Desert Skies

Tucson Amateur Astronomy Association

Volume XLII, Number 7 July, 1996

Calendar of Events

BEGINNERS LECTURE- Friday, July 5, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is Imagine That ! by Terri Lappin. All are welcome!

GENERAL MEETING - Friday, July 5 , 7:30 pm at the Steward Observatory Auditorium -room N210. Topic is The Destruction of the Sagittarius Dwarf, and the Halo of the Milky Way by Dr. Edward Olszewski.

YOUNG ASTRONOMERS CLUB - No club meetings planned for the Summer.
BOARD OF DIRECTOR'S MEETING - Thursday, July 11, 7:00 pm at the Conference Room at Flandrau Science Center.

STAR PARTIES & EVENTS:
July 13: Empire Ranch Dark Sky Observing
July 20: Arivaca Library Star Party

Newsletter Schedule: Deadline for articles: Monday, July 15. Printing: Monday, July 22. Folding Party: Tuesday, July 23,. Mailing: Wednesday, July 24. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: Views from the Grand Canyon Star Party. Clockwise from upper left, Sarah Witt and sister Leah from La Crosse, Wisconsin enjoying the canyon thru Dean's binoculars. Keith and Sandy Kum and Dean and Vickie Ketelsen toast the former's wedding & the later's anniversary. Mike Spooner of Page, AZ and his superb home-made 9" refractor. Bob Goff and his new friends from India. John Dobson shows off his lariat skills at the rim.

TAAA Home Page: http://www.primenet.com/~lwilson/taaa/taaa.html

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Membership in the TAAA
Individual $25.00/year
Family $30.00/year
Senior Citizen (over 60) $23.00/year

Sky & Telescope subscription (optional) $27.00 Rates for membership in the TAAA are given above. Members may subscribe to Sky & Telescope at the time membership renewal, saving more than 25% off the cost of a regular subscription. The subscription term must match your membership period.

Send one check, made payable to Tucson Amateur Astronomy Association, to cover both membership and subscription to:
TAAA
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Tucson, AZ 85717

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4 Easy Steps to Membership Renewal
1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label.
2. If you want Sky & Telescope:
   a) add $27 to your membership rate
   b) include Sky & Telescope's renewal notice, if possible.
3. Write one check, payable to TAAA
4. Send it to: TAAA
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   Tucson, AZ 85717

Call the Treasurer if you have any problems

Desert Skies Publishing Guidelines
All articles, announcements, news, etc. must be submitted by the newsletter deadline listed above. Materials received after that date will appear in the next issue. All submissions are retained by the editor unless prior arrangements are made. Partial page article submissions should be submitted on Wordperfect compatible files on a floppy. Full page articles, artwork, and photos should be camera ready. We will not publish slanderous or libelous material! Send articles, announcements, etc. to:

TAAA - Desert Skies
PO Box 91316
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OR email: ninalehman@aol.com or nlwagner@aol.com

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President's Message

The new Board of Directors met for the first time last month. We spent the major part of the meeting discussing what the TAAA should do in the next year. I think we all feel this is the year for change and growth. One thought on most of our minds is public star parties. We will be scheduling some local public events, especially with Comet Hale-Bopp on its way. Also discussed was our search for land and we talked about the situation with our telescope making equipment. With the help and support of our members, we will be doing something about these projects and more. If you are interested in participating or you think we should be doing something not mentioned, let us know. Either attend a board meeting or talk to any board member. It's the Member's at Large responsibility to bring your ideas to the board meetings.

Also discussed at the directors meeting was Project ASTRO. I was recently in contact with Kitt Peak's Outreach Coordinator about this project and her plans are to bring it to Tucson. I originally heard about Project ASTRO at the Riverside Telescope Makers Conference a couple years ago. This is a project, funded by the National Science Foundation, which teams amateur and professional astronomers with teachers. It would fit in very well with what we are already doing with local schools. I have written a short article in this newsletter about this program. If you are interested please let me know.

Please help your board of directors make this year a lot of fun! Attend a board of directors meeting and help us plan this years activities.

Clear skies,Terri *

Meeting News

Beginner's Lecture:

IMAGINE THAT !

Over the past 20 years of observing, I have learned that the amateur astronomer must have a pretty good imagination. For example, does Lyra look like a harp to you? Use your imagination! Actually, it looks like a goldfish to me. In addition to making patterns out of the stars, there are numerous imaginary lines in the sky. For example, there is the ecliptic and the lines of right ascension and declination. The typical beginning amateur may think that understanding imaginary lines is the key to finding objects with their telescope. Like the goldfish example, each person must find their own "landmarks" in the sky before they will really start to learn the sky. At this month's lecture I will explain something about these imaginary lines and tell you which ones are important and useful to you. I will then present a few tips about how to learn new parts of the sky and how to find those hidden treasures with a telescope. These techniques work for me and should be helpful to you. Fair warning...I don't use setting circles...only star hopping ! *

July's Speaker: Dr. Edward Olszewski

THE DESTRUCTION OF THE SAGITTARIUS DWARF, AND THE HALO OF THE MILKY WAY

Ed grew up in Windsor, Connecticut and traces his interests in astronomy back to grade school. He recalls one of the Pleiades occultations from the '60s, the annual Perseid observing, and a view of Saturn through the Van Vleck Refractor at Wesleyan. He and his buddies observed with Criterion 6" and 8" scopes through high school, and he owned a 6" till 15 years ago when he rationalized he had easy access to 24" class scopes for his casual observing.

After receiving his Physics BS from Rensselaer Polytechnic Institute in '74, he studied astronomy at the University of Washington, being awarded his PhD in '82. He was a postdoc at Dominion Astrophysical Observatory for 18 months, then at Arizona, working with the late Marc Aaronson. He became a "research astronomer" at Steward in '86 and is currently an Associate Astronomer. Ed is married to Jill Bechtold, who is a tenured faculty member at Steward.

Ed first used the big scopes on Kitt Peak and Cerro Tololo to take plates to make color magnitude diagrams of nearby galaxies. After paying his dues as a grad student, CCDs came along, removing much of the tedium from the work he does.

The Sagittarius Dwarf galaxy was recently discovered during studies of the rotation of the galactic bulge. It was soon realized that this closest external system to the Milky Way is being tidally destroyed by our galaxy. Ed will discuss the discovery and properties of the Sagittarius Dwarf, how it fits into the population of the local group of galaxies and how it relates to the formation and stellar population of the galactic halo. *

Club News

Project ASTRO

The Astronomical Society of the Pacific has developed a program called Project ASTRO which pairs amateur and professional astronomers with teachers with the goal of improving science education in the classroom. The ASP conducted a successful pilot program in California and have now received a 3 year grant from the National Science Foundation to replicate this program in several cities throughout the United States. Suzanne Jacoby, Kitt Peak's Education Outreach Coordinator is interested in implementing the program in Tucson, but she needs our support.

As part of Project ASTRO, the TAAA would contribute by bringing telescopes to school star parties. This is something we already do very successfully thanks to Karen Allen and our faithful star party participants. Through workshops Project ASTRO helps teachers develop astronomy programs for their classroom. This would help the TAAA tremendously. While we handle the star parties quite well, we are severely hampered when it comes to helping educators with classroom projects. Usually the request is for a speaker or demonstration. There is a real lack of astronomical knowledge in teacher training and many teachers are reluctant to teach astronomy themselves. Project ASTRO's goal is to educate the teacher so he or she can bring astronomy into the classroom.

The TAAA has nothing to lose in this program. We are already organizing star parties and will continue to do so

whether we join Project ASTRO or not. For some time now the TAAA has wanted to put together a resource kit for teachers to help them teach astronomy. There have also been discussions about the TAAA running a summer workshop for teachers. All these plans require a lot of work. By teaming up with other collaborators in Project ASTRO these plans can come to fruition. With the added manpower of the other organizations they will take less work on our part and will have greater success. In addition to star parties, some of our members will have the opportunity help with the workshops and to work closely with a teacher. Participation in Project ASTRO will give the TAAA recognition in the community by working closely with Kitt Peak, representatives from almost every school district, and with professional astronomers. At the same time, we will accomplish many things we want to do anyway.

Participation in the star parties will be much like we already do. The workshops will require more time (at least 4 visits with a teacher plus a few planning activities) and they may not be for everyone. Some members have a lot of free time and can put it to good use with this program. Those who work may need to take vacation time from work. To avoid this, I suggested to Suzanne that we make this a community effort by asking for employer support. Large companies (like Hughes) may see the community benefit of your participation in this program and may be willing to give you administrative leave for your time, similar to serving on jury duty. Suzanne is willing to write a letter to your employer describing the program if you think they will support your participation.

If you are interested in participating in Project Astro, let me know. The board of directors needs to hear your opinion about Project ASTRO (either in support or otherwise) before we commit the TAAA to the project.
Terri *

Best Wishes to Didier

Didier Saumon has been a member of the TAAA since he came to Tucson to take a position at the Lunar and Planetary Lab. Didier is a professional astronomer, but we know him as an amateur. He has a very good 10" telescope which he has brought to many TAAA star parties. Back in January, Didier gave the lecture about the newly discovered planetary systems. Didier's biggest contribution to the TAAA has been his work with the Desert Skies. For the past several years Didier Saumon has stood in front of a high speed copier and printed essentially ALL 350 or so copies of the Desert Skies each month. By the end of July Didier will be moving to Nashville to take a position at Vanderbilt University. He says he will miss Tucson's dark skies and will have to get used to the Tennessee not-so-dark skies. It will be a challenge to find someone to help out like Didier has. If you see Didier at the July meeting be sure to say thanks for all his work. *

Car-less in Tucson

TAAA Member Gilbert Freidman's vehicle is still in the shop for extensive repairs. He would like a ride to and from Star Parties. He lives near Wilmot and 22nd. He will help pay for gas.

How about it folks. He can be reached at: 571-1662. *

Dark Skies for July

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm,20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object,set for evening object

Su/Mo	30/ 1	Full Moon		Th/Fr	11/12	21:11 - 3:09	Su/Mo	21/22	22:56 - 3:57
Mo/Tu	1/ 2	- - -		Fr/Sa	12/13	21:10 - 3:49	Mo/Tu	22/23	23:31 - 3:58
Tu/We	2/ 3	- - -		Sa/Su	13/14	21:10 - 3:50	Tu/We	23/24	0:11 - 3:59
We/Th	3/ 4	21:14 - 21:45					We/Th	24/25	0:54 - 4:00
Th/Fr	4/ 5	21:14 - 22:28		Su/Mo	14/15	21:09 - 3:51	Th/Fr	25/26	1:43 - 4:01
Fr/Sa	5/ 6	21:13 - 23:08		Mo/Tu	15/16	21:08 - 3:52	Fr/Sa	26/27	2:38 - 4:02
Sa/Su	6/ 7	21:13 - 23:46		Tu/We	16/17	21:08 - 3:52	Sa/Su	27/28	3:40 - 4:03
				We/Th	17/18	21:07 - 3:53			
Su/Mo	7/ 8	21:13 - 0:24		Th/Fr	18/19	21:15 - 3:54	Su/Mo	28/29	- - -
Mo/Tu	8/ 9	21:12 - 1:02		Fr/Sa	19/20	21:48 - 3:55	Mo/Tu	29/30	Full Moon
Tu/We	9/10	21:12 - 1:42		Sa/Su	20/21	22:21 - 3:56	Tu/We	30/31	- - -
We/Th	10/11	21:11 - 2:25					We/Th	31/ 1	- - -

Weekend Sa/Su	Sun Set	Sun Rise	Mercury Rise	Vi	Venus Rise	Vi	Mars Rise	Vi	Jupiter Set	Vi	Saturn Rise	Vi
29/30	19:33	5:19	4:25	6	3:40	-1	3:28	4	5:45	-2	0:13	1
6/ 7	19:32	5:22	4:59	-	3:16	-3	3:20	4	5:14	-2	23:46	1
13/14	19:30	5:26	Set	-	2:57	-3	3:12	3	4:42	-2	23:19	1
20/21	19:27	5:30	20:10	7	2:43	-4	3:04	3	4:11	-2	22:51	1
27/28	19:23	5:35	20:21	6	2:32	-4	2:57	3	3:40	-2	22:24	1

Vi=Visibility
-3 brilliant
0 conspicuous
3 moderate
6 naked eye limit
9 binoculars limit

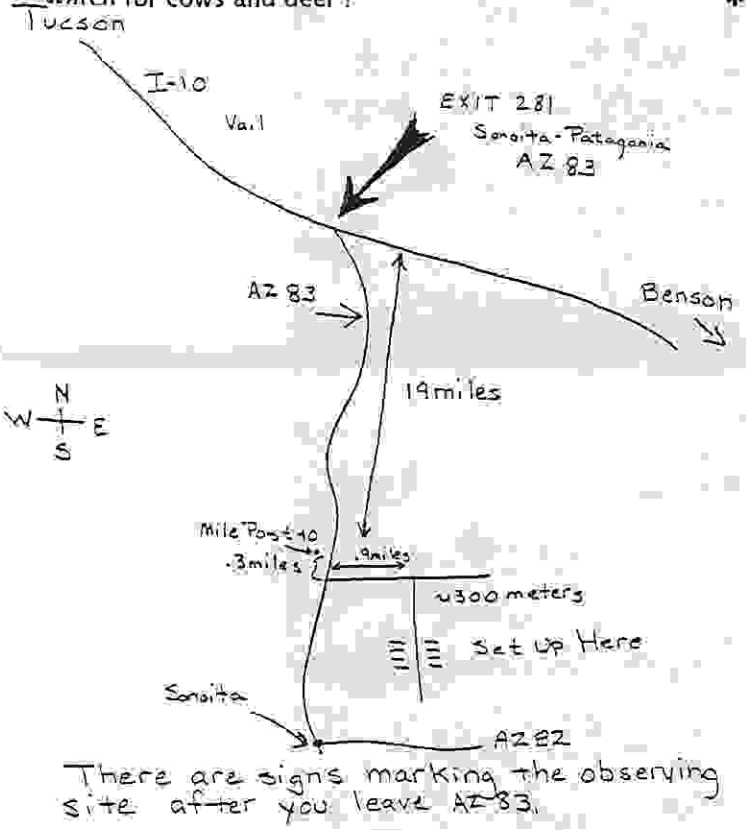
By Erich Karkoschka

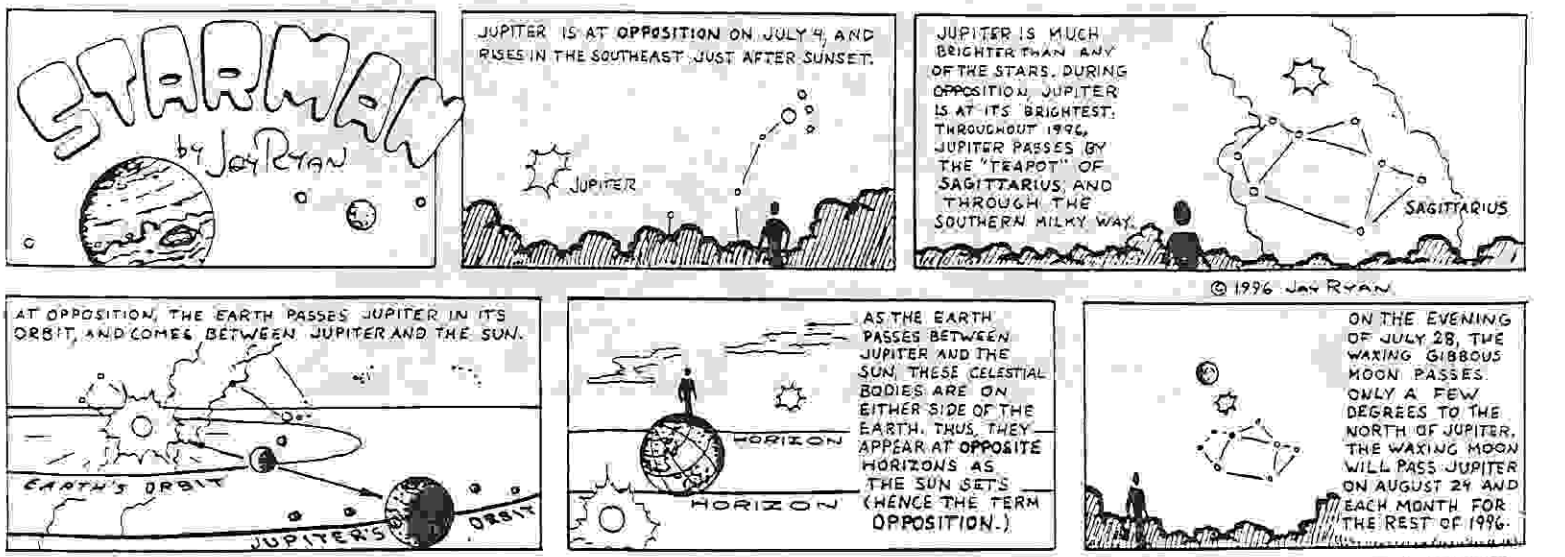
Star Parties & Events

Arivaca Library Star Party
July 20

There will be a star party at the Arivaca Library on July 20th. Last year's star party was fun and people have asked that the library have a star party this year. It's a bit of a drive, but the library people really appreciate it. There is a map in the newsletter and there will be a sign up sheet at the meeting. We would like to get at least five people and telescopes to sign up.

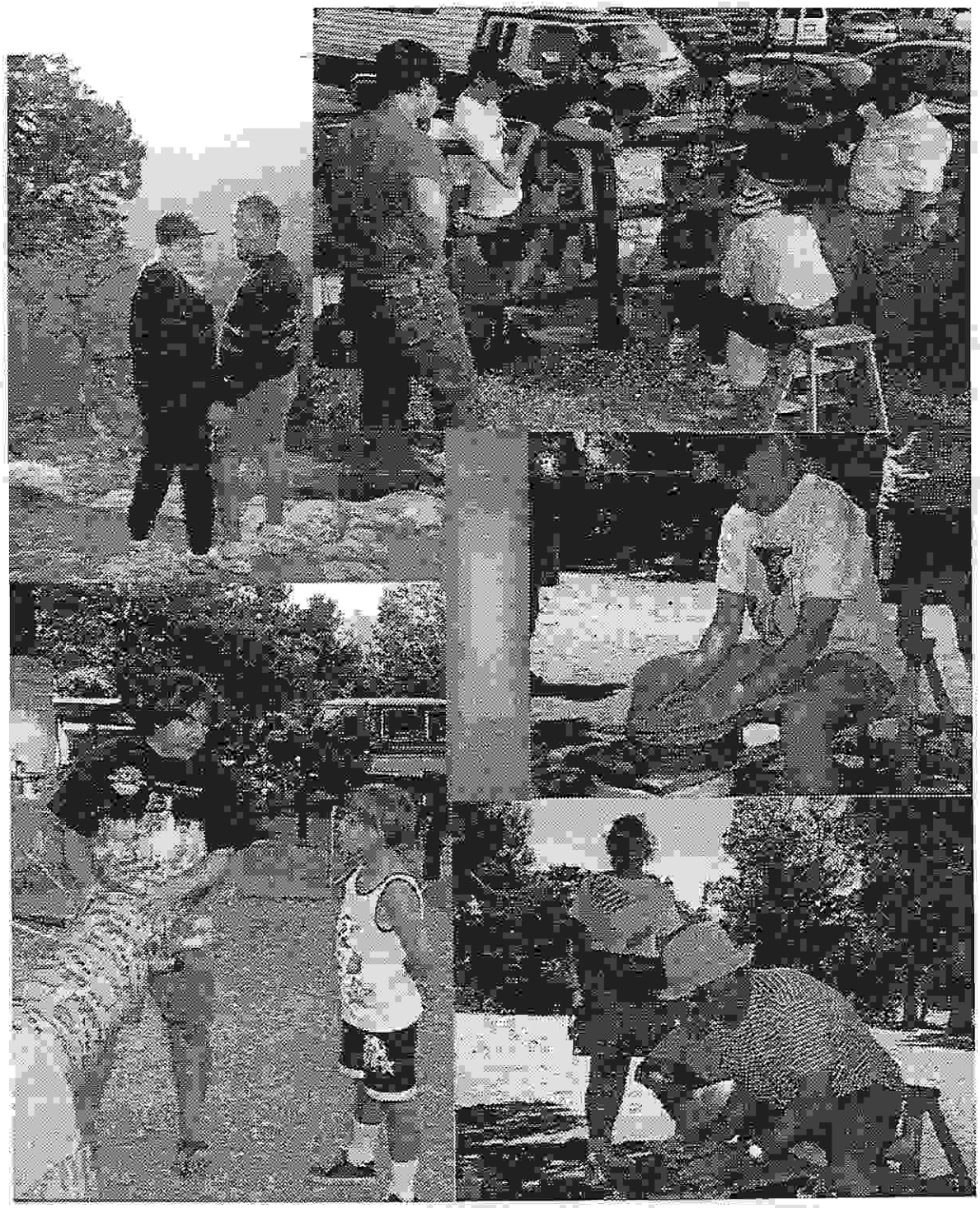
From Tucson, travel south on I-19 approximately 35 miles. Go past Green Valley to the Amado, Arivaca Road exit (Exit 48). Turn right off the freeway, right again on the Frontage Road, then left on Arivaca Road (just past the Cow Palace). Travel west on Arivaca Road for 21 miles to mile marker #2. Turn left on Universal Ranch road. The Community Center is on the right in approximately 1 mile. Watch for cows and deer! *





http://www.en.com/users/cygnus

Clockwise from upper left: Dean and Vickie Ketelsen enjoy the sunset from Yavapai Point. John Dobson draws a crowd while figuring the 10" primary (see article). Vickie Ketelsen takes a turn at grinding the lens. Hans Art hard at work with Marilyn Unrah and nephew Ryan raady to jump in. Barry gives Yavapai's operating instructions to Jake Wahler.



Grand Canyon Star Party 1996

BY DEAN KETELSEN

The star party was a great time - you should have been there! We attracted a great group of amateur astronomers from Canada to Florida, New York to San Diego. Only 12 of the 45 bringing telescopes were from Tucson (SHAME!), 8 from the Phoenix area, 5 from the San Francisco area and the rest scattered about the country. It was great seeing old buddies from previous years and meeting new ones on their first trip. We had some great crowds for the evening slide shows (over 1030 over the 8 days, by my count), though a lack of coverage in the Park's guide and elsewhere seems to have cut into the sustained crowds of late-evening observers we've enjoyed in the past.

For the astronomers, it was a little more organized than other years. Before, we had spontaneous events, but this year they were planned. We had two very nice picnics, one on Sunday the 9th at the campground, the other Saturday the 15th at our previous sponsoring ranger Chuck Wahler's house. Because of fire restrictions in forest lands this spring, charcoal fires were not allowed. But we improvised with a spaghetti feed on Sunday and a turkey on Saturday. Between those entrees and various munchies from Babbitts General Store, all were stuffed except the turkey! In addition to the mass feedings, there was a loosely planned day trip to Meteor Crater and Lowell Observatory on Wednesday. Because of my car overheating on the way north, I had to miss the crater, but got to enjoy 8 hours in Flagstaff while my radiator was reamed out. A hike up to Mars Hill and 3 hours of Lowell tours helped pass the time. The normal Lowell tour is 2 hours (highly recommended!), but staffer Melanie Melton provided some "behind the scenes" looks in exchange for some star party video (see next paragraph). Melanie uses the same office Clyde Tombaugh had when he discovered Pluto, and toured us from the old plate vault to the new library. In addition to Lowell, Vicki and I ate two meals in the Galaxy Diner - a 50's style eatery that we visited a third time on the way home on the 16th.

For the first time we received a little media coverage. Patti Kurtz is an editor from Astronomy magazine and was sent out on a scouting mission. I warned her in advance that it was not your normal star party like Texas or Riverside, but she ignored me, came out anyway and had a great time. It remains to be seen if an article will appear - keep an eye out! Patti implies that if it happens, it could easily triple the number of amateurs attending. Melanie Melton from Lowell Observatory was filming for an exhibit on amateur astronomy and brought a video crew out to film us setting up scopes, rubbing elbows with the public and making a 10" telescope (see separate story). She promises me a copy of the final product, so look for that at an upcoming meeting.

As usual, John Dobson was in his element at the South Rim. Even as he was complaining of a vague illness, he spent 2 days hiking below the rim, spreading the word among the hikers he met about the astronomy program at Yavapai point. He also supervised the construction of the telescope and single handedly figured the mirror as most of us were away on our Wednesday trip to Flagstaff. He cut a striking figure as he performed and taught rope tricks with his lariat at the campground. I wish we were all so vibrant in our 80's!

Some of our Utah buddies from previous years, Karen and Deloy Pierce to be specific, organized a North Rim version and had a small band of telescopes service what sounds like a good crowd there. We had a few evening conversations via CB radio, and also shared some crossover traffic. A few of their astronomers defected to the south side for a couple days, and some of ours did a trip up there. I am waiting for a final report from them to include here or for the next newsletter.

The weather was very good, but the clear streak that had held for 3 straight years was broken as the clouds that had evaporated every night at sunset failed to do so on Friday. It cleared late, but most of the public was disappointed early that evening. Overall there was some great observing - Jupiter and its moons put on quite a show, especially in Mike Spooner's home made 9" refractor. Comet Hale-Bopp took center stage, though, visible with the slightest optical aid. In a large telescope it was spectacular with its stellar nucleus and asymmetric coma. Recent brightness estimates put it at magnitude 6.2, and I could almost convince myself it was visible to my unaided eye.

My favorite part of the star party continues to be setting up scopes at the rim during the day to observe a slice of the world pie. You meet the most incredible people there and it never fails to amaze me how nice they all are. Those who set up met folks from all continents save Antarctica. The whole attraction for organizing a public star party here is because of them and the attitude they carry. They come to the Canyon expecting to be amazed and we add to that by showing them the sky as they have never seen before. That week in June is always special to me because of the appreciation they show us and I hope more of you will join us in the future.

My astronomer of the year award goes to: (drum roll) Margie Williams of Phoenix! There was nothing she would not volunteer to do for us, from making countless runs to the maintenance garage for telescope hardware, a trip to Flagstaff with 5 minutes notice to fetch polishing pitch when all the scope makers forgot, paid out of her own pocket to make up star party buttons for all participants to wear, watching over us like a protective mother on a long afternoon of scope making ("here, eat this"), and for making me hot chocolate on a late final night. She truly deserves the title Grand Canyon Star Party Volunteer of the Year!

Many thanks to all the volunteers - those staying 3 days or more included: Derald Nye, Carol and Rudy Rostash, Paul Lorenz, Rob Nyberg, Oliver Van Hoesen, Keith and Sandy Kumm, Nelson Wilt, Bob and Valerie Goff, and Erich Karkoschka from the TAAA, John Dobson, Rob Negro, Barry Hirrell, Jonathan Wilkendorf, Hans and Linda Art, and Mike Packer from San Francisco, Bernie Sanden, Sam Herchak, Anne Beeby, and Jerry and Terri Matheis from the Phoenix area. Also there were Marilyn Unruh and nephew Ryan from Prescott, Mike Spooner from Page, Richard Jones from Las Cruces, Chuck Schroll from Pensacola, Florida, Linnette Kogler from Las Vegas, Dennis Young from Sedona, Jim Runsdorf from New York, Doug Hansen from San Diego, Marilyn Roberts and Eric Moon from Kaslo, B.C., Canada, and Jerry Erwin from Chicago. If there was a visitor of the year, it would go to Dan Hirsch - a seasonal employee at the Grand Canyon National Park, normally from Texas. He attended all the twilight talks and was liberal in his praise of our programs there. Speaking of twilight talks, special thanks go to those who served in this special capacity, keeping the public entertained until it got dark enough to observe. John Dobson, Barry Hirrell, Derald Nye and yours truly each gave two presentations during the week. It should be noted that Barry gave the ultimate twilight talk as he closed us out on

the 15th. Before a crowd of nearly 200 he inspired emotions from tears to cheers (no polite applause here!) in the growing darkness. His talk was no attainable target for those of us who attempt them, but will remain an unachievable goal, a talk for the ages, if you will and certainly worth the price of admission after a long week of effort. Thanks Barry! I only wish Kyra was there to catch it on video!

For those of you who plan ahead, next year's Grand Canyon Star Party is tentatively planned for the 7th - 14th of June 1997. It will feature a 2 to 9 day old moon, which will provide twilight viewing for an object hungry public, since we lost Jupiter last year. Mark your calendars now!

We were informally discussing ways to improve the star party, take that next step to make it memorable. How about backpacking your telescope down to Phantom Ranch for a few nights so that we have both rims and the river covered? Keep it in mind! *

The Star Party Makes a Telescope!

It was Barry Hirrell of San Francisco who last year suggested making a telescope as part of the program at this year's event. It was an excellent suggestion providing a daytime exhibit for the public, valuable experience for visiting amateurs, and an honorable donation for the local grade school so that kids can always have access to their dark sky.

As an optical type myself, I was always suspicious about the scopes that the San Francisco Sidewalk Astronomers turn out at public events. A few years back they turned out one in a day at the Riverside Telescope Makers Conference that was raffled off as a fundraiser. But you have to wonder about a mirror that is ground and polished outside in a dusty environment, then tested against a glint of sunlight off a telephone insulator.

As the star party approached, I ordered two blanks, one as a spare after visions of slippery hands dropping it on a sidewalk. The folks at the Optical Sciences Center allowed me access to the diamond generator to rough in the curve for both blanks, saving us many hours of rough grinding. Barry had sent plans for the sidewalk telescopes (let me know if you want a copy) and had suggested an F/5 curve to make a short telescopes with which the grade school moppets could observe. I also bought a 6 foot length of 12" sonotube at Border Products here in Tucson, and a sheet of plywood cut up to the plans Barry sent. Total outlay was $127, not counting the spare mirror. I happened to have a cast iron tool of 100" radius, 9 inches in diameter that served me as a grinding tool to fine grind out the diamond generator marks from the blanks. There was some concern about aluminizing the mirror at some date after the star party, but I learned that Star Instruments in Flagstaff, Paul Jones, owner, had a coating chamber. I cleared it with him in advance to get it coated before the end of the star party. I packed up mirror, tool, 4 fine grades of abrasive, polishing compound, tube and plywood for the trip.

We got to work on Monday the 10th, about noon. Using a bucket and a 2-rung stepladder to balance the grinding board, 3 cleats held the mirror face up. The subdiameter tool was used on top and after a few strokes the mirror rotated counterclockwise and the tool clockwise. We quickly moved through the 40 micron grit and progressed through 25, 12 and 5 grits. As soon as the Lowell Observatory crew was finished filming, grinding was declared finished. All this work was done in the open, under a shade tree, with passersby asking questions and anyone who wanted a turn grinding getting one. It was then we realized that of the 3 people bringing supplies, none of them brought any polishing pitch! John Dobson went off searching for some asphalt, but I called my buddy Paul Jones in Flagstaff to borrow a cup of pitch. Fortunately he was willing and Margie Williams made the trip.

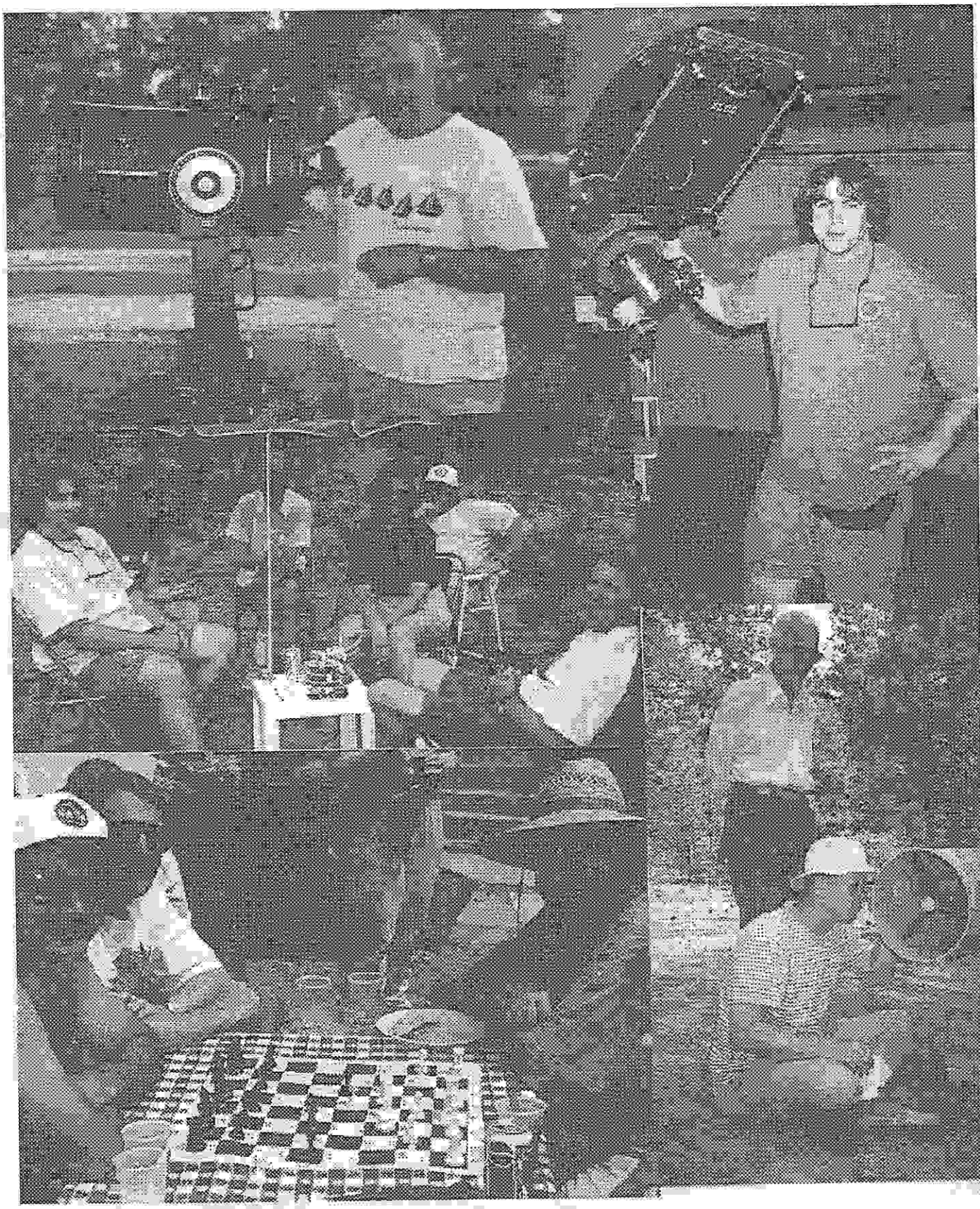
Polishing started late the next morning. In deference to the wind and dust at Yavapai Point, it was polished at the campground, where there was less wind. Meanwhile, the hardware went to Yavapai to put together the mechanical parts. After 5 hours of drilling, sawing, screwing, etc, etc, the tube and mounting were ready for the mirror, which had polished out in about 3 hours. The mirror was installed and John Dobson "read" the mirror against the solar reflection off a power pole insulator. What he does is compare the inside and outside focus appearance of the image and polishes the center or edge to make them look alike. A few cycles on Tuesday evening did little to the figure (hard pitch), and John finished it on Wednesday while most were on a day trip to Meteor Crater and Lowell Observatory. An inspection Thursday morning showed an identical appearance inside and outside focus, but some astigmatism was evident that did not rotate with the primary - the secondary was not flat! Fortunately, Bob Goff had a friend, Rod Dodgen, in Flagstaff who delivered a diagonal to the aluminizer for us. Barry Hirrell made the trip to Flagstaff for the 2nd time in 2 days and waited the 4 hours for the coating. It looked beautiful - slight grey around the edge from not being completely polished, but scratch free! The primary and new secondary were installed in the telescope Thursday night and it was a great performer! Very nice details were seen in Jupiter's cloud bands and M-13 looked great!

After two nights of use for the star party, "Yavapai", as the scope is called, was presented to Jake Wahler and his father Chuck, for the grade school on behalf of the Grand Canyon Star Party. Barry Hirrell plans to make a video tape on the care and feeding of a sidewalk telescope so that anyone can use it effectively.

I was only able to locate a low power eyepiece (28mm) for the kids to use. If any members out there have something in the 8-20mm range they are willing to donate, let me know (293-2855).

Many thanks go out to John and Barry for helping with the work and organization, and to Margie for fetching pitch and hardware. Of course, Paul Jones and Rod Dodgen up in Flagstaff deserve great thanks for their contributions. Other workers putting in sweat were Mike Spooner, Rob Negro, Laurie Larson, Dennis Young, Hans Art, Marilyn Unruh and even Vicki Ketelsen! I apologize if I have forgotten anyone. Thanks to your efforts we had a great public display, made a nice little scope and had a donation to inspire the local school kids. *

Clockwise from upper left: Oliver Hirrell at the working end of the Pluto telescope at Lowell Observatory. Hans Art gets testing tips of Yavapai's figured mirror from John Dobson. Rob Negro, Bernie Sanden, Rob Nyberg and Jake Wahler get some chess action at Sunday's picnic. Socializing around the watermelon bones at the same picnic.



THE SCORPION'S HEART

In the southern sky on these July evenings is one of the constellations that lives up to its namesake Scorpius the Scorpion. You can trace out its curving pattern by starting at its head made up of the three stars of β, δ and π Scorpii. Then move eastward to σ, α a bright 1st magnitude star with an orange tint and τ. Now turn southward to ε and μ, again turn eastward to find η and θ. At θ turn slightly northeast to ι then κ and then finally turn to the northwest toward λ and υ, this marks the "Sting" of the Scorpion. If you have binoculars or a small telescope look to the northeast of the "Sting" and you will notice two star clusters Messier 6 and 7.

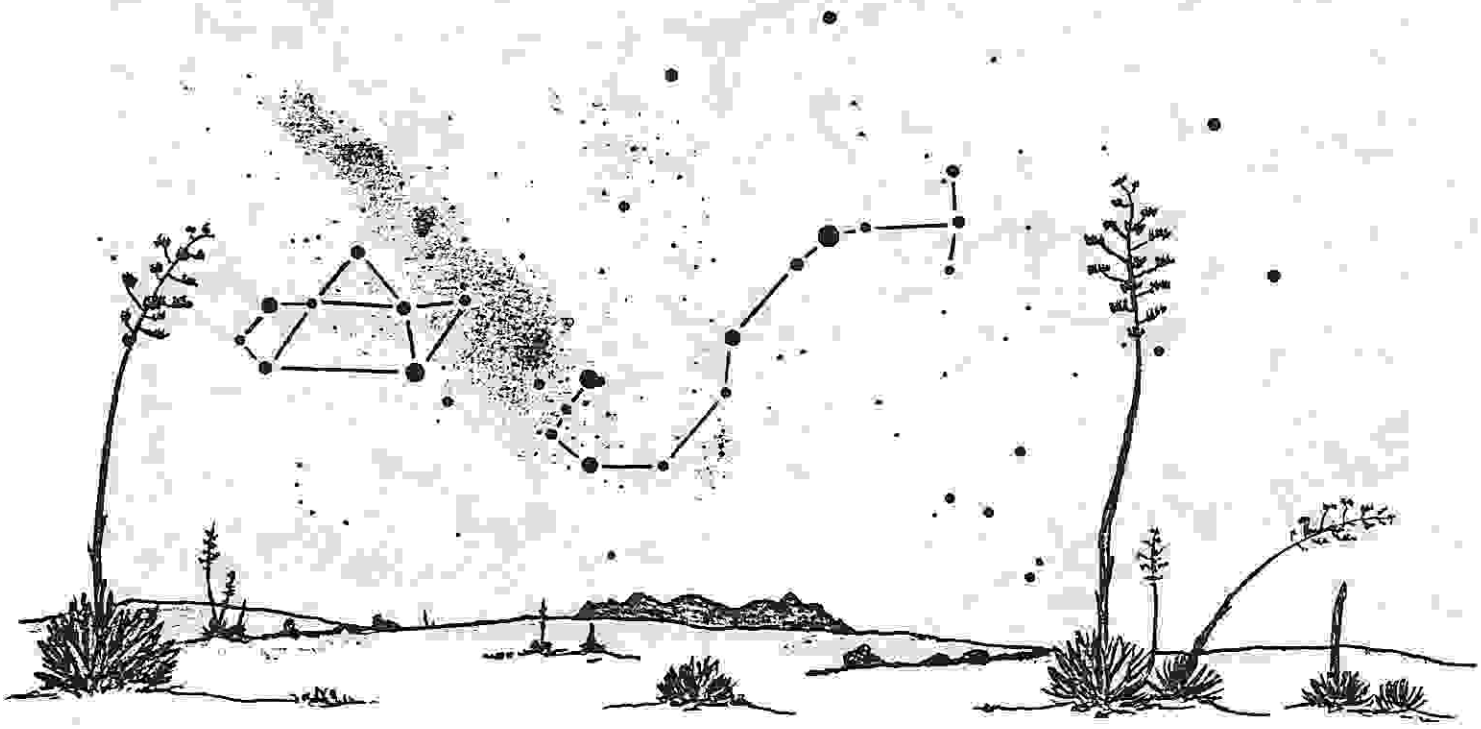
Now lets return to Alpha (α) Scorpii, known as Antares and pronounced (an-TAIR-ease). The name Antares means The "Rival of Mars" and when Mars appears near Antares you can plainly see why it is named so. Antares is the 15th brightest star in the heavens. It is a supergiant star of immense proportions having a diameter of 600 million miles. If Antares replaced the Sun in the Solar System the four inner planets would be inside this star and it would stretch into the Asteroid Belt. It is so large that astronomers have been able to measure its diameter with large telescopes. With an instrument called a Interferometer astronomers measured an equatorial diameter of 0.041" and polar diameter of 0.026". So Antares isn't spherical like our Sun but ellipsoidal or egg-shaped. Antares is the brightest star of the Scorpius-Centaurus Association having a luminosity of 6000 suns.

The distance to Antares is about 440 light years. Antares is a cool star with a temperature of 3100°K. Antares has a spectrum of M1 and a mass of about 15 suns. This star is usually listed with a magnitude around +1.0, but it is a semi-regular variable slowly pulsating over a period of about 5 years, like a beating heart. At times it may be slightly brighter than magnitude 1.0 and its been known to drop to around 2nd magnitude on occasion.

Antares also has a binary companion of magnitude 5.4 orbiting it in a period of 878 years. This is a very difficult star to resolve and usually takes a 6" to 8" telescope to separate the companion from Antares glare. Most observers see a greenish dot nestled next to orange Antares, and that may the best you can do. Try observing it during twilight or by using a nebular or blue filter and see how you fair. The companion is 2.6" to the west of Antares. To some with small telescopes Antares will just appear as a pretty orange star, but its still worth a look at low power.

Although just looking at stars or their colors may not be the most exciting astronomical activity, its only when we learn some facts about the stars themselves that they take on some individuality. We can see that just like humans stars have certain characteristics about them that makes them interesting.

BY JEFF BRYDGES



TAAA Board of Directors Meeting - June 13, 1996

Attending: Teresa Lappin, Larry Wilson, Gary Rosenbaum, Dave Harvey, John Kalas, John Polacheck.

Agenda: Other Topics: Motion by Dave Harvey that discussion of the club's ALCOR be put on the agenda for the next Board of Directors meeting. Motion seconded by Terry and carried unanimously.

Welcome of new board members. Terry welcomed new board member John Polacheck, Steve Kristman (absent).

Events/meetings:

Star Parties: July 13 - Empire Ranch.
July 20 - Arivaca Library

Meetings: July 5 - General Membership Meeting - Ed Olzewski will speak on nearby galaxy interactions. Beginners lecture - Terry Lapin will speak on Observing Tricks.

Treasurers' Report:

Current total cash Assets:	$37,336.72
Total Liabilities:	$250.00
Current Total Assets:	$73,070.72

Astrophoto Fundraising: John Kalas reported on progress of sales of astrophotos - to date $1,045.00 in sales have been achieved with $965.00 expended.

ALPO Meeting October 20th. TAAA will host the ALPO meeting in the Steward Observatory lecture hall. Volunteers will be recruited from the General Membership and the Board of Directors to help run the auditorium, setup poster boards and provide refreshments.

Plans for TAAA Board of Directors 96: Discussion of priority Agenda items for the 96 term. John Polacheck made a motion that the Board of Directors come up with a realistic plan for the club observatory and that this plan be ready to implement by the end of the 96 Board of Directors term. Motion seconded by Terry and carried unanimously.

Project ASTRO and NOAO: Discussion of the national educational project called ASTRO run by NOAO. Terry will research and report next meeting as to possible involvement of the TAAA in this project.

Association Handbook: Disussion tabled till next meeting after new Board members submit input as to their job descriptions.

Old Business: Newsletter printing - Since our newsletter printing person will be leaving in the next few months Terry will look for a replacement or replacements for this duty. Report as to findings will be made next meeting.

Meeting Adjourned at 9:05 p.m. *

Desert Skies Classified

FOR SALE: Meade MTS-SN6 6" Schmidt-Newtonian reflector, 8X50 finder, aluminum stand, electric drive w/CCD capability. Portable and in mint condition - paid over $900 new, hoping to get $375. Moving to England and must sell! Barry O'Connor (520) 636-1397 (Chino, AZ). (07-96)

FOR SALE: Brass Telescope Cheschire 5" f5 with 3" guide scopewith 2 7" Byers drives on both axes. Brass Pier and legs, 2" and 1.25 star diagonal. Dual axes drive control and Baush and Lomb drive corrector. Kroy 80K editor (labeler) with 14 font disks: $100 with tapes, sold for $3000 in early 80's, makes nice permanent labels. HP 7550A graphics plotter/8pin $300 for cad drawings on big paper. Canon NP-7550 Copier/50 copies per minute with 20 page collator/$500. Contact Steve Petersen at 446-2731/pager or 326-5303/home. (07/96)

FOR SALE: 6" mirror made by Edmund Scientific, 30" focal length, & the diagonal that goes with it. It is glued to an 8" wooden disc, from which I tried to make a telescope, but my attempt was not very satisfying. Mirror and diagonal both for $65. Call "Frosty" Gray at 296-9264 (07-96)

FOR SALE: Spitz Jr. Planetarium - $40. Astroscope Planetarium - $20. A 6" mirror f/3 no coating $125. (for cassegrain) Call Gilbert 571-1662. (07-96)

FOR SALE: Well maintained Celestron C8 with wedge, tripod, five eyepieces (5, 9, 18, 25, and 40mm), 6x30 finder scope, solar filter, drive corrector, Barlow lens, plus additional accessories. $499. Call Chris Lancaster at 750-9463 or stargzr626@aol.com. (07-96)

FOR SALE: Cannon TX, 50 mm lens and 350 mm lens F 4.5 for $220. Call Massoud Mortazavi at 326-0057 and leave message.(08-96)

FOR SALE: Celestron SPC102 refractor. 102mm; F/9.8 with Super Polaris mount (with clock drive and Polaris alignment scope). Excellent condition, used very little. $1150. or best offer. Call Frank Cathell at (520) 825-5540 or e-mail fcathell@aol.com. (09-96)<ads here>

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