Desert Skies

Tucson Amateur Astronomy Association

Volume LI, Number 4 April, 2005

John Dobson visits Tucson

Cover Photo: The inventor of the Dobsonian telescope mount, and founder of Sidewalk Astronomy, signs telescopes and meets fellow astronomers. Photos by Thom Peck.

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Membership in the TAAA

Annual Dues

Individual membership	$ 25.00
Family	$ 30.00
Senior (over 60) membership	$ 23.00
Senior Family (at least one over 60)	$ 28.00
Student membership (over 18 years old)	$ 17.00

Family Membership includes two adults plus minor children. Persons under 18 may join at a special Reduced Family Membership rate ($17/yr) upon parental or guardian acknowledgement of participation in TAAA activities. Call the Treasurer to request the required form.

Options (add to above membership rates)

Tucson soc. of the Astronomical League (TAL)	$ 5.00
Sky & Telescope Magazine 1 year rate	$ 32.95
Astronomy Magazine 1 year rate	$ 29.00
2 year rate	$ 55.00
Postage for New Member Pack	$ 3.85

Donations are accepted for the following funds: SA-IDA/Light Pollution, TIMPA, Education, 30" Telescope & Land, and General/Undesignated.

Renewal Information

- Your membership expires as indicated on your mailing label.
- TAAA members may join the Tucson society of the Astronomical League (TAL) at the time they join or renew.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Rates are given above. Allow 3 months for processing. Subscriptions must be sent through the TAAA. *Do not send money directly to the magazines.* To change an individual subscription to the group rate, pay the subscription amount to the TAAA treasurer. Include your magazine renewal notice.
- Please include a note explaining what you are paying for. Credit cards are not accepted. Write one check or money order for dues plus any options or donations. Make it payable to TAAA and send to:

Tucson Amateur Astronomy Association
PO BOX 41254 Tucson, AZ 85717

Mailing Address or Email Changes - Send to address above or email the treasurer.

TAAA Mission Statement - The mission of the Tucson Amateur Astronomy Association is to provide opportunities for members and the public to share the joy and excitement of astronomy through observing, education and fun.

Desert Skies Publishing Guidelines - All articles, announcements, news, etc. must be submitted by the newsletter deadline. Materials received after that date will appear in the next issue. The editor retains all submissions unless prior arrangements are made. Partial page submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full-page articles, artwork, and photos can be submitted camera ready. We will not publish slanderous or libelous material! Send submissions to:

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President's Message

We're into one of the best times of the year for star parties. Not only do we have a backlog of school star parties, we have the Arizona Sonora Desert Museum Public Star Party, the Telescopes for Telethon Wal-Mart Star Parties (at which Wal-Mart will double any donations received), and the main T4T event on the University of Arizona Mall, all this month. Please help out in any way you can, especially for the school kids.

Next month, the TAAA has elections for Board of Directors officers for the next term, which starts on June 1. Please check the TAAA constitution Articles III and IV for Board of Directors election particulars and Constitution Amendments.

And finally, I trust that everyone who wanted to do the Messier Marathon had a good sky. Many of us were at George Barber's place on March 12--not so much for a marathon as for a celebration of good skies and good friends getting together with common interests. And that's what is great about being in an astronomy club. This is such a wonderful hobby and I want to say thanks to all the volunteers who make Tucson astronomy fun for all of us.

Thom Peck, President

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, April 1 at the Steward Observatory Auditorium - Room N210

ASTRONOMY ESSENTIALS: 6:30 pm
Title: Single Mirror Telescopes
Speaker: Dr. Mary Turner

This discussion will concentrate on why reflecting telescopes are made in certain shapes. Questions like "What exactly is a parabloid, and why is it important?" and "What are the advantages and disadvantages of a parabolic design?" will be answered. A relatively non-mathematical discussion of aberration will be used to explain what is seen during observations using a Newtonian reflector.

GENERAL MEETING: 7:30 pm
Title: Big Telescope Projects at the UA: LSST and GMT
Speaker: Dr Peter Wehinger

Dr Peter Wehinger will discuss two current projects that Steward Observatory is involved in. LSST, the Large Synoptic Survey Telescope, is a proposed ground-based 8.4-meter telescope that will take 10 second exposures, covering the entire night sky every three nights. The Giant Magellan Telescope will consist of seven 8.4-meter mirrors on a single mount similar to the original MMT.

Dr. Wehinger grew up in Goshen, New York and majored in physics at Union College in Schenectady, NY. He did graduate work in astronomy at Indiana University (MS) and Case Western Reserve University (Ph.D.). He has been on the faculty of the University of Michigan, Kansas, Tel-Aviv, Sussex (UK), Northern Arizona University, Arizona State University, and University of Arizona. He also has been on the staff of the Royal Greenwich Observatory (UK), the Max Planck Institute for Astronomy (Heidelberg, FRG). He has observed from such places as Kitt Peak, Cerro Tololo, Wise (Israel), European Southern Observatory, Mauna Kea, Calar Alto (Spain), Mt. Stromlo (Australia), and the Anglo-Australian Observatory. His research has included spectroscopy of comets and imaging and spectroscopy of quasars and quasar-host galaxies.

BOARD OF DIRECTORS MEETING: Wednesday, 13 April, 6:30 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:
25 Mar - Cienega High School Star Party
28 Mar - Cross Middle School Star Party
02 Apr – Arizona Sonora Desert Museum Public SP
06 Apr - Agua Caliente Elementary School Star Party
07 Apr - Vesey Elementary Star Party
07 Apr – Astrophoto SIG
08 Apr - Sierra Middle School Star Party
09 Apr - TAAA Star Party at Las Cienegas
10 Apr - UofA Astronomy Students Star Party
12 Apr - Mission Manor Elementary Star Party
14 Apr - Copper Creek ES Star Party
15 Apr - CFHS Student Astronomy Club Star Party
16 Apr – Beginner's SIG
20 Apr - Maxwell Middle School Star Party
22 Apr - Accelerated Learning Laboratory Star Party
23 Apr - Public Viewing with LPL & Flandrau
29-30 April – Telescopes for Telethon

NEWSLETTER SCHEDULE: Deadline for articles: Sat, April 23. Printing: Mon, April 25. Folding Party: Tues, April 26. Mailing: Wed, April 27. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Member News

We welcome the most recent members to join the TAAA: Bernard Doherty, Hans and Carola Hoffmann, Donald Johnson, Joseph De Koninck, Ronald and Judith Probst, Jeffrey Williams, and Robert Zawada. Glad to have all of you join! New members should be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available to any member at most meetings, so pick one up if you need it.)

Arizona-Sonora Desert Museum Public Star Party

April 2, Saturday

We again invite the public to the Desert Museum for an evening under the stars. As usual we set up around 6:30 in the lowest rows of the parking lot near the museum entrance; security should have them coned off for us when you arrive. Before full darkness Jupiter and Saturn will be available. Bring a jacket as this spring evening is likely to be cool, and be prepared for crowds around your scope. The museum will be closed but the bathrooms will be open. Events will wrap-up around 11:00pm.

All of the media outlets, newspaper, TV and radio, have been contacted to invite the public, so we need every telescope and operator we can come up with. You don't have to be an expert to come out and enjoy the evening; in fact a few volunteers are needed to handle non-telescope related items.

Astro-photo SIG Meeting

April 7, 7pm
China Rose, NE corner Speedway/Rosemont

Our presentations feature CCD images, planetary webcams, and film. Come see some of the state of the imaging art over some Chinese food. Just show up and enjoy the show!

NOTICE OF AMENDMENT TO THE TAAA CONSTITUTION

Past President Memberships
By Bill Lofquist

The Board of Directors of the Tucson Amateur Astronomy Association is presenting an amendment to the TAAA constitution to recognize the contributions of past presidents of the Association.

By giving notice in the April, 2005 issue of Desert Skies, and announcing it at the April meeting, we will be able to vote on the amendment at the May, 2005 membership meeting.

The amendment, if passed by the membership, will waive the membership fees of past presidents after they have served one year as president. They can choose either an individual or family membership. This also acknowledges the contributions that a president's spouse makes to the organization.

The amendment to be voted on is as follows:

--* Past President Memberships:
As recognition of their contributions to the Association, membership fees, either individual or family, will be waived for members who have served as President of the Tucson Amateur Astronomy Association after completing a year as President.

TAAA Elections 2005

Attention all members! The election for the 2005 TAAA Board of Directors will be held on May 6, 2005 during the regular monthly meeting. The Nominating Committee has been hard at work seeking out TAAA members to represent the TAAA and provide stewardship as we continue into our second 50 years of observing the skies together.

To date, the following candidates have agreed to run for office and serve if elected. Please note that all positions, President, Vice President, Treasurer, Secretary and 3 Members-At-Large, are still open for candidates. The current club officers are listed on page 2 of the Desert Skies newsletter. Any nominations received by the Nominating Committee on or before the published deadline of April 1, 2005, will be placed on the ballot. Nominations received after April 1, 2005, but before the General Meeting on May 6, 2005 will be placed into the write-in category. Write-in candidates must accept their nomination in person or in writing before the vote is taken. The qualifications for becoming a member of the Board of Directors are listed in the TAAA Constitution, Article III, Section 5. The voting process is explained in Article IV, Section 6 of the TAAA Constitution. (http://www.tucsonastronomy.org/constitution.html).

The current list of candidates for officers of the

President	Thom Peck
Vice President	Bill Lofquist
Treasurer	Terri Lappin
Secretary	Steve Marten
MAL	C. Michael Thompson
MAL	Tom Watson
MAL	Jack Farmer
MAL	Richard Dougall
MAL	George Barber

TAAA:Please come out and cast your vote for the next leaders of the TAAA.

The Nominating Committee

Valerie Grindle (Valerie@InsideTucsonHomes.com)
Steve Marten (taaastarparty@yahoo.com)
Michael Turner (mrmgturner@earthink.net)

Club News (cont.)

Upcoming Lecture Schedule

Below is our upcoming lecture schedule. Topics under consideration: Mars/Spirit & Opportunity, Charles Messier, and Meteor Crater. If you have a suggested topic or speaker in mind send an email to Terri at tklappin@earthlink.net or call her at 977-1290.

Date	Lecture	Speaker	Topic
May 6	Essentials	Open	
	Invited	Dr Elizabeth Turtle	Cassini/Huygens
Jun 3	Member's Night No Astronomy Essentials Lecture		
Jul 1	Essentials	Open	
	Invited	*Tom Evans, NWS*	*Weather and Astronomy*
Aug 5	Essentials	Open	
	Invited	Open	
Sep 2	Essentials	Open	
	Invited	Open	
Oct 7	Member's Night No Astronomy Essentials Lecture		

TAAA Apparel

Looking for a special gift, or a way to make that fashion statement? Try on something from our fine line of club apparel. We've got hats, T-shirts, denim shirts, and patches. Plan ahead with a new 2005 Calendar, also available at the apparel table. We take cash and checks.

Phone and Email Address

Please update your phone and/or email address with us if you have changed either since you last updated, or perhaps when you paid your dues. Notices regarding star parties, nominations and other information won't get to you unless we have your correct information. All TAAA Membership information is strictly confidential.

Star Party Leader Reminders

TAAA's Star Party Program is our strongest community outreach activity. Those that volunteer for these very worthwhile events foster our excellent relationship with schools and organizations. Each star party works best when a Star Party Leader makes a few phone reminder calls or sends a few reminder emails to the school/ organization and our volunteers that facilitate the following:

- Cancellation decision if rain/clouds
- Viewing area is cleared, unnecessary lights out, sprinklers off, star party etiquette
- Volunteer event reminder and directions to event for new TAAA members.

Occasionally, a Star Party Leader may be asked to describe what significant objects the attendees will see that night before your event begins. For those that are associated with a school through location, friends or Project Astro, please sign-up as a Star Party Leader.

Thanks to the many TAAA members that have volunteered to share the wonder of the night sky with the Southern Arizona community and for the continued success of our Star Party Program.

Steve Marten
TAAA Star Party Coordinator

SPECIAL INTEREST GROUP FOR NOVICE ASTRONOMERS GETS UNDER WAY

By Bill Lofquist

We had planned to have the first meeting of the Beginners Special Interest Group (SIG) at the TIMPA night on March

Club News (cont.)

5, but the rains had other ideas. Instead, a small group got together just to talk about the SIG and what it might try to do.Of the 14 members who gathered, there were about a half dozen new members, and the rest were more experienced members who support the formation of the new SIG.A variety of ideas were discussed. Importantly, it was acknowledged that some members, both old and new, prefer a go-to scope that will find objects of interest. Others prefer to seek and find the objects they want to observe. The new SIG will support both of these approaches. Interest was expressed in learning about telescopes, what to buy, and how to use scopes that have been purchased. Some want to learn about the basics of simple astrophotography.Much of the discussion was about observing and how beginners can be supported in learning their way around the sky. A systematic approach to seasonal observing was suggested. The Astronomical League observing programs help to do this, and we discussed making certificates available to members who reach different observing levels.A packet for new members that includes a list of useful books and observing guides will be helpful. The rules and etiquette for star parties are also important. These are already available for members.SIG members can also greet new members and visitors at TAAA meetings and let them know about the SIG.The next meeting of the Beginners Special Interest Group will be held on Saturday, April 16 at the home of Bill Lofquist. He lives at 1935 West Harran Circle, which is near Foothills Mall. We will begin gathering at 6:30. If you have a scope you would like to bring, please do. We will have several scopes there. The patio will accommodate about 6 to 8 scopes, and others can be set up on the ground nearby. If you are planning to come and need directions, contact Bill at wlofquist@comcast.net, or call at 297-6653. Further notice will be posted on the TAAA Forum. Those who have expressed an interest will receive email messages.

wlofquist@comcast.net
1935 West Harran Circle
Tucson, AZ 85704
520-297-6653

Telescopes for Telethon 2005

By John Kalas

The TAAA will be supporting the Muscular Dystrophy T4T activity again this year on Friday and Saturday, April 29th and 30th. The activity on Friday, April 29th involves two-telescope teams at each of six different Wal-Mart stores around Tucson from 6:00 to 9:00 pm. Saturday's activity will have solar viewing taking place from 3:00 to 6:00 pm with evening observing running from 6:00 to 10:00 pm at the University of Arizona Mall across from the Flandrau Science Center. David and Wendee Levy will be hosting the event. It is anticipated that Starizona, Sky Works, Stellar Vision and Flandrau Science Center will also be participating.

John Kalas is the TAAA coordinator for the event. There will be signup sheets at the April meeting. Many volunteers will be needed to operate telescopes (solar and evening), staff donation areas and assist in general public support. Please consider supporting this worthwhile event. If you are unable to attend the meeting to sign up, please contact John at 620-6502 or via e-mail at jckalas@cox.net.

Last year, the T4T committee initiated corporate sponsorship as a means of increasing donations and it was very successful. Sponsor forms will be available at the April meetings. If you know of a company that would be interested in supporting this great event, please pick up a sponsor form or contact John Kalas.

Desert Sunset Star Party

There is still time to register for the third annual Desert Sunset Star Party, May 4-8, 2005. The DSSP is held at the Caballo Loco RV Ranch, 11miles south of Robles Junction (Three Points). Registration materials and agenda are posted at http://www.chartmarker.com/sunset.htm. We will have speakers on Friday and Saturday evenings and lots of door prizes. Come out and enjoy the dark skies and camaraderie of fellow amateurs.

Pat and Arleen Heimann
ChartMarkers and More
http://www.chartmarker.com

Astronomy Day 2005 at Discovery Park

April 16 from 9am - 3 pm
Discovery Park in Safford, AZ
(Asking $1 per person to cover costs and maintenance fees)

DEMOS AND SPEAKERS
Solar System Demo - Throughout Day
9:30 Demo - Planet Quest
10:00 Demo - Galaxies
10:30 Hands On - Making a Comet
11:30 Huygens Probe, UofA - Lunar and Planetary Lab
1:30 Our Solar System, by Guest Author - Ken Graun
(His Presentation is geared to Meeting our Standards in Space Science)

SPECIAL FEATURES
Rocket Launching
Telescope and Binocular Display
Space Based Hands on Game Room
- Family ASTRO - Games & Demos
- Project ASTRO - Games & Demos
- NASA Kids - Space Place - GEMS
- (and much more!)

NASA Display Room
Solar Viewing
- pin-hole observing
- 8" telescopes
- Come Sketch the Sunspots

Club News (cont.)

Solar System Display
Train Ride Through Discovery Park and the Solar System ($3 per person for ride)

Many Displays handouts, and hands on activities
Door Prize Drawings - at 12:30 and 2:30 (must be present to win)
Wal-Mart Astronomy Essay Contest Winner of a New Telescope Will be announced!

Discovery Park Gift Shop -- Lion's Club Food Court-- Astronomical Vendors

Star Party in the Evening, Discovery Park Parking Lot, Under our Natural Planetarium - The Arizona Night Skies

6:00 - Universe Sampler Workshop - Walking Around the Night Sky
7:00 - Telescope Workshop
Dusk - Viewing

Any Questions Call or E-mail -
Paul and Cathy Anderson 928-485-7017 / m44m46@aznex.net

Sat. April 23 Public Viewing with LPL & Flandrau

"Meteorites" Event at LPL

The UA's Lunar & Planetary Lab (LPL) and Flandrau Science Center are hosting another public outreach event, this time on Saturday April 23. TAAA astronomers and telescopes are needed for a star party on the UofA mall (organized by Flandrau Science Center) on Saturday, April 23 from 7:00 p.m. (setup time can start as early as 6:00 p.m.) to 9:00 p.m., weather permitting. This star party is the outside portion of the ongoing LPL sponsored "Meteorite: Discovering the origins of our Solar System" event. The keynote speaker will be Dr. Julia Goreva who will discuss her experience in Antarctica looking for meteorites from Nov 2004 through Feb 2005. Those TAAA volunteers who need parking permits to park on the UA mall for this event should contact Michael Terenzoni (<miket@ns.arizona.edu>, or phone 621-3646). Otherwise parking (as on most Saturdays & Sundays) will be open and free of charge in any metered space or any "Service Vehicle Only" spaces. A sign up sheet will be available at the April meeting. Free pizza is at 5 p.m. (at LPL) and available only for those who help with this event! For more information visit the LPL POP site at http://www.seds.org/~loretta/pop/news.html.

Grand Canyon Star Party

4-11 June, 2005
North and South Rims

It is getting late to convince you to join us if you have not already made your plans to attend this year's event. I've heard that there are rooms available, but they will soon be hard to come by. In other news, Joe Bergeron has been working on a new design for t-shirts and it is enclosed elsewhere in the newsletter. If you have any special requests as far as colors, sizes above XL, items other than short sleeve t-shirts (long sleeve, hooded sweatshirt, etc) please let me know. Also if you are NOT attending the star party but are still interested in a t-shirt, please let me know to put one aside for you. E-mail orders are best at ketelsen@as.arizona.edu.

It should be another great star party, though a couple of our regulars will be absent this year. Dennis Young will be in Bolivia for the Southern Skies Star Party and Elaine Osborne has also made her excuses. On the plus side though, for those who missed John Dobson at his recent appearance at Starizona, he will be at the Canyon most of the week thanks to the efforts of Jane Houston Jones and "Mojo". As always, if you have any questions about the star party, please let me know at the above e-mail or check out www.tucsonastronomy.com/gcsp.html. See you there!

Dean Ketelsen

2005 Messier Marathon

By Tom Watson
March 17, 2005

After a day that was far busier than I would have liked (I would rather have hoarded my energy for the long night ahead) I arrived in the field south of Arizona City in a rented SUV to participate in my first Messier Marathon. There were people in attendance from Phoenix I very much wanted to meet (fellow members of the Cloudy

Club News (cont.)

Nights forum), but I wanted if possible to set up in the company of other TAAA members. In the end, I accomplished both. First I found Carter and Mae Smith, and parked next to them. Nick de Mesa and his family (along with a young friend armed with a nice dob) came in awhile later and joined the crowd, as did Andy Cooper. While folk were setting up, one Cloudy Nights acquaintance tracked me down, and that set off a fresh round of meeting and greeting. Such a curious aspect of this internet age, that you can make friends with people before you've actually met them. It was a lot of fun, and one of the highlights of the experience, to meet these fellow astronomers. While this was going on, in the midst of telescope assembly by Andy and Carter, Valerie and Mike Grindle came by to introduce themselves. (This was the last I saw of them, I'm sorry to say, for reasons that will be made plain shortly.)

Looking back on it, I should have known from their sunset banter that Carter and Andy were going to put on a show. Their repartee was a cross between an astronomy lecture and a vaudeville routine, and went on long after I could not. Trust me, you had to be there. We had the sunset pep talk from the site coordinator, and then went to our scopes as the skies darkened and the slim crescent of the 2-day-old Moon began to shine. Mercury hovered glittering in the boundary between day and night. Andy made it plain that he was not "marathoning," but with a minimum of arm-twisting, Carter got him on the trail. Soon they were in the midst of what could best be described as a co-operative competition. Yes, it sounds like an oxymoron... You *really* had to be there. After a lengthy wrangle over the two twilight challenges (M77 and 74), Messier numbers were called out in a fairly rapid, have-ya-got-it-yet context. In the dark on the opposite side of me, Nick's daughter and her friend were also reciting a litany of M numbers. Aside from an occasional comment to egg Andy or Carter on (something I quickly realized was totally unnecessary) I stayed quiet. This was only the second time in more than 3 decades that I've been under a dark sky with a good telescope (an 8" Newtonian on an SVP mount - affectionately known as the '3-legged newt.') It was beautifully overwhelming, and as a result I got off to a bit of a slow start. For a moment I was tempted to blow off the marathon and just be there under all those stars, but I thought better of it and set to work. For a long time I did pretty well, but as the hours ticked away toward midnight, the energy expended during the day began to catch up with me.

The wee hours came, and those who had gotten ahead of the sky went off to wander around, meeting and greeting. I was a bit too aware of how slowly I was working through the list, so I stayed with the 'newt and kept at it. And so many of those I met at sunset never saw me again that night. Two of my forum friends came by at some point, as well as someone who thought he knew me but didn't (and was good company all the same, so I'm sorry I can't remember the name.) I plodded on, drinking caffeinated sodas and eating sandwiches prepared earlier, trying to maintain my blood sugar while I struggled to remain awake. Andy and Carter, who had gone off together, came back at some point and launched into a pursuit of objects just barely rising above the horizon. In this endeavor Carter's smaller scope proved to have an advantage over Andy's 'Violet': it could point down closer to the horizon. Carter made full use of this advantage, and in fact was almost merciless in employing this option after *Andy* pointed it out to him. (Andy took it all rather well, I thought).

I plodded on as the night rolled toward sunrise. At some point I found the sky glow in the direction of Tucson growing ragged, as if it were being torn apart by a high wind - As if a dome of light could be so affected. But what was actually happening, right before my sleep-deprived eyes, was the rising of the Milky Way in Sagittarius, emerging slowly from that very same sky glow. It was an awesome sight, and a very strange illusion.

The Andy and Carter show went on, with one calling out numbers and the other replying as often as not with some variation on the theme of "Not yet." Somehow, when the two compared totals, Andy was frequently an object or two ahead of Carter, who then had to guess which object he might not have picked up that Andy could have seen. It rarely took Carter more than a few minutes to solve the mystery.

By this point the night had grown old, cold, and quiet. Nick's daughter and her friend had long since crashed, while Nick experimented with a new imaging system as he quietly froze to death. (He was a bit under-dressed for the occasion.) Carter and Andy went on as if they'd only just gotten started. Mae wandered around in the dark, and I was so addled by this point (4am) that I'm not entirely sure what she was doing. At 4:15am it all came crashing down on me. I knew I'd hit the wall when I found myself standing there in the dark, one hand on the telescope, and utterly clueless on how to point a scope on an EQ mount. It was all gone. It seemed I'd made a lot of check marks on the list, so I convinced myself that it would be okay to give it up and catch a couple of hours of sleep. So into the SUV I crawled, and the next thing I knew daylight was creeping over the land while Andy and Carter, still going on about the night's events, put away their gear.

In the end I managed to see 84 Messier objects, a respectable total for a first marathon, and yet far short of what I thought I would do. But I was not disappointed by the experience, not by a long shot. It was a grand night under glorious stars, surrounded by good people. And how could any of that be a let-down?

THANKS TO STARIZONA and TAAA FOR SUPPORTING KIDS AND ASTRONOMY

By Carter Smith

I want to personally thank Starizona for being so supportive of kids and astronomy. Starizona provided scavenger hunt prizes for the participants in the star party that I organized at ASDB, and donated an old telescope

Club News (cont.)

that I could use for blind participants to feel. Again, Starizona came through with SARSEF and supplied gift certificates to the TAAA winners of the Science Fair. This type of support, encouragement, and generosity means a lot to those of us who want some day to have a career in astronomy. THANK YOU, STARIZONA!

I want to thank each of you who donated your expertise to my science project. "Light Pollution Over Tucson," won four prizes in the Southern Arizona Regional Science and Engineering Fair. It won : (1) the Middle School Award from TAAA; (2) First Place, Light Pollution and Outdoor Lighting, SA_IDA; (3) The U.S. Department of Health and Human Services, U.S. Public Health Service Award in Life Sciences; and (4) 3rd Place, 7th Grade Astronomy/Physical Science Individual Award from SARSEF. Obviously, contributions of TAAA members mean a lot!!

Items of Interest

Science Fair Awards

The 50th Annual Southern Arizona Regional Science and Engineering Fair took place March 14 - 19. Five TAAA members served as judges: Nancy Howard, Terri Lappin, Dennis Nendza, Chuck Schroll, and Mae Smith. (Dennis was also a Grand Judge for the 4th Grade Physical Sciences.) There were many science fair projects worthy of awards. We awarded one project at the middle school level and three at the elementary school level.

The TAAA thanks Dean Koenig at Starizona for matching our $150 contribution, making it possible for the TAAA to award $300 in gift certificates to the following students:

TAAA member Carter Smith used the IDA prototype light pollution meter to conduct a survey of sky brightness in his project "Light Pollution over Tucson". He took readings at several locations in and around Tucson and correlated them with population density. (Names are not on the displays and Mae Smith excused herself from the middle school judging.) The TAAA judges were delighted when we learned that we had selected Carter's project for the $100 Starizona gift certificate. Carter paid careful attention to taking non-biased, consistent measurements at each location even though the measurements were separated both in time and space. Carter is a 7th grader at Doolen Middle School.

The second $100 gift certificate went to a couple of 4th graders who did team project titled "CD Reflection". They investigated the basic laws of reflection of light using lights reflecting off a CD. They then predicted what would happen if, say, they moved the light source. These two students attend Saints Peter and Paul Catholic School.

A $50 gift certificate went to a couple of students who thought the earth's orbit around the sun was circular and set out to prove it. For their project, "The Earth's Orbit", they measured the diameter of the sun using images taken from the Internet. They detected a 1% variation in the sun's diameter over the course of a year. This led them to correctly determine that we are closer to the sun in the winter and that the earth's orbit around the sun is not circular. These two third graders attend Fruchthendler Elementary School.

Another $50 gift certificate went to a second grader at Harelson Elementary School. In the project "The Search for Solar Noon", this young scientist took measurements of the shadow of a stick and determined the exact time when the sun was at its highest in the sky. She tried different angled sticks and found the angle of the stick didn't make a difference in when the shadow became the shortest so she stuck with a straight stick stuck in the ground for her measurements.

All 5 judges had a great time looking over all the projects. There were many other projects that received Honorable Mention certificates from the TAAA.

Students Study Light Pollution

By Joe Frennea and Dave Bilgray

Members of the Southern Arizona Section of the International Dark-Sky Association (SA-IDA) scoured the rows of over 1,300 exhibits at the Southern Arizona Science Fair (SARSEF) for projects dealing with Light Pollution and Outdoor Lighting. Excellent exhibits were found and prizes were awarded to three students.

First Place Award: The winner was Carter, a 7th grade student from Doolen Middle School. His project titled "Light Pollution over Tucson" was very professional and detailed, demonstrating impressive scientific skills and keen powers of observation. He measured sky brightness (light pollution) from five different areas in and around Tucson. He used two different methods. First, he used a Light Pollution Meter (LPM) made by Avery Davis (a member of SA-IDA). Carter meticulously developed his measurement technique until his observations were highly reproducible - - - to a degree of "perfection" not yet demonstrated by other users of the meter. Carter then counted stars within Pegasus from his five observation areas. Finally, he plotted his results graphically, demonstrating a most impressive relationship.

Second Place Award: The winner was Jessica, a 6th grade student at Satori Charter School. Her project titled "For Stars at Night Turn Down Your Lights" was most innovative, demonstrating awesome imagination. She coupled two unique ideas that she developed into her

Items of Interest (cont.)

science project. First, she constructed "View Finder 2", a box to fit over her head while lying on the ground to observe the stars above. This year's box had been significantly improved from the one that she originally

invented last year. She was able to introduce various levels of white light to "mimic" light-pollution artificially. Next, she devised an experimental method to determine how much light was really necessary to do a simple task- - - finding toys in a darkened room. She concluded that outdoor lighting could be reduced appreciably to a level where she was still able to perform tasks well and at the same time still be able to enjoy seeing lots of stars- - - including the Milky Way. Her final comment was that this would also result in a substantial saving of energy.

Third Place: The winner was Amie, a 7th grade student at Alice Vail Middle School. Her project titled "A Study of Lampshades and Light Pollution" could not have been more appropriate. She constructed many different shapes of lampshades, hand-made from paper materials. She then tested the shades, at different angles, using a light meter. Her results clearly demonstrated that fully shielded fixtures do send more light onto the ground where it is needed and also send far less light upward - - - thereby greatly reducing light pollution. If Amie continues this interest, Tucson may have a skilled lighting design engineer in a few years !!!

All three winners will be invited to present their projects to members of TAAA at an up-coming general meeting.

They also have been invited to show-off their science fair projects at the International Dark-Sky Association's Annual Conference. The conference is always exciting. The three day meeting is again being held right here in Tucson at the Hilton Hotel East on Broadway from April 7th through April 9th. We hope that several TAAA members will be able to attend.

Submitted by John Polacheck
President of SA-IDA

Star Parties & Events

REMAINING MARCH EVENTS

Cienega High School Star Party **Vail**
Friday, 3/25/2005 No. of Scopes: 5

Cienega High School will be having a Star Party at 12901 E Colossal Cave Rd. Take I-10 east to exit 279, Wentworth/ Colossal Cave Rd. Turn left and go under the freeway, continuing about ½ mile to the school. Viewing will be on the football field. Contact person Megan Summers can be reached via email summersm@vail.k12.az.us. A Star Party Leader is needed for this event. Set-Up Time: 6:30pm. Observing will be from 7:00 pm to 8:30 pm. Sunset: 6:39pm, Dark Sky: 7:32pm, Moon Phase: Full Moon.

Cross Middle School Star Party **Northwest**
Monday, 3/28/2005 No. of Scopes: 6

Cross Middle School's "Night Sky of the Ancients and Mythology" at 1000 W. Chapala promises to be an interesting evening of combining ancient folklore and mythology with astronomy. Take Oracle Rd. North, turn left at Ina Rd., and proceed west. Turn right at Paseo del Norte (the first stop light). Travel north to the stop sign and turn left at Chapala. Cross is a little ways west on the right side. The observing location is behind the library/ administration building. Contact person Toby Drakulich can be reached at 696.5963 or email tdrakuli@amphi.com. Star Party Leader for this event is needed. A "Pot Luck+" dinner will be available for TAAA volunteers! Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:30 pm. Sunset: 6:41pm, Dark Sky: 7:35 pm, Moon Phase: near Full Moon.

APRIL EVENTS

Many of these events have been rescheduled from the unusually heavy rains in January and February. Please take a night or two to help out these students and parents! Thanks!

Agua Caliente Elementary School Star Party **East**
Wednesday, 4/6/2005 No. of Scopes: 6

Agua Caliente ES will be hosting "Star Party Family Fun Picnic" at 11420 E. Limberlost Rd. Go east on Tanque Verde, turn left (north) on Catalina Hwy. Turn right (east) on Prince, past Houghton, then Melpomene, go to end

Star Parties & Events (cont.)

(Homestead), take left (north). Less than a block to the school on left. Viewing will be on the playing field east of school building. Go past the school and take a right onto Homestead. Access gate to field is on the right. Ok to drive onto field. Contact person Dan Beach can be reached at 749-2235 or email dwbeach2@juno.com. A Star Party Leader is requested for this event. Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:00pm. Sunset: 6:51pm, Dark Sky: 7:42pm, Moon Phase: Crescent after New Moon.

Vesey Elementary Star Party **Southwest**
Thursday, 4/7/2005 No. of Scopes: 4

Vesey Elementary will be celebrating "Vesey Family Science Night" at 5005 S Butts Rd. Take I-10 to I-19 and continue to Irvington exit and turn right at stop sign (go westbound). Continue west on Irvington for several miles and continue past stop sign at Camino De Oeste, for about another ½ mile. Viewing will be on the east side of the building outside of the cafeteria (dark parking lot and easy access to the astronomers to set up equipment) Contact person Claire Dunham can be reached at 908-4600 or email Claire.Dunham@tusd.k12.az.us. A Star Party Leader is requested for this event. Set-Up Time: 6:00pm. Observing will be from 6:45pm to 8:00pm. Sunset: 6:48pm, Dark Sky: 7:42pm, Moon Phase: New Moon.

Sierra Middle School Star Party **South**
Friday, 4/8/2005 No. of Scopes: 5

Sierra Middle School will be preparing "Exploring the Future" at 58012 S Del Moral. Take Speedway west to Campbell. Turn South on Campbell to Drexel. Turn West on Drexel. Turn South on Del Moral Blvd. The school is located on the left. Viewing will be on the playground area. Contact person Christopher Taylor can be reached at 520 545-4871 or email christophert@susd12.org. Star Party Leader for this event is Nick DeMesa. Set-Up Time: 6:30pm. Observing will be from 7:00 pm to 8:45 pm. Sunset: 6:49pm, Dark Sky: 7:43pm, Moon Phase: New Moon.

TAAA Star Party at Las Cienegas (Empire Ranch)
Saturday, 4/09/2005

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please 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. Las Cienegas is at 4000 feet so be prepared for cold temperatures after sunset. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip, or parallel to the airstrip along either side facing west. That way, when you are ready to leave, you will not have to back up and turn on your bright white backup lights. See the directions to Las Cienegas on the outside flap of this newsletter.

UofA Astronomy Students Star Party **West**
Sunday, 4/10/2005 No. of Scopes: 7

UofA Astronomy Students will be conducting one of their two spring Star Party events at Saguaro Nat'l Park West. Take Speedway Blvd. west past I-10 and continue about 3.5 mi. where Speedway becomes Gates Pass Road. Go over Gates Pass and continue about 5 mi. west to Kinney Road. Turn right (north) on Kinney Road and continue past the Desert Museum for about a mile. Observing will be in the parking lot of the Visitor Center. Contact person Tom Fleming can be reached at 621-5049 or email taf@viking.as.arizona.edu. Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 9:00 pm. Sunset: 6:50pm, Dark Sky: 7:45pm Moon Phase: Late Crescent.

Mission Manor Elementary Star Party **South**
Tuesday, 4/12/2005 No. of Scopes: 5

Mission Manor Elementary will be planning "MoonScope" at 600 W. Santa Rosa. Go south on Alvernon Way to Valencia, turn right. Continue west to 12th Ave, turn right (north), go past stoplight (12th&Bilbee). School is on northwest corner. Viewing area is on the basketball court of the playground. Contact person Yvonne Flores can be reached at 545.3533 or email YvonneFl@sunnysideud.k12.az.us. A Star Party Leader is requested for this event. Sandwich & coke will be available for TAAA volunteers! Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 8:45 pm. Sunset: 6:52pm Dark Sky: 7:46pm Moon Phase: Late Crescent.

Copper Creek ES Star Party **Northwest**
Thursday, 4/14/2005 No. of Scopes: 7

The enthusiastic students, parents and teachers of Copper Creek Elementary will be hosting their annual Star Party at 11620 N. Copper Spring Trail. Take Ina Rd. west past Oracle to La Canada, turn right (north). Proceed about five miles, continuing past McGee, Lambert, Oro Valley Town Hall and Naranja to W. Silver Leaf Drive, turn right (east). Continue to end of street and turn right (south). Viewing will be north of the school (adjacent) on the basketball court just south of the baseball field. Contact person Marian Shultis can be reached at 696.6871 or email marianshu@msn.com. A Star Party Leader is requested for this event. Set-Up Time: 7pm. Observing will be from 7:30pm to 9pm. Sunset: 6:53pm Dark Sky: 7:48 pm Moon Phase: near First Quarter.

Star Parties & Events (cont.)

CFHS Student Astronomy Club Star Party Foothills

Friday, 4/15/2005 No. of Scopes: 5

CFHS Student Astronomy Club will be gearing up for "Foothills Moon and Sky" at Ventana Vista Elementary School. Take Swan north to Sunrise Dr. Turn east (right) on Sunrise Dr. Take Sunrise Dr. east to Kolb Rd. Turn north (left) on Kolb Rd. Ventana Vista is on the west (left) side of the road. Turn in just after the crosswalk signs. Take the lane to the parking lot; the viewing are is just north of the lot. Contact person DaNel Hogan can be reached at 577-5090 or email dhogan@cfsd.k12.az.us. Star Party Leader for this event is Steve Marten. Set-Up Time: 6:30 pm. Observing will be from 7:00 pm to 9:00 pm. Sunset: 6:54pm Dark Sky: 7:49pm Moon Phase: First Quarter.

Maxwell Middle School Star Party West

Wednesday, 4/20/2005 No. of Scopes: 4

Maxwell Middle School will be conducting their school star party at 2802 W Anklam Rd. Go west on Speedway Blvd and take I-10 East (south) to St Mary's Rd. and turn right (west). St Mary's becomes Anklam Rd about 1 1/2 miles from the freeway. Continue to 2802 W Anklam Rd (just past Greasewood Park and about 2 ½ miles from the freeway). Viewing will be on the basketball court. Contact person Heather Gorman can be reached at the school. Star Party Leader for this event is George Barber, 822-2392. Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 9:30 pm. Sunset: 6:56pm Dark Sky: 7:51pm Moon Phase: Waxing Gibbous.

Accelerated Learning Laboratory SP Northwest

Friday, 4/22/2005 No. of Scopes: 5

Accelerated Learning Laboratory will again be hosting "Exploring the Night Sky" at 5245 N Camino de Oeste. Go west on Camino del Cerro (same as Ruthrauff), past Silverbell and continue to Camino de Oeste, turn right (north). After the first small hill, look for a wash; the school driveway is at the top of the very next hill, on the left. Look for the brick pillar with the school sign. The observing site is on the basketball courts at the end of the drive and on the left. Contact person Legail Pearson (parent) can be reached at 743.1113 or email alctucson@msn.com. Star Party Leader for this event is Andrew Cooper. Pizza & coke will be available for TAAA volunteers! Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 9:00 pm. Sunset: 6:59pm Dark Sky: 7:55pm Moon Phase: near Full Moon.

Dark Skies for April 2005

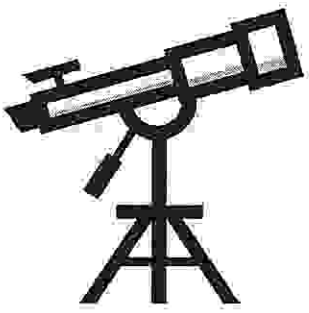
DARK SKIES (no twilight, no moonlight) for Tucson in 24-hour MST: 18=6pm, 20=8pm, 22=10pm, 0=12am
RISE, SET, VISIBILITY for sun and bright planets: rise for morning object, set for evening object

Th/Fr	31/ 1	20:07 - 1:17		Su/Mo	10/11	21:06 - 4:35		Th/Fr	21/22	- - -	
Fr/Sa	1/ 2	20:07 - 2:17		Mo/Tu	11/12	22:09 - 4:34		Fr/Sa	22/23	- - -	
Sa/Su	2/ 3	20:08 - 3:08		Tu/We	12/13	23:11 - 4:32		Sa/Su	23/24	Lunar Eclipse	
				We/Th	13/14	0:08 - 4:31					
Su/Mo	3/ 4	20:09 - 3:51		Th/Fr	14/15	1:00 - 4:29		Su/Mo	24/25	- - -	
Mo/Tu	4/ 5	20:10 - 4:28		Fr/Sa	15/16	1:45 - 4:28		Mo/Tu	25/26	20:29 - 20:50	
Tu/We	5/ 6	20:11 - 4:42		Sa/Su	16/17	2:24 - 4:27		Tu/We	26/27	20:30 - 22:01	
We/Th	6/ 7	20:12 - 4:41						We/Th	27/28	20:31 - 23:09	
Th/Fr	7/ 8	20:12 - 4:39		Su/Mo	17/18	2:59 - 4:25		Th/Fr	28/29	20:32 - 0:12	
Fr/Sa	8/ 9	20:13 - 4:38		Mo/Tu	18/19	3:29 - 4:24		Fr/Sa	29/30	20:33 - 1:06	
Sa/Su	9/10	20:14 - 4:36		Tu/We	19/20	3:57 - 4:22		Sa/Su	30/ 1	20:34 - 1:51	
				We/Th	20/21	- - -					

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn		
Sa/Su	Set	Rise	Rise	Vi	Set	Vi	Rise	Vi	Set	Vi	Set	Vi	Vi=Visibility
2/ 3	18:43	6:07	5:38	-	18:44	-	3:12	2	6:21	-2	2:06	0	-3 brilliant
9/10	18:47	5:59	5:09	8	18:57	-	3:01	1	5:51	-2	1:39	0	0 conspicuous
16/17	18:52	5:50	4:50	6	19:11	9	2:50	1	5:21	-2	1:13	0	3 moderate
23/24	18:57	5:43	4:39	5	19:25	7	2:39	1	4:51	-2	0:47	0	6 naked eye limit
30/ 1	19:02	5:36	4:32	5	19:39	6	2:26	1	4:21	-2	0:21	0	9 binoculars limit

By Erich Karkoschka

Telescopes for Borrowing



Don't own a telescope?
The TAAA Loaner Program is your answer!
There's no cost to you.
We have the following telescopes:

Sears 60mmf/15 on equatorial mount
Unitron 62mmf/14.5 on equatorial mount
Meade 90mm ETX
Coulter Odyssey8 8-inch f/4.5 Dobson
Meade10-inch f/4.5 on equatorial mount
Meade 10" LX200 GPS (requires training session)

New members, here's your chance to begin learning and observing the sky before buying any equipment.
Loaner Program is available to any current member after meeting requirements detailed in the TAAA Loan Policy.
Contact the Equipment Loan Coordinator listed in the "Desert Skies" for details about the telescopes.

TAAA Board of Directors Meeting - March 09, 2005

Attending: TAAA Board members Thom Peck, Michael Turner, Steve Marten, Ed Finney, Ray Toscano, Bill Lofquist. TAAA Members: Nora Toscano, Ellen Finney, and Robert Crawford. The meeting was opened at 6.34pm.

1. February Minutes. Accepted/unanimous.
2. Announcements.
   - Thom noted T4T on track for events 29/30 April.
   - Thom will ask members via the newsletter to update their phone and email address.
   - TAAA/Arizona-Sonora Desert Museum Star Party will be held on April 2nd Thom Peck and Steve Marten will contact local media outlets to publicize the event.
   - Star Party Leader information will be included in the next newsletter and Steve Marten will also request time for a short (2 min) announcement at the next General Meeting.
3. Member Feedback
   - Some input received regarding the General Meeting main lecture on lighting. Less emphasis on energy usage and more on dark sky issues would have been more beneficial.
   - The General Meeting ran too long due to a UofA sporting event that reduced available parking and other factors. The Board agreed to continue managing our General Meetings to ensure they are on time. Announcements must be approved by the President at least a week prior and announcements longer than 5 minutes will be presented as scheduled lectures.
4. Board of Directors Vote by Email. Michael Turner presented documentation of the Arizona Revised Statues that allow voting by email. The Board voted to establish Vote by Email in consonance with statute guidelines. Vote by Email will be used when appropriate and will include confirmation of the vote at the following Board meeting and posting in the Board of Director Minutes.
5. Charitable Gifting Policy. Steve Marten reviewed an updated draft of the TAAA Charitable Gifting Policy. The Board agreed on several modifications regarding cash and non-cash gifts. The policy will be completed via vote by email.
6. Past President Membership. The Board discussed how our Constitution could be amended to allow past presidents to receive free lifetime membership for their work for and dedication to TAAA. The Board was generally in approval. Wording and vote will be completed by email to allow Terri's further participation.
7. Impromptu Star Party Policy. The Impromptu Star Party draft was broadened to TAAA Star Party Policy. The policy will include an impromptu star party directive regarding TAAA sanctioned events. The updated policy draft will be completed and approved via vote by email.
8. SHARE Project. In lieu of a defined plan to accommodate the SHARE equipment should it be awarded to TAAA, the Board members present agreed unanimously that TAAA will withdraw from the project. If the equipment has been awarded to TAAA and the Board has not received notification at this time, the Board will reconsider the project but only with an accommodation plan.
9. Action List. In addition to the above, the Action List was updated with status reports on the following ongoing projects: 6' Dome Bids, Directors and Officers Insurance, 30" Scope Project, Publicist Appointment, SEDS Letter, Pima Prevention Partnership and TAAA Web Site Re-Design. The following items were tabled: TAAA Member Survey, Sale of Select Loan Scopes and 16' Dome Transportation Planning.

Adjourned at 9.16pm
Respectfully Submitted,
Steve Marten
Secretary

Desert Skies Classified

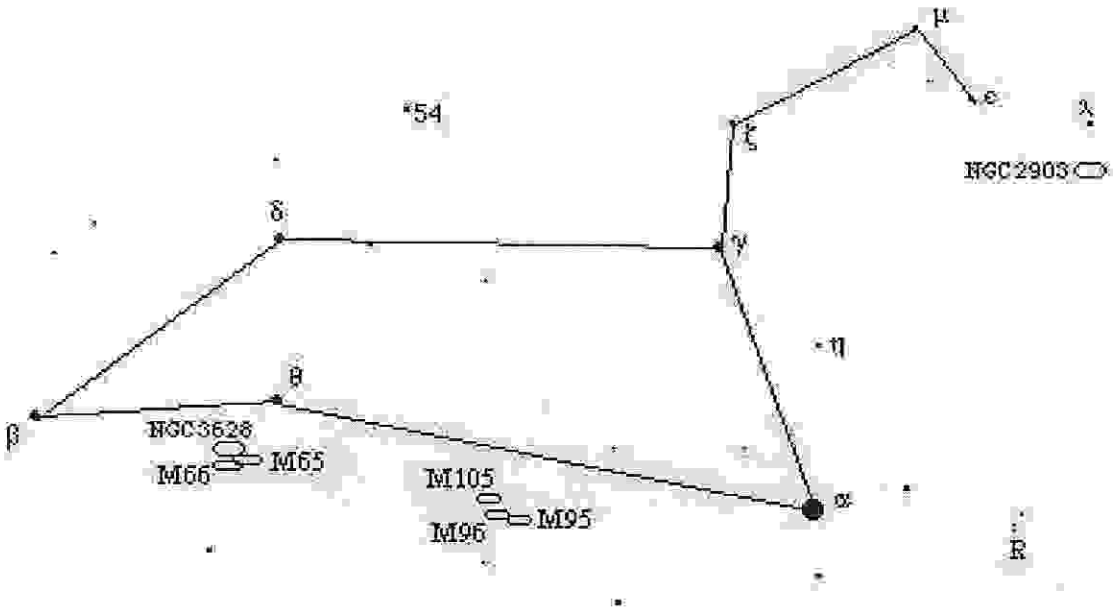
For Sale	Meade 6" ED APO refractor (OTA), FL 1380mm. Essentially new and has seen little use. Comes with Meade mounting saddle with Losmandy mounting plate, and an Orion 60mm guide scope mounted on top of the saddle with three point adjustable rings. $2400. Steve Aragon 909-792-0072 [06/05]
For Sale	SBIG STV deluxe camera/guider with FR-237 and E finder assembly. $2000, Steve Aragon, 909-792-0072 [06/05]
For Sale	Cannon 10D digital camera, body only. 1yr old.6.3 megaPixl, 2 batteries, batt grip, 640K memory card, EF mount, all cables, charger, manuals incl.$1000, contact: Jerry Farrar at 520-731-1104 or 520-404-9858. e-mail jandkfarrar@earthlink.net [06/05]
For Sale	Canon 12 X 36 IS Binoculars with Canon's "Vari-Angle Prism" Image Stabilization system. Image remains steady with the press of a button, no need for a tripod. Includes hard case, neck strap, removable switch lock, and manual. Rubberized (not water-proof) body. Great for both astronomy (Messier objects like M51 and M81/82 visible) and bird watching (close focus of ~12 feet). Excellent color correction. Clean, well cared for optics. $350.00 Terri Lappin, 579-0185, tklappin@earthlink.net. [05/05]
For Sale	Celestron NexStar11GPS with tripod, JMI case, W.O. 2"diag., quick release finder, counterbalance weight kit, flexible dew shield, anti vibration pads, Starizona tripod spreader/ acc. tray, 2 power cords, JR's keypad holder, cable for firmware upgrades. Also includes the owners manual, original 1 1/4" diag, 40mm eyepiece, ac power supply and shipping carton. Everything is in excellent cond. $2850 Steve Henderson 818-9165 stargazer@robsoncom.net
For Sale	Celestron Firstscope #114 4.5" Diameter Newtonian reflector telescope on a German equatorial mount with adjustable wooden tripod. Includes: three eyepieces (4mm .96" dia., 20mm .96" dia. and 25mm 1.25" dia.), a 2x .96" dia. Barlow lens and a .96" dia. moon filter. Asking price: $100. Contact Matt at nowayout@earthcorp.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 George Barber at 822-2392or e-mail at barbergj@flash.net.

Constellation Report by Chris Lancaster

Leo

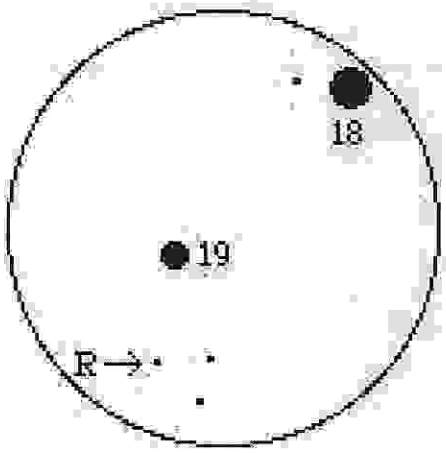
Lying on the ecliptic and making its appearance just above the horizon as the sun sets in March is one of the more recognizable constellations of the zodiac, Leo the Lion. The vast majority of ancient civilizations indeed saw a lion in this collection of stars. The exceptions include the Chinese, who saw a horse, and the Incas, who thought the stars outlined the figure of a puma. Other than its regal shape, one reason for a lion being connected with the constellation is the observation that lions came to the Nile to cool themselves when the sun was passing through Leo during the hot days of late summer. The Greeks considered that Leo specifically represented the mythological Nemean Lion which terrified Corinth until Heracles came to the rescue.



Leo contains several bright stars, so finding it in the sky is simple. If you are familiar with the pointer stars of the Big Dipper which lead you to Polaris, the North Star, just follow that line formed by those pointers in the opposite direction and your eyes will land firmly on Leo's back.

Gamma Leonis (named Algieba) provides a good first target to view. It is an excellent double star whose components shine at magnitudes of 3.3 and 3.5 with an identical yellow-orange color. It will take high magnification to overcome its close separation of 4.5", which is slowly increasing toward about 5" during the next 100 years. Gamma is the brightest star in the curve of stars forming Leo's head and shoulder, often seen as a sickle.

Sitting 9.5 degrees northeast of Algieba is 54 Leonis. This double star is a close copy of Algieba in that it has an almost identical PA and a similar difference of magnitudes between the two (4.5 and 6.5), but they have a slightly wider separation of 6.5" and a color of white or slightly blue.



One of the best variable stars to observe is R Leonis. It is easily found 21' in RA (or just over 5 degrees) west of Regulus near 5.6 magnitude 18 Leonis and 6.3 magnitude 19 Leonis. R is a long period variable of the Mira class, pulsating from minimum near 10th magnitude to a maximum of about 5.5 magnitudes in a span of about 156 days. It forms one point of a triangle south of 19 Leonis with two other 9th magnitude stars, and it's easy to determine which one it is by its red color. The finder chart that shows R Leonis spans 1/2 degree.

Galaxies in Leo are too numerous to mention in detail. There are several, however, that deserve special attention. Starting 2.5 degrees southeast of Theta Leonis is the trio of galaxies M65, M66, and NGC3628. M65 and M66 both measure 8'x 4' and so appear as parallel stripes south of the more distended NGC3628. All are in the neighborhood of 10th magnitude and can be framed in the same field of view in a low power eyepiece centered at RA 11h 20m Dec +13d 15.5'. Half the distance between these and Alpha Leonis (Regulus), is another trio of bright Messier galaxies–M95, M96, and M105. M95 is the dimmest of these three at magnitude 11.5, but, being a barred spiral, perhaps the most photogenic. M96 is a tight spiral with a bright central bulge, while M105 is a bright elliptical of magnitude 10.1.

An isolated galaxy, NGC2903, can be found 1.5 degrees south of Lambda Leonis. Its bright 9.6 magnitude glow and fairly large size of 12.5'x 6' make it an easy target. NGC2903 is located at RA 9h 32.2' Dec +21d 30'.