

# *Desert Skies*

Volume XLI, Number 9

September, 1995

*Desert Skies* is the monthly publication of the TUCSON AMATEUR ASTRONOMY ASSOCIATION, P.O. Box 41254, Tucson, AZ 85717

## Happy Birthday, John Dobson!



## Calendar of Events

**GENERAL MEETING** - Friday, September 1, 7:30 pm at the Steward Observatory Auditorium - room N210. Topics are *The Length of the Day, Month, and Year in Ancient Times* by Ronald Ferdie and *Crayford Design Focuser* by Ed Blair.

**BEGINNERS LECTURE** - Friday, September 1, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is *Astronomical Satellites* by Mike Marinello. All are welcome!

**EXECUTIVE COMMITTEE MEETING** - Tuesday, September 5, 7:30 pm at Steward Observatory, Room N305.

==>Please note the change in meeting place and date. <==

### STAR PARTIES & EVENTS:

September 2 - John Dobson Birthday Star Party  
 September 8 - Computers & Electronics SIG  
 September 12 - Fundraising Committee  
 September 13 - Education Committee  
 September 16 - Kitt Peak Cookout/Star Party

September 16 & 23 - Empire Ranch Dark Sky Observing  
 September 23 - Whipple Observatory Star Party  
 October 23 - Catalina Library Star Party  
 October 21 - All-Arizona Star Party  
 November 18 - Chiricahua Star Party

**Newsletter Schedule:** Deadline for articles: Monday, September 18. Printing: Monday, September 25. Folding Party: Tuesday, September 26. Mailing: Wednesday, September 27. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

**Cover:** Barry and Kyra Hirrell (l) and John Dobson (r) at the Grand Canyon. They formed the San Francisco core of the 1995 Grand Canyon Star Party. John Dobson, who is celebrating his 80th birthday this month, is renowned for his efforts to bring astronomy to the public. Join the TAAA on September 2 in honoring John Dobson's lifetime of achievement. Photo supplied by Dean Ketelsen, scanned by Larry Wilson.

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

### TAAA Officers

President	Terri Lappin	579-0185
	lappin@egret.sao.arizona.edu	
Vice-President	Larry Wilson	299-6608
	lwilson@primenet.com	
Secretary	Dave Harvey	797-2512
	dave@astro.as.arizona.edu	
Treasurer	Gary Rosenbaum	579-0185
	garyr@astro.as.arizona.edu	
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Member-at-Large	Bob Goff	790-1452
Member-at-Large	John Zajac	299-3203
Past President	Dean Ketelsen	293-2855
	ketelsen@astro.as.arizona.edu	

### Send Address Changes to:

TAAA  
 Attention: "ADDRESS CHANGE"  
 P.O. Box 41254  
 Tucson, AZ 85717

### 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 \$24 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

P.O. Box 41254  
 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  
 Tucson, AZ 85752-1316

OR email: 74750.247@compuserve.com

### Membership in the TAAA

Individual	\$25.00/year
Family	\$30.00/year
Senior Citizen (over 60)	\$23.00/year

Sky & Telescope subscription (optional) \$24.00. 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  
 PO Box 41254  
 Tucson, AZ 85717

## President's Message

At this month's regular meeting, we will do something different. After the main lecture but before the break, we will have a short amateur presentation about 10 minutes long. This month, Ed Blair will make a presentation. This will give everyone a chance to hear him and then talk to him during the break. It is hoped that one amateur presentation can be scheduled each month. If you have a ten minute presentation to give, contact me at the next meeting. We will, of course, continue our long tradition of having less formal talks in the second half (limited to time available).

At the last executive meeting it was decided to rent a storage unit for our mirror making equipment which has been kept at the Flandrau Science Center. The unit will cost us \$960 over the next year. This is a great incentive to getting the equipment into use. If you have any ideas for a location, please talk to any executive committee member.

I wish to thank the several people who came forward and volunteered to give Beginner's Lectures over the next few months. This month, we will hear from Mikey Marinello. Coming in the next few months will be Jeff Brydges and Ray Bergman.

We recently received notification regarding future plans for the area near Empire Ranch, our dark sky star party site. This development includes a possible mine to the northwest of Empire Ranch. Development in the Sonoita area will obviously impact the quality of the dark skies at Empire Ranch. Since we are currently holding our star parties at Empire Ranch, I have asked that the TAAA be kept informed

of upcoming meetings regarding development. A series of workshops and meetings have been scheduled over the next few months. Those interested can talk to me. (The TAAA has limited the land search to an area southwest of Tucson and hopefully away from future development. It was decided not to look at land in the Sonoita area because it has become more and more populated over the years.)

We held a star party for about 15 Boy Scouts on August 12th. John Kalas did a fine job of explaining how telescopes work and what was in the sky that night. In addition to myself, new member Chuck Goldman was there to help out.

This month we have a public star party scheduled at the Smithsonian Headquarters on September 23rd. The visitor's center will open at 10 am, so get there a little early and look at the displays. The moon will not interfere, so plan on coming out and doing some observing after the crowds have gone home. We also have a star party scheduled for October 3rd at the Catalina Library. This is a rescheduled event. The July event was rained out.

Lastly, I wish to congratulate Gil Esquerdo. Gil and fellow U of A astronomy student John Barentine have two photographs of M77 in the recent Astronomy magazine (September 95 issue, page 24). Their photographs show a possible barred nucleus at the center of M77.

Clear skies, Terri

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## Meeting News

### Beginner's Lecture: Astronomical Satellites

By TERRI LAPPIN

This month's Beginner's Lecture will be presented by Mikey Marinello. Mikey will be talking to us about astronomical satellites. There's quite a few satellites around for us to see. The most obvious is our moon, but Mikey will tell us about other satellites in the sky.

The Beginner's Lecture starts at 6:30 pm, one hour before the start of the regular meeting, in Steward Observatory's Lecture Hall.

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### September's Amateur Speaker

During the first half of the September 1st meeting, Ed Blair will be talking about a Crayford design focuser.

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### September's Speaker: Ronald Ferdie

By TERRI LAPPIN

Ronald Ferdie, an amateur astronomer for over forty years, is a retired aerospace and computer storage systems engineer from IBM. He worked on the Saturn-Apollo Skylab, Apollo-Soyuz, and the Space Shuttle External Tank space programs. He is a past president of the Tucson Amateur Astronomy Association and the Von Braun Astronomical Society in Huntsville, Alabama. He is a past chairman of the South East Region of the Astronomical League.

His presentation on "The Length of the Day, Month, and Year in Ancient Times," will describe how variations of the day, month and year are presently measured by Doppler and laser satellite techniques. Historical variations can be reconstructed from recorded events like lunar occultations and ancient solar eclipses (a record of several thousand years), and by unknown terrestrial life-forms (marine fossils) and tidal deposits in rock formations that have

extended this astronomical record up to hundreds of millions of years ago. This use of fossils and rock formations as ancient clocks provides an interesting interaction between astronomy, biology, paleontology, and geology.

These measurements provide another tool to determine the origin of the Earth-Moon system. However, the measurements DO NOT closely agree with the theory that the Earth's tides are the only (although acknowledged major) cause of the gradual lengthening of the Earth's day and decrease of the days per lunar month. Various theories have been offered for additional causes: major geologic changes of the Earth's crust, circulation within the Earth's molten interior, and a changing cosmological constant of gravitation, among others.

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### Young Astronomers Club

By NINA LEHMAN

Many thanks to members Gary Mechler and Bob Andress. Gary provided the Young Astronomers with an autographed copy of his new book *National Audubon Society Pocket Guide: Constellations*. Bob, a retired planetarium director, provided us with around 20 posters. Donated materials are used as incentives for children to go out and observe.

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### Fundraising Meeting: September 12

A meeting for those interested in fundraising will be held over dinner on the evening of Tuesday, September 12th. This will be a brain storming meeting to formulate some ideas of what we should do. Other than the Automatic Donation Program, we do not have any fundraising efforts underway. We are in need of some new ideas. We will meet at a restaurant convenient to those attending. Please call Terri if you are interested.

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## Notes

**1996 Astronomy Calendars**

BY TERRI LAPPIN

We will begin selling the Astronomy Magazine "Exploring the Universe 1996" wall calendar at the September meeting. Each month features an astronomical photograph or artwork. Astronomical trivia and celestial happenings are given for most dates as well as a 'Planets this month' box with information about the naked eye planets. These calendars will be sold for \$8 each (list price \$10.95).

We received a volume discount, and proceeds from the sale of these calendars will go to TAAA activities. \*

**Astronomy Magazine Subscription Discounts**

BY TERRI LAPPIN

Astronomy Magazine offers discounts on subscriptions to their magazine. The regular subscription rate is \$30/year, but you can save \$10 by subscribing through the TAAA. Money will be accepted at the September meeting. If you are unable to attend, please send a check for \$20, made payable to TAAA, to PO Box 41254, Tucson, AZ 85717. Please be sure to say it is for a subscription to Astronomy Magazine. We must receive your check by September 25th.

If you have a current subscription not through the TAAA and want to take advantage of this discount rate, you must renew your subscription now through the TAAA. Astronomy magazine will convert your subscription to their club program and the expiration date will be extended one year.

You must supply us with a copy of your Astronomy mailing label (or the customer number from the label) so the publishers of Astronomy can match you with your subscription.

For your convenience, we list those who need to renew their subscriptions to continue receiving Astronomy Magazine:

William Cota 10/95  
Robert Crawford 10/95  
Gary Gardner 10/96  
Shelly Guerrero 01/96  
Brian Harris 10/95  
Roy Head 01/96  
William Holsey 10/96  
Keith Kumm 07/96  
Teresa Lappin 05/96  
Hazel Lawler 11/95  
Bernard Merems 01/96  
Ken Moore 10/96  
Glenn Nishimoto 10/95  
John Polachek 10/96  
Richard Schulze 10/95  
James Trexler 12/95

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**TAAA Library**

BY DEAN KETELSEN

We have finally gotten our space at Steward Observatory to store our library. This will allow members to peruse our small collection during our monthly meetings and check out material for use. We have a wide variety of materials and will be looking for donations of more once we get organized. Give us a month or two to get things in order and develop a checkout procedure, then check it out! \*

**Eduardo Vega Dedicates Observatory Addition**

On 12 August, Ed and Pat Vega, with about 180 of their friends dedicated a new wing to their observatory. The addition includes a classroom, two bedrooms with kitchen area, and a planetarium dome. They have also expanded their exhibits area in support of the school groups that regularly visit the facility. The bedroom areas are for a bed and breakfast that they plan to run on the site, with the telescope facilities and an astronomer available for a charge.

The dedication was attended by a few special guests: Max Bray and his wife Irene were present, David Levy and Roger Angel made short speeches in the short ceremony, and space artist Kim Poor was also a guest of honor. Though the sky did not clear, at least it did not rain, and through Ed and Pat's hospitality, everyone was well fed with snacks scattered throughout the facility.

For all your astronomer friends that yearn for great skies and facility, they can call Ed for more info at the "Skywatcher's Inn" at (520) 745-2390. \*

**Observing in Hermosillo, Sonora, Mexico**

BY ANTONIO SANCHEZ-IBARRA

I know about the difficulties of travel in our country with astronomy equipment. I had a bad experience in 1984 with a group from LPL when we observed a star occultation by Ceres from Mazatlan. If any members of TAAA would like to come with an observation plan, they may use our (OACES observatory) equipment. We have not only the 16" telescope of OACES, but also a Meade 10" and a Celestron 5", with a SSP-5A Photoelectric Photometer and a SBIG STX-4 CCD camera. This equipment is used mainly by our students, and there is no problem for any TAAA member to use it. In fact, our main work is in solar astronomy. So, there are many free nights for our instruments. If you are interested, contact me at:

Antonio Sanchez-Ibarra  
CIF-US/Area de Astronomia  
Universidad de Sonora  
Apdo. Postal 5-088  
Hermosillo 83190 Sonora, Mexico

Ph. (5262) 59-2156  
Fax (5262) 12-6649  
Email [asanchez@cajeme.cifus.uson.mx](mailto:asanchez@cajeme.cifus.uson.mx)

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## Special Interest Groups

### The Computers and Electronics in Astronomy Subgroup Report

By ROGER TANNER

The sixth meeting of the subgroup was held at Space Imagery Center, which is on the forth floor of the Lunar and Planetary Laboratory at the University of Arizona. There were about 8 members present for discussion of the materials archived in the Center and the image processing demonstration. The off hours demonstration was courtesy of Mary Guerrieri (the Data Manager for the center) and Dr. Robert Strom who is the expert on the scientific processing of the data.

The meeting started with the a discussion of the type and quantity of data archived in the center. The center concentrates on images from the planetary missions and lunar data. While the archives are intended for researchers, the center is open to the public during the weekdays. You can go in and look at a particular frame from a mission, providing you know the frame number! Mary manages the collection and helps people to find and order what images they need. This center is one of about 16 image centers scattered around the country, including the main one in Greenbelt Maryland. At this image center they have all of the Lunar Orbiter, Apollo and some ground based pictures taken of the Moon. They are just starting to get in the computer CD ROM's of the Clementine mission. These two data set illustrate two dramatic things, there hasn't been any significant missions to the Moon in 25 years, and where the Apollo data is only available on film, the Clementine data is only available on CD-ROM! The other missions that they have images for are the Viking, Voyager, Magellan, Galileo, and, Mariner. Most of the planetary missions are available in digital form, many on CD-ROM. Unfortunately as several members have discovered, they are raw data, not processed to remove noise and calibrated for dark and flat fields. They are also not cataloged or indexed and there are thousands of images for a typical mission. The Voyager data set is available on 20 CD-ROM's. The first CD-ROM you order is about \$20, subsequent one's are about \$10. The other thing is the images are stored in PDS (Planetary Data Storage) format which only a few programs read. Dr. Strom explained that this data is intended for the researcher, not the public. The researcher typically wants the raw data to do his own calibration. Several members mentioned the expensive best hits discs that were available from private companies and complained that nothing comparable was available from NASA. The center also has the US Geological Survey maps of several of the planets and moons. In addition the center has an extensive collection of slides that are available to University educators for use in courses. The slides Dr. Lunine used at the last meeting were from this collection.

The Apollo images of the Moon were taken on 70 mm square film, and to digitize these images to there full resolution would take tens of megabytes each. The center only digitizes images or parts of images for researchers and they are not generally available. There was much discussion about the people who come in and ask for information about the "face on Mars" and other sensational interpretations of the images they have. Mary just shows them the images and make arrangements for copies if they request it.



The meeting then moved to the imaging room where Dr. Strom showed some basic image processing steps to make the typical planetary image usable; removing noise with a filter, stretching the contrast to allow all of the information to be visible, and using false colors to enhance low contrast details. For most of this processing he used a Macintosh computer and a public domain program called NIH for the sponsors of the software (National Institutes of Health). The software was originally meant to process microscope images. However, the program has such flexible capabilities that it can be used for some things the writers never imagined, like astronomical image processing. Dr. Strom illustrated this by using some topography data available in image form. He took an image of Olympus Mons on Mars and used the program to convert it into a 3-D image. Then he cut a slice through the data set and showed a profile of the volcano. By setting the peak and base values to known altitudes, the profile was calibrated, showing a 5 mile tall shield style volcano with steep scarps at the edges.

As the meeting ended, Mary offered some information packets containing some fine prints of several of the best images from the planetary missions. These were quickly snapped up. One stunning image included was the 3-D images of the volcanoes on Venus made by combining both the altitude and surface radar reflectivity data from the Magellan mapping mission. This image also covers the wall in the entrance to the center.

The next subgroup meeting will be given by Derald Nye on September 8, Friday, at 7:30. Derald will give a short discussion on how he goes about figuring out where one would go to see an lunar occultation, how he sets up his video equipment to tape the occultation, and, how the circuit he is building labels each frame with the Universal time. The meeting is at Derald's house is in Corona de Tucson, for directions see me or Derald at the next two meetings or give me a call at 574-3876.

The meeting after that will be at Bob Goff's optics shop where he will show us how he fabricates and tests optics. He will also discuss his plans for a computer system to help him in the testing process. The meeting is tentatively set up for Friday the 13th, at 7:00. This will depend on Bob getting back from his European trip, so watch the newsletter for further details. His shop is off of Kino south of Broadway. See Bob or me at the meeting for details.

Contact Roger Tanner at 574-3876 or email:

[rtanner@gas.uug.arizona.edu](mailto:rtanner@gas.uug.arizona.edu).

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## Star Parties

### Local Observance of Dobson Birthday September 2

As noted in the August Newsletter, the San Francisco Sidewalk Astronomers are celebrating the 80th birthday of John Dobson on Labor Day Weekend. In keeping with John's driving goal of getting everyone in the world to look through a telescope, they are planning a huge program of hands-on science exhibits, telescope making demonstrations, and of course observing. They are also encouraging other groups to hold public observing events on that weekend in celebrating John Dobson's theme. To that end, how about joining me for a star party for 50,000? I am hoping to set up one or more of my telescopes near the football stadium on the U of A campus September 2nd for the Wildcat's opening game. The game starts about sunset, but the first quarter moon will give us something to impress everyone even with the sun up. Parking will be impossible (getting dropped off by a second party more likely), but if you are up to it, call and come join me. Time and place still to be determined, depending on response. 293-2855 - Dean \*

### Kitt Peak Picnic and Star Party September 16

BY DEAN KETELSEN

We have asked permission to hold another cookout at Kitt Peak's Picnic area on 16 September. It is a very pleasant location to hold such an event with the pavilion available for the cooking, eating, and socializing, a nice clearing for setting up scopes, bathroom facilities, and one of the best views around, with the big scopes up the hill providing some inspiration. As before, we are limited in attendance to 30, unless you are a KPNO museum docent, when you don't count towards that total. In addition to that stipulation, we are not allowed on the mountaintop after 4pm (picnic area only), cooking fires must be put out by sunset, and we need to vacate the site about midnight - moonrise (ie, no camping). But these rules are easy to live with and it is usually a great time, assuming the monsoons have left by then.

This is a pot-luck picnic - bring something to grill (charcoal is provided) and bring a dish to share. Don't forget that at 6,400 feet altitude it will be significantly cooler there, so bring lots of warm clothes. There will be a signup sheet at the September meeting and the first 30 to sign up get to come. If you can't attend the meeting for some reason, call Dean for consideration (293-2855). We have had trouble getting our full complement lately, so we may open up remaining spots to some of the Phoenix Clubs. So let me know early if you are thinking about attending - no walkups! \*

### Whipple Observatory Star Party September 23

The Whipple Observatory will present an Open House and Star Party on Saturday, September 23. The Observatory Visitors Center will open at 10 a.m. An informal lecture on astronomy will be presented at 6:30 p.m. Observing will begin at 7 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association.

The Visitors Center opens at 10 a.m., and informal lectures on Astronomy by Observatory staff members begin

at 6:30 p.m. (in parking area and on grounds). All lectures will be repeated as needed to accommodate the crowd. Observing begins at 7:00 p.m. (in parking area next to building). On view: Jupiter, Saturn, Mars, galaxies, star clusters, double stars and more.

Dress for cool evening temperatures. Small flashlights and binoculars are useful to bring.

Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA members and their telescopes. Visitors should park along the driveway or in the parking area outside the gate or along the road as directed. PLEASE NOTE: Visitors will be allowed to park cars next to the building in the space usually reserved for telescopes until 5 p.m. At that time, visitors will have to move their cars to other parking spaces so that telescopes may be set up.

For more information call 670-5707. In case of threatening weather, call 670-5707 after 2 p.m. on the 23rd for information about star party cancellation.

The Fred Lawrence Whipple Observatory and Tucson Amateur Astronomy Association present this opportunity to see the stars under dark Southern Arizona skies. \*

### Catalina Library Star Party October 3rd

On Tuesday, October 3rd at 6:30 pm the TAAA will be providing telescopes for a public star party at the Catalina Library located at 15631 N. Oracle Road. A short presentation will be given before the observing starts. This star party was one of the few summer star parties that was rained out. We will do a little publicizing of this event, so the more telescopes, the better. Since this star party is before the October meeting, a sign up sheet will be at the September meeting.

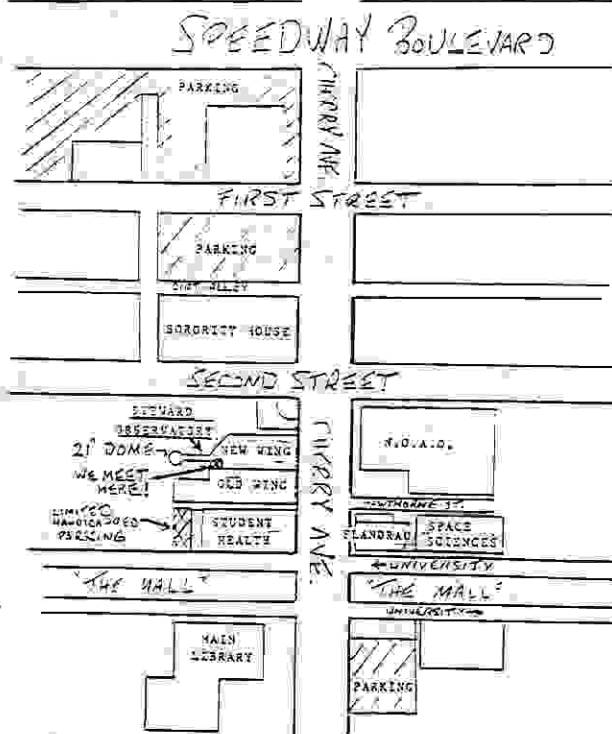
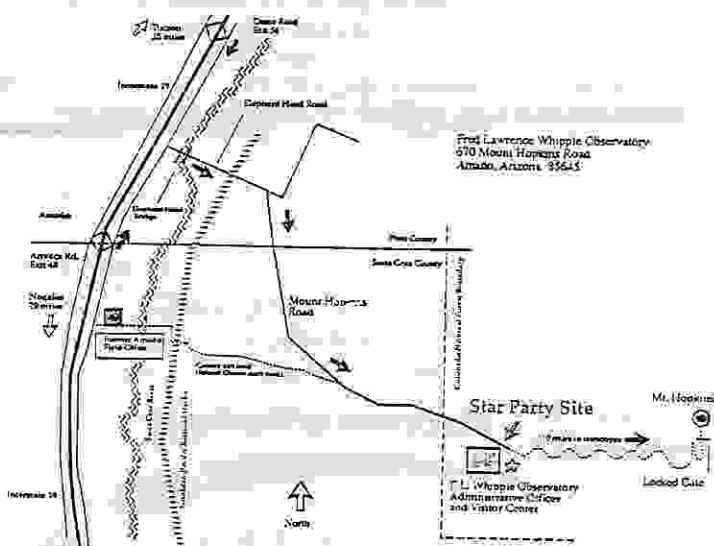
### Fall Star Parties

Can you feel it? The Monsoon season, a poor performer at best this year, is about to end, so it is time to schedule some of those events where you definitely want it to be clear. The following notice details the latest Kitt Peak cookout and observing session coming this month. The East Valley Astronomy Club is organizing this year's All-Arizona Star Party for 21 October south of Arizona City midway between Phoenix and Tucson. This site is due north of Kitt Peak and has pretty good skies, as well as providing a good chance to meet some new friends from the Phoenix area and beyond with similar astronomical interests. We have also planned another expedition to the Chiricahua National Monument on 18 November (yes, I know it will be cool). The Chiricahuas provide some fantastic observing from 7,000 feet altitude, and give the club a chance to do some socializing and public astronomy from this isolated site. Mark these events on your calendar and make your plans now. Look for details in the next newsletter. \*

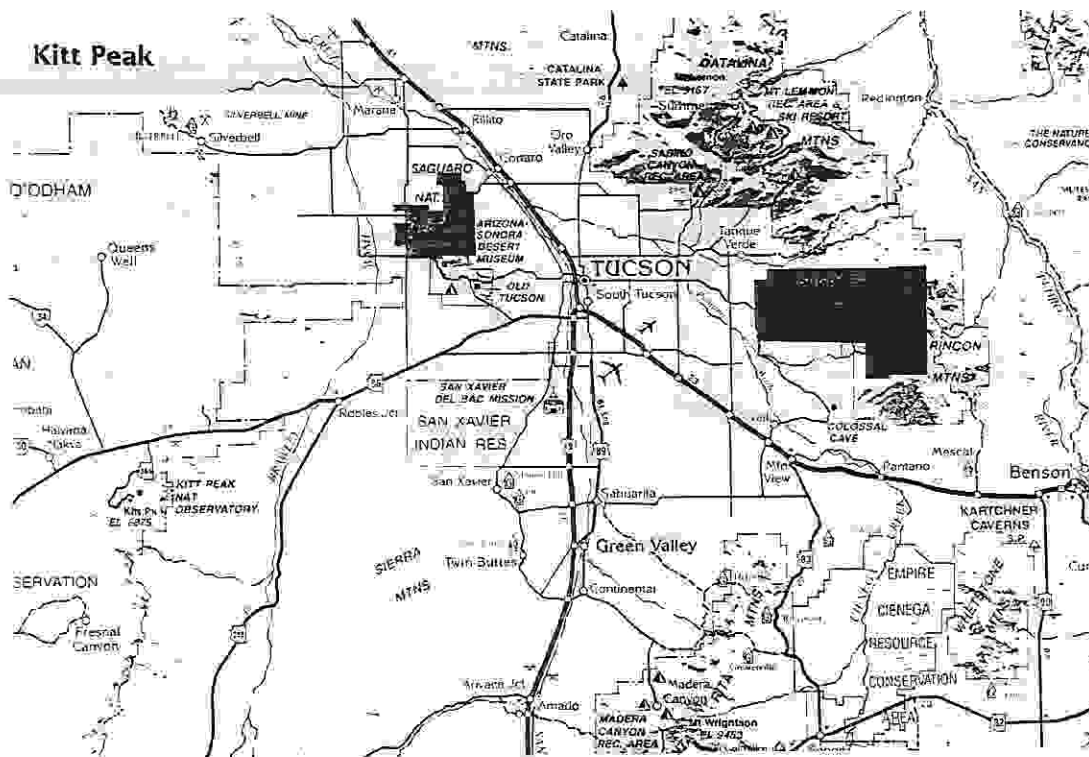
### TAAA Meeting Location

From Tucson, drive south on Interstate 19 to exit 56 (Cortez). At the bottom of the exit ramp, turn left and drive under the freeway to the frontage road on the east side. Turn right and drive south three miles to Elephant Head Road. Turn left and drive east, crossing the Santa Cruz River on Elephant Head Bridge. One mile east of the river, turn right on Mount Hopkins Road. Drive southeast about seven miles to the Observatory Office (end of pavement).

From Nogales, drive north on Interstate 19 to exit 48 (Amado/Arivaca junction). At the end of the exit ramp, turn right and then left onto the frontage road. Drive north for about two miles to Elephant Head Road. Turn right and drive east, crossing the Santa Cruz River on Elephant Head Bridge. One mile east of the river, turn right on Mount Hopkins Road. Drive southeast about seven miles to the Observatory Office (end of pavement).



## Kitt Peak





## Observing Reports

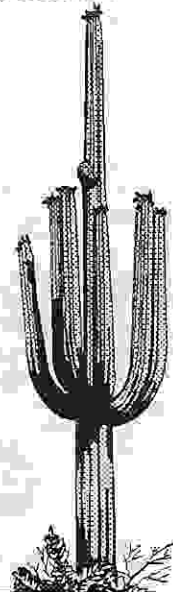
### Chief Observer's Report

Just after I got finished writing the column last month about how it's been such a lousy time to observe comets, Alan Hale and Arizona's Thomas Bopp discovered an important comet near M70 in Sagittarius. Bopp's discovery is a story in itself, as he was simply looking at M70 in a friend's 17 inch Dobsonian when the comet drifted into view. Comet Hale-Bopp is gathering lots of attention (even the news media nationally have written about it), as predictions currently are for it to brighten anywhere from magnitude 0 to -2 during perihelion on April 1st (no joke), 1997. Yes, that's 1997! The comet is so far out (about 7 AU or 650 million miles as of August 1995) that it'll take almost 2 years just to get to its perihelion distance of 85 million miles. The question now is why the comet is so bright (at magnitude 10.3), so far out. If the comet is actually intrinsically bright and not undergoing a series of outbursts, the show it puts on in March and April 1997 could be spectacular. And so far this appears to be the case, but don't bet on it. As one astronomer has said: "If you have to bet, bet on a horse, not a comet." However, the prediction for a spectacular magnitude -2 takes into account a pre-discovery photograph from 1993 April, which helps its credibility. Also, to add to the interest, JPL's Steve Edberg writes on the Internet that: "If Comet Hale-Bopp lives up to current expectations, it will be visible to the naked eye during the total solar eclipse of 1997 March 9" (If you care to travel to Mongolia and eastern Siberia that is). For now, if you want to observe the comet from locations closer to home, the coordinates are:

9/1:	18 hours,	21.5 min;	-30 degrees 41.7 min
9/7:	18 hours,	19.6 min;	-30 degrees 25.2 min
9/14:	18 hours,	17.9 min;	-30 degrees 5.7 min
9/21:	18 hours,	16.7 min;	-29 degrees 45.9 min
9/28:	18 hours,	16.2 min;	-29 degrees 26.2 min

The comet will be fairly easy to find in Sagittarius in a moderate (6-10 inch telescope) in dark skies (assuming you don't get lost with all the faint globulars in this region of sky). The comet's coma should be elongated to the north. The important thing to observe is its brightness. If the comet stays near magnitude 10.2 all month, we'll have more confidence it will be a spectacular object in '97.

As for my introduction to the comet, I first heard rumors about it at Stellafane, the annual gathering of telescope makers in Springfield, Vermont. Speaking of Stellafane, we had another wet Friday night, but things cleared out for yet one more consecutive year of Saturday night observing. I managed to take a long look at Saturn just before sunrise in the newly completed 13 inch Schupmann telescope, and can testify to the excellent quality of the mirror.



On electronic subgroup meeting day, Friday the 8th, the Full Moon will rise in the east about 6:15 PM, Tucson time. This is the "Harvest Moon", called so because native peoples could harvest corn, pumpkins, squash and other food staples under the light of this moon. Many people think the September Harvest Moon appears larger than any other moon throughout the year. This is actually an illusion, caused by the way we humans perceive things close to the horizon. This full moon will be somewhat closer than average, however, at almost 232,000 miles from Earth, although not nearly as close as the public generally thinks the Harvest Moon should be.

Earth draws closest to Saturn on the 14th. At 800 million miles away, this is the closest we'll get to Saturn all year. Look for a bright pale white star rising in the east 1 hour after sunset. The ringed planet continues to have short "lines" as rings, as its thin rings are facing directly edge on as seen from Earth. Due to monsoon clouds I have yet to see Saturn after last month's ring crossing. Let's hope we fare better weather wise in November for the next ring crossing.

Fall begins on September 23 at 5:13 AM Tucson time for the northern hemisphere. The sun, in Virgo, crosses the equator on its trip south in Earth's sky, marking the Autumnal Equinox.

Michael Terenzoni

Voice mail at 621-2001; mailbox #111-1123

E-Mail: MikeT@ns.arizona.edu

### What's New at Flandrau



### Construction, construction!

Several construction projects are under way or newly completed this month. For starters, a new fire escape has been added to the second floor mezzanine. To long time TAAA members, this was the room where the TAAA used to hold its meetings years ago. Workers cut a hole in the brick then built a solid stairway on the side of our building facing LPL. From the looks of it, they did a good job. In a month workers will start on the long awaited elevator project, also on the backside of our building. Finally, exhibit personnel are adding more space to our exhibit floor, by tearing down walls that take up too much space. This will enable more hands on exhibits to be set up on our floor.

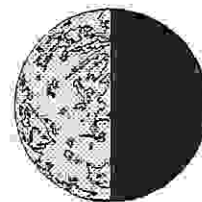
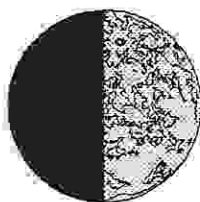
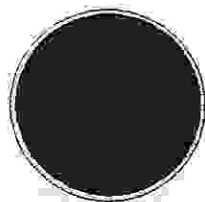
Michael Terenzoni, Outreach Coordinator

Flandrau Phone: 621-4515/business hours

Voice mail at 621-2001; mailbox #111-1123

E-Mail: MikeT@ns.arizona.edu





### Dark Skies for September

DARK SKIES for Tucson (in MST)

1995 SEPTEMBER no twilight  
no moonlight

Fr/Sa 1/ 2 11:18pm - 4:35am  
Sa/Su 2/ 3 12:14am - 4:36am

Su/Mo 3/ 4 1:14am - 4:36am  
Mo/Tu 4/ 5 2:18am - 4:37am

Tu/We 5/ 6 3:23am - 4:38am

We/Th 6/ 7 4:28am - 4:39am

Th/Fr 7/ 8 - - -

Fr/Sa 8/ 9 - - -

Sa/Su 9/10 - - -

Su/Mo 10/11 - - -

Mo/Tu 11/12 7:58pm - 8:11pm

Tu/We 12/13 7:57pm - 8:50pm

We/Th 13/14 7:55pm - 9:30pm

Th/Fr 14/15 7:54pm - 10:12pm

Fr/Sa 15/16 7:52pm - 10:57pm

Sa/Su 16/17 7:51pm - 11:44pm

Su/Mo 17/18 7:50pm - 12:34am

Mo/Tu 18/19 7:48pm - 1:26am

Tu/We 19/20 7:47pm - 2:20am

We/Th 20/21 7:45pm - 3:16am

Th/Fr 21/22 7:44pm - 4:12am

Fr/Sa 22/23 7:42pm - 4:51am

Sa/Su 23/24 7:41pm - 4:51am

Su/Mo 24/25 7:40pm - 4:52am

Mo/Tu 25/26 7:38pm - 4:53am

Tu/We 26/27 7:39pm - 4:53am

We/Th 27/28 8:25pm - 4:54am

Th/Fr 28/29 9:15pm - 4:55am

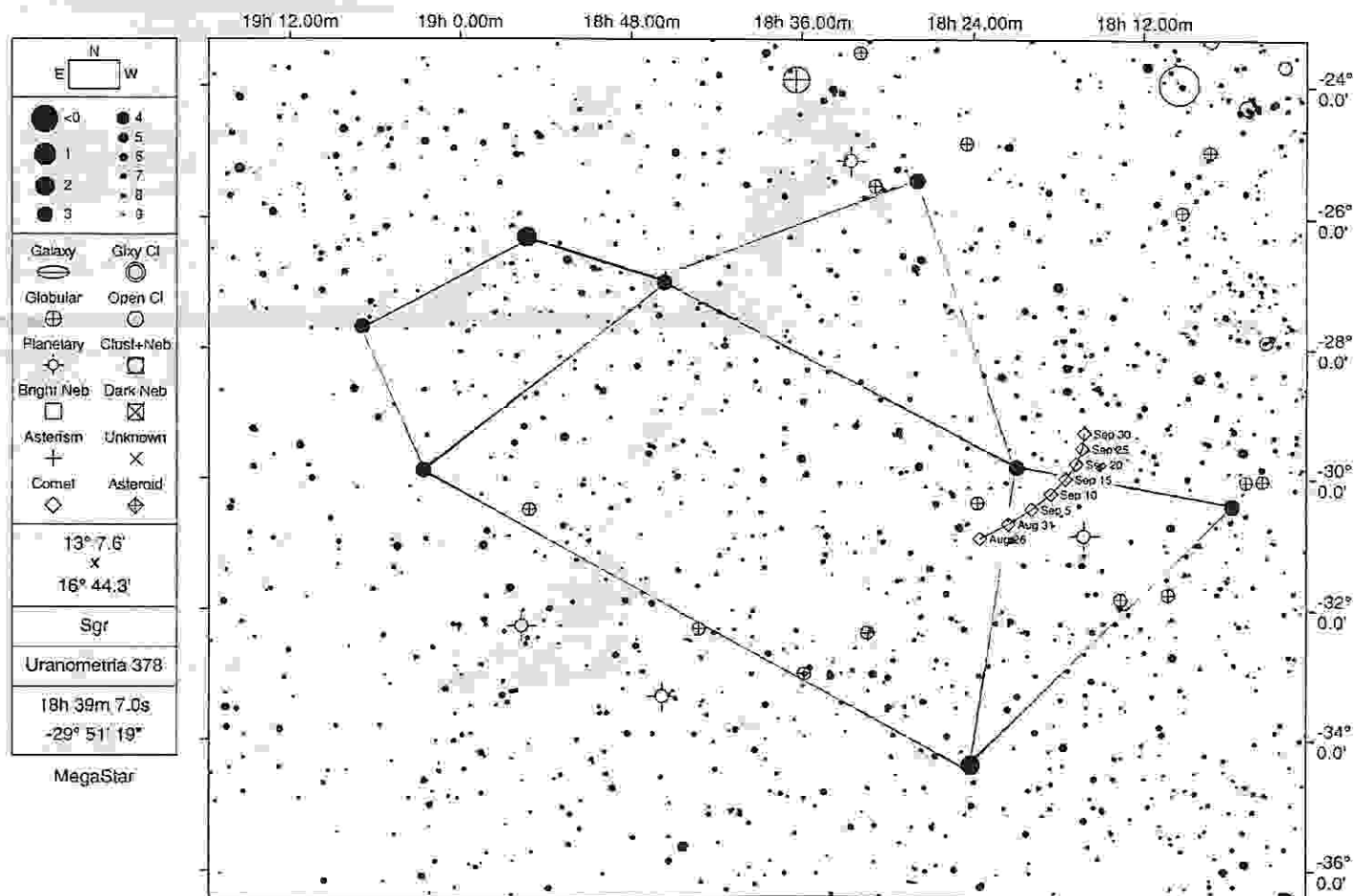
Fr/Sa 29/30 10:10pm - 4:56am

Sa/Su 30/ 1 11:09pm - 4:56am

Erich Karkoschka

### Comet Hale-Bopp Starchart

Starchart provided by Dean Ketelsen.



## A DOUBLE IN THE RIFT

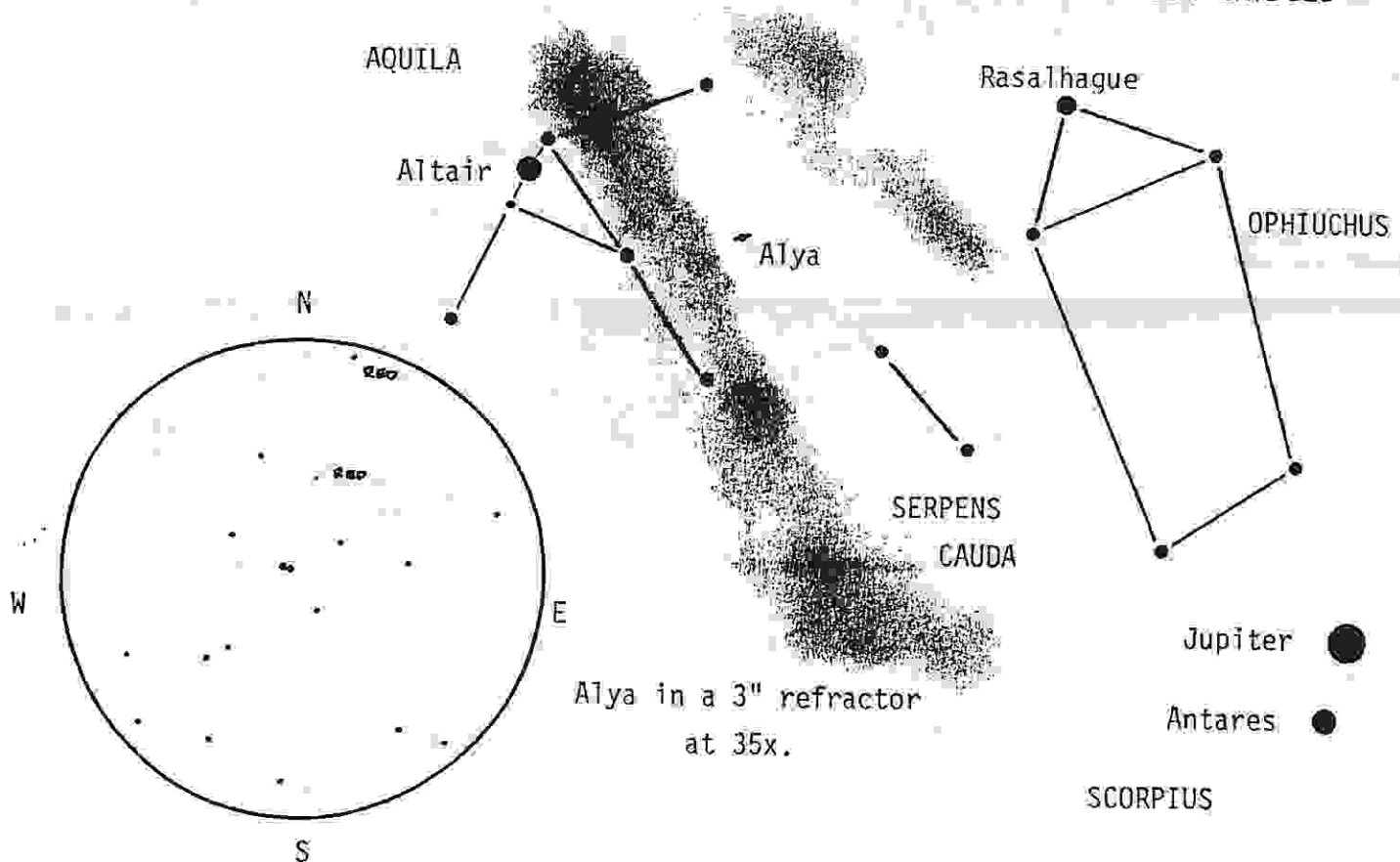
During September evenings our Milky Way Galaxy spans from low in the northeast to high overhead and then back down toward the starclouds of Sagittarius low on the southwestern horizon. High in the south along this milky band we see a dark linear feature bisecting the Milky Way. This feature is named the "Great Rift". This Great Rift is comprised of clouds of interstellar dust, that block our view of the stars behind it. Right in the middle of this rift between the constellations of Ophiuchus and Aquila lies a very attractive double star of fourth magnitude which is easily separated with amateur telescopes. This star is Theta Serpentis and it marks the tail end of the serpent.

Theta Serpentis is also called Alya pronounced (AL'ya) which in arabic means serpent. Both of these stars are main sequence stars with spectra of A5. Theta-one has a magnitude of 4.6, and Theta-two has a magnitude of 5.0. Both stars are about  $1\frac{1}{2}$  times the diameter of our Sun. The luminosity of each is about 11 suns. The distance to Alya from Earth is 110 light years.

As a double star Alya is easy to resolve in a small telescope or large tripod mounted binoculars. The separation is  $22.3''$  at a P. A. of  $104^\circ$ . Since 1830 when Friedrich Wilhelm von Struve first measured this pair the position angle and separation has remained largely fixed, although this pair is believed to be an actual binary system. Both stars appear pure white in my 3" refractor as their spectra would suggest. Interestingly from Tucson both stars look yellowish white, I guess that's because of the interstellar dust hovering over the Tucson basin these days. Low powers work best for this wide duo, try no more than 50x with your telescope. Also within this lovely field lie two red stars both almost directly north of Alya, one at 11' magnitude 8.5 and the other is about  $27''$  magnitude 7.5.

I have always been captivated by the whiteness of these two suns. It reminds me of the eternalness of the stars, and as you gaze upon this pair maybe you will have a similar feeling.

JEFF BRYDGES



## TAAA Executive Committee Meeting - August 8, 1995

Members present: Terri Lappin, Larry Wilson, Gary Rosenbaum, John Kalas, Dean Ketelsen, and John Zajac.

1) Meetings: The TAAA has offered to host the ALPO'96 meeting, but we've had no response yet. We have people scheduled for the next 3 beginner's lectures.

2) Treasurers Report: There were 6 new memberships, 10 renewals, and 9 dropouts, for a total of 250 members. There is \$150 a month in automatic deposits coming in to the land fund. Gary has the accounts computerized, but some of the actual amounts are preliminary pending a more thorough accounting. Updated values for some of the clubs property needs to be determined (ie telescopes, tools, etc). Gary will be using a method known as "Full Accrual Basis" accounting, which is the type most grant funding organizations will be looking for. He feels this will also improve our budget planning.

A motion by Terri was passed to pay \$85 for newsletter bulk postage permit. A motion by John Zajac was passed to include the Profit/Loss and Balance Sheet in the minutes. A summary as of July 31, 1995 follows:

Profit/Loss:	
Total Income	\$ 1,147.43
Total Expense	\$ 404.14
Net Income	\$ 743.29 (what we made)

### Balance Sheet:

Total Current Assets	\$33,321.93 (money in hand or owed us)
Total Fixed Assets	\$34,234.00 (club property. Needs to be updated.)
Total Assets	\$67,555.93
Total Liabilities	\$ 335.00 (what we owe)
Total Equity	\$67,220.93 (what we're worth)

3) Property: We have formally received the boot from Flandrau, and must remove our stuff on the 18-19th of August. Plans were discussed concerning: obtaining a storage locker, Arrangements for a truck, who will be there to help, and of course how much all this will cost. A motion by John Zajac to spend the money needed for a locker (limited to \$1500/year) and truck was passed.

4) Land: John Zajac spoke on behalf of P. Schmerl, the attorney looking into our land questions. A memo from Schmerl was presented answering some of these.

5) Constitution: John Zajac was merciful and tabled his discussion of the Constitution until the September meeting.

Meeting was adjourned at 9:40 PM.

The Exec meeting is now being held in room N305 in the Steward building (which is locked after hours). We request that anyone wishing to attend be at the main entrances before 7:30pm. If you're late, there is a phone in the meeting room (621-2607) where you can activate the automatic door opener. Sorry no windows to throw rocks at.

## Desert Skies Classified

**For Sale:** \$150 Towa Tokyo Refractor 60mm X 900 focal length, Model 305, tripod, wooden case, sun projection screen, accessory shelf, Barlow lens 2X, star diagonal prism, erecting prism, sun and moon filters, equatorial mount, 22mm, 9mm, 4mm eyepieces. Call Wally Platt, 888-8970. (09-95)

**For Sale:** 1) Super Polaris mount on aluminum tripod with dual access drive corrector - \$450. 2) Dual scope platform for the above mount \$30. 3) Extra 4 lb counter weight \$20. Call Mike Nakamura, 624-3372. (09-95)

**For Sale:** Achromatic Barlow Lens by Edmund Scientific. 2x and 3x amplification. Negative focus lens. 47 mm. \$20.00 Call Gilbert Friedman 571-1662. (11-95)

**FOR SALE:** Six inch f/10 Alt/AZ homemade Newtonian telescope with newly re-aluminized mirror by legendary optician Joe Frish - \$300. Call Dick Buchroeder at 884-9800. (12-95).

**FOR SALE:** In excellent Codntion - LX200, 10-inch f/10 telescope, 1 yr old, with carrying case, several 1 1/4 inch eyepieces and a field tripod. \$2,000. Call Shamus Carney (909) 657-8857. Will deliver for a nominal fee.(12-95).

**FOR SALE:** Brandon 80mm f/6.25 APO refractor, 2" focuser, 2" diag., 2" 32mm eyepiece in wooden case \$250. Meade 60mm f/11 guidescope fitted with 1 1/4" sky micro regular focuser \$90. Lumicon DS filter 1 1/4", \$25. O.B.O. Commodore 64 keyboard and disk drive plus extras, V.G. condition \$80. O.B.O. Call evenings 797-1693 - ask for Ted. (12-95).

**FREE** to a good home: 67" diameter f/.35 parabolic reflector. Perfect start for a radio telescope. You pick up. Call Gil Esquerdo at 290-0168. (12-95).

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call Nancy or Nina at 579-1382 or email to 74750.247@compuserve.com.