



Events:

General Meeting : Monday, Aug 3, 2015 at the Temecula Library, 30600 Pauba Rd, Rm. B at 7 pm.

Tim Deardorff with his What's Up in the night sky and we will have a special presentation on the New Horizons mission currently investigating the Pluto system by JPL speaker and SDAA member Jerry Hilburn. All are welcome...

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



[APOD Aug 21 2013](#) - Perseid Meteors Over China - Image Credit & Copyright: [Xiang Zhan \(Beijing Planetarium\)](#)

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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 – August/2015

by President Mark Baker

Hardly a Star Party goes by that I don't get a request for "Where's Pluto??" . I often hesitate because I really want to say something flip and condescending, but I don't and find myself explaining where it might be found at that particular instant, with the caveat that we have no equipment available to truly see it.

Sooooo... with all the attention the New Horizons probe has gotten, this is just a heads up that we can probably expect that question at upcoming Star Parties, but with an exponential increase in frequency!!!

I'm hoping that those that attend the August TVA meeting will glean a lot of information on our favorite Dwarf (actually, Dopey is mine...but that's a different story!!!).

But here's to being prepared... please help our participants out as best you can, and leave the condescension to me!!!

Clear, Dark Skies my Friends...



Art's Night Out - Reloaded

Article 43 Aug-2005

by Art Cobb

We are well into Summer now and with it brings some of my favorite nebulae and star clusters. Two of the more famous constellations have become vary apparent in our S/E sky. I'm referring to Scorpius (the Scorpion) and Sagittarius (the "tea-pot"); Sagittarius being to the left of Scorpius. Scorpius looks like the capitol letter "J" with the top of the "J" leaning to the right.

The tail, or southern most part of the constellation looks like a "fish hook". Sagittarius is identified by the asterism in the shape of a "tea-pot". It too leans to the right a little. The lid of the "tea-pot" appears as a triangle of stars. If you look at the "tea-pot", the spout is made up of three stars in the right side and the handle is made up of four stars on the left.

Both of these constellations are full of open clusters, globular clusters and nebulae. Sagittarius sets just below the center of our own galaxy and enters in the massive array of stars in our Milky Way Galaxy. This area is a great binocular observation. I'd like to start our



observing tonight using binoculars. Use at least a good pair of 10 x 50 or larger pair. If you can mount them on a tripod for stability, the better you'll see. This is especially true of the smaller globular clusters. For most of my binocular viewing, I am using a 11 x 80 Parks binocular mounted to a Televue "telepod" swinging type of mount, mounted to a Bogen camera tripod.

Okay, let's start with the constellation Scorpius. Up towards the top of the "J" is a 2nd magnitude star, which is the brightest star in the area. This is Alpha or commonly called "Antares". This is a beautiful orange colored star with a smaller greenish companion star making this a double star.

In binoculars, you can see the primary orange star only. You will need a telescope at about 150 power to split the double. If you look to the right of Antares about 5 degrees, you'll see three bright stars forming the top of the "J". They run north to south. The top star is Beta, the middle star is Delta and the bottom star is Phi. Look at Antares. Just to the right of Antares, about 2 degrees, you'll see another fairly visible star, 20-o (Omicron). If you look down from Antares and to the right towards 20-o, you'll see a hazy disc. This is the globular cluster M4. This is easily seen in binoculars and becomes a nice group of visible stars in moderate to large scopes.

Now, form a line between Antares and Beta. If you look half way between these two stars, you'll see another globular cluster, M80. This is much smaller and fainter than M4. However, it is visible from my driveway using my binoculars. It is easier to pick up using a small to moderate telescope. Yet, it is still a nice challenge using a pair of binos. It will look like an out-of-focus star up against the few surrounding stars that are sharp.

Next, move down the line of stars in the "J" to where they just start to turn left into the "fish hook". As you look at this area with the unaided eye in fairly dark skies, you'll see a nice bright group of stars forming what looks like the head of a comet with it's tail heading upward. This is called "the false comet". As you view this with binoculars, you'll see a pair of stars that form the head of the comet. These are Zeta 1 and Zeta 2. Looking just up from them appears a nice small open cluster, NGC 6231. This cluster is a beautiful and bright sight through binoculars and small scopes. Above NGC 6231 you'll also see a couple of fainter, spread out open clusters. These are Collinder 316 and Trumpler 24. These two clusters form the fading tail of the comet.

Next, look left of the "false comet" about 3 degrees in line of the "fish hook", and you'll see star Eta. The next left of Eta is star Upsilon. Upsilon lies about 4 degrees left or east of Eta. If you look below Upsilon about 2 ½ degrees and to the right a little, you'll see another globular cluster, NGC 6388. This one is just a little brighter and larger than M80 and can be seen with binoculars if you have a good southern exposure. This one sits pretty close to the horizon. I have picked this up using my binoculars on a moonless, clear night from my driveway. Like M80, a scope will give you a better view.

Next, I have a nice challenge for you. Follow the stars of the "fish hook" to the end stars. You'll see a nice pair of stars forming the tip of Scorpius' tail. These are 35-Gamma and 34-



Nu. If you look to the left of these two stars about 3 degrees, you'll see another star about as bright as 34-Nu. This is star G. The challenge is to find the small globular cluster just south and east of this star. I first noticed this cluster while observing this area. I first thought it to be a galaxy. I was using my 4" refractor looking for double stars. My first view was at about 50 power. Using my 11 x 80 binos, I have seen this late at night, with no moon, from my backyard. I can't always see it from my house. Thus, the challenge. Good hunting.

Next, look to the left of star G, about one degree and up about 3 degrees. In binos you'll see a very nice open cluster, M7. Actually, you can see this with the unaided eye in darker skies. Another unaided eye visible cluster, M6, is just up from M7 about another 3 degrees. This one is not as large or as bright as M7, but is still a nice binocular view.

Before I end for the evening, let's look at a couple of double stars in Scorpius. For these, I'll use my 4" refractor, again from my driveway. First, find star Beta again, the top star of the "J". This appears as a nice white and bluish pair. The primary is about twice the size as the companion star. Separation is about 13". Next, move down the "J" to star "20-o", which is just above the brightest star Antares. Star "20-o" is another nice double. The primary star is just about as bright as Beta. However, the companion star is $\frac{1}{2}$ the brightness as Beta's companion. These two stars are separated by about 20", a little farther than Beta and it's companion. Both of these stars are a nice bright white in color.

If you have access to a good star map, you can locate and view several double stars in Scorpius, as well as most constellations. Trying to split some of these can be a real challenge.

Until next time, Art



Looking Up – August 2015 by Curtis Croulet

Last Quarter Moon is August 6 at 7:02 PM; New Moon is August 14 at 7:53 AM; First Quarter Moon is August 22 at 12:31 PM; and Full Moon is August 29 at 11:35 AM.

Mercury spends most of August low in the sunset sky. The highest it will get above the horizon will be around August 20. The messenger planet will be at its best around August 20. This is not a particularly good apparition.

Venus passes Jupiter on July 31-August 1, but this pass isn't nearly as close as the one a few weeks ago. Venus continues to dive toward the Sun, reaching inferior conjunction on August 15. By then Venus will be gone from the evening sky. Then it'll leap quickly into the morning sky. You might be able to see Venus just before sunrise by August 31.

Mars is now in the morning sky. It's very small (less than 4 arc sec in diameter), and you may not even recognize it unless you make a point of looking for it.

Jupiter trudges westward slower than Venus, but it reaches conjunction with the Sun on August 26.

Saturn is in northwestern Scorpius, ideally placed for evening viewing.

Uranus is in Pisces. It rises at about 11 PM on August 1 and about 9 PM on August 31.

Neptune rises shortly after 9 PM on August 1 and shortly after 7 PM on August 31. Opposition is the night of August 31-September 1. Neptune is in Aquarius.

Pluto is in Sagittarius. Last month I said it was mag 15. Wrong. It's mag 14. But you'll still need a good-sized telescope and a good chart. For a chart, look in the July issue of Sky & Telescope, on pp.52-53. Astronomy has a chart for August in the August issue on p.36.

Perseid Meteors: see below.

Let's look up.

The Perseid Meteors peak on the night of August 12-13 (Wednesday-Thursday). This is the best circumstance for the Perseids in the past several years, and it's the best until 2018. The Moon will be one day shy of New Moon. The Perseids are generally considered to be our most reliable meteor shower. Their best competition is the Geminids (December). The Leonids (November) went through a run of several good years in the late 1990s and early 2000s, but it'll be awhile before they are once more reliably good.

You can view the Perseids from a suburban backyard, but they'll be best from a dark-sky site. They'll be better after midnight, as your particular spot on the Earth's surface rotates into the



meteor stream. Best viewing will be after 3 AM. But there's reason to watch at other times. The full span of dates for the Perseids runs all the way from July 17 through August 24. According to Astronomy's Bob Berman (August 2015, p.10) you may see more bright Perseids on the night of August 11-12. As you pursue other viewing activities in late July and August, you'll undoubtedly see a few Perseids.

Meteor showers are the easiest of all astronomical phenomena to observe, because you only need to lie down on a chaise lounge or reclining chair and look up. As you do so, you'll probably also see some artificial satellites, especially early in the evening or during the final pre-dawn hours during the peak of the shower. Unless you're seriously attempting to count or plot the meteors, you'll probably want binoculars so you can study deep-sky objects that catch your interest as you scan the sky.

The Perseid Meteors appear to originate in the area of the Double Cluster, that bright patch between the patterns of Cassiopeia and Perseus. That's the radiant. Although you'll be tempted to look in the direction of the radiant, the most spectacular meteors will probably appear in other parts of the sky, well away from the radiant. The meteors can be anywhere. If you're observing with companions, you'll inevitably hear shouts of excitement for meteors that you didn't see because you were looking the wrong way. You can't see them all.

As you see the meteors, try to mentally trace their paths back to the radiant. If your imaginary lines appear to intersect near the Double Cluster, those are Perseids. But you may also see some erratics – meteors unassociated with recognized showers. Perseids often leave bright, luminescent trails, and they often end with a brief star-like burst. The Perseids have had rare outbursts, when up to 100 per hour were seen. The most recent outburst was in 2004. You never know what you're going to get.

You should have reasonable expectations about the number of meteors. A reasonable average is one meteor every minute or two. You may see three or four within a few seconds, but then you may wait several minutes before seeing another.

The Perseid Meteors are debris from Comet 109P Swift-Tuttle. The connection between the meteors and the comet was discovered by Giovanni Schiaparelli in 1866. The meteors themselves are tiny particles of dust, usually no larger than a grain of sand or piece of gravel. Most of them burn up between 60 and 100 miles up.

Observing Perseid Meteors is a perfect way to enjoy a relaxing August night.

Clear skies.





Temecula Valley Library WINS!

From: John Goss
Date: July 15, 2015 at 7:34:12 PM MDT
To: Mark Baker
Subject: Congratulations on winning the Library Telescope drawing! (WRAL)

Hi Mark,

On behalf of the 16,000 members of the Astronomical League, please allow me to congratulate the Temecula Valley Astronomers on winning the Library Telescope drawing for the Western Region of the Astronomical League. The drawing was held at the 2015 ALCon on Saturday morning when telescopes were given away to ten of the thirty-three clubs that entered.

Orion Telescopes and Celestron will be given the mailing address supplied on the entry form. We will also be mailing a commemorative plate to be adhered to the base of the telescope.

Thank you for participating in this wonderful program. It is a great club activity, one that benefits your community and amateur astronomy.

We are examining the feasibility of repeating the Library Telescope give-away program for next year. Please look for announcements in upcoming issues of the Reflector.

Clear skies,

John Jardine Goss
Astronomical League President
www.astroleague.org

The TVA is a member club of [The Astronomical League](http://www.astroleague.org).

