



Newsletter of the Pomona Valley Amateur Astronomers

What we observe as material bodies and forces
are nothing but shapes and variations
in the structure of space.
Erwin Schrodinger

Volume 28 Number 4

nightwatch

April 2008

President's Address

We are now well into spring and the day and nighttime temperatures are warming. Time to star party! And we have some good ones (that are also close by) coming up.

On Saturday, May 3rd we will be returning to Mount Baldy Ranch RV Park near Cow Canyon Saddle, above Baldy Village. The owners have been kind enough to let us have our star parties there. We used to go to the turnout at Cow Canyon Saddle, but headlights from the road were a constant problem. This site is surprisingly dark considering its proximity to town. The Milky Way is easily visible. The northern and eastern skies are good; the western sky is washed out by the lights of LA. We will be setting up on the hillside south of the headquarters building. ***Please try to arrive before dark.*** The site can be difficult to find, especially if you haven't been there before.

Our June star party (on the 7th) will be at the Brea Canyon Scout Camp. This will be combination event, serving as both a public star party for the Girl Scouts and as our monthly club star party. In these times of high gas prices, this is another short drive location.

As we have entered the topic of public star parties, on Saturday, April 26th we will have our Solar Star Party part *trois*. Twice the weather has refused to cooperate, so third time the charm. For this event, we

will again be outside of the Brackett Observatory on the campus of Pomona College. The time will be from 10:00 AM until 2:00 PM. If we are not once more thwarted by clouds, I believe this event will be well attended. In November we had fun even though we were only able to see the Sun two or three times.

On Monday, May 12th from 7:00 until 9:00 PM we will be at the Main Branch of the Ontario Public Library. We will have Saturn and the Moon to look at (those two are always crowd pleasers) perhaps Mercury (if our horizon isn't blocked) and if we stay past 9:00, Jupiter will be up. We generally have a have a good turnout at these library star parties.

I hope that many of you will be able to attend one or more of these "local" star parties.

Happy stargazing!

Ron Hoekwater

PVAA Events Calendar

Month	Star Party	General	Board
May	3(CC)12(OPL)	16	8
June	7(Brea Cyn)	20	12
July	5(WM)	18	10

Site Legend

(CC) Cow Canyon Saddle above Mount Baldy Village
(OPL) Ontario Public Library - Main Branch
(Brea Cyn) Boy Scout Camp - Directions at later date.
(WM) White Mountains - Grandview Campground

The Seasons First Star Party - Warm and Enjoyable

The word was out that the campgrounds at Cottonwood Springs might be sold out. At this time of the year a divergent group of park visitors descend on Joshua Tree National Park. Barbara and I decided to set out for the desert one day before the scheduled star party and secure some campsites. It's a good thing we did, as the camp ground was nearly full.

Upon our arrival, we were greeted by the Stellar View group and another informal astronomy group that visits the area regularly. The Stellar View group was all set up with some very impressive equipment. We were treated to some spectacular solar prominences that were ejecting from the sun. The view of these prominences was the best I had ever seen.

On Saturday, with campsites secured, PVAA members began to arrive. That night we had Ken Crowder, Ron Hoekwater, and Jim Bridgewater. We were also visited by Boy Scout from the San Marino Troop #358. Scouts William Tam, Jonathan Lin, Alex Trinh and Nicholas Liu were working on their astronomy merit badges and were busy the entire evening with various projects.

The evening was more of an astronomy expo than a normal star party. We had a large number of visitors at all the telescopes with questions about the telescopes and the technologies being used as well as questions about the many stellar objects being observed.

Saturn was positioned very well and, as always, was a crowd pleaser. The Orion Nebula was a huge hit as were other Deep Sky Objects. My Integrate video equipment displayed M51 and M82 very nicely as well as a new Galaxy for me: NGC 4565. It is an edge on galaxy about 90 light years in diameter and about 20 million light years distant. A central bulge was very noticeable as were dust lanes near the bulge.

With the weather condition very pleasant we continued observing and sharing our universe with others for many hours. Tonight was just an indicator of what awaits us this spring and summer as the weather warms up and the sky remains clear for days on end.

Frank Busutil

PVAA Officers and Board	
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March General Meeting

Bert McElroy joined our meeting, after locating our Club on line. We hope he continues to join us, please make him feel welcome.

We continue to take signups for the Wednesday, June 25th trip to Edwards Air Force Base. The Club will be given a private tour but if there are extra seats on the 42-person bus, we may see if any nearby astronomy club members would like to join us rather than let seats go to waste. The visit will run from about 9:30 AM until 3:00 PM and will include a morning with NASA, lunch in their cafeteria, then a tour with the Air Force. While there may be a few areas which are off-limits for pictures, we are welcome to bring cameras and were advised to pack plenty of drinks and water as well since June in the desert is usually pretty hot. Please feel free to invite family members on the tour. We talked about meeting at 7 AM at the College for the drive up there if you are interested so we can share cars – and gas money! We will need some information ahead of time from all those who wish to attend so please contact Claire soon for details or pick up a signup sheet at the next meeting so we can reserve you a spot.

March Featured Speaker

On March 17th St. Patrick's Day is celebrated by many, both Irish and non-Irish. Since our General meetings are "dry" events and in any case, no one remembered the green beer, we decided to celebrate instead with a lecture from our own Roy Schmidt. Roy's topic for the evening was, of course, Astronomy in Ireland.

The country in general is famed for green rolling hills and the rainfall necessary to sustain them, not for the high mountains and clear skies one might expect to ensure good night sky observations. Despite these limitations, Ireland and neighboring England are well known for some of the most famous ancient sites for observing the skies – Stonehenge in southern England and Newgrange in Ireland.

Newgrange is a giant domed earthwork with a 60-foot passageway into its central mound that is aligned so the rising sun on the winter solstice shines down it and lights up a central chamber within. On the solstice itself the chamber is lit up for about 17 minutes and for shorter periods a few days on either side of the solstice. The bones found inside led to its classification as a tomb but the dramatic light show around December 21-22 of each year marks the importance of timekeeping, at least, to these agrarian people. Built by nearby Neolithic farming peoples around 3200 BC, the mound of earth covers over one acre and the passageway is filled with beautifully carved stones. The perimeter is covered in a dramatic 10-15 foot wall of white quartz stones which make the monument well visible from the surrounding area.



The monument was first re-discovered in 1699 when nearby road building works uncovered it. Efforts which brought it to its current renovation began in 1962, when the white quartz wall was recreated using stones found nearby.

Needless to say, the central chamber is a popular place to be on the solstice itself. A lucky 50 names each year are drawn by lottery and each winner is given two admission tickets. In 2007, over 28,000 applied for the privilege to join the 100 solar observers for this special event.



The famous prehistoric monument, Stonehenge, a contemporary of Newgrange, also began construction about 5000 years ago. While it is the much more frequently visited and photographed icon, Stonehenge actually does not have such a clear astronomical purpose as the Irish mound. Many theories have been proposed which suggest Stonehenge as a predictor for movements of the sun, the moon, or even bright planets and stars but none of them are as clear as Newgrange's lighted December chamber.

A more modern Irish building effort had a much larger role in helping to expand our knowledge of the night skies – and it has an equally impressive name to match: the Leviathan of Parsonstown. It was built by Irish nobleman Lord Rosse in 1845 and was an extremely imposing structure even by today's standards. The telescope itself is a reflector consisting of a 72-inch metal mirror at the end of a 54-foot long tube.





It was supported by chains hung between two massive 50-foot stone walls. Viewing was done from a 50-foot high platform. There were some limitations of design – the scope could basically be moved only up and down between the stone walls and so could see only a small slice of the entire sky. The Lord’s estate was in a damp, windy location and like much of Ireland overcast skies are common. Despite these handicaps, Rosse was able to use his huge instrument to help unravel the mystery of the composition of the objects called nebula – a generic name given to various cloudy patches in the sky. As telescopes grew larger, some were resolved to show they were actually huge collections of stars. The 72-inch scope resolved others so clearly that for the first time a spiral shape was distinguished. In the 1920s these objects were found to be galaxies entirely outside of our own. The first such galaxy recorded by Lord Rosse was M51 which was later given the name of the Whirlpool Galaxy.

A last Irish contribution to our knowledge of the skies is the Armagh Observatory. Founded in 1790, research continues today within our solar system and in studies of stellar astrophysics.

Thank you so much, Roy, for your fascinating introduction to astronomy in the Emerald Isle.

Claire Stover



References:

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http://en.wikipedia.org/wiki/Armagh_Observatory

http://en.wikipedia.org/wiki/Archaeoastronomy_and_Stonehenge

What’s Up – “By Gemini”

In the days of ancient Rome, when artificial light was but a gleam of oil lamps, people worshiped the night sky. The figures of Gemini were really holy twin gods, and the faithful swore “by Gemini,” which later became “by jiminy.” Today, amateur astronomers look to Gemini for some good open clusters, especially the bright M35. Nearby is the planetary nebula NGC 2392, called the Eskimo for its fuzzy, parka-like “head” which often appears in astronomy calendars. That calendar month could be March, named for the Roman god Mars. Mars is now in Gemini, distant but still seen as a rusty orange-red.

Gemini’s two mythically athletic twins are represented by two first magnitude stars, Castor (a telescopic double star) and Pollux (a red giant). A good meteor shower (Geminids, in December) often emanates from here. Further along the zodiac lies the equally worshiped royal form of Leo the Lion.

Leo has also been the king of beasts since antiquity with its bright star Regulus, the “little king.”

Regulus is a huge star that spins so fast it’s squashed into an elliptical shape. Ancient Greeks saw Leo as the Nemean Lion killed by Hercules, while Egyptians associated Leo with the famous Sphinx. Good meteor showers also appear here near Leo’s “sickle” shaped head in November. Beneath Leo’s regal form is a “trio in Leo” of galaxies (M65, M66, NGC 3628) nearby is another group (M95, M96, M105). A faint but close star (7.7 light years) cataloged as Wolf 359 is here, proving that all close stars are not necessarily bright.

Between these two worshiped constellations lies Cancer the Crab, the faintest constellation in the zodiac (or the ecliptic line, the plane of our solar system). In addition to its unimpressive faintness, the bane of a dreaded disease has fallen on the Crab. Early doctors saw diseased tissue as being chewed up by crabby claws. This feared illness forces even astrologers to refer to those “born under Cancer” (when the sun is in Cancer) as “Moon Children.” But the cursed Crab does contain one of the brightest open clusters in the sky – M44, The Beehive Cluster. Also called Presaepe (the manger), it sits near two stars nicknamed the





“Asses” (or “Oxen”) who metaphorically feed on the tasty star cluster. Just to the south is another delicious looking cluster, M67. Feast your binoculars on these beauties. Just forget that the ancient Japanese saw these clusters as lumps of hopelessly lost souls.

While the Milky Way near Gemini is full of such open clusters, the north pole of the galaxy near Leo opens out toward the Realm Of The Galaxies in deep space. Here is Ursa Major, with its Big Bear paws or “the three leaps of the gazelle.” The gazelle was a fancy of Arab star chart makers who didn’t see as many bears as gazelles. This envisions the three twin star groups of bears paws as hoof prints of a leaping gazelle.

To the south is Hydra, the Sea Serpent, the largest of all constellations. Although the Hydra of legend grew extra Hydra heads when the first one was chopped off by Hercules, this one has only one head. This Hydra head is the most prominent asterism of the entire constellation and is found just above the “solitary star,” Alphard. Here is also an example of why planetary nebulas are likened to planets – “The Ghost of Jupiter Nebula.” Looking like a faint, unmoving, ghostly Jupiter, it hides its true nature as the shell of an exploded star. Finally, Hydra has a star cluster M48 often called the “lost cluster.” This was because Messier misplaced it on his charts, and it remained for later astronomers to place it in its correct location.

Two bright planets are currently passing “by Gemini.” I already mentioned Mars, now moving rapidly eastward through Gemini toward Cancer. Brighter than usual is stately Saturn, slowly passing through Leo. In September 2009 Saturn’s rings will seem to briefly disappear from sight by going edge on, demonstrating how very thin they really are. When Galileo first observed Saturn in 1610 with a primitive telescope, he thought it had two large moons or maybe ears. He couldn’t comprehend the truly incredible nature of the rings, so when they disappeared to appear again later on he was bewildered. He vowed never to look at the enigmatic planet again. It remained for the Dutch astronomer Huygens (in 1656) to deduce the flattened ring nature of the system. American astronomer Gerald Kuiper (in 1957) concluded that the ring system was composed of innumerable revolving icy particles. Today, by means of space probes, the system reveals an enormous complexity involving embedded moonlets, “liquid” waves, magnetic spokes, and a flow of ice from geysers on the moon Enceladus. Billions of ice particles, ranging from dust - to house- size form the glorious system. A mysterious jewel of the solar system, “by Gemini.”

Lee Collins



Images by Ludd Trozpek

Project Bright Sky at Joshua Tree National Park



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Images by Ludd Trozpek