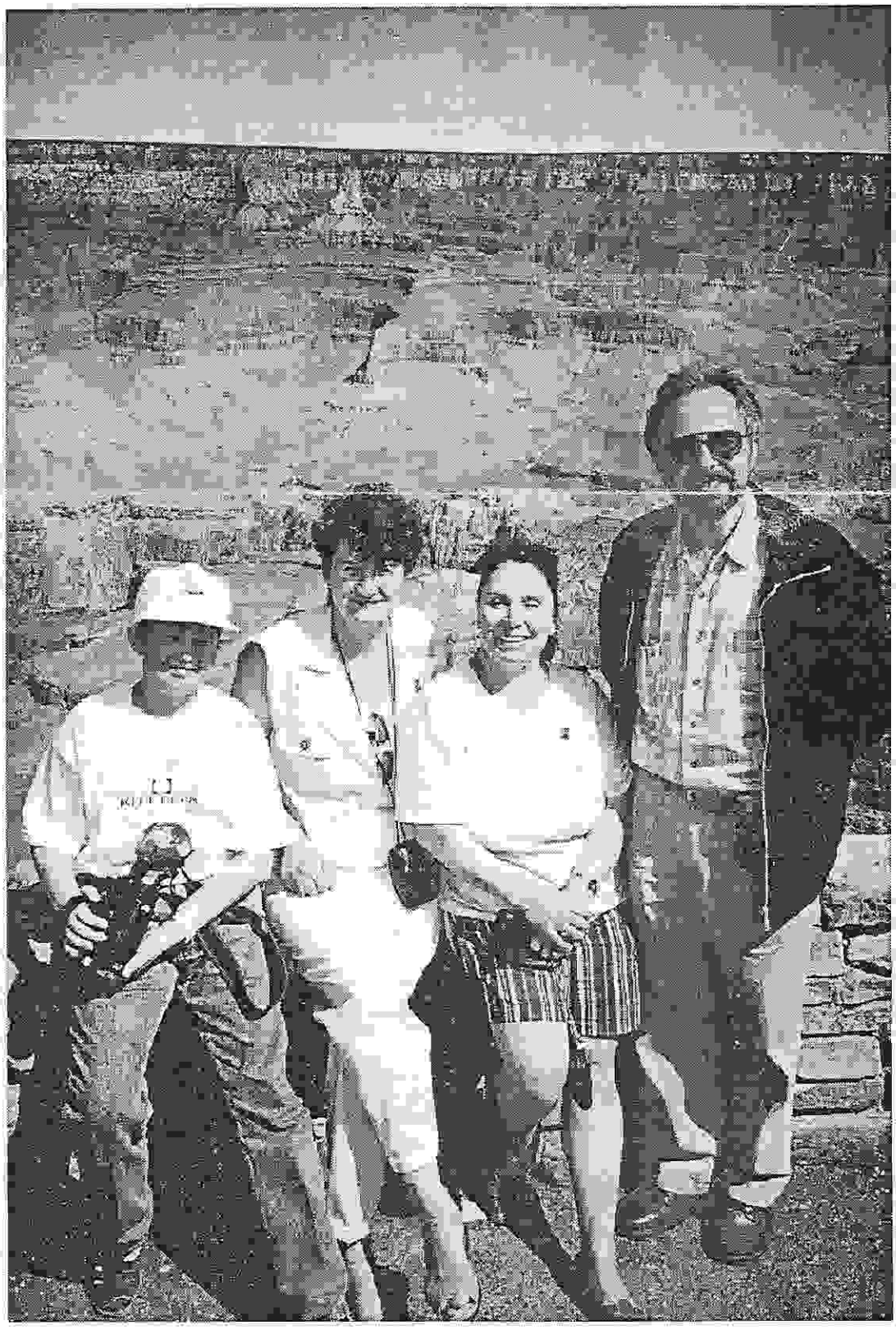
Desert Skies

Tucson Amateur Astronomy Association

Volume XLIV, Number 11 November, 1998



Calendar of Events

BEGINNERS LECTURE: ***** NOTE: THERE WILL BE NO BEGINNERS LECTURE THIS MONTH. *****

GENERAL MEETING: **Friday,** November 6, 7:30 pm at the Steward Observatory Auditorium - Room N210. In conjunction with the annual NRAO Jansky Lecture the topic is **"Radio Telescopes: Reaching for the Astronomical Frontiers."** by Dr. Bernard F. Burke. Second half presentations will follow the Jansky Lecture. See details in **Meeting Information** section.

BOARD OF DIRECTORS MEETING: **Thursday,** November 12, 7:00 pm at Steward Observatory Conference Room N305.

STAR PARTIES & EVENTS:
Nov. 13 - Salpointe High School Star Party
Nov. 14 - Whipple Observatory Star Party
Nov. 16/17 - Leonid Meteor Shower Party at TIMPA
Nov. 18 - TIMPA Site Committee Meeting (members welcome)
Nov. 20 - Girl Scout Star Party
Nov. 21 - TAAA Empire Ranch Star Party
Nov. 22 - Tucson Fun & Adventures Star Party (singles club, paid)
Nov. 22 - Pima Air & Space Museum (tentative)
Nov. 23 - Our Mother of Sorrows Elementary School Star Party
Nov. 24 - Aqua Caliente Elementary School Star Party

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

Cover: ***Thanks, Tucson and Goodbye.*** Our recent visitors from Russia pose in front of the Grand Canyon. From left to right: Andrey, Olga, Tatyana and Sergey. They are deeply grateful for the kindness and assistance they received during their visit. Photo by Dean Ketelsen.

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

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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.

Membership in the TAAA:

Regular membership	$ 23
Senior (over 60) membership	$ 21
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	$ 27
Add for Astronomy Magazine	$ 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

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. 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
3470 W. Red Bird Court
Tucson, AZ 85745

or e-mail: jckalas@aol.com

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President's Message

WOW! What a month. It started with a bang at the October monthly meeting. The presentations by two of our Russian visitors were very enjoyable. Sergey Karpov's slide talk about the history of amateur astronomy in Russia was both humorous and informative. Twelve year old Andrey Bakin gave an astounding talk on a theory that the Krasnoyarsk Astronomy Club came up with regarding the strange rotational axis of the planet Uranus. What's even more impressive is that Andrey and Sergey did the calculations for the proposal two years ago when Andrey was only ten. Our visitors expressed their gratitude for the warm welcome and outstanding hospitality they received from our club by presenting gifts to the club and various members who supported their visit to Tucson. What a great experience!

The rest of the presentations for Members Night were terrific, resulting in one of the best Members Night meetings.

The rest of the month has been very busy with many school star parties, three Kitt Peak sessions, a paid star party for Raytheon Employees at Whipple and a TIMPA Site Committee meeting. November is shaping up to be just as busy with a Leonid Meteor Shower (Storm?) party at TIMPA as a highlight. Many volunteers will be needed to cover all of the activities. Come to the November meeting and sign up to help. You'll enjoy it.

John Kalas

Meeting Information

Beginners Lecture

NOTE: THERE WILL NOT BE A BEGINNERS LECTURE AT THE NOVEMBER MEETING.

Main Lecture

Jansky Lecture
"Radio Telescopes: Reaching for the Astronomical Frontiers"
By Dr. Bernard F. Burke

The TAAA November meeting main lecture will be held in conjunction with NRAO's Jansky Lecture. TAAA club announcements and a regular second half of presentations will follow the Jansky Lecture which should end by about 9:00 pm. Please call either John Kalas at 620-6502 or Andrew Cooper at 795-3585 if you are interested in making a second half presentation. The following information was supplied by NRAO.

Associated Universities, Inc., and the National Radio Astronomy Observatory announce the award of the thirty-third Karl G. Jansky Lectureship to Professor Bernard F. Burke of the Massachusetts Institute of Technology. Dr. Burke will present the Jansky Lecture at 7:30 p.m. on Friday, November 6, in the Steward Observatory Lecture Hall (Rm N210). The Lecture, to which the public is cordially invited, is entitled "Radio Telescopes: Reaching for the Astronomical Frontiers."

Dr. Burke is the William A.M. Burden Professor of Astrophysics at the Massachusetts Institute of Technology. He has had a wide- ranging career and has made fundamental discoveries pertaining to objects as diverse as the planet Jupiter and the bending of space around massive galaxies.

Prof. Burke was a pioneer in the study of radio emission from objects in outer space. In 1954, while still in his twenties, he discovered that the planet Jupiter was producing bursts of intense radio emission, like an enormous natural radio transmitter. This discovery was an early indication that there were phenomena in the universe which produced no visible light, and could be detected only through their radio emission. The field of radio astronomy has subsequently flourished, and Prof. Burke has been associated with many exciting discoveries.

In 1989, Prof. Burke played a crucial role in the discovery of the first "Einstein Ring," a manifestation of the warping of space-time by matter that was predicted by Albert Einstein in his general theory of relativity. An Einstein Ring is a distorted image of a distant object whose light has passed through a region of warped space. This discovery confirmed a fundamental prediction of relativity, and gave a measurement of the mass of the object producing the distortion of space as well.

Prof. Burke has been President of the American Astronomical Society and a member of the National Science Board, the governing body of the National Science Foundation. He is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and a Fellow of the American Association for the Advancement of Science.

The Jansky Lectureship was established by the Trustees of Associated Universities, Inc., and was first awarded in 1966. It is named in honor of Karl G. Jansky, who in 1933 first detected cosmic radio waves from the Milky Way.

Holiday Party

Saturday, December 5th

Club News

40th Anniversary Celebrations at Kitt Peak
by John Kalas

In support of Kitt Peak's 40th anniversary, the TAAA was represented on two Saturday's (10/3 & 10/17) with two large contingents of telescopes. On the 3rd, all telescopes were positioned around the .9m Observatory (36" telescope) that was open to the visitors for visual observing. That evening proved to be quite a challenge with winds gusting all night. Observing targets were somewhat limited due to a nearly full moon. Undaunted, our member volunteers gave the crowds some great views of Jupiter and the Moon. When the session was finished at about 8:15 pm, the wind was constant at 40-50 mph.

The evening of the 17th was another story. With little wind and no moon, the sky was the limit as far as observing targets were concerned. Apprehensive about the possibility of more wind, Kitt Peak offered to allow some members to setup at the Visitors Center as well as around the .9m Observatory. The cool, crisp, clear weather exposed all deep sky objects for viewing.

Thanks to all who volunteered and special thanks to Dave Reynolds who saw to it that the TAAA members were taken care of for dinner each day. Members were invited to a hot dog barbecue on the 3rd and to the staff dining hall for sandwiches on the 17th. Thanks again for the hospitality, Dave.

Kitt Peak TAAA Picnic
By Laurel Dunlap

Coinciding with the 40th anniversary of Kitt Peak, the TAAA club picnic on the 10th had to be sandwiched between several celebrations, and scheduled events. The evening may have been shortened, due to the ~22:30 rising of the waning Gibbous Moon; but that didn't keep those serious-minded few who did attend, from catching some beautiful sights. John Kalas, with his new 5" refractor, demonstrated to the group the smooth performance of the guidance controls. The Dumbbell Nebula (M27), had a great deal of structure in his telescope, and the views of Jupiter and Saturn were excellent.

An unexpected treat was the final mirror cell assembly, and first light, of Dean Ketelsen's new 7.25" f7 reflector. Using a semicircular diffraction limited secondary mirror mount, this equatorial Newtonian outperformed any other I have seen. It's primary mirror had just been completed by Mike Spooner. The Cassini division on Saturn was beautifully obvious, and performance at remarkably high power magnification (Ask Dean for the details, I'm still amazed. Let's just say, >250X) did not have nearly as much of the usual image degradation that one might expect. Many double stars were split by Dennis Dunlap, and Dean Ketelsen. With Dean's new reflector, Σ 186 Cetus (near α Pisces and Saturn) were split at a remarkable 1.1 arcseconds!

Observations through the new scope were exceptional; in spite of the fact that the sky transparency was slightly less than optimal, for Kitt Peak. I usually judge transparency by the ability to see 5.75 magnitude Uranus without magnification. It was intermittently visible using averted vision that night, but with the assistance of Dean's 7.25" scope, the greenish disc of Uranus, was immediately recognizable as the face of my old friend.

Uranus is within the constellation of Capricorn in 1998; while 7.91 magnitude Neptune remains on the Sagittarius/Capricorn border above M75, near two 11th magnitude stars. Soon, both will not be visible until the Spring.

The evening ended early for us, when the Moon rose over the hills at the picnic grounds. As we headed for home, each of us thought this year's picnic had been one of the best ever.

Member News

We welcome the most recent members who have joined the TAAA: Andy, Chris & Rachel Barnett, Avery Davis, Dave Gilinsky, C.E. Mannix (Jr.), Jens Irwin Rossler, Victor Schneider Let's introduce ourselves and get to know each other.

Hubble Library of Electronic Picturebooks CD-ROM

I apologize to everyone who tried to pick up their Hubble CD-ROM at the October meeting (which I unfortunately didn't make). I will have them at the November meeting. If you purchased a CD, I have one waiting for you.

TIMPA Site Committee Meeting

A TIMPA Site Committee meeting was held on 10/14. Chairperson John Polacheck presided with Ingrid Saber, Patrick Price, Terri Lappin, Gary Rosenbaum, Ed Vega, Robert Callanan and John Kalas present. The discussions concentrated on the type of construction to be used for the observatory building and its projected size. Construction options reviewed included; metal or plywood sidewalls, metal or wood wall studding, wall heights, flooring materials and conventional foundation vs. piers to achieve the required building elevation. Depending on the number of telescope piers designed into the building, the size of the building could vary from 20'x20' to 20'x24'. A roll-off roof design is preferred over a dome. John Polacheck is working with some contractor acquaintances of his to try to determine rough cost estimates of some of these options. Current intention is to contract out as little of the construction tasks as possible and use club "sweat equity" to reduce the cost. Materials will be sought either by donation from supply houses or "at cost".

Although timing for the construction phase has not been established, preparation for construction is proceeding. The committee is seeking qualified TAAA members who have skills related to; concrete work, carpentry, welding, electrical and excavation and who would be willing to work on this project. If you're interested, please contact John Polacheck at a monthly meeting. Also, the committee is looking for qualified individuals to act as Construction Supervisor, Fundraising Coordinator and Materials Acquisition Coordinator.

The next TIMPA Site Committee meeting is scheduled for Wednesday, November 18th. Interested TAAA members are welcome and encouraged to attend.

Club News (cont.)

TAAA Holiday Party

Mark your calendars! This year's TAAA holiday party will held on Saturday evening December 5th at the China Rose Restaurant. Chairperson John Polacheck has arranged for menu additions of fried chicken and vegetarian plates to the Chinese cuisine. The cost for the dinner, which includes all food and non-alcoholic beverages, will be $12.00 per person. Send your checks, made payable to the TAAA, to John Polacheck, P.O. Box 85699, Tucson, AZ 85754. There is a seating capacity of approximately 100 people, so don't delay and make your reservations now. We are seeking speakers for the event, so if you would like to make a presentation or if you have any suggestions, please call John Polacheck at 743-1362.

1999 Calendars Available

Get your calendars now! The 1999 Exploring the Universe calendars, produced by the publishers of Astronomy magazine, will be sold at the November, December and January TAAA meetings. They sell for $10 each ($9 each if you purchase more than one). This wall calendar has a different astronomical image for each month. There's plenty of room for noting family events, and there are notes about what's going on in the night sky.

The 1999 Year In Space desk calendar is available from The Starry Messenger Press. This calendar, formerly known as the Astronomy & Space Weekly Calendar, features a full week on a page and a photo on the opposite side. The desk calendar sells for $13.95 each. We will not be placing a bulk order, so if you want one, call 607-277-6836, or check out their web page at
http://www.yearinspace.com/order.htm.

Reminder about Parking

Cherry Avenue is closed just south of University Blvd. Access to the Visitor's Center parking lot is from Campbell, down University and then South on Cherry. There's a bit of construction at the corner of University and Cherry, so be careful where you walk.

Some Mail Delivery Issues

Is your newsletter usually late? Generally, mail sent to 857 zip-codes is delivered in about the same time as first-class mail. The same is true of 856 zip-codes. Most other zip-coded mail is routed through Phoenix and can sometimes be delayed. If your newsletter is usually late, let the treasurer know. Maybe we can fix that problem.

If you move, please notify the treasurer as soon as you know your new address. Desert Skies is mailed at bulk rate, saving us a substantial amount of money each month. We ask for forwarding and address correction services. This service costs about $1 for each newsletter that gets forwarded. We feel this service is valuable. The alternative is for the post office to throw out the newsletter and we don't find out about the address changes. To help us save some money, please send us a note as soon as you know your new address so we can change our records, and keep your newsletter on time.

4th Avenue Street Fair

Several months ago, the TAAA submitted an application to the fair to be considered for one of the free booths that are provided to non-profit organizations via a lottery drawing. Incredibly, we were chosen again. The TAAA participated in the March 1998 street fair. This winter's fair runs from Friday, 12/11, through Sunday, 12/13. We were excited about participating again until we read the fine print on the paperwork. This time the fair administration revised the requirement for volunteer hours from a non-profit organization from 18 hours for three days to 96 hours. This would require that the TAAA supply four people for eight hours each day to perform activities supporting the street fair. Manning the booth would be over and above this effort. Terri Lappin and John Kalas decided that it was more than the TAAA could supply. It was felt that the investment in time was not worth the potential benefit. Therefore, the TAAA graciously withdrew from participation. The TAAA will consider participation in the street fair in the future, provided the volunteer hours are reasonable.

Items of Interest

Russian Visitors Take Arizona By Storm

By Dean Ketelsen

Many of you have perhaps read my notices regarding the Russian amateur astronomers who paid us a visit early this month. Some of you caught their presentation at the October meeting. I thought a quick overview of their visit might be of interest.

Four of them made the trip - down from the original 7 planned. Because of the economic crisis in Russia right now, I am amazed that the trip took place at all, but they are determined if anything. The four who made it were Sergey Karpov, their leader, Andrey Bakin, a 12 year old amateur astronomer, his mother Olgo Bakina, and Tatyana Kosenko, who is, in fact, Sergey's boss back home (both Physicists). The biggest effect of leaving some of their party back home was that they had no driver. I had offered the use of my van, but the new developments, along with the tolerance of my supervisors at work, had me acting as chief bus driver and tour guide while they were in Tucson.

After the 3 day trip, I expected them to hibernate for a couple days, but they hit the ground running and we toured the Mirror Lab just after leaving the bus station (flew into LA and took the redeye overnight bus to Tucson). Wanting to hit all the astronomy stops, we did an afternoon tour of Kitt Peak as well as the evening observing program, spent an evening as guests at Vega-Bray Observatory, toured the Whipple Observatory, and were the highlight of the October member's night. Fortunately John Polacheck stepped forward and offered them lodging for most of the nights they were in Tucson, and Eduardo Vega hosted them at his observatory one night, his house another, and made their travel arrangements to San Francisco.

Items of Interest (cont.)

Russian Visitors Take Arizona By Storm (cont.)

Before they left, however, the four of them and I make a weekend dash up to northern Arizona to visit Meteor Crater, Lowell Observatory and the Grand Canyon. This trip make a great impact on them - the Canyon is evidently not as well known over there and literally drove them to tears. Quite an emotional experience for them. It was also my first time to Meteor Crater and I was quite impressed, especially with the 50mph winds that day that limited us to unsettling views from the balcony off the visitor's center there. Sergey was adamant about hiking down, but was lucky to wander just a few yards down the path, it was so windy. Similarly, at Lowell it was quite gusty and they kept the Clark 24" closed that night, though we did see the red spot on Jupiter with their 16" Cass. The trip was closed out by a drive down Oak Creek Canyon at sunset - they burned a lot of film that weekend and continued that evening near Sedona till it was dark.

Before leaving on Tuesday the 6th, Andrey visited some 8th grade classes at a local school, visited Starizona, where they met Tom Bopp, and feasted on a chinese dinner at China Rose with their new Tucson friends. Leaving them at the shuttle stop the next morning for Phoenix to catch their plane was a sad time. They were a very friendly warm group and all of us who spent any time with them are better off for it. I'm glad some of you got to meet them at the meeting.

A side note - a few months ago, someone donated a 10 year set of Sky and Telescope magazines to the Club. They sat in my office for a while, then in my garage. Sergey just started a subscription there in Krasnoyarsk and when I offered them the collection, his eyes lit up as he worried how he would get them back home. UPS wanted over $600 for shipping (really!), so Sergey tied ropes around the two boxes, determined to carry them onto the plane and on the rest of their trip!

Rumor has it that some friends of Ed Vega's, Bill and Edwina Cherrington met them at the San Francisco airport and shuttled them around the city, including trips to Stanford University, Lick Observatory, and of course, the Golden Gate Bridge. They also helped make contacts with the Los Angeles Sidewalk Astronomers, where Bill Scott was taking care of them, last I heard. They were to leave the U.S. on 10/18 and I expect to hear from Sergey soon. Perhaps I'll have a note to pass on next month.

EDITOR'S NOTE: Dean Ketelsen deserves a tremendous amount of credit for stepping forward and taking on the responsibility of coordinating the activities for our Russian visitors. He donated substantial amounts of time and funds to help them out. John Polacheck and Ed Vega supplied meals and lodging. Glenn Nishimoto, and Ingrid Saber contributed funds to help with their expenses. Thanks to all for the assistance. I'm sure that our Russian friends will remember Tucson very fondly as they look back on their experience. And maybe they'll encourage some of their friends to visit. What do you say, Dean? I can see it now, Dean's Travel and Tours, Inc. .....Just kidding, Dean. Just kidding.

Steward Observatory Public Evening Lectures

Steward Observatory has been hosting public evening lectures in astronomy for 70 years. The lectures for the Fall 98 semester will be held on Monday nights at 7:30pm in room N210 of Steward Observatory. Following talks, there will be opportunities for viewing the night sky (weather permitting) with the use of the 21-inch telescope at the Campus Station of the Observatory operated by undergraduate majors in astronomy and related sciences. All of the lectures and the use of the telescope are free of charge and open to the public.

Fall 98 Schedule:

Nov 9 Dr. Elizabeth Green
"Hot Blue Stars in Cool Red Star Clusters"
Nov 23 Dr. Gary Schmidt
"The Incredible Magnetic Personalities of Exotic Stars"
Dec 7 Dr. Mark Giampapa
"The Solar-Stellar Connection"

1999 Messier Marathon

The TAAA received the following e-mail message regarding the date and location for the 1999 Messier Marathon:

"Mark Saturday, March 13th, on your clubs calendar of activities for the 1999 Arizona Messier Marathon. It is to be held at the Arizona City observing site owned by Ray Farnsworth. We'll have more details in a few months."

AJ Crayon & Rick Rotramel
Deep Sky Group, Saguaro Astronomy Club

Note from Whipple Observatory

The following e-mail message was received from the Whipple Observatory:

"The June 27th 1998 Star Party at Whipple will be featured in the December issue of Smithsonian Magazine. I was asked for caption information for two photos: One shows Jim Trexler unloading his 25-inch, with the edge of the MMT bldg in the background. The other is a time-exposure of the telescopes along the wall on the west side of the parking lot. Several Dobs and a mounted binocular are easily seen, as is the Nogales sky glow. Tell the members to look for the article."

Thank you,
Dan Brocious

Don't Forget the Holiday Party

Dark Skies for November 1998

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	3:37 - 5:18	Tu/We	10/11	18:51 - 0:05	Sa/Su	21/22	19:37 - 5:34
			We/Th	11/12	18:50 - 1:01			
Su/Mo	1/ 2	4:45 - 5:19	Th/Fr	12/13	18:50 - 1:55	Su/Mo	22/23	20:27 - 5:34
Mo/Tu	2/ 3	- - -	Fr/Sa	13/14	18:49 - 2:49	Mo/Tu	23/24	21:21 - 5:35
Tu/We	3/ 4	Full Moon	Sa/Su	14/15	18:49 - 3:42	Tu/We	24/25	22:17 - 5:36
We/Th	4/ 5	- - -				We/Th	25/26	23:16 - 5:37
Th/Fr	5/ 6	18:54 - 19:17	Su/Mo	15/16	18:48 - 4:34	Th/Fr	26/27	0:17 - 5:37
Fr/Sa	6/ 7	18:53 - 20:11	Mo/Tu	16/17	18:48 - 5:27	Fr/Sa	27/28	1:20 - 5:38
Sa/Su	7/ 8	18:52 - 21:09	Tu/We	17/18	18:48 - 5:31	Sa/Su	28/29	2:24 - 5:39
			We/Th	18/19	18:47 - 5:31			
Su/Mo	8/ 9	18:52 - 22:08	Th/Fr	19/20	18:47 - 5:32	Su/Mo	29/30	3:31 - 5:40
Mo/Tu	9/10	18:51 - 23:07	Fr/Sa	20/21	18:51 - 5:33	Mo/Tu	30/ 1	4:39 - 5:40

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn		
Sa/Su	Set	Rise	Set	Vi	Set	Vi	Rise	Vi	Set	Vi	Set	Vi	Vi=Visibility
31/ 1	17:33	6:39	18:30	6	17:36	-	2:26	2	2:48	-3	5:58	0	-3 brilliant
7/ 8	17:27	6:45	18:34	5	17:35	-	2:18	2	2:19	-3	5:28	0	0 conspicuous
14/15	17:22	6:51	18:33	5	17:36	-	2:09	2	1:51	-3	4:58	0	3 moderate
21/22	17:19	6:57	18:20	7	17:39	9	2:00	2	1:24	-2	4:29	0	6 naked eye limit
28/29	17:17	7:03	17:40	-	17:44	7	1:51	2	0:58	-2	3:59	0	9 binoculars limit

By Erich Karkoschka

Star Parties & Events

Salpointe High School Star Party
November 13 (Friday)

For a freshman astronomy class, 4 telescopes are needed to cover 30 – 40 people. Set-up at 6:00 pm with observing to start at 6:30 pm. Salpointe H.S. is located at 1545 E. Copper St near Grant and Campbell. Take Grant Rd. west past Campbell Ave. and turn right (north) on Mountain Ave. Go past Copper St. and turn right into the main entrance to the rear of the school. Set up telescopes on the football field. Andrew Cooper is the Star Party Leader for this event (Home phone 795-3585).

Whipple Observatory Star Party
November 14 (Saturday)

Open House and Star Party
"Look For The Leonids!"
Free and open to the public

The Whipple Observatory will present an Open House and Star Party on Saturday, November 14. Observing will begin about 6 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association and Sonora Astronomical Society.

3 p.m. Visitors Center open
Meteor specimens, etc. on display.
5 p.m. Informal lecture on meteors and meteor showers by Observatory staff

Dress for cool evening temperatures. Small flashlights and binoculars are useful to bring. Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA members and their telescopes. In case of threatening weather, call 670-5707 after 3 p.m. on the 14th for information about star party cancellation.

How To Find The Observatory Offices

The administrative complex for the Fred Lawrence Whipple Observatory is 43 road miles south of Tucson and 38 road miles north of Nogales, Arizona. From Tucson, drive south on Interstate 19 to exit 56 (Canoa). At the bottom of the exit ramp, turn left and drive under the freeway to the frontage road on the east side. Turn right and drive south three miles to Elephant Head Road. Turn left and drive east, crossing the Santa Cruz River on Elephant Head Bridge. One mile east of the river, turn right on Mount Hopkins Road. Drive southeast about seven miles to the Observatory Office (end of pavement).

TAAA Leonid Meteor Shower Party at TIMPA
November 16/17 (Monday evening - Tuesday morning)

John Polacheck has received permission for the TAAA to use the TIMPA site for observing the Leonid Meteor Shower. Reports suggest that this shower could be the best this year with a potential for a storm. The best opportunity for viewing the peak activity is late on Monday, 11/16, evening into the morning of Tuesday, 11/17. Plan to arrive by 7:00 pm and bring chaise lounges or cots to recline for ease of observing the entire sky. Dress warmly. For those who would like to capture the event on film, bring a 35mm camera with a wide-angle lens, fast slide or print film and a tripod. Telescopes are not needed. If you don't plan to stay through to Tuesday morning, Park at the west end of the parking lot or along the entry drive with your car facing to leave. In case of bad weather the event will shift one day later to the 17th /18th.

Star Parties & Events (cont.)

TIMPA Site Committee Meeting
November 18 (Wednesday)

7:00 pm in Steward Observatory Conference Room N305 at the UofA. All interested parties are invited.

Girl Scouts Star Party
November 20 (Friday)

Details are pending due to last minute changes and will be available at the November meeting.

TAAA Empire Ranch Star Party
November 21 (Saturday)

The Empire Ranch has been our normal observing site for quite a number of years. Empire Ranch is at about 4000 feet, so be prepared for cooler temperatures and arrive soon after sunset. Stay as long as you like, but let everyone know when you ready to leave. Someone may be taking astrophotos. Bring a telescope if you have one, but you don't have to have one to attend. Most of us would be glad to let you look through our telescope. There are no 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 sharing of equipment always goes on at our star parties. If you haven't attend a party yet, you're missing the best part of belonging to the TAAA.

Tucson Fun & Adventures Star Party
November 22 (Sunday)

This is a paid star party for a singles club. Approx. 20-30 people are expected. All of you single members; here's your chance. The event will be held at the Pusch Ridge Stables. We need a 20-30 minute slide presentation and 4 to 5 scopes. Slide presentation starts at 5:45 pm and observing at 6:15 pm to 8:00 pm. Pusch Ridge Stables is located at 13700 N. Oracle Road. Take Oracle Road nine miles north of Ina Road. Turn right (east) immediately at mile post 84. Go approx. ¼ mile toward the mountains and follow the signs along the dirt road. We need a Star Party Leader for this event. Any volunteers? Call John Kalas at 620-6502.

Pima Air & Space Museum Star Party
November 22 (Sunday)

Pima Air & Space Museum is planning an evening outing for their staff and volunteers. Four to five telescopes will be needed. Set-up at 6:00 pm with viewing from 6:30 to 9:00 pm. We need a Star Party Leader for this event. Any volunteers? Call John Kalas at 620-6502.

Our Mother of Sorrows Elem. School Star Party
November 23 (Monday)

This star party will be for the whole school, kindergarten through 8th grade, and will require 5-7 telescopes. 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. The school has requested a "telescope clinic" to start at 5:30 pm for TAAA members to help students with their telescope problems. Set-up will be at 6:00 pm with observing at 6:30 pm. The event will end by 8:30 pm. The Star Party Leader for this event is Nick Applegate (Home phone 886-1801).

Aqua Caliente Elementary School Star Party
November 24 (Tuesday)

Another whole school star party but with benefits. Pizza will be served to all TAAA volunteers at 5:30 pm. Set-up at 6:00 pm with observing at 6:15 pm. and ending by 8:00 pm. Five to seven telescopes will be needed. The school is located at 11420 E. Limberlost. Take Tanque Verde to Catalina Highway. Left (north) on Catalina Hwy. to Prince Rd. Right (east) on Prince Rd., past Houghton and Wendell, to Melpomene. You have to turn left (north) onto Melpomene. Go past Roger and the entrance to the soccer field is on the left. Set up at the north end of the field. Karen Allen is the Star Party Leader for this event (Home phone 749-5744).

Members' Forum

Chiricahua Astrophoto Star Party
By Steve Peterson

The following synopsis includes an excerpt from an email I previously sent to Dean Ketelsen summarizing the October 16-18 star-party at the Echo Canyon parking lot in the Chiricahua National Monument. I thought you all might be interested. It was attended by Dean Ketelsen, Roger MacLaren, Jim Riddle, Roger Tanner, John Nuechterlein, Larry Ross, Ray and Tanna Rhine and myself.

Dean Ketelsen brought two exquisite Newtonian telescopes; an 11" and a 7.25". The two were strapped together and mounted on a Losmandy G-11 Equatorial Mounting. Dean delighted those present with clear, high-powered views of Saturn and Jupiter. High winds precluded Dean from taking guided astrophotos. Dean left late Friday night to sack-out in Willcox before traveling to the "All-Arizona" Star Party in Arizona City near Casa Grande.

Jim Riddle brought his Meade ETX 90mm f/15 Maksutov. Ray Rhine and his wife Tanna brought their 8" f/8 Newtonian on a "Bigfoot" mount. They also shared the much-appreciated comfort of their motorhome and fresh-brewed coffee!

Roger MacLaren and I brought my Takahashi Epsilon f/3.3 160 Astrograph, 300mm f/2.8 Canon Fluorite Telephoto Lens and Camera, guide telescope, C-8 OTA, ST-4 autoguider, Losmandy G-11 Equatorial Mount and 16" Dobsonian Telescope.

Members' Forum (cont.)

Chiricahua Astrophoto Star Party (cont.)

Friday night was clear, cold and blustery; with gusting winds aggravating my attempts to guide the Takahashi Astrograph. The winds calmed shortly before moonrise Saturday morning. The skies remained clear all night. Roger MacLaren and I packed up, traveled back to Willcox, and zonked out at the Motel-6 by 7:00 A.M.

We arrived back at Echo Canyon at about 5:30 P.M. Saturday afternoon and set up the 16" Dob and my G-11 rig. I fitted the G-11 with the Canon 300mm f/2.8 Fluorite Telephoto and an 80 mm f/11 refractor guidescope side-by-side, and attached the ST-4. I still had problems calibrating the ST-4. A couple of campers stopped by to look through the telescopes, and mentioned that there were some "telescope guys" set up at Massai Point. One of them drove me there, where I met Peter Ceravolo and a couple of his associates. Peter mentioned that he expected to meet Dean Ketelsen at Massai Point, and was disappointed he missed him. After a brief discussion with our Canadian friends, I described my difficulties with getting the ST-4 to calibrate with the G-11 mount. They gave me some pointers, and after some fine tweaks with Roger Tanner's assistance I was finally able to calibrate the drive! A worthwhile encounter! Roger Tanner did not setup his equipment, and left after visiting for a couple of hours to continue his trip to Okie-Tex (and bad weather).

I shot the Lagoon and Trifid, the Orion region, North American, Wolfhead and Pelican Nebula. The ST-4 and drive performed flawlessly. The night was crystal clear and cold with light and variable winds. A beautiful and memorable night! I got about 6 frames Friday night, and 20 frames Saturday night. The conditions were so good that I was able to resolve Saturn's Cassini division during brief moments of good seeing with my 80mm refractor at 225X! I discovered after I got back home Sunday afternoon that the secondary spider on the 16" was missing one of its acorn nut fasteners, and the remaining ones were loose. This accounted for the wobbly, wind-blown (and uncollimated) images. It sure pays to thoroughly check out your gear before charging off into the boonies! I'll remember that next time!

I'm pretty hooked on the Chiricahuas...it doesn't get much better than this! Thanks to all for your contribution in making this a memorable trip!

Mirror Reflections: Happenings related to a mirror

By Hazel Lawler

In February this year I was fortunate to acquire a 20 inch Dobsonian telescope. The views were extraordinary, crisp and clear. On one morning, shortly after I got the scope, we decided to wheel the scope out of my roll top building. During this move, suddenly and I say suddenly, the whole base rolled off the bearings and the mirror slid out onto the ground! What a feeling (for me)!!!!!! Unfortunately, it was the good side of the mirror face down. Due to our ignorance, we had put the wheels on the wrong end. I now have arrows marking the right spots. The consequence of this mishap was new enhanced coatings.

Last Summer (July) we traveled north and camped on a beautiful lake in the lower Sawtooth Mountains when a strong wind out of no where came and ripped our awning off the trailer. Luckily my scope was still in the truck. The next day I set my scope up and was anticipating having 2 weeks of good observing. A few other campers were scattered about the campground, but they retired early. The second night there, I was preparing to observe and strolled over to my scope and casually glanced down the tube and to my horror I discovered a kitten crawling up from inside!!!!! Controlling my urge to scream out loud (very hard to do), I gently called "kitty, kitty, kitty" and the kitten crawled up to me and I placed him away from my area. Two minutes later the kitten was climbing my ladder. The kitten's owner told me "what did I expect?, a cat is a predator!" Now, not only is my mirror dusty, it has little paw marks and slide areas too. But thank goodness the viewing was still good.

Some time later in August while visiting my son in Montana we decided to wash the mirror. I have always tried to be very careful and guard my mirror, so we proceeded to clean it by using a child's swimming pool, a water hose and distilled water. After washing it, we placed it on the truck tail-gate for inspection. And then it happened! All in Slow-w-w motion-n-n !!! Out of the corner of my eyes I saw something hurtling through the air. My son's dog was leaping over the mirror into the back of the truck! My mind screamed "No–No--No–"!, but it happened anyway!!!!!!! The dog's paw hit one side of the mirror!!!!!!!!

I now have a mirror with a dog's signature on one side. Through all these horrific events I have kept my sanity (?), but I never, never say "What more could happen?" C'est la Vie. How was your summer?

TAAA Board of Directors Meeting - October 8, 1998

Location: Steward Observatory Conference Room N305, University of Arizona
Call to Order: 7:00 pm
Board Members Present: John Kalas, Andrew Cooper, Ingrid Saber, Terri Lappin, Bill Lofquist
Board Members Absent: John Polacheck, Dave Reynolds
Guest: JJ. Ruther of Buehler Capital Management

1. Events
   - Nov. 6 – TAAA Monthly Meeting, no Beginners Lecture, joint Jansky Lecture and TAAA meeting.
   - Nov. 12 – TAAA Board of Directors meeting
   - Nov. 13 – Salpointe High School Star Party
   - Nov. 14 – Whipple Observatory Star Party

TAAA Board of Directors Meeting - October 8, 1998 (cont.)

- Nov. 16/17 – Leonid Meteor Storm Party at TIMPA
- Nov. 20 – Girl Scout Star Party
- Nov. 21 – TAAA Empire Ranch Star Party
- Nov. 22 – Tucson Fun & Adventures Star Party (singles club - paid)
- Nov. 23 – Our Mother of Sorrows Elementary School Star Party
- Nov. 24 – Aqua Caliente Elementary School Star Party

2. Investment Survey and Current Risk – J.J. Ruther of Buehler Capital Management led the board through a risk assessment survey. The purpose of the survey is to ensure that the investment advisor understands the TAAA's financial objectives and risk tolerance. A copy of the filled-out survey is available for review at the monthly meeting. Terri Lappin advised that she had not received the monthly statements for August or September. J.J. Ruther promised to mail them to her immediately.
3. Treasurer's Report – The monthly financial reports were circulated, reviewed and unanimously accepted. Copies of the reports are available for review at the monthly meeting. Terri mentioned that the sale of 45 out of 50 Exploring the Universe calendars last year generated $220. for the club. The five unsold calendars were returned for a full refund. We will order 50 more calendars for this year. Terri reviewed the annual report forms for the State of Arizona Corporation Commission and circulated them for the appropriate signatures.
4. Student Membership Proposal - John Kalas explained that there was several inquiries from college students over the past two months about a reduced cost membership to the TAAA. John thought that such a level of membership would be beneficial. The fee for such a membership would have to be enough to cover the cost of the newsletter and other club expenses. Concern was expressed that regular members might try to switch over to the new membership category so conditions would have to be established which would preclude this from happening. John suggested that the new level of membership would not have voting rights and recommended a fee of $15.00. Further discussion of the issue was tabled to the next board meeting.
5. TAAA Holiday Party - John Kalas announced that Holiday Party Chairperson, John Polacheck, had reserved the China Rose restaurant for the evening of Saturday, December 5th. The menu has been changed to add fried chicken and vegetarian plates this year.
6. Club Telephone Number – Currently, Dean and Vicki Ketelsen generously offer the use of their home phone as the official TAAA telephone number. Their number is printed in all TAAA literature. Last month, John Kalas recommended that the club research the services available. Andrew Cooper investigated many local telephone services companies to determine the services offered vs. cost. There is a wide range of services and prices. One interesting service costs $15.00 per month with adequate capabilities. The topic was tabled for continuation of discussion at the next board meeting.
7. 4th Avenue Street Fair – Several months ago, the TAAA submitted an application to the fair to be considered for one of the free booths that are provided to non-profit organizations via a lottery drawing. Incredibly, we were chosen again. The TAAA participated in the March 1998 street fair. This winter's fair runs from Friday, 12/11, through Sunday, 12/13. An overall coordinator would be required as well as daily leaders. (Editor's Note: See the update in the Club News section)
8. Free Newsletter Listing Review – Tabled until the next board meeting.

Meeting Adjournment: 9:35 pm
Respectfully submitted, Ingrid Saber, TAAA Secretary

Desert Skies Classified

FOR SALE: Besseler Dichroic Enlarger with Gray Lab timer and power supply. Includes two lenses and 35mm slide holder. All for $350. Also other darkroom items. Call Duane Neihaus at 529-7767 for details. (12/98)

FOR SALE: C5+, tripod, acc'y tray, Telrad, Dec motor, hand controller, JMI Moto-Focus, Celestron Advanced AstroMaster computer, 26 mm Plossl. Like new, used twice. $1850. On display at Starizona - 5201 N. Oracle Rd 292-5010 or call Dave Reynolds 579-2231 evenings. (11/98)

FOR SALE: 6" f/8 Newtonian reflector tube assembly with finder. $295. WWII vintage Elbow telescope (M75C) with crosshair reticle and dial-in filters (neutral, red and amber). Easily adapted to a camera tripod. Excellent condition, $125. Call Duane Niehaus at 529-7767. (12/98)

FOR SALE: **Omega D5XL** 4x5 enlarger, condenser and **Arista** cold light heads, 4- negative carriers, reduction gear microfocuser $560.00; **Bowens Illumitran** 35mm slide duplicator $240.00 obo; **Rodenstock Rodagon** 150mm enlarging lens $200.00, **Schneider** 80mm and 50mm enlarging lenses $120.00 ea. **Omega** and **Saunders** easels, Digital and Analog **Gralab** timers, trays, etc. Call **Steve Peterson** @ 794-2323 (W), 326-5303 (H), digital pager: 446-2731, or e-mail : swpeterson@theriver.com (12/98)

WILL TRADE: A complete 10" F5.9 Newtonian mounted on an 4" pipe part mount (equatorial), 3" eyepiece mount, HD fiberglass tube, comes apart in three sections, with the top one spinable, Novak curved vane spider. Real beefy telescope, will deliver anywhere in the Tucson area. Trade for a good 16, 17 or 18 inch mirror or complete DOB. Call James Miller (520) 751-4961 (1/99)

FOR SALE: 6" Celestron Star Hopper dobsonian telescope, new condition, includes 3 eyepieces (7.5mm, 12mm & 22mm), 2X barlow, all for $350.00. Call Eric Schilling at 323-8435 (H). (2/99)

FOR SALE: 5 ½", f/15 folded refractor with mounting. Worm gear drive on polar axis, tangent arm slow motion on dec. axis. Prize winner at both Riverside and Stellafane. Easily transportable. Can be used with binocular eyepiece holder and matched Clave plossl eyepieces which are available for separate sale. Telescope and mounting only, $1500. For private demonstration or for more info call Duane Niehaus at (520) 529-7767. (2/99)

FOR SALE: 5", f/4 rich field Newtonian reflector with very solid and vibration free fork mounting and tripod. Byers worm gear drive on polar axis, tangent arm slow motion on dec. axis. Superb diffraction limited optics. Scope won merit award at Riverside and award for optical quality and mechanical excellence at Stellafane. Asking $1200, but will consider all reasonable offers. For private demonstration or for more info call Duane Niehaus at (520) 529-7767. (2/99)

FOR SALE: 11x80 Swift Observer Binoculars, Model No. 845, field of view: 236 ft. at 1000 yds., new, complete with tripod. Price negotiable. Call Ann Hilemn at 577-9125 (H) or e-mail at: ahilemn@azstarnet.com

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.

Late Breaking News !!!

EDITOR'S NOTE:

This e-mail transmission came in just before the newsletter went to copy. We were hoping to hear from our Russian friends and the timing couldn't have been better. I took the liberty of guessing the meaning of one of Sergey's words and placing it in (parenthesis) after his word. Enjoy!

Date: 98-10-26 05:32:40 EST
From: karpov@guno.cross.krasnoyarsk.su (Karpov S.)
To: jckalas@aol.com

John,

Several days ago we have returned to Krasnoyarsk. Our 3 weeks in USA flew by imperceptibly. So far our trip seems to me incredible and it is difficult to believe that all it was in reality, not in dreams.

In SF we have been met by very nice retired couple - Edwina and Bill Cherrington recommended by E. Vega - they made for us an excellent program in the city - the tour to look around all sightseeing of SF and tour to Lick Observatory. Everything was settled dawn (down) here more then successful. Only we could not get a chance to look through 36" refractor. One day we spend in Exploratorium with the president of the SFAA, Allan Stern (as it turned out I contacted him 1/2 years ago), he arranged for us a visit to Morrison Planetarium where we met people who observed the solar eclipse in Siberia in 1997 at the same site we did. We stayed in inexpensive hotel Sonoma near dawn-town (downtown). From SF we got to LA by bus - this was very educational travel for us. In LA we have been met by Bill Scott - from "LA Amateur Astronomers". He hosted us in the apartment of Vedanta Society for low cost. It is Edwina asked him to help us and he did all that in his power to arrange our program in spite of he is very busy. I called Mike Kendall and other (about 10) members of LAAA - only one of them - Bob Alborzian agreed to help with transportation - all people in LA are very busy. That's why I especially appreciate any assistance we could get here. With Bob we visited Griffith Observatory with show in planetarium and observation through 300-mm Zeiss refractor - it was the best (most steady) image I ever saw with finest details on Saturn.

We met in LA Gil Clark - he is a coordinator of educational program from Wilson Observatory. He arranged for us an excellent tour to Mt. Wilson and next day to JPL in Pasadena. Bill Scott drove us to Palomar Observatory and find in observatory someone who could show us around. We were allowed even to come inside the dome of 200" telescope to take photos (other visitors were standing behind the glass). Lots of impressions! In the end of week we visited Disneyland and Science center. We lived in Hollywood area in LA and it was very easy to get to Hollywood Blvd. with its famous sightseeing and movie-stars's stars on the sidewalks. In the last day we took part in the first in history joint American-Russian star party (17 miles to North from LA) with observation through large home-made Dobsonians up to 17". Everywhere we met very kind people who were ready to help us to share emotions and any important information from amateur practice. We are overwhelming by hospitality of people especially in Tucson. Lots of thanks for our wonderful, unforgettable trip.

With best wishes to you and your wife, and with hopes for future mutually beneficial cooperation,

Sergey, Andrey, Olga, Tatyana

Best wishes to all members of the TAAA who helped to make our trip great!

Constellation Report

Lepus, the Hare

The winter skies are dominated by many attention grabbing constellations which are home to some very bright stars and star clusters. But lying below Orion, which is arguably guilty of stealing the most limelight, is a rather unimposing constellation by the name of Lepus. This collection of stars represents a rabbit or a hare, and its location here is significant for two reasons. Firstly, consider that Orion has been seen as the Sun god, and the hare has been connected to the moon by the fact that many cultures have seen the shape of a hare in the patterns formed by the lunar maria. Therefore, just as the sun chases the moon across the sky, Orion acts as the hunter, and Lepus is his prey, having been snared and lying at Orion's feet. Secondly, hares also serve as prey for eagles, so being afraid of Aquila, the eagle, Lepus is seen safely rising in the east as Aquila sets out of sight in the west.

To begin your observation of Lepus, look for the globular cluster M79. Among the globulars in Messier's catalog, M79 is one of the smaller ones similar to M70 and M54 in Sagittarius and M72 in Aquarius, but judging it on its own merits makes it a wonderful sight in any telescope. Glowing at magnitude 8.3, you'll see it at RA 5h 24.2' Dec -24° 31', or 3.8 degrees south and 4 minutes west of Beta (β) Leporis. Use medium to high power to see this globular the best.

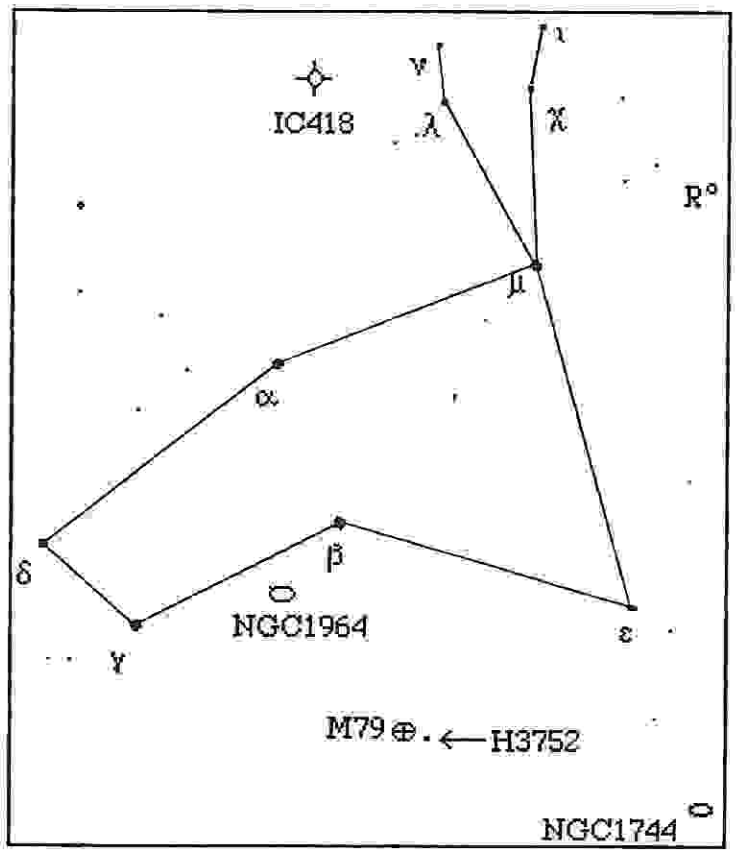
While you're in the neighborhood, slide about 2/3 of a degree to the southwest to a star designated Herschel 3752. At low power, this will appear as a double star with a wide separation of 59", but looking more closely with a high power eyepiece will turn this binary into a triple system. Its components are of magnitudes 5.5, 6.4, and 9.0 with the closer pair only 3" apart. They sit in almost a straight line with PA's of 97° and 106° with respect to the primary.

Tucked near the northwest corner of Lepus is a rare, high mass star in the late stages of evolution which falls outside of the mainstream stellar categories. Designated R Leporis, it is a type of star called a carbon star, so termed because it uses carbon as a catalyst for its nuclear reactions instead of the simpler proton-proton mechanisms used by lower mass stars. Like the Garnet Star in Cepheus, R Leporis has a similar name, the Crimson Star, due to its red color. It is actually a variable star swinging between magnitudes 5.5 and 10.5, and the richness of its color likewise varies. While at its dimmest, its redness stands out like a neon bulb, but near its brightest, it is more coppery. When looking at R Leporis, you can simply enjoy its appearance, or contemplate the unusual nuclear activity taking place inside as a last ditch effort to keep the star shining.

For those wishing challenges, Lepus offers IC418, a very small 11th magnitude planetary nebula at RA 5h 27.8', Dec -12° 31.1', or start at Nu (ν) Leporis and move south 1/3 of a degree and then east 8 minutes. At 120x through an 8-inch scope, I was just able to see this nebula as a fuzzy disk compared to the surrounding stars. With decent surface brightness, this nebula can be seen fairly easily with sufficient magnification.

NGC1964 and NGC1744 are two faint galaxies that can be elusive depending on seeing conditions and the type of telescope used. NGC1964, at magnitude 11.6, is the brighter of the two and can be found at RA 5h 33', Dec -21 52', or 1.2 degrees south and 5 minutes east of Beta (β) Leporis. NGC1744 resides at RA 5h 00', Dec -26° 05' or 3.6 degrees south and 6 minutes west of Epsilon (ε) Leporis. Both of these galaxies don't appear much more than dim, oval smudges, but some satisfaction results from finding them.

by Chris Lancaster



Observing Reports

AN AQUARIUS WATER JAR BINARY

During November as the Milky Way departs to the west, we peer into a section of the autumnal skies that is rather dim, and devoid of stars. This region of the heavens is full of constellations with a watery theme. We see Capricornus the Sea Goat, Pisces the Fishes, Cetus the Whale, and Aquarius the Water Carrier. In Aquarius to the west of the bright planet Jupiter you will notice a Y-shaped pattern of stars. This asterism of the four stars, Gamma (γ), Eta (η), Pi (π), and Zeta (ζ) Aquarii is aptly termed the "Water Jar". Located at the intersection of this Y is the very fine binary star system of ζ Aquarii.

In the late 1700's during Sir William Herschel's time ζ Aquarii was a nice double star to resolve with a small telescope. Christian Mayer was the first to report the duo nature of ζ Aquarii. It's separation at the time of discovery was a comfortable 4½", a rather easy split for a modest 50mm refractor under average seeing conditions. Since Sir W. Herschel's first measurement in 1781, this pair has become a difficult binary to resolve with small instruments. Since the mid-1950's it has remained under 2". Now in the late 1990's it is starting to open up again. It will continue to widen throughout the next several centuries, making it an easy object once again for future observers. Periastron passage occurred in 1968, and this pair should reach a maximum separation of 6½" during the mid 23rd century. Apastron should occur by 2348. The orbital period seems to take about 7½ centuries to complete.

The current separation is 2".1 at a P.A. of 192°. I can now see two merging Airy disks in my 60mm refractor at 100x. For many years it appeared as only an elongated image with this instrument. If you want to be able to cleanly resolve this pair try using 100mm to 150mm telescopes with magnifications of 150x to 200x.

Zeta Aquarii consists of two subgiant stars, both with identical spectra of F2IV. Their individual magnitudes are quite evenly matched at 4.3 and 4.5. They have diameters of about 2 suns each, and a combined luminosity of about 15 suns. Zeta Aquarii B has an astrometric companion also. In the early 1940's K. Strand noticed that ζ Aquarii B wobbled in it's orbit around ζ Aquarii A, in a cycle of 25½ years. This unseen companion is a red dwarf star of magnitude 11. At maximum separation it appears 0".4 or 11 A.U. away from ζ Aquarii B. The total mass of the entire system is equal to 3½ suns. Distance to this binary system is about 90 light years.

Locating ζ Aquarii is quite easy, using Jupiter as a guide move 15° northwest to the Water Jar, or use these coordinates for epoch 2000, R.A. 22h 28m 50.0s Dec. -00° 01' 12". So after observing Jupiter keep your high power eyepiece near and why not slip over and take a peek at this wonderful close binary system.

by Jeff Brydges