

Temecula Valley Astronomer

The monthly newsletter of the Temecula Valley Astronomers

August 2014

Events:

General Meeting

We will be meeting at the
Temecula Library, 30600 Pauba
Rd, Rm. B on Monday, August 4,
2014 at **7 pm**

What's Up : Tim Deardorff

Presentation : Jim Lafferty
"Solar Viewing and Imaging"



*SN 1006 Supernova Remnant - NASA APOD -
Image Credit: NASA, ESA, Zolt Levay (STScI)*

WHAT'S INSIDE THIS MONTH:

COSMIC COMMENTS:

by President Mark Baker

LOOKING UP:

by Curtis Croulet

Cupula Rock

by John Garrett

Art's Night Out

by Art Cobb

Send newsletter submissions to Mark DiVecchio
(markd@silogic.com) by the 20th of the month for the next
month's issue.

General information:

Subscription to the TVA is included in the annual \$25
membership (regular members) donation (\$9 student;
\$35 family).

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Cosmic Comments – August/2014

by President Mark Baker

I really love the Summer night skies in the northern hemisphere... I'd probably love the southern hemisphere night skies as well but I've never seen them!! Maybe someday...

There is just soooo much to see... I can spend an eve, just looking at things celestial between Scorpio and Sagittarius alone. But throw in the summer Milky Way and "Oh what a night...!!"

I had to smile at the recent Star-B-Q, as a woman approached me, once she became aware of my affiliation, with a question...

"What is it" she says "about the skies here in Anza, that we can see so much??"

"Whadya mean" says I...

"Well, I was in Anza Borrego and couldn't see anything like what I can see here" says she...

I says "HmMMM...that's strange, because that area is well known for the dark clarity of its skies!!"...

And she says "But I couldn't see the Milky Way or any of the other things I've seen here tonight"...

And then it occurred to me... "And when were you last there?" asks I...

"February" she says...

"Oooooohhhh" I say... "That's because you were looking at the winter sky there, and we now have the summer sky to view here!!"

"Aaaaaaaahhhh" says she..."Didn't know it made a difference"

Well, WE all know it makes a big difference what time of year we view the cosmos. Sadly, for me at least, Summer is the time we are least active and the students and parents and other observers that Ooh and Aah over what we show them the rest of the year would LOVE seeing what's up there right now... toss in a couple of planets and they'd be wow'd for sure. And I especially miss the opportunity to learn and, in return, teach as well...

So I hope you all get a chance to take in the Summer Splendor...it is my favorite time of year, even if I don't get to share it.

Clear, Dark Skies my Friends

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Looking Up –August 2014 by Curtis Croulet

First Quarter Moon is on August 3 at 5:50 pm; **Full Moon** is on August 10 at 11:09 am; **Last Quarter Moon** is on August 17 at 5:26; **New Moon** is on August 25 at 7:13 am.

Mercury has a very poor evening apparition in late August. It'll be too low to see easily.

Venus is in the pre-sunrise sky at magnitude -3.8. **Venus** skims by **Jupiter** on August 18.

Mars is now in Libra. It's closing in on **Saturn**, which is also in Libra. **Mars** is now too small to see detail in amateur telescopes.

Jupiter creeps into the morning sky after the first few days of August. Jove reached conjunction with the Sun on July 24. **Jupiter** and **Venus** make a close pass on August 18.

Uranus and **Neptune** rise during the evening. **Neptune** reaches opposition on August 29. They're in Pisces and Aquarius, respectively.

Pluto, at magnitude 14.1, looks like just another very faint star in Sagittarius.

The **Perseid Meteors** peak on the night of August 12-13, but this will probably be a poor shower, since the Moon will only be two days past full, it's light swamping all but the brightest meteors. However, the Perseids produce occasional bright meteors with long, glowing trains. Keep in mind that the **Perseids**, like many meteor showers, aren't only visible on the peak night. The shower actually starts during the last week of July and lasts until about August 18.

Let's look up.

Ah, the "Dog Days of Summer." The weather is so hot, it's only fit for dogs. Or it's so hot, you feel like a dog. Or it's so hot, dogs do nothing but pant and snooze the days away. Or it's so hot, dogs go mad. There may be a kernel of truth in that last one. Civil disturbances increase during the hottest weeks of the year. The tragic urban riots in American cities in past decades occurred during the hottest days of summer.

So when are the Dog Days? And why are they called Dog Days?

I confess that until I performed my research for this essay, I had an incorrect idea of which days were the Dog Days. Years ago, a certain TV weatherman in San Diego promoted the adoption of shelter dogs during calendar August, which he called the "Dog Days." So I assumed that August equaled Dog Days. However, according to the *Old Farmer's Almanac*, the Dog Days run from July 3 to August 11. Several references describe this span of days as "traditional."

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The Dog Days are so called from their relationship to Sirius, the Dog Star. We usually think of Sirius as a winter and early spring object. Therefore it may seem strange to discuss Sirius in July. But Sirius is important in summer, too, because it's in summer that Sirius first appears in the morning sky.

Sirius was important to the ancient Egyptians. Its first visible appearance in the morning sky, just before sunrise, coincided with the beginning of the annual flooding of the Nile. The floods were caused by seasonal rains thousands of miles away. The floods irrigated and replenished the soil, which was vital for the survival of the Egyptian civilization. The beginning of the floods signaled the time to begin planting.

The Egyptians identified Sirius with several deities, including the jackal-headed god Anubis, the ibis-headed Thoth, and the cow-headed female god Hathor. This is according to Fred Schaaf's *The Brightest Stars*, but another source says the Greeks identified Sirius with Isis, and the personification of Sirius was named Sopdet. Perhaps the link of Sirius and deity varied according to political or religious considerations.

We get our Dog Days directly from the Romans, who called the hot part of summer *dies caniculares* ("Dog Days" in Latin). Greek and Roman writers sometimes attributed the heat of summer to the combined effects of the Sun and Sirius, but the astronomer Geminus (70 BC) sensibly thought this was ridiculous.

The first appearance of Sirius in the morning sky is called its *heliacal rising*. During the height of the ancient Egyptian civilization, Sirius's heliacal rising occurred around June 25, just after the Summer Solstice. The Dog Days followed. But precession, the slow wobbling of the Earth's axis, has delayed the heliacal rising of Sirius in the intervening sixty centuries. The latitude of Temecula is about 33.5 deg N, which is close to ancient Egypt's latitude of about 30 deg N. For us the heliacal rising of Sirius is now about August 4. Thus, the *Old Farmer's Almanac's* assignment of July 3 through August 11 to the Dog Days nearly precedes the heliacal rising of Sirius, rather than following it as it did for the ancient Egyptians.

I urge our members to try to see what morning in August they can first detect Sirius in the dawn twilight. In more northerly latitudes (say, northern U.S., Canada, or Europe), the detection of Sirius's heliacal rising is the final activity of a night of observing the Perseid Meteors (Aug 12-13). Hypothetically, at our latitude, we should be able to see a few mornings before the Perseid Meteors.

One other thing that must be addressed is the color of Sirius. To my eyes, Sirius on a crisp winter night is blue-white. Guests at school star parties often describe Sirius as changing colors, from red to green to blue to anything else you can imagine. The twinkling caused by the Earth's atmosphere favors different colors from moment to moment. But the ancients sometimes described Sirius as red. Some people have suggested that Sirius has actually changed its color in the past several thousand years. But what we know of stellar evolution makes it unlikely that a bright red star would become white or blue. Furthermore many of the old writers described it just as we see it. The simplest explanation that I've seen is that Sirius

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at heliacal rising, being very low and filtered through a thick atmosphere, would indeed be red. If you see Sirius on one of these August mornings, be sure to take note of its color. Clear skies.



Quiz Answer

Why do clocks run clockwise?

From: <http://www.almanac.com/fact/why-do-clocks-run-clockwiser-before-the>

“Before the advent of clocks, we used sundials. In the northern hemisphere, the shadows rotated in the direction we now call "clockwise." The clock hands were built to mimic the natural movement of the sun. If clocks had been invented in the southern hemisphere, "clockwise" would mean just the opposite. ”

Quiz

Planets (except the Earth) are named after Roman Gods. Who or what are the moons of each planet named after?

If you know the answer (without Googling it!) post it to <tva@mrh.org>.



Cupula Rock by John Garrett

The Julian Starfest is a yearly star party taking place at Mengheni Winery in Julian every August over the past four years. I've been speaking at each of these events and will do so again this August this event which takes place on August 21 – 24.

Normally, I develop a new topic for Starfest as part of my routine yearly activity, but this year, that didn't happen, so I decided to open an old topic: archaeoastronomy

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I've been fascinated by ancient artifacts that have an astronomical connection. I've shared my speculation about cupula rock from the Santa Rosa Plateau Ecological Reserve.



Figure 1: Cupula Rock

The Reserve's literature on this rock describe the manmade depressions as having a ritualistic purpose connected to the rock's resemblance to a rabbit. I can see the rabbit, but I can also see a rabbit in nearly any cloud, rock, tree, and of course, the moon.

I was intrigued by how accurate an overlay of Cassiopeia fits some of the cupules near the middle. I suspect some square, linear, or cross patterns match other constellations too. However, my efforts to share this hypothesis with real archeologists has returned some healthy skepticism. For example, Anthony Aveni considers any maplike construction, such as my rock starmap, to be a unique product of western culture, and therefore seeing a pattern would be imposing my traditions where they may not belong.

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Image: Thomas Hockey

Figure 2: Cupules on a Easter Island (Rapi Nui) rock

After some research, I found a publication that examined cupules on a rock on Easter Island. The pattern was compared to Sagittarius with some optimism, so I thought I found a sympathetic reviewer.

It turns out that in hindsight, the paper's author considers his work proof that you can find a pattern in anything.

Ok, fair enough. I do not position cupula rock as astronomical petroglyphs, but as a curiosity. If they were standard bore holes for tool making, as suggested to me by Aveni, then what tools were made and why would the holes be at different heights? Tools would match the physique of the builder and therefore tend to be at shoulder or hip height, which ever is most convenient when doing hard labor.

Inevitably, any claim of an astronomical influence in an artifact needs some cultural corroboration: a traditional

story or descendents who can report the purpose of an artifact. Since my first inquiries I've met Luiseno Indians who claim that their ancestors did carve constellations into rocks. My conversation was too brief for me to know if this has broad support within the Luisenos. I also met members of the Juaneno Band of Mission Indians whose name for themselves is the Cuel Atah, which means, "The Star People".

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This is as much as I have on Cupula Rock and my information is several years old. However, with the advance of the world wide web, I suspect that digging deeper will become easier for an arm chair researcher such as myself. If I learn more, I'll share it in my Julian Starfest talk, regardless of whether the information supports or refutes my star map hypothesis. In addition to this topic, I'll share research on an artifact whose astronomical connection is not in dispute, and has produced a lot of recent analysis. This is the Antikythera Device, found in an ancient mediterranean shipwreck.

My presentation is on Friday, August 22. I do not yet know the start time, but most likely 5, 6 or 7 pm.



ART'S NIGHT OUT **Article 150 August 2014**

August is here again and with it brings us great binocular viewing. Summer months are a great time to get out a good pair of binoculars, find yourself a comfortable lounge chair, a moonless clear sky, and lay down and enjoy our night sky.

If you look into the southern horizon you'll notice a nice hazy area in the sky that extends upwards and across the sky ending up into the northern horizon. This hazy band of light is our Milky Way Galaxy. We are situated in one of the 'spiral arms' of this galaxy. The large hazy mass of light in the southern horizon area is the center of our galaxy.

As you are looking at this magnificent band of light, grab your binoculars and start looking into this band of light from the southern horizon and follow it up over the sky into the northern horizon. As you look into the southern area where the mass of light is larger, you'll see several open star clusters and even some nice nebulae. The sight is really breath-taking.

Tonight I'd like to locate some interesting objects in the constellation Scorpius.

I have identified Scorpius several times in the past. I'll stick with my more popular description of this constellation for tonight. I think it looks like a capital "J". This "J" is leaning over to its right just a little. The three stars forming the top of the "J" are aligned almost straight up and down. The top star is Beta. The middle star is Delta. And, the bottom star is Pi. The rest of the body stars head down and to the left in a sharp arc, where they then flatten out and move to the left and then curve upward to form its tail or "hook" as some see it.

Look back at the three "top" stars again. From the middle star Delta, look left until you see a nice bright orange colored star. This is star Antares. Using your binoculars, if you have them, look to the right of Antares about 2 degrees. Here you will see a nice globular cluster called

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M-4. You can see this very easily and with nice detail using a small to moderate sized telescope at low power.

I must interject a comment at this point. I need to remind us of some viewing tips here. Viewing in our night sky is best done in dark sky areas, with no moon and a transparent sky. Unfortunately, for most of us, casual viewing is done from our driveways or backyards in our light polluted Temecula Valley sky. Most of my observations are from my yard. If an object is better seen in a dark sky area, I usually let you know.

Back to Scorpius. Look 1/3 of the way from Antares or M-4 to star Delta, and up slightly. Here you will see another small globular cluster M-80. This is not only smaller than M-4, but also quite fainter. A little more power on the telescope will give you a little more detail. Even though smaller, still it is a nice find.

Remember: The "M" in these objects stands for Messier. Messier was a French astronomer from the early 1700's who was on a quest to find comets. Back then the quality of the telescopes used was quite inferior to today's scopes. Most of his observations of what he thought were comets, ended up being clusters and galaxies. He had listed some 110 objects that were later classified as clusters and nebulae and galaxies. A popular challenge is to find all of his objects in one night. This is known as the "Messier Marathon. This usually occurs at the end of April.

If you follow the body stars of Scorpius from Antares downward to the point where the stars move left, you'll see a group of stars just above the bending point that form what appears through binoculars to be a comet. This is known as the "False Comet" and is a nice view from our location. Take that location of stars and (using your binoculars) pan left and up to the tip of the "tail" of Scorpius. You begin to see masses of brilliant stars. This becomes one of the most beautiful areas of our night sky that will really "blow-you-away".

As you look at the "tail" stars of Scorpius, you'll see two fairly bright stars that are close together. These two stars are at the end of the curved area of the "J". If you look just left of these two stars, you'll see another star that is smaller and not quite as bright. I call this the "stinger" star. Just off of this star is a dark-sky challenge. There is a small, faint globular cluster called NGC6441 that can be seen using moderate sized telescopes in darker skies. It will appear as a small hazy ball of light. I can easily see this one using my 4.5 inch refractor at about 45 power, from my front yard on a moonless, clear night. Have you found it? Keep looking.

If you look up and left of that star, about 2 degrees, you'll see a nice open star cluster. This is a great binocular view or a small scope at low power. This is cluster M-7 and is a magnificent sight. It is hard to miss due to its size and mass in the sky. I like to find this first in my binoculars then switch to my telescope. Up and to the right of M-7, about 2 degrees is another nice open cluster called M-6. M-6 is not quite as large as M-7, but still a real nice sight.

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Take some time relaxing in your chase lounge and make use of your binoculars. The area that we have been looking in is full of beautiful clusters and nebulae. One could spend an hour just enjoying the beauty of this part of our heavens.

In the next couple of months, we'll be looking straight up from Scorpius to the constellation Ophiuchus and to the left of Scorpius into the constellation Sagittarius.

Until then,
Art

