



Newsletter of the Pomona Valley Amateur Astronomers

Volume 29 Number 12

nightwatch

December 2009

Member Observations

I was in Borrego Springs for the Thanksgiving Holiday and found quite a bit of information regarding stargazing. One item of interest is that the City is now certified as an "International Dark Sky Site". They have passed lighting regulations which limit the type of lighting permitted.

The area just outside of the city was very dark, but the Milky Way was not visible, mostly (I thought...) due to the moon being at last quarter. Stars were clearly visible, but no "faint-fuzzies" were evident.

We had come into town from the west and decided to leave by driving to the east in the direction of Salton Sea on Saturday morning. We were surprised to see significant morning fog which was extending from Salton Sea West to Borrego Springs in a light easterly wind. After driving further we were shocked to realize that it was not fog but dust being generated by thousands of ORV's tearing up the open areas of the State Park and the wind driving the dust into town.

My final recommendation is that the area has many good sites for stargazing, but the availability of improved camping sites is limited to the Park just north of town (close to the

Our November star party was held at Salton Sea State Park. Mecca Beach campground is closed due to state budget cuts, so we used the main campgrounds at the visitor center. It has 40 campsites.

There was only Ken, Bill and myself. The night was clear, warm and no wind, you could see the Milky Way because it was that great of a night. Ken had his 8" Meade with his new camera hooked to his lap top. He got some great shots of the Ring Nebula, m31 and m42. Bill had his 12" Meade Light Bridge and I had my 120mm refractor.

In January we have a star party back at Salton Sea, hope to see more club members there.

Have a happy holiday.

Jim Bridgewater

mountains) with a significant amount of sky blocked by the mountains. Further, it not a good place to be if winds are out of the east.

Bill Connelly

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November Meeting

At our November lecture, we learned from Joann Eisberg how different elements emit light at different wavelengths. We all had fun using the diffraction gratings Annie handed out to us as we looked at neon, hydrogen, and helium; gaining a better understanding of what astronomers look at when they aren't viewing objects in the visible spectrum. Most of today's newly operational observatories are measuring compositions and motions of stars and planets by looking at electromagnetic radiation outside the narrow band of visible light.

Just as Joann gave us a new perspective on light, I recently read about a new perspective on the night sky. The author grew up in Australia and he was puzzled to read about the man in the moon. No matter the moon phase, he was never able to stretch his imagination enough to see the figure others saw. Well, the geometry of our Earth-moon system was to blame for his confusion. When the moon is visible for observers in the Southern Hemisphere it is "upside down" from what those in the Northern latitudes see, so the face isn't apparent.

While missing the man in the moon might be no big deal, our Southern neighbors also miss out on the most prominent asterism from our winter night sky – Orion the Hunter. Though the constellation is visible in their summer sky; standing on his head, Orion doesn't look like a man so much as a Saucepan, as our "dagger" looks like the handle rising from the side of a cooking pot. To us Leo looks like a regal lion, but his dignity is slightly damaged in the south as he sits perched on his head.

One phenomenon exists for both hemispheres albeit with different names. While we are all familiar with the Aurora Borealis its southern counterpart is the lesser known Aurora Australis. Aurora is the Roman goddess of dawn while Borealis is the Greek name for the north wind and Australis is Latin for "of the South."

Perhaps the biggest plus for amateur astronomers in our hemisphere is the North Star. Polaris has a reasonable magnitude, is very close to due north, is above the horizon all year, and is convenient to find by following the two bright pointer stars in the Big Dipper. Our comrades in the South also have a method for correctly aligning their telescopes, but it is more involved. They extend the long axis of the kite-shaped Southern Cross. Then they draw a second line perpendicular to a line between two other pointer stars located nearby. The two lines intersect at the apparently blank area in the sky known as the southern celestial pole.

Lest you think that there is no heavenly reason to journey south, let's now look at a few objects which justify your visit. First are the Large and Small Magellanic Clouds. While much smaller than the northern Andromeda Galaxy, these dwarf

galaxies are among the closest to our Milky Way, and they are very prominent objects in the southern night sky all year since they are circumpolar. The closest galaxy of all, our own, is also more prominent in the sky down under since the center of the Milky Way is in Sagittarius.

Best of all though, remember those two pointer stars that are used to align southern telescopes? One is none other than a close stellar neighbor, Alpha Centauri. I remember hearing about that star since childhood and I know we evoke it often during public events as we try to communicate the vast size of the universe to people. A more complete name is Alpha Centauri AB-C as it is actually a three star system. Centauri A is slightly larger than our Sun and is 4.37 light years away from us. It has a slightly smaller binary companion known as Centauri B. Centauri C or Proxima Centauri, the official closest star, is a little over 2 degrees and .21 light years from the AB pair but is still thought to be gravitationally connected to the other two. It is a bit closer to the Sun at 4.2 light years distant but is only an 11th magnitude star, while the whole system, at magnitude - 0.27, is the third brightest star in the sky after Sirius and Canopus. The second pointer, Beta, resides around 350 light years away, but has an apparent brightness close to the Centauri AB-C system. The southern star parties then can include a visual of our sun's closest neighbor while we must be resigned to only talking about it.

On a side note, the Centauri system would seem to be an ideal candidate for a planet search, and indeed there have been observations, but so far they have not produced any results. As our techniques are able to detect smaller and smaller planets this may change, and Jody Foster may have a new destination for her next movie now that she has already explored the Vega system.

Now for one last north-south comparison. While it is just a myth that water spirals down the drain in opposite directions in the different hemispheres, there is a direction difference that would probably take us some getting used to. While our constellations move around the North Star through the night in a counter-clockwise direction, for our southern friends the stars move clockwise around their celestial pole. It is surprising how many differences arise from the different perspective of the Southern Hemisphere. I'd enjoy visiting one day to observe them for myself.

Claire Stover

References:

<http://www.universetoday.com/2009/11/25/the-view-from-down-under/>

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



What's Up - Christmas In The Night Sky?

Like asking the contents of a fruitcake, the Christmas also brings a question commonly asked of astronomers, "What was the Christmas Star of Bethlehem?" Although we all know this image so well, a bright horizon star that led the Magi toward Bethlehem is mentioned only in Matthew 2, an account written about 50 AD. Another fact is that nowhere in the Bible is December 25th mentioned as Jesus Christ's birthday. This is a later Roman addition, perhaps to coincide with the wild Saturnalia festivals of winter. The only seasonal image mentioned in the Bible is of shepherds keeping watch over their flocks by night. This suggests a birthing of lambs in springtime rather than winter. The year is also unsure, studies show that the sacred birthday could have been anywhere between 5BC and 1BC.

So, what astronomical event could have impressed people enough at that time to be remembered over 50 years later? It was a time when astronomy and astrology were one in the same. When heavenly bodies were seen to determine the events of history. Notable candidates could be a fireball meteor, an impressive comet, an exploding supernova, or a close radiant conjunction of planets.

A meteor would have been too brief to lead Magi on their

quest. Meteors were often seen as evil omens, as were comets. The Chinese, with imperial funding, kept the best records of "celestial visitors" during this period. There were comets recorded in both 5 and 4 BC. But they weren't very bright and even the Chinese considered them "sinister and hairy." The watchful Chinese recorded only one dim "guest star" or nova in 5 BC. They certainly would have made written note of a rare and brilliantly long lasting supernova.

This leaves us with a close conjunction of planets. This astronomical information can be precisely determined by reversing orbital sky patterns.

The two brightest planets, giant Jupiter and neighboring Venus, came unusually close on June 17th of 2 BC. This spring conjunction was only a tiny 6 arc seconds apart, so close that they would have appeared as one dazzling -6 magnitude star to the unaided eye. Also, it took place in Leo, a constellation astrologically associated with royal births.

Or maybe the Christmas star was just a miraculous mythology on the part of Matthew. True belief doesn't need astronomical evidence.

Lee Collins

Club Events Calendar

December 9, – Oakmont Elementary, Claremont
 December 11, – Holiday Party 6:30 – 9:30 PM
 December 12, Star Party – Claremont Hills Wilderness Park
 December 17, Board Meeting

January 9, Star Party – Mecca Beach
 January 19, Main Branch, Ontario Library, 7 – 9 PM
 January 21, Board Meeting
 January 29, General Meeting
 -Larry Kawano on "Astro Mythbusters"

February 13, Star Party – Death Valley
 February 18, Board Meeting
 February 23, Colony Branch Library Ontario 6 – 8 PM
 February 26, General Meeting

March 13, Star Party
 March 18, Board Meeting
 March 26, General Meeting

April 10, Star Party
 April 15, Board Meeting
 April 20, 2010, – Main Branch, Ontario Library 7 – 9 PM
 April 23, General Meeting

May 6, Board Meeting
 May 12 - 16, RTMC
 May 21, General Meeting

June 5, Star Party – Mt. Baldy
 June 12, Saturday – Mt. Wilson 60" viewing
 June 17, Board Meeting
 June 25, General Meeting

July 10, Star Party – White Mountain
 July 23, General Meeting

*On the twelfth day
 of
 Christmas
 - my true love sent to me...*

