



Desert Skies

Tucson Amateur Astronomy Association

Volume LIV, Number 7

July, 2008



Hunting for Meteorites in Antarctica

Inside this issue

***TAAA Meeting is
on the 11th
this month!***

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- ◆ Constellation of the month
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- ◆ Job Opportunity at Kitt Peak
- ◆ July Star parties

Cover Photo: Cruising the base of an Antarctic mountain range, searching for meteorites, on an austral summer day. (Photos: Julia Goreva, UA Lunar and Planetary Laboratory)

TAAA Web Page: <http://www.tucsonastronomy.org>

TAAA Phone Number: (520) 792-6414

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	All Board Members		taaabod@tucsonastronomy.org

Membership in the TAAA

Annual Fees

- Individual membership\$25.00
- Family (includes two adults plus minor children)\$30.00
- Youth under 18 years must join as a family upon parental or guardian acknowledgement of participation in TAAA events. Ask the Treasurer for the required form.

Discounts (one discount allowed, subtract from above rates)

- Seniors (over 60 years)\$2.00
- College Students, Teachers (K - 12)\$8.00
- Youth under 18 yrs (form required, contact the treasurer).....\$13.00

Options (add to above membership rates)

- Tucson society of the Astronomical League (TAL) fees.....\$ 7.50
- Sky & Telescope Magazine 1 year (12 issues)\$32.95
- Astronomy Magazine 1 year (12 issues)\$34.00
- 2 years (24 issues)\$60.00
- Postage for New Member Pack\$ 4.80

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 fees 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. Submissions should be submitted in Word compatible files via e-mail or on a recordable media.. All material copyright Tucson Amateur Astronomy Association or specific author. No reproduction without permission, all rights reserved. We will not publish slanderous or libelous material! Send submissions to:

George Barber
TAAA/Desert Skies Editor
15940 W Ridgemoor Ave
Tucson AZ 85736

Join our Email Lists on YahooGroups

Announcements: <http://tinyurl.com/e7o3y> (TAAA news, no posting allowed, 15/month)
TAAA Forum: <http://tinyurl.com/hwoau> (general astronomy discussion, posting allowed, 75/month)
TAAA Dark Site: <http://tinyurl.com/3d8ts9> (discussion of dark site issues, posting allowed)

Desert Skies is published monthly by the
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President's Message

We have been enjoying some great nights of clear viewing throughout June. As July brings us to our impending monsoon season and the prospects of limited clear viewing nights we still find there is plenty to do. The extra time allows us to do those much needed equipment maintenance and improvement tasks. We are also moving forward on several projects within the club.

We are finalizing the last details on the TIMPA scope project and thanks to Keith Schlottman we have the loan of his wedge for the 14" until a permanent one can be acquired. Thank you to the many volunteers who are assisting in the last details that will make the roll off a facility we can enjoy for many years to come. We will announce soon our plans to officially dedicate the facility.

The new web site is now live and, if you haven't yet had the chance to take a look at it, please check it out. Changes and improvements are ongoing and if you have any comments please forward your comments to our Webmaster Debra Malmos or talk to a board member. We will have additional changes and resources for the site for members as time goes on.

Finally, we are continuing to move forward on the dark site project. Plans are continuing to progress for getting the permits and other items needed to install the infra-

structure that will allow us to start using the facility. Please be aware that we are not able to start using the site for astronomy activities until the requirements set forth by Cochise Planning and Zoning are met. If you are interested in or have an idea of some way that you can assist in the dark site project, please contact Bill Lofquist.

A reminder to everyone that this month the general meeting has been moved to July 11th as the first Friday falls on the 4th of July holiday. The BOD meeting will be on July 9th, which is the Wednesday before the general meeting.

Before I close, I would like to take the opportunity to express my gratitude to Bill Lofquist for his service as the club President for the past two years. He has given a great deal of his time and expertise in this roll and we have been very lucky to have had his leadership on the board. It has been in great part due to his leadership and determination that we can now see a club dark site facility as a future reality. We look forward to Bills' continued leadership on this project. Thank you, Bill.

Clear Skies

Ken Shaver

Meeting Information and Calendar of Events

TAAA MEETING DATE: Please note the date change: Friday, July 11, at the Steward Observatory Auditorium - Room N210

ASTRONOMY ESSENTIALS: 6:30 pm

Title: Objects of the Season

Speaker: Dr. Mary Turner

Dr. Turner will give her quarterly update on the best objects for observing during the summer season.

GENERAL MEETING: 7:30 pm

Title: Spending the summer on ice: hunting for meteorites in Antarctica

Speaker: Dr. Tim Swindle

As well as studying meteorites, Prof. Tim Swindle (of the UA Planetary Sciences department) has also spent three southern hemisphere summers on the Polar Plateau in East Antarctica, hunting for meteorites. His talk will include a little bit of travelogue about a place where summers are about 100 degrees cooler than they are in Tucson, a little bit about how you hunt for meteorites in Antarctica and why the U.S. has sponsored meteorite hunters annually for more than 30 years, and a little bit about some of the other science that is conducted on the Polar Plateau.

BOARD OF DIRECTORS MEETING: Wednesday, July 9, 6:30 pm. The meeting is held at Steward Observatory Conference Room N305.

STAR PARTIES AND EVENTS:

05 July- TAAA and AF-SIG Star Party at TIMPA

07 July - Astro-Imaging SIG at China Rose

10 July- Astronomy Fundamentals SIG

24 July - Tucson Botanical Garden Star Party

26 July - TAAA Star Party at Las Cienegas

NEWSLETTER SCHEDULE: Deadline for articles: Sat, July 19. Printing: Mon, July 21. Folding Party: Wed, July 23. Mailing: Thu, July 24. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Member News

We welcome these members who have recently joined the TAAA: Mark & Laura Balstad, James Butler, Gabriel Cocio & Steve Courter, Joan Flannery, Marlys Hathaway, John T Hogan, and Stephen Wright & Janis Burt. Glad to have all of you join! New members can pick up a members pack at a meeting if they didn't request it by mail. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available online at either Yahoo Groups email list website under Files, or at most meetings.)

Astro-Imaging SIG Meeting

Monday, July 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! For more information, contact Steve Peterson.

Astronomy Fundamentals Special Interest Group

(Formerly the Beginner's Special Interest Group)
Thursday, July 10, 6:30 pm

The Astronomy Fundamentals Special Interest Group (AFSIG) will meet on Thursday, July 10, at 6:30 pm. AFSIG meetings are on the second Thursday of every month.

This month's presentation topic will be "Observing Star Clusters", by J.D. Metzger. Learn about the origin and types of star clusters, and get a few tips on observing these very interesting and beautiful objects.

The meeting will be held at the Environmental and Natural Resources Building (USGS and Weather Service) in room 253. The USGS building is on the northeast corner of Sixth Street and Park Avenue on the campus of the University of Arizona. Parking will be available in the lot to the east of the building. There are no restrictions on parking after 5:00 pm. To get to the lot, go one block north on Park and turn east onto Lowell. The entrance to the lot will be on your right shortly past the building. From the parking lot, walk through the breezeway to the open court yard. Take the stairway to the second floor patio area. Room 253 is immediately to the left side of the patio at the top of the stairs.

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 have got hats, T-shirts, denim shirts, and patches. We take cash and checks.



Supernova! Toolkit is Here!

The recently acquired Night Sky Network toolkit, called "Supernova!" is here. Terri Lappin will be reviewing this newest of the toolkits at the August 1st Astronomy Essentials Lecture. This toolkit contains several projects that help you tell the public about the demise of massive stars into neutron stars or black holes.

The complete list of NSN toolkits is below. Should anyone want to borrow a toolkit for a school star party, contact Terri to make arrangements for getting the toolkit of your choice. These toolkits are also available for other outreach or educational activities (private star parties, public events). They contain essentially all the materials needed. All projects are easy to do. You can pick and choose which part you want to demonstrate.

PlanetQuest: explains planet detection techniques

Our Galaxy, Our Universe: scale model of the Milky Way galaxy and the Universe

Black Hole Survival Kit: what is a black hole and how does it affect objects nearby

Telescopes - Eyes on the Universe: explains basic principles of optics, the human eye, and observing

Shadows and Silhouettes: covers lunar phases, eclipses, and transits

Exploring the Solar System: scale model of solar system and NASA exploration of planets

GLOBE at Night: light pollution principles

Supernova! life cycle of massive stars, touches on life cycle of sun-like stars

SolarScope: provides a white light image of the sun suitable for small group viewing.

All NSN toolkits include a Resources CD, a training DVD. You can request your own copy of the CD and DVD set from Terri (give her a week or so to make them up). The CDs contain PowerPoint presentations, along with scripts and background information. All projects are described on the DVDs.

Contact information for Terri Lappin (our Treasurer) is on page 2.

Club News (cont.)

Upcoming Lectures

Remember that our July meeting will be held on the 2nd Friday of the month due to the 4th of July holiday.

Aug 1	<i>Astronomy Essentials</i>	Terri Lappin Night Sky Network Super-nova Toolkit
	<i>Invited Lecture</i>	TBA
Sept 5	<i>Astronomy Essentials</i>	TBA
	<i>Invited Lecture</i>	TAAA Status Report

SAIDA NEEDS MORE HELP FROM MORE TAAA MEMBERS. AFTER ALL, WE WILL ALL BENEFIT FROM DARK SKIES IN OUR AREA !!!

For more information, go to: www.sa-ida.org
Or feel free to contact:

John Polacheck
President of SAIDA
E-mail: jpolach@dakotacom.net
Telephone: 743-1362

SAIDA meets on the second Wednesday of each month from 5:30 to 7:30 PM in the IDA office located at 3225 N. First Ave, just North of Ft. Lowell. And.....
WE USUALLY HAVE PIZZA !!!

Items of Interest

**Job Opening at Kitt Peak
Public Program Specialist #898**

Email: hrnao@noao.edu
FAX: 520-318-8494

Kitt Peak National Observatory has a seasonal position available to help conduct its nightly observing programs. The position requires knowledge of astronomy, strong public speaking skills and proficiency with computers and amateur telescopes. Knowledge and experience in CCD imagery is highly desirable. Must be flexible to work evening hours. Meals provided and Transportation is available via employee-driven vehicles from our Tucson Headquarters. Relocation not available.

To apply please send an electronic resume, reference job title and job number above.

Send resume to:

Human Resources Office
National Optical Astronomy Observatory
P.O. Box 26732
Tucson, Arizona 85726-6732

NOAO and NSO are affirmative action and equal employment opportunity employers. Preference granted to qualified Native Americans living on or near the Tohono O'Odham reservation.

NOAO and NSO foster a diverse research environment. Women and candidates from under represented minorities are particularly encouraged to apply.



Due to the July 4 holiday, the July TAAA Meeting Date will be Friday, July 11.



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Member's Events

TAAA and AF-SIG Star Party at TIMPA

Saturday, July 5

Come on out and enjoy the summer skies (Monsoons willing)! TIMPA star parties are great for both beginners and experienced observers. Our novice members can get help with observing issues or equipment problems, as there are many experienced members there who would be happy to help. If you don't own a telescope, come anyway, because there are lots of telescopes set up and everyone is invited to look through them. This is a great way to check out different telescope designs before you make that all important decision to buy. We'll do our best to get you the answers you need. If you have friends or relatives who are curious about amateur astronomy, feel free to bring them along. The TIMPA site features a large parking area, and full restroom facilities. Directions to the TIMPA site are located on the outside flap of this newsletter.

TAAA Star Party at Las Cienegas (Empire Ranch)

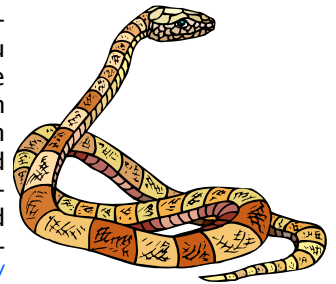
Saturday, July 26

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 astro-images. 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. And, there are now restroom facilities at the site.

Las Cienegas is at 4000 feet so be prepared for cooler temperatures. 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.

Rattlesnake Alert!

Be alert for rattlesnakes! Rattlesnakes are generally aggressive only if disturbed. If you see one, keep a safe distance and DO NOT try to interact with it in any way. Snakes are much faster than our reflexes, and should be handled only by professionals. Wear boots and long jeans. For more information, go to <http://www.friendsofsaguaro.org/rattlesnakes.html>.



Along with rattlesnakes, other desert critters, such as gophers and ground squirrels, make their home wherever they want. These residents can leave holes and other potential tripping hazards, so be careful when walking.

Dark Skies for July 2008

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

Mo/Tu 30/ 1 21:15 - 3:29	Fr/Sa 11/12 0:45 - 3:48	Mo/Tu 21/22 21:04 - 21:33
Tu/We 1/ 2 21:15 - 3:42	Sa/Su 12/13 1:22 - 3:49	Tu/We 22/23 21:03 - 22:01
We/Th 2/ 3 21:14 - 3:42		We/Th 23/24 21:02 - 22:31
Th/Fr 3/ 4 21:14 - 3:43	Su/Mo 13/14 2:03 - 3:50	Th/Fr 24/25 21:01 - 23:02
Fr/Sa 4/ 5 21:14 - 3:43	Mo/Tu 14/15 2:51 - 3:51	Fr/Sa 25/26 21:00 - 23:39
Sa/Su 5/ 6 21:50 - 3:44	Tu/We 15/16 3:44 - 3:52	Sa/Su 26/27 20:59 - 0:23
	We/Th 16/17 - - -	
Su/Mo 6/ 7 22:21 - 3:45	Th/Fr 17/18 Full Moon	Su/Mo 27/28 20:58 - 1:15
Mo/Tu 7/ 8 22:49 - 3:45	Fr/Sa 18/19 - - -	Mo/Tu 28/29 20:57 - 2:17
Tu/We 8/ 9 23:16 - 3:46	Sa/Su 19/20 - - -	Tu/We 29/30 20:56 - 3:26
We/Th 9/10 23:44 - 3:47		We/Th 30/31 20:55 - 4:06
Th/Fr 10/11 0:13 - 3:48	Su/Mo 20/21 21:05 - 21:05	Th/Fr 31/ 1 20:54 - 4:07

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn
Sa/Su	Set	Rise	Rise Vi	Set Vi	Set Vi	Rise Vi	Set Vi Vi=Visibility
5/ 6	19:32	5:21	3:57 4	20:03 7	22:16 2	19:39 -2	22:25 1 -3 brilliant
12/13	19:30	5:25	4:10 4	20:08 6	22:00 3	5:11 -2	22:00 2 0 conspicuous
19/20	19:27	5:29	4:39 6	20:10 5	21:44 3	4:39 -2	21:34 2 3 moderate
26/27	19:23	5:34	5:20 -	20:11 4	21:28 3	4:08 -2	21:09 3 6 naked eye limit
2/ 3	19:18	5:39	6:00 -	20:09 3	21:12 4	3:37 -2	20:43 4 9 binoculars limit

By Erich Karkoschka

TAAA Board of Directors Meeting - June 11, 2008

Attending: TAAA Board Members present (6): Ken Shaver, presiding, Keith Schlottman, Steve Marten, Terri Lappin, John Kalas, and Teresa Bippert-Plymate. Members present (1): Claude Plymate.

The President called the meeting to order at 6.33pm.

May Minutes. May Minutes accepted, unanimously.

Announcements

Ken is arranging for special activities or speaker for International Year of Astronomy (IYA) in October. He will invite Connie Walker or Doug Isbell to an upcoming Board meeting to discuss events developing for this fall.

January 2009 General Meeting falls on Friday January 2nd. The Board voted not to move the meeting back one week.

Treasurer's Report – Terri Lappin

The only unusual expense this month was for attorney fee at \$125 for one-half hour (phone call) related to the Dark Site well sharing agreement.

Website – Ken Shaver for Debra Malmos

For Debra Malmos, Ken requested that a press release be distributed regarding launch of new TAAA website (after current corrections and updates have been completed) and that Debra be appointed as TAAA Publicist. After discussion, Board supported her request for a press release and Ken appointed Debra as Publicist for TAAA. Terri will send Publicist position information to Debra.

TIMPA Scope – Ken Shaver for George Barber

George Barber, John Kalas, J.D. Metzger, and Michael Turner have determined that the upgrade to the 14" scope will require a strengthening modification to the pier. The Board voted to approve purchase of a premium quality wedge up to \$700 plus S/H (motion by Ken, second by Keith, vote 6-0.) While awaiting the new wedge, Keith has agreed to lend us his Meade Ultra wedge. With completion of the pier modification and positioning of the wedge George expects first light this fall.

Dark Site Land Development – Steve Marten

The Board declared the following resolution: "The TAAA Board of Directors approves the grant application for \$1,500 to be submitted by Bill Lofquist, TAAA Past President, to the Cochise Community Foundation for the development of handicap accessible observing pads and associated areas at the observing site near Sunizona, Arizona." Terri reported on the progress of the Policy and Procedures ad hoc committee. A draft of the site access policy has been posted to the Board of Directors Website.

Astronomy Magazine Award – Ken Shaver

Ken Shaver proposed that the club consider submitting an application for their annual "Out-of-this-World Award". It is a \$2500 cash award given to an astronomy club that excels in the area of public outreach. John Kalas volunteered to compose the 500-word maximum essay to be submitted to the BOD by the end of June. The deadline for application submission is July 18th.

Adjourned at 8:58 pm

Respectfully Submitted,

Steve Marten

Secretary

Public Star Parties and Community Events

All members of are asked to support the TAAA School Star Party program and other community events listed below. TAAA either sponsors or co-sponsors these events. These are great opportunities for beginners as you may only need to know a few objects in the sky. Even without a telescope, you can be valuable in other capacities. Sign up sheets for many events can be found at the meeting or contact a TAAA officer.

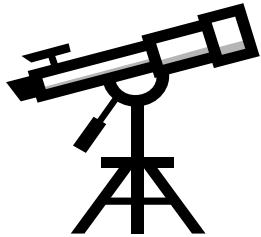
Tucson Botanical Garden Star Party **Central**
Thursday, 7/24/2008 No. of Scopes: 2

Tucson Botanical Garden will be hosting Pajama Party at 2150 North Alvernon Way. Go north on Alvernon from Speedway. TBG will be on the east side for the street before Grant Rd. Contact person Lisa Chittim can be reached at 326-9686 or email youthed@tucsonbotanical.org. Set-Up Time: 8:00pm. Observing will be from 8:30 pm to 10:30 pm. Sunset: 7:26pm, Dark Sky: 8:26pm Moon Phase: (no moon during viewing).



Due to the July 4 holiday, the July TAAA Meeting Date will be Friday, July 11.

Telescopes for Borrowing



Free service



Only for Members

Don't own a telescope?
Our Loaner Program is your answer!

These telescopes are in the program

Sears 60mmf/15 on equatorial mount
Unitron 62mmf/14.5 on equatorial mount
Meade 90mm ETX
Coulter Odyssey8 8-inch f/4.5 Dobson
Meade 8-inch f/4 Schmidt-Newtonian LX D-55
Meade 10-inch f/4.5 on equatorial mount
Meade 10" LX200 GPS (requires training session)

Beginners, here's your chance to learn and observe the sky before buying any equipment. The Loaner Program is available to any current member after meeting requirements detailed in the TAAA Loan Policy. Contact the Equipment Loan Coordinator (see page 2) or any club officer for details about these telescopes.

Desert Skies Classified

SERVICE	Green laser pointer need repair or tune up? Contact Donald Arndt at (415) 215-2409 or donaldja@pacbell.net. Typical repairs cost \$25-50, including return shipping.
FOR SALE	Original case for an Astro-Physics AP140 telescope. I have an extra case. Outside dimensions 40"x10.5"x10.5". Foam lined. Could be used for many refractors. \$50 has slight damage. I was quoted \$237 plus shipping from AP. Local pickup or buyer pays for shipping. Call for details - Larry Phillips at 777-8027 or llp41astro@cox.net . [09/08]
FOR SALE	Orion Megaview 15X80 binoculars with hard case, and Sunpak Platinum Plus 7500 Pro tripod with soft case. Like new, \$365 for both. Tim 398-6590 hm, 663-9350 wk. Review at: http://excelsis.com/1.0/entry.php?sectionid=21&entryid=150 [07/08]

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 or e-mail the newsletter editor.

CONSTELLATION REPORT BY CHRIS LANCASTER

Vulpecula

(vul-PECK-you-lah)

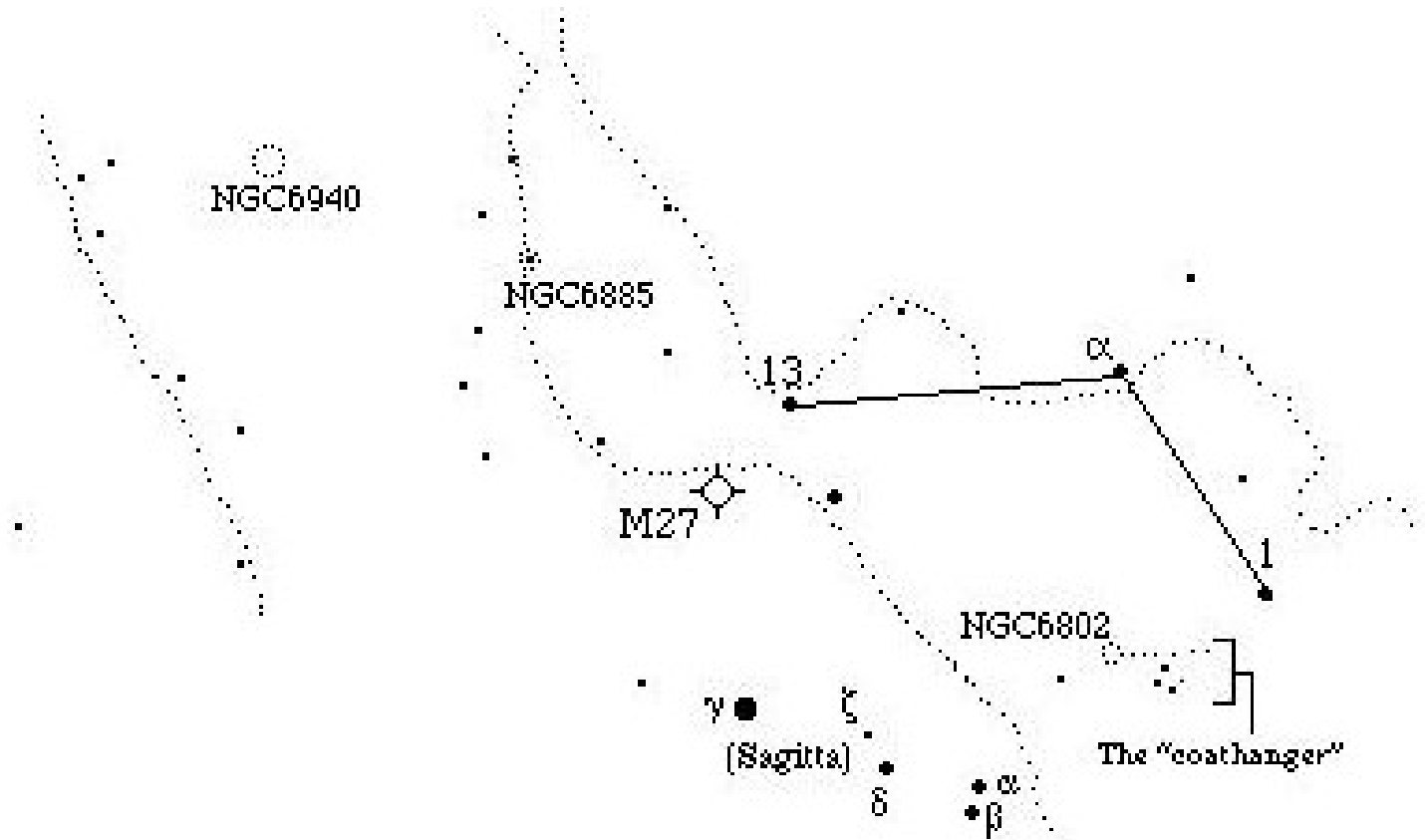
The Fox

The last constellation alphabetically in our list of 88 is the dim collection of stars which Johannes Hevelius originally named Vulpecula cum Anser, or the "Fox with the Goose". In the 312 years since he invented that name, the goose has been forgotten, and only the fox remains. Since it only contains one star with a Bayer designation--magnitude 4.4 Alpha Vulpeculae, its brightest star--it is easily overlooked. Between Albireo, the beak of Cygnus the swan, and Sagitta, the arrow, are the brightest stars of Vulpecula shining between magnitudes 4.5 and 5. The rest of the constellation is a collection of even dimmer stars scattered to the east.

Vulpecula's claim to fame is that it is home to what many observers would call the most spectacular planetary nebula in the sky. This, of course, is M27, or the Dumbbell nebula. And, no, it is NOT named after the astronomer who discovered it, but rather it gets its name from its unmistakable shape. Probably the easiest way to find M27 is to point your finder scope at the small, distinctive group of stars forming Sagitta. The two center stars, Zeta and Delta Sagittae, fall in a line oriented toward the northeast. Follow this line in that direction about 4 1/2 degrees and your finder scope (or binoculars) will show you a small, ghostly disk of light. M27, therefore, is visible in a telescope of any size, but the degree to which you will recognize detail is determined by your aperture. Small scopes will pick out a roughly rectangular shape of gasses expanding away from an invisible central star. Telescopes in the 8-inch category will begin to see some mottling within the brightest areas of the Dumbbell and also give you a chance to spot the magnitude 13.9 central star, while 10-inch and larger instruments will, in addition, show you an unmistakable haze forming oval shaped lobes extending in a perpendicular fashion to the bright dumbbell.

CONSTELLATION REPORT BY CHRIS LANCASTER (cont.)

High power will fill your eyepiece with this very large nebula and give you a chance to spot some of the small detail within the knotty tangle of gasses being pushed away from the hot central star which has a surface temperature near 85,000 degrees Kelvin. The vital statistics of the Dumbbell Nebula are as follows: magnitude: 7.6, size: 350", location: RA 19h 59.6m Dec +22d 43'.



While M27 grabs your attention, most of Vulpecula's other deep sky objects, which are destined to be present since the constellation inhabits the dense summer Milky Way, are subtle by comparison. NGC6940, however, demands scrutiny as one of the better open clusters around. Immersed in the thickest part of Vulpecula's Milky Way, NGC6940 is a huge open cluster of more than a hundred dim stars 31' across--as big as the full moon. Use low magnification on this cluster, otherwise it will fill the view of your eyepiece and lose its identity. Find NGC6940 at RA 20h 34.6' Dec +28d 18'.

NGC6885 is another open cluster and slightly easier to find since it surrounds a magnitude 5.9 star, 20 Vulpeculae, which acts as the cluster's centerpiece. Here is a sprinkling of about 35 stars ranging in brightness from 6 to 11 and arranging themselves in a shape resembling a spade or arrowhead around 20 Vulpeculae. The overall brightness of the cluster is magnitude 6 and it is located at RA 20h 12.0m Dec +26d 29'.

Moving over to the southwest corner of the constellation we find a large asterism whimsically nicknamed the "coat hanger". Oriented upside down, this collection of stars measures 1.5 degrees across and, indeed, looks like a simple coat hanger, complete with a conspicuous hook formed from four stars and six other stars forming the "shoulders" of the hanger.

If you follow the straight edge of the coat hanger toward the east and you have at least a medium sized scope, you will see a star cluster which is truly different than the other clusters described so far. It is difficult to see and would truly be a challenge to find if it weren't for the line of stars pointing directly at it. It lies 17' due east of the eastern most star of the coat hanger. This cluster, NGC6802, is formed from stars shining at magnitudes 13 through 18, and, therefore, very few, if any, stars can be resolved. The brightness of the entire cluster is magnitude 8.8, is bar-shaped, and measures 3' along its length. If you didn't know that you were looking at a galactic star cluster, you may mistake NGC6802 for a nearby irregular galaxy as it will appear in most scopes only as a diffuse glow.

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**TAAA Meeting is
on the 11th
this month!**

Please consider renewing your membership on time. Renewal month and dollar amount appears on your address label. Magazine subscriptions are not included. TAL fee is included if participating in TAL. See details on page 2.

Directions to TIMPA and Empire Ranch

Directions to TIMPA Site

GPS coordinates: 32 deg 15.868' N, 111 deg 16.390' W

From the North:

1. Take Ina Rd. west about three miles past I-10.
2. Turn left (south) on Wade Rd.. Wade Rd. becomes Picture Rocks Rd. when the Rd. bends to the right (west).
3. Take Picture Rocks Rd. west to Sandario Rd..
4. Turn left (south) on Sandario Rd. to Manville Rd..
5. Turn right (west) on Manville Rd. to Reservation Rd..
6. Turn left (south) on Reservation Rd. (dirt Rd.) and go about two miles. The TIMPA entrance is on the left.

From the East:

1. Take Speedway Blvd. west and it turns into Gates Pass Rd..
2. Go over Gates Pass and continue west to Kinney Rd..
3. Turn right (north) on Kinney Rd. and continue past the Desert Museum.
4. Kinney Rd. bends left at the entrance to Saguaro National Park West and becomes Mile Wide Rd..
5. Take Mile Wide Rd. west about five miles to Reservation Rd.. Mile Wide Rd. ends at Reservation Rd. and you must turn right (north) onto Reservation Rd..
6. Take Reservation Rd. north about one mile. The entrance to TIMPA will be on the right.

NOTE

A gate card is required for TIMPA access. Please **DO NOT** ask the caretakers for entry to the TIMPA SITE. A list of TIMPA key keepers is available on the TAAA website, or by contacting a board member. For scheduled TIMPA star parties, a designated TAAA representative will provide access to the site.

Directions to Las Cienegas (Empire Ranch)

GPS coordinates: 31 deg 47.356' N, 110 deg 37.913' W

Take I-10 East from Tucson. Take Exit 281 (Route 83 Sonoita-Patagonia Highway South). Travel south on Route 83 for about 19 miles, watch for green and white milepost 40 sign on the right side of the road. Approximately ¼ mile past milepost 40, turn left into Las Cienegas. The road is dirt and is "washboarded" so go carefully. At about 2.9 miles, there is a fork in the road. Stay to the right. When the road ends in a "T", take a left. Cross over a concrete section of the road down in a wash. Just up the hill from the wash (about .2 mile), turn left. 0.1 mile ahead will be the end of an abandoned airstrip with a covered ramada. The club members have been setting up several tenths of a mile down the runway. If you arrive after dark, as a courtesy to other members, use only your parking lights to approach the set-up location.