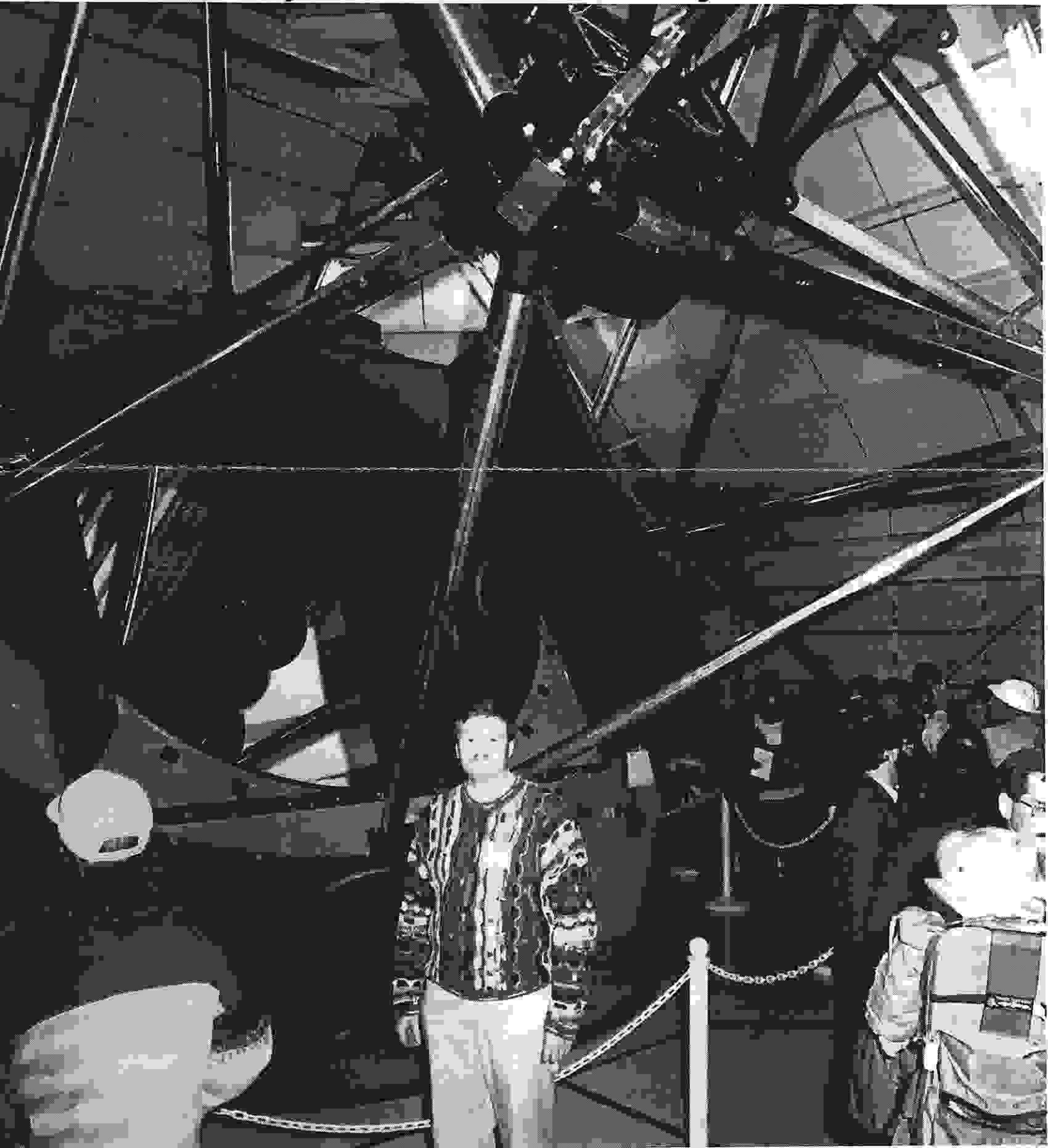


Desert Skies

November, 1994

The Newsletter of the Tucson Amateur Astronomy Association (TAAA)



GENERAL MEETING - Friday, November 4th, 7:30 pm at the Steward Observatory Auditorium -room N210. November's speaker is Grant Bazan: **"The Last 1000 seconds of a Massive Star."**

Pre-meeting "Beginners lecture" at 6:30 by Ed Blair - **"What's Up?"** All are welcome! This lecture is in Steward obs. lecture hall N210. (Note earlier starting time). See enclosed map for directions!

EXECUTIVE MEETING - Thursday, November 10th, 7:30 pm at Flandrau Science Center's Conference Room

STAR PARTIES: 3 November - Star Party at Pistor Elementary.
5 November - Star Party at Empire Ranch - see map inside.
7 November - Star Party at Mesa Verde.
7 November - Star Party at Sunrise Elementary.
9 November - Star Party at Holaway School.
10 November - Star Party at Agua Caliente School.
12 November - Star Party at Smithsonian Base Camp.
26 November - Star Party at Empire Ranch.

Lectures: 18 November - Aaronson Lecture by Wendy Freedman, 7pm, Steward N210.
7 November - Thomas Fleming "Rosat: An International X-Ray Satellite Program"
28 November - Tom Gehrels "The Beauty and Danger of Comets and Asteroids."
These later two are in Steward Observatory N210 at 7:30 - observing follows.

Next Newsletter Deadline - November 16th.

Cover: TAAA member David Anderson admires the WIYN telescope at its dedication on October 15th. Dave was the lead optician at Steward Observatory Mirror Lab in charge of polishing and figuring the 3.5 meter mirror. Early indications verify lab measurements of 1/40th wave optics. **Back Cover:** The F/1.7 primary of WIYN makes for a short, stiff telescope structure. See WIYN dedication story inside. Photos by Dean Ketelsen.

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 Terepzi	887-3226
Mem. Coord.	Gary Rosenbaum	579-0185
Past President	Tim Hunter	299-2972
Newsletter	Dean Ketelsen	293-2855

MEMBERSHIP IN THE TAAA

Individual	\$25.00/year (increased)
Family	\$30.00/year rates as of
Senior Citizen (over 60)	\$23.00/year July 1st '94)

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.

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

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. a) Decide if you want Sky & Telescope, then 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.

November's Speaker - Dr. Grant Bazan

"The Last 1000 Seconds of a Massive Star"

Grant Bazan is a research associate at Steward Observatory where he is working on models of stellar interiors. In this lecture he will be presenting some of the work he has been doing in "blowing up stars" (supernovae).

He says he got his interest in exploding things from his parents who are nuclear chemists. Grant grew up in northern California and developed an interest in astronomy at a very early age. It became more than an interest when his grandmother gave him the Time-Life nature series and he wore out the astronomy volume. The highlight of his years were the family summer trips to the dark skies of the Sierras. He was an admitted math geek in high school, attended Berkeley as an undergraduate and the University of Illinois for his Phd, which he received in 1991. He had a McDonald Fellowship at the University of Texas, and has now been at the University of Arizona for a year. His current astronomical interests are in nuclear astrophysics and stellar evolution, and divides his time about 80%/20% between theoretical and observational work.

Beginner's Lecture

Steward Observatory Lecture Hall @ 6:30

What's Up?

Ed Blair will present models that show the light paths through the instruments most used by amateur astronomers: binoculars, refractors, Newtonian reflectors, and Schmidt-Cassegrains --with and without star diagonals. The resulting orientations through the eyepiece will be demonstrated: what's up, what's down, what's right, what's left. As an integral part of the presentation -- with the help of Bugs Bunny -- Ed will show some of the simple but puzzling visual orientations that occur with mirrors.

Young Astronomers Club

5 November, 1994

The first meeting of the TAAA's new club for school-age children will be held from 7:30 - 8:30 p.m. in room 208 at Steward Observatory. Our goal is to provide children with a basic knowledge of the night sky, solar system, telescopes, and space exploration through hands-on activities. We will also schedule occasional field trips to augment the program. The meetings are scheduled to coincide with the TAAA general meeting. So now you can bring along the kids to get a dose of astronomy activity at their level.

For more information or if you want to lend a hand, contact Nina Lehman, 579-1382 (email: 74750.247@compuserve.com).

Thanks!

Nina :)

TAAA Positions Open

Dean Ketelsen is trying to cast off some of the tasks that he has picked up over the past few months/years. Available immediately is the position of **Newsletter Editor** (a potential Executive position) and **Star Party Coordinator**.

The **Newsletter Editor** is responsible for putting *Desert Skies* together every month. In recent years the process has become more computerized, and it is highly recommended that the Editor have a computer and access to a laser printer. Submissions are organized and printed. Organizational skills and some writing is required. Other volunteers are available to assist in xeroxing, folding and bulk mailing. The time required to put out an issue in recent months has averaged about 15

hours per month. Call Dean or Teresa if you are interested.

We need a **Star Party Coordinator** to arrange star parties for school and other groups. The candidate would be contacted by phone, coordinate event needs and maps to the site and see that they get in the newsletter. They will also provide signup sheets at the meetings to alert attendees to changes in plans, and to twist a few arms in the event there are not enough signups. The Coordinator would be a regular clearinghouse for information regarding our educational events. Time required is about 4 hours per month. Call Dean or Teresa if you are interested.

Year-End Tax Deductions

If you itemize your taxes, you might want to think about making a donation to the TAAA land fund. Though progress has not been made recently, the search for the perfect observing site continues and the more we

have to work with, the better. All donations to the TAAA are fully tax deductible. Call your favorite Executive member for information.

Photo Show in November

The twice-a-year camera show takes place the 26th and 27th of November at the Tucson Community Center, 260 S. Church. It is always a fun place to go get that gizmo you always needed for that old Argus you have in the closet (or a place to sell that old Argus in the closet). Admission is \$4 per day from 10am to 4pm and

is sponsored by Arizona Photographic Collectors (who get in free with \$25 membership - call 529-5072 for info). They are giving away two Nikons as door prizes and offer free camera inspection by AZ Phototechnical Services. Go check it out!

Last Call for that Holiday Weekend in Mexico?

We put out a call for observers who might be interested in a holiday observing trip to Mexico, but only 3 responded. We would probably need twice that to make it worthwhile, so think about it one more time!

In the never ending drive to find interesting places in which to observe, Dean has been debating if there is any interest in a Mexican observing trip. With the New Year's weekend falling at the dark of the moon, how about a trip to Pinacate National Park not

far southwest of the border from Lukeville. Why the Pinacates? Well, the volcanic rock formations are supposed to be spectacular in their desolation, and it is also only about 30 miles to Rocky Point for some fun day trips to the beach! Also the elevation is lower for more moderate winter observing temperatures. If you are interested or if you have been in the area and know of observing/camping locations, give Dean a call at 293-2855.

Last Call for 1995 Astronomy Calendars!

Next year may seem like it's way off, but to the calendar industry it's just around the corner! It is time to place your order for the 1995 Astronomy and Space Appointment Book. We will be selling these spiral bound appointment books at the October and November meetings with delivery at the December and January meetings. These calendars feature 54 color photographs and space images. Each week is shown on a single page, making for easy planning. Moon phases are shown and

space trivia included. (Did you know that the first photograph of the sun was taken on April 2 1845?) We will be selling these appointment books for \$12.95 each. A sample copy will be at the next meeting for your viewing. Please place your order with Terri or send it to the TAAA P.O. box. All orders must be paid for in advance.

WIYN Telescope Dedicated

On October 15th, the newest large telescope in Southern Arizona was dedicated on Kitt Peak. The WIYN project is a consortium between Wisconsin, Indiana, and Yale Universities and the National Optical Astronomy Observatories, and is a "new technology telescope" utilizing the latest advances in telescope and building technology.

The 3.5 meter lightweight mirror was cast and polished at the University of Arizona's Steward Observatory Mirror Lab. They used their stressed lap technology to polish the 5,000 pound F/1.7 mirror to 1/40th wave, one of the world's best large telescope mirrors. In addition, an active optics system has been implemented to correct figure errors induced by pointing and temperature effects. Early engineering tests with passive mirror support has obtained .4 arcsecond images. The F/1.7 mirror makes for a very short, stiff telescope, and that in addition with the alt-azimuth mounting allows the use of a dome not much larger than that for the 36" next door! The "dome" is a faceted structure with 8 sides that have large doors that can be opened to promote rapid air exchange and result in a telescope that is always at the nighttime air temperature. The primary mirror is under active control to assure it is also at the same air temperature.

The telescope has two F/6.3 Nasmyth foci that allows two permanent instruments to be mounted - a multi-object spectrograph called Hydra, that uses 100 optical fibers to transmit the light of up to 100 objects to the bench mounted spectrograph 2 floors below. The other focal position is for direct CCD imaging, where chip mosaics will allow imaging large fields. A rotating tertiary mirror can switch between instruments in about a minute to take advantage of changing atmospheric conditions.

The dedication on the 15th coincided with the first winter storm of the season. Festivities were standing room only in the Kitt Peak visitor's center. The tent erected to seat the 300 attendees for the Mexican buffet was destroyed the night before by 100 mph wind gusts. Eating was done in shifts in the regular mountain cafeteria. The invitation-only event was a lot of fun, although the highlight - viewing Saturn through the big scopes was weathered out. Unfortunately, the telescope will not be part of any regular Kitt Peak tours, as there is no visitor access. Stay tuned, however, as I am going to try some behind-the-scenes negotiation to see if a few of us can get up on some engineering nights. -Dean

PUBLIC STAR PARTY CO-SPONSORED BY WHIPPLE OBSERVATORY

The TAAA is holding another Santa Cruz Valley Public Star Party at the Whipple Observatory headquarters on Saturday November 12th. The headquarters are located at the base of Mt. Hopkins in the Santa Rita Mountains south of Tucson (about 40 miles from the University of Arizona). We wanted to avoid scheduling a star party over the Thanksgiving holiday, so it was decided to have a "bright of the moon" star party before the holiday season gets under way. Deep sky objects will be pretty washed out, but the planets Saturn, Uranus, and Neptune will be visible. With the moon up, the sky will be perfect for constellation identification. Constellation identification will be conducted throughout the evening with the expert help of TAAA members. If you can help the public locate a few constellations, or if you know some mythology or Indian sky

lore, please contact Terri at 579-0185.

The US Forest Service recently finished upgrading the picnic area complete with cook out grills and tables (handicap accessible). Since we have scheduled perfect weather for this star party, consider bringing a picnic dinner. During the star party the Visitor's Center will be open with coffee provided by Whipple Observatory. Arrive by 5:00pm to set up telescopes. Feel free to attend the lecture which will begin at 5:30pm; observing will start immediately after the lecture. A map is provided in this newsletter. (In the event that the weather isn't as nice as we have promised, you can call 670-5707 after noon on the 12th and listen to the message to find out if the star party has been cancelled.) -Terri 579-0185

Aaronson Lecturer Named

It is with great pleasure that I pass on the news that Wendy Freedman of the Observatories of the Carnegie Institution of Washington in Pasadena, CA, will be our 1994 Marc Aaronson lecturer. She will visit Tucson November 17-18, and deliver the public lecture Friday evening, NOVEMBER 18, at 7PM in the Steward Observatory lecture hall (N210). This will be preceded at 6pm by a reception with refreshments, where you can meet Marianne Kun, Marc's wife, also his Father, Simon Aaronson, and other members of their families. Circle this date and plan on bringing family and/or friends!

As most of you know, Marc Aaronson was Associate Professor at the Department of Astronomy/ Steward Observatory in the 1980s, but was killed tragically in an observatory accident in April 1987. He was highly acclaimed for his work on the extragalactic distance

scale and stellar populations, having received the Pierce Prize of the AAS, among other things. The Aaronson lectureship was established to honor Marc's memory by bringing to Tucson an astronomer whom we think represents the same passion for astronomical research, and who has made the same kind of fundamental contributions to astronomical research that we remember Marc for.

We think that Wendy Freedman is an especially appropriate choice for this year. Marc Aaronson was the first Principal Investigator of the Hubble Space Telescope "key project" which Wendy joined with Marc's strong support. She is now a P.I. of this project, as is Rob Kennicutt. Now the Cepheid data from the fixed HST are rolling in, and Wendy is giving us some results!

-James W. Liebert

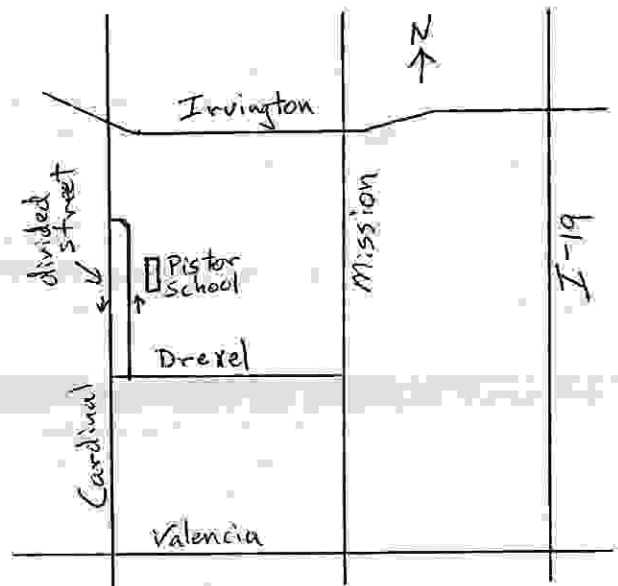
School Star Parties in November

The TAAA charter states in part that we are an educational organization. While we have always made the occasional school appearance with some scopes, we will be tested to the limit in November with 5 appearances in a 10 day period! The demand was there, so we scheduled all requests. The locations are scattered throughout town, so hunt down the ones that are convenient for you to attend, but please try your best to get to one or two. Kids and parents alike are really impressed with the views we provide of Saturn and the Moon and a little gratitude is a lot of payback for dragging your scope out and taking part.

The event at Pistor school is before the November meeting, so if you can make it, call Dean to get put on the signup list (it is always a good idea to sign up in case there is a change in plans). The other events will have signup sheets at the November meeting.

Pistor Middle School **Thursday, 3 November, 1994** **Cardinal/Irvington** **6pm - 8:30pm**

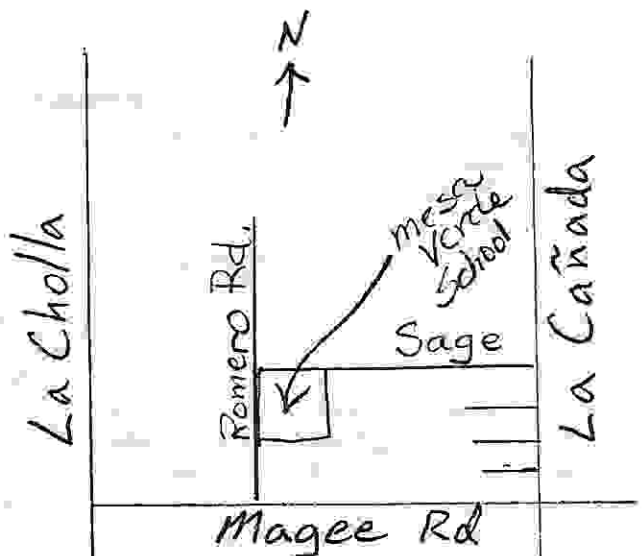
Pistor Middle School is at 5455 S. Cardinal, where they expect up to 100 kids and parents to attend. They would like us to set up at the front of the school by the parking lot. Ask for explicit directions if you arrive early.



Mesa Verde Elementary **Monday, 7 November, 1994** **Magee/La Cañada** **6pm - 7:30pm**

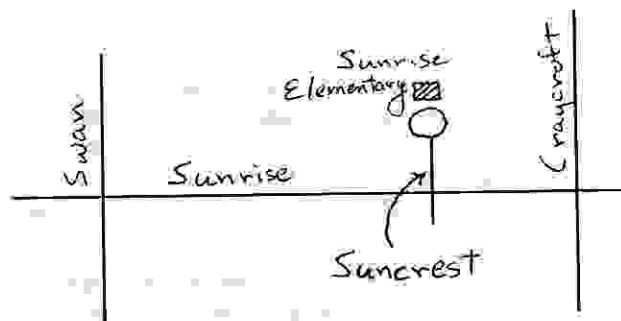
Mesa Verde is at 1661 West Sage, where they expect up to 100 kids (2nd graders) and parents to attend. Enter on the west side of the school off Romero and proceed to the setup area on the south side near the basketball courts.

Note the event at Sunrise Elementary at Sunrise/Craycroft noted on the next page is on this night as well.



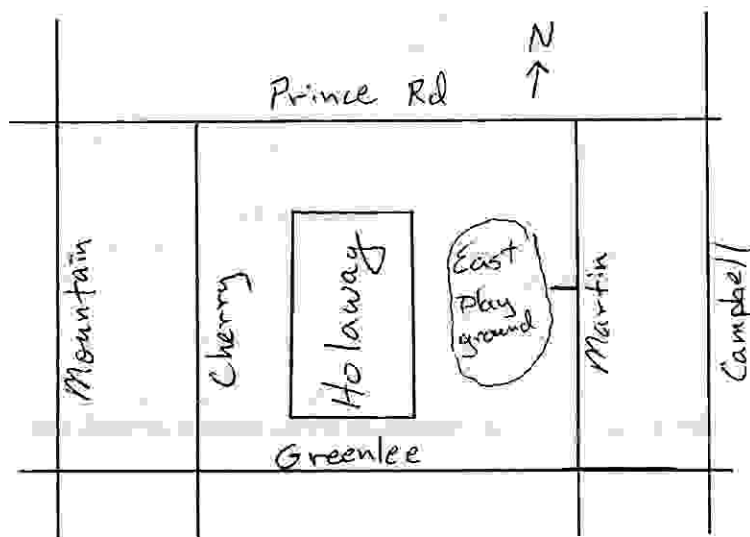
Sunrise Elementary
Monday, 7 November, 1994
Sunrise/Craycroft

Duane Niehaus would like a few folks with scopes to join him for a program here at 5301 E. Sunrise. Contact him at 797-4189.



Holaway Elementary
Wednesday, 9 November, 1994
Prince/Campbell
6pm - 7:30pm

Holaway is at 3500 N. Cherry, where they expect up to 65 kids (3rd graders) and parents to attend. Setup will be on the playground on the east side of the school, which you can enter off of Martin.



Agua Caliente Elementary
Thursday, 10 November, 1994
Snyder/Catalina Highway
6pm - 9pm

Agua Caliente is at 11420 E. Limberlost Rd, where they expect up to 200 children and parents. Setup will be on the playing field on the east side of the school, which is accessed from a gate on Homestead Avenue.



AN AUTUMN STAR

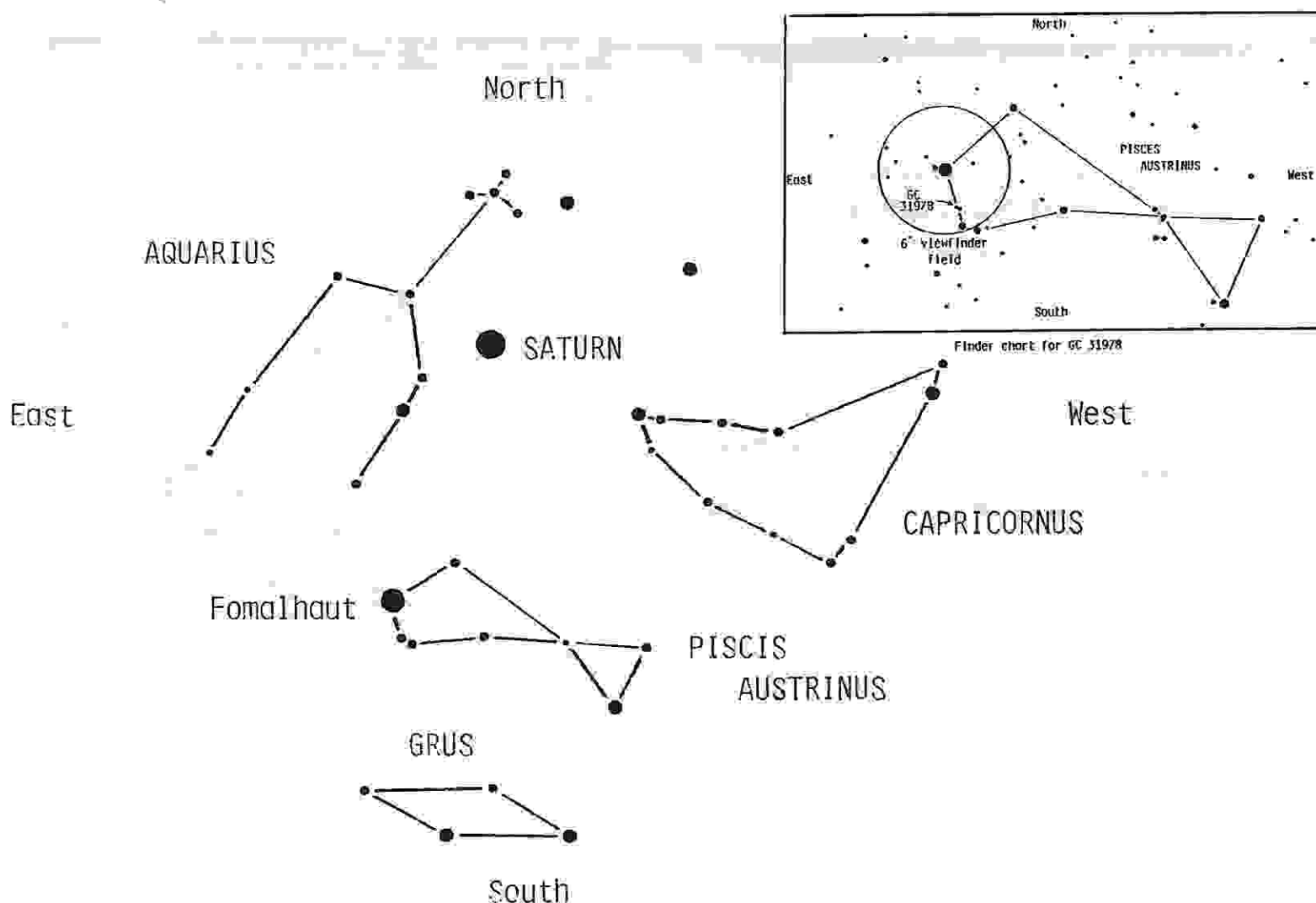
As you watch Saturn this month you may notice a bright star about 20 degrees below, hovering like a distant airplane above the southern horizon. This is the 1st magnitude star Fomalhaut. This is the 1st magnitude star Fomalhaut, pronounced (FOAM-al-ought). Fomalhaut is the brightest star of the constellation Pisces Austrinus the Southern Fish. Fomalhaut is usually the southernmost 1st magnitude star visible from Northern Europe and North America. Fomalhaut stands out like a beacon during these late Autumn evenings, because its located amongst an area of dim stars, therefore it is sometimes referred to as "The Solitary One".

Fomalhaut is a main-sequence star having a spectrum of A3 and its about $1\frac{1}{2}$ times larger than the Sun and 12 times more luminous. Fomalhaut is the 18th brightest star in the sky, shining at magnitude +1.17. Fomalhaut is fairly close being only 22 light years from our Solar System. The name Fomalhaut means the "Mouth of the Fish". To ancient astrologers Fomalhaut was known as one of the "Royal Stars" of Persia.

Is Fomalhaut a double star? Maybe, but its unlikely. There is a $6\frac{1}{2}$ magnitude star about 2° south of Fomalhaut known as GC (General Catalog) 31978 which shares the same proper motion through space as Fomalhaut, but its about 0.8 of a light year distant from Fomalhaut itself. Its probably very unlikely that this is a true companion, but why not check it out anyhow. This star is a dwarf with a spectrum of K5, can you see its orange tint in your telescope? This star has a luminosity about 1/10th the Sun's.

In a small telescope Fomalhaut appears pure white, but when it approaches the horizon it goes through some beautiful changes due to atmospheric scintillation. So why not spend some time viewing this solitary star this month, and maybe it will leave you with some thoughts about the loneliness of deep space.

JEFF BRYDGES



OBSERVER'S REPORT

October eventually turned out to be a decent month for observing, if you waited towards end of dark time. Clear weather and cool nighttime temperatures returned for southern Arizona skywatchers on the weekend of Oct. 8-9, the dates of the All-Arizona Star Party. The previous weekend observers dodged clouds to see deep-sky objects at 8,000 feet from Masai Point in the Chiricahua mountains. The cloudy weather halved the anticipated TAAA crowd from 16 to 7, but those who came were rewarded with the cool temperatures and fantastic scenery that makes the Chiricahuas one of the best outdoor spots in southeastern Arizona. Comet Macholtz turned out to be quite scenic that weekend as well. Dean Ketelsen and Tom O'Hara peered through Tom's 20" Dobsonian and saw 5 different cometary fragments, the brightest of which were 9th magnitude. By the next weekend though (at Vega-Bray with his 20") Tom and I were quite disappointed with Macholtz 2, the comet fading to about 11th magnitude. I had to content myself with views of 9th magnitude Periodic Comet Borrelli (proper spelling?) which was obvious in my 10" Dobsonian at 35 power. What amazed me with this comet was how much brighter this comet had appeared Saturday night as opposed to the night before. It appeared to me that the comet had jumped in brightness half a magnitude-has anyone else seen Comet Borrelli and observed such a brightening? The comet as of October 22 was at magnitude 9 and had a very condensed coma 2 1/2 arc minutes across. If you have medium to large telescope look for a distinct jet jutting eastward. The latest coordinates I have are:

Oct 25 ____ 7 h 22min +10.8°

Oct 27 ____ 7 h 27min +11.9°

Well, after months of seeing the majority of planets in the evening sky, a shift in planetary "activity" occurs this month to the morning sky. For starters, November finds Mercury visible in the morning sky, low in the east-southeast 40 minutes to 1 hour before sunrise. Best dates to see Mercury highest in the morning sky are from November 4-8.

Mercury, for those of you who haven't seen it, will appear as a bright yellow-white star if you don't have trees or buildings blocking your eastern horizon. In binoculars or a telescope this elusive planet is fascinating to watch as it pulsates different colors. The pulsation is due to the bending of Mercury's light by Earth's atmosphere. Of course no surface detail can be seen due to Mercury's perpetual low position in our sky, a result of the planet's proximity to the sun. Saturn is of course easily visible in November's evening sky. The ringed planet is almost overhead after sunset, and presents observers with a telescope an excellent view of its ring system. Finally, Venus passes Mercury in the morning sky on November 14. Best views from Tucson will be from 6:10 to 6:20 a.m. Venus will shine over 10 times brighter than Mercury and present a beautiful 5% lit crescent for those viewing with a telescope.

Unfortunately, the Leonid Meteor shower is washed out by the full moon this year. The Leonids are hopefully building up to a spectacular display in 1998-1999. In spite of the moonlight, some quality observations are needed to determine if this shower is in fact building in intensity. If you can spare the sleep, please go out on the morning of Nov. 18 and record some hourly meteor rates, then pass the information on to myself and the magazines (*S&T* and *Astronomy*). The Taurid meteor shower is going on throughout the month as well. It should be called the Taurid meteor "trickle" though because only 8-10 meteors per hour can be seen during its broad maximum in early through mid November.

Finally, an interesting lunar occultation occurs on the evening of November 9, when the dark limb of the first-quarter Moon covers the 4.5 magnitude star Upsilon (v) Aquarii. Be outside ready to go by 9:45 p.m., the occultation should occur around 10:12 p.m. according to Voyager II for the Macintosh (times +/- 15 minutes). Until next time, clear skies!

Michael Terenzoni

WHAT'S NEW AT



If you haven't been to a planetarium show recently, you'll be in for a pleasant surprise. David Patterson's donation of our new video projector system has greatly improved the quality of our educational programming as well as commercial shows. Two months ago, after the TAAA newsletter folding in Flandrau's conference room, the foldees got to see the first half of NASA's *The Dream is Alive*

from this system using the laserdisk. The sound was incredible!

Volunteers Bob Goff and Demo Galanos continue work on upgrading the 16" telescope. A CCD camera will be used shortly to project live images of the moon and planets to disabled folks downstairs. This will enable those who cannot negotiate the spiral staircase to enjoy the sky almost as much as those viewing through the telescope.

Michael Terenzoni
Outreach Coordinator,
Flandrau Science Center
Phone: 621-4515; Voice mail at 621-2001 -
mailbox #111-1123

TAAA Exec Meeting - 13 October, 1994

Attending were D. Ketelsen, T. Lappin, D. and Tabitha Niehaus, Nina Lehman, D. Harvey, G. Rosenbaum, and B. Goff. Meeting was convened at 7:50

1. Youth Astronomy Club - Nina Lehman presented her plans for starting the youth group which will run concurrent with the regular TAAA meetings for school age children. She will begin the program with some star chart making and simple constellation finding. We will try it with the November meeting and see what response there is.

2. Executive Reorganization - Dean is giving up the newsletter editorship at the end of the year, and would also like to get someone to take over running school events. Teresa presented some of her ideas about reorganizing the TAAA constitution. Major changes include combining both secretarial positions, and change the membership coordinator to membership secretary - an assistant to the Treasurer at meetings in addition to regular duties. Other of her potential changes are the naming of an education administrator, fundraising chairperson, property chairperson and newsletter editor to the Executive Committee. Some discussion over wording took place. The goal is to make any changes by the first of the year for a general membership vote. We also have enough members to vote in a third Member-at-Large.

3. Upcoming Events -

Nov. Meeting - Dr. Grand Bazan speaking on Supernovae.

Dec. Meeting - James McGaha with a historical talk on Nebulae searches.

There are lots of star parties planned this month:

12 November - Smithsonian

10 December - Public Saturn Party at Sabino

3 November - Pistor Elementary

7 November - Mesa Verde and Sunrise Elementary

9 November - Holloway School

10 November - Agua Caliente School

4. Treasurer's Report - Total funds on hand \$27,467.32. Total 40th anniversary banquet costs were \$1020.60.

5. Fundraising News - Sharon Niehaus was named Education Administrator as she is working on writing grants to area science education people.

6. Land Search Issues - no activity this month.

7. A. L. News - Bob Goff is settling into his role as new ALCOR by working with computerized membership lists.

8. Other Business - none.

Meeting was adjourned at 10:05.

Desert Skies Classified

Free to Good Home: Old Heath/Zenith computer (64K Ram) with 2 disk drives. Formerly owned by Dr. Nick Sanduleak (one of the S's in SS433 and the discoverer of the precursor of SN 1987). Comes with gobs of software and disks (10RH) including several basic compilers, fortran compiler, and some astronomical programs. If you know someone in need of an entry level machine or a word processor, this is it. Rik Hill 721-0123. (11-94)

For Sale: 8" F/20 Tri-schiefspiegler (Buchroeder Design). Some of you may have observed through this scope at a gab fest Near Three Points a few years back. The owner died and the fellow storing it needs to recover storage fees. The equatorial mounting is very heavy duty (observatory quality) with electronic slow motion. The fellow selling it doesn't know telescopes, but it should be complete with finder and eyepieces. Before dying the owner specified that it be sold for \$6500, but after storing it for years, the fellow wants \$2500 (a real steal). It is still in storage in Three Points - call Ken at 822-2222. (11-94)

For Sale: Questar 7", superb condition. Sell or trade for Chevy Suburban or equivalent. Mario Sibilli 327-0665. (11-94)

Wanted: David J. Eicher's book "Deep Sky Observing with Small Telescopes" Gilbert Friedman, 571-1662. (11-94)

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. External CD-ROM drive, like new in box \$150 or best offer. Perry Berlind, 795-4575. (02-95)

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 Dean, 293-2855.

DARK SKIES for Tucson (in MST)

1994 NOVEMBER no twilight
no moonlight

Tu/We	1/ 2	6:57pm - 5:19am
We/Th	2/ 3	6:56pm - 5:19am
Th/Fr	3/ 4	6:55pm - 5:20am
Fr/Sa	4/ 5	6:54pm - 5:21am
Sa/Su	5/ 6	7:45pm - 5:22am

Su/Mo	6/ 7	8:48pm - 5:22am
Mo/Tu	7/ 8	9:52pm - 5:23am
Tu/We	8/ 9	10:54pm - 5:24am
We/Th	9/10	11:55pm - 5:24am
Th/Fr	10/11	12:54am - 5:25am
Fr/Sa	11/12	1:50am - 5:26am
Sa/Su	12/13	2:45am - 5:27am

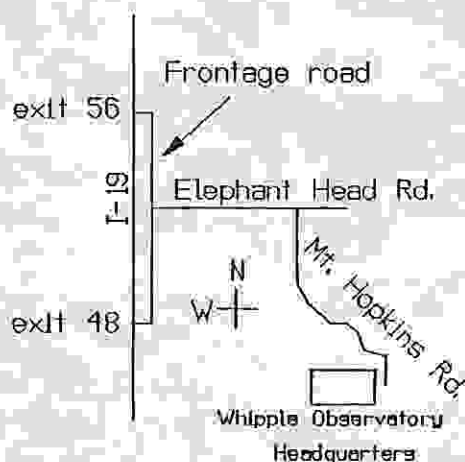
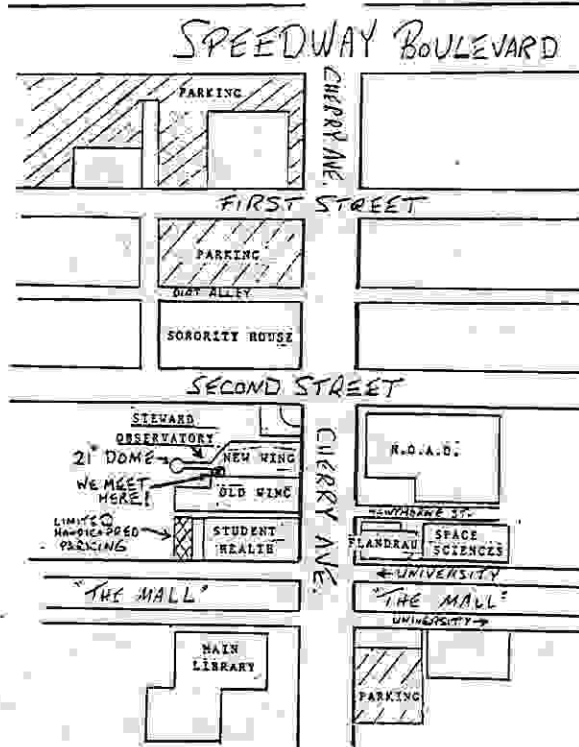
Su/Mo	13/14	3:40am - 5:28am
Mo/Tu	14/15	4:33am - 5:28am
Tu/We	15/16	5:27am - 5:29am
We/Th	16/17	- - -
Th/Fr	17/18	- - -
Fr/Sa	18/19	- - -
Sa/Su	19/20	- - -

Su/Mo	20/21	6:47pm - 7:29pm
Mo/Tu	21/22	6:47pm - 8:21pm
Tu/We	22/23	6:46pm - 9:15pm
We/Th	23/24	6:46pm - 10:11pm
Th/Fr	24/25	6:46pm - 11:08pm
Fr/Sa	25/26	6:46pm - 12:06am
Sa/Su	26/27	6:46pm - 1:07am

Su/Mo	27/28	6:46pm - 2:09am
Mo/Tu	28/29	6:46pm - 3:15am
Tu/We	29/30	6:46pm - 4:22am
We/Th	30/ 1	6:45pm - 5:32am

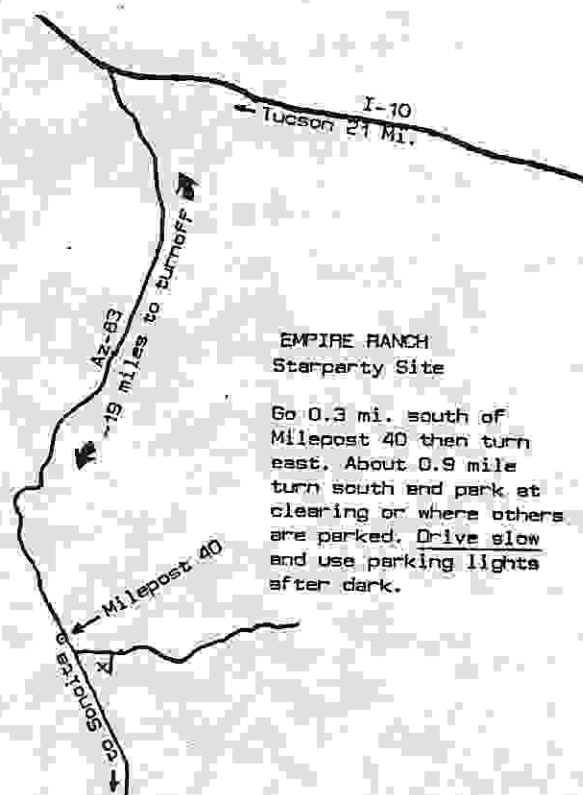
Erich Karkoschka

TAAA Meeting Location



Smithsonian Observatory Basecamp Star Party November 12th

From I-19 (exits 56 or 48) take the frontage road on the East side of freeway to Elephant Head Road. Cross bridge at Santa Cruz River, then railroad tracks. Turn on Mt. Hopkins Road (a paved road). Basecamp is at end of pavement (about 7 miles)



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.

Tucson Amateur Astronomy Association
P. O. Box 41254
Tucson, AZ 85717

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