



East Valley Astronomy Club

October

Newsletter

1994

EVAC HIGHLIGHTS

Tom Polakis started the September 21st meeting with some slides he took on a recent hiking trip in the Grand Canyon. Tom experimented with photographing the Canyon by moonlight. By using a ten-minute exposure at $f/2.8$ and 400-speed film, he was able to obtain pictures that look remarkably like daylight pictures. The only difference was the unusual appearance of the clouds (which moved during the exposures). He also showed some slides taken with shorter exposures that showed constellations and looked more "natural." Although the weather was not exactly what Tom had hoped for, he still came away with some excellent shots.

The main speaker for the evening was EVAC's own Sheri Kahn, who talked about her trip to England and visits to the Royal Astronomical Society and Greenwich Observatory. Although the Royal Astronomical Society is very exclusive and is not open to the public, Sheri was extremely fortunate and found someone who gave her a full tour. Sheri showed slides of some of the priceless items housed by the Society, some of which date to the 1700's. Greenwich Observatory also contains many items of interest, including several old transits and telescopes. Sheri brought back an assortment of literature from her trip, which many perused after the meeting.

On September 29th, two EVAC members went to the event sponsored by More Than Meetings. The evening turned out to be mostly cloudy, although Saturn and a few other bright objects peeked through the clouds long enough to provide nice views for some of the guests.

The local star party on October 1st turned out to be well-attended. About 15 people showed up at the Florence Junction site to enjoy the clear skies. Saturn was on many people's observing plans and a few observers were getting one last look at the summer objects before they sank below the horizon for another year. By 11:00pm, some thin, high clouds began to make their way across the sky from the

west and nearly everyone decided to pack up and go home.

The weather was not even a question for the All-Arizona Star Party—it was perfectly clear—the kind of weather that amateur astronomers dream of! On Friday evening, about 30 people showed up at the Arizona City Site. The observing was excellent, although it got a little chilly later in the evening (or maybe we just aren't used to cool weather after the long, hot summer). During the day on Saturday, people talked astronomy, napped and planned for the upcoming night. As sunset grew closer, more observers started arriving. Although no "official" count was taken, there were easily over 100 people and at least 35 telescopes.

Unfortunately, Saturday night was not quite the repeat performance everyone hoped for. The wind had starting picking up in the late afternoon and remained constant until shortly after moonset at 9pm. Within only a few minutes, the wind speed increased dramatically and sent many observers scrambling for dust covers. The wind remained strong throughout the evening and most people spent their time socializing and joking about the winds and dust that had put a premature end to a beautifully clear night. However, nature compensated for the lost observing by providing a spectacular bolide. The fireball started low in the northeast and passed nearly overhead, finally ending in the southwest. It was slow moving, taking over five seconds to cross about 140° of sky and was brighter than Venus.

UPCOMING EVENTS

EVAC Business Meeting
October 19, SCC Room PS172, 7:30pm

Local Star Party
October 29, Florence Junction Site and Carefree Site

Deep Sky Star Party
November 5, Vekol Road Site

COMING CELESTIAL ATTRACTIONS

Saturn is still well-placed in the evening sky and is on the meridian by the end of evening twilight. As mentioned last month, a white spot was discovered in August at 65 degrees south latitude. If the white spot proves to be too difficult, at least the rings will be easy—they will be at their greatest tilt for the year. As Saturn approaches eastern quadrature in late November, you will also have the best chance of seeing the shadow of the planet on the rings. In other words, it's an excellent time to get out and observe the ringed planet.

Venus passes inferior conjunction with the Sun on November 2nd and becomes an early morning object. How soon after conjunction can you spot it?

Mercury is at greatest elongation on November 6th and is low in the east-southeast about 45 minutes before sunrise. This is the best morning apparition of the year.

On November 17-18, the Moon undergoes a penumbral eclipse. Although not a spectacular event, the slight darkening of the northern limb of the Moon should be easily visible. The times for the event are:

Moon enters penumbra	4:26 UT (9:26pm MST)
Mid-eclipse	6:44 UT (11:44pm MST)
Moon exits penumbra	9:02 UT (2:02am MST)

If you are interested in tracking asteroids, 8 Flora and 40 Harmonia are near the Hyades in Taurus. In late October/early November, Flora will be at about magnitude 9 and Harmonia will be at magnitude 10. See the November issue of *Sky and Telescope*, page 72 for more details and a finder chart.

The Taurid meteors, usually a rather weak display can be seen from late October through late November. The radiant will be high in the sky all night, so you will probably see as many meteors in the evening as you will in the morning. The Taurids are the slowest of all meteors and often have brightly colored fireballs.

EVAC OFFICERS

President	Bob Kelley	451-6497
Vice-President	Don Wrigley	982-2428
Treasurer	Bill Smith	831-1520
Secretary	Frank Kraljic	991-5105
Newsletter	Don Wrigley	982-2428
	Robert Kerwin	837-3971
Properties	Carl Lorson	834-6864

PUBLIC STAR PARTY

On October 21st, EVAC will sponsor a star party for St. Francis School at Lost Dutchman State Park. If you are interested in helping out and sharing your astronomical experiences and knowledge with young people, contact Bill Smith at 831-1520 for more information.

EVAC ELECTIONS

EVAC elections are coming up in November. Remember, the club needs you. There are plenty of ways you can help the club and guide its direction throughout the coming year. Consider running for an office or being a club director.

Nominations for club officers and directors are taken at the October meeting. You may also volunteer for offices. The election will take place at the November 16th meeting.

ASTRONOMICAL CALENDAR

As in prior years, EVAC will be offering the *Astronomical Calendar* at a special discount rate. The calendar is a large-format book containing monthly information on celestial events along with a monthly star chart. In addition, you will find extensive information and charts explaining celestial events such as eclipses. The calendar is \$12 and payment must be received in advance. Contact Bob Kelley for more information.

EVAC T-SHIRTS

At the September meeting Anne Beeby brought up the idea of astronomical T-shirts with the EVAC logo printed on them. She has contacted Main Sequence of Scottsdale which already markets shirts with beautiful renditions of such objects as the Horsehead and Trifid Nebulae. They have agreed to print our logo on the sleeve with a choice of celestial prints on the front for only \$11.00 per T-shirt and \$15.00 per sweatshirt. Anne will have samples and begin taking orders at the October meeting, so bring your checkbook. For those who can't attend, watch for more information and an order blank in the November newsletter. The shirts should be ready by Christmas.

The Deep Sky Notebook

by Robert Kerwin

Planetaries in the Autumn Sky

Planetary nebulae are a fascinating class of deep sky object for amateur observation. Although not very numerous compared to such objects as galaxies, many fine examples await your patient gaze. One of the greatest challenges facing the observer is the relatively small size of most planetaries. Many planetaries are so small that they are difficult to distinguish from field stars. A good star atlas and finder chart are essential for identifying the tiny nebulae. Since most planetary nebulae have a high surface brightness, they tolerate high powers well. In many cases, high powers will be necessary to distinguish them from stars. Nebula filters may also help with identification, since the filter will not dim the nebula as much as it will the field stars.

Of course, none of the planetaries in this month's column will be overly challenging. Rather, they are some of the finer examples of autumn planetaries.

Our first stop is **NGC 7008** in Cygnus. Located roughly halfway between α Cephei and Deneb, this planetary should be visible in four-inch and larger scopes under dark skies. With eight-inch and larger scopes, this object is a fascinating sight. It is about 1.5 arc-minutes across and elongated approximately

north-south. The nebula has the appearance of a patchy annulus with a bright knot to the northeast. A much fainter knot can be seen to the southeast. Directly to the south of the nebula is a bright double star with components of magnitude 9.3 and 10.2, separated by 18 arc-seconds. This nebula has a fairly high surface brightness, so you can use higher powers to bring out more details.

About five degrees southeast of Deneb lies **NGC 7027**. Plotted as a bright nebula on Sky Atlas 2000, this object is indeed a planetary. At magnitude 8.5, it is bright enough to see in almost any telescope; its relatively small size is the only factor hindering observation. The nebula is about 20 arc-seconds along its longest dimension and is extended southeast-northwest. In medium telescopes, this object appears as a featureless disk. The striking feature of this planetary is its greenish color. The color is caused by ionized gasses that emit energy only at certain wavelengths. The glow from ionized oxygen is responsible for the NGC 7027's green color.

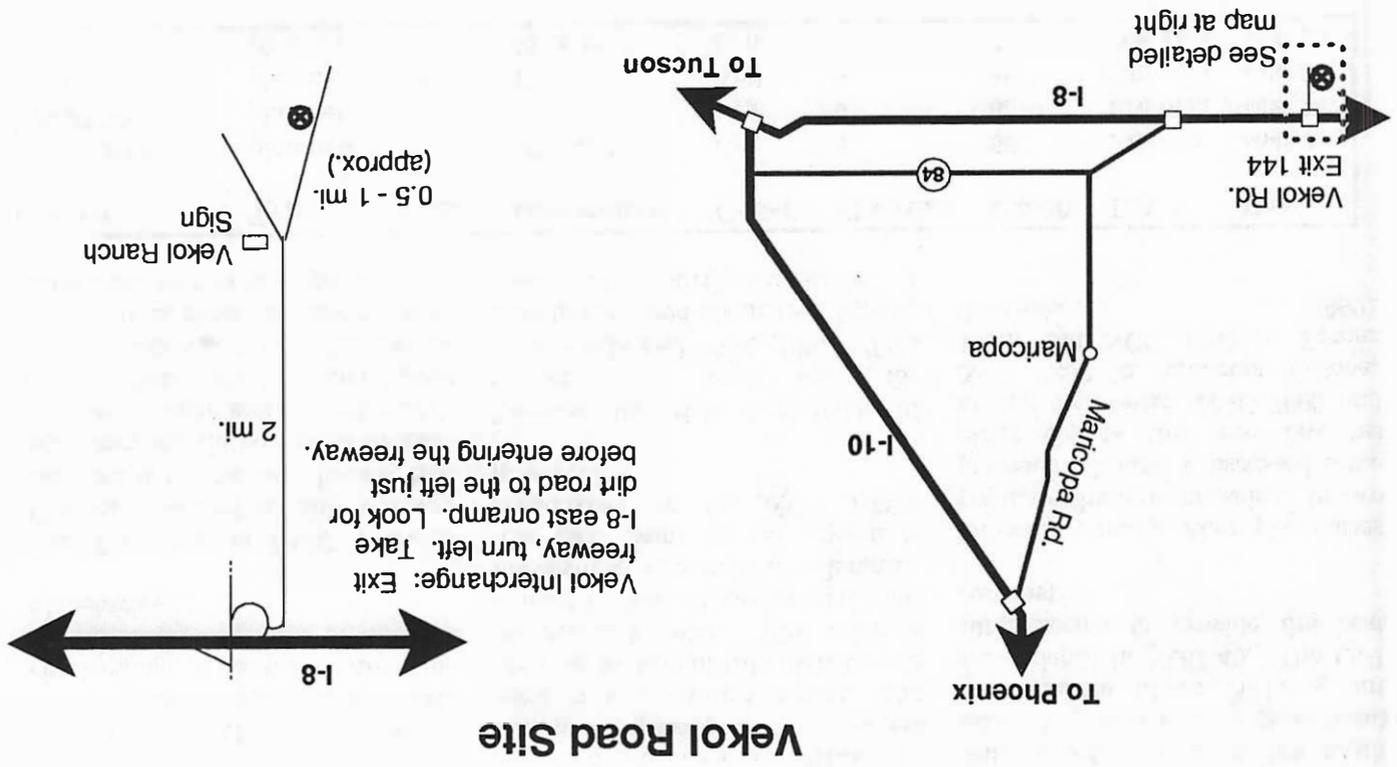
Leaving the rich star fields of Cygnus, we head east for Andromeda and **NGC 7662**. This nebula is located about two degrees west of fourth-magnitude ι

Andromedae. This object is similar to NGC 7027 in brightness and size, but is much better known. Perhaps the reason for this is its striking blue or blue-green color, which should be evident in almost any telescope. In small to medium telescopes, the nebula appears as a slightly oval disk. Larger telescopes begin to bring out the slightly darker center. Although the central star is magnitude 13.2, the nebula's high surface brightness makes the star difficult to see even with large telescopes.

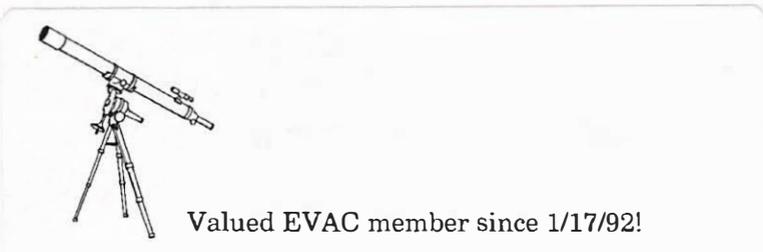
Our final object is **NGC 40** in Cepheus. This object is located about five degrees southeast of γ Cephei. The nebula is round and roughly 40 arc-seconds across. The central star is quite bright. The nebula appears darker in the center with a brightening on the south edge. You may wish to experiment with nebula filters to bring out more detail in NGC 40. The OIII filter seems to provide the best contrast.

Of course, many other planetaries populate the autumn skies. In two previous columns, I discussed three other objects that are favorites among observers: NGC 7009 and NGC 7293 in Aquarius (October 1993) and NGC 1360 in Fornax (December 1992).

Name	Type	Mag.	Dimensions	Const	SkyAtlas	U2000	R.A.	Dec
NGC 7008	plan neb	10.7	86" x 69"	Cyg	3	56	21h 01m	+54° 33'
NGC 7027	plan neb	8.5	18" x 11"	Cyg	9	85	21h 07m	+42° 14'
NGC 7662	plan neb	8.3	17" x 14"	And	9	88	23h 26m	+42° 33'
NGC 40	plan neb	10.7	60" x 40"	Cep	3	3	00h 13m	+72° 32'



EVAC/Robert Kerwin
 14026 N. Sussex Place
 Fountain Hills, AZ 85268



Valued EVAC member since 1/17/92!