East Valley Astronomy Club

January Newsletter 1996

EVAC MEETING HIGHLIGHTS

Robert Kerwin opened the December Meeting at 7:35 pm to a packed house. There were several visitors who were interested in becoming members. The meeting was a members' show and tell/swap meet.

Video Highlights of 1995

Pierre Schwarr put together a video of the astronomical events that he recorded. We saw the January 23, and April 15, 1995 occultation of Spica by the Moon. He also recorded the Spica Graze on June 9, 1995. Next was video of Saturn's disappearing rings. The video included scenes from the 1995 Messier Marathon.

Adopt-a-Highway

It is now official, the signs will be going up shortly. We have adopted 1 mile of US 60 between mile marker 211 and 212. This stretch of highway is west of Florence Junction, on the way to our observing site. It is not known when our trash pick-up will occur, but we will keep you informed.

Flight over Arizona Observatories

Tom Polakis and Bernie Sanden showed a video of their flight on December 2nd, with Sam Herchak as pilot, over several of the major observatories in Arizona. They flew over Kitt Peak, Mt. Hopkins, Mt. Graham, Mars Hill and Anderson Mesa, just to name a few. The flight took over seven hours. Some of the pictures can be viewed on Tom Polakis's Homepage at URL:http://www.indirect.com/www/polakis.

After show and tell, the members socialized. There was plenty to eat and drink, because several members brought refreshments.

Boyce Thompson Southwestern Arboretum

Bill Feldman, director of the Arboretum, has asked if a few members would like to setup their telescopes for a function there on January 13. They would like 4 or 5 telescopes there at dusk and you can stay as long as you like. The Arboretum is about 3 miles further down US 60 from the Florence Junction site. This is also the same night as the local star party. For more information contact Don Wrigley at 982-2428.

JANUARY GUEST SPEAKER

This month's speaker is Chris Schur, a member of EVAC and highly regarded astro-photographer. Several of his photos have been printed in Sky & Telescope and Astronomy magazines. He will be giving an overview of astro-photography and some examples of his work.

BUY A GALAXY! ALL THIS CAN BE YOURS!

by Tom Polakis

Nervously punching the presets on my radio while sitting in Christmas-season traffic in Tempe, I was startled to hear an advertisement describing an opportunity to register a galaxy for $50 and visit an observatory south of Phoenix. The organization went on to identify itself as Windowpane Observatory. I had remembered a talk from five years ago at the Texas Star Party about this subject. Could this be the same person?

Skeptically going after the details. I called the number

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(1-800-727-4367) and spoke with Bill Georgevich, who was indeed the person who did the TSP talk. A 16-foot Ash Dome just away from Ajo houses a short-focus 18-inch scope. Bill would like to upgrade to a 35-foot dome and a 36-inch telescope, with a vision to do supernova patrolling and comet hunting. So he is allowing interested people to finance this endeavor with galaxy registration. He is well aware of parallels with the International Star Registry and its mild controversy. As a result, he is making it clear that the name on "your very own galaxy" doesn't make it a part of official astronomical nomenclature. What makes this not so bad of a deal for even the cynical amateur astronomer is that the price includes a sky tour with an 18-inch scope at a dark sky site. In addition to the establishment of a public observatory, Bill was able to get the streetlights of Ajo converted to full cut-off fixtures.

You're probably asking yourself, "What's up with the name?" "Windowpane" has nothing to do with comparing astronomical views with LSD hallucinations. Rather, it refers to a 48-inch viewing glass in the dome slit that allows objects to be viewed in indoor comfort. As it is configured by Ash Dome, the pane stays perpendicular to the telescope's optical axis. On the subject of viewing objects through a window, Georgevich acknowledges that he loses 6 or 7 percent of the incoming light, and the pane limits his useful magnification to around 150x. He notes that it is only installed for the coldest Winter months, and allows sessions with the public that are much prolonged over what could be accomplished with the usual underdressed visitor.

Windowpane Observatory has a nicely designed World Wide Web site providing more details. The URL is http://www.bslnet.com/accounts/wpo/www/windowpane.html. (Ed. Note: URL is one line, no spaces or returns.)

Desert Sky Observatory Completed

I'm pleased to say that my observatory is operational! In the November club newsletter I had a brief article reporting on its status. At that point everything but the roof was complete. In considering wood versus a metal roof, I found it difficult to talk local shed builders into fabricating a metal roof to sit on the wheel and track system I had prepared. Meanwhile, my brother-in-law, who's a carpenter, talked me into letting him build the roof. So over two days and about $300.00 worth of wood and shingles, I had a roof. A roofer who I met in the Home Depot parking lot while loading the shingles agreed to install them for $50.00.

The track system is from an idea I "borrowed" from Paul Cicchetti, who had an article in Sky and Telescope (Nov. 1994 ,Pg. 91) on drawing lunar features. What caught my eye was the picture of him standing in a roll off roof observatory. Through letters, he was most helpful by supplying me with rough drawings of his system and numerous tips. Basically he used 4" Genie garage door pulleys mounted in assemblies made at a machine shop. They're bolted onto the bottom of three 2x4's which are glued and screwed together for strength. Two of these set-ups on either side of the building support the roof, which I estimate weighs 1300 pounds. I used four wheels per side for my 12'x12' structure while Mr. Cicchetti used three per side for his 10'x10' facility- I wanted to insure that the wheels could take the weight (since their really pulleys, not true wheels). Twenty-four feet of 2", quarter inch thick angle iron were laid along the top of the west and east walls extending out to the 4x4 frame work which accommodates the roof when it's rolled back. Though somewhat massive, I can push the roof back with one hand. The four wheel housings nearest the corners have holes drilled through them to allow insertion of tie down pins which run through the housing and angle iron tracks. I use DC-10 aircraft nose gear pins for this purpose (including their "Remove Before Flight" red streamers!).

It's wonderful to simply go out to the observatory, roll back the roof, and in a minute or two be observing with my C-14. The days of dragging that monster to a mountain top 50 miles away are, happily, now only a memory. (Total cost of the project was $3500.00).

Bill Dellinges
December 15, 1995
6130 E. 16th Ave.
Apache Junction, Az., 85219
(602) 983-6651

Stay Warm

by Frank Honer

Our club has expanded greatly in the last year. Many of our new members are seasoned observers transplanted from other areas. Still many other members are new to amateur astronomy. Here are some tips on staying warm to those that haven't much experience observing on those long winter nights.

Winter desert nights can get very chilly. Unlike other winter activities you may do such as skiing, hiking, or biking; observing is essentially a sedentary experience. Consequently, you're body does not generate an abundance of heat. You should take every precaution to conserve the minimal amount of body heat you generate.

Wear loose clothing! The object is to keep an insulating blanket of air between you and your outer clothing. The only snugly fitting clothing I wear is a pair of thermal underwear. Over this I usually wear an extra large sweat shirt. Finally, I wear a large loose fitting ski jacket.

Keep your feet warm! In the past I would wear wool socks with chemical toe heaters. They last about three hours and are available from Popular Surplus. This year I'm experimenting with battery powered toe heaters. My shoes are a pair of snow boots. They are a size larger than I usually wear. The idea is not to restrict or reduce blood circulation to your feet and toes.

Keep your hands warm! I wear two sets of gloves. One set is made of thin "Thermastat" type material. On top of these I wear wool gloves with finger cutouts. This allows me to keep my hands and fingers warm while handling those eyepieces and filters with very little difficulty.

Keep your head warm! There was a time when covering my head was not that important to me. But these days a hat is a must. I've read that approximately 40 percent of your body heat can be lost through your head. I'll usually wear a ski mask with a wool cap.

Keep your neck warm! I wear a transition turtle neck lining from my chin to my shoulders. I've also found these a Popular Surplus.

If after all this I still get a chill, I find spending ten minutes in the cab of my pickup with a cup of coffee (or my wife) gets the fires burning again. You're body heat will raise the cab temperature enough to help warm you. You can use this time to plan your next observing session or just reflect on what you've observed to now.

Given the proper attire you will be surprised how long you can stay out in the winter hunting those elusive deep sky objects in the winter Milky Way!

QUESTIONNAIRE FOR A BEGINNER'S LECTURE SERIES

by Bernie Sanden

I would like some feedback regarding the possible formation of a series of lectures aimed at helping acquaint members new to the hobby with the basics of astronomy. Regardless of where your astronomy interests eventually lead, there are certain 'unavoidables' to reckon with as a beginner to the hobby. These include, for instance, the use of a star chart or a telescope, or understanding the difference between atmospheric transparency and steadiness. Our intention is to cover a wide range of general interest topics. I would like to avoid or, at best, skim over very narrow, special-interest subjects. A possible list of topics to be considered for this series appears below. I would like suggestions for topics and opinions on meeting times, meeting structure, etc., in order to better plan such an effort. If you would be interested in attending lectures in a series such as this, please respond to the list of questions below and either mail it to me (e-mail or snail mail) or give it to me at the next meeting. Please be aware that the final structure and contents of this series is subject to approval from the EVAC Board of Directors.

Possible Topics: Star charts, constellations, coordinate systems, seasons, precession, astronomical distances, star classifications, our Solar System, eclipses, nebulae, star clusters, galaxy types, basic telescope types, telescope and eyepiece math, finding celestial objects, motions of planets and moons in our sky, nova, supernova, comets, asteroids, meteors, good beginner books, good beginner scopes, star party etiquette, observing accessories, light pollution, keeping warm in January at Sentinel, etc.

QUESTIONNAIRE :

1. What topics should be included or excluded from the list above?

2. Should a section of each session be devoted to a general question-and-answer period?

3. What are (were) the three most important questions you wanted answered when you first joined the club? Were these answered to your satisfaction?

4. When should we meet for these lectures and where? (One possibility is to have them in the same room before the general meeting, or make them a small part of each general meeting)

5. How many meetings should we have and how long should they be?

UPCOMING CLUB EVENTS

EVAC Club Meeting, Jan 10, 7:30 pm
SCC, Physical Science Bldg., Room PS 172

Local Star Party, Jan 13, Sunset 5:38 pm
Florence Junction Site

Deep Sky Star Party, Jan. 20, Sunset 5:47 pm
Vekol Road Site

6. What form should the meetings take (totally lecture, lecture + q&a, supplement with audio-visual if possible, guest speakers, etc)?

7. Should it be restricted to members only?

8. Will there be pop quizzes?!?!

We want to do this in such a way that our effort produce the maximum benefit, so I ask that you respond specifically, accurately, and promptly.

Bernie Sanden 4614 S. Los Feliz Tempe 85282
E-mail: bsanden@amug.org

Lest I forget to mention...I need "hardy veteran" volunteers to help with the actual lectures. Please contact me if you have any interest in being a part of this program. Thank You.

LATEST COMET HALE-BOPP NEWS FROM TEIDE OBSERVATORY

December 18, 1995 - Mark Kidger

The group here in Tenerife has nearly completed reduction of the 50 nights of imaging of Comet Hale-Bopp that we obtained between August and October with the 82 cm Telescope at Teide Observatory. Some of our results are rather interesting and we would appeal for observers to check their data to try and plug some of the gaps in our coverage. We have a light curve of the nuclear condensation (an approximately 6 arcsecond aperture) over the full period of observation. A few nights are not yet reduced because the fields must be re-observed, with standard stars, on a photometric night to get a decent photometric calibration out. This light curve has come up with some interesting results, some of which contradict what we have thought previously:

1) Jet events are very clearly seen in the light curve as big bursts in the nuclear magnitude. The September jet shows up as a 2 magnitude brightening in broad-band R. The August jet looks as if it may have been even bigger (perhaps 3 magnitudes), but our light curve is only well-sampled well into the decline. The September event reached maximum in 2 days, declining from there back to quiescence.

2) It appears that the light curve was already rising sharply on August 16.9, which implied that the August jet probably initiated much earlier than we thought, probably around August 16.5 (on August 15.9 the nuclear magnitude is quite normal). The jet was thus, presumably, undetected until our first observation of it on August 25.9 and multiple detections around August 29.0. It seems astonishing that such a large event remained unobserved for so long. The only observations of the event that I know of are the reports from visual observers like John Bortle that the nuclear condensation was very bright and that the coma was condensed; even these reports though seem to start several days into the outburst.

3) A small jet event is clearly seen in early September. This is one of Zdenek Sekanina's "missing" jets. The light curve reached maximum around September 11th. We have several very deep images around that date (total exposure ~6600-6800 seconds) and see no evidence of a jet. This means that the jet was either very faint, or close to the nucleus and not resolved by us. If anyone has deep images, in good seeing, from around that date, it would be well worth looking at them.

4) A jet event initiated, it seems, on October 31st. This was our very last night of observation before bad weather and poor visibility stopped us. We see a sharp rise in the light curve, albeit on a night of poor seeing. This date corresponds quite closely to the expected date of the next jet given an average separation around 18 days, so we think that the event is genuine, although the jet itself would not have become visible until around November 2nd or 3rd.

5) We find an average separation of jet events of 19.0+/-3.9 days. There are quite large variations in the intervals between jets as estimated from the light curve. Our estimated separations (based on the light curve) are: 24 days, 15 days, 20 days and 17 days. My reading of this is that you probably need active zones at two different longitudes to give such variable intervals, but we need to do more work on this.

6) One interesting feature of the light curve is that the 5 events that we observed alternate: big, small, big, small, big(?).

7) Our first estimate of the rotation period of the nucleus is around 3.6 days, but this is provisional and unconfirmed and based on partial analysis of the data.-

----------The bottomline? If Hal Weaver's estimate of a nucleus diameter of 40 km is confirmed and if the activity keeps up as it has at present, the absolute magnitude of Comet Hale-Bopp should be around +1.5 and the comet SHOULD reach a magnitude around +1 at maximum. We are still extrapolating an awfully long way though. This though would still make Hale-Bopp the brightest comet since 1976. Very bright magnitudes now look very unlikely; fainter magnitudes are still possible, but again, increasingly unlikely unless something unexpected happens. I would guess that there is a 75% chance of a magnitude from 0 to +2 and better than 90% that it is in the range -1 to +3.

EVAC Board of Directors Meeting

November 30, 1995

Minutes

Attendees: Tom Polakis, Kirk Keating, Bob Kearney, Paul Dickson, Ted Heckens, Robert Kerwin, Don Wrigley, and Sheri Cahn.

The meeting was called to order at about 7:10 pm.

Old business: The only pending item from the last meeting was the "Adopt-A-Highway" program that Sam was looking into. All agreed it was a good idea--free publicity for the club as well as doing our part to keep Arizona beautiful.

1996 EVAC Calendar: The star party and meeting dates were already set. The dates for other events are:

EVAC Cookout - April 27
Texas Star Party - May 12-18
Riverside Telescope Makers Conference - May 24-27

EVAC Cookout: The date was set for April 27th and this will be held at the river bottom. Ted again would be glad to set this up as long as he has some help getting things organized and set up. There will be a first quarter moon, so a public star party would be a good possibility.

Honorarium: Tom brought up the idea of increasing the honorarium for local speakers. This would increase our honorarium budget by about $150 for the entire year. Everyone felt that it was a good idea if we could afford it. Since we were unsure of the financial outlook for next year, the decision was to keep the honorarium as is and increase it if our income looks good.

Newsletter Budget: The newsletter currently costs the club about $900 per year. About 130 newsletters are printed each month. Bob Kearney and Kirk Keating will look for ways of decreasing the cost of the newsletter.

EVAC Party Line: Robert will look for another volunteer to take this over for the upcoming year, but will continue to handle it for now.

Field Trip: This year's field trip will be Lowell Observatory. Tom would be glad to make the arrangements with Lowell, but does not want to handle the money or bus company. Sheri agreed to take care of the money and transportation arrangements. No date is set, but the trip will most likely be in August. This year's trip should be somewhat less expensive because we have a 50% discount from the bus line because of last year's problems.

Membership Information: Bob will coordinate with Sam to put together an information packet for new members. One possibility would be to put the information in a three-ring binder to give to new members. Ted did this a couple years ago and it worked well.

By-Laws: Robert will contact Bill to obtain a copy of the by-laws.

Public Star Parties: Some general discussion of public star parties: The consensus was that we should sponsor 2-3 public star parties per year. A "public" star party is separate from the for-pay star parties and the impromptu school star parties. SAC works through the Parks and Recreation Department to set up their public events and this was presented as a possibility for EVAC as well. The advantage of doing it this way is that the advertising for the event is handled by Parks and Recreation, so it's less of a burden on the club. We also discussed finding a volunteer to serve as an "events coordinator" for the public events only. This person would handle scheduling and coordinate volunteers for each public star party.

Programs and Projects: Sidewalk astronomy was an idea that we would like to pursue in 1996. Frank Kraljic set up the last event, which was quite successful. A beginner's workshop is another idea that everyone felt was something we should be doing. Tom volunteered to put together something on this. The beginner's workshop would cover basics, such as setting up and using a telescope, star atlases and observing techniques. As for fund-raising ideas, the for-pay star parties we did last year helped enormously and we will certainly be looking to do more of these in the upcoming year. Ted suggested that if we don't get any requests, we could put together some information promoting the for-pay star party idea and distribute it to resorts and convention organizers. Tom introduced the idea of setting up an observing program similar to the "Herschel 400" program. The purpose of the program is to encourage members to start an organized program of observing. Tom would be glad to set up the observing list, if someone else would administer the program.

Newsletter Ads: The EVAC newsletter will accept non-member ads on a limited basis at the discretion of the editor. The issue of accepting commercial advertising has not arisen, but we decided that, if a request for space should arise, we would accept it and charge a fee.

Florence Junction Site: Two incidents occurred at the site, one involving a group of ATV'ers that disrupted a local star party, the other involving a nearby beer party and shooting. We decided to take no immediate action and see how things go for the next few months. Hopefully, these are isolated incidents and we can

continue to use the site without further problems. As a precaution, however, Kirk and Robert will survey the area near the Florence Junction site and look for an alternate site in case we need to switch.

All-Arizona Star Party: Considerable discussion about the star party. Although October's event was quite successful, the topic of giving up sponsorship of this event arose. The primary issue seems to be the long stretch of dirt road to the site and perhaps the fact that better observing sites exist (although they are not conveniently located for the majority of Arizona observers). The comments came from Dean Ketelsen of the Tucson club. All officers and board members present were in favor of keeping the All-Arizona an EVAC event; Paul will contact TAAA to find out what the issues are and if there was a burning desire for them to take over sponsorship of the event. The idea of finding another (less dusty) site was also brought up, but we will take no action yet. The general consensus of the group was that we don't mind finding a new site and we would even be willing to give up sponsorship of the event as long as the event is truly an "All-Arizona" star party that attracts astronomers from across the state, not caters only to a particular region of the state.

The meeting was adjourned at about 9:15 pm. Thanks again to Tom Polakis for allowing us to meet at his house!

Final note: During the meeting, several ideas were brought up that required volunteers. Here's a summary:

Public Events Coordinator: responsible for scheduling and promoting public star parties and coordinating club members to show up with telescopes for the event.

EVAC Cookout: need several people to help Ted with setting up the grills, coordinating the sign-up for the event, reserving the site, making arrangements for the star party, etc.

EVAC Party Line: responsible for serving as a point of contact for the local and deep-sky star parties.

Observing Program Coordinator: responsible for keeping track of participants in the observing program(s) and printing and distributing certificates upon completion.

DOWNLOADED FROM GALILEO HOMEPAGE—DEC 23rd

SUCCESSFUL PROBE ENTRY CONFIRMED
on December 7, 1995
at 3:10 PM PST (23:10 GMT)
An analysis of the fate of the Galileo Probe

The Galileo Probe successfully entered the atmosphere of Jupiter. Until six hours before entry the Probe had been in a dormant state since its separation from the Galileo Orbiter on July 13, 1995 when both were at a distance of 81,520,000 km (50,660,000 miles) from Jupiter. A radio signal from the Orbiter, indicating that it was receiving the radio transmission from the entry Probe, was received on Earth at 3:10 PM PST (23:10 GMT). Data radioed from the entry probe during its descent into the atmosphere of Jupiter was stored in the Galileo Orbiter's computer memory and on its tape recorder. At 6:07 PM PST (2:07 GMT / Dec. 8) confirmation was received on Earth that the Galileo Orbiter had successfully fired its rocket engine to enter orbit about Jupiter, thus becoming the first spacecraft from Earth to enter orbit about a gas giant planet. The stage has now been set for transmission from the Orbiter to Earth of the stored data from the Galileo Probe. This transmission will occur in the period from December 9, 1995 through May 1996. After the scientific data from the Probe is successfully back on Earth, the Galileo Orbiter will begin an intensive study from orbit of Jupiter's moons, magnetic field and radiation belts, and Jupiter's atmosphere.

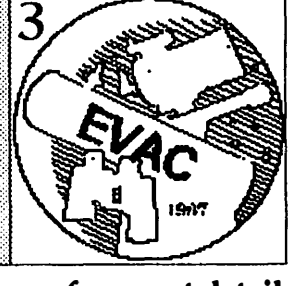
The direct exploration of Jupiter's mysterious atmosphere by the first entry of a spacecraft from Earth into the atmosphere of a gas giant planet has successfully begun. On this page we will provide status reports on the transmission of data from the Orbiter and on preliminary scientific results from the Galileo Probe data as they come available.

> December 12: Engineers have determined that the radio link between the Probe and Orbiter lasted for at least 57 minutes on Dec. 7. Based on the atmospheric and engineering models of the entry available prior to Dec. 7, this duration indicates that the Probe survived until approximately a depth of 160 km (100 miles) below the visible cloud tops of Jupiter.

> December 12: Telescopic observations of Jupiter from the Earth at about the time of the Galileo Probe's entry have allowed astronomers to characterize the appearance of the Probe's entry location. These observations at visible and infrared wavelengths were obtained at NASA's Infrared Telescope Facility on Mauna Kea Hawaii, at the Pic du Midi Observatory in France, and by D. Parker in Coral Gables Florida. By identifying the type of cloud feature entered by the Probe, these observations will assist in generalizing the scientific results from the Probe to other locations on the planet with similar cloud features.

East Valley Astronomy Club

January1996

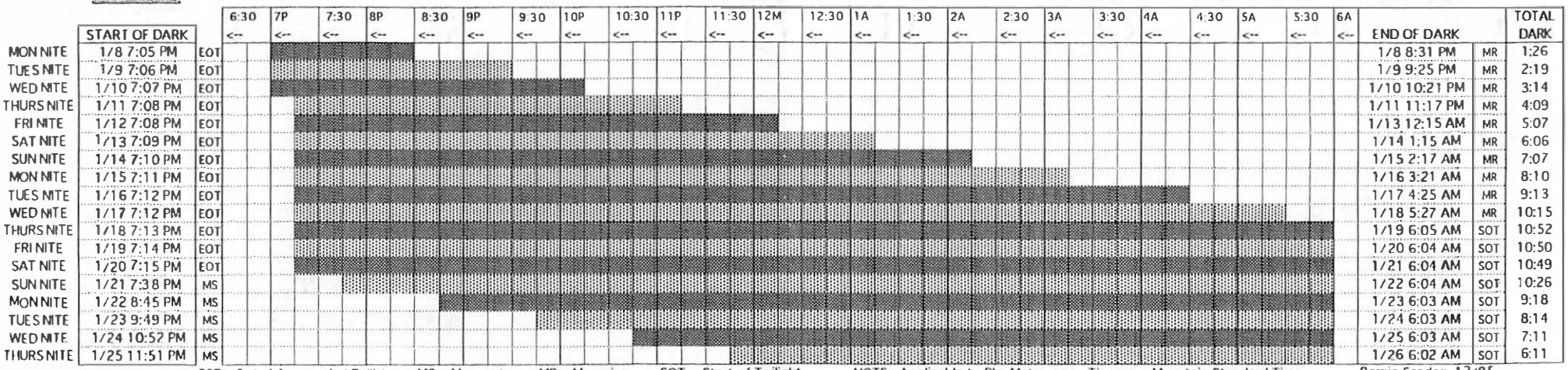
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31 *4:45 AM Algol at min	1 *ALL MONTH NOTES	2 *10:00 AM Mercury Elong.	3 *1:34 AM Algol at min	4 *7:00 PM PAS Mtg *10:00 PM Quadrantid Meteors	5 ○ *7:30 PM SAC Mtg	6 *Max N Lunar Libration *10:23 PM Algol at min
7 *10:40 PM Lunar Occultation	8 Sunset 5:37 PM	9 *9:12 PM Algol at min *9:24 PM Rhea Reappears Sunrise 7:33AM	10 7:30 PM EVAC Mtg	11	12 *9:09 PM Titan Sh. Transit	13 ◑ * Local S Parties *Max W Lunar Libration
14	15 *Neptune in Conjunction	16	17 *Good S Lunar Libration	18 *Mercury at Inf. Conjunction	19 *7:00 AM Old Moon	20 ● * Deep Sky S P *6:08 PM Young Moon
21 *Uranus in Conjunction	22 Sunset 5:50 PM	23 *3:19 AM Algol at min Sunrise 7:30AM	24	25 *Max E Lunar Libration	26 *12:08 AM Algol at min	27 ◐ *Fire kills Apollo 1 crew-1967
28 *Explosion kills Challenger crew-1986	29 *8:57 PM Algol at min	30	31	1	2	3 

All Times are LOCAL - add 7 hrs for Universal Time

Flip over for event details

Date	Start	Title	Description
1/1/96	12:00 AM	ALL MONTH NOTES	CALENDAR NOTES: 1996 occultation events for Phoenix have not yet arrived. For details on Saturn's satellite events, see Aug 95 S&T. Algol min refers to minimum magnitude of the naked eye variable star. See Sky&Telescope (S&T) and Astronomy (Astro) for more details. PLANETS: MERCURY can be found low in the SW at sunset first week of Jan. Moves to AM sky by month's end. VENUS is bright (-4 mag) and unmistakeable in the SW evening sky. Sets about 3 hours after Sun. MARS is positioned close to the Sun and cannot be observed. JUPITER rises at dawn and is not well placed for observation. SATURN is just West of the celestial meridian at sunset. View from Earth is of N side of rings while sunlight illuminates the S side, both at very shallow angles. Makes rings difficult to view. URANUS and NEPTUNE are both in conjunction with the Sun this month–not visible. PLUTO rises around 3 AM and is a difficult target–most published finderchorts don't show location until next month. OBJECTS OF INTEREST: Comet Schwassman-Wachmann 3 (PM) and Hyokutake (AM) Asteroids 7 Iris & 16 Psyche (see Nov 95 S&T), and 14 Irene (Jan 96 Astro)
1/2/96	10:00 AM	10:00 AM Mercury Elong.	Mercury at Eastern Elongation making it visible low in the SW after sunset–7 degrees above horizon–azimuth 240 degrees at 6:15 PM.
1/4/96	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.
1/4/96	10:00 PM	10:00 PM Quadrantid Meteors	Moon interferes but shower predicted to peak tonight. Hourly rate of 85 meteors normal under dark sky conditions.
1/5/96	7:30 PM	7:30 PM SAC Mtg	Saguaro Astronomy Club meeting, Grand Canyon University, Fleming Bldg, Rm 105. Camelback and 33rd Ave.
1/15/96	12:00 AM	Neptune in Conjunction	Neptune in Conjunction with Sun and not visible.
1/18/96	12:00 AM	Mercury at Inf. Conjunction	Mercury at Inferior Conjuction–between Sun and Earth and not visible.
1/19/96	7:00 AM	7:00 AM Old Moon	Look for Old Moon (22 hours from new) before dawn near E-S-E horizon.
1/20/96	6:08 PM	6:08 PM Young Moon	Chance to spot record breaking Young Moon–13 hours post New. Look 3 degrees above horizon at azimuth of 250. Opticol aid required!

JAN 1996



	START OF DARK		END OF DARK		TOTAL DARK
MON NITE	1/8 7:05 PM	EOT	1/8 8:31 PM	MR	1:26
TUES NITE	1/9 7:06 PM	EOT	1/9 9:25 PM	MR	2:19
WED NITE	1/10 7:07 PM	EOT	1/10 10:21 PM	MR	3:14
THURS NITE	1/11 7:08 PM	EOT	1/11 11:17 PM	MR	4:09
FRI NITE	1/12 7:08 PM	EOT	1/13 12:15 AM	MR	5:07
SAT NITE	1/13 7:09 PM	EOT	1/14 1:15 AM	MR	6:06
SUN NITE	1/14 7:10 PM	EOT	1/15 2:17 AM	MR	7:07
MON NITE	1/15 7:11 PM	EOT	1/16 3:21 AM	MR	8:10
TUES NITE	1/16 7:12 PM	EOT	1/17 4:25 AM	MR	9:13
WED NITE	1/17 7:12 PM	EOT	1/18 5:27 AM	MR	10:15
THURS NITE	1/18 7:13 PM	EOT	1/19 6:05 AM	SOT	10:52
FRI NITE	1/19 7:14 PM	EOT	1/20 6:04 AM	SOT	10:50
SAT NITE	1/20 7:15 PM	EOT	1/21 6:04 AM	SOT	10:49
SUN NITE	1/21 7:38 PM	MS	1/22 6:04 AM	SOT	10:26
MON NITE	1/22 8:45 PM	MS	1/23 6:03 AM	SOT	9:18
TUES NITE	1/23 9:49 PM	MS	1/24 6:03 AM	SOT	8:14
WED NITE	1/24 10:52 PM	MS	1/25 6:03 AM	SOT	7:11
THURS NITE	1/25 11:51 PM	MS	1/26 6:02 AM	SOT	6:11

EOT = End of Astronomical Twilight MS = Moonset MR = Moonrise SOT = Start of Twilight NOTE: Applicable to Phx Metro area. Times are Mountain Standard Time Bernie Sanden 12/95

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 $20.00 annual dues.

Sheri Cahn, EVAC Treasurer
4220 W. Northern #116
Phoenix, AZ 85051
246-4633

Name _____ ***Please***
Address _____
_____ Zip _____ ***Print***
Phone # _____
E-mail address _____

( ) New ( ) Renewal ( ) Change of address

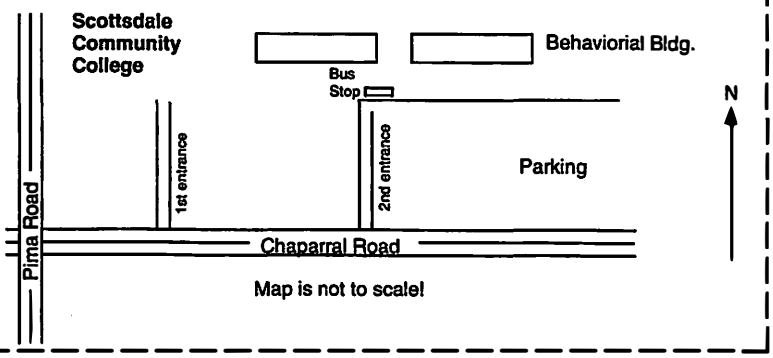
Major area(s) of interest:
( ) General observing
( ) Lunar observing
( ) Planetary observing
( ) Telescope Making
( ) Astrophotography
( ) Deep Sky
( ) Other_____

Enclosed:
___$20 annual
___$15 April - Dec.
___$10 July - Dec.
___$ 5 Sept.-Dec.

It is not necessary, but do you currently own astronomy equipment?
( ) Yes ( ) No
If yes, please describe. _____
How did you hear about the East Valley Astronomy Club? _____

CLIP AND SAVE

Monthly business meetings are on the Wednesday nearest to the full moon.



Please renew today for 1996. Meetings are the 2nd Wed.

EAST VALLEY ASTRONOMY CLUB
Robert G. Kearney, Jr., Editor
2120 W. 8th Ave.
Mesa, AZ 85202

EAST VALLEY ASTRONOMY CLUB

President:	Vice-President:	Treasurer:	Secretary:	Properties:
Robert Kerwin	Tom Polakis	Sheri Cahn	Sam Herchak	Steve O'Dwyer
837-3971	967-1658	246-4633	924-5981	926-2028

MEMBERSHIP&SUBSCRIPTIONS: $20.00 annually. Reduced rates available to members for *Sky&Telescope* and *Astronomy*. Contact Sheri Cahn, 4220 W. Northern #116, 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.