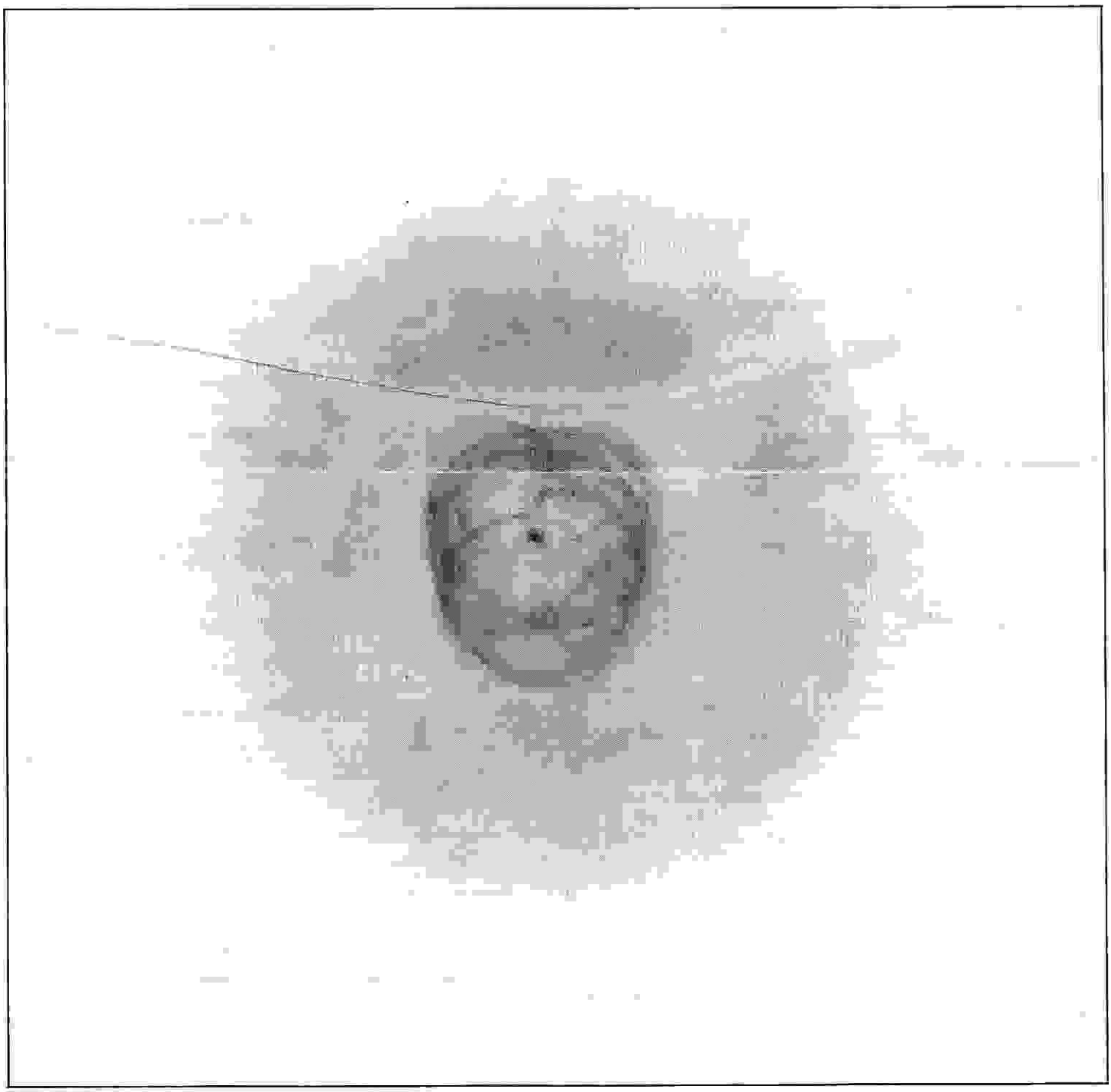
Desert Skies

Tucson Amateur Astronomy Association

Volume XLVI, Number 2 February, 2000



NGC 2392 • "Eskimo" Nebula **HST • WFPC2**

NASA, ESA, A. Fruchter and the ERO Team (STScI) • STScI-PRC00-07

Calendar of Events

BEGINNERS LECTURE: NONE. See General Meeting info below. **Members Night presentations will start at 6:30 pm.**

GENERAL MEETING: Friday, February 4, **6:30 pm** at the Steward Observatory Auditorium - Room N210. Topic is ***Members Night***.

BOARD OF DIRECTORS MEETING: Thursday, February 10, 7:00 pm at Steward Observatory Conference Room N305.

STAR PARTIES & EVENTS:

- Feb. 5 – TAAA Empire Ranch Star Party
- Feb. 10 – Jewish Community Center Star Party
- Feb. 11 – Our Mother of Sorrows Elementary School Star Party
- Feb. 11 – Science & Math Education Conference Star Party
- Feb. 16 – Desert View High School Star Party
- Feb. 22 – C.E. Rose Elementary School Star Party
- Feb. 26 – TAAA TIMPA Star Party
- Feb. 29 – Ironwood Elementary School Star Party
- Mar. 1 – Holladay Intermediate School Star Party
- Mar. 2 – Sunrise Drive Elementary School Star Party

Newsletter Schedule: Deadline for articles: Monday, Feb. 14. Printing: Tuesday, Feb. 22. Folding Party: Wednesday, Feb. 23. Mailing: Thursday, Feb. 24. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: Hubble Space Telescope image (reversed) of the Eskimo Nebula, NGC 2392, taken between January 10 – 13, 2000 after the successful December 1999 Space Shuttle servicing mission. The image shows the "intricate structure of shells and streamers of gas around a dying sun-like star 5,000 light years away". Image was downloaded from the website: http://spacescience.com/headlines/y2000/ast24jan_1.htm

TAAA Web Page: http://www.tucsonastronomy.org **TAAA Phone Number: (520) 882-1950**

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TAAA Mission Statement:

We are a resource for anyone interested in astronomy. It is our mission to nurture a person's natural curiosity about the night sky. By giving people a knowledge and understanding of astronomy, we enhance their enjoyment of the solar system and beyond. Through our public activities and school evening observing sessions, we bring astronomy to persons of all ages. Our regular meetings and observing sessions offer members a forum to meet others with similar interests and experiences and to learn from one another.

Annual Membership in the TAAA:

Regular membership	$ 23
Senior membership (over 60)	$ 21
Student membership	$ 15
Add for Family membership	$ 5
Add for Astronomical League (optional)	$ 3
Add for contribution to Southern Arizona Section of I.D.A. (optional)	$ 3 (recommended minimum)
Add for Sky & Telescope Magazine Subscription	$ 29.95
Add for Astronomy Magazine Subscription	$ 29

Rates for membership are given above. Family Membership includes two adults plus minor children. Members may subscribe to Sky & Telescope or Astronomy magazine (or both) at the time of membership renewal, saving substantially over the regular subscription rates. To assure we understand what you are paying for, please identify which class of membership and what options you want. Send one check made payable to *TAAA* to cover membership dues, magazine subscription(s) and any contributions to:

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

Four 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. Find your membership class and its rate. Add the Family Membership rate to this, if applicable.
3. If you desire membership in the Astronomical League or magazine subscription(s) or wish to make a donation, add the appropriate amounts to your membership rate. If a magazine subscription renewal is desired, include the magazine renewal notice, if possible. Be sure to identify which options you are paying for.
4. Write one check, payable to *TAAA*, and send it to the address given above.

Call the Treasurer if you have any problems.

Send address changes to the above address.

Desert Skies Publishing Guidelines:

All articles, announcements, news, etc. must be submitted by the newsletter deadline noted 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 in Word compatible files via e-mail or on a floppy disk. 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
c/o John Kalas
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Tucson, AZ 85745

or e-mail: jckalas@aol.com

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President's Message

Not knowing what to expect by scheduling a club star party on a "holiday", I was pleasantly surprised to see a good turnout at the Millennium Star Party at Empire Ranch on New Year's Day. About a dozen people attended with eight telescopes. Everyone seemed to enjoy the clear, crisp weather, but eventually the cold temperatures got to us. I poured myself a cup of hot chocolate, drank most of it, and then wandered over to another scope. When I returned to my cup about half an hour later, the remaining drink was frozen. When we packed up for the night, there was frost on many of the cases. All things considered, it was a great start to the New Year.

The TIMPA Star Party on Jan. 8 was very well attended. At least twenty telescopes were there. Many more people were strolling up and down the lines of telescopes asking the important questions necessary to make an informed decision about buying their first telescope. It was great hearing the experienced members sharing their knowledge with the newcomers. That's what it's all about. Thanks to all who attended.

The planning activities are in full swing for the development of the TIMPA Site. Two sub-committees have been formed to accomplish the required planning; Long Range Planning and Site Preparation. The first meetings of each group were held in January. See the sub-committee reports in the ***TIMPA Site News*** section of this newsletter.

Many thanks to David and Wendee Levy for awarding the Meade ETX Telescope to the TAAA on behalf of the Telescopes for Telethon campaign. See the article in the ***Club News*** section of this newsletter entitled "A Night To Remember For All Time".

Special Message:
With the club elections coming up in May, I will be deciding whether or not to run for President for my third year. Seeing the TIMPA Project progress into reality is one of the reasons why I would like to run again. But, there are several things that must be addressed before I consider continuing. My current work load as President, Newsletter Editor, School Star Party Coordinator, TIMPA Site Committee member, and very active volunteer for school/organization and paid star parties is excessive. I cannot continue this level of club involvement for another year. It has begun to adversely affect my personal life (no free time) and even my employment performance (inability to work needed overtime due to club commitments). I have asked for help numerous times in the past, but little or none is forthcoming. I get great satisfaction from helping guide the club towards growth and improvement. If you could volunteer and assist with some of the tasks, I may consider running one more year. Please review the Help Wanted notices in the ***Club News*** section of this newsletter. Thanks.

John Kalas

Meeting Information

February Meeting is Members Night

IMPORTANT! Please Note the Change to February's Meeting Schedule Below.

Beginners Lecture/Main Lecture

There will not be a Beginners Lecture due to the many member presentations anticipated for February's Members Night. Instead, the Members Night Presentations will start at 6:30 pm and proceed through the Main Lecture portion of the meeting.

February is Members Night. Short presentations by TAAA Members take the place of the usual main lecturer. The following members have requested time to present:

- Jack Tepper – Video of the Mercury Transit of the Sun
- Terry Gilmartin – The Fermi Lab
- Andrew Cooper – Constructing an 18" Dobsonian Scope
- Alfredo Garcia, Jr. – MX5C Color CCD Imaging
- Doug Smith – Mercury Transit, Lunar Drawings, and More
- Erich Karkoschka – Cycles of Solar & Lunar Eclipses
- Gary Rosenbaum – CCD Images of Jupiter & Saturn
- Mike Turner – Photos of Lunar Eclipse, Jupiter, Saturn, etc. Using Nagler Eyepiece Adaptaview Device
- John Kalas – Lunar Eclipse Photos

There will probably be more presentations added by the time the meeting rolls around, so it's shaping up as a very interesting evening. Contact John Kalas at 620-6502 to reserve time for your presentation.

Club News

February Monthly Meeting – Members Night

Every three to four months the TAAA dedicates one monthly meeting to members. A Members Night gives all members the opportunity to present to the meeting audience any astronomy-related topic that they have been working on. It is a great chance to show your astrophotography, discuss a topic that you may be investigating, or show a widget or doodad that you may have developed to make a task easier.

At the January monthly meeting a number of TAAA Members have already requested time to make a presentation, but there is room for more. If anyone has a topic that they would like to present, please contact John Kalas at 620-6502. **NOTE:** All Members Night presenters should arrive in time for the usual Beginners Lecture because there will not be a Beginners Lecture and the Members Night presentations will begin at 6:30 pm

Club News (cont.)

A Night To Remember For All Time... January 7th 2000

by Laurel Dunlap

Anno Domini... January 7, 1610, Galileo Galilei used one of his home made "spyglasses" to observe the planet Jupiter. On that night, he carefully described what he thought might be "3 little stars" in an unusual linear pattern near the great planet.

Quite by accident, Galileo found himself studying the same portion of the sky in the days that followed, when he stumbled across the "little stars" near Jupiter curiously rearranged. Determined to observe these 'stars' over the next several days, Galileo noticed another "little star" 4 days later that appeared to line up with the other 3 still visible since his first encounter with them. Galileo made daily observations of the planet and began to notice that these "star like" objects seemed to travel with the planet as it made its way across the night sky. He concluded that these objects were "erratic sidereal bodies performing their revolutions around Jupiter," a radical concept in those geocentric days of past.

The discovery of these, now called "Galilean" satellites, later provided "a priori" evidence that all celestial objects do not orbit the Earth. They would clear the path to a new dawn of discovery, and the proof of Copernican theory.

January 7, 2000 A.D. was the 390th anniversary of the discovery of the Galilean moons of Jupiter.
http://www.jpl.nasa.gov/galileo/ganymede/discovery.html

Last month, we were treated to a fabulous lecture by Dr. Paul Geissler. What a fantastic start to the New Year! If you missed the first TAAA/TAL lecture of 2000, you missed some of the best images of the Galilean satellites along with an astoundingly detailed geologic adventure exploring the current theories about their inner dynamics and surface structures. Many of the images he used, if not all of them, are available on the www via several NASA sites. Yet, most of us don't usually analyze the images with the finely tuned focus Dr. Geissler provided. He gave us new insight into specific features on the many images he shared with us throughout the evening.

And as if that wasn't enough...

Immediately following the January 7th lecture, we were treated to a special announcement by our very own (Jupiter impact specialist extraordinaire!) David H. Levy. As many of you know, David and Wendee Levy created a charity star party event benefiting MDA research and programs, called Telescopes For Telethon.

Last year, The TAAA and TAL along with many others in the Tucson area hosted star parties for the TFT project. Many other astronomy clubs and planetaria across the US and Canada also participated in TFT with star parties of their own. The highest contribution came from Fort Bend Astronomy Club of Texas, and the combined Tucson events placed us as the second highest contributor for TFT 1999.

Meade Instruments Corp. had donated a 10" LX200 to the group providing the highest donation. It was awarded to Fort Bend by David and Wendee in December of 1999. Meade also donated an ETX for MDA children's camps to be used to help "kids see the stars." David and Wendee knew that TAAA/TAL members would be the ones called upon locally to assist with such a star viewing event for these kids. They decided that the ETX would be best utilized by making it available as a loaner scope for just such star parties, and the many other star viewing events that TAAA/TAL support. In addition, TAAA/TAL members have the skill and resources to provide safe instructional use of the scope with children.

David told the group how he and Wendee had hosted a Star Party for kids at an MDA camp. There were many kids in wheelchairs who never had the opportunity to look through a telescope before partly due to the restrictions inherent with the wheelchair itself. They wanted to create more opportunity for these kids, and this is at the heart of what Telescopes For Telethon is all about...making dreams come true, and providing resources to that end.

Concluding his announcement, David read from the closing lines of a poem that reminded them of the awe inspired faces of the children; who on that one memorable night... Reached for the Stars through a lens in their telescope.

from "Song of Honor"

...I stood and stared; the sky was lit,
The sky was stars all over it,
I stood, I knew not why,
Without a wish, without a will,
I stood upon that silent hill
And stared into the sky until
My eyes were blind with stars and still
I stared into the sky.
Ralph Hodgson (1913)

SPECIAL REQUEST

John Kalas, David Levy, and I would like to ask if any club members have a sturdy old tripod that they would be willing to donate to mount the ETX? It would be even better if the tripod was able to be adjusted to a lower wheelchair height. Anyone wanting to donate a tripod can contact Laurel Dunlap 544-7780 or John Kalas 620-6502. The ETX awarded to the TAAA/TAL will soon be available for check out.

For additional information about Telescopes For Telethon 2000 contact: Laurel Dunlap <T4T@Jarnac.org>

Nominating Committee

It's that time of the year, again. The TAAA Constitution requires that a nominating committee of three members (anyone except the President) be elected at the February monthly meeting. The purpose of the committee is to present a slate of candidates to the membership for club elections in May. The committee members contact the current officers to determine if they are willing to run for office again and also solicit other members who are interested in running for office. Please consider supporting the club in this important duty. If you would like to be considered for the nominating committee, please contact any board member.

Club News (cont.)

Help Wanted: School Star Party Coordinator

Back in November 1999, the School Star Party Coordinator position became vacant. The school star party program is the major educational outreach effort of the TAAA. It exposes the youth of our community to the wonders of astronomy. This position maintains the master star party calendar and is the contact point for schools or non-profit organizations to arrange for star party dates. The coordinator schedules the events and records all of the pertinent information about the school/organization (i.e. event location, contact person's name and phone number, size of group, etc.). Once this basic information is established, the coordinator generates a brief announcement for the newsletter, transmits the info to the newsletter editor, and prepares the signup sheet for the monthly meeting. The candidate for this position must have a computer (preferably with Microsoft Word) and e-mail capability.

This position is a very important one within the TAAA. If you would be interested in learning more about it, please call John Kalas at 620-6502. John Kalas will assume the responsibilities of the coordinator until a replacement can be found.

Help Wanted: Newsletter Editor

Responsibilities include composing the *Desert Skies* on a computer utilizing e-mail or hard copy inputs from various internal and external sources. Either Microsoft Word or Wordperfect word processing programs may be used. This individual would prepare the newsletter, print out the master copy, paste it up ready for copying and deliver the paste-up copy to the LPL copy center per a specified deadline. Contact John Kalas at 620-6502 if you are interested.

Help Wanted: School Star Party Volunteers

With an increase in the activity level for school star parties, we need additional telescope volunteers to perform this worthwhile and rewarding function. School star parties are, by far, the best way for the TAAA to achieve one of its major objectives of promoting astronomy education to the public. Ask any of the current volunteers and they will tell you that setting up a telescope at a school star party and showing the youngsters and their parents the night sky is very satisfying. Won't you join us? A list of the current volunteers, with blanks for additional members to volunteer, will be placed on the sign-up table at the February monthly meeting. If you are interested in volunteering but cannot make the meeting, please call John Kalas at 620-6502. Please consider participating in this great service.

Wanted: Beginner's Lecturers

We would like to involve more members of the TAAA in the Beginner's series of lectures presented before each monthly main meeting. There's got to be a topic that you could share with the club. We're looking for the basics. Even if you don't have previous knowledge of a topic, you could do a little research and present your findings. Please consider this enjoyable and rewarding activity. Contact Terri Lappin at 579-0185 or John Kalas at 620-6502 if you would be interested.

Member News

We welcome the most recent members who have joined the TAAA: Roger T. Berg, Wren Breedlove, Mina Charon, Sheila Conrad, Scott Damschen, Pat Heimann, Dave and Karen Jordan, Susan U. Mann, Ulrich F. Michael, Larry Prewitt, Robert A. Scala, Ron and Patty Tamler, and Robert and Andrea Wilson. Glad to have you join! Please be sure to pick up a new member's pack at a meeting. Hope you'll make it to a star party or a meeting so we can all get to know you.

Possible Monthly Meeting Day Change

In the December 1999 newsletter, a request was made for information pertaining to a hardship for members of the Jewish Community to attend TAAA meetings currently scheduled on the first Friday of each month. The very limited number of responses has led the board of directors to decide not to pursue a proposal to change the meeting night schedule.

Member Information Update

In preparation of updating the TAAA Membership listing for distribution to the members in a future newsletter mailing, the club requests that members inform Treasurer Terri Lappin of any changes. Address, telephone, and e-mail address changes or additions are sought. Please contact Terri at 579-0185 or via e-mail at <tlappin@as.arizona.edu>.

A School Star Party Thank You

The following letter of thanks was received recently from the Northminster Presbyterian Church.

To: Tucson Amateur Astronomy Association
Dated: January 6, 2000

Dear Friends at the TAAA,

Enclosed you will find a check as a donation to your wonderful organization for the excellent evening of education and entertainment you afforded the children of our MIDWEEK program last Wednesday, January 5. We have been learning about the seven days of creation, and your program fit in beautifully with Day Four, the Sun, Moon and Stars!

My deep appreciation goes out to John Kalas for the great job he did coordinating the evening along with volunteers Mike and Mary Turner, Nick Applegate, Andy Keefer, Kevin Bays and Bill Lofquist. Each of these folks were helpful and patient with the children, taking time to answer their questions and educate them about the wonders of the night sky. Many thanks to the TAAA for this great outreach program, and for the great volunteers you sent to our event!

Sincerely,
Meagan Gillan
MIDWEEK Program Coordinator

Club News (cont.)

Grand Canyon Star Party 2000!

June 3-10

It is time once again to make plans for everyone's favorite star party - Grand Canyon 2000. This year's dates are Saturday thru Saturday, the 3rd thru 10th of June. A few have asked why we do it so early in the month. The reason is statistics - looking at Lowell Observatory's weather data in Flagstaff, the chances of clouds goes up dramatically after the 20th, and if we wait for dark of the moon later in the month, we stand a much better chance of clouds. As a result, we start the weekend after Memorial Day.

The last couple years it has been great to refer people with questions to check out the TAAA website. There is a link to the star party complete with details regarding camping, motels and suggestions for surviving the Canyon's busiest time of the year. If you are new to the event yourself, check it out at http://www.tucsonastronomy.org and let me know if you have any questions. To sum it up, it appeals to those of us who love showing off the sky to someone who perhaps has never looked thru a scope before. I twist a few arms to get some folks to set up telescopes and we invite the multitude of visitors to come take a look. The amazing skies there make it easy to impress a newcomer to astronomy, or even the most jaded of observers that may live in a light polluted area. The result is we get a lot of happy astronomers who get in some great observing and impress the heck out of some passers by. Anyway, it is a great time and if you like sharing the views, you will love this event.

You need to make your reservations now if you hope to get a motel room. If you plan to camp out, life is much easier; spots are generally available even a few days in advance. But it never hurts to make those reservations now. I suspect the Park Service will again make some campsites available for those of us who will be staying the full week. If your schedule allows and you would like to get one of these free sites, contact me ASAP starting 1 March. Last year the 16 sites lasted all of about 10 days, so don't forget to contact me then.

After 10 years of organizing this, I sometimes forget the questions you may have, so if you have any that are not addressed here or at the website, or if you do not have Web access, give me a call at 293-2855. Don't miss out on all the fun!

Dean Ketelsen

Items of Interest

Websites: Trips on the Internet Super-Skyway

by Rik Hill

For those of us in the southwestern deserts an aurora is a seldom seen thing, and when seen is usually no more than a dimly colored glow in the northern sky. However, having come from a fairly northerly latitude 20+ years ago, I can tell you that seeing an aurora from Arizona and comparing it to Michigan is like the difference between a partial and total eclipse! Imaging aurorae is a tricky business made easier by the use of some of today's fine grained, high speed emulsions. Spectacular examples of these kind of photographs, taken from Alaska, can be seen at: http://climate.gi.alaska.edu/Curtis/curtis.html. This is the website of Jan Curtis. His images are among the finest I've ever seen of aurorae showing every classifiable form and color. Mr. Curtis is a staff member of the Geophysical Institute with Univ. of Alaska in Fairbanks. For those of you who miss the pictures that used to hang in the old-Old Peking restaurant, this will be a welcome treat.

Are you still procrastinating about that big sundial you were going to put in the backyard or on the side of the house? Well get inspired by going to the website of The North American Sundial Society at: http://www.sundials.org/ On these pages are found everything from a glossary of sundial terms to plans, designs, types and photos of sundials from all over the world. There's even a registry of Sundials where dials are noted from nearly every state and country. Did you know, for example, that there's a large 50-foot sundial in Rillito River Park, another dial at the TCC, and one in Tohono Chul Park? These and more in Arizona are in this registry. Another site takes you to software to help you design that masterpiece of your own. It's a great way to dress up that home observatory.

Austrialian amateur astronomer, Steve Massey, has an astronomy page at http://www.ozemail.com.au/~smassey/index.html, that is a delight and wonder. His specialty is planetary video and CCD imagery and he is very good at it! His Mars images are so good that he dares to post an HST image of the same longitude on Mars next to one of his best images with his 24" telescope, and it's a fair fight. But the real Mars treat is his time lapse video of a rotating Mars at that resolution. Absolutely breathtaking. Almost as good are his images of Saturn and Jupiter. They surpass even the splendid work by Don Parker here in the U.S. But on his Gallery page at: http://www.ozemail.com.au/~smassey/planets.html is something as exciting as the Mars video. He has assembled images of Saturn from the last few years into a short loop that shows the rings bobbing back and forth with the change in tilt. Also, on that page is a rotating Jupiter, a close up of one of the jovian moons in transit and a time lapse video clip of a partial solar eclipse. This is a page that you'll want to come back to from time to time as he adds more of these spectacular images.

If you know of a particularly good website you would like reviewed here, drop me a line at rhill@lpl.arizona.edu or visit my website at: http://www.lpl.arizona.edu/~rhill.

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No Beginners Lecture at February Meeting

Members Night Presentations Start at 6:30 pm

Items of Interest (cont.)

2000 ARIZONA MESSIER MARATHON

Where: Arizona City Site
When: Saturday evening 4/1 thru Sunday morning 4/2

Solar Data:
April 1: 3:57pm Moon set
6:49pm Sunset
8:11pm astronomical twilight
April 2: 4:50am morning twilight
5:14am Moon rise
6:11am Sunrise

The Messier Marathon is designed to encourage Deep Sky observing. By joining in with other marathoners, you will enjoy companionship of those also involved. It will test your observing skills. If you are a club member in good standing, then join in and do so just for the FUN OF IT. If you decide to participate then be sure to read ALL of this information.

There will be a check off list available at the site to record your observations. Be sure to pick one up, preferably before you start marathoning and fill in the top portion so awards can be made. It is important to remember that you must turn in your form to one of the Coordinators before leaving the site or by sunrise. We cannot accept any after these times.

Although it is possible to do the marathon with a 4" telescope, I wouldn't suggest this unless you are an experienced observer. Don't forget to check off each object as it is observed.

Plan on arriving at the site early enough to set up the telescope and allow it to reach thermal equilibrium. Be sure to fill out the heading of the check off form!

The Marathon this year affords the optimum conditions of finding 107 objects. The three most difficult to impossible ones are M33, M74 and M77. Next in line for difficulty are M31, M32, M110, M30 and M76.

If you plan on participating in the Marathon, then doing some homework ahead of time will pay dividends. If interested, the check off list can be made available prior to the marathon. Study the catalog along with your star atlas to develop your own process. Be prepared in case it becomes cloudy and the sequence has to be altered.

Your involvement will not go unnoticed, as there will be awards in recognition of effort. People observing 50 or more objects will receive an 8 1/2 x 11 certificate. For first, second and third places there will be plaques suitable for mounting on a telescope. Duplicate awards will be made for ties. We need your club's support to help purchase the awards for its members.

Not interested in the marathon? Come anyway, you are also invited for deep sky observing, planetary observing, astrophotography or just plain old relaxing under a dark sky!

AJ Crayon, e-mail - acrayon@primenet.com
Rick Rotramel, e-mail - Rick.Rotramel@CAS.honeywell.com
Messier Marathon Coordinators
Saguaro Astronomy Club

Here's an Interesting Question & Answer

TAAA Member, John Polacheck, asked the following question:

As the Winter Solstice approaches, the days get shorter in the Northern latitudes. That is because the sun rises later and sets earlier. However, several of us have noted that these two phenomenon are not "in sync" with each other. The earliest sunset in Tucson is about December 5th (5:19 PM). BUT, the latest sunset is about January 9th. Why does the sunset reach its earliest time (about one month) before the sunrise reaches its latest time ??? I would have expected both of these to occur very close to the solstice.

TAAA Member, Erich Karkoschka, was kind enough to supply the answer:

The earth's rotation period is 23h 56m. On average, the sun moves 1 degree/day corresponding to 4min/day, so that solar transits occur, on average, every 24 hours. In December and January, the earth is near perihelion which makes the sun moves faster in the sky. Furthermore, the sun is far from the equator where 1 degree of motion is more than 4 min. Currently, the sun moves 4.5 minutes/day and solar transits occur 30 seconds later each day, shifting sunrise and sunset 30 seconds later each day. It takes awhile until lengthening of days can catch up with this 30 sec/day shift. Transit times in Tucson change from 12:08 in early November to 12:38 in mid-February. Thus, as you move towards the equator, the latest sunrise gets closer to mid-February, while the earliest sunset gets closer to early November.

Star Parties & Events

TAAA Empire Ranch Star Party
February 5 (Saturday)

The Empire Ranch has been our normal dark-sky observing site for quite a number of years. Empire Ranch is about 4000 feet in elevation, so be prepared for freezing temperatures and try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astrophotos. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. There are no restroom facilities at the site, so be prepared. One nice advantage of belonging to the TAAA is the opportunity to observe among friends. Help in finding an object or the sharing of equipment always goes on at our star parties. If you haven't attended a star party yet, you're missing the best part of belonging to the TAAA. See the directions to Empire Ranch on the outside flap of this newsletter.

Star Parties & Events (cont.)

Jewish Community Center [North]
February 10 (Thursday) No. of Scopes: 4

There will be about 25 Kindergartners with parents at this event. The center is located at 3800 E. River Road, corner of River and Dodge. Set-up will be at 6:30 pm in the rear parking lot northeast of the main building. Observing will start at 7:00 pm and end at 8:00 pm. A Star Party Leader is needed for this activity. A signup sheet will be at the February meeting.

Science & Math Education Conference [Benson]
February 11 (Friday) No. of scopes: 5

This event is part of the Tenth Annual Science and Mathematics Conference sponsored by the UA Science and Math Education Center. Anywhere from 30 to 100 teachers are expected to participate in this outing. Volunteers with telescopes are needed at Vega-Bray Observatory in Benson, AZ for observing from 7:30 - 9:00 PM. Set-up will be from 6:30 pm to 7:30 pm. A Star Party Leader is needed for this activity. A signup sheet will be at the February meeting.

Our Mother of Sorrows Elementary School [East]
February 11 (Friday) No. of scopes: 6

This star party will be for 1st graders to 6th graders. The school is located at 1800 S. Kolb Rd. (approx. midway between 22nd St. and Golf Links). Go south on Kolb Rd. just past the school and turn right (west) onto Calle Ileo. Set up the telescopes on the basketball courts along Calle Ileo. Set-up will be at 6:00 pm with observing at 6:30 pm. The event will end by 8:30 pm. A Star Party Leader is needed for this event. A signup sheet will be at the February meeting.

Desert View High School [South-Central]
February 16 (Wednesday) No. of scopes: 3

Jim Treat, an astronomy instructor at the school, wants his students to do some near Full Moon observing! The school is located at 4101 E. Valencia (on the north side of Valencia, east of Alvernon and west of I-10). Setup will be at 5:30 p.m. in the Faculty parking lot's SE corner. Observing will run from 6:00 pm to about 8:00 pm. A Star Party Leader is needed for this event. A signup sheet will be at the February meeting.

C.E. Rose Elementary School [Southwest]
February 22 (Tuesday) No. of scopes: 6

Set-up at 6:00 pm with observing from 6:30 to 8:30 pm. Rose Elementary School is on 12th Ave., 2 blocks south of Ajo Way. Turn right onto Michigan south of the school and take the second (staff) entrance. At the back of the parking lot take the entrance into the playground area and set up near the basketball courts. Dean Ketelsen (293-2855) is the star party leader. A signup sheet will be at the February meeting.

TAAA TIMPA Star Party
February 26 (Saturday)

What makes this event special is that our novice members can get help with observing issues or equipment problems. There will be experienced members present who would be more than happy to help. If you don't own a telescope, don't worry. There will be lots of scopes set up and everyone is invited to look through them. This is a great way to check out the different telescope designs before you make that all-important decision to buy. There is no scheduled talk for this activity. Just come out with lots of questions and we'll do our best to get you the answers you need. Arrive at about 5:00 pm for a group question and answer session. It should be dark enough to observe by 6:00 pm. If you have friends who might be interested in amateur astronomy, bring them along. Be prepared for the cold weather and bring lots of warm clothing. Directions to the TIMPA site are located on the outside flap of this newsletter.

Ironwood Elementary School [Northwest]
February 29 (Tuesday) No. of scopes: 8

Three 3rd grade classes (120 maximum plus families) will be partaking of the evening of observing after their music program. Set-up will be at 6:30 pm with observing starting at 7:00 pm and ending at 8:30 pm. To get to the school from Ina and Thornydale, head north on Thornydale for 2.5 miles. Take a right onto Overton Heights Drive (across from Arthur Pack Park). Head east for just under 0.5 mile. Go north on Camino de la Tierra to the end (about 0.25 mile). The school is on the north side of Freer Drive. On the west side of the school there is a gate. Enter and head north along the driveway. The playground will be on the left. A Star Party Leader is needed for this event. A signup sheet will be at the February meeting.

Holladay Intermediate School [South-Central]
March 1 (Wednesday) No. of scopes: 8-10

This will be a large star party held in conjunction with the school's science fair. Set-up will be at 6:00 pm on the basketball court. Observing will start at 6:30 pm and run to about 8:30 pm. The school is located at 1110 E. 33rd St. Take 22nd St. west to Park Ave. Turn left (south) on Park and proceed approx. 0.8 mile to 34th St. Turn left on 34th St. and cross over Freemont. On the north side of 34th St. there will be back entrance gate to the school's field and basketball court. A Star Party Leader is needed for this event. A signup sheet will be at the February meeting.

Sunrise Drive School [North]
March 2 (Thursday) No. of scopes: 5

The school's 3rd graders will participate in this star party. Set-up will be at 6:00 pm on a field to the north of the school. Observing will run from 6:30 pm to 8:30 pm. The school is located at 5301 E. Sunrise Drive. Go north on Swan and turn right (east) onto Sunrise Drive. Proceed to the next traffic light and turn left (north) onto Suncrest. Suncrest is actually the entrance to Sunrise Drive School. Directions will be given to access the playing field to the north of the school. A Star Party Leader is needed for this event. A signup sheet will be at the February meeting.

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February Has Many School Star Parties.

Won't You Volunteer to Help?

Dark Skies for February 2000

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

Mo/Tu	31/ 1	19:20 - 4:22		Fr/Sa	11/12	0:19 - 5:47		Mo/Tu	21/22	19:37 - 20:38	
Tu/We	1/ 2	19:21 - 5:12		Sa/Su	12/13	1:23 - 5:47		Tu/We	22/23	19:38 - 21:37	
We/Th	2/ 3	19:22 - 5:53						We/Th	23/24	19:38 - 22:35	
Th/Fr	3/ 4	19:23 - 5:53		Su/Mo	13/14	2:28 - 5:46		Th/Fr	24/25	19:39 - 23:32	
Fr/Sa	4/ 5	19:24 - 5:52		Mo/Tu	14/15	3:33 - 5:45		Fr/Sa	25/26	19:40 - 0:27	
Sa/Su	5/ 6	19:24 - 5:52		Tu/We	15/16	4:35 - 5:44		Sa/Su	26/27	19:41 - 1:22	
				We/Th	16/17	5:33 - 5:43					
Su/Mo	6/ 7	19:25 - 5:51		Th/Fr	17/18	- - -		Su/Mo	27/28	19:41 - 2:14	
Mo/Tu	7/ 8	20:17 - 5:50		Fr/Sa	18/19	FULL MOON		Mo/Tu	28/29	19:42 - 3:06	
Tu/We	8/ 9	21:16 - 5:50		Sa/Su	19/20	- - -		Tu/We	29/ 1	19:43 - 3:54	
We/Th	9/10	22:15 - 5:49						We/Th	1/ 2	19:44 - 4:40	
Th/Fr	10/11	23:16 - 5:48		Su/Mo	20/21	- - -		Th/Fr	2/ 3	19:44 - 5:23	

Weekend Sa/Su	Sun Set	Sun Rise	Mercury Set	Mercury Vi	Venus Rise	Venus Vi	Mars Set	Mars Vi	Jupiter Set	Jupiter Vi	Saturn Set	Saturn Vi
5/ 6	17:59	7:13	19:07	4	5:22	-2	21:01	2	23:36	-2	0:32	0
12/13	18:05	7:07	19:29	3	5:28	-1	20:58	2	23:13	-2	0:06	0
19/20	18:11	7:00	19:28	5	5:33	-1	20:56	2	22:51	-2	23:41	0
26/27	18:17	6:52	18:51	-	5:36	0	20:53	2	22:29	-2	23:16	0
4/ 5	18:22	6:44	18:00	-	5:37	1	20:50	2	22:08	-2	22:51	1

Vi=Visibility
-3 brilliant
0 conspicuous
3 moderate
6 naked eye limit
9 binoculars limit

By Erich Karkoschka

TIMPA Site News

Next TIMPA Site Committee Meetings

Note: All meetings are held at 7:00 pm in the Steward Observatory Conference Room N305

- Site Prep Sub-Committee Meeting - Tues. 2/15
- Long Range Planning Sub-Committee Meeting - Mon. 2/21
- General TIMPA Site Committee Meeting - Wed. 2/23

What is TIMPA, Anyway?

We forget that not all TAAA members know about the TIMPA project. For our new members, this explanation will appear in all future newsletters.

TIMPA stands for; Tucson International Modelplex Park Association. It is a parcel of land (approx. 160 acres) located about seven miles west of the Saguaro National Park West. The property is leased from the City of Tucson by the TIMPA organization and is to be used as a specialty park. The TIMPA organization flies radio-controlled model airplanes at the site. The Southern Arizona Rocketry Association (SARA) also uses the site to launch model rockets.

About three years ago, TAAA member, John Polacheck, heard about the site and inquired if the TIMPA organization would be interested in acquiring another partner, the TAAA. The TIMPA group was very interested because the relationship would be non-competing. TIMPA and SARA use the site during the day and the TAAA would utilize the facility at night. The TAAA has used the site, by permission, for about a year for scheduled star parties, such as Beginners Star Parties. On July 14th, the TAAA and the TIMPA organization signed a letter of agreement allowing the TAAA unlimited use of the site for scheduled star parties as well as member use at other times. Ultimately, the TAAA intends to develop an observing area on the site that will include an observatory for the club's 16" reflector telescope. Many club and joint benefit projects will be undertaken in the next several months to improve the facilities at the site:

1. Run electricity and telephone line to our observing area and on to TIMPA's ramada. Also, run a water line to our site. (Completed - 10/9)
2. Construct a secure storage cage in the TIMPA Barn. (Completed - 12/11)
3. Move the TAAA property from the mini-storage unit to the new security cage in the TIMPA Barn. (Completed 12/12)
4. Construct permanent bathroom facilities. (Tentative schedule 1st quarter 2000)
5. Construct observatory to house club's 16" telescope. (Tentative schedule 2nd quarter 2000)
6. Upgrade club's 16" telescope. (Tentative schedule 2nd quarter 2000)
7. Construct additional site improvements. (Schedule to be determined)

Watch the newsletter for announcements about TIMPA activities and how you can help.

TIMPA Site News (cont.)

Observatory Update

Discussions will soon start between the TAAA and NOAO to establish the means and expense of moving the dome and support building from the storage area on Kitt Peak to the TIMPA site. The issue of the disposal of the asbestos paneling on the support building must also be resolved. Actual transfer of the structures to TIMPA will depend on the progress of site preparation for the observatory. TAAA/NOAO liaisons, Claude and Teresa Plymate, and John Kalas will handle the negotiations.

TIMPA Site Prep Sub-Committee Meeting Recap

The first sub-committee meeting was held on 1/11 with Bob Schwartz, Gary Rosenbaum, Andrew Cooper, Robert Callanan, Ingrid Saber, and John Kalas in attendance. A listing was generated for the major tasks necessary to install the observatory at TIMPA. Included on the list was; soil testing (is it necessary? What did TIMPA do for their ramada?), what permits or building codes will be in effect?, transfer of the structures to the TIMPA Site (equipment needed, costs, crane at TIMPA to unload, oversized load with escort), excavation of the footers (forms or cement blocks?), pier design, elevated floor design, exterior siding design, and electrical design. The resources needed to performed some of these tasks include; mason, carpenter, and electrician. If anyone in the club has these skills and would be interested in volunteering, please contact Bob Schwartz at 440-5005 or John Kalas at 620-6502. John Kalas reviewed the projected costs for the immediate TIMPA projects and stated that he would like to see the observatory installation cost no more than $5000. The next meeting is scheduled for Tuesday, February 15, at 7:00 pm in the Steward Observatory Conference Room N305.

TIMPA Long-Range Planning Sub-Committee Meeting Recap

The first meeting of the TIMPA Long-Range Planning Sub-Committee was held on January 18th. Present were: Barbara and Robert Callanan, John Kalas, Terri Lappin, John Polacheck, Ingrid Saber, Bob Schwartz, and Michael Turner.

The purpose of the sub-committee is to recommend a site layout including the location of the 16" telescope observatory and any other improvements the committee envisions. The committee, at this time, cannot recommend a location for the observatory until the location of the bathroom and septic field and TIMPA plans for expansion of the parking lot are known. Once known, a site layout will be drawn up with particular attention paid to situating thermal sources north of the observatory. Additional facilities the sub-committee discussed were observing pads, footpaths to bathrooms and parking lot, a warm room addition to the observatory, a roll-off roof observatory for other telescopes, and a multi-purpose room for TAAA-related activities (telescope repair/cleaning, group instruction, etc.). Discussion about the segregation of observers doing photography or CCD imaging was discussed and the special requirements of these activities were noted. A point was made that currently no one requires electricity at TIMPA for observing, so we should not become carried away with distributing electricity throughout the observing area. However, most observers want easy access to their vehicles either for battery hook-up or for spreading out their observing supplies.

It was agreed that the parking lot would continue to be the main observing area even after the observatory is in use. The committee discussed the current use of the parking lot. Signage indicating "long-term" and "short-term" parking was discussed. Those leaving before 10pm would be directed to park at the west end of the parking lot. This would reduce the instances when observers are subjected to headlights. A sign reading "parking lights only" was discussed, but it was noted that some headlights, on newer cars, can't be turned off. Permission for any signs would need to be given by TIMPA before installation. Concern over dust was mentioned, but the consensus was, until Reservation Road is paved, there's little point to worrying about the dust kicked up by vehicles in the parking lot.

Those present at the meeting agreed to look over the site at the January 29 star party with the thought of where an access road to the 16" observatory could go. An aerial photo of the land is in the committee's possession, but a good site map showing water lines and existing structures or large trees is needed. The next meeting of this sub-committee will be on Monday, February 21st, at 7:00 pm in the Steward Observatory Conference Room N305. The committee is open to additional suggestions from TAAA members and they are encouraged to attend the next meeting or contact Terri Lappin at 579-0185, in the near future, with any ideas.

Procedures for Use of the TIMPA Site

The TIMPA Site Committee and the TAAA Board of Directors have developed procedures for the use of the TIMPA Site by members at times other than scheduled club activities. The procedures are as follows:

TIMPA Site Use Procedure
January 22, 2000

Purpose: This procedure describes the requirements for astronomical observing use of the TIMPA site for times other than scheduled TAAA club star party activities.

1. TIMPA gate keys will be available from certain persons (Key Keepers). At this time, the Key Keepers are as follows:
   - John Polacheck (743-1362)
   - Terri Lappin (579-0185)
   - Andrew Cooper (795-3585)
   - John Kalas (620-6502)
2. Keys may be reserved for access to TIMPA for specific nights; not open ended periods.
3. A key must be signed out by the borrower. Information about the reservation will be noted on the Key Keeper's Log.
4. It is the responsibility of the Key Keeper to notify the caretakers at TIMPA of the scheduled use of the facility. The caretakers are Gus and Barbara Drews and can be reached at 616-7073.
5. Keys are not transferable to other people and must be returned to the Key Keeper within 2 days of the last day of site use.

TIMPA Site News (cont.)

Procedures for Use of the TIMPA Site (cont.)

6. A late return fee of $5.00 per day, or part thereof, will be imposed on the borrower who does not return the key within two days of the last day of site use.
7. There will be a $3.00 per person per night or $6.00 per carload per night user fee that will be prepaid to the Key Keeper at the time of key pickup.
8. Overnight stays are permitted when acknowledged at the time of reservation.
9. Reservations for groups of ten or more people require special approval from John Polacheck (Home Phone: 743-1362).
10. Persons borrowing a key take full responsibility for the safety and well-being of their party and the appropriate use of the site, i.e. courtesy, security, cleanliness, damage, etc.
11. A $50.00 fine will be imposed if a key is not returned.
12. The club reserves the right to deny future site use privileges to a person who does not return a key or who does not follow the rules of use.
13. An annual pass for site use, starting from the date of donation, may be obtained for a donation of $50.00. Call John Polacheck at 743-1362.

TIMPA Site - Rules of Use

1. Unlock the main gate and close the gate behind you when entering. Drape the locking chain around the closed gate but, for safety reasons, do not lock the gate while you are inside the site. Upon leaving, close the gate and secure it by locking the TAAA padlock to the TIMPA padlock, hasp to hasp.
2. No alcoholic beverages.
3. Do not litter. Anyone using the site is responsible to clean up after themselves. Use the refuse containers provided.
4. No fires.
5. Use the portable bathrooms.
6. Be aware of hazards, i.e. tripping risks in the dark and the possibility of rattlesnakes. **Do not** kill any snakes. If a rattlesnake continues to be a hazard and will not leave, call 911 from the telephone in the cabinet at the TIMPA ramada. The fire department should be able to remove the snake.
7. Neither the TAAA nor TIMPA is responsible for items lost at the site.
8. Until further site improvements are completed, telescopes are to be set up on the parking lot area. **Do not** set telescopes up on the TIMPA ramada area, north of the chain link fence.

Special TIMPA Report

Observing Conditions at TIMPA

by Gary Rosenbaum

There was a good turnout at the January 8, 2000 TIMPA star party with about 30 scopes set up in the parking lot. Some observers mentioned that they thought the seeing was not very good. While there were some scattered cirrus clouds visible all night decreasing transparency at times, I thought the seeing was fairly good. As a planetary observer, I always make the distinction between seeing and transparency. I looked through a few of the telescopes at Jupiter and Saturn and, as usual, found a couple scopes gave nice sharp views while some of the others did not do as well.

Seeing refers to the steadiness of the earth's atmosphere. This is what lunar, planetary and double star observers are concerned with. For a good view of these types of objects you do not need a dark sky but you do need a steady atmosphere. To rate the seeing the Association of Lunar and Planetary Observers (ALPO) use a subjective scale of 0-10 with 0 (worst) to 10 (best). In good seeing (8-10) you can detect the Encke division in Saturn's A ring with a magnification of 300-400X or the Rima Tenuis, a thin division that is occasionally visible in the North Polar Cap of Mars at 600-800X. I have made both these observations a number of times with telescopes in the 8-10" aperture range.

When judging the seeing, you should differentiate between instrumental problems and atmospheric seeing. The most common instrumental problems are due to poor optical collimation, thermal effects and optical aberrations. Optical collimation should be performed after the telescope has reached thermal equilibrium. Telescopes need a half hour to an hour or more to cool to ambient temperature to perform properly. Thermal currents inside a telescope tube will distort the image in numerous ways. Point your telescope at an angle (not at zenith) to a bright star and defocus the image so it is outside of focus (move the eyepiece away from the telescope) so the out-of-focus star image covers about one quarter of the field of view or more. Warm air rising inside a long telescope tube open at both ends like a Newtonian causes tube currents that may appear as a slow moving distortion at the edge of the out-of-focus star image. This is caused by heat coming off the primary mirror. With a closed tube optical system with a central obstruction like a Schmidt Cassegrain or Maksutov, you may see a narrow plume of warm air slowly wandering back and forth from the center to the edge of the out-of-focus star image. This is caused by heat coming off the secondary mirror, secondary baffle tube or primary baffle. When all of the telescope components have cooled to the ambient air temperature, you will not see these distortions. Telescopes with open tubes that allow good air flow through the tube cool quicker than sealed tubes that can only cool by radiation.

Atmospheric seeing can appear in the image of an out-of-focus star as a changing pattern of fast moving dark bands or ripples traveling across the entire field of view from one direction to another. With a small aperture telescope the in focus image may appear sharp but can display image motion making small excursions in position. In poor seeing with a larger aperture the in-focus image is usually

Special TIMPA Report (cont.)

Observing Conditions at TIMPA (cont.)

stationary in position but may appear to be boiling, stars appear distended in size and the diffraction rings around the airy disk of a star are often absent or fluctuating in appearance. On nights of good seeing the atmosphere is less turbulent and images show a noticeable improvement in sharp detail.

In the arid environment of Arizona, we often have a 30 degree F or more difference in day to night temperature. The afternoon high will be in mid to late afternoon with the morning low near sunrise. Before sunset the earth's surface slowly begins to cool due to radiation and proceeds rapidly after sunset. A good rule of thumb, when the sky is clear and the humidity low, is that two thirds of the radiative heat loss will occur by 10-11pm. The seeing may be good near sunset as the heat loss begins, and then quickly deteriorates as the nighttime cooling increases. From about 11pm on, as the radiative heat loss slows down, the seeing may slowly begin to improve until sunrise. Seeing is hard to predict but for a brief introduction see the article in the January 2000 issue of Sky & Telescope, page 128.

A few things that adversely affect the seeing are proximity of the Jet Stream, large cumulus clouds indicating convection in the atmosphere, passage of a cold front, winds out of the north or east, observing near a mountain range, especially on the east (leeward) side, observing near a large canyon where the cold air from the mountain will flow out of the drainage at night, and large mass heat sources like buildings, parking lots and concrete.

Transparency refers to the clarity of the atmosphere and is what deep sky observers are mostly concerned with. On nights of good transparency, the Milky Way may seem brighter than normal and the dark rifts can be seen with better contrast. Transparency is generally rated as the faintest star (limiting magnitude) visible naked eye. Some people recommend rating transparency near the North Polar Region but I would rate it in the vicinity of the object being viewed. Transparency can be adversely affected by light pollution, thin clouds, high humidity, dust in the atmosphere, volcanic eruptions, forest fires or even a high pollen count, any one of which can create a hazy appearance to the sky, lowering contrast.

On Jan 8 from the TIMPA site, Terri Lappin and I were able to observe the Horsehead Nebula in Orion, an object usually referred to as difficult. We used Terri's 10" f/5.2 Newtonian telescope with magnifications of 51X and 78X with a Lumicon UHC filter. Observing conditions were far from optimal. Orion was just east of the meridian but clear of most of the light pollution. At the time of the observation, about 10pm, we had cirrus clouds covering about one quarter of the sky but the general area of Orion appeared relatively free of clouds. We could only detect the Horsehead by moving the telescope back and forth over the area while observing. The technique of putting the object in motion is a common way to discern detail in an object near the lower limit of vision.

My preliminary impression of the observing conditions at our TIMPA site compared to the Empire Ranch is as follows. Looking east, the light pollution dome of Tucson extends up to at least 60 degrees, higher if you take a more critical view. However deep sky viewing is good at TIMPA from about the meridian to the west and should satisfy many observers. For lunar, planetary, double star and some medium to high power (200X +) deep sky viewing (globular clusters) the TIMPA sight may be better than the Empire Ranch and other Sonoita area sites I have observed from. Proximity to the Santa Rita Mountains to the west and the generally hilly area tends to degrade the seeing in the Sonoita area. In the past year of observing at TIMPA I have experienced about as many nights of good seeing as I have in 19 years of observing in the Sonoita area. I don't think the seeing at TIMPA is special, probably no better than some locations in Tucson. The TIMPA area is flat and has no high mountain ranges nearby especially to the west, so local topography does not disturb the airflow over the site. As is typical of most valley locations, the seeing at TIMPA may deteriorate for a few hours as cold air pools in the valley (temperature inversion). For deep sky viewing, the Sonoita area is obviously superior due to it's greater distance from sources of light pollution and therefore better transparency. The seeing in the Sonoita area is certainly adequate for most deep sky observing. Had Terri and I been observing from the Empire Ranch site under identical weather conditions we may not have had to put the scope in motion to see the Horsehead Nebula.

TAAA Board of Directors Meeting - January 13, 2000

EDITOR'S NOTE: The following information are summaries of the topics discussed at the board meeting. Complete minutes of this meeting are available for review at the next monthly meeting from Ingrid Saber, TAAA Secretary.

Location: Steward Observatory Conference Room N305, University of Arizona
Call to Order: 7:17 pm
Board Members Present: John Kalas, Andrew Cooper, Ingrid Saber, Terri Lappin, Robert Callanan, Bill Lofquist
Board Members Absent: Daniel Manrique

1. Treasurer's Report - Terri Lappin distributed the financial statements for the review of the board members. Terri explained that the TIMPA Security Cage expense ($720.18) was not charged to the TIMPA Fund but was charged to the General Fund. Terri reported that the TAAA total membership reached 352 at the end of December.
2. Nominating Committee - John Kalas stated that the TAAA Bylaws require the election of a nominating committee at the February monthly meeting and that no one had volunteered. Andrew Cooper and Ingrid Saber offered to be considered for nomination. A third candidate will be sought before the February meeting.
3. Monthly Meeting Day Change - John Kalas reported that he had received no responses acknowledging hardship in attending TAAA monthly meeting due to the Jewish Federation's proposal. A few responses were received requesting consideration for a meeting date change, but the responses were too few to warrant consideration for a change. John will place an announcement in the February newsletter stating that no change will be made.

TAAA Board of Directors Meeting - January 13, 2000 (cont.)

4. TAAA Website – John Kalas has received several inquiries about the absence of the TAAA Member e-mail address listing that used to be in the old website. John acknowledged that the previous e-mail address listing also contained members' personal website addresses and therefore, may have been dropped because of the decision to delete members' personal website addresses. He proposed that the member e-mail address listing be reestablished on the TAAA website without the member's personal website addresses. Andrew Cooper, TAAA Webmaster, mentioned that he could protect the member e-mail address listing from automatic access and download. Andrew made the following motion; Replace the club e-mail address listing onto the TAAA Website using only those addresses for which the respective members have not checked the "Do Not Post" box on membership applications or renewals. The webmaster will investigate protection from automatic e-mail address scanners (robots) before posting the addresses. The motion was seconded by Robert Callanan and passed unanimously. Andrew said that he will place a notice at the top of the listing advising any member who wants their e-mail address removed from the listing to contact him.
5. TAAA E-Mail Exploder – John Kalas stated that it is his belief that the current TAAA E-mail Exploder service in Phoenix is inoperative. John requested that Andrew Cooper pursue, at his earliest convenience, establishing a new exploder service on the SEDS server where the TAAA Website resides. Andrew will approach the SEDS group and request permission to establish the exploder.
6. Telescopes For Telethon 2000: Insurance Issue – John Kalas mentioned that the T4T Committee was working with Sabino Canyon to use the site for this year's event. The TAAA has liability insurance that covers the club for just such an event as the T4T Star Party at Sabino Canyon. The question arose about whether or not our insurance would cover the other entities participating in the activity. John will report back to the T4T Committee about this concern. John mentioned that the MDA has access to liability insurance at a very reasonable rate. Any expense for liability insurance will be deducted from the proceeds of the activity's donations.
7. Reach for the Stars – Bill Lofquist reported that the first steering committee meeting held on 1/12 was a resounding success. Present at the meeting were four TAAA members, three youth representatives, and two representatives from the Pima Prevention Partnership. Bill distributed the minutes of the meeting for board review. He said that the early actions of the committee will be exploratory in nature and will start with star parties by TAAA volunteers. Bill envisions a slow evolution of small clubs developing. He will require all participating organizations to shoulder their own chaperoning, insurance, and transportation responsibilities. It was suggested that there be a more definitive, documented relationship between the TAAA and the PPP regarding this project.
8. 4th Avenue Street Fair – Terri Lappin stated that the next fair will take place March 24 – 26 and that the terms of non-profit organization participation had not changed from the last fair. The board verbally authorized Terri to submit the application on behalf of the TAAA.
9. Grant Writing Seminars – Terri Lappin reported that she had received several notices about seminars in the Tucson area. The costs for these seminars vary widely from free to $675. John Kalas recommended that the TAAA consider the free and/or reasonably priced seminars to aid in raising future funds for the TIMPA Site Project and dark sky site. Bill Lofquist mentioned that the PPP has expertise in granting writing. Terri offered to research the economical courses.
10. TAAA Schedule for 2000 – John Kalas distributed copies of a master schedule of TAAA meetings and star parties for board review. One TIMPA Star Party date was changed in November. Andrew Cooper suggested that the club post the schedule on the TAAA Website. The board members gave Andrew verbal authorization to proceed with posting the schedule on the club website.

Meeting Adjourned: 9:04 pm

Desert Skies Classified

FOR SALE: Celestron Celestar 8, 8" SCT with wedgepod, one 25mm eyepiece, and one 32mm eyepiece. Six months old, used once. ~~$1000~~. $800. Call John Newbern at 750-1558. (4/00)

FOR SALE: Meade LX 50 7" Maksutov Cassegrain on superwedge with accessories. Great planetary scope! As new,$1950. Contact Gordon Gower at 792-9690. (3/00)

FOR SALE: Tele Vue wide field 1¼" eyepieces, each in excellent condition; 24mm $110., 15mm $90. Celestron Light Pollution Rejection filters; for 2" dia. eyepiece $30., for 1¼" eyepiece $20. Contact Duane Niehaus at 290-1722. (4/00)

FOR SALE: Hard case for 10" SCT (broken fastener), $10. Contact Hazel Lawler at Arizona City (520) 466- 9845 or e-mail at lawler@cybertrails.com (4/00)

FOR SALE: 11" Celestron Starhopper Dobsonian with 2" JMI Crayford focuser. Includes Telrad base and 26 and 17mm Plossl eyepieces. Scope was used mainly for planetary work and the optics are excellent. $950. Call Frank at 825-5540 or E-mail at Fcathell@aol.com (5/00)

FOR SALE: Meade 16" Dobsonian tube and base (no optics) $50.00, 1¼" Meade focuser $40.00, 4" diagonal mirror $40.00, 6x30 Meade finder scope with bracket $35.00, 9x50 Celestron finder scope with bracket $50.00. Buy one item or whole package. Negotiable. Call Jim Brix (520) 281-8759 evenings. (5/00)

FOR SALE: Starmaster 12.5" dia. f/5.2 true truss Dobsonian with Zambuto mirror. It comes with NGF (DX1) 2-speed focuser, telrad finder and black shroud to block stray light from the mirror. Asking for $2400. Contact Ted via e-mail at CTGWC@aol.com (5/00)

SERVICE: Custom machine shop work – design and manufacture of telescopes and mountings. Fabrication of small parts or repair of existing hardware. For consultation and price quotes, call Duane Niehaus at 290-1722.

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 John Kalas at 620-6502 or e-mail at jckalas@aol.com.

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February is Members Night

Call John Kalas at 620-6502 to Request Presentation Time

Constellation Report by Chris Lancaster

Sextans

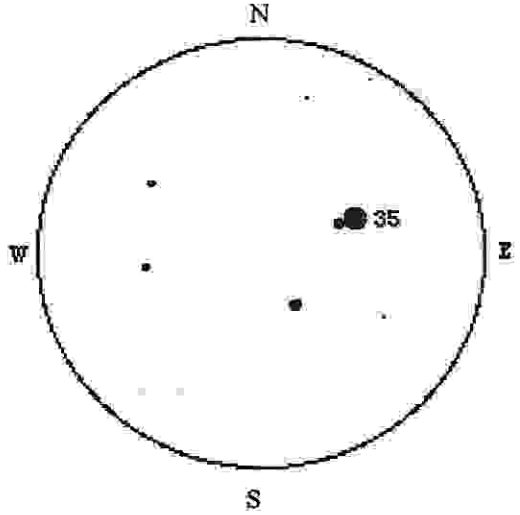
The Sextant

This is an obscure little constellation that owes its creation to Johannes Hevelius, a 17th century German-Polish astronomer who is responsible for also naming other small, dim constellations (namely Canes Venatici, Lacerta, Leo Minor, Lynx, Scutum, and Vulpecula) to fill in some rather blank areas of the sky. He named this one after his astronomical sextant, a tool which allowed him to make a detailed star atlas which was published by his wife as a posthumous work three years after Hevelius's death in 1687.

Sextans lies south of the front half of Leo, and since it contains only 4th and 5th magnitude stars, a dark sky is necessary to adequately pick out its shape. It begins to rise at 7 pm and reaches the meridian just after midnight during the month of February. The handle of the familiar sickle that shapes Leo's head and shoulders points straight to Alpha (α) Sextantis, the constellation's brightest star.

Having a careful aim is important to finding the noteworthy objects in this area of the sky since there are no easily visible landmarks nearby to help guide the way. Star hopping from Regulus to the north or Alpha Hydrae to the southwest will require sizable jaunts, but with perseverance you will find some rewarding sights.

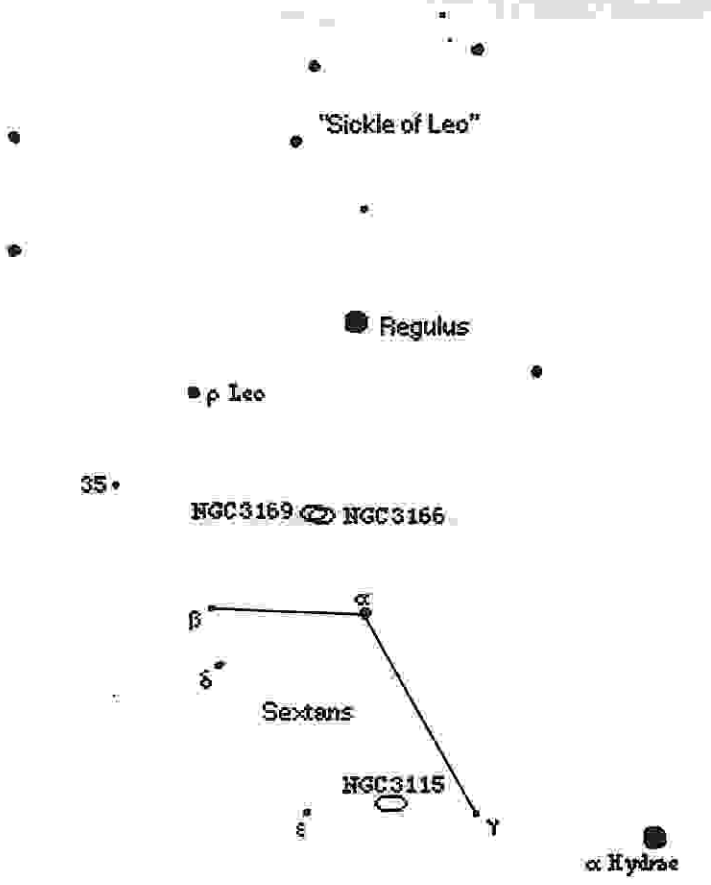
Let's start with 35 Sextantis, a double star whose components are of spectral type K3 and K0 and shine at magnitudes 6.5 and 7.5. Starting from 1st magnitude Regulus, move 6.5 degrees to the southeast to 4th magnitude Rho (ρ) Leonis, then another 2.5 degrees SSE to 5th magnitude 48 Leonis, and finally another 3 degrees to the SE to 35 Sextantis (or on your setting circles, RA 10h 43.3' Dec 4° 44.8'). Otherwise, envision 35 Sextantis forming a flat triangle with Regulus and ρ Leonis. This pair of yellowish-white stars shows a distinctive brightness contrast and separated comfortably by 6.5 seconds of arc. They form one corner of a trapezoidal pattern of four stars having a shape almost identical to that of the trapezium at the center of the Orion nebula, only on a scale that's about 21 times larger. 35 will be the brightest of the four.



35 Sextantis
Field of view is approximately 20 arc minutes

A small but bright galaxy sits in the southern environs of Sextans halfway between and just north of a line drawn from Epsilon (ε) to Gamma (γ) Sextantis. Cataloged as NGC3115 but popularly named the "Spindle Galaxy," this is a lens shaped assemblage of stars measuring 4' x 1' and glowing at magnitude 10. Its high surface brightness, which is evenly spread across its face, allows it to withstand high magnification very well. It appears as a spiral seen edge on, but there is no appearance of dust lanes or any other features of differing contrast. Gently tapering on each side from its central mass are thin extensions which barely hint at a flat disk. The Spindle is located at RA 10h 5.2' Dec -7° 43.1'.

A pair of more challenging galaxies lies farther north. When you find them, you will see both sitting side by side less than 8 arc minutes apart. This pair of 11.5 magnitude galaxies are NGC3169 and NGC3166 and appear quite similar to each other. Both have a noticeable nucleus surrounded by very faint disks covering only 4 to 5 arc minutes in their longest dimension. To track them down, start at α Sextantis and move 4 degrees north and then six minutes of RA east, or center your view at RA 10h 14' Dec +3° 26'.



Chris Lancaster

Club Schedule - Year 2000

TAAA Meetings and Club Star Parties Year 2000 Schedule

	MEETINGS		STAR PARTIES		
MONTH	MONTHLY MEETING	BOARD MEETING	EMPIRE RANCH	TIMPA	NEW MOON
January	1/7	1/13	1/1	1/8	1/6
February	2/4	2/10	2/5	1/29	2/5
March	3/3	3/9	3/4	2/26	3/6
April	4/7	4/13	4/1	*	4/4
May	5/5	5/11	4/29	4/29^	5/3
June	6/2	6/8	5/27	6/3	6/2
July	7/7	7/13	7/1	6/24	7/1
August	8/4	8/10	7/29	8/5	7/30
September	9/1	9/7	8/26	9/2	8/29
			9/23	9/30	9/27
October	10/6	10/12	10/28	10/21	10/27
November	11/3	11/9	11/25	11/18	11/25
December	12/1	12/7	12/23	12/16	12/25

* Saturday, 4/8 – Telescopes For Telethon 2000 Public Star Party

^ Saturday, 4/29 – Joint TAAA/TIMPA Activity (Flying/Observing)
Saturday, 5/6 – Public Star Party at the Desert Museum