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Astronomical League of the Philippines' *HerAld*

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Vol. 8, Issue No. 10
October 2010

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FEATURE IMAGE THIS ISSUE

We have a new member who is a Filipino astro-imager in Jackson, Ohio - Mario Bautista. Above is his image of the Wizard Nebula in Narrowband & RGB color, taken with a Takahashi TOA150B with 67 Flattener and STL11000 camera with Astrodon Gen 2 LRGB Filters, guided with a Mini Borg 50mm and SBIG RGH AP1200 GTO Mount. Exposure time: Ha: 5 hours, SII: 5 hours, OIII: 5 Hours with 30 mins subexposures. RGB: 60 mins : 60 mins : 60 mins for star color. Softwares: CCD Autopilot, Sky6 Pro, MaxIM DL, Focusmax, CCD Navigator, CCD Stack and Photoshop CS2. Taken August 31st, Sept 1 & 2, 2010. © Mario Bautista

CLUB NEWS

September Meeting

Last September 12, members of the Astronomical League of the Philippines (ALP) held their monthly meeting at the Manila Planetarium at 3 p.m. Members who attended were ALP President James Kevin Ty, wife Charito and son Kendrick Cole (KC); Myra Lee and son Jason; director Edgar Ang; Andrew Ian Chan; Belen Pabunan; John Ray Cabrera; Babak Parhizkari; Kevin Dagunan; Crispin Riosa; Christopher Lee; Michael Cruspero; Mark Ian Singson; Desiree del Rosario; Mickee Natividad; Kristine Angeli Valdez; and guests Mark Anthony and Maritoni Giron.

The meeting started at around 3:30 p.m. with James introducing John Ray Cabrera as the day's lecturer. John talked about the *Fundamental Forces of the Universe*. He described the 4 fundamental forces: the (S) Strong Force, (W) Weak Force, (G) Gravitational Force, and the (EM) Electromagnetic Force. These forces exhibit different properties and it has been a holy grail of physics to unite these four forces into one common metaphysical foundation. The strong interaction is very strong; however it decayed in a very short range.

It acts only over ranges in the order of 10⁻¹³ centimeters, and is responsible for holding the nuclei of atoms together. The EM force governs electric and magnetic effects, such as the repulsion between two similar electrical charges. It is long range, but weaker than the Strong force. It is either attractive or repulsive, and acts as a mediating particle between pieces of matter carrying electric charge.

The weak force is responsible for radioactive decay and neutrino interactions. Short-ranged and, as its name goes, it is very weak. The gravitational force on the other hand is weak, but very long range. Furthermore, it is always attractive, and acts between any two pieces of matter in the Universe, since mass is its source.

The four fundamental forces all play central roles in making the Universe what it is today, but with respect to the large-scale issues that are of interest to cosmology, it is gravitation that is most important. This is because of two of its basic properties that set it apart from the other forces: (1) it is long-range, and thus can act over cosmological distances; and, (2) it always supplies an attractive force between any two pieces of matter in the Universe.



John Ray Cabrera lectures on the *Fundamental Forces of the Universe and the Standard Model of Particle Physics*

Thus, although gravitation is extremely weak, it always wins over cosmological distances and therefore is the most important force for the understanding of the large-scale structure and evolution of the Universe.

Afterwards, John discussed the Standard Model of Particle Physics. He explained that in recent years, high-energy physicists have arrived at a picture of the microscopic physical universe, called "The Standard Model (SM)", which unifies the nuclear, electromagnetic, and weak forces and enumerates the fundamental building blocks of the universe:

6 leptons:

- electron, electron neutrino
- muon, muon neutrino
- tau, tau neutrino (⇒ p. 108).

6 quarks:

- *d* (down), *u* (up)
- *s* (strange), *c* (charm)
- *b* (bottom), *t* (top)

Ordinary matter is made of protons (each a *u-u-d* quark triplet), neutrons (each a *u-d-d* quark triplet), and electrons. Quarks cannot exist singly (or so it appears), so the particles created in accelerator collisions include mesons (combinations of a quark and an anti-quark), baryons (combinations of three quarks), and leptons.

All but the proton, electron and neutrinos are unstable and decay to the stable particles. In the Standard Model, the forces are communicated between particles by the exchange of quanta which behave like particles and these are the 4 intermediate vector bosons:

- gluon (nuclear force)
- photon (electromagnetic force)
- W and Z bosons (weak force)

Though still called a model, the Standard Model is a consistent and well-tested particle physics theory. Physicists use it to explain and calculate a vast variety of particle interactions and quantum phenomena. High-precision experiments have repeatedly verified subtle effects predicted by the Standard Model. However, the Standard Model is incomplete because it couldn't predict a particle's mass, and gravity is not yet accounted for.

One essential ingredient of the Standard Model, however, still eludes experimental verification - the Higgs field. It interacts with other particles to give them mass. The Higgs field gives rise to a new force carrier, called the Higgs boson, which has not been observed.

As the 21st century began, physicists developed a commanding knowledge of the particles and forces that characterize the ordinary matter around us. Simultaneously, astrophysical and cosmological space observations have revealed that this glimpse of the universe is incomplete — that 95 percent of the cosmos is not made of ordinary matter, but of a mysterious and enigmatic something else: “dark matter” and “dark energy”. We have learned that in fact we do not know what most of the universe is made of.

Understanding this unknown “new” universe requires the discovery of the particle physics that determines its fundamental nature. Powerful tools exist to bring the physics within reach. With astrophysical observations, we can explore the parameters of the universe; with accelerator experiments, we can search for their quantum explanation.

Energies at particle accelerators now approach the conditions in the first instants after the big bang, giving us the means to discover what dark matter and dark energy are, and creating a revolution in our understanding of particle physics and the universe.

After this very interesting lecture, James invited ALPers to join the September 18th free public Moon viewing to observe the 1st International Observe the Moon Night (InOMN) at AstroCamp Observatory in SM Mall of Asia, San Miguel by the Bay, from 6 p.m. to 9 p.m. The meeting ended at around 5:30 p.m. - *James Kevin Ty & John Ray Cabrera*



International Observe The Moon Night

Last September 18, ALP members celebrated the 1st *International Observe the Moon Night (InOMN)*, at AstroCamp Observatory in SM Mall of Asia, San Miguel by the Bay, by providing free public viewing of the Moon through low, medium and high power magnification, between 5:30 p.m. and 10 p.m. The InOMN was created this year to get public awareness, and not only to observe the beauty of our nearest neighbor, but also promote lunar mission awareness by various international agencies like the Lunar Reconnaissance Orbiter Education and Public Outreach, NASA Lunar Science Institute (NLSI), Lunar Atmosphere and Dust Environment Explorer, Lunar Quest Office at NASA Marshall Space Flight Center, The Lunar and Planetary Institute (LPI), Astronomers Without Borders, The Astronomical Society of the Pacific, The NASA Night Sky Network, Gemini Observatory, and the International Year of Astronomy.

Members there to help facilitate the event included ALP President James Kevin Ty, wife Charito and son Kendrick Cole (KC); Myra Lee and son Jason; Andrew Ian Chan; Christopher Louie Lu; John Ray Cabrera; Babak Parhizkari and friend Amir Mohamadi; Kevin Dagunan; Crispin Riosa; Christopher Lee; Mark Ian Singson; Kristine Angeli Valdez

and friend Nikka Santos; and, Michelle Lampa. Mr. Bernie Esporlas as well as some staff of Cutting Edge were also present to help provide manpower and scope equipment.

The event started at around 5:30 p.m. with ALPers setting up their telescopes beside the Astrocamp's main scope, a Celestron C11 Schmidt-Cassegrain reflector on Atlas EQ-6 mount. James brought his Meade ETX-90AT Maksutov-Cassegrain; Babak Parhizkari his SkyWatcher Mak 102 on Takahashi Sky Patrol 2 mount; and, Andrew Ian Chan his Skywatcher 80ED refractor on Vixen GP mount. Astrocamp also provided several scopes for event use, such as Celestron C90 Maksutov-Cassegrain, William Optics 66SD refractor and a 10" Discovery Newtonian reflector. Cutting Edge, through Star Paper Corp, the official Celestron dealer here in the Philippines, brought along a Nexstar 4i Schmidt-Cassegrain.

More than 400+ people attended the event to get a free view of our Earth's closest neighbor, the Moon. Some of them were surprised that even a small scope can show abundant detail on the lunar surface, which they thought can only be viewed with a very large telescope. ALPers also explained what they were looking at through the scope, as well as explained the history and significance of the Moon in the evolutionary formation of life. Another plus factor to the event was a surprise media coverage by QTV5's *The Beat*, which covered how ALPers facilitated the event in a smooth and orderly way.

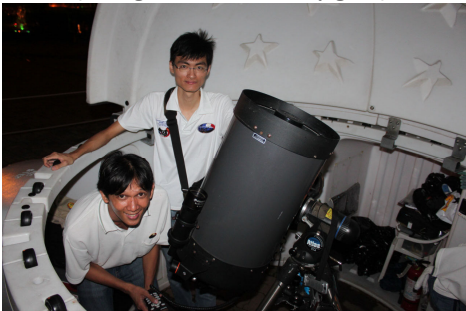


James was interviewed and he provided details of the event, as well as what the ALP objectives and missions were. Survivor Philippines participant Jervy Patani Dano was also present with the QTV crew and was also able to observe the Moon through various telescopes.

The originally scheduled time of the event was supposed to end at around 9 p.m., but due to more and more people lining up and requesting for more observing time, ALPers decided to extend it by another hour to let more people get a chance to view the Moon. At the end of the event, ALPers posed for the traditional group picture shot to mark the success of the 1st International Observe the Moon Night event at AstroCamp Observatory (⇒ p. 109).



ALPers posing for the customary group shot



Christopher Louie Lu (left) and Andrew Ian Chan (center) had a great time viewing Jupiter through the large Celestron C11 Schmidt-Cassegrain telescope.



Survivor Philippines star Ms. Jery Patani Dano waits while Mark Ian Singson aims the telescope at the Moon for her to view.



Crispin Riosa (center) posed with guests beside a Celestron C90 portable Maksutov-Cassegrain telescope.

Around 400 people attended the event from 6 – 10 p.m. The ALP would like to thank Jen Liza of Cutting Edge for their support and providing ALPers at the facility free dinner packs. - *James Kevin Ty, with images by James & Andrew Ian Chan*

IESO

The 4th International Earth Science Olympiad (IESO) was held in Yogyakarta, Indonesia, from Sept 18 to 28, 2010. Nineteen (19) countries participated in the Olympiad. The IESO is composed of four parts: Geology, Meteorology, Oceanography, and Astronomy.

Our country saw its first group of high school amateur astronomers and physics enthusiasts join the prestigious International Olympiad on Astronomy and Astrophysics last September 12 to 21, 2010 in Beijing, China. The Philippines was invited by Dr. Jin Zhu of Beijing Planetarium of China, who hosted this year's IOAA. The Philippines, through the office of Dr. Cynthia Celebre of PAGASA, responded and arranged our country's participation. The team sent by DOST-PAGASA had:

Team Leader 1 : Dr Armando Lee – Director, Institute of Astronomy, Astronomical League of the Philippines

Team Leader 2: Mr Erick Marmol – Physics Teacher, Phil Science High School, Naga, Bicol Province

This is the first time that the Philippines took part in this prestigious Olympiad on Astronomy and Astrophysics. There were 22 teams from different countries: China, Thailand, India, Indonesia, Poland, Serbia, Czech Republic, Slovakia, Bangladesh, South Korea, Lithuania, Sri Lanka, Kazakhstan, China, Iran, Belarus, Russia, Greece, Brazil, Bolivia, and another team (guest team) from China. The Philippines was given a special mention during the Introduction Ceremony as the newest member of IOAA and team leader Dr. Armando Lee led the Philippine team on stage and gave a short message introducing the team and expressed gratitude for the invitation sent by Dr. Jin Zhu of Beijing Planetarium and the warm welcome given by China.

The Philippine team garnered two Honorable Mentions; one by our student from Pasig City Science High School – Rigel Gomez, and the other one with a higher score, our student from Philippine Science High School Davao Campus – Gerico Sy.

The countries that lagged behind the Philippines in the overall standing were: Kazakhstan, Sri Lanka and Bolivia. The top notchers were India for the theoretical part, Poland for the practical part, and Thailand for the team competition.

The team leaders would like to express the team's gratitude to DOST-PAGASA Director Graciano Yumul Jr. for the funding to send the team to Beijing; to Hon. Representative Angelo Palmones of AGHAM Partylist for additional funds; Globaleader Inc. CEO Richard Nixon Gomez for the official jacket and shirt of Team Philippines 4th IOAA; and, to Professor Perry Esguerra for serving as the team's chief mentor. Next year's IOAA will be held in Poland. Team Philippines hopefully will be there again and hopefully compete better and bring home pride and glory to our country.



All members of the Philippine Team bagged bronze medals. Last year one member of the team didn't get any medal; however, we got silver last year. With the standing that we have this year, we are better than USA, Italy, Russia, Ukraine, Nepal, Maldives, Kuwait, Sri Lanka, etc. Indeed, we were proud Filipinos in Indonesia.

The students in the team are the ff:

- Rigel Gomez of Pasig Science High School (NCR)
- Christopher Jan Landicho of Phil Science High School (Bicol)
- Kenneth Amthony Roquid of Phil Science High School (Bicol)
- Gerico Sy of Phil Science High School (Davao)
- Rommel Flora of Rizal Science High School (Binangonan, Rizal)

After the Olympiad, we had a side trip to BOSSCHA, the largest observatory in Southeast Asia (at least until early 2011). We were blessed with excellent weather. We saw Jupiter and the Moon through their scopes - a great experience for all of us.

We look forward to the next IESO in Italy, Japan in 2012, and India in 2013. - *Miguel Cano, Dr. Armando Lee*

BREAKING NEWS

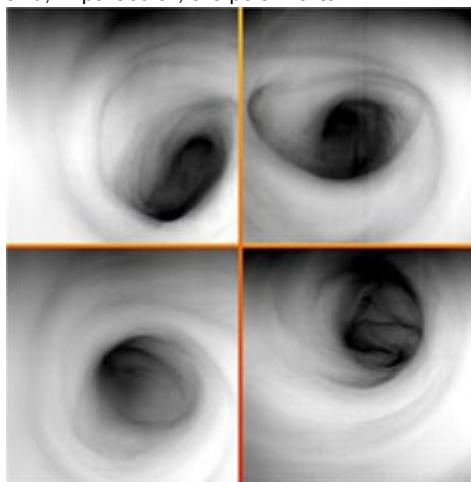
Solar System Game

Next year, 2011, is the Year of the Solar System. "Solar System Explorer" is a super-game containing several mini-games. Pick a planet. Or a comet. Or an asteroid. Zoom in and poke around. If it's a planet with moons, zoom in on one of them and explore even more. And if a spacecraft is already there, or headed there, play a mini-game to help the spacecraft with its mission of exploration. Earn achievements by reading about solar system objects and by playing the games. More mini-games are coming soon. See how high you can push your scores. Post them on your Facebook page. Start exploring at <http://spaceplace.nasa.gov/en/kids/solar-system>. Enjoy! - *Laura K. Lincoln, on behalf of the Space Place Team*

Venus Polar Vortex

A new animation using data from the European Space Agency's (ESA) Venus Express spacecraft shows that the double eye of the giant vortex at Venus' South Pole has disappeared.

Orbiting around Venus since April 11, 2006, Venus Express is providing an extensive and unique dataset of great scientific importance, spanning from the planet's surface, to the atmosphere and its interaction with the solar wind. The Visible and InfraRed Thermal Imaging Spectrometer (VIRTIS) instrument studies Venus from orbit through atmospheric "windows," which are transparent at certain infrared wavelengths, and thus able to transmit the thermal radiance from deep regions in the Venusian atmosphere. It also provides information about the temperature of the atmosphere and the cloud tops, from which it is possible to study the dynamics and, in particular, the polar vortex.



A set of images of the Venus south polar vortex at 3.8 microns acquired by VIRTIS. The images show the temperature of the clouds top at about 65 kilometers altitude.

A darker region corresponds to higher temperature, and thus lower altitude. The center of the vortex, approximately at a temperature of about -23 Celsius, is the deepest zone, exhibiting the highest temperature of the Venus clouds' top. ESA/VIRTIS/INAF-IASF/Obs. de Paris-LESIA

In 1979, the Pioneer Venus mission observed a similar polar vortex with two apparent centers of rotation in the Venusian northern hemisphere. Scientists labeled this feature the dipole of Venus. The VIRTIS instrument observed a similar shape in the southern hemisphere. This discovery revealed a north-south symmetry on Venus and, at first glance, confirmed the stability of the dipole. However, in the course of the mission, systematic observations with VIRTIS showed a large number of different shapes of the vortex with complex configurations and not well identified stable features.

"We had ironically observed it in a dipole configuration right at the beginning of the mission," said Giuseppe Piccioni from the National Institute for Astrophysics in Rome. "But we soon discovered that this was just a coincidence since the dipole in reality is not a stable feature on Venus, but just one shape among others." - *Space.com*

Fireballs light up Jupiter

Jupiter is getting hit surprisingly often by small asteroids, lighting up the giant planet's atmosphere with frequent fireballs. "Jupiter is a big gravitational vacuum cleaner," says co-author and JPL astronomer Glenn Orton. "It is clear now that relatively small objects left over from the formation of the solar system 4.5 billion years ago still hit Jupiter frequently."

The impacts are bright enough to see through backyard telescopes on Earth. Indeed, amateur astronomers were the first to detect them, recording two fireballs in 2010 alone — one on June 3rd and another on August 20th.

Professional astronomers at NASA and elsewhere have followed up on the amateur observations, hoping to learn more about the impacting bodies. The June 3rd fireball was caused by an object some 10 meters in diameter. When it hit Jupiter, the impact released about 1015 Joules of energy. For comparison, that's five to ten times less energy than the Tunguska event of 1908, when a meteoroid exploded in Earth's atmosphere and leveled millions of trees in a remote area of Russia. Scientists continue to analyze the Aug. 20th fireball, but think it was comparable in scale to the June 3rd event.

Before amateurs spotted these fireballs, scientists were unaware collisions so small could be observed.

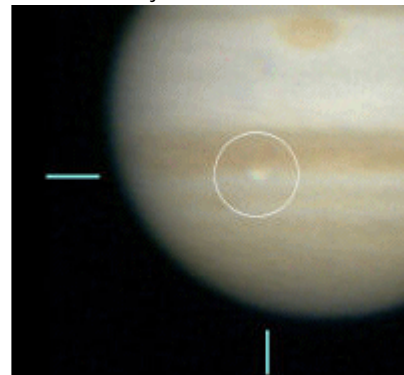
The first hint of their easy visibility came in July 2009, when Anthony Wesley, an amateur astronomer from Australia, discovered a dark spot on Jupiter. It was clearly the swirling debris of an impact event that he had only just missed. Next time, however, his luck would improve. On June 3, 2010, he caught a fireball in action.



A color composite image of the June 3rd Jupiter impact flash. Credit: Anthony Wesley observing from Broken Hill, Australia.

"I was watching real-time video from my telescope when I saw a 2.5-second-long flash of light near the edge of Jupiter's disk," says Wesley. "It was clear to me straight away it had to be an event on Jupiter."

Another amateur astronomer, Christopher Go of the Philippines, confirmed that the flash also appeared in his recordings. Professional astronomers, alerted by e-mail, looked for signs of the impact in images from larger telescopes, including NASA's Hubble Space Telescope, the European Southern Observatory's Very Large Telescope in Chile, and Gemini Observatory telescopes in Hawaii and Chile. Scientists saw no thermal disruptions or typical chemical signatures of debris, which allowed them to put a limit on the size of the object.



The Aug. 20th fireball recorded by Aoki Kazuo of Tokyo, Japan. The second fireball on Aug. 20th was first detected by Japanese amateur astronomer Masayuki Tachikawa of Kumamoto city and quickly confirmed by another Japanese amateur, Aoki Kazuo of Tokyo. This one flashed for about 1.5 seconds and, like the June 3rd fireball, left no debris observable by large telescopes (⇒ p. 111).

Earth gets smacked by a 10-meter-sized object about every 10 years on average, while it looks as though Jupiter gets hit with the same-sized object [as much as] a few times each month. Learning how often Jupiter is hit can tell astronomers something about the meteoroid population throughout the solar system – a matter of considerable interest right here on Earth. On Sept. 8th, a 10-meter class asteroid named 2010 RF12 flew past our planet without hitting. A somewhat smaller space rock, 2008 TC3, actually burned up in the atmosphere above Sudan two years ago. – *Dr. Tony Phillips, Science@NASA*

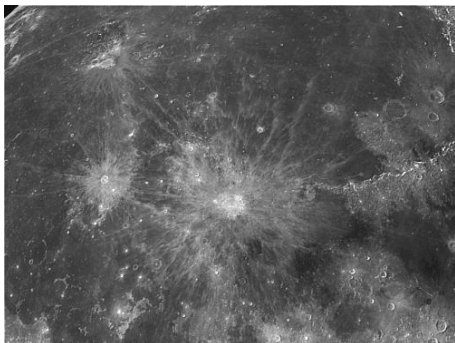
Reports

Moon

Sept. 28. Imaged the Moon last night using WO 102ED/NexImage webcam/Registax (my first Moon image stacked).



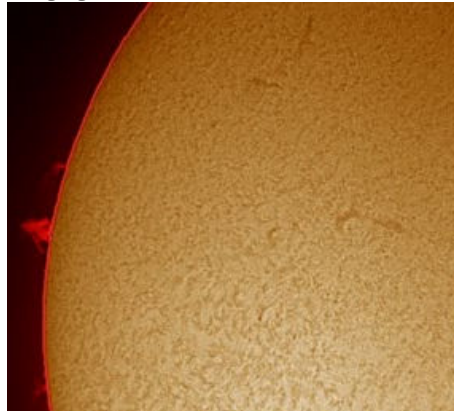
- *Ernie Bautista*



Sept. 27. The craters Aristarchus (*above*, top left), Kepler (left), and Copernicus (center) display three rather striking samples of lunar impact splatter. The material evacuated from Copernicus generated rays that span over 400 miles. Judging from the circular shape of the three craters and the relatively even distribution of ejected material, the objects that caused the impacts approached nearly perpendicular to the lunar surface. One can only imagine what such impacts would do if they occurred on Earth today. Remnants of three ancient and eroded craters, (Flamsteed P, Wichmann R, Letronne) are at the lower left corner of the image, while the crescent outline of another, far more enormous, and also ancient crater occupies the upper top right area defining the borders of Mare Imbrium. - *John Nassr*

Sun

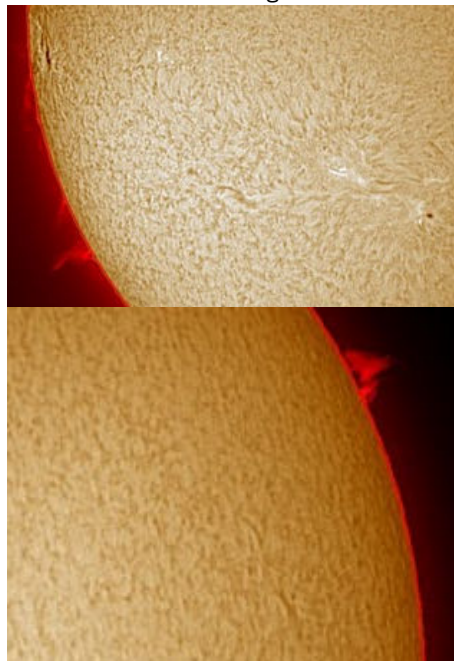
Sept. 10. It's a good feeling to be back doing solar imaging after almost 5 months of solar imaging hiatus.



The sky this morning was a bit cloudy but there were some small cloud openings where I got to image the Sun before the roof obstructed my view. As I looked through the eyepiece, I was able to see numerous large eruptive prominences that were visible on the solar limb.

I was able to get some shots before clouds totally obscured my view. Seeing was poor this morning but not bad for me to at least get started back up again and test my solar imaging setup for more solar work in the days to come.

Sept. 17. The sky this morning was surprisingly good, and I didn't waste time observing and imaging the Sun through the PST-H α . There were 2 active region groups visible on the solar disk. AR11108 sunspot group could be seen at the southeast limb, while AR11106 sunspot group was large, but scattered across a large area.



There were also numerous large eruptive prominences that could be seen on the solar limb as well.

Sept. 18. The sky this morning was a bit hazy and seeing condition was only fair. I could still see the 2 active sunspot groups AR 11106 and AR 11108 as well as several nice eruptive prominences on the solar limb.



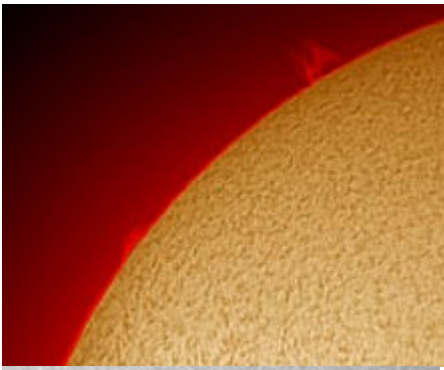
Sept. 29. The sky this morning was a bit hazy and seeing condition was not that good. Nevertheless, I still proceeded to observe the Sun through both white light and H α wavelength.

The most prominent feature that caught my eye right away was the beautiful AR 11109 sunspot group, which showed nice detail. One large prominence as well as several small ones could be seen in the Sun's limb.

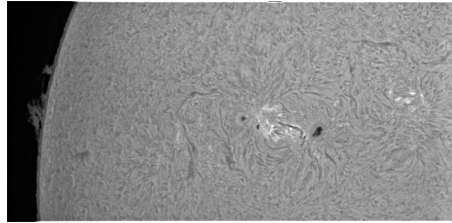
Also visible was AR 11110 which I was able to image together with AR11109.



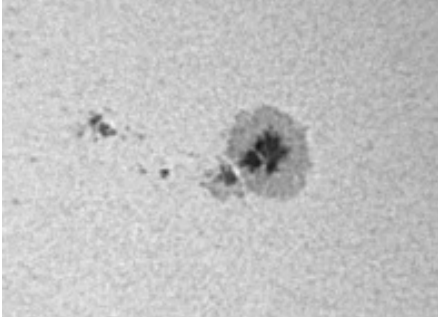
Another active region, AR11111 group, was still near the limb and didn't show much detail yet. Maybe it might also become a big group in the days to come. Also to watch for is a new possible active region that might emerge near the center of the solar disk (\Rightarrow p. 112).



Sept. 25. The sun this morning presented a lovely juxtaposition of a prominence and new sunspot, AR1109.

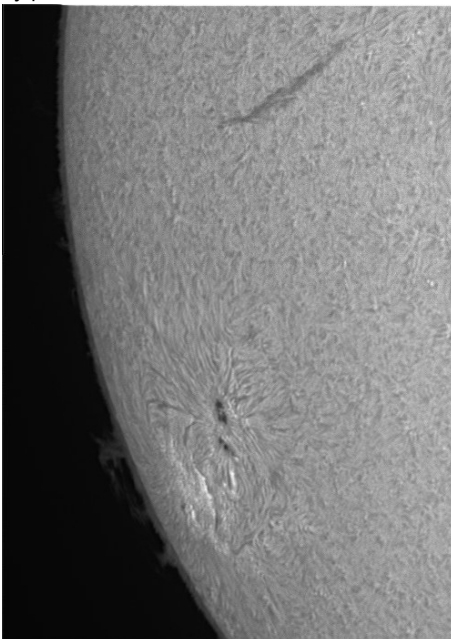


- John Nassr, Baguio



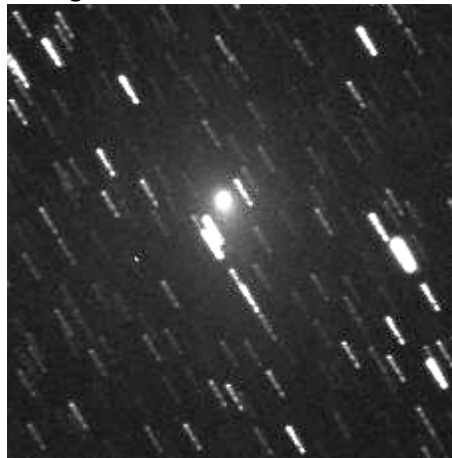
In white light, AR11109 sunspot group was beautiful to view as it displayed nice detail in both umbral and penumbral regions, with a nice bright light bridge cutting through the main umbral group. As I was planning to image AR11110 and 11111 groups, thick clouds started to cover the Sun and I had to quit imaging in high resolution and quickly snap I got totally overcast! Nevertheless, I was still happy with the session, as I was able to image the Sun again through H α and white light after a long spell. - James Kevin Ty

Sept. 17. New sunspot AR1108 was emerging from the Sun's limb and was creating beautiful contortions accompanied by prominences and a dark filament!



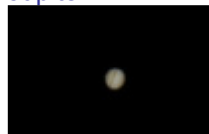
P/Comet Hartley 2

After two previous failed attempts several weeks ago, I was finally able to image comet 103P/Hartley 2 last night at a location nearly half a degree away from where it was predicted to be by the Harvard Minor Planet and Comet Ephemeris Service! It was an early evening object currently glowing at magnitude 10.2 in the constellation Andromeda. It is forecasted to brighten to near naked eye magnitude 5 brightness by October 20 when it approaches closest to Earth. This comet should be quite interesting to observe to see how it evolves in the coming weeks!



Imaged September 12, 2010 with Astrophysics 5 and Atik 16HR Camera with exposure of 23x1minute using a Luminace filter - John Nassr, Baguio

Jupiter



- Ted Gonzaga, Iloilo

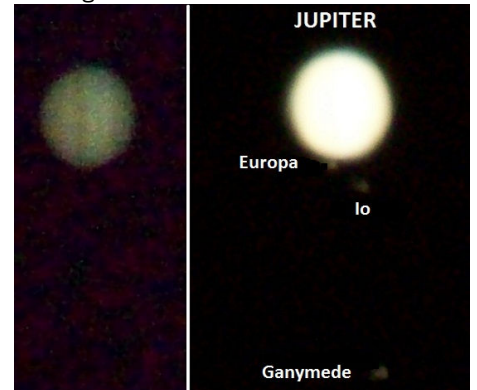
Sept. 14. Last night, I took some clips of my old favorite Jupiter. While processing the clips, I noticed that there's a dark spot above the Great Red Spot (GRS). I thought it was something new (wishful thinking... hahaha) - probably a giant spacecraft of those insectoids crashed on Jupiter, but all excitement disappeared after checking Chris' image last Sept 6.

Oh well, discovering something is not easy... So I will congratulate Chris again for those great discoveries!



Taken using a Canon Powershot A540 on a 102mm Skywatcher Starmax Mak-Cassegrain. - Vincent Lao

Sept. 24. I've managed to image two "diamond ring" formations with Jupiter and Io/Europa during the GRS transit last Friday evening:



One is an afocal image taken through the C8/Hyperion zoom/Kodak digicam:

And this YouTube video which I uploaded - used the NexImage webcam on the C8:

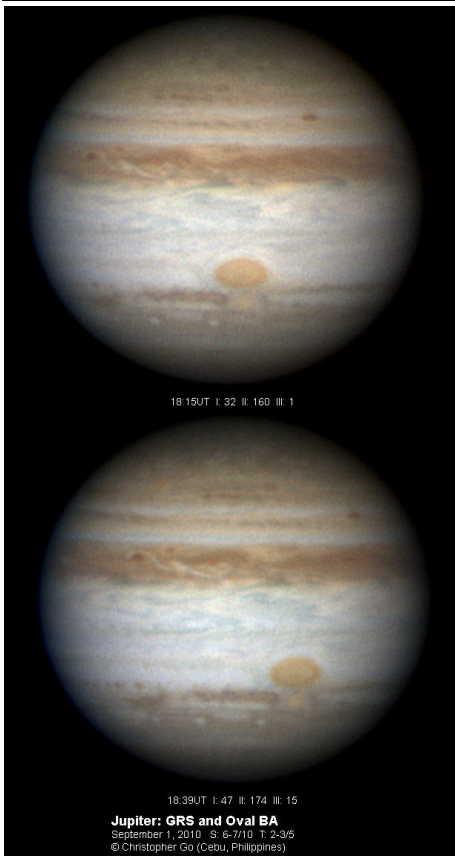
<http://www.youtube.com/watch?v=y2eTYODuvoY&feature=channel>

The video was my 1st attempt at Jupiter with the NexImage. I know the Great Red Spot (GRS) was somewhere there. - Ernie Bautista

Sept. 1. It was mostly cloudy today. Seeing was okay but transparency was horrible. I had to image Jupiter through clouds. This resulted in a lower frame rate.

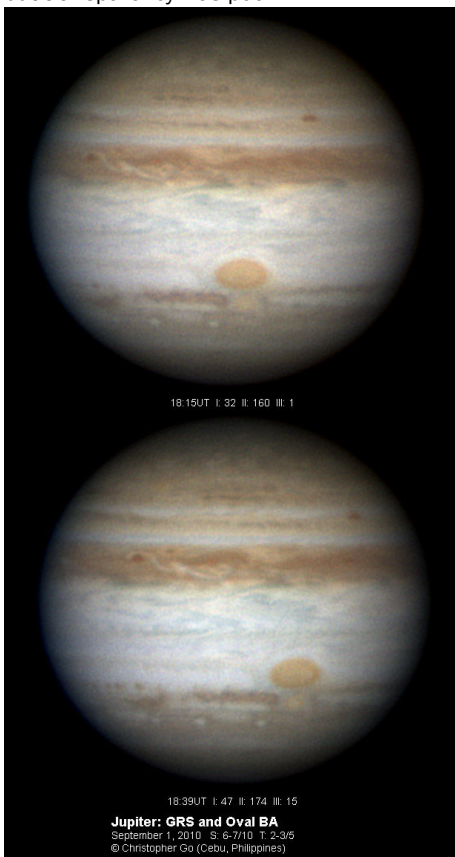
The GRS and Oval BA could be seen very close to each other. Oval BA was very dark red now.

The South Equatorial Band (SEB) was quiet and very light. The North Equatorial Band (NEB) was still very dark and busy (\Rightarrow p. 113).



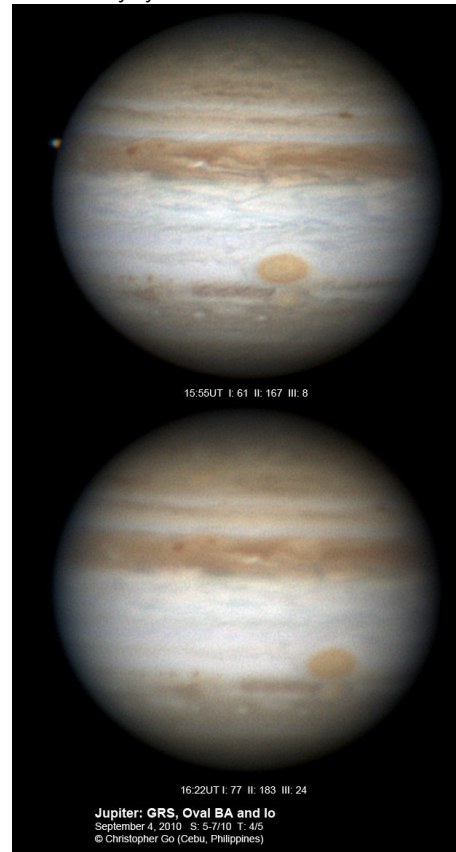
Jupiter on Sept. 1.

Sept. 3. It was hazy today. Seeing was good but transparency was poor.



The SEB was still very quiet. Io was transiting the SEB. Io was well resolved. The NEB was still dark with white and dark spots.

Sept. 4. I had a scary night. It was mostly clear when I started imaging. Seeing was okay at the start, but went downhill as clouds started getting closer. Half an hour after I started, I felt rain showers, even though there were no clouds. I was in panic, as I shut down all my electronics and covered my system.



The GRS and Oval BA were still close to each other. The SEB was still very quiet - no sign of revival. The NEB looked very busy. Io was peeking out of Jupiter as it emerged from behind Jupiter.

Sept. 6. Seeing and transparency was great, until about 20 minutes after I started imaging, when clouds suddenly rolled in!

The GRS and Oval BA were well resolved. The SEB looked very complex (left, top). The NEB was very dark with complex rifts. Note the dark red barge at the northern South Temperate Belt (STBn).

Sept. 9. Seeing and transparency were incredible this evening. I had to deal with some small clouds in between imaging sessions. The GRS was setting in this image. The SEB was still very quiet. The dark ovals lining up on the STB were still present. Note the small bright spots on the SEBs.



The NEB was very busy with a lot of dark and red spots along with complex rift outbreaks. The merged NEB oval was also visible later on. - Chris Go, Cebu

Deep Sky Objects

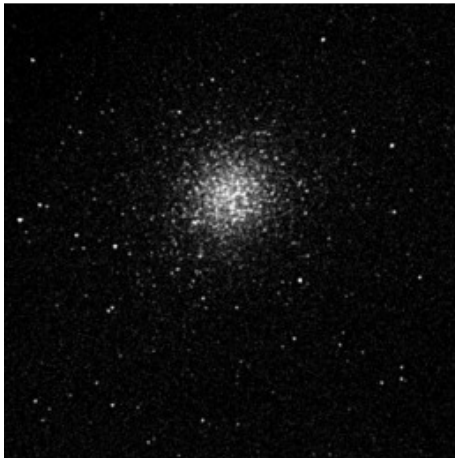
I was trying to clean my computer's hard drive that just run of space. In doing so, I managed to find some old photos I haven't processed. Here are some taken between March and April.



NGC3532 in Carina



NGC3766 in Centaurus



Omega Centauri
- Vincent Lao

Whirlpool Galaxy

I've been lying low the last few months as life has caught up with me. Unfortunately, inertia has gotten the better of me as well, as I've been having some difficulty making myself sit down and process images. Add to that some budding perfectionism in me, and we're making the recipe for a long backlog.

I haven't been inactive from imaging though.



On the contrary, practically each week has been finding me doing something astro-related, be it actually imaging, or lurking in groups, or chatting gear with friends.

I've been telling some of my friends that if I stop acquiring images now, I probably will still have enough data to keep me busy over the next year or two. Combine that with this perfectionist streak that's hitting me, and you may never hear from me again....

Given that, I thought I'd break the streak by presenting another image from my partnership with Tom Carrico and his setup at New Mexico Skies.

This is M51 shot in March of 2010 (at least it was shot this year!). There are aspects of this image bugging me, but I thought I'd share it, warts and all. After all, we won't progress without a helpful suggestion from others, right?

M51 is a "classic" spiral galaxy. In fact, this is the archetype of the "spiral nebula", as it was the first "nebula" to be described as having a spiral shape by William Parsons, the Third Earl of Rosse, using a huge 72" reflector.

M51's distinct spiral shape is likely caused by encounters with its companion, NGC 5195. This shape also makes it one of the most photogenic galaxies in the northern sky, and it is one of the favorite targets of imagers. This shape has also earned it the nickname "The Whirlpool Galaxy".

M51 is fairly bright, though views of it from my backyard and an 8" telescope are pretty disappointing: only the cores of the two galaxies are faintly visible.

With an 18" telescope at a dark site though, the galaxy looked like a black-and-white image. This galaxy is also what got me hooked on imaging. I was trying out an astronomy CCD camera (ST-7Ei) in my backyard back in 2003. I used that same 8" telescope that only showed faint blobs of the galaxies' cores. A ten-second exposure revealed the galaxy's spiral shape and arms. I was hooked on imaging right then and there.

The image on this page is my most recent attempt at this galaxy. This is one of the very first galaxies I tried shooting in earnest back in 2004. At 820 mm focal length, this shot showed me that if I was to shoot galaxies at an image scale (very loosely defined: "magnification") that would satisfy me, I needed a longer focal length scope.

That was when I tried a Celestron C8 as well as a Takahashi Mewlon 210. I shot M51 in 2005 with the Mewlon 210, though this was a brief shot mostly aimed at revealing a supernova in the galaxy. I tried again in 2009, and this latest one is as of 2010. As you might surmise, this is one target that I keep coming back to again and again.

Equipment Used: 10" RCOS Ritchey-Chretien on a Paramount ME. SBIG ST-10XME with 5-position filter wheel and Astrodon H α LRGB filters. AO-8 adaptive optics unit. Guided using the camera's built-in guide chip and AO-8 unit.

Acquisition Software : MaximDL, TheSky6, ACP

Processing Software: MaximDL, Photoshop CS4, IrFanView, Noel Carboni Actions

Exposure Details:

L: 19x15 minutes

R: 13x15

G: 13x15

B: 13x15

- Eric Africa, Westchester, Ohio

The Sky

October is a transition month as the monsoon rains die down a bit, and the ITCZ typically moves in an erratic manner, bringing clear skies to some, and rainy weather to others.

October continues to show Jupiter as a bright luminary, claiming the evening sky for itself, as Venus leaves the area for a conjunction with the Sun, and Mars shines very pale and dim, trying to outrun the Sun. Saturn is now visible in the early morning sky before sunrise.

Comet Hartley 2

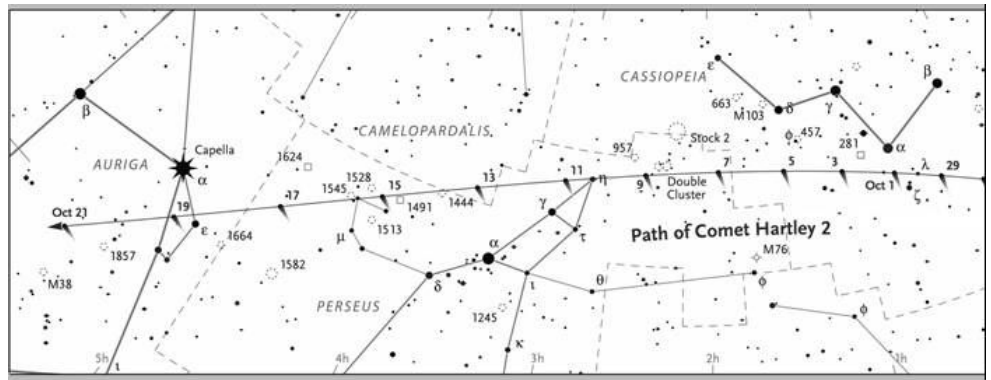
P/Comet Hartley 2 continues brightening in its unusually fast slide across the constellations, both resulting from how closely it will approach Earth: by just 0.12 astronomical unit (18 million km) on October 20th. This will be its closest approach since its 1986 discovery and one of the closest approaches of any comet in the last few centuries.

Moonlight becomes a significant factor starting around Oct. 15th or 16th. On October 20th, the comet is closest to Earth, at a distance of 0.121 a.u. On that date the fuzzy visitor is passing just south of brilliant Capella.

By the end of October, the comet should still be around 5th magnitude — but now in Gemini. So it doesn't gain a high altitude until later in the night. Perihelion, 1.06 a.u. from the Sun, comes on October 28th — but that morning, the nearly last-quarter Moon is just a few degrees away.

Moonless viewing times return around November 1st. But now, with the comet moving away from both the Sun and Earth, it fades by about a magnitude every two weeks. In November, it's a midnight-or-later object heading south across Gemini, Monoceros, and into Puppis. It ends November at perhaps 7th or 8th magnitude, east of Sirius. By the end of December, it fades to 10th magnitude, still east of Sirius.

With its small central condensation but a big, diffuse coma, Comet Hartley 2 appears quite different through different amounts of light pollution. Accordingly, observers are reporting it as anywhere from magnitude 5.3 to 7.2 overall. - Greg Bryant, SkyandTelescope.com

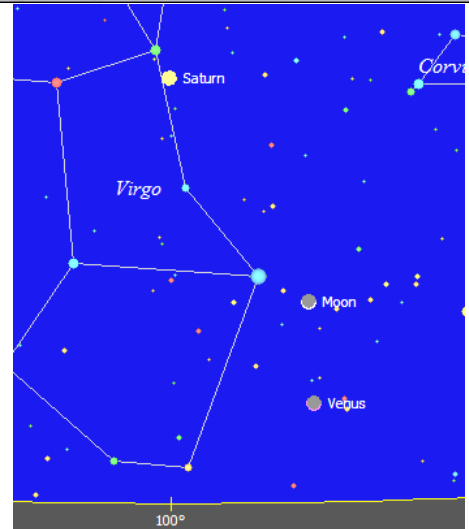


Eric Africa captured the comet on Oct. 9, after its close passage by the Double Cluster in Perseus. Below is his shot of Comet Hartley 2 taken from his backyard in West Chester, Ohio, as it approached Eta Persei. Shot between 11 p.m.-12 a.m. EDT.

Camera: SBIG ST-10XME
Optics: Takahashi TOA-130F
Mount: Astro-Physics AP1200GTO



Data taken through RGB filters, 9x1 minute each. © Eric Africa



On the early morning of Nov. 5, you can spot Venus, a thin crescent waning Moon, and the planet Saturn low in the eastern sky before sunrise.

Sky Calendar

| DAY HR | EVENT |
|----------------------|------------------------------------|
| October 2010 | |
| 15 05:27 | FIRST QUARTER |
| 17 09:04 | Mercury at Superior Conjunction |
| 20 | P/Comet Hartley 2 Closest Approach |
| 21 12:23 | Orionids Meteor Shower Peak |
| 23 09:35 | FULL MOON |
| 25 17:48 | Moon 1.7° S of Pleiades |
| 29 09:09 | Venus at Inferior Conjunction |
| 30 20:45 | LAST QUARTER |
| November 2010 | |
| 03 08:52 | Taurids Meteor Shower Peak |
| 05 04:29 | Moon 2.8° S of Spica |
| 05 18:01 | Venus 0.6° N of Moon |
| 06 12:51 | NEW MOON |
| 07 12:25 | Mercury 2.2° N of Moon |
| 07 04:47 | Mars 1.6° N of Moon |



On Nov. 21, Mercury is close to Mars, and is visible just after sunset.

| DAY HR | EVENT |
|----------|----------------------------|
| 07 07:19 | Moon 2.3° N of Antares |
| 14 00:38 | FIRST QUARTER |
| 15 18:50 | Mercury 2.5° N of Antares |
| 17 14:20 | Leonids Meteor Shower Peak |
| 21 08:47 | Mercury 1.7° S of Mars |
| 22 01:27 | FULL MOON |
| 22 03:49 | Moon 1.2° S of Pleiades |
| 29 04:36 | LAST QUARTER |



The Hunt is On!

by Carolyn Brinkworth

The world of astronomy was given new direction on August 13, 2010, with the publication of the Astro2010 Decadal Survey. Astro2010 is the latest in a series of surveys produced every 10 years by the National Research Council (NRC) of the National Academy of Sciences. This council is a team of senior astronomers who recommend priorities for the most important topics and missions for the next decade.

Up near the top of their list this decade is the search for Earth-like planets around other stars, called “extrasolar planets” or “exoplanets”, which has become one of the hottest topics in astronomy.

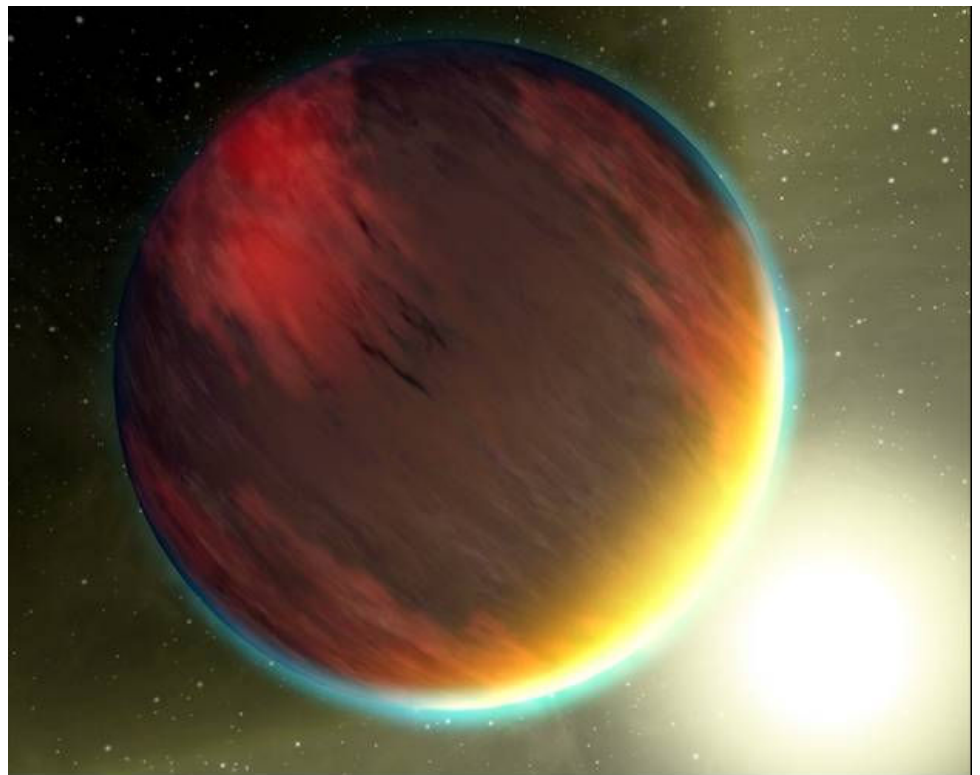
The first planet to be found orbiting a star like our Sun was discovered in 1995. The planet, called “51 Peg b,” is a “Hot Jupiter.” It is about 160 times the mass of Earth and orbits so close to its parent star that its gaseous “surface” is seared by its blazing sun.

With no solid surface, and temperatures of about 1000 degrees Celsius, there was no chance of finding life on this distant world. Since that discovery, astronomers have been on the hunt for smaller and more Earth-like planets, and today we know of around 470 extrasolar planets, ranging from about 4 times to 8000 times the mass of Earth.

This explosion in extrasolar planet discoveries is only set to get bigger, with a NASA mission called Kepler that was launched last year.

After staring at a single small patch of sky for 43 days, Kepler has detected the definite signatures of seven new exoplanets, plus 706 “planetary candidates” that are unconfirmed and in need of further investigation. Kepler is likely to revolutionize our understanding of Earth's place in the Universe.

We don't yet have the technology to search for life on exoplanets. However, the infrared Spitzer Space Telescope has detected molecules that are the basic building blocks of life in two exoplanet atmospheres.



Artist's rendering of hot gas planet HD209458b. Both the Hubble and Spitzer Space Telescopes have detected carbon dioxide, methane, and water vapor—in other words, the basic chemistry for life—in the atmosphere of this planet, although since it is a hot ball of gas, it would be unlikely to harbor life.

Most extrasolar planets appear unsuitable for supporting life, but at least two lie within the “habitable zone” of their stars, where conditions are theoretically right for life to gain a foothold.

We are still a long way from detecting life on other worlds, but in the last 20 years, the number of known planets in our Universe has gone from the 8 in our own Solar System to almost 500. It's clear to everyone, including the Astro2010 decadal survey team, that the hunt for exoplanets is only just beginning, and the search for life is finally underway in earnest.

Explore Spitzer's latest findings at <http://www.spitzer.caltech.edu>. Kids can dream about finding other Earths as they read “Lucy's Planet Hunt” at <http://spaceplace.nasa.gov/en/kids/storybooks/#lucy>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Refresher: ALP Membership

Types of Membership

1. Regular Members

Professional and non-academically prepared astronomers who have met the qualifications set forth by the Society and have paid the annual dues for the current year.

2. Honorary Members

The Society confers honorary membership to deserving individuals who have contributed to the advancement of astronomy, both locally and internationally.

Membership Benefits

As a member of the society, you will be given access to the Member's Section of the ALP website where the monthly newsletter, ALPha, and issues of the Philippine Journal of Astronomy can be downloaded. Members are also regularly updated with society activities, such as monthly meetings and stargazing events, through SMS and group mailing list.

As an institutional member of the Association of Lunar and Planetary Observers (ALPO), ALP members also have free access to the quarterly issues of The Strolling Astronomer, Journal of the ALPO.

Lastly, being a member of the Astronomical League of the Philippines means participating in the country's leading scientific community promoting astronomy and related sciences.