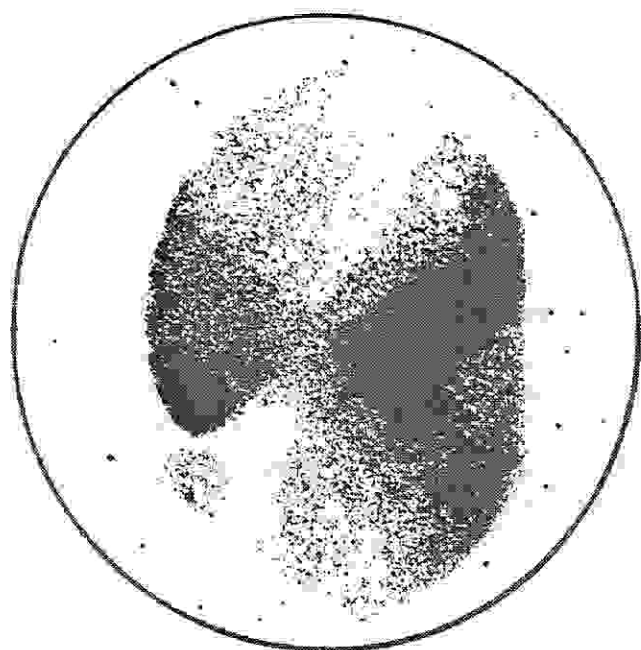


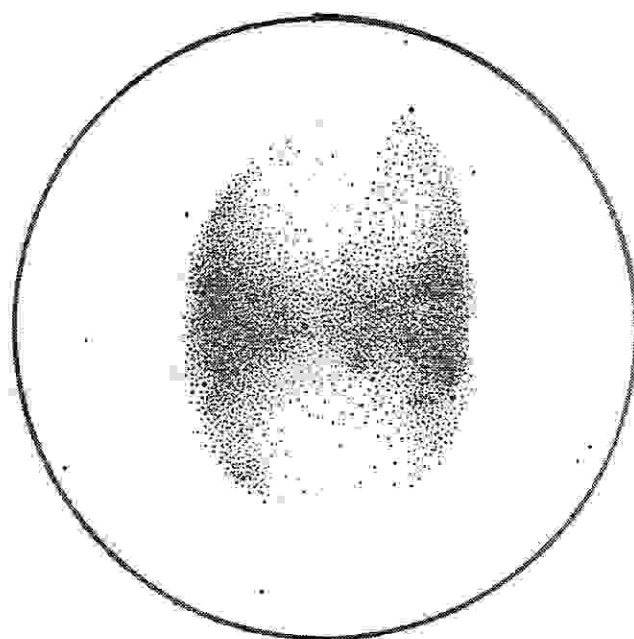
Desert Skies

JULY 1990

M27



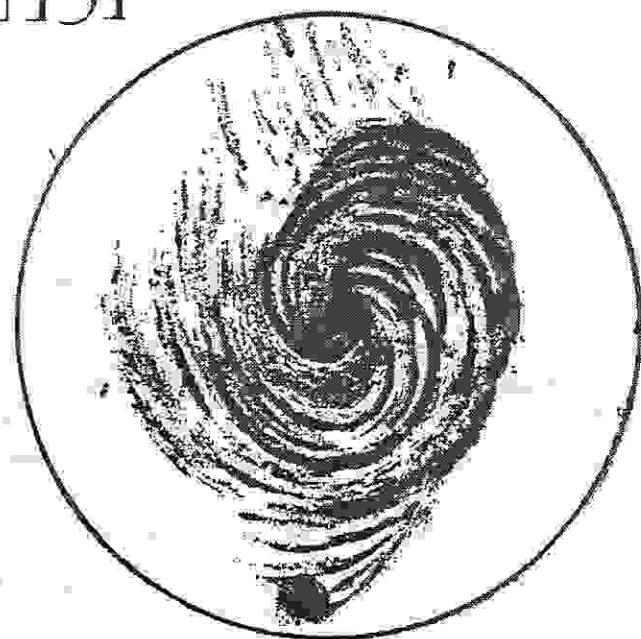
William Lassell, 1860, 48 inch



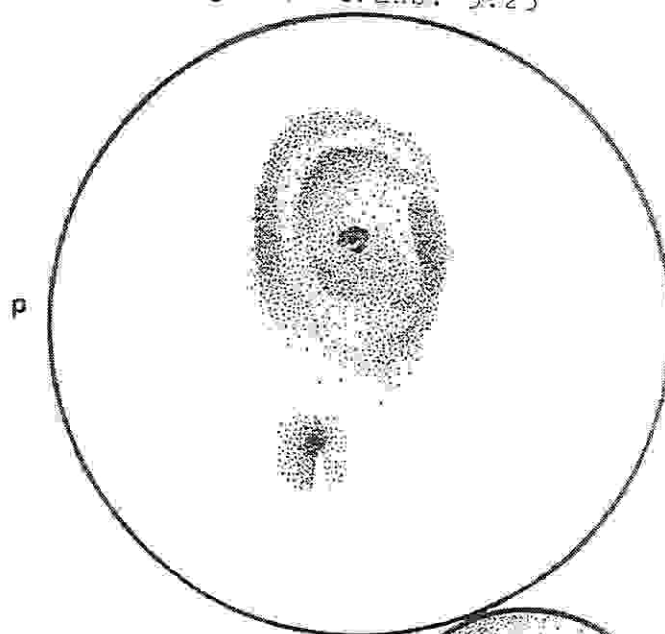
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M.E. Sweetman, 1988, 208x
10 1/2 inch f/16 cass.
Seeing: 6-7 Trans: 5.25

M51



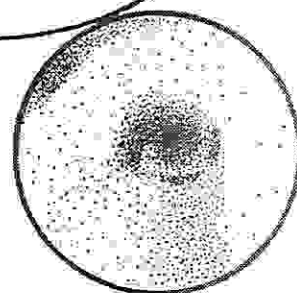
William Parsons, 1843,
36 and 72 inch



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M.E. Sweetman
1988, 6 inch f/5
102x Seeing: 6
Trans: 5.5



nucleus

MEETINGS

GENERAL MEETING - FRIDAY, July 6, 7:30 P.M. at Steward Observatory.
Chris Impey will present a talk on Ultra-Faint Galaxies.

FRIDAY, August 3, 7:30 P.M. - location to be announced.
Dave Harvey will give a talk on "Auto-Tracking of Satellites" and Jim Scotti will present a History of Orbital Mechanics.

FRIDAY, September 7, 7:30 P.M. - location to be announced.
Roger Angel will give a talk entitled "Mirror Spinning and Big Astronomy".

FRIDAY, OCTOBER 5, 7:30 P.M. - location to be announced.
A talk on Astronomical Clocks will be given by Ewen Whitaker.

EXECUTIVE MEETING - THURSDAY, JULY 12, 7:30 P.M. at Flandrau Planetarium.

SWIM PARTY - SATURDAY, JULY 21 Swim Party at the home of Duane & Sharon Niehaus.....~3 P.M.

TAAA EXECUTIVE

President	Tim Hunter	299-2972
Vice-President	Dean Ketelson	293-2855
Executive Sec.	Dick West	1-762-5831
Recording Sec.	Sharon Niehaus	299-7328
Treasurer	Debbie Smith	296-4780
Member-at-Large	Bob Goff	790-1452
Chief Observer	Terri Lappin	790-5053
Membership coordinator	Terri Lappin	790-5053
Past President	Duane Niehaus	299-7328
Desert Skies ed.	Dolores Hill	325-9820
Asst. ed.	Rik Hill	

Desert Skies Publishing Guidelines

- *All articles, announcements, news etc. must be submitted by the 20th of the month. 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 Desert Skies c/o Dolores Hill 4632 E. 14th St., Tucson, AZ 85711 (phone: 325-9820) OR Lunar & Planetary Lab, U of A (621-6951).

MEMBERSHIP IN THE TAAA

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

Sky & Telescope subscription (optional) \$16.00

Rates for membership in the TAAA are given above. Members can subscribe to Sky & Telescope at the time of membership renewal, saving over 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, P.O.Box 41254, Tucson, AZ 85717. It is best to pay your dues 2-3 months before your membership actually expires.

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 \$16 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.

New Location for Club Meetings!

After suffering with our Club's growing pains at the planetarium's mezzanine, we are going to try the main auditorium at Steward Observatory. It has all the benefits of an auditorium - good views of the screen, a rear door for late entries, and close to 200 seats. It also retains the central location of the University and reasonable amounts of parking, in fact I encourage you all to park at your usual locations. There is a grey parking lot right at the door that is available after 7pm, but there are only about 8 spaces. I encourage you all to save these for our elderly or handicapped members, the member bringing refreshments for that meeting, and for those who may be unloading something for display.

Steward Observatory is directly across Cherry Ave. and a little north of the planetarium. Use the main northeast entrance to the building, go in the door about 10 yards and turn left to room 202. Those arriving late may wish to use the door some distance to the left, which gets you into the rear of the room. Lets try it for a couple of months and see how we like it. Please direct comments or suggestions to me at 293-2855.

-Dean Ketelsen

ITEMS FOR SALE:

MIRRORS TESTED by Bob Goff..... call 790-1452.

Celestron 5 tabletop reflector/stand, 25mm Kellner.....\$150, Yashica 35mm SLR camera/50mm lens.....\$150. Contact Patrick Craig at 750-8046.

6" Parks Dobsonian telescope- includes 25mm Kellner eyepiece, 6 x 30 finderscope, Novak curved spider.....\$300

Astroscan 4", f/4 from Edmund Scientific/ 28mm RKE eyepiece....\$100

50mm Parks Kellner eyepiece.....\$20

2" Parks rack & pinion focuser.....\$20

1.3" Diagonal holder (no mirror) & spider for 6" scope.....\$10

7" Parks Tube for 6" scope, 37" long.....\$20

Call Jeff Bridges at 293-8976 if interested.

WANTED: Need a ride to club star parties and meetings.....
Call Patrick Craig at 750-8046.

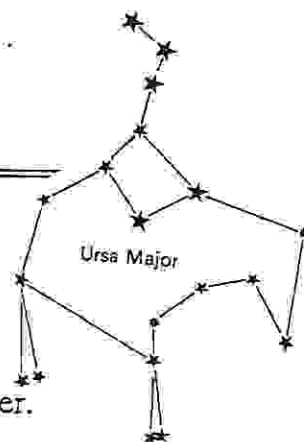
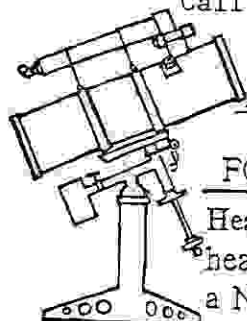
FOR SALE:

Heavy 8" diameter steel column on a triangular steel base with a rising heavy tube by rack & pinion. Min. height 5 ft. and max. height 7 ft. It was a NASA tooling stand.... would be good for a large refractor etc. \$500.

Will trade 3 1/2" Alvan Clark refractor on tripod mount for Mac II computer.
Call Mr. Seville at 327-0665 (450 S. Rosemont Ave., Tucson 85711)

FOR SALE: Cave 6" F/4 Rich-Field Newtonian Reflector with 28mm eyepiece, personally refigured primary mirror, on Edmund Scientific equatorial mount with electric clock drive, 1" R.A. and Dec. shafts, \$350.

Call Duane Niehaus 299-7328





OBSERVER'S REPORT

Our May star party at Empire Ranch was great!! Even with a lot of the "regulars" at either the Riverside or Texas conference, we still had a good sized group of observers enjoying the southern Arizona skies. I was delighted to see Ed Blair's Buchroeder Tri-schiefspiegler telescope set up on the field. Ed is new to the TAAA but can be easily recognized as the owner of the strangely shaped triangular telescope. The Buchroeder Tri-schiefspiegler was designed by TAAA member Dick Buchroeder several years ago.

Tri-schiefspiegler are unobstructed telescopes of very long focal length (Ed's is an 8", f/20) which give high contrast images, excellent for planetary and deep sky observing. Like a refractor, there is no central obstruction (diagonal or secondary) to diffract light into the outer diffraction rings of an image. This increase in the amount of light in the diffraction rings contributes to low contrast images. A recent Astronomy magazine had an article showing the affect of central obstructions on an image. A disadvantage of refractors is that they suffer from chromatic aberration--different wavelengths of light focus at different places due to the way light behaves when it passes through glass. A Tri-schiefspiegler has the advantage of a reflector--the optical components are mirrors, so that all the wavelengths of visible light come to focus at the same place. I encourage members to get a look through Ed Blair's 8" at a future star party.

The June star party was attended by 20-25 people. Andy Meyer recently finished his long awaited 8", f/6 Newtonian. Andy made the mirror himself with the help of Duane Niehaus' coaching. The mirror gives superb images. Omega Centauri was a field full of sharp stars edge to edge. The inside and outside of focus images looked very good, indicating that the mirror was figured correctly. This type of star test is easy to do (compare the images of a star when the eyepiece is inside and outside of best focus--they should be the same) and is very sensitive. Interpreting the out of focus images can be a little more difficult.

David Levy's recent find, comet 1990c, was easily located at the June star party near Alpha Andromedi. Alpha is the star in the Great Square of Pegasus from which Andromeda extends northward. On July 6th, our meeting date, Comet Levy will be located at 00h 08.2m, +29° 54', magnitude about 8. An ephemeris will be made available in the future.

This monsoon season we are going to try something different. Since it is likely that the star party will be clouded out we are scheduling a swim party at Duane and Sharon Niehaus' place. An announcement is located elsewhere in the newsletter. Remember that Empire Ranch is available for observing anytime. If your not much of a swimmer and would rather observe stars through the clouds from Empire you may do so. Of course, now that we have planned on clouds it will be a record clear and dry July!!

Terri Lappin, Chief Observer

EXECUTIVE MEETING - 6-7-90

Members Present: Dave Crawford, John Zajac, Terri Lapin, Tim Hunter, Bob Goff, Debbie Smith, Derald Nye, David Levy, Andy Meyer, Dean Ketelsen, Duane Niehaus, Sharon Niehaus, Dick West.

1. Upcoming speakers include; Carolyn Porco, Dave Harvey, Roger Angel, Ewen Witaker, and John Hill.
2. Refreshments for the July meeting will be provided by Dick West. Members wishing to bring refreshments may sign up at the General meeting.
3. Dave Crawford gave a talk on Star Watch to the executive and club members present. This is the same program Dave spoke about at the May general meeting. This endeavor has enjoyed tremendous success in Japan. Promoters of the event there have contacted Dave and suggested that Tucson join them. A trail program this summer on August the 11th was discussed. The TAAA, IDA, and Flandrau Planetarium would form the nucleus of persons who would host and organize the event. What is done here would serve as a model for the rest of the country and possibly the world. The program might include setting up observing stations at different mileage points on the main highways from Tucson. At each station individuals would be asked to determine the faintest stars visible, what extended objects they may be able to see with the unaided eye or a small pair of binoculars, or to determine how light pollution from the lights of Tucson are affecting the night sky. If the weather on the 11th if not favorable, the event will be held the 18th.
4. Club sponsorship for Miss America Pre-Teen was discussed for Tabitha Niehaus. Enough money was collected from the members present to purchase a one-fourth page ad in the event's brochure.
5. Debbie Smith gave the Treasurer's report. The club has a total of \$9774.81 in its account. There is a total of \$8444.50 in the land fund. One Hundred dollars was given to the Planetarium.
6. A problem with the Gold Mine site near Arivaca has come up. There is another party which has expressed interest in the land. This party put up \$500.00 to have the land reappraised. The price is now \$420.00 per acre. Since this party has put up the money to have the land reappraised, they can determine how the land will be divided up to be sold. It is conceivable that they may ask that all the tracts be sold as a single unit at a price of around \$130,000.00. This amount is clearly out of reach for us. A letter has been sent to the University stating our interest in the site, however. The Albatross site which is located close to the Gold Mine site was also discussed. It is located about 10 miles from the Gold Mine site. It is approximately 17 acres. The road to it may be very steep. Hopefully, we may be able to examine this site soon to see if it could be useable for us. A 37 acre site near Tombstone was also discussed. The main concern here are the lights of Sierra Vista. The total asking price is \$24,900.00.
7. Terri gave the chief observer's report, and dates for future star parties.
8. Our newsletter will be posted on the bulletin board at Kitt Peak.
9. The July meeting will be in room 202 of Steward Observatory.
10. Tim Hunter gave an update on Mt. Graham.
11. The MMT observatory has given the TAAA a dome shelter 5 feet in diameter. The dome was moved to Bob Goff's house on the 16th of June.
12. The executive and members present voted on the officers for ALCOR. These votes were tallied and will be sent in by Derald Nye.

Richard A. West
Executive Secretary

A CELESTIAL SMEAR CAMPAIGN

Are you having problems getting the most out of your telescope? Do double stars, lunar & planetary detail all smear into blurred fuzziness? The problem is most likely not your telescope, or at least not wholly your telescope. The vast majority of seeing problems occur within 100 feet of your telescope. Unfortunately, many of us cannot choose our observing site, or wish to keep the telescope near home. So we think we must live with seeing problems. Other problems might appear to be optical but are actually due to the atmosphere. And, of course, some are just plain man made.

Most "bad seeing" is quite local to your telescope. I continually had a problem to the south and east of my observatory. It was not very apparent in the RV6 Dynascope (4 inch, f/9), the C8 or 10 $\frac{1}{2}$ inch f/4, but in the C14 I now have it is VERY apparent. After some investigation the problem was found to be daytime heating of the metal observatory building. I had assumed the metal would cool rapidly after dark, but not so. Cooling was exponential - rapid at first but slowing as the metal neared the ambient air temperature. An hour after sunset the building was still shedding much heat. This problem was handily solved by coiling a lawn misting hose around the roof. By turning this on several times during twilight, for no more than a minute each time, the building reached the ambient temperature by dark.

The next problem was the C14 itself. It got quite warm in the 120°+ daytime temperatures inside the observatory. At night I would get either tails on all the stars or the image would appear astigmatic. Looking at a star out of focus revealed the cause. Heat was rising off the aluminum cell. It would take hours to acclimate! The main mirror cell would also stay warm to the touch for hours into a summer night. I needed a way to get the whole instrument cooled off before dark. First, I used a fan to get the temperature inside and out the same. Next, I used a damp, not wet, sheet over the instrument in late afternoon an hour or so before sunset. The fan blowing on the sheet acts like a cooler for the telescope. The sheet needed rewetting a couple times but it got the instrument a bit cooler than the twilight air. This is a better situation, where the telescope is warming a small amount, not cooling a lot.

If there is a large expanse of concrete, asphalt, metal or stone near your observatory, you should consider wetting that down around sunset as well. These kinds of materials shed heat for hours after dark. A bit of water to evaporate and carry off the heat will help a lot. It is not necessary to soak areas down. We are not watering, just cooling. Be sparing since we live in a desert. You'll soon learn how much is enough.

There are some seeing disturbances you cannot change. My worst problem here is aircraft. When a jet goes by my sky is shot for a minute or more. I can see this best against the moon, when aircraft fly by. Waves of warmed air make the moon look liquid. There's nothing that can be done about this.

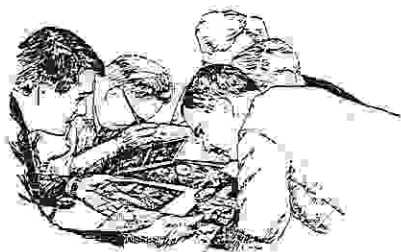
Once building, instrument and grounds are under control you still have the sky to fight. If objects are not exactly at zenith they will suffer from two problems: refraction (where the objects image will be displaced from its real or true position) and dispersion (where the atmosphere acts like a prism and smears the starlight into a spectrum). The change in position is not important to our present discussion. Dispersion becomes apparent as one observes farther and farther from zenith. Only 40° off the zenith (called zenith angle) and the spectrum smears the image of a star about one arc second. If your telescope is greater than 4 inches aperture then you will suffer image deterioration at this point. The only way to improve images suffering from atmospheric dispersion is with filters. They need not be narrow band like the light pollution

filters sold by Lumicon. Wide band color filter like the ones you buy for your camera are sufficient. These filters are wonderful things. On the planets different filters show different features. On close double stars filters can be used to help separate stars of dissimilar spectral types (e.g. Antares and Alpha Her.). On the moon I have found a deep red filter most useful, increasing apparent contrast and decreasing dispersion—a double benefit.

Users of two element objective, refractor telescopes, will also notice an improvement with the use of filters as the residual chromatic aberration is virtually eliminated. This can be most dramatic at high magnifications on the moon. The increased contrast will result in increased apparent sharpness, and the reduction of chromatism (both optical and atmospheric) will result in increased real sharpness.

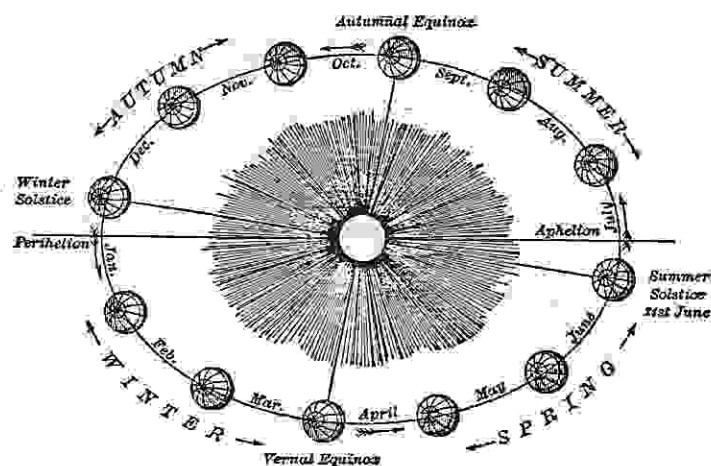
So here are some simple and inexpensive techniques by which the usefulness of my observatory was significantly increased. Sure, one could install fancy sprinkling systems and a cooler, but it costs more. The suggestions presented here can be done by anyone with a permanent telescope installation with little or no cash outlay.

— Rik Hill



Please check your mailing labels for any errors. The month your membership expires should be printed in the upper right hand corner of the label. Gary Rosenbaum is now printing the labels for the newsletter and we had to reenter each address by hand into his computer. Please send corrections to PO Box 41254, Tucson, AZ 85717. Much thanks to Duane Niehaus for having printed labels for as long as I can remember.

Terri Lappin, Membership Coordinator



— The Seasons

• You, too, can write articles for **DESERT SKIES!**

Send them to the editor by the 20th of the month.

4632 E. 14th St., Tucson, AZ 85711 or LPL via UA campus mail

A SWIM PARTY!!

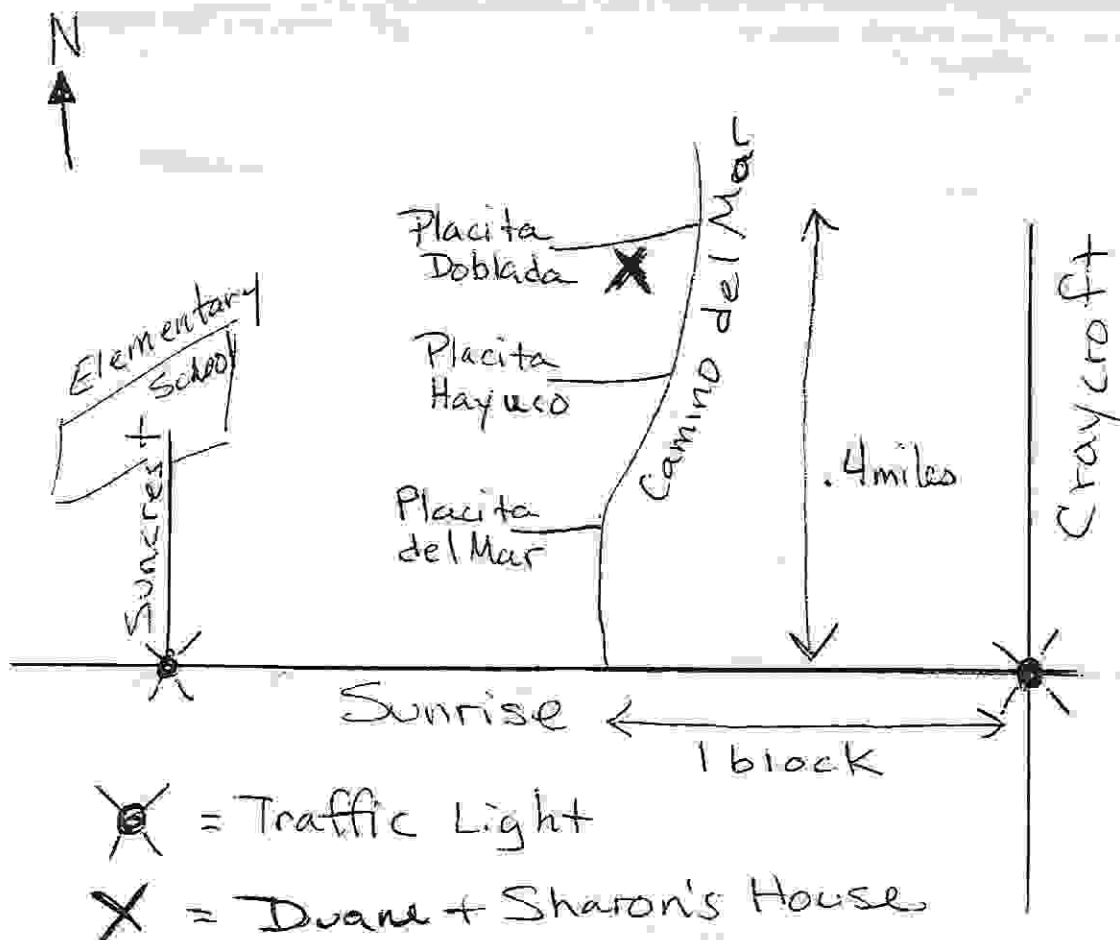
With the monsoon rains comes frustrated observers. Well-- don't fret--get some relief at Duane and Sharon's Swim Party.

Instead of a July star party we will have a swim party on July 21st starting around 3 pm. Around dinner time we will take up a collection and order some pizza and cold drinks.

So---bring you bathing suit, towel, sunscreen and whatever else you need for swimming. The whole family is invited to this. The pool is 3' at the shallow end and 12' to accommodate a diving board at the deep end.

If it clears up in the evening some of us may head out to Empire in our wet bathing suits for some observing, but Duane says that there is plenty of room to set up telescopes at his house.

Directions to Duane and Sharon's new house: From Sunrise Blvd near Craycroft, turn north onto Camino del Mar. Go to the top and then the bottom of the first hill, passing Placita del Mar and Placita Hayuco both on the left. At the bottom of the hill, turn left (west) onto Placita Doblada. Duane and Sharon's place is on the left, not far from the corner. The address is 5412 E. Placita Doblada, phone number 299-7328.

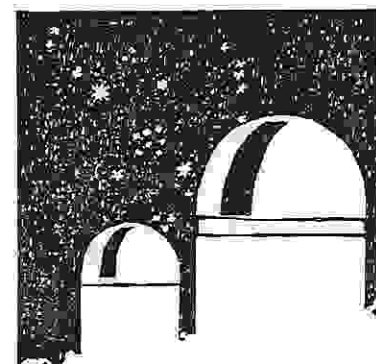


INTERNATIONAL DARK-SKY ASSOCIATION

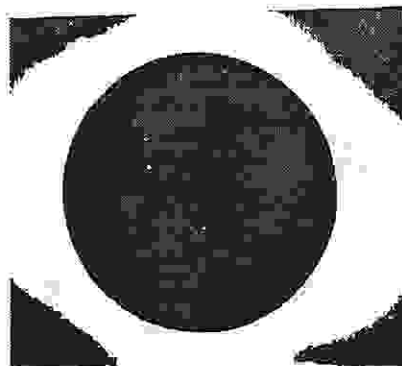
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List of Information Sheets Available at the Date of This Edition

No.	Date	Title
1	Dec 88	Astronomy's Problem with Light Pollution
2	Dec 88	Light Pollution - A Problem for All of Us
3	Dec 88	Why We Don't Like the 175 Watt Mercury Fixture
4	Dec 89	Operating Data And the Economics of Different Lamps
5	Jan 89	Cities and Counties in Arizona with Outdoor Lighting Codes
6	Jan 89	Advice on Working with Community Leaders, Officials, and Others to Educate Them about the Issues and to Solicit Their Help
7	Dec 89	As a Non-Profit Organization, IDA Needs Help
8	Dec 89	Local Sections for IDA: Why? How?
9	Jan 90	Glossary of Basic Terms and Definitions
10	Feb 89	Summary of the IAU Colloquium No. 112
11	Nov 89	Estimating the Level of Sky Glow Due to Cities
12	Dec 89	Recommendations about Effective Outdoor Lighting
13	Dec 89	Summary of the City of San Diego Street Lighting Conversion
14	Dec 89	Fact Sheet on the International Dark-Sky Association
15	Jan 90	List of Information Sheets Available as of This Date
16	Dec 89	Items Currently (or Soon) Available from IDA
17	Dec 89	Vast Orbiting Displays .. A Letter by Robert Dixon
18	Jan 90	Theft of the Night .. Text of a Dec 1989 NAS Op-ED Press Release
19	Jan 90	The American Astronomical Society's Position on Light Pollution
20	Jan 90	Sky Glow Effects on Existing Large Telescopes
21	Jan 90	Poster Paper: Light Pollution, Another Threat to the Environment
22	Jan 90	Sample Letter to Help Build Awareness and Ask for Help
23	..	Campus Lighting, and Other Such Applications (Libraries, etc)
24	..	Security Lighting. Let's Have Real Security, Not Bad Lighting
25	Feb 90	How To Talk To Your Neighbor Who Has a Bad Light

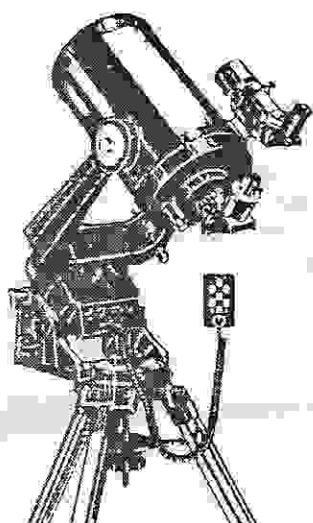


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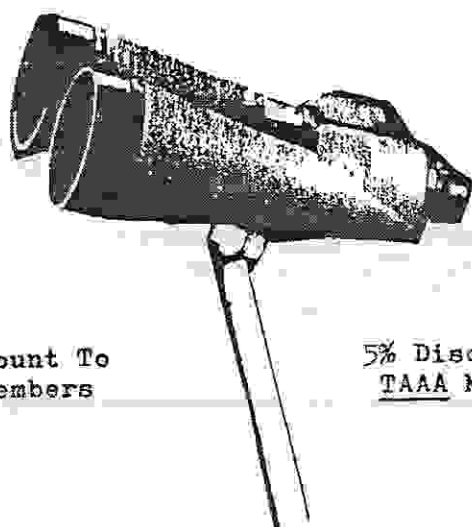


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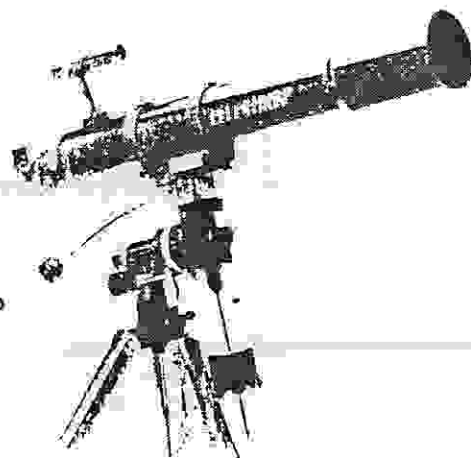
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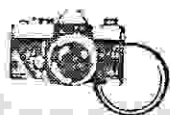
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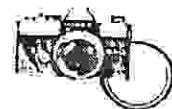


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