



alpha

Astronomical League of the
Philippines' *HerAld*

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FEATURE IMAGE THIS ISSUE



19:35UT I: 131 II: 111 III: 90

Jupiter has been quite active the past few months. It's as if Jupiter is undergoing global climate change, with the appearance and color changes of spots, and outbreaks in its cloud bands and zones. Chris Go has been actively monitoring the planet, with one such image of Jupiter on May 24 highlighting the three red spots and the NEB Outbreak. © Chris Go

CLUB NEWS

MAY MEETING

The Astronomical League of the Philippines (ALP) held its monthly meeting on May 11 at the Manila Planetarium at 2:00 p.m. Members who attended the meeting were James Kevin Ty, Angie Tan, Bel Pabunan, Dr. Jett Aguilar, Vincent Lao, Alfonso Uy, Jomar Lacson, Melisa Bata, Dr. Armando & Mia Lee with their son Jason, Theodore Marc Gutierrez, Michael Manriquez, Dr. Jesus Rodrigo Torres and Omar Turqueza.

ALP President James Kevin Ty started the meeting by welcoming members and guests to the meeting. ALP Observation Chairman Peter Benedict Tubalinal was supposed to do a basic lecture on Astronomical Terminology but had to beg off because he had a bad stomach earlier in the morning. Awarding of certificates for the recently concluded Messier Marathon was likewise postponed. James proceeded with the meeting program by introducing the next speaker - Dr. Armando Lee. Armand talked two topics that afternoon. The first lecture was about his group's astro-imaging experience and trip to Baler, Aurora Province. Based from the images he took, he estimated the sky darkness of the site to be around 9/10. Although the road to the site was rough and bumpy, he said it was a very scenic drive with many attractions along the way (waterfalls and lakes) and well worth the trip. He expressed optimism that soon the road leading to Baler will be repaired. He is looking forward to return to the site next year for another astro-imaging session.



Dr. Lee gave an interesting presentation on his astro imaging experience at Baler, Aurora.

Afterwards, he gave a Powerpoint presentation highlighting the BS Astronomy Technology course where he showed some images of class sessions, showing students learning how to set up telescopes, imaging equipment, and cleaning/collimating optical instruments. A rundown on the curriculum on BS Astro Technology at Rizal Technological University (RTU) was done using the website of the Astronomy Education Review. Together with RTU Vice President Dr Jesus Rodrigo Torres, they explained what comprised the 5-year course as well as the employment opportunities it will provide to the graduates of this course.

Dr. Jesus Rodrigo Torres also announced to fellow ALPers a new short course Astronomy Education program designed for busy people who don't have time to attend regular classroom sessions.



Dr. Jesus Rodrigo Torres announced to fellow ALPers a new short course Astronomy Education program that can give a Diploma degree

The initial proposal requires applicants to meet at RTU to get the entire semester's assignments to be studied at home and meet with the teachers only once per month to submit their assignments. According to Dr Torres, this plan will have to gain approval of the Board of Regents of RTU. The local astro community will surely welcome such offering in Astro Education. Even though it's not a formal degree course, it can be an avenue for those who might later pursue formal education in Astronomy in the MS Astronomy course being offered for BS degree holders.

Lastly, ALP President James Kevin Ty, together with ALP Ways and Means chairperson Melisa Bata, discussed the ALP 5th Year Anniversary Souvenir Program Project. (⇒ p. 54).

Below are some of the items discussed:

- 1) A hardbound edition was decided with 100-page content.
- 2) Deadline for submission of articles is July 15, while for advertisement it is July 31, with printing starting August 15 and expected presentation of the ALP Yearbook on September 14.
- 3) Since this is a special event for the ALP, members are encouraged to help solicit at least 1 page of advertisement so as to help fund the expenses that will occur in the production of the souvenir program. A free copy of the yearbook will be given to the member for free if he or she were able to help solicit 1 full-page advertisement. A member will be obliged to pay P600 for a copy of the yearbook in case he or she wasn't able to help out on the yearbook.
- 4) Each member at the meeting was given 5 ALP brochures and 5 solicitation letters to help get sponsors for the project. Additional brochures and letters can be obtained from Ways and Means Chairperson Melisa Bata.

The meeting ended at 5:30 p.m. - *by James Kevin Ty & Armando Lee, images by James Kevin Ty*

ALPER IN ASTRONOMY

Imelda Joson had a very nice article on wide field imaging using a DSLR and tripod that was featured in June 2008 issue of Astronomy magazine.

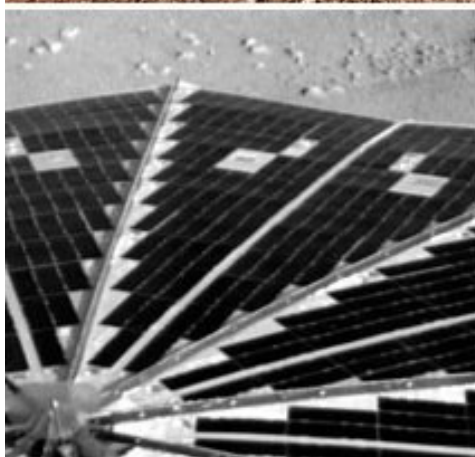
BREAKING NEWS

Phoenix On Mars

NASA's newest outpost in the solar system is a polygon-cracked terrain in Mars' northern polar region believed to hold a reservoir of ice beneath. Radio signals confirmed the Phoenix Mars Lander had survived its difficult final descent and touchdown 15 minutes earlier. The signals took that long to travel from Mars to Earth at the speed of light.

A flood of images sent back by Phoenix revealed a landscape similar to what can be found in Earth's permafrost regions — geometric patterns in the soil likely related to the freezing and thawing of ground ice.

Phoenix landed on Mars after a 10-month, 675 million-km journey. After a week checking out its science instruments, the lander will begin a 90-day digging mission to study whether the northern polar region possesses the raw ingredients needed for life to emerge.



First pictures beamed back to Earth from Phoenix's arctic landing site. Image credits: NASA/JPL-Calech/University of Arizona

Phoenix joins the twin rovers on the Martian surface, which have been exploring the equatorial plains since 2004. Unlike the mobile rovers, Phoenix was designed to stay in one spot and dig trenches in the soil.

Indications show the lander is healthy and confirm the lander unfurled its solar panels, hoisted its weather mast and unwrapped the protective covering of its 8-foot-long robotic arm. The lander is now starting up its scientific experiments. - *Alicia Chang, Associated Press and Science@ NASA*

Jovian Global Climate Change

The first images of Jupiter since it came out from behind the sun show that the turbulence and storms that have plagued the planet for the past two years continue. Whether or not this is a sign of global warming, the turbulence does seem to be spawning new spots. As Red Spot Jr. and the Great Red Spot (GRS) approach a June conjunction, a new third spot may merge with the GRS in August.

Increased turbulence and storms first observed on Jupiter more than two years ago are still raging.

Captured with NASA's Hubble Space Telescope (HST) and the 10-meter Keck II telescope, this so-called "major upheaval" on Jupiter involves stunning changes in the planet's atmosphere, said lead astronomer Imke de Pater, professor of astronomy at UC Berkeley.

The upheaval was heralded in December 2005 by a color change from white to red of a large oval near the Great Red Spot, earning it the moniker Red Spot Jr. This oval, formally known as Oval BA, formed six years earlier through a merger of three large white ovals just south of the Great Red Spot - storms that formed in the early 1930s and were prominent in the Voyager era.

"One of the most notable changes we observe in both the Hubble and Keck images is the change from a rather bland, quiescent band surrounding the Great Red Spot just over a year ago to one that is incredibly turbulent at both sides of the spot," de Pater said (⇒ p.55).

"During all previous HST observations and spacecraft encounters, starting with Voyager in 1979, such turbulence was seen only on the west or left side of the spot."

The Great Red Spot is a persistent, high-pressure storm on Jupiter whose cloud head sticks some 8 kilometers above the surrounding cloud deck. Why the spots are red is a subject of great debate. Moreover, the color of several bands on the planet has been changing since the upheaval began, said Christopher Go, an amateur astronomer in Cebu, the Philippines, who joined de Pater's team two years ago. Go alerted the astronomical community in early 2006 about the color change of Red Spot Jr.

"Lately, the red color of the Oval BA has faded a little bit, while the Great Red Spot may have turned dark red," Go said.

The Great Red Spot and Red Spot Jr. are squeezed between bands called shear flows, where the flow above each storm is moving westward and the flow below is moving eastward. Since the shear flow in each band is slightly different, and the storms are different sizes, Red Spot Jr. drifts slowly eastward toward the Great Red Spot while the Great Red Spot drifts slightly westward toward Red Spot Jr. In late June, this storm will pass the Great Red Spot, as it does every two years. Interestingly, a third red spot has appeared to the west of the Great Red Spot in the same latitude band.

"Although much smaller in extent, the color is striking," said UC Berkeley team member Michael Wong. "Like the other two large red storm systems, this newest red spot is bright in near-infrared wavelengths and dark in the ultraviolet. If this spot and the Great Red Spot continue on their courses, they will encounter each other in August, and the small oval will either be absorbed or repelled from the Great Red Spot."

According to Philip S. Marcus, a professor of fluid dynamics at UC Berkeley, analysis of the Hubble and Keck images may support his 2004 conjecture that Jupiter is in the midst of global climate change that will alter temperatures by as much as 10 degrees Celsius, getting warmer near the equator and cooler near the south pole. He predicted that large changes would start in the southern hemisphere around 2006, causing the jet streams to become unstable and spawn new vortices.

The appearance of the planet's cloud system from just north of the equator down to 34 degrees south latitude keeps surprising us with changes and, in particular, with new cloud features that haven't been previously observed.

Whether or not Jupiter's climate has changed due to a predicted warming, the cloud activity over the last two and a half years shows dramatically that something unusual has happened.

The red coloration in the ovals may be generated as their swirling hazes rise to heights like the clouds of the Great Red Spot. Detailed analysis of the Hubble's visible light data and the Keck images at near-infrared wavelengths will reveal the relative altitudes of the cloud tops of the three red ovals. Since all three oval storms are bright at near-infrared wavelengths where methane gas is absorbing, the data already show that all three systems rise up well above the surrounding cloud deck.



In what's beginning to look like a case of planetary measles, a third red spot has appeared alongside its cousins — the Great Red Spot and Red Spot Jr. — in the turbulent Jovian atmosphere. This third red spot, which is a fraction of the size of the two other features, lies to the west of the Great Red Spot in the same latitude band of clouds. The new red spot was previously a white oval-shaped storm. The change to a red color indicates its swirling storm clouds are rising to heights like the clouds of the Great Red Spot. One possible explanation is that the red storm is so powerful it dredges material from deep beneath Jupiter's cloud tops and lifts it to higher altitudes where solar ultraviolet radiation — via some unknown chemical reaction — produces the familiar brick color. (Credit: M. Wong and I. de Pater (University of California, Berkeley))

The Hubble telescope imaged the entire planet on May 9 and 10 using the Wide-Field Planetary Camera 2, while Keck II focused on the area around the Great Red Spot on May 11 using adaptive optics to sharpen the image.

The Hubble team consisted of de Pater, Marcus, Wong and Asay-Davis of UC Berkeley and Go of the Philippines. The Keck team members were de Pater, Wong and Conor Laver of UC Berkeley and Conrad of the Keck Observatory. — [Science Daily](#)

Saturnian Storm

A monster storm spawning bolts of lightning 10,000 times more powerful than any seen on Earth is raging on the ringed planet Saturn. The powerful electrical storm cropped up in Saturn's southern hemisphere five months ago, and has persevered to become the planet's longest continuously recorded tempest to date.

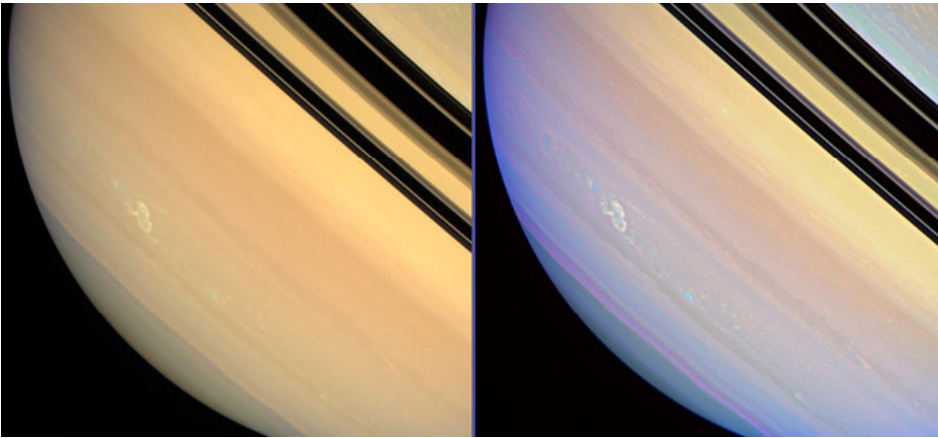
Similar storms in 2004 and 2006 each lasted for nearly a month, but this storm is longer-lived by far. It appeared after nearly two years during which we did not detect any electrical storm activity from Saturn. Cassini's radio and plasma wave science instrument first picked up signals from the storm's lightning bursts on Nov. 27, 2007, with the probe's cameras catching their first visual glimpse on Dec. 6. Images of the storm show it as a smudge on Saturn's otherwise creamy cloud bands. The electrostatic radio outbursts have waxed and waned in intensity for five months.

Electrical storms on Saturn are similar to thunderstorms on Earth, but much larger. They can span thousands of miles and generate radio bursts from lightning that can be thousands of times more powerful than Earthly lightning bolts, said mission scientists, who named a massive lightning storm in 2004 "Dragon."

The current electrical tempest is mired in a region of Saturn that mission scientists have dubbed "Storm Alley" because of its frequent and intense storms. Every few seconds the storm belches intense radio pulses consistent with lightning that can be detected even when the weather itself is over the horizon and out of direct view from Cassini.

Researchers hope that by tracking the Saturnian weather, they may gain new insights into the processes behind the planet's lightning, as well as how it changes as the seasons shift from summer to autumn in Saturn's southern hemisphere.

Cassini's onboard instruments have tracked the storm every 10 hours and 40 minutes, when Saturn's rotation brings it into view, though amateur astronomers are also watching over the tempest from Earth. Since Cassini's camera cannot track the storm every day, the amateur data are invaluable. Launched in 1997, Cassini arrived at Saturn in 2004 and has spotted a series of odd storms while studying the ringed planet and its many moons (⇒ p.56).



These two side-by-side views show the longest-lived electrical storm yet observed on Saturn by NASA's Cassini spacecraft. On the left is a view of the storm as it would look to the human eye, while an enhanced version to bring out the storm is at right. Credit: NASA/JPL/Space Science Institute.

The probe has captured views of a hurricane-like storm near the south pole of Saturn and recorded a massive lightning storm about 3,500 kilometers wide in 2006. Earlier this year, managers for the international Cassini-Huygens mission, which includes NASA, and the European and Italian space agencies, extended the probe's \$3.27 billion expedition by two additional years to 2010. – [Space.com](#)

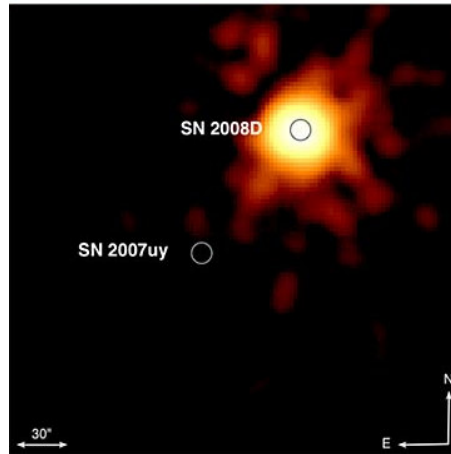
Supernova Caught In The Act

Once in a while you get so lucky it's spooky. In a typical galaxy like the Milky Way, a supernova explodes once every 50 years on average. So what was the chance that the first moments of a supernova would occur while NASA's Swift X-ray satellite happened to be trained on just the right galaxy?

What we are used to calling "a supernova" is really just a supernova's afterglow. A "new star" is seen growing brighter and brighter for 1 to 3 weeks, then fading back down for many months, but this is just the expanding debris shell of a star that actually took only seconds or minutes to blow apart. The debris even shines by a delayed, time-release effect: the slow radioactive decay of nickel-56 that got cooked up in the brief blast itself.

A supernova's actual energy release is pretty much complete even before the blast wave inside the star (moving at a good fraction of the speed of light) gets to the star's surface. After that it's really all over but the shouting.

On January 9th, Alicia Soderberg and Edo Berger were using Swift's X-ray telescope to observe the fading glow of Supernova 2007uy, which had gone off a month earlier in the galaxy NGC 2770, 90 million light-years away in Lynx. During their observation, an overwhelming X-ray blaze appeared in a different part of the galaxy.



Top: Several days after it erupted in X-rays, Supernova 2008D showed up in visible light – though not as brightly as Supernova 2007uy, which was then several weeks old. Bottom: Days earlier, while Swift's X-ray camera was aimed at the galaxy, a sudden high-energy eruption flooded the image at the exact same point. By comparison, the earlier supernova was already dark in X-rays. NASA/Swift Science Team Stefan Immler

It brightened rapidly for one minute, then faded away over the next several minutes. They quickly alerted other orbiting and ground-based observatories. In the following days, the X-ray blaze turned out to mark the site of a new, ordinary supernova of Type Ibc swelling into view.

It was designated Supernova 2008D, since it was the fourth discovered in 2008. A Type-Ibc blast results when the dense iron core of a hydrogen-depleted, massive but compact blue-giant star (a Wolf-Rayet star) collapses in on itself to form a tiny neutron star or black hole. At least that's what astronomers have every reason to believe. The gravitational energy released by the internal collapse is more than enough to blow the rest of the star to pieces and send its material flying out at a few percent of the speed of light.

For nearly 40 years, astronomers have known that the first visible sign of a core-collapse supernova ought to come when the shock wave from the center erupts through the star's surface. The shock wave should suddenly heat the surface to ultraviolet- and X-ray-hot temperatures and send it expanding out fast. So, a sudden UV and X-ray flare should be a supernova's first observable event (aside from a pulse of neutrinos, and perhaps gravitational waves, from the core collapse itself).

That's what Swift saw. Interestingly, spectra taken soon after showed no sign of jets being emitted near the speed of light – ruling out the possibility that this was a gamma-ray burster that was aimed away from us. A small fraction of Type-Ibc supernovae do produce gamma-ray bursts, but there was no sign that this blast was anything but round and relatively low-velocity. Supernova 2008D may have had the first shock-wave breakout observed in X-rays, but it won't be the last. The next generation of [wide-field] X-ray satellites will find hundreds of supernovae every year exactly when they explode.

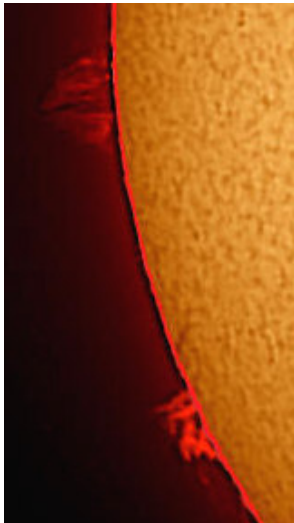
NASA's Galaxy Explorer (GALEX) apparently caught ultraviolet emission following the shock breakout in two supernovae of Type II (core collapses in red-giant stars that still had their hydrogen outer layers). – [Alan MacRobert, SkyandTelescope.com](#)

Observing Log

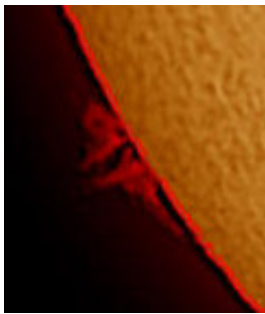
Sun

[May 2](#). I had a small opening in the clouds this morning for me to shoot the Sun. This time around, I had some difficulty putting the Sun in my field of view because the Sun is now rising a bit to the NNE position and at that position, my window allows me to image the Sun from 8:20-9:00 a.m. only.

The Sun will revert back to rising again in the east more or less around the months of August or September, so for the meantime, I will have to bear with it. Another remedy for me is to move my setup to the laundry area where I can shoot the Sun after 11 a.m. (⇒ p. 57).



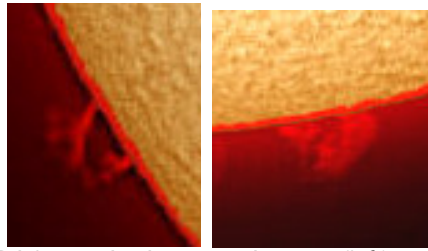
Anyway, going back to the Sun, there are 2 eruptive prominences that are easily visible in my whole disk view of the Sun (above). I was able to image the 2 larger prominences before clouds and obstruction shut me down completely.



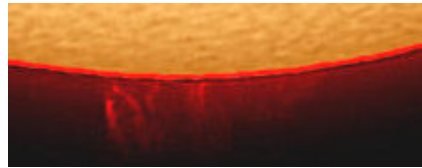
May 3. Yesterday morning, the sky was cloudy so I didn't have a chance to follow up any observation of the prominence that I took the other day. In the afternoon, I needed to go back home for a short errand to get some things for the office, so when I got home, I saw the Sun shining and it was really hot! My thermo watch showed an estimated temp of around 36+ C!

I was curious on what was happening with the Sun so I quickly set up my PST on a tripod to get a quick view and whoa - the prominence is still there and very nice! So I quickly ran up to my room and brought the whole setup down to the ground floor and, after 10 minutes, I was set up and amid a "sauna heat" environment, I was able to image (above) the Sun, and it was featured in Spaceweather.com.

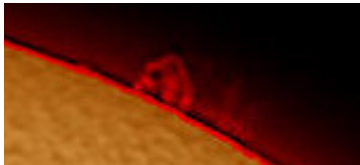
May 6. This morning, I was able to get a window of clear sky to image the Sun in a jiffy. When I peered through the eyepiece, I was able to see 2 nice eruptive prominences and I was able to image them despite not that good seeing. After 10 more minutes, clouds covered up the sky.



Bright projection prominence (left) and eruptive prominence (right) on May 6.



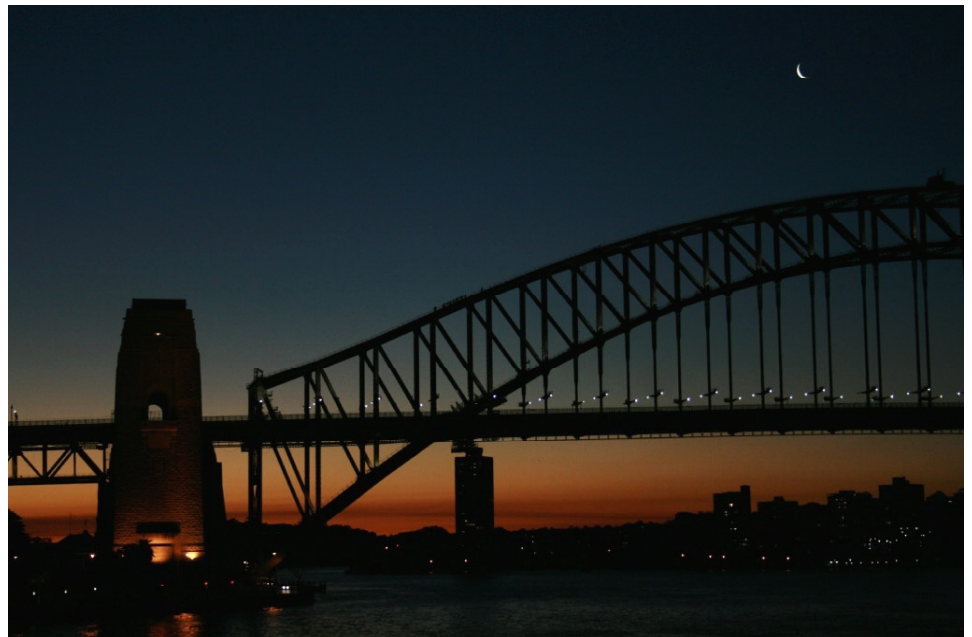
May 8. Yesterday, the Sun was almost devoid of any nice prominences, except for 1 or 2 very small prominences, but today the Sun started to come alive again with a nice prominence. Although not that big and bright, it was still nice to image it (above).



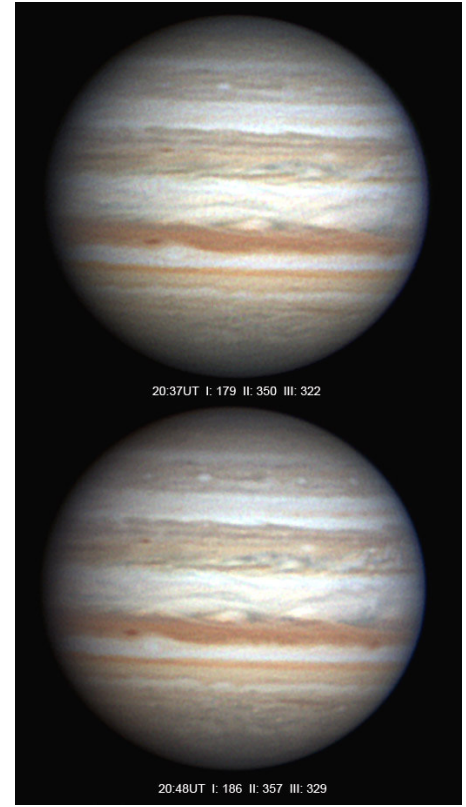
May 11. Yesterday morning, the sky was a bit clear around lunchtime. Not much activity except for a medium-sized eruptive prominence (above). - James Kevin Ty

The Moon

Took the shot below at the Sydney Opera House facing the Harbour Bay Bridge in Hong Kong using a Canon 400D on May 8. Exposure settings: f/5, 1/60 sec at ISO-800 5/8/2008 5:42 p.m. Handheld, no tripod - Mon Sarmiento

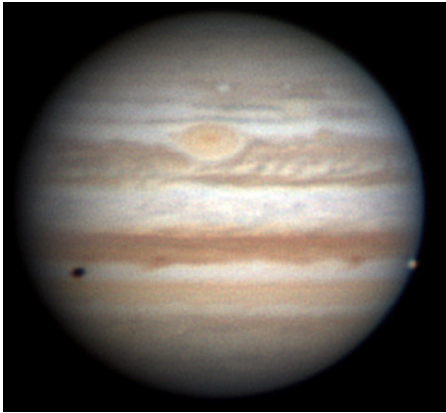


Jupiter



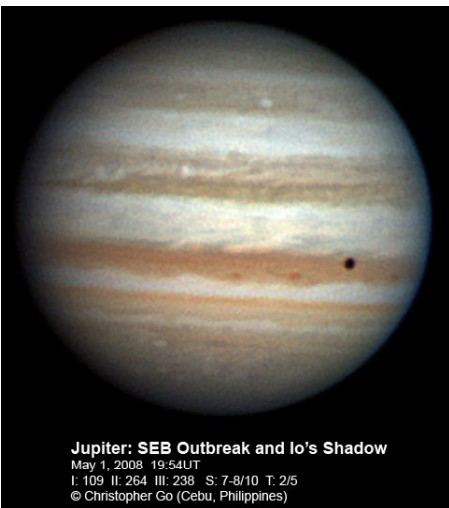
April 29. It was unusually cloudy and rainy during the past week, but I got a break. When I woke up, the sky was totally overcast. I was able to image Jupiter during a short break in the clouds. Seeing was very good this morning but transparency was not great. The South Equatorial Belt (SEBs) is very complex in the image above. The outbreak has really affected the SEB. Note the white spot at the mid-SEB on the right side (⇒ p. 58).

The Equatorial Zone (EZ) has a lot of activity. The North Equatorial Belt (NEB) is still dark red. Note the huge white oval on the NEBn. It seems like the merging ovals has disappeared. The North Temperate Belt (NTB) is very dark red. The detail in the



northern hemisphere is very good.

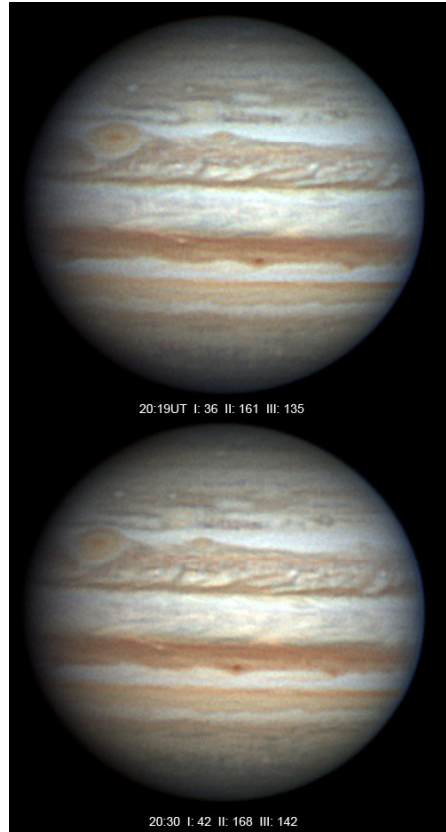
April 30. It was mostly overcast this morning. I was only able to scrape 1 image during a brief break in the clouds. Seeing was okay but transparency was poor. I waited for more clearing only to get some light showers. I had to panic and shut everything down. The Great Red Spot (GRS), Red Jr. and South Tropical Zone (STrZ) Little Red Spot (LRS) can be seen in this image *above*. Note the South Equatorial Depression (SED) north of the GRS at the SEBn. The LRS seems to have stalled, while Red Jr. is getting closer to the GRS. Europa and her shadow can also be seen on the North Tropical Zone (NTrZ). The NTB at this area is very light.



May 1. Seeing was good this morning, but it was partially cloudy and a thunderstorm was threatening on the east. Transparency was poor because of thin clouds. I was still able to scrape a decent image of Jupiter (*above*). The SEB outbreak can be seen setting on the left. The shadow of Io is at the NEBn. Except for the SEB outbreak, Jupiter looks quiet at this region.

May 5. It was cloudy when I woke up this morning, but it cleared after a few minutes. The 3 Red spots are visible in this image. The GRS is setting.

Red Jr. looks very pale. The STrZ little red spot looks very dark red. It now has a wake. This seems to be a very powerful storm system. All 3 red spots are getting closer to each other!



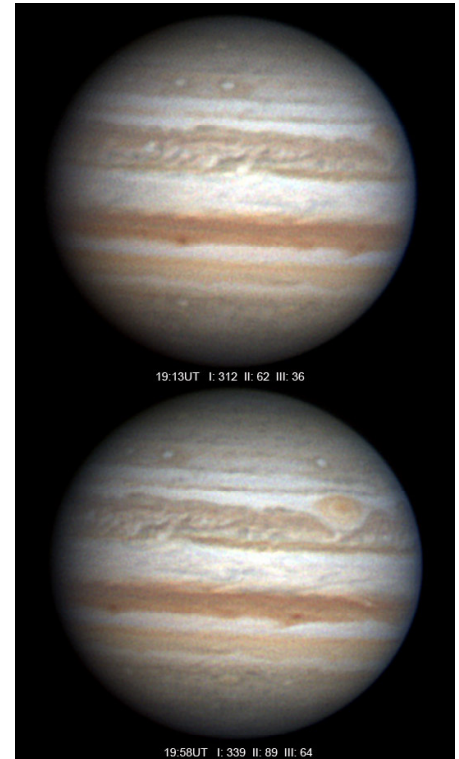
The SEB is very busy with a lot of activity! The NEBs is very dark red while NEBn seems to have a lighter color. NEBn has some large white spots and prominent dark ovals.

May 7. The calm before the storm - there is a tropical storm east of the Philippines. Seeing was average. Lots of activity at the SEB. The SED has reached the SEB outbreak and is interacting with it. Note that the color of the SEB has become dark red (*right top*).

It also seems that the GRS is interacting with the outbreak. Note the band forming at the STB. The EZ is very pale with only a slight hint of yellow. The blue festoons are not very prominent. Note the huge reddish oval at the North North Temperate Belt (NNTB).

May 15. Finally clear skies! The GRS, Red Jr. and the STrZ LRS are visible in this image. The SEB is very active from the activity of the SEB Outbreak (*right, center*). The Oval BA looks very pale. The NEB is still very dark.

Jupiter on May 7

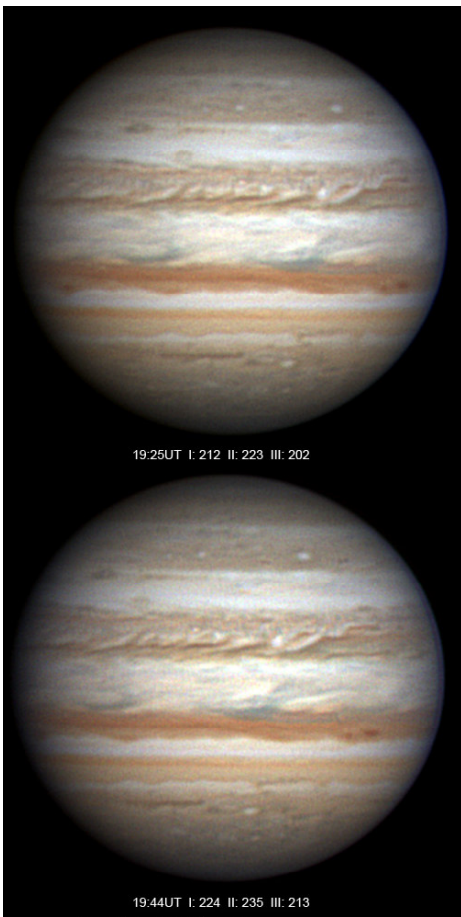


Jupiter on May 15

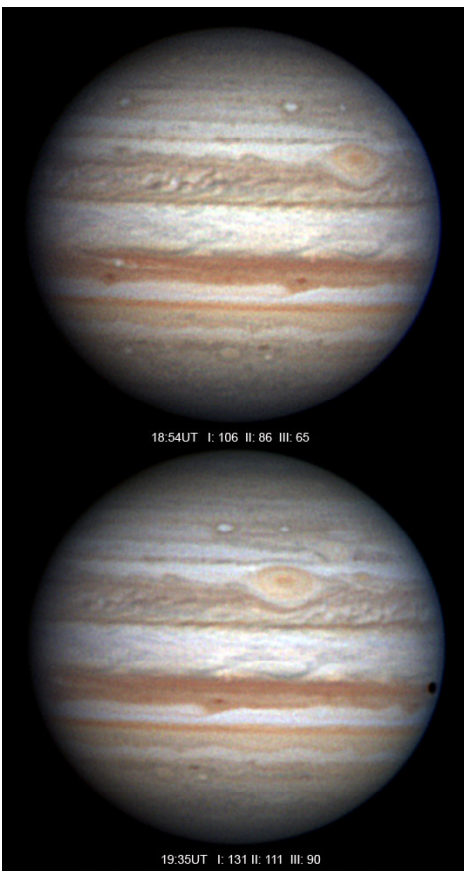
May 20. Conditions were perfect this morning. It's been cloudy for the last few days. This is probably one of my best images of the season (*left top on following page*). Note the impressive SEB outbreak.

The white spot to the right of the CM is the "eye" of the outbreak! The STrZ Oval 1 can be seen after the CM. Note the bluish NTB remnant.

The NEB is getting lighter in color from the deep dark red a few weeks ago. Note the huge dark barge at the N3TB. The northern hemisphere has a lot of white spots as it seems to be clearing up (⇒ *p. 59*).



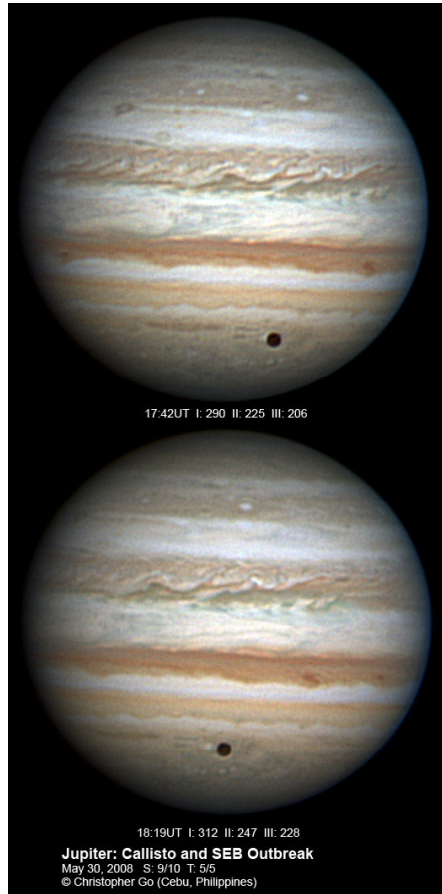
Jupiter on May 20.



May 24. May has really been a rainy month. I wasn't expecting much this evening. Although seeing was good, dew was a big problem and so was transparency. I took almost 2 hours' worth of images. Note the NEB white spot that is forming an outbreak. This is the first NEB outbreak I have seen in a long time. The NNTZ Red Spot is visible in this image (left, bottom). The SEB outbreak east of the GRS is very complex.

The GRS is very well defined with a dark red core. The STRz red oval is getting very close to the GRS. Oval BA has faded and is also getting closer to the GRS. Io's shadow can be seen at the NEBs.

May 30. Finally a clear night. Seeing and transparency are perfect. Note the huge SEB outbreak with the SED almost below it. The SED is very dark blue. Note the white oval with a dark ring at the STB. The STRz white oval 1 can be seen after the Central Meridian (CM). The EZ has a lot of dark festoons.



Note the merging barges at the NEBn and the dark bar forming on the NEBs. Callisto is at the NNTB right next to a white spot (above).

Note some surface details on Callisto's disk. Callisto is really a very dark moon. Note the area around Callisto is very busy. - Chris Go, Cebu



May 29. The seeing was uncharacteristically steady and clear at 3 this morning and I decided to image Jupiter as its three red spots discovered by Galileo, Go, and Akutsu transited across its face. Imaged with a C-14 f/27 SCT and DBK21 S7 T5. - John Nassr



Galaxy Pair

I have been stalking clear skies since last month and have all but given up that stars will ever appear again. In three weeks I was only able to catch two hours of clear sky; just barely enough to capture some luminance subexposures of NGC4725 and NGC4712, two nearly face-on spiral galaxies glowing softly in Coma Berenices near the northern galactic pole (above). Imaged with C14 f/6.5 SCT and ST10 L 2hrs. - John Nassr

ISS



There was a spate of opportunities to see the International Space Station (ISS) as it made its way across the sky. Above is an image showing the trail of the space station on May 22. - Jun Lao

Sky Calendar

June is normally a time of high heat and high humidity, with cloudy or rainy skies. In case skies do clear, take a look at the planets and the summer Milky Way marking the nighttime sky.

The Sky

DAY	HR	EVENT
JUNE 2008		
09	12:18	Venus at Superior Conjunction
10	23:03	FIRST QUARTER
17	12:33	Moon 0.02° S of Antares
19	01:30	FULL MOON
20	18:54	Jupiter 2.8° N of Moon
21	07:59	Summer Solstice
26	20:09	LAST QUARTER
30	17:40	Moon 0.7° N of Pleiades
JULY 2008		
01	12:05	Mars 0.7° N of Regulus
02	01:45	Mercury Greatest Elongation - 22° W
03	10:18	NEW MOON
03	22:20	Venus 1° S of Moon
04	17:55	Earth at Aphelion
05	03:44	Moon 0.9° S of Beehive star cluster
06	21:43	Moon 2.3° S of Regulus
09	15:41	Jupiter at Opposition
10	12:34	FIRST QUARTER
11	14:23	Mars 0.8° S of Saturn
14	19:05	Mon 0.8° S of Antares
18	15:58	FULL MOON
19	02:50	Venus 0.3° S of Beehive star cluster
26	02:41	LAST QUARTER
27	22:59	Moon 0.5° N of Pleiades
28	10:08	Delta Aquarids Meteor Shower Peak
30	04:04	Mercury at Superior Conjunction
30	06:46	Mercury 0.1° N of Beehive star cluster

Bright Comet Coming?

Serious comet chasers — people who track faint comets with telescopes and binoculars — have been aware of Comet C/2007 W1 (Boattini) for quite a while. It was forecast to become quite bright for a telescopic comet, 6th or perhaps even 5th magnitude, making it visible without optical aid to skilled observers at dark sites.

So far, Boattini has exceeded the brightness predictions by more than a full magnitude. If it keeps behaving like this — and that's a very big if! — it could become quite prominent in July.

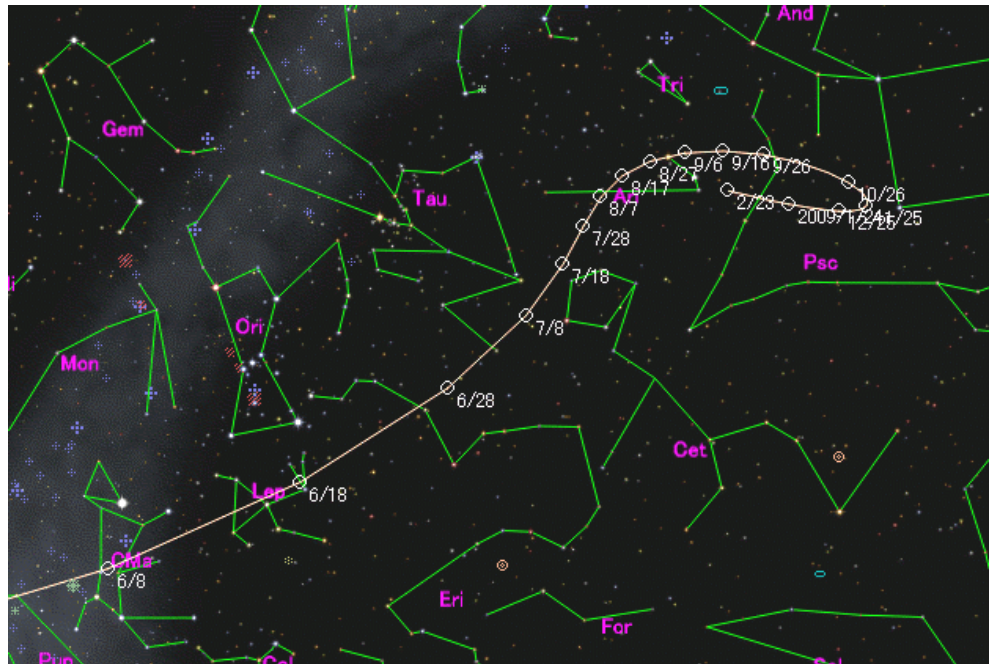


Chart generated via StellaNavigator Ver.8 (AstroArts) by Seiichi Yoshida

This comet was discovered on November 20, 2007, by Andrea Boattini during the course of the Mt. Lemmon survey in Arizona. Andrea is originally from Italy, and while in his native country developed a strong interest in near-Earth asteroids; during his research efforts there he discovered (or co-discovered) up to 170 asteroids (mostly main-belt objects). He has recently begun working with the Catalina and Mt. Lemmon program and has made several additional asteroid discoveries while there; one of these was the object 2007 WD5, which made some headlines when it made an extremely close approach to Mars at the end of January 2008. Comet C/2007 W1 is his first comet discovery, and I suspect there will be more of these to come.

Comet Boattini is traveling in a long-period orbit with an unusually small inclination of 10 degrees. Right now, unfortunately, the comet is fairly deep in the southern sky, making it a difficult target from mid-northern latitudes. The best sightings have been from the Southern Hemisphere, where it's already visible without optical aid under ideal conditions. The comet passes directly south of the Sun in mid-June. Do not confuse this comet with another fainter Comet Boattini in Vulpecula (C/2008 J1).

Boattini will emerge from the Sun's glow as an early-morning object around the beginning of July. What it will look like then is anybody's guess. Most likely, it will be a pleasant though unspectacular binocular target, just as it is now. There's a small but significant chance that it will become brighter than any comet since Holmes's spectacular outburst late last year.

There's an even smaller chance that the comet will disintegrate entirely while it's hidden in the Sun's glow and never be seen again. It wouldn't be the first time that's happened to a comet. — *Tony Flanders, SkyandTelescope.com and Alan Hale, Earthrise Institute*

May 23. After waiting three weeks for the sky to clear, I was finally able to hunt down and briefly image Comet Boattini C/2007 W1 before it set behind some trees in the southwest. It took me just a few minutes to visually find it in the constellation Pyxis through an 8x50 finderscope. It glowed brightly at an estimated 5.8 magnitude even through a hazy sky lit up by city lights. The comet is quite large with a size of about 20 arc seconds.



A full moon is 30 arc seconds for comparison. The emerald green comet is moving rapidly west southwest at 2 degrees per day causing background stars to streak in this 16 minute exposure (above) imaged with a Borg 77ED f/5.5 refractor and Atik 16HR camera. Field of view is 51x65 arc seconds. — *John Nassr, Baguio*