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The *Philippine Journal of Astronomy (PJA)* is published by the Astronomical League of the Philippines (ALP), the eminent astronomical organization in the country. The Society is the major scientific and educational organization for astronomy in the Philippines. It is a general society with membership from the professional and amateur astronomy community.

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Prehistoric megalithic, towering pyramids of Giza, stonehenge... these left humankind in utter awe and disbelief in the old culture as to how they came to be. The study now gave rise to a new branch in astronomy- archaeoastronomy, an interdisciplinary study, investigating not just the mechanics of astronomical practices but the uses in which the practices were put in ancient societies. The synchronization of celestial motions with the seasons resulted in the development of mathematics, navigational and exploratory interests, surveying methodology and measurement system.

Archaeoastronomy is not your typical, run-of-the-mill science, particularly because it doesn't appeal to modern archeologist as the subject matter requires some skills and interest outside those generally posed by the archaeological community. The core value of this particular set of study led to the incorporation of astronomy into social and religious principles, involving folklore, mythology and world view of ancient society.

The activity ranges from precisely timed and measured eclipses, Sun's motion along the horizon, and the stellar markers which marks for the beginning of the season of harvest, among many others.

Mankind have looked heavenward in an attempt to decipher the meaning of their daily grained, the modern man may have to look downwards at these structures to understand how history were framed due to the affinity of ancient society to the celestial shifts.

Not only are these mostly intended as heliolithic rituals, but the ancient structures, particularly the stonehenge serves as a monumental compass to which how their lives will be shaped in the next century.

As a science that tends to understand the stonehenge culture, the archeoastronomy fills the complimentary void in landscape and cognitive archeology. Material evidence is suggestive of its connection to the sky and revealed a wider front to their belief systems. Case in point is the Mayan astronomy and its relationship with agriculture. Others may include cosmic order embedded in the ancient urban planning.

The building of these structures, if we were to assume that they were built by the locals and not some ancient aliens, requires a deep knowledge on physics, angular momentum, mass dispersion, acceleration and center of gravity. But as to how they were built is not as much as significant as to what they were built for. One presents itself that stonehenge is aligned northeast-southwest, and it was suggested that this is due to the alignment of the solstice and equinox point.

The conclusion is fair and well. Stonehenge gave rise to the birth of today’s known scientific quests, from season to the stars, from agriculture to architecture.

All images featured in the article are derived from beforeitnews.com.
times. We may should have been listening to our farmers and fishermen handed with ancestral knowledge about food shortages and livestock supply. Our knowledge of the sky played a really crucial role in these undertakings.

Ethnoastronomy, is but an almost insignificant sector of the entire astronomy science, much as the local ethnoastronomy. This is because, in the majority of the science luminaries, prefixing an entire body of science is tantamount to creating a fringe or second-class science. Little have we discovered the the localization made our explanation to different sets of knowledge more experimentation and analysis-friendly.

Terms fly here and there when the Filipino ancestors look at the sky. Orion's Belt is copied as Tatlong Maria, our Pleiades is Rosario or Supot ni Hudas by the Tagalog and Mapulon by the Visayan and Mindanao area.

In fact, their local knowledge is so vast the ancestors even have their own mathematical system to compliment with their pre-science science. While modern math teaches about multiplication, division and fraction, the ancestors weight system is characterized by three "saga" equals one "bahay", three "bahay" equals one "bulay", three "bulay" made one "kupang", two "kupang" made one "balabato", which is roughly equivalent to 1/2 "mas", four "kupang" made one "mas", four "mas" made one "sapaha", eight "mas" for one "paningan", 16 "mas" is equal to one "tahil." If one "mas" is about 2.4 grams, how many grams would one "balabato" be? See? The ancestors already covered a whole weight system.

All images featured in the article are derived from whitebuffalocalfwomanning.blogspot.com.
Last September 6, members of the Astronomical League of the Philippines (ALP) proceeded to Luneta Park to celebrate the International Observe the Moon Night 2014 (InOMN) despite a not so good weather prospect. Members who were present were ALP President James Kevin Ty, Secretary Christopher Louie Lu, Treasurer Andrew Ian Chan, Ronald Sison, Iah Serna, Mark and Arlene Vornhusen, Vincent Gella, Alberto Lao, Planetarium director Bel Pabunan and staff Liza Quitlong, Judy Carla Cruz and Max Zabanal, Cutting Edge’s Cynthia Jason and staff.

They arrive at the site at around 6:45 pm and set up their telescopes. ALP President James Kevin Ty brought along Celestron C130 EQ AstroMaster Newtonian reflector with CG3 mount, Treasurer Andrew Ian Chan with his Skywatcher 80ED refractor on Vixen GP mount, Mark Vornhusen brought along his 1000mm Maksutov Lens, Ronald Sison with his Celestron C90 Maksutov on CG3 mount, Cutting Edge brought along their Celestron C130 EQ AstroMaster Newtonian reflector with CG3 mount and Nexstar 6SE SCT, RTU Astrosoc with their Celestron Firstscope 114 Newtonian reflector on EQ-1 mount.

The sky was initially clouded out but after 30 minutes, the sky cleared up and more than 1000+ people were able to observe the Moon through various telescope at low and high power views! The called it a night at around 9:30 pm so as not to get tired out as ALP will have their 11th anniversary party the next day.

The group then have a traditional group photo before packing up and leaving with a happy heart as ALP was able to share the beauty of the Moon to many people! A successful event indeed!
ALP President James Kevin Ty and Cutting Edge Cynthia Jason discussed future projects for both organization.

RTU AstroSoc President Ehmir Cristobal and Jerome Felicidario manned the Celestron C130 AstroMaster Newtonian reflector while Planetarium Max Zabanal looks on.

ALP Secretary Christopher Louie Lu entertain questions from the crowd on the Moon and astro related topics.

Planetarium director Bel Pabunan holds the ALP InOMN banner so that the people will know what the event is all about that evening.

Long queues lined up all the ALP telescopes that are available for use at the Park.

Group shot of the ALP members and family.

All images featured in the article are owned by Astronomical League of the Philippines.
Pyramidology! The very word produces groans and upturned eyes in an audience of scientists, along with sighs of "here we go again." As well it might. The rubbish written about pyramids generally, and the Great Pyramid of Khufu (or Cheops) in particular, is overwhelming. Bizarre theories about its construction and supposed metaphysical properties have only multiplied over the centuries. The Internet is filled with this nonsense.

Yet these age–old monuments are a marvel, and they do tether our modern civilization to its origins. So there is a danger that the baby of rigorous scholarship can all too easily be thrown out with the bathwater of mystical blather, particularly by those scientists or educators who are plied with questions from well–meaning New Age disciples. But in fact, there are, and long have been, serious scientists applying careful methods to the study of ancient pyramids. Henry Petroski penned a thoughtful analysis of the engineering challenges of pyramid construction in a recent issue of *American Scientist* (May–June). Here I look at some studies that examine the astronomy of the pyramid builders.

Anatomy of a Pyramid

Whatever the excesses of its advocates, the Great Pyramid is one of the most remarkable structures ever made, if only in terms of sheer workmanship: The fact that it is the only standing remnant of the seven ancient wonders speaks for itself. Built roughly 4,500 years ago, it towers over the Giza plain some 16 kilometers west of Cairo amid several smaller pyramids, 60 or more of which stretch down the western bank of the Nile. The base of the Great Pyramid covers 13 acres, or about seven midtown blocks in Manhattan. It rises in 201 stepped tiers comprised of more than two million pieces of limestone and granite, averaging two or three tons apiece (with some a good deal more), to the height of a modern 40–story building. It was the tallest construction in the world until the Eiffel Tower was erected in the 19th century.

For the first 3,000 years or so of its history, the Great Pyramid was encased in brilliant polished limestone—about 22 acres of it. The slabs were up to 2.5 meters thick and were fitted together with joints so fine they could scarcely be seen, according to Herodotus, who visited in 440 B.C. This must have been a dazzling sight in the Egyptian sun! Unfortunately, the covering was stripped in medieval times to build palaces and mosques in Cairo, and now we can only see the rough building blocks.

Under this shining canopy lay the interior structure. Strabo, after a visit in 24 B.C., described an entrance on the north face of the pyramid made of a hinged stone that could be raised but was otherwise indistinguishable from the stones around it. So indistinguishable, in fact, that its location was lost during a period of neglect in early Christian times. Much later, in the early 9th
century, an Arab potentate named Al–Mamun, following rumors of vast, hidden wealth, forced a new entrance near the base of the north side. So impregnable was the structure that his engineers could proceed only by building fires against each huge stone in their path and, having heated it to a high temperature, dousing it with cold vinegar to shatter it. The residue was cleared, and they repeated the process on the next stone. Inchning forward in this way for some 30 meters, and almost at the point of giving up, they broke through into a pre–existing tunnel, later termed the Descending Passage because it started high on the north face and sloped smoothly into the pyramid's depths below ground level. Unlike the ragged tunnel gouged by Al–Mamun’s men, the Descending Passage, about a meter square, was astonishingly straight. It was so exact that in 1881, Flinders Petrie, an experienced, professional surveyor and skeptic, using the best equipment then available, found that the average departure from a perfect line over the full length of some 100 meters was less than 7 millimeters.

Of less interest was the discovery of another tunnel, the so–called Ascending Passage, which led off of the Descending Passage and headed up to what the potentate’s henchmen called the King's Chamber because it had a flat ceiling, which was an Arab custom for male deceased. An offshoot of the Ascending Passage led to the Queen’s Chamber, so called for its gabled ceiling. The dimensions of these rooms, along with the overall dimensions of the pyramid itself, provoked endless discussion among luminaries such as Isaac Newton and John Herschel, who speculated that the measurements might hold the key to converting biblical units to their modern equivalents. Although this numerical Rosetta Stone never emerged, Newton did conclude that the builders must have employed more than one unit of length.

**Pointing at the Heavens**

The first modern European astronomer on the scene was probably John Greaves, a professor of geometry at Gresham College. In 1637, Greaves suddenly abandoned the academy in order to undertake measurements of the Great Pyramid. His work was thorough and extensive, and Newton and others scrutinized the published results for data to develop their theories. Upon his return to England in 1640, Greaves’s reputation won him the Savilian Professorship of Astronomy at Oxford. Unfortunately, he fell from this lofty position after being fired for misappropriation of fSome two centuries later, a much more famous astronomer named Charles Piazzi Smyth, Astronomer Royal for Scotland, turned his attention to the Pyramid. A curious figure, Smyth produced some first–rate science in other fields, but he lost almost all rationality when it came to this subject. For example, he attributed great significance to the fact that the slope of the Pyramid is near the ratio 10:9, and that its height of 484.9 feet (or 0.09184 mile) multiplied by 10^9 equaled 91,840,000 miles. Coincidentally, that number is close to the actual distance between the Earth and the Sun. Smyth believed that the coincidence meant that the Pyramid builders must have also known this distance. There was much more along these lines, with liberal doses of religious and prophetic conclusions. He published a three–volume, 1,600–page opus about his findings, which, needless to say, was a great hit among the like–minded, but which was dismissed by one reviewer as containing "more extraordinary hallucinations than has appeared in any other three volumes of the past century." Nevertheless, Smyth was not entirely without redemption. Like a previous investigator, he was intrigued by the extraordinary straightness of the Descending Passage and took care to measure carefully its angle of descent, noting that a person within the passage looking out through the surface opening would see a patch of sky close to the celestial north pole. However, Polaris, the current pole star, would not have been visible to the builders because precession (the slow wobble of the earth’s axis of spin) would have placed the pole much farther from Polaris than it is now. A possible (though not very likely) pole star for people of that era is the magnitude 3.7 star Thuban (Alpha Draconis), which, Smyth calculated, would have been visible in the opening at lower culmination (the
time of its lowest point in the sky) around the years 2123 and 3440 B.C. He suggested that the Pyramid might have been built near either of those dates, which despite the flimsiness of his argument is not entirely ridiculous when compared to the modern estimate at about 2500 B.C.

A long-standing problem relating not only to the Great Pyramid but also its smaller cousins is the question of how the builders managed to orient such colossal structures to the cardinal points with surprisingly high accuracy. The eastern side of the Great Pyramid, for example, points only three arcminutes away from a true north–south line, and other pyramids in the group are not much worse. This makes it virtually certain that some astronomical method was used to establish the local meridian. At first thought this does not seem too difficult a problem, even without a bright star close to the north celestial pole during the millennia of interest. (Even today, Polaris is some 43 arcminutes from the pole, and during this time it was about 25 degrees away.)

Still, other possibilities spring to mind. An obvious method would be to note the directions of sunrise and sunset on a given day and bisect the angle between the two—the result marks the meridian. But this, and other seemingly straightforward methods, while fine in principle, turn out to be unsatisfactory in practice, at least when accuracies of a small fraction of a degree are called for. For instance, in this case the rising and setting sun must be seen over an absolutely flat horizon, which Giza lacks. Then there is refraction in the earth’s atmosphere: When one sees the lower edge of the setting sun just touching the horizon it has in fact already set. The light rays are bent to produce an image above the horizon, thereby shifting the direction in which the sun appears to set. And since the amount of refraction depends on air temperature, pressure and other factors, all of which can differ between morning and evening, the effect may not be consistent between rising and setting. Furthermore, the sun’s celestial coordinates will change during the course of the day, spoiling the symmetry of the method. All in all, these practical hurdles have stymied modern astronomers who tried to figure out just how the early Egyptians managed to orient their pyramids as precisely as they did.

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The apparent movements of the stars were different in ancient Egypt, as seen in this reconstruction of the 9 o'clock sky in Cairo on April 25, 2467 B.C. Then, Polaris was quite distant from the north celestial pole, for which dim Thuban might have been the closest marker. Yet the pyramids point north with such accuracy that a more rigorous method must have been used. A recent analysis shows that a line drawn between the circumpolar stars Mizar and Kochab would very nearly cross the pole, and that the pyramids themselves exhibit the slight deviations that would result from using these stars to determine true north.
An Answer Written in the Stars

That an astronomical method was used to orient the pyramids received strong, if unexpected, support in the 1980s when historians discovered that among most of the Giza pyramids, the departure of a pyramid’s eastern edge from a true north–south line correlated strongly with the accession date of the king for whom each was constructed. Which is to say that the direction of north as determined by the Egyptian method varied systematically as the centuries went by. The ready explanation for this is once again precession of the equinoxes: The early Egyptians must have applied some method of using the stars to find the north celestial pole without realizing that the pole is not fixed, but rather drifts slowly through the heavens.

In November 2000, Kate Spence, an Egyptologist at the University of Cambridge, published a seminal paper in *Nature* in which she suggested a method by which the pyramid builders determined what they thought was north. She also showed that the resulting orientation errors varied as a function of time—just as predicted by precession. Moreover, by fitting the time–linked precession errors to the slight deviations of each pyramid, she revised their building dates. Instead of 2554 B.C., her data suggest the Great Pyramid was constructed between 2485 and 2475 B.C.

The method proposed by Spence involved two stars on opposite sides of the celestial pole. She had to choose them by trial and error, since the pole drifts into different star fields as millennia pass. For the period of interest, Spence found that the stars named Mizar (Zeta Ursa Majoris) and Kochab (Beta Ursa Minoris) would have appeared to revolve around the pole on almost (but not exactly) opposite sides, so that a line joining them would always pass very nearly through the pole. When these two were aligned vertically, the pyramid builders might have hoisted a long plumb line and fixed it at the moment when the two stars both lay on the line. The point where the vertical line touched the ground would indicate north.

One idiosyncrasy of this method was that because these two stars were circumpolar (they never set), they could be seen from Egypt year–round. Thus, at some date during the year Kochab would have appeared above Mizar at meridian transit (when they would have been vertically aligned), but six months later Mizar would have topped Kochab. Early in the pyramid era, the pole was really slightly west (or east, depending on which star was uppermost at the time) of the line. Because of precession, the opposite was true late in the era. Support for Spence’s theory came from two pyramids whose deviation from true north was of the expected magnitude but opposite sign. The explanation was that all the pyramids except these two had been set during the time of year when Kochab was above Mizar—these two must have been set six months later (or earlier), when Mizar surmounted Kochab.

Like many groundbreaking papers, this one quickly became the center of arguments and proposed improvements. Spence accepted a small but significant correction by extending the pole displacement to an azimuthal displacement, but she seems not to have been enthused by other proposals to use different stars in a different way. The method still has some practical problems. For one, the plumb line would have to be very long to reach high enough to be seen against the upper star, especially because the observer would need to be far away from the line to achieve sufficient accuracy. And it would have been difficult to see the line at all against a dark sky. Nevertheless, the explanation for the two pyramids with errors of reversed sign supports the basic idea. As centuries went by and the errors grew, later builders may have realized the problem and abandoned the method or used different stars. Thus, the failure of Spence’s scheme among later pyramids is not necessarily a valid critique. My own inexpert view is that whether she is proved right or wrong, Spence’s basic idea marks a major breakthrough in dating these pyramids.

All images featured in the article are derived from americanscientist and fromquarkstoquasars.com


Last September 6, members of the Astronomical League of the Philippines (ALP) proceeded to celebrate their 11th anniversary party at the residence of VP Jett Aguilar. Members who were present were ALP President James Kevin Ty, wife Charito and son Kendrick Cole KC Ty, VP Jett Aguilar and family, Secretary Christopher Louie Lu, wife Karren and daughter Frances, Treasurer Andrew Ian Chan and Iah Serna, Auditor Edgar Ang, directors Peter Benedict Tubalinal and daughter Steph, Mike Enage, Rich Pijuan, Arnel Campos; Ronald Sison and children Aleecia and Ray, Mark and Arlene Vornhusen, Alberto Lao, Edge Lat, Adrian Reginald Sy and parents Reynaldo and Lily Sy and sister Abigail, Shubhashish Banerjee, Saju Pillai, Val Villanueva, Jeremy Arabes, Marlon Monzon, Jason Comia, Miguel Cajita and parents Trix and Mel Cajita.

They started to arrive at the site at around 11:30am and bringing lots of potluck foods to share with fellow members. While awaiting for the other members to arrive, ALP VP Jett Aguilar invited the members to his observatory to get a view of the Sun through white light and H-Alpha wavelength to the delight of the members!

Party started at around 1:00pm with ALP director Peter Benedict Tubalinal leading the prayer invocation to start off the party. Lots of food variants and drinks were served to the members. Members use the opportunity to have a great lunch as well as chat and discuss on both astro and non astro topics. The group then have a traditional group photo taken midway along the party.

Afterwards, some members played parlor game Pinoy Henyo wherein members choose a partner and try to guess a word that the other partner will agree only by either a YES, NO, or MAYBE. ALP President James Kevin Ty and Secretary Christopher Louie Lu volunteered to do the first game while others followed. It was both fun and hilarious as all of them tried to get the best time to get the answer. In the end, ALPer Jason Comia has the fastest time and was given a small prize by ALP President James Kevin Ty by virtue of a copy of Sky and Telescope Skywatch 2014. :) 

Some of the ALP officers also used the party time to discuss preparations for the National Astronomy Week 2015 as well as other ALP projects.
ALPer Adrian Reginald Sy together with his family post with ALP President James Kevin Ty and VP Jett Aguilar.

ALPers also lined up to get a view of the Sun through the H-Alpha telescope as well.


ALP VP and host Jett Aguilar sets up his Solar white light telescope for members to view the Sun!

Vast variants of foods and drinks brought by ALPers to share with fellow members!

All images featured in the article are owned by Astronomical League of the Philippines.
First, let’s check the events and knowledge timeline:

- 3500B.C.-Construction of Stonehenge I begins.
- 2500B.C.-Pyramids in Egypt.
- 2300B.C.-Megaliths appear at Stonehenge.
- 1400B.C.-Chinese record solar eclipse.
- 500B.C.-Babylonian astronomy reaches highest point.
- 300B.C.-Greek astronomy reaches its height.
- Eratosthenes determines size of the earth.
- 135B.C.-Hipparchus develops first star catalog and measures star brightness.
- 100B.C.-Chinese astronomers estimate size of the round earth and moon.
- 28B.C.-Chinese record sunspots.
- 200A.D.-Teotihuacan Empire reaches its height.
- 250A.D.-Rise of Mayans, 300A.D.-Nazca Culture in Peru.
- 820A.D.-Muslim astronomy begins.
- 900A.D.-End of Mayan period/Begin Mississippian culture.
- 920A.D.-Building of Uxmal in Yucatan.
- 940A.D.-Oldest Chinese star map.
- 1000A.D.-Caracol at Chichen Itza constructed.
- 1100A.D.-Decline and disappearance of Anasazi.
- 1200A.D.-Rise of Inca.
- 1300A.D.-Aztec Civilization Rises/Height of Cahokia.

With that elaborate knowledge, one might question, how did it all come to be. Our forefathers may have well been so informed out of their innovative ideas that they were able to construct and develop such a monumental structure and a learned system of things? Or is there an architect to the human knowledge that brought down scrolls of blueprints on how to proposer as a society.

While we are so overwhelmed by the presence of the Baghdad battery, the Antikythera computer of Greece, ancient methodology on how we are able to predict celestial phenomena, we can’t help but teased our curiosity on who these authors are? Or are they collectively learned by the ancient society. Are they themselves teachers of their own scheme of things? They just discovered and possessed physics on how to build structures like megalithic and pyramid? And without the presence of continental communication, other ancient society from another parts of the world invented just the same? The answer is still a hotly contested research and may surprise us in the coming centuries.

*All images featured in the article are derived from advancedphotoshop.co.uk.*
In any case, in so far as our knowledge of the universe carries us, the advent of civilization for the first time on our globe represents the highest ascent of the life processes to which evolution had anywhere attained.

By James H. Breasted
Coined in the local astronomy community as a "father of ethnoastronomy", the late Dr. Dante Ambrosio, a history professor of the College of Social Science and Philosophy, wrote a book that will change the way we perceive our ancestral ingenuity. The book, Balatik: Kalangitan sa Kabihasnang Pilipino, tackles about the daily grind of an ancestral Filipino root and how they associate human affairs with the sky.

Written in pure Tagalog, his doctoral dissertation revolves about Filipino ethnoastronomy, an unchartered course, where nobody has ever written about, traces back to the stars' and constellations' pre-colonial names. As his research went on, he discovered that the Philippine civilization is written not on the caves and stone walls but on the stars.

After all, various Philippine cultures have long ago formed their own map and understanding of the sky and its phenomena (one of them was already covered by the Philippine Journal of Astronomy last July 2012 on the issue "Demystifying the Bakunawa Myth"), by organizing the stars into constellations. They have claimed the sky their own as much as their own backyard, and put their distinctive marks on it. As they made the sky part of their culture, its movements influence the we they move and think and live, consequently. Though the colonial intervention introduced changes to the Philippines cultures, their high regard for the stars and heavenly influences remained in place. reinforced and enriched their struggle for everyday survival.

Perhaps, such local names in your childhood (especially those Patintero era which, by the turn of the century had completely gone in favor of the Playstation era), "Tatlong Maria", "Supot ni Hudas", "Krus na Bituin", "Koronang Tinik", etc were familiar names from our grandparents. These had been an exciting tale under the moonlight coupled with local riddles and urban legends.

Dr. Ambrosio scoured the different parts of the Philippines to encapsulate the diversity into a single readable material. The diversity even is as simple as our parlance with the star, Binukid, Manobo, Sambal and Tagalog call them "Bituin", Aklan, Bikol, Hiligaynon, Maguindanao, Samar-Leyte, and Sebuano call them "Bituon", Sama and Tawi Tawi call them "Mamahi", Mangyan call them "Magirim", Ilokano call them "Baggak" and the people of Cordillera call them "Talaw." The diversity is endless and the book a good find.

All images featured in the article are derived from journeytothestars.files.wordpress.com.
Astronomy, and most of modern science, traces its roots back to the time when our primitive understanding of the universe is folded under the antiquity of celestial savoir faire-- our symbolic orientation with the stars, our cultural interpretation with the season, our self-induced perception of the world views based on constellation.

These are and more are the highlight of this quarter's issue of the Philippine Journal of Astronomy. Coined as an anthropology of astronomy, Archeoastronomy is one of the hallmarks of today's research foundations, professionals and academic, al from different backgrounds and cultures. Tracing back its primordial roots in the stonehenge discoveries, archeoastronomy have blossomed into an active discipline of science that pave human interests on ancient and native calendar systems, concepts of time and space, counting systems and geometry, surveying and navigational techniques and geomancy and other fields of architectural planning.

With this, we seek the help of our resident archeoastronomer, to help us shed light on the quirks and ardors of this interrelated discipline.

PJA: How was your interest in archeoastronomy spring. How did it all began.

ESFL: Between 6 - 7 yrs old when I noticed a foreign yellow magazine arrived almost every month via delivery guy. Then one day out of curiosity I open one of the sealed envelopes and I was stunned to see a magazine (National Geographic) full of colors and amazing pictures with awesome drawing and words written I cannot understand, but of course at young age I wouldn’t understand those except for the ancient dinosaurs drawings. Every day I make sure that I asked my father for some questions about the magazine contents as he explained to me the importance of everything that was printed inside of it. I enjoyed every minute of it as I open more and more national geographic magazine collected by my father. From there it started my curiosity of galaxies, space, planets, asteroids, stars and more. It was my window of knowledge that started to ask myself tons of questions and ignorance. Then I decided to read and study them till it came to my high school years. As I came to understand that astronomy was my interest and enjoyment. As I continued my explorations I gathered my data from school library and soon finding myself inside the
national library located in Manila or Maynila. There it all started to my understanding that with all the stars lined up above corresponds a particular ancient placed on earth, not to mention some of the findings being unearth by the archeologist and explorers to some account that tells a story correlated with the stars aligned during solstices. There was this accurate consistencies that describe the pyramids and its geographical locations that correlates a particular star or constellations. So, curiosity was my engine to be interested in archæoastronomy and I believed for some reason that ancient people have full knowledge of their astronomy despite their technology way beyond their existence. Then I started to travel with my group of photographers as we explore the country. But for me it was a different journey in mind to explore more evidence that just maybe I could find some ancient documents which can be useful to my personal research. It was a never an ending journey me for up to this very day that someday, somehow il get that evidence.

PJA: What aspects in this field motivated you to further accelerate your study in archæoastronomy.

ESFL: It motivated me closely when I have learned the use of historical records of heavenly events to answer astronomical problems and its history, which uses written records to evaluate past astronomical practice. Some applied across cultures when examining ancient beliefs. It is perhaps the need to balance the social and scientific aspects of archæoastronomy.

PJA: What lessons and values in life you have earned out of the study of archæoastronomy.

ESFL: The lesson and values that I have personally earned was to simply respect and honor this ancient people that who have devoted their life and put everything into writings to make sure that the future will tells its story behind it. Material evidence and its connection to the sky reveal how a wider landscape can be integrated into beliefs about the cycles of nature.

PJA: If there were to go back to the past, say back when Egyptian Pharaohs still live, what would have been your ultimate dream that would give rise to enriching human knowledge on astronomy and science as a general.

ESFL: If given a chance to enriched human knowledge in astronomy or any branch of science "is not stop believing that creation is based on math and science" with all these numeric numbers and combinations of biological composition which we all started to make us here on earth. That maybe that our creator was he’s ingredients of our existence. All we must be is to explore and learned from it.

PJA: How do you differentiate (and ultimately convince people) between real science (one that is founded on facts about celestial-based navigation, cycles of nature, ethnography and other precursors of today’s science) vs fringe science (one that is posited on myths and other unfounded, interrelated effects of the human affairs with celestial orientation).

ESFL: The reality of real science is...there always a procedure or a process that we do in order to make our observation into a document, these are the foundations of our decision in order to specify which is which can be describe as a real science or just a mere myth.. I believe the myth only correlates when these cultures collided with some of their personal belief or opinion as they judge the way they saw it... but, always remember that proper documentations must be studied in order not to confuse between science and myths. But, sometimes myth’s can be a door opening to a world of science.

Respondent:
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Instrument / Equipment: Celestron Astro Master 130, Canon 60D

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