East Valley Astronomy Club

July 2003 www.eastvalleyastronomy.org Scottsdale, Arizona

July 2003

Contents

From the Desk of the President
by
Peter Argenziano
2003 EVAC President

Summer is officially upon us, and it won't be long before the monsoons arrive bringing much needed moisture to the desert. Many of us choose to take a vacation during the summer; others spend this time getting caught up on their "honey-do" lists. Others use this time to finally tackle that astronomical task they have been postponing: making some modification or improvement or repair to their telescope, cleaning their optics, getting their optics refigured and or recoated, building an observing chair -- the list goes on and on. And some of us check the NWS reports and Clear Sky Clocks daily, hoping to get one more observing session in before it starts to rain.

Whatever your choice of summertime activity, now is a good time to review the club's star party etiquette. While these guidelines ensure that everyone has an enjoyable time under the stars at an EVAC event, they are really generic and will put you in good stead with whoever you observe with.

Consumption of alcoholic beverages is not permitted at EVAC star parties. Putting aside any moral or legal discussions, one should be concerned about the effects of alcohol (and cigarettes, for that matter) on dark adaptation and visual acuity. Alcohol increases the time it takes for the pupil to fully dilate, and it limits the extent of dilation. Some studies have shown a decrease of up to 20% in light gathering ability following alcohol use. Alcohol, being a neuro-depressant, also has a negative effect on the transmission of visual information to the cerebral cortex. So, leave the partying until after the observing run.

Please pack out all trash. Most observing sites do not have trash cans, so it's a good idea to keep some trash bags in your vehicle. Keeping our observing sites litter-free is everyone's responsibility.

No white lights after dark. Please use only dim, red lighting. It's a good practice to start using red lighting during twilight. If your vehicle's interior lights cannot be disabled, either cover them with red film beforehand or strategically position everything so that you will not find it necessary to open a car door after dark. Remember that others around you may be engaged in time-consuming astrophotography. Not to mention that dark adaptation can be ruined in seconds. If you do find it absolutely necessary to open a vehicle door and bathe the area in white light, announce your intention so your neighbors can take necessary precautions. Also, be aware of the light output from computer screens -- they should be completely covered with dark red film or plastic. Don't rely on the software program to "redden" the display, as this method is mostly inadequate.

There is no water (or food) at the observing sites, so bring what you need. Proper hydration is critical to your well-being in the desert!

Plan your arrival before dark. Most observing sites are remote and can be difficult to locate or navigate in the darkness. Late arrivals are disruptive to those already observing or imaging. Allow yourself plenty of time for travel, and to set up your gear upon arrival. It's always fun to socialize during twilight. If you do arrive late, turn off your headlights and have someone guide you onto the observing field with a red flashlight.

Most observing sites have a single point of entry and exit. Please take this into consideration when choosing your "spot". Orient your vehicle in such a way that it facilitates your departure with minimal disruption. If you are not planning to stay late, consider parking toward the front of the field with your vehicle facing the exit. Familiarize yourself with the exit

contd. on p.2

contd. from p.1

still daylight or twilight. If you are staying late, move to the back of the observing field to allow room for those leaving early up front.

All good things must come to an end. When you are ready to start tearing down for the night, please be considerate of those around you and continue to use only red lighting. Try to time your departure with that of others so as to provide minimal disruption for those remaining. Before starting your vehicle, announce your intentions so that others may take necessary precautions. Have someone with a red flashlight guide you toward the exit.

Please drive very slowly on and around the observing field in an effort to minimize airborne dust and dirt.

Please keep noise to a minimum. Certainly talk and have fun, but be considerate of those around you. If you like to listen to music or a ballgame while observing, consider using headphones or keeping the volume at an unobtrusive level. Walk away from your spot and listen to determine if the volume is excessive. Or, just ask your neighbors -- remember everyone has different preferences.

Members are responsible for their guests. It is certainly appropriate to bring a guest with you, just be sure they have an understanding of general star party etiquette. That being said, please only bring observers with you. Small children and pets do not generally enjoy star parties and usually prove to be disruptive. Leave them at home if at all possible.

Want to have a look through that great looking telescope set up near you? Just ask first -- most folks welcome the opportunity to share the views!

If possible, don't be the last to leave the observing field. The last two observers should leave together to ensure that no one is stranded with vehicle problems.

While this may all sound to the uninitiated like a lot of rules to remember, it is all really just common sense and courtesy. Just remember to have fun! Walk around and meet those observing with you.

I encourage you to visit our website often, as something is always in the works. Got an idea? Let either the webmaster or myself know about it.

Please remember that our July meeting will be held in our old meeting room, PS-172, on July 9th at 7:30 PM.

What a great time to be an amateur astronomer in Arizona! Keep looking up!

Q: How many astronomers does it take to change a light bulb?

A: None -- if it's burned out.

If it's clear...
by
Fulton Wright, Jr.
Prescott Astronomy Club
for June 2003

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 arc minutes in diameter. All times are Mountain Standard Time unless otherwise noted.

This is the month to start observing Mars. Before now it was too small to see much. After this -- the surface may be obscured by a global dust storm. Mars rises around 11:00 PM at the beginning of this month and 9:35 PM at the end.

On Tuesday, July 1, at 8:45 PM you can see Io go behind Jupiter.

On Thursday, July 3, at 8:36 PM you can see two of Jupiter's moons pass close to each other. Io and Callisto will almost touch as they pass.

On Friday, July 4, at 8:26 PM you can see Io move from in front of Jupiter.
At 9:10 PM Io's shadow leaves the planet.

On Tuesday, July 8, about 5:00 AM, you can see two planets near each other. With binoculars look 5 degrees above the east-northeast horizon for Venus (mag -4) and, one degree to the right, Saturn (mag 0).

On Thursday, July 10, during the evening when Jupiter is visible, Europa will be in front of the planet (hard to see) and Europa's shadow will be on the planet (easier to see).

On the night of Wednesday-Thursday, July 16-17, from midnight to 1 AM, you can see the Moon move by Mars. With anything from your unaided eye to a medium (6 inch) telescope look 25 degrees above the southeast horizon for the gibbous moon (easy) and Mars (up and to the left, not hard, either).
They get as close as 1/4 degree.

On Friday, July 25, about 8:00 PM, you can see two planets close together. With binoculars look 8 degrees above the west horizon for Jupiter (mag -2) and Mercury (mag 0) about 1/3 degree apart.

On Wednesday, July 30, about 8:00 PM, you can see a grouping of objects. With binoculars look low in the west. The brightest and lowest is Jupiter (mag -2). Up and to the left, the next brightest is Mercury (mag 0). Back down and to the right and very close to Mercury is Regulus (mag 1). Finally, above all these is the crescent moon (less than 2 days old).

Q: How many astronomers does it take to change a light bulb?

A: Only one, if he can shoot straight.

(Can I get mounting rings to fit an air rifle on top of my 8" Schmidt-Cass telescopic sight?)
(Is it sporting to shoot off a field tripod?)

An Astronomy Book Review
by
John Matthews

This is not a conventional book review, because I would like to let the author speak here — in his own words. The following section from his Introduction answers the "Why" of amateur astronomy better than anything I have ever seen.

I like it, and I hope you will.

Needless to say, I recommend the book.

J.M.

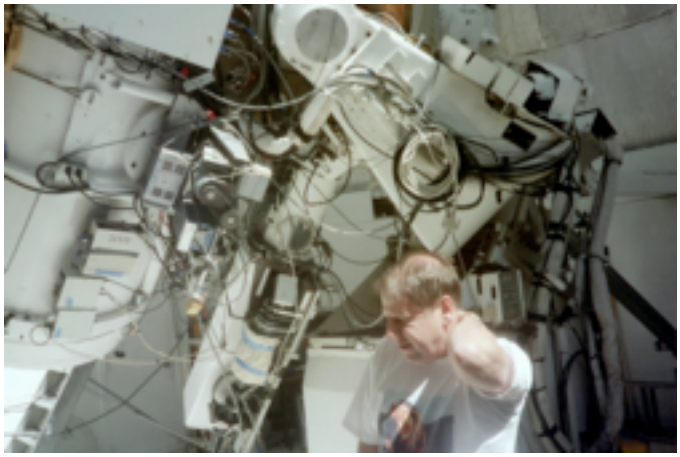
If astronomy is the oldest of the sciences, surely amateur astronomy may rightfully claim to be the oldest of the scientific hobbies. No one can date that remote epoch when astronomy "began" – we can say only that the fascination of the heavens is as old as man's ability to think; as ancient as his capacity to wonder and to dream. And in company with most of the special enchantments of human life, the unique appeal of astronomy is incommunicable, easily understood through direct experience, but not to be precisely defined or explained. Nor should any explanation be thought necessary. The appeal of astronomy is both intellectual and aesthetic; it combines the thrill of exploration and discovery, the fun of sight-seeing, and the sheer pleasure of firsthand acquaintance with incredibly wonderful and beautiful things. But it also offers the privilege, not to be taken lightly, of adding something to the knowledge and understanding of man.

There is one other factor which I think deserves comment. An amateur, in the true and original meaning of the word, is one who pursues a study or interest for the sheer love of the subject; and in this respect the division between professionals and amateurs is indeed indefinite. We are all impelled by the same wonder and curiosity, we are all exploring the same Universe, and we all have the enviable opportunity of contributing something to the store of human knowledge.

Now I should like to phrase one of these considerations in a somewhat less conventional manner, at the risk of being accused of undue whimsicality by the sternly serious minded. Considered as a collector of rare and precious things, the amateur astronomer has a great advantage over amateurs in all other fields, who must usually content themselves with second and third-rate specimens. For example, only a few of the world's mineralogists could hope to own such a specimen as the Hope diamond, and I have yet to meet the amateur fossil collector who displays a complete tyrannosaurus skeleton in his cabinet. In contrast, the amateur astronomer has access at all times to the original objects of his study; the masterworks of the heavens belong to him as much as to the great observatories of the world. And there is no privilege like that of being allowed to stand in the presence of the original.

Yet it sometimes happens, perhaps because of the very real aesthetic appeal of astronomy and the almost incomprehensible vastness of the Universe, that the more solidly practical and duller mentalities tend to see the study as an "escape from reality" – surely one of the most thoroughly lopsided views ever propounded. The knowledge obtained from astronomy has always been, and will continue to be, of the greatest practical value. But, this apart, only the most myopic minds could identify "reality" solely with the doings of man on this planet. Contemporary civilization, whatever its advantages and achievements, is characterized by many features which are, to put it very mildly, disquieting; to turn from this increasingly artificial and strangely alien world is to escape from unreality; to return to the timeless world of the mountains, the sea, the forest, and the stars is to return to sanity and truth.

Robert Burnham, Jr.
(From the Introduction)
Burnham's Celestial Handbook
An Observer's Guide to the Universe Beyond the Solar System



Our guide, Solar Astronomer, Randy Fear getting a "Star Tan" while conducting a tour of the Big Bear Solar Observatory.

EVAC members walking with Astronomer Dr. Alice Monet (on the left), during a tour of the U.S. Naval Observatory at Flagstaff.

Schedule of Events - June, July, August 2003
East Valley Astronomy Club
by
Howard Israel

Date	Event	Location	Notes
Sat. June 28	Deep Sky Star Party	Vekol Road Site	Sunset: 7:42 PM
Wed. July 9	EVAC Meeting	SCC - Room PS#172	7:30 Speaker TBA
Fri. July 11	Gilbert Public Star Party	Gilbert Public Library	7:00 Setup
Sat. July 12	Beginners Lab	Dave Coshows' home	7:00 Setup
Sat. July 19	Local Star Party	Boyce Thompson Arboretum	Sunset: 7:37 PM
Sat. July 26	Deep Sky Star Party	Vekol Road Site	Sunset: 7:33 PM
Sat. Aug. 9	Beginners lab	Dave Coshows' home	7:30 setup
Wed. Aug. 13	EVAC Meeting	SCC - Turquoise Room SC#164	7:30 Speaker TBA
Sat. Aug. 16	Local Star Party	Boyce Thompson Arboretum	Sunset: 7:14 PM
Sat. Aug 23	Deep Sky Star Party	Vekol Road Site	Sunset: 7:05 PM
Sat. Aug. 30	Bonus Deep Sky Star Party	Vekol Road Site	Sunset: 6:57 PM Equipment Shootout

Free Classified Ads
(Wanted & For Sale)

Non-commercial advertisements for Astronomical equipment, books, computers, or software — Wanted or For Sale — will be accepted from current EVAC members, (another good reason to renew your membership, if you have not already done so).

Ads will be run on a "space available basis" and may be edited slightly to best fit the space. Ads should consist of a brief text description and must include a current member name and an evening phone number. You may include your email address if you wish. Ads will be run until canceled or until they have appeared in three issues of the newsletter (whichever occurs first). Ads will be "tagged" with the first issue in which they appear.

For Sale (July)
Astro Physics 800 mount w/3 9lb counterwieghts and cases.
Meade ETX 125 with AutoStar, Star Pionter & JMI foam Case.
Call for price & details.
Eron Lee
(602) 740-3489

Ads can be emailed to: john-cathy@cox.net
(this address may change in the future)
or send by U.S. Mail to:
EVAC PO Box 2202
Mesa, AZ 85214
Please mark the subject line of the email or the envelope, "EVAC Newsletter Ad."

Scientists have shown that the moon is moving away by a tiny, although measurable distance from the earth every year. If you do the math, you can calculate that 85 million years ago the moon was orbiting the earth at a distance of about 35 feet from the earth's surface. This would explain the death of the dinosaurs...the tallest ones, anyway.....

The Backyard Astronomer

By Bill Dellinges

A Mars "Ephemeris"

"Mars, by virtue of its color alone, must have seized the attention of stargazers from time immemorial, catapulting them into inescapable fantasies." From the book, "Mars" by Stephen James O'Meara

This summer is special due to Mars' close approach. I offer this July piece in hopes of distilling the vital statistics of this upcoming Mars opposition for club members. See my June article for a general view of the situation. I will be submitting for the August newsletter a previous piece from 2001, "Mars (again!), a tale of my past 3 oppositions. **William Dellinges**

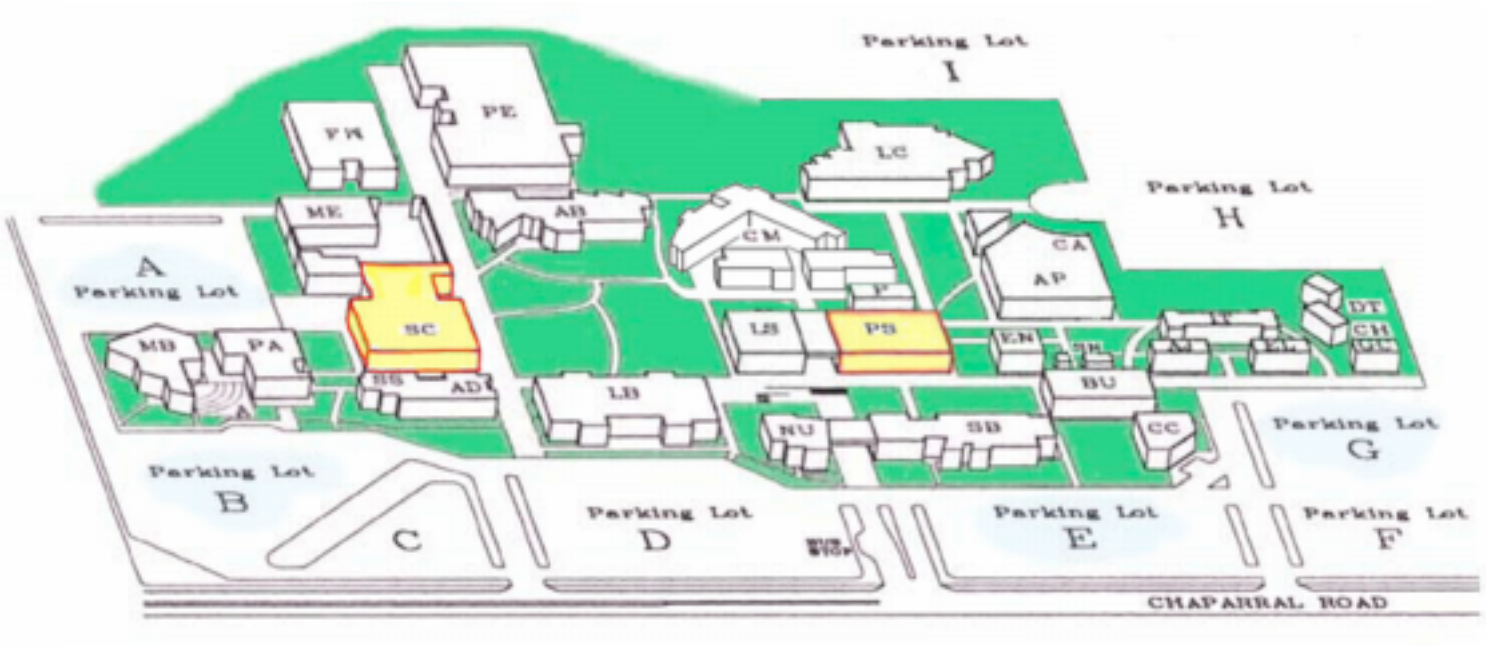
Closest to Earth August 27, 2003: 34,646,418 miles.
Opposition: August 28, 2003.
Perihelion: August 30, 2003.
Retrogrades: August 1-September 21.
Planet's diameter: 4223 miles (half Earth's size).
Moons: 2, Phobos (mag.11.3) and Deimos (mag.12.4), 17 and 10 miles in diameter respectively.
Average distance from Sun: 142 million miles or 1.524 astronomical units.
Length of year: 1.88 Earth years (687 days).
Length of day: 24 hours, 37 minutes.
Inclination to ecliptic: 25.2o.
Atmosphere: 95% carbon dioxide, 2.7% nitrogen, 1.6% argon, traces of oxygen, water vapor, carbon monoxide. 1/150 the pressure of Earth's atmosphere.
No liquid water on surface. North and south polar caps of frozen water (north cap only) and, in winter, ~ 3 feet of frozen carbon dioxide (removed from its atmosphere).

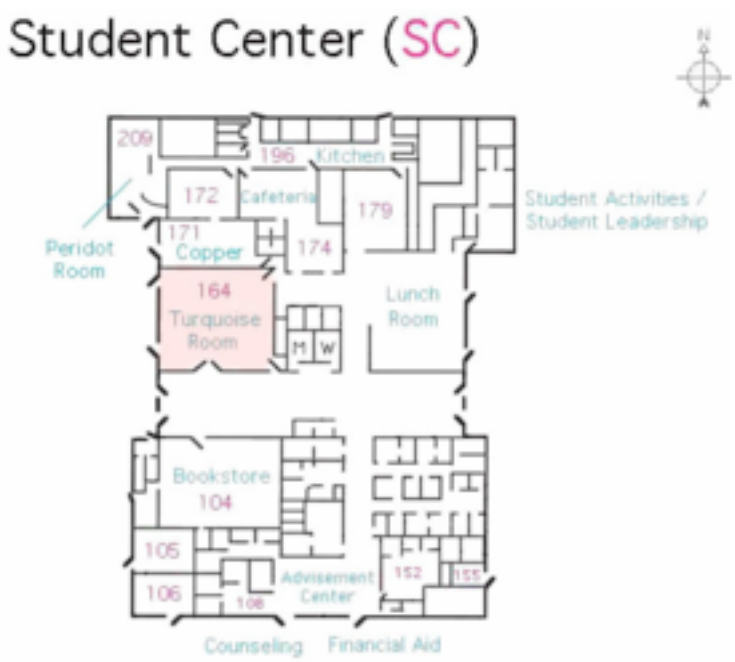
Earth passes Mars every 26 months (2.16 Earth years) at a distance of 50-60 million miles. Every 15-17 years this distance is reduced to about 35 million miles, as in 2003, 1988, 1971, 1956, etc. The next 15th year pass will be on July 31, 2018. Dist: 35.8 million miles, size: 24.31".
Last time this close; 57,617 B.C. Next this close: Aug. 24, 2208. Next time closer: Aug. 28, 2287.

Date	Rises	Mag.	Size (")	R.A.	Dec.	Dist. (10^6 Mi.)	Remarks
June 1	12:30A	-0.7	12.4"	21h43m	-16°36'	70	
June 11	12:00A	-0.9	13.7"	22h02m	-15°26'	64	
June 21	11:45P	-1.2	15.1"	22h20m	-14°25'	58	
July 1	11:15P	-1.4	16.7"	22h35m	-13°37'	52	
July 11	10:45P	-1.7	18.4"	22h46m	-13°09'	47	
July 21	10:15P	-2	20.3"	22h53m	-13°05'	43	Highest above S. horizon, 43°.
Aug. 1	9:30P	-2.3	22.4"	22h56m	-13°29'	39	Stationary, retrograde begins.
Aug.11	8:45P	-2.6	23.9"	22h53m	-14°14'	36	
Aug.21	8:15P	-2.8	24.9"	22h45m	-15°10'	35.34	Max size, 25.11" Aug. 27.
Sept. 1	7:15P	-2.9	25.0"	22h34m	-16°04'	34.92	Opposition Aug. 28.
Sept.11	before	-2.7	24.1"	22h24m	-16°29'	36.27	
Sept.21	sunset	-2.4	22.6"	22h17m	-16°21'	38	Stationary Sept. 29, direct motion begins.

Sources: Astronomical Tables of Sun, Moon, and Planets: Jean Meeus Observer's Handbook 2003: Royal Astronomical Society of Canada: Sky and Telescope Magazine, June 2003.

Scottsdale Community College Campus Map





Because of the growing size of our club we have been given the opportunity to frequently use a larger room at Scottsdale Community College.

Here is the EVAC Monthly General Meeting Schedule for 2003 with the room assignment for each meeting. (SAVE THIS NOTICE!)

May 14th - Turquoise Room
Room #164 in the Student Center (SC - 164)

June 11th - Room PS - 172

July 9th - Room PS - 172

August 13th - Turquoise Room
Room #164 in the Student Center (SC - 164)

September 10th - Turquoise Room
Room #164 in the Student Center (SC - 164)

October 8th - Room PS - 172

November 12th - Turquoise Room
Room #164 in the Student Center (SC - 164)

December 10th - Turquoise Room
Room #164 in the Student Center (SC - 164)

Monthly meetings are held on the second Wednesday of the month, beginning at 7:30 PM

The Turquoise Room (SC #164)
is located in the Student Center (SC Building). Parking lots A and B are the most conveniently located for when our meetings are held here.

Our old meeting room (PS #172)
is located in the PS Building. Parking lots E and G are the most convenient when meetings are held here.

East Valley Astronomy Club
Membership Form

Please complete this form and return it 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:
( ) Email (saves club printing & postage) ( ) U.S. Mail

Total enclosed $

Name: _____

Address: _____

_____

Phone # ( ) _____

Email: _____

URL: _____

Local Star Party Sites
 # 1: Florence Junction Site

General Information: The Florence Junction site is one of the two official sites for the East Valley Astronomy Club's Local Star Parties, 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. EVAC's Land Use Permit #26-104528 applies to this site.

Location: N 33° 14' 40" W 111° 20' 16"

 # 2: Boyce Thompson Arboretum Site

General Information: The Boyce Thompson site is still considered the new local site. Only a few Star Party have taken place there as a second local site, although EVAC members have held Star Parties there at the request of the Arboretum on a twice yearly basis. The site has some privacy advantages over the FJ site.

Location: N 33° 16' 52" W 111° 09' 35"

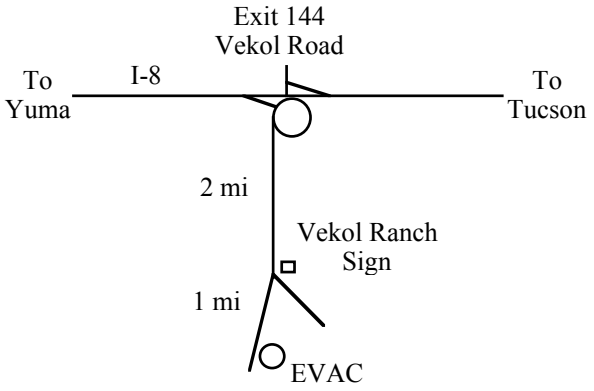
How to get there: Drive East on US 60 past Florence Junction for both sites. About 3.7 miles East of Florence Junction (after crossing railroad tracks) you will see a (second) flagpole on your right. Turning right (South) here and following the dirt road for 0.6 miles you will reach the FJ #1 site (marked by an old corral on your left). Continuing past the flagpole turn-off on US 60 and over Gonzales Pass will bring you to the Boyce Thompson Arboretum just before you enter the town of Superior. The Arboretum is marked with a large brown and white State Park Sign and there is a right turn lane.

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 90 minutes 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 small road (now paved) 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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East Valley Astronomy Club
EVAC Homepage: http://www.eastvalleyastronomy.org/
Membership & Subscriptions: $20 per year, renewed in December. Reduced rates to *Sky & Telescope* and *Astronomy* available. Contact Stanley Bronstein. PO Box 2202 Mesa AZ 85214-2202.
Address Changes: Contact Stanley Bronstein. PO Box 2202 Mesa AZ 85214-2202
Club Meetings: Second Wednesday of every month at the Scottsdale Community College, 7:30 p.m. Meet in **either** Room PS 172 (Physical Science Bldg.) or SC 164 (Student Center Bldg.). See maps and meeting schedule on page 10. of this newsletter. **•• SAVE PAGE 6 ••**
Newsletter: Email John Matthews at: john-cathy@cox.net The newsletter is mailed out the week before the monthly Club meeting. An electronic version is available in Adobe PDF format in lieu of the printed copy. Please send your contributions to John Matthews at: john-cathy@cox.net Contributions may be edited.
EVAC Library: The library contains a good assortment of books, downloaded imagery, and helpful guides. Contact Gary Finnie a: 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 you would like the "Club Discount." When ordering by mail, there is a line to subtract the club 10%.
EVAC Star Party Line: Let other members know in advance if you plan to attend a scheduled observing session. Contact Events Coordinator Howard Israel at (480 893 7523).

East Valley Astronomy Club

EVAC
PO Box 2202
Mesa, AZ 85214

EVAC Homepage:
www.eastvalleyastronomy.org

Reminder: July EVAC Meeting
Wednesday, July 9, 2003
Location: Room PS - 172 @ 7:30PM

August EVAC Meeting
Wednesday, Aug. 13, 2003
Location: Room SC – 164
Student Center, (SCC) @ 7:30PM