



# Sacnews

Volume 25 Issue 2

February 2001

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## A Second "New" Telescope

By A.J. Crayon

After 20 years of fun with my 8-inch telescope and a plethora of memorable sessions I began thinking of a modern Dobsonian telescope around October of 1999. Eventually I settled on a 14 1/2 inch TeleKit by Astro Systems in Colorado. The scope was ordered in January 2000; but only after enlisting the assistance of Bill Anderson, Steve Coe, David Fredericksen and Pat - my wife. It was scheduled for delivery about June 1st. Along with the TeleKit, Sky Commander digital setting circles and an Equatorial Platform were also ordered. The mirror was purchased from Pierre Schwaar and Astro Systems agreed to make the scope fit the mirrors 75.8 inches of focal length.

As described by Ken Reeves, another TeleKit owner, the scope comes in kit form and you put it together yourself. This saves about 20% the cost of a modern Dobsonian telescope. Although Bill and myself did most of the work, we could only schedule working on non-telescoping Saturday's, unless, of course, the weather inhibited such activities.

The complete kit finally arrived in

August, came well packed in about four boxes, the largest being about two feet on a side, plus a long one containing the trusses and handles. Included was an excellent assembly manual with many nice tips about telescopes, observing, a long list of references not to mention the excellent description and photos of the entire assembly process from beginning to end.

The design of the telescope is well thought out and goes together rather intuitively. My personal favorites are the 20% savings, finger jointed Mirror Box and Rocker Box, the filter switch and mirror fan. The filter switch holds five filters in a slide under the focuser and by turning a knob you can look through the filter of your choice; no need to remove eye piece, thread filter and reinsert eyepiece or blink, running the risk of dropping the eyepiece.

Other nice features are large diameter altitude bearings, 9-point flotation mirror cell and the Upper Cage storing in the Mirror Box. The best feature is the transport handles; if it weren't for them I

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would not be able to handle a telescope of this size. Astro Systems owner, Randy Cunningham, was always available to discuss assembly techniques, answer questions or just talk shop.

For starters there was a lot of sanding, sanding and more sanding; followed by epoxying the Mirror Box, Rocker Box and Upper Cage and final sanding. This took about one half the assembly time. The Baltic Birch plywood was finished with four coats, including a pine stain and two coats of varnish. Time wise this took about another one quarter of the time. The remainder of the time was just plain old assembling everything.

Building your own telescope has a number of advantages, even if it is a TeleKit. Amongst the advantages are personal satisfaction, the confidence that if something breaks, needs main-

tenance or modifications or additional accessories, you can do it yourself!

The biggest problem constructing the telescope was actually a delay of one month trying to get the correct size mirror sling. After which the scope was completed in a short time and first light occurred December 2, 2000 in Bill's back yard. Collimation was easy and quick, aided by the laser collimator. The telescope didn't even need any extra weights for balance. During the month of December the Sky Commander was calibrated and brand new modern Panoptic and Meade Ultra-wide eyepieces were purchased.

Absent moistons, I'm looking forward to taking this new scope to many star parties, especially SAC star parties. If you get chance, please drop by and take a view through what Pierre called, one of his better 14 1/2 inch mirrors.



*A proud A.J Crayon Poses with His latest toy, an Astro Systems, TeleKit, with a 14 1/2 inch Schwaar mirror.*

## 2001 ALL ARIZONA MESSIER MARATHON

**Site: Arizona City, AZ**

**Date: March 24/25, 2001**

Solar Data:

March 24 6:33pm Moonset

6:43pm Sun set

8:04pm astronomical twilight

March 25, 5:02am astronomical twilight

6:21am Sun rise

7:04am Moonrise

We don't have much choice for the Marathon this year, but oh what a choice! The only date possible is Saturday, March 24, 2001. New moon occurs on this date around 6:25pm MST! The optimal chance for finding ALL 110 entries in the Messier Catalogue is late March, about the 26th through the 29th. So we are within 2 days of the best chance for viewing the entire catalogue.

Worried about not being able to reach high counts? DON'T! Set your own goals; don't bother with trying to reach high counts or competing with everyone else. You decided on what YOU expect, what you want to do and try to reach the goal. And the heck with everybody else! For instance, try 50 objects. If you find them it qualifies you for a certificate. If that's too easy for you then "kick it up a notch or two" and try for 55, 60 or even 70 objects. Counts like these don't require you to be up the entire night; you can crash once your goal is reached. Then you will have enjoyed the true meaning of the Messier Marathon!

How do we keep track of who sees what? We don't, you do. The honor system is used so if you see the object, mark it and go on to the next. There are no referees for this exercise.

There will be a check off list available at the site to record your observations. Be sure to pick one up, preferably before you start marathoning and fill in the top portion so awards can be made. It is important to remember that

you must turn in your form to one of the Coordinators before leaving the site or by Sunrise. We cannot accept any after these times.

The Messier Marathon rules leave the choice of how to locate each object up to the observer. Methods include star hop, setting circles or computer control. But you MUST check off each object viewed.

Although it is possible to do the marathon with a 4" telescope we can't really suggest this unless you are an experienced observer. Don't forget to check off each object as it is observed.

Plan on arriving at the site early enough to set up the telescope and allow it to reach thermal equilibrium. Be sure to fill out the heading of the attached form!

There are 6 objects within 15 degrees of the western horizon at evening twilight. They are; M 74, 7 deg; And 11 deg - all three!; M 77, 12 deg; M 33, 14 deg.

There are only 2 objects within 15 degrees of the eastern horizon at morning twilight. They are: M 30, 1 deg - always the toughest; M103, 9 deg

Your efforts will not go unnoticed, as there will be awards in recognition of effort. People observing 50 or more objects will receive an 8

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## Fuzzy Spot, Orion Part 2

### By Ken Reeves

Last month we covered many objects in Orion, but there was an obvious omission, the Great Orion Nebula, which is the topic of this month's column. Also known as M-42 and NGC 1976, this object is probably the most observed deep sky object, at least in the northern hemisphere (the Pleiades and the Andromeda Galaxy are the only other objects that are in competition), and was the first object I pointed my 10" scope at when I received it.

One of the problems with such a phenomenal and detailed object is knowing where to start, what to write down, and how not to be overwhelmed. Here are a few suggestions on how to tackle this object, which I have found useful:

- 1) Observe it often and always take a few notes even if it's just a sentence or a real quick sketch.
- 2) Observe it in different conditions. Sometimes a view from the city may show some detail that is overwhelmed when viewed from a dark site.
- 3) Observe with different equipment. Pay attention to what you see naked eye, in binoculars, in different telescopes, and at different magnifications. Don't be afraid to ask someone at a star party if you can observe this object through their telescope (or any object for that matter) and take some notes. Most people will gladly oblige, although they may ask you to wait till they get to a good breaking point.
- 4) Plan on spending an evening out just observing this object. I have done this a couple of times and it has been quite rewarding.
- 5) Focus on a particular portion of the object. Perhaps you noticed a particular wisp or dark spot, which you never noticed before.

Before I get into my observations, there are a few names to portions of the nebula, which should be defined.

1. The Trapezium is the central 4 bright stars, which are responsible for illuminating the entire nebula. Good optics, good seeing, and good eyes may show 6 or more stars.
2. The Fish mouth is the dark lane pointing to the Trapezium, entering the nebula from the north. I'm not sure where this name came from, as I've never seen anything that looks like a fishes mouth.
3. The Bat Wings or Wings are the portions of the nebula that flare away from the Trapezium to the east and west.
4. The Huygenian Region is the brightest central portion of the nebula around the Trapezium and is roughly square shaped.

**Naked Eye:** There appears to be three stars in a row, which are the sword of Orion. Upon careful observation, the central star is obviously fuzzy, especially in dark skies.

**10x50 Binoculars:** The nebulosity is obvious, but I can't split the trapezium. However the two stars to the E of the trapezium are split. N of the trapezium, I can see the fish mouth dark area, the nebulosity at M-43, and suspect nebulosity at 1973/1977 area. To the S, the nebula fans out strongly. The E wing separates into two portions, the W wing blends in with the nebula. The SW portion extends much further than the SE. The Huygenian Region, which is so obviously brighter in telescopes, is only slightly brighter in binoculars. The nice haze texture is seen as slightly bluish. The S star of sword is the brightest; the cluster to the N (NGC 1981) is obvious as a grouping of 10 stars.

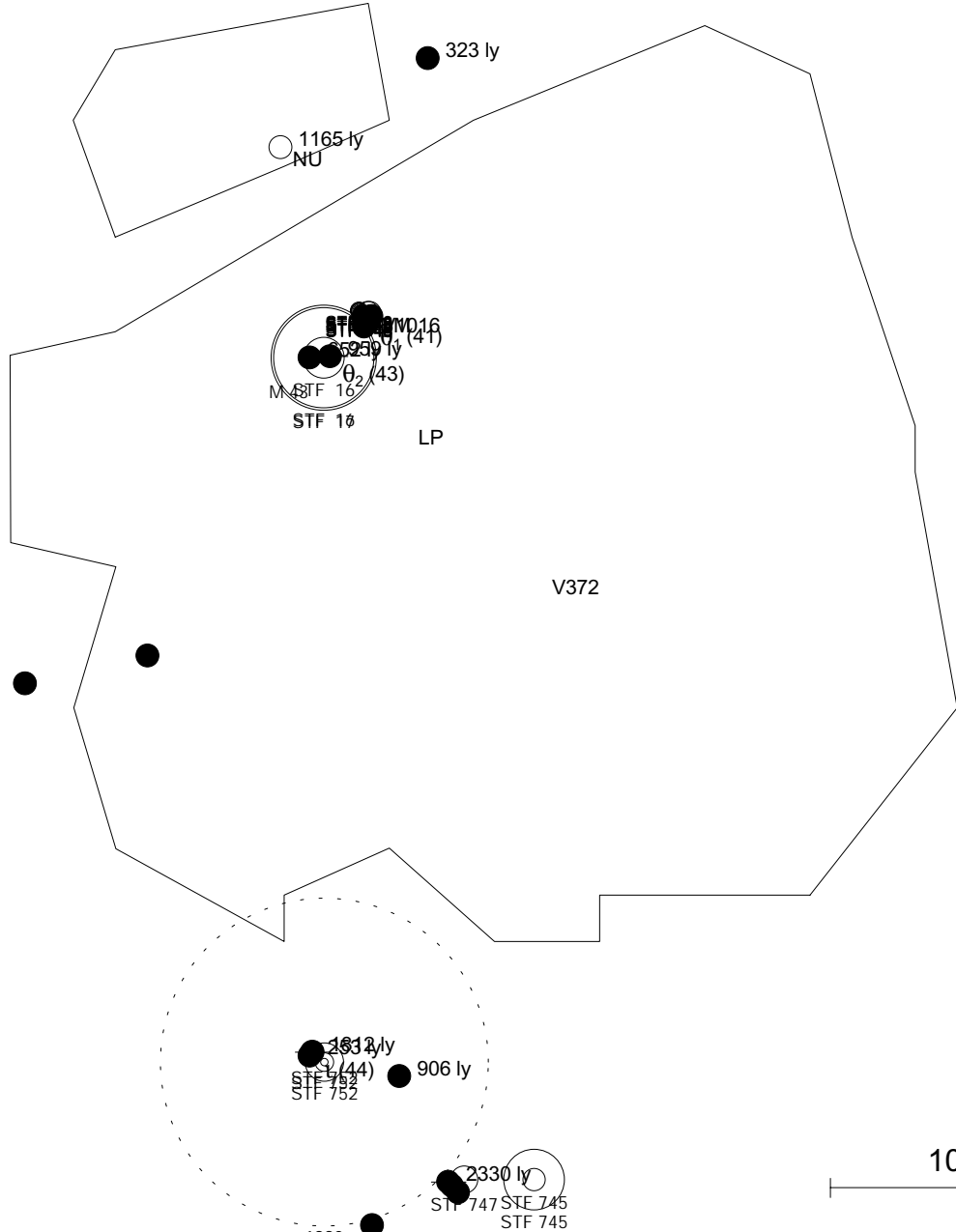
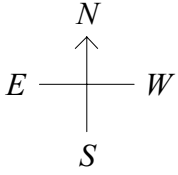
**10" F4.5, 30X:** Nebulosity abounds! M-42 is the most obvious part, M-43 is not all that obvious, NGC 1977 complex is quite obvious, and NGC 1980 around Iota is quite obvious. At this power, the trapezium is barely split. There is a definite green/blue tint to M-42. The contrast at the fish mouth is quite obvious. The E wing is the poorer and splits into two. The nebula slowly fades on the SE end. The W wing is much brighter and larger. It also slowly fades to the N. At 80X, only M-42 and M-43 are in the field. The trapezium is obviously 4 stars. Although the fish mouth is darker than the rest of the area, it has some nebulosity in it. The Huygenian Region is quite bright with many wisps, creating a smoky appearance. There is a particularly dark area on the SE corner of the Huygenian Region. The E wing curves S sharper than the W wing and the darker edge is more pronounced. As you get into the darker S area, streamers seem to radiate away from the trapezium. The comma shape of M-43 is obvious. Finally, at 240X, the field is very tight. I was hoping to see more stars in the trapezium, but I was still only able to see 4. The Huygenian Region fills the full field and is mottled beyond belief! Just into the fish mouth below the trapezium is a glowing stream cutting across. The field moves so rapidly and the scope is unstable enough that viewing at this power is difficult.

**20" F5, 60X:** At this power, the entire nebula just fits in the field of view. Perhaps the most noticeable difference from the 10" scope is some additional nebulosity on the S end. The dark spot on the SE edge of the Huygenian Region is very prominent. The fish mouth is

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# Fuzzy Spot Orion, Part 2

Orion



STARS	SYMBOLS	
● <8	● Multiple star	⊞ Dark nebula
○ >8	○ Variable star	⊕ Globular cluster
☄	☄ Comet	⊙ Open cluster
⊖	⊖ Galaxy	⊕ Planetary nebula
□	□ Bright nebula	⊗ Quasar
		△ Radio source
		× X-ray source
		○ Other object

Local Time: 13:54:24 9-Jan-2001

UTC: 20:54:24 9-Jan-2001

Sidereal Time: 20:40:56

Location: 33° 39' 56" N 112° 49' 10" W RA: 5h35m12s Dec: -5° 32' Field: 1.0°

Julian Day: 2451919.3711

# Seeing Double

By Thad Robosson

## "Resolutions"

OK, so my "resolutions" column is a month late, (and no, procrastination is not on my list...sorry Rick.) but nonetheless, here it is.

**Resolution #1...**I'm always second-guessing my previous observations, so to correct this, I'm adopting a method used by St. Louis observer Richard Harshaw. The beauty is in its simplicity: a 1 through 5 scale used to judge *your* perception of an object. In my case, the scale is like this...

1. A wonderful, must see every time out object, rich, large, or quite colorful. I will sometimes give a "1" to quite difficult, but rewarding objects, such as close pairs of doubles.
2. A rewarding object, but maybe a tiny bit of a let down after a long star hop. Possibly a challenge, but with a bit less payoff.
3. Your typical run of the mill object. Worth looking for, but possibly faint, or colorless. Maybe a challenging object that gave just a touch of payoff, but might be worth looking for under better conditions.
4. A very bland object, and barely worth any star hop short of it being next to a brighter star. Maybe a challenging object that wasn't really worth the effort.
5. A non-existent object in the eyepiece. In any case, not seen, resolved, or split.

Your scale doesn't have to match mine, your "1" may represent something different to you, so feel free to tweak this. The goal is for you to know what you thought of the object months and years

later. I will be including scale ratings in future observations.

**Resolution #2...**I will be actually measuring some doubles here this year. I've got some ATM issues to resolve on the way to this goal, but at some point, faithful readers will be seeing some of my results in this column. Ultimately, the goal is to be able to contribute measures reliable enough to be published.

**Resolution #3...** I want to test the limits of my eyesight and 'scope, so during the next year, I will be participating in the "33 Doubles Nutcracker I". This list is designed to test the limits. Here is some samples, let me know how you fare with these!!

I would love to hear from you if you have some

NAME	CON	RA	DEC	MAGS	SEP	PA
14 Ori	Ori	5h 07.9m	+08 29.9'	5.9/6.7	.7"	343*
32 Ori	Ori	5h 30.8m	+05 56.9'	4.5/5.7	1.1"	047*
Struve 1426	Leo	10h 20.5m	+06 25.8'	7.9/8.3	1.0"	305*
Struve 2203	Her	17h 41.2m	+41 39.3'	7.6/7.9	.7"	297*
O. Struve 338	Her	17h 51.9m	+15 19.5'	6.8/7.1	.8"	350*
O. Struve 359	Her	18h 35.5m	+23 36.4'	6.3/6.5	.7"	006*
O. Struve 410	Cyg	20h 39.5m	+40 36.2'	6.7/6.9	.8"	005*
Lambda Cyg	Cyg	20h 47.5m	+36 29.5'	5.0/6.5	.7"	028*

observations to contribute. You can reach me at [trob@primenet.com](mailto:trob@primenet.com)

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much darker in the middle with some nebulosity all around it. M-43 and M-42 are connected by faint nebulosity. The trapezium is easily split 4 ways and of course, many more stars are visible. There appears to be a dark "hole" around the trapezium. At 180X, the detail is amazing. Panning around shows stream and puffs of smoke all over the place. The trapezium shows an

obvious 5 and sometimes 6 stars. The "hole" around the trapezium is much more filled in with lots of streamers and filaments. The entire Huygenian Region is just full of blue/gray streams with many dark areas. Much nebulosity continues NE away from M-42 and M-43 leaving a dark void for the fish mouth. The wing to the E has much detail at the edges passing between 2 stars. This arm reminds me much of the Veil Nebula.

# February 2001

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

## *Schedule of Events for February 2001*

<b>Feb. 1st</b>	Moon at First Quarter, 0702 mst
<b>Feb. 8th</b>	Full Moon at 0012 mst
<b>Feb. 9th</b>	<b>SAC General Meeting at Grand Canyon University, 1930</b>
<b>Feb. 14th</b>	Moon at 3rd Quarter 2023 mst
<b>Feb. 15th</b>	Deep Sky Subgroup Meeting at the McGraths, Direction on page 10
<b>Feb. 20th</b>	<b>SAC Star party at Flat Iron Mountain. Sunset 1818, Ast Twilight ends 1941, Moon-rise 0431</b>
<b>Feb. 21st</b>	Venus at greatest Brilliancy, Magnitude -4.6
<b>Feb. 23rd</b>	New Moon at 0121

## Future Planning

<b>March 24-25</b>	<b>2001 All Arizona Messier Marathon</b>
<b>April 21-22</b>	<b>2001 Sentinel Schwaar Star Gaze</b>
<b>May 25-28</b>	<b>Riverside Telescope Makers Conference</b>
<b>June 16-25</b>	<b>Grand Canyon Star Party</b>

## Reflections: Christmas, an Eclipse and a Bicycle By Rick Tejera

The last eclipse of the millennium presented me with an opportunity to share some astronomy quality time with my daughter. When you're working with a five-year-old, though you need to start early. With this in mind, I mentioned the eclipse to Lindsay when the January issue of Astronomy came. I showed her the eclipse glasses and explained what would happen. I told her we could make an "Eclipse Box" to look at it and this got her excited. So far so good. We made a pinhole camera and tested it out. She thought this was cool. Next step in my master plan was to make a solar filter for the ETX I've had custody of. Thad Robosson had gotten some solar film and let me have some. Thad had mounted his using a cardboard frame, and it expanded a bit with a change in humidity and ruined the film. Seems he didn't read the instructions (again). They reminded you to live with a few wrinkles rather than risk stretching the material. I mounted mine between two pieces of corrugated plastic and this worked fine.

As the holiday approached I realized that the timing of the eclipse was going to present some logistical problems. My plan was to get Lindsay a few presents and then head out to

see the eclipse before the rest of the family arrived. Easier said than done. I was up about 0800 to get things ready outside. Lindsay woke up and found the Little Mermaid Bicycle she had asked Santa for. Needless to say this immediately occupied her attention. Using this as an opportunity I told her we could take it for test ride outside and see the eclipse start. I spent the next two hours between helping Lindsay ride her new bike, sneaking glances at the eclipse and getting the house ready for company.

I first noticed a bite out of the sun about 0839 at PA 350 naked eye (using the eclipse glasses). I even suspected a few sunspots here and there. Most likely was on the SW limb. By 0910 I had noticed the largest part of the eclipse (I was inside during max eclipse) about 20% at PA 290. Through this all, Lindsay thought the best view was in the eclipse box, although also she enjoyed using the eclipse glasses. The nice thing was I think she understood what was happening. The Telescope was a bit of a disappointment, in that I really didn't have time to set it up properly, so I had trouble tracking. I had forgotten to make a filter

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1/2 x 11 certificate. For first, second and third place there will be plaques suitable for mounting on a telescope. Duplicate awards will be made for ties.

We need your clubs support to help purchase the awards for its members.

Still not interested in the marathon? Come anyway; enjoy a night of observing, astrophotography or just plain old socializing.

AJ Crayon, e-mail - [acrayon@primenet.com](mailto:acrayon@primenet.com)  
Jack Jones, e-mail - [spicastar@mindspring.com](mailto:spicastar@mindspring.com)  
Messier Marathon Coordinators  
Saguaro Astronomy Club

## Presidents Message

By Jack Jones

Our first Millennium of Astronomy was a great era of discovery, and though there were many, many earth-shaking events along the way, our present concept of the Universe and its wondrous contents has been accepted. Dire forecasts notwithstanding, the first Millennium ended quite peaceably. The new Millennium may have come in with a whimper, but you can bet the fireworks will be soon to follow. Are we all ready for another thousand years of Astronomy?

A mild winter portends a hot summer, so let's plan a lot of high-country observing events this year! So many events were rained out last year; this is the year we'll get back to doing the things we enjoy so much. We'll have a memorable Messier Marathon, an amazing All-Arizona Star Party, a gorgeous Grand Canyon Star Party, some fantastic field trips, and a happy Inter-club picnic. I sincerely hope you are getting all you can out of this club. I need you to keep supplying me



with those all-important inputs that tell me what it is that is particularly interesting to you astronomically.

The best way to get the most out of the club is to attend a board meeting and state what it is that really lights your cookies. Why should we spend our time and money doing something that you are not really that interested in or you've done one time too many? Guide us in the right direction and make it to your advantage. Thinking outside the box is encouraged, and you may be the catalyst for a unique and memorable astronomical experience. We all are on the lookout for something new and different. We will be holding our board meetings on the odd months, an hour before the general meetings. As I said before, please come, one and all and put in your two cents. Tell us what you want us to do with you this year!

Jack Jones

## Such A Deal

### FOR SALE

Perfect for astrophotography beginner or veteran as well as doing normal photography:

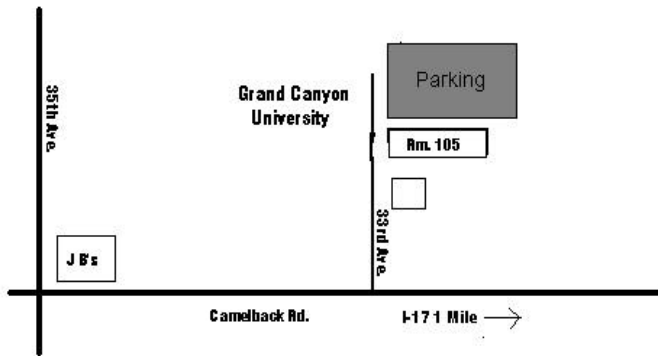
Konica TC (small body, light weight) 35mm Autoreflex camera w/matched 50mm f17 lens, Vivitar close focus auto zoom 35-105mm lens, Vivitar close focus auto zoom 100-300 mm lens, cable release, adaptor rings (for telescope), eyecup attachment, complete instructions, Marsand case, all in excellent like new condition. Would consider as partial trade for Meade Series 4000 Ultra Wide Angle 14 mm and/or Super Wide Angle 40 mm eyepiece. Otherwise \$ 575 obo.

Chuck Crawford 480-985-8824 or [astroc@mindspring.com](mailto:astroc@mindspring.com)

# SAC Meeting and Observing Sites

## General Meetings

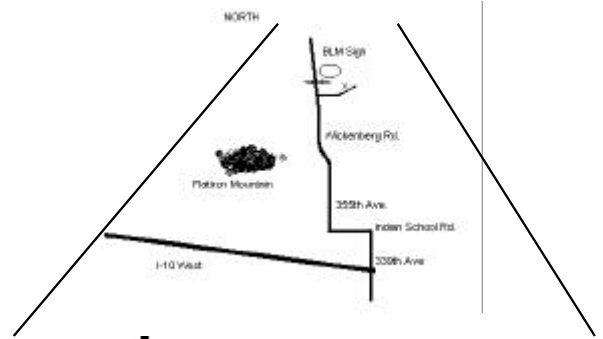
7:30 p.m. at Grand Canyon University, Fleming Building, Room 105: 1 mile west of I-17 on Camelback Rd., North on 33rd Ave., Second building on the right. Note: The I-17 exit at Camelback Will be Closed through October due to construction. Use either Indian School or Bethany Home Rd. Exits.



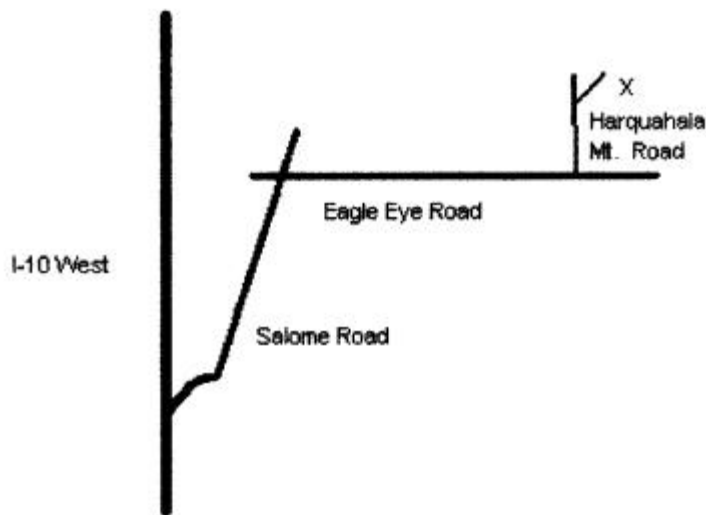
## Deep Sky Group Meetings

Meets at John & Tom McGrath's house: 11239 N 75th St., Scottsdale, 480-998-4661 Scottsdale Rd north, Cholla St. east to 75th St., Southeast Corner.

## Flatiron Star Parties



## Eagle Eye Star Parties



## SAC Membership Services Membership

Memberships are for the following calendar year and are pro-rated for new memberships as follows:  
Jan.-Mar. 100%, Apr.-Jun. 75%; Jul.-Sep. 50%, Oct.- Dec, 25%

\$ 28.00	Individual Membership
\$ 42.00	Family Membership (one newsletter)
\$100.00	Business Membership (includes advertising)
\$ 14.00	Newsletter only
\$ 4.00	Nametag for Members

### Subscription Services

The following magazines are available to members. Subscribe or renew by paying the club treasurer. You will receive the discounted club rate only by allowing the club treasurer to renew your subscription.

\$ 30.00/yr	Sky & Telescope
\$ 29.00/yr	Astronomy

#### Please Print

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Make Checks Payable to SAC

Mail Completed form to:

**Peggy Kain**  
SAC Treasurer  
P.O. Box 30424  
Phoenix AZ 85046-0424

*(Continued from page 8)*

to cover the finder, so the hard part was actually locating the sun without blinding myself. Given my penchant for eyesight, I kind of gave up after a half hearted effort.

Even though I had to compete with a new bicycle and family and other presents, my best present was sitting out on the patio, holding some silly glasses to our faces and going "Ooh" as the moon took a little nibble out of the Sun. With a little luck, I hope Lindsay will

develop an interest in astronomy so I can spend some more quality time like this with her. Now on to phase two, building our own telescope! She was very receptive to the idea and wanted to play with the mirror blanks to the point where I had to hide them! I doubt she has any clue as to what's involved, but hopefully she'll find the task an enjoyable way to spend some time with dad. Plant the seed and watch it grow.

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*Videmus Stellae*

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## SAC Schedule of Events

### SAC Meetings

January 12, 2001	July 6, 2001
Feb 9, 2001	August 3, 2001
March 9, 2001	September 28, 2001
April 6, 2001	October 26, 2001
May 4, 2001	November 30, 2001
Jun 8, 2001	December :TBA (Holiday Party)

### Deep Sky Group Meetings

February 15, 2001	August 9, 2001
April 12, 2001	November 11, 2001
June 14, 2000	

### SAC Star Parties

Date	Sunset	Astronomical Twilight Ends	Moonrise
1/20	1751	1918	0525
2/17	1818	1941	0431
3/17	1841	2004	0258
4/14	1902	2029	0139
5/19	1928	2106	0410
6/16	1944	2127	0239
7/14	1943	2123	0109
8/11	1922	2053	2341
9/15	1837	2001	0513
10/13	1800	1933	0401
11/10	1731	1857	0254
12/8	1723	1852	0151