



East Valley Astronomy Club

September

Newsletter

1996

EVAC MEETING HIGHLIGHTS

by Sam Herchak/Secretary

Robert Kerwin opened the meeting promptly at 7:30 PM as a record thunderstorm was hammering north west Phoenix. About 50 people were present, with 3 being visitors. Rob first covered the Club events scheduled for the month of August.

EVAC Web Page

A question came up about problems reaching the Club home page. Fortunately Tom Polakis, the webmeister, was there to answer. His Internet access is through a company called Internet Direct. They have a policy of shutting off access each day to any home page after a certain quantity of files have been downloaded! It is "reopened" after 5:00 PM local here. Tom said to access the page all you want, but limit your downloads so others won't be cut off. If you can't connect, wait until 5:00 PM and try again. His last advice was don't use Internet Direct for an Internet provider.

Phoenix Library Summer Solstice

Aaron McNeely reported and showed slides of a little known aspect of this library's design. The architect incorporated small porthole-like skylights that are purposely aligned with the roof support pillars. From these portholes, the summer solstice sunlight "climbs" up each pillar to its peak. The Sun is also used to provide dramatic lighting of walls, etc. throughout the library. Mark your calendars for next June to see for yourself.

WWW Grand Tour

Paul Dickson then took us on a tour of the World Wide Web (or the Internet). With slide film, he took over a dozen pictures of a computer monitor showing various astronomical web pages. These included the news group sci.astro.amateur, Tom Polakis' Sky Photography, Chris Schur's Skyshoot, Paul Dickson's Photo Album, and the pages of some local clubs; EVAC, SAC, and TAAA. Look for information and the URLs (internet address) of these and others in the future.

Images

Chris Schur brought several recent color slides he took using hypered Fuji 400 Super G Plus film, including one only days old of Comet Hale-Bopp. Chris pointed out that when Comet Halley last visited, it was extremely faint at Hale-Bopp's current distance (15th magnitude at 3.8 Astronomical Units). Hale-Bopp is already a naked eye comet!! This one will not disappoint anyone next spring.

FEATURED PRESENTATION

Fellow amateur astronomer Derald Nye came all the way up from Tucson to get a closer look at our massive thunderstorm and address the Club on "Eclipse Chasing," something he knows quite a bit about.

Observing solar eclipses as total or annular requires you going to them; they rarely come to you. These shadows are infrequent, often over the ocean, and are only observable along a very narrow and specific groundtrack. Since 1970, Derald and his wife have been on 18 different eclipse expeditions, and they aren't done yet! Needless to say, they have covered much of the globe.

It is hard to decide what was the best part—the spectacular eclipse pictures or the travelogue. The tiny town of Atka, Alaska; the tent city in the deserts of India; the stone money on the island of Yap; the 12,000 foot Bolivian plateau, or the many cruise ships.

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Of the 18 trips, Derald missed out on 5 eclipses. Four times clouds interfered and once their ship broke down (in Sydney, so all was not lost). He was actually highly in favor of ships because they can usually get to where the clouds are not. He says anything larger than 10,000 tons provides a reasonable platform for photography too (under normal sea conditions). They also have the additional benefit of interesting speakers like Isaac Asimov, Margaret Mead, and Neil Armstrong. On one ship, they shared a dinner table every night with Michael Collins, who orbited the Moon on Apollo 11.

It was a fun hour, followed by a short video of several bright Perseid meteors that Pierre Schwaar captured with an image intensifier. The refreshments from Art Zarkos and brownies courtesy of Sheri Cahn came out at 9:00 PM. It was close to 10:30 before the last few people closed the door.

Outer Planet Tour

by Bill Dellinges

On the night of June 17th, I observed all five "outer planets" beyond Mars. This was a first for me and not preplanned. My objective was to track down Pluto, the one planet I'd never seen. I had given the hunt for Pluto a couple of halfhearted tries in the past without success. Using the S/T finder chart on page 71 of the April '96 issue, I drew the field stars on paper so I could flip it over and shine a light through the back to match the mirror reversed image of my C14. I used setting circles to get to the general area first. Fortunately, I recognized some field stars immediately - this was a big break; now I knew for sure Pluto (mag. 13.7) had to be one of the specks in this 0.70 degree field (using a Tele-Vue 55mm eyepiece at 71x). I quickly identified a suspicious object between two stars (mag. 11 and 12) on the chart track just where Pluto should be. This had to be it. Indeed, I would confirm its movement over the next two nights. Finally after 40 years of stargazing, I had seen all nine planets; of course the one we're standing on was easy! It had always bugged me to answer "no" when asked if I'd seen all the planets in my telescope. Note: I was amazed how faint Pluto was. The C14's advertised limiting magnitude is 15. Pluto at mag. 13.7 was BARELY visible! Sometimes it actually disappeared and I would have to use a averted vision to pull it back into view. Several factors might explain this conundrum, but lets not digress here and move on. Jupiter was blazing away in the southeast and I turned the orange cannon on the king of planets. Quite a change from Pluto to this monster! Wonderful as always, three moons, the NEB (Northern Equatorial Belt) sporting a very ragged south side (have you noticed?). The SEB (Southern Equatorial Belt) is back now after a few years hiatus. The Red Spot was not evident. Remember the old days when if the Red Spot

was facing us, boy, you saw it! You couldn't miss it, it was red and conspicuous. Not so these days, it faded some years ago and is difficult to "spot" now, though the indentation it makes in SEB helps to locate it.* Each year, I enjoy the challenge of finding Uranus and Neptune with the help of S/T charts (April '96, p. 70). Uranus was easy as usual due to its generous mag. 5.7. Neptune was a bit more difficult at 7.9 but was found in a few minutes with aid from my 10x70 binoculars. I'd hate to have to rely on an 8x50 finder to find Neptune, the binoculars really help to pull in those faint field stars. Large binoculars gather more light, render a right-side up field, and allow you to use two eyes. These factors are a good thing when hunting elusive quarry! I usually keep them mounted on a tripod, where their efficiency is greatly increased. You would do well to heed this free advice. The planet's blue-green discs were discernible (3.7", 2.3"). I must try for their moons sometime (Astronomy, August '96, p. 72). I retired but awoke at 4:00a.m., unable to sleep. It dawned on me (no pun intended) that Saturn should be up, so I went back out to the observatory and rolled the roof back. Aiming the scope at the sole remaining object in the morning sky, I beheld a glorious sight - Saturn and its stunning ring, now tilted open 6 degrees, enough for me to gasp in delight. It had been a year or more since I'd seen the rings this well due to their edge on appearance recently. I also noted four moons. So, seeing five outer planets in one night, and especially bagging Pluto, made for an enjoyable and productive observing session, one of the best that I can recall in some time.

*Ed. Note - The transit times of the Red Spot can be found monthly in Sky and Telescope magazine.

NAKED EYE ASTRONOMY

M. Aaron McNeely

September 1996: The Seventh Month

30 Days: day 245 to 274 of the year

Julian: 2450327.5 to 2450356.5

Phoenix, Arizona

33°27'N, 112°04'W

"The dazzling Fomalhaut he'll find, in Piscis notius' mouth." -Admiral Smyth

Constellations and Starlore

In September, as astronomical darkness descends upon the land, the large but faint constellation of Capricornus lies near the meridian, or due south, Cygnus the Swan is positioned close to the zenith, the Big Dipper is circling below Polaris, Arcturus is about to set in the northwest, and the Pleiades are rising in the northeast. The Great Square of Pegasus lies east of the

meridian. The west edge of the Square points down to the bright star Fomalhaut, alone in splendor amid the faint backdrop of Piscis Austrinus. Fomalhaut was named the "Autumn Star" by the famed observer Leslie Peltier. The name of the star was derived from a Medieval abbreviation of its Arabic name meaning "Mouth of the Southern Fish." Fomalhaut is one of the four Royal Stars, along with Regulus, Aldebaran, and Antares, of the ancient Persians.

In astronomical history:

American Astronomical Society formed, Sept. 6th, 1899.
Star Trek premiers, Sept. 8, 1966.

E.E. Barnard discovered Amalthea, the fifth satellite of Jupiter, Sept. 9th, 1892.

William Herschel discovered Mimas, a satellite of Saturn, Sept. 17th, 1789.

K. Tsiolkovsky born, Sept. 17th, 1857.

J. Foucault born, Sept. 18th, 1819.

William Boyd discovered Hyperion, a satellite of Saturn, Sept. 19th, 1848.

Johann Galle of the Berlin Observatory identified the planet Neptune, Sept. 23, 1846.

William Herschel discovered Enceladus, a satellite of Saturn, Sept. 28th, 1789.

Henry Draper obtained first photograph of the Orion Nebula, Sept. 30, 1880.

Planets, Moon, Sun

Mercury continues its current shallow evening apparition lying a little south of the due west position. It will quickly fade into the solar glare and achieves inferior conjunction (between Sun and Earth) on the 17th. After inferior conjunction, Mercury ascends quickly into the morning sky for a good morning apparition and achieves greatest western elongation in early October.

Jupiter lies west of the meridian at sunset and sets around midnight. Jupiter is stationary on the third and resumes direct (eastward) motion against the background stars. The planet also achieves an extreme declination of $-23^{\circ} 24'$, its lowest value for this Jovian "year" or sky circuit, and is positioned against the backdrop of northern Sagittarius. Jupiter also lies within 1° of the globular star cluster M22.

Saturn achieves opposition, and lies near the eclipsed Moon, on the 26th (see below). At opposition an astronomical body rises as the Sun sets (hence "opposition"), passes due south at midnight, and sets as the Sun rises.

Venus continues to perform a grand morning apparition and lies about 40° above the horizon at sunrise. Mars overtakes Venus on the 3rd when the two planets lie 3° apart. The waning crescent Moon joins Venus and Mars on the morning of the 8th.

The last quarter Moon lies less than 1° from Aldebaran

on the morning of the 4th, the waning crescent forms a triangle with Venus and Mars on the morning of the 8th, and the Moon is New on the 12th. The waxing crescent appears west and east of Spica on the 14th and 15th respectively. The Moon, just past First Quarter, lies about 5° north of Jupiter on the evening of the 20th, near the Head of Capricornus on the evening of the 22nd, and is Full on the 26th. The Full Moon closest to the September equinox is termed the Harvest Moon. The Harvest Moon undergoes a total eclipse this year on the evening of the 26th, with the Moon positioned 2 degrees north of Saturn. As September ends the waning gibbous Moon approaches the Hyades.

This month's lunar eclipse is exciting for many reasons. This eclipse occurs at Harvest Moon, so the eclipsed Moon will rise close to the due east point of the horizon. Saturn achieves opposition just a few hours before the eclipse, so it will lie close to the eclipsed Moon. The Moon and Saturn straddle the celestial equator and also lie close to the March equinox position of the celestial sphere, the "First Point of Aries." Observing this year's Harvest Moon is like seeing the Sun just past the first day of Spring, in a sense it forms an "anti-sun." Our local circumstances are as follows: The Moon begins to enter the umbra at 6:12 pm (MST), the Sun sets, and the Moon rises, at 6:15 pm, totality begins at 7:19 pm, mid eclipse occurs at 7:54 pm, totality ends at 8:29 pm, and the Moon leaves the umbra at 9:36. This will be very ideal for people who need to get up early for work on Friday.

The autumn (September) equinox occurs on the 22nd. This is the moment of time when the Sun, because of its daily shift against the backdrop of the celestial sphere, crosses the celestial equator and moves into the sky's southern hemisphere. This event marks the beginning of autumn in the northern hemisphere and spring in the southern. At the equinoxes the Sun rises and sets at the due east and west positions along the horizon, and the length of day and night are approximately equal.

The sunrise positions in azimuth for September 1st and September 30 are 80 degrees and 94 degrees, and the sunset positions are 280 and 266 degrees respectively. According to the conventions of astrology, the Sun enters the sign of Libra during the equinox on the 22nd; according to observational astronomy, the Sun enters the constellation of Virgo on the 16th.

The Jewish year 5757 begins with Rosh Hashanah on Saturday, Sept. 14th, 1996. Traditionally, Rosh Hashanah began with the sighting of the young crescent Moon after the New Moon closest to the September equinox. The Muslims maintain a similar arrangement, but use the March equinox.

Astro Quiz: What is the only surviving constellation that represents something from the Bible?

EVAC wants YOU!

by Robert Kerwin

Once again, another election year has arrived. Everywhere you look, ads emblazoned with red, white and blue are urging you to vote for one candidate or another. This November you will have the opportunity to take part in another election—East Valley Astronomy Club's annual election.

EVAC needs interested and willing volunteers to serve the club in a variety of ways. If you are a dues-paying member and desire to become more involved in EVAC, I invite you to consider running for an office or the Board of Directors. As an officer or director, you will be involved in planning club activities, bringing up new ideas for improving the club and making decisions about the use of club resources and money.

To be honest, involvement with the club will take some of your time and energy, depending on the office. As an officer or director you will be expected to see the job through for one year. However, the rewards are enormous. There is always a sense of accomplishment at the end of a successful club event. You can also take satisfaction in the fact that you are supporting an organization that is promoting amateur astronomy to the general public. Of course, you will make new friends and have fun being part of the EVAC team.

There are no special skills required. You do not have to be the most knowledgeable or experienced amateur astronomer to be an officer or director. All that's required is the desire to be involved with a great bunch of people and the willingness to devote some of your time and energy to making EVAC a fun and helpful organization for your fellow astronomers.

Here is a list of the positions available and a short description of each:

President: responsible for running the monthly meetings and the quarterly board meetings. September Club meeting.

Vice-President: obtains speakers for the monthly meetings. Runs the monthly meeting in the absence of the President.

Secretary: responsible for taking minutes at club meetings and reporting on club activities. Also serves as the point of contact for other clubs and general public

Treasurer: responsible for overseeing and tracking the use of club funds.

Properties: responsible for overseeing club properties such as telescopes and library.

Board of Directors: consists of five members who are responsible for planning, organizing and carrying out club activities.

All positions will be open for nomination starting with the October meeting. The election will take place at the November meeting and the new officers will start in December. If you are interested in a particular office and would like to know more about it, please contact me at 837-3971.

Adopt-A-Highway Cleanup

by Sam Herchak/Coordinator

The EVAC signs are in place on Highway 60, the construction in that area is over, and the weather is getting cooler. That means it's time to pick up trash!

The tentative date is Saturday, September 28th at 9:30 AM. We will meet right at Florence Junction (intersection of Highway 60 and 89) on the north side where a few shops are found. Our designated area for cleanup is just west of this, between mileposts 211 and 212.

Our task is to pick up trash from the shoulder of the highway to the right-of-way fence. The median separating this divided highway is OFF LIMITS! State crews are responsible for that. Here's what else you need to know:

Participants must be at least 12 years old. Work in groups facing oncoming traffic.

Dress appropriately—long pants, sturdy shoes/boots, long sleeves and/or sunblock, hat, and heavy GLOVES. I will also pass out safety vests to be worn.

UPCOMING EVENTS

- **Local Star Party, Sept. 7, Sunset - 6:44 pm**
New Florence Junction site
- **EVAC Club Meeting, Sept. 11, 7:30 pm**
SCC, Physical Science Bldg., Room 172
- **Deep Sky Star Party, Sept. 17, Sunset - 6:35 pm**
Vekol Road site
- **Adopt-a-Highway Cleanup, Sept. 28,**
see article
- **Public Star Party, Oct. 4, Dusk**
Lost Dutchman Park. Contact Don Wrigley
- **Local Star Party, Oct. 5, Sunset - 6:06 pm**
New Florence Junction site
- **EVAC Club Meeting, Oct. 9, 7:30 pm**
SCC, Physical Science Bldg., Room 172

Have lots of water and a first aid kit on hand.

Pick up bags and other litter with caution—it could contain dirty needles, be hiding a snake, etc. A stick with a nail or hook is strongly recommended to use instead of your hands. When lifting large objects, keep your back as straight as possible, the object close to your body, and let your legs and arms do the work.

Be prepared for anything—people have found guns, pipe bombs, toxic waste, etc. along our roadsides. If anything looks odd or is real heavy, **LEAVE IT ALONE!** Note its location and we'll notify the State about it afterwards. Any trash you do collect should be placed at the shoulder of the road.

As with any government program, there are a few requirements to complete before participation. One is a briefing from the cleanup coordinator. The second is to sign the usual waiver for the State saying participants won't sue if something happens. The forms are kept on file so one signature covers you for all future cleanups. A sign up sheet and the waivers will be posted at the September Club meeting. With 8 volunteers, we can probably finish by 1:30 PM. Thanks for your support.

Kitt Peak Cookout and Star Party

5 October, 1996

Kitt Peak has allowed the Tucson Amateur Astronomy Association to hold occasional cookout starparties at its picnic area, located at 6500 feet elevation, about 1.5 miles below the summit. While these events are usually limited to about 30 attendees, they are allowing 50 this time, and I thought it would be nice to see if there was any interest in attendance from the Phoenix area. There are several conditions that may make this less than ideal for amateurs that travel a long way. First of all, there is no camping allowed at the picnic area, and they expect the area to be vacated about moonrise, which is about 1 am. The nearest place to pull over to even sleep in your car is the base of the mountain. Also, though I tried to obtain a WIYN telescope tour, the request was turned down because of manpower being devoted to other events that evening. So with no special tours for the group, the last regular tour is at 1:30 pm. The mountain usually closes at 4 pm, at which time we all head to the picnic area. Those arriving after 4 pm should not go above the picnic area! There is a nice pavilion and clear area for setting up scopes. Cooking fires need to be put out about sunset because of telescopes in the area. There are rest rooms and water on site as well as a soda machine. Electricity may be available if you bring long extension cords, but I would plan on running off battery power unless you are running a CCD system. We usually run a pot luck picnic - bring something to grill and a dish to share - it is usually a great time to socialize and share

views. As I mentioned before, the site should be vacated about 1 am. Now if I were doing this from Phoenix, I would combine this event with some other tourist activity on Sunday morning before heading back. Tucson has a few unique places to visit, such as the Arizona-Sonora Desert Museum, Pima Air Museum, or the Titan Missile Museum to name a few. Why not bring the family and rent a motel room off I-10 to use as a base. Come back down after observing and enjoy another activity on Sunday before heading back up to Phoenix for the heat. Speaking of heat, be sure to bring some warm clothes as the mountains can get cool in October.

Be sure to let me know as soon as possible if you are interested in attending. I will be limiting the Phoenix attendance to 20, so let me know. You can contact me at (520) 293-2855, ketelsen@as.arizona.edu, or at 1122 East Greenlee Pl. Tucson, AZ 85719. By the way, the event happens rain or shine, so even if it is cloudy, we can still enjoy a Kitt Peak tour and cookout on the mountain.

-Dean Ketelsen

Stellafane '96

by Roy S. Diffrient

Remember that line "it was the best of times, it was the worst of times"? Once again it applies to Stellafane. Amazing resemblance from year to year, each one different but the same in many ways.

Friday, on the way there, the radio was forecasting "one of the ten best weekends of the year"! Yeah, right. We laughed and cursed at that as we set up camp in a steady drizzle. Cloudy skies continued through the afternoon talks, which were mostly on making large 30"+ optics. But well after Midnight and after most everyone had given up hope and gone to bed, it suddenly cleared. You have to experience this to believe it: All day it's threatening rain, and then within twenty minutes, there's not a cloud in the sky! That's Stellafane weather - or maybe Porter's ghost in action! I spent the next few hours observing various globulars through a "portable" (with a big U-Haul and six guys, maybe) 130 year-old, 13" f12.5 Fitz (refigured by Clark) refractor, courtesy of the Aruna (MA) Astro club. Very impressive for an old steel-tubed monster with no lens coatings. Only at Stellafane.

Saturday was again cloudy, cool and threatening rain all day. Despite that, the attendance swelled to over three thousand, and the gatekeepers had to finally start turning people away. Both Breezy Hill and Stellafane East were packed with campers and day-trippers. The telescope competition had attracted 32 entries, which was much improved from last year's 17. Last year there were zero junior entrants. This year,

the kids having heard the call, there were at least six, with four awards including one optics award. In the adult entries, I didn't see anything revolutionary, although there were a few well executed Newtonians and a neat idea or two. The optical judging award was again won by Steve Eldridge of NH. Last year, Steve won the glass-pushing award with his own 16" f6+ truss tube Dob, but this year he had done a truss-tube Dob with a 16" f6.2 mirror for Kent Blackwell of VA, which took top optics honors. He says Kent's new mirror is even better than his, which tests at 1/18th wave on the Foucault. Kent was ecstatic. Last year Kent brought a talking telescope (an eq mount with a voice announcement from a recordable greeting card mechanism saying reset the sector gear). This year he had Stellafane's most powerful dew-zappers on his eyepiece. These heaters were powered by his van, and actually smelled of singed hair! We kidded him that he didn't just evaporate dew, he boiled it off! Kent wrote a letter to Sky & Telescope a few months ago on correcting his old 12" mirror's figure with heat. But Steve Eldridge has now also refigured that mirror as well, so he had to find something else to do with those heaters! Also, John Desbiens of NH won top honors in Craftsmanship for another tall f6+ truss-tube Dob he built based on a mirror by Steve Eldridge.

Saturday night John Dobson answered questions at twilight in light rain sprinkles, and we learned about SETI advances (?) or efforts, at least, from Paul Horowitz. Then, when it was time to either observe or give up in disgust, suddenly, miraculously, again, it cleared up completely! If I hadn't seen it I wouldn't have believed it. Of course, the star-hungry crowd immediately flocked to every telescope on Breezy Hill!

For the next five hours or so I showed them the Cocoon Nebula, the Crescent Nebula, Stephen's Quintet, and several other "non-Star Party" objects. The sky was very good, but not quite as transparent as last year. I did not show M13, but I heard about a big Dob which seemed to be stuck on it, unfortunately. At the grandest, oldest Star Party of them all, you have to think that many of these people have seen a bit of the universe. I'd rather not waste their time and the beautiful clear skies on a very familiar object. Some of them had a bit of trouble seeing some of the more challenging objects in my scope, but I heard no complaints and many complements on the selection and the opportunity to see something they hadn't seen before.

During the night the Perseids flashed across the sky, to the crowd's delight. Everyone who did not have an eye to an eyepiece seemed to be looking up, and when a meteor would brighten the sky those who were looking into the eyepiece immediately knew from the shouts of others that they had missed something. That seemed to happen at least once a minute. Also during the night, we witnessed a bizarre triangular formation of

three satellites in polar orbit. They were within a degree or so of each other, at the same relative speed, and on the same track down through Cygnus. They were naked-eye visible, about mag 4.5 or so I'd guess. Some military or intelligence birds? No one knew.

Finally, an hour or two before dawn's first glow, only the hardcore types were left, and we could finally pick and choose objects as we pleased. This is my favorite time at Stellafane. It was great, but all too brief. That's one of the agonies of Stellafane - it comes down to just a few hours, really. But overall, it was another great year. Call me a masochist, I don't care. I know I'm hooked, I know I'll be back. Next year's event will be held August 1, 2, and 3, 1997. Make your plans now. And check the Stellafane web page at <http://www.stellafane.com>.

That's all for Stellafane '96, but that's not all. This year there was a small party after the party by the hardcore group. But that's another story, not for publication.

Public Star Party at Lost Dutchman Park

On October 4, members of EVAC have been invited for a public star party at the Lost Dutchman Park. St. Francis Xavier School has asked that we set up our telescopes for them. They are having a cookout, star party and camping. St. Francis will provide food for those that show up.

The park Rangers will allow you to enter the park for free. That is providing that you tell that you are with EVAC and leave after the star party. To get to the park, take US 60 to the Idaho Rd exit. This is also highway 88, head north. Signs will direct you to the Lost Dutchman Park. The rangers will show you where St Francis is camping out.

The star party is tentatively scheduled for 6:30 pm. Contact Don Wrigley at 982-2428 for the latest information. Don would like to know who all is coming.

Want Ads

SpaceScope Images
August 16, 1996
RE: "The Hand Of God"
Eagle Nebula M16

Dear Fellow Stargazer,

SpaceScope is proud to announce the release of the first gallery quality lithographic print of a Hubble Space Telescope image. To learn more about this 22X28 inch litho go to <http://www.spacescope.com>.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 *ALL MONTH NOTES	2 *4:35 AM Occ Sunset 6:50 PM	3 Sunrise 6:00AM	4 *4:30 AM Venus/Mars Conjunction	5 *7:00 PM PAS Mtg	6 *4:43 AM Occ *7:36, 7:52, 8:49, 11:06 PM Gal Moons	7 Local S Party
8 *4:30 AM Venus/Moon/Mars Conjunction	9	10 *5:03 AM Occ	11 EVAC Meeting	12	13 *7:14, 8:29, 9:29, 9:57, 10:44 PM Gal Moons	14 Deep Sky S Party
15	16 *8:17, 8:32, 11:05 PM Gal Moons Sunset 6:31 PM	17 *2:59 AM Algol at Min *Mercury at Inferior Conjunction Sunrise 6:09AM	18	19 *11:48 PM Algol at Min	20 *8:03, 9:38 PM Occs *9:08, 10:25, 10:51 PM Gal Moons	21 *4:00 AM Mars skirts south half of Beehive Cluster
22 *9:10 PM Occ *Autumnal Equinox	23 *7:47 PM Occ *8:19, 10:53, 11:05 PM Gal Moons	24	25	26 *7:27, 7:58, 8:05 PM Occs *Saturn at Opposition *7:19 PM Total LUNAR ECLIPSE	27 *7:30 PM SAC Mtg	28 *9:30 AM Adopt-A-Highway Cleanup
29 *10:10 PM Occ	30	1	2	3 *Mercury at Greatest West Elongation	4 	5 Local S Party

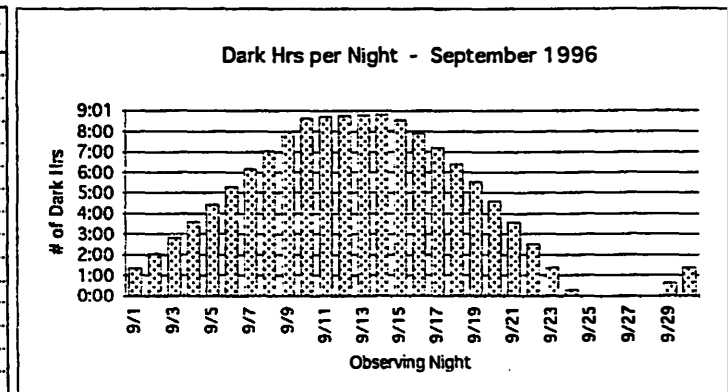
Date	Start	Title	Description
9/1/96	12:00 AM	ALL MONTH NOTES	<p>CALENDAR NOTES: See 1996 EVAC Occultation Predictions in the February newsletter for details on lunar "Occ" events. "Gal Moons" refers to at least 3 events of Jupiter's satellites. See Sky&Telescope (S&T) and Astronomy (ASTRO) magazines for more info.</p> <p>PLANETS: For the third month, max lunar librations all occur when the applicable limb is not sunlit. MERCURY reaches inferior conjunction with Sun at mid-month, then becomes a difficult dawn object. VENUS rises 3 hours before dawn and dominates the eastern sky at a brilliant white -4.2 magnitude. MARS is small and 200 times fainter than Venus in the morning sky, rising shortly before it. JUPITER is high in the south at sunset, but sets by midnight. Still near the bright globular cluster M22. SATURN rises at sunset and is the pale yellow 1st magnitude "star" in the southeast. The ring tilt has decreased slightly to 5 degrees (south side visible). URANUS, and NEPTUNE are about 20 degrees east Jupiter and are a challenge to spot. PLUTO sets early in the evening now. See pg 64 of the July Astro or pg 70 of the April S&T for findercharts.</p> <p>OBJECTS OF INTEREST: Comets Hale-Bopp and Kopff (pg 72 of Sep S&T; pg 67 of Sep ASTRO). Jupiter and M22.</p>
9/5/96	7:00 PM	7:00 PM PAS Mtg	Phoenix Astronomical Society meeting, Brophy Prep, 4701 N. Central Ave. Turn off Highland into Main entrance, follow signs upstairs to Physics lab.
9/26/96	7:19 PM	7:19 PM Total LUNAR ECLIPSE	Eclipse in progress at Moonrise (6:12 PM)—already entering umbra. Total eclipse begins at 7:19 PM (fully covered by umbra). Mid-eclipse at 7:54. Moon begins umbral exit at 8:29 and only covered by penumbra by 9:36. Little or no shadow visible by 10:00. Watch for occultations at 7:27, 7:58, and 8:05! See pg 68 of S&T or ASTRO for details.
9/27/96	7:30 PM	7:30 PM SAC Mtg	Saguaro Astronomy Club meeting, Grand Canyon University, Fleming Bldg, Rm 105. Camelback and 33rd Ave.
9/28/96	9:30 AM	9:30 AM Adopt-A-Highway Cleanup	First of many Adopt-A-Highway cleanups. Meet at shops on north side of Florence Junction (highways 60 and 89) at 0930. See newsletter article for more details.

Dark of the Moon Table -- SEPTEMBER 1996

OBSERVING NIGHT	START OF DARK	END OF DARK	TOTAL DARK	OBSERVING NIGHT	START OF DARK	END OF DARK	TOTAL DARK
SUN NITE	9/1 8:18 PM EOT	9/1 9:40 PM MR	1:22	MON NITE	9/16 8:54 PM MS	9/17 4:50 AM SOT	7:56
MON NITE	9/2 8:17 PM EOT	9/2 10:21 PM MR	2:04	TUES NITE	9/17 9:38 PM MS	9/18 4:51 AM SOT	7:13
TUES NITE	9/3 8:15 PM EOT	9/3 11:05 PM MR	2:50	WED NITE	9/18 10:25 PM MS	9/19 4:52 AM SOT	6:27
WED NITE	9/4 8:14 PM EOT	9/4 11:51 PM MR	3:37	THURS NITE	9/19 11:18 PM MS	9/20 4:52 AM SOT	5:34
THURS NITE	9/5 8:12 PM EOT	9/6 12:39 AM MR	4:27	FRI NITE	9/21 12:16 AM MS	9/21 4:53 AM SOT	4:37
FRI NITE	9/6 8:11 PM EOT	9/7 1:29 AM MR	5:18	SAT NITE	9/22 1:19 AM MS	9/22 4:54 AM SOT	3:35
SAT NITE	9/7 8:09 PM EOT	9/8 2:20 AM MR	6:11	SUN NITE	9/23 2:24 AM MS	9/23 4:55 AM SOT	2:31
SUN NITE	9/8 8:08 PM EOT	9/9 3:12 AM MR	7:04	MON NITE	9/24 3:32 AM MS	9/24 4:55 AM SOT	1:23
MON NITE	9/9 8:06 PM EOT	9/10 4:05 AM MR	7:59	TUES NITE	9/25 4:39 AM MS	9/25 4:56 AM SOT	0:17
TUES NITE	9/10 8:05 PM EOT	9/11 4:45 AM SOT	8:40	WED NITE	none	n/a	-
WED NITE	9/11 8:03 PM EOT	9/12 4:46 AM SOT	8:43	THURS NITE	none	n/a	-
THURS NITE	9/12 8:02 PM EOT	9/13 4:47 AM SOT	8:45	FRI NITE	none	n/a	-
FRI NITE	9/13 8:00 PM EOT	9/14 4:48 AM SOT	8:48	SAT NITE	none	n/a	-
SAT NITE	9/14 7:59 PM EOT	9/15 4:49 AM SOT	8:50	SUN NITE	9/29 7:37 PM EOT	9/29 8:14 PM MR	0:37
SUN NITE	9/15 8:15 PM MS	9/16 4:49 AM SOT	8:34	MON NITE	9/30 7:35 PM EOT	9/30 8:58 PM MR	1:23

EOT = End of Astronomical Twilight MR = Moonrise SOT = Start of Twilight MS = Moonset

NOTE: Applies to Phoenix area (Mtn Std Time)



Bernie Sanden 8/96

For Sale:

Meade 2045D Telescope 4" Schmidt-Cassegrain with field tripod and wedge, includes barlow lens and 2 eyepieces. Mint condition. \$800 or best offer. Contact Steve Roquemore- Eve. & Wknd. 990-1569, Work 542-2245.

All-Arizona Star Party

Mark on your calendars, the All-Arizona Star Party for October 11 and 12. The star party will be held at the Arizona City Site (See map below).

The site is on private land and should only be used during an approved club star party where the club has obtained permission from the owner. The site is dark; the glow from Phoenix is placed to the north, fainter glows from surrounding communities can be seen to the east. Drive time from the East Valley is typically 11/2 hours or less.

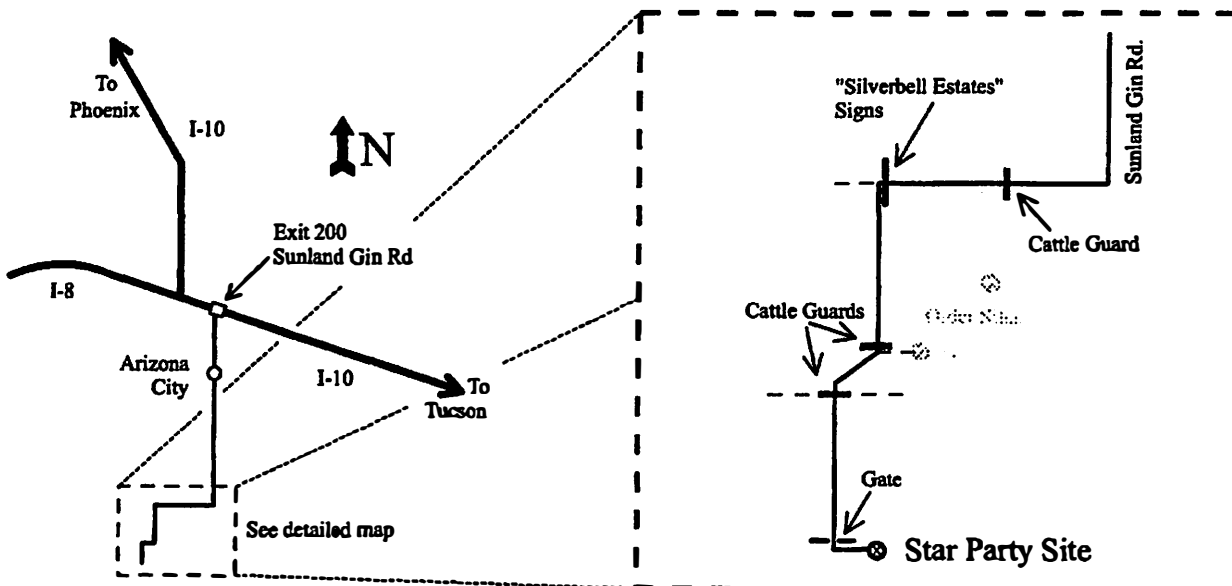
Take I-10 south from Phoenix to Exit 200, Sunland Gin Road. Turn right (south) after exiting the freeway. After about 15 miles, the pavement ends and about one mile further, the road turns sharply to the west. After another four miles, the road will turn south just after the "Silverbell Estates" signs. Three miles past the signs, the road will veer off to the west. Continue on the main road for another five miles, where it passes through a gate. Take an immediate left after the gate and continue for about 14 mile. Take the next right onto a road that leads into an abandoned field.

More details to follow in next newsletter.

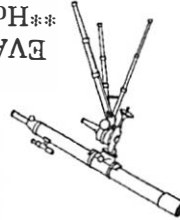
COMET-ASTEROID CONUNDRUM
from Sky&Telescope Online

Two recent discoveries have blurred the distinctions between comets and asteroids. First came an 18th magnitude object, captured on ESO Schmidt plates by Guido Pizarro but first noticed in early August by Eric Elst in Belgium. Calculations show it to be moving in a hum-drum orbit, much like those of thousands of main belt asteroids. The only trouble is, this one has a short tail! There's some speculation that the tail of Comet Elst-Pizarro (P/1996 N2) may be quite new—perhaps the result of a dust-emission episode in late May or June.

Meanwhile, NASA's Near-Earth Asteroid Tracking project, directed by Eleanor Helin, has spied something in a decidedly comet-like orbit among the hundreds of new asteroids it finds each month. There's no trace of a tail or coma yet, so this object is being called minor planet 1996 PW for now. Its extraordinary orbit extends 10 times farther out than Pluto, and 1996 PW is now near perihelion between Mars and Jupiter. The last time it came around, the Egyptian pyramids were being built! If this object proves to be a dead comet, rather than an asteroid, it could tell astronomers more about what happens to comets as they plunge our way from the remote Oort Cloud.



EVAC member since 1/17/92!
Hope to see you at the meeting Sept. 11th



Mesa, AZ 85202

2120 W. 8th Ave.

Robert G. Kearney, Jr., Editor

EAST VALLEY ASTRONOMY CLUB



EAST VALLEY ASTRONOMY CLUB

President: Robert Kerwin 837-3971	Vice-President: Tom Polakis 967-1658	Treasurer: Sheri Cahn 246-4633	Secretary: Sam Herchak 924-5981	Properties: Steve O'Dwyer 926-2028
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MEMBERSHIP&SUBSCRIPTIONS: \$20.00 annually. Reduced rates available to members for *Sky&Telescope* and *Astronomy*. Contact Sheri Cahn, 3721 W. Hayward Ave., Phoenix, AZ 85051, (602)-246-4633.

CLUB MEETINGS: Second Wednesday of every month at the Scottsdale Community College, 7:30 PM. Normally Room PS 170 or 172 in the Physical Sciences Building.

NEWSLETTER: Published and mailed out the week before the monthly Club meeting. Send your thoughts and stories for publication to: Robert G. Kearney, Jr., 2120 W. 8th Ave., Mesa, AZ 85202, (602)-844-1732. Email to: JRKearney@aol.com.

CHANGE OF ADDRESS: Notify Bill Smith, 1663 S. Sycamore, Mesa, AZ 85202, (602)-831-1520. Email to: bsmithaz@aol.com.

EVAC LIBRARY: The library contains a good assortment of books, downloaded imagery, and helpful guides and is usually brought to the Club meetings. Contact Steve O'Dwyer for complete details, (602)-926-2028.

BOOK DISCOUNTS: Great savings for members through Kalmbach and Sky Publishing Companies. Contact Sam Herchak, 145 S. Norfolk Cir, Mesa, AZ 85206-1123, (602)-924-5981.

EVAC PARTY LINE: Let other members know in advance if you plan to attend a scheduled EVAC observing session. Contact Robert Kerwin, (602)-837-3971. Email to: p24493@gegpo7.geg.mot.com.