East Valley Astronomy Club

July 2001 www.eastvalleyastronomy.org **Scottsdale, Arizona**

Riverside Telescope Makers Conference

By: Silvio Jaconelli

Memorial Day weekend means RTMC (Riverside Telescope Makers Conference) time! This year the telescope/telescope accessories and observing sessions were held at the YMCA Camp Oakes, in the San Bernardino Mountains near Big Bear Lake, California. This event is held every Memorial Day weekend. There are also talks, presentations and panel discussions held during this weekend, which stretches from Friday until Monday.

There were fewer EVAC attendees this year than in previous years (at least, that was my perception) but EVAC was amply represented in various official capacities - in fact, the EVAC members who actively participated in the various events outnumbered the members - like me - that did not actively participate! Arizona was mentioned as a source of much innovation, several times during the weekend.

On Friday evening, Rick Scott showed his excellent "The Sky We Share" audio/video presentation in the Dining Hall. This was the same presentation that he made at the December EVAC meeting, and it was extremely well received by all the attendees, with very loud applause at the end. A special word of thanks to Joe Orman who helped in the original production.

On Sunday, Rick gave a Dining Hall talk on the 9.8" Lurie Houghton that he built and entered for judging. On Sunday night, he won a Certificate of Merit for this. Rick had designed this telescope himself, had Mike Spooner make the optics, then Rick assembled it. This was Rick's first submission at RTMC and he hit a home run in his first 'at bat'!

Although not an EVAC member, I thought that I'd mention Mike Spooner, a very able telescope maker from Page, who also entered a Lurie Houghton identical to Rick's for judging. When Rick asked Mike to make the optics for his Lurie Houghton, Mike was so intrigued by the design that he just had to build one for himself. Well, Mike shared the Certificate of Merit award with Rick so both Rick and Mike were recognized by the judges.

Chris Schur, one of the top astrophotographers on the planet, assumed a variety of responsibilities at RTMC. First of all, he was one of the telescope judges. He followed this up by being one of the award presenters on Sunday night. Finally, Chris was one of

the panel members in the 'Tent' discussion on CCD photography. Don't miss Chris' presentations at the Wednesday night EVAC meetings - his work is excellent. Chris was accompanied by his wife, Dawn.

Tom Polakis made a presentation on Friday night on a top 40 deep sky-observing list for the weekend. Tom is a very experienced deep sky observer, and writes regularly for 'Astronomy Magazine'. In addition to what to look for, Tom also gave some advice on observing techniques.

Frank Kraljick attended with his audio/video equipment and, amongst other things, taped an interview with John Dobson. Gene Lucas also attended, and helped with the audio/visual equipment for the entire weekend

'Passive' attendees included me, John and Cathy Mathews, Kevin Hall and Joe Goss (with a friend who flew in from Indiana). We were definitely in the minority!

Ex-members that we ran into included Aaron McNeely (a previous EVAC newsletter editor) and Tony Ortega who now writes for New Times in Los Angeles. Dick Jacobsen from the 'Astronomy Shoppe' was also there (with Kevin).

As for the weather, well, the weather gremlins struck again - Friday night was okay, Saturday night started off cloudy and the seeing remained poor after it cleared up. Sunday was clouded out. Driving out on Monday morning was like being in Scotland - as we got off the mountain, we drove down through a deep cloud layer from warm sunshine into wet, rainy weather that did not clear up until we got to Palm Springs. This was the worst part of the trip - the thought of having to brave the 100+ degree temperatures back in the Phoenix oven. The c-o-l-d nights on top of the mountain sure felt good!

Thanks to Dawn Schur and Earl Wilson for supplying the pictures.

My Telescope

By: Randy Peterson

It was in junior high that I first got a glimpse of the moon in a real telescope through a cloud-strewn sky. That was enough to whet my interest in astronomy. In high school, I joined the school Astronomy Club, and in 1966 several of us bought 6" mirror grinding kits from Edmund Scientific. At that time, the recommended kit to buy was a 4.25", and a 6" was considered the largest size that should be attempted by an amateur! Over a period of months we ground and polished our mirrors after school. I still remember struggling with Jean Texereau's equations, making a pitch-lap for the first time, and that homemade Focault tester. The other parts needed to complete the telescope were also purchased from Edmund. Then somehow, family and work life took precedence, and the scope was put away and never used. Almost thirty years later, astronomy began to draw my interest again, and the scope was brought out of storage. With a few modifications, this was the telescope that was taken to my first Messier Marathon about 7 years ago. A few people asked to look through it at the Marathon, and after doing so, had nothing much to say. Unfortunately, it wasn't awe that prevented them from saying anything, it was politeness. After looking through several other peoples' telescopes, it was apparent that the images through this scope left a lot to be desired! I wanted a better scope!

I started associating with amateurs who did asteroid occultations. The dynamics of doing an occultation REALLY whet my astronomical appetite! After doing one. I realized that 11th and 12th magnitude stars were pretty dim in a 6" unless you had dark skies, so a bigger scope as well as a better scope became the new requirement. After attending a couple of star parties, a 10" rich-field scope seemed to be the size I needed. Anything much bigger, and the scope wouldn't easily fit in my passenger car. An 8" would probably do the job, but one of my goals was to

see Pluto, and an 8" was marginally adequate for that job. I also came to the decision that an equatorial mount was a necessity for me. The uninterrupted views of the planets at high power with an equatorial drive convinced me I didn't want a Dob.

When I looked at my budget, about $1000 was the amount that was available to spend on the scope and mount. It seemed like a fair amount of money until I started shopping! After looking at a number of catalogs and magazines, most of the 10" scopes with equatorial mounts were well over that price range. Rather than order something that big through a catalog, I took a trip to Mr. Telescope to look at what he had. I decided to go with the company that makes the most telescopes, and purchased a 10" Meade Starfinder Newtonian reflector from him.

The mirror on the 10" is quite good for a mass-produced scope, and I am very happy with it. After using the scope several times, though, it became apparent why some 10" scopes are about $1000, and some are considerably more. There were a couple of annoying qualities of the scope:

The eyepiece focuser was made of plastic, and lacked the fine-tuning I was hoping for. Every time the eyepiece was adjusted, it would take close to 8 seconds from when my hand let go of the control knob for the vibrations to settle down enough to see anything through the eyepiece. With that kind of a time lag after every adjustment, coming to a fine focus was rather time consuming, at best.

To try to minimize these issues, I ordered a JMI eyepiece focuser, model NGF-DX2, with motofocus. At JMI's suggestion, they added a metal backing plate to provide a sturdier base than just the cardboard tube that comes with Starfinders. They also added an eyepiece extender, which is needed with this scope, since the DX2 is physically a shorter focuser than the original one. This setup took care of both of the above problems! Now the telescope can be finely focused electronically with a control box without touching the scope, and images can be viewed immediately during/after focusing with no vibration!. Another benefit is that for prime focus photography, the extender can be simply removed, and the scope is instantly ready to go. With the original focuser, the main mirror and holder had to be physically removed and re-installed a little over an inch closer to the front of the scope to do photography. Then, of course, the scope had to be re-collimated. Switching back and forth from visual to photography was an extremely labored process before installing the new focuser!

The main counterweight was also modified. The stock Starfinder comes with an allen wrench screw that tightens the counterweight. Try finding and struggling with an allen wrench on a dark cold night when you need to re-balance the scope! The local Ace hardware store stocked everything needed to replace the allen screw with a long bolt with a hand-knob on the end for just a few bucks. No more struggling with the allen wrench!

The other modifications made have been to replace the original finderscope, a 6x30, with a 12x50. A red dot has been placed in the center of the mirror to make collimation easier; but the next time I feel inclined to do this, I'll replace the dot with a lifesaver sized donut shaped stick-on instead, so that a laser collimator can be used. An angle bracket was added to the side of the scope, which allows a camera to be attached for guided photography. And of course, a Telrad was added, which has enabled me to find many more objects than before I owned one. An attached-to-the-tube counterweight, opposite the focuser, was added to balance out the additional weight of the camera, Telrad and bigger finder scope. Then one of the polar-axis counterweights from my old Edmund Scientific sidereal mount was added to the original telescope counterweight, to balance out all the other additional weight. All of these modifications were done one-at-a-time over a period of time.

The advantages of this scope: good optics made of pyrex glass with rich field views (f/4.5): several people at the Grand Canyon Star Party have remarked that the views were better through my scope than several others around me that they looked through. It is transportable, easily fits in my compact size car, although it does take up the whole back seat. Even with several hundred dollars of modifications, it is still pretty economical. It is capable of doing short-term photography (moon, bright planets, and very short guided photos). And with the new focuser, changing from visual mode to photography is quick. Once balanced, the clock drive keeps objects in view for a long time. The clock drive runs on AA batteries. The optics stay collimated as long as it is not excessively bumped.

The disadvantages of a Starfinder: the pier mount takes slightly longer to put together than my friend's SCT mount in the field. You had better have an extra

wing nut or two for installing the legs onto the pier in case you lose one. The clock drive has no fine adjustment, and is unsuitable for any photography of deep sky objects. The clock drive is also very sensitive to the scope being exactly balanced, or just slightly weighted to the west. If bumped, the scope still takes the better part of 8 seconds to quit vibrating.

However, I am very happy with this scope, in spite of its few shortcomings, and have no immediate plans to upgrade. And yes, I have seen Pluto with this scope. This is the scope I take to star parties, and have made a mask for the front of the scope to hold a 4.25" solar filter for looking at the sun.

On the other hand, if I win the lottery, you may find me processing images on a 36" LX200 with a $25,000 CCD coupled to a 2G-hertz laptop computer, looking for comets and NEO asteroids at a new house near Arizona City!

Grand Canyon Star Party 2001 or "My Adventures in Clouds"?

By Martin Bonadio

This year, Randy Peterson and I headed up to the Canyon for a few days to participate in the annual Grand Canyon Star Party. This is a week long event sponsored by the TAAA club in Tucson and hosted by Dean Ketelson. This year, it ran from the 16th – 23rd of June. Unfortunately, Randy and I were only able to attend the last few nights of the event – Friday the 22nd and Saturday the 23rd. From the accounts of other amateurs that headed up there at the start of the week, it was a real treat and clear skies were to be found. However, once Randy and I got there it clouded up and we never even had a chance to set up our scopes! Somehow I get the feeling a dark cloud hangs over my head…

However, despite Mother Nature, we braved a torrential downpour in Flagstaff, made our way to the Grand Canyon, unpacked our wet gear, and set up camp at Mather campground. Good thing, because I had a good time interfacing with some really fantastic people in the amateur community. Among those present when we arrived: Dean Ketelson (TAAA & mirror lab in Tucson, AZ), Steve and Rosie Dodder (Stone Haven Observatory in Maricopa AZ), Dennis Young (President - Sedona Sirius Lookers Club), and Mike Spooner (ace telescope maker in Page, AZ!). And that's just to name a few. Bernie Sanden and Tom Modzden from EVAC were also present. I'm told that earlier in the week there was a much bigger crowd, and that John Dobson (founder of the Dobsonian telescope) was among them.

On Friday, night we enjoyed a slide show by Dennis Young, during which he graced a crowd of about 30 people with some of his wonderful astro-scenery images. The backdrop of the south-canyon rim at Yavapai Point really added to the impact of his slides. But, of course, the wind did not!! Haha. Dennis really adds a lot of excitement to his work, and reminds me of how much I really need to learn about astro-imaging!

On Saturday afternoon, many of us gathered for a non-BBQ (yes, even though it was cloudy and rainy during the days we were there, the park issued a no-fire restriction). Regardless, the event was a potluck, and the food was fantastic. Even more fun was the talk between fellow amateur astronomers. Steve Dodder and I had a brief conversation about transient events (comets, occults, transits, etc.) and amazed ourselves at how many treats we've had in the past few years. Mike Spooner and I had a great talk about telescope optics and his trip to RTMC last month.

Saturday night I got optimistic. The evening started off with another slide presentation – this time by Dean Ketelson. During this slide show, Dean showed us a number of wonderful astrophotos that he has taken. He did a wonderful job explaining what we were seeing, and the crowd of 50 really took a lot of knowledge with them. During the slide show, the moon popped out of some thinning clouds. Bernie and Tom rushed off to set up a telescope. Minutes later, many of the guests were enjoying a view of a low crescent moon under thin clouds. Hey –it beats nothing.

The clearing didn't last too terribly long, but it was long enough for Randy and I to visit Steve and Rosie Dodder. For about 30 minutes, we had the chance to look at some brighter double stars and bright deep sky objects. The doubles Cor Coroli and Pi Bootis are always worth a peek when the seeing is steady – and sure enough, at moderate power in Steve's 8" SCT, we accomplished just that.

Ok, so this trip wasn't exactly what I had in mind. But, enjoying the canyon, hanging out with my astronomy friends, enjoying a BBQ and seeing some great slides still allowed me to enjoy my stay. I wish I had gone earlier in the week, but maybe next year. Of course, you realize that my leaving earlier will probably result in clouds sooner too!! I hope not. Fortunately, I can read the emails on the AZ-Observing list and realize the success of the event from those who cleared out on Thursday.

Needless to say, I hope that you get a chance to join us next year. If anything -- escaping the 110-degree Phoenix summer should entice you! Clear Skies.

Backyard Observing

By: Silvio Jaconelli

This is another in my series of occasional articles on backyard observing. This was a two night session - June 8th and 9th where the transparency was awful (suburban Gilbert and a 75% illuminated Moon) and the seeing was average. I was using a 6" unobstructed f/8 telescope. So if any of the objects appeal to you, grab a star chart, haul your telescope into the backyard, and start observing!

To get started, I tried to find M104, the Sombrero 8th magnitude Galaxy just above Corvus. Most folks never dream of looking at deep sky objects in town, but I do this regularly and get quite a kick out of it. Even with 6" of aperture, I was able to spot it right away. It was very dim but also unmistakable. I was at 40 power.

Then it was time to look at M81/M82 in Ursa Major, a pair of 7th magnitude galaxies visible in the same field of view. Again I was at 40 power, and again the galaxies were obvious.

The Ring Nebula (M57) in Lyra was visible at 40 power, but the best image was at 250 power. This is one object that takes magnification well. This object is 10th magnitude, and even an object this dim is easy to view from town - not breathtaking, mind you, just easy.

M13, the 6th magnitude Globular Cluster in Hercules was next and again I located it using 40 power but the best images were at 250 power.

The 6th magnitude Globluar Cluster - M4 - in Scorpius was a good bit fainter than M13, probably due to the lower elevation in the sky - about 30 degrees compared to 80 degrees for M13. NGC 6144 close by - a 9th magnitude Globular Cluster - was not visible. The dimness of the object, the low elevation and the sky glow all combined to doom this target to failure.

Now it was time to leave the faint fuzzies and head over to some targets better suited to town observing. I started with Epsilon Lyrae, the 'double double' in Lyra. I tried a light blue filter to help with the seeing. Sometimes a filter will reduce the glare and produce a steadier image, but be careful to make sure that the filter is not too dark or you will dim out very faint objects. This was an easy split at 250 power, and at 450 power, the separation between each component was very wide; cavernous, in fact.

I next tried to split Antares. This was tough. I tried a combination of magnifications and color filters, and the only thing that worked was a blue filter at 450 power, and even that was a tough split. A red filter did steady the image better but it dimmed out the companion. The companion is about 5 arc seconds away, but being considerably dimmer than Antares it is easily glared out of view by the blazing primary star. Component stars of equal magnitude are so much easier. See my next target below.

The component stars in Gamma Virginis are about 2 arc seconds apart but being of equal magnitude and just a fraction of the brightness of Antares makes this an easy double. 250 power was all that I needed for a clean split.

By this time, Mars was about 25 degrees above the horizon. Although this is one of the closer Mars apparitions, it unfortunately reaches opposition in June which means that it never rises high in the sky; the atmosphere degrades the images. Now, if you were in the Southern Hemisphere, then Mars would be almost overhead and providing knock-out views. Having said this, I still find that Mars is providing the best views that I have ever seen in my 8 years in the hobby. Syrtis Major was right on the meridian, and the gradations in the darkening were obvious. Sinus Sabaeus was very dark, and stood out well compared to the not-so-dark surrounding dark areas. The Hellas Basin was visible, but not too obvious. I was unable to make out any polar caps. All views were through a red filter, except for when I was looking for ice caps when I used a blue filter. I also used a Mars globe to help in identifying surface features, which I find to be of much more use than the flat maps found in the national magazines.

Finally, armed with the latest edition of Astronomy magazine, I tried to find Phobos and/or Diemos, but the sky glow and small aperture did not allow me to spot these.

Rick Scott joined me the following evening with his 9.8" Lurie-Houghton that he built himself. This telescope is like a Newtonian reflector with two 10" glass lenses on the front as a corrector and a spheroidal instead of a paraboloidal mirror. The focal ratio is f/4.6. We did a repeat performance of the solo that I had done the night before. The result? Well, I was plagued by a vibrating mount problem, and Rick still has to polish out a slight astigmatism in one of his lenses but, despite these issues, I must say that his telescope performed excellently. His images were every bit as good as the 6" refractor, but also brighter. This was true for Mars as well as the deep sky objects. The deep sky objects benefited greatly from the larger aperture, which allowed the use of nebula filters that lead to even better views of these objects. The globular clusters looked particularly wonderful. The Lurie-Houghton did not do well on double stars, attributable to the astigmatism in the lenses, a problem that will be taken care of during the Monsoon

downtime! But, since I authored this article, I get the right to conclude by stating that Rick was very impressed by the views of the Moon through the binocular viewer on the Takahashi!

EDITORIAL - Rick will help me fix the mount problem that I was having and if any expert out there can give us a few tips, please let us know!

Mars 2001

By Chris Adamson

As most of you know, this year is the closest Mars has been to Earth since 1988, with a minimum distance of 67.34 million kilometers on June 21 (which was actually over a week past opposition, which occurred June 13). This also translates to Mars appearing larger to us on earth anytime since 1988. The planet actually reaches 20.8" in apparent diameter and shines at a very bright magnitude -2.4. The prime months have the Martian equator nearly center to us, with the northern part of Mars just going into Autumn, while the southern portion is just coming into Spring.

For most, the only downside to this opposition is that Mars never rises very high, reaching between -24 and -27 degrees between the prime months of May through July. We in Arizona are lucky, as this is high enough to get some great views, especially when combined with the large apparent size.

Most of my observing of Mars so far this year, mainly by chance, has been when the Syrtis Major area has been in view. Most nights, my seeing has limited me to 175x, sometimes getting to 250x and even 400x on a couple rare occasions. In my 16" Starmaster, a typical night of notes was similar to the following on June 15:

"The entire Syrtis Major region, SE up through Mare Serpentis, and SW through Mare Tyrrhenum and Mare Hadriacum was very dark gray, especially Syrtis Major by a shade or two. Heading west and towards the equator, there was a clear separation between Mare Tyrrhenum and what I believe is the Tritonis Sinus/Mare Cimmerium region. The Hellas region clearly stood out, though interestingly not quite as white as a few nights ago when I reported. To the north, the Utopia and Uchronia region was visible. Interestingly, the northern region seemed to have three distinct large patches (sort of like peninsula's) coming up from the NNE. I saw clear, but thin white slivers right where the north polar cap should be and directly opposite at the southern edge."

On June 25, with an 8" Orion XT I had the following notes:

"At about 200x, the darkest, easiest feature to see is the Mare Sirenum and Aonius Sinus areas in the south, with Solis Lacus also slightly visible to the SW. The center of the disk is rather peach, but featureless, with maybe hints of some slightly lighter areas. To the north, I could see a very slim and barely perceptible Polar Cap (perhaps cloud) surrounded by a dark, thin patch, that may be Lemuria and/or Abalos."

I spent a lot of time with filters looking at Mars, though I like the unfiltered view best. #21 have been the best filter for me this year, followed by #25. #80A has been helpful in seeing some cloud features. On some nights, filters seem to help more than others, depending on seeing. If using them, give time for your eye to adjust. To me, it usually is after a few minutes with any one filter that I begin to see what it highlights.

Keep in mind that Mars rotates every 24 hours and 37 minutes. So if you observe nightly at the same time, you will notice the same features as the night before just a bit further to the east. You can get a good map of Mars in the July Astronomy or May Sky and Telescope. Also, there is an outstanding freeware program called Mars Previewer at http://members.nbci.com/marsprev/mpenglish.htm. This program shows you what Mars looks like at any time, based on the date, time and timezone. Running your mouse over the animation of Mars tells you what feature is being shown. It is extremely helpful in helping to understand what it is you are seeing (and giving you an idea of what you can see given good seeing and good optics).

The planet remains greater than magnitude zero and larger than 10" in diameter through Mid-October. So if you missed opposition, keep trying. There should still be a chance for a handful of good views over the coming months. Mars takes practice. Spend as much time as you can and more and more detail will come your way. On nights of good seeing, your perseverance will pay off when spectacular detail comes your way. Get your practice in this year, as in 2003 Mars will attain an apparent diameter of 25.1" and will be approximately 12 degrees further north. In other words, it will be as good as it gets (you will be much, much older the next time it gets even nearly this good!)

President's Comments

By Martin Bonadio

Greetings to my fellow club members. I can't believe that half of this year has past. However, June had to be my favorite month of the year so far. There were a ton of astronomy-related activities for our club. For me, it started with a beginner's lab, peaked with an article about our club in the Tribune "Get Out"

magazine and culminated with star parties at the Gilbert Library, Florence Junction, Vekol, Greyhawk, and the Grand Canyon.

Thanks to everyone who participated this month in the many activities. Here is just a summary of the some of the events and the exposure EVAC got this month as a result of this effort:

1. At the Gilbert Library on June 8th, there were over 40 people who had a chance to view my multimedia presentation titled "Space and Time". After that, many had a chance to look at the sky through club members' telescopes.
2. On June 14th, the Mesa Tribune "Get Out" magazine featured a 3-page article on our club. There were quotes and pictures of many EVAC members and even some professionals in the community. Wow!
3. At Greyhawk on June 15th, 50 people attended, many of who were interested in learning more about the sky. This was a paid event that earned the club extra money. You can bet we'll put that to good use! Greyhawk was so impressed, they want us to come back 3-4 times a year!
4. At Florence Junction on June 16th, a small group of boy scouts attended and got to see views of galaxies, clusters, nebulas, and of course, Mars. They were thrilled
5. At the beginner's lab on June 2nd, about 10 new members showed up and got first-hand assistance with their scope setups and how to aim them at objects. Photographers from the Tribune were on hand taking pictures until the sun set.

Whew!! Well, all this excitement had me really pumped up to spend 3 days and 2 nights at the Grand Canyon Star Party . I do hope that some of you had a chance to attend as well. I plan to show pictures at an upcoming club meeting – so stay tuned.

I have had several people ask me about how to get started in Astronomy and what telescope to buy. Below is a summary of some of my notes. I thought it worth sharing with you (especially for some of our newer members).

1. Get a good starter book. I suggest "**Nightwatch"** by *Terrance Dickenson*. Many of the popular bookstores carry it.
2. Next, get a planisphere and learn the sky. Astronomy is a lot like fishing. You have to know where to look in order to catch a fish. It's the same for the sky. If you don't know where to look, you won't catch a galaxy. (So to speak).
3. Invest in a nice pair of 10x50 binoculars and start to home in on some areas of the sky. There are a few good books on Binocular Astronomy. In fact, a good pair of binoculars will show more than a cheap department store telescope.
4. Learn about the different types of telescopes. Attend club star parties and also club meetings if you can. Read reviews in the Astronomy and Sky and Telescope magazines, and surf the web. Ask a lot of questions. A telescope is like a car. You wouldn't race NASCAR with a Suburban, would you? (Don't answer that!!) It's the same concept with a telescope. Some are better suited for planets and others for galaxies. The most important thing is to choose a telescope that is right for you, and choose one that is comfortable. Don't go out and buy a 20" dob if you aren't willing to haul it and set it up every night.
5. Once you have a little understanding of the basics you will be able to decide what you will observe and where you will observe. Only then do I suggest you buy a telescope. But I'm guilty too of buying a telescope first, and then later finding out that it wasn't what I wanted. Then again, that may be why I have 3 telescopes - I have a variety of interests and my 3 telescopes each hold a different purpose!!

Please feel free to call me if you want chat more about selecting a telescope or getting started. My home number is 480-926-4900.

Finally – the board will be having a meeting on July 27th at David Coshow's home. If you have any topics that you want us to address, please forward them to any board member or myself. We'll gladly discuss it. We will present a short summary of the board minutes in the next newsletter. As well, Randy Peterson will be presenting a financial report in the upcoming month.

If it's clear...

By: Fulton Wright, Jr. Prescott Astronomy Club

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.

Mars will be getting slowly smaller in our telescopes this month, so this is your last chance to observe the planet near opposition for a couple of years.

On Monday, July 9, at about 4:30 AM, you can see Mercury at its best and near another planet. With your unaided eye look just above the east-southeast horizon for Jupiter (mag -2, on left) and Mercury (mag 0.5, on right). They will remain close for a few days.

On Friday, July 13, if you don't have bad luck, at about 4:30 AM you can see two planets and a star near each other. With your unaided eye look 20 degrees above the east horizon for Venus (mag -4), Saturn (mag 0), and Aldebaran (mag 1). If you look at Venus with binoculars or a small telescope, you will see Epsilon Tauri (mag 3.5) 6 arcminutes to the right. All these objects are also close the following 2 nights. The planets are less than 1 degree apart and the same angular size on the 15th. The Moon joins the group on the 17th, getting ready for an occultation (described in the next paragraph).

On Tuesday, July 17, at 10:32 AM, you can see the Moon occult Venus. As you can tell, this happens in daylight, but both objects are bright enough to see anyway. The sun will be high in the east. With binoculars or a small telescope, look slightly higher in the southwest for the crescent Moon. Venus reappears from behind the unlit (and invisible) side of the Moon at 12:02 PM. See Sky & Telescope, July 2001, p. 100 for details.

On Thursday, July 19, at about 4:30 AM, you can see the Moon near Mercury. With binoculars, look very low (3 degrees above the horizon) in the east-northeast for the pair, 7 arcminutes apart.

On Wednesday, July 25, at about 8:30 PM, you can see the southern part of the Moon at its best. With any telescope look 30 degrees above the southwest horizon for the crescent Moon. Libration tips the south toward us. It should also be good a day on either side.

Events Schedule

By: Silvio Jaconelli

I will be the EVAC Events coordinator, and I will incorporate all upcoming events in our monthly Newsletter. Please communicate all events that you wish included in our calendar to me by email at silvioj@msn.com

Double Star Special Interest Group

By: Silvio Jaconelli

I will also be heading up the Double Star Special Interest Group. The intent of this group is to 'dive deep' into the observation of double stars. I envision that at least once each month (and more frequently if the demand is there), the group will meet at a member's home (we can rotate homes if the group so decides), set up our equipment, and discuss the evening's targets prior to the start of the observing session.

I suggest that we have a preliminary meeting at a convenient fast food location to nail down exactly the 'whats and whens'. But for now, please email me at silvioj@msn.com if you are interested in being part of the group:

Internet Links

By: David Brandt

Maybe some of the members are interested in Space Simulation. A friend sent me these.

1. http://www.medphys.ucl.ac.uk/%7Emartins/orbit/orbit.html

2. http://www.fasterlight.com/exoflight/

For Sale:

8" Celestron Schmidt-Cassegrain telescope with Telrad and 9x50 finderscopes with F/6.3 Reducer/Corrector. 3 years old. $875. Phone Terry at (480) 985-3170

EVAC & Other Events: 2001

	New Moon	Meet	Local	Deep Sky	Other
July	7/20	7/11	7/14	7/21	7/27 – Board Meeting
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 – Norther 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 July Newsletter Submissions is July 23rd, 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 July 11 EVAC meeting with either check or cash. We plan to order these shirts on July 12, so postmark you letter in time to reach us by July 10. 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	TOTAL
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	TOTAL
COLOR:	quantity	quantity	quantity	quantity	quantity	quantity	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:

New Member select month joining:
( ) $20.00 January - March
( ) $15.00 April - June
( ) $10.00 July - September
( ) $ 5.00 October - December

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

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

_____ **Total Enclosed**

3. Complete requested information below. Please Print.

Name: _____

Address: _____

_____

Phone #: _____ E-mail: _____

URL: _____

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

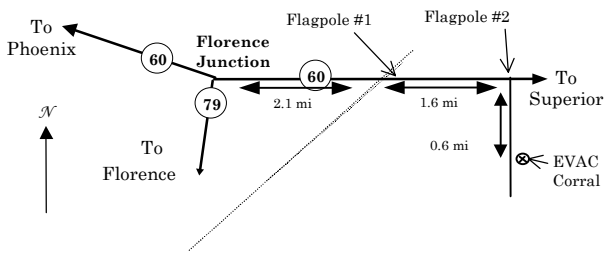
EVAC Star Parties

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.

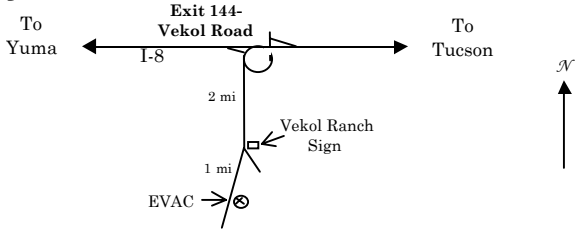


Deep Sky Star Party: Vekol Road Site

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 Coshow
(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.

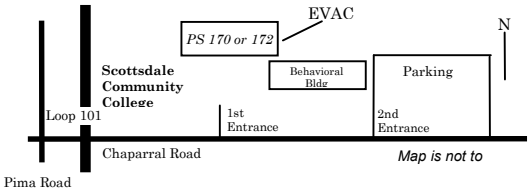
Address Changes: Contact Randy Peterson. PO Box 2202, Mesa, AZ. 85214-2202. (480) 947-4557. Email: rgp14159@aol.com.

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.



East Valley Astronomy Club

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

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Reminder: Next EVAC Meeting Wednesday, July 11, 2001