EVAC Meeting Overrun!

ASTROPHOTOGRAPHY AFICIONADOS FROM ALL OVER ARIZONA PACKED THE FEBRUARY 1999 MEETING OF THE EAST VALLEY ASTRONOMY CLUB TO HEAR WORLD-FAMOUS SKY-SHOOTERS TONY AND DAPHNE HALLAS DISCUSS THE FINE DETAILS OF THEIR CRAFT. AT APPROXIMATELY 180 IN ATTENDANCE, THIS WAS THE LARGEST EVER EVAC MEETING! HELD IN A SPECIAL AUDITORIUM AT THE SCOTTSDALE COMMUNITY COLLEGE, EVAC MEMBERS AND GUESTS WERE TREATED TO CUTTING EDGE CELESTIAL IMAGERY THAT INSPIRED AWE IN ALL WHO ATTENDED! MANY THANKS TO EVAC MEMBER TOM POLAKIS FOR BOOKING THE HALLAS DUO FOR THE MEETING. FOR MORE DETAILS SEE THE EVAC MEETING MINUTES THAT FOLLOW...

Contents

EVAC Meeting Highlights

February 10, 1999

Tom Mozdzen, Secretary

Call to Order: President Silvio Jaconelli called the meeting to order at 7:40 p.m. There were ~175 people present with 25 being guests. Various Astronomy clubs were represented such as Green Valley, Tucson, Prescott, PAS, and SAC. Officers and board members stood to be recognized.

New Business: AJ Crayon talked about the Messier Marathon coming up on March 13th. He recounted how Charles Messier began recording objects in the sky which might confuse his search for comets. This was over 200 years ago and done with 3.5" and 7.5" telescopes. The list grew to 110 objects (with one duplicate, M102) and all objects can be observed in one night this year in March and early April. This year morning twilight will interfere with one object.

Again the date is March 13th in Arizona City.

Summer Getaway: Cliff DeVlieg asked the audience to show their interest in a summer-time observing party in Flagstaff or Payson. The dates proposed were June 12th (possible conflict with the Grand Canyon Star Party), and July 9th . The campground has food and coffee services, a swimming pool, showers, etc. , as well as electricity in the field!

AZ Science Center Observing Night: Sherri said we have a new date, March 31st—the 2nd blue moon of the year. They need 7-10 telescopes to observe the moon. Sherri gets to pick the location of the scopes. This will be on a Wednesday evening from 7-9 p.m.

Stan Ferris gave a pep talk on the benefits of belonging to an astronomy club. He called it the 5 F's:

Fun—two parties a month
Facts—guest speakers, newsletter, colleagues
Finance—you get access to:
- Newsletters
- Magazine discounts
- Free handouts
- Free advice: Test drive other people's equipment at star parties before you buy

Friends—physical appearance does not matter at dark star parties
Future—carry on the tradition, help track asteroids

EVAC At-A-Glance

◆

March 10	**EVAC Meeting** at SCC Speaker: Jeff Medkeff ,the planet Mars
March 13	**EVAC Local Star Party** at Florence Junction
March 13	**Messier Marathon** at Arizona City
March 20	**EVAC Deep Sky Star Party** at Vekol Road
March 31	**Arizona Science Center Public Star Party**, 7-9 p.m.
April 6	**SCC Public Star Party**

Silvio announced that on Tuesday, April 6th, the club would host a star party at the Scottsdale Community College as a gesture of thanks for the use of the room and the general support of the College. The moon will be in the last ¼ phase.

Show and Tell: Tom Polakis began by telling us of his adventures in convincing his brainy brother that deep sky objects could be moving at near speed of light velocities, yet appear motionless in our eyepieces.

The truth of the matter is that the objects can be seen to change over several years and in some cases, one can even detect small changes from week to week.

He began by explaining that at ~1000 light-years away, 1 arc second is about 300 AU. At the speeds estimated of the deep sky objects, it would take 10 years to cover 1 arc second. One arc second corresponds to one pixel in his CCD captured images.

EVAC & Other Events: 1999

	New Moon	Mtng	Local	Deep Sky	Other
Jan	17	13	9	16	
Feb	16	10	6	13	
Mar	17	10	13*	20	13: Messier Marathon*
Apr	16	14	10	17*	17: Sentinel Star Gaze*
May	15	12	8	15	9-16: Texas Star Party 28-31: Riverside TMC
Jun	13	9	5	12	12-19: Gr Canyon SP
July	13	14	3	10	1-7: Universe '99
Aug	11	11	7	14	13-14: Stellafane
Sep	9	8	4	11	17-19: Astrofest
Oct	9	13	2/30	9*	9: All-AZ Star Party* 4-10: Okie-Tex SP
Nov	8	10		6	
Dec	7	8	11	4	

Tom showed pictures of Hubble's Variable Nebula, NGC 2261, taken from 1916 to 1951. Changes in the structure were apparent. Tom then show pictures of NGC 2261 taken over several weeks time, and we were able to see some very faint differences. He will continue to record the nebula over the next several months.

Tom finished with a demonstration showing how shadows can move much faster than the speed of the actual object. This was used to explain how shadows can move faster than the speed of light without violating physical laws.

Chris Schur was the next show and tell presenter. He showed us several slides taken with a Schmidt camera in the past 3 weeks. He combined between 2 and 4 exposures to produce excellent slides of various nebulas, such as one in Cassiopeia, Perseus, the bowl of the pipe nebula, Pleiades, and the California Nebula.

Tony Ortega advised us to be on the lookout for his upcoming article in the *New Times* regarding the government's ability to detect asteroids at an amazing rate.

Guest Speakers: Tony and Daphne Hallas were the guest speakers from California. Tony began his interest in astronomy in 1986. He worked in a photolab and is very adept at processing astro-photos using conventional photo chemical techniques. However, about 2 years ago he discovered the possibilities of using digital techniques to process and enhance his photos.

Tony presented a narrated slide show which demonstrated the process and the before and after results. He credits Vince Farnsworth for discovering how to use a handy modest program called Picture Window to combine exposures to reduce the graininess inherent in all photos. The graininess reduction or signal to noise ratio (S/N) is related to the square root of the number of exposures. So if you have 4 exposures combined, your increase in the S/N ratio is 2.

His cookbook procedure is thus:

1. Take several exposures (usually 3)
2. Digitize the images with a scanner.
3. Combine with Picture Window.
4. Touch up with Adobe photo shop
5. Write the image back to film.

He showed us the results with several examples: The Horsehead nebula, Orion's nebula, Hale-Bopp (removed the horizon glow), M81 & M82.

He also processed Hubble images and optimized them for film output.

The images were spectacular and we are very grateful for the visit to our club by Tony and Daphene.

Meeting Close: The meeting was called to a close at 9:30 p.m.

March Guest Speaker

Our speaker for March 10 will be Mr. Jeff Medkeff. He is the acting assistant coordinator of Lunar and Planetary observers at the Rockland Observatory in Hereford, Arizona. For those of you who don't know, Hereford is south of Sierra Vista in southern Arizona. Mr. Medkeff will discuss the planet Mars and some interesting things happening there over the next month. It will be quite informative.

EVAC Board Meeting Highlights

January 1999

Silvio Jaconelli, President

I would like to devote this month's comments to our recent (January 1999) Board Meeting (which went better than I dared hope for!).

We covered a lot of ground and did not finish until 11 p.m. I want to thank all the attendees (there were 11 of us) for devoting so much of their personal time to the Club, and especially to Stan Ferris who allowed us to use his home for the meeting.

The major topics that we covered included :

The intention to carry out a membership survey (probably in May—yes, it takes time to get things organized!) to determine the membership views on a wide range of club issues such as electronic newsletters, meeting dates, club activities, etc. Tom Polakis will obtain a draft survey form for the April 1999 Board Meeting and the Board will tailor this for EVAC. The aim is to ensure that the Board is in sync with the membership at large.

A lot of time was spent discussing roles and responsibilities of the individual Board members. My personal thoughts were that all areas of club administration ought to ultimately rest with the Board so that at our quarterly Board meetings there will always be an attendee who has knowledge of whatever

topic is up for discussion. The intent is NOT to centralize the administration within the Board but rather to just ensure that the Board has official contacts with the non-Board members responsible for each areas. In addition to the current roles, the following new roles were defined :

Memberships: Stan Ferris. Bill Smith will continue maintaining the membership lists and Stan will be the official liaison with Bill, plus Stan will be the official interface with new/prospective members, including new membership packages.

Electronic Data: Steve Bell will be the official liaison with the email and Web coordinators, plus Steve may get involved in helping study electronic newsletters. Incorporation—David Romney will handle this.

Events/Calendars/Outside Contacts: Lika Romney volunteered to assume responsibility for setting meeting and event dates, plus be the official club contact person with the local astronomy shops, Scottsdale Community College, Arizona Science Center, etc.

Club Historian: Rick Scott volunteered to maintain club documents such as newsletters, treasurer's reports, membership lists, club constitution, etc., as well as look into the feasibility of starting a club scrapbook and keeping club memorabilia.

Kathy Woodford presented the Treasurer's Report for 1998. This showed that our bank funds had dropped around $1300 over the last 12 months—a cause for some concern. The Board discussed ways to cut costs/increase revenues to reverse this degradation, and we will all be bringing our ideas with us to the April 1999 Board meeting.

Other topics covered:

- Keep the honoraria at $50 for all speakers whether club members or not.
- Fix the membership dues at $20 a year, except for new members joining in the last 6 months of the year, where the dues will be $10.
- Where possible, attempt to have club-member speakers every other month.
- Prohibit the use of propane heaters at club star parties.
- Have no "show and tell" at the February 1999 club meeting due to the Hallas' visit.

The next Board meeting will be held at Stan Ferris' home on Thursday, April 29. A lot to do!!!

EVAC Web Page Updated

Robert Kerwin, EVAC

The new EVAC Web site is now on-line! Besides a new look, the new site sports new features such as:

- Equipment Reviews: reviews of telescopes, accessories, books and software.
- EVAC Comm Center: how to contact the right person in the club to handle your questions and comments.
- Deep Sky Object of the Month: features a different object each month giving photos, descriptions and a finder chart.
- A club e-mail directory.

The new site will be updated at least monthly, so you will want to bookmark the site and check back often. In addition, the new site offers an opportunity for all EVAC members to contribute. Right now I am in need of:

- Equipment reviews (including books and software)
- Images of EVAC events
- Ideas, observations and images for the Deep Sky Object of the Month feature
- Ideas for improving the site!

This is only the beginning. Stay tuned for more changes over the next few months. With participation from club members, our Web site can become a resource for the club and for amateur astronomers worldwide.

The new Web site is found at the same address as the old one,

www.goodnet.com/~rkerwin/evac/evac.html

1999 All Arizona Messier Marathon

AJ Crayon, Chairman & Rick Rotramel, Assistant
Saguaro Astronomy Club
Deep Sky Group

Sat/Sun, March 13, 1999

The Marathon will be held Saturday, March 13, 1999. That is Saturday night and Sunday morning—an all night affair. The Saguaro Astronomy Club of Phoenix, Deep Sky Group, headed by Chairman, AJ Crayon,

manages this event. Helping out this year as Assistant, is Rick Rotramel.

Forms will be available for checking off each object as it is observed. Turn in form before leaving the site. Be prepared for a full night of observation. Arrive before sunset to allow for plenty of time to set-up.

For previous Marathons, check out the following web site:

www.seds.org/messier/xtra/marathon/results.html

A port-a-john will be at the site for your use if needed. A note about the site: It is managed by Ray Farnsworth and we should thank him for allowing us use of the site.

If you plan on attending. first watch the weather and plan to show up BEFORE sunset. Better yet, arrive well before sunset to give yourself more time to setup and visit with others. Please drive slowly on the observing campus to keep dust levels down.

Evening objects that are hard to find are M74 and M77. The most difficult morning object should be M30. So be prepared with red flash lights, nourishing refreshments and an observing plan.

Awards, same as in the past. Plaques for mounting on the telescope for 1st, 2nd and 3rd highest totals. Certificates for 50 or more. In order to qualify for awards you need to get an observing form, fill it out, check it off as you marathon along and turn it in before leaving the site. The cost of awards will have to be supported by your club.

Observing forms will be available at your club meeting or at the site from the coordinators.

Not interested in the marathon? Don't fret, come anyway! Many show up to gab, observe or take astrophotographs. So don't miss this rare opportunity.

Take I-10 to exit 200 (Sunland Gin Road). (*Consult full-page map at the end of this newsletter!*) From here it is about 29 miles to the site. Turn south (right if coming from Phoenix or left if coming from Tucson) 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 main road will turn south just after the "Silverbell Estates" signs. Three miles past the signs, the road will veer off to the west, and five miles further, the road will pass through a gate. Turn left immediately after the gate and continue for another 2/3 of a mile to the site.

Messier Marathon Timetable

Sat. Sunset:	6:33 p.m. MST
Sat. Twilight:	7:55 p.m. MST
Sun. Moonrise:	4:37 a.m. MST
Sun. Twilight:	5:17 a.m. MST
Sun. Sunrise:	6:39 a.m. MST

If it's Clear...

March 1999

Fulton Wright, Jr.
Prescott Astronomy Club

Shamelessly stolen information from *Sky & Telescope* magazine, *Astronomy* magazine, and anywhere else I can find data.

On Monday, March 1, about 3:30 a.m. you can see the Moon pass within 0.1 degrees of a first magnitude star. With binoculars or a small (3 inch) telescope look 40 degrees above the west horizon for the full moon with Regulus just above and slightly to the right of it.

On Tuesday, March 2, about 6:50 p.m. you can see Mercury at its best. With binoculars or a small (3 inch) telescope look 12 degrees above the west horizon for Mercury at magnitude -0.5. Although it will be small (7 arc seconds) and low, you might be able to make out with a telescope that it is at half phase. You should also be able to see it for a few days on either side of this greatest elongation from the sun.

On Saturday, March 7, from moonrise (10:47 p.m.) till sunrise (6:51 a.m.) you can see the Moon's south pole at its best. With a small (3 inch) telescope look 25 degrees above the southeast horizon for the Moon. Libration tips the Moon's south pole toward us for a few days around this date. (Mars is about 4 degrees to the right of the Moon at this time.)

On Friday, March 19, after sunset (6:40 p.m.) you can see a nice grouping of solar system objects. With your unaided eye or binoculars look 25 degrees above the west horizon for the Moon, Saturn, and Venus, all within 6 degrees of each other.

On Sunday, March 21, from sunset (6:42 p.m.) till moonset (11:23 p.m.) you can see the Moon's north pole at its best. With a small (3 inch) telescope look 55 degrees above the southwest horizon for the Moon. Libration tips the Moon's north pole toward us for a few days around this date.

March 1999

All Times MST

"Two full moons in a calendar month bring on a flood"
—*Weather Lore*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 Mercury at greatest evening elongation	4 Moon passes N of Spica PAS Mtng	5 Moon approaches Mars	6 SAC Star Party PAC Mtng
7 J. Herschel, b. 1792	8	9 Moon passes N of Antares	10 **EVAC Meeting** 7:30 p.m. at SCC	11	12 Sun enters Pisces	13 **Messier Marathon** **EVAC Local SP**
14 A. Einstein, b. 1879	15	16	17 *St. Patrick's Day*	18 Mars stationary Moon lies E of Jupiter	19 Moon near Venus & Saturn	20 **EVAC Deep Sky Star Party** Equinox
21	22 Moon lies near Aldebaran	23	24	25 C. Huygens discovered Saturn's moon Titan, 1655	26 Moon lies S of Praesepe SAC Mtng	27 Moon approaches Regulus
28 *Palm Sunday*	29 H.W. Olbers discovered asteroid Vesta, 1807	30	31 Blue Moon			

On Tuesday, March 23, at 1:04 a.m. you might see an asteroid occult a star. There is a fairly good chance that 120 Lachesis will cover a 10th magnitude star for up to 40 seconds. The star will be about 22 degrees above the southeast horizon and should be visible in a small (3 inch) telescope. See *Sky & Telescope*, Feb. p.106 and Mar. p.106 for details.

Two Asteroid Occultations for Phoenix

Bill Peters, EVAC

Phoenix area observers are suitably placed to witness two asteroid occultations this month. On the night of March 22/23 the longest asteroid occultation of the year for North American observers will pass directly over the Phoenix area. Asteroid 120 Lachesis will occult a 9.9 magnitude star on the Libra/Hydra border for up to 39 seconds on March 23 at UT 8:04, or 1:04 a.m. local time. The asteroid shadow projected on the Earth is 438 kilometers wide at our location and centered on a north/south path running through the near east valley. The delta magnitude drop in brightness will be 2.74 from the combined star and asteroid.

The second occultation will be of the brightest star to be eclipsed this year for Arizona. On the night of April 2/3 asteroid 121 Hermione will occult a 7.6 magnitude star visible from just north of the Phoenix area. The present prediction places the southern boundary of the 290 kilometer wide shadow running through New River, Cave Creek, skirting northern Fountain Hills, across the Ft. McDowell Casino area and on to Globe. The central shadow is best observed from near Payson, AZ. The occultation will commence on April 3, UT 10:21 or 3:31 a.m. local time. The magnitude drop will be a hefty 5.4 degrees of the combined light.

The International Occultation Timing Association (IOTA) has hallmarked four asteroid occultations across Arizona for further scrutiny, including the two above, an occultation which crosses northern Arizona on March 3, and a final event again through Phoenix on May 9th (which was somehow omitted from the Feb *Sky & Telescope* list). An observing plane will fly out of Edwards, AFB in California to attempt to record these events. Ground observers are actively sought to supplement the aerial observations. IOTA is keenly interested in obtaining accurately timed reports of these and similar events to determine the size and shapes of these asteroids.

The way to provide useful observing data is to have good preparation. It is best to find the target star on an earlier night. On the night of the event you will need a short-wave radio set to Greenwich universal time, a camcorder to verbally record your call outs of "OFF", "ON", and precise information of your longitude, latitude, and altitude of your observing site. Finally, you will need a report form available from IOTA, or the author, to submit your data. Exact stellar coordinates and further information can be obtained from the Feb, Mar, and Apr 1999 issues of *Sky & Telescope* or at the websites:

www.anomalies.com/iotaweb/index.html
www.skypub.com/sights/occultations/occultations.html

The author can be reached at (602) 813-4242 or bpeters@imap2.asu.edu. Good observing!

Backyard Astronomy

Public Star Party Tips (Part II)

Bill Dellinges EVAC

Continued from the February EVAC Newsletter:

4) I like to bring along a step ladder with a hand rail at the top. It has two steps (good enough to reach my scope's eyepiece). It's purpose is two fold: to get kids up to the eyepiece, or when turned around, it gives adults something to hold on to (the hand rail) to steady themselves as they peer into your scope. Without such an aid, people have a tendency to waver and will usually grab the eyepiece to gain stabilization.

5) Do your home work. Bone up on the objects you're likely to show the folks. For instance, with M42 you'd want to tell them it's a gas cloud forming stars 1600 light years away, about 30 L.Y.'s across, with enough gas to produce 10,000 suns. They will be impressed. If on a double star, be prepared to field the inevitable question, "How far apart are they really?" Consult your Burnham's beforehand.

6) I like to sling over my shoulder a pouch containing handy references I can refer to not only for their questions, but to help me out too! It contains Ridpath and Tirion's "Universe Guide to Stars and Planets "(a pocket book), Kunitzch's "Short Guide to Star Names and Their Derivations", Karoschka's "Observer's Star Atlas", (a nice small but comprehensive atlas), A 3x5 inch spiral bound set of index cards listing the vital stats of the brightest stars (home made along with the next item), a spiral bound notebook containing my drawings of the constellations with lines connecting the stars, to be used as a last resort for those people having trouble seeing the star patterns. Oh yes, there's also a red flashlight in the bag.

7) A rechargeable 500,000 candle power spot light with a lens shade to point out stars and constellations. This monster seems to reach all the way to the stars! I bring this wonderful teaching aid to any public event. Not only does it leave no doubt what I'm pointing out, it never fails to fascinate the crowd with its long narrow beam shooting out into the night sky.

There you go! You're ready for your public now! Oh yeah, don't forget your telescope!

Heavenly Details

courtesy of
The Old Farmer's Almanac 1999
www.almanac.com

March 1999
The Third Month

(all times EST)

Venus, becoming still higher and brighter, hosts a series of eye-catching encounters in the western sky a half hour after sunset. On the 3rd, it's just above **Jupiter**, with little **Mercury** a bit lower. From the 17th to the 20th, **Saturn** sits just to the right of Venus, looking anemic in comparison with the dazzling planet. Mercury remains easily visible for those with unobstructed western horizons during the first week of this month. From the 3rd to the 12th, it floats just to the right of brilliant Jupiter. The **vernal equinox** occurs at 8:46 p.m., EST, on the 20th.

Full Moon: 2nd day, 1st hour, 58th minute
Last Quarter: 10th day, 3rd hour, 40th minute
New Moon: 17th day, 13th hour, 48th minute
First Quarter: 24th day, 5th hour, 18th minute
Full Moon: 31st day, 17th hour, 49th minute

Maybe we're moonstruck, but we humans seem never to tire of watching the amazing spectacle of the sky. For your interest and edification, The Old Farmer's Almanac provides the dates and locations of solar and lunar eclipses for the year, as well as the days of the full moon for seven years. Check it out at www.almanac.com, *then go outside and look UP!*

Backyard Astronomy

Deep Dive

Silvio Jaconelli, President

This is a follow-up to my earlier article on winter observing objects. I find on observing sessions that I stumble across so many unexpected interesting objects, so I thought that I would write about some of the neat things I found on my recent observing report. All observations for this article were done from my Gilbert backyard using a 10" f/7.6 reflector. So once again, arm yourself with a good star chart, haul out your scope and have fun !

This is at the feet of Gemini—the Pollux side—and is the star cluster **NGC 2264** at 6 Hr 41 Min, +9° 40'. This is a fourth magnitude open cluster where the stars are arranged in the shape of a **Christmas Tree**. The brightest star in this cluster is situated at the 'base' of the tree, and is a tough double star whose components are magnitudes 4.8 and 7.6, and are 3 arc seconds apart. While 3 arc seconds may sound wide, the magnitude difference makes a split tough (well, tough for me !). I used 220x and a light yellow filter (to lessen the glare from the primary star) in order to get a clean split.

Surrounding this double—a few arc minutes away—are three more sets of double stars all to the east. These are faint and two are very wide, and I could split all three at 60x.

The brightest star at the top of the Christmas Tree is also an unequal but easy double, again just resolvable at 60x.

Then about a quarter degree to the southwest of that star is a 10th magnitude double 5 arc seconds apart—I used 220x on this and got an easy split.

The last double star in this neighborhood is easily found by extrapolating a line from the bright base star to the bright top star by the same distance going southwards—about half a degree due south from the star at the top of the tree. Here we find a pair of 7th magnitude stars with a separation of 7 arc seconds—again just resolvable at 60x.

At this point we are now only half a degree away from **Hubble's Variable Nebula**. This nebula lies to the southwest of the last double star and I fully described it in last month's magazine.

And just approximately 5 degrees to the southwest of Hubble's is the **Rosette Nebula**—the star cluster is easily visible from my Gilbert backyard, but it takes my 13" scope and OIII filter out in the desert to clearly make out the nebulosity—has anyone ever spotted the nebulosity from town ? If so, what equipment was used ?

Let's now swing about 25 degrees to the north east to the **Eskimo Nebula**, which was also covered in last month's newsletter. This is planetary nebula **NGC 2392** and is a star in its death throes giving off puffs of gas. It is located just a few degrees east of the Pollux leg of Gemini; look for it at 7 Hr 29 Min, +20° 55'. There is a 7th magnitude "companion star" less than 10 arc seconds away, giving the initial impression that you are looking at a double star—but the planetary is much more fuzzier, looking like an out of focus star.

About half a degree due north you will find a semi-circle of 6 bright stars, the brightest of which is visible to the naked eye. The two stars to the east are very close together and point to a beautiful double about a quarter of a degree to the northwest. This double is a smaller version of **Albireo** in Cygnus—a 6th magnitude gold star and a 8th magnitude blue star about 8 arc seconds apart—the colors are really very obvious. This is an easy split at 60x.

Go back to the Eskimo, and from there go half a degree to the southwest to **STF 1083** at 7 hrs 26 min, +20° 30'. This is another easy split—the components are 7th and 8th magnitude and 7 arc seconds apart. 60x will split this pair.

Are you ready for a challenge to end the tour? Go back to the semi-circle asterism, go to the brightest star (the most western one) and go west for half a degree to **STF 1081** at 7 hrs 24 min, +21° 27'. This is a 9th magnitude pair with a separation of 1.8"—I guess that the seeing was not so good the night I looked at it since my first attempt to split it failed; I waited until the pair was 55 degrees above the horizon before I could split it (at 280x).

'Scopes in Space:

The Great Observatories...and the Next Generation

Joe Orman. EVAC
p27491@email.mot.com

Here's a quick look at NASA's "Great Observatories," a series of four space-borne observatories designed to

conduct astronomical studies over many different wavelengths:

1) Hubble Space Telescope (HST) was launched on the space shuttle in 1990. A 2.4-meter telescope for observing in the near-ultraviolet, visual, and near-infrared wavelengths (1150 A to 1 mm), HST will probably be used beyond its planned mission end in 2005.

2) Compton Gamma-Ray Observatory (CGRO) was launched on the shuttle in 1991. CGRO collects data from 30 keV to 30 GeV, and studies some of the most violent physical processes in the Universe: Solar flares, gamma-ray bursts (which for a few seconds can generate more energy than an entire galaxy), pulsars, nova and supernova explosions, black holes, and quasars.

3) Advanced X-Ray Astrophysics Facility (AXAF) will be launched on the shuttle and boosted into high-earth orbit in early 1999 to observe black holes, quasars, and high-temperature gases. AXAF was recently renamed the Chandra X-Ray Observatory in honor of the late Indian-American Nobel laureate, Subrahmanyan Chandrasekhar, one of the foremost astrophysicists of the twentieth century.

4) Space Infrared Telescope Facility (SIRTF), currently in development, will start its 2.5 to 5-year mission in December 2001 on a Delta rocket. A 0.85-meter telescope for imaging and spectroscopy in the 3 to 180 micron wavelength range, SIRTF will observe the far reaches of the Universe and conduct large-area imaging and spectroscopic surveys.

A sister program for SIRTF is the Stratospheric Observatory for Infrared Astronomy (SOFIA), the next-generation airborne infrared observatory. A 2.5-meter telescope aboard a customized Boeing 747 airplane, SOFIA will make over 100 high-altitude flights annually over 20 years starting in late 2001. It will perform targeted observations, especially in the Milky Way Galaxy and in the Solar System, within the wavelength range of 0.3 micron to 1.6 millimeter.

The successor to HST will be the Next Generation Space Telescope (NGST), which is planned for launch in 2007 aboard an Atlas-class rocket on a 10-year mission. Three different preliminary designs are being considered. It will detect wavelengths in the range 0.5 to 30 microns, and be optimized for the 1 to 5 micron region. To keep its infrared detectors cold and away from Earth's reflected sunlight, NGST will probably be located at L2, the stable Lagrangian orbital point which remains on the opposite side of the earth from the sun. With an 8 to 9-meter mirror, NGST will see objects 400 times fainter than large ground-based infrared telescopes (such as Keck or Gemini) or the current generation of space-based infrared telescopes (ISO, NICMOS or SIRTF), with a spatial resolution comparable to HST. It is a key part of NASA's Origins Program, which will use a series of new, low-cost observatories in space and on the ground to investigate the origins of galaxies, stars, and planets—and of life itself.

International Dark Sky Association Meeting

April 23-25

Sam Herchak, EVAC

Dear Dark-sky Enthusiasts: Please make plans for the annual meeting of the International Dark Sky Association (IDA) to be held April 23-25 in Tucson, AZ. Registration is only $25 and the information presented there will be invaluable to all of us in turning the tide toward the smart, efficient, and unobtrusive lighting that we all desire. Through IDA and their advice, we CAN make a difference as evidenced by the recent Canoga Ranch rezoning ruling by the Pima County Supervisors.

For the latest information, visit the IDA website at:

www.darksky.org

If you aren't already a member, please send your support to this non-profit organization and its volunteer staff with a $30 annual membership.

Feel free to contact myself or the IDA if you need more information. Thank you.

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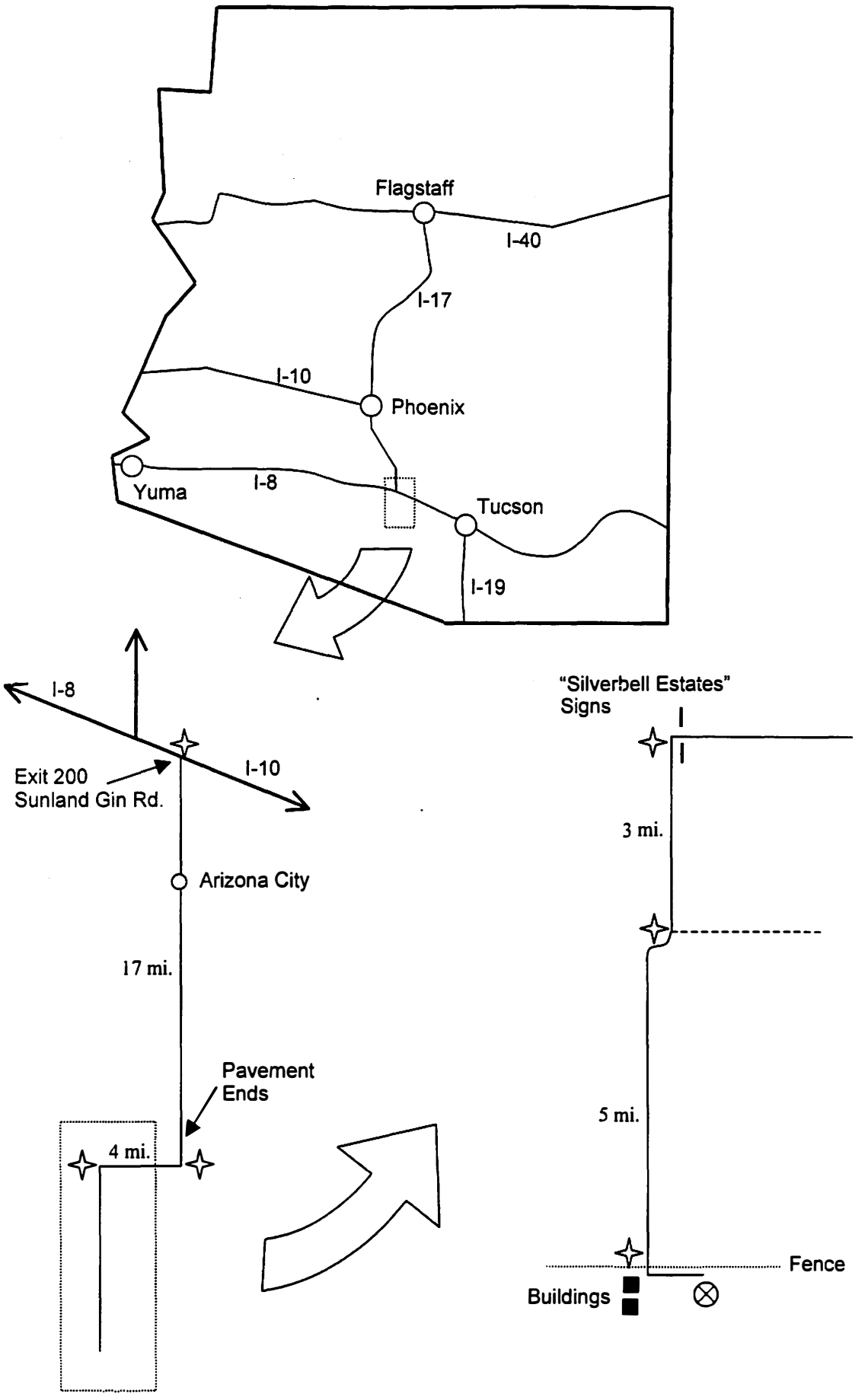
Email: ida@darksky.org
URL: www.darksky.org

For Sale

TeleVue 4.8 mm Nagler eyepiece. Wide 82 degree apparent field of view. Suitable for low focal length scopes. $140. Silvio Jaconelli (H) 926-8529; (W) 244-4699; email ngc2477@ibm.net.

Arizona City: Maps for the March **Messier Marathon** & October **All-Arizona Star Party**



East Valley Astronomy Club

EVAC on the Internet

EVAC Homepage

www.goodnet.com/~rkerwin/evac/evac.html

E-mail Mailing Lists

EVAC-mls is a mailing list for club announcements and quick notification of astronomical events.
EVAC-Board is for EVAC business. All club members are welcome to participate.

AZ-Observing is a fairly general mailing list about observing in Arizona. Included are star party information, who is going, as well as the latest observations and astronomical events.

To join, send E-mail with the "Subject: Subscribe" to the "-request" mailing address at psiaz.com. For example, you would send the request for AZ-Observing to "AZ-Observing-request@psiaz.com"

East Valley Astronomy Club

Membership Form

Please complete the information on the form and return to the address below along with a check payable to EVAC for the appropriate dues amount. See below:

Kathy Woodford
EVAC Treasurer
PO Box 213
Apache Junction, AZ 85217

Enclosed:
____$20 Annual
____$10 July—Dec
____$27 *Sky & Telescope*
____$29 *Astronomy Magazine*
____$ 7 EVAC Nametag
____ Total

Circle: New Member Renewal

Please Print (indicate confidential information)

Name _____
Address _____
_____
Phone _____
Email _____
URL _____

How did you hear about EVAC? _____

Major areas of interest (circle): General observing; Lunar/Planetary; Deep Sky; Telescope making; Astrophotography; CCD/Computer; Archaeoastronomy; Other: _____

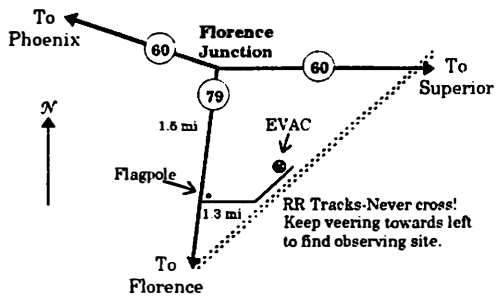
EVAC Star Parties

Local Star Party: Florence Junction Site

General Information: The Florence Junction site is the official site for the East Valley Astronomy Club's Local Star Party, typically held on the Saturday closest to Last Quarter Moon. Florence Junction offers reasonably dark skies within a short drive of most east Valley locations. (Report gunfire or illegal activity: 800/352-3796; Land use permit number: 26-104528.)

Location: N 33° 14' 40" W 111° 20' 16"

How To Get There: Take US 60 east to Florence Junction. At Florence Junction, turn right (south) on SR 79. After 1.5 miles, you will see a tall steel flagpole and a dirt road to the left. Turn left onto the dirt road and continue for another 1.3 miles. Drive with caution as the road is rough in some areas. To the left there will be a large open area.

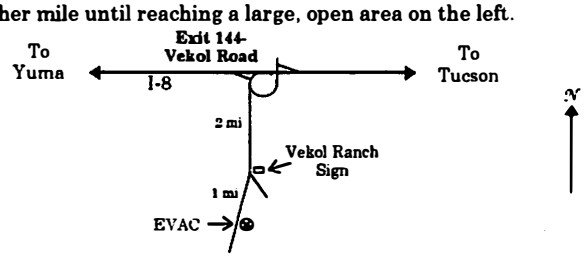


Deep Sky Star Party: Vekol Road Site

General Information: The Vekol Road site is the official site for the East Valley Astronomy Club's Deep Sky Star Party, typically held on the Saturday closest to New Moon. Vekol Road offers dark skies despite prominent skyglow from Phoenix to the north. The site is within 1½ hours drive time from most east Valley locations.

Location: N 32° 47' 55" W 112° 15' 15"

How to Get There: Take I-10 south and exit onto Maricopa Road. Continue through the town of Maricopa to SR 84, about 25 miles from I-10. Turn right on SR 84, after about 5 miles the road merges with I-8. Continue west and exit I-8 at Vekol Road—Exit 144. Turn left and cross the highway overpass. Before looping back onto I-8 take the dirt road to the left. Go south for 2 miles. At the Vekol Ranch sign bear right and continue south for another mile until reaching a large, open area on the left.



East Valley Astronomy Club

M. Aaron McNeely, Editor
16129 West Madison Street • Goodyear, AZ 85338

Contents

Dont Forget: The 1999 All Arizona Messier Marathon on March 13!

Valued member since 3/16/97

Next EVAC Meeting — Mar. 10th 7:30 pm

East Valley Astronomy Club—1999

Scottsdale, Arizona

EVAC Homepage—`http://www.goodnet.com/~rkerwin/evac/evac.html`

Membership & Subscriptions: $20 per year, renewed in December. Reduced rates to *Sky & Telescope* and *Astronomy* available. Contact Kathy Woodford, P.O. Box 213, Apache Junction, AZ 85217, 602/857-3438. Email—`ariz.kat@juno.com`

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. See map below.

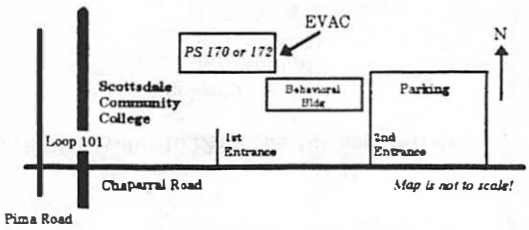
Newsletter: Mailed out the week before the monthly Club meeting. Send contributions to M. Aaron McNeely, 16129 W. Madison St., Goodyear, AZ 85338, 602/925-0183. Email—`amcneely@primenet.com` Contributions may be edited.

Address Changes: Contact Bill Smith, 3430 N. Mountain Ridge Unit 32, Mesa, AZ 85207, 602/854-8071. Email—`bsmithaz@aol.com`

EVAC Library: The library contains a good assortment of books, downloaded imagery, and helpful guides. Contact Enrico Alvarez for complete details, 602/837-0486.

Book Discounts: Great savings through Kalmbach and Sky Publishing. Contact Kathy Woodford, PO Box 213, Apache Junction, AZ, 602/857-3438. Email—`ariz.kat@juno.com`

EVAC Party Line: Let other members know in advance if you plan to attend a scheduled observing session. Contact Stan Ferris, 602/831-7307.



EVAC Officers

PRESIDENT
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602/926-8529

VICE-PRESIDENT
Pedro Jane'
602/833-2002

TREASURER
Kathy Woodford
602/857-3438

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Tom Mozdzen
602/497-5703

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602/837-0486