



Desert Skies

Tucson Amateur Astronomy Association

Volume XLVII, Number 11

November, 2001



M33—The Pinwheel Galaxy In Triangulum

Calendar of Events

BEGINNERS LECTURE: Friday, Nov. 2, 6:30 pm at the Steward Observatory Auditorium - Room N210. This month's topic is *Beginning Astrophotography Without a Telescope* by Dean Salman.

GENERAL MEETING: Friday, Nov. 2, 7:30 pm at the Steward Observatory Auditorium - Room N210. Topic is *The Search for Supernovae: in the Sky and on the Web* by Wayne Johnson.

BOARD OF DIRECTORS MEETING: Tuesday, Nov. 13, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

- Nov 1 - Astrophotography SIG Dinner
- Nov 10 - Whipple Observatory Star Party
- Nov 10 - TAAA Star Party at Empire Ranch
- Nov 16 - Sonoran Desert Home Schoolers
- Nov 17 - TAAA Star Party at TIMPA
- Dec 6 - Hendricks Elementary School

Newsletter Schedule - Deadline for articles: Mon, Nov. 19. Printing: Mon, Nov. 26. Folding Party: Tues, Nov. 27. Mailing: Wed, Nov. 28. The newsletter is mailed at least one week prior to the following month's General Meeting.

Cover: M33, the Pinwheel galaxy, in Triangulum. By Dean Salman at www.galaxies.com

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

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Membership in the TAAA

Annual Dues

Individual membership.....	\$ 23
Family.....	\$ 28
Senior (over 60) membership.....	\$ 21
Senior Family (at least one over 60).....	\$ 26
Student membership (over 18 years old).....	\$ 15

Family Membership includes two adults plus minor children. Persons under 18 may join at a special Reduced Family Membership rate (\$15/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 society of the Astronomical League (TAL) dues.....	\$ 3.50
Sky & Telescope Magazine.....	\$ 29.95
Astronomy Magazine.....	\$ 29.00
Postage for New Member Pack.....	\$ 3.50

Donations are accepted for any of the TAAA funds: SA-IDA/Light Pollution, TIMPA, Education, 30" Telescope & Land, or General Fund.

Renewal Information

- Membership expires the last day of the month indicated on your mailing label. You will receive a renewal notice when they are due.
- TAAA members may join the Tucson society of the Astronomical League (TAL). TAL expiration will match your TAAA expiration.
- Discounted Sky & Telescope or Astronomy magazine subscriptions are available to members and can be started or renewed at anytime. Only single year subscriptions are accepted. Allow at least 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, send the above subscription amounts and your magazine renewal notice to the TAAA treasurer.

- To ensure proper credit to your account, 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 changes to the above address or email the treasurer.

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 sun, moon, and stars. 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.

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. 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

The cool evenings of winter are again upon us, and jackets and gloves are again added to the required observing equipment checklist. But the turning of the season also brings Jupiter and Saturn back into the evening sky. Public star parties without a big bright planet can be tough, but they are back. As was recently pointed out to me, Jupiter and Saturn are drawing apart in the sky, and in a few years they will be placed so we will almost always have at least one of them available.

The heavy school star party schedule has put a bit of a strain on us, but we have managed everything well. The high thin clouds that have plagued us the last few weeks hasn't helped. The Desert Museum event was quite a success with plenty of scopes and lots of satisfied eyeballs. More children than I expected as there were several small

groups from area schools and a few boy scouts as well. The November schedule is pretty light so we can relax a bit. Let's try to give Sonoran Desert Home Schoolers on the 16th a good show, they got clouded out last time and they are a great group of kids.

This month's big event will be the Leonids on the 17th/18th (see the club news section). Here in Arizona we are very well located to watch this event. If you attend no other star party this year this is one you should not miss. Even if you don't join us at TIMPA you should make a point to get out in the early morning hours of Sunday the 18th of November and enjoy the meteors at your favorite dark site.

Andrew

Meeting Information

Beginner's Lecture

Title: Beginning Astrophotography Without a Telescope
Speaker: Dean Salman

Have you ever wanted to take photographs of the night sky, but don't own a telescope capable of astrophotography? Dean will explain the basics of photographing the night sky using just a camera and basic equipment. Dean is a member of the TAAA and has a web site <www.galaxies.com> full of astronomic images.

Regular Lecture

Title: The Search for Supernovae: in the Sky and on the Web
Speaker: Wayne Johnson

Mr. Galaxy (aka Wayne Johnson!) will give basic information about how Supernovae (SNe) come to be, techniques for locating these elusive, ephemeral objects, and where to find information about them on the world wide web. Wayne is originally from Buffalo, NY. He began his college career majoring in astronomy at the University of Arizona thirty (gulp!) years ago, ending up majoring in electrical engineering and getting his BSEE from Northern Arizona

University. He has been interested in astronomy since he was 5 years old when he watched for satellites with his dad on the front porch. At the age of 13 he built an 8-inch Newtonian reflector. The moniker "Mr. Galaxy" comes from his avid interest in observing galaxies, though his interests are wide-ranging. Searching for SNe comes as a side interest from wanting to see something change while observing apparently static galaxies and is considered "icing on the cake". Mr. G. has been fortunate to find 6 of these exploding stars since 1991 and is currently building an automated backyard observatory with the intent of continuing the search on a more efficient basis. Wayne moved back to Tucson two years ago after a long hiatus in California, along with his wife, Mrs. Galaxy (aka Arlene). He works on algorithm development for Raytheon.

Club News

Member News

We welcome the most recent members who have joined the TAAA: Jason Bowman, Jeannie Cox, Debra L Davis, Herve A Dole and Caroline Barban, Gary Freiburger, David C Garza, Pete and Lori Gregoire, Elaina Hyde, Stephen Katz, Otto Kreipke, Nels Lindberg, Jay Mills, James O'Grady, Bill Owens, Dean and Michelle Salman, Larry H Scott, John and Sharon Seneca, Jay and Minna Shah, Kim and Geoff Shepard, David P Wierzbza, Lance Wozniak. Glad to have you join! If you haven't already, 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.

Calendars for 2002

We are now selling calendars for 2002. Kalmbach Publishing who publishes Astronomy Magazine produces these stunning calendars each year. Ann Scott will sell them at our meetings until our supply runs out. The cost is \$10 each (~\$2 off the regular selling price), or \$9 each for

Club News (cont.)

more than one. They make great gifts. This calendar, which features a full-color astronomical photo, image, or painting each month, has daily information about astronomical events, both historical and observational...plus space for adding important events you need to remember. This year there are a number of European Southern Observatory images and a super Hubble image of the area near Eta Carina.

Proceeds from the sale of these calendars will be used appropriately as decided by the board. Thank you to all who support the TAAA through the purchase of the yearly calendars.

ALCOR Award

Doug Smith, our Astronomic League Correspondent, will be presenting a Herschal 400 award to Hazel Lawler at the November 2 meeting.

Astrophotography SIG Dinner

1 November, China Rose, 7pm

Come join us at the China Rose at the NE corner of Speedway and Rosemont for dinner and some pretty pictures. Bring some to share, or just see the ones on display. Lately we have even had a computer projector, so electronic images on CD or floppy are encouraged! See you there.

Dean Ketelsen, 293-2855

Leonid Watch!

TJMPA, Nov 17th

By: Andrew Cooper

By very happy coincidence our Leonid prospects couldn't be much better! 1) No moon to drown out the view. 2) The peak is scheduled to be on a Sunday morning. 3) We are in the second best place in the world to view this apparition of the Leonids with predictions of 400+ meteors/hour for the western US. (Eastern Asia has higher predicted rates).

<http://leonids.hq.nasa.gov/leonids/>
<http://www.arm.ac.uk/leonid/>

Now meteor predictions are more art than science, but they are getting better lately and all the best practitioners of this art mostly agree on their predictions this time around. The predictions so favor us that fellow amateurs from across the nation are planning to join us here in Tucson. I have been contacted by people from places from the Pacific Northwest to Holland who are traveling to our clear skies. Two teams from the Dutch Meteor Society are setting up special video gear at Vega Bray and Safford to triangulate meteors coming into the atmosphere and calculate what the orbits around the sun were.

So pack up your lawn chairs and join the club at the TIMPA site. Suggested gear: Reclining lawn chairs, blankets or sleeping bags to keep warm, drinks and munchies. A camera and tripod are not a bad idea either (see <http://www.tucsonastronomy.org/aphotohints.html>)

I am going to attempt to keep light at the site under control by instituting a zone system in the TIMPA parking lot. Those observers committing to an all night experience (the only way to do it right for a meteor shower) should park at the furthest end of the lot away from the access road. If you think you might leave during the night park near the access road in such a way that you will not need reverse gear to move your vehicle. And if you know you will be leaving please park a little way down the access road and walk in. Likewise if you are arriving after dark turn off your lights before you pass the barn and park along the access road and walk in, but try to arrive before dark. As you don't need much equipment to enjoy a meteor shower this should be easy to do.

Now just hope for clear skies!

Found

A very nice seat cushion was found at the Kitt Peak picnic area by John Kalas after the star-b-cue on 10/13. It is light green in color with two sets of ties used to attach the cushion to a chair. Whoever left it at the site, please contact John Kalas at 620-6502 to reclaim it.

Computers and Electronics in Astronomy Subgroup Meeting Notice.

2 December, 5:30 pm

I have setup another meeting to visit Roy Tuckers home observatory. Roy has been hunting for near earth asteroids for 3 years. Roy had designed and built his own CCD camera utilizing a back illuminated CCD. He made all his discoveries up till recently with a 14" Celestron telescope. His three-shooter asteroid hunting telescope is now done and operational. During September, the Minor Planet Center has listed him as providing 4800 asteroid positions. Most are known asteroids, but he has found a few odd ones. The new telescope uses 3 - 14" Newtonians, each on a separate mount. Each fitted with a back illuminated CCD camera of his design. He has them aimed so that each scans the same area of the sky about 1 hour apart. He has invited us out to see his stuff on December 2nd at 5:30 PM.

Roy lives at 5500 Nebraska, which is south west of Tucson. Go west on Ajo Way, until you are about ¾ mile past Kinney road, then turn south onto Sunset Blvd. Go south for about a mile, then turn east, he is just down the road a short way. His phone is 578-8564 in case you need further instructions. You can see some of his stuff at his web page at <http://www.azstarnet.com/~gpobs/gpobs.htm>

Club News (cont.)

So skip dinner to make up for Thanksgiving and join us.

Roger Tanner

TAAA Holiday Party

by Liz Kalas

This year's TAAA Holiday Party will be held in the Rillito Room at the Tucson Racquet and Fitness Club on Friday, December 14th, starting at 6 pm. The club is located at 4001 N. Country Club Rd. and the entrance to the club parking lot is at the end of Country Club Road where it deadends a few short blocks north of Fort Lowell Rd. There is parking to the left or right as you approach the club grounds. The entrance to the club is to the left and through an archway of tall hedges.

The menu has an Italian flare this year. The meal will start with an antipasto and fruit appetizer from 6 pm to 7 pm., then dinner at 7 pm. For a dinner entree you will have a choice of either Chicken Marsala or Chicken Picotta. The Marsala is wine and mushroom sauce and the Picotta is lemon and caper sauce. Please indicate your choice when signing up for the party. Included with the dinner will be a tossed salad with bread sticks, vegetarian lasagna, Italian vegetable sauté, non-alcoholic beverage, and cookies. A cash bar will be available. The cost is \$18.00 per person. Sign up for the party at the November or December monthly TAAA meetings or call me at 620-6502. Seating is limited to 75 people.

Speakers are needed for this event. If you are interested in giving a 15-minute talk or showing some slides, please contact John Kalas at 620-6502.

Thanks

by John Kalas

At the October monthly meeting, I was surprised and thrilled by Andrew Cooper's presentation to me of a card and gift in recognition of my three years as club president. I am very grateful for the generous demonstration of appreciation. I am also very grateful for the help and support of so many TAAA Members during those fun years. The TAAA is the third amateur astronomy organization that I have been privileged to guide and it is, by far, the best and most satisfying experience of them all.

With the \$450. gift certificate to Starizona, I will pursue a new aspect of the hobby; video astronomy. As I write this thank-you note, I am awaiting the delivery of an Astrovid 2000 black and white video camera. I believe it will enhance my interest in recording the beauty of the Moon, the planets and the Sun. I look forward to sharing those images with the club in the near future.

Thanks again for the kindness and show of appreciation. I look forward to supporting the club as a very active

member for many years to come.

Kitt Peak Star-B-Cue Review

by John Kalas

About fifty TAAA Members journeyed up the mountain on Saturday, 10/13, and enjoyed a fantastic evening of food, friendship and astronomy fun. The weather this year was about as perfect as you could ask for; crystal clear and cool. The pot-luck table overflowed with all kinds of great dishes and desserts. A great barbecue was followed by some serious observing. There were nearly as many new members as there were seasoned veterans at this event.

The attendees are to be congratulated for abiding by all of the rules and for leaving the picnic area spotless. This type of member cooperation demonstrates to the Kitt Peak administration that the TAAA is an organization worthy and appreciative of the special privilege of observing at this incredible national observatory complex.

I will begin the process of requesting two more dates for Kitt Peak Star-B-Cues for the spring and fall of next year.

Project ASTRO at NOAO Begins Year Six

By: Connie Walker

Led by the National Optical Astronomy Observatory (NOAO) and funded by NSF, Project ASTRO is an educational outreach program that partners professional and amateur astronomers with teachers in grades 3 through 9 to enhance astronomy education and increase students' interest in science. Project ASTRO Tucson hosted its sixth annual workshop September 28 and 29 at the Four Points Sheraton Hotel and Kitt Peak Visitor Center.

A main goal of this year's workshop was to extend the concepts from the book *Moon Journals: Art, Writing, and Inquiry through Focused Nature Study* into the area of authentic scientific inquiry, and have teachers work in collaboration with trained astronomers to assist with student investigations of the Moon.

Thirty-two teachers were paired with twenty-eight astronomers to form partnerships and teams. Most participants were from the Tucson area, but some traveled from Saford, Phoenix, the Tohono O'odham Nation, and the Navajo and Hopi Nations in northern Arizona.

Workshop presenters included authors Joni Chancer and Gina Rester-Zodrow (*Moon Journals, Writing Art and Inquiry Through Focused Nature Study*), Planetary Scientist, Space Artist and Author, William Hartmann, Comet Hunter, Author and Lecturer, David Levy, and local educators and astronomers, Larry Dunlap, John Kalas, Larry Lebofsky, Nancy Lebofsky and Debbie Melde. Activities from the Astronomy Society of the Pacific's publication, *Universe at Your Fingertips*, were conducted, exploring phases of the Moon using Styrofoam balls in the dark belly of the Mayall 4-meter telescope, to the surface of Venus (a stucco

Club News (cont.)

model) using radar (bamboo sticks) through cloud cover (a box top with holes), to a demonstrative walkout of a scaled down model of the solar system, to a cratering experiment with flour, cocoa and rocks of different sizes.

The Friday evening session at the Kitt Peak Visitor Center 16" telescope was hosted by Adam Block and Robert Wilson, staff members with NOAO Public Outreach involved with the Nightly Observing Program (NOP). Adam and Robert, along with Tucson Amateur Astronomy Association members and astronomer partners George Barber, Bill Lofquist, Paul Olson, Rich and David Watson dazzled participants with telescopic views of the nighttime sky. The Visitor Center NOP observers and Project ASTRO astronomers served as knowledgeable resources, and the exchange of astronomy facts was beneficial to all.

Plans are underway for the 2002 Project ASTRO workshop. For information visit the Project ASTRO Tucson web site:

<http://www.noao.edu/education/astrotucson.html>

For application materials, contact Connie Walker, cwalker@noao.edu, 318-8535.

Beginners Lecture Speakers Needed

Have you ever considered giving the Beginner's lecture? It's not as hard as you might think. The club is always looking for someone who is willing to share the benefit of their experience. And, if you can't come up with a topic, Ray has a number of topics, which would greatly benefit those who are new to astronomy, as well as the seasoned astronomer. This gives you a chance to learn something new, as well as help others. So, step up to the spotlight! Give Ray a call at 294-1197, or e-mail at raywal-lace@altavista.com.

Newsletter Cover Photos Needed

Perhaps you've noticed that every month, the cover of the newsletter prominently displays a photograph either documenting a club activity, or which ties in with the main lecture for the month. We have our usual contributors, but sometimes no one has an appropriate photo and we have to scramble. I would like to build a library of photos, which could be used in our newsletter whenever we needed a specific subject. If you would like to contribute, please send your photo to the newsletter editor. Be sure to include your name, so we can credit you, as well as details on how you obtained the photograph.

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY

By Rik Hill

There has been a lot of talk lately along the lines of "I can see a star of magnitude <so-and-so>" or "my camera can image stars of <such-and-so> a magnitude". But the sources for the magnitudes used by different observers vary as much as the observers themselves! Some use SAO (for brighter stars) which is not a good reference for brightness or spectral type. Others use the Guide Star Catalog magnitudes, also not a great reference though it is used in a lot of software. The AAVSO charts are internally consistent but often have some large discrepancies from field to field. So what to do?

For 30 years Dr. Arlo Landolt, of Louisiana State Univ., has worked at improving the definition of photometric standard stars spending thousands of hours at the telescope measuring stellar brightness and colors. Using Selected Areas around the sky he has done meticulous absolute photometry. The areas are the same ones established in the *Durchmusterung of Selected Areas* in Harvard Annals Vol.101. A good paper on this work was published by Landolt in the *Astronomical Journal*, Vol.104, No.1, July, 1992.

Landolt's work has been landmark and forms a basis from which many other catalogs and systems have been developed. It covers much of the sky and now that it's on

the web and instantly available to any and all, it can be use as a reference for visual observations, photometry, astrophotography and CCD observations.

But you need not go through a lot of librarial gymnastics to find copies of the fields, identifications of the stars and charts. They have been put on the web at several URLs:

<http://www.cfht.hawaii.edu/ObsInfo/Standards/Landolt/>

<http://www.ucolick.org/~jharris/landolt/>

<http://www.astro.virginia.edu/~rjp01/photometry/standards.html>

My favorite site is the first one as it has a simple listing of the standard stars and then a direct link to a scanned image of the published plate. I use this often for work with asteroids and comets.

You can look up the full papers by Landolt that have appeared in print by going to the Astrophysics Data System at:

http://adsabs.harvard.edu/article_service.html

and putting in the journal name, volume and page number.

If you want to know a bit more about the professor himself, you can find short biographies at:

Items of Interest (cont.)

http://adsbit.harvard.edu/cgi-bin/nph-journal_query
<http://aaweb.lsu.edu/award98/Landolt.htm>
<http://www.phys.lsu.edu/faculty/landolt/landolt.html>

He is frequently in Tucson observing and if you are lucky you may bump into him on campus near NOAO offices or some other selected area!

As always, if you know of a particularly good website you would like mentioned here, drop me a line at rhill@lpl.arizona.edu

All Arizona Star Party

The date in last month's newsletter for the All AZ star party was incorrect! Sorry for the misinformation.

Star Parties & Events

Whipple Observatory Visitors Center Star Party November 10 (Saturday)

Observing will begin after 6:15 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association and Sonora Astronomical Society.

3 p.m. Visitors Center opens.

5 p.m. Informal lecture on astronomy by Whipple Observatory staff.

6:15 p.m. Observing begins (next to Visitors Center)

Binoculars and small flashlights are useful to bring. Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA/SAS members and their telescopes. Visitors should park along the driveway or in the parking area outside the gate or along the road as directed. (Please note: Visitors will be allowed to park cars next to the building in the space usually reserved for telescopes until 4 p.m. At that time, visitors will have to move their cars to other parking spaces so that telescopes may be set up.) For more information call 670-5707. In case of threatening weather, call 670-5707 after 3 p.m. on the 10th for information about star party cancellation. Se habla Español. See website <http://cfa-www.harvard.edu/cfa/ep/starparty.html> for location and background information.

TAAA Star Party at Empire Ranch November 10 (Saturday)

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

Sonoran Desert Home Schoolers Southwest November 16 (Friday) No. of Scopes: 5

This star party is being held at the home of Wendy Barnett. The home is located at 5400 N. Old West Road. Go west on Gates Pass, turn right on Kinney Road to Mile Wide Road. Go left on Mile Wide to Sandario Road. Turn right and proceed for about 2 miles to Manville Road. Go left and proceed for about 1 mile to Old West Road (dirt road). Turn right. After the stop sign, the house is on the right. If you have any difficulty finding it please call Wendy at 616-7221. Set-up is at 6:00pm with observing from 6:30pm to about 8:30pm. A star party leader will be needed for this event. A sign up sheet will be available at the November meeting.

TAAA Star Party at TIMPA November 17 (Saturday)

See article in *Club News*.

Hendricks Elementary School Northwest December 6 (Thursday) No. of Scopes: 8

Henry Emery, teacher at Hendricks Elementary School, his fellow teachers and I have scheduled a star party for Thursday, December 6. This is connected with Project Astro at the school.

Bill Lofquist will serve as the leader. Hendricks Elementary is located at 3400 West Orange Grove Road. The time is 6:00 PM to 7:30 PM. Three classes are doing it together, and they have about 80 students. In addition, some other classes will also be invited. It is estimated

Star Parties & Events (cont.)

that as many as 100 people could attend.

Sign-up will be at the November meeting.

Support our Sponsors:

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ADVENTURES IN ASTRONOMY AND NATURE

6201 N. Oracle Rd. www.starizona.com
Tucson, AZ 85704 292-5040



Kitt Peak
National
Observatory
Visitor's
Center

Dark Skies for 2001

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, s=et for evening object

We/Th 31/ 1	FULL MOON	Su/Mo 11/12	18:50 - 3:54	Th/Fr 22/23	0:10 - 5:35
Th/Fr 1/ 2	- - -	Mo/Tu 12/13	18:50 - 5:00	Fr/Sa 23/24	1:05 - 5:35
Fr/Sa 2/ 3	- - -	Tu/We 13/14	18:49 - 5:28	Sa/Su 24/25	1:59 - 5:36
Sa/Su 3/ 4	18:55 - 19:33	We/Th 14/15	18:49 - 5:28	Su/Mo 25/26	2:54 - 5:37
Su/Mo 4/ 5	18:54 - 20:22	Th/Fr 15/16	18:48 - 5:29	Mo/Tu 26/27	3:49 - 5:38
Mo/Tu 5/ 6	18:54 - 21:18	Fr/Sa 16/17	18:48 - 5:30	Tu/We 27/28	4:47 - 5:38
Tu/We 6/ 7	18:53 - 22:20	Sa/Su 17/18	19:35 - 5:31	We/Th 28/29	- - -
We/Th 7/ 8	18:52 - 23:25	Su/Mo 18/19	20:27 - 5:31	Th/Fr 29/30	- - -
Th/Fr 8/ 9	18:52 - 0:32	Mo/Tu 19/20	21:23 - 5:32	Fr/Sa 30/ 1	FULL MOON
Fr/Sa 9/10	18:51 - 1:40	Tu/We 20/21	22:19 - 5:33	Sa/Su 1/ 2	- - -
Sa/Su 10/11	18:51 - 2:47	We/Th 21/22	23:15 - 5:34		

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	Vi-Visibility
Sa/Su	Set	Rise	Rise Vi	Rise Vi	Set Vi	Rise Vi	Rise Vi	
3/ 4	17:30	6:42	5:20 3	5:20 0	23:07 0	21:33 -2	19:21 0	-3 brilliant
10/11	17:25	6:48	5:43 5	5:34 1	23:04 0	21:05 -3	18:52 0	0 conspicuous
17/18	17:21	6:54	6:09 7	5:48 2	23:01 0	20:36 -3	18:22 0	3 moderate
24/25	17:18	7:00	6:36 -	6:02 3	22:58 1	20:06 -3	17:53 0	6 naked eye limit
1/ 2	17:17	7:06	7:03 -	6:17 4	22:55 1	19:36 -3	17:23 0	9 binoculars limit

By Erich Karkoschka

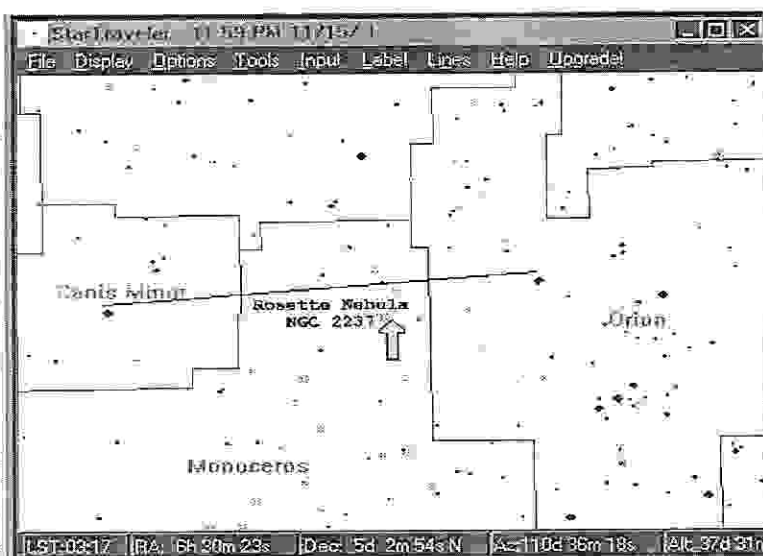
Object of the Month by Alfredo Garcia, Jr.

Here we are quickly approaching the end of 2001! I think you would agree it has been quite a year to date. I hope you enjoyed some of the clear October skies we had last month and were able to observe the Great Andromeda Galaxy. This month, the Object of the Month (OTM) is a wonderful view in small, wide-field telescopes and/or a pair of binoculars.

This object belongs to one of the class of objects known as emission nebulae. An emission nebula consists of clouds of high temperature gas. The hydrogen atoms in the cloud are heated when ultraviolet light shines on them, and then in turn they emit radiation as they cool. There are many fine examples of emission nebulae, but this month's OTM is one of the best and certainly one of the largest of its class to observe in the sky.

So without any further adieu, I present to you the November 2001 OTM, the Rosette Nebula or NGC 2237. The Rosette Nebula is a vast cloud of hydrogen gas and dust exhibiting a striking circular symmetry that gives it the appearance of a partially opened rose. This illusion is further enhanced by the rich, red hues seen in color astrophotographs/CCD images of the nebula. The rose-like circular symmetry and red hue lead to its common name, the Rosette Nebula. This cloud of dust and gas extends over 80x 60 arcminutes in the sky or about twice the apparent size of the full moon. John Flamsteed discovered it in 1690.

The Rosette is easy to find and is located in the constellation of Monoceros, the Unicorn. Due to its large surface area and diffuse nature, the nebula is best observed from a site that has dark skies. If you go out observing (from the Tucson area) around mid-November, you will find the Rosette almost 40 degrees above the eastern horizon at around midnight. Look for it south of a line drawn from Procyon (in Canis Minor) to Betelgeuse (in Orion) with the nebula being closer to the latter star (See Map). For those with setting circles and automated go to scopes, it is located at RA 6hr 30min and Dec +05 deg 03min.



Though the Rosette Nebula presents a great telescopic wide field view, it is even more spectacular in a wide field astrophotograph or CCD image. The image shown is typical of what can be recorded by amateurs with their telescopes and film or CCD cameras.

CCD Image: NGC 2237, The Rosette Nebula

The accepted distance to the Rosette Nebula is 3,000 light-years. Nebula diameter and mass estimates place it at about 130 light-years across with a mass of 10,000 to 11,000 solar masses thus making it one of the more massive diffuse nebulae in the sky.

Embedded in the center of the Rosette Nebula is a bright, young open cluster known as NGC 2244. The bright, blue stars in this cluster emit ultraviolet light that "knock" electrons away from hydrogen atoms. When the electrons "fall back", they emit the red light, which distinctively define the glow of all emission nebulae. This star cluster formed from the gas that now surrounds it less than a million years ago. The gas and dust at the center of the nebula are being forced away from the bright stars at thousands of kilometers per hour by radiation pressure and intense stellar wind, which is often associated with very hot stars. The nebula will gradually expand and dissipate until the stars of NGC 2244 are free from the nebulosity.

Recent observations of the Rosette Nebula by the CHANDRA X-Ray Observatory estimate the gas temperature at the center of nebula at six million degrees with it occupying a volume of about 3,000 cubic light years. As a result of these observations, astronomers now have a view of the engine lighting the beautiful Rosette Nebula and new evidence for how the interstellar medium may be energized.

The cold, clear skies of November hold some of the best observing skies for us here in Tucson, so go out and brave the cold and observe this most wondrous nebula that is harbored by the mystical unicorn of the sky. You won't be disappointed!

TAAA Board of Directors Meeting - October 9, 2001

Location: Steward Observatory Conference Room N305 University of Arizona

Call to Order: 7:10 pm

Board Members Present: Andrew Cooper, Thom Peck, Terri Lappin, Jane Tongate, Steve Peterson, Robert Callanan.

Board Members Absent: Bill Lofquist.

Other Members Present: Past President John Kalas.

1. Changes to the agenda: Insurance and publicity added to the agenda.
2. Events: Andrew Cooper read and reported briefly on the events through November 17. Leonid viewing November 17 will be at TIMPA. 50 members are signed up for the Kitt Peak Star B'Que.
3. Treasurer's report: Terri Lappin handed out the monthly balance sheet, there is one correction, the Raymond James balance shown is for July 30. Andrew and Jane signed tax-related paperwork. Club taxes are due October 15. 12 new members joined, nine dropped their membership leaving a total of 379 members.
4. Insurance: Robert Crawford presented to the Board what he felt the issues are regarding the process of obtaining sufficient insurance for the club. Fulfilling the requirements of TIMPA and how can Robert be of service were the top two issues. The City of Tucson will need to be added to the policy and Robert suggests asking and to advise on then obtaining a few quotes. A property list will be needed and value assigned. Andrew mentioned we need to consider when it does not become cost effective to insure in this manner. Robert will write a letter and Terri will contact the insurance agent. Liability will be dealt with first.
5. TIMPA: Land use, future plans, and work goals were discussed by the Board.
6. Holiday Party: Five tickets were sold at the October meeting. Tickets will be available at the November and December meetings. Seating is limited to 75 people. The party will be held at the Tucson Racquet Club on the second Friday, December 14.
7. Publicity: Terri brought up that this is still lacking. Terri put the Sonora Desert Museum Star Party on the DoTucson.com website and the upcoming monthly club meetings. Terri, Jane Tongate and Chuck Dugan will work on publicity.
8. Club Calendar for 2002: This will remain as published in the September newsletter with the addition of the Holiday Party in December.
9. Email List: There is a need for a club listserve. Terri suggested using Yahoo. Andrew is concerned about disclosure rules and the selling of the club member address list. If this is a possibility it will not be used. Terri will check on this and report back to the Board.
10. Apparel: A brief discussion on apparel took place. Terri mentioned that a member had a special request, the item will be purchased for sale.

Meeting adjourned at 9:35 pm.

Respectfully submitted,

Jane Tongate, Secretary

Desert Skies Classified

- FOR SALE:** Orion Premelium Deep Space Explorer Dobsonian. 12.5" F / 4.8, 1524mm FL. Full thickness PYREX mirror with 96% enhanced coatings. 2" with 1 1/4" adapter JMI focuser. Handles on Tube for easy carrying. 9X50 Celestron finder scope. Base, and Dust cover. Price \$ 700.00 firm. Colin Butler, 8851 N. Oracle Rd # 255, Tucson AZ, 85737. (520) 877 - 8438 (02/02)
- FOR SALE:** Celestron Nexstar 8" Schmidt-Cassegrain with 40mm Plossel eyepiece. As new, used once. Includes all original packaging and manuals. \$1300 OBO. Will consider trades. Jim Berger, 744-3858, <jberger@theriver.com> (02/02)
- FOR SALE:** Meade 8" LX-10 Schmidt-Cassegrain, with dec. motor, 8x50 finder, Meade field tripod, 9mm, 26mm x 32mm Plossl eyepieces, moon filter, variable tele-extender camera mount and Pentax adaptor, red LED maplight, books and other accessories. Contact king_mcp@hotmail.com, or call direct to 602-909-1039 (leave a message if there is no answer). Asking \$1000 firm for all of the above, the scope is in Mesa. (11/1)
- FOR SALE:** Orion Skyview Deluxe 6" Reflector telescope on a Skyview Deluxe equatorial mount. Two years old, perfect condition, signed by Thomas Bopp. Includes: Orion 25mm and 9mm eyepieces, finder scope and moon filter. Asking \$350. Contact Martin Koenig at 219-3895 or e-mail at <robmartkoe@aol.com> after August 11. (11/1)
- FOR SALE:** Televue Genesis (the original) with Televue everbright diagonal, Telrad and Losmandy plate. The Genesis tube has some scratch from years of use, but no dents. The optics are in good condition. Asking for \$1100. Please contact Ted Wu @ 806-3808 or CTGWC@AOL.COM. (12/01)
- FOR SALE:** Like-New Orion Skyquest 8-inch Newtonian telescope on Dobson mount. Eddie Bauer Edition. Includes TelRad base, Finder scope, Lens Holder and 25mm Plossl eyepiece. FOB price at Skyworks is \$601. Sacrifice to you for \$444. Call Jeanpaul Sosville at 290-6017. (12/01)
- FOR SALE:** Large shipping case for 10-14" SCTs. Tough rotationally molded ABS plastics with gaskets, in perfect condition. Outside dimensions are 24"L x 26"W x 36"H, subtract two in each dimension for inside dims. The high density foam inside is cut for a Meade 10" OTA. New this would be about \$500, asking \$200 for it. Contact Andrew Cooper at taaa@seds.org or 795-3585. (12/01)
- WANTED:** Dome observatory. Minimum size 8' diameter, can be mobile or not. Please call anytime 822-5143 or email: sonskies@azstarnet.com (1/02)

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 822-2392 or e-mail at barbergj@flash.net.

Constellation Report by Chris Lancaster

Aries

the ram

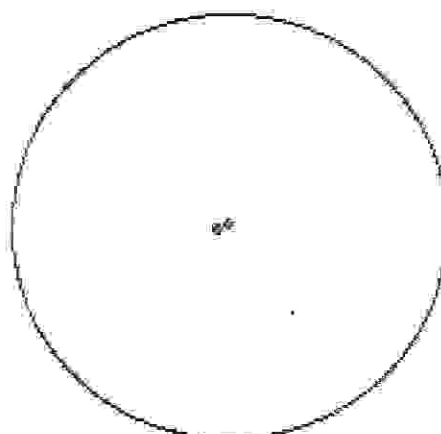
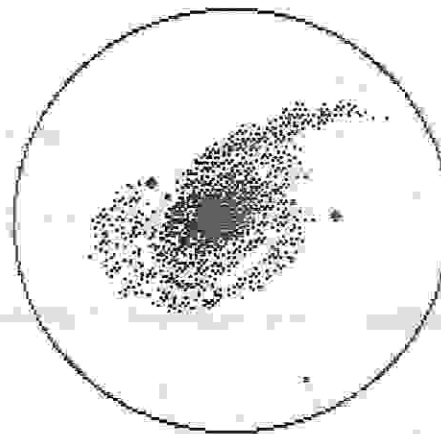
Many ancient civilizations have viewed this inconspicuous group of stars as a ram. Its pattern suggests the curved shape of a ram's horns and is a fitting tribute to an animal revered by both nomadic peoples and agricultural settlers alike. Specifically, Egyptians of 16 century BC considered this constellation to be the ram connected with their god Amon Ra. In Greece, it was the golden fleeced ram created by the god Hermes to take the son and daughter of King Athamas of Thessaly away from their abusive stepmother. The ram's final destination was a region near the Black Sea where the animal was sacrificed. Its golden fleece was placed in the branches of a tree and guarded by a dragon, but nevertheless it was later stolen by Jason and his Argonauts.

Looking high in the south, you'll find Aries crossing the meridian near 10pm and tucked between the tall V shape of Pisces and the soft glow of the Pleiades star cluster of Taurus. Its brightest stars range from magnitude 2 to 4.

An excellent starting point for your exploration of Aries is the magnificent double star Gamma (γ) Arietis. To the naked eye it glows softly at magnitude 3.8. Through the telescope you will see two white points of light oriented due north-south and separated by 8 arc seconds. The two stars are twins in most respects. Each are magnitude 4.8 and of similar spectral types—A0 and B9. In the year 1664, Robert Hooke discovered this double star accidentally while comet hunting. It was one of the first double stars to be discovered, and since then, while hardly any change in PA has been observed, its separation has decreased slightly. This indicates that the orbital plane must be turned flat with respect to the Earth and in a few more centuries the two stars may appear to meet each other with very little or no separation at all.

Another double star which is nearby, and one easier to split from its 37" separation, is Lambda (λ) Arietis. The primary glows at magnitude 4.9, and the secondary at 7.7, making its overall brightness 4.8.

Since Aries is far from the Milky Way's spiral arms, the deep sky objects here are all in the form of galaxies. But they suffer from remoteness. However, well worth tracking down is NGC772, Aries' brightest galaxy. Comparatively strong at magnitude 11 and measuring 7.3' x 4.3', this galaxy shows a distinct core, and in CCD or photographic images, it reveals an assortment of spiral arms. One arm is elongated dramatically as if being pulled by some unseen attractor. NGC772 is 1.4 degrees east south-east of Gamma Arietis at RA 1h 59.4m Dec +19° 00.4'.

Gamma (γ) at 182x

NGC772

NGC1156 is an irregular galaxy measuring a small 3.3' x 2.4' and a little dimmer at magnitude 12. Large telescopes may see a mottled, rectangular object, or otherwise simply an undefined patch of light of roughly oval shape between two dim stars. You'll have to look to the northeast part of the constellation 3 degrees southeast of 41 Arietis, or RA 2h 59.6m Dec +25° 14.3'.

