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Astronomical League of the Philippines' *HerAld*

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National Astronomy Week 2013 is a wrap, and the ALP was an active promoter of the science & joy of astronomy. © Christopher Louie Lu

CLUB & LOCAL NEWS

February Meeting

Last February 3, members of the Astronomical League of the Philippines (ALP) held their monthly meeting at the Manila Planetarium. Members who attended included ALP President James Kevin Ty, wife Charito and son KC; Secretary Christopher Louie Lu, wife Karren and daughter Frances; directors Edgar Ang, Alfonso Uy, Christopher Lee and wife Sandra; Ma. Belen Pabunan; Liza Quitlong; Mike Enage; Ronald Sison; Norman Marigza; Per Edman; Gary & Steinar Andreassen; Mark Vornhusen; Mark Ian Singson and Ma. Cristina Decena; Jan Karlo Hernandez; and, Sheldon Espartero.



Dr. Custer Deocarís gave a short preview of his NAW 2013 lecture on the Philippine Space Agency Bill, HB6725.

The meeting started at around 3 p.m. with ALP Secretary and ALP National Astronomy Week (NAW) 2013 chairman Christopher Louie Lu discussing updates of ALP's NAW activities. The following were planned:

February 17, 2012: **NAW – PAC 2013 Opening Ceremony**

Venue: National Museum Planetarium

- 12:00 pm Registration
- 1:00 pm (1:30 pm): Philippine National Anthem
Prayer/Liturgy
Opening remarks by Astronomical League of the Philippines President James Kevin Ty and National Museum Planetarium curator Bel Pabunan
- 2:00 pm Introduction to Comets & Asteroids: Film Showing: Asteroids, Meteors & Impacts
First Lecture on PANSTARRS & ISON by:
 - Norman Marigza – The Physics of Comets
 - Dr. Jett Aguilar – Observation & Photography of Comets
- 3:20 pm Second Lecture on Astrobiology by Dr. Armando Lee
- 4:15 pm Product presentation of Celestron Prodigy Telescopes by Cutting Edge
- 4:30 pm Awarding of the Fr. Victor Badillo Astronomy Service Award to Dr. Dante Ambrosio
- 4:45 pm or 4:50 pm Awarding of Certificates and Honorarium
- 6:00 – 6:30 to 10 pm Free Public Viewing at Rajah Sulayman Park

February 20, 2013: **NAW – PAC 2013 Mid-week Free Public Viewing**

Venue: AstroCamp Observatory Services in SM Mall of Asia, San Miguel By the Bay, Pasay City (3:00 pm – 9:00 pm)

February 23, 2013: **NAW – PAC 2013 Closing Ceremony**

Venue: Rizal Technological University

- 12:00 pm Registration
- 1:00 pm (1:30pm): Philippine National Anthem
Prayer/Liturgy
Opening remarks by Christopher Lu and RTU President Dr. Jesus R. Torres*
- 2:00 pm First Seminar/lecture: Philippine Space Agency Bill HB6725 by Dr. Custer Deocarís
- 2:45 pm Second Seminar/lecture: Search for Exoplanets by Bamm Gabriela
- 3:45 pm Third Seminar/lecture: Surviving the Messier Marathon by Peter Tubalinal
- 4:30 pm Product presentation of Celestron Prodigy Telescopes by Cutting Edge
- 5:00 pm Open forum & Awarding of Honorarium
Closing Remarks by: ALP President James Kevin Ty

Lastly, ALP President James Kevin Ty discussed the logistics for the February 9, 2013 Caliraya Stargazing Session. The meeting ended at around 6:00 p.m. - *James Kevin Ty & Christopher Louie Lu*

NAW 2013

Opening Day

Last February 17, 2013, the ALP celebrated the 2013 National Astronomy Week and 5th Philippine Astronomy Convention with an opening day activity at the National Museum Planetarium. Members who were present were ALP President James Kevin Ty with wife Charito and son KC; VP Jett Aguilar; Secretary Christopher Louie Lu (⇒ p. 34)

with wife Karren and daughter Frances; PRO Armando Lee with wife Mia and son Jason; directors Edgar Ang, Arnel Campos, Peter Benedict Tubalinal and daughter Stephanie Joy, Christopher Lee and wife Sandra; members Nathaniel Custodio and son Terrence; Norman Marigza; Jason Kristopher Comia; Marvy Gulapa; Miguel Enrique Cajita and dad Trix; Planetarium curator Bel Pabunan and staff members Liza Quitlong; Nel Lagda; Maximo Zabanal; Mary Ann Ramirez; Judy Carla Cruz; special guests National Museum 3rd Director Dr. Ana Maria Theresa Labrador, Anita Ambrosio, Maria Divina Munoz; and, guests and visitors.



The program started at around 1:30 p.m. with ALP NAW 2013 chairman Christopher Louie Lu welcoming members and guests to the event. This was followed by welcome remarks by National Museum 3rd Director Dr. Ana Maria Theresa Labrador (*above*) and ALP President James Kevin Ty.

The National Museum Planetarium then presented a free film show entitled "Comets, Asteroids & Meteors". Afterwards, Norman Marigza (*middle, top*) talked "Comets: Structure and Principles". He discussed cometary structure and the physical principles behind them that are usually a result of the interaction of the comet to solar radiation. Pressure heating from the Sun allows the icy materials to sublimate, carrying gas and dust into a cloud shell known as the coma. Solar radiation drives the dust tail out and ionized material is pushed in a straight ion tail by the solar wind. Cometary debris ejected out in space becomes a source of meteoroids which in turn will generate meteor showers if they follow an Earth-crossing orbit.



The upcoming comets ISON and PANSTARRS will provide us with new comets to study with their fairly close approach.



This was followed by ALP VP Jett Aguilar (*above*), who discussed "How to Observe and Image Comets". The history, cultural impact, and nature of comets were presented, including a detailed description of the first and only comet discovery in the Philippines, Comet Boethin 85P/1975 by Father Leo Boethin. The structure of comets, their classification into short and long period comets in relation to their possible origins from the Kuiper belt and the Oort cloud, were discussed. The current 1995 comet-naming convention was explained and illustrated with examples. The basic requirements and essential tips for comet astrophotography were shown with some image examples from the members of the Astronomical League of the Philippines. Lastly, the potentially great comet show for 2013 was discussed with descriptions of the two bright comet candidates - comet PanSTARRS C/2011 L4 and comet ISON C/2012 S1.

A 15-minute break followed. Light snacks and drinks were offered to ALP guests and members. A group picture was also taken after the break.



This was followed by a presentation by ALP PRO Armando Lee (*above*), who discussed "Astrobiology: the Fundamentals and Latest Findings" - a teaser lecture about the basic principles being used in the search for life elsewhere in our galaxy. The lecture included the search for habitable environments in our Solar System and habitable planets outside our Solar System, the search for evidence of prebiotic chemistry as well as the instruments that are being used and will be used in the future. A list of earth-like worlds was presented to illustrate that finding another planet harboring life might soon be more a reality rather than fiction.

This was followed by the presentation of the ALP's prestigious award, the Father Victor Badillo Astronomy Service Award, to the late Dr. Dante Ambrosio of the University of the Philippines, Diliman, for his tireless dedication in researching and popularizing Filipino Ethno-Astronomy, thereby showcasing early Filipino cultures, beliefs and stories about the universe around us.

Dr. Ana Maria Theresa Labrador, who was a close friend of Dante Ambrosio, made a very special detailed account of her joint research and work with Dante in his pursuit to discover the different ethnic beliefs and cultures on astronomy. This award was then accepted by Dante's sister, Anita Ambrosio, on behalf of her brother. She then thanked the ALP for recognizing her brother's dedication in the field of Ethno-Astronomy in the Philippines.

In the picture on the following page, ALP President James Kevin Ty presented the 2013 Father Victor Badillo Astronomy Service Award to the late Dr. Dante Ambrosio as Anita Ambrosio and Dr. Ana Maria Theresa Labrador looks on (\Rightarrow p. 35).



They brought along a Prodigy 70mm refractor for demonstration to the audience. This telescope has a built in GPS Auto Align system which simplifies observations, even to a newbie going into astronomy.



Dr. Aguilar lecturing to the crowd



James and Jett with Dr. Ambrosio's book on ethnoastronomy, together with Annie Ambrosio and Davina Munoz



Kids peeking through one of the scopes set up for stargazing for the public.



The Father Victor Badillo Astronomy Service Award (above) given to Dr. Dante Ambrosio



Cutting Edge, the exclusive distributor of Celestron telescopes and products in the Philippines, introduced their latest telescopes, the Prodigy telescope series.



Group picture in front of the National Museum Planetarium

James and Christopher then presented certificates of appreciation as well as gift tokens courtesy of Cutting Edge, to the lecturers of the event. Lastly, James then closed the opening activity by thanking all the guests, members and lecturers who made the event a successful one. He also invited all to attend the free public stargazing to be held that evening and the Free Public Stargazing at AstroCamp in SM MOA, Pasay City on February 20, 2013 and the ALP NAW Closing Activity at Rizal Technological University - Boni Avenue on February 23, 2013.

After the opening activity and convention, ALPers proceeded to Rajah Sulayman Park for their free public stargazing session. They had a light dinner at Shakey's before starting the stargazing session. James brought a Meade 8" f/10 Schmidt-Cassegrain on Vixen GP-DX mount; Dr. Armando Lee brought a Discovery 10" f/5 Dobsonian reflector; Christopher a Celestron 80mm f/11 refractor on EQ-1 mount; Arnel Campos a Celestron C130 Newtonian reflector on EQ-1 mount; Miguel Enrique Cajita a Celestron C127 Newtonian reflector on EQ-1 mount; and the National Museum Planetarium brought along their Celestron C8 SCT and Skywatcher 100mm refractor on EQ-4 mount (⇒ p. 36).



Jason Comia and Arnel Campos point his telescope to the Quarter Moon.

More than 500 people got the opportunity to take a look at the Quarter Moon in low power as well as close-up: Jupiter and its moons; M42, the Orion Nebula; and M45, the Pleiades star cluster. They ended their stargazing session at around 10 p.m. with their traditional group shot. - James Kevin Ty, Jett Aguilar, Armando Lee & Norman Marigza; images by James Kevin Ty & Christopher Louie Lu

Public Stargaze

On February 20, ALPers gathered at SM by the Bay at the Astrocamp Observatory Services to conduct the mid-week National Astronomy Week Free Public Viewing. Scheduled activities included solar observation from 3 p.m. to 5 p.m. and night-time celestial observation from 6 to 9 p.m., with the waxing gibbous Moon and the planet Jupiter.

Members who came at around 3 p.m. included Christopher Louie Lu with his Celestron Powerseeker 80EQ and Per Edman and his Orion 6" Dobsonian reflector. Other members who gave support and manpower were Gary Andreassen, Nathaniel Custodio, Mike Enage, and Michael Thomas with wife Leah. Later on they were joined by members Mark Ian Singson, Cris Tina and Jan Karlo Hernandez. Representatives from sponsor Cutting Edge and Celestron arrived and brought a Celestron Prodigy 70mm Refractor.



Per Edman, Nathaniel Custodio and Gary Andreassen

Spirits were high in anticipation for the Free Public Viewing but unfortunately due to tropical storm 'Crising', this became a waiting game for skies to clear.



ALPers posed with Cutting Edge representatives after the conclusion of the free public viewing session.



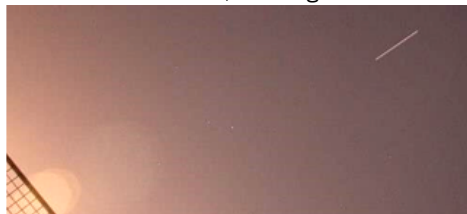
Cris Tina, Gary Andreassen, Nathaniel Custodio, Per Edman, Mike Enage, Jan Karlo Hernandez and Mark Ian H. Singson

From 3 to 6 p.m. members waited for any sign for clear skies. At 7:45 p.m., when no clear skies were in sight, they decided to pack up but also took the customary group picture for posterity. - Christopher Louie Lu, with images by Christopher Louie Lu & Gary Andreassen

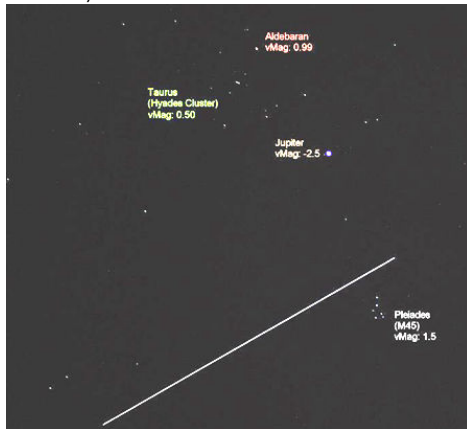
Reports

ISS

Feb. 4. After closing the shop, I ran to my roofdeck and quickly set up my DSLR to capture this International Space Station (ISS) flyby, which peaked at mag. -3.3, looking toward the southwest, heading northeast.



Imaged with a Canon 450d with 18-55 mm lens at f/4. 10-15 seconds at ISO 400.



- Christopher Louie Lu

Caliraya Stargaze

Last February 9, ALP members went to Caliraya, Laguna for their monthly weekend stargazing session under a dark sky. Members who came were James Kevin Ty; Per Edman and his son Oliver; Manuel Goseco and his son; and Michael Thomas with wife Leah and son.

They individually proceeded to the site but most arrived by around 6 p.m. The sky was partly clear. James brought his Canon EF100-400mm f/4.5-5.6 IS L lens on Vixen GP-DX mount with ATIK-16HR CCD camera as well as Vixen Polaris Star Tracker; Manuel his Celestron C6N Newtonian reflector on CG4 mount; Per his Canon lenses as well as Samyang 800mm f/8 mirror lens on Vixen Polaris Star Tracker; and Michael with his Meade 12" LX200 SCT.

Unfortunately, drizzles came and went, thus James decided not to do any imaging but did casual observation with fellow ALPer Manuel's Celestron C6N reflector and other members of the group. Michael also didn't set up his 12" SCT. Michael brought his Collin's I3Piece image intensifier eyepiece and connected to the telescope to view the fainter region of M42. This cool gadget was best used to observe fainter DSOs rather than bright DSOs. Despite the weather condition, Per was able to get some shots with his portable setup.



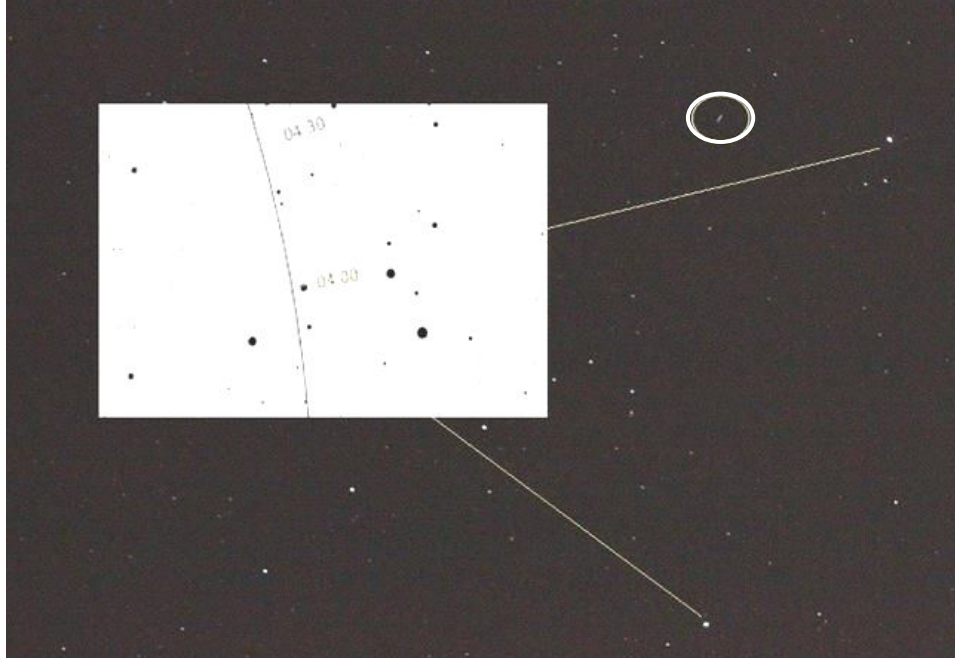
Orion and the Orion nebula by Per Erdman

They left in the morning and ate breakfast at Jollibee Pagsanjan before heading home and looking forward to next month's stargazing session. - James Kevin Ty, images by James Kevin Ty & Per Edman

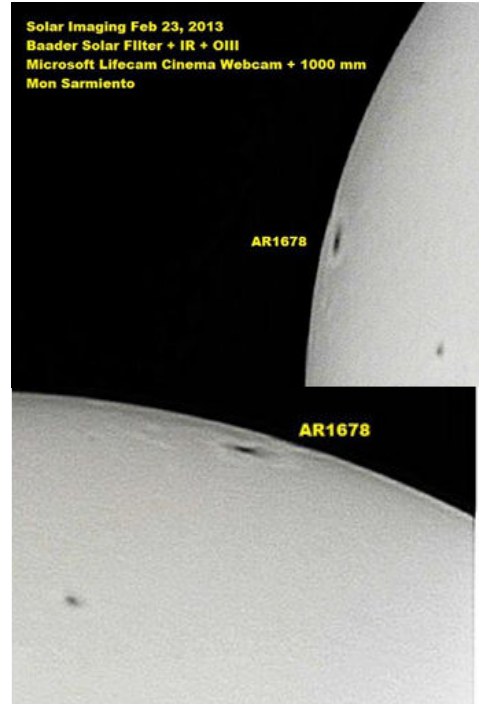
NEA 2012 DA14

Comet ISON

Asteroid 2012 DA14 Location when imaged at exactly 4:00 AM (Manila Time) compared to the heavensabove skychart flyby prediction

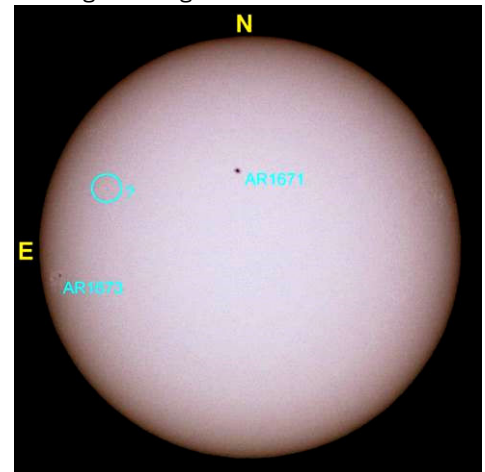


Above is a snapshot of the asteroid as captured exactly at 4:00 a.m., compared to the actual prediction of heavensabove.com sky chart. Captured using a Canon 600D DSLR at 100 mm f/5.6, 5 secs at ISO 6400. - Raymund Sarmiento



- Raymund Sarmiento

Feb. 16. AR1671 had slightly decayed as it neared the center, with two new active regions also emerging - AR1673 and a still undesignated region.



Imaged with a Canon 450d on a Celestron Powerseeker 80EQ f/11. 1/4000 second at ISO 100 with Baader solar filter 3.8. - Christopher Louie Lu

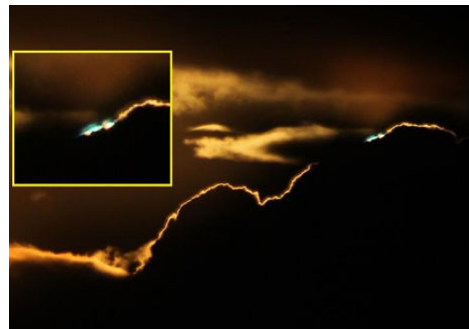


2012 DA14 captured from Greenbelt, Makati City. Nikon D5000, 180 mm f/2.8 lens, 2.5 seconds at 1600 ISO. - Mark Vornhusen



A nearby half Moon notwithstanding, here was a forty minute exposure of Comet ISON at 4,195mm focal length. - John Nassr, Baguio

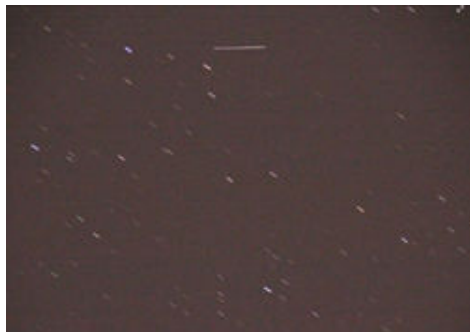
Sun



If there are Green Flashes, there is a phenomenon called a Blue Flash. Here is one as the sun's rim barely exposed behind an edge of a cloud

Feb. 23. Solar Imaging with a Microsoft Lifecam cinema webcam at 1000 mm with a Baader solar filter with IR and O III filters.

Feb. 4. The sky was clear but seeing condition was not that good. 2 moderate-sized sunspot groups, AR11667 (below) and AR11665, were the interesting groups on the Sun.



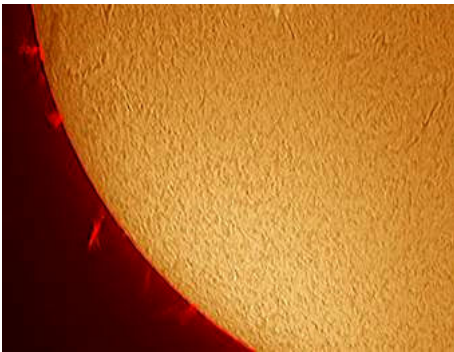
Was able to get images of the asteroid from Trece Martires, Cavite. - Arnold Campos

(=> p. 38).

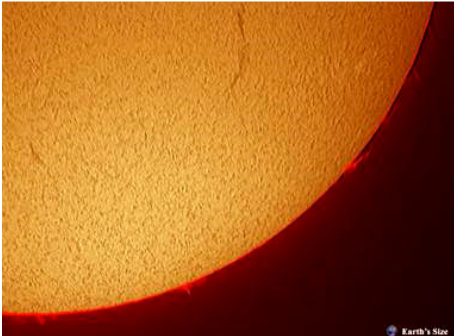
Numerous large dark filaments were also visible between the 2 groups.



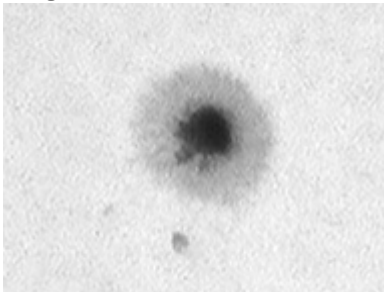
AR11647 and AR11665 with numerous long dark filaments. Imaged using an ATK-1HS webcam on Coronado PST H α telescope and 2x Barlow lens.



Large group of eruptive prominences



Nice large dark filament



AR11665 imaged with a Televue TV-101 refractor with Televue 5x Powermate barlow with INTES Herschel wedge and B+W ND 6.0 filter and Baader solar continuum filter,

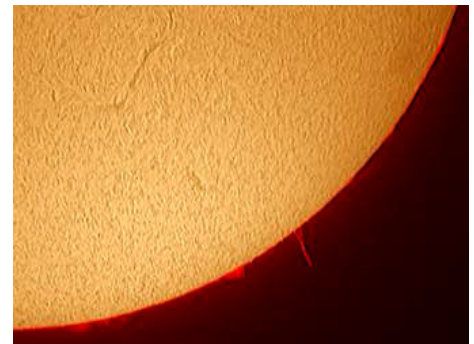
Several groups of large eruptive prominences were also visible on the southeast limb. The Sun was getting quiet again.

Feb. 5. The sky this morning was cloudy, but I was able to get one shot of the surface detail through my PST-H α , which showed a lot of long dark filaments in between AR11667 and AR11665.

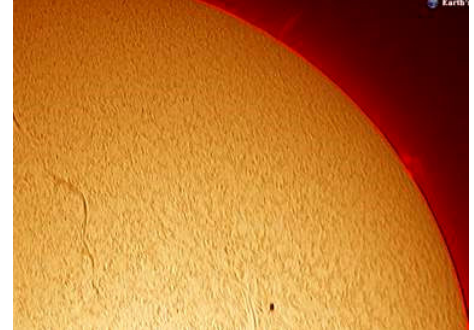


There was also a nice-sized eruptive prominence visible in the northwest limb but clouds got in the way and I had to call it a day as I had to go to work.

Feb. 6. The sky this morning was slightly hazy and seeing condition was fair. What caught my attention this morning was observing a nice bright flare eruption on AR11667, which produced an inky-dark plume of plasma spiraling away from the explosion! It was a joy to monitor and image the event. AR11667 was silent for the past few days and the outburst this morning was a welcome treat.



Large bar prominence



AR11665 with long dark filament and prominence

Based on spaceweather.com "The magnetic canopy of decaying sunspot AR1667 erupted this morning (Feb. 6th @ 00:21 UT),

AR11667 Bright Flare Sequence
February 6, 2013

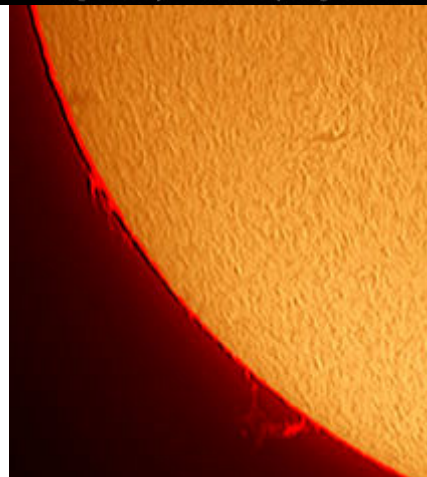
08:12:52 (00:12:52 UT)	08:26:20 (00:26:20 UT)	08:56:03 (00:56:03 UT)

Image taken by James Kevin Ty using ATK-1HS II webcam on Coronado PST-H α and 2x barlow lens. Seeing - 1 / 5 .

producing a long duration C9-class solar flare and hurling a coronal mass ejection (CME) into space."

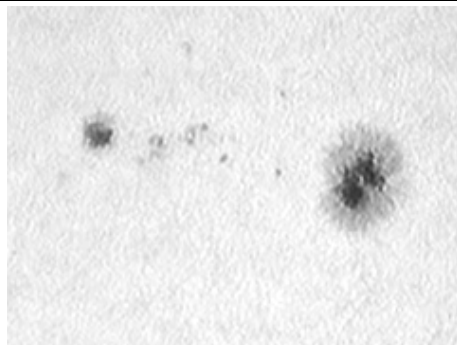
Several huge long dark filaments were visible in between AR11667 and AR11665. Large prominences were also visible along the limb that were worth observing. I was able to image both AR11667 and AR11665 at high resolution in white light.

Feb. 7. The sky this morning was hazy and seeing condition was fair. AR11667 had simmered down after a huge bright flare eruption but some small residuals could still be seen on the group (\Rightarrow p. 39).





AR11669 with nice group of eruptive prominences



AR11667
Numerous huge prominences could be seen on the limbs. The long dark filament between AR11667 and AR11665 was still visible.



AR11670 and AR11669 with numerous large eruptive prominences



AR11667 with long dark filaments

Feb. 8. The sky this morning was hazy and seeing condition was poor. Lots of huge dark filaments were still visible between AR11667 and AR11665. A very huge hedgerow prominence was visible in the southwest limb despite poor seeing conditions.

Some large groups of eruptive prominences were visible at the northeast limb. AR11667 continued to shrink in size but was still showing some signs of activity by virtue of a small spiral dark filament snaking its way around the group. The rest of the groups were quiet.



Large hedgerow prominence

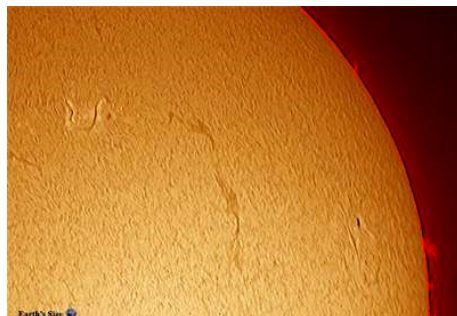


AR11679, AR11669, and AR11667 with numerous dark filaments

Feb. 11. The sky was hazy and seeing condition was poor. AR11670 was huge and nice to look at. There were 4 sunspot groups on the Sun - AR11670, 11667, possible new 11671 and 11672.



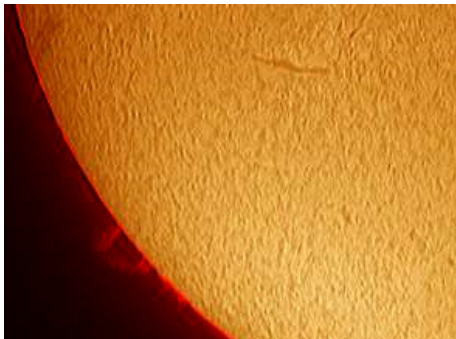
AR11667 and AR11665 with dark filaments



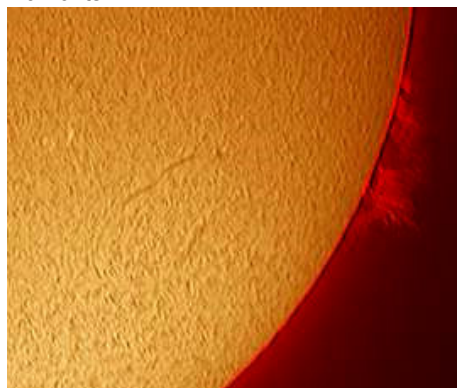
AR11667 and AR11665 with numerous dark filaments



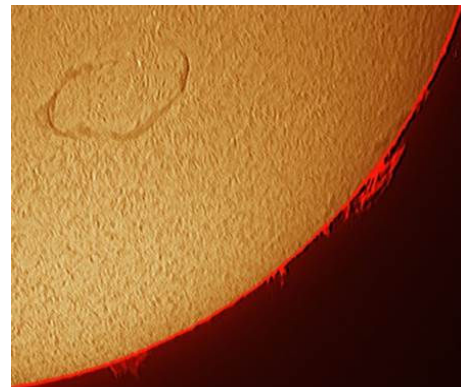
AR11670 and AR11667



Large loop prominence



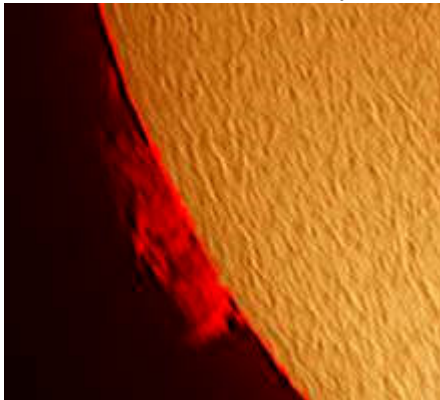
Huge hedgerow prominence



Two dark filaments making up a circle and groups of eruptive prominences

What caught my attention this morning was the presence of a beautiful curved or arching dark filament visible in the southwest quadrant. Overall, the Sun was fair in solar activity.

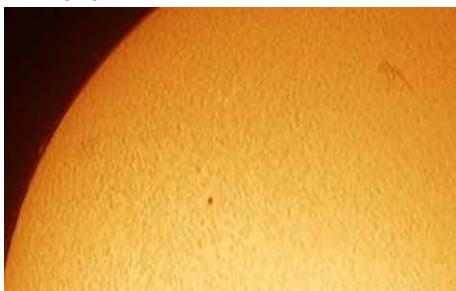
Feb. 14. The sky was very hazy and seeing condition was poor. There was a huge hedgerow prominence that was visible in the southeast limb for Valentine's Day.



Huge hedgerow prominence



AR11670

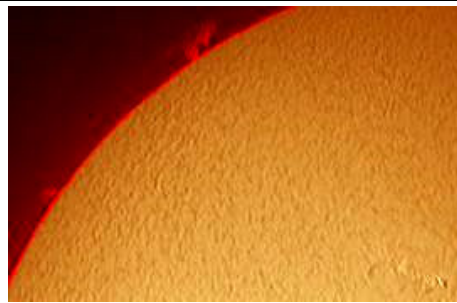


AR11670 shrunk in size and only AR11671 remained large.

Feb. 18. The sky was very hazy and seeing was very poor. I nevertheless proceeded to observe the Sun in H α only as the image was very soft and hard to focus. There was a huge long dark filament in the southeast quadrant.



AR11676 and AR11675 with long dark filament



AR11675

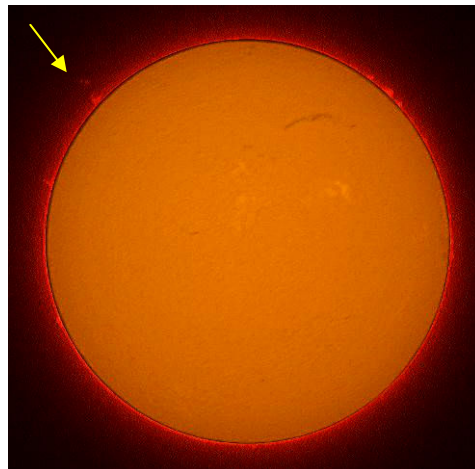
There were 2 nice large eruptive prominences visible in the northeast and southeast limb. Several nice sunspot groups were also visible on the Sun's disk - AR11675, AR11671, AR11676, AR11673, and AR11672. - James Kevin Ty

Feb. 9. Mid-afternoon, the sky was open enough and not too cold for me to observe and image the Sun, and I got to see a nice textbook-style loop prominence and a bar prominence and lots of dark filaments.



The bad thing about sunny winter skies is that air currents generated between the warmed ground and the cold air above it, lead to poor resolution.

Feb. 23.



There's a nice eruptive prominence that seems to have sent material out, as there's a part which seems detached from the prominence.

I had to overexpose the limb a bit to surface this detached portion.

The other nice thing about the Sun was this huge dark filament that completely dominated this image of the Sun's disk. - Jun Lao, Mason, Ohio, USA

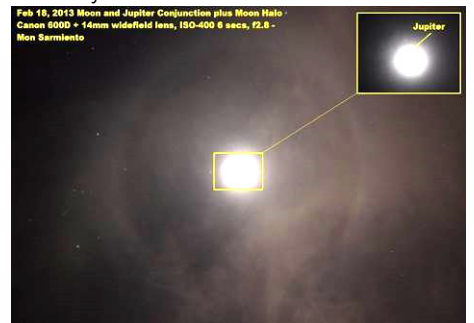
Moon

First light on the 800mm f/8 mirror lens. The quality is a little "soft" from a comparison of this shot and other full moon shots I've done with the 6-inch Celestron, which was also 800mm in focal length.

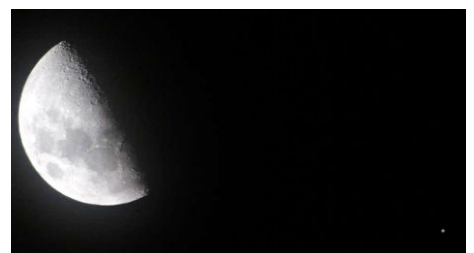


I really really miss having a telescope. - Gary and Steinnar Andreassen

Feb. 18. Jupiter and the Moon, enveloped inside a lunar halo, signifying the presence of ice crystals in the clouds.



Imaged with a Canon 600d and 14 mm f/2.8 wide field lens. 6 seconds at ISO 400.

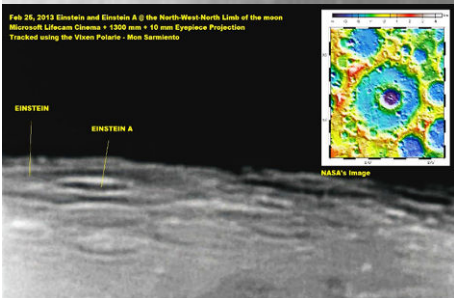
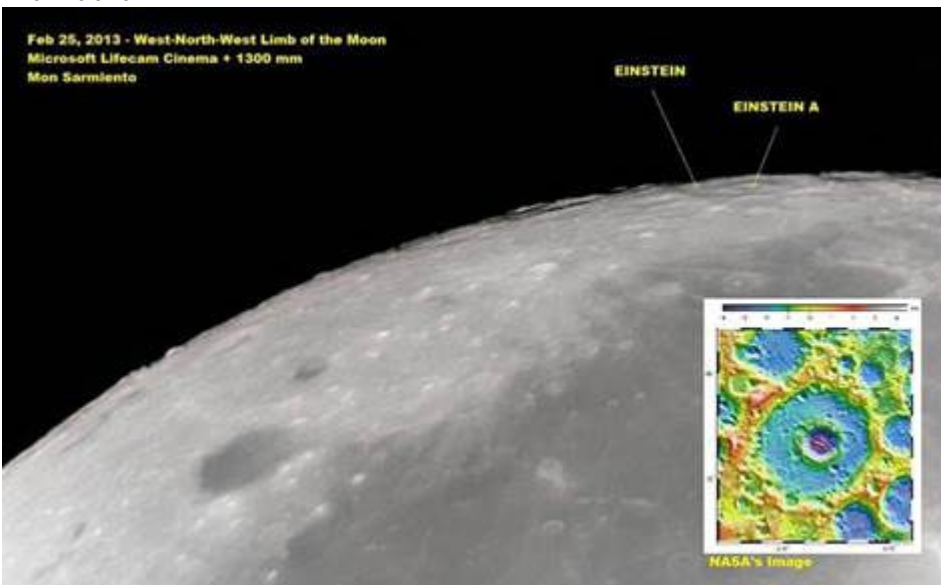


Jupiter and the Moon using a Canon 600d and a 900 mm refractor.

Feb. 23. Imaged using a Microsoft Lifecam cinema webcam mounted on an 800 mm mirror lens (\Rightarrow p. 41).



The Einstein Craters up close via 1300 mm + 10 mm eyepiece projection using Microsoft Lifecam, and tracked using the Vixen Polaris.



- Raymund Sarmiento

Feb. 18. 8-day old waxing gibbous Moon in conjunction with the bright planet Jupiter, imaged with a Canon 450d with Celestron Powerseeker 80EQ f/11. 1/20 second at ISO 200.



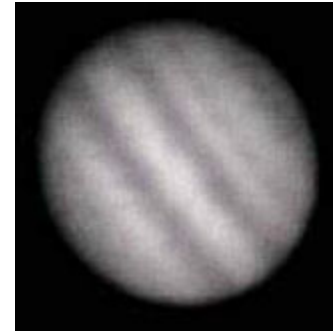
- Christopher Louie Lu

Feb. 26. I got home and was happy to see the Full Moon (above) from my window after several months of obstruction from view.

I didn't waste time and used my Canon EF100-400mm f/4.5-5.6 IS L lens set at 400mm f/8. - James Kevin Ty

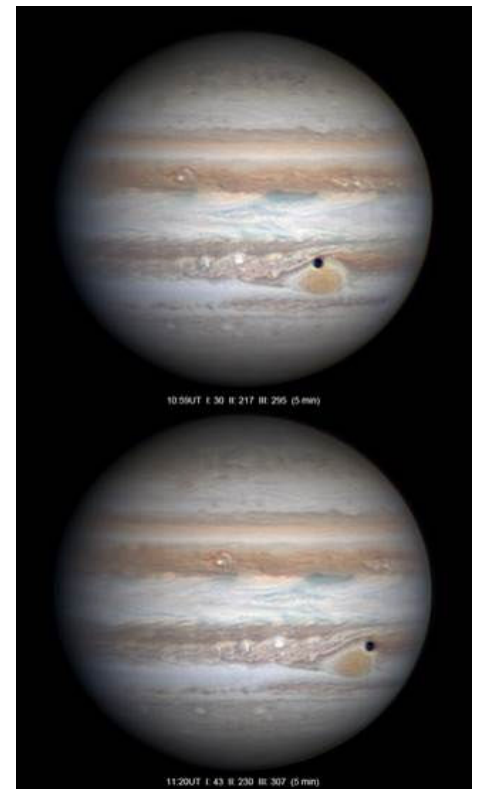
Jupiter

Feb. 26. Tests on the Microsoft Lifecam at 0 saturation and full contrast recording at 1300 mm focal length and 10 mm eyepiece projection.

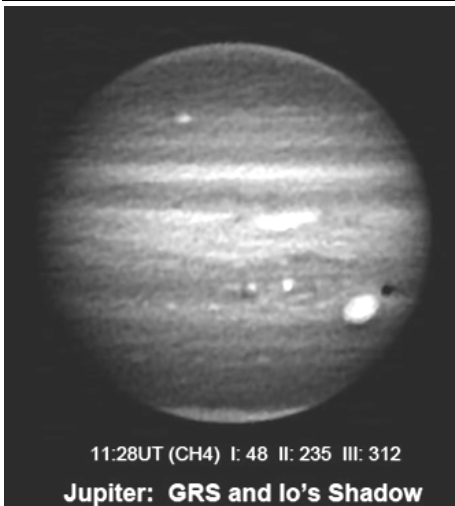


- Raymund Sarmiento

Feb. 6. The sky had been cloudy during the last few days. Seeing and transparency was variable because of thin clouds.



The Great Red Spot (GRS) was setting in this image. Io's shadow could be seen just north of the GRS. The wake of the GRS was very chaotic because of outbreaks. The South Equatorial Belt (SEB) outbreaks were very bright in methane (CH₄) band. Note the colorful outbreak in the North Equatorial Belt (NEB). Note the dark barge in the Equatorial Zone (EZ) was very bright in CH₄. The North North Temperate Zone Little Red Spot (NNTZ LRS) could also be seen (⇒ p. 42).



Feb. 9. Seeing was variable this evening.



The SEB featured the tail end of the wake of the GRS.

There were complex rift activities in the NEB. The NNTZ LRS was setting in these images. Note the dark spots lining up above the North Temperate Belt (NTB).

Feb. 11. It was a frustrating session this evening. Seeing was okay but humidity was 98%!! It was raining hard early this evening when the sky suddenly cleared. Dew was on my corrector and I had to remove it after each RGB run.



This area was similar to the area I imaged two days ago.

Two dark spots on the North Tropical Zone (NTrZ) seemed to be getting closer to each other. Will they merge? Other features looked more or less the same as two days ago.

Feb. 13. Seeing wasn't very good this evening, probably because my optical tube assembly needed more cooling.



The GRS and Oval BA were moving further away from each other. There seemed to be a large white oval following Oval BA.

The wake of the GRS looked a bit strange. Io could be seen following the GRS. The NEB still had some rift activity, while the NTBn was still dark.

Feb. 16. Transparency was terrible this evening because of thin clouds.

The two dark spots on the NNTB had merged! There was only one bigger dark spot now.

The SEB looked very chaotic (⇒ p. 43).



Feb. 22. I had a short break in the clouds this evening. Weather had been crummy for weeks. Seeing and transparency was variable.



Jupiter: Oval BA
February 22, 2012 S: 6:7:10 T:3-45
© Christopher Go (Cebu, Philippines)

Oval BA was prominent in these images, with the white center surrounded by the thick red ring being obvious. The SEB was very active.

The SEBn was very dark. There were outbreaks in the NEB associated with the EZ festoons. The NTB was wide and red. The NTBn was dark! - *Chris Go, Cebu*

Nebulae

Reprocessed image of the Pleiades taken last December 2012. Total exposure of 1 hour and 30 seconds.



Flame Nebula and Horsehead Nebula. Single 301-second exposure at ISO 1600.



Taken February 5, 2013 with a Pentax Kx and a 200mm f/4 lens on a Vixen Polarie mount. - *Oliver Abrigo de Guzman*

Scorpius



The head of the scorpion. Single 30-second exposure at ISO 12,800 taken on February 17, 2013.

Antares and the Pipe Nebula. Single 242-second exposure at ISO 1600 taken on February 18, 2013.



Pipe nebula. Single 30-second exposure at ISO 1600 taken on February 17, 2013 - *Oliver Abrigo de Guzman*

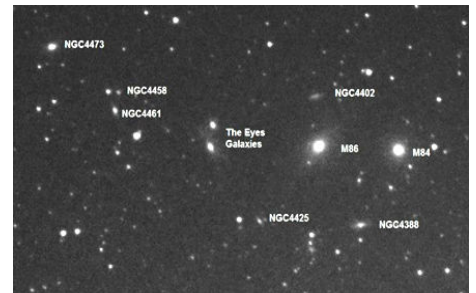
Planetary Nebula

NGC 2371 is a pretty blue planetary nebula in Gemini. Its bipolar nature is obvious with a left and right lobe. This magnitude 13 planetary nebula is often overlooked because of its more famous and much brighter neighbor, the Eskimo Nebula.



- *John Nassr, Baguio*

Galaxies Galore



Markarian Chain in Virgo. 12 minutes and 2 seconds exposure on Pentax Kx and 200 mm lens on Vixen Polarie mount. - *Oliver Abrigo de Guzman*

Obscure Nebulae

Here are a couple of images shot late in 2012. These are objects from the Sharpless Catalog. This catalog was named after Stewart Sharpless, a US Naval Observatory astronomer, who published a catalog of HII regions in the Milky Way. HII regions are what are usually classified as regions of ionized hydrogen. Some of the objects in this catalog are also known by other catalog designations, but some exist only in this catalog.

First up is Sharpless 181 and 183, which reminded me of the logo of the Chicago Bulls:



Not only are "Da Bears!" immortalized in not one, but TWO constellations (Ursa Major, the "Great Bear" and Ursa Minor), now "DA BULLS!" are immortalized in this portrait.

Sharpless 183 (the face of the Bull) is incredibly faint. Dean Salman of sharplesscatalog.com fame described it as faint. That doesn't begin to describe this object. Ninety minutes each of RGB data showed no features in this part of the sky. The redemption of this image is the amount of H-alpha captured (23 hours!).

Sharpless 183 and the accompanying Sharpless 181 (the bull's single horn) is a dim diffuse nebula in the constellation Cassiopeia. There is little information about this object, but according to galaxymap.org, it is mostly obscured by foreground dust, it contains about 44 thousand solar masses of gas and is at least 3.9 million years old. It is unknown which stars are ionizing the gas (making it glow), and are probably obscured by the foreground dust. The obscuring dust could explain at least part of its faintness.

Date Imaged: October 2012

Location: Rancho Hidalgo, Animas, NM

Exposure Details:

H α : 46 x 30 Minutes Binned 1x1

R: 9 x 10 Minutes Binned 1x1

G: 9 x 10 Minutes Binned 1x1

B: 9 x 10 Minutes Binned 1x1

Twenty-seven hours and 30 minutes total exposure time

Equipment Used: Takahashi FSQ-106N on an Astro-Physics AP1200GTO mount. SBIG STL-6303E camera with FW8-STL filter wheel and Astrodon filters. Robofocus focuser.

Acquisition Software: MaximDL 5, TheSky6, CCDAutopilot 5, FocusMax

Processing Software: MaximDL, Photoshop CS/CS5, Carboni Actions, Croman GradientXterminator, Noise Ninja, IrFanView

Next up is a couple of supernova remnants, the remains of a couple of supermassive stars that blew up a few (or perhaps several) thousand years ago:



According to www.sharplesscatalog.com, both Sharpless 224 (the very interestingly-shaped object on the left) and Sharpless 223 (to the lower right) are both supernova remnants, so this image covers the debris of two ancient colossal super stars that literally went out with a bang thousands of years ago. Both objects lie in the constellation Auriga, and both are very faint nebulae that required a bit of exposure to bring out the details and colors depicted here. I was pleasantly surprised to pick up both SII and OIII data, so I'm representing the image in many of the popular ways these targets as depicted, as well as an H-alpha/OIII blend that brings out the difference in structure of the ionized gases represented. I am not sure about the extent of the OIII data outside of the outer extensions around Sharpless 224. There was a glow in my OIII data, which I decided to preserve in the H α /OIII representation in case it's real data.

Date: Imaged over five nights October - November, 2012

Location: Rancho Hidalgo, Animas, NM

Exposure Details:

H-alpha: 18 x 30 Minutes Binned 1x1

SII: 13 x 30 Minutes Binned 1x1

OIII: 16 x 30 Minutes Binned 1x1

Red: 12 x 10 Minutes Binned 1x1

Green: 12 x 10 Minutes Binned 1x1

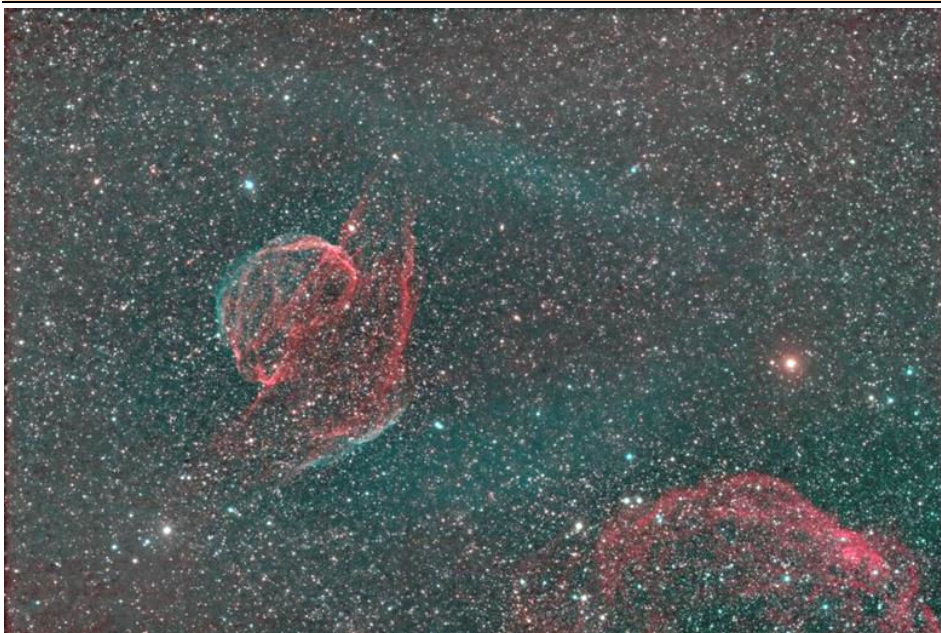
Blue: 12 x 10 Minutes Binned 1x1

29 Hours and 30 Minutes Total Exposure Time

Equipment Used: Takahashi FSQ-106N on an Astro-Physics AP1200GTO mount. SBIG STL-6303E camera with FW8-STL filter wheel and Astrodon LRGB and narrowband filters. Robofocus focuser.

Acquisition Software: MaximDL 5, TheSky6, CCDAutopilot 5, FocusMax

Processing Software: MaximDL, Photoshop CS/CS5, Croman GradientXterminator, Carboni Actions, IrFanView, Noise Ninja



Sharpless 224 is particularly interesting to me shape-wise. I've actually been aware of this object for several years now, but only got around to finally imaging it late in 2012.

Supernova Predictors

I have a confession to make: I have this bad habit of working on an image, then giving up after a while because I'm not happy with it with the intent of coming back "someday" to work on it. I then either never get around to it, or go back, fiddle with it a bit, then forget about it.

I resisted this urge with my recent sharing of the two faint objects, specifically the Sharpless 183 image. That one was, I felt, not ready for prime time, but I shared it anyway, warts and all. The feedback was enough impetus to make me look at the image with a fresh eye. I am currently working on a bit of a redo on that target. Expect a reshare of that nebula soon.

With that philosophy, please allow me to share two images going back a couple of years (yes, years!). I call this pair my "Supernova Predictors", because in both cases, a supernova went off a few months *after* I shot a galaxy in that composition!

The first is M101, a nice big galaxy near the Big Dipper. This is quite aptly called the Pinwheel Galaxy, though I will admit that I am a bit confused by that moniker, as M33 is also called that.

M101 is also known as the Pinwheel Galaxy. While I personally first heard of M33 being called the Pinwheel, I definitely see the pinwheel shape more dramatically in M101 than in M33.



NGC 5474, the oddly-shaped galaxy to the right of this image, is one of M101's companion galaxies. Its odd shape is likely due to gravitational interactions with its much larger neighbor.

M101 is a pretty tough galaxy to see visually. I don't recall any instance to date of having seen it so far.

A couple of months after I shot this image, a supernova went off in this galaxy.

Date: Four nights from April through May 2011

Location: Rancho Hidalgo, New Mexico

Exposure Details:

L: 61 x 10 Minutes binned 1x1

R: 18 x 10 Minutes binned 1x1

G: 18 x 10 Minutes binned 1x1

B: 18 x 10 Minutes binned 1x1

Equipment Used: Takahashi TOA-130F on an Astro-Physics AP1200GTO mount. SBIG STL-6303E camera with FW8-STL filter wheel and Astrodon LRGB and narrowband filters. Robofocus focuser and Astrodon Takometer rotator.

Acquisition Software: MaximDL 5, TheSky6, CCDAutopilot 4, FocusMax, Takometer Controller

Processing Software: MaximDL, Photoshop CS, Carboni Actions, Croman GradientXterminator, IrFanView

Next is a wide field of galaxies in Leo that I originally planned to call "The Trio in Leo 2", as a nod to the original Trio in Leo.

There are more than three bright galaxies in this field of view, however, so I decided to call it a "Quintet in Leo" instead.



The Trio in Leo is a famous grouping of galaxies among amateur astronomers. Few major galaxies can be seen grouped together in the field of view of an 8" or larger telescope like these three. In this image above can be seen M65 (upper right), M66 (lower right) and the dimmer NGC 3628 (lower left) (⇒ p. 46).

Like most galaxies within a few million light years of each other, the Trio in Leo are gravitationally interacting with each other and are destined to merge into one super galaxy eons from now. They have already encountered and interacted with each other in the past, which explains their distorted shapes (most notably M66's warped arms).



This was an attempt to capture "another Trio in Leo", but the number of interesting galaxies (not counting the more distant ones in the background) in this images goes up to at least five, so I'm calling this the Quintet in Leo.

If we are just counting Messier objects, this picture does represent a Trio in Leo 2, comprising M95, M96 and M105. However, the classic Trio only counts two Messiers, so this remains a quintet. I'm a bit puzzled by the designation of the labeled NGC galaxies, as even my planetarium software (TheSkyX) gives these galaxies two catalog numbers. A couple of months after I shot this image, a supernova went off in M95.

One other point of note: the constellation Leo happens to lie on the same plane as our Solar System, which means it also lies in the same area as the asteroid belt. Long story short, it is almost certain to catch an asteroid, or two or three or four, when imaging targets in this part of the sky. At right is a composite of my luminance data for this image, stacked and processed to show the asteroids (the streaks in the image). Please ignore the longest somewhat blurred streak going down along the right third of the image; that is a processing artifact. How many asteroid streaks can you see?

Date: Two nights In February 2012

Location: Rancho Hidalgo, New Mexico

Exposure Details:

L: 30 x 10 Minutes binned 1x1

R: 12 x 10 Minutes binned 1x1

G: 12 x 10 Minutes binned 1x1

B: 12 x 10 Minutes binned 1x1

11 Hours total exposure time

Equipment Used: Takahashi TOA-130F on an Astro-Physics AP1200GTO mount. SBIG STL-6303E camera with FW8-STL filter wheel and Astrodon LRGB and narrowband filters. Robofocus focuser and Astrodon Takometer rotator.

Acquisition Software: MaximDL 5, TheSky6, CCDAutopilot 4, FocusMax, Takometer Controller

Processing Software: MaximDL, Photoshop CS, Carboni Actions, Croman GradientXterminator, IrFanView

As mentioned in the text of this page, quite a few asteroids zipped through the field of view as I shot this area:



- Eric Africa, West Chester, Ohio, USA

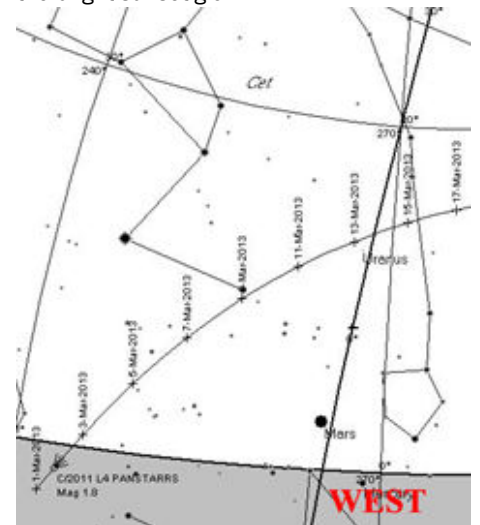
The Sky

Comet PANSTARRS

The relatively bright comet C/2011 L4 PANSTARRS will be visible low in the western horizon this month.

Although not as bright as initial expectations for this comet (early estimate forecasted that it would reach magnitude -1!), the comet is estimated to be at magnitude 3-4 in the first and second week of March and will gradually started to dim toward the end of the month.

Look for a clear western horizon and try to locate it low in the horizon. A pair of binoculars will help locate it easier against the bright sunset glow.



As of press time (March 2), the comet was visible to the naked eye even despite bright sky glow from sunrise, from the southern hemisphere. This bodes well for a nice display when the comet becomes visible in our skies.

Comets are unpredictable, so it can either flare up to a nice display or fizzle out. Right now, it looks somewhat close to how Halley's Comet looked like after perihelion, but it may yet surprise us and look like the much brighter Comet Hale-Bopp.