

Philippine Journal of Astronomy

The journal of the Astronomical League of the Philippines

Demystifying the Bakunawa myth

In this issue:

- Eclipse: The story behind the Bakunawa myth
- ALP Goes Global: Xiamen Annular Solar Eclipse
- ALP Luneta Partial Solar Eclipse
- Partial Lunar Eclipse at AstroCamp SM MOA



Philippine Journal of Astronomy

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Philippine Journal of Astronomy

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Table of Contents



By James Kevin Ty

Annular Solar Eclipse:
**Xiamen Annular Solar
Eclipse Full Report**

1-5



By James Kevin Ty

Stargazing Session:
**Caliraya Stargazing
Report**

9-11



By Gary Andreassen

Annular Solar Eclipse:
**Luneta Partial Solar
Eclipse Report**

6



By John Ray Cabrera

Featured Article:
**Eclipse: The story
behind the Bakunawa
Myth**

12-13



By Dr. Armando Lee

Partial Solar Eclipse:
**C6 Partial Solar
Eclipse Report**

7



By John Ray Cabrera

**Do's and don't's
during solar eclipse**

14



By James Kevin Ty

**Partial Eclipse
Report**

8



By John Ray Cabrera

**Gazers and Go-Getters
Eclipse Chasers**

15-16

**Movie Review: 20th Century Fox's
"Prometheus"**

By John Ray Cabrera

17-18

**Book Review: A Universe From Nothing
(Lawrence Krauss)**

By John Ray Cabrera

19

Xiamen Annular Solar Eclipse Full Report

By James Kevin Ty



Day 1 (May 19) - Arrival in Xiamen

Last May 19, ALPers headed by ALP President James Kevin Ty went to Xiamen, China to observe and document the May 21, 2012 annular solar eclipse. Joining the Xiamen eclipse team were ALP VP Jett Aguilar and Mark Vornhusen.

They departed Manila to Xiamen at around 9:05am after a short 20 minutes delay and arrived in Xiamen at around 10:50am. Afterwards, they proceeded to Xiamen Hwa Quiao Hotel which is about 20 minutes away from the airport. Since it was raining and super cloudy that afternoon, they decided to cancel their site inspection as well make a dry run for their equipment.

They then opted to just take some rest a bit before proceeding to SM Xiamen to buy some needed items as well as have a heavy dinner at a Korean restaurant at the Mall. They then look around at the mall and got to visit some photo shops and got to see Canon banners promoting the May 21, 2012 annular solar eclipse :) They were also able to test out 2 generic 70mm and 80mm binoculars as well.

They then went back to the hotel and Mark continued to test around his webcam for use with the Coronado PST he brought to view the eclipse.

Day 2 (May 20) - Inspection of Observing Site and Xiamen Science and Technology Center

ALPers all wake up a little late this morning due to tiredness. At around 8:00am, they went to have their breakfast at the hotel and meet up with their hired driver, Xiao Yeh, who was hired to give the ALP eclipse team easier access around the city to inspect the observing site near the eastern coastline.

They then went to the the Xiamen Business Center area where there is a clear out horizon facing the sea. But unfortunately, as they inspect the site, they got to find out that the 72 degree azimuth is blocked by some building infrastructure! With the Sun rising northerly starting this month, James was not surprised that the lady yesterday at the mall suggested to this area. He figured she might have visited this area maybe between September to April wherein the Sunrise is a bit southerly so is indeed rising in the sea instead on the infrastructure.

So they proceeded to another area at the back of the infrastructure and come across another beach park which has no obstruction on the 72 degree azimuth. They check their GPS and compass to double check where is the best area for them to setup tomorrow morning. With the Sun nowhere to be seen that morning, they also use another Iphone software Sun Seeker to double check where the Sun will rise next day. Indeed a very nice application to check where the Sun is located anytime of the day :)

Afterwards, they went to the city to buy barbell weights for Jett's use on his Takahashi SpaceBoy. They also buy some more necessary things at the local supermarket to complete the needed things for their use tomorrow. They then

proceeded to another coastal area where they had their late lunch which include seafoods which is Xiamen's popular dishes. This is similar to our local seafood market style wherein one get to select what type of seafoods he or she wanted to eat and then let the chef cook it to the style you wanted. They ordered some seashells for their soup, then shrimps and a large fish which was very delicious and fresh! Yummy!



After lunch, they then get some rest as well as stroll the coastal area for a while. Jett and James then got to discover that Mark is an avid sea shell collector and he had a great time collecting many seashells on the sand.

Lastly, they visited one of the few Xiamen's science oriented museum or center in Xiamen Science and Technological Center, It was like our local Science Centrum or Mind Museum but very much high tech in its facilities. It was a nice place for then unwind a little and enjoy some science oriented projects that one can explore in the center. Some of the nice features in the center is an earthquake simulator room, electricity room, solar system orrery, etc. As they finish touring the center, they were happy to see the Sun shining through the clouds and they were able to get some short test of their cameras and videos before the Sun completely gets covered again by the clouds. But with the local weather prediction as well as our team assessment of the weather satellite images with the help of Mark, we were confident that tomorrow will have a good chance for the annular solar eclipse.

They then went back to the hotel to get some needed rest for tomorrow big event. Jett used that evening's time to do a dry run of his setup equipment in his room while Mark continue to finish his modified webcam for use on his Coronado PST as well as make his solar filter for his 1000mm f/10 mirror lens, small

National Geographic 60mm refractor. James, on the other hand, opted to just relax and surf the internet to further check on the weather satellite map as well as make the 2 days summary report prior to E-Day.



ALPer Jett standing in front of the large solar system gallery.



ALPer Jett walking through the time machine hallway :)

All photographs featured in the article are owned by the Astronomical League of the Philippines.

Day 3 (May 21) - E-Day , Gulangyu Short Tour & Return to Manila

ALPers all wake up early at around 2:30am and started to make final inspection of their eclipse equipment before they go down to the lobby at around 3:30am to meet with their driver. They left the hotel at around 3:45am en route to their observing site. After a 20 minute ride, they arrived at their observing site and started to setup their equipment. James brought along a very portable setup with a Canon EOS 500D DSLR with Canon EF 100-400mm f/4.5-5.6 IS L lens with Canon EF 1.4x converter set at 560mm (35mm equivalent of 900mm) mounted on his portable Kenko Sky Memo-R tracker. He also brought along a small Canon Powershot 650 IS digicam for him to document activity shots as well as a Sony old model TRV-120 camcorder for him to video the eclipse ; Jett brought along his Canon EOS 7D DSLR on Borg 77ED II refractor as well as video camera and Canon EOS 50D DSLR on Canon EF 100-400mm f/4.5-5.6 IS L lens set on sturdy tripod. Mark, on the other hand, brought along his Nikon D5000 DSLR on Russian 1000mm f/10 Maksutov mirror lens as well as Coronado PST-Ha and a National Geographic 60mm refractor. BTW, China standard time is same as Philippine Standard Time so need to deduct 8 hours to get GMT time just in case.

The team's observing site is situated near the coastal beach facing the small Kinmen island which is facing east horizon. It was a clear sky as predicted by the local weather news and indeed it was a clear day for all eclipse viewers in Xiamen! At around 5:23am local time , They got to see the first small horn of the eclipsed Sun and started to click away. Although the sky is clear, James could sense that there is slight thin haze hovering near the Sun as his exposures were not consistent and he had to constantly change exposure almost every shot thus he had to bracket his exposures to lessen the burden. With that on hand, I had to quit doing the video because I might jeopardize my still imaging session :(With that in hand, James opted to let go of his video camera to concentrate on the still images which is his priority.

But nearing 2nd contact, a small patch of black cloud started to cover the Sun unexpectedly and all viewers

there at the site were going crazy and all are yelling and hauling for it to go away :) But from the looks of the small clouds which covers the Sun 10 minutes before 2nd contact, James estimated and tell his fellow members that this small pesky cloud will exit the Sun before 2nd contact arrives and true to the prediction, the Sun came out of the small cloud like a "second contact" diamond ring and everyone was celebrating as the Sun continuous to come out part by part. What surprises James was the visibility of of inner corona , chromosphere , prominence and Bailey's Beads just before 2nd contact! The faint glow of the inner corona illuminated the Moon's dark limb a bit! It was AWESOME, BEAUTIFUL and DRAMATIC!!! As like what fellow member Mark Vornhusen , also an avid eclipse chaser, said " It's an annular solar eclipse that we came here to observe but we were treated with a "semi total solar eclipse" effect :) LOL



A few more seconds passed and they got to see the "Ring of Fire" for about 4 minutes or so before all things comes to an end 3rd contact started. They also got to see some Bailey's Beads during the 3rd contact. As the time moves forth, the Sun started to undergo partial phases till it exits the Sun more or less around 7:21am. It was a very good, dramatic annular solar eclipse and it was worth the trip going to see this eclipse!!! After getting their customary ALP group shot, they packed up their stuffs and head back to the hotel to have a quick breakfast before going back to the hotel room to process the eclipse images.

At around 11:30pm, Xiao Yeah meet them at the lobby to take them to get a 10 minute ferry boat ride to the island of Gulangyu where they had a short tour of the old houses there and lastly check out the Underwater World in Gulangyu. They check out the various aquatic fishes both plain and salt water fishes of the facility. They also got to see a short sea lion show before they head back via ferry boat back to Xiamen City and get their luggages at the hotel en route to the airport.



At the airport, their original flight time of 8:20pm was delayed by more than 50 minutes before they got to depart Xiamen to Manila at around 9:10pm and arrived in Manila at around 11:00pm.

Overall, they went back home in the evening with a happy heart and looking forward to observing the total solar eclipse in Borneo in 2016!!! More time to prepare again :)



All photographs featured in the article are owned by the Astronomical League of the Philippines.



Partial eclipse visible through a glass solar filter.



Xiamen University Astronomical Group members were there as well to witness the annular solar eclipse



ALPer James is busy imaging the various stages of the annular solar eclipse.



Seconds Before 2nd Contact with Chromosphere and Prominences - 12/05/21 06:08:05 (12/05/20 22:08:05 UT) Image taken by James Kevin Ty in Xiamen , China using Canon EOS 500D DSLR with Canon EF 100-400mm f/4.5-5.6 IS L lens with Canon EF 1.4x converter set at 560mm f/8 (35mm equivalent of 900mm f/8) . No Filter. 1/2000 sec exposure at ISO 100.

By James Kevin Ty



Annular Solar Eclipse, May 21, 2012, 06:15:17 AM, Xiamen, China
By Jett Aguilar, Astronomical League of the Philippines

By Dr Jett Aguilar



By Mark Vornhusen

More images from ALP members at the last page.

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Luneta Partial Solar Eclipse Report

By Gary Andreassen



To document the 2012 Partial Annular Solar Eclipse, ALPers

Andrew Ian Chan, Berenice Viola Chan, Jan Karlo Hernandez and dad Junn; and Gary and Steinar Andreassen all met up at the Manila Planetarium with Curator Bel Pabunan (and staff) at 5:00am on May 21, 2012 (Monday). Loading up their astro equipment, they then headed for and setup their gear at the back of the Jose Rizal Monument at the Rizal Park (Luneta).

Solar filters attached and DSLRs mounted, when the sun rose at 5:27am, ALPers were ready and clicking away at their shutters. Sadly, the eastern horizon was blocked with a 10 degree obstruction so ALPers couldn't take a crescent sun rising shot. There was also bit of a haze and cloud cover. None of these however hindered ALPers from documenting the event. If anything, the clouds actually allowed the taking of shots *without* solar filters and made for some spectacular shots. Also, the obstruction made for grand perspective shots.

All in all, it was good day for astrophotography enthusiasts," says ALPer Andrew Ian Chan with his SkyWatcher 80ED Refractor on a Vixen GP mount. Associated Press Video Journalist Joael "Bogie" Calupitan was there to cover the event and interview ALPers. ALP got local (in print) and international

coverage (on video) the following day as Bogie quoted ALPer Gary Andreassen as saying: "It's amazing! We do this for the awe and it (the annular eclipse) has not disappointed. I am awed, literally floored." The video interview can be viewed at this link

<http://www.usatoday.com/tech/science/space/story/2012-05-20/solar-eclipse/55099766/1>.

After some final shots documenting sunspots AR 1482 and AR 1484, the Luneta Team dispersed at around 8am.



Sunrise Partial Solar Eclipse



Resounding success!!!

C6 Partial Solar Eclipse Report

By Dr Armando Lee



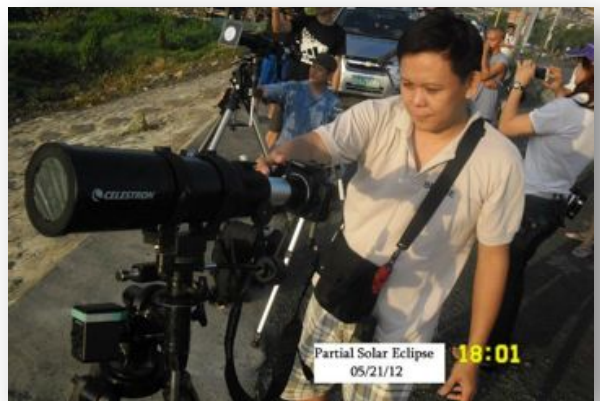
Last May 21, the ALP C6 Road Partial Solar Eclipse Team started from Malibay, Pasay and drove down to the Lower Bicutan at around 4:45am and got to their site along C6 Road at 5:10am. It was partly cloudy and the Sierra Mountain range where the Sun and Moon is expected to rise from has clouds over it.

With the team were: Dr Armando Lee with his wife ALPer Myra Lee, ALPers Christopher Lee, Sheldom Espartero and Kevin Dagunan. Their set up included the following: a Personal Solar Telescope + GE digicam @ afocal set up, an 80mm f/5 achromatic refractor + EOS 350d @ prime focus, an 80mm f/7.5 ED refractor + EOS 1100D @ prime focus, iphone + 8x telephoto lens for twitcasting, 3 solar binoculars, and a welder's mask with grade 14 filter. The group missed the crescent sunrise over the Sierra Madre mountains and saw it 3 mins after sunset. The maximum partiality was imaged successfully and from them on, the sky participated well and gave the group chance to image the rest of the partial phases. Around 50 people from the site were able to view through the group's solar binoculars and welder's mask. The planned twitcasting did not push through because of poor mobile phone signal at the site. The group documented the eclipse as planned except for the twitcasting and also shared the views through the solar binoculars and welder's mask. Photos were twitted through twitter account: [astrocamp_ph](#) later on that morning when they

finally left the site and got a better signal for Dr Lee's iPhone.



ALP C6 PSE Team waiting for the Sun to rise.



ALPer Christopher Lee all set for the eclipse :)



Partial Solar Eclipse image in Ha wavelength by Dr Armando and Mrs Myra Lee.

Partial Eclipse Report

By James Kevin Ty

Last June 4, members of the Astronomical League of the Philippines made separate personal observations of the June 4, 2012 Partial Lunar Eclipse. The eclipse started early late in the afternoon with penumbral starting at around 4:47pm while umbra started at 5:59pm. Unfortunately, it was not visible till moonrise at around 6:17pm. All times are in Philippine Standard Time (PST) which is +8 hours from Universal Time.

Unfortunately, due to thick clouds and haze, majority of our members were only able to see the eclipse past moonrise time with earliest recorded view of the eclipse through clouds by ALP PRO Armando Lee at around 6:42pm near C5 road. Next earliest eclipse observation was made by ALP President James Kevin Ty from Binondo, Manila through thick haze and clouds at around 7:02pm which is almost near greatest eclipse of 38%. Afterwards, clouds started to thinned out little by little till it got clear for all to see the eclipse at its best :0

Umbra then ended more or less around 8:07pm while penumbra completely exits at 9:20pm. Most of ALPers in Luzon had a more favorable view of this eclipse compared to our members in Visayas and Mindanao which reported got clouded out or rained.



Composite Image of the June 4, 2012 Partial Lunar Eclipse by James Kevin Ty



Imaged by Dr Armando Lee

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Caliraya Stargazing Report

By James Kevin Ty



Last April 21, members of the Astronomical League of the Philippines (ALP) went to Caliraya, Laguna to make the final leg of the Philippine Messier Marathon Open as well as do astro observation and imaging under dark skies. Members who were present were ALP President James Kevin Ty, wife Charito and son Kendrick Cole KC Ty; VP Jett Aguilar, Secretary Christopher Louie Lu, wife Karren and daughter Frances; PRO Armando Lee with wife Mia and son Jason; director Peter Benedict Tubalinal, Ronald Sison with wife Adriel, children Adrian, Aleecia and Aldrin; Nathaniel Custodio with wife Tere and sons Cedric and Terrence; Miguel Enrique Cajita with his family; Mike Enage, Mark Vornhusen, Oliver de Guzman, Gary Andressen, wife Irma, son Steinnar, Joanna Escobar with her daughters and guest Irving Raymundo.

They started to converge at the observing site at around 5:00pm and started to setup their mounts. James brought along his portable Canon EF 100-400mm f/4.5-5.6 IS Lens with Canon EOS 500D mounted on top of Kenko Sky Memo-R tracker; Jett with his Talahashi TSA-102 refractor with ATIK-16HR CCD camera mounted on Vixen GP-DX mount; Christopher Louie with his Celestron Powerseeker 80 refractor on EQ-1 mount; Ronald with his Celestron C90 Mak on EQ-1 mount; Gary with his Celestron C6N reflector on Orion SVD EQ-5 mount; Nathaniel with his William optics Megrez ED 90mm and 80mm

refractors with Canon EOS 400D and 350D mounted on Vixen GP-DX mount; Oliver with his Meade ETX80 refractor on EQ-2 mount. Mike with his Meade ETX125 Mak, Mark with his Coronado PST-Ha solar scope.

The sky was practically clear in the evening and all were very busy doing polar alignment of their scopes, casually viewing the deep sky objects while others concentrated on finishing their Messier Marathon goals and imaging deep sky objects. But unfortunately after midnight, sky got clouded out for around 2 hours before it opened up again to show the beautiful Milky Way stretching from Scorpius to Cygnus area through thin haze. Lyrids was also active that evening and Peter reported to have seen around only 25 Lyrids and about 14 sporadic meteor shower. A low Lyrid output from an observation time from evening till morning :(2 additional participants of Messier Marathon namely Miguel Enrique Cajita and Steinnar Andreassen join the event and got 25 and 36 respectively. So the final tally for this year's Philippine Messier Marathon 2012 Open are as follows:

Peter Benedict Tubalinal	- 92
Mark Ian Singson	- 62
Sheldon Espartero	- 46
Christian Alagon (UP Astro)	- 38
Miguel Enrique Cajita	- 37
Steinnar Andreassen	- 36
Ann Margarett Tayco (UP Astro)	- 35
Regyn Avena (UP Astro)	- 35
Ma. Criselda Roque (UP Astro)	- 35
Gary Andreassen	- 20
Carlo Ray Selabao (UP Astro)	- 17
Beb Jansen Poricallan (UP Astro)	- 17
Angelie Alagao (UP Astro)	- 16
Jerome Sabidong (UP Astro)	- 15
Jan Karlo Hernandez	- 14
Arnel Campos	- 6

Before they packed up their stuffs, they had their traditional group shot taken and later proceed to Jollibee Pagsanjan to have their breakfast first before going home.



ALPers had a good breakfast after a night of astro observation and imaging.



ALPers chat on astro subjects while waiting for the sky to darken after sunset/



ALPer Nathaniel Custodio & son beside their William Optics Megrez 90mm and 80mm ED refractors on Vixen GP-DX mount.



ALPer Miguel Enrique Cajita beside his Celestron Powerseeker 130 reflector on EQ-1 mount.

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ALPers group shot.



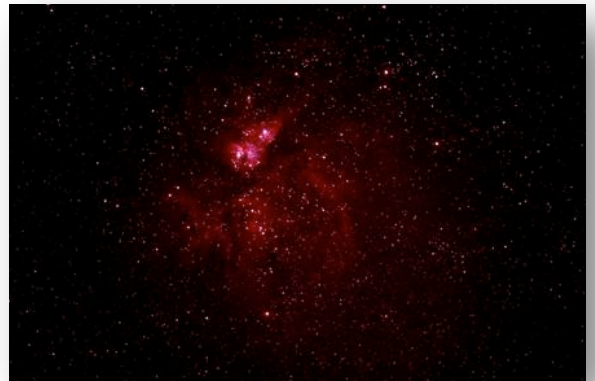
Cosntellation Orion by Joanne Escobar



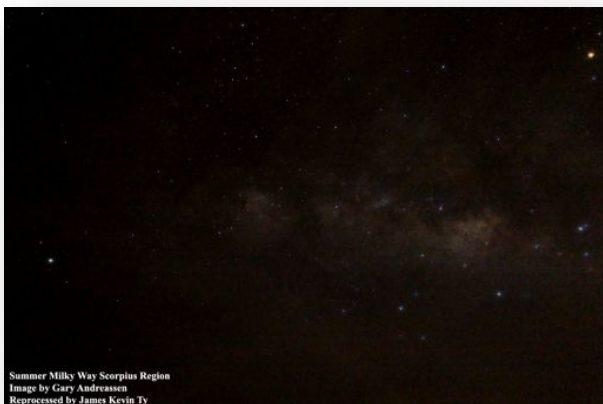
M51 Whirlpool Galaxy by Jett Aguilar



NGC3372 Eta Carina Nebula by Nathaniel Custodio



NGC3372 Eta Carina Nebula by James Kevin Ty



Milky Way Image by Gary Andreassen



M42 Orion Nebula by Mike Enage

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Eclipse: The story behind the Bakunawa Myth

By John Ray Cabrera



Eclipse, it is the most feared celestial phenomenon in the ancient times. Several culture worldwide speaks of a frightening mythical dragon that swallowed the moon whenever it occurs. Both the Sun and the Moon were never spared by the beastly fangs of these creatures, and all cultures although differed in their belief of which mythical iconology believe a similar fate, that the Sun and the Moon were dreadfully swallowed by these creatures.

Hindu-Buddhist in India believed that Rahu, a demonic figure chases after the Sun. In China, the legendary celestial dragon went to attack the Moon. Even our ancestors have their share of story to tell.



They believed of a Bakunawa, a giant sea-dwelling serpent that randomly rose up to the sky and swallowed the Moon. Asterism Master and fellow ALPer **Christopher Louie Lu** said that "legend has it that

the ancestors' god, Bathala, scattered 7 Moons in the sky and because their glitters were such a breathtaking plendor in the sky, Bakunawa fancied them and consequently swallowed six of

them. For the people to defend the last remaining Moon, the tribal folks have to go out of their homes trumpeting vociferous noise by sounding off their pots and pans in order to drove off Bakunawa and ultimately return to the ocean floor."

Modern science debunked such mythology but with respect to the ancestors by saying that there is no other means to understand such a bleeding Moon or a darkening Sun than the demonic apparitions, often manifested by animal forms, swallowing or concealing them.

Even our myth of having 7 Moons were decoded by scientists which tells that of lunar phases, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter and Waning Crescent. New Moon of course was disregarded from the mythological source because of its darkness and almost zero visibility.

Lu has been chasing the eclipse, covering and researching this occultation a long time ago. He recounted his first total solar eclipse experience back in 1987 when he was still 9 years old. He was with his elders and was told that the say will turn to night and will mark the end of the world.

Today though, with a mature disposition equipped with a repository of knowledge on eclipses and how it happened, his feeling went from frightening to fascination. The latest of which is the Partial Annular Eclipse in May 2012. Covering the event, he used Celestron Powerseeker 80EQ telescope with a focal length of 900mm on a CG-2 Equatorial mount which is supplemented by his trusty Canon 450D dSLR camera astutely snugged a T-Ring adaptor.

All photographs featured in the article are owned by the Christopher Louie Lu and Norman Marigza and Image grabbed from englishclass.jp.



Norman Marigza, an astronomy teacher at the Rizal Technological University uses different equipments for eclipse imaging. He has a Skywatcher Explorer 150PL telescope with a Nikon D3100.

There are several ways to kill a cat as much as there are a whole gamut of equipment in imaging eclipses. Both Lu and Marigza wished they have H-Alpha to do solar imaging. Lu said that a SolarMax II 60mm H-Alpha would have produced crisp and crystalline pictures of beautiful prominences on the solar limb, the filament on the solar surface that sometimes burst into a solar flare, including the daily solar activity of ionized plasma that surrounds an active region in the Sun like sunspots.

Lu shared that historically "during 1919, Sir Arthur Eddington, organized a expedition to the West African island of Principe to obtain photographic images of a total solar eclipse. The main purpose of the expedition was to find out if the stars surrounding the solar limb has changed position if ever so slightly. Upon returning from this expedition with his calculations and data he reported his finding to the community of the Royal Astronomical Society. There, he announced that during a total solar eclipse, starlight coming from behind and along the limb of the Sun has changed position from earlier observations. This meant that light (and ultimately time-space) curves in the presence of a strong gravitational force. This discovery has proven that the Theory of General Relativity of Albert Einstein is true and correct. With this better understanding of the nature of the universe it has brought us the technology that we take for granted today. This same knowledge is also taught and re-examined again and again in various Physics Universities and Colleges all around the world. This is just one of many other benefits we now enjoy by simply observing our local star. There are other fields of study that could benefit from observing the Sun, like, Global Warming and climate change, the correlation between solar

maximum and its effects on our planet and environment.

And with new ways and technologies to monitor our Sun (Solar Dynamics Observatory SDO, STEREO A & B), we can now observe the Sun 24/7 giving us the opportunity to study 'Spaceweather' and the Solar wind. Yes, we have learned a lot from our Sun that is now being taught to the young today but there is still a lot to learn and explore about our local star."

Today, Solar and Lunar eclipses carried in itself an impact to both academic undertaking of the young minds especially those who will pursue science profession in this field, and to any scientific research body drilling up eclipse data as a primordial resource of their study. As Marigza said, "as a teacher, I think letting students experience these events allows them to have a growing sense of amazement and appreciation for the universe, as well as inspires them to ask questions and share what they've learned to others. A lot of public stargazing events we had in my previous school always brought out the curiosity and sense of awe of the students."



Left image by Christopher Louie Lu and right image from Norman Marigza.

All photographs featured in the article are owned by the Christopher Louie Lu and Norman Marigza.



Do's and Don't's when observing solar eclipses

By John Ray Cabrera



- Never watch the eclipse with a naked eye.
- Don't use Binoculars to view the eclipse.
- Don't use Telescope to view the eclipse.
- Don't use any cheap or easily available filters in Telescope or Binoculars to view the sun. Only specifically designed filters should be used with Telescope and Binoculars.
- Don't watch the eclipse using color film.
- Don't watch the eclipse with non-silver black and white film.
- Don't watch the eclipse with medical x-ray films with images on them.
- Don't use smoked glass to view the sun.
- All developed films lack a silver emulsion and therefore it should not be used to view the eclipse.



- You should take the advice of an experienced person or a scientist before planning to view a Total Solar Eclipse.
- Only use specifically designed spectacles designed with filters to view the eclipse.
- The safest method of viewing a Total Solar Eclipse is by projection, in which a small opening is used to cast the image of the Sun on a screen beyond the opening.
- It is safe to view the total phase of an eclipse (when the moon completely covers the sun) with naked eye. But one needs to know when to stop and start viewing the total phase. So this is bit risky.

Eclipse Chasing

By John Ray Cabrera



Name: James Kevin Ty

First Eclipse Imaged: March 18, 1988 in General Santos City , South Cotabato

Last Eclipse Imaged: May 21, 2012 Annular solar eclipse in Xiamen , Fujian , China

If you were a celestial object, what are you and why: SUN of course! Being the main object in our solar system, I got to give life and warm to the rest of the objects in the solar system. I also got a big gravitational pull for me to hold all the objects in our solar system. In essence, the Sun is like a leader that helps preserve the organizational goals and make sure it goes the right way :)

Having been in the eclipse imaging sessions way before all of us took a serious dip in astrophotography, James Kevin Ty, the incumbent President of the Astronomical League of the Philippines, is the most appropriate resource to reckon with in a subject that relates to eclipses and other occultation.

Philippine Journal of Astronomy puts Ty into the crosshair to ask questions on the topic:

PJA: ***What is it like being the country's formidable "eclipse chaser"?***

JKT: It feels great that I could do a small part to help newbies as well as veteran eclipse observers to get a good experience to seeing a total solar eclipse , be it annular or total.

PJA: ***What was the recent eclipse you have been(and imaged) into. Share your experience.***

JKT: May 21, 2012 Annular solar eclipse in Xiamen , Fujian , China wherein I got to lead a small group of ALPers that include VP Jett Aguilar & Mark Vornhusen.

My experience can be summarized and viewed at

<http://astrophotophils.blogspot.com/2012/05/may-21-2012-annular-solar-eclipse-in.html>.

PJA: ***What are the instrumentations and equipment you have used.***

JKT: For solar eclipse expeditions, I use different types of portable setups because of the strict airline luggage dimension and weight limits and for this recent trip, I brought along my Canon

The content of this article is an expressed opinion of the reviewer only and may not represent the collective view of the Astronomical League of the Philippines.

EOS 500D DSLR with Canon EF 100-400mm f/4.5-5.6 IS L lens with Canon EF 1.4x converter mounted on top of Kenko Sky Memo-R equatorial mount.

For overall astronomical equipment that are being used by me are:

Mounts:

- Vixen GP-DX equatorial mount with Starbook-S controller
- Kenko Sky Memo-R

Scopes and Lenses:

- TV-101 4" f/5.4 apochromat refractor
- Coronado PST-Ha
- Canon EF 100-400mm f/4.5-5.6 IS L lens and EF 1.4x converter

Cameras:

- Canon EOS 500D DSLR
- ATIK-1HS II webcam
- ATIK-16HR CCD camera
- Philips Toucam 740K webcam

PJA: ***Whew... that's a whole lot there. But are there any other equipment you wished you could have to be used as both eclipse chaser and star gazer?***

JKT: Yes, such as:

- Celestron C11 or C14 to do high resolution planetary, solar and lunar imaging
- Coronado SM60 or 90 Ha filter
- DMK41 or PGR Grasshopper Express 2 webcam for solar imaging use.
- DMK21 or DBK21 webcam for planetary imaging use
- SBIG ST1100 CCD camera

PJA: ***What is the most momentous eclipse event that you have had. Share experience.***

JKT: Of course my solar total solar eclipse on March 18, 1988 in General Santos City, South Cotabato. Being the first total, I got hooked and thus leads to setup another 6 more total / annular solar eclipse expeditions after the 1st one.

PJA: ***What contribution to the society does being in***

your field brought. And how can you inspire the young minds to follow your lead.

JKT: By being a serious amateur astronomer, I do hope to share my experiences to our fellow members and hope to ignite their passion in the field of astronomy. Of course, not all can have the dedication and perseverance that I got in my bloodstream but I do like to share my experiences to those who are willing to step up and learn from me just in case.

Some of Ty's photos were shown below:



May 21, 2012, China: Wide Angle Shot of the Partially Eclipsed Sun.



July 16, 2000: Image taken using Sony TRV-110 video camera at 20x optical zoom. Image captured using Snappy 2.0 software.

Prometheus

By John Ray Cabrera

- Director/s : Ridley Scott
- Produced By: Ridley Scott, David Giler, Walter Hill
- Written By: Jon Spaihts, Damon Lindelof
- Running Time: 124min
- Studio: Scott Free Productions, Brandywine Productions
- Distributed By: 20th Century Fox
- Release Date(in the Phils): June 8, 2012



Ridley Scott's return to the sci-fi cinematic undertaking since the Alien franchise and Blade Runner, **Prometheus**, equally received remarkable undulation as it does with frowning disgust from people of all sectors, especially on the benches of scientific research body and religious bigots.

Although not new to the concept being a human DNA to be a possible fruit of intergalactic seeding, the movie portrays a clearer picture to the most uphill debate of the century since Charles Darwin's Evolution Theory.

The movie posits in 2093, when an exploration crew is sent out to a cosmic wilderness for an archaeological mission. After discovering cave drawings which has been dated several thousand years, they interpreted such construct to be an

invitation by human race's forerunners they fondly and conveniently call "engineers", most likely to denote genetic engineers.

The journey ended up in an uncharted planet, having a toxic, corrosive atmosphere, and a whole gamut of treacherous conditions.

There they encountered catacombs of giant, muscular, alabaster-biped humanoids that finally confirmed the cave drawings they have unearthed.

The movie set is mesmerizing to be close to realism and the story provocative take for both scientific understanding and religious teaching.

For one, the only plausible way for intergalactic travel is to place the human body in a cryogenic chamber where tissues and other biological components will be preserved for the long haul.

Second, the fact that our DNA developed in just a short span of time longs for answer as to how or who propelled it. Francis Crick, world's renowned molecular biologist, stated that "genes couldn't have developed because there is not enough time for the DNA to evolve by accident." So the question is then, who sparked this drastic change to our genetic structure.

Third, it will only take 5% of our DNA to clone ourselves. What will then rest of 95% of our DNA do. The figure is just too huge to be considered a genetic waste. Geneticists theorized that DNA is the most viable to store information, information of our beginning,

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Image grabbed at mycineworld.com

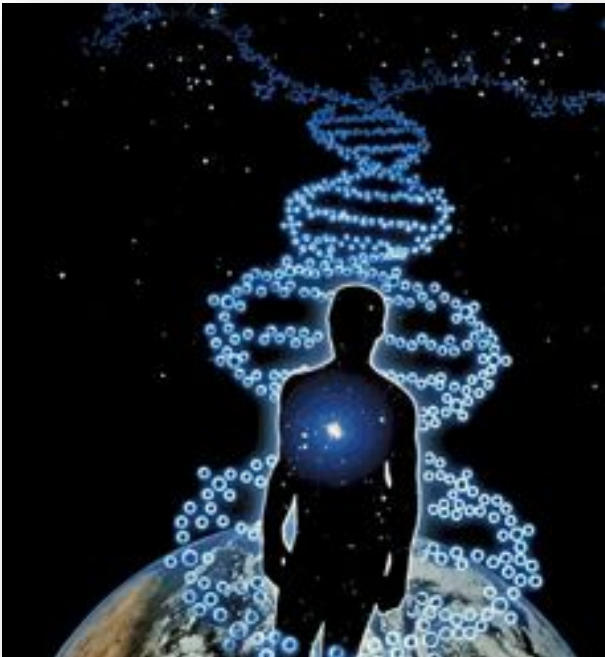
information of our ancestors, information science's most elusive "missing link" from the Neanderthals.



The engineers portrayed in the movie are descriptive to the one written by ancient Sumerian texts, the Nephilim, a breed of giants they exalt as those who descended from the sky.

In another side of the world, Hopi Indians from northeastern Arizona also foretold their encounters with pale, tall men who came from the stars.

Of course, the stone carvings in that planet almost resembled to the one's in Inca of Peru, Easter Island of the Pacific, Giza of Egypt, Pumapunku of Bolivia, and Palenque from the Mayan culture, but that part is another story.



So the questions remains, in our quest to seek the truth of our origin, should we divert SETI radio

telescopes and look into ourselves instead and dissect the strands of our DNA to find tantalizing clues of our very beginning? Are we the hybrids of both ancient earthly bipedal beings and extraterrestrial entities? If so, who are these extraterrestrials that make ourselves. Where do they come from. Why did they extend their genetic lines through us. Will they return? And if they will, how are we going to accept it, both scientifically and spiritually.

Whether or not we are, there's something in us that make us leap from people who simply ignite fire in the caves to the civilization which builds megalithic structures with ancient tools to boot, one that our modern day engineering will still find it hard to erect.

The answer to the question for now may rely largely on our belief system, but someday, truth will come out and science will be there to confirm it.

Are we? Or are we not.

The movie is presented with less plotting complexity but left with a whole slew of questions unanswered.



Prometheus exploration crew.

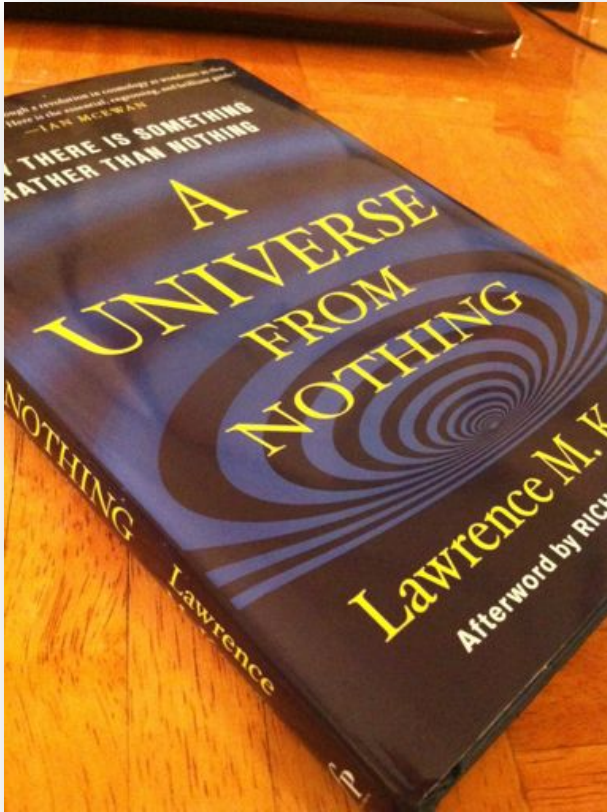
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Image grabbed at wakeup-works.com video-gum.com and clipper.com.

A Universe From Nothing

By John Ray Cabrera

- Author/s : Lawrence Krauss
- Copyright year: 2012
- Number of pages: 224
- ISBN: 978-1-4516-2445-8
- Price (in US Dollar or Philippine Peso): Php9,999
- Softcover or hardcover: hard cover
- Publishing company: Free Press



"What is the beginning of space and time. Where did our universe come from. What was before time. What is the future state of our universe. And why is there something rather than nothing."

These and more are some of the mentally-arresting questions in Lawrence Krauss's book, "A Universe from Nothing."

Riveting theories pondered by thousands of theoretical physicist claimed of a universe, particularly our universe, exists because of quantum gravity. Krauss explained in all with an imminently provocative theories encompassed with wry humor, presenting the physical mechanism, the observable evidence, and the experimented variable on how the universe evolved from what seemed to be a primordial atom that is non-zero in size but close to

zero. Beautifully smoldered with words, his explanation on quantum field theory is something that most people will understand.

However claims made by scientists may change in the distant future, as there are astounding theories one after the other that support our current model of physical laws.

Newton's time for example, accounts that every matter is a composite of elementary particle, and that is followed by an era where physicist discovered the force carriers being an important factor that make up regular matters.

The book though has somewhat fast-paced tone, and perhaps utterly fast-paced for those who are not really into the scientific discipline. While you can understand as how the words cadenced to make up an imagery in your head, there are non-sequitur terms that randomly pops up into existence, such as vacuum energy and negative pressure, which are pertly abstract concept and best understood using the mathematical components of rate of expansion and energy density.

Whether it will be embraced with reading fanaticism from both religious community and scientific sector, no one would really know. One thing is for sure though, he presented a cutting-edge cosmological model on how nothing evolved into something.

Lawrence Krauss is a Canadian American theoretical physicist and a foundation professor in School of Earth and Space Exploration. He is also known for his other book "The Physics of Star Trek."

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