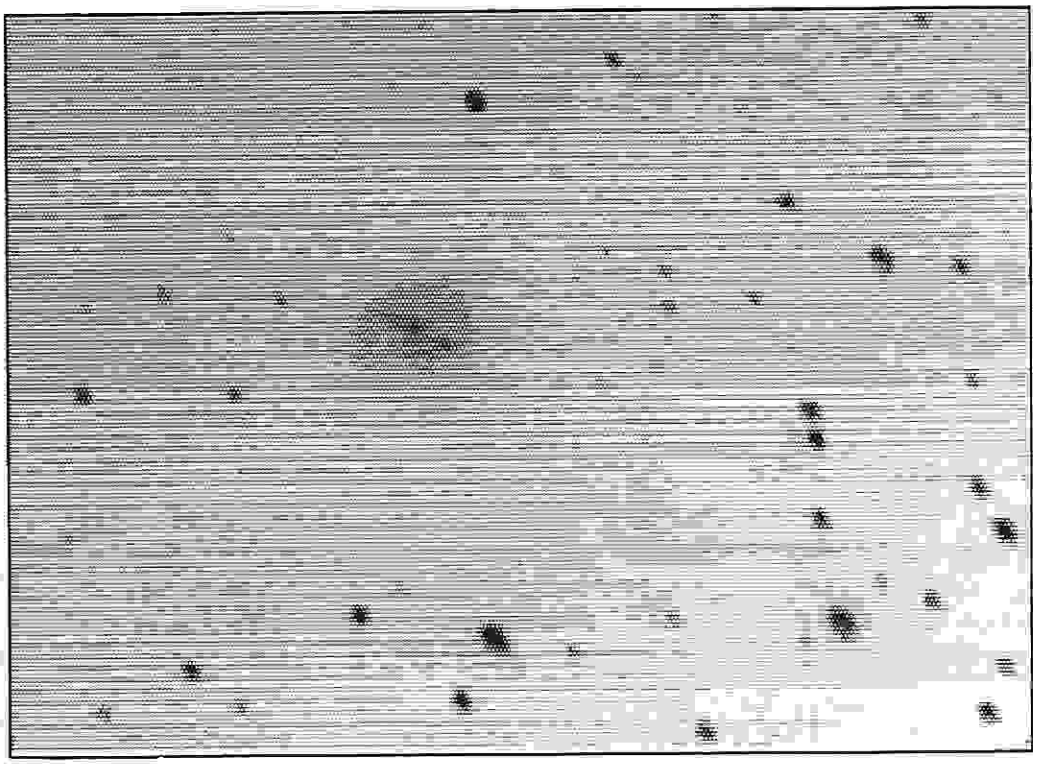
Desert Skies

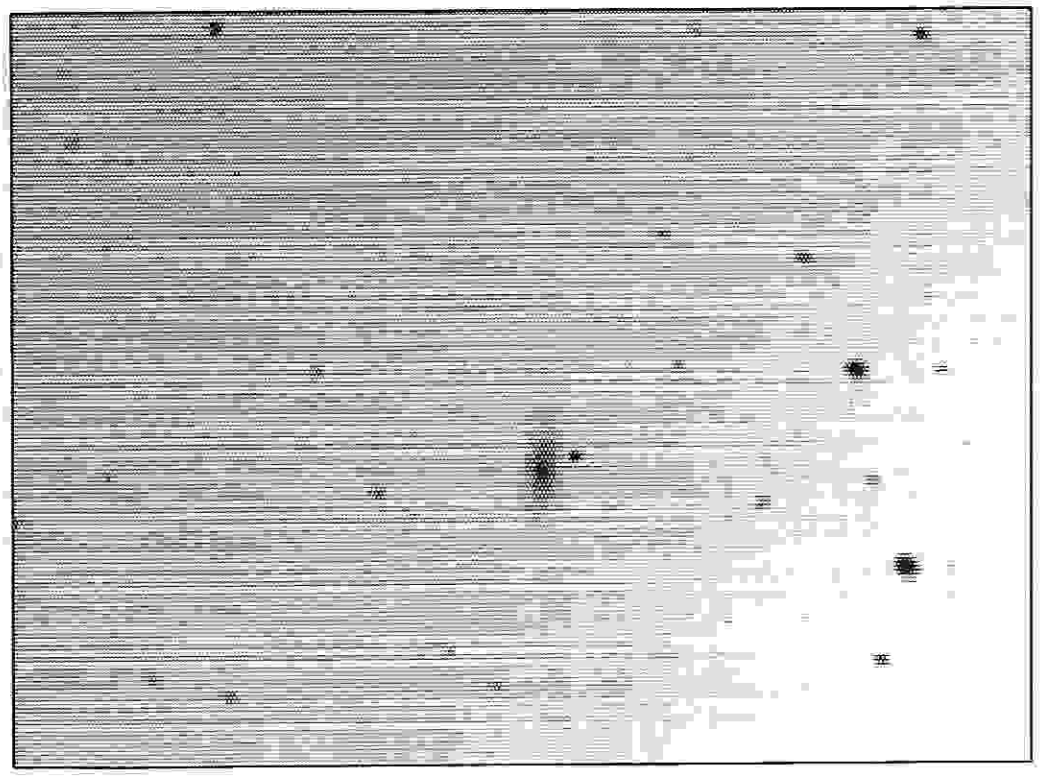
Tucson Amateur Astronomy Association

May, 1995



Supernova in NGC2441

Supernova in NGC2726



Calendar of Events

GENERAL MEETING - Friday, May 5, 7:30 pm at the Steward Observatory Auditorium -room N210. Topic is **What's New at IDA and GNAT** by Dr. David Crawford.

BEGINNERS LECTURE- Friday, May 5, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is **Saturn's Rings** by Terri Lappin. All are welcome!

YOUNG ASTRONOMERS CLUB - Friday, May 5, 7:30 pm at Steward Observatory **room 202.** Aimed at school-age kids and is concurrent with the general meeting. This month - Saturn and Virgo. **Please note that the meeting is in a new location: room 202.**

EXECUTIVE MEETING - Thursday, May 11, 7:30 pm at Flandrau Science Center's Conference Room.

COMPUTERS IN ASTRONOMY SIG - Friday, May 12, 7:00 pm at the Mirror Lab
Sunday, June 4, 7:30 pmat Bill Garrett's house.

STAR PARTIES:

April 21 - June 4 - Flandrau Science Carnival
May 3 - Agua Caliente Elementary School
May 4 - Hohokam Middle School
May 6 - Astonomy Day at UA Mall
May 20 - Empire Ranch Dark Sky Observing
May 24 - Triangle Y Ranch in Oracle
May 27 - Empire Ranch Dark Sky Observing
June 6 - El Pueblo Neighborhood Center
June 8 - Spica Graze
June 17-24 - Grand Canyon Star Party
July 5 - Arivaca Star Party

Next Newsletter Deadline - May 17th.

Cover: These CCD images were taken on March 12, 1995 by member Roger Tanner. The upper image is supernova 1995E in NGC2441 (star in right arm of galaxy). Two 10-minute exposures were averaged together. The lower image is supernova 1995F in NGC2726. Two 4-minute exposures were averaged together. Roger took the images in his driveway using a 17.5" scope and a cookbook 245 CCD camera, processed with SuperFix, then Photostyler. Halftone for newsletter generated using Corel PhotoPaint and printed on Canon BJ100 bubble jet printer.

TAAA EXECUTIVE

President	Dean Ketelsen	293-2855
Vice-President	Terri Lappin	579-0185
Executive Sec.	Rob Nyberg	745-0710
Recording Sec.	Tabitha Neihaus	797-4189
Treasurer	Duane Niehaus	797-4189
Member-at-Large	Bob Goff	790-1452
Member-at-Large	Dave Harvey	797-2512
Chief Observer	Mike Terenzoni	887-3226
Mem. Coord.	Gary Rosenbaum	579-0185
Past President	Tim Hunter	299-2972
Editors	Nancy Wagner	579-1382
	Nina Lehman	579-1382
Star Party Chair	Karen Allen	749-5744

MEMBERSHIP IN THE TAAA

Individual	$25.00/year (increased)
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 41254
Tucson, AZ 85717

OR email: 74750.247@compuserve.com

Meeting News

Beginner's Lecture: Saturn's Rings

By Terri Lappin

No More Rings!

This month the earth passes through the plane of Saturn's rings. For the next year we will be seeing the rings edge on or very close to this. At this month's Beginner's Lecture, I will talk about Saturn's rings and what you can expect to see over the next year.

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

May's Speaker: Dr. David Crawford

By Dean Ketelsen

What's New with IDA and GNAT

While many in the TAAA are professionals in fields very near to astronomy, David is very nearly the only research astronomer who is a TAAA member. Since it has nearly been 2 years since we have heard from him, it is time for an update on some of his innovative projects.

David grew up in Johnstown, Pennsylvania, went to college at the University of Chicago where he received his Ph.D. in astronomy in 1958. While attending school, he was a research assistant at Yerkes Observatory, and taught at Vanderbilt University for a short time before moving west.

In 1960 he joined the staff at Kitt Peak National Observatory, where he remains today. His most visible position there was serving as project manager for the 4 meter telescopes for Kitt Peak and CTIO. Observationally he has specialized in photometry, with his primary interest in young stars and star clusters.

In 1988 he was the joint founder of the International Dark-Sky Association (IDA), where he remains executive director and driving force for that still-growing organization. He is recognized as the world's leading expert in lighting systems and light pollution. He is also currently involved in GNAT, Global Network of Automated Telescopes for computer controlled collection of photometry data. His talk will bring us up to date with both of these projects. *

Young Astronomers Club

By Nina Lehman

Due to the construction of a new computer lab for Steward Observatory, the Young Astronomers will be in room 202 beginning with the May 5th meeting.

Parents should review the handouts with the young astronomers and assist them in observing/finding the objects depicted. Astronomers bringing observing reports to meetings will be awarded points. The points can then be saved and applied to prizes.

The topics for May are Saturn and Virgo. *

Constitution Update

By Larry Wilson

During the last meeting, we discussed the changes to the TAAA Constitution, and a new set of wrinkles came out. The proposed changes fall into 3 major catagories:

1) To re-organize the Executive Committee titles/duties to more accurately reflect the present needs and activities of the club, and to restrict the power to vote on matters governing club operation to only those members that were directly elected by the General membership. As it presently stands, appointed (unelected) Executive members are making major decisions on behalf of the club. Perhaps a better answer would be to make all Executive positions elected ones, but we already have a hard time coming up with enough people to run for the existing positions, and it was thought that this would be too much.

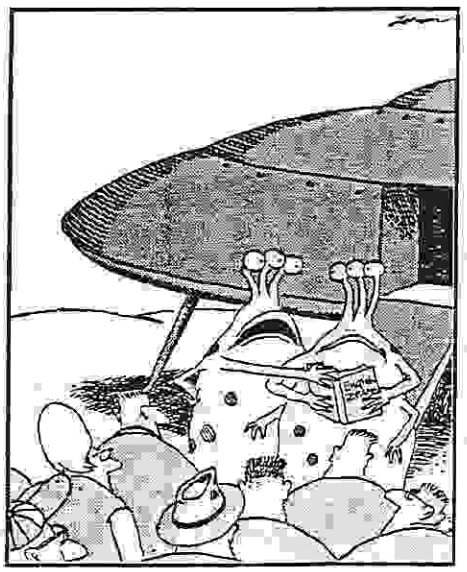
2) To allow a mechanism for greater participation in governing club operations by the General membership. As the club grows, we will get more people from out of the immediate area or who for one reason or another find it inconvenient to attend every meeting. For this reason, provisions for absentee voting have been added.

3) To specify a proceedure for initiatives, appeals, and recalls by the General membership. The wording of the present Constitution assigns the power to make decisions governing the club to the Executive Committee. Although General members have the right to make motions, the actual vote is up to the Executive Committee. If for some reason the Executive Committee chose to ignore the sentiment of the General membership, these changes would provide a way to force an over-ride. (In the past, the Executive Committee has often refered controversial decisions to the General membership for a vote, but this is not guaranteed by the constitution).

(Continued on next page)

At the meeting, two substantive objections to the new Constitution were raised. The first concerned the actual number of members signatures required to initiate the initiative, appeal or recall process. The 10% number was originally proposed knowing that the exact number would be debatable. Too big a number makes it hard for the membership to be heard, but too small a number allows small minorities to harass the Executive Committee with petty complaints. The Executive Committee felt the number should be based on a percentage to track membership fluctuations. Some at the meeting felt this should be a fixed number since we don't have up-to-date records of how many members we have. Part of the Treasurer's job is to "keep a current list of dues paying and honorary members", so this SHOULD not be a problem. The second objection concerned the exact wording allowing general members to make motions to the Board. The wording was changed to allow motions from the floor at all General meetings as well as Board and Executive Committee meetings. My feeling was that the basis of the complaint was concern that the Executive was trying to cut the General members out of the voting loop so it could enact its own agenda without discussion. In light of some of the contentious issues the club has faced recently, this concern is understandable. As mentioned before, the present Constitution does not require the Executive Committee to consider the sentiment of the General members in its decision making. In the past we have relied on the honor and democratic spirit of our elected representatives. Regardless of how many rules we add to protect the rights of the members, if we are going to have a representative government we ultimately have to trust the people we choose. That is why we have elections, to pick people we feel we can trust. The club has a history of running one-name-per-office elections because it is so hard to get anyone to run. If you don't feel you can trust the people running for office, PLEASE try and convince someone you do trust to run, or run yourself. In the meantime, if you have any specific suggestions on how the proposed Constitution can be worded to address your concerns or objections please contact me or Terri Lappin. Time is growing short before we have to take a vote on accepting or rejecting the changes. It is in your best interest to say something now while we can still make adjustments than to wait until you can only say Yes or No.

(Copies of the lastest changes will be available at the next general meeting. -ed.) *



"Take me to your stove? You idiot! Give me that book!"

Computer News

Computers In Astronomy Subgroup

By Roger Tanner

The second meeting of the subgroup was held at Dean Ketelsen's house on April 9th. There were about seven members present for the software demonstrations. Dean demonstrated 3 programs MegaStar, Satellite PRO, and ZEMAX on his IBM PC. Later on Larry Wilson showed a shareware program he brought called STS-Plus.

MegaStar is a DOS or Windows sky chart program which produces charts on your screen or printer which are very detailed. The entire Hubble Guide Star Catalog is condensed down to fit on a CD-ROM disc (or 40 floppies). Dean was running off of the CD-ROM and mentioned the program need about 10 Mbytes of disc space this way, if you load the CD-ROM onto the disc it need 80 Mbytes! This gives it a database of stars down to about 15th+ mag. Dean demonstrated what this means by enlarging the field of view to 20 degrees and showing all the stars in this patch of sky. The screen filled up with stars covering just about every pixel on the screen. The Milky way could be seen in an increasing density of stars toward the galactic plane and local star clouds could be seen. Decreasing the limiting magnitude of stars improved the usefulness of the display at the wide fields. However this program is not for people who want wide field view of the sky as its maximum field is only 20 x 30 degrees. It is intended for the deep sky observer who needs accurate maps of what he sees in his eyepiece to aid in identifying objects. Dean then narrowed the field down to a few degrees and used the database search function to find several objects and show the maps generated. We looked up an asteroid 253 Mathilde and had its path plotted across the sky for several days. This program is especially helpful to locate the fainter asteroids because of the faint stars shown in the map. The program also has the elements for several comets and capability to enter elements for new objects.

We then looked at an open cluster and a few galaxies. This program doesn't just show a symbol for a galaxy, it shows the actual size, aspect ratio, and position angle of the galaxy if the information is available. This really helps identifying galaxies in a crowded field. The program has just about all of the nonstellar catalogs in its database. We looked up a Barnard dark nebula, an Abell galaxy cluster, a bright nebula and several other objects. Dean showed how the user could enter his telescope focal length and then his CCD or eyepiece angular field and get a movable square or circle on the map which would show what was in a particular eyepiece or CCD view. The program costs about $100 for the CD-ROM version, see ads in the astronomy magazines.

Satellite PRO was demonstrated next. Satellite PRO is a DOS program to plot where a satellite would be in relation to the Earth and when and where it would be visible from a particular location. Dean showed how to select an satellite from the database and display its track across the Earth. The satellite was a geosynchronous (but not geostationary) satellite which traced out a figure 8 pattern in the sky. You could also view the orbit from a distant point in space to see the loops the satellite makes in the sky. You can also display its ground track on a Mercator map of the Earth or you can display an overhead view from your location. You can also display its motion against a sky map which shows constellations and stars down to about 8th magnitude. One unusual thing about the star map is that the stars are colored by spectral type. The elements for satellites which are using thrusters to alter their orbits (like MIR or the Shuttle) will only give accurate orbits until the next propulsion burn, then you will have to get updated coordinates.

Then we picked out some more typical satellites like MIR , the Hubble Space Telescope and a Space shuttle mission, STS-67. Their ground tracks crossed and crisscrossed the globe and the part of the orbit where they would be visible at your selected location was intensified. This is the program that Dave Harvey (who also wrote the program) used at the general meeting several months ago to show the upcoming visibility of the MIR and Space Shuttle docking. It has about 4000 satellites in its database that comes with the program and can work with up to 200 at one time. Satellite PRO is available from Zephyr Services for $150, see adds in Astronomy.

The next program shown was a Windows program called Zemax, which is an optical design program. Dean demonstrated the program using a standard Ritchey-Chretien Cassegrain design file supplied with the program. The program loaded the optical description for the telescope which consists of the radius of curvature for all of the surfaces, the distances to each surface and the index for the material in between. Then he opened the 2D plot window to show the optical layout. This showed where the optical surfaces are and the path of the light rays through them. Dean then entered several field angles for ray tracing. He then opened another window and the program calculated and displayed the Spot diagrams for the optical system. This showed good concentration of the light rays compared to the airy disc for that system. Dean mentioned that this program will not teach you optical design, but will assist you in designing, analyzing, and optimizing a design. Zemax will analyze a design in many different ways, including calculating the Modulation Transfer Function, the Encircled Energy, Spot Diagram, and many others. It will do it for several field angles and several wavelengths of light. The program also has an optimizer which will optimize a design given several parameter to vary. The version that Dean has is the entry level version which costs about $900. It includes a hardware key which is installed on the printer port. More powerful versions include a global optimizer which can optimize a design and find the global optimum not just the local optimum, (and they cost

about $3000). ZEMAX is available from Focus Software which is here in Tucson. This software is intended for optical design professionals a little expensive for the amateur.

After that the meeting broke up into several discussions. Larry Wilson brought in a shareware program, called STS Plus which plots out the Space Shuttle orbits for a mission given the orbital parameters. It will plot out the orbit on a Mercator map of the Earth and update it in real-time. It looks like an interesting program. Bill Garrett brought in some astrophotos and there was some discussion on the effects of focal reducers in astrophotography. Also, there is no truth to the rumor that this subgroup is being renamed the TAAA BTS (Beandip Tasting Society), but the beandip was very good, thanks Dean.

The next meeting is at the Mirror Lab on May 12 , a Friday at 7:00 PM. Paul Brown is giving a tour of the astronomy resources available on the Internet. We will try to have several terminals available so more people will be able to try it.

The meeting after that will be held at Bill Garrett's 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 to see how useful a computer is in addition to an already highly automated scope. Bill will bring maps to his house at the next subgroup meeting. If you are not going to be there, see him at the general meeting.

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

Charting Utility

The following is from Brian Skiff at Lowell Observatory, forwarded by Paul Dickson of TAAA and SAC.

Astro-folks,

I thought you would be interested to know that a nice charting utility called "SkyView" from Goddard Space Flight Center now has the digitized sky survey for the whole sky on-line. Until a couple weeks ago only the southern sky portion was available. The interactive program can be found on the Web at the URL: http://skyview.gsfc.nasa.gov/skyview.html

The program allows input of a field center, equinox (default to 2000), field size, etc., along with a choice of several databases, such as IRAS, EUVE, and radio surveys, as well as with the visible sky surveys. Do note that in the north the sky survey is the POSS-I E (red) survey, while in the south (viz. south of about +3 Dec) it is the UK Schmidt J (blue-green)survey.

If you get a patch of sky either 0.1 or 0.3 degrees square, the file that has to come across is in the range of 50-75k bytes. Bigger fields and/or in the Milky Way, you get more bits. The images are displayed (at least in our Mosaic window) in false-color with a deep-blue for sky background. You can download either GIF or FITS formatted files of the field selected. The resolution is only 1".7 per pixel, so it's a little coarse for small galaxies, but otherwise adequate for many purposes. I would think this would be fine for checking on supernova suspects.

Try it out on your favorite object! *

World Wide Web

By Larry Wilson

I am going to stick my head out of the foxhole, and ask for opinions. I make no promises that your great idea will go anywhere, so what else is new. The TAAA web page:
http://www.primenet.com/~lwilson/taaa/taaa.html
is still evolving and there is room for improvement. I am trying to create something that will be an interesting plug for the TAAA to the general public while still being a useful resource for our members. Right now we have a blurb about the club taken from our brochure, map of the meeting site, coming events, member email list, and links to weather info and other Astronomical sites. In the future, I hope to add a truncated version of the newsletter with stuff of public interest. In case you are thinking about suggesting an area for downloadable software, sorry, the area available is too small.

There is some interest in having an area highlighting the work of members. I feel that this could become a problem if egos are allowed to get involved, and that this kind of thing belongs in their personal home pages. I propose having a highlights section that is changed at least monthly, with some mechanism for selection that keeps any one member from hogging the area (limited memory use and/or articles per year?). I would rather see the area used primarily for highlights about club projects and events. Any ideas? Remember, textual data is cheap to put up as it uses little disk space and can be quickly transmitted over the net. Graphics are nastier but more interesting, and I will compress them as much as possible (under 50K), so dont expect to see your 1Kx1Kx16bit CCD images posted in their full glory. If you have a home page, let me know and I will add a link in the email section. Any other suggestions are gratefully solicited.

Contact Larry Wilson at lwilson@primenet.com

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Notes from Other Clubs

Saguaro Astronomy Club

The Spica Graze in June
by Gerry Rattley

On Friday morning, June 9, 1995, at just after midnight, a grazing occultation by the Moon of the first magnitude star Spica will occur across south central Arizona. The graze path runs from just north of Gila Bend to Coolidge. It comes in from the west and goes out to the east. The time of central graze will be 12:11.5 AM local at Gila Bend and 12:13 AM local at Coolidge.

After recently going out to look at the roads in these areas, Gene Lucas, Gerry Rattley, and myself, have decided that the old highway north out of Gila Bend is by far the best location for observing this event. It is a quiet agricultural road with very light traffic and broad shoulders. To get onto this road from Highway 85 (the main street through Gila Bend), turn north about 900 feet west of the overpass at the northeast end of Gila Bend. There is a sign there pointing you to Arlington. Also there is a "WSR" sign (probably the sand and gravel company just down the road). The road is paved.

The Moon's altitude during this graze will be about 24 degrees, with an azimuth of 237 degrees, putting it out in a southwesterly direction. The Moon will be 79% illuminated going toward full. The cusp angle is slightly dark but peaks in the area will be lit up. It will not be difficult to time though as it is a first magnitude star. Spica is a triple star, but circumstances are not favorable for resolving components on this graze. However, if you do witness a secondary event, please note it and time it if possible.

Everyone is encouraged to come out to view this event, but in order to do timings you will need a tape recorder and a radio that can receive WWV, the international/universal/standard time signal (watches are not accurate enough). Your station will be preselected and measured for you. If you stay home in Phoenix you can watch an occultation of the star (a dark limb disappearance and a bright limb reappearance). South of Coolidge, e.g. Tucson, they will see a miss, the star will pass south of the Moon.

An update on this article and more on how to do timings will appear in next month's newsletter. It would be helpful for planning purposes if I know you are coming out to the event, either observing or timing, so I will keep a sign-up sheet going around. You can call me, Gerry Rattley, at (602) 892-5698 or Gene Lucas at (602) 837-3718 for more information or to sign-on. You can still show up at the last minute if you like, I will set several extra stations out for unexpected arrivals. Do not be late though, you'll need at least an hour to get a station assignment, find your station and get your equipment working.

For reference to this graze see the Observer's Handbook 1995 (RASC), pages 116, 119, and 121. Also see the article "Lunar Occultation Highlights for 1995" in the January issue of Sky & Telescope, pages 80-82. An article on this graze will appear in the June issue of Sky & Telescope. *

White Mountain Astronomy Group

By Gene Fioretti

As you may know, I have moved up to the White Mountains and have started a club called the White Mountain Astronomy Group. We are now 19 members and growing. Because I am so far from Tucson and so heavily involved in my own club I have decided to stop my membership in the TAAA but would like to maintain contact with the club.

I am publishing a monthly newsletter and I orchestrate a monthly meeting and star party. I'm trying to establish our club as a legal entity. We are preparing for Astronomy Day and other activities that will go on through the Summer here. I would like to arrange a monthly Summer lecture series (brown bag) to be held at our junior college. As a club we would like to participate in state wide events, especially the Grand Canyon Star Party. We would like to become affiliated with other clubs in Arizona and especially to host members of the Tucson and Phoenix clubs when they spend time here during the summer. We would like to have knowledgeable speakers from Tucson give lectures at our brown bags and club meetings.

In this regard I would like you to consider posting this letter in your newsletter to get input from TAAA members to help realize our goals. If anyone has input that would help foster communication or suggestions for getting potential speakers willing to come up and talk to our group, please let me know. I look forward to hearing from you all.

Gene Fioretti
R.R. #1 Box 1011-4
Lakeside, AZ 85929
(520) 367-4005 (home) *

Volunteer News

Behind the Scenes...Members Doing More Than Their Share!

By Terri Lappin

(This article was submitted in late February. -ed.)

It's time to express appreciation to members who have taken on some responsibilities. The executive committee can only do so much. Thanks to the following people doing non-executive things.

School Star Parties: Just a few months ago, we faced the possibility of dropping this service we provide to school groups because of a lack of volunteers. Luckily, **Karen Allen** stepped in as the school star party coordinator and things have been much better. Karen makes sure there are enough telescopes for each event and gets on the phone to round up more if needed. She also notifies members of cancellations. Of course, these star parties are only successful if TAAA members volunteer their time and we have had lots of volunteers!

The kids have fun looking through telescopes and their excitement is always a pleasure to those bringing the telescopes. As long as we have members committed to bringing out telescopes, we will continue this program. Contact Karen if you would like to show some kids the night sky through your telescope. (749-5744)

Astronomy After-School Program: At the end of this semester, **Sharon and Duane Niehaus** will have taught over 2000 students. This semester, Sharon and Duane are teaching school children at all four elementary schools in the Catalina School District, and doing it with the help of a very few TAAA members. If you would like to be part of this program, call Sharon. (797-4189)

Refreshments: Several months ago, **Ingrid Sabor** became the refreshments coordinator. It was a real relief to me when Ingrid took on this responsibility. Thanks to all those who have brought refreshments in the past. As Dean likes to say...if all 260 members took their turn we would each bring refreshments once every 22 years! I know some have brought them more than once in the past year...somebody isn't taking their turn. There is a sign up sheet at each meeting, just waiting for your signature. Ingrid makes a reminder phone call to you before the meeting to be sure you haven't forgotten your turn.

A.V. Equipment: Since October 1992, when we started using the Steward Lecture Hall, **Dave Harvey** has been operating the audio visual equipment during the regular meetings. We are very fortunate to be allowed to use the wonderful facilities at Steward. Dave's expert abilities have made for some great meetings. Believe me, meetings Wouldn't be much without the A/V equipment.

Young Astronomers Club: As a result of the Astronomy After-School program the executive committee became aware of the need for a youth astronomy group in Tucson, but without someone to run it things looked bleak. That was until last fall when **Nina Lehman** (who was a new member at the time) approached the executive with plans of organizing the Young Astronomers Club for kids with an interest in astronomy. Through the efforts of Nina, **Karen Allen**, and **Sharon Niehaus**, the TAAA Young Astronomers Club is a growing group of young astronomers. The Young Astronomers Club meets in Steward Observatory (room 202) at the same time as the regular TAAA meeting. Extra hands can always be used. If you (or your spouse) aren't interested in the regular meeting, consider helping Nina out. Give her a phone call so she will know she will have helpers.(579-1382)

Desert Skies: **Nina Lehman** and **Nancy Wagner** are the new Desert Skies editors and we very much appreciate their efforts in producing this fine monthly publication. Submissions come from several members, but there's always something to be written and dates to check out...it's a lot of work! Desert Skies is copied by **Didier Saumon** and **Dean Ketelsen**. Once all 350+ copies of each page are made (2100 copies), they need to be collated, folded, labeled, sorted, and finally mailed. There is a whole team of volunteers collating, folding, and labeling. The regulars are: **Jim Wilmot, Rob Nyberg, Dean and Vicki Ketelsen, and Didier Saumon** (**David and Eleanor Levine** used to fold every month until they moved to Texas). This team meets at the Mirror Lab under the UofA stadium around the beginning of the third week each month. Dean organizes the group; talk to him if you want to help. (293-2855)

Observing: Almost every month we have reports from **Erich Karkoshka** and **Jeff Brydges** about what is going on in the night sky. Erich provides the Dark Skies schedule for the newsletter and an update about the planets at the regular meetings. Jeff writes an informative monthly article in the Desert Skies about stars, be they variables, binaries, or otherwise. *

TAAA Speaker's Bureau

We have several requests from local libraries and groups looking for informal astronomy talks and presentations. The need covers all ranges in age and mostly novice education levels. If you can help out this summer, call Dean or Teresa to volunteer. *

Sky & Telescope Back Issues

S&T Backissue Service is a unit of the Amateur Astronomers Association, 1010 Park Av, New York NY 10028, USA; 212-LE5-2922; RN.5305@ROSE.COM.

Since May 1991 – before the bustout of Internet into the home astronomy world – we havs offered backissues of Sky and Telescope to all astronomers. Yes, any astronomer can request S&T backissues thru our S&T Backissue Service.
We started this service partly to clear out our offices, which were getting cluttered with hundreds and hundreds of the backissues. We passed along scores of crates of S&Ts to you good people out there. What's more, you astronomers with excess issues donated to the Service their old magazines. You see, until the S&T Backissue Service you sort of just pitched all those old issues into the trash. After all, how can you ever find any one who wants them? So, our supply is always replenishing and you, the astronomer who needs S&Ts, share in this bonanza. We can still fill your requests.
It's easy. Fill out the form here and email it to us. Of course, you do not include payment with this email. We collect the issues and email back to of their readiness. Certain issues may be depleted for your instant request; we tell you which. We also tell you the full and complete payment needed for the gathered issues. Then we hold the request for you for thirty days (same date of the next month). That way you have time to send in the payment by snailmail.
We ship the issues to you via UPS because we want you to actually get them soon, safe, and sound. Yes, that's right, only US funds payable by a US bank can be handled by the Service.
We even laid out a simple and sane fee schedule. For AAA members issues are $15 per dozen and $1.50 per single. For all other requests they are $20 per dozen and $2.00 per single. The dozens are merely sets of twelve; they do not have to be complete calendar years. These rates include pack & post within the lower 48 states. None
of that 'oops, there's extra' for you. For example, 42 issues – any mix of 42 – makes 3 dozens and 6 singles for a total of $72 (or $54 for AAAers). Requests from beyond the lower 48 states add 15% to accommodate their much higher UPS shipping costs. The example request here would then total $82.80 ($62.10 for AAAers).

We can supply S&T backissues from 1955 thru 1992, with scattered availability before that.

We offer these backissues only to those who want them for their own selves with no intent to resell them to others. Thus libraries, clubs, colleges, planetaria, museums, laboratories, as well as individual astronomers have benefited from the Service. Requests from dealers or retailers are declined.

year	months, or 'all' for entire year				

___ doz X $20 = $_____

___ sgl X $1.00 = $_____

___ doz X $20 = $_____

___ sgl X $2.00 = $_____

subtotal $_____

15% outside L48 $_____

total $_____

(payable from US bank)

Name_____Apt____Address_____

City_____Postcode/Zip_____State/Province_____

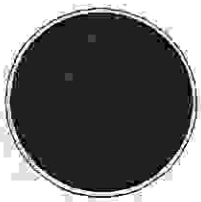
Country_____Day phone_____Eve phone_____

Fax phone_____Email & Net_____

Where did you obtain this form?_____

Note that UPS requires a bonafide street address, not a box number

S&T Backissue Service is a unit of the Amateur Astronomers Association, 1010 Park Av, New York NY 10028, USA; 212-LE5-2922; RN.5305@ROSE.COM.




Dark Skies for May

DARK SKIES for Tucson (in MST)

1995 MAY — no twilight, no moonlight

Mo/Tu	1/ 2	9:01pm	4:08am
Tu/We	2/ 3	9:51pm	4:06am
We/Th	3/ 4	10:37pm	4:05am
Th/Fr	4/ 5	11:21pm	4:04am
Fr/Sa	5/ 6	12:01am	4:03am
Sa/Su	6/ 7	12:40am	4:02am
Su/Mo	7/ 8	1:17am	4:00am
Mo/Tu	8/ 9	1:53am	3:59am
Tu/We	9/10	2:29am	3:58am
We/Th	10/11	3:06am	3:57am
Th/Fr	11/12	3:46am	3:56am
Fr/Sa	12/13	-	-
Sa/Su	13/14	-	-
Su/Mo	14/15	-	-
Mo/Tu	15/16	-	-
Tu/We	16/17	8:50pm	9:33pm
We/Th	17/18	8:51pm	10:29pm
Th/Fr	18/19	8:52pm	11:19pm
Fr/Sa	19/20	8:53pm	12:04am
Sa/Su	20/21	8:54pm	12:43am
Su/Mo	21/22	8:55pm	1:20am
Mo/Tu	22/23	8:55pm	1:55am
Tu/We	23/24	8:56pm	2:29am
We/Th	24/25	8:57pm	3:03am
Th/Fr	25/26	8:58pm	3:39am
Fr/Sa	26/27	8:59pm	3:43am
Sa/Su	27/28	9:00pm	3:42am
Su/Mo	28/29	9:01pm	3:42am
Mo/Tu	29/30	9:02pm	3:41am
Tu/We	30/31	9:03pm	3:41am
We/Th	31/ 1	9:19pm	3:40am

Erich Karkoschka

Star Parties and Events

Science Carnival
21 April thru 4 June 1995

The Flandrau Science Center and Kitt Peak National Observatory present the Pacific 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. *

Agua Caliente Elementary School
3 May 1995

There will be a star party at Agua Caliente Elementary School May 3, from 7:00 to 8:30 pm. The Agua Caliente Elementary School is at 11420 E. Limberlost near Houghton and Prince. Setup will be at 6:45 and viewing will be till 9:00 pm. This is a school-wide event. We anticipate more than 300 visitors. Three volunteers have signed up, and we need 2 more. **NOTE:** TAAA volunteers are invited for FREE pizza at 6:00 pm. Call Karen Allen at 749-5744. *

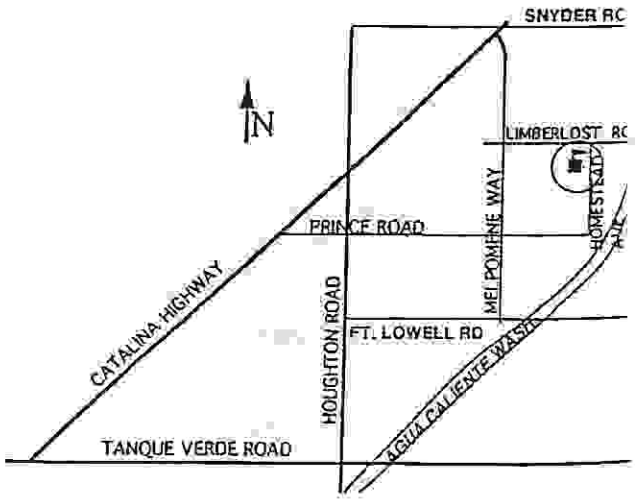
Hohokam Middle School
4 May 1995

A star party is planned for Hohokam Middle School located at 7400 S. Settler, near I-19 and Valencia. Set up to be at 6:30pm, with observing starting at 7:00 pm. Sixty to seventy students and parents are expected to attend. We have 3 volunteers signed up and need 1 more. Call Karen Allen at 749-5744. *

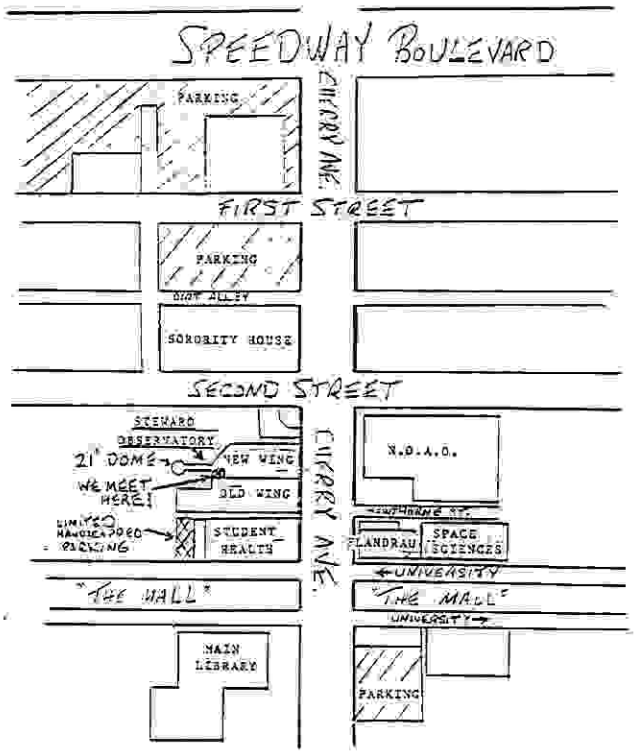
Astronomy Day Star Party
6 May 1995

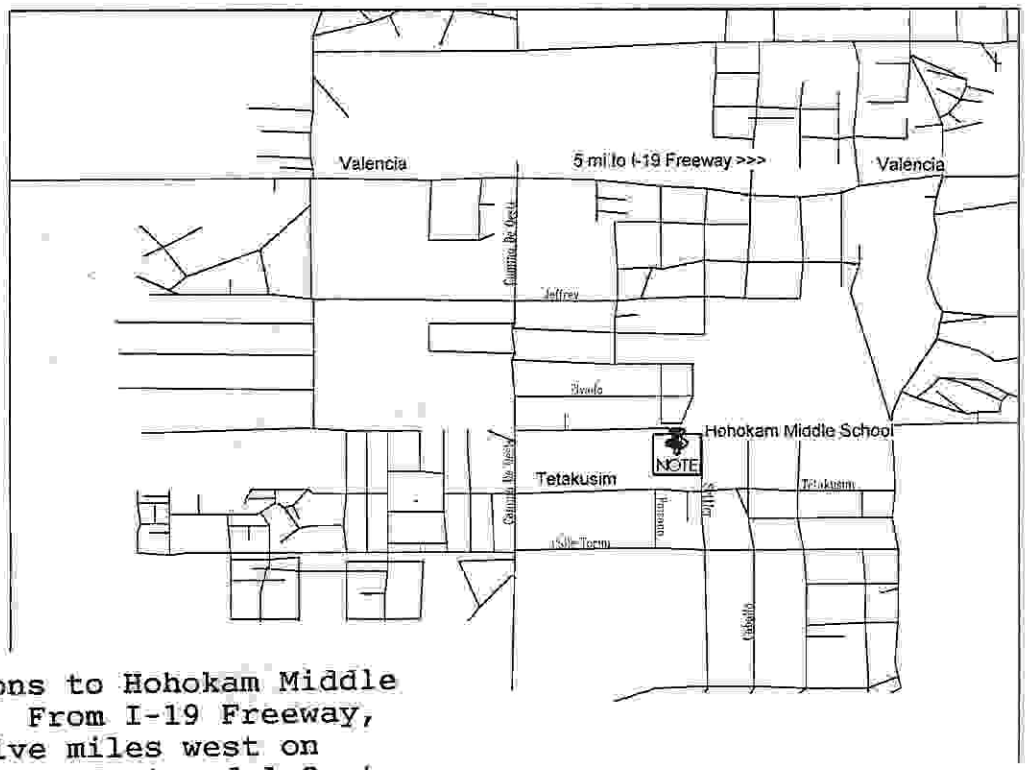
The Astronomy Day star party will be at the UofA Mall starting at 7:00pm and ending at 9:30 pm (possibly stretching to 10:30 pm). Free mall parking for TAAA members with scopes will be arranged. Donation buckets will be out. Large crowds are expected due to the fact that the Flandrau Science Carnival is taking place at the same time. Electricity will be provided for those who set up close to Flandrau. A limit of two FREE show passes will be given to those TAAA members with scopes. Passes must be obtained from Mike Terenzoni. For more information call Mike Terenzoni at 621-4515. *

Agua Caliente Elementary School



TAAA Meeting Location





Directions to Hohokam Middle School: From I-19 Freeway, drive five miles west on Valencia to Camino del Oeste. Turn left and drive south about 1¾ miles on Camino del Oeste to Tetakusim. Turn left on Tetakusim for about ½ mile. The school will be on your left.

Triangle Y Ranch in Oracle
24 May 1995

A star party is planned for Triangle Y Ranch in Oracle for the 5th grade camp for Amphi School District. TAAA members are invited to join the camp for FREE lasagna dinner from 5:00pm to 6:00 pm. Setup to be at 6:30 pm and viewing to start at 7:15 pm. We need 3 telescopes for this event. Volunteer on the signup sheet at the next meeting, or call Karen Allen 749-5744. *

Spica Graze
8 June, 1995

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. *

Grand Canyon Star Party
17-24 June, 1995

Well, only two months to go and everything is looking good for this spring's event. The Park Service has provided a dozen campsites for us and they have all been reserved. If you have talked to me about reserving a spot and you have not heard from me in the last week or so, let me know and we will try to get more (oral reservations have a way of not getting recorded!).

Requests for information are still coming in almost daily, from across the country. Barry Hirrell of San Francisco verifies that John Dobson, really the event's grandfather, and popularizer of the Dobson mounting will be attending the star party with him. That will assure the lack of dull moments up there. Rooms are becoming hard to come by, so hopefully those needing them have made their plans. Be sure to tell me that you are coming (leaving a written paper trail is always best) so that I can get you a fee waiver and maps in plenty of time.

For letting me know you are coming, or to get phone numbers of lodging in the area, or for consideration of complimentary campsites, contact me at:

Dean Ketelsen
Grand Canyon Star Party
1122 East Greenlee Pl.
Tucson, AZ 85719
(520) 293-2855

Thanks in advance for making this a great event. See you there! *

Pima County Libraries would like to have TAAA present a short talk on Night Sky Observing through telescopes at the following locations on the dates specified:

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

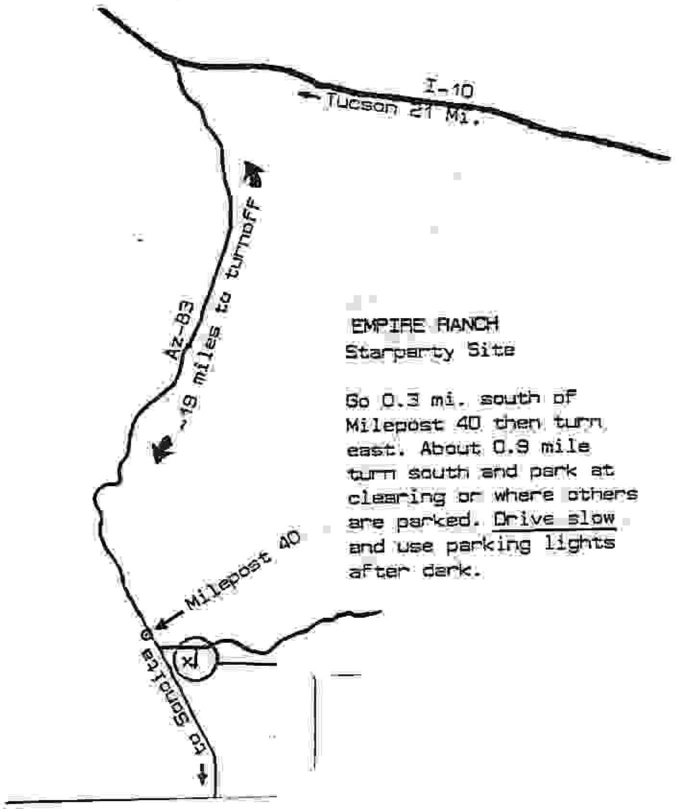
We need one speaker and 2 telescopes for this upcoming event. They desire a sunset viewing at the El Pueblo Neighborhood Center, 101 West Irvington, at Irvington and 6th Avenue. For additional information call Karen Allen 749-5744. *

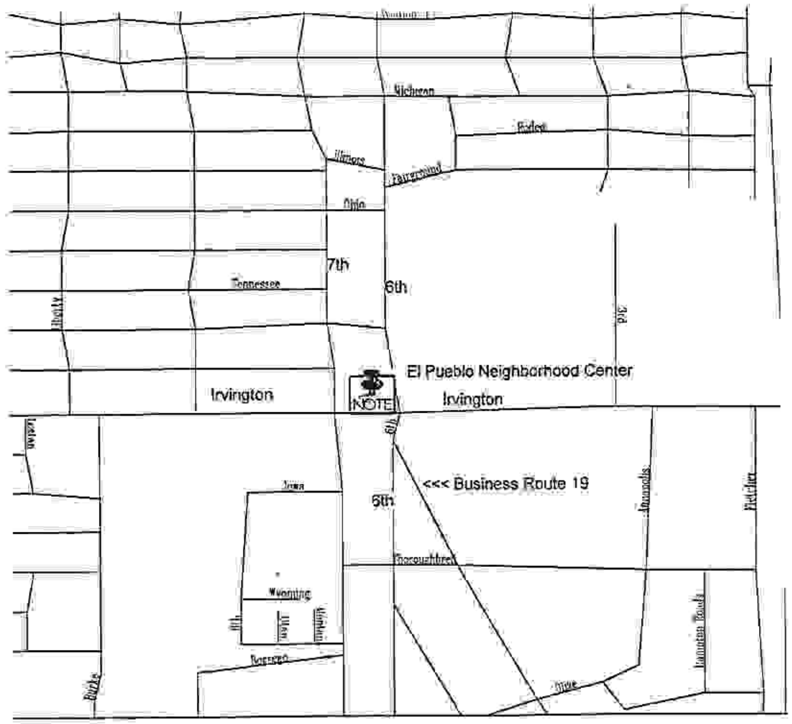
Solar Eclipse Chasers
24 October 1995

TAAA has received two fliers from California travel agents who are "holding" 20 seats should we wish to observe the solar eclipse.

Safaricenter has organized a 12-day trip to Borneo for the eclipse and points of interest on that island. They claim the longest land-based eclipse duration consisting of 2 minutes and 14 seconds. The cost will be $2950 per person. The trip originates from Los Angeles. Date of departure and mode of transportation unknown to editors as of this writing. Call Dean Ketelsen 293-2855 for details.

CBH Travel has created a 17-day cruise-tour which will be based from the liner Marco Polo. It includes flight to Bangkok for a 3-day stay, a flight to Singapore to meet the ship, then the cruise portion visits Kuala Lumpur, Borneo and Ho Chi Minh City, as well as observing the eclipse from the South China Sea. The price is $4000 to $5700 depending on accommodations on board the ship. For departure date and additional information call Dean Ketelsen 293-2855. *


I-10
← Tucson 21 Mi.
Az-83
~19 miles to turnoff
Milepost 40
to Sonoita
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.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El Pueblo Neighborhood Center
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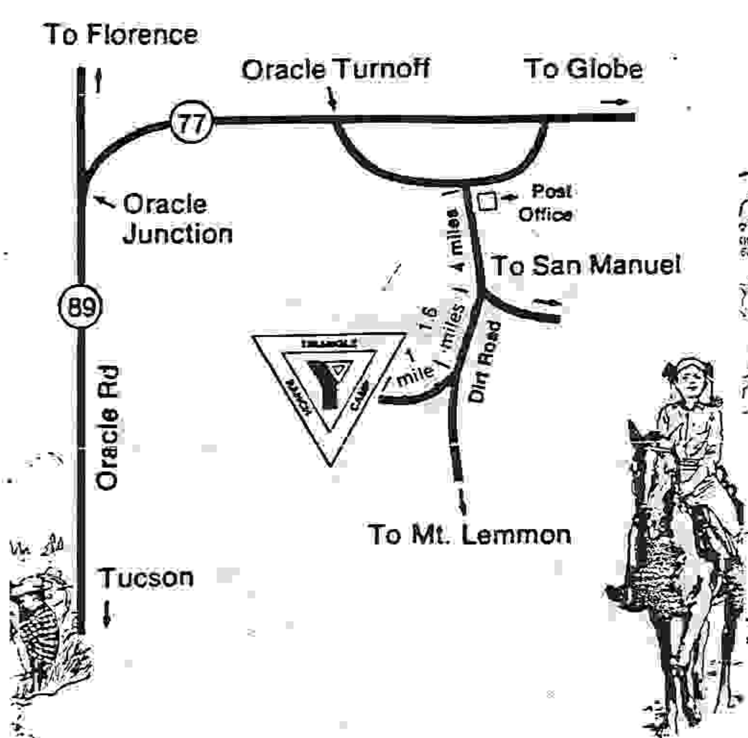
Map to Camp


To Florence
Oracle Turnoff
To Globe
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Oracle Junction
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To San Manuel
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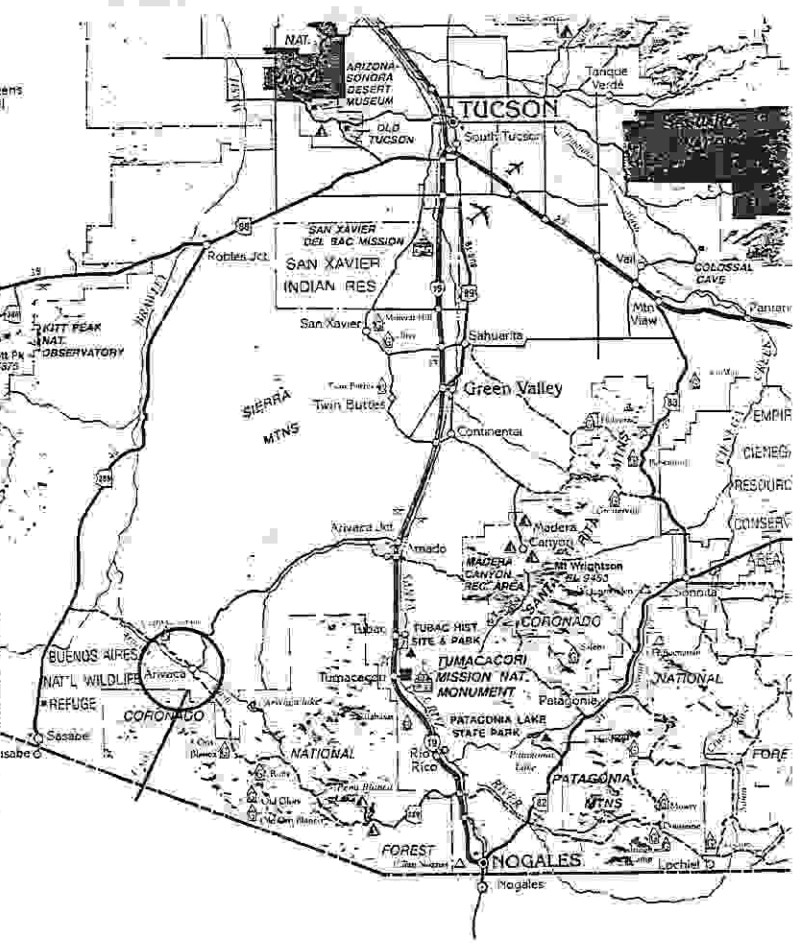
To Mt. Lemmon
Tucson


ARIZONA-SONORA DESERT MUSEUM
OLD TUCSON
TUCSON
South Tucson
Tanque Verde
SAN XAVIER DEL BAC MISSION
SAN XAVIER INDIAN RES
Robles Jct.
KITT PEAK NAT. OBSERVATORY
San Xavier
Sahuarita
Vail
COLOSSAL CAVE
Mtn View
SIERRA MTNS
Twin Buttes
Green Valley
Continental
Arivaca Jct.
Amado
Madera Canyon
MADERA CANYON REC. AREA
Mt Wrightson
CORONADO
Tubac
TUBAC HIST SITE & PARK
TUMACACORI MISSION NAT. MONUMENT
Tumacacori
BUENOS AIRES NAT'L WILDLIFE REFUGE
Arivaca
CORONADO
Sasabe
NATIONAL
PATAGONIA LAKE STATE PARK
Patagonia
NATIONAL
Rio Rico
PATAGONIA MTNS
FOREST
NOGALES
Nogales
Lochiel

Observing Reports

A SPRINGTIME FAVORITE

Canes Venatici lies high overhead on these May evenings just south of the Big Dipper and west of the bright orange star Arcturus. The constellation of Canes Venatici in legend represents the two hunting dogs of Bootes which continuously drive the two bears around the north celestial pole. The dog "Chara" is represented by the star Alpha Canum Venaticorum and the other dog "Asterion" is represented by Beta Canum Venaticorum. The former star is also named Cor Caroli , which means " The Heart of Charles", so named for King Charles II of England. Cor Caroli is a fine double star easily resolved by amateur telescopes but over shadowed by Mizar to the north. It is also a star of interest to astrophysicists since it belongs to a very rare class of variable stars.

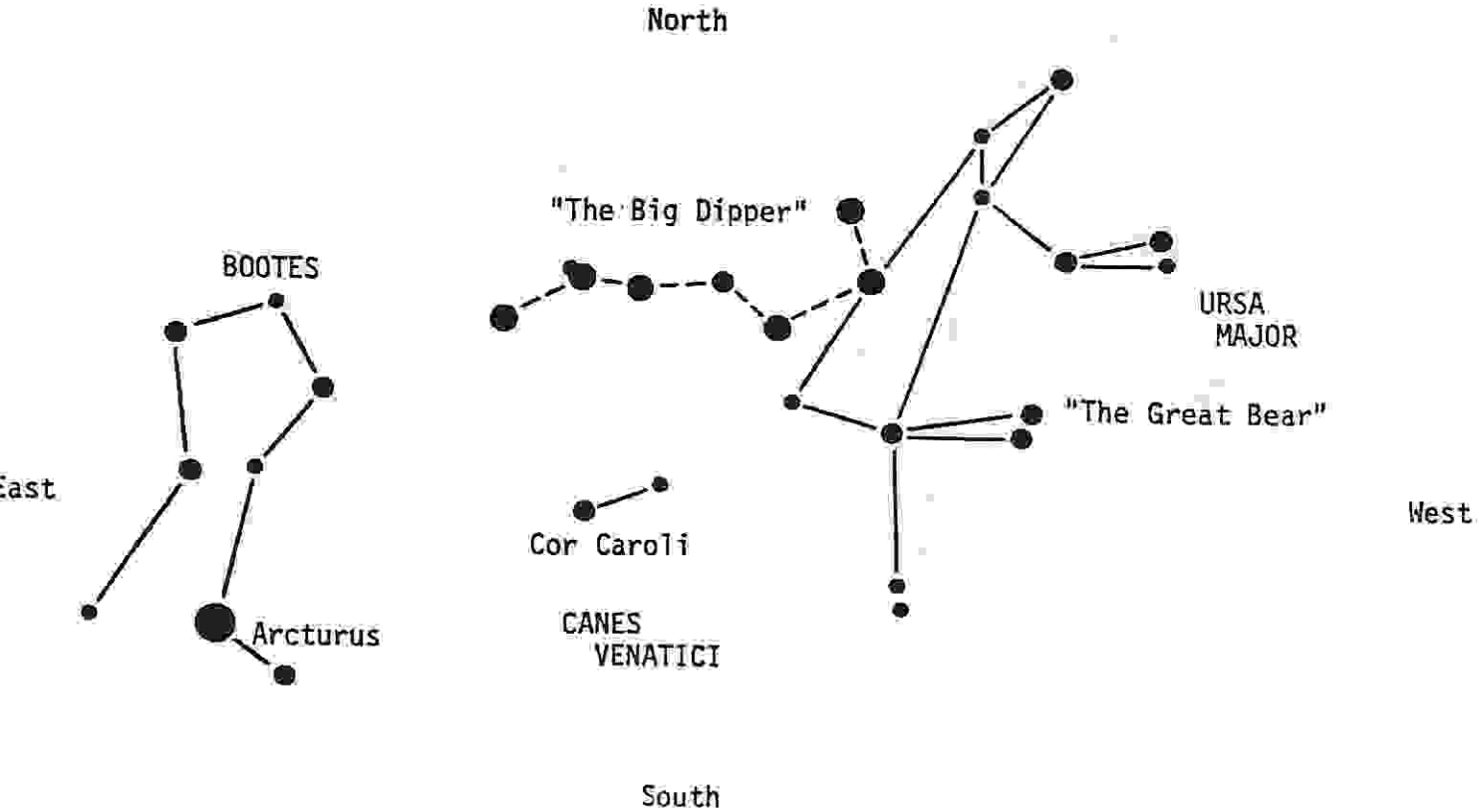
Cor Caroli is a giant star with a spectrum of A0p and it has a luminosity of about 80 times the Sun. This star is a little larger than the Sun and 3 times more massive. The distance to this star is about 120 light years. Cor Caroli belongs to a very rare group of variable stars once called magnetic spectrum variables but now it is placed in a category named after itself a type called Alpha Canum Venaticorum variables of which only 50 or so are known to exist. Cor Caroli itself varies from magnitude 2.84 to 2.98 in a period of 5½ days.

Main characteristics of Alpha Canum Venaticorum variables are strong magnetic fields, rare earth elements, and metal overabundance such as strontium, silicon, and chromium.

Cor Caroli is also a pretty double star for amateur astronomers and my favorite springtime duo because of the delicate colors. In my telescope I see the primary as white and the companion as a light blue. Other observers have recorded the hue of the companion as lilac, blue, and yellow. What colors do you observe with your telescope? The companion shines at magnitude 5.6 and its a main-sequence star about 1½ times the diameter of our Sun and it has a luminosity 6 times greater. The companion lies 19.4" away from the primary at a P.A. of 229°. The separation of 19.4" corresponds to an actual distance of about 800 A.U. (1 AU equals the mean distance of Earth from the Sun.) and the companion probably takes 10,000 years to complete one orbit.

This month why not spend some time observing this attractive springtime double star, who knows maybe it will become one of your favorites also.

Jeff Brydges



Planets Report

By Rik Hill
Dated 7 april 1995

Activity in the sky has been really great this week and month thus far. So here's an update.

Mars

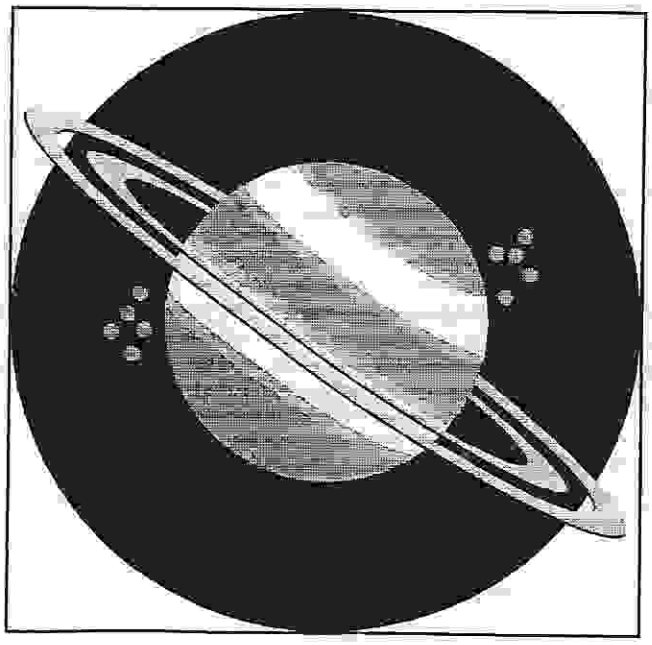
Lots of cloud activity. With the shrinking polar cap it is getting hard to tell the cap from clouds in smaller telescopes. Right now we are looking at the "hard" side of the planet in early evening where there are few really dark features. In about a week that will change. The planet is noticably gibbous even in the C5.

Jupiter

You have to stay up late to get a good look. The impact belt is now the third darkest feature on the planet after an equatorial temperate belt. Because of the low altitude, even on the meridian, I was unable to get a good detailed look.

Saturn

Last chance to see the sunlit side of the rings before ring plane crossing on 22 May. Lots of the fainter moons can be seen in smaller telescopes this year. The trick will be to see how close to ring plane crossing you will still be able to see the rings. From 22 May until 10 Aug. we will be seeing the unlit side of the rings (really tough) then the next ring plane crossing will happen and we will see the lighted side. On 21 Nov. the sup-solar point on Saturn will do a ring plane crossing and the portion we are then viewing (north) will become dark. All this should make for some really fun observing.



U Geminorum

The cataclysmic variable star U Geminorum is in outburst. This is the first one in quite a while. I believe the star is plotted in Uran. 2000 near Pollux & Castor. In outburst it is around 9th mag. and at minimum it is near 14th.

For other events over the next month I am enclosing a portion of the ASTRONOMICAL PHENOMENA FOR 1995 that I prepare for the A.L.P.O. Solar System Ephemeris.

MAY

05-01-05	Mercury 4 deg. N. of Moon
05-03-01	Moon at apogee
	Mercury greatest lat. N.
	Eta Aqr. meteors peak (20/hr)
05-05-11	Uranus stationary
05-07-2144	1st QUARTER MOON
05-08-14	Mars 7 deg. N. of Moon
05-10-16	Mercury 8 deg. N. of Aldebaran
05-12-02	Mercury greatest elong. E. (22deg)
05-20	Moon occults Spica (not in N.Amer.)
05-20	Venus greatest lat. S.
05-14-2048	FULL MOON
05-15-15	Moon at perigee
05-16-02	Jupiter 2 deg. S. of Moon
05-19-01	Neptune 5 deg. S. of Moon
10	Uranus 6 deg. S. of Moon
05-20-17	Pluto opposition (m=13.7)
05-21-1136	3rd QUARTER MOON
05-22-08	Saturn ring plane crossing
05-23-11	Saturn 6 deg. S. of Moon
05-24-07	Mars 1.1 deg. N. of Regulus
16	Mercury stationary
	63 Ausonia opposition (mag. 9.8)
05-27-07	Moon occults Venus (not in N.Amer.)
	Mercury descending node
05-29-0927	NEW MOON-Lunation 896 begins
05-30-08	Moon at apogee

Mars Update from April 20:

I'm on the 61-inch on Mt. Lemmon right now observing Mars, when weather allows.

Mars is loaded with clouds. In fact, one of our observers mistook limb clouds for the polar cap. The N. polar cap is getting pretty small, and so is Mars. The S. polar hood is very obvious and rivals the N.polar cap in brightness. Because of the phase Mars is very non-round, which can be seen even in a small telescope now. It will be necessary for observers to use at least 300x to see details on the planet since it is less than nine arc seconds across.

Chief Observer's Report

The 1995 Arizona Marathon was held on April 1st at the SAC dark sky site near Arizona City. TAAA's Steven Alden, Hazel Lawler, Glenn Nishimoto, and Janna Scott attended the SAC sponsored marathon. With Hazel's big dob undergoing work and Glen doing astrophotography with his new 8"SCT, Steve and Janna took the lead as TAAA marathoners. Heavy cirrus rolled in at sundown and eliminated the first few objects on everyone's hit list. But the cirrus rolled on through,, allowing for excellent observing with clear skies and no wind for the rest of the night. Steve and Janna used a 4" Genesis at 35 power to nail 106 Messier objects, putting them at 2nd place in the competition. For the more difficult Messier objects, (like M77) they used a combination of star hopping and JMI computer. At dawn they were rewarded for their hard work, lucking out to sweep M31 low in the northeast. This years winners, bagging 107 objects, were Adam Block and Stephanie Barko from the UofA astronomy club, and Saguaro astronomy member Paul Lind. Block and Lind both used 8" reflectors and only missed (due to clouds) M77, 74, and 33. This year's marathon apparently was the best ever marathon (and the best attended) in Arizona with 58 scopes, 26 forms turned in, and 29 participants from 5 different clubs (50% participation). The newest club at the marathon was the White Mountain Astronomy Club, started by former TAAA member Gene Fioretti in the Pinetop-Lakeside area. This club is growing and already has 20+ members. Although it seems every year that clouds roll in at sunset to discourage Tucson observers, hopefully next year the law of averages will catch up with us and we'll have totally clear skies all night long.

The planet Mars, in Leo, continues to dim, losing half its brightness in Earth's sky by month's end. Rik Hill reports lots of cloud activity and that the planet is "noticeably gibbous" even in his C5. Because Earth continues to draw away from Mars, it will be a challenge to see its famous ice caps with a telescope, much less any cloud activity. To see the North Polar Cap, use a magnification of 150-300 power and try a blue 80A filter.

May is a great month to view the giant planet Jupiter this year, but you'll have to wait until after 11 PM, when it gets high enough to view with a telescope. If you can stay awake, 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. Rik Hill reports that the "impact belt is now the third darkest feature on the planet, after an equatorial temperate belt." Jupiter's low declination will make detailed observations difficult no doubt..

Saturn gains 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 in the east-south east 1 hour before sunrise. The rings will thin throughout May until the 21st, when they will turn exactly edge-on. Afterwards, we get a rare view of the shadowed side of the rings for the following weeks. A more favorable repeat of this "ring crossing" will occur in November, with Saturn high in the evening sky.

May is a great month to glimpse elusive Mercury, low in the west-northwest 45 minutes after sunset. Best dates for viewing, when Mercury is highest and sets latest, are May 1-20. If you're up for a challenge, look in the east for a super thin crescent moon just below Venus starting at 4:30 a.m. on the morning of the 27th. Because these two objects will appear so low in the eastern pre-dawn sky, binoculars may be needed to locate them after 5 a.m. Finally, the little observed Eta Aquarid Meteor Shower, occurs on the night of May 3-4. A beautiful thin crescent moon sets at 10:30 p.m. in the western sky, leaving the rest of the night to meteor watching.

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

What's New at

The big news at Flandrau Science Center this month is Science Carnival, a traveling exhibition of the best of Pacific Science Center's hands on interactive science exhibits. The name implies fun, and indeed these exhibits are really fun, educational and entertaining. Done in conjunction with Kitt Peak National Observatory, the Carnival will be located in a large tent along Hawthorne Ave., just behind Flandrau Science Center. Science Carnival starts April 21, and ends June 4. With mornings booked by school groups, the best time to try the exhibits is after 1 PM. Admission is $2.00 for children under 13, and $3.00 for everyone else. Also, being promoted with the Carnival is the popular Omnimax movie "To Fly" in Flandrau's Space Theater.

Finally, look for Mirimar Pictures computer animation production entitled "The Gate", playing in the Space Theater. Entirely computer animated, "The Gate" will take you on a wild ride thought the latest in computer graphics technology. Both films offer the unique and interesting all-sky experience that only a dome theater can give. See you at the Carnival!

Michael Terenzoni
Outreach Coordinator Flandrau Science Center
Phone: 621-4515;
Voice mail at 621-2001: mailbox #111-1123
E-Mail: terezon@gas.uug.arizona.edu

Record Setting Marathon!

By Sam Herchak

This year's Messier Marathon sponsored by the Saguaro Astronomy Club (SAC) was a huge success by any standards. At sunset, fifty-eight telescopes of all types and up to 20 aperture were set up at Arizona City. At dawn, thirty or so still remained.

AJ Crayon, the event coordinator promised M74 would be a difficult object low in the west at sunset but didn't mention clouds! After a terrific clear day, clouds moved in at sunset obscuring M74, 77, 31, 32, and 110 for most observers. As the night progressed, the clouds crept higher and produced a splendid display of the Zodiacal light beaming up from behind. By 8:30 PM, many people including myself had given up on the sky and were telling stories. Then conditions improved slightly and some people went back to work. I had my doubts but by 9:30 PM, we had beautiful, dark skies that got better as the night went on. Many observers were able to make up M31 and 32 in the pre dawn sky but the other evening objects were lost.

Thirty people officially participated in the Marathon with 13 from EVAC, 8 from SAC, 7 from the University of Arizona, and 4 from the Tucson Amateur Astronomical Association. Two participants even came from the White Mountain Astronomy Group. The most impressive statistic however, is that twenty-two people logged over 100 M objects on this one night.

The highest number observed was 107 by three different individuals; Adam Block & Stephanie Garko from the U of A and Paul Lind of SAC, all of whom used 8 Newtonian reflectors. The highest tally for an EVAC member goes to Don Farley with 106. Equally impressive are first time marathoners Sheri Cahn, Jane Kearney, and Bill Smith. Although a newcomer to observing the sky, Jane found 21 objects with her 20X80 binoculars. Sheri netted 62 before the Virgo Cluster and fatigue took its toll while Bill Smith still managed 79 between his helpful visits to other observers. Congratulations to these winners, the Saguaro Astronomy Club, AJ Crayon, and all the participants who made this a record star party for Arizona. *

WIYN Tour and Kitt Peak Star-B-Que

By Dean Ketelsen

On April 22, the TAAA held another cookout/star party on Kitt Peak. This time was a little different - we were treated to one of the first public tours of the WIYN telescope! Just dedicated last October, it is not part of the public tours up there, so a tour is a treat - especially from the former Kitt Peak acting director Richard Green. We spent over an hour pouring over recent images, examining the telescope close up, even walking through the optical fiber fed spectrograph room below the telescope. It was a great time and hopefully will be a standard part of these Kitt Peak events so that more members get to see it.

The cookout and observing had nearly perfect conditions, though it was a little cool. We had a great pot luck table, and as usual, Mike Terenzoni arrived late to make sure we didn't have any leftovers. People had their scopes set up by twilight, the largest being Roger Tanner's 17.5", mounted now as a Dobsonian that fits in his car, and Paul Lorenz' 12.5" telescope. As darkness fell, we were treated to great views of some of our favorite setting winter constellations. Then we all got to see the Hubble Space Telescope make a fine pass, signalling the start of some serious observing. Some of the highlights included planetary nebulae NGC 3242, the Ghost of Jupiter and NGC 4361 in Corvus, galaxies NGC 4565, the spectacular edge on galaxy in Coma Bernices, and M 83 in Hydra, and of course the spectacular globular clusters Omega Centauri and M 13 in Herculies.

As the hour grew late, there were some good glimpses of Jupter, and I thought the cometary impact band. Interestingly, that observation resulted in another. The view of Jupiter was occasionally interrupted by very bad seeing, but everywhere else, it seemed fine. And then the realization hit - there were occasional strong breezes from the northwest and on the picnic area hill from where we were observing, we were observing Jupiter through the downwind turbulence! Just looking by eye, you could see the bright stars of Scorpio twinkling violently, but the bright stars of the summer Milky Way rising in the east were very steady. Another well documented affect finally documented by a simple demonstration. The highlights of the evening? To me, probably the realization that all the meteors we were seeing was the peak of the Lyrid meteor shower that evening, and one of my favorites, the feeble but unmistakeable glow of the Gegenshein, marking the antisolar point, transiting to the south at midnight. In my mind, it was probably the best observing event we have held there. It is also nice to note that after the first three rainouts up there, the last three have been getting better and better. That bodes well for the upcoming event this fall, yet to be scheduled.

See you at Ed Vega's on Saturday!

(Attendees included Paul Brown, Bill Cota, Mark Elowitz, Steve Furlong, Robin Garnet, John & Elizabeth Kalas, Eric Karkoschka, Dean & Vicky Ketelsen, Chris Kubes, Terri Lappin, Hazel Lawler, Nina Lehman & family, Paul Lorenz, Glen Nishimoto, Derald Nye, Steven Peterson, Randy Quiroz, Gary Rosenbaum, Roger Tanner, Mike Terenzoni, and Andrew Tubbiolo, Nancy Wagner. -ed.)

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Police those Star Parties!

(The following originally appeared in August, 1991 issue of Astronomy- by Dave Clyburn.)

The star parties staged by our astronomy club were becoming unruly and chaotic. Perhaps you've noticed the same trend in your own club observing sessions. Do your typical group nights consist of telescopes careening rapidly from one bright object to another - a minute on M13, another minute for the Andromeda Galaxy, a brief glimpse at the Ring Nebula? Observing at excessive speeds is a common infraction. Another is the stunting that some observers revel in. They claim to see targets like Palomar 4, a magnitude 14 globular cluster, in a 4-inch telescope and then have the nerve to boast for all to hear, "But it's real easy to see!"

Another insidious practice that is becoming more widespread occurs when lazy observers rush over to see an object that a more disciplined amateur has found after spending half the night star-hopping to its obscure location. Such thievery of photons is unconscionable. What's more, these parasitic observers then glance through the victim's finderscope or Telrad finder so they can sight the location of the target and quickly sweep up the same object in their telescopes. They then add insult to injury by claiming to have found the object themselves. Such claims are illegitimate in our minds. Guilty parties should be stripped of their Messier badges.

The disorderly conduct was becoming to much to handle. The trend had to stop. To stem the tide of unruly observing, our club formed a much-feared but effective Observing Police. Their job: bring discipline and good observing skills to the uncontrolled nighttime mob. It was a tough job, but someone had to do it.

To enforce order, our Observing Police regularly patrol local star parties. Armed with red flashlights, they inspect observers and hand out citations for any observing they feel does not conform to the high standards we are attempting to instill. Citations that the Police have recently issued include:

OBSERVING TOO QUICKLY - A speed of 5 objects per hour is in force at our observing site. All objects must be sketched and sketches must be available for insperction during random spot checks. PENALTY: Confiscation of eyepieces.

OPERATING A TELESCOPE IN AN UNSAFE MANNER - Includes bonking people on the head with the tube of a long refractor or wiring a telescope tube to a high-voltage generator to create a giant "dew-zapper" effect. PENALTY: Observing with said telescope.

STUNTING - Such as claiming to see invisible objects. PENALTY: Thirty days Solar observing. A further crime is claiming to actually see detail in invisible objects. PENALTY: Immediate promotion to club president.

RECKLESS OBSERVING - You're guilty if you think you see objects not actually being viewed. (such as exclaiming that "the Cocoon Nebula is really bright!" when the telescope is pointed at the Andromeda Galaxy). Also includes viewing objects with inappropriate filters and magnifications (such as scanning the Pleiades at 900X with an O III filter). PENALTY: One night in the Coma-Virgo galaxy cluster with a 60 mm telescope and an old Norton's Star Atlas as your only guide.

IMPAIRED OBSERVING - On one occasion an observer was caught trying to find an apparently interesting object called NGP. "But it's marked right here on my atlas!" he protested, not realizing the object was, in fact, the North Galactic Pole. Carefully searching for deep-sky objects with a sub-aperature planetary mask in place over a Dobsonian is also subject to ticketing. TYPICAL PENALTY: Tracking down all the Messier objects in numerical order.

IMPERSONATING AN OBSERVER - Infractions include arriving at an observing site in July with a 20-inch telescope with the intention of observing the Orion Nebula. Or owning a 20-inch telescope with digital setting circles and never looking at anything except the brightest Messier objects. PENALTY: A mandatory one-night Messier Marathon-WITHOUT the digital circles.

Our Observing Police have also found a lucrative method of raising money for Club activities - mostly to purchase Nagler eyepieces for all the club executives. We now require that all observers buy observing licenses. We set the highest fees for the brightest objects. This discourages people from partaking in the tiresome and unproductive practice of observing the
same bright objects over and over again. Our license fee structure is as follows:

Moon	$1000.00
Planet	$500.00
Galaxy	$20.00
Planetary Nebula	$10.00
Orion Nebula	$1000.00
All other diffuse nebulae	$2.50
M13	$1000.00
All other globulars	$1.50
Open clusters and double stars	FREE
Comets and Meteors 3 for	$1.00

In addition, novice observers must obtain a learner's permit, at a cost of $50.00.

By enforcing these regulations we have found that our star parties are now much easier to manage. Gone is the boisterous, uncontrolled enthusiasm of the past. The chaos has been replaced by a quiet, disciplined observing that is a credit to amateur astronomy. Perhaps your club will follow our lead. (Club affiliation of the Author withheld)

TAAA Executive Committee Meeting - April 13, 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. (07-95)

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