



Temecula Valley Astronomer

The monthly newsletter of the Temecula Valley Astronomers Aug 2016

Events:

General Meeting : Monday, Aug 1, 2016 at the Temecula Library, Room B, 30600 Pauba Rd, at 7 pm.

We will recap the wonderful Star-B-Q held recently, in addition to regular Club business. Sharon Fleming will provide another stellar What's Up and Chuck Dyson is providing a presentation on the important JUNO mission that arrived in Jupiter orbit on July 4th.

For the latest on Star Parties, check the [web page](#).



NASA APOD 3 Oct 1997: Comet Halley and the Milky Way – 1986 . Credit: [Kuiper Airborne Observatory](#), [NASA](#)

WHAT'S INSIDE THIS MONTH:

Cosmic Comments

by President Mark Baker

Looking Up

by Curtis Croulet

Random thoughts

by Chuck Dyson

Venus and Jupiter prepare for their close-up this August

by Ethan Siegel

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

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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 – Aug/2016

by President Mark Baker

July 20th of 1969...do you remember where you were and what you were doing??

This is a date indelibly etched in my memory...following a summer league basketball game, I was invited to the home of a longtime friend that was nearby. Skip, his Father, and I sat up through the wee hours of the next morning watching the first Moon landing. I can still “feel” the excitement that this singular event imposed on my psyche...after I got home, I then stayed up to watch, first Neil Armstrong, and then Buzz Aldrin, take those small steps that were supposed to become a giant leap. All this time later and I, for one, am still awaiting that Leap...

However, this date was when I decided on what course to pursue educationally, and that alone was a great thing for me. I just knew I would soon have the opportunity to be considered for a seat on an upcoming mission, either back to the Moon, or maybe even Mars or elsewhere. It is what jump started my technical interest in things Astronomical and you all know how that has worked out...so far!!!

The bottom line is that we of the TVA are all drawn to the skies and celestial stuff for different reasons, maybe, and with varied intensities, but we provide a good in our community that transcends who we are and why we do Astronomy... I'm proud to be associated with such a wonderful organization that sacrifices so much to get our children neighbors, and friends to just look up. Thanks for all you do...

Clear, Dark Skies my Friends...





Looking Up – Aug 2016

by Curtis Croulet

New Moon is August 2 at 1:44 PM PDT; **First Quarter Moon** is August 10 at 11:21 AM PDT; **Full Moon** is August 18 at 2:26 PM PDT; **Last Quarter Moon** is August 24 at 8:41 PM PDT.

Venus is now in the early evening sky. Look shortly after sunset. As I write this (July 21), I was able to spot Venus and **Mercury** with binoculars about 15 to 20 minutes after sunset. Venus was low. Mercury was much dimmer and to the upper-left of Venus. Once I knew where Venus was, it was easy to see with the naked eye. On July 30 Mercury and the 1st magnitude star Regulus will be only ½ degree apart.

Mars is shrinking and dimming. By the end of August, it'll be only about 10.5 arc seconds across, meaning the dark albedo features will be hard to see. On August 23 Mars passes between Saturn and Antares.

Jupiter, which we greeted with delight during mid-winter, is leaving us. By August 31 the giant planet sets less than an hour after sunset.

However, Mercury, Venus, Jupiter, and Regulus (brightest star in Leo) perform an entertaining evening dance during August.

August 4 – Venus is close to Regulus.

August 5 – Jupiter is close to the Moon.

August 20 through 25 – Venus, Mercury, and Jupiter form an attractive triangle.

August 27 – Venus is close to Jupiter.

Saturn is in southern Ophiuchus. The ringed planet remains almost stationary (relative to the stars) during August.

Neptune rises shortly after 9 PM at the beginning of August and as early as 7:13 PM by August 31. **Neptune** is in Aquarius.

Uranus rises very late in the evening as August begins. By the end of August it rises shortly 9 PM. But that means it'll be high up in a dark sky



Saturn - Credit : Curtis Croulet



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by 1 to 2 AM, since the sky gets darker as the night progresses (lights are turned off all over Southern California). Contrary to my implied promise last month, the September issue of *Sky & Telescope* does *not* have finder charts for Uranus and Neptune. Maybe they'll be in the October issue.

Pluto is in eastern Sagittarius. It's up most of the night. Expect to use a big telescope and spend some time hunting to identify it. The July issues of both *Astronomy* and *Sky & Telescope* have finder charts for Pluto. Yes, this is, verbatim, the same thing I said last month.

The **Perseid Meteors** peak on the night of August 12. Unfortunately, the Moon is past first quarter. The Perseids are visible from mid-July to August 24, so you will probably see some on other nights when conditions are better.

There are two other minor showers in August: **Kappa Cygnids** on August 17; **Aurigids** on August 31.

Let's look up.

When I was 8 years old, before I was interested in astronomy (that came two years later), my best friend told me about Halley's Comet, which was to appear in 1985 and 1986. Looking into that distant future, I realized I'd be 41 years old when the comet became visible to the naked eye. The comet came and went. I saw it and photographed it. Many people were disappointed with Comet Halley. I thought it was pretty good. My late parents saw it from Malawi, in Africa. My mother – not prone to superlatives about celestial matters – described it as “spectacular.” Alas, the friend who told me about the comet never saw it. He died in 1980. I think about that when I think about the Great American Eclipse, the coming total solar eclipse. It was once an almost unimaginably remote event. But now it's only a year away, on Monday, August 21, 2017. The zone of totality crosses the U.S. from Oregon to South Carolina. If you intend to see the Great American Eclipse, I suggest you start making plans now. Weather prospects are best in the arid regions of eastern Oregon and worst in the southeastern U.S. Hotel and campground reservations are already filling up in anticipation of the eclipse. My own plans are to view the eclipse from Riverton, WY, where a friend has arranged viewing on private property. You might start your research about the eclipse at www.greatamericaneclipse.com.

OPT Telescopes recently held their annual Southern California Astronomy Expo. They had ticket drawings for prizes. I won a prize. Furthermore, my prize was something useful – an Atik GP color guide and planetary CCD camera. The camera lists for \$445. Since I already had a good guide camera, it was planetary imaging that interested me. An optimal telescope for planetary imaging has large aperture and a long focal length. The Celestron C14 (14-inch aperture, 4000 mm focal length) is popular for this purpose. Although I have a 10-inch Meade available (2500 mm focal length), I decided to try the new camera with my Tele Vue NP101is refractor, mainly because it was already set up for viewing. The NP101is has a mere 540 mm focal length, but a 5x Tele Vue Powermate (Tele Vue's version of a Barlow lens) extends this to 2700 mm. This combination gives me a healthy focal length, but not much aperture (4 inches).



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The accompanying photo is my first foray into planetary imaging, using the Atik GP color CCD camera, TV NP101is refractor, and 5x Powermate. I shot the image from my driveway in Anza, CA, on the evening of July 19, 2016. The camera can shoot video, which is the preferred method for shooting planets, so I shot about 1000 frames. The camera includes capture software, and I mostly used the capture program's defaults. I assembled the video frames with Registax 6, which is freeware. I did some minor tweaking in Photoshop. This image doesn't match the superb offerings of others, but I'm pleased with my first effort.

Clear skies.





Random Thoughts by Chuck Dyson

I actually have no plan or agenda for each month's article, but let events of the month that interest me dictate what I will write about. Obviously some months have several events that are interesting and other months there is a hunt to find a topic likewise some topics are easy research, four to five hours and others require days, the Brashear article was one that required visits to many web sites. For this month I thought the article that interested me would be easy to hold forth on, it is in the British Astronomy magazine *Sky at Night* and know that it is not about Brexit and its effect on astronomy; it is titled "When Religion Meets ET" and is by David A Weintraub and astronomer at Vanderbilt University. Professor Weintraub does not delve into the Hollywood versions of aliens, you know the two main types, short, fat, cute, speaks English, and has just lost his/hers/its spaceship and big, ugly, glowing eyes, speaks no English, and wants to eat our planet. Professor Weintraub thinks that it is not unreasonable to expect that we will detect the atmospheric signature of some form of life within the next two or three generations and this will surely kick the search for technologically advanced civilizations into overdrive. What to do once the contact is made? Cell phone exchanges with other civilizations are just not practical, darn that speed of light thing; therefore, of necessity there will be a face to face meeting between civilizations. Based on humanities track record one can with some confidence bet that one or more persons at the meeting will be more than eager to save the souls of the other civilization. Professor Weintraub speculates on how extraterrestrials, I deliberately do not use the word alien as the dictionary defines alien as one belonging to a foreign country or nation and only Hollywood defines it as an alien and not an extraterrestrial, could possibly view or practice some of our Earth centered religions, for example beings from a fast rotating planet could find it awkward to pray three to five times per day while on a planet with tidal lock to its star and has a day that is twenty eight Earth days long would have no problem with the three to five prayers per day. The question is also asked as to whether or not an Earth centered religion would make any sense or have relevance to extraterrestrials and to this argument Brother Guy Consolmagno the director of the Vatican Observatory states that "It is not just humankind, but the whole of creation that was transformed and elevated by the existence of Christ"; however, this view is opposed by Brother Pierre Teilhard de Chardin a Catholic philosopher who writes "The idea of an Earth chosen arbitrarily from countless others as the focus of Redemption is one that I cannot accept". Obviously there is a difference of opinions within the ranks of the Catholic Church and please do not think things are any better in the Protestant Church, the Synagogue, or the Mosque because they are not. Professor Weintraub suggests that the Hinduism and Buddhism could have more appeal or relevance to extraterrestrials because they focus on spiritual enlightenment through reincarnation and enlightenment to end personal suffering in this life; any extraterrestrial smart enough to build a space ship probably has a concept of self and can grasp the concepts of self-enlightenment and self-improvement and these concepts are ones that could be universal whereas the Abrahamic religions tend to be highly Earth centric.

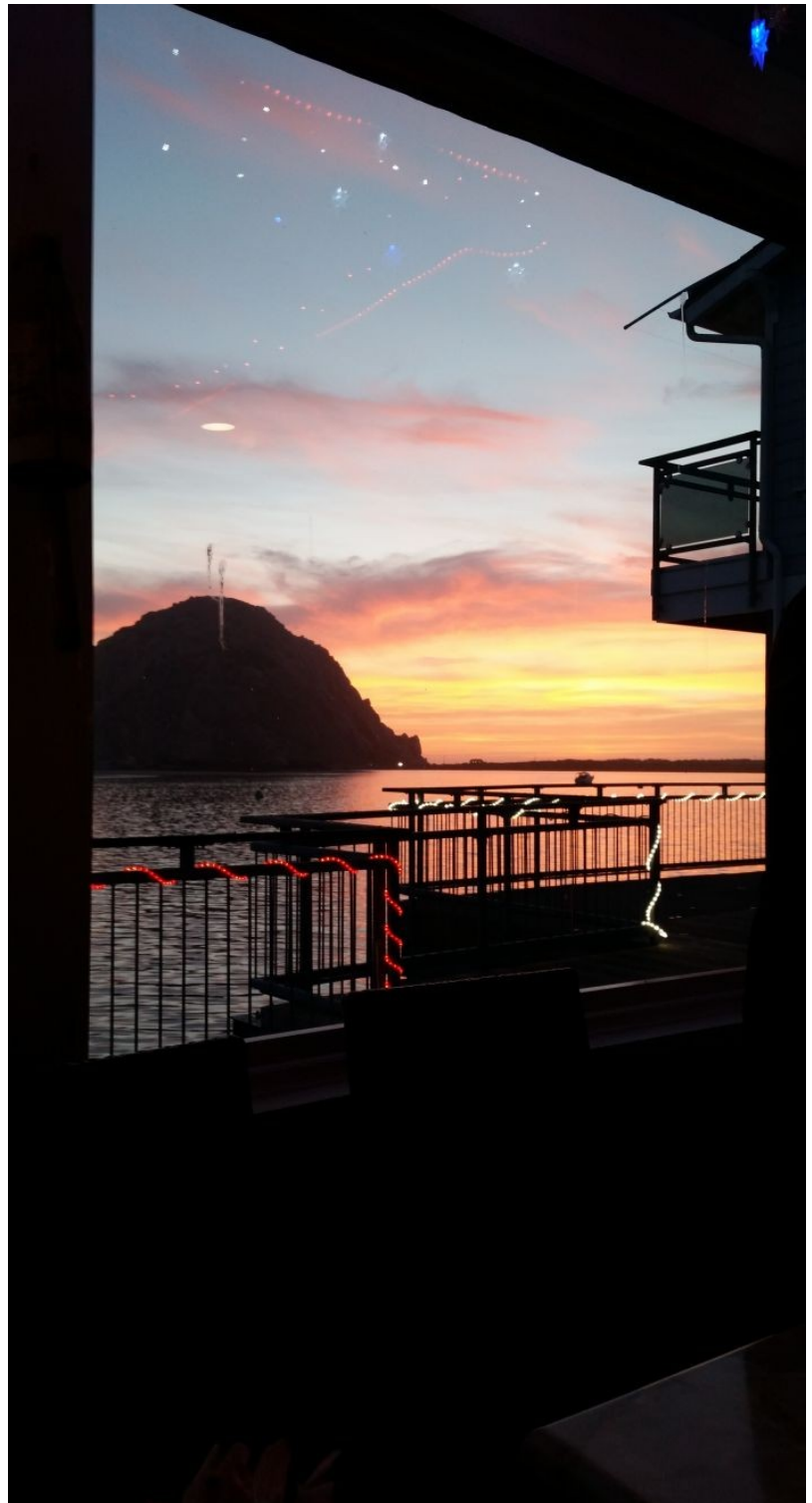


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What professor Weintraub does not explore is what happens if the first three extraterrestrials exit the space ship and they are all carrying a religious book and all three books are different and they approach three earthlings and they are carrying three religious books and all three books are different and each one of the six individuals is convinced that the book they carry is the one true book, as Thomas the Tank Engine says on the children's show "And then there was trouble". Another possibility could be the extraterrestrials are from a civilization that has passed through the acrimonious religion phase of its development and the first question they ask is "Dude why are you all still whacking each other over the head with clubs over religious differences?" This question would be followed by us being told, in the nicest sort of way, that we were under planet arrest until we grew up, can't have this sort of madness running wild in the galaxy you know.

At the start of this Random Thought I stated that I thought that commenting on professor Weintraub's article would be easy and as long as one stays in the mechanistic realm it is, but if one ventures into the realm of the psyche the whole subject becomes quite complicated and murky. On a day to day basis we can say that we are not attached to any particular idea or program but when confronted with a paradigm shift that threatens to change everything then we reach into our psyche and grab on to our core beliefs that we have spent a lifetime collecting and building. A good example of this happening is the revolution in biology caused by the recent ability of biochemists to read and understand the messages in DNA, overnight the system of taxonomy



Flying saucer hovering over Morro rock. Credit: Chuck Dyson



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that had been started by Linnaeus in 1757 and was based on anatomical features was thrown out the window to the extreme dismay of all classically trained biologists. If extraterrestrials showed up with a completely new and unique world and religious view, how would we react, how would we cope, and could we accept it? If you want to search for answers to these questions the best advice I can give is to recommend the Herrmann Lectures given by Owen Gingerich at Gordon College in 2013 and on U tube. In this series professor Gingerich asks the questions in three lectures Was Copernicus right? Was Darwin Right? Was Hoyle Right? In these lectures professor Gingerich explores the scientific effect of the paradigm shift each caused in the scientific world and the religious world, very interesting talks.

In the words of my favorite extraterrestrial, Mr. Spock, until next month “May you live long and prosper”.

Cheers
Chuck





Venus and Jupiter prepare for their close-up this August by Ethan Siegel

As Earth speeds along in its annual journey around the Sun, it consistently overtakes the slower-orbiting outer planets, while the inner worlds catch up to and pass Earth periodically. Sometime after an outer world—particularly a slow-moving gas giant—gets passed by Earth, it appears to migrate closer and closer to the Sun, eventually appearing to slip behind it from our perspective. If you've been watching Jupiter this year, it's been doing exactly that, moving consistently from east to west and closer to the Sun ever since May 9th.

On the other hand, the inner worlds pass by Earth. They speed away from us, then slip behind the Sun from west to east, re-emerging in Earth's evening skies to the east of the Sun. Of all the planets visible from Earth, the two brightest are Venus and Jupiter, which experience a conjunction from our perspective only about once per year. Normally, Venus and Jupiter will appear separated by approximately 0.5° to 3° at closest approach. This is due to the fact that the Solar System's planets don't all orbit in the same perfect, two-dimensional plane.

But this summer, as Venus emerges from behind the Sun and begins catching up to Earth, Jupiter falls back toward the Sun, from Earth's perspective, at the same time. On August 27th, all three planets—Earth, Venus and Jupiter—will make nearly a perfectly straight line.

As a result, Venus and Jupiter, at 9:48 PM Universal time, will appear separated by only 4 arc-minutes, the closest conjunction of naked eye planets since the Venus/Saturn conjunction in 2006. Seen right next to one another, it's startling how much brighter Venus appears than Jupiter; at magnitude -3.80, Venus appears some *eight times brighter than* Jupiter, which is at magnitude -1.53.

Look to the western skies immediately after sunset on August 27th, and the two brightest planets of all—brighter than all the stars—will make a dazzling duo in the twilight sky. As soon as the sun is below the horizon, the pair will be about two fists (at arm's length) to the left of the sun's disappearance and about one fist above a flat horizon. You may need binoculars to find them initially and to separate them. Through a telescope, a large, gibbous Venus will appear no more distant from Jupiter than Callisto, its farthest Galilean satellite.

As a bonus, Mercury is nearby as well. At just 5° below and left of the Venus/Jupiter pair, Mercury achieved a distant conjunction with Venus less than 24 hours prior. In 2065, Venus will actually occult Jupiter, passing in front of the planet's disk. Until then, the only comparably close conjunctions between these two worlds occur in 2039 and 2056, meaning this one is worth some special effort—including traveling to get clear skies and a good horizon—to see!

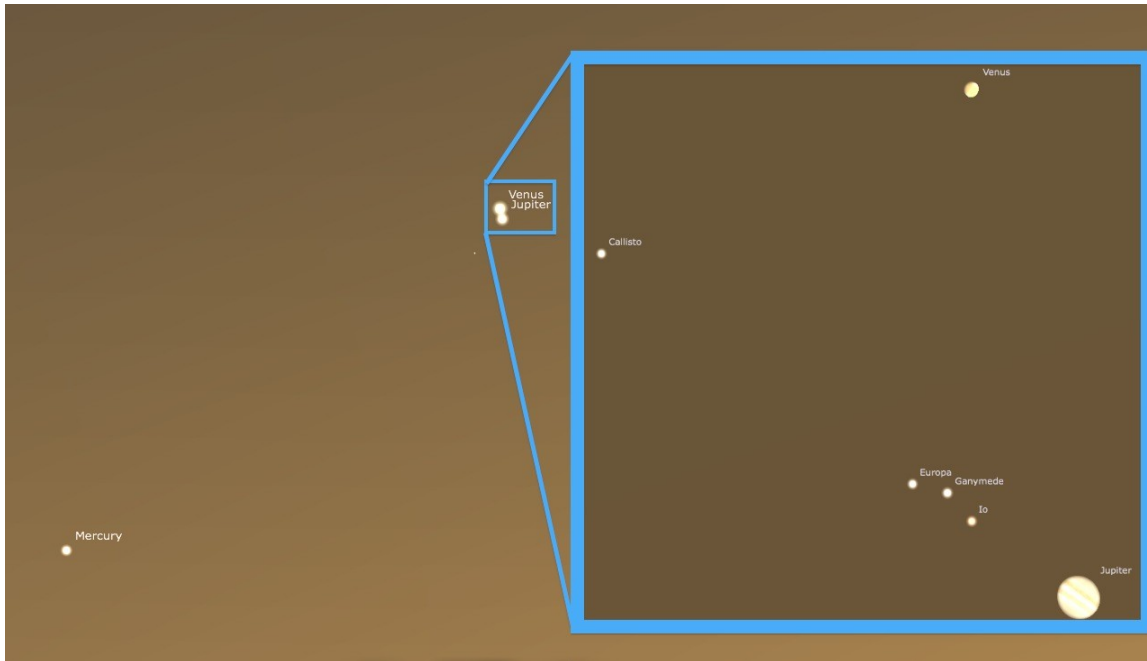


Image credit: E. Siegel, created with Stellarium, of a small section of the western skies as they will appear this August 27th just after sunset from the United States, with Venus and Jupiter separated by less than 6 arc-minutes as shown. Inset shows Venus and Jupiter as they'll appear through a very good amateur telescope, in the same field of view.

To teach kids more about Venus and Jupiter, visit the NASA Space Place webpages titled "All About Venus" [<http://spaceplace.nasa.gov/all-about-venus/en/>] and "All About Jupiter" [<http://spaceplace.nasa.gov/all-about-jupiter/en/>].

This Article is provided by NASA Space Place.

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