East Valley Astronomy Club

December Newsletter 1996

EVAC MEETING HIGHLIGHTS

by Sam Herchak

Robert Kerwin opened his last meeting as President at 7:30 PM, welcoming 50 people, 3 of whom were guests. The next order of business was elections of Club officers for 1997. Bernie Sanden was nominated to the list as a Board member, followed by an overwhelming approval of all the nominations.

Your Club Officers for 1997 are:

President:	Sheri Cahn
Vice-President:	Tom Polakis
Treasurer:	Silvio Jaconelli
Secretary:	Aaron McNeely
Properties:	Ken Spruell

The Board of Directors will additionally include:

Paul Dickson	Frank Honer
Bob Kearney	Bernie Sanden
Don Wrigley	

Please join me in thanking these volunteers! You can look forward to another strong year for the Club under their direction.

Bits and Pieces

Robert reported a strong showing of about 12 members at Vekol Road for the recent Deep Sky Star Party (S.P.). Sam Herchak took orders for two types of astronomical calendars—delivery will take place at the December Club meeting. Paul Dickson brought pictures from the All-Arizona S.P.; announced a Messier Logbook (similar to his 110 Best of the NGC guide), and that he will have copies of *The Observer's Handbook* for around $11.00. Paul concluded with a sign up sheet for anyone interested in an open house at the Steward Observatory Mirror Lab in Tucson for the casting of their first 8.4 meter mirror. Don Wrigley handed out maps for the Black Mountain Elementary School S.P. Sheri Cahn produced a thank you card and donation from St. Xavier School for the Club's participation in a S.P. for them.

Messier Award

Mike Sargeant was presented the first award for completing the Club's Messier Observing Program. Congratulations Mike!

Images

Chris Schur revealed the process by which he produces most of his color images these days; use conventional films instead of a CCD camera but then create digital images by scanning the film into a computer! The resulting images can then be combined/manipulated by graphics applications like Photoshop (much like a CCD image). The result has photographic quality however, without the "pixels" normally seen in CCD images. The final (and large) digital file is then made into a slide by a service bureau. Chris uses Photo Concepts at 30th St. and Thomas in Phoenix. The cost is only $7.00/slide. He showed several recent images including one of Comet Hale-Bopp that will certainly find its way into several publications.

Comets and Meteors

Tom Polakis brought several transparencies depicting unusual orbits of recent comets. Then he explained the work of Gary Kronk who has researched numerous meteor showers and their relationship to specific comets (such as the Leonids and Comet Tempel-Tuttle). The

UPCOMING EVENTS

- **Deep Sky Star Party, Dec 7, Sunset - 5:20 pm**
  Vekol Road site
- **EVAC Club Meeting, Dec. 11, 7:30 pm**
  SCC, Physical Science Bldg., Room 172
- **EVAC Holiday Party, Dec. 27, 6:30 pm**
  Sam and Anne's home, see map
- **Local Star Party, Jan. 4, 1997, Sunset -5:33 pm**
  Florence Junction site
- **EVAC Club Meeting, Jan 8, 1997, 7:30 pm**
  SCC, Physical Science Bldg., Room 172

best part is Gary has put all of this knowledge into a webpage for anyone with Internet access—Tom says it is a "must see." The URL is:

http://medicine.wustl.edu/~kronkg/index.html

FEATURED PRESENTATION

The Club was very fortunate to have Professor Paul Knauth from Arizona State University to talk about the recent news of possible life on Mars. His field of expertise is geology and "early life," hence a perfect speaker to report on the validity of the recent announcements from NASA.

Paul started with an overview of what we know about meteorites and how our understanding of their "parent bodies" has changed over the years. This the result of a unique collection point on Earth; Antarctica and the South Polar ice sheet! Here many "rocks" stand out on the ice but none of them were formed on Earth. They have all fallen from the sky as meteorites and been preserved by the cold and snow for thousands of years.

Meteorites are mostly "rock," and as Paul explained, much of rock is silicate that contains a lot of oxygen. Scientist analyze the oxygen isotopes in samples and find only 3 in terrestrial rocks while there are 8-12 in meteorites. After collecting data from 2,500 meteorites, researchers say most formed 4.5 billion years ago and probably from less than 15 parent bodies.

But about a dozen meteorites have been recovered that are far different from the others. These are called SNCs, an abbreviation that simply refers to the names of the first 3 sites that they were found. These SNCs are more like lava than rock, and contain trapped gases and distinctive oxygen isotopes. Of the 40,000 meteorite fragments recovered in Antarctica, several were SNCs and have been thoroughly studied by scientist at NASA.

The gases trapped in these samples must come from the atmosphere of its parent body it is theorized. Only a few objects in our Solar System have atmospheres and we have sampled one besides our own—Mars. Viking landers returned data on that atmosphere years ago and it is a perfect match with the gas trapped in some of these SNCs! Not close—perfect. This is the most compelling evidence that these unique meteorites were blasted from the surface of Mars, probably about 16 million years ago.

Then Paul diverged to biology and what he feels may be a whole new chapter in that field. A small group of biologist have been arguing for years now that viruses are not the smallest form of life on Earth. They talk about "nano bacteria" (that have to be magnified 30,000 times to be seen) as a whole new class of "life"; one that is common all over the Earth. The fossils found on the Mars rocks closely match the nano bacteria here on Earth.

Paul summarized as follows; we don't know if there was life on Mars but there is a credible argument. The data is from test equipment at their very limits, but it has been done very carefully. No cold fusion here Paul believes. As if it wasn't enough to hear about these Mars rocks, Paul then pulled one out of his briefcase! A piece of only 12 SNCs known on Earth!

When the questions and answers ended at 9:30, we each got to hold this piece of Mars. **This was a very special evening.**

DECEMBER MEETING

December's meeting will be a Member's show and tell. If would like to make a presentation, please contact Tom Polakis (967-1658).

EVAC HOLIDAY PARTY

Anne Beeby and Sam Herchak are hosting a "star party" at their home on Friday, December 27th at 6:30 PM. This party will have beer and food instead of telescopes! Please join your fellow Club members for some holiday spirit on the 27th by following the map on inside back page.

NAKED EYE ASTRONOMY

by M. Aaron McNeely

December 1996: The "Tenth Month"
31 Days: day 336 to 366 of the year (leap)
Julian: 2450418.5 to 2450449.5
Phoenix, Arizona
33°27'N, 112°04'W

"Thunder in December presages fine weather"-Weather Lore

Constellations and Starlore

In December, the constellations of winter have begun their seasonal ascent in the east while groups such as the Summer Triangle are still hanging on in the west. The Big Dipper is crawling above the horizon in the north while lonely Fomalhaut, the Autumn Star, graces the southern sky near the meridian. After sunset, Saturn lies in the high southeast near the vernal equinox, and the east edge of the Great Square of Pegasus seems to direct the eye down towards the planet. Jupiter is sinking low in the southwest as Capella is rising in the northeast. Rising just a few degrees north of the east point of the horizon are Aldebaran and the Hyades. Directly above the Hyades lie the Pleiades, the famous Seven Sisters. Perhaps this is the origin of lucky number 7? (There are also seven stars in the Big Dipper).

Many famous astronomers and scientists such as Isaac Newton, Tycho Brahe, Johannes Kepler, and E.E. Barnard were born in December-even a woman astronomer, Annie J. Cannon, joined the ranks of the December patriarchs of science.

In Astronomical History:
Dec. 2, 1934: Mt. Palomar 200-inch mirror blank cast
Dec. 11, 1863: Annie J. Cannon, born
Dec. 14 1546: Tycho Brahe, born
Dec. 16, 1857: E.E. Barnard, born
Dec. 23, 1672: Cassini discovers Saturn's moon Rhea
Dec. 24, 1968: Apollo 8 orbits Moon
Dec. 25, 1642: Isaac Newton, born
Dec. 27, 1571: Johannes Kepler, born
Dec. 28, 1882: Arthur S. Eddington, born
Dec. 31, 1864: Robert G. Aitken, born

Solar System Phenomena

Mercury experiences a shallow evening apparition during December and achieves inferior conjunction with the Sun early next January. Jupiter also lies low in the southwest and will be quickly exiting for the year. Jupiter and Mercury lie near each other from the 15th through the 25th, with closest approach on the 21st and 22nd- a "quasi" conjunction in that Mercury approaches and then recedes from Jupiter without achieving a conjunction in right ascension. Saturn lies just east of the meridian at sunset below the Great Square of Pegasus and achieve eastern quadrature on the 22nd. At eastern quadrature an astronomical body lies 90 degrees east of the Sun, the position analogous to the First Quarter Moon, and lies halfway between opposition (180 degrees) and conjunction (0 degrees) with respect to the Sun. Mars, rising around midnight south of Leo, continues to brighten as it approaches its March 1997 opposition. Venus rises about two hours ahead of the Sun at midmonth and lies close to Zubenelgenubi (Alpha Librae) on the 5th and Antares on the 25th. The Moon undergoes a close and beautiful conjunction with Venus on the morning of the 8th.

The waning Moon lies near Regulus on the 2nd, Mars on the 3rd (at Last Quarter), Spica on the morning of the 6th, and very close to Venus on the morning of the 8th. New Moon occurs on the 10th, and the Young Moon lies north of Mercury on the 11th and near Jupiter on the 12th. The Moon approaches Saturn on the evening of the 16th and, at First Quarter, lies near Saturn and the vernal equinox on the evening of the 17th. The waxing gibbous Moon is positioned north of the Head of Cetus on the evening of the 20th, occults Aldebaran (in daylight) on the 22nd, and achieves Full phase on the 24th near the star Alhena. The waning gibbous Moon approaches Regulus on the 28th and Mars on the last morning of the year, Dec. 31st.

The Dec. 24th Full Moon achieves was is termed a "minor standstill." This designation, coined by the archaeoastronomer Alexander Thom, denotes the time when the Full Moon rises at its greatest amount removed from the location of the ecliptic. These major and minor standstills occur in a 9.3 year cycle and describe the limits that the Moon can achieve in azimuth at rising. This effect is apparent at the times of the solstices. At each solstice, the Full Moon rises at the position of the opposite solstice, and during the times of a major or minor standstill the rising point of the Full Moon is displaced south or north of the point where the ecliptic intercepts the horizon by about 7 degrees (latitude of Phoenix). For example, the summer solstice position rises about 28 degrees north of the direct east point (90 degrees) or at azimuth 62 degrees. The Full Moon of Dec. 24th, at its minor standstill, will rise at the 69 degree position in azimuth.

The Sun enters Sagittarius on the 17th. The winter solstice occurs on Saturday, Dec. 21st at 11:05 am, MST. The winter solstice of marks the moment when the Sun, traveling along the ecliptic, achieves its lowest value of declination for the year. This moment heralds the rebirth of the Sun after the seasonal decline which began with the summer solstice. It is not a coincidence that the birth of Jesus is celebrated near the time of the winter solstice. The true date of the birth of Jesus is not specified in the New Testament, and the date of Dec. 25th was consciously chosen by the Church Fathers in the fourth century A.D. to replace the chief festival of an earlier sun cult that had been Rome's state religion. Dec. 25th was the date of the Winter Solstice in Julius Caesar's calendar.

The Geminid meteor shower will be favored by a young crescent Moon that sets early on Friday the 13th. According to Leslie Peltier, Friday the 13th occurs when a month begins with a Sunday.

TOP 10 REASONS TO NOT RENEW YOUR EVAC MEMBERSHIP

by Robert Kerwin

10. If it only costs $20 a year, it can't be any good...can it?
9. I'd have to spend time sorting out the newsletter from my bills and junk mail.
8. Helpful, friendly advice on choosing the right equipment is fine, but I've got money to burn!
7. People have too much fun at those meetings and star parties—astronomy is supposed to be serious.
6. I might feel guilty saving money on *Astronomy* and *Sky & Telescope* publications while everyone else has to pay the full price.
5. There's too many people in astronomy already–going to those public star parties only encourages more people to become interested.
4. Don't mind meeting new people at star parties, but I can never figure out who they were in daylight!
3. Learning about new comets and other events is OK for some people, but I'd rather get the complete story in

Astronomy and *S&T* after they have occurred.
2. Looking through other people's scopes really isn't that much fun.
1. Don't want to miss a single episode of Beverly Hills 90210!

Seriously, the $20 you spend on your EVAC membership will be one of the best astronomy investments you will make this year. For the price of an average astronomy book, you can have:
* An informative monthly newsletter with articles from EVAC members and many other sources.
* Monthly meetings with interesting guest speakers and an opportunity to talk astronomy with other club members. Monthly deep sky and local star parties.
* Opportunities to share your interest in astronomy with the public.
* Friendly people who are willing to help you out with advice on equipment and observing.

Don't delay—renew your membership today!

RIM REPORT

by Mike & Jon Sargeant

During a hike to the old railroad tunnel below the Mogollon Rim, Jon and I passed a burn area on the Rim top which had been clear cut. A road off the main rim drive accessed this flat area which looked ideal for an observation site.

Returning on the afternoon of 9 November, we set up for an evaluation of high altitude (over 7000 feet) observing. For comparison we re-observed dozens of objects observed within the last year with the same equipment, an 8 inch Schmidt-Cassegrain telescope. Our objective was to find out if views at high altitude were worth the trip. There was no detectable drop off in clarity down to the horizon, with stars rising at full magnitude. Sky-glow from Payson was in the south-southwest and did not interfere. Temperatures were dropping from the low 50s to the high 30s while we did our alignment and cooldown time was at least half an hour in breezy conditions.

The equipment performed and aligned perfectly (Orion Sky Wizard computer on board). Jupiter and Saturn were the first targets. We were curious about improvements in magnified detail at this elevation. Suprisingly the images were blurred yet star twinkling was noticeable only within 2 or 3 degrees of the horizon. Star images on the other hand were much more sharply defined, and were brighter. We turned to objects not having a distinct boundary. Starting with galaxies, we immediately noted a 1 to 1.5 magnitude improvement in detection ability. Extended galaxies at least showed a trace of a glow. Clusters of galaxies appeared like groups of faint fuzzies rather than faint stars. However, a 12.6 magnitude galaxy, 2 by 1 minutes in size is still a faint fuzzball whether viewed in the desert or the mountains with an 8 inch SC scope. Multiple stars showed theirs colors more readily, we added to our store of data on many. However, ability to split close doubles was not enhanced by the clear atmosphere.

Speaking of clear atmosphere, while it was darker, it was not a blackout condition. The ground was readily visible and the distant dead trees stood out against the sky. The stars were noticeable brighter with many more visible. Constellation recognition was render more difficult due to the increased number of stars visible. However, use of star charts for individual star recognition improved as fainter magnitude stars were easily seen. The lanes of the Milky Way stood out more readily, looking more cloud-like than ever. Planetaries were a lot brighter, some globular clusters graduated from looking like galaxies to looking like the tight star clusters they are, open clusters improved in the detection of the correct number of stars, especially fainter stars. One bright nebula at least showed a faint glow, we had avoided them almost completely in the desert.

If you want to look at stars and lots of them, a night on Mog Rim is the place. Naked eye views are super, binoculars great, and you should see the Pleiades in a 30mm eyepiece, like looking down on streetlights from a low flying plane.

By 11pm we were cold enough that writing was suffering. The breeze was constant and it HAD to be in the teens. We had observed and commented on 91 objects. Nebulosity in open clusters was not necessarily improved on. The Pleiades and some clusters listed with nebulosity did not reveal it.

Conclusion: For a scope of our light-gathering capability, if you want a change of pace, Gee-whiz evening of general viewing, head for the Rim. The improvement at the Rim is one of degree, not kind. For head-down, plodding work (working the Messier list or SACs best NGC objects) stay in the desert, its w-a-r-m-e-r !

CORRECTION

In last month's article about the asteroid Toutatis, the magnitude listed was incorrect. The asteroid will only reach a maximum magnitude of +11.9.

YUCCA VALLEY MEETING

by Bob Gent, WRAL Rep., Tucson, Arizona

On Saturday, November 9, Tim Hunter and I visited the town of Yucca Valley, California. It was about a 400 mile (each way), six-hour drive that turned out to be well worth the effort. I wanted to provide a preliminary report on the results of our meeting.

Representatives at the meeting included ALCORs from three Western Region clubs, the WAA, the National

East Valley Astronomy Club

December

prepared by Sam Herchak

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 *ALL MONTH NOTES	2 ◑	3	4	5 *7:00 PM PAS Mtg	6	7 Deep Sky S Party
8 *6:00 AM Venus/Moon Conjunction *Excellent S. Lunar Libration	9 Sunset 5:18 PM	10 ● Sunrise 7:18 AM	11 EVAC Meeting	12 *3:24 AM Algol at Min. *11:00 PM Geminid Meteors	13	14 *SAC Holiday Party
15 *Mercury at Greatest E. Elongation *12:13 AM Algol at Min.	16	17 ◐ *9:02 PM Algol at Min. *10:43 PM Occ	18	19	20	21 *7:06 AM Winter Solstice
22 *5:30 PM Moon/Aldeboran Conjunction *Good E. Lunar Libration *Ursid Meteors	23 Sunset 5:23 PM	24 ○ Sunrise 7:26AM	25 *Excellent N. Lunar Libration	26	27 *EVAC Holiday Party	28
29	30	31	1 ◑	2 *Mercury at Inferior Conjunction *7:00 PM PAS Mtg	3	4 EVAC 1987

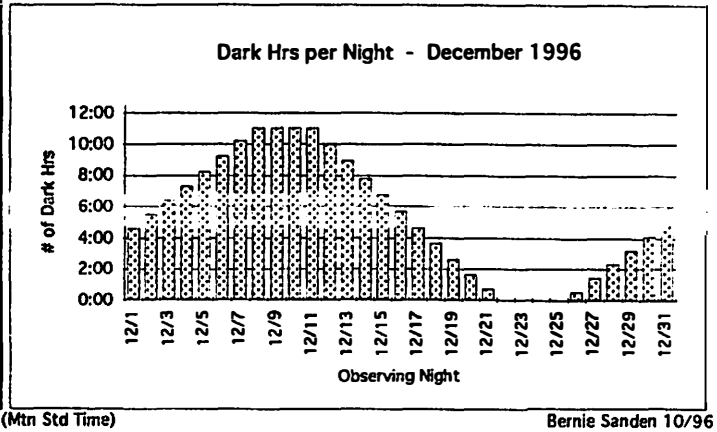
All Times are Local - add 7 hrs for Universal Time

Flip over for event details

Date	Start	Title	Description
12/1/96	12:00 AM	ALL MONTH NOTES	CALENDAR NOTES: See 1996 EVAC Occultation Predictions in the February newsletter for details on lunar "Occ" events. HAPPY HOLIDAYS! PLANETS: MERCURY is a difficult evening object low in the SW after Sunset. Near Jupiter around the 22nd-look at about 6:00 PM for the pair. VENUS rises later each month as it makes it way toward the Sun. Dominates the eastern sky at a brilliant white -4 magnitude. MARS is small (6 arcseconds) and rises near midnight. A good telescope can still show its N polar cap. JUPITER is low in the SW at dusk, soon to be lost in the solar glare. SATURN is well placed in the evening sky for observation. Ring tilt is only 3 degrees (south side visible). URANUS and NEPTUNE are about to be lost in solar glare with Jupiter. PLUTO is lost to solar glare. OBJECTS OF INTEREST: Comet Hale-Bopp (pg 70 of Dec ASTRO). Asteroids 704 Interamnia (pg 73 of Dec ASTRO) and 4179 Toutatis (pg 96 of Dec ASTRO; pg 76 of Dec S&T).
12/5/96	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.
12/12/96	11:00 PM	11:00 PM Geminid Meteors	Predicted max occurs during following day but shower lasts for several days. Up to 95 meteors/hour may be seen.
12/27/96	6:30 PM	EVAC Holiday Party	Hosted by Anne Beeby and Sam Herchak. Doors open at 6:30. Beer and food provided. See map elsewhere in newsletter.

Dark of the Moon Table -- December 1996

OBSERVING NIGHT	START OF DARK		END OF DARK		TOTAL DARK
SUN/MON	12/1 6:48 PM	EOT	12/1 11:25 PM	MR	4:37
MON/TUES	12/2 6:48 PM	EOT	12/3 12:18 AM	MR	5:30
TUES/WED	12/3 6:48 PM	EOT	12/4 1:11 AM	MR	6:23
WED/THURS	12/4 6:48 PM	EOT	12/5 2:06 AM	MR	7:18
THURS/FRI	12/5 6:49 PM	EOT	12/6 3:02 AM	MR	8:13
FRI/SAT	12/6 6:49 PM	EOT	12/7 4:01 AM	MR	9:12
SAT/SUN	12/7 6:49 PM	EOT	12/8 5:01 AM	MR	10:12
SUN/MON	12/8 6:49 PM	EOT	12/9 5:53 AM	SOT	11:04
MON/TUES	12/9 6:49 PM	EOT	12/10 5:53 AM	SOT	11:04
TUES/WED	12/10 6:50 PM	EOT	12/11 5:54 AM	SOT	11:04
WED/THURS	12/11 6:52 PM	MS	12/12 5:55 AM	SOT	11:03
THURS/FRI	12/12 7:56 PM	MS	12/13 5:55 AM	SOT	9:59
FRI/SAT	12/13 9:02 PM	MS	12/14 5:56 AM	SOT	8:54
SAT/SUN	12/14 10:08 PM	MS	12/15 5:57 AM	SOT	7:49
SUN/MON	12/15 11:14 PM	MS	12/16 5:57 AM	SOT	6:43
MON/TUES	12/17 12:17 AM	MS	12/17 5:58 AM	SOT	5:41
TUES/WED	12/18 1:20 AM	MS	12/18 5:58 AM	SOT	4:38
WED/THURS	12/19 2:21 AM	MS	12/19 5:59 AM	SOT	3:38
THURS/FRI	12/20 3:22 AM	MS	12/20 5:59 AM	SOT	2:37
FRI/SAT	12/21 4:21 AM	MS	12/21 6:00 AM	SOT	1:39
SAT/SUN	12/22 5:19 AM	MS	12/22 6:00 AM	SOT	0:41
SUN/MON	none	--	n/a	--	--
MON/TUES	none	--	n/a	--	--
TUES/WED	none	--	n/a	--	--
WED/THURS	none	--	n/a	--	--
THURS/FRI	12/26 6:57 PM	EOT	12/26 7:30 PM	MR	0:33
FRI/SAT	12/27 6:57 PM	EOT	12/27 8:23 PM	MR	1:26
SAT/SUN	12/28 6:58 PM	EOT	12/28 9:16 PM	MR	2:18
SUN/MON	12/29 6:59 PM	EOT	12/29 10:09 PM	MR	3:10
MON/TUES	12/30 6:59 PM	EOT	12/30 11:02 PM	MR	4:03
TUES/WED	12/31 7:00 PM	EOT	12/31 11:55 PM	MR	4:55



EOT = End of Astronomical Twilight MR = Moonrise SOT = Start of Twilight MS = Moonset NOTE: Applies to Phoenix area (Mtn Std Time)

Bernie Sanden 10/96

Park Service, the town of Yucca Valley, the local astronomy club (The Andromeda Astronomical Society), and a few others. The local Chamber of Commerce representatives were extremely enthusiastic, and their level of support is fantastic.

The Yucca Valley local attendees selected the name "Starry Nights Festival," and everyone at the meeting liked the name. Unfortunately, we could not get our primary date of last new moon in October 1997 (Oct 31). The city is very active already with a Halloween festival every year, and the new moon falls on Halloween in 1997. As a back-up date, we selected October 24-25, 1997. Of course, one of our main goals is to NOT conflict with any RTMC, WAA, or other major astronomical events in the West.

The facilities are superb. If all is approved by the town council, we should have access to the Community Center. This building complex has lots of space for guest speakers. We are also negotiating for a nearby campground in the national park. We visited this site at night and the skies were very dark, considering we were only five miles or so from the town center. The mountains around the campground blocked out much stray light. The evening was cool since the elevation at the observing site was about 4,000 ft. In addition to great facilities and a good observing site, there are plenty of motels and restaurants in the area to support a meeting.

The location is fairly centralized. Considering our region includes Arizona, California, and Nevada, I think it would be difficult to find a location with easier access. For example, my 400 mile drive from Tucson was a few miles shorter than my previous San Antonio drive to the Texas Star Party. I don't want to forget Hawaii, but it would be very difficult to hold a centrally located star party with them unless we held it on ships.

Our next plan is to finalize the details and confirm that the campground can, in fact, be reserved for the Starry Night Festival. We received lots of offers of help from attendees, and we owe a note of appreciation to all those who attended. None of this would have been possible without a lot of work from Jim Schooler, the Director of Community Services in Yucca Valley. He deserves a big THANKS. Additionally, I'd like to thank all the Astronomical League Correspondents from western clubs who attended. Paul Livio and Tim Robertson have been especially helpful.

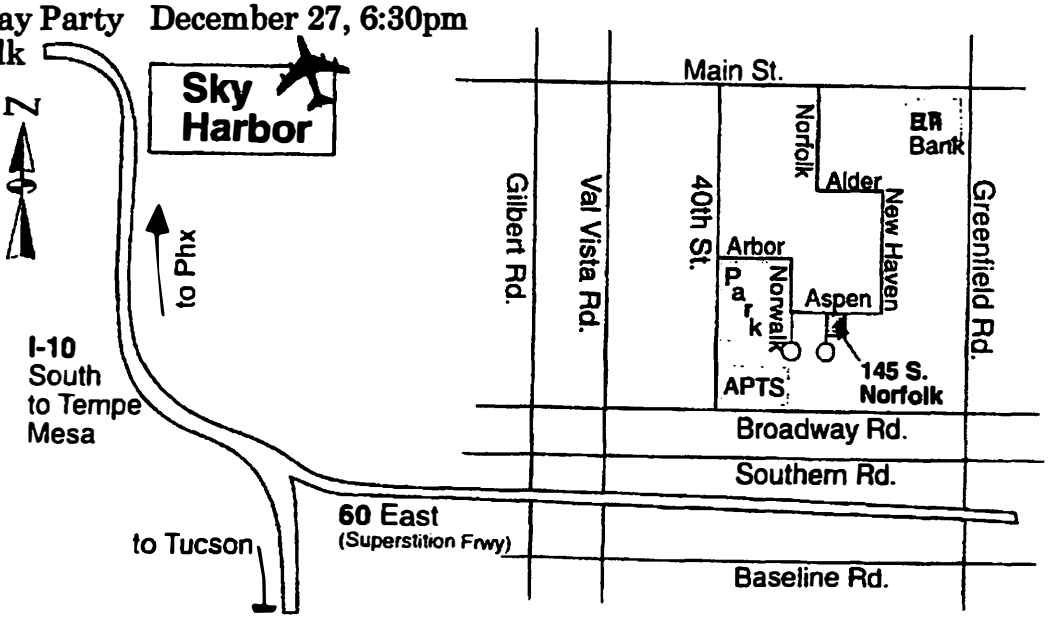
This seems to be the beginning of a very exciting friendship between the Astronomical League, western amateur astronomers, and a very friendly community. Although we have lots of details to work out, this will clearly put the western region on the road map. We will continue to work with western amateurs, the WAA, and RTMC to enhance amateur astronomy in the region.

PROPOSED 1997 EVAC SCHEDULE OF EVENTS

	Meeting	Local s.p.	Deep Sky	New Moon
JAN	8	4	11	9
FEB	12	1	8	7
MAR	12	1&29	8*	9
APR	9	12#	5*	7
MAY	14	31	3	6
JUN	11	28	7	5
JUL	9	26	5	4
AUG	13	2&30	mons.	3
SEP	10	27	mons.	1
OCT	8	25	4*	1&31
NOV	12	22	1&29	30
DEC	10	20	27	29

Other Events: MAR 8*Messier Marathon
APR 5 *Sentinel Star Party
APR 12#Astronomy Day
???? EVAC Cookout
May 4-11 Texas Star Party
May 23-26 Riverside T.M. Conference
JUN 7-14 Grand Canyon Star Party
OCT 4??? *All Arizona Star Party

EVAC Holiday Party December 27, 6:30pm
145 S. Norfolk



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

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, 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: starjb@mail.idt.net.

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.