



East Valley Astronomy Club

August 2001

www.eastvalleyastronomy.org

Scottsdale, Arizona

Hubble Photo of Mars



Observing the Venus-Saturn Conjunction on July 15th, 2001

By Chris & Dawn Schur

The prospect of seeing the brilliant crescent of Venus and the ringed, golden planet Saturn in the same low power eyepiece field, .7 degrees apart in the morning twilight was enticing to say the least. However, monsoon clouds completely blocked the sunrise hours, and the event was not visible. At about 10am however, the skies started to clear out, and by 10:30, most of the sky was blue. We had observed Venus in the daytime before, so why not try to see the pair in broad daylight? First, I got the coordinates of Venus, Saturn, and the Moon from Megastar for the

time of observation. I also added Jupiter and Mercury, much closer to the sun, but now high in the late morning sky.

Out in the backyard, my 12.5-inch Newtonian is equipped with setting circles. As you know, the declination is always set up, but the right ascension must be set on an object with the drive running. That's where the moon came in very handy. We carefully centered up the moon, now past the zenith in the western sky in the scope, with a 20mm Nagler eyepiece. The RA circle was spun to the coordinates given by Megastar, and then we panned over to the coordinates of Venus. Dawn looked in the eyepiece, and there it was, nearly centered. Its white gibbous disk was bright and easy to see against the blue sky; however, little detail could be seen because at 10:30 in the morning, the seeing was poor from solar heating of the air and the telescope tube. Saturn was not seen by panning around, so I put in the coordinates on the circles, and a very faint and low contrast Saturn was seen in the field. When the seeing cleared up for seconds at a time, both of us could see the rings very clearly, but no bands on the disk or divisions in the rings. Both Venus and Saturn could just fit in the one degree field of the 20mm. This was the first time either of us had seen Saturn in broad daylight.

With that success behind us, Jupiter and Mercury were next. I set the coordinates for Jupiter on the circles, and Dawn immediately spotted the king of planets in a bright, pale blue sky, being closer to the sun. Easily seen were the cloud belts and large white disk. We tried in vain to see the moons, but the sky was just too bright. Perhaps later this year when Jupiter is much farther from the sun in a deep blue sky, this may be possible. Sixth magnitude stars can be seen in broad daylight if they are part of a double star system with a much brighter companion that can be found easily against a blue sky. Mercury was about 4 degrees closer to the sun, but still in a very pale blue sky. The circles put us right on it again, and we saw a crescent planet, small but bright against the sky. We couldn't believe how tiny Mercury was in the eyepiece. You've got to have a lot of respect for the skilled observers who have seen detail on its tiny disk.

By 11:00, the seeing had gotten much worse from the sun making the tube very hot. The scope was put in a horizontal position, the roof rolled shut, and we had accomplished far more that morning than we thought possible. Both of us had seen the moon and five planets in broad daylight, something we had never done before. Oh, the fifth planet - Earth. We looked down at the ground after finishing up with Mercury!

Williams GT-One HD German Equatorial Mount Product Review

By Richard Jacobs, M.D.

A stable telescope mount with low periodic error is essential to astrophotography. Also, the sensitivity of the CCD imaging device, when compared to traditional film, makes accurate image guiding more critical than ever before. Unfortunately, the amateur astrophotographer has few affordable mounts available to meet these requirements. High quality mounts are either not readily available or command a premium price that makes them far too expensive for most people. For this reason, I was very interested in trying out the newly-released Williams GT-One German equatorial mount.



The Williams GT-One GEM actually comes in two varieties. The GT-1 is a lighter-weight version of the GT-One HD. Because my Takahashi Epsilon 210 astrograph weighs about 40 pounds, and because I own a Celestron C14, which weighs about 50 pounds, I opted to purchase and test the heavy duty GT-One HD. Its advertised payload for astrophotography is 60 pounds and 80 pounds for visual work. This should be plenty of "muscle" to accommodate my C14, along with my SBIG ST-8e CCD, color filter wheel, and cords.

I ordered by William GT-One HD mount from Anacortes Telescopes (<http://www.buytelescopes.com>). When the GT-One HD GEM arrived at my house in five (5) cartons a little less than one week after placing my order, I was surprised how nicely the mount broke down into its component parts. The fit and finish of the mount is world-class. Everything about this mount looks heavy-duty and first rate. The mount is painted with a beautiful white finish,

trimmed with red piping on the right ascension axis. The pier and tripod legs were heavy-duty and very sturdy. There is a storage compartment built into the top of the pier that I thought was a very nice touch. In spite of its size and payload capacity, the mount head only weighs 46 pounds. I found this to be very manageable for a mount of this size.

Assembly of the mount was very simple and straightforward. Although adequate instructions were provided for the assembly of the mount, I did not really need them. A complete set of metric Allen wrenches were supplied with the mount but I only needed a couple of the wrenches to complete the mount assembly. The mount head secures onto the pier through a single large bolt that is outfitted with a black hard plastic knob. A secondary bold can be added to further secure the position of the mount head on the pier, if desired. Each of the three legs attaches onto the pier pedestal using 4 bolts each. The counterweight assembly arm simply screws into the mount head. A dovetail plate saddle is bolted to the top of the mount. A 15.5-pound counterweight is provided with the mount. Total mount assembly took about 15 minutes.



The GT-One HD is a GOTO mount. It has powerful high precision servomotors on both axes. This is similar to the GOTO system that I found so accurate and useful on my AstroPhysics 600E GOTO mount. The maximum slewing speed for the mount is 300 times sidereal rate. An optional polar alignment scope with illuminate reticle is incorporated into the RA axis. The mount is powered by 12-volts DC, and draws about 1.6 amps at top slewing speed. A battery or regulated power supply that can provide at least 3 amps is recommended.

The GT-One HD mount currently uses the Vixen SkySensor 2000-PC (SS2K) as its electronic "brain." Other electronic systems, including one being developed by William Optics, may become available later. The SS2K has a 13,942-object database that includes Messier, NGC, IC objects, planets, and more. Orbital elements for comets, asteroids, and even satellites, can be entered into the SS2K so that the mount can find and track these unusual objects. The user can populate 2 separate databases with up to 60

additional objects. One, two, and three star alignment routines calibrate the servomotors. The three-star alignment improves pointing accuracy. The SS2K is capable of linking to your PC for use with popular planetarium programs, like Software Bisque's *TheSky*. An RJ-11 jack on the SS2K allows an autoguider cable to be connected. The SS2K is powered by 12 volts and uses the same power cord as the GT-One HD mount itself. Red LEDs make reading the SS2K easy in the dark. LED brightness is adjustable by keypad input. The documentation supplied with the SS2K is clear, detailed, and easy to understand.



I powered up the GT-One HD in my living room to become familiar with its operation. The SS2K menu system took about 5 minutes to learn. I found it to be fairly straightforward and intuitive. My mount's movement in Declination experienced some hesitation at times. Other times, the mount became stuck in Declination and could not be made to slew further. Mount adjustments recommended by William and

David Yang would not remedy the problem and William Optics quickly replaced the mount head totally at their cost. I had one of the first production runs of this new mount. A minor design error that made the GT-One HD prone to this problem had been detected during early production runs and is now corrected. The new mount functioned flawlessly throughout the entire range of motion in both Right Ascension and Declination.

My first CCD image taken through the mount was attempted after I made up the required autoguider



cable for my SBIG ST-8e CCD. Adequate documentation to make up the autoguider cable was provided on the SBIG WebPages (<http://www.sbig.com>). For some reason, I kept getting the orientation of the cable configuration turned around and my first couple of cables didn't work. A little help from a close friend who is more adept at reading these diagrams than me led to a working autoguider cord in about 15 minutes. Wiring diagrams have never been my strong suit! For those of you who share my impediment, I've posted the full wiring diagram on my website at this URL:

<http://www.azastronomy.com/images/GT%20One%20T8%20Autoguider.pdf>.

The mount's polar alignment scope quickly established polar alignment that was within 0.1 degrees of the pole, quite sufficient for astrophotography. I decided to test the William GT-One HD mount out by using my 14-inch F/11 Schmidt Cassegrain telescope. The heavy 14-inch scope and its 3910-mm focal length would provide a rigorous test of the mount's pointing accuracy, slewing capabilities, and tracking ability. After balancing the scope in both axes, DC servomotor calibration was easily obtained by alignment on three stars. I chose Vega, Arcturus, and Regulus in order to widely sample the night sky. Autoguiding was established without difficulty on my first try.

My first target for imaging was the Ring Nebula in Lyra. The GT-One HD slewed to M57 and placed the planetary nebula squarely on my ST-8e CCD chip. A one-minute unguided CCD test integration provided round stars, evidence that the GT-One HD had acceptable periodic error for CCD imaging. A several minute autoguided session provided enough data in the Tracking Log of Cyanogen's MaxIm DL CCD (<http://www.cyanogen.com>) software to allow me to measure the mount's period error to be less than 5 arcseconds. This is excellent tracking accuracy by any



standard. Autoguiding calibration was easily achieved and multiple 5-minute integrations of M57 were obtained for stacking later on. The 14-inch scope and GT-One HD combination produced a beautiful CCD image that was later processed. The final image is shown above.

In a separate imaging session using my 9.25-inch F/10 Schmidt Cassegrain scope, I chose M13 in Hercules, as another CCD imaging test. Its 2350 mm focal length should provide excellent sampling and image scale for this bright deep space object and my ST-8e's 9u pixels. Seeing was not good as a weather front was moving into my area and M13, was low in the horizon. Clouds were gathering even as I beg on my imaging session. Autoguiding was easily established, however, and several integrations were obtained of the globular cluster before clouds forced me to end my session. The stars in the images were round and sharp. The final processed image was one of my best for this object. The William GT-One HD mount was performing quite well under the demanding requirements of CCD imaging from a suburban setting.



Although my imaging experience with this new mount is still limited, the GT-One HD seemed to perform consistently with its quality appearance and design. For CCD imaging, it is a very stable mount platform with GOTO functionality and a low periodic error. The mount is readily available without years of waiting and, although it is a high-end mount, its price makes the mount an excellent value for its many features and quality. Also, William Optics stands behind their mounts and provides world-class customer support and assistance. The service and assistance from Anacortes Telescopes was outstanding, as usual. I plan several more testing sessions away from the convenience of my backyard. If

all goes well, I look forward to the mount's first dark skies debut from the Arizona desert.

The Backyard Astronomer Top Ten List Part II

By: Bill Dellenges

In a May article, I listed (just for fun), my top ten astronomical experiences as an amateur astronomer. In the interest of brevity, I left a few things out. With this article, I hope to include them and, scraping the bottom of the barrel, add a few more to come up with another ten! I promise this madness will end here - no more "top tens".

Kitt Peak: My first of many visits to this wonderful facility and other observatories in the U.S. and around the world. As an airline employee, I had the advantage of flying on passes and in 1971 started my "tour" of observatories with Kitt Peak. I've been to 24 so far. Even got married in one! (Chabot Observatory in Oakland, Ca.). I really need to hit something in Chile, Yerkes, and-gulp!-Mt. Graham.

Meeting Clyde Tombaugh and James Christy (discoverers of Pluto and Charon) at an A.S.P. meeting in Tucson, I think around 1980 (?). He (Clyde) would also be on my bus up to the MMT telescope on Mt. Hopkins. I remember he had quite a sense of humor and seemed fond of puns. David Levy had an open house. Many of us visited his "telescope farm", as he called it. He had about 50 telescopes throughout his house. This was before he had discovered any comets or written any books!

Bright meteors: In addition to the 1966 one I saw in Boston (see May article, #2), I saw two other REALLY bright ones. Around 1985, while observing at Mt. Hamilton (Lick Obs.) at 4:30 a.m., and while looking through binoculars with my glasses off, I noticed-out of the corner of my eye-something REALLY bright. Instantly I knew it was a fireball. Instantly also, I knew there was no time to put my glasses on. I quickly looked up to see a large object about as bright as the sun-it was huge. For a moment it was day. I watched the monster run from overhead, down to the NW horizon with blurry eyesight. Brightest meteor I've ever seen. At that same observing site, at another time, I saw one weird "meteor". It looked to be a flight of jets, low, running north to NE. I could see their bright "exhausts" but not the planes! I quickly grabbed my bins and checked them out. Not planes, about six separate "meteors" flying in formation! They petered out a few moments later. Next day, the newspapers explained that it was a Russian booster (T14, 9/17/85) re-entering the atmosphere! Hey, while on the subject...while doing a star program back in the 80's in the East Bay area of S.F, a lady asked "what's that

moving star?" Oh yeah, I thought, another nut case. I looked in that direction and my mouth fell open. It was a submarine launched missile rising from the sea 20 miles away and heading up and south. In binos I could see a stage fall away leaving an eerie green circle of smoke. Now that was weird.

3C273: Using a S&T chart (March '88 p.294), I found this Quasar on April 3, 1989 with my C14. Later, I found it with my C8. 2 billion light years away. A pleasant thrill.

Attending, for several years, Ron Oriti's "Stars Over Yosemite" seminars at Glacier Point. Ron, an astronomy instructor at Santa Rosa College, is a wonderful lecturer. I learned from him you don't need a telescope to teach people the night sky. He would just talk under the stars 3 hours each night for 5 nights-it worked beautifully.

The 1993 Perseids: Ha! The shower was supposed to be more intense that year, so I took a scope up to Mt. Hamilton (thought I might do some observing too). Turns out I was not the only one with this idea in mind. What a zoo! I expected to be alone. There were hundreds of people there, cars coming and going, total chaos. Even a TV crew showed up! They made a bee line for me since I was the only idiot with a telescope set up. I imagine it made for good "press". I wonder how many TV viewers after that felt you needed a scope to see meteors.

Teaching observational astronomy to Elderhostel groups since 1995. Planting the seed of astronomy in the minds of about a thousand over 55 folks (Whoa! I'm one of those, myself!) has been fun and educational for me too. They come up with some hard questions that send me back to my library to research. Don Wrigley has been kind enough to assist me on scope nights with these groups-thanks Don! Fun too, since 1995, have been my observatory classes here at my home through the A.J. Parks and Recreation Dept.

Splitting Antares: On July 4th, 1996, after trying many times to split this star for years, I just happened to succeed with my C14 at 122x this night. I couldn't believe it, but there it was-the 5th mag companion about 3" away in the proper position angle. Notes indicate high cirrus clouds out that night. Did that help? Don't know for sure, maybe there was good seeing that night. I've never been able to split it since. (!).

Horsehead sighting! I finally saw this elusive object through Sam Herchak's 20" Obsession Dob at F/J. Sam was kind enough to invite me (or did I invite myself?!) and Don Wrigley along on a gazing session. I was surprised how big and easy it was to see in his scope (no filter). A first for me!

E-Mail pal: In the Feb'99 S&T magazine, p.127, six amateur observatories were featured. Mine was one, along with Italian amateur Enrico Moltisanti. We developed a friendship and have had many a laugh e-mailing one another these past two years while discussing everything from optics to politics. His knowledge of astronomy never fails to amaze me. He has three astronomy books out and is a prolific writer for Italy's major astronomy magazine, Orione. You may see his web site at:

<http://users.iol.it/enrico.moltisanti>

I hope you enjoyed sharing my above experiences, and as I said in part 1 in May, how about hearing from you and your memorable exploits in a future article?

EVAC Shirt Update

By: Randy Peterson - EVAC treasurer

For all who have ordered EVAC shirts: The order for the Polo Shirts is being placed, and the polo shirts should be available to be picked up at the August EVAC meeting. We have barely met the minimum order, so there won't be any cost savings for a "quantity discount".

The minimum order for the t-shirts with the "Whirlpool Galaxy" picture on the front has NOT been met. Therefore, I will continue to accept orders for t-shirts for an additional month, with the anticipation that we will receive another dozen or two more orders, which will bring the cost of the shirts to the club to a reasonable level. The order for the t-shirts will be placed the week AFTER the August club meeting, with delivery planned for the September meeting. If you are one of the people who have already placed an order for a t-shirt, and this is not acceptable to you, please contact me. As a reminder, the t-shirts are \$14 apiece for S/M/L/XL, \$16 for XXL, and \$17 for XXXL. They are available in White or Ash color. If you haven't ordered a t-shirt and wish to, please mail your order and check by August 8th to EVAC, PO Box 2202, Mesa, AZ 85214, or see me at the August meeting.

For the initial order, we needed a minimum of two dozen polo shirts, and three dozen t-shirts, to help defray the setup costs. If even one-third of the members would order one t-shirt apiece, we could get a pretty good price break, and each would receive a small rebate from the posted price.

If you are interested in ordering either kind of shirt in the future, please note that after our initial order, we may order additional shirts at any time, provided we have a minimum of 12 t-shirts or 12 polo shirts per order. So, in the future, if you wish to place a shirt order, you may have to wait for a few months

until we receive the dozen minimum quantity requirement.

President's Message

By Martin Bonadio

I hope everyone is having a great summer so far. It looks like the monsoons have rolled in, so I suspect that some of you have engaged in other astronomy related activities. Here's a short list of what I've been up to:

1. Annual cleaning of my optics and eyepieces.
2. Going through magazines and other reading material and catching up.
3. Making repairs and improvements to telescopes.
4. Playing meteorologist and looking for monsoon sucker holes.

This past Saturday (July 14th) I thought I would get lucky, as the weather started drying out. Since this was the Florence Junction star party night, I began to scheme...

One thing that I have needed to do with my 13.25" compact Dobsonian was to brace the secondary assembly so that it was more rigid and had less flexure. Rick Scott and I played around with this earlier in the month and discovered the source of this problem. To correct it, I decided to first make a prototype brace out of wood to test the concept. I made four of these, actually. These would fit into the corners between my secondary vane and my secondary head. On each side I placed two of these.

I'll mention that my Dob isn't a traditional 3 or 4 vane spider, but instead one thin metal piece that curves from one side of the head to the other. It actually works out nice for making an off-axis planetary mask because I can get a 5" unobstructed view with this configuration. As well, there is less diffraction spiking on stars. However, flexure is more a problem this way.

I was very pleased with the results of my test. I eliminated a great deal of the problem with these small braces. Using wood isn't the final configuration, as it's too soft, and not rigid enough to eliminate the entire problem. But it's good enough to improve things by 75%, and possibly 90% once improved using metal braces instead. I was proud that I made my first telescope improvement, and took one step closer to becoming an ATM (amateur telescope maker)! However, if you see my workmanship, I won't be offended if you encourage me not to start building telescopes. Ha Ha.

However, this is hope for budding amateurs in EVAC. Last general meeting I announced that the SIG's (special interest groups) had arrived. I was very pleased with the number of people that signed up. Rick Scott encouraged me to join his ATM SIG and I in turn am hosting a deep sky SIG. Silvio Jaconelli is the sponsor of our double star SIG, and Randy Peterson and Bill Peters will champion the occultation SIG. One more SIG – the astrophoto SIG will need a leader (hint hint). As a result, I'm very excited and signed up for all of them. This will keep me plenty busy the second part of the year.

Well to wrap this all up, I guess I'm responsible for the Scottsdale monsoon microburst on Saturday evening. As soon as I finished making my telescope improvements and looked outside again, the clouds built up in the east, and I decided not to head out. Then minutes later I heard that power lines were down and trees uprooted. I looked outside again and watched a black ominous cloud descend on my house. Oh well, I apologize.

However, there were some brave souls in EVAC and SAC (the other astronomy club in town) that braved the clouds and were treated to some great skies. However I was pleased with my Saturday of non-observing astronomy. Besides, Sunday AM I got a peak at Venus and Saturn in a close conjunction – $\frac{3}{4}$ degree apart. And today (July 17th) I plan to watch the Moon/Venus occult from my office parking lot in the daytime. In retrospect, my dark sky testing with my new-improved Dob may have to wait awhile, but my enthusiasm for our wonderful hobby won't!

Treasurer's Report for the First Half of 2001

By: Randy Peterson - EVAC treasurer

At the beginning of January, we had \$4409 in the treasury. This compares favorably with \$4017 in 1999, and \$4353 in 1998.

Our income is primarily from memberships. During the first six months, 109 members paid their dues, which was \$20 each for the first quarter and \$15 each the second quarter for new members. The money paid-in for the magazines and nametags just covers the costs to the club, there is no income from these. We took in \$50 from a paid star party. This constitutes our income.

Our expenses include:

- Printing costs and postage for newsletters - \$254
- Speakers' Honorarium - \$225
- One year of Insurance - \$248

- Properties (i.e., eyepieces for loaner scopes) - \$237
- Guest speakers dinner - \$136
- Meeting refreshments - \$80
- Messier Marathon awards - \$55
- Adopt-a-Highway brunch - \$108
- Board meeting refreshments - \$55
- Yearly post office box fees - \$38
- Incorporation fees - \$10
- Two-year web site fees - \$63.

Ending balance in the treasury on June 30 was \$5122.89. During the upcoming second half, new members pay either \$10 each or \$5 each, depending on what quarter they join. With our monthly costs remaining relatively constant, we have projected a net loss for the year of around \$600, which would leave us about \$3800 in the treasury at the end of the year. However, this ignores existing members' renewals at the end of the year. Usually about half of our members renew in November or December. Normally these dues are applied to the old year rather than the new year, so it makes the old year appear more profitable.

EVAC Meeting Minutes

by Tom Polakis

President Martin Bonadio opened the meeting with about 70 people in attendance. He began with the Top 10 signs you're a deep-sky observer, then went on to give some city observing tips.

Besides the usual upcoming star parties (listed elsewhere in this newsletter), EVAC's annual All-Arizona Star Party at Arizona City will be held in October. Martin needs a volunteer to step up and organize this event. This is typically a simple task.

Another volunteer request involves the star party line. This person acts as a focal point to call when people want to observe at remote sites. This minimizes the number of people going to sites alone.

A Board meeting will be held on July 27.

There are a number of special interest groups that have recently formed, which include such subjects as double stars, deep-sky observing, and telescope making. The photography SIG is in need of a leader.

Martin showed several examples of EVAC members in the news. This included Joe Orman's Astrophoto of the Day, Rich Jacobs' CCD images in several publications, and an EVAC story in Get Out!

After the bread, there were a few member presentations. Rich Jacobs showed many great examples of his CCD images, including wide-field

mosaics. Laurice Dee discussed the upcoming Genesis mission, whose goal is to collect particles from the solar wind. This was followed by Chris Schur, who displayed CCD images, including a noteworthy image of Comet LINEAR A2.

The main speaker was Dr. Laurie Leshin from ASU. She is the principal investigator for the SCIM (Sample Collection for Investigation of Mars) mission. As its name indicates, the spacecraft will skim through the atmosphere of the red planet, collecting Martian dust using Silica aerogel, much like the currently aloft Stardust craft. While a complex landing mission would launch in 2011 at the earliest, SCIM could get off the ground as early as 2007. The entire sample collection period would be only one minute. NASA is still in the downselect process, but this mission has a good chance of being selected.

If it's clear...

by Fulton Wright, Jr. Prescott Astronomy Club for August 2001

Shamelessly stolen information from Sky & Telescope magazine, Astronomy magazine and anywhere else I can find data. When gauging distances, remember that the Moon is 1/2 a degree or 30 arcminutes in diameter.

On Sunday, August 5, about 4:45 AM, you can see Venus (mag -4) and Jupiter (mag -2) about 1 and 1/3 degrees apart. With your unaided eye look 20 degrees above the east horizon for the pair. The view should also be good in a wide field telescope. The pair are still close on the following night.

On Saturday, August 11, after midnight, i.e., late in the evening of August 10, you can see the crater Plato on the moon at its best. The sun angle will be good, and libration tips the north part of the moon toward us. Only with a very good telescope and steady skies will you be able to see the 4 small craters on the floor of this smooth, walled plain. Clavius, in the south, has many craters of different sizes in it for testing your telescope's resolution. The sun angle will be good tonight, but the libration will be at its worst.

On Sunday, August 12, between midnight and 4 AM, you might see some Perseid meteors. Face northeast and with your unaided eye look high in the sky. You might see some the following few nights also. As always with meteors, we aren't sure how flashy the display will be.

On Wednesday, August 15, at 1:34 PM you can see the Moon occult Jupiter. With a small (3 inch) telescope look 35 degrees above the west horizon for the Moon with Jupiter near the thickest part of the

thin crescent. Since this event happens during daylight, be sure that your telescope never points at the sun. At 2:36 PM Jupiter reappears from behind the dark side of the moon.

On Thursday, August 16, about 4:30 AM you can see the Moon and Venus near each other. With your unaided eye look 15 degrees above the east horizon for the pair less than 2 degrees apart.

On Thursday, August 23, about 7:30 PM you can see the southeast part of the moon at its best. With a small (3 inch) telescope look 30 degrees above the southwest horizon for the crescent Moon. Libration tips the lower part of the Moon toward us.

On Tuesday, August 28, after 7:00 PM you will have another chance to test the resolution of your telescope (see August 11 entry). This time libration will not be so good for Plato but much better for Clavius.

EVAC & Other Events: 2001					
	New Moon	Meet	Local	Deep Sky	Other
Aug	8/19	8/8	8/11	8/18	8/11 - Perseid Meteor Shower
Sept	9/17	9/12	9/15	9/22	9/14&15 - Northern Arizona Star Party
Oct	10/16	10/10	None	10/20	10/12 & 13 - All AZ Star Party
Nov	11/15	11/14	11/10	11/17	11/17 - Leonid Meteor Shower
Dec	12/14	12/12	12/8	12/15	Xmas Party TBA

**Deadline for August Newsletter
Submissions is August 20th, 2001.
Send articles to JKLINE29@HOME.COM**

EVAC Members - Shirt Order Form

Please mark quantity in appropriate box(es). Add up cost(s) along the bottom. Prices are based on a minimum quantity being ordered, and include tax. If the minimum quantity is not reached, we reserve the right to not order the shirts. If many more shirts than the minimum are ordered, we will refund any difference due to volume savings on a per shirt basis. We reserve the right to round off the savings to help preserve our sanity.

Please either mail your order and a check for the total due to EVAC, P.O. Box 2202, Mesa, AZ, 85214, or place your order at the August 8th EVAC meeting with either check or cash. If we don't place an order due to insufficient quantities to reach the minimum, your check or cash will be returned to you. The two types of shirts we are taking orders for are:

Hanes, short sleeved Polo shirt, with pocket on left, EVAC logo in black on right. 50% cotton/50% polyester. Logo may not show up as well on darker color (Royal Blue).

SIZE>	M	L	XL	XXL	XXXL	<u>TOTAL</u>
COLOR:	quantity	quantity	quantity	quantity	quantity	quantity
White						
Ash						
Light Steel					N/A	
Light Blue					N/A	
Royal Blue					N/A	
PRICE EA>	\$16	\$16	\$16	\$18	\$19	\$

Hanes, short sleeved T-shirt with pocket. Pre-shrunk - 100% cotton. Three-color silkscreen picture of nebula on front of shirt, large EVAC logo in black on back of shirt. Stars in the picture will be color of shirt

SIZE>	S	M	L	XL	XXL	XXXL	<u>TOTAL</u>
COLOR:	quantity						
White							
Ash							
Price ea>	\$14	\$14	\$14	\$14	\$16	\$17	\$

Name _____

Address _____

Phone # _____

E-mail _____

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East Valley Astronomy Club

EVAC on the Internet

EVAC Homepage: www.eastvalleyastronomy.org

E-mail Mailing Lists

EVAC-mls is a mailing list for club announcements and quick notification of astronomical events.

To join, send E-mail with the "Subject: subscribe" to EVAC-mls-request@psiaz.com

EVAC-Board is for EVAC business. All club members are welcome to participate.

To join, send E-mail with the "Subject: subscribe" to EVAC-Board-request@psiaz.com

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-request@psiaz.com

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.

East Valley Astronomy Club

Membership Form

Please complete the information requested. Return at the next club meeting or to the address below, with a check made payable to EVAC for the appropriate amount due. **IMPORTANT:** Please note that ALL memberships expire on December 31 of each year.

1. Check one of the following: () New Member () Renewal

2. Select appropriate dues options:

Send To:

New Member select month joining:

- () \$20.00 January - March
- () \$15.00 April - June
- () \$10.00 July - September
- () \$ 5.00 October - December

EVAC Treasurer
P.O. Box 2202
Mesa, Arizona 85214-2202

Member Renewals (current Members ONLY!)

- () \$20.00 Annual Renewal (January - December)

Magazines: Provide renewals notices with payment.

- () \$29.00 Astronomy Magazine
- () \$30.00 Sky & Telescope

Name Badges

- () \$7.00 Each

_____ **Total Enclosed**

3. Complete requested information below. Please Print.

Name: _____

Address: _____

Phone #: _____ E-mail: _____

URL: _____

4. Newsletter delivery option: () U.S. Mail () E-mail

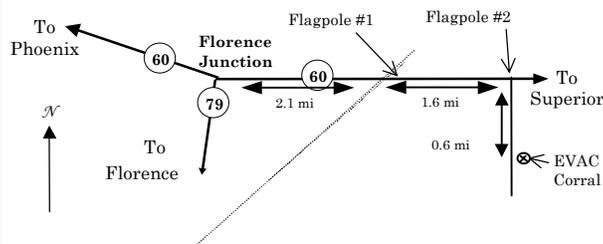
EVAC Star Parties

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 right before a gas-line sign.

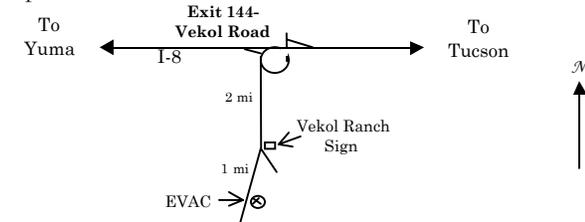


Deep Sky Star Party: Vekol Road Site

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.



EVAC Officers

PRESIDENT
Martin Bonadio
(480) 926-4900

VICE-PRESIDENT
David Coshov
(480) 732-1132

TREASURER
Randy Peterson
(480) 947-4557

SECRETARY
Tom Mozdzen
(480) 497-5703

PROPERTIES
Rick Scott
(480) 821-5721

NEWSLETTER
Jim & Chris Kline
jkline29@home.com

East Valley Astronomy Club—2001
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. (480) 947-4557 Email: rgp14159@aol.com

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

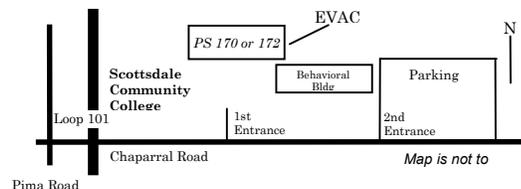
Address Changes: Contact Randy Peterson. PO Box 2202, Mesa, AZ. 85214-2202. (480) 947-4557. Email: rgp14159@aol.com.

Newsletter: Contact Jim & Chris Kline. 1209 W. Palo Verde Dr., Chandler, AZ 85224. Email: jkline29@home.com. Contributions may be edited. 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 printed copy. Please notify Jim & Chris of your delivery preferences.

EVAC Library: The library contains a good assortment of books, downloaded imagery, and helpful guides. Contact Rick Scott for complete details, (480) 821-5721

Book Discounts: Great savings through Kalmbach and Sky Publishing. Contact Randy Peterson, rgp14159@aol.com

EVAC Party Line: Let other members know in advance if you plan to attend a scheduled observing session. Contact Stan Ferris, (480) 831-7307.



Jim & Chris Kline, Editors
1209 W. Palo Verde Dr. Chandler, AZ 85224

Contents:

- Hubble Photo of Mars
- Venus-Saturn Conjunction
- Williams GT-One HD German Equatorial Mount Product Review
- The Backyard Astronomer - Top Ten List Part II
- EVAC Shirt Update
- President's Message
- Treasurer's Report For The First Half Of 2001
- Meeting Minutes
- If it's Clear...
- EVAC Shirt Order Form

**Reminder: Next EVAC Meeting
Wednesday, August 8, 2001**