East Valley Astronomy Club

December 2002 **www.eastvalleyastronomy.org** **Scottsdale, Arizona**

President's Comments

By Martin Bonadio

As it currently stands here is the list of nominations and volunteers for the 2003 officers and board of directors. We're getting closer to a full ballot and have some great names on the list! We just need a few more people to step up to some key positions that are important to club communication. The actual election and approval of positions will take place in November.

President – Peter Argenziano
Vice President – Diana Jane'
Treasurer – Stanley Bronstein
Properties – Gary Finnie
Secretary – Tom Polakis
Webmaster - Marty Pieczonka
Web Developer – Dave Kelley
Newsletter Editor – John Mathews
Newsletter Coordinator – Silvio Jaconelli
Events Coordinator - Howard Israel
Club Photographer – Jason Nelson

Board:
Dave Coshow
Craig Dokken
Jim Gutman
Mort Hanlon
Dave Hertel
Brian Rhodes

This will be my last article as EVAC President. I'm bummed, because it has been a great experience. I'll miss the hard time everyone gave me because I never quite figured out what direction I was facing in the room. I will also regret not spending time at work searching out new forms of humor for my presentation at the general meeting. I have had the opportunity to interface with a lot of great people during the last few years. We have a lot of new faces in EVAC, plenty of old ones, and have made a lot of improvements. I look forward to being a "regular guy" next year.

A big thanks goes out to Diana Jana', David Coshow, Randy Peterson, Gary Finnie, Tom Polakis, Don Wrigley, Silvio Jaconelli, Dave Kelley, Craig Dokken, Gene Lucas, Dave Hertel, Peter Argenziano, and Howard Israel for all their efforts as officers and board roles. I couldn't have made it without their help.

I welcome Peter Argenziano as the club's new president next year. I am confident that he will do an excellent job for all of us. Congratulations Peter. Also want to thank all the new officers coming on board, esp. those who offered to serve a 2nd term in their current positions. It is a testimony to EVAC's long-term success.

Going forward I look forward to a safe and happy holiday season for all of us. I cannot wait to spend more time in the field with my new telescope. I am also excited about all the observing opportunities coming up next year. I absolutely won't miss Grand Canyon and All-Az this time around!! I'm putting my foot down at work! Astronomy has been a real positive part of my life and has helped get me through some really tough times. Most of all I look forward to the continued development of friendships within the club. This group is among the most important in my life, not because I was club president, but because you have been a part of something really important to me. Clear Skies!

The Holiday Party will NOT be held at my house on December 14th as originally announced.
People should disregard the flyer and map to my house. Instead see the new information on the next page.

This calendar will be updated at the January newsletter by the new editor.

EVAC & Other Events: 2002-2003					
	New Moon	Meet	Local	Deep Sky	Other
Dec	12/4	12/13	12/14	12/7	Holiday party 12/14
Jan	1/2	1/8			
Feb	2/1	2/12			
Mar	3/2	3/12			

EVAC ANNUAL HOLIDAY PARTY

Date: Saturday, December 14th
Time: 6:00 PM - 11:00 PM
Location: Clubhouse of the Alta Vista Apartments. The address is 1444 N. Recker Road in Mesa. (Between Brown and McKellips).
This will be a potluck party with the club sponsoring a main dish.
Please reply to me directly if you are able to bring a side dish or dessert!

Contact - Peter Argenziano
Phone - 480-633-7479
Email - pargenz@earthlink.net

A very special THANKS to this year's host: Chuck Crawford.

I hope to see you there!

Peter Argenziano, 2003 President

EVAC Meeting Minutes - November 13, 2002
Tom Polakis, Secretary

The meeting opened to a standing-room-only crowd in the alternate room. Martin Bonadio began with his "Quick Tips" regarding collimation of telescopes. Jason Nelson volunteered to be EVAC's photographer. Next up were the nominations for officers, which were approved for 2003.

Among the summaries of club events were the adopt-a-highway, which was done by 21 club members, filling 32 large trash sacks. Also, the SCC star party, which is held to secure our meeting room, was recapped.

After introduction of visitors and club officers came an announcement by Randy Peterson about remaining available club shirts. Renewals were enticed by raffles of club shirts and calendars. Now is the time to renew for 2003 if you haven't done so.

In show and tell, Martin Bonadio spoke about astronomy in Korea. Then he discussed his new 12" Meade LX-200 telescope. Laurice Dee followed with a short videotape about the Mars Exploration Rover Mission. Joe Orman then showed a series of his slides, including one of the moon in front of M44, the ISS, and star party shots.

The main speaker was Tom Polakis, who spoke about using desktop planetarium software to enhance the astronomical experience. He carried on and on for nearly an hour until he had to be dragged off the stage with a large hook.

Tom Polakis
Tempe, AZ
Arizona Sky Pages
http://www.psiaz.com/polakis/

Backyard Astronomer

By Bill Dellinges (12/02)

Jack Newton's Arizona Sky Village

www.jacknewton.com http://arizonaskyvillage.com

During a stargazing session recently, club member Jim Gutman mentioned he'd heard about a project east of Tucson that would be of interest to those seeking a dark sky site. Noted astro-photographer Jack Newton has decided to set up camp here in Portal Arizona, leaving his Chiefland, Florida site where he had wintered from his native Canada for some years. You may recall a recent Sky & Telescope article about this dark sky community that developed nearby.

This all sounded exciting to me, so my wife Lora and I buzzed on down to check it out. Portal is at the end of the world. Careful, you might fall off. The drive was 250 miles from Apache Junction via Globe and Safford, east on I10, across the New Mexico border a few miles, then south a bit, and back into Arizona. Yes, you actually have to go into N.M. to get there! We stayed at the Portal Lodge ($65/night). It has a small café and grocery store. There is a post office, a library-both vary rustic-and a few homes nearby. That is Portal. But the country is gorgeous! It is the gateway town to the eastern

EXPERIENCES WITH THE PURCHASE OF A BINOCULAR VIEWER

When I first got started in astronomy, I never suspected how diverse were the choices that existed for equipment selection. I can remember many years ago out at Florence Junction observing with Chris McFarlane, and while I was still struggling with the question of reflector versus refractor versus catadioptric, Chris was struggling with how to best achieve two-eye viewing. I must admit that I could not understand why he chose to pursue this particular avenue - it seemed like a lot of work and expense at the time.

As the years rolled by and I gained more familiarity with the equipment side of the hobby, I was picking up on a lot of discussions over binocular telescopes, large aperture binoculars, and binocular viewers. It began to dawn on me what it was that was driving Chris in the direction that he was heading - everyone who had mastered the techniques of two-eyed viewing (as you will read soon - yes - there is a lot to be mastered!) was most enthusiastic about the results. I felt that this was an area worth looking into.

The first category of two-eyed viewing (TEV) is binocular telescopes, where two separate telescopes have their independent light paths sent through two focusers, one for each eye. The ones that I have read about consist of two medium size reflectors. I confess that I never did delve into this much - I was reading about the expense involved, the problems with getting the separate images collimated at the eyepieces, the difficulties in slewing the pair of telescopes together across the sky - in short, all I read about were the problems in getting these units to work. I quickly abandoned any efforts in this direction.

Then one day I got into a big fight with my boss at work, and we spent the next several weeks avoiding each other. He showed up in my office one afternoon with a bonus check - his way of making up - which was enough to cover the cost of a pair of 4" Myauchi binoculars. Which is what I spent the money on! And this brings us to the second category of TEV. I must state that these units were first class - the sharpness and the views were simply incredible. Sunspots looked gorgeous through them, and the Moon was just as impressive. Some of my most memorable views of the Moon were to watch it rise in the east as it climbed over mountain ridges far off in the horizon - all the main lunar features were resolved, and in front of these would be the cactus, bushes, rocky crags, etc silhouetted against the lunar backdrop. Marvelous! Asteroid tracking was a snap with these - with approximately a 3 degree field of view, it was easy to pan large areas of sky and pick up wide star fields - it was a lot of fun watching these large pieces of rock wend their way through the stars. And all Messier objects were easily visible through them - in fact, I would opine that this would be the easiest way to do a Messier Marathon. I ended up putting these on a large fork mount; as with telescopes, if these were not mounted properly, then they were basically unusable. Bill Dillenges also has a pair of Myauchi's, except he has the upgraded ED glass version, with interchangeable eyepieces.

After a few years, I was finding that I was not getting as much use out of these as I would have liked. The magnifications were limited to low powers (20x in this case), and I did not feel like spending a night in the desert restricted to 20x - the resolving power at this magnification is low. Also, with the fork mount, the set up was just as heavy and cumbersome as a telescope. Finally, I live in a town home complex, so I did not have the terrestrial views that would have enhanced the use of these. During this time, my good friend Chris McFarlane had bought a pair of 5" giant binoculars through mail order, based mainly on his experiences looking through my Myauchis, but he was very disappointed in the images that he had been getting - just as with telescopes, quality varies greatly from instrument to instrument. After some brief discussion, Chris returned his 5" binoculars and became the new owner of my Myauchis, and I went back to one-eyed viewing (OEV).

As my interests in astronomy shifted to Moon, Sun, planets and double stars - back yard objects -I again began to read about the advantages of TEV, especially when used in conjunction with refractors (by this time I had acquired a high-end 6" refractor). Almost all of the discussions on TEV centered around Binocular Viewers (BV) which somewhat resemble the head of a microscope that uses two eyepieces and fits into the drawtube of a telescope. Jim Gutman made an excellent presentation on these units a few months ago at one of our monthly meetings. For my birthday a year or so earlier, my

Continued from pg 5 “Binocular viewer”

wife had bought me a Takahashi Twin View BV which today retail for between $500 and $600; the images were superb, but there was one big drawback - the eyepiece holders were angled at 45 degrees and since my refractor drawtube was no more than 24 inches above the ground when the telescope was pointed overhead, I effectively lost use of the unit on any object higher than 70 degrees above the horizon - the prime area of the sky for Moon, Sun, planets and double stars! Oh no!!! Observing Jupiter made me have to choose between viewing it relatively low in the sky, or arching my spine backwards 60 degrees while groveling in the dirt! I took the unit over to Don Wrigley’s place a few times and used it on his 6” refractor which sits about 6 feet above the ground - the unit worked great on his setup, and today Don now owns that unit!

I had already been doing a lot of research on 90 degree angled binocular viewers, and had narrowed the choice down to one of three units - Baader-Zeiss Astrophysics (most expensive), Tele Vue (mid price), and BW Optics (least expensive). The Baader Zeiss AP unit meant putting your name on a long waiting list (like most of the Astro Physics high end equipment) so I immediately did this while I tried to make up my mind which unit to go with. Then I got a real lucky break - Jim Gutman acquired several BVs for evaluation, including two of the three units that I was interested in - the Tele Vue and the BW Optics units! So I joined Jim out at Vekol and looked through some of his BVs. Here were my impressions at that point (without any hands-on experience with the Baader unit). Both units looked very cumbersome for refractors - they would have to use extension tubes between the BV and the 1¼-inch diagonal. This made me concerned about flexure issues in the light path. Also the units would only work with a 2x Barlow, and no other magnification options. Talking with Al Nagler (he talked too much like a salesperson and I found it tough to get straight answers) and the BW Optics distributor (he did not seem all that knowledgeable) did not enhance my opinions. The only place where I was getting good advice and straight answers was from Roland Christen and from the Yahoo AP Users Group. Then the Baader AP BV arrived and I immediately was impressed!!!! The finish was immaculate, the unit was built to fit right into the focuser without any extensions, it came with a custom-built, very low profile high quality 2” diagonal, and there were the options of using barlows of 1.25x, 1.7x, 2.4x and 3.2x. And the image quality was what you would expect from AP. All this plus excellent customer service!! I had previously tentatively agreed with Jim to sell him my AP unit and buy his BW unit, but within 24 hours of trying out the Baader BV I was on the telephone with Jim to ask him to let me renege on the deal!!

Well, what I have learned about BVs after all of this? Firstly, BV’ing is not a developed ‘plug & play’ proposition - a lot of trial and error is involved, and it is sometimes difficult to obtain reliable advice. So any aspiring BV’ers need to be prepared to learn as they go.

Secondly, your telescope will need either a lot of back focus; this is because the BV unit will add around 4 or 5 inches into the light path, so you will need to focus the scope inwards by a corresponding amount in order to compensate. There are two exceptions to this - SCTs do not have any problems because they focus by moving the primary mirror so they have an extremely wide range of focus; the other exception is when you use a Barlow - by their very nature Barlows throw the image far back, enough in most cases to allow the telescope to come to focus. The downside to this solution is that you lose low power wide field images with a Barlow. I have read nothing lately about using BVs with reflectors so I cannot comment except to say that many years ago when Chris McFarlane was trying to mate his BV to his reflector I seem to recollect that he had trouble getting the unit to work properly. Any reflector owner thinking of using a BV needs to tread very carefully.

Thirdly, there is the expense of owning duplicate sets of eyepieces - a pair of Nagler 3 -6 zoom eyepieces will set you back $800!! For my set up 1200 mm focal length using a Barlow, these Nagler zooms yield excessively high magnifications - there are no other ‘click-stop’ high quality zooms out there - so I must use various sets of fixed focus length eyepieces - a pricey proposition. This is where the AP Baader BVs have an advantage - there are several Barlow options available - 1.25x, 1.7x, 2.4x and 3.2x. So I set of eyepieces can yield four different image scales. And let me add that all BVs use only 11/4” eyepieces - 2” eyepieces will not fit BVs, though Jim Gutman tells me that one supplier has asked him to test out a BV prototype that uses 2” eyepieces.

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That brings us to the fourth issue with BVs. Because you are using 2 separate light paths, there are all sorts of optical defects that become readily apparent. For example, each light path needs to be collimated just right, or else you will see double images. Also, the incoming light path needs to be centered exactly. And the prisms do tend to introduce some spherical & chromatic aberrations. For these reasons, Roland Christen strongly recommends the use of Barlows to get the required magnifications and to stick with medium power eyepieces, so that the magnification takes place BEFORE the light enters the prism sets. By the way, this is exactly the same advice that Tom Polakis recommends for OEV (one eyed viewing) because - among other things - it preserves the excellent eye relief that medium power eyepieces normally provide. The AP Baader BV has the edge over other BVs in that it has 4 different Barlow options as stated earlier.

Now let’s talk a little about collimation. When I first tried out the AP BV, I had no difficulty merging the twin images for extended objects, but I was seeing double images of stars. Hmmm - ‘out of collimation’, I thought. After consulting with the AP Users Group on Yahoo, I discovered that the AP Baader unit is designed to allow for easy collimation adjustments; I do not think that other units offer this. Now a strange thing happened - before making any adjustments, I did a ‘blink test’ on Epsilon Lyrae at the edge of each eye’s FOV and found that the images were in the same identical spot at the edge - that is, they were perfectly collimated - so why was I not able to merge the images - what the heck was going on??? Well, it was back to the AP users group. I got some interesting feedback. Firstly, the higher the magnification of the eyepieces, the more difficult it is to merge the two images - this was another reason given by Roland Christen to use Barlows rather than high power eyepieces; Roland suggested to use eyepieces no more powerful than 10 mm. Secondly, some people will never be able to merge separate images - why, I do not know - just a fact; so aspiring BV purchasers would do well to try before you buy. And thirdly (my problem), some people cannot merge perfectly collimated views, and instead the images need to be ‘off’ by a certain amount; there was a medical description for this condition, and I cannot remember it’s name but it seems that I have it! So after getting the images on my AP BV to merge, I did a ‘blink test’ and sure enough the unit was now out of collimation! But the images were now perfectly merged (for me)!!!

Finally, most BVs have a smallish central prism, so there have been reports of some vignetting using low power wide-FOV eyepieces. The AP Baader unit employs over-sized prisms so vignetting is not an issue with them. For me personally, vignetting is not an issue because my targets (solar system) do not require wide FOVs. The question is debated as to how much darker do BVs make the image because they split the incoming light in half, and introduce a lot more glass into the light path. The conclusions of these discussions is usually that while some light does get lost, there is no *obvious discernible* loss of light at the eyepiece. My experiences support this, at least for the higher quality BVs. And as for *resolution*, there is no loss in resolution, regardless of any light loss.

So what is so great about the images through BVs that make them worth the time, trouble and expense? For me personally, there are several factors.

Firstly, there is the extra comfort of looking at objects as nature intended, using two eyes. Try using an eye patch over one eye for 15 minutes, and compare that to two-eyed viewing - the greater viewing comfort will be readily apparent.

Secondly, you will swear that BVs will double the image scale at the eyepiece. I got into lengthy discussions with both Art Ciampi of Texas Nautical and Marjorie Christen of AP on this topic - I was convinced that the BVs were introducing a 2x magnification factor since objects just looked so much bigger. But they both told me that there was no magnification increase. So one night me and Don Wrigley did some star drift tests and guess what - Art and Marjorie were right and I was wrong - our star drift tests revealed no increase in image scale!! So essentially we were getting *apparent magnification* of 300x with the image sharpness of 150x - the best of both worlds.

Next, one unfortunate consequence of the aging process is the incidence of ‘eye floaters’ (matter in our eyes that seem to float across the FOV at high powers) when one eyed viewing; these are very annoying when looking at planets and the Moon. The good news is that ‘eye floaters’ are not noticed with two-eyed viewing - they are compensated out of the signal processed by the brain.

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One supposed effect of TEV is a stereo dimension to the view. I must confess that I have never really experienced this effect to any great extent. Given each individual’s sensitivity to collimation effects, I would never say that there is no stereo effect - just that I personally do not seem to experience this.

Let me end by directing readers to Alan Dyer’s article on comparing the TV BV to the AP Baader BV on page 46 in the September 2002 edition of Sky & Telescope. Alan thinks that BVs are the next big thing in astronomy - time will pass judgment on this!

Earth/Space Scientific Research, Inc
A Cordial Invitation to Join

Under the auspices of Earth/Space Scientific Research, Inc., a 501(c)(3) non-profit educational corporation, a club is being organized to be called the Mesa Astronomy/Geology Society. We shall be offering a lecture series in the Earth and Space Sciences covering topics in astronomy, astro-geology, meteorites, planetary geology, volcanoes, paleontology, tectonics, seismicity, earth materials, and atmospheric science. These will be on each Saturday closest to the full moon every month beginning January 18, 2003 from 7:00 to 9:00 pm. The meetings will take place in the clubhouse of Alta Vista Apartments at 1444 N. Recker Road in Mesa.

Dues will be $ 20 for the year or prorated and will be used for refreshments at each meeting, incidental expenses of club operation and small stipends for out of town guest speakers. Planned activities such as trips to Lowell Observatory, the Naval Observatory, Kitt Peak, Mt. Graham, Mt. Hopkins, Mt. Lemon, Steward Observatory, various planetariums and museums, Meteor Crater, the Grand Canyon, various volcanoes will be possible depending upon interest. Out of state trips are also possible. Small group access to a 16" Richey-Chretien telescope equipped with CCD and Spectrograph with CCD is certain as well as possibly to other local observatories for observational time or for serious research.

Forthcoming would be a monthly newsletter and web site as the club develops in membership. In the meantime club news will be distributed via email. A Christmas party in 2003 and a joint picnic are also to be planned as well as various star parties for local community functions as requested.

I would hope this endeavor would be of interest to you and you would consider joining us for these activities. We do not wish to compete with other astronomy clubs in any way but instead offer additional activities in all of the earth sciences.

Please contact me to indicate your interest in joining, being placed on a list for future mailings, and for further details as they develop. Our first speaker will be announced shortly for January 18. If you do not wish to be contacted further merely send a response saying No or Not Interested.

Charles Crawford, President
ESSRI
480-981-1295
astrogeoc@cox.net

For Sale:

Meade Super Wedge	$295
Meade HD Tripod	190
Meade #1812 12v to 18v conv	30
Scope Saver for LX Series	60
Meade 35mm camera mount	15
Meade LX200 front power panel	50

Contact George Kolb - EVAC Member
480-706-0936

For Sale:

Microbigfoot mounting, fair condition. One of two ever made by Pierre Schwaar. Reduced price: $150 OBO. Please see:

http://www.psiaz.com/Schur/astro/microfoot.html

For details. Contact Chris Schur at:

cschur@cybertrails.com

East Valley Astronomy Club
Membership Form

Please complete this form and return to the club treasurer at the next club meeting OR mail to EVAC, P.O. Box 2202, Mesa, AZ 85214, with a check or money order made payable to EVAC.
IMPORTANT: ALL memberships expire on December 31 of each year.

New Member Only - select month joining:
( ) $20.00 January – March
( ) $15.00 April – June
( ) $10.00 July – September
( ) $25.00 October–December & Next Year

Membership Renewals:
( ) $20.00 January – December

Name Badges:
( ) $7.00 each Name:_____

Magazines: if renewal, customer #_____
(New) (Renewal)
( ) ( ) $29.00/yr Astronomy Magazine
( ) ( ) $30.00/yr Sky & Telescope

Newsletter delivery option, check one:
( ) E-mail (saves club postage/printing) ( ) U.S. Mail

Total enclosed $_____

Name:_____

Address: _____
_____

Phone # (_____)_____

E-mail _____

URL: _____

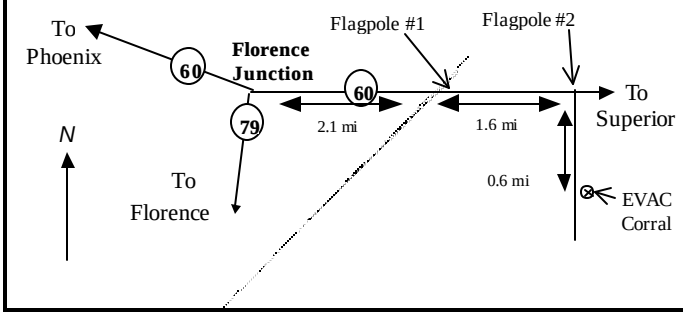
EVAC Star Parties

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. Go past Florence Junction. 2.1 mi past FJ are railroad tracks, and on the right will be a flagpole. Do not turn there. Continue on for another 1.6 miles until you find the second flagpole on the right. This is your turn. Turn right, and continue on the dirt road for 0.6 miles. The corral is on the left, just before a gas-line sign.

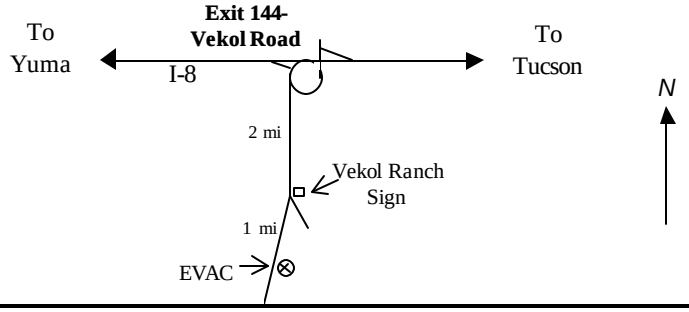


Deep Sky Star Party: Vekol Road Site

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 sky glow 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.



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Coordinator
(480) 926-8529

East Valley Astronomy Club—2002 Scottsdale, Arizona

EVAC Homepage—http://www.eastvalleyastronomy.org/

Membership & Subscriptions: $20 per year, renewed in December. Reduced rates to *Sky & Telescope* and *Astronomy* available. Contact Randy Peterson. PO Box 2202, Mesa, AZ. 85214-2202. Email: rgpeterson@cox.net

Address Changes: Contact Randy Peterson. PO Box 2202, Mesa, AZ. 85214-2202. Email: rgp14159@aol.com

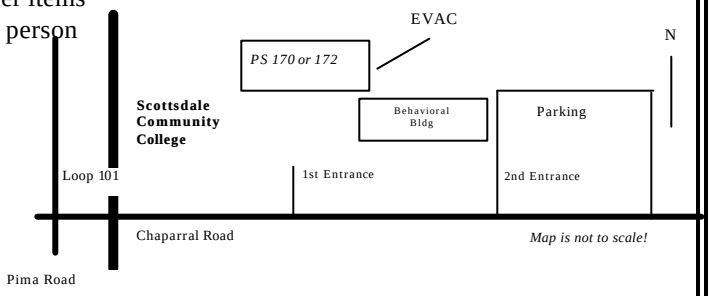
Club Meetings: Second Wednesday of every month at the Scottsdale Community College, 7:30 p.m. Normally Room PS 170 or PS 172 in the Physical Sciences Building. See map below.

Newsletter: Contact Don Wrigley or Kathy Woodford, 423 W. 5 th Ave, Apache Jct, AZ 85220. The Newsletter is mailed out the week before the monthly Club meeting. An electronic version is available in Adobe PDF format in lieu of a the printed copy. Please send your contributions to Silvio Jaconelli SilvioJ@msn.com or Don Wrigley DJWrigley@earthlink.net. Contributions may be edited.

EVAC Library: The library contains a good assortment of books, downloaded imagery, and helpful guides. Contact Gary Finnie for complete details gfinnie@kam-az.com

Book Discounts: Kalmbach and Sky Publishing offer a 10% discount to EVAC members on books and other items from their catalog! When ordering, notify the person on the phone that your would like the "Club Discount." When ordering by mail, there is A line to subtract the club discount of 10%.

EVAC Party Line: Let other members know in advance if you plan to attend a scheduled observing session. Contact Dave Coshow (480) 730-1132.



Deadline for the January Newsletter is December 27th

East Valley Astronomy Club

EVAC
PO Box 2202
Mesa, AZ 85214

EVAC on the Internet
EVAC Homepage:
www.eastvalleyastronomy.org

E-mail Mailing List:

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 AZ-Observing@freelists.org

Although EVAC is a private club not open to the public, we do encourage potential new members to initially join us at our club meetings and/or star parties to help them determine the suitability of the club to meet their needs.

This newsletter was prepared by:
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Silvio Jaconelli, Coordinator
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djwrigley@mchsi.com

Send new submissions to:
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john-cathy@cox.net

Reminder: Next EVAC Meeting Wednesday, December 11, 2002