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1st Philippine Astronomy Convention

Members of the Astronomical League of the Philippines and participants of the 1st Philippine Astronomy Convention (PAC 2009) held on Rizal Technological University posed for a group photo. The convention is one of the activities in connection with the International Year of Astronomy 2009 Philippine celebrations.

PHILIPPINE JOURNAL OF ASTRONOMY

Published by the Astronomical League of the Philippines

The *Philippine Journal of Astronomy (PJA)* is published by the Astronomical League of the Philippines (ALP), the eminent astronomical organization in the country. It is the first such astronomical journal published in the Philippines, signifying the continued evolution of Philippine Astronomy.

The *Journal* publishes refereed manuscripts, general astronomy articles, proceedings of astronomical conference, letters, image submissions and reviews from amateur and professional astronomers, as well as news and announcements from the organization.

For inquiries, comments, or suggestions, please send an electronic mail to the editor at pjastro@astroleaguephils.org

Visit the ALP website at:
http://www.astroleaguephils.org

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DEPARTMENTS

ABOUT THE ALP

The Astronomical League of the Philippines, Inc (ALP) was initiated by amateur astronomers James Kevin Ty and Allen Yu on July 22, 2003 to cater to the needs of dedicated amateur astronomers whose main objective was to concentrate more on the practical side of amateur astronomy such as observational and imaging techniques.

On August 1, 2003, the ALP took form when James Kevin Ty, Allen Yu, Edmund Rosales, Alice Villa-Real, Joel Paul Munoz, Ma. Purificacion Pijuan, Charito Ty and Jonathan Ty met to set up the goals for the ALP. They were the initial people behind the formal realization of ALP as a dedicated astronomical organization.

On August 8, 2003, ALP formally took effect when the 12 original ALP founders namely James Kevin Ty, Allen Yu, Edmund Rosales, Joel Paul Munoz, Ma. Purificacion Pijuan, Alicia Villa-Real, Charito Ty, Alfonso Uy, Jonathan Ty, Edward Tan, Elena Moya, and Russell Limcangco signed the historic papers making the formation of the ALP a reality.

On September 8, 2003, the Astronomical League of the Philippines, Inc became an official non-stock, non-profit SEC-registered organization.

GOALS OF THE SOCIETY

- To further enhance the skills of amateur astronomers in both visual and imaging applications.
- To disseminate accurate astronomical information to the public.
- To help members acquire the skills to build his/her own astronomical equipment by giving technical assistance that are needed by him or her.
- To locate / set up observation sites that have less light pollution than in city proper.
- To stimulate the public interest in astronomy by concentrating more on the practical side of astronomy.
- To foster brotherhood interest among fellow amateur astronomers both locally and internationally.
- To submit and share astronomical research studies with local and international based institutions.

ALP SECTIONS

BOARD OF DIRECTORS (2009)

Chairman: James Kevin Ty

Board Members

Angie Tan	Brian Davis
Rich Pijuan	Raymund Sarmiento
Alice Villa-Real	Henry So
Edgar Ang	Edward Eli Tan
Dr. Jose Aguilar	Peter Benedict Tubalinal
Melisa Bata	Alfonso Uy

EXECUTIVE OFFICERS (2009)

President	James Kevin Ty
Vice-President	Dr. Jose Aguilar
Secretary	Rich Pijuan
Treasurer	Henry So
Auditor	Brian Davis
Public Relations	Alice Villa-Real

COMMITTEE CHAIRS (2009)

Membership:	Angie Tan
Observation:	James Kevin Ty
Instrumentations:	Jomar Lacson
Education:	Dr. Armando Lee
Ways and Means:	Melisa Bata
National Astronomy Week:	Dr. Armando Lee
Publications	
ALPha:	Francisco Lao
PJA:	Raymund John Ang
Special Events:	Angie Tan
Solar Eclipse 2009 Expedition Team:	James Kevin Ty
Webmaster:	Jonathan Ty
Web Content Editor:	James Kevin Ty

EDITORIAL

HAPPY IYA TO ALL!

This year, astronomers all over the world celebrate the International Year of Astronomy (IYA) in commemoration of the 400th anniversary of Galileo's use of the telescope as an astronomical instrument. It is an important event to amateurs and professional astronomers who have dedicated themselves in advancing the field which we now know as contemporary Astronomy.

In the Philippines, a National Organizing Committee (NOC) was created to coordinate IYA activities within the country. Numerous projects have been planned out by the NOC in partnership with government and private institutions. Astronomical organizations have also played an important part in the celebrations. In fact, I consider the different astronomy groups to be the driving force for the IYA-related activities. Surely, without the participation of these dedicated organizations, the IYA events in the Philippines would not have been this successful!

On February 16, 2009, the official opening of the IYA 2009 Philippine celebration was ushered by the National Organizing Committee, headed by Dr. Cynthia Celebre, Single Point of Contact (SPOC) for IYA 2009 in the Philippines and Chief of the Space Sciences and Astronomy Section of PAGASA. You can view the report at this URL: http://www.astroleaguephils.org/archive/news/090216iya2009.html. Prior to the event on the 16th, a major convention was held to promote astronomical efforts in the country, the Philippine Astronomy Convention 2009 (http://www.astroleaguephils.org/archive/news/090215pac2009.html). The convention was organized by the Astronomical League of the Philippines, in partnership with the Rizal Technological University, Manila Planetarium, PAGASA and Sidewalk Astronomers – Philippines.

May this be a memorable year for all!

--- Raymund John Ang
Managing Editor

1st PHILIPPINE ASTRONOMY CONVENTION (PAC 2009)

ABSTRACTS

IYA 2009

Pauline Pearl Divinagracia
Rizal Technological University

The International Year of Astronomy 2009 is a global effort initiated by the International Astronomical Union (IAU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) to help the citizens of the world rediscover their place in the Universe through the day and nighttime sky and, thereby, engage a personal sense of wonder and discovery. The vision of the IYA celebration is for everyone to realize the impact of astronomy and other fundamental sciences on our daily lives, and understand how scientific knowledge can contribute to a more equitable and peaceful society. Various global projects were initiated to help achieve the goals of the IYA 2009. An opening ceremony was held last January 15 to 16, 2009 at the UNESCO Headquarters at Paris, France to mark the beginning of the IYA celebrations. Attendance for the said ceremony was by invitation only. In the Philippines, Dr. Cynthia Celebre, Chief of the Space Sciences and Astronomy Section of the Philippine Atmospheric, Geophysical and Astronomical Services Administration, and the Single Point of Contact in the Philippines for the IYA, and I, as the student representative of the Philippines, were invited to attend the opening ceremony. We also participated in a symposium with the theme "The Role of Astronomy in Society and Culture" which was also held at the UNESCO Headquarters at Paris, France last January 19 to 23 this year.

PROGRAM OFFERINGS IN ASTRONOMY IN THE PHILIPPINES

Dr. Jesus Rodrigo Torres
Department of Astronomy – Rizal Technological University
Astronomical League of the Philippines

The formal academic programs in Astronomy of the Rizal Technological University are the first such programs in the Philippines. The Master of Science in Astronomy program is envisioned to provide the student with a wide range of knowledge in many areas of Astronomy, leaning towards the descriptive aspects of knowledge. The student will choose the field or research most suitable to his or her interests. Three of these researches done while enrolled in the program, and even researches completed before the student actually enrolled in the program, may be considered as his or her thesis. The program suits professionals in all persuasions who wish to study Astronomy either for professional advancement or plainly for the love of the science or for intellectual satisfaction. Non-science majors can enroll. In 2008, the RTU Graduate School decided to ladderize the MS program and the Graduate Diploma in Astronomy was designed. This program is suited for science educators, astronomy lecturers and entrepreneurs, members of astronomical societies, and plain astronomy enthusiasts who like to gain in-depth knowledge in the most important aspects of astronomy. A bachelor's degree in any field is required. The program can be finished in two semesters and one summer. If the student opts to continue in the MS in Astronomy program, all the courses he or she has earned in the Diploma will be credited. The Bachelor of Science in Astronomy Technology is an intensive baccalaureate degree program designed to prepare students to become future research

scientists and technologists in the field of Astronomy. The BS in Astronomy Technology is a cross-fertilized program, integrating interrelated sciences, such as engineering, geology, remote sensing, physics, atmospheric and environmental science, biology and biochemistry, and even philosophy and entrepreneurship into the study. Thus, the B.S. in Astronomy Technology program gives the student excellent job opportunities in many fields.

PHILIPPINE ETHNOASTRONOMY

Dante L. Ambrosio
Department of History
University of the Philippines – Diliman

Ethnoastronomy refers to the system of beliefs and practices of ethno-linguistic groups regarding astronomical and meteorological phenomena which form part of the upper world in their three-world view of the universe. For the Philippines, the study is relevant in the investigation of Philippine pre-colonial society and culture. It is also important in showing the diversity, commonality, richness and depth of what would be referred to later on as Philippine cultures. Through this study, various Philippine groups which are usually neglected in the writing of history are brought to the forefront to share in the limelight with mainstream groups in tracing the development of this society and culture.

The study focuses on the indigenous world view, beliefs, knowledge and practices regarding the sun, the moon, the eclipse and the stars. It shows how astronomical, as well as meteorological, phenomena influence the way people look at the world and the way they think, behave and live. Beliefs and knowledge regarding these phenomena inform their everyday life then and now as they continuously engage in agriculture, fishing, hunting, and trading, in observing various rituals, in building a house, and even in securing good fortune in any undertaking.

GENERAL ARTICLES

GENERAL ARTICLE

A PARTIAL ECLIPSE OF THE SUN

Dr. Armando Lee
Astronomical League of the Philippines
Sidewalk Astronomers – Philippines

Eclipses, it be solar or lunar, have always fascinated Filipino astronomy enthusiasts. Some have become avid eclipse chasers, traveling to other countries to document the phenomena. Others have invested considerable sums of money in acquiring astronomical equipment for recording eclipses. The experience of being able to observe an eclipse is overwhelming and satisfying, even for a casual observer.

On January 26, 2009, a contingent of members of the Astronomical League of the Philippines and members of the Sidewalk Astronomers – Philippines, headed by me, together with a team of astronomy students from the Rizal Technological University (RTU), observed and documented the first eclipse of the year 2009. Three setups were prepared by the team to do public outreach and scientific documentation.

Figure 1. Dr. Armando Lee with members of Sidewalk Astronomers – Philippines and BS Astronomy Technology students conducting public viewing during the eclipse.

The first setup was for public viewing. I used a Celestron FS80wa (80mm f/5) achromatic refractor on a photo tripod fitted with a visual grade Baader film filter. I was assisted by members of the Sidewalk Astronomers – Philippines and BS Astronomy Technology students from Rizal Technological University in manning this setup as well as providing crowd control.

The second setup was for photographic documentation of the event. I used my William Optics Zenithstar 80ed II f/6.8 80mm apochromatic refractor on an EQ2 mount. The camera used was a Canon 50D owned by Fermin Naelga, an astronomy student from RTU. It was set at small resolution (unfortunately) and was fitted with visual grade Baader film filter, although there were times that it had to be removed for the sunset portion of the event.

Figure 2. Crescent Sunset. Time 17:49. Pasay City, Philippines. Camera: EOS 50D Lens: 80mm (*f/6.8*)

William Optics ZS-80edII Mount: Orion EQ-2 Photograph by: Dr. Armando Lee / Fermin Naelga, Jr.

Details for the Crescent Sunset image, Figure 2, (that was previously published) are as follows:

Single frame digital image with Canon 50D; exposure time 1/60sec, ISO 125, sRGB, small resolution set with horizontal resolution 72dpi, vertical resolution 72dpi, width of frame 2352, height of frame 1568, bit depth 24, metering mode - pattern. Photo was taken at 17:49 local time.

Geographical coordinates of the observing site is N 14° 31' 57.6" E 120° 58' 45.0". The site is locally known as Aling Mahsya Restaurant, South Sea Wall, Mall of Asia, Pasay City.

Third setup was for the scientific documentation which involved the use of another 80mm f/5 achromatic refractor (Orion ST80) mounted on another EQ2 mount and fitted with photographic grade Baader film filter. Imaging device used was the PC164c-ex CCD black and white video CCD camera, fitted with a Celestron Neximage Reducer Lens and with the following filters: Red, Green, Blue, and ND filter to further cut off light and, also, to provide needed focus working distance for the prime focus set. The video signal from this camera was sent via RCA video analog cable into the KIWI-OSD-VTI (On Screen Display – Video Time Inserter) which was connected to a Garmin LVC18 GPS unit. The output of this setup (still analog) was sent via another RCA video cable to a Canon mini-DV video camera where it was recorded as digital video frames with atomic time from GPS stamped into its individual frames. The purpose of this observation/recording is to document accurately the significant events of the partial eclipse from 1st contact to the maximum and to the sunset time.

I was preparing to study and compare the data with predictions from planetarium/simulation software like Occult 4.0 and SkyMap Pro 8.0. I was even planning to include it in my graduate thesis. Unfortunately, at the predicted 1st contact time, the team was clouded out and only a portion of the Sun's disk was visible – and it was the limb that cleared the clouds! Another problem occurred when at the moment of sunset, I ran out of tape in my mini-DV. Thus, documentation had to be stopped. Fortunately, the team was able to get a photographic image of the Sun setting as a crescent at the moment of sunset. But the timing in the Canon 50D is not as precise as the set up for scientific observation.

Succeeding photos (Fig. 3, 4, and 5) are other images of the actual eclipse taken during the event, using the second setup. Figures 6, 7 and 8 are video frames with GPS time stamps using the third setup.

Figure 3. A minute past the first contact. Time 16:56. Pasay City, Philippines. Camera: EOS 50D Lens: 80mm (*f/6.8*) William Optics ZS-80edII Mount: Orion EQ-2 Photograph by: Dr. Armando Lee / Fermin Naelga, Jr.

Figure 4. Shark's Fin Sunset Manila Bay. Time 17:51. Pasay City, Philippines. Camera: EOS 50D Lens: 80mm

(*f/6.8*) William Optics ZS-80edII Mount: Orion EQ-2 Photograph by: Dr. Armando Lee / Fermin Naelga, Jr.

Figure 5. Partial Solar Eclipse Sunset Manila Bay. Time 17:52. Pasay City, Philippines. Camera: EOS 50D Lens: 80mm (*f/6.8*) William Optics ZS-80edii Mount: Orion EQ-2 Photograph by: Dr. Armando Lee / Fermin Naelga, Jr.

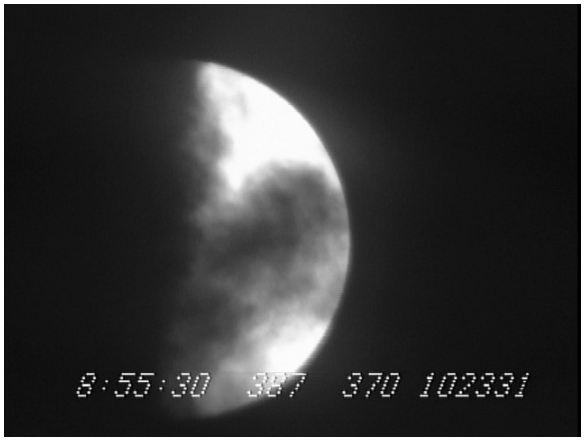


Figure 6. Video frame with GPS time stamps using the third setup.

We are looking forward for the next big eclipse, a total eclipse of the sun – the longest in decades. This time, it will be in China where totality will strike. A research expedition team will be sent by the ALP and I hope we can document the event from 1st contact to last using our modest equipment.

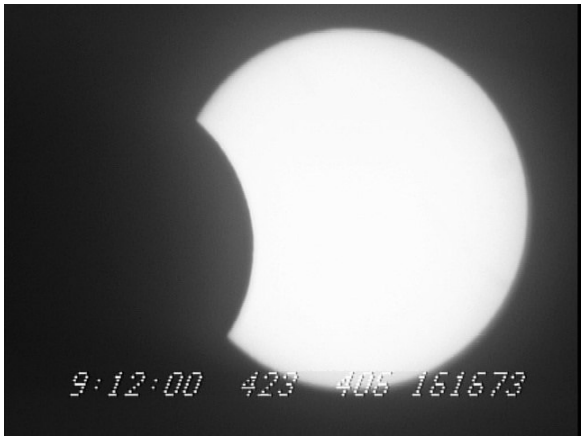


Figure 7. Video frame with GPS time stamps using the third setup.

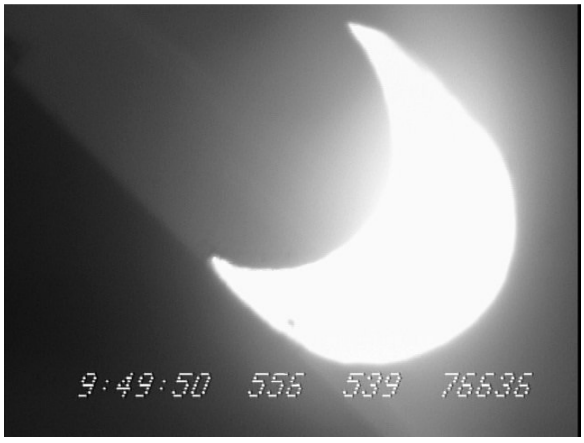


Figure 8. Video frame with GPS time stamps using the third setup.

GENERAL ARTICLE

1st MAJOR ASTRONOMY CONVENTION IN THE PHILIPPINES *A SUCCESS!*

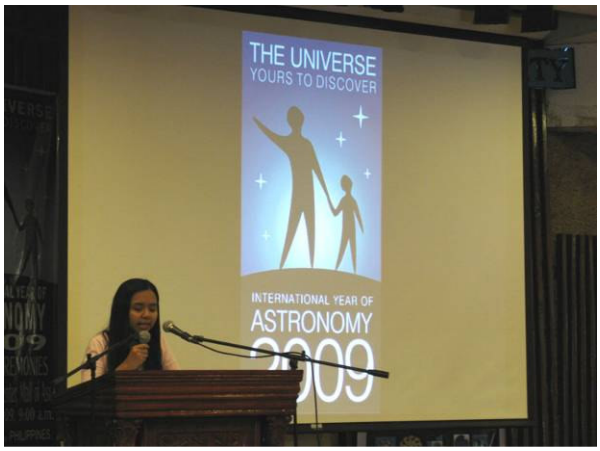
James Kevin Ty
Astronomical League of the Philippines

Images by James Kevin Ty, Dennis Buenviaje, & Dr. Armando Lee

February 15, 2009. The 1st Philippine Astronomy Convention was held at the Plenary Hall of the Rizal Technological University (RTU) in Boni Avenue, Mandaluyong City, Philippines. Among the members of the Astronomical League of the Philippines who were present during the convention were ALP President James Kevin Ty, ALP VP Jett Aguilar, Vincent Lao, Alice Villa-Real, Rich Pijuan, Armando Lee, Antoinette Icot, Brian Davis, Christopher Go, Raymund Sarmiento, Angie Tan, Edward Tan, Melisa Bata, Nathaniel Custodio, Irving Raymundo, Dennis Buenviaje, Henry So, new ALP members Rosalyn Penol, Miguel Cano, and March Anthony Honrade. Astro Camp members Bencie Lee, Wilbert Palma, Francis Esporlas, Fermin Naelga, and Mark Ian Singson were also there to assist in the activities. RTU Astronomy Technology students: Frank Kelvin Martinez, Rhyan Coronel, Pauline Pearl Divinagracia, Lordnico Mendoza, Miguel Artificio and Ma. Angela Lourdes Lequiron were also present to extend their help.

Representatives from various schools such as Rizal Technological University, Cavite State University, Cayetano Science High School, Valenzuela City Science High School, Trinity University of Asia - High School, Pasig City Science High School, Polytechnic University of the Philippines, University of the Philippines - Diliman & Integrated School, Asian Institute of Computer Studies as well as members of the Philippine Astronomical Society, National Institute of Physics and IYA-NOC also attended to grace the event. An estimated crowd of more than 230 participants filled up the Plenary Hall area. ALP souvenir items such as pins, patches, key chains as well as Bernie Esporlas' Starry Night Sky Maps were available at the registration booth.

The event started at around 9:30 a.m. with the ribbon cutting ceremony to formally open the 1st Philippine Astronomy Convention. ALP PRO Alice Villa-Real, as master of ceremonies, ushered in the event with a prayer invocation, followed by the singing of the National Anthem. She then introduced RTU Vice President Dr. Jesus Rodrigo Torres to give the opening remarks, in place of RTU President Dr. Jose Macaballug, who was out with a bad cold.



Pauline Pearl Divinagracia, an astronomy student at RTU, gave an account of her experience as one of the Philippine delegates who attended the opening ceremony of the International Year of Astronomy in Paris.

The first speaker of the convention was no other than RTU Astronomy Technology student, Pauline Pearl Divinagracia, who gave an interesting talk entitled "IYA2009". She gave a beautiful account of her experience as one of the delegates chosen by IYA Philippines – National Organizing Committee to attend the opening ceremony of the International Year of Astronomy in Paris. She was accompanied by IYA Philippines Single Point of Contact (SPOC)

Dr. Cynthia Celebre. She also gave a lengthy discussion of the mission and vision of IYA2009 to the audience.

It was then Dr. Jesus Rodrigo Torres' turn to present a discussion entitled "Course Offerings In Astronomy In The Philippines". He explained the significance of studying astronomy, and assured students who are planning to take up the course that they will have a good chance of landing stable jobs. More details on the astronomy courses offered by RTU can be found at http://www.astroleaguephils.org/rtuastro.html.

Rizal Technological University Vice-President, Dr. Jesus Rodrigo Torres, gave an interesting discussion on "Course Offerings In Astronomy In The Philippines".

After the lecture given by Dr. Torres, Alice invited the students, enthusiasts and guests to visit the Astrophoto Gallery Exhibit at the adjacent room of the Plenary Hall where astronomical images taken by members of the ALP were being displayed. Also, at the exhibit room was Samahang Pisika ng Pilipinas (SPP) Physics Society of the Philippines President Dr. Jose Perico Esguerra who showed the convention participants his computer simulation on galaxy collision. Another highlight at the exhibit room is a looped photo slide show of the first 5 years of ALP which was played through a laptop screen. There was also a telescope exhibit at the ground floor of the Plenary Hall, showing numerous types of telescope designs and models for the participants to see. Telescopes on display were later used to view the night sky after the conclusion of the convention proper.

At around 2:00 p.m., Dr. Dante Ambrosio of UP Department of History gave an informative talk on "Ethnoastronomy in the Philippines." He talked on how ancient people integrated astronomy into their lives. He investigated various ethnic tribes in the Philippines and studied how they perceive astronomy as applied to their own culture.

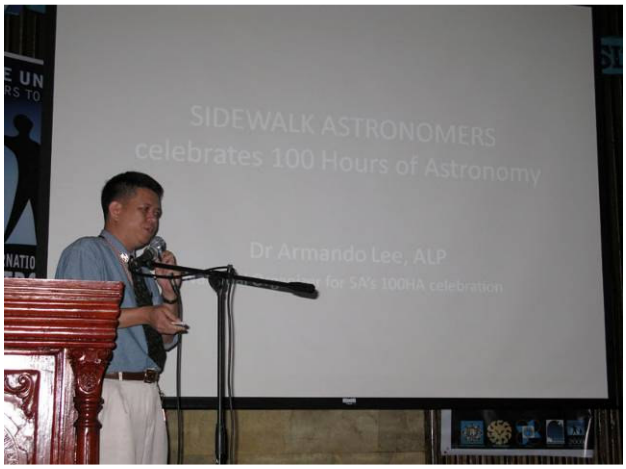
Dr. Dante Ambrosio gave an informative lecture on "Ethnoastronomy in the Philippines".

Then, IYA National Organizing Committee 100 Hours of Astronomy Overall Coordinator, Bamm Gabriana, gave a brief overview on how the 100 Hours of Astronomy project will be implemented in the Philippines on April 2-5, 2009, as well as around the world. It is expected that astronomers and astronomy enthusiasts worldwide will bring out their telescopes and share the views of the heavens to the public. This is one of the cornerstone projects of the International Year of Astronomy.

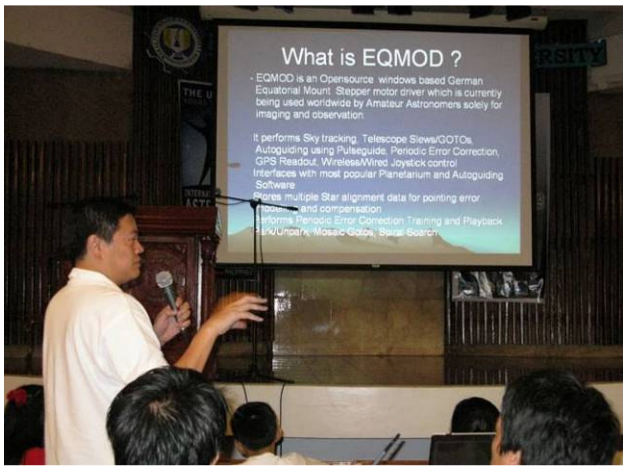
ALP National Astronomy Week 2009 (NAW 2009) Chairman, Dr. Armando Lee, who is also the Sidewalk Astronomers' 100 Hours of Astronomy – Philippines Coordinator, then gave a lecture on how the Sidewalk Astronomers will celebrate the IYA 2009 (100HA, Global Star Party, IYA). He further discussed how the Sidewalk Astronomers Philippines will hold its local version of the Global Star Party this coming April 2-5, 2009. The ALP will be celebrating the Global Star Party on April 4, 2009.

After Dr. Lee's discussion on Sidewalk Astronomers' participation in the IYA celebrations, Raymund Sarmiento, also a member of the league, proceeded with his scientific presentation on how he

designed the EQMOD software to improve the Chinese made EQ-6 and HEQ5 equatorial mounts, making their tracking capabilities more accurate. He explained in detail his innovation, as well as made a short demo using his software to drive a telescope.



Dr. Armando Lee, NAW and PAC Organizing Committee Chair, gave a presentation on how the Sidewalk Astronomers, as well as the ALP, will celebrate the 100 Hours of Astronomy event this coming April 2-5, 2009.



ALP member, Raymund Sarmiento, gave a discussion on how he was able to make a computer program called EQMOD which improved the Chinese made EQ-6 and HEQ5 equatorial mounts, turning them into great astrophotographic mounts.

Last, but certainly not the least, ALP member, Christopher Go, came all the way from Cebu to give the participants an interesting and enlightening discussion on how he discovered the changes in Jupiter's Oval BA, or more famously called Red Spot, Jr. Christopher made headlines around the world with his February 2006 discovery, as well as being part of the NASA Hubble Team and his involvement in various research studies to further understand the Jovian planet. He was conferred the Father Leo Boethin Astronomy Achievement Award by the Astronomical League of the Philippines in 2006 for his discovery of Red Spot, Jr. This award is given to individuals who have made important discoveries which led to the expansion of astronomical knowledge.

ALP member, Christopher Go, gave an interesting talk on the Jovian planet and how he was able to discover Red Spot, Jr.

ALP President, James Kevin Ty, concluded the event with the closing remarks, and thanked the speakers as well as those who made the 1st Philippine Astronomy Convention a huge success and a milestone in Philippine astronomy. He then invited the participants to a stargazing session with numerous telescope setups to let them have a live view of the night sky. Although the sky was cloudy that evening, the participants were still able to get a glimpse of the planet Venus through some of the telescopes aimed at the bright planet.

GENERAL ARTICLE

INTERNATIONAL YEAR OF ASTRONOMY 2009 OPENING CEREMONY - PHILIPPINES

James Kevin Ty
Astronomical League of the Philippines

Images by James Kevin Ty & Dr. Armando Lee

On February 16th, the local opening ceremony of the International Year of Astronomy was held at SM Mall of Asia Foyer 1 area. Around 200 or more participants from various schools, agencies and astronomical organizations attended the said event, with Ms. Venus Valdemoro as the emcee.

The program started with PAGASA's Sining Amihan leading the prayer invocation as well as singing of the National Anthem. This was followed by the opening remarks from Ms. Anni Garcia, president of Shopping Center Management Corporation, then followed by messages coming from Ms. Yolanda Berenguer, Space Education Programme Coordinator, UNESCO, as well as DOST Secretary Estrella Alabastro. The event's guest speaker, Senator Edgardo Angara, was not able to attend due to his hectic schedule, so RTU President Dr. Jose Macaballug led the closing remarks to end the opening ceremony.

IYA – NOC Chairman Dr. Prisco Nilo, DOST Sec. Estrella Alabastro, UNESCO Space Education Programme Coordinator Yolanda Berenguer & Dr. Jose Macaballug led the ribbon cutting ceremony to formally open the IYA 2009 activities.

The ribbon cutting ceremony was led by PAGASA Director / IYA NOC Chairman Dr. Prisco Nilo and Ms. Yolanda Berenguer, together with Dr. Jose Macaballug, Sec. Estrella Alabastro, IYA Philippines SPOC Dr. Cynthia Celebre, Ms. Anni Garcia and Mr. Yoshikatsu Chikira of Sun East Asia Corporation, to open the IYA Photo Exhibit outside the Science Discovery Center (SDC). Lunch buffet was served to the guests before the IYA-NOC held a press conference at the lecture room of SDC.

Members of the IYA National Organizing Committee and ALP members Dr. Armando Lee and Christopher Go during the press conference.

After the press conference, the two scheduled lectures for the event were presented by ALP member Christopher Go and ALP NAW and PAC Organizing Committee Chairman, Dr. Armando Lee. Christopher gave an interesting discussion on "Jupiter and Red Spot, Jr." while Dr. Armando Lee ended the event with a similarly interesting lecture on the "New Solar System and Search for Habitable Worlds". The event ended around 3:00 p.m. Both Christopher and Armand were given certificates of

appreciation by Dr. Cynthia Celebre, Chief of PAGASA Space Sciences and Astronomy Section (SSAS).

ALP member, Christopher Go, received a certificate of appreciation from Dr. Cynthia Celebre for his talk on Jupiter and Red Spot, Jr.

ALP member, Dr. Armando Lee, received a certificate of appreciation from Dr. Cynthia Celebre for his talk on New Solar System and Search for Other Habitable Worlds.

GENERAL ARTICLE

BEYOND CASUAL OBSERVING

Raymund John Ang
Astronomical League of the Philippines

This article was inspired by the presentation of Mike Simonsen entitled "*Life After Messier*" during the 94th Annual Meeting of the American Association of Variable Star Observers in Newton, Massachusetts.

Most amateur astronomers, enthusiasts, or even professional research astronomers, started out by looking at the sky and wondering how the universe works. Asking questions like… Where and how did it all begin? Is there life on other worlds? Or, is the Big Bang just a theory or a proven fact?

After gazing at the night sky for a period of time, memorizing the names of the brightest stars and recognizing the prominent constellations using nothing but his unaided eyes, a stargazer becomes more intrigued about what he is seeing. He wants to see fainter objects, those that he cannot see with his eyes alone. Then he asks himself… Which one should I get - a pair of binoculars, or maybe a telescope? In most cases, the telescope wins, not knowing the potential these little binos have to this hobby.

Unfortunately, without the guidance and assistance of more experienced and seasoned observers, these budding enthusiasts would most likely acquire instruments of lesser quality – a *department store telescope*, others would say. For some, this would be the dead end. They ended up losing their passion altogether, and abandoning the hobby just because they were not given the proper advice on what to look for.

But still, there are those who are really into the passion of stargazing and would seek members of astronomy clubs for information regarding the basics of astronomy, and advice on what instrument to buy – even joining them in out-of-town observing sessions. Now, they are well informed on matters regarding choosing the right kind of instrument suited for them. They try to find out what really interest them. Is it observing the moon and the sun? Is it monitoring the changes in Jupiter's atmosphere and observing the magnificent rings of Saturn? Or, does he like looking at the Messier objects and other deep sky wonders? This will now determine which equipment he will likely to purchase.

A PAGASA astronomer using a pair of binoculars to observe Comet Lulin during its February 2009 apparition. Binoculars have proven to be indispensible equipment in observational astronomy. Credit: Astronomical League of the Philippines files.

For observing or taking photographs of the moon, the sun and other planets, a refracting telescope would be most ideal. If one gets fascinated in hunting for deep sky objects, then a medium to large aperture

reflector would best suit him. Those who want a grab-and-go scope might decide to get themselves short tube refractors or a pair of giant binoculars instead.

The stargazer is now ready to journey into the cosmos with his new-found friend, the telescope (or in some cases, the binoculars). He starts to observe the brightest of all the stars. He points his telescope to the other planets in the Solar System. He examines star clusters and takes time looking at different nebulae and galaxies to his amazement. He is now really hooked into the hobby.

And like a very contagious virus, aperture fever gets a hold of him. Seeing almost the same objects from night to night gets monotonous. He is no longer amazed at viewing the same objects after he sets up his equipment. Well, maybe still fascinated a bit. But he wants to see fainter objects – those he cannot see with his naked eyes; those he can't observe using his present instrument. He wants a telescope with a much larger aperture. A 16-incher or even a 24-inch reflecting telescope on a Dobsonian mount – a light bucket?

Alas! With limited resources, the dedicated stargazer decides to save up enough to acquire a telescope with a wider aperture. Yet while waiting for his dream scope, he still enjoys watching the celestial sights using his trusty telescope… maybe not most of the time.

When he finally receives his monster scope – let's say a 16-inch Newtonian on Dobsonian mount – he immediately gets the scope out of the packing, do some collimation procedures if necessary, then starts observing with his new toy. And yes, the view does improve quite a lot! He can now more clearly see those galaxies, clusters and nebulae that have eluded him for years. The cloud belts on Jupiter and rings of Saturn are just awesome – his eye glued to the eyepiece! He can finally observe fainter and fainter objects.

But with his new equipment and a clearer view through the eyepiece of his light bucket, slowly, he loses the excitement again, just like he did when he had a telescope of lesser aperture. He has mastered navigating his way across the skies using faint stars to hop to other fainter objects. He has remembered how the different Messier and NGC objects look thru his telescope. And most of the time, his equipment just sits inside the closet and never gets used.

What's next for this stargazer who used to be full of joy and passion for astronomy, and is now not enjoying the way he used to? I think this is a very important question every astronomer should ask himself, whether he is an amateur or a professional in the field. He must know what his purpose is to the field and the purpose of astronomy to him as an individual. Otherwise, his interest in astronomy may gradually decline and, eventually, lost.

Most astronomy enthusiasts lose the excitement because they no longer see any purpose of astronomy or stargazing in their lives. They were once captivated by the heavens and became fascinated with its wonders, but now, they no longer seek the cosmos to have personal satisfaction. Even with all the gadgets they have invested, they can't seem to revitalize their interest in the field. This is primarily because they no longer see purpose.

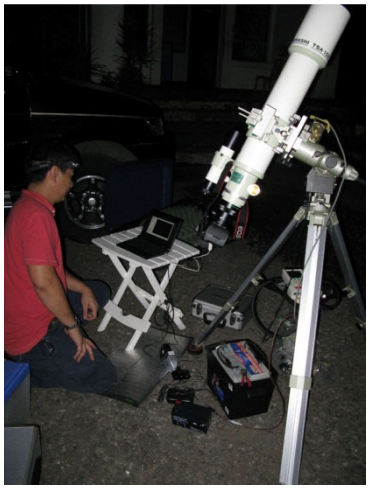
Graduate students studying Astrophysics at Princeton University. Astronomy students have found their purpose in the field and decided to pursue formal education. Note: Reinabelle Reyes (Center row, third from right), a Filipino

astrophysicist, who was given an award by the AAS for her research studies in black holes. Credit: Princeton University, Department of Astrophysical Sciences.

Fortunately, many have remained dedicated to astronomy and stargazing. Even though they still have the same equipment for many years (and fought aperture fever), they still find joy and satisfaction in doing what they do. They have found their purpose in the field and have recognized the purpose of astronomy to them. Gazing at the stellar sights, for some, is like an outlet to release pressure at work or at home. Others find passion by engaging in systematic observations and imaging of selected objects. They keep on improving their setup, investing time and money, to get better results. A few have even dedicated themselves in contributing to astronomy education and research, either as an amateur or professional.

Stardust Observatory, a private observatory in Baguio City, Philippines, owned and operated by John Nassr. For decades, John has been continually improving his equipment to get the most of astrophotography. Credit: John Nassr.

Some members of astronomical organizations have specialized in digital imaging of celestial objects. Using small to medium-sized telescopes and commercially available CCDs or DSLRs, they are producing stunning photographs of the heavens, taking a snapshot of just a parcel of what the universe has to offer. Others who find joy in observing thru the eyepiece of a telescope have become avid observational astronomers, observing objects thru their telescopes every chance they get. Even if the sky seems clouded out or a hint of rain shower, they still set up their equipment and hope for a clearer sky or just a window of opportunity to observe their target of interest.



Members of astronomy groups have been engaging in serious astrophotography. Shown here is Dr. Jett Aguilar of the Astronomical League of the Philippines with his astrophotography setup. Credit: Astronomical League of the Philippines files.

Still, a number of experienced amateurs have gone into serious research and getting involved in developing and enhancing astronomy education. This era is a milestone in astronomy where a strong bond exists between amateurs and research scientists. Amateurs have the luxury of resources and time that professionals don't have. Research astronomers have to apply for telescope time in major observatories in order to complete an observing run for their particular research studies. Enthusiasts, on the other hand, have the freedom and flexibility to equip themselves with the latest telescopes and CCD imagers, and engage in observing or imaging sessions almost on a nightly basis – at least, for those who are really addicted to astronomy.

It is not only in observational astronomy or scientific research where a dedicated observer or imager can participate. The development of formal

education in astronomy, particularly in less developed countries, can hugely benefit from the assistance of amateurs. They have the much needed resources – telescopes, binoculars and imagers – vital in introducing students to the scientific side of astronomy. Not all institutions offering astronomy courses or degrees have the most sophisticated or advanced astronomy equipment. Well-equipped amateurs who are willing to help out in improving the state of astronomy education can do so by providing their time in staging stargazing events for the students, or even providing telescope time in their private observatories.

Astronomy students of Rizal Technological University had a memorable stargazing activity with members of the Astronomical League of the Philippines. It is hands-on experience like this that will enhance students' knowledge on the basics of the field. Credit: Astronomical League of the Philippines files.

There is much an astronomer can do beyond casual observing. He may pursue systematic observations and imaging, and record what he sees in an observing log or digitally archive his images. He may decide to pursue serious research in astronomy and go into variable star observation or sunspot monitoring. He may even participate in formal educational programs offered by academic institutions if he wants to contribute in the field of education. It's just a matter of knowing his purpose in astronomy and what the purpose of astronomy is to him.

GENERAL ARTICLE

THE ULTIMATE PRIVATE OBSERVATORY

Joseph Aymond
Washington Parish, Southeast Louisiana

An amateur astronomer from Washington Parish, Southeast Louisiana, USA has designed and built an amazing observatory (see Fig. 1). It is not only an astronomical observatory, but a home theater, and tornado shelter designed to take a direct hit from an F5 tornado. The facility is fully equipped and automated, with a hydraulically driven roof that weighs 20,571 lbs. (9,329 kg.), which lifts up, then rolls away to the end of the tracks. This leaves the user sitting inside of four 14-foot high walls open to the night sky. It has two premium quality telescopes for viewing deep space and objects inside the solar system (Fig. 2). The chair that the observer sits on is also hydraulically driven.

Figure 1. The Ultimate Private Observatory owned by Joseph Aymond. Southeast Louisiana.

This observatory was designed so that the user would exert little physical effort, from beginning to the end of an observing session – only climbing into the hydraulic chair, then pushing a few switches. The observatory also has a big screen TV on the top corner, for viewing deep space through the camera, which is installed on either of the two telescopes. The facility is climate controlled to protect instrumentations from humidity, which could cause deterioration on the telescopes and electrical equipment. The facility is equipped with a premium quality 7.1 surround sound system.

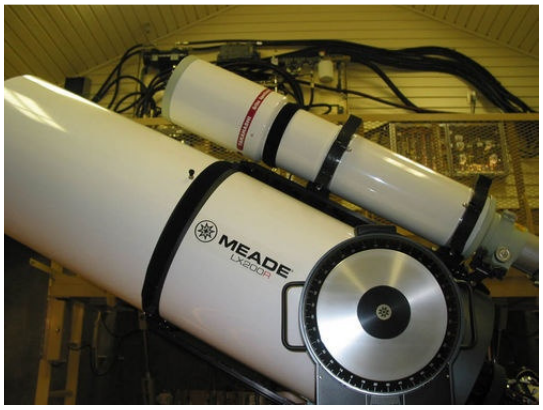


Figure 2. The two primary telescopes of the observatory – a Takahashi TOA 150 piggybacked on the Meade 16" Ritchey-Chretien telescope.

The construction of the Ultimate Private Observatory was completed in February 2007 (Fig. 3). The observatory has its own website, and was completed January 2009. It can be accessed at www.ultimateprivateobservatory.com. During the initial three weeks, the website registered 390,000 hits from visitors. There are several hundred photos of the construction along with details. In the near future, there will be a 1 hour documentary video available explaining every aspect of the construction – covering handmade parts & their function , electrical systems, hydraulic systems, pneumatic systems, mechanical systems, & the structure. A large fraction of the parts needed to build this facility was handmade by the owner himself.

GALLERY

IMAGE	BY	REMARKS
	Dr. Armando Lee	*Partial Solar Eclipse* - January 26, 2009 - Taken with William Optics Zenithstar 80ED II refractor and Canon 50D DSLR. Image also posted at Astronomy Picture of the Day & Spaceweather.com.
	Brian Davis	*Penumbral Lunar Eclipse* - February 09, 2009 - Image taken using Canon 30D DSLR and 127ED refractor at ISO 400.
	Astronomical League of the Philippines	Members of the Astronomical League of the Philippines and some of the participants had a group photo taken after conclusion of the 1st Philippine Astronomy Convention.

REVIEWS

BOOK REVIEW

Astronomy: The Definitive Guide

Fog City Press; San Francisco, USA

Reuel Norman Marigza, Jr.
Silliman University

Astronomy: The Definitive Guide is an excellent handbook on astronomy, filled with high-quality colored illustrations and easy to digest learning. It is for readers of all ages, and no high level math skills are necessary. It is effective as a reference material and as a field guide.

The book is divided into two main parts. The first part is a discussion on astronomy concepts that are brought up-to-date. It involves important subject matters in astronomy that are related in simple language that is easy to understand. It traces back the history of astronomy, its development, its marriage to physics, and man's exploration into space. It discusses the planets, galaxies, cosmos, and our place in the universe.

The second part is a guide to observing heavenly bodies. It includes tips, maps and illustrations for observing the celestial objects. Part of the observations suggested in the guide are: observing the planets and other neighboring bodies, observing the moon and the sun, observing stars, observing nebulas, and observing galaxies. It also contains monthly star charts and sky tours of the northern and southern hemisphere. Pictures of the sky targets also entice the reader to search and scurry the night sky for these beautiful treasures.

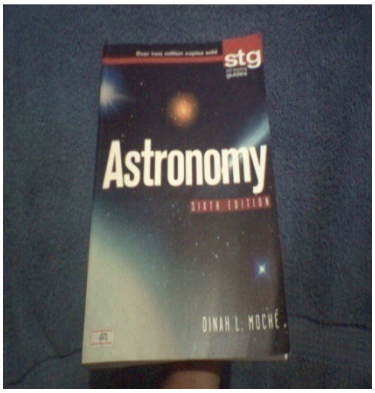
Astronomy: The Definitive Guide is written by three prominent science writers who specialize in astronomy. Their experience in writing astronomy-related articles has contributed to the quality of the guide. The book captures the beauty of astronomy without boring the readers who have no particular interest in astronomy. Personally, I really approve of this book. It is like a textbook-encyclopedia with the appeal of a magazine.

The only thing I can argue about the book is the price, but the quality of the content and the printing makes it worth it.

Availability: Cagnaan Book Store

BOOK REVIEW

Astronomy: A Self-Teaching Guide



© 2004 Dinah L. Moche, Ph. D.
6th edition

John Wiley & Sons Inc; New Jersey

Reuel Norman Marigza, Jr.
Silliman University

Astronomy: A Self-Teaching Guide is a textbook in astronomy aimed at those who would like to become professional astronomers. It contains detailed discussions of astronomy concepts, supplemented with illustrations, photos and charts. It comes with hands-on tips and removable star charts (by season) and moon maps for observing the night sky.

The chapters are presented in short, numbered sections and usually contain questions as you move along topics. Also, each chapter comes with a self-test where the reader can asses his/her understanding of the subject matters. However, the answers to the questions are provided right after the questions, unlike most textbooks which put the answers in the appendices, making it unavoidable for the reader to glimpse at the answers before thinking.

The sixth edition of Moche's book is up-to-date with the latest in astronomy. It contains accurate astronomical data on stars and constellations. The topics are incorporated with web site addresses for the reader to expand his/her knowledge and see high-resolution images of the celestial targets. This edition incorporates new discoveries and suggestions made prior to the first editions. Among the new developments is the twenty-first-century research into black holes, active galaxies and quasars, searches for life in space, origin and structure of our universe, and the latest in ground and space telescopes.

The book is convenient for those who are starting in professional astronomy since it provides enough background information without going deep into the mathematical aspect of the discipline. Since it does not require a higher level of mathematics, it can be used and understood by even those in the high-school level.

Availability: Cagnaan Book Store

SOLAR BULLETIN

Solar Bulletin for the months of January and February 2009

Prepared by
Raymund John Ang
Chair, Commission on Sunspot Activity

About the Program

The Philippine Sunspot Number Program was initiated by the Astronomical League of the Philippines as one of its projects for the International Year of Astronomy 2009. Its aim is to consolidate solar observations from Philippine and foreign-based astronomers and produce the daily and monthly Philippine Sunspot Numbers.

Using relatively small telescopes in the 50 – 80mm range, dedicated solar observers monitor sunspot activity and report their monthly results to the commission.

The Commission on Sunspot Activity

Scientific bodies – divisions, commissions, and working groups – were created within the Astronomical League of the Philippines to foster growth and development in the different fields of astronomy in the country.

One of the commissions established is the *Commission on Sunspot Activity*, under Division – Sun & Heliosphere. Its primary task is to recruit and train potential observers who can contribute to the sunspot monitoring program. The commission also collects sunspot data from solar observers and publishes the results in the Solar Bulletin section of the Philippine Journal of Astronomy.

Calling on Solar Observers!

The Commission on Sunspot Activity is looking for dedicated solar observers who can monitor sunspot activity on a daily basis and participate in the Philippine Sunspot Number Program. You do not need to have expensive equipment to be part of the program.

If you have a telescope with an aperture of at least 50 to 80mm, you can do serious science by monitoring solar spots either by direct viewing with the aid of solar filters or projection of the sun's images onto a piece of white cardboard. You can also participate if you have a setup with a larger aperture. But be reminded to place an aperture stop and appropriate filter in front of the objective lens.

If you are interested to join the program, please contact the chair of the commission at rj_y_ang@yahoo.com

JANUARY
2009

DAY	No. of Observations	R_p
1	-	
2	-	
3	-	
4	-	
5	-	
6	-	
7	-	
8	-	
9	-	
10	-	
11	-	
12	-	
13	-	
14	-	
15	-	
16	-	
17	-	
18	-	
19	-	
20	-	
21	-	
22	-	
23	-	
24	-	
25	-	
26	-	
27	-	
28	1	0
29	1	0
30	1	0
31	1	0

R_p – Philippine Sunspot Number

STATISTICS

Observers	No. of Observations
Raymund John Ang	4

Total No. of Observations:	4
Monthly Average:	**0**
Standard Deviation:	0
Minimum:	0
Maximum:	0
Coverage:	4/31 (12.90%)

SUMMARY

January of 2009 marks not only the beginning of the IYA celebration worldwide, but also, the Philippine Sunspot Number Program. This program was initiated by the society to consolidate sunspot data and train dedicated solar observers to be part of the project.

For this month, only 4 observations were made by 1 observer. No sunspot activity was detected during the observing run.

FEBRUARY
2009

DAY	No. of Observations	R_p
1	-	
2	-	
3	-	
4	-	
5	1	0
6	-	
7	-	
8	1	0
9	1	0
10	-	
11	-	
12	1	11
13	-	
14	-	
15	-	
16	1	0
17	1	0
18	1	0
19	1	0
20	1	0
21	1	0
22	1	0
23	1	0
24	-	
25	-	
26	-	
27	1	0
28	-	

R_p – Philippine Sunspot Number

STATISTICS

Observers	No. of Observations
Raymund John Ang	13

Total No. of Observations:	13
Monthly Average:	**0.85**
Standard Deviation:	3.05
Minimum:	0
Maximum:	11
Coverage:	13/28 (46.43%)

SUMMARY

A total of 13 observations were made by 1 observer with a monthly coverage of 46% (13/28), a little less than four times the previous month. Sunspot activity was quite low during the month of February. On the 12th, only a single group (and single spot) was observed, after which no activity was again reported.

Sky condition was good from the 16th to the 23rd so a continuous stream of data was gathered.

CLASSIFIEDS

FOR SALE: Used telescope

LARGE ASTRONOMICAL TELESCOPES
and accessories

12.5 inch *f*/5 Newtonian Reflector on Dobsonian mount

Eyepieces: Plõssl 40mm wide view
Orthoscopic 12.5mm
Orthoscopic 6mm high magnification

Millennium Star Atlas 2000 3 volumes

Celestron Skyscout portable planetarium

Laser Quick Find finderscope

Padded Carry Bag

Pick-up Only from Calape, Bohol

Offers around P98,000 will be considered

Text to 09203641158 or email emu@2die4.com

Please contact: Bill Temby

WANTED: Used telescope

ORION SHORT TUBE 80mm REFRACTOR

Looking for a new or slightly used Orion Short Tube 80mm refractor in good condition; complete with finderscope and camera tripod adapter (Terrestrial package).

Please contact: Raymund John Ang

Email address: rj_y_ang@yahoo.com

Cell phone No: 0921-2868473

Philippine Journal of Astronomy

Published by the Astronomical League of the Philippines