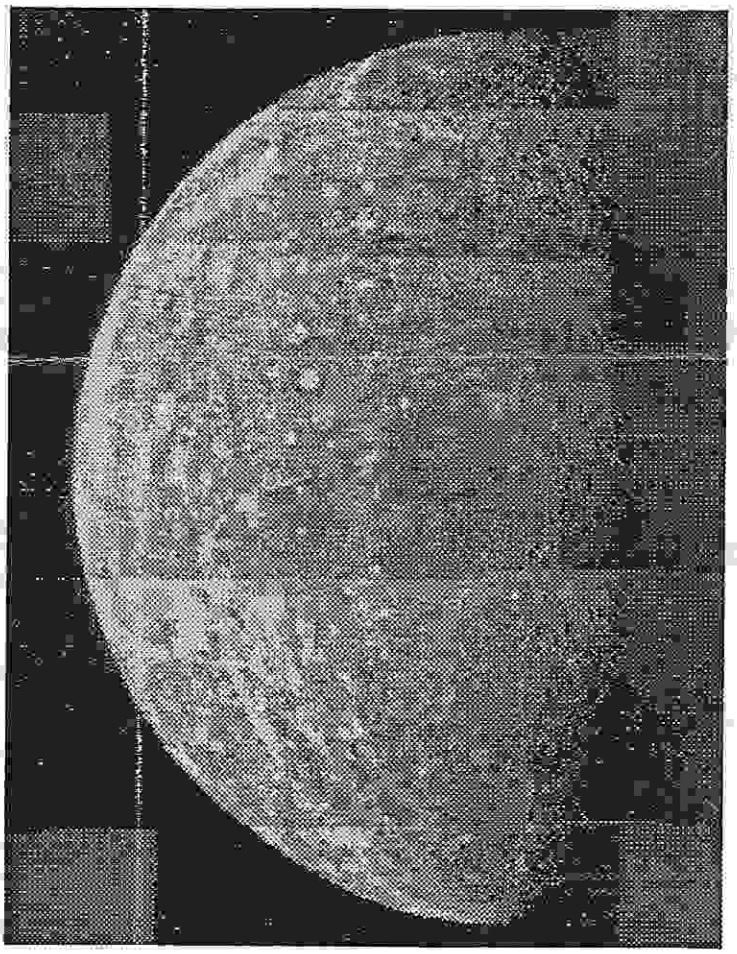
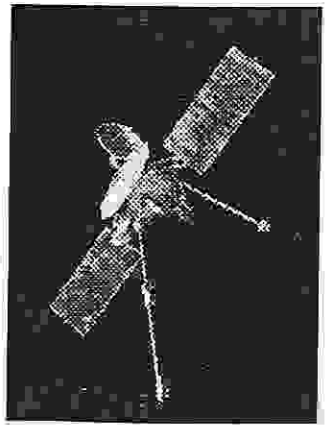
Desert Skies

Tucson Amateur Astronomy Association

Volume XLII, Number 9 September, 1996

Mercury





Calendar of Events

BEGINNERS LECTURE- Friday, September 6, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is The Quest for the Detection of Life in Meteorites. All are welcome!

GENERAL MEETING - Friday, September 6, 7:30 pm at the Steward Observatory Auditorium -room N210. Topic is Mercury by Ann Sprague.

YOUNG ASTRONOMERS CLUB - Friday, September 6, 7:30 pm at Steward Observatory room 202. Aimed at school-age kids and is concurrent with the general meeting. This month - Lunar Eclipse.

BOARD OF DIRECTORS MEETING - Thursday ,September 12, 7:00 pm at the Conference Room at Flandrau Science Center.

STAR PARTIES & EVENTS:
September 7: Empire Ranch
September 14: Empire Ranch
September 16: Steward Obs Public Lecture: LBT
October 5: Kitt Peak Cookout and Star Party

Newsletter Schedule: Deadline for articles: Monday, September 16. Printing: Monday, September 23. Folding Party: Tuesday, September 24. Mailing: Wednesday, September 25. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: Mosaic of Mercury taken by the Mariner 10 spacecraft. Surf over to http://nssdc.gsfc.nasa.gov and http://jplinfo.jpl.nasa.gov

TAAA Home Page: http://www.primenet.com/~lwilson/TAAA/taaa.html

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Membership in the TAAA
Individual $23.00/year without Astronomical League Membership
$25.00/year with Astronomical League Membership
Family $30.00/year
Senior Citizen (over 60) $23.00/year

Sky & Telescope subscription (optional) $27.00. 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

Send Address Changes to:
TAAA
Attention: "ADDRESS CHANGE"
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Tucson, AZ 85717

4 Easy Steps to Membership Renewal
1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label
2. If you want Sky & Telescope:
   a) add $27 to your membership rate
   b) Include Sky & Telescope's renewal notice, if possible.
3. Write one check, payable to TAAA.
4. Send it to: TAAA
   P.O. Box 41254
   Tucson, AZ 85717

Call the Treasurer if you have any problems.

Desert Skies Publishing Guidelines

All articles, announcements, news, etc. must be submitted by the newsletter deadline listed above. Materials received after that date will appear in the next issue. All submissions are retained by the editor unless prior arrangements are made. Partial page article submissions should be submitted on Wordperfect compatible files on a floppy. Full page articles, artwork, and photos should be camera ready. We will not publish slanderous or libelous material! Send articles, announcements, etc. to:

TAAA - Desert Skies
PO Box 91316
Tucson, AZ 85752-1316

OR email: ninalehman@aol.com or nlwagner@aol.com

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President's Message

I hope you were able to get out under some clear skies and see some Parseid meteors last month. I saw 9 Perseids over a thirty minute period the morning prior to the predicted peak. Not bad for observing from our house while half asleep! One meteor left a trail that lasted about 5 seconds. Not the best Parseid I've seen, but any bright meteor is still exciting.

At the last few meetings of the board of directors we have discussed scheduling a public star party in the Tucson area. We are aiming for October and are looking for a location. John Polacheck has contacted a few places (Desert Museum, Old Tucson, and Saguaro National Park). We are looking for someplace that most Tucsonans can easily find. We need a location that has good lighting (dim lights, or lights that can be turned off), and a parking area for at least 100 vehicles. We used to have public star parties at the Sabino Canyon Parking Lot, but over the years this site has become less desirable. If you have an idea for a location, let John know. Thanks to John for taking on this responsibility.

There are other projects like the one John has taken on that aren't getting done because there isn't anyone doing them. For example, we need a publicist who can make sure our public activities get announced. We could use a librarian to maintain our library. Our library is at Steward Observatory and members could check out books if we had a librarian. We also need someone to do some research about insurance for us. Some projects are short term and others are longer term. If you have time, give me a call and I'll give you a project.

I would like to take this opportunity to clarify something in our constitution. We have a section (Article IV, Section 6-C) which basically spells out the method by which the membership can require a vote of the general membership to modify or veto a decision the board makes. (This isn't the exact wording, look at the constitution for the exact words.) A petition is mentioned and there is a requirement that at least 10 percent of the membership must sign the petition. This apparently has created tension among some members which was never the intent. If there is ever a board decision that a member questions, that member should let the board know. We will listen to your comments and explain our rational in making the decision. The constitutional clause was written into our constitution to provide a check and balance between the membership and the board. If simple talking doesn't work, then as a last resort a member has this provision available. I would like members to spend most of their time having fun doing astronomy and very little time discussing constitutions and board decisions. Don't let our constitution get in the way of our friendships or our enjoyment of astronomy.

Monsoons should be over soon and we should have a good supply of clear nights coming our way. See you at Empire Ranch!
Terri *

Club News

Thank you Starizona

The TAAA staff and members would like to say thank you to Dean Koenig of Starizona for donating the door prizes that have been given away at the last several meetings. Those of us who were there enjoyed the excitement and fun of seeing who would win them and what the astronomy related gifts were. Don't forget to drop in and see his new place featuring Adventures in Astronomy & Nature on 5201 North Oracle road in Tucson. *

Project ASTRO Update

The Astronomical Society of the Pacific has accepted Kitt Peak's proposal to become a Project ASTRO site. The TAAA will play a big part in this project. Suzanne Jacoby will be at the September meeting to give us information about Project ASTRO and will be available to answer questions. The first big plan is a workshop which has been scheduled for November 22nd and 23rd which each participant is required to attend. *

Meeting News

September's Speaker: Ann L. Sprague

OUTSTANDING QUESTIONS ABOUT MERCURY

ANN L. SPRAGUE is a planetary astronomer and theorist at the Lunar and Planetary Laboratory, University of Arizona. She earned her Ph.D. in Planetary Sciences from the same institution in 1990 where she was awarded the Gerard P. Kuiper Memorial Prize for her doctoral research on the atmospheres and surfaces of Mercury and the Moon. While a National Research Council Fellow at NASA Ames Research center she continued observations in the mid-IR and by using both the High-efficiency Infrared Faint Object Grating Spectrometer (HIFOGS) and the Mid-Infrared Array Camera (MIRAC) has established methods for remotely sensing Mercury's surface composition. Recent observations of Mercury using HIFOGS on the Kuiper Airborne Observatory (KAO) have confirmed the ground-based spectral measurements. Other mid-infrared studies include measurements of the chemical and dynamical effects of the impact of Comet P-Shoemaker/Levy into Jupiter's atmosphere with mid-IR instrumentation (HIFOGS from the KAO and MIRAC 2D-array at the IRTF). As a result of this work, she received a Goddard Space Flight Center Award for Scientific Excellence. Besides these observing programs the mid-IR, Sprague also works on long-term programs to monitor water vapor in Mars atmosphere and to study the thermal and suprathermal populations of sodium and potassium in the mercurian and lunar atmospheres.

Remarkable advances in our understanding of Mercury are a consequence of ground-based observations made throughout the last decade. Mercury has an interesting and changeable atmosphere composed mostly of oxygen, sodium, potassium, small amounts of hydrogen and helium, and possibly sulfur. The sodium and potassium are seen to have variable intensity and spatial distribution. The exact sources and physical processes controlling the atmosphere remain unknown. Mercury's surface appears to be very low iron and titanium oxides, compounds that are quite abundant in the lunar regolith. There is evidence that some of the surface materials have a visible index of refraction higher than that of silicates which are commonly found on terrestrial planets. A suite of observations indicate the widespread presence of feldspar and the absence of iron-bearing basalts, indicating Mercury may have cooled without late-stage volcanism. These advances, which point to a planet that has retained a significant inventory of semivolatiles despite its close proximity to the Sun, compel us to reformulate our questions and methods for understanding this planet. Missions, both in situ and remote, designed to understand physical processes at Mercury are critical for understanding solar system formation in general and Mercury's origins and magnetic field in particular. *

Beginner's Lecture: Andy Keefer

THE QUEST FOR THE DETECTION OF LIFE IN METEORITES

Andy Keefer will present this month's Beginner's Lecture. He will give a historical account of the quest for the detection of life in meteorites. Some of this research was conducted as early as the 1930's. Recent claims of Martian life makes it very believable that extraterrestrial life will be found, in all places, right here on earth. This should be an interesting lecture*

October is Member's Night!

There will be a sign up sheet at the September meeting to schedule member's presentations for the October meeting. Already there are two presenters lined up. Don't be shy! Tell us what you've been up to. *

Star Parties & Events

Star Party at the Hilton East September 16, 7:30 pm

The TAAA has been asked to provide a few telescopes for a star party at the Hilton East. The hotel is located at Broadway and Pantano. There will be 75 people there and the TAAA will receive $100 for providing telescopes and astronomers for the event. A slide presentation has also been requested. If you can show some slides, call Terri. The slide presentation is to begin at 7:30pm and observing will begin at 8:00pm. Plan on getting there around 7:30pm to set up telescopes. We will have a sign up sheet at the meeting. *

Kitt Peak Cookout and Star Party 5 October 1996

We have been approved to hold another picnic and star party at Kitt Peak's very own picnic area on October 5 th. Since this is the day after the October meeting, we will be having the signup at the September meeting. We can all make plans a month in advance — right?!

The rules we must follow are very similar to previous events. Though I asked for a tour of the WIYN telescope again, there is another event that is using up the manpower that would have given that tour. So there are no special tours planed. If you

would like to attend a guided Kitt Peak tour, the last one scheduled for the public is at 1:30 in the afternoon. The mountain top officially closes to the public (and us) at 4:00 pm. At that time we should all be heading down to the picnic area (6500 feet elevation, 1.5 miles below the peak on the access highway). If you arrive after 4:00 pm, DO NOT go above the picnic area! We have full use of the picnic area, pavilion, and rest rooms. I'll supply charcoal again - bring something to grill and a dish to share for a potluck picnic. The cooking fires need to be put out by sunset because of telescopes in the area. The last quarter moon rises about 1:00 am, and we are asked to leave at that time (no camping allowed). Electricity may be available if you really need it, but you should plan on using battery power unless you are running a CCD system.

For the first time we have been granted 50 attendees. Since we usually have a hard time filling 30, I have invited the Phoenix clubs to add up to 20 spaces if there is any interest (initial reaction was in the negative because of camping prohibition). You MUST BE REGISTERED WITH ME to attend, and signup will be during the break at the September meeting (Friday the 6 th). If you are not attending the meeting, you may call me at home to register afterwards, or contact me by e-mail, as listed below.

This is always a fun event, and it will be held rain or shine. Some of you may remember the first two of these held under extremely moist skies... Anyway, plan ahead, pack up the warm clothes, and head out to where the fun is! (Don't forget your flashlight ! - Editor)

Dean Ketelsen
293-2855
ketelsen@as.arizona.edu *

Hale-Bopp Cruise March 30

Want to see Comet Hale-Bopp from the Caribbean? Frank Lopez of Stellar Vision is planning a cruise to see Comet Hale-Bopp. The cruise departs on March 30th for the Caribbean and will last 7 days. Plans are to have, David Levy, Brian Marsden and Bill Hartmann join the cruise. The cost is reasonable, $906/person and will be by a Holland America cruise ship. Contact Jennifer of Cruise Holiday at 886-7447 for more information about this exciting opportunity. We will try to have some flyers with more details at our next meeting. *

Dates for Fall 1996 Public Evening Series

The 73rd year of Steward Observatory Public Evenings continues during the Fall Semester 1996. All talks will be held in Room N210, Steward Observatory (the new auditorium), and will begin promptly at 1930 hrs MST (Mountain Standard Time). The talks, including pertinent questions to the speaker and their answers, will last for about an hour.

Following the talk, there will be opportunities for viewing the night sky (weather permitting, as always) with the use of the telescopes at the Campus Station of the Observatory, and with the assistance of members of the University's Astronomy Club.

All of the lectures and the use of the telescopes are free of charge and open to the general public. *

Moon	Date	Speaker	Topic
1st Q	16 Sep	Dr. John M. Hill	The Large Binocular Telescope (the talk includes a tour to the S.O. Mirror Lab to see the mold for the first 8.4-m mirror)
3rd Q	7 Oct	Dr. Chris Impey	Checking Up on the Big Bang
1st Q	21 Oct	Dr. Tom Gehrels	Update on Spacewatch Programs
3rd Q	4 Nov	Dr. Jill Bechtold	Protogalaxies
1st Q	8 Nov	Dr. R. Mauersberger	Protostars: in Search of the Holy Grail
3rd Q	2 Dec	Dr. Don McCarthy	UA Astronomy Camps: Progress and Future Plans

Dark Skies for September

1996 SEPTEMBER

DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm, 20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object, set for evening object

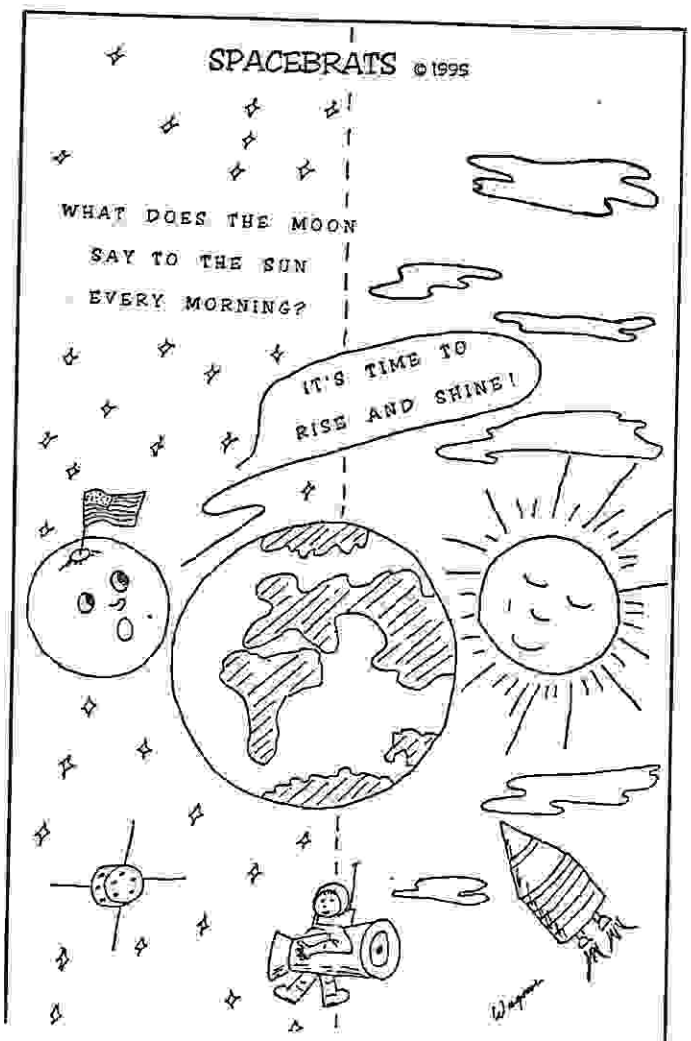
Sa/Su 31/ 1 20:13 - 20:57	Tu/We 10/11 19:59 - 4:43	Sa/Su 21/22 1:16 - 4:51
	We/Th 11/12 19:57 - 4:43	
Su/Mo 1/ 2 20:12 - 21:38	Th/Fr 12/13 19:56 - 4:44	Su/Mo 22/23 2:21 - 4:51
Mo/Tu 2/ 3 20:10 - 22:20	Fr/Sa 13/14 19:54 - 4:45	Mo/Tu 23/24 3:28 - 4:52
Tu/We 3/ 4 20:09 - 23:04	Sa/Su 14/15 19:53 - 4:45	Tu/We 24/25 4:35 - 4:53
We/Th 4/ 5 20:07 - 23:50		We/Th 25/26 - - -
Th/Fr 5/ 6 20:06 - 0:38	Su/Mo 15/16 20:12 - 4:46	Th/Fr 26/27 Lunar Eclipse
Fr/Sa 6/ 7 20:04 - 1:28	Mo/Tu 16/17 20:51 - 4:47	Fr/Sa 27/28 - - -
Sa/Su 7/ 8 20:03 - 2:19	Tu/We 17/18 21:35 - 4:48	Sa/Su 28/29 - - -
	We/Th 18/19 22:23 - 4:48	
Su/Mo 8/ 9 20:02 - 3:11	Th/Fr 19/20 23:16 - 4:49	Su/Mo 29/30 19:32 - 20:12
Mo/Tu 9/10 20:00 - 4:03	Fr/Sa 20/21 0:14 - 4:50	Mo/Tu 30/ 1 19:31 - 20:57

Weekend Sa/Su	Sun Set	Sun Rise	Mercury Set Vi	Venus Rise Vi	Mars Rise Vi	Jupiter Set Vi	Saturn Rise Vi
31/ 1	18:47	5:57	19:36 7	2:27 -4	2:24 2	1:13 -2	20:03 1 -3
7/ 8	18:38	6:02	19:06 -	2:33 -4	2:17 2	0:45 -2	19:34 1 0
14/15	18:29	6:06	Rise -	2:40 -4	2:11 2	0:19 -2	19:05 1 3
21/22	18:19	6:10	5:29 -	2:49 -4	2:04 2	23:53 -2	18:36 1 6
28/29	18:10	6:15	4:57 4	2:59 -4	1:57 2	23:27 -2	18:07 1 9

Vi=Visibility
brilliant
conspicuous
moderate
naked eye limit
binoculars limit

By Erich Karkoschka

Maps



Notes From Other Clubs

Iowa Astronomy Club Needs Help !

The editors of Desert Skies received the following plea from our fellow amateur astronomers:

On Sunday, July 21st, the Des Moines Astronomical Society's observatory was BURGLARIZED and several items were stolen. Included in the loss was a SBIG ST-4 CCD (SN# 419306817), an 8" Parks Newtonian/Cassegrain, a Celestron C5 telescope and tripod, several eyepieces, and much more.

We are attempting to alert the amateur astronomy community of this loss in the event someone is approached to purchase these items from the central Iowa region. We are led to believe the people responsible for this crime are astronomers (sad as it is) because the items taken are not your everyday street merchandise. The observatory has a computer, TV/VCR, and slide projector which were not touched.

The most frustrating angle of this theft was the loss of a physically-challenged members telescope. We stored the scope at the observatory for his convenience and he was very active with our public night program. The scope, a Celestron C5, was removed from it's case, taken along with his tripod and eyepieces.

I'm writing to advise your club members to be on the look out for any of these items being sold in national astronomy publications or at astronomy gatherings, ie., swap meets, conferences, star parties. If you feel a sale is suspicious, please notify me either through email or telephone. My number is 515-255-1585.

Thank you,
Bryan Butcher
President
Des Moines Astronomical Society
butcherbr@dmps.des-moines.k12.ia.us
http://www.geocities.com/paris/2313/dmas.htm *

Mirror Cleaning Procedure

BY JACK JONES

I have used several different procedures to clean mirrors, but they are mostly experimental and involve special materials and techniques. The following procedure is the classic tried-and-true and easiest method for cleaning an aluminized Newtonian-type astronomical mirror.

Note: Cleaning a mirror is a very personal thing. Do only what you think best for your particular circumstances. For example, if your mirror is still under warranty, follow the instructions in the owner's manual.

Mirror size: I'm assuming a 4-13" mirror.

Frequency: If something is not necessary, it is best to refrain from doing it. You know what they say. "If it ain't broke..." A good guideline is to never clean the mirror, and go from there.

Get ready the following materials and equipment (or equivalent):

Absorbent cotton, 100% USP sterile, 2 oz. roll. Dish soap, Dawn Free (clear) - has no perfumes or dyes. Distilled water (the type for steam irons or batteries), 1 gallon. Turkey baster, glass or one with a good air stream - look in the Yuppie utensil store in the Mall.

Cleaning a mirror is like chinese cooking. Everything must be ready to use and the action must be continuous with no interruptions. Turn off the phone and lock the door. Perform the following steps with no pauses during or between steps.

1. Blow off the mirror with the baster; you probably don't even need to clean it. If you still think you must, then remove the mirror from its cell.

Note: some mirrors cannot be removed from their mounting boards. If the mounting board is bare wood, you do not want to get it wet. Either seal the wood with water sealer or epoxy paint, or be careful with the water.

2. Run a light stream of water in the sink to room (and mirror) temperature and place the mirror under the stream at a slight angle, propped up on a folded hand towel or large sponge so the water runs fully across it and down the drain. Always beware of that faucet: it's a killer. This is another place you can stop. If you feel the mirror is clean enough after rinsing, skip Step 3, which involves using soap.

Note: NEVER touch the cotton that will be touching the mirror with your fingers! Pull straight out from the end of the roll and use the underside which has not been touched! (Or your mirror will always have a hazy cast to it and you - as most other mirror-cleaners do - will wonder why.)

3. Wet a medium-sized piece of cotton and apply a few drops of dish soap. Waft the cotton in back-and-forth strokes over the entire surface. (Waft means to lightly move as if on a buoyant medium - look it up.) The running water will gradually rinse the soap from the cotton as you do this but that's OK. Discard the cotton, and either repeat or go ahead and rinse the mirror thoroughly. On the larger sizes, trying to rinse the back of the mirror is where a mishap can occur. It is not necessary to turn the mirror over to rinse the back, so let's avoid it altogether. Make sure the front

is fully rinsed of soap by wafting another wad of cotton without the soap this time. Rinse some more.

4. Turn off the water and tip the mirror up almost to the vertical this time, watching our for that faucet. Pour the distilled water onto the top edge of the mirror and down the face of the mirror. This displaces the high-mineral content water that would permanently spot the mirror if allowed to dry. Pour enough distilled water to give it full coverage. Splashing is OK, it helps rinse the back.

5. Prop the mirror up on a folded towel and allow the distilled water to dry completely. If it's a diagonal, I shake it like a thermometer to get most of the water off. (You can try that, but if it goes flying across the room, don't blame me.) You now have a clean mirror.

Questions:

1. How often should I clean my mirror? Normally, as far as a vacuum-deposited reflective optical coating less than a micron thick is concerned, if something is not necessary, it is best to refrain from doing it. A good guideline is to never clean the mirror and them proceed from there. However, city-dwelling and seashore telescope mirrors actually benefit from a periodic (3-4 mo.) removal of pollutants. This can extend the life of the coating. Some specialty coatings, like Beryl, are really touch stuff, though, and you can leave them out in the rain (well, not quite.)

2. What about mirrors larger than 13"? A 10" fits in the bathroom sink. A 13" fits in the kitchen sink. Some 16-to-20-inch mirror owners have been known to get right into the bathtub with them. Over 20" hey, ask the man who owns one.

3. Should I use canned air, alcohol swabs, lens cleaner, lens tissue, lens brushes, facial tissue, cosmetic (cotton or synthetic) puffs/balls/pads, acetone, bleach, or sulfuric acid to clean my mirror? No.

4. What happens if tap water is allowed to dry on the mirror? Permanent polka-dots.

5. Is alcohol OK? Alcohol is fine. This may be tried between steps 3 and 4 only, if you notice (after normal cleaning) any haze or mottling when looking down the tube with the light just right. Just before Step 4, with the mirror still at a steep angle, slowly and carefully pour alcohol down the face of the mirror. (Use either full strength 91% alcohol, or the alcohol/distilled water mixture recommended in your particular owner's manual. Remember alcohol is a solvent. Do not get any on the back of the mirror as it will erase or smear any markings or QC stamps there. The trick is to get FULL coverage on the front yet don't get any on the back. I use an absorbent washcloth as a dam at the top and the baster to squeeze alcohol on the extreme upper portion of the mirror, and then pour from the bottle to get the rest. Follow immediately with distilled water (step 4) to avoid deposition of the dissolved solids!

6. What happens if I do accidentally drop the mirror? Then disregard this entire procedure. Actually re-coating a mirror is really inexpensive - replacing a mirror is not. Most of the labor cost in a telescope goes into machine-and hand-figuring of the mirror blanks. Making a mirror takes from dozens to hundreds of hours, depending on the size of the blank, the pocketbook of the consumer, and the standard of quality of the manufacturer. And you want to hold it over a porcelain sink with set hands? Well just be careful and watch what you're doing.

This article was posted on the sci.astro.amateur newsgroup about a year ago, but has since been rewritten to incorporate comments received and other improvements. Used with permission from the Saguaro Astronomy Club and Jack Jones. *

Observing Reports

Chief Observer's Report

By Gil Esquerdo

As I sit here writing this month's report, the skies above are quite overcast, and the monsoon is threatening once again. Needless to say, observing is one of the last things on ones mind with weather like this. Despite this, there are a number of interesting events that happened last month, and a few in the upcoming month as well.

The Perseids put on another good show (as usual). We were clouded out for the event, but reports from all over the country gave average results for this years show. Is the effects of Swift-Tuttle's passage finally wearing off? Only time will tell.

The opportunity to see Venus in broad daylight last month was probably the most interesting. I showed family members the bright pinpoint of light just a few degrees from the moon with the sun shining bright overhead. On September the 8th, you will have another opportunity to catch the thin waning crescent moon just a few degrees from Venus. While this month's passage is not as favorable as last month's, the moon will be close enough to Venus to act as a pointer. Has anyone seen any of the other planets or bright stars during daylight? I would love to hear your reports.

On September the 4th, the moon will occult Aldebaran for those observers in the Arctic. Because we obviously aren't there (although there are those of

us who wish we were), we will be treated to a near miss instead. Ruddy Aldebaran will contrast nicely with the silvery surface of the moon. Make an effort to get up early for this one.

And of course we cannot forget the total lunar eclipse on the evening of September 26th. The moon will rise already in the partial phases of the eclipse, but we will see the majority of the event from Tucson. Hopefully, by this time, the monsoon will have lost its power and left us for another year.

Good Observing
Gil Esquerdo *

What's New at Flandrau

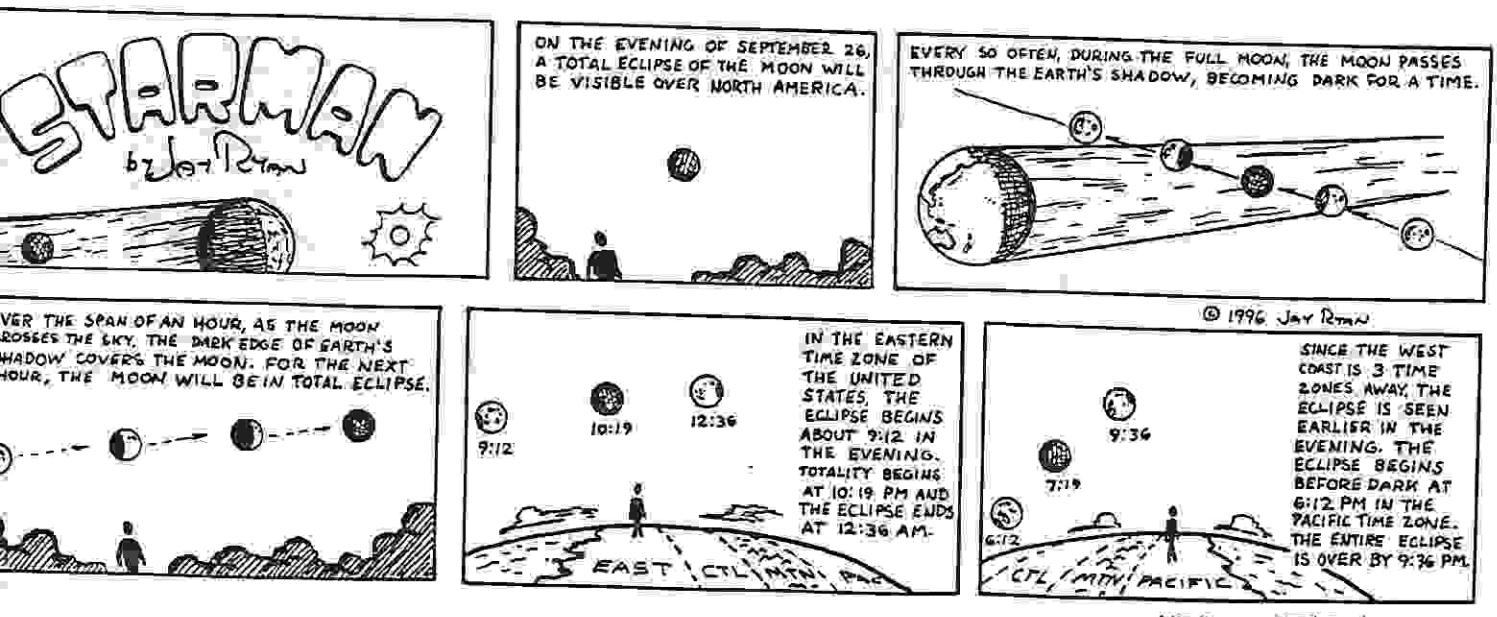
LUNAR ECLIPSE "PARTY" ON THE MALL !

Flandrau will host an eclipse party on the UofA mall for the total lunar eclipse on Sept. 26. TAAA members are invited to bring their telescopes to the mall area in front of the Science Center to view the eclipse with the public. Two special 1 hour showings of the Pink Floyd "Dark Side of the Moon" laser show will be held that evening at 6:00 p.m. and at 9:30 p.m.

The partial or umbral phase of the eclipse starts in bright evening twilight at approximately 6:17 p.m. local time with the moon only 1 degree above the horizon. This means that you can set up your 'scope as early as 5:45 p.m. The moon will enter the total phase of the eclipse at approx. 7:27 p.m., only 15 degrees above the horizon (making for a dramatic naked eye eclipse due to the moon-horizon illusion). Totality will end at 8:28 p.m. with the moon 27 degrees in altitude. Because of trees near the Space Sciences building, telescopes will be set up on the grassy "mall" in front of the Science Center, where there will be totally unobstructed viewing, and of course all lights turned off (including around the Science Center). The mall runs almost due east, creating a perfect in town viewing location. Finally, as always, parking will be allowed on University Ave. next to the mall, but only if you are setting up telescopes. Please contact me if you are bringing a telescope at the numbers below. Thank you!

Michael Terenzoni
Outreach Coordinator
Flandrau Science Center
Phone: 621-3646
Internet: MikeT@ns.arizona.edu *

Starman



http://www.en.com/users/cygnus

CARBON COPIES

During September the Milky Way spans from horizon to horizon passing high overhead. If you look about 45° up from the southern horizon in the middle of this milky band is a roundish brighter patch at the tail end of the constellation of Aquila the Eagle. This milky spot is the Scutum Starcloud. It lies at a distance of some 6,000 light years from Earth. Many interesting telescopic objects are within this region of the sky, such as the star cluster Messier 11, the pulsating variable star R Scuti, and the fine colored double star 15 Aquilae. Also near this stellar cloud are the two deeply colored Carbon Stars, V Aquilae and S Scuti.

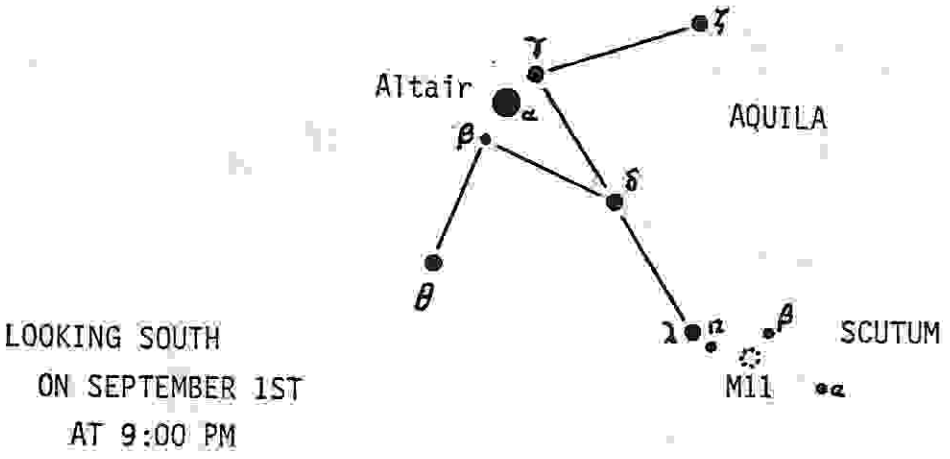
V Aquilae lies 2° east of the heart of the Scutum Starcloud within the borders of Aquila near the star 12 Aquilae. V Aquilae is one of my favorite red stars, having a very deep blood red hue. A binocular or small telescope will show this quite nicely. V Aquilae has semi-regular light variations usually fluctuating between 7th and 8th magnitude. V Aquilae is a red giant star with a spectrum of N7.7, (C6,4). It is also a very cool star with a temperature of about 2,000°K. This star lies around 1,600 light years from Earth.

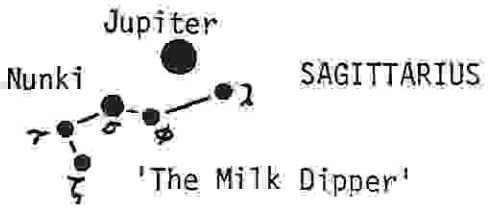
S Scuti is very similar to V Aquilae with a spectrum of N7.7,(C5III). It too has a striking crimson red color. S Scuti also is a semi-regular variable star usually hovering around 7th magnitude. Like V Aquilae it is an aging red giant star. You might visualize these stars as glowing red coals with their nuclear furnaces about to be extinguished forever.

To locate these two of a kind Carbon Stars, first find the 1st magnitude star Altair, Alpha (α) Aquilae, a white star which marks the southern apex of the Summer Triangle. Then move 18° southwest to 3rd magnitude Lambda (λ) Aquilae. To find V Aquilae it now lies about 1° south southwest of λ Aquilae at the east end of a curved row of four stars. To locate S Scuti find the galactic star cluster M 11, then move about 1½° south. You should notice a deep red colored star amongst the many faint white background stars of the Scutum Starcloud.

These two red Carbon Stars are a real treat to see when viewed against the backdrop of the summer Milky Way. So spend some time this month and seek them out, You'll get a special view if you do.

By Jeff Brydges





TAAA Board of Directors - August 8, 1996

Officers/members in attendance.

Teresa Lappin, Larry Wilson, Gary Rosenbaum, Dave Harvey, John Kalas, John Polacheck, Steve Kristmann, Derald Nye, Robert Gent, Dean Ketelsen, Tim Hunter, John Zajac. Call to Order: 7:06 p.m.

Agenda: Events/meetings:

Star Parties: September 7 - Empire Ranch.
September 14 - Empire Ranch
October 5 - Kitt Peak
(See Dean Ketelsen for signing up)

Meetings: September - General Membership meeting - Ann Sprague will speak about Mercury.
Beginners lecture - TBA
October - Members Night.
November - Nick Woolf - detecting life on other planets
December - Don Davis

Treasurers Report:

Current total cash Assets: $39,046.95
Current Fixed Assets: $35,734.00
Total Liabilities & Equity: $74,780.95
Net Income for July: $862.38

Astrophoto Fundraising: John Kalas reported on progress of sales of astrophotos - to date $1,155.00 in sales have been achieved with $203.14 in realized profit.

Astronomical League. Bob Gent - western Regional Representative of the AL gave a 10 minute presentation on the benefits of league membership. A protracted discussion revolving around the recent club policy allowing voluntary membership in the AL took place. Mr. Gent agreed to consult with league officers to see if a modification of league bylaws could be accomplished to support the club's position. In the mean time Bob agreed to act as ALCOR temporarily. John Polacheck made a motion to table further discussion of AL membership until Bob Gent heard from the league. Seconded by Steve Kristmann and approved unanimously.

Land: Land committee will meet on August 18th to look over several sites being considered by the club for a future observatory.

Project ASTRO and NOAO: Teresa Lappin wrote a letter of support for project ASTRO agreeing to hold up to 3 star parties per month and recruit members to help with telescope repair, etc. Gary Sowinski was appointed project coordinator.

Mine Position: Teresa made a motion to send a letter to the forest service and ASARCO opposing the open pit mine proposed to be constructed near Empire Ranch. Seconded by Polacheck and approved unanimously. Teresa will write the letter.

Association Handbook: An outline for the handbook was distributed for review by the board with discussion set for the next Board Meeting.

Old Business: Public Star Party Site - John Polacheck agreed to contact several authorities regarding the possibility of having a public star party. These sites include Desert Museum, Saguaro Monument West, and Old Tucson.

Meeting Adjourned at 9:14 p.m. *

Desert Skies Classified

FOR SALE: Celestron SPC102 refractor. 102mm; F/9.8 with Super Polaris mount (with clock drive and Polaris alignment scope). Excellent condition, used very little. $1150. or best offer. Call Frank Cathell at (520) 825-5540 or e-mail fcathell@aol.com. (09-96)

FOR SALE: The Santa Clarita Astro Club. has sweat shirts for sale, XLG, good quality, $15.00 plus postage. Black with pale blue and white design (planets and galaxies). Dean Ketelsen has one if you want to see what it looks like. Call or write: Patty Domay, 22408 3rd St., Newhall, CA 91321, or Phone: (805) 255-3625. (11-96)

FOR SALE: 80mm f11 refractor, ALT-AZ mount, hard maple tripod, star diagonal, terrestrial Porro prism, sun filter, 3 Ploss eyepieces, $500. Call Jeff Brydges at 888-0591. (12-96)

FOR SALE: Celestron 8 with carrying case, tripod, wedge, 1¼" star diagonal, piggy back camera bracket, sturdy sand cast aluminum fork mounting, special coatings on optics, 30mm finder, one University Optics Kenig 24mm eyepiece and one University Optics 10.2mm orthoscopic eyepiece, $495. For more information call Duane Neihaus at 797-4189. (12-96)

FOR SALE: Celestron 8 inch Schmidt camera with attached C5 guide scope; excellent condition, $795. For more information call Duane Niehaus at 797-4189.(12-96)

FOR SALE: Eyepieces: Tele-Vue 13mm Nagler, $185; Tele-Vue 31mm Wide-field, $175; Tele-vue 2.5X Barlow for 1¼ inch diameter eyepieces $50. All in excellent condition. There will be a 5% discount for purchase of two or more items. Call Duane Niehaus at 797-4189. (12-96)

FOR SALE: Meade LX200 HP f/10 10" scope with V3.34 software. Very good condition and ready for deep sky viewing or astrophotography. Includes $1,700 worth of accessories. Asking $3,500 OBO. Phone Jim Waters, Phoenix AZ, EVAC Member at (602) 554-8789, 8:00 to 5:00 pm. (12-96)

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call Nancy or Nina at 579-1382 or email to nlwagner@aol.com or ninalehman@aol.com.