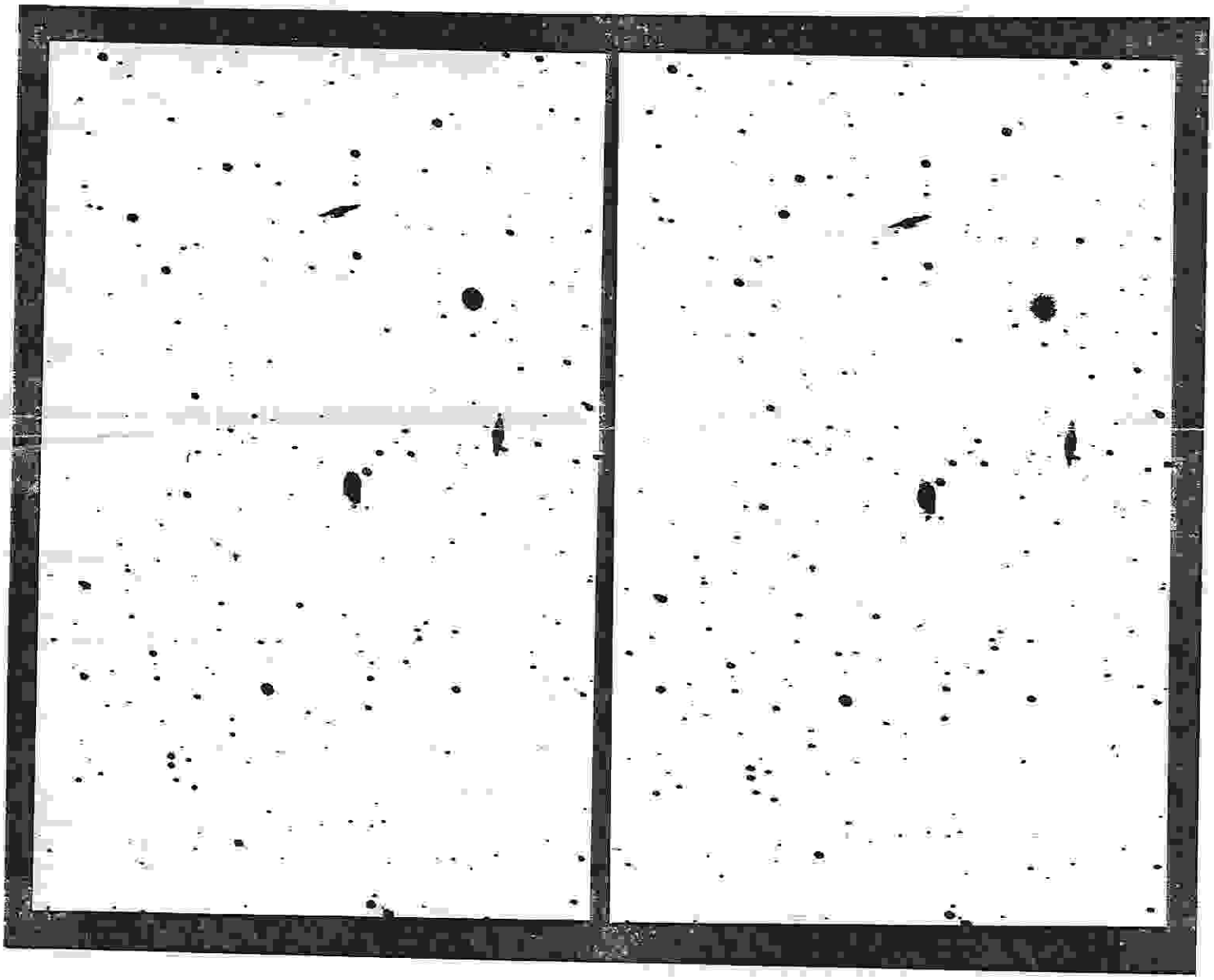
Desert Skies

Tucson Amateur Astronomy Association

June, 1995



A trio of galaxies (M65, M66, and NGC3628) in Leo taken on 1 April (left picture) and 2 April 1995 (right picture). Your mission is to find asteroid 9 Metis in the field. You might try the Shoemaker comet-hunt method: cross your eyes slightly to fuse the two fields. Metis will then pop up "above" the background field of stars.

Calendar of Events

GENERAL MEETING - Friday, June 2, 7:30 pm at the Steward Observatory Auditorium -room N210. Topic is **Probing Planetary Atmospheres with Stellar Occultations** by Dr. William Hubbard.

BEGINNERS LECTURE- Friday, June 2, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is **The Summer Sky** by Terri Lappin. All are welcome!

YOUNG ASTRONOMERS CLUB - Friday, June 2, 7:30 pm at Steward Observatory room 202. Aimed at elementary school-age kids and is concurrent with the general meeting. This month - **Saturn and Virgo.**

EXECUTIVE COMMITTEE MEETING - Tuesday, June 6, 7:30 pm at Flandrau Science Center's Conference Room. **Please note the change from Thursday to Tuesday.**

STAR PARTIES & EVENTS:

April 21-June 4 Flandrau Science Carnival
June 2-3 10th Annual Astronomy Festival
June 3 Whipple Observatory Star Party
June 5 Tohono Chul Star Party
June 8 Spica Graze
June 17-24 Grand Canyon Star Party
June 24 Empire Ranch Dark Sky Observing
July 5 Arivaca Star Party
July 6 El Pueblo Neighborhood Center
July 20-22 Alcon '95

Next Newsletter Deadline - Monday, June 19th.

Cover: Photo and caption provided by Dean Ketelsen. Exposure data: Hypered Tech pan, 25 minutes, unfiltered, 300mm f/4.

TAAA Officers		
President	Terri Lappin	579-0185
Vice-President	Larry Wilson	299-6608
Secretary	Dave Harvey	797-2512
Treasurer	Gary Rosenbaum	579-0185
Member-at-Large	John Kalas	620-6502
Member-at-Large	Bob Goff	790-1452
Member-at-Large	John Zajac	299-3203
Past President	Dean Ketelsen	293-2855

Committees/Appointed Positions		
Chief Observer	Mike Terenzoni	887-3226
Editors	Nancy Wagner	579-1382
	Nina Lehman	579-1382
Education	Open	
Fundraising	Open	
Property	Open	
Publicist	Open	
Star Party	Open	

MEMBERSHIP IN THE TAAA

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

Sky & Telescope subscription (optional) $20.00. 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

It is best to pay your dues 2-3 months before your membership actually expires.

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 $20 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.

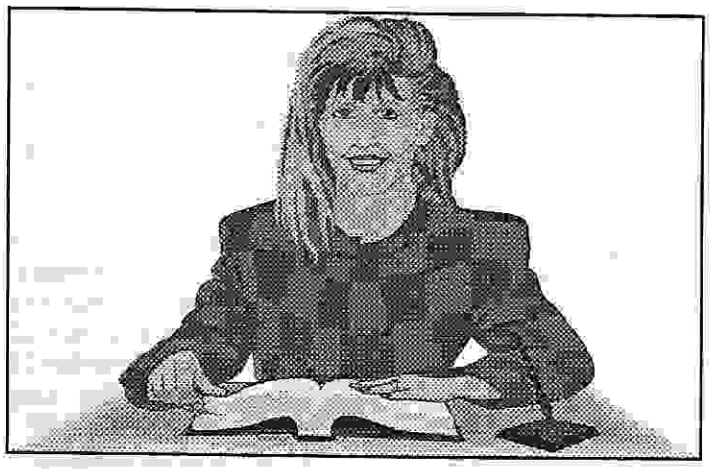
Desert Skies Publishing Guidelines

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

President's Message



Thank you for electing me as your president. I hope to run this organization as smoothly as Dean did for the last 4 years!

Every new administration wants to put fresh ideas into action. Well, I'm no exception. In the next few months I intend to make changes to our meeting format. This isn't a new idea, but an old problem the executive committee has struggled with for years. Several ideas have been bounced around at executive meetings, including the elimination of either the professional or amateur presentations, or scheduling two meetings per month.

Last month, John Polacheck presented to the executive committee a motion outlining a meeting format. His motion is printed elsewhere in this newsletter. The motion was tabled to allow the input from other members to be considered.

As your newly elected president, I wish to be given the benefit that previous presidents of the TAAA have had. I would like to run the meetings unencumbered. I encourage your inputs regarding the meeting format and content. I believe we can work together and achieve a satisfactory format without going to two meetings per month and without continuing our marathon meetings. Here's just one of my ideas (times are approximate)...

```
6:30pm - 7:00pm  Beginner's Lecture
7:00pm - 7:30pm  Room Preparation
7:30pm - 8:15pm  Invited Lecture,
                 professional or TAAA
                 member, includes questions
8:15pm - 8:30pm  Observer's Report,
                 announcements, and
                 business
8:30pm - 9:00pm  Refreshments
9:00pm - 10:00pm Other  presentations
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The "second half" (9:00pm - 10:00pm) would be reserved for short presentations limited to 10 minutes each. Members with particularly interesting topics would be encouraged to present more information at a Member's Night or invited as the main lecture at a future meeting.

Currently, we have 2 Member's Nights per year. Believe it or not, we have trouble finding members to make presentations! There might be two reasons for this:

First, Member's Nights haven't been publicized well enough in advance for members to prepare talks. I plan to change that. In the future, TAAA members will be given the same courtesy we give our invited speakers: at least one full month to prepare your talk.

The second reason is because speakers aren't waiting until Member's Night to make their presentations. Instead, 20-30 minute talks are crammed into 10-15 minutes, or time constraints are ignored leading to our marathon meetings. By limiting the second half speakers to 10 minutes each, and encouraging them to make Member's Nights presentations, I am certain we will start having some very interesting Member's Nights. If the membership desires, we can increase the frequency of Member's Nights during the year.

I would like feedback about my ideas, as well as your own ideas. Please call me at 579-0185 (before 9:30pm) or e-mail me at (lappin@egret.sao.arizona.edu).

During meetings, please give me your ideas in writing, and not verbally. While I try to listen to them, it is impossible for me to devote full attention to your ideas while taking care of pressing meeting matters. If I receive your ideas in writing, I can read them at a more convenient time, and give them the individual attention they deserve. So, please, call me or write.
TERRI LAPPIN

Meeting News

Beginner's Lecture: The Summer Sky

By Terri Lappin

In Tucson, summer means monsoon season and almost no observing. With all the weird weather we've had this year, who knows, maybe we will have some clear nights this summer. I'll spend some time this month describing some of the jewels of the summer sky...the Milky Way with all its clusters and nebulae, and this summer's planets: Jupiter and Saturn.

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

June's Speaker: Dr. William Hubbard

By Dean Ketelsen

"Probing Planetary Atmospheres with Stellar Occultations"

Everyone with a telescope who has ever looked at the moon has probably noticed its orbital motion sneak up and cover stars. Since the moon has no atmosphere, the stars appear to blink out instantly. But if the object has an atmosphere, the star is dimmed more slowly, and if you consider the star as a light source, you can use it to analyse the distant atmosphere. These observations will be the basis for Dr. Hubbard's talk.

William Hubbard was born in Liberty, Texas. He attended Rice University, majoring in physics. He moved to the University of California at Berkeley for his Ph.D. in astronomy in 1967. He held a post doctorate at Cal Tech and was an assistant professor of astronomy at the University of Texas at Austin before moving to the Lunar and Planetary Labs in 1972. He has been there since, serving as director for 4 years. He has been a science advisor to NASA through the 70s, and has been associate editor of Icarus, a journal of solar system studies, since 1980. His major areas of interest are planetary interiors, structure of rotating planets, high pressure physics, stellar structure, occultation theory and observation, and turbulence. *

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Members' Night Speakers Needed

By Nancy Wagner

The next Member's Night will be 7 July 1995. In accordance with our new president's policy, we are announcing this event a month in advance. Please prepare your lectures and contact Terri to have your presentation placed on the agenda. *

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Dark Skies for June

DARK SKIES for Tucson (in MST)

1995 JUNE — no twilight, no moonlight

Th/Fr	1/ 2	10:01pm	-	3:40am
Fr/Sa	2/ 3	10:40pm	-	3:39am
Sa/Su	3/ 4	11:17pm	-	3:39am
Su/Mo	4/ 5	11:52pm	-	3:38am
Mo/Tu	5/ 6	12:27am	-	3:38am
Tu/We	6/ 7	1:02am	-	3:38am
We/Th	7/ 8	1:40am	-	3:37am
Th/Fr	8/ 9	2:20am	-	3:37am
Fr/Sa	9/10	3:05am	-	3:37am
Sa/Su	10/11	-	-	-
Su/Mo	11/12	-	-	-
Mo/Tu	12/13	-	-	-
Tu/We	13/14	-	-	-
We/Th	14/15	-	-	-
Th/Fr	15/16	9:13pm	-	9:57pm
Fr/Sa	16/17	9:13pm	-	10:40pm
Sa/Su	17/18	9:13pm	-	11:19pm
Su/Mo	18/19	9:14pm	-	11:56pm
Mo/Tu	19/20	9:14pm	-	12:31am
Tu/We	20/21	9:14pm	-	1:05am
We/Th	21/22	9:14pm	-	1:40am
Th/Fr	22/23	9:15pm	-	2:17am
Fr/Sa	23/24	9:15pm	-	2:56am
Sa/Su	24/25	9:15pm	-	3:38am
Su/Mo	25/26	9:15pm	-	3:38am
Mo/Tu	26/27	9:15pm	-	3:39am
Tu/We	27/28	9:15pm	-	3:39am
We/Th	28/29	9:15pm	-	3:40am
Th/Fr	29/30	9:15pm	-	3:40am
Fr/Sa	30/ 1	9:18pm	-	3:41am

Erich Karkoschka

Club News

Election Results

A total of 70 ballots were cast, majority vote is needed for election.

President:
Teresa Lappin 69 ELECTED
Abstentions 1

V.President:
Larry Wilson 67 ELECTED
Abstentions 3

Treasurer:
Duane Niehaus 11
Gary Rosenbaum 59 ELECTED
Abstentions 0

Sectretary:
David Harvey 68 ELECTED
Abstentions 2

Member-at-Large:
Bob Goff: 68 ELECTED
John Kalas 68 ELECTED
John Zajac 63 ELECTED
Abstentions: 9
Write Ins:
Mike Terenzoni: 1
James McGaha: 1

The new Executive Committee will appoint members to head the following committees:

Education
Fundraising
Property
Publicist
Star Party

*

Motion to Change Meeting Format

The executive Committee received the following proposal to change the format of the General Meeting.

Dear President, TAAA:

I am writing to you regarding a proposal to rearrange the organization of the monthly meeting. Rationale: The current format of the monthly meeting does not place enough emphasis on the first "A" of TAAA, "AMATEUR". Presently, amateurs must wait for several hours to deliver their presentations. By then they may be very tired. Also, most of the other members have already left, including those who would be able to give them useful feedback. This certainly does not encourage amateur members to prepare presentations, conceive and carry out creative projects, etc.

Therefore, I am making the following "draft" motion. I am requesting that it be discussed by the membership and by the Executive committee. I want only a minimal amount of time to be spent at the monthly meeting discussing this motion. I would like it to be printed in the Desert Skies in the June issue.

Draft Motion: The general meeting will always start promptly at 7:30. The first 5 minutes (7:307:35) will be for important/new announcements (most announcements should already have been printed in the Desert Skies; others can be projected while the membership is being seated or can be printed as handouts). The next 5 minutes (7:357:40) will be for the chief observer's report. The next 20 minutes (7:408:00) will be for 2 amateur presentations, 10 minutes each. The next 45 minutes (8:008:45) will be for the main/guest speaker. The next 15 minutes (8:459:00) will be for a break (and to allow individual members to speak with the guest speaker).The meeting will resume promptly at 9:00. There will not be strict time limits for the second half of the meeting. Thus, it will be less formal. However, the first 40 minutes will be set aside for more amateur presentations. After that there can be a business meeting, votes, etc.There will be a "timekeeper" appointed by the president for each meeting to see that the above times are strictly adhered to. At each meeting, the time slots for amateur presentations will be allotted in the reverse order to the last time spoken (for example: the first slot will be for a member who has never presented; the next, for a member who has not presented for a long time, etc).

During the first two weeks of June, I will be willing to discuss changes/suggestions with any member (phone: 544-8152; Email address: JPOLACHECK@AOL.COM; mail address: P.O. Box 299, Cortaro, AZ 85652). In the middle of June, I will prepare a final motion, to be printed in the Desert Skies, so that it can be voted on at the July meeting (hopefully, with a large percentage of the membership voting either in person or by absentee ballot).

Thank you.
Sincerely,
John Polacheck

Comments on Motion:
By Dean Kettelsen

The Executive committee has long been aware of the problems concerning the length of many of our meetings. We have discussed making changes at the executive meetings, but with little success.

There are a number of solutions, such as; 1) a second meeting each month for beginning lecture and youth groups, 2) timing speakers to keep informal

presentations to a manageable length, 3) have more Member's Nights. These all seem feasible until we have an especially interesting speaker with LOTS of interest. When that happens, you can throw the stop watches out the window!

John Polacheck prepared a presentation for the April meeeting and had to leave during the extended constitution discussions. He feels we have the need to change the meeting format.

The Executive Committee invites discussion and response to this problem from all TAAA members. If you have suggestions/solutions, please contact your new executive committee members and lets get together and find a workable solution. *

Open Positions

BY TERRI LAPPIN

We have some open positions on the Executive Committee. These positions are appointed by the president. Since they don't vote at the Executive meetings, attendance at the Executive meetings isn't required. Any reports can be either written or oral, depending on circumstances.

The positions of Chief Observer and Newsletter Editor have already tentatively been filled. Listed below are the open positions. If you want more information call Terri.

PUBLICIST: The Publicist serves as the official contact person between the TAAA and the media.

EDUCATION ADMINISTRATOR: The Education Administrator directs the Education Program, and chairs the Education Committee.

FUNDRAISING CHAIRPERSON: The Fundraising Chairperson directs our fundraising programs and assists in the scheduling of special events.

PROPERTY CHAIRPERSON: The Property Chairperson keeps records of all TAAA property and items loaned to members. *

TAAA Beginners Lectures Tapes

By Terri Lappin

The beginners lectures have been recorded on VHS video cassette tape. If you missed a lecture or want to hear one again, copies of these tapes are available for TAAA club members to borrow.

They are on VHS format recorded on SP mode. If you would like to borrow a tape you can reserve one by calling Teresa Lappin or Gary Rosenbaum at 579-0185.

Available Titles:
Asteroids
Telescopes
Mars
Cleaning Mirrors and Lenses
Open Star Clusters
Jupiter the King of Planets
Galaxies
Red Variable Stars
The Sun
Perseid Meteors
Observing Saturn
The Autumn Sky
Observing the Andromeda Galaxy
Comets
Observing Orion
How to Use a Small Telescope
Natural Skyglow
Annular Eclipses
Venus
Eyepieces
Beginners Astrophotography
Light Pollution
Electromagnetic Spectrum
Observing Mars
Aluminizing Mirrors

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Miscellaneous Notes

BY DEAN KETELSEN

I had a star party for fifty 6th graders at Gilbert Ray Campground on the west side of Tucson on the 18th. I wanted to show them Mercury, since not many of the public get to see it. Anyway, I found it early in the 10X70s and quickly got it in the 10" celestron. It was a spectacular thin crescent! In addition, the atmosphere dispersed it into a short spectrum with some very pure colors. It will be fading and dropping rapidly the next couple days, but it is certainly worthwhile to go to some efforts to find it early (while still bright out) to see the skinny crescent phase before it gets down to the murk.

Next, Mark Trublood sends a reminder of the Spica Graze coming up on June 8th. The May newsletter had a short notice about joining the Phoenix clubs to do a limb profile. Note there is no occultation from Tucson - you have to go north to see the graze or occultation!

In responding to my last post about ASTRONET, Wayne Johnson of OCA tells us of his third supernova discovery.

Lastly, for those who have been around a while, Steward Faculty member Thomas Swihart died last week while on a cruise with his wife. *

Special Interest Groups

Computers & Electronics In Astronomy

BY ROGER TANNER

The third meeting of the subgroup was held at the University Mirror Lab on May 12th. There were about 11 members present for the demonstration of the astronomy information available on the Internet. Paul Brown started the meeting with an overview of what the Internet is, the exploration he has done, and the way most people have access to it. A quick poll showed that only a few club members have access to the Internet, either through their job or by buying the service from an internet provider. You can purchase the basic text access for typically $20 per month. Graphical access is typically $5 per month more.

This started a discussion of the way information is transmitted and sent to your computer. The information sent across the internet is in packet form and you need a program that can understand these packets to see the information. The information on the World Wide Web is stored as text pages. Programs which show you a graphical view of this text are called viewers (like Mosaic and Netscape). These programs take this text and format it on the screen and call up the associated pictures for display. If you have just the text service, you can see the original text pages with just a text viewer, but no pictures. To see the pictures you have to download them to your computer and use an image viewing program to see them. One drawback to buying this service from an internet provider is that your access is over the phone lines, and the amount of information that has to be transmitted can be very large for some of the images. It can take several minutes to bring up the first page even with a 14.4K baud modem. Access through a computer that is on an Ethernet link is much faster and reduces the wait, although some screens can take a long time if the network is busy.

Some members were trying to get free access from their home computers by using a modem to access their work or school computers, and this raises an additional complication. An additional program is needed to provide translation on each end of the phone line, and the user usually provides this program. These are provided by the internet provider if you buy the service.

After that Paul demonstrated accessing some WWW pages using Netscape, including the TAAA page generated by Larry Wilson. We looked at the text file that generated the graphics in the web page and found the file references that keyed Netscape on where the graphic files were. The unique thing about the Web pages are the highlighted words in the pages. If you click on them Netscape will take you to another page which will have more information on that subject. This could be part of the original file you accessed or it could be another file on another computer halfway across the globe produced by an unrelated individual. This allows you to follow the thread of a subject to information on several computers all around the globe. This web of information is cross linked and referenced extensively.

After that we broke up into three groups each using a different computer to look at different things. One group found the digitized Palomar Sky Survey and downloaded a small section around the Crab nebula. This could give you access to a sky map that goes considerably deeper than the Hubble Guide Star Catalog. James McGaha was going to try and view the file in an astronomical image processing program called Mira.

Another group found their way to the Space Telescope Science Institute Web page and the Hubbells Greatest Hits image files. We looked at an image of Mars taken in February showing exquisite detail including orographic clouds around one of the volcanoes. Web surfing was fun but sometimes you got lost as to exactly where in the world you were logged into. Thanks to Dean for getting us access to the Lab and their many computers.

The next meeting will be held at Bill Garretts house in southwest Tucson on June 4 at 7:30 PM. Bill will demonstrate his LX200 computer controlled scope. I will bring a computer with The Sky software that can remotely operate the scope and display its position. Bill's phone is 746-9462 and give him a call if you want to attend and didn't get maps at the last meeting.

Contact Roger Tanner at 574-3876 or email:
rtanner@gas.uug.arizona.edu. *

TAAA Bulletin Board

BY NINA LEHMAN

I have finally received and installed the new, improved Pentium chip. Hopefully I will have a prototype BBS up and running within the month. Watch this space for more information in upcoming issues.

Contact Nina Lehman at 579-1382 or email:
74750.247@compuserve.com.

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Star Parties

Flandrau Science Carnival
21 April to 4 June

The Flandrau Science Center and Kitt Peak National Observatory present the Pacific Science Center's Science Carnival. The best of Pacific Science Center's hands-on science exhibits will be housed in a giant tent. It will take place on the north side of Flandrau on Hawthorne St. at Cherry Ave. Lots of fun for children and adults. For details call 621-4515 or 621-STAR. Group discount rates are available. *

10th Annual Astronomy Festival
2-3 June

The Sirius Lookers of Sedona, and the Verde Valley Astronomy Club will hold their 10th annual Astronomy Festival at Red Rock State Park in Sedona, AZ. Everything from world class resorts to RV facilities are available. Nearby are Lowell Observatory in Flagstaff, and Meteor Crater. Enjoy comfortable weather, spectacular scenery, and great seeing under dark Arizona skies! Contact Russell A. Nidey, 1101 Zalesky Rd., Cottonwood, AZ 86326, (520) 634-7332, or Dennis Young, (520) 282-7501. *

Whipple Observatory
3 June

The Whipple Observatory will present an Open House and Star Party on Saturday, June 3. The Observatory Visitors Center will open at 10 a.m., featuring new exhibits. An informal lecture on astronomy will be presented at 7:30 p.m. Observing will begin at 8 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association.

7:30 p.m. Informal lectures on Astronomy by Observatory staff and TAAA members (in parking area and on grounds). All lectures will be repeated as needed to accommodate the crowd.

8:00 p.m. Observing begins (in parking area next to building). On view: Mars, Jupiter, the Moon, 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 6 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 3rd for information about star party cancellation. *

Tohono Chul Lecture and Star Party
5 June

Tohono Chul Park has again asked us to give an astronomy presentation this spring. Last year it was very popular and they overfilled the lecture hall. The plan is the same - I get a chance to practice my Grand Canyon twilight talk at 7:30, and the observing gets underway at 8:00 on the tennis court/staff parking lot. It draws lots of interested folk, so help out if you can. *

Spica Graze
8-9 June

There will be a grazing occultation of the star Spica on the night of 8-9 June. The path of the graze is between Tucson and Phoenix. I have been asked by Gene Lucas of the Saguaro Astronomy Club to invite people to participate in the graze limit observations of this event. The time of the graze is approximately 7h 13m UT. For more details, if you are interested in participating, contact Derald Nye - 762-5504. Also see accompanying article under **Notes from Other Clubs.** *

Grand Canyon Star Party
17-24 June, 1995

Final preparations are under way for this year's Grand Canyon Star Party, to be held the 17th - 24th of June. We have a good number of new folks bringing telescopes, as well as a bunch of new ones from around the country. By all indications, we will be setting records for astronomer attendance this year!

I recently received fee waivers from Chuck Wahler, and we are making final arrangements. I am hoping to have waivers, maps, and a letter to all attendees that I know about by the June meeting. That plan is complicated by my attendance at RTMC, but that is my hope. If you have not heard from me by the June meeting, I will have waivers and packets available. If you are not attending the meeting, call me and make sure I know you are coming.

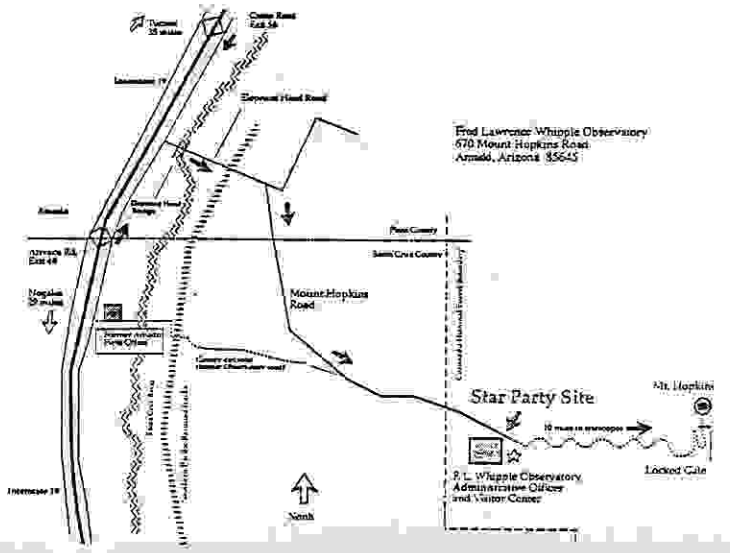
It should be a great time again and I hope you can all think about attending even if you can't this year. If you can be arm-twisted into giving a twilight talk, or helping out with the star party in any way, let me know and I will put you to work. See you there! *

How To Find The Observatory Offices

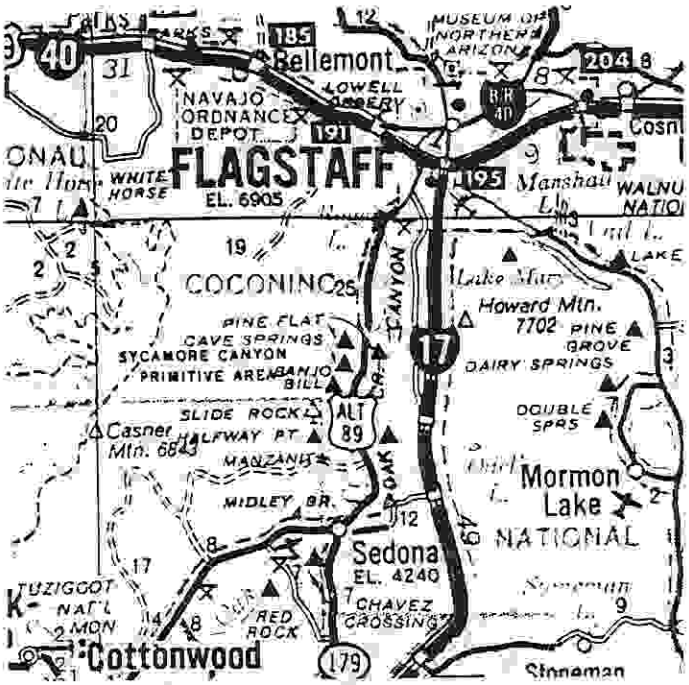
The new administrative complex for the Fred Lawrence Whipple Observatory is 43 road miles south of Tucson and 38 road miles north of Nogales, Arizona.

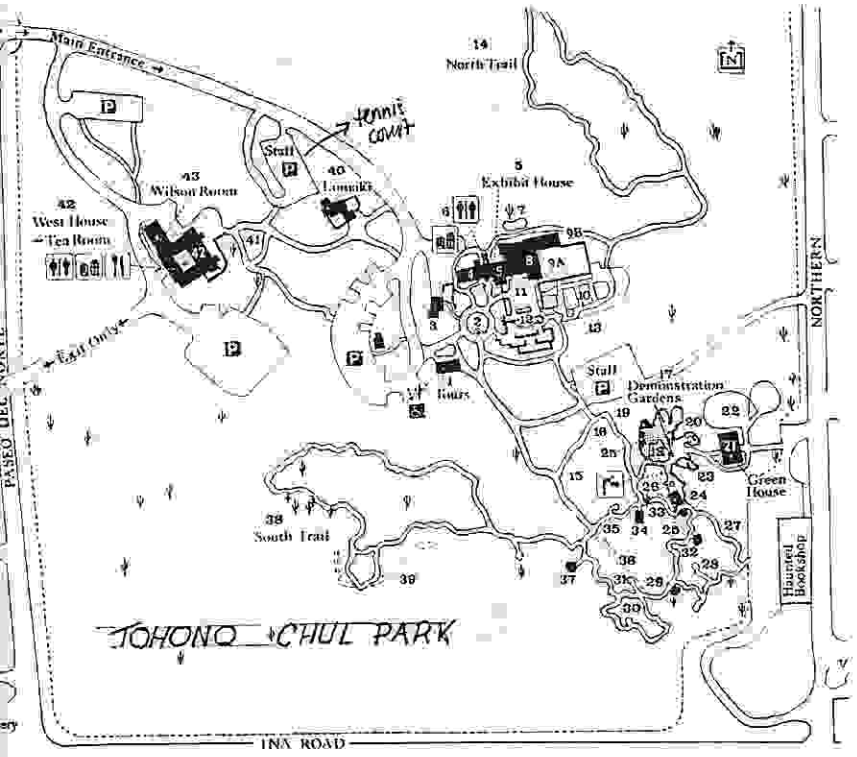
From Tucson, drive south on Interstate 19 to exit 56 (Canoa). At the bottom of the exit ramp, turn left and drive under the freeway to the frontage road on the east side. Turn right and drive south three miles to Elephant Head Road. Turn left and drive east, crossing the Santa Cruz River on Elephant 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)

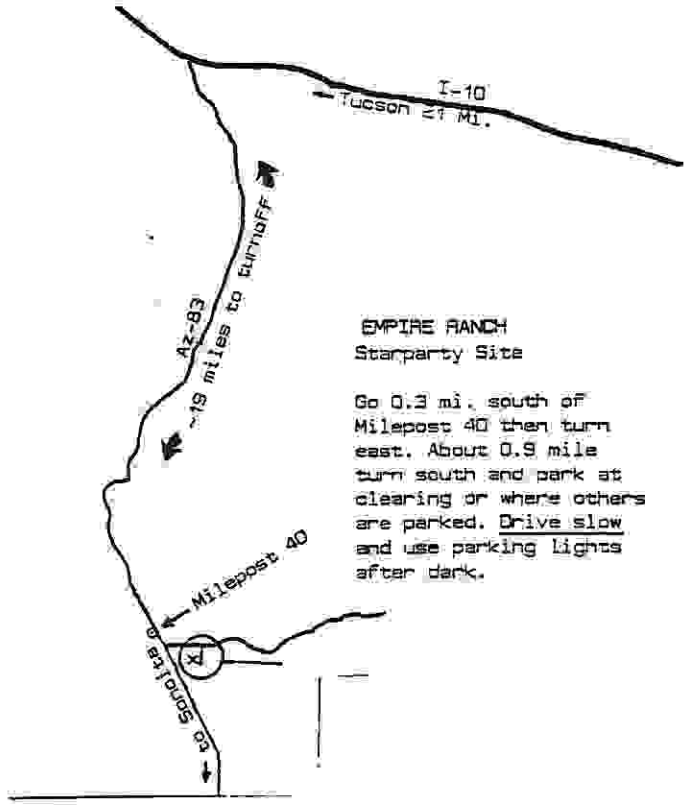
From Nogales, drive north on Interstate 19 to exit 48 (Amado/Arivaca Junction). At the end of the exit ramp, turn right and then left onto the frontage road. Drive north for about two miles to Elephant Head Road. Turn right and drive east, crossing the Santa Cruz River on Elephant Head Bridge. One mile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



10th Annual Astronomy Festival, Red Rock State Park







EMPIRE RANCH
Starparty Site

Go 0.3 mi. south of Milepost 40 then turn east. About 0.9 mile turn south and park at clearing or where others are parked. Drive slow and use parking lights after dark.

Arivaca Star Party
5 July 1995

We shall need a speaker and 3 telescopes for a sunset observing. It will take place in Arivaca, 39 miles south of Green Valley. South on I-19 to Arivaca Junction, then 19 miles west on Arivaca Road to Arivaca. For map and details, call Karen Allen at 749-5744. *

El Pueblo Neighborhood Center
6 July 1995

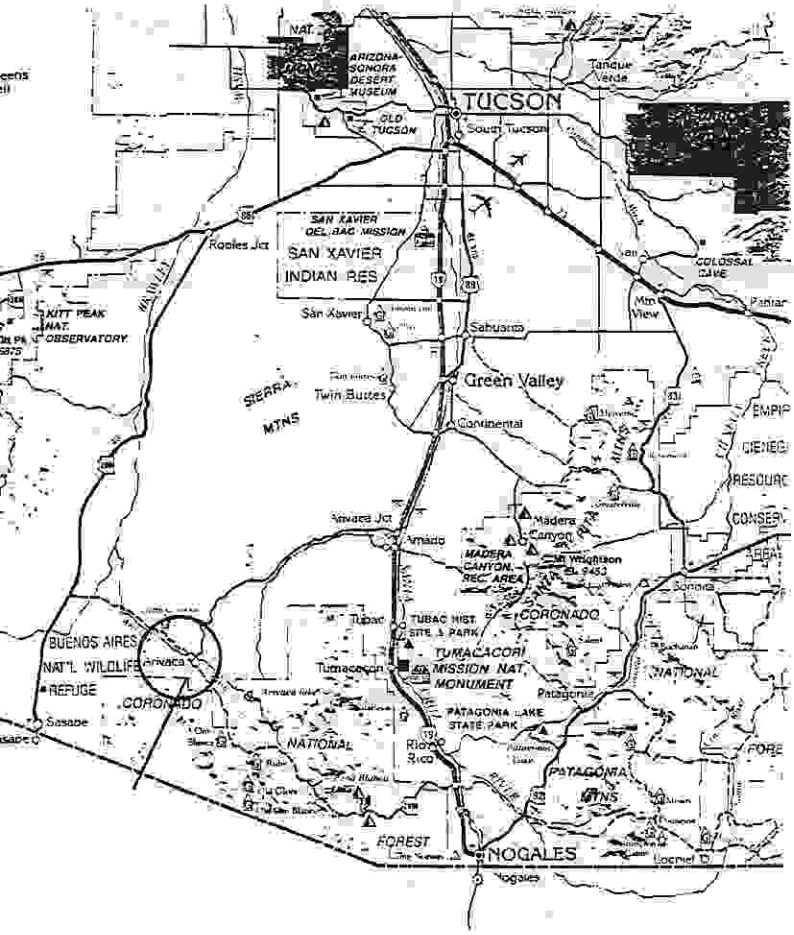
7:00 presentation, 7:30 observing

This is one of the Tucson Library - requested events over the summer. There are three more in July. El Pueblo is at 101 W.Irvington, and last year we set up just south of the center on an open area. I'm still looking for someone who can give a little astronomy presentation for this or the July dates. If there are no volunteers, I'll be forced to subject them to one of mine (Dean's)! *

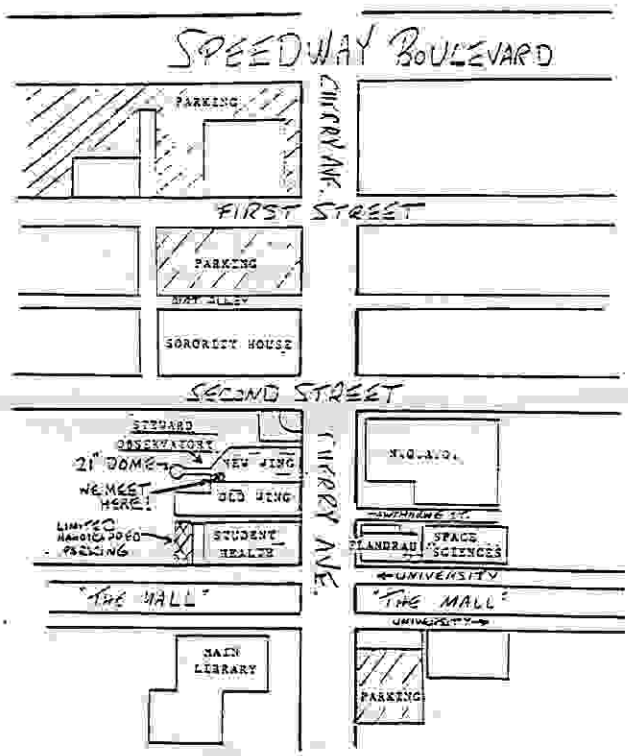
ALCON '95
20-22 July

The Astronomical League Convention, ALCON '95, will be July 20-22 in San Antonio, Texas. Everyone should have received info about it in the February issue of the Reflector. Anyone wanting more information can contact Bob Goff (the TAAA ALCOR). *

Arivaca Star Party



TAAA Meeting Location



El Pueblo Neighborhood Center

Notes from Other Clubs

Update on the Spica Graze in June

BY GERRY RATTLEY

This will be the last article about this spectacular graze before the event. This is the final graze/occultation of Spica in this current series. It occurs on Thursday evening, Friday morning, June 8-9, 1995 at 12:11.5 MST. This is the central graze time at Gila Bend. For each station, graze events will begin from one to three minutes before this time and last until one to three minutes after. The length of the graze depends on how deep your station is into the lunar profile.

Our graze expedition will go to the old Highway north out of Gila Bend. This highway intersects Hwy-85 on the east end of Gila Bend just west of the overpass that cuts south to I-8. There is a sign there pointing you to Arlington. The graze line goes across this highway about 5 miles north of that intersection (Hwy-85 and the old highway) and you will find Gerry Rattley in this area on Thursday evening, June 8.

If you've been out to the SAC's star parties at Buckeye Hills Rec. Area, you can plan your time past there to Gila Bend as an additional 30 minutes. The Buckeye Hills site is about an hour out of Phoenix. Plan to be at the graze site by about 10 to 10:30 PM, but no later than 11:00 PM. You'll need at least an hour to get your station assignment, find your station and get your equipment set up and running.

I would encourage anyone interested in astronomy to come out for this event. You don't have to time it, just watching can be fun (both the graze itself as well as the timing efforts.)

You'll need some optics. Tripod mounted binoculars will work, but I don't recommend holding the binoculars by hand (you can do this, but not for timing.) It's too easy for the Moon to slip out of the field of view at the critical moment and miss seeing an event. A camcorder can be used but I am not an expert on this method. Call Gene Lucas, 837-3718, for instruction, hints and tips about this technique if you haven't done this before. Any kind of telescope will be OK for this graze as long as it's not shaky. A Dobsonian should probably be used as a fairly low power unless it moves smoothly and firmly and you are used to tracking objects with it at medium powers. A driven scope can be used at medium power. You won't need higher powers for this event. You can use a neutral density or polarizing filter to knock down the lunar glare if you wish.

If you wish to take timings for this graze, the most popular method is with a WWV radio and a portable tape recorder. The other popular method is with video and you'll have to discuss this method with Gene Lucas. Video is the superior method and has many advantages over visual observing: timings are more accurate, you don't have to pay close attention to the image, and a permanent record is secured - just to name a few.

If you're timing this visually you can still get useful data. Start your tape recorder and WWV radio about 10 to 15 minutes before the graze. Check them out for a minute or two to be sure they're working. Be at your eyepiece observing Spica as it crawls into the Moon (actually the Moon is creeping up on Spica) between 5 and 10 minutes before the central graze time.

Spica will eventually "pop" out as it goes behind the Moon. It may come back on and go off again several more times as it passes behind lunar mountains and peeks out of lunar valleys until it finally comes back out for good. Call "out", "in", "flash", "blink", "D", "R" or whatever you will remember meaning as events occur. Strive to react as quickly as you can see something happen. Sometimes people are "dumb-struck" when such a bright star "pops" out or back on and just mentally freeze. Try not to do this. Say something. Anything! If events are slow you can comment on what's happening as the graze progresses. Sometimes events occur so fast you have a panic scene. Do the best you can and make comets on the tape as soon after as you can. You won't remember much the next day, so say it as it happens! Continue observing until about 5 to 7 minutes past central graze time, even if you haven't seen an event for a couple of minutes. If you quit too early you might miss the tip of a high mountain peak. Nothing will happen past the 5 minute mark though.

Be sure to note when you start observing continuously and when you stop. Just say "start observing" and "stop observing" on your tape. These times are part of the data set for your station. I usually start and stop on a WWV minute mark for ease of data reduction later.

If the WWV signal is weak before the graze, start your tape 15 to 20 early and play with the radio for 5 to 10 minutes to try to get a minute mark or two on the tape. Leave the tape running at this point until you can get another minute mark or two on the tape after the graze is over. Let WWV run free during the graze, the signal may clear up. If you have good radio reception during the graze, be thankful, and just let it run in the background. I set my radio about the same distance from my tape recorder as my voice is so that the two don't interfere with each other.

I use a card table next to my scope to set my radio and tape recorder. I can reach out and pick up the radio if the signal is weak without taking my eye from the eyepiece. Don't knock the radio on the ground though. You can use a step ladder, a tail gate or anything else you can set your stuff on.

I won't go into how to reduce your data from the tape yet. Concentrate on getting the data on the tape for now. You can get help reducing your tape later.

Gene Lucas and I will take care of your position data: longitude, latitude and elevation. All you have to do is find the station we assign you and set up on our marker (an orange road cone with a letter of the alphabet on it - each station is a different letter.)

The information in the previous newsletter is still valid. The Sky & Telescope article in the June issue is on page 72-73. If you stay in Phoenix, you can view and/or time a long occultation. Use the S&T article to work out your rough disappearance and reappearance times if you choose to do this.

If you have questions, want to get more information or want to get your name on the sign-up list, you can call me, Gerry Rattley at (602) 892-5698 or Gene Lucas at (602) 837-3718. *

Observing Reports

A FINE SUMMER DOUBLE

When I was a teenager I would look forward to the rising of the fiery red supergiant star Antares over the cornfields of northern Illinois during June. For this meant that the warm summer observing season was here and the appearance of the heart of our galaxy with its numerous star clusters and nebulae wasn't far behind. As Antares rises from the horizon in June, ahead of it are three stars that form a slightly curved line - this is the head of Scorpius. The star directly above Antares and the topmost of the three is called Graffias or Beta Scorpii. This is a lovely double star for small telescope users. Graffias pronounced (GRAF-ee-as) means the Crab in Greek and some attribute this star to one of the Scorpion's claws.

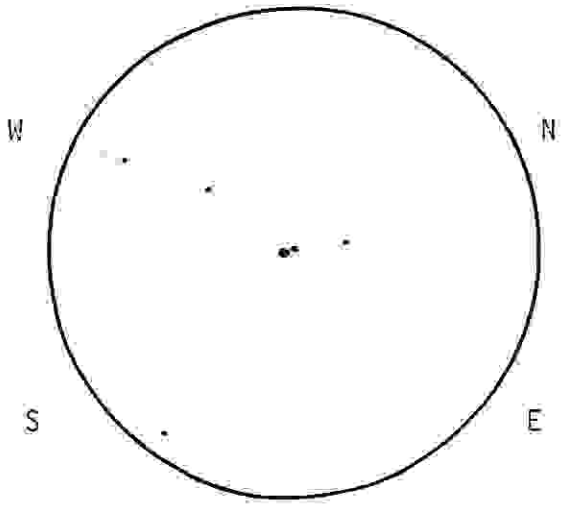
Beta Scorpii lies 550 light years away from Earth, and it belongs to the Scorpius-Centaurus Association of bright giant stars. Beta Scorpii is a main-sequence star with a combined magnitude of 2.6 and a spectrum of B0.5. Beta Scorpii is a multiple star with five known components. Beta Scorpii A is a spectroscopic binary with a 6.8 day period of revolution. The two stars are about 8 million miles apart and have masses of 21 and 13 suns. Beta Scorpii B has a magnitude of 10.3 and it lies 0.5" from the primary pair at P.A. 132° and it probably takes 1000 years to complete one orbit. This faint companion was first seen by the keen eyed S.W.Burnham in 1879. This pair needs a good steady night, large aperture and high power to be seen.

Beta Scorpii C at magnitude 4.9 is the only companion visible in small amateur telescopes. It lies 13.6" from the primary and has a P.A. of 21°, and it may take 20,000 years to orbit the main pair. Beta Scorpii C is also a main-sequence star with a spectrum of B2. It to is a close binary with a companion of magnitude 6.9 lying 0.10" away at a P.A. of 308°, and resolved only with the very large professional instruments. This whole vast quintuple star system spans 2000 AU's across and shines with the luminosity of 2800 suns.

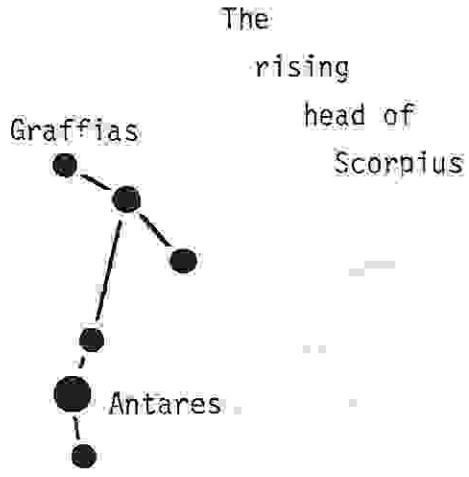
To the amateur observer Beta Scorpii forms one of the nicest double stars in the sky, almost like a southern hemisphere Mizar. The primary and companion are both fairly bright and well separated in a 3" refractor at 50x. The colors of this system are also attractive, the primary to most appears white whereas the companion glows light blue or lilac to some observers.

So this month enjoy this summer favorite of many a devoted double star observer and you'll be refreshed by its brightness and ease by which you can resolve it with your telescope.

JEFF BRYDGES



Graffias in a 3" refractor telescope at 50x.



Southeast horizon

Chief Observer's Report

The Vega-Bray Observatory picnic this year was a success in spite of clouds that threatened to spoil everything. At 2pm the day of the picnic it was mostly clear over the Observatory, but a band of high clouds started to move over the southern part of the sky shortly thereafter, thickened and then drifted north. Surprisingly though things cleared enough for decent (not great) viewing. Tom O'Hara and Bruce Walsh put their large aperture dobs on "the hill" and got some decent views in Lupus and Centaurus, while Dean Ketelsen and Bob Goff examined Dr. Vega's new monster 11" refractor. The word is, although the seeing was mediocre, the scope performed well image wise. Now, the question is how does Ed fit this behemoth in the roll off roof?

The planet Mars, having dimmed more than one sixth from its brightest back in February, is just a pale version of its former self at first magnitude. Look for the "red planet" as a bright orange-red star high in the west 1 hour after sunset. Mars is just below the constellation Leo, the Lion all month and is moving toward Virgo. See if you can detect Mars' apparent motion from week to week This month it really picks up steam as it heads out of Leo.

Venus disappears from our morning sky this month. Venus is our "morning star" all month, but gradually lowers and disappears from view by month's end. Venus, a brilliant beacon in the east, will appear very close to the horizon 30 minutes before sunrise, so buildings, trees and other obstructions may block your view. June is the best month to view the giant planet Jupiter this year, it is closest to Earth on June 1st (at opposition), and gives a large disk to view all month. To find Jupiter, look after sunset in the southeast for a very bright "star". Jupiter will be in the constellation Scorpius all month, and is already well up in the southeast after end of evening twilight. Of course this is the month to look for the remaining impact areas from the Shoemaker-Levy comet, now showing up as a dusky irregular belt on the southern portion of the planet. In observing Jupiter in mediocre seeing in May, I can say that the impact belt is still visible, but is not very distinct. You'll need decent seeing (at least a "6" on a scale from 1-10) to get a worthwhile look. Finally, look for the nearly full moon to pass just north of Jupiter on June 12.

Saturn continues to gain altitude in our morning sky all month, but you'll need to view it before sunrise in the pre-dawn sky. Look for a bright pale white star high in the south east 1 hour before sunrise. Early in the month Saturn is 30 degrees up in mid-twilight, but by June 30 it's already 50 degrees in altitude (mid-twilight) and approaches the meridian at sunrise. Saturn is almost as dim as it gets because of the edge-on view of the rings we have (the rings add substantially to Saturn's brightness). Considering that this month we get a rare view of the dark, shadowed southern face of the rings, you really should spare the sleep and take a look. The rings, barely tilted at 0.6 degrees to us, will leave a thin black line across Saturn's equator.

Of course the 10 day old waxing gibbous (79 percent lit) moon will occult (block) the bright star Spica on the night of 8-9 June for parts of central and northern Arizona. Fortunately for us, a rare graze of Spica will occur between Tucson and Phoenix at approximately 12:13 a.m. This is a must see event. If you are interested in making the trek to see this, call the main man, Derald Nye at 762-5504, e-mail at nye@kw-obsv.org.

Michael Terenzoni
Voice mail at 621-2001: mailbox #111-1123
E-Mail: terezon@gas.uug.arizona.edu

What's New at

FLANDRAU
SCIENCE CENTER

Work is really progressing on Flandrau's 16" telescope. Volunteer Demo Galanos has done an outstanding job making the telescope user friendly. We now have a custom curved (to match the curve of our dome) observing table, dual Telrads, and a premium 80mm finder scope on a Losmandy mounting. Galanos is to be greatly thanked for donating the latter. This scope is really looking good and performing well. If you think you might want to partake in the views, consider volunteering once or twice a month as a telescope operator. As the scope gets better and better, I expect more folks volunteering, so call or e-mail me to reserve your spot now ! Science Carnival, a collection of fun, educational and entertaining hands on science exhibits ends on June 4. To catch it before it ends, come to Flandrau to buy tickets, the Carnival is located in a large tent just behind the Science Center. Admission is $2.00 for children under 13, and $3.00 for everyone else.

Being promoted with the Carnival is the popular Omnimax movie "To Fly" in Flandrau's Space Theater, which continues to amaze audiences not used to our all sky theater. The Mirimar Pictures computer animation production entitled "The Gate", is now playing in the Space Theater. Entirely computer animated, "The Gate" takes you on a wild ride through the latest in computer graphics technology.

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Voice mail at 621-2001: mailbox #111-1123
E-Mail: terezon@gas.uug.arizona.edu

Spring Weather Good to TAAA Events

By Dean Ketelsen

We have really lucked out recently with many of our events. A month ago there was the WIYN tour followed by a cookout and spectacular observing at Kitt Peak.

A week later was the Spring picnic. Ed Vega, our host, outdid himself this year. Usually he supplies drinks and a grill. This time he supplied drinks, grill, and about 40 pounds of steaks, burgers and hot dogs. Though the weather wasn't perfect, the record crowd all got in some observing and enjoyed Ed's hospitality. There was some great CCD imaging with the 20" Maksutov, and even though the new 12" refractor had just been finished in time for the picnic and the optician (Max Bray - perfectionist) didn't want anyone to use it before adjusting, your president (ex-president, actually) seized control and showed some great views to some patient observers. Thanks Ed!

The club was also able to make a few dollars for our land fund thanks to some convention groups. We had a group of bicycle enthusiasts out at Colossal Cave on April 24th. It is a nice dark site and we had lots of interested people show up. Thanks to John Kalas, Bill Kota, Glen Nishimoto, Roger Tanner, Andy Gittler and Eric Karkoschka for helping out.

A few days later we hosted a star party for a gourmet dinner out in the desert at the White Stallion Ranch. Randy Quiroz, Roger Tanner, Teresa Lappin and myself were treated to the 4-course meal in exchage for coming out a few hours early. That plus the trio providing live music made it the stylish event of the year. The best part was getting paid for these events - $680 for both events!

Super Nova in NGC4512

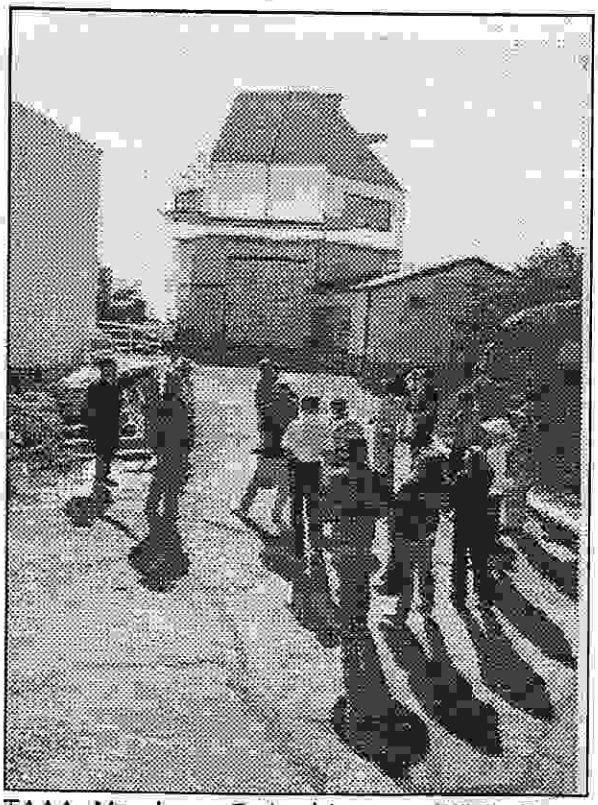
Dean Ketelsen received the following email:

From MRGALAXY@UCRPH0.UCR.EDU Tue May 2 16:55 MST 1995

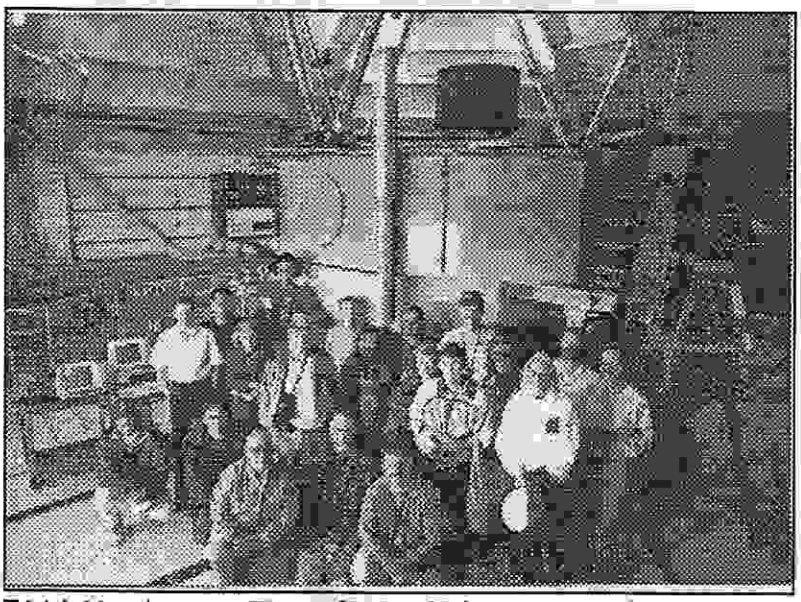
Hi Dean,

Did you hear of my 3rd SN discovery? It's a 16th magnitude object in NGC 4512 about 30"N and 30"E of this LSB barred spiral's nucleus. I found it on Apr 4th using our club's (the OCA) 22-in telescope and CCD camera. Anyway, let the others know, maybe if they have astroimaging capability they can take a peek. It seems to be holding its own.

Wayne Johnson (aka Mr. Galaxy)



TAAA Members Embarking on WIYN Tour, April 22, 1995



TAAA Members on Tour of WIYN Telescope, April 22, 1995

Photographs courtesy of Dean Ketelsen, scanned into computer format by Roger Tanner.

TAAA Executive Committee Meeting - May 1995

As of the deadline for inputs for this newsletter, the editors have not received this report.

Desert Skies Classified

For Sale: CD-ROM disks of astronomical images and CD-ROM player. ARN (Astronomical Research Network), IRAS, Deep Space, Neptune and moons for $40 each or best offer. Perry Berlind, 795-4575. (06-95)

For Sale: Celestron 6 telescope, $400. Minolta XG1 Camera with 500mm telephoto lens, T-ring, tripod, $180. Massoud Mortazavi, pager: 703-3797. (07-95)

For Sale: 2.4" Altazimuth Refractor "Jupiter" 800mmF.L. adjustable wood tripod, eyepiece shelf, 5-.965" eyepieces, all metal mount and tube, wooden storage box, finder scope, instructions. $75.00 call Jeff Brydges 888-0591. (07-95)

Books For Sale: Star Ware by Phil Harrington, **The Planet Observer's Handbook** by Fred Price, **Turn Left at Orion** by Guy Consolmaeno, **Observing Variable Stars** by David Levy, **Sky Phenomena** by Norman Davidson, **Binary Stars, A Pictorial Atlas** by Dirk Terrell, **The Universe (Life)** by David Pargamini, **The Supernova Story** by Laurence A. Marschall, **Pictorial Astronomy** by Dinsmore Alter, **Jupiter** by Hunt & Moore, **Astronomy** by E. G. Ebbighauser, **Physics Without Math** by Clarence E. Bennett, **Our Changing Universe** by John Brault, **Weather Around Us** by Richard Anthes, **Astronomy Made Simple** by Meor H. Degan. For price and information, call Jeff Brydges 888-0591. (08-95)

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)

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.