

Desert Skies

April, 1993

The Newsletter of the Tucson Amateur Astronomy Association (TAA)



GENERAL MEETING - Friday, April 2, 7:30 P.M. at the NEW Steward Observatory Auditorium (N210). TAAA member Michael Smith will present a talk on "Photoelectric Photometry for the Amateur".

6:45 P.M. - pre-meeting "Beginners lecture" by Teresa Lappin will be "Jupiter, King of the Planets." All are welcome! ("old" Steward obs. room 204). See enclosed map for directions!

EXECUTIVE MEETING - Thursday, April 8, 7:30 P.M. at Flandrau Science Center's Conference Room

30" TELESCOPE DESIGN, LAND & FUNDRAISING MEETING - Wednesday, April 14, Location to be announced - call Dean for location.

STAR PARTIES - See descriptions and maps inside

- 30 March - Borton Elementary School (22nd and Park)
- 31 March - Camp Cooper (West on Speedway to Trails End Rd.)
- Thurs. 15 April - Cub Scout Troop (Kolb and Golf Links)
- Sat. 24 April - Smithsonian Base Camp (foot of Mt. Hopkins)
- Mon. 26 April - Sunrise Elementary School (Craycroft and Sunrise)
- Sun. 1 May - Astronomy Day - events at Tucson Mall and Sabino Canyon

COVER: As is the tradition at the Kitt Peak Star-B-Que, clouds ruled. As late as 4:30, early arrivals were checking out the view of the sun and its spots in Dean's 5" binoculars, but the clouds quickly moved in and thickened. This group photo shows the well-fed attendees before the 80' radio telescope of the Very Long Baseline Array. **Back Cover -** Members examine Lee Dettman's Nasmyth-Newtonian 10"

TAAA EXECUTIVE

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Vice-President	Terri Lappin	579-0185
Executive Sec.	Dick West	762-9037
Recording Sec.	Sharon Neihaus	299-8541
Treasurer	Duane Niehaus	299-8541
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Mem. Coord.	Terri Lappin	579-0185
Past President	Tim Hunter	299-2972
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MEMBERSHIP IN THE TAAA

Individual	\$20.00/year
Family	\$25.00/year
Senior Citizen (over 60)	\$18.00/year

Sky & Telescope subscription (optional) \$20.00 (as of July, 1992)

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 2 days prior to newsletter meeting. The Newsletter meeting is held on the Saturday 2 weeks before the next general meeting. Materials received after that date will appear in the next issue.
- * All submissions are retained by the editor unless prior arrangements are made.
- * Articles, artwork, and photos should be camera ready. Photos should be screened.
- * 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.

This Month's Speaker - Michael Smith

TAAA's very own **Michael Smith** will be our featured speaker for the April meeting, where he will be talking about *Photoelectric Photometry for the Amateur*. Many of you know him best for the column "Under Dark Skies" he writes every other Thursday in the Arizona Daily Star, which he has been writing for over eight years. Originally from upstate New York, he has been in Arizona 16 years, where his astronomical interest soared. Though he observes double stars and the occasional deep sky object (he holds both the Messier and Herschel certificates from the Astronomical League), he has found his calling as a variable star observer. Most of his observing is done with an 8" Celestron and a photometer, though he recently acquired a 14" Celestron. He also holds the editorship of the IAPPP newsletter, an astronomical organization specializing in variable star observing.

Michael is the medical director at St. Mary's Hospital and also has a small neurology practice. Last year he took 6 months off from his duties and volunteered as a park ranger in the Minnesota backcountry, where by his count he took 22 exploratory trips into the wilderness.

Beginner's Lecture

Jupiter--The King of Planets

Jupiter reaches opposition on March 30th, which means it is visible all night long, rising at sunset and setting at sunrise. This month's Beginner's Lecture will include some general facts about this planet, the largest of the solar system, and some guides to observing it. We will discuss what magnification is best, which filters to use to bring out detail, and give you an idea of the surprises Jupiter may hold in store this apparition.

Remember, to allow us more time for the talk, the Beginner's Lecture now starts at 6:45pm, 45 minutes before the start of the regular meeting. See you at 6:45pm on April 2nd.

Desert Skies Classified

For Sale: 8" Celestron Classic, heavy duty tripod, wedge, eyepieces, finder. Fitted with "Astro-Master" computer database and encoders with 8000 objects. Two years old, but never used - \$1,000. Storne Shively 529-1117(home), 750-4926 (work). I will be out of town until 5 April - call after then.

For Sale: Rivett 8" swing toolmaker's lathe. Complete set of collets. Good condition. No automatic feed (can't cut threads). Call Al (602)465-7521 (Phoenix number) This is from the Fultz estate and is located in Prescott.

For Sale: 14.5" Sky Designs Dobsonian - superb optics. \$1800 - call Gordon Gower, 749-0398.

Wanted: Brackets to hold 6X30 finder; FOR SALE: Small diagonal for Newtonian telescope; 20th wave, 7/8" minor axis, custom made; OR WILL TRADE FOR 1 1/4" diameter eyepiece with 16-18mm focal length. Call Gilbert Friedman at 571-1662

For Sale: Dobson-type mounting for 12.5" telescope. Nearly new, \$175. Werner Scharlach 795-9350.

For additions or changes to this list call Dean, 293-2855.

Mirror Laboratory Tour

This is your chance to see the inner workings of the world famous spinning oven and the recently cast 6.5 meter mirror, as well as mold preparation for the 2nd 6.5 meter. On the fabrication side of the shop, you will see final testing of the aluminized 3.5 meter for the Air Force and modifications of the polishing - generating machine for upcoming work on the 6.5 meter. The tour will be led by your very own president, Dean Ketelsen.

The group will be limited to 30

people, so make your plans now. It is the same date as the next general meeting, so come on the Mirror Lab tour, join in a group dinner at a local restaurant and then on to the April general meeting! You must call ahead to reserve a spot. To be a member of this tour, call Dean at home (293-2855) or work (621-8764) or leave a message at either number and reveal the number of people attending. He will return your call to confirm your reservation. No calls before March 29 please!

Fossil and Meteorite Hunt!

Rick Hill, our resident fossil and meteorite expert, will lead a group of TAAA members on **Sunday, April 4th** to some local spots ripe for hunting. This is the first time we have tried to organize something like this and your interest will determine if we ever do it again. Rick has obtained permission to go into a couple places that have been off limits until now, and in fact, negotiations are ongoing, so we can't say where we will go just yet. But the spots are a very short drive from town. One of the areas is part of a known meteorite fall, the other rich in fossils. We will visit one spot in the

morning, the other in the afternoon.

We will leave from the **Donut Wheel** at the **northeast corner of Mission and Ajo at 8:00 sharp!** If you are late, you lose out! The temperatures and sun may be extreme, so wear a wide-brimmed hat and plenty of sunscreen, and bring a supply of drinking water.

If you are interested, call Dean at 293-2855 or come to the April general meeting. We are not aware of any group size restrictions at this time, but want to know the amount of interest in advance.

TAAA Spring Picnic set for May 15

The annual Spring Picnic has been set for **Saturday, May 15** at the Vega-Bray Observatory near Benson. Be sure to mark your calendar for this ever popular event. We are hoping to have the Club's 16" operational again after a refiguring by Bob Goff. There is

fishing available, as well as general exploring and rock hounding for the kids. There will be a grill provided, bring your own entree to cook and a dish to share. Plan to come early and stay late. Check next month's newsletter for a map and more details.

Fundraising News:

Open Forum - Should the TAAA change its name? by Eduardo Vega

The TAAA needs to obtain significant funds so as to be able to buy the necessary acreage for a decent observing site and for building an observatory for the existing 16" telescope and the 30" telescope that is in the making.

Some of us believe that to be successful in fund raising, we should change slightly the name of the TAAA to one that does not include the word "amateur".

Would you donate some of your money, or the money of an organization you work for, to the "Tucson Society of Amateur Neurosurgeon"? Or would you be more inclined to do so for the "Tucson Society for the Advancement of Neurosurgery"?

Some of the proposed alternatives are:
Tucson Association for the Advancement of Astronomy (TAAA)

Tucson Society for Astronomy (TSA)

Tucson Astronomy Association (TAA)

Tucson Association for Astronomy (TAA)

Southern Arizona Astronomy Association (SAAA)

Tucson Astronomical Society (TAS)

Think about it and give us your own proposals.
Ed Vega 747-9323

PUBLIC STAR PARTY

COSPONSORED BY WHIPPLE OBSERVATORY

We will be holding a Santa Cruz Valley Public Star Party at the Whipple Observatory headquarters on Saturday April 24th. The headquarters are located at the base of Mt. Hopkins in the Santa Rita Mountains south of Tucson. It is about 40 miles from the University of Arizona, most of which is interstate driving and the entire route is paved. The site is reasonably dark and great for public star parties. Facilities are available and AC power can be provided if necessary (call Teresa if you need AC power).

Arrive by 6:00pm to set up the telescopes. A short talk will be presented by one of the staff astronomers at 6:15pm and observing will start around 7:00pm. A map is provided in this newsletter.

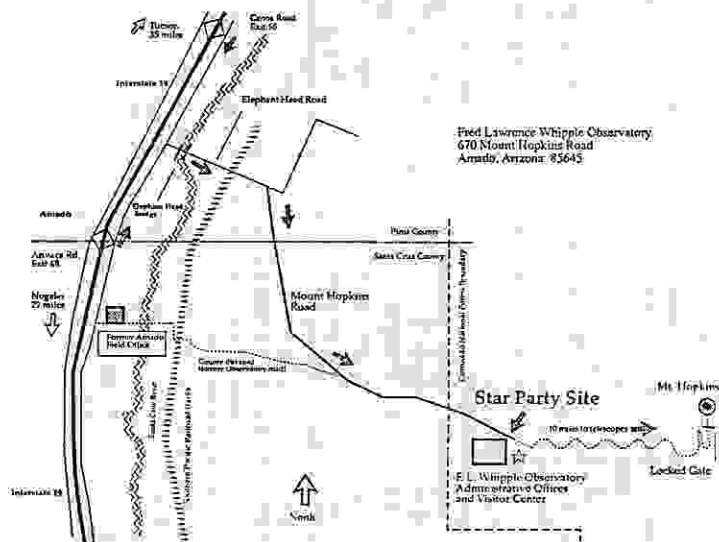
Teresa 579-0185

How To Find The Observatory Offices

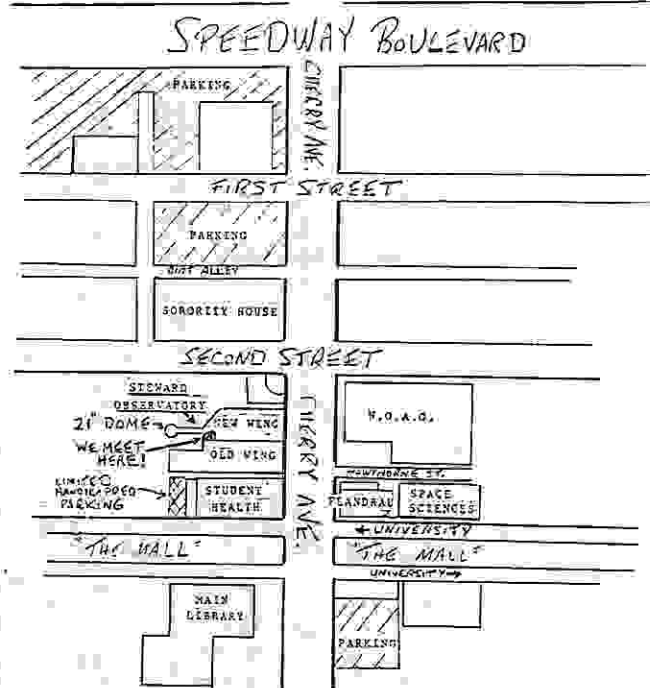
The new administrative complex for the Fred Lawrence Whipple Observatory is 43 road miles south of Tucson and 38 road miles north of Nogales, Arizona.

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

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



TAAA Meeting Location



CELESTIAL CALENDAR for April 1993 (all times are in MST):

T	Mar. 30	Star Party at Borton Magnet School, call Dean Ketelson for more details.
W	Mar. 31	Star party at Camp Cooper, call Mike Terrenzoni for details.
T	Apr. 1	6am, Venus at inferior conjunction, .282 a.u. from Earth, passes into the morning sky.
F	Apr. 2	7:30pm, TAA General Membership Meeting, Steward Obs. new auditorium.
S	Apr. 3	12pm, Moon passes 5.8° S of Regulus.
S	Apr. 4	Kappa Serpentid meteors, ZHR 1, yawn!
M	Apr. 5	8am, Mercury at aphelion, .4667 a.u. from Sol.
		10am, Mercury at greatest elongation west, 27.8° from Sol.
T	Apr. 6	11:43am, FULL MOON, the Egg Moon.
W	Apr. 7	Delta Draconid meteors, ZHR 1, another yawner!
T	Apr. 8	7:30pm, TAA Executive Meeting, Flandrau Science Center conference room.
F	Apr. 9	M68 discovered by Mechain, 1780.
S	Apr. 10	TAA Star Party, Empire Ranch.
S	Apr. 11	M59 & M60 discovered by Koehler, 1779.
M	Apr. 12	Virginid meteors.
T	Apr. 13	12:38pm, LAST QUARTER MOON.
W	Apr. 14	7:30pm, 30" Telescope Design, Land and Fundraising Meeting at Duane Niehaus'.
T	Apr. 15	Cub Scout star party, at Evangelical Lutheran Church of the King, see map elsewhere.
F	Apr. 16	4am, Mercury 8.4° S of Venus, shining at 0 and -4.4m respectively.
S	Apr. 17	TAA Star Party, Empire Ranch.
S	Apr. 18	M46, "M47", "M48", M49 discovered by Charles Messier, 1771.
M	Apr. 19	8:09am, mid-day Venus occultation, reappears at 9:30am.
T	Apr. 20	8pm, Uranus at heliocentric conjunction with Neptune, and about as close to each other as they're going to get for a while!
W	Apr. 21	4:49pm, NEW MOON.
T	Apr. 22	6am, Lyrid meteors peak, ZHR >30, dark sky all night! Should be a good shower.
F	Apr. 23	10pm, Moon passes 5.7° N of Pleiades.
S	Apr. 24	7pm, Moon passes 5.7° N of Aldebaran.
S	Apr. 25	5pm, Mars at aphelion, 1.666 a.u. from Sol.
M	Apr. 26	6:30pm, Star Party at Sunrise Elementary, see map elsewhere.
T	Apr. 27	Immanuel Kant, Russian philosopher & astronomer, born 1724.
W	Apr. 28	Alpha Bootid meteors, ZHR 7ish.
T	Apr. 29	5:40am, FIRST QUARTER MOON.
F	Apr. 30	7:40am, Algol at minimum.

Andrew J. Meyer

DARK SKIES for April 1993 (in MST):

T/F	Apr. 1/2	3:06am - 4:48am
F/S	Apr. 2/3	3:46am - 4:46am
S/S	Apr. 3/4	4:24am - 4:45am
S/M	Apr. 4/5	none
M/T	Apr. 5/6	none
T/W	Apr. 6/7	none
W/T	Apr. 7/8	8:11pm - 8:18pm
T/F	Apr. 8/9	8:12pm - 9:27pm
F/S	Apr. 9/10	8:13pm - 10:31pm
S/S	Apr. 10/11	8:14pm - 11:29pm
S/M	Apr. 11/12	8:15pm - 12:20am
M/T	Apr. 12/13	8:16pm - 1:05am
T/W	Apr. 13/14	8:17pm - 1:44am
W/T	Apr. 14/15	8:18pm - 2:19am
T/F	Apr. 15/16	8:19pm - 2:51am
F/S	Apr. 16/17	8:20pm - 3:20am
S/S	Apr. 17/18	8:20pm - 3:49am
S/M	Apr. 18/19	8:21pm - 4:19am
M/T	Apr. 19/20	8:22pm - 4:22am
W/T	Apr. 20/21	8:23pm - 4:21am
T/F	Apr. 21/22	8:24pm - 4:20am
T/F	Apr. 22/23	8:25pm - 4:18am
F/S	Apr. 23/24	8:26pm - 4:17am
S/S	Apr. 24/25	9:52pm - 4:16am
S/M	Apr. 25/26	10:45pm - 4:14am
M/T	Apr. 26/27	11:35pm - 4:13am
T/W	Apr. 27/28	12:21am - 4:12am
W/T	Apr. 28/29	1:03am - 4:10am
T/F	Apr. 29/30	1:42am - 4:09am
F/S	Apr. 30/1	2:20am - 4:08am

Times listed are for Tucson, Arizona when:

- (1) Moon is below the horizon
- (2) Sun is >18° below the horizon (astronomical twilight)

Andrew J. Meyer

Have you made your Grand Canyon
Star Party plans yet??
The dates are the 12-19 of June 1993.

Upcoming Events

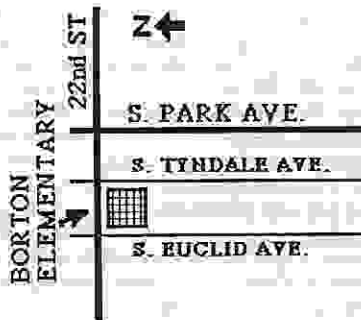
Borton Elementary Star Party

When: 30 March, 1993 6:30 p.m. (setup)-8:30 p.m.

Where: Borton Elementary School, 700 East 22nd St., between S. Tyndale and S. Euclid.

This will be a star party similar to past star parties for elementary schools. What's different is that Borton is a magnet school, meaning we should have an especially interesting mix of kids. We will entertain 50 2nd and 3rd graders and their families (meaning about 75 people total). We will set up in the athletic field, which is accessible by turning south on S. Euclid from 22nd. The school is located between S. Tyndale and S. Euclid. Please call Dean Ketelsen at 293-2855 if interested for

information and possible schedule changes (if cloudy).

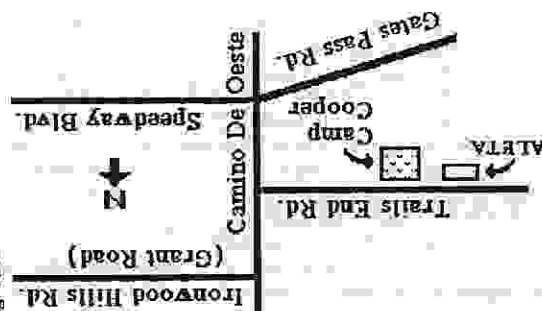


Camp Cooper Star Party

When: 31 March, 1993 6:30 p.m. (setup)-8:30 p.m.

Where: Camp Cooper, Trails End Road, in the foothills of the Tucson Mountains.

This will be a star party similar to past star parties at TUSD's Camp Cooper. We will entertain 30 students from Vail Middle School from teacher Alice Bever's science class. Alice is looking for at least 5 telescopes for her kids, to show them a variety of each type of object. So, one telescope would be on the Orion Nebula, one on Mars, one on a double star, etc... We will set up near the large ramada area, near the center of the camp. TUSD's Camp Cooper is located off of Trail's End Road in the Tucson Mountain foothills. This is east of SilverBell, off of Camino De Oeste. Follow the signs to the ALETA police academy. Camp Cooper is just east of ALETA. Please call Mike



Terenzoni at 577-6857 if you intend on coming out.

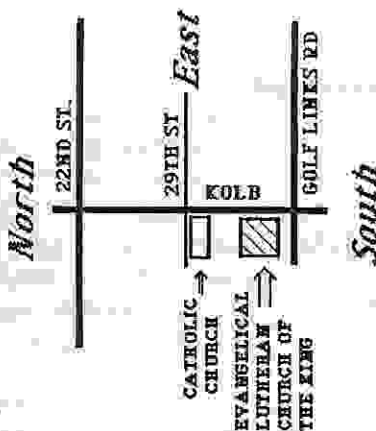
Upcoming Events

Cub Scout Star Party

When: 15 April, 1993 7:00 p.m. (setup)-9 p.m.

Where: Evangelical Lutheran Church of the King, 2450 South Kolb Road (just north of Golf Links).

This will be a star party similar to past school events. There will be 40 boys eagerly awaiting their turn at the eyepiece, so lots of telescopes are requested by the Cubmaster, Ed Anderson (himself an astronomer at Kitt Peak National Observatory). We will set up in the parking lot behind the church, in the darkest spot available. The church is located just north of Golf Links, off of Kolb (address above). Although you don't have to sign up please do so at this month's meeting so we have a general idea as to how many scopes we will have. You can also call



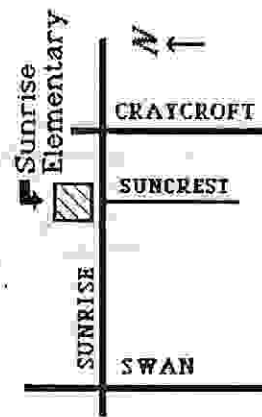
Sunrise Elementary Star Party

When: 26 April, 1993 6:30 p.m. (setup)-8 p.m.

Where: Sunrise Elementary School, off of Sunrise, 1/3 mile west of Craycroft.

This will be a star party similar to events in past years at this school in the Catalina foothills. We will entertain 50-100 3rd graders and their families (and whoever else happens to be at the school). Duane Niehaus and his kids will probably be there since his kids go there! We will set up in the courtyard area near the center of the school. The school is located off of Sunrise, 1/3 mile (or so) west of Craycroft (between Craycroft and Swan). Although you don't have to sign up please do so at this month's meeting so we have a general

idea as to how many scopes we will have. You can also call Mike Terenzoni at 577-6857. If you need power for your scope please bring some long extension cords.



Constitutional Amendment

With the recent push to raise funds, we have also looked at ways to reduce waste in the TAAA. One way is to stop sending newsletters to members whose membership has expired. Currently the Club carries them for 3 months, but it has stretched out to six months or more. Teresa Lappin has introduced an amendment to the constitution where the member would

receive only one newsletter after their membership has expired, then send them a postcard notifying them their membership has expired. This would save over \$1 per non-renewing member. The proposal was approved at the March Executive meeting and needs a vote before a general meeting before it would take effect. The vote on this amendment will take place at the April meeting.

May Elections Approaching

TAAA elections are coming up during the May general meeting. If you are interested in getting more active in the inner workings of the Association, please contact Gary Rosenbaum (579-0185) or Bob Goff (790-

1452), who make up the nomination committee. They will give a report at the April Meeting as to which positions will be open.

May Meeting is Member's Night!

The May general meeting has been selected to be a member's night. In other words, you are the entertainment. If you have something to share, if you have a project you have been working on, a story to tell, an observation to report, now is the time to step up and let us know what you have been up to. Call Dean and let him know if you would like to speak.

Along the same lines, we usually like to have auctions at these meetings. If you have a piece of astronomical gear that you no longer use, and would like to donate the proceeds to the club, or if you like to sell something and give the Club 20% of the proceeds, bring it to the May meeting. Bring some cash and unused gear and let's swap!

Executive Meeting Minutes-12 March, 1993

Meeting convened at 7:45, attending were D. Nye, T. Lappin, G. Rosenbaum, R. Goff, M. Terrenzoni, D. Niehaus, D. Ketelsen.

1. Land Search Issues - TAAA has reached a standstill in its search for land. We are still looking for a dark sky site, but have resigned ourselves to the fact that without funds, our choices are extremely limited.

Teresa suggested contacting Pima County board of supervisors or to Pima County Parks and Recreation, to see about setting up an observatory in a local park for convenient public access. Since the 16" is available now, perhaps we can work out a deal for a site in exchange for public programs. Teresa will draft a generic letter asking about the possibilities.

2. Fundraising Issues - We received a number of forms authorizing direct donations from members' accounts at the last meeting. Response was encouraging for the first attempt. We discussed naming the members who took part in this program both to thank the members taking part and to encourage others to do so.

Because of the planned trip to Prescott, the March 30" and fundraising meeting was cancelled.

3. Stellarvision and the TAAA 22" - Frank Lopez has made an offer of \$1200 worth of merchandise in exchange for the Vann telescope donated to the club last summer. We discussed the possibilities of obtaining raffle prizes or a set of Nagler eyepieces. A trip to Andy Meier's house is planned to more completely evaluate the quality of the telescope and optics before a decision is made.

4. Upcoming Prescott Trip - A final trip to Prescott was planned to pick up the larger items from the Fultz donation of mirror making supplies and telescopes. The best deal on trucks with a lift gate was Budget Rental at \$43 per day and \$.25 per mile. Hertz and Ryder were \$75 per day and \$.25 per mile. Bob Goff was going to make the off loading arrangements at the Planetarium, including volunteer labor. Photos were examined regarding the telescope mounting we are to receive. The very heavy mounting is fastened to a large air cylinder (like that at an auto mechanic for jacking up cars) to enable raising the mounting so that the eyepiece is at a convenient height. If removal is possible, we will try to salvage the cylinder.

Update at press time - Because of construction at the Lunar and Planetary Laboratory, which we have to pass through to get access to Flandrau's basement, the Prescott trip was cancelled. Dean will work with the building monitor to schedule another try, hopefully on the weekend of the 27-28 March.

5. Upcoming Events - Discussed late breaking changes to upcoming events. The May general meeting will be a member's night. Dean will write a notice for the newsletter. The TAAA Spring picnic is tentatively scheduled for May 15, subject to Ed Vega's approval. Upcoming star parties: 30 March - Borton Elementary School, 15 April - Cub Scout Troop, 24 April - Smithsonian Base Camp. Notices will get into the newsletter.

6. Liability Insurance - Teresa has gone over the new liability insurance policy and is concerned that it does not do what we want. We have evidently been getting conflicting information from two different people on their end. Terri and Dean will meet with an agent later this month to hopefully straighten things out.

7. Astronomy Day - Teresa is coordinating Astronomy Day activities. At the moment, plans are to have a few tables at Tucson Mall (depending on the resolution of the above insurance situation) which will be manned by members on Saturday, May 1. There are also plans for a public star party at Sabino Canyon parking lot that evening.

8. Treasurer's Report - Land Fund is currently at \$13,900, checking and cash total \$4,000. We are hoping with the direct donation program that the land fund will start to grow after a period of stagnation.

9. Elections - Nominations - Bob Goff and Gary Rosenbaum will contact existing executive members and determine their interest in continuing on the board. They will also approach active members in getting them to run for positions.

10. Other Business - Teresa made a motion for a constitutional amendment regarding the length of time a member is carried on the role after their membership has expired. Currently the official length is three months, but has lagged on to over 6 months in some cases. Teresa suggested one month with a postcard for notification before they are dropped. With Dick West making a vote from the telescope dome (making a quorum), the amendment was approved. It will be brought up at the next general meeting for a vote. The meeting adjourned at 9:45. -D. Ketelsen

OBSERVER'S REPORT

Unfortunately the month of February turned out to be an almost total loss for TAAA star parties. However it seems the weather patterns in March are turning to our favor. It still may be cloudy (as it was at the March 13 Kitt Peak Picnic) but at least it's not raining. In the hope of seeing clear skies return for April, here's a short list of objects I've found to be intriguing or just fun to check out.

NGC 2392, the Eskimo Nebula (also called the Clown Face Nebula) is an object well known to most amateurs. This planetary nebula is located about $2/3^\circ$ southeast of the double star delta Geminorum. A UHC filter is recommended as is medium high powers. In the span of 3 days just before Christmas 1992 I saw this object first through the 61" reflector on Mount Bigelow at around 800 power and then, two days later, in a 32" Dobsonian at the Custer Institute on Long Island at 500 power. What was fascinating to me was how different this nebula appeared from the photographs. I half expected the "face" to be visible in the 61" but in reality the view in both telescopes did not resemble the photographs much at all. No Eskimo face (or fur hood liner) was recognizable. Robert Burnham states in his handbook that a small telescope will show this as an eighth magnitude star like object, "distinguishable by its soft fuzzy glow and perceptible disc, which measures about $40''$ across". Although this object appeared green in the 61" due to the UHC filter used, you may see a ghostly bluish-green color in a large telescope without a filter.

Here's a challenge object, a globular cluster in Lynx, NGC 2419. It's found about 7° north of Castor. NGC 2419 is the famous "Intergalactic Wanderer", the most distant of the Milky Way's globular clusters, and is tentatively classed by some authorities as an extragalactic object. Burnham describes it as magnitude 11.5, extremely condensed, with a diameter of 2 arc minutes. Even though dim and faint this object can be seen even in a 6 inch scope as a small fuzzy spot. Medium-low powers probably work well to find this object.

South from NGC 2419 and below M44 (the Beehive cluster), lies the open cluster M67. This is a rich cluster best seen in a low power ocular. I had not viewed this cluster until recently and was surprised at how rewarding an object it is at low power. About a hundred stars are visible in an area of about 15 arc minutes. M67 is unusual in two respects:

1. It is one of the most ancient of all open clusters.

2. It lies far away from the plane of the galaxy. Look for this object by scanning 7 degrees above the head of Hydra, the water snake.

Often overlooked due to the numerous galaxies in the spring sky is NGC 2903, an isolated but easily found spiral galaxy. This 9.7 magnitude galaxy measures 11

by 5 arc minutes and is found by scanning just two degrees south of lambda Leo (off the top of the sickle of Leo). Using low power look for an oval smudge of light (spiral structure will be difficult to discern).

Sliding past the meridian at end of twilight in April is the southern winter Milky Way. This portion of our galaxy that we see best in winter months is particularly rich in open clusters. Two of the most interesting ones are M93 and NGC 2477. Both objects are best seen at low power and are still well up in the southern sky at end of evening twilight in mid-April. M93 is found approximately 8 degrees east of the tail area of Canis Major, the Big Dog. NGC 2477, a truly spectacular and rich open cluster, can be located by forming a line with the tail of the Dog and scanning 11 degrees from Eta along this line. Don't confuse this object with nearby, coarser NGC 2451. NGC 2477 is so rich, some members may think it's a globular on viewing it for the first time. Until next meeting, clear skies.

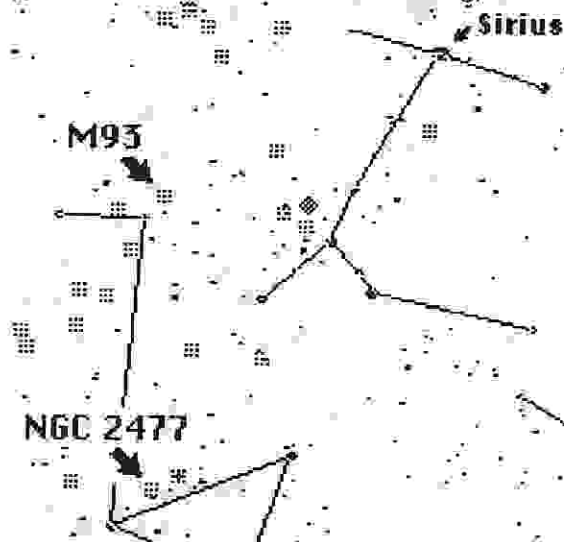
M67

Head of Hydra

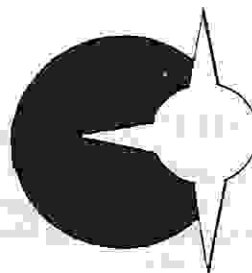


NGC 2419

Castor →



Michael Terenzoni



ASTRONOMY DAY '93

at THE TUCSON MALL

May 1st is Astronomy Day and the TAAA will be recognizing it with a display at The Tucson Mall from 10am to 9pm and a star party at Sabino Canyon Parking Lot which will begin at 7:30pm. Astronomy Day's theme is to "bring astronomy to the public" and we hope to do this with our mall display and star party. The mall display includes a few telescopes, astronomy computer programs, telescope making equipment and supplies, video tape and slide presentations. A solar telescope outside the mall entrance will allow shoppers to see sunspots. Since the mall is open in the evening, we may set up a telescope for viewing Jupiter and the moon, but the main evening attraction will be the star party at Sabino Canyon.

Members are needed to help man the mall display and make sure that nothing walks away or is broken. You may be asked some questions, too. Someone will always need to man the solar telescope; maybe we can arrange a rotating schedule if there are enough TAAA members around. If you can provide a few hours on Saturday, please come by The Tucson Mall. Your help would be greatly appreciated. Our display will be just inside the lower level south entrance between Foley's and Broadway.

If you are an early bird or would rather help behind the scenes, we will be setting up the display on Saturday morning at 7:30am. A NOTE TO THOSE WHO HELPED IN PREVIOUS YEARS: The Tucson Mall provides tables with skirting so we do not need to mess with it this year! Yeah!!! We will be permitted to park vehicles at the entrance to the mall for loading/unloading, provided this is done at 7:30am or after 9pm.

The display will be dismantled at 9pm Saturday night. We should be out of the mall by 10pm.

The following TAAA members have said they will provide equipment for the display:

Bob Goff: Optics display

Dean Ketelsen: Sunspotter telescope

Dave Levine: Computer

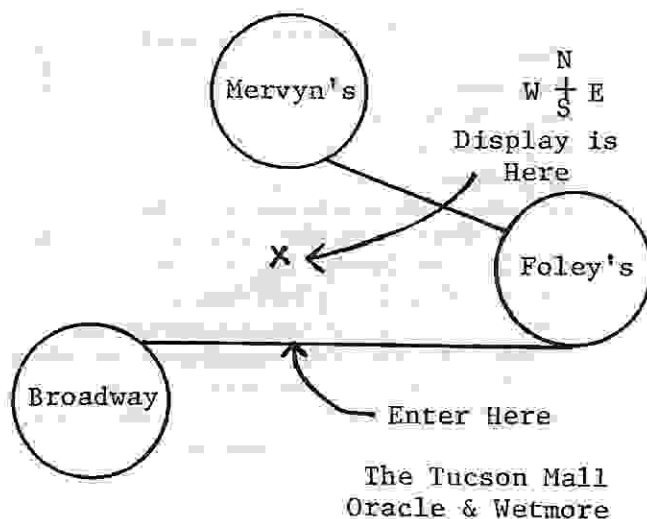
Duane Niehaus: Telescope making things, membership information

Derald Nye: Video equipment, solar eclipse videos

This equipment should be brought to The Tucson Mall by 8:00am Saturday morning. Call Terri at 579-0185 if this is a problem. Equipment should remain at the mall until 9pm, however those leaving early for the star party at Sabino Canyon may find it easier to take their things when they leave the mall. If you chose to do so, the mall asks that you do so in a manner that does not disrupt mall business. Obviously, vehicles will not be allowed to park at the entrance for loading at this time.

The Sabino Canyon star party will start at 7:30pm and end at 10pm. Please arrive by 7pm to set up your telescope. We will set up at the east end of the parking lot as usual.

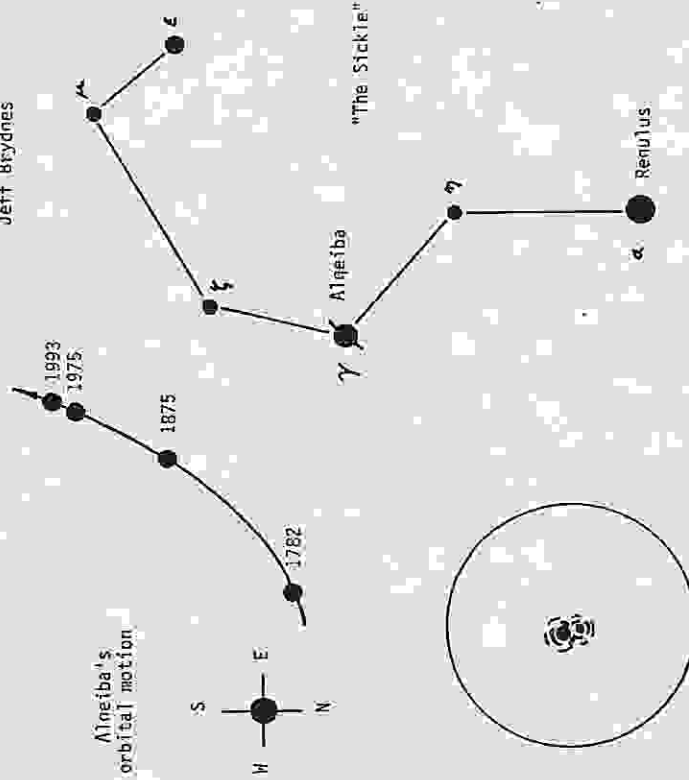
Teresa



ALGEBIA: Leo's Celestial Gem

High above almost overhead these April nights the constellation of Leo the Lion. Its brightest star Regulus forms the meridian point at the end of the backwards question mark or Sickle asterism. One of the prettiest double stars in all the heavens lies 8 degrees north northeast of Regulus its name "Alciba" which means "The Lions Mane" and is also known as Gamma Leonis. Sir William Herschel was the first to notice Alciba's duplicity in 1782 at that time the two stars were only 1.5 arc seconds apart. The two stars have since slowly widened their separation to 4.4 arc seconds the two stars are expected to widen to a maximum separation of 5 arc seconds by the year 2100. At the present time the stars are about 130 AU's apart or close to 1 1/2 times the diameter of the Solar System. Alciba is a binary system taking about 600 years to complete an orbit, the two stars shine at magnitudes 2.1 and 3.4, they are both giant stars with spectra of K0 and G7, their luminosities are about 90 and 30 times that of the Sun. The distance to Alciba is approximately 90 light years. In a telescope both stars have a deep golden tint to resolve this pair use 100x in 2.4 inch and larger telescopes, 6 inch and smaller telescopes give the best view of this bright pair. So during this month why not search out this celestial jewel and crank up the magnification.

Jeff Brydnes



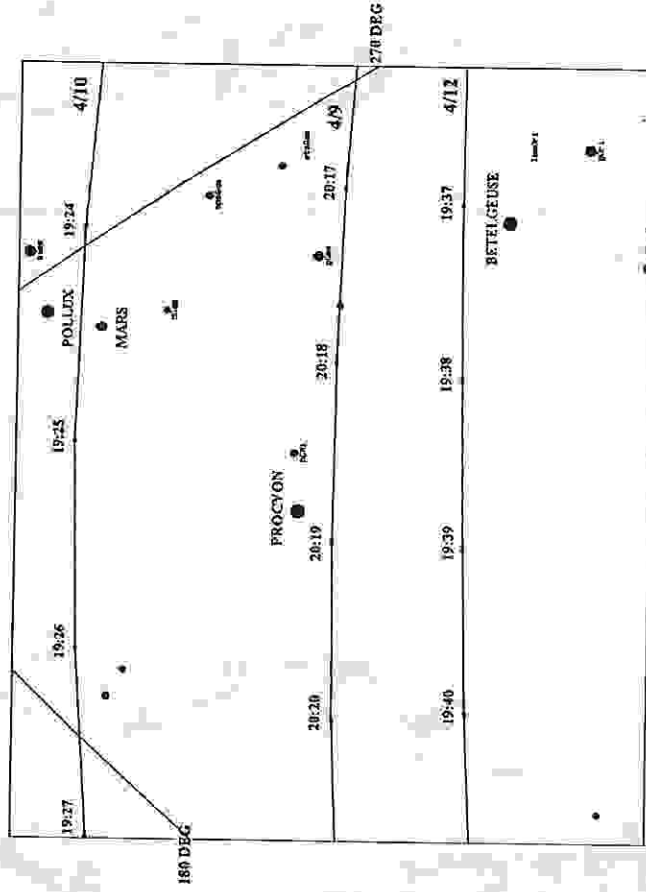
Alciba in a 3" Refractor at 133x

SATELLITE SPOTLIGHT - EGP

This Japanese satellite is the most distinctive object in orbit. EGP (Experimental Geodetic Satellite) was launched on the first test flight of the H-1 rocket in August 1986. EGP is a sphere with a diameter of seven feet, and is covered with mirrors and corner-cube reflectors. The latter are used to reflect laser beams and are invisible to amateur observers, but the mirrors are spectacular. They are designed to reflect sunlight so the satellite can be photographed by ground stations for precise geodetic surveying measurements. In binoculars EGP resembles

the strobe of an airplane but the flash pattern is more complex than a strobe light. Because of the extremely high orbital altitude of 1,500 kilometers, EGP is often visible closer to midnight than other satellites, and can frequently be seen on as many as four orbits during a single overnight observing session.

Try spotting this satellite with binoculars first before attempting to view with the unaided eye. The flashes will probably be in the 4th to 5th magnitude range.





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