structure. This feature was very dark in CH_4!

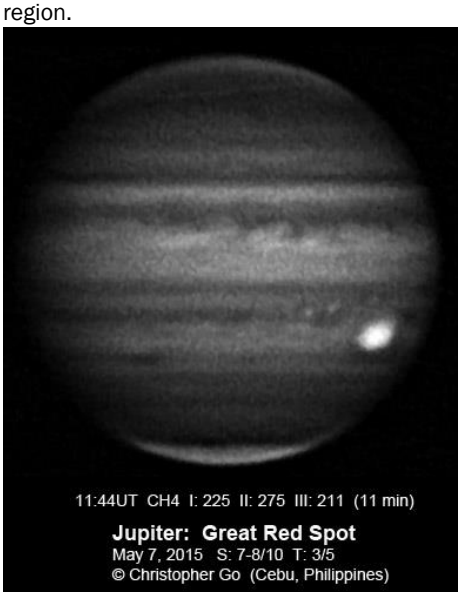


The NEB was very active in this region. White Spot Z was rising in the second image (⇨ *p. 88*).

May 7. Transparency was poor because of thin clouds. Seeing was also variable.

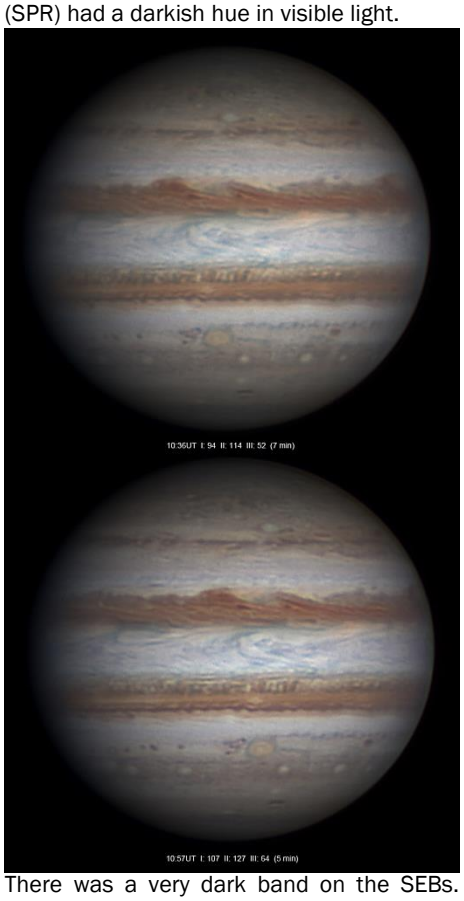
The GRS had a very strong red-orange color. The northern edge of the GRS halo was very dark. There were a lot of outbreaks following the GRS.

Europa's shadow was leaving the Equatorial Zone (EZ). The SEB was very active in this region.



May 11. The condition was very bad during the last 3 days because of Super Typhoon Noul. Fortunately things were very good this evening, as the seeing was excellent.

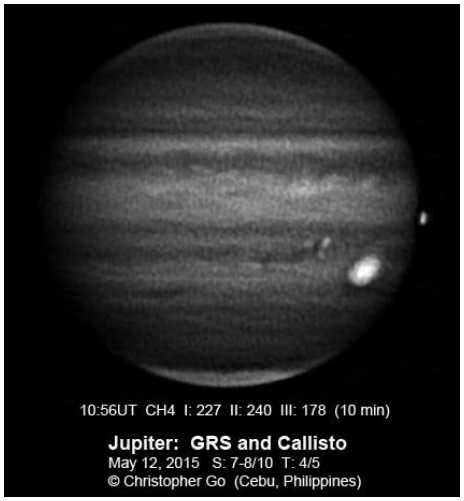
Oval BA was well resolved in these images. Note the center white ring had a dark border. This dark feature was also visible in the IR image. Note that the South Polar Ring (SPR) had a darkish hue in visible light.

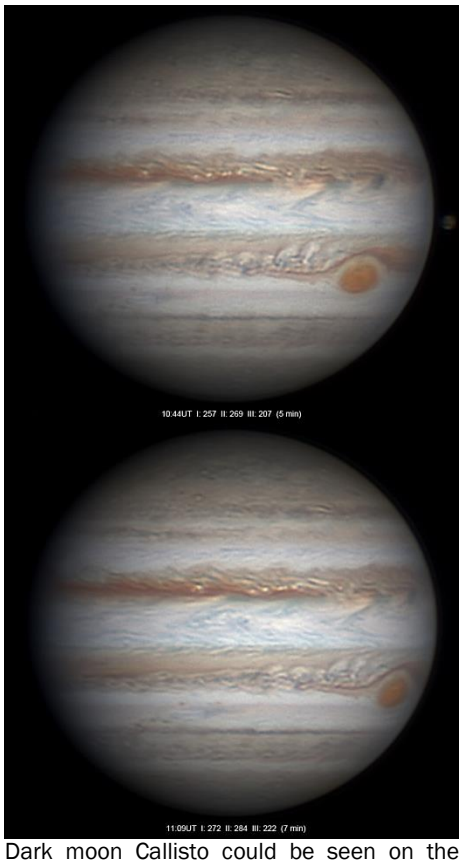


There was a very dark band on the SEBs. Note the small white spot on the mid-SEB. The SEBn had a lot of complex activity. There were light rifts on the NEB. There seemed to be some dark features on the NEBn.

May 12. Seeing was variable this evening. The GRS was setting on these images. The wake of the GRS was very complex.

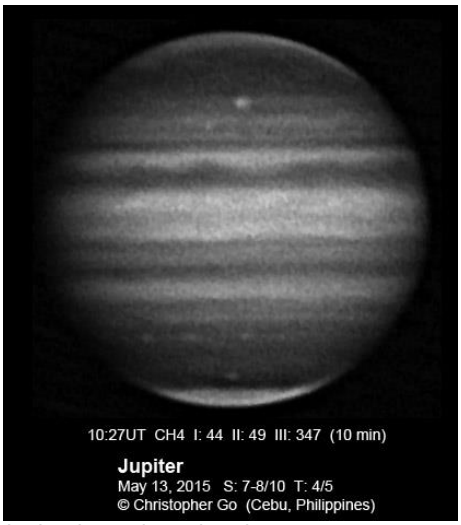
The STB ghost was well resolved. The NEB was very active in this region. There were a lot of outbreaks on the NEB and complex rifts.





Dark moon Callisto could be seen on the right side of Jupiter's disk.

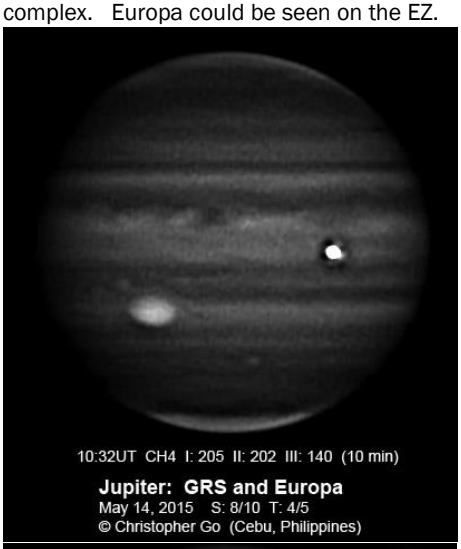
May 13. I had an interesting imaging session this evening. While imaging, I was attacked by hundreds of insects (a type of fly). It was very irritating! Seeing was average.

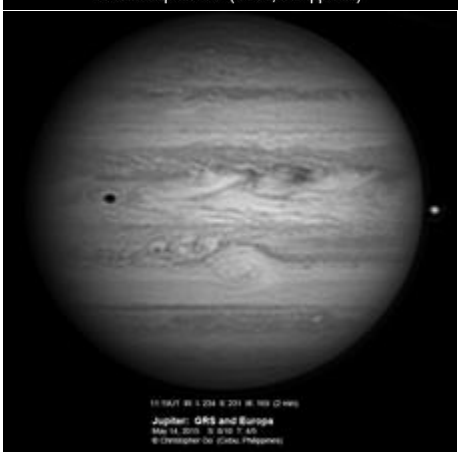


Jupiter in methane band

The South South Temperate Belt (SSTB) white spots were clear. Note the large cyclone at the SSTB at the Central Meridian (CM) of the first image. The SEB looked quiet in this region. The NEB was also quiet but very wide.

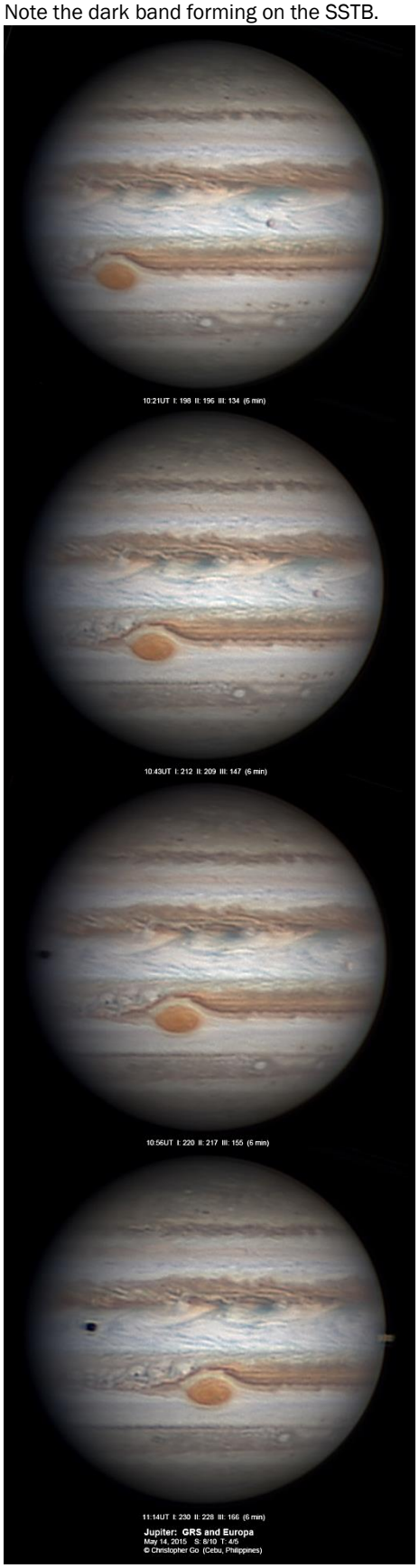
May 14. Seeing was great this evening. The GRS was well resolved (*at right*). Note the very dark northern halo of the GRS. The outbreak following the GRS was very complex. Europa could be seen on the EZ.



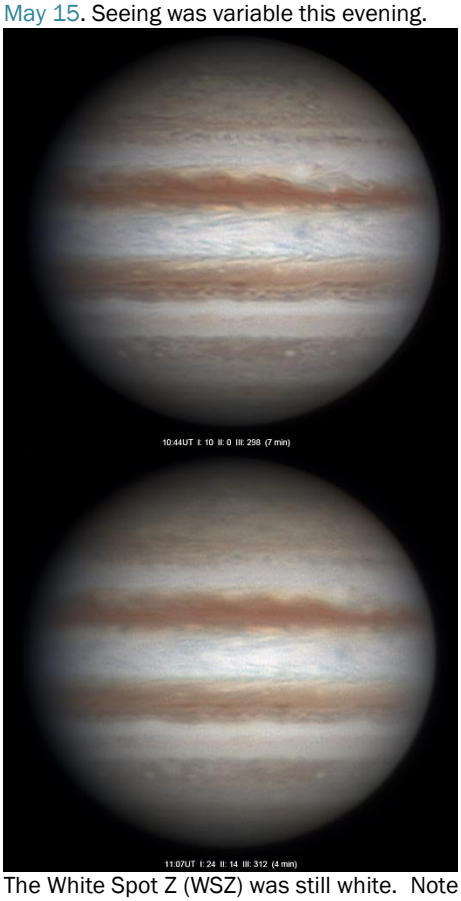


Note the complex rift on the NEB. Lots of violent interaction between the EZ and the NEB.

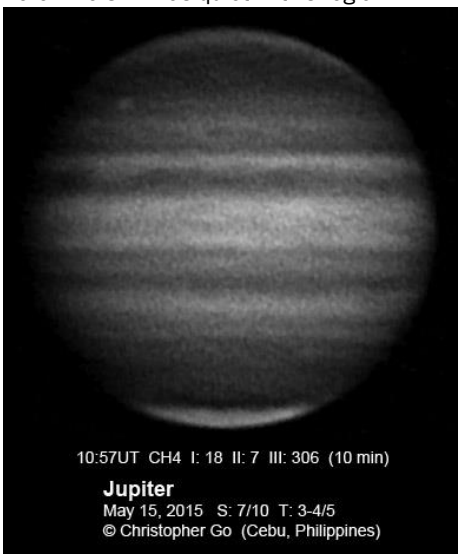
Note the dark band forming on the SSTB.



May 15. Seeing was variable this evening.



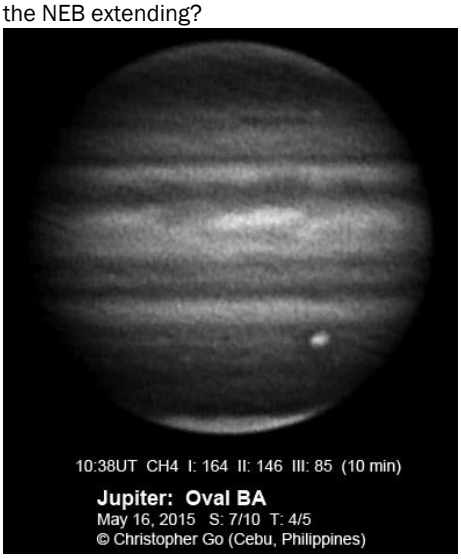
The White Spot Z (WSZ) was still white. Note the complex area preceding the WSZ. The NEB had a dark red color but no outbreaks here. The SEB was quiet in this region.



(⇨ *p. 90*).

May 16. Seeing was unstable this evening.

Oval BA was setting when I took these images. The SEBn was very active. Note the unusual feature on the NEBn just past the CM. Was a new oval forming here or was the NEB extending?



May 17. Seeing was good this evening. The GRS was setting on these images. The wake of the GRS was very complex. The STB ghost (the blue feature on the STB) was well resolved. This feature was still dark on CH_4.

The NEB directly north of the GRS had a lot of rift activity. While the area following it looked quiet, the northern edge of the NEB in this quiet region had some interesting activity.

Volcanic Io was on the EZ.

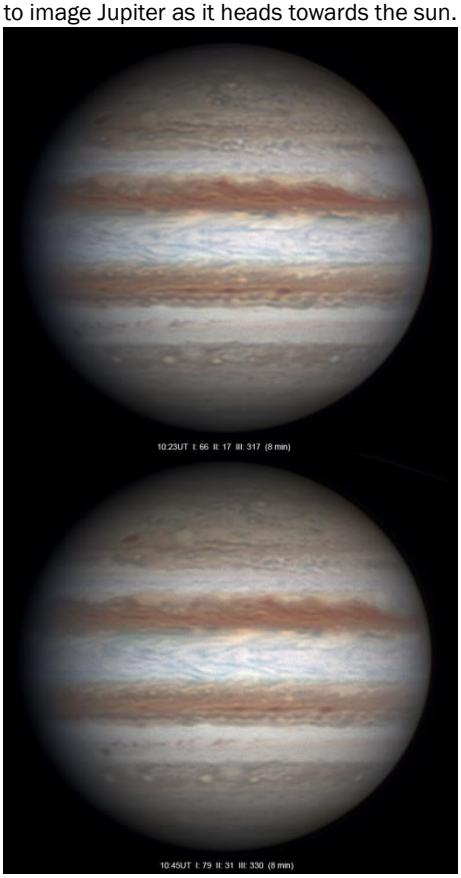
May 18. Seeing was good this evening, but my session was cut short because of clouds.

Oval BA was rising on the left. Note the dark cycle preceding Oval BA. Note the dark band on the SEBs and the complex activity in the SEBn. The NEB had some faint rift activity.

May 19. Transparency was very poor this evening because of thin clouds. Seeing was good. The GRS was at the CM in these images. The wake of the GRS was very complex. Note the area of the SEB north of the wake had a very pale color, however, the area preceding the GRS had a very strong deep red color. The northern rim of the GRS extending to the preceding side of the SEBn had a strong red band.

The NEB was very active in the region with a lot of outbreaks and rift activity.

May 20. Condition was perfect. Jupiter was now moving away and it was getting tougher to image Jupiter as it heads towards the sun.

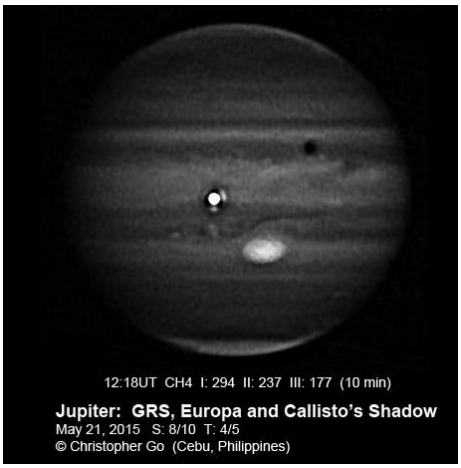


(⇨ *p. 91*).

The SEB was active in this region. White Spot Z was setting in this image. The northern edge of the NEB had a lot of complex activity. Note the reddish coloration in the area around the NTB/NNTZ. The large white spot on the NNTZ was very bright in methane band and was followed by a dark cyclonic red spot.

May 21. I had to image late today because I had to attend a meeting. Seeing was good. This was probably the most active image of Jupiter I have taken this season.

The GRS was well resolved.



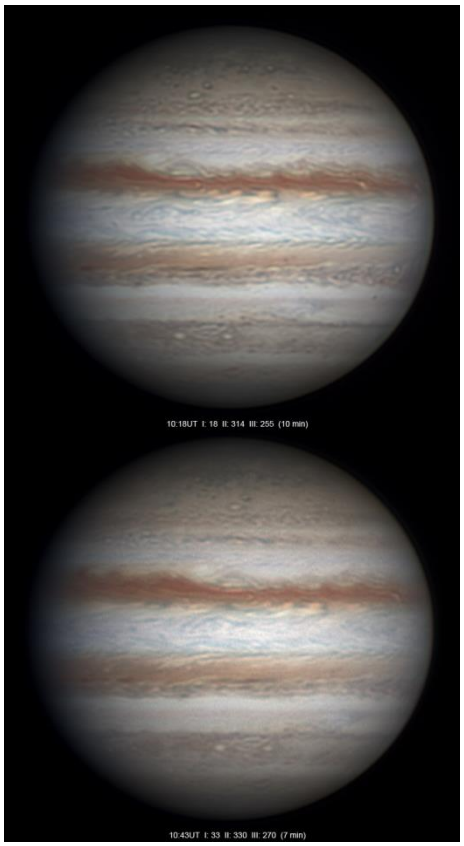
Note the northern part of the halo was prominent in the Methane band image. Europa was on the EZ. Lots of outbreaks in the NEB. Callisto's shadow was on the NEB.

May 22. Seeing was excellent when I started imaging, but it deteriorated when I started to capture my second set of RGB.

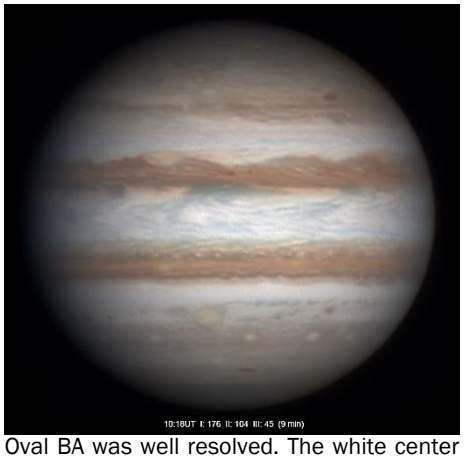
The SEB had a very pale color in this region. The wake of the GRS extended to this region.

The STB Ghost seemed to be interacting with the SSTB material. Note the light reddish band forming on the South Tropical Zone (STrZ), just below the STB.

The NEB had a very dark red color in contrast to the pale SEB. The NEBn was very complex. White Spot Z had a very white center.

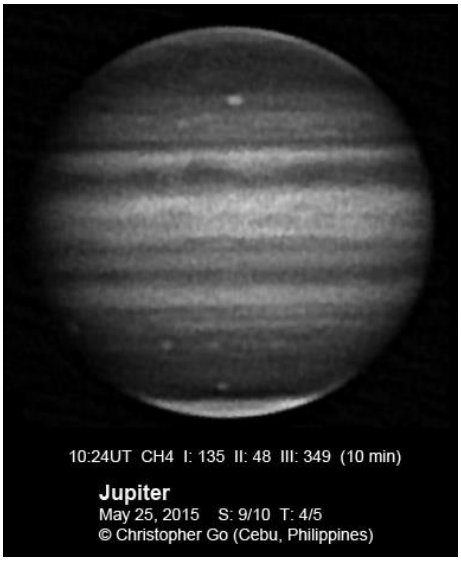


May 23. Condition was challenging because of clouds. Transparency and seeing were variable.



Oval BA was well resolved. The white center could be seen. The SEBs continued to be active. The SEB still had a strong red color in this region. The NEB was quiet here, but note the large elliptical red oval forming on the NEBn.

May 25. Jupiter season was getting close to the end. I had to start imaging before sunset. Venus was a good guide for my mount and I was able to image earlier than before. Seeing was perfect when I started imaging. Unfortunately, a few minutes after my first imaging run, sky conditions deteriorated! The SPR red spot could be seen. It was very low contrast but the reddish hint is obvious. This spot was bright in CH_4. It was interesting to note that the STB was getting dark in CH_4.



The SEBn and SEBs continued to be active. The NEB was quiet in this region. Note the complex activity on the NEBn.

The grey spot on the NNTZ was very bright in CH_4. Was this the NNTZ Little Red Spot (LRS)? Note the small ovals on the NTB that were creating complex activity there.

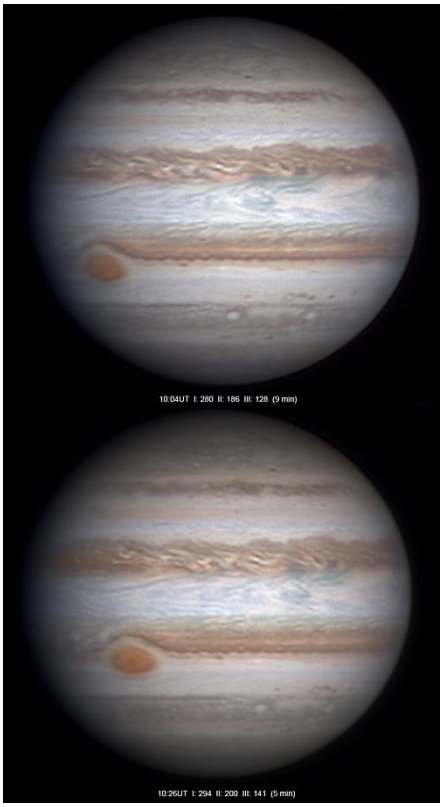
May 26. I was able to image Jupiter a few minutes BEFORE sunset! Venus really helped in finding Jupiter just like yesterday.

The GRS was rising. The SEBn continued to be chaotic due to the outbreak wake pushing to the north of the GRS. The dark band on the SEBs seemed to be forming a wave pattern. Note the elongated feature between the two SSTB ovals.

The NEB was very chaotic in visible light. Lots of outbreaks and rift activity that might be associated with the NEB expansion.

Note the dark EZ festoon just past the CM which seemed to be pushing into the NEB, probably creating the convective outbreak.

Surprisingly, the NEB looked quiet in Methane band (⇨ *p. 92*).



May 27. It was mostly cloudy and I wasn't sure I could image, but the sky cleared early this evening. Unfortunately, I wasn't able to cool my optical tube assembly.

Note the activity on the NTB. Looked like ovals interacting there. White Spot Z was setting on the right. The NEB looked quiet in this region.

May 29. I started imaging a few minutes before sunset. Fortunately, Venus was there to help me calibrate my mount to Jupiter. Seeing was variable and transparency was poor because of clouds and poor contrast because of the bright sky. The GRS was setting in this image. The blue STB Ghost was close to the CM. The wake of the GRS was very complex. The northern part of the SEB had a very light color.

The NEB had a very dark color. The area setting was the active area of the NEB, while the region following it was quiet.

May 30. Seeing was variable this evening. Transparency was poor because of thin clouds. I had to take a lot of data just to get one image!

Oval BA was rising on the left. The orange ring was well resolved. The area on the STB/SSTB just before the CM looked chaotic.

It was interesting that what seemed to be a circulation was crossing the STB/SSTB. There was a dark red spot right next to this area. The south polar red spot could be seen past the CM.

The SEBn/SEBs was very active. There was a lot of rifting on the NEB. Note the reddish fin-like feature on the NEBn.

There was a dark barge on the NTZ. Note the two small ovals just south of this dark barge. Will these ovals merge? – Christopher Go, Cebu

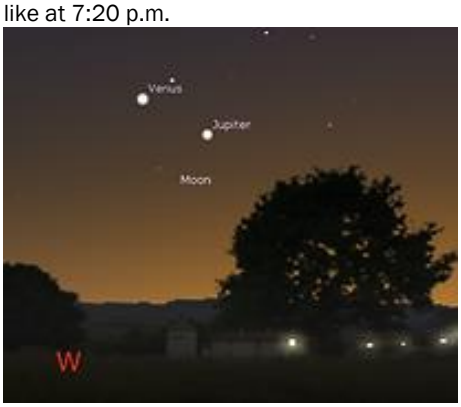
The Sky

July is a month that can have clear night-time skies that open up viewing of the summer Milky Way, but very often it would be humid, rainy, or cloudy.

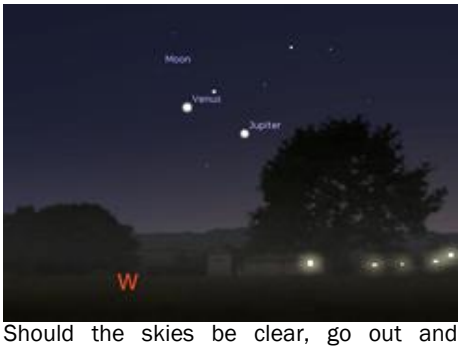
Just in case the skies are open, here's what would be visible –

Jupiter and Venus make quite a close approach during the first days of July and continue to separate as Jupiter sinks more and more into the glare of the Sun.

On the early evening of July 18, try to catch a nice grouping of the crescent Moon, Jupiter, and Venus low in the western sky after sunset. The graphic below shows how the sky above the northwestern horizon looks like at 7:20 p.m.

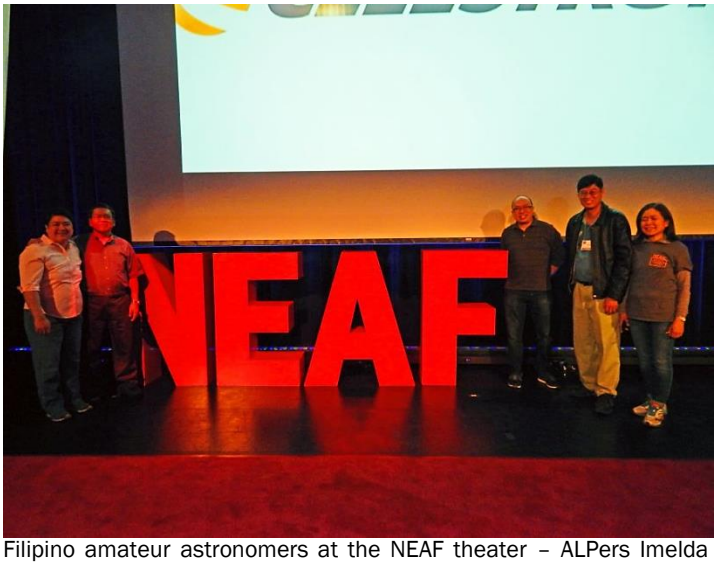


The following night, a line of luminaries becomes visible:



Should the skies be clear, go out and observe and image!

Barlow Bob's NEAF Solar Star Party sponsored by the Charlie Bates Solar Astronomy Project and Lunt Solar Systems.



Filipino amateur astronomers at the NEAF theater – ALPers Imelda Joson, Edwin Aguirre, Jun Lao, & Christopher Go, plus Anna Castillo

ALPers Edwin Aguirre, Imelda Joson, Christopher Go, and Jun Lao, with Astronomy editor-in-chief Dave Eicher, who knew all of us

Northeast Astronomy Forum 2015

The Northeast Astronomy Forum (NEAF) 2015 is one of the biggest meetings for amateur astronomers here in the US. It is often here that telescope and equipment manufacturers show their latest wares, and where you can get bargains for equipment as some vendors provide discounts or do not charge taxes.

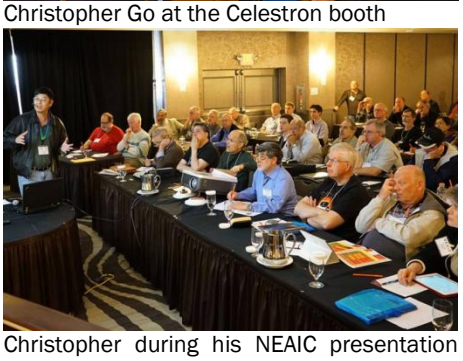
NEAF is also when the Pinoy amateur astronomers get together, and this year we had Christopher Go (whose trip was sponsored by Celestron) join us, as he was in the US to give presentations during the Northeast Astronomy Imaging Conference (NEAIC) the days before NEAF, as well as provide a talk on "Getting Started with Planetary Imaging".

Among the ALPers who were at NEAF 2015, aside from Christopher and me, were Edwin Aguirre and Imelda Joson. Eric Africa was unable to make it as he was sick at the time, so I had to make the 10-hour drive from the greater Cincinnati area to Suffern, New York, on Friday, by myself.

Hercules telescope mount

Christopher Go at the Celestron booth

Moon Raker custom-made telescopes



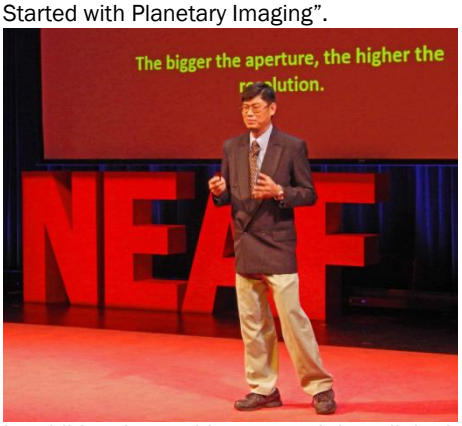
Christopher during his NEAIC presentation (*image not mine*)

(⇨ *p. 94)*

NEAF 2015 – bird's eye view of the exhibit floor.

Most of the major telescope makers, equipment, and accessories manufacturers were there – Astro-Hutech/Borg; Astro-Physics; Celestron; Daystar Filters; Explore Scientific; iOptron; Lunt Engineering and Solar Systems; Meade Instruments (whose current president is a Pinoy!); Sky Watcher; Stellarvue; Televue; and Vixen Optics, among others, as well as major vendors, such as Hands-on Optics, OPT, Woodland Hills, and others. Astronomical magazines were also represented – Astronomy, Astronomy Now, and Sky & Telescope.

It was hard allocating time between going between the vendor booths and taking in some of the presentations, but I was still able to go to quite a few of them, especially Christopher Go's fully-packed "Getting Started with Planetary Imaging".

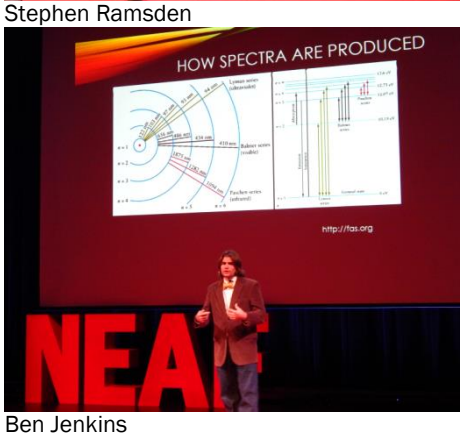


In addition, I was able to attend the talk by J. Kelly Beatty, Senior Editor of Sky & Telescope magazine, on "Preparing for Pluto", where I was seated near the front, and next to renowned meteorologist and astronomy writer Joe Rao. I was also able to attend the talk on the "2017 Solar Eclipse" given by eclipse observer Mike Reynolds.

Running in parallel to the exhibits and talks was the NEAF Solar Star Party, now named to honor Barlow Bob, who died last year. There were a number of white light, H-alpha, and Calcium-K telescopes from Lunt Solar Systems, present for people to look through.

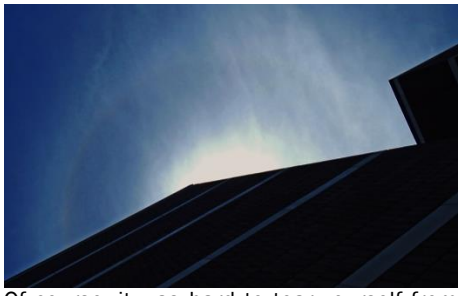
On Sunday afternoon, there was a talk on "Solar Astronomy Outreach and Using Today's Amateur Spectroscopic Equipment" by Stephen Ramsden, director of the Charlie Bates Solar Astronomy Project, and Ben Jenkins, of Georgia State University.

Stephen Ramsden

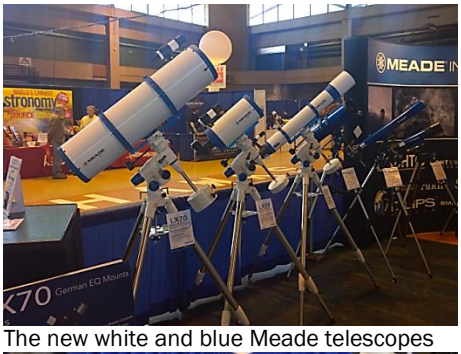


Ben Jenkins

What was interesting was that during the solar star party there was a faint halo around the Sun:



Of course, it was hard to tear yourself from talking with the astronomy equipment vendors and learning more about the new items.



The new white and blue Meade telescopes

Vixen binoculars

- Jun Lao