THE APPULSE

Official Newsletter of the Philippine Astronomical Society

PROPELLING ASTRONOMY EDUCATION TOWARD THE ACHIEVEMENT OF SCIENTIFIC EXCELLENCE AMONG FILIPINOS

Vol. 40 No. 54 SEPTEMBER 2008

August 1, 2008 Total Solar Eclipse, EAYAM and APRIM Conferences - A Report from Jiayuguan and Kunming, China

by Romar Sese

For someone who has been in the field of astronomy for quite some time, I always look forward to new experiences that bring awe and appreciation of our Universe. Last August 1, I experienced my first total solar eclipse in Jinta County, Gansu Province, China. The solar eclipse coincided with the last day of the East Asian Young Astronomers Meeting (EAYAM) held in Jiayuguan, China. The organizers of the Meeting made it a point to include the solar eclipse viewing as part of the program schedule.

The EAYAM is a gathering held every 2-3 years between China, Japan, Taiwan, and Korea. This meeting was the third of its kind and was held from July 26 to August 1, 2008. The venue was in the remote city of Jiayuguan, Gansu Province. The town is quite small (by Chinese standards) located in the outskirts of the Gobi Desert and between two mountain ranges. It is famous for the Jiayuguan Fortress, which marks the end of the Great Wall of China.

I was privileged to attend the EAYAM despite the fact that I am not East Asian. On July 25th, most of the participants met in Lanzhou City, the capital of Gansu Province. Even in Lanzhou, one can feel the dry and dusty desert air.. From Lanzhou, we took a nine-hour train ride to Jiayuguan. As an idea, Lanzhou is about three hours away from Beijing, Shanghai or Hongkong by air. We would have flown directly to Jiayuguan, but there were only several direct flights a week.

On arrival in Jiayuguan on the morning of the 26th, the organizers were kind enough to give a tour of Jiayuguan Fortress. I think they had that as a consolation for the very long train ride that we took. The conference proper started on the 27th. Most of the 70 participants were graduate students or early postdoctorate plus several undergraduate students. All participants were required to give a 20-minute talk on their research with topics ranging from cosmology, galactic evolution, stellar astronomy down to planets and asteroids. The topics spanned from theoretical to numerical to observations. It is amazing that despite having such a wide range of topics, most of the participants got along together quite well, whether they were theorists or observers. In the true spirit of astronomy, theorists and observers were working together to unravel the mysteries of the Universe.

The EAYAM-scheduled viewing of the momentous solar eclipse made us all excited. Most of us were very worried though because of the cloudy days before. However, in the morning of August 1, we were greeted with a clear, bright sky! Everyone was delighted for the blessing of a good weather. After a tour of the First Beacon of the Great Wall in the morning, we traveled for two hours to Jin Ta County, close to the central line of totality.

We arrived at the site around 4:00 p.m. local time (I'll be using local time in this report). On arrival we had to undergo security checks as the site was restricted by the Chinese government due to its proximity to the Space Launch Center, and we had to obtain special permit to conduct observation in the site. Even the uses of GPS trackers were forbidden (special notice were sent out days before) and were monitored by the Chinese government.

Though the non-Chinese participants

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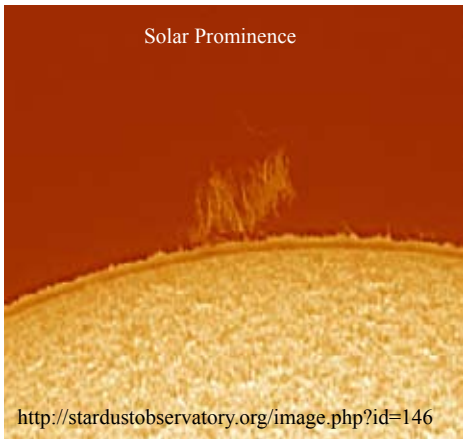
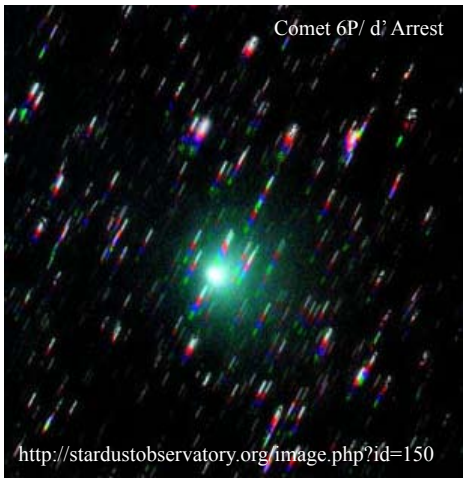
Astro-Photography

by John Nassr



Here is an August 18 image of a prominence on our Sun that has been quiet for so long.

Date	ImagedAugust 18, 2008
Lens	Astrophysics 5"
Camera	Dragonfly 2FilterSM60
Mount	Titan
Location	Stardust Observatory, Baguio,



Periodic comet d' Arrest glowed softly at magnitude 9.1 through the eyepiece of a C14 and revealed its distinctly emerald coma streaking past the background stars of Capricorn after 48 minutes of exposure.

Date Imaged:	August 22, 2008
Lens:	Borg 77ED f/5.5
Camera:	ATK16HR
Exposure:	48 minutes (L9x2min,RGB 5x2min)
Mount:	Losmandy Titan
Location:	Stardust Observatory

August Monthly Meeting

by Victoria Evarretta

It intermittently rained that Sunday, so we were afraid that members may not come to the PAS August meeting at Rizal Technological University. But no, they did come - members from Ateneo University, Quezon City High, University of Asia and Pacific, University of the Philippines, and St. Paul Pasig - besides the usual oldies Hernan Dizon, Edna Azucena, Ian Allas, Jake Irlandez, Engr. Camilo Dacanay, Leo Manosca, and myself. The meeting was held at the airconditioned Reading Center of RTU's Main Academic Building. (Thanks, Dr. Torres.)

What is a PAS monthly meeting without a lecture? No way. It's the only time PASers sharpen those brains and astronomical interests with bombardment of lectures classroom-style given by the astro-knowledgeables and physicists in the group or it's simply the venue for social interaction.

The August 17 meeting was thus highlighted with two lectures: Planetary Geology by Engr. Camilo Dacanay and Celestial Navigation by Leo Manosca.

I guess his being now an associate professor IV at RTU has effected a difference in Engr. Dacanay. We were still looking at the assortment of Allen Yu's meteorites for sale when Engr. Dacanay rapidly walked into the room at 1:30 PM, straight to the front, and started his lecture. Aha - no ifs, no buts.

But Planetary Geology is an interesting topic. First came the introduction of how the subject was so named, followed by the physical and chemical composition of planets, how stars and galaxies and planets formed, why stars are mostly in binaries, why there are the big gaseous planets and the small rocky terrestial planets, why they are so located in the solar system, the big bang theory, how gravity and physical laws govern the universe and our solar system, if stars are born - how they die, etc. etc. It was like a free-for-all unsatiable quest for astronomical info about the universe. One question led to another and on and on. I guess one meeting is not enough for this lecture as the whole universal beginnings and end was capsulized in just an hour and a half.

On the other hand, Leo's lecture was hands-on demonstration of celestial navigation using the free stellarium software that can be downloaded from www.stellarium.org. (Thanks to our new multimedia projector, which came handy for this purpose.) For another hour and a half, we were transported to a stargazing trip - but this time, we were kids again. We zoomed in and out of planets, constellations, the moons. With stories or legends to tell, Leo had everyone spellbound on the constellations. What with those stellarium drawings, for instance, of the bear and the chariot or the vain lady in the sky? That was food for the imagination and good for the heart and brain.

Back to reality when Edna capped the meeting with organizational concerns and priorities for NAW 2009 and International Year of Astronomy. The August Appulse issue was also distributed to each member during the snack time while brief last-minute reminders for Committees were given.

Until September 21, au revoir.

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WATCH
" THE UNIVERSE"
every Sunday 9-10 PM
at the History Channel!!

Special Mention – Graciele Lopez of St. Paul, Pasig is PAS Events Committee Assistant Chairperson. She can be reached at 0920-430-7155.

OCTOBER Celebrants

Happy Birthday!

1 Remegio Arales
Eanne Yeanne Lin
2 Marlon Macatol
10 Dondi Esteban
11 Marites Del Valle
12 Marites Canlas
Anthony Ong
13 Pia Sosa
14 Ma. Nelia Abiday
Benjamin Cristobal
17 Arlyne Marasigan
18 Khristine Sailog
20 Walter Tolentino
21 Bernadeth Agcoili
23 Katrina Charmane Ong
24 Susan Adajar
25 Chona Gajo
26 Henry Marcelo
28 Michael Irvin Ong
30 Suzette Pido

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METEORITES AROUND THE WORLD

by Allen Yu

One of the most important and popular meteorite in history came from the world's best preserved impact crater, and it was a solid chunk of iron/nickel from the core of a big asteroid that gouged a hole in Coconino County, some 30,000 to 50,000 years ago. The intruder was 60,000 tons in mass estimate, 80 to 150 feet in diameter, and traveling at a velocity faster than a speeding bullet. With such an enormous amount of kinetic energy, the main mass exploded with an estimated energy of 20 megatons of energy, a thousand times that of Hiroshima bomb, and vaporized 85% of the mass, blasted fragments kilometers away, and condensed bits of iron fell back to earth. The condensed iron rained back to land as spheroids; the blasted bits, which is a mere 15% of the main mass, is what we pick up as the iron meteorites to keep. Such is the fabled history of the Canyon Diablo meteorite, a story told over and over again, lending to the fact that Earth is no safe haven from cosmic missiles.

The Meteor Crater, probably the world's most famous impact site, is of private property. It is also called Barringer Crater, named after Daniel Moreau Barringer who

in 1902 was the real champion in recognizing the true nature of the crater, that is, a result of a meteorite impact. Prior to this realization, the crater was initially thought to be a crater of a dead volcano, or a steam explosion or a blowout. Dead volcanoes look a bit similar to it, and it is no surprise that craters on the surface of the Moon were also thought to be dead volcanoes. The science of impact cratering matured rather late, well into the 1900s that scientists began to differentiate volcanoes from impact craters. But there were no lava flows nor any volcanic material found to support the idea. Another theory was that of a steam explosion or blowouts where some water for some reason, was trapped below the land and heat from geologic activity inside the Earth boils the water into steam and pressurized the trapped water to a sudden burst producing a crater of similar appearance. Steam blowouts have been found near Meteor Crater, albeit on a much smaller scale. And the Meteor Crater is way too large for such to occur.

Barringer already collected so many ideas of different theories prior to his personal visit to the crater, and was more directly convinced because small iron fragments have been found and collected in the vicinity, and the irons were confirmed to be that of extraterrestrial origin 11 years earlier. Nickel readily shows up in test, and testing the existence of nickel in iron would bring us 90% to confirm an iron to be a meteorite. Furthermore, up-tilted rocks inside the crater and a slightly raised outside rim has all the hallmarks of an impact mechanism. So he theorized that there has to be a big mass of iron missing and then ventured to find that chunk (which is a valuable $80/ton at that time) he believed buried inside the crater. He obtained a deed to the land and started drilling more than two dozen test holes. Shattered rock beneath the crater further strengthens the impact theory, and by 1910, many leading scientists and including Pres. Theodore Roosevelt was convinced so, except that the Geological Survey maintained the crater and the surrounding meteorites as mere coincidence because the main mass has not been found yet. In 1919, his company thought they struck gold when the drill was stuck at a depth of 1,376 feet, here he believes he found the main mass, but unknown to him it was only a very dense material that he encountered. Lack of funds prevented him to free the drill, and the hole has to be abandoned without seeing what is inside it. By the fall of 1929, at the height of the Great Depression, Barringer died suddenly of heart attack without seeing what he hoped for.

The science of finding the true nature of the crater and what happened to the missing meteorite didn't stop there, however. Scientists in the 1960's later formulated the conditions of a projectile impact and its varying magnitude. They soon realized the iron mass couldn't be buried inside the crater, but rather, upon calculating the total energy involved upon impact, it would generate so much heat to vaporized majority of the mass. An important factor was that the impactor didn't arrived on a free fall velocity (velocity applied by Earth's gravity), rather, it was still traveling at cosmic velocity (its velocity while in orbit around the Sun) upon its entry to the Earth's atmosphere, and the sheer size and mass of the intruder didn't give any respect to the braking force it encounters with the atmosphere. The atmosphere was almost negligible, a silent bystander to this unwelcome visitor. Smaller meteoroids would feel the braking force applied by the atmosphere, sometimes stopping it to a halt to cancel out its cosmic velocity and make it a free fall. Sometimes smaller meteoroid do not even survive, they burn or explode in the atmosphere and floats like dust, settling silently on the Earth.

Canyon Diablo Meteorite, Iron Meteorite from Arizona's Meteor Crater, USA

The meteorite provided itself a dose of its usefulness when it became an instrument in determining the age of the Earth. Scientists knew that isotopes of uranium slowly decay into isotopes of lead. In 1953, American geochemist Clair Cameron Patterson measured the isotope composition of lead in a piece of Canyon Diablo meteorite which gave us a figure of 4.6 billion years, the most agreed upon date for our home planet. Furthermore, scientists are now constantly refining the age of the Solar System by studying trace isotopes contained in primitive meteorites.

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August 1 ...

from page 1

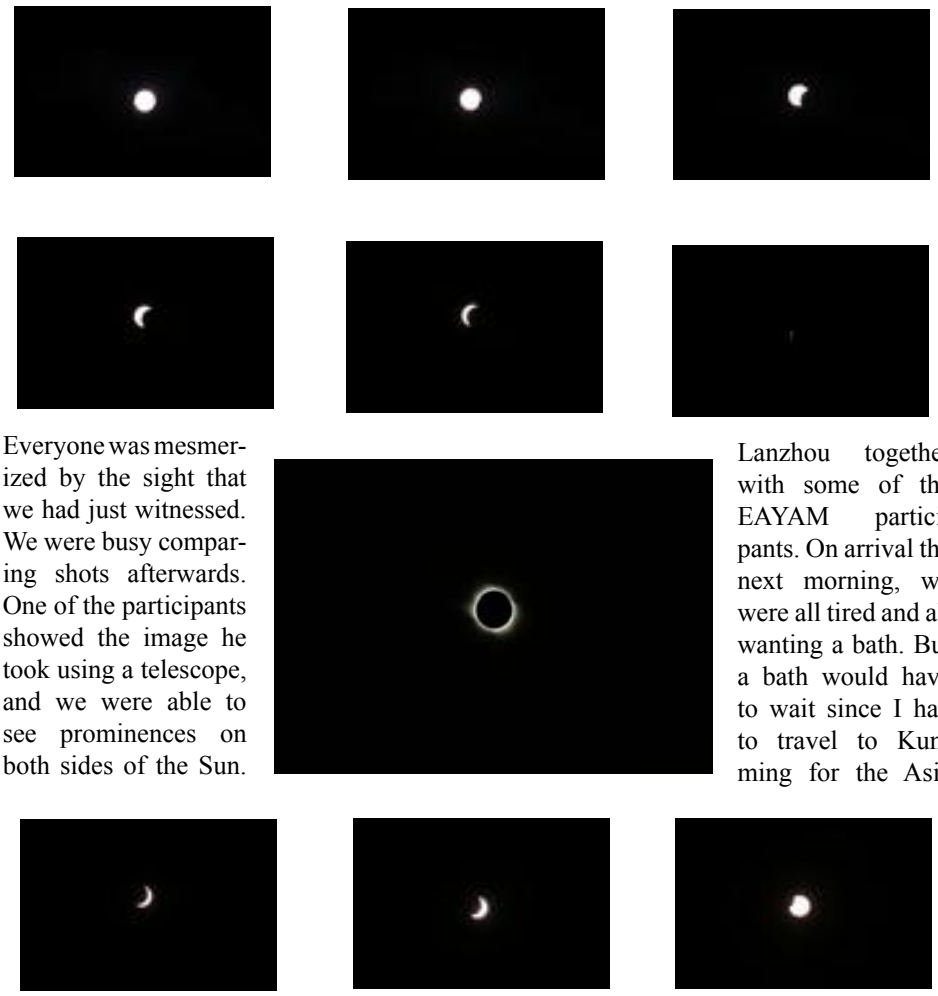
brought mostly cameras, the Chinese participants were kind enough to bring several telescopes for all the participants. While they were setting up the scopes, we spent some time exploring the desert despite the heat. Most of the participants were busy walking around until we heard people screaming in delight.

The first contact just happened, and the eclipse had begun around 5:15 p.m. (Sorry for the inexact time. I didn't bother to check it, much more bring a watch). It was about this time that I regretted that I did not bring my tripod with me. I took several photos using my DSLR camera with zoom lens. Being a first-time eclipse astrophotographer, it was very exciting to take pictures of the eclipse as it happened

Around 6 p.m., everyone was excited as the totality neared. I had to find a stable position to capture the moment of totality. Given the vast expanse of desert, it wasn't a problem for everyone. While the moon blocked more and more of the Sun, I remembered the ancient Chinese legend about a solar eclipse. No wonder they thought that the Sun was being swallowed by a dragon. It really did look like something was eating up the Sun!

Then at around 6:15 p.m. (again an estimate), it happened - TOTALITY! It was incredible and simply amazing! Words simply aren't enough to describe the feeling of being able to see a total solar eclipse. I was busy snapping away the view with my camera, hoping that I would get at least several good shots. After taking pictures, I looked around and it was spectacular. The sky was bluish black, similar to twilight but without the reddish tint. It was dark enough to see Venus and Mercury! The sun became a black orb hanging up in the sky, which made it both creepy and marvelous. I remembered uttering the words "Wow! A black sun!" as I was looking up into the sky. It wasn't everyday that one sees something like that.

Then, as quickly as it started, it was over and the Sun started to emerge behind the Moon. In my bewilderment, I forgot to take pictures and missed the Bailey's Beads. The moment was over. Totality lasted for about a minute and a half, but it was the most spectacular one and a half minute of my life!



Everyone was mesmerized by the sight that we had just witnessed. We were busy comparing shots afterwards. One of the participants showed the image he took using a telescope, and we were able to see prominences on both sides of the Sun.

Surprised, all of us who used only cameras reviewed our images in higher magnification, and there it was! We were lucky enough that a prominence was there during the eclipse.

As astronomers, I think all of us agreed that being able to see a total solar eclipse was one of the best moments of our lives. All of us who were there shared a bond of being able to see Nature's hide-and-seek together. It was the moment of a lifetime!

We stayed for another 30 minutes before we packed up. We didn't even finish the eclipse as we had to leave in order to catch the train that would depart from Jiayuguan that evening. On the way back to the train station, everyone was quiet, absorbing and recalling the event, and wondering when will we be able see another one. I don't think anyone of us would be professional eclipse hunters/chasers but being professional astronomers, a total solar eclipse would always rank among Nature's top wonders.

I then took the night train going back to Lanzhou together with some of the EAYAM participants. On arrival the next morning, we were all tired and all wanting a bath. But a bath would have to wait since I had to travel to Kunming for the Asia Pacific Regional IAU Meeting (APRIM). After several hours of plane ride and stopovers, I finally arrived at Kunming around 8:00 p.m., dead-tired but happy!

The next morning, I braced myself for another conference. The APRIM was held on August 3 -6, 2008 at Kunming in southwestern China. I initially thought of cancelling my attendance to APRIM as there were two bus explosions in Kunming the week before. However, when I emailed Dr. Cynthia Celebre, she said she won't be attending this conference due to lack of funding, hence I was the only representative left from the Philippines.

The APRIM was much larger than EAYAM, with almost 400 participants. The topics were also more diverse as it included astronomy popularization and education. On the first day, there were plenary sessions on topics such as IYA 2009, quasar spectroscopy etc.. The second and third day were

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PAS PAST AND LONG-LOST PASER

by Victoria Evarretta

I struck a mine of PAS info from yesteryears when I exchanged emails with a mountaineering colleague Edwin Gatia, who I later found out to be a long-lost PASer and one of the more active amateur astronomers during his time.

Edwin joined the Philippine Astronomical Society as an official member in 1974 while he was still a chemical engineering student at UST. In his spare time, he hung out at the PAGASA Observatory and had become acquainted with Chief Astronomer Engr. Simeon V. Inciong and Max Sacro.

According to him, the 4th PAS Convention was held at the Philippine Science High School in 1974 and was then attended by founding members Hans Arbers (Swiss) from the Science Foundation, Atty. Isaac O. Chaves, Mrs. Emilia Agustin, and Gertrudes Lucas, among others. He fondly recalls how home-made telescopes were then displayed and used for the stargazing after the convention.

The following year was a supremely favorable one for PAS.

First, it was in 1975 that Fr. Leo Boethin, SVD, discovered a comet that was thus named Comet Boethin. Edwin further details that Fr. Boethin, had been observing the dark clear skies of Abra when he chanced on what appeared to be an 'interloper' among the stars in the heavens. Suspecting it to be a comet, Fr. Boethin began a series of observations, but the waxing moon at the time prevented him from making accurate sky positions for the object. Eventually, the find was confirmed and Comet Boethin became the first comet to have been discovered by an observer on Philippine soil.

Second, the PAS-Bacolod Chapter was also established in 1975 by Edwin, he being a native of Bacolod City. (This information came up when another Bacolod City kababayan Raymund Ang wrote him about the PAS plan (?) to organize a chapter in Bacolod.) The PAS-Bacolod Chapter was the first PAS local chapter established outside Metro Manila at that time. According to Edwin, when he initiated the task of setting up a local chapter, the local media enthusiastically responded; and before he could even realize it, the Chapter was up and running with the help of members from the academe and skywatch enthusiasts.

Among the original members were Dr. Eduardo Garcia+ and Don Alberto Balcells+ (both highly respected well-heeled members of Negrense society and close astronomy associates of Edwin); Engr. Margarito Magbanua, a practicing civil engineer and formerly Physics instructor at the West Negros University; Bacolod City High School Physics Department Faculty Ricardo Yap, Nilda Monge (now Principal of the Negros Occidental HS), and Dr. Jess Sabandal (later pioneered on computer applications in Bacolod); Mrs. Alamon (Science faculty, Colegio de San Agustin); and Mr. Olvido+ (Physics instructor at Tay Tung HS). Other active members were Dr. Joel Yap, Rev. Gerry Osbron (an American church pastor), Ralph Belzunce, and Dr. Fruesch (chemist and faculty at the University of St. La Salle-Bacolod) whose Celestron-8 was one of the group's favorites. The Chapter Officers were formally inducted by then Bacolod City Mayor Carlos Bernares at West Negros University.

On request of then PAS President Fr. Victor Badillo, Edwin reported on the organization of the PAS-Bacolod Chapter during the 5th PAS Convention held in October 1975 at the newly inaugurated Manila Planetarium. It was also during this same convention when Fr. Leo Boethin was the other Speaker and was conferred the Padre Faura Award for his exceptional comet discovery.

Third, 1975 was also the year the Manila Planetarium was inaugurated, as was previously mentioned.

On a personal note, as one of the active members of PAS in the 70s, Edwin Gatia had his own rooftop observatory (Montevista Observatory) that housed his home-made 8-inch reflector, The 8-inch mirror was a gift from a Danish film maker who did a documentary on the Negros sugar industry; the secondary mirror was donated by a fellow mountaineer; and the rack and pinion for the eyepiece was also a gift from a Japanese friend who frequently visited Bacolod. A local school bought this telescope from him, so he replaced this with an 8-inch SCT Meade telescope, which he gave away to two local chapter PASers when he left for the US.

Montevista Observatory

Montevista Observatory had been "decommissioned" since then (at least for the time being until his return.) It is worth mentioning here that in the 90s his 8-inch telescope, which had a CCD camera attached to its eyepiece, was connected to his television set so that neighbors could view on a large screen whatever the telescope "saw." Thus, with the high-clarity resolution of the CCD, the viewers had a heyday being amazed and awed by the details of the lunar craters, for example, or by whatever planet or deep-sky object his telescope was focusing at the time.

Long-lost PASer Edwin Gatia has been inactive in astronomy as he has moved to the "other side of the planet" (as he says). But he never resigned from PAS, and he is still with us and with PAS all the way!

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Meteorites ... *from page 3*

Canyon Diablo meteorites can sometimes be aesthetic to behold, is also an important component in every collection. The Meteor Crater site and its vicinity has since been a private property, and meteorite hunting in the area is not allowed. Specimens available today came from old collections, and availability depletes as its popularity soars. Minerals reported from the meteorite include: cohenite, chromite, daubreelite, diamond and lonsdaleite (carbon), graphite, haxonite, kamacite, base metal sulfides, schreibersite, taenite, troilite, and moissanite. Moissanite is now becoming a good alternative for diamond jewelry, and the meteorite provided its first source.
Report by Allen Yu, International Meteorite Collector's Association # 2041.

Meteorite specimens of varying types and sizes, like the Canyon Diablo, are available for personal viewing and acquisition, as the author maintains a collection and holds a number in stock. Please contact Allen at allen_yu70@hotmail.com, 9016-5396858 to make arrangements.

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August 1... *from page 4*

composed of eight parallel and poster sessions. It was actually difficult to decide which session to attend since all the topics were interesting. I needed to plan which talks I will be attending. On the final day, all the participants went to a tour of the Shilin (Stone Forest) Park, a UNESCO World Heritage site.

During the meeting, I was able to get in touch with other Southeast Asian Astronomy Network (SEAAN) members like Dr. Hakim Malasan of Indonesia and Dr. Busaba Kramer of Thailand. We were able to have a long discussion about the future of SEAAN. They even mentioned plans regarding the 2.3 m telescope currently being built in Chiang Mai, Thailand that expected to have its first light in late 2009.

Being relatively new, SEAAN is still building linkages and experiencing birthing pains. However, the good thing about SEAAN is that all member nations have more or less similar backgrounds, particularly the lack of a developed astronomy program in their respective countries. However, countries like Indonesia, Malaysia, and Thailand are already moving forward in this aspect. Hopefully, our country can catch up in the near future. I encourage all astronomers, professional or amateur, to actively participate in SEAAN. It would be a good opportunity to meet other astronomers in neighboring countries and to learn from each other's experiences, whether on personal, institutional, or national level. More details can be seen in the SEAAN website,
http://www.narit.or.th/seaan/index.htm

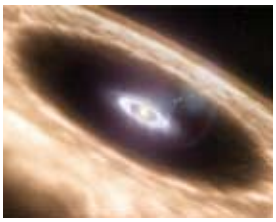
Overall, the trip to China was very exhausting but very fulfilling. After my two consecutive conferences in France last year, I swore never to do that again and yet here I am, having attended another two consecutive conferences. It may be tiring, but hey, astronomers are used to that. Furthermore, the opportunity of witnessing a total solar eclipse and getting in touch with other SEA astronomers was simply too good to pass up.
Would I want to go back to China again? Definitely! Would I want to view another total solar eclipse again? Definitely! The universe has more marvels out there for us to witness. As mere mortals, we would always be in awe as we try to grasp and understand the wonders of Nature!

Romar Sese is a PAS member since 2001. He is now on a three-year scholarship for a PhD in Astrophysics at University of Tsukuba, Japan. Prior to this, he was the Physics Division Head of UP Los Banos.

Stellar News

A. Presence Of Planets in Young Gas Discs Hinted at Using Clever New Astronomical Method

ScienceDaily (Sep. 9, 2008) — Astronomers have been able to study planet-forming discs around young Sun-like stars in unsurpassed detail, clearly revealing the motion and distribution of the gas in the inner parts of the disc. This result, which possibly implies the presence of giant planets, was made possible by the combination of a very clever method enabled by ESO's Very Large Telescope.
Planets could be home to other forms of life, so the study of exoplanets ranks very high in contemporary astronomy. More than 300 planets are already known to orbit stars other than the Sun, and these new worlds show an amazing diversity in their characteristics. But astronomers don't just look at systems where planets have already formed -- they can also get great insights by studying the discs around young stars where planets may currently be forming.



"This is like going 4.6 billion years back in time to watch how the planets of our own Solar System formed," says Klaus Pontoppidan from Caltech, who led the research.
Pontoppidan and colleagues have analysed three young analogues of our Sun that are each surrounded by a disc of gas and dust from which planets could form. These three discs are just a few million years old and were known to have gaps or holes in them, indicating regions where the dust has been cleared and the possible presence of young planets.
The new results not only confirm that gas is present in the gaps in the dust, but also enable astronomers to measure how the gas is distributed in the disc and how the disc is oriented. In regions where the dust appears to have been cleared out, molecular gas is still highly abundant. This can either mean that the dust has clumped together to form planetary embryos, or that a planet has already formed and is in the process of clearing the gas in the disc.
For one of the stars, SR 21, a likely explanation is the presence of a massive giant planet orbiting at less than 3.5 times the distance between the Earth and the Sun, while for the second star, HD 135344B, a possible planet could be orbiting at 10 to 20 times the Earth-Sun distance. The observations of the third star, TW Hydrae, may also require the presence of one or two planets.
"Our observations with the CRIRES instrument on ESO's Very Large Telescope clearly reveal that the discs around these three young, Sun-like stars are all very different and will most likely result in very different planetary systems," concludes Pontoppidan. "Nature certainly does not like to repeat herself."
"These kinds of observations complement the future work of the ALMA observatory, which will be imaging these discs in great detail and on a larger scale," adds Ewine

Continued on page 7

NOTES FROM ABROAD

From Richard Taylor - now back in Canada

"We are fine (but COLD! Last night the temperature dropped to 7 degrees! And this is SUMMER!) Very busy moving into our old house and figuring out where to put everything. Spent all day yesterday setting up our computers and internet connection (much swearing). Anyway, it works now:-)

Frances and I saw just two Perseids last Tuesday night. Then we went to a cottage very remote from city lights - but there was a full moon! so we didn't see much in the way of stars. Lovely views of the moon, though."

A picture of the full moon rising over Lake Huron; on the right is Jupiter. Photo by Richard Taylor

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From Dr. Galen Bollinger - University of Texas (Austin) Astronomy Department

"I thank you for sharing a copy of the PAS publication. It is very well done, with interesting and informative articles."

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Stellar... *from page 6*

van Dishoeck, from Leiden Observatory, who works with Pontoppidan.
To study the gaps in dust discs that are the size of the Solar System around stars that are located up to 400 light-years away is a daunting challenge that requires a clever solution and the best possible instruments.
"Traditional imaging cannot hope to see details on the scale of planetary distances for objects located so far away," explains van Dishoeck. "Interferometry can do better but won't allow us to follow the motion of the gas."
Astronomers used a technique known as 'spectro-astrometric imaging' to give them a window into the inner regions of the discs where Earth-like planets may be forming. They were able not only to measure distances as small as one-tenth the Earth-Sun distance, but to measure the velocity of the gas at the same time.
"The particular configuration of the instrument and the use of adaptive optics allows astronomers to carry out observations with this technique in a very user-friendly way: as a consequence, spectro-astrometric imaging with CRIRES can now be routinely performed," says team member Alain Smette, from ESO.

Astronomers have been able to study planet-forming discs around young Sun-like stars in unsurpassed detail, using ESO's Very Large Telescope. The studied discs were known to have gaps in the dusty discs (represented by the brownish color in the image) but the astronomers found that gas is still present inside these gaps (represented by the white color in the image). This can either mean that the dust has clumped together to form planetary embryos, or that a planet has already formed and is in the process of clearing the gas in the disc. (Credit: Image courtesy of ESO)
Source:
http://www.sciencedaily.com/releases/2008/09/080908105400.htm

B. The Thousand-Ruby Galaxy - A prodigious pinwheel shines in the darkness.
ESO's Wide Field Imager has captured the intricate swirls of the spiral galaxy Messier 83, a smaller look-alike of our own Milky Way. Shining with the light of billions of stars and the ruby red glow of hydrogen gas, it is a beautiful example of a barred spiral galaxy, whose shape has led to it being nicknamed the Southern Pinwheel.

This dramatic image of the galaxy Messier 83 was captured by the Wide Field Imager at ESO's La Silla Observatory, located high in the dry desert mountains of the Chilean Atacama Desert. Messier 83 lies roughly 15 million light-years away towards the huge southern constellation of Hydra (the sea serpent). It stretches over 40 000 light-years, making it roughly 2.5 times smaller than our own Milky Way. However, in some respects, Messier 83 is quite similar to our own galaxy. Both the Milky Way and Messier 83 possess a bar across their galactic nucleus, the dense spherical conglomeration of stars seen at the centre of the galaxies.

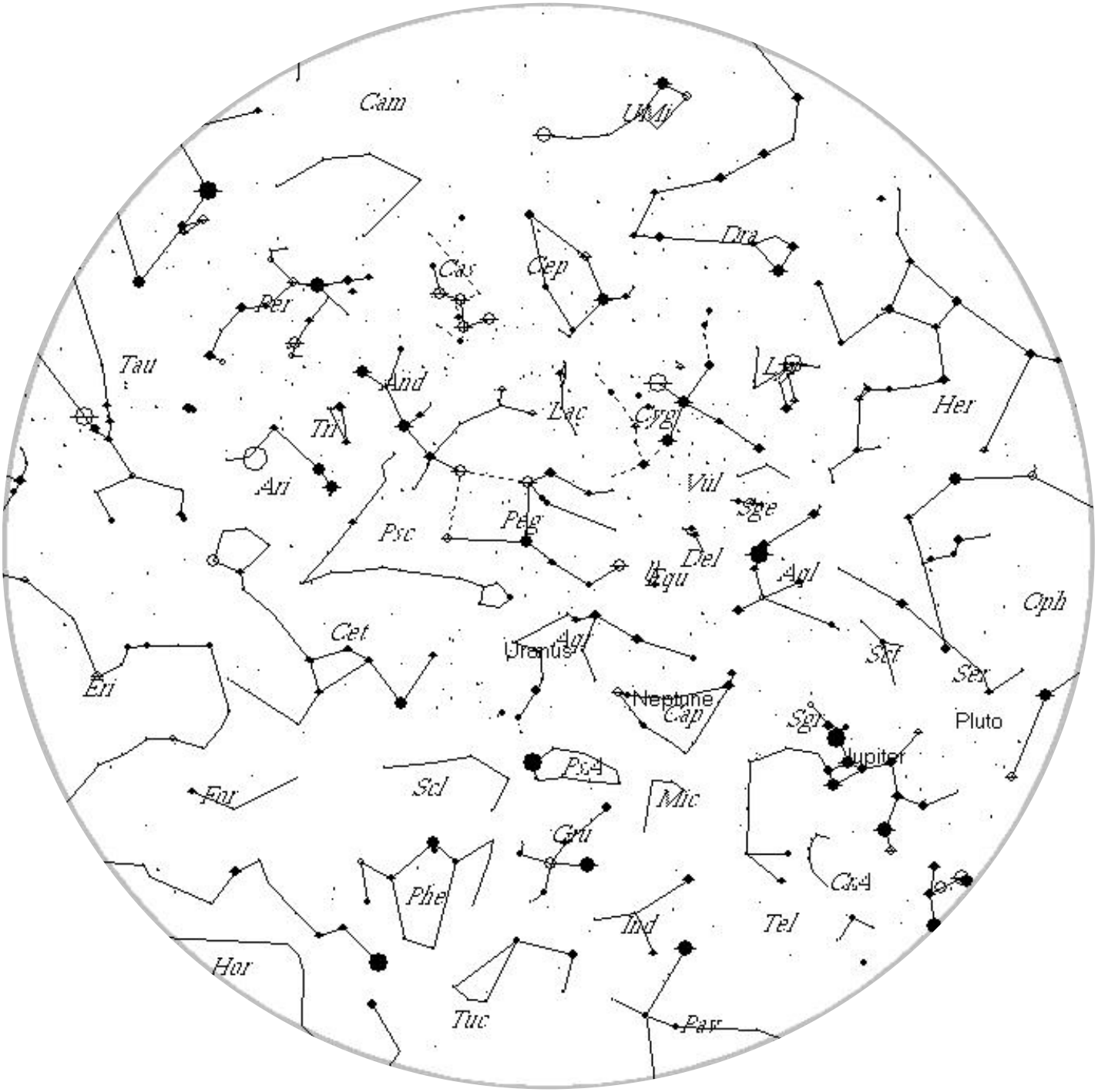
This very detailed image shows the spiral arms of Messier 83 adorned by countless bright flourishes of ruby red light. These are in fact huge clouds of glowing hydrogen gas. Ultraviolet radiation from newly born, massive stars is ionising the gas in these clouds, causing the great regions of hydrogen to glow red. These star forming regions are contrasted dramatically in this image against the ethereal glow of older yellow stars near the galaxy's central hub. The image also shows the delicate tracery of dark and winding dust streams weaving throughout the arms of the galaxy.
Messier 83 was discovered by the French astronomer Nicolas Louis de Lacaille in the mid 18th century. Decades later it was listed in the famous catalogue of deep sky objects compiled by another French astronomer and famous comet hunter, Charles Messier. Recent observations of this enigmatic galaxy in ultraviolet light and radio waves have shown that even its outer desolate regions (farther out than those seen in this image) are populated with baby stars. X-ray observations of the heart of Messier 83 have shown that its centre is a hive of vigorous star formation, held deep within a cloud of superheated gas, with temperatures of 7 million degrees Celsius. Messier 83 is also one of the most prolific producers of supernovae, that is, exploding stars: this is one of the two galaxies, which had 6 supernovae in the past 100 years. One of these, SN 1957D was observable for 30 years!
Source:
http://www.eso.org/public/outreach/press-rel/pr-2008/pr-25-08.html

World Space Week Oct 4 - 10.

The UN-declared World Space Week is the largest annual Public Space Event on Earth celebrated in more than 50 nations.

"Exploring the Universe" 2008 theme
Source: Wikipedia

Monthly Star Map – October 2008



This map was prepared by the Observation Committee of the Philippine Astronomical Society using SkyMap Pro 9 software.

This map shows the sky at 9pm on October 15, 2008 as seen from the latitude of Metro Manila, Philippines with North on top and the zenith at the center. The large circle represents the horizon. Star limiting magnitude is 5.5. Deep sky limiting magnitude is 7.0.