Desert Skies

Tucson Amateur Astronomy Association

Volume XLVIII, Number 12 December, 2002

2002 Holiday Party

Cover Photo: The TAAA Annual Holiday Party is on December 14, 2002, at the China Rose Restaurant. Get your tickets at the December meeting!

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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

It may not have been the meteor storm we were hoping for but it was a decent meteor shower by any other standard. The "official" counting team on Mt. Lemmon estimated the shower topped out at about 500ZHR for a few minutes around the peak, but otherwise the rate was rather sedate. The show was rather dimmer than last year as well with average magnitudes from two to four.

Monday I joined five other club members on a back road behind the Rincon Mts. for a wonderful night. Enjoying Saturn and Jupiter in a 'scope or hiking among granite boulders in the light of a full Moon. About one o'clock in the morning the telescopes were dismounted and the cameras put up in their place. I had two 35mm cameras riding on my losmandy mount, Ray Toscano was more reserved with one on his LX90, while Ed Finney and Robert Crawford had no less than three 35mm's bolted to the top of their 4.5" on a Vixen mount. I think they had more aperture in camera lenses than the telescope and I'm sure they will have more photos to show us at the next meeting. While Dean Salman went for instant gratification and mounted his CCD with a 50mm lens and we all crowded around his monitor every time he caught a meteor. Definitely a good night, too bad I had to go to work the next day.

We are making a push to finish the observing area at TIMPA, maybe not the domes at the moment, but pads, power and access road. The road is now complete, gravel poured all the way to the two existing pads. I hope to add a few more pads and get the power out to them in the coming months. The area may not be large enough to support the entire crowd that shows up for a scheduled TIMPA star party, but should be ideal for someone who wants to do serious observing or imaging on any other night.

So hopefully the weather will give us a break and we can enjoy some of these cool fall evenings or some of these new facilities.

See you out in the dark.

Andrew

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, Dec. 6 at the Steward Observatory Auditorium – Room N210

BEGINNERS LECTURE: 6:30 pm
Title: Stellar Magnitude
Speaker: Andrew Cooper

Brightness seems like a simple subject, but when measuring brightness in the sky things get a bit more complex. A little history and a little practical skill will make up the talk.

GENERAL MEETING: 7:30 pm
Title: QUASARS: Monsters of the Ancient Universe
Speaker: Jill Bechtold, Steward Observatory

Quasars are super-massive black holes, which have fascinated astronomers since their discovery in the 1960's. The Chandra X-ray Observatory is discovering new facets of the quasar phenomenon: high-energy jets and hot gas near the central engines of these objects. With the upcoming launch of SIRTF, we will be able to study quasars with unprecedented sensitivity in the next few years. Dr. Bechtold will talk about why we think quasars quase, what the outstanding questions in quasar research are, and what the new generation of telescopes will tell us about the link between quasar evolution and galaxy formation.

BOARD OF DIRECTORS MEETING: Wednesday, Dec 11, 7:00 pm at Steward Observatory Conference room N305.

STAR PARTIES AND EVENTS:

3 Dec - Van Buskirk ES Star Party
4 Dec - Quail Run ES Star Party
5 Dec - Hendricks Elementary School Star Party
10 Dec - Accelerated Learning Laboratory Star Party
12 Dec - Manzanita ES Star Party
12 Dec - Astro-photo Special Interest Group Dinner
13 Dec - Flandrau Science Center Star Party
14 Dec - TAAA Annual Holiday Party
14 Dec - Flandrau Science Center Star Party
21 Dec - TIMPA Work Party
22 Dec - Tucson Children's Museum

Newsletter Schedule: Deadline for articles: Mon, Dec 9. Printing. Mon, Dec 16. Folding Party: Tues, Dec. 17 Mailing: Wed, Dec 18. 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 who have joined the TAAA: Michelle Deardorff, Richard Hoye, David and Patricia Kirby, Bob Mezzone, Roger Schuelke, Gordon L Smith, Carl Stanley. Glad to have all of 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. (Updated membership lists are available at the regular meetings, so pick one up if you need it.)

2002 HOLIDAY PARTY TICKETS

The 2002 TAAA Holiday Party will be held December 14th, at the China Rose restaurant, 5101 East Speedway (at Rosemont). Our hostess, Carol Hunter, has designed for us a generous family-style Chinese dinner featuring eight main dishes including chicken, pork, beef, seafood, and vegetarian selections.

Our guest speaker will be Raymond E. White, University of Arizona Distinguished Professor Emeritus of Astronomy and Astronomer Emeritus at Steward Observatory, who will present a program on "The Inspiration of Astronomical Phenomena: Astronomy and Art". Professor White is one of the original organizers of INSAP, a series of international conferences concerning the many and variegated cultural impacts of perceptions about the day- and night-time sky. His presentation promises to be exciting to a wide range of listeners, including both hard-core amateur astronomers, and those who love them! The evening's entertainment will of course include the popular annual bonanza of door prizes.

We will begin with a social hour (cash bar) at 5:30 p.m., and dinner will be served at 6:30. Tickets are $16. If you have any special dietary restrictions, please let us know when you purchase your ticket, and we will endeavor to accommodate your needs.

THE LAST OPPORTUNITY TO BUY TICKETS will be at the December meeting, so bring money and checkbooks! 75 tickets will be sold, and a waiting list will be kept. Reservations may also be made by phone or email (ORDER NOW!) to:

Thom Peck 327-7825 tpeck@email.arizona.edu
Sheila Conrad 529-1750

CHECKS FOR PHONE/EMAIL ORDERS MUST BE MAILED BY DECEMBER 1ST to Sheila at:
7254 E. Crystal Mist Drive, Tucson AZ 85750

If you find you cannot attend, please contact Thom or Sheila so that another member may be given the opportunity to enjoy this function. Refunds will be guaranteed only for cancellations made by December 8th. BTW, attire for the party is typical Tucson -- anything goes! If you want to dress up in your favorite holiday fancy duds, we will be pleased to admire and compliment you; but if your idea of dressing up is a new astronomical T-Shirt (also for our admiration) and your best Birkenstocks, that's equally acceptable!

HELP WANTED: Donations for door prizes are solicited by the party planners. We could also use a few people to help with legwork, set-up and other details (no decision-making, heavy lifting, or deep-thinking involved!). Please contact Thom or Sheila if you can lend a hand with this fun event.

Refreshments

Jeff and Maggie Buzek brought the refreshments to the November meeting and will do so again this month. We are seeking refreshment hosts for the next few months, so a sign up sheet will be available in the meeting room if you are interested. Sign up for one or more months at a time. Remember to tell the Buzek's "Thank You" at the next meeting for their efforts.

Refreshment hosts bring cookies, soda, ice, and whatever other supplies are needed to the meeting. The hosts set out the refreshments shortly before the main lecture ends and then cleans up after the feast is over.

Calendars for 2003

There are about a dozen 2003 calendars left. Ann Scott will sell them until the supply is exhausted. The calendar selected this year comes from the Royal Astronomical Society of Canada. The cost is $10 each (~$7 off the regular selling price), or $9 each for more than one. They make great gifts. This calendar, which features full-color astronomical photos taken by amateur astronomers, has daily information about astronomical events, including moonrise and moonset information, plus space for adding important events you need to remember. Whether it's the excellent photographs or the moon data, our members have had good things to say about this calendar.

Newsletter Deadlines for January 2003

Due to the upcoming holiday season, the January 2003 newsletter schedule has been advanced one week. This will allow us to get the newsletter out in time without impacting everyone's enjoyment of the holidays. Check the inside front cover for actual dates.

TAAA Land Search Survey Results

By George Barber

In June a survey was taken regarding the search for a permanent observing site for the TAAA. A total of 19 surveys were returned and compiled. All agreed that the

Club News (cont.)

TAAA should find and a permanent dark-sky site, 79% were willing to help with financial or other support for building and maintaining a TAAA observatory, 47% were interested in long-term lease options for their personal use, and 74% suggested leasing rather than purchasing property.

In considering a permanent dark-sky site, these criteria were ranked on a scale of one (unimportant) to five (very important).

Proximity within 1-hour drive of central Tucson:	2.5
Proximity within 1.5-hour drive of central Tucson	3.3
Proximity within 2-hour drive of central Tucson	3.0
Property located above 4000 feet elevation	3.1
Sky at least as dark as TIMPA	4.1
Sky at least as dark as Empire Ranch	4
No light trespass by nearby light sources	4.5
Flush Toilets	2.2
Public Utility Electricity	2.3
Water Well	2.2
Away from airplane flight paths.	3.1

Other comments noted: Facilities for camping (2), hookups/RVs (1), overnight facilities (1), warm room/ indoor meeting area (1), internet access (3), remote observatory capability (2), private observatories (2), reduced traffic (1), reduced dust/paved roads (2), adjacent land for astro-friendly homes (1), auto access (3), usage fees/leases (3). Safety/Security (4), Caretaker on or near grounds (2), no interference with TIMPA development/ funds (1)

6. Distance, darkness, sky glow: the following comments were noted: Distance: up to 1 hour (2) up to 1.5 hour (4) up to 2 hours (1). Sky glow: in North (2) in East (1) in West (3). Most importantly, a dark south sky (6). Darker than TIMPA (1) Darker than Las Cienegas (1) minimal or "darkness most important" (6). No threat of nearby development (2)

7. Preferred or suggested locations: Santa Margarita Ranch, Rancho Seco, Chiricahua mountains, near Kitt Peak.

The land search committee wishes to thank everyone who participated in the survey. Your recommendations will be very helpful as we survey the available properties and select those which would potentially meet our needs. As this process continues, future articles will be published to keep the TAAA members informed of our progress.

Small Amounts Add Up - The TAAA Automatic Donation Program

The New Year is approaching. This is a good time to join other TAAA Members who are contributing monthly to the TAAA using our Automatic Donation Program. It's easy to do. Each month, the TAAA automatically deducts an amount you specify from your designated checking account. The transaction appears on your bank statement as an EFT. If you are interested, there is a form to fill out which authorizes the TAAA to make the EFTs, and we need a voided check. Money can be donated to any of the TAAA funds, including Light Pollution (SA-IDA) and TIMPA. Monthly donations need to be at least $5/month. The agreement can be cancelled at any time with proper notification. Forms are available at every monthly meeting. See the treasurer if you have questions.

Items of Interest

Steward Observatory Public Evening Lecture

On December 9th, the Karl Jansky Lecture (sponsored by the National Radio Astronomy Observatory) will be presented in place of the Steward Public Evening Lecture. Dr Shrinivas Kulkarni, who has received the 37th Annual Karl Jansky Lectureship, will present a lecture titled "The Brightest Explosions in the Universe." Kulkarni is being honored by the Trustees of Associated Universities, Inc. as a young and active researcher, whose work represents a breadth and depth usually associated with a lifetime of productive work. As a graduate student, Kulkarni collaborated with Don Backer of the University of California at Berkeley in the discovery of the first millisecond pulsar. Kulkarni's research focuses on neutron stars and other compact objects, including binary pulsars and stellar black holes in globular clusters, pulsar powered bowshocks, soft gamma-ray repeaters, and magnetars. He also is an expert in optical interferometry, and his systematic search for brown dwarfs culminated in the discovery of the lowest-mass brown dwarf known, Gliese 229B. More recently, Kulkarni spent time in Japan learning X-ray astronomy. Dr. Shrinivas Kulkarni is the McArthur Professor of Astronomy and Planetary Science at the California Institute of Technology and a senior fellow at the Mount Wilson Institute, Pasadena. The lecture will be presented at 7:30pm in the Steward Observatory Lecture Hall.

Desert Sunset Star Party
May 1-4, 2003

The Desert Sunset Star Party scheduled for May 1-4, 2003 at the Kartchner Caverns State Park in Benson, AZ, is an event for amateur astronomers. Our goal for the DSSP is to promote amateur astronomy in southern Arizona annually, to encourage and invite other amateurs to enjoy our dark Arizona skies and the many related attractions in this area.

For those of you who have not been to an event like this, it is a great opportunity to learn and socialize with amateurs from other locations. Unlike the many public star parties that the TAAA hold each year, this event will be closed to the public. But you will still hear the wows, oohs and ahs as someone finds an object for the first time or looks at a familiar object through someone else's telescope.

Prior to dinner, we plan to have a few demonstrations set up near the pavilions. We hope we can get a few of the seasoned amateurs to volunteer to demonstrate specialized techniques and to share their expertise. We will have a swap meet on Saturday afternoon followed by a contest for your homemade innovative astronomy gadget.

After dinner, attendees can listen to speakers at the amphitheater while we wait for the sun to set. We are hoping to have a good selection of door prizes donated from some local businesses and other vendors we have contacted in our star party travels.

During the days, we are encouraging attendees to visit places like Kitt Peak, the UA Mirror Lab and Planetarium, the Air and Space Museum and Titan Missile Museum, and of course the many non-astronomy related sites such as the Arizona Sonora Desert Museum and Old Tombstone.

We hope we can count on many of the TAAA members to assist us with this event. We still have openings for speakers. We can also use volunteers to help with check-in, area orientation and other tasks. Please help us make this event a memorable one. If you have any suggestions or questions, please feel free to contact us. We will be speaking about the DSSP at the January 4, TAAA members night meeting. In the meantime, please check out our website at http://chartmarker.tripod.com/sunset.htm for additional details and registration forms.

Star Parties & Events

Star Parties for December are generally at the beginning of the month owing to TAAA members and school holiday schedules. Times have been moved back to 6:30 set-up times and a 7 pm start by popular demand to allow members to depart work, grab their scopes and head out to the sometimes distant sites.

Van Buskirk ES Star Party — South Central
Dec 3, (Tuesday) — **No. of Scopes: 6**

Van Buskirk is a Southside school that has not had a party before and the kids are looking forward to their first opportunity to attend a star party there. Go south on Park Ave. from Broadway, past Ajo to Fair St. (stoplight). Turn right (west) to Van Buskirk Elementary School. Signs on Fair St will point to the entry gate that is located at the very east end of the parking lot. Go into the lot, through the Playground gates and follow the signs to the Set Up Area which is behind the School on the playground. Set up time is 6.30 pm and viewing begins at 7 pm. Paul Olson will be Star Party Leader for this event. A sign up sheet will be available at the December meeting.

Quail Run ES Star Party — Northwest - Marana
Dec 4, (Wednesday) — **No. of Scopes: 4**

Quail Run is home to a group of very enthusiastic teachers and students that have participated in Project Astro. Dark skies will prevail for students to get a better look at Saturn and deep sky objects. From I -10 West, take Cortaro Rd. exit east (turn right at end of exit ramp). Travel east on Cortaro, past the IHOP restaurant on the

Star Parties & Events (cont.)

left and Wendy's & Chevron on right. Go straight through the intersection (stoplight) with Camino de Oeste. Quail Run will be on your left. Parking lot is in front of school. From Ina Rd., travel west to Oldfather Rd. Turn right at Oldfather. Travel north to Cortaro Rd. Turn left (west) at Cortaro. School will be on your right. Set up time is 6.30 pm and viewing begins at 7 pm. A Star Party Leader is needed for this event and a member sign up sheet will be available at the December meeting.

Hendricks Elem. School Star Party — Northwest
Dec 5, (Thursday) — **No. of Scopes: 5**

Hendricks Elementary School will be holding their fall Star Party with teachers, parents and students attending. From Oracle proceed west on Orange Grove Rd. past La Cholla about a mile and a half. If arriving via I-10, you will find Hendricks one mile east of the freeway. Set up in the large field on the east side of the two story school building. There is also concrete walk around the east side of the school. Set up time is 6.30 pm and viewing begins at 7 pm. A Star Party Leader is needed for this event and a member sign up sheet will be available at the December meeting.

Accelerated Learning Lab Star Party — Northwest
Dec 10, (Tuesday) — **No. of Scopes: 6**

The Accelerated Learning Lab is a fall regular with TAAA. Go west on Camino del Cerro to Silverbell, continue west on Camino del Cerro for about a mile and a half and make a right on Camino de Oeste. Drive approximately a half of a mile and make a left at a big brick mailbox, which is the driveway to the school. Set up time is 6.30 pm and viewing begins at 7 pm. A Star Party Leader is needed for this event and a member sign up sheet will be available at the December meeting.

Manzanita ES Star Party — North
Dec 12 (Thursday) — **No. of Scopes: 5**

Manzanita will be holding a Star Party for student and parents. The kids will be interested in exploring the first quarter moon as well as Saturn and deep sky objects. Go north on Campbell Ave., cross Sunrise Dr (Mall under construction on NW corner on intersection) and continue north just about a quarter mile just past the apartment complex on the left. Manzanita Elementary is just past the apartments on the left (westside) of Campbell. Set up time is 6.30 pm and viewing begins at 7 pm. Parent and teachers will have pizza, soda and cookies for the TAAA team by 6.30 so you can eat before the kids all get there. A Star Party Leader is needed for this event and a member sign up sheet will be available at the December meeting.

Flandrau Science Center Star Party
December 13-14 (Friday and Saturday)

Here's two chances to show the general public Saturn, the bright winter sky and the gibbous Moon on the e UofA mall with the folks at Flandrau Science Center. Saturn is close to from opposition, and the UA basketball team is not playing, making this a good opportunity for public outreach. Join Flandrau Science Center on Friday, December 13 and Saturday December 14, 2002 from 6:45 p.m. (setup) to 9:30 p.m., weather permitting (set up recommended at 6:15 p.m., no later than 7 p.m.). Flandrau Science Center will need lots of volunteers for the two nights of celestial viewing to handle the expected large crowd on the grassy mall in front of Flandrau. Lights on the mall will be specially turned off for the event. Parking on the grassy portion of the mall near or at the observing area will be only allowed with permission, in advance. If you intend on helping out (or have special parking needs) please let Michael Terenzoni at Flandrau know via e-mail (miket@ns.arizona.edu) or phone (621-3646). A sign up sheet will be available at the December meeting.

TIMPA Work Party
21 Dec 2002

In the final push to make a nice observing area we are planning to extend electrical power from the 16' Dome site to the observing pads along our new access road (about 150 ft). So this month we will trench and lay cable, as well as build small stations for the electrical receptacles. Work starts at 9:00am and the cool December weather should make for a pleasant morning. Bring water and a hat as well as shovel and rakes. Contact Andrew Cooper at taaa@seds.org for more information.

Tucson Children's Museum — Central
Dec 22 (Sunday) - Solar Event — **No. of Scopes: 2-3**

The museum will celebrate the Winter Solstice with displays and museum events including a look at the sun on solstice day (the solstice actually begins at 8pm Saturday). You will find the museum at 200 S. 6th Ave. Go two blocks south of Broadway on 6th Ave. (Note: 6th is a one way going north). The museum is right across from Armory Park. Set up time is 12.30 pm and viewing is scheduled for 1-4pm. A member sign up sheet will be available at the December meeting.

TIMPA Site News

We have road! 50 tons of gravel was delivered to TIMPA today and spread on the road to the domes and observing pads.

The cost was less than I expected, about $680. The truck did most of the spreading as we got a driver who knew what he was doing. But we did hand spread much of the gravel, without much dust. We didn't pay for the good stuff, this is just what they get from their pit.

Bathroom light covers and coat-hooks were also installed. I understand that the TIMPA folks have purchased vent fans for the bathrooms, they just haven't installed them yet.

turning circle as well a few thick spots where the truck started its pours.

The gravel is still soft to drive, but should pack down with a little traffic on it. It is nice rock as well, like a large pea

Dark Skies for December 2002

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

Sa/Su	30/ 1	18:45	4:01	Tu/We	10/11	23:49	5:47	Sa/Su	21/22	18:51	19:18
				We/Th	11/12	0:44	5:48				
Su/Mo	1/ 2	18:45	5:12	Th/Fr	12/13	1:38	5:49	Su/Mo	22/23	18:52	20:21
Mo/Tu	2/ 3	18:46	5:42	Fr/Sa	13/14	2:32	5:49	Mo/Tu	23/24	18:52	21:27
Tu/We	3/ 4	18:46	5:43	Sa/Su	14/15	3:26	5:50	Tu/We	24/25	18:53	22:32
We/Th	4/ 5	18:46	5:43					We/Th	25/26	18:53	23:37
Th/Fr	5/ 6	18:46	5:44	Su/Mo	15/16	4:22	5:50	Th/Fr	26/27	18:54	0:42
Fr/Sa	6/ 7	19:47	5:45	Mo/Tu	16/17	5:19	5:51	Fr/Sa	27/28	18:54	1:48
Sa/Su	7/ 8	20:50	5:45	Tu/We	17/18	-	-	Sa/Su	28/29	18:55	2:55
				We/Th	18/19	FULL MOON					
Su/Mo	8/ 9	21:52	5:46	Th/Fr	19/20	-	-	Su/Mo	29/30	18:56	4:04
Mo/Tu	9/10	22:52	5:47	Fr/Sa	20/21	-	-	Mo/Tu	30/31	18:56	5:14

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn	
Sa/Su	Set	Rise	Set	Vi	Rise	Vi	Rise	Vi	Rise	Vi	Rise	Vi
30/ 1	17:17	7:05	17:46	-	4:08	-4	3:58	2	22:21	-2	18:28	0
7/ 8	17:17	7:11	18:03	7	3:55	-4	3:52	2	21:53	-2	17:58	0
14/15	17:18	7:16	18:23	5	3:48	-4	3:46	2	21:25	-2	17:28	0
21/22	17:21	7:19	18:42	4	3:45	-4	3:40	2	20:56	-2	16:58	0
28/29	17:25	7:22	18:53	4	3:46	-4	3:34	2	20:26	-2	16:28	0

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

By Erich Karkoschka

Object of the Month by Alfredo Garcia, Jr.

This month's OTM is a wondrous member of our Milky Way Galaxy that belongs to the class of objects known as open star clusters.. There are many fine examples of open star clusters in our galaxy, but this OTM is very appropriate for this time of the year.

Open clusters are physically related groups of stars held together by that powerful, governing force of the universe known as gravity. They are believed to originate from large cosmic gas and dust clouds in the galaxy and orbit the galaxy through the disk. Most open clusters have only a short life as a cluster. As they drift along in space, some members escape the cluster due to velocity changes in mutual closer encounters; tidal forces in the galactic gravitational field; and encounters with field stars and interstellar clouds crossing their way. On average, an open cluster has spread most of its member stars along its path after several 100 million years and only few of them have an age counted by billions of years.

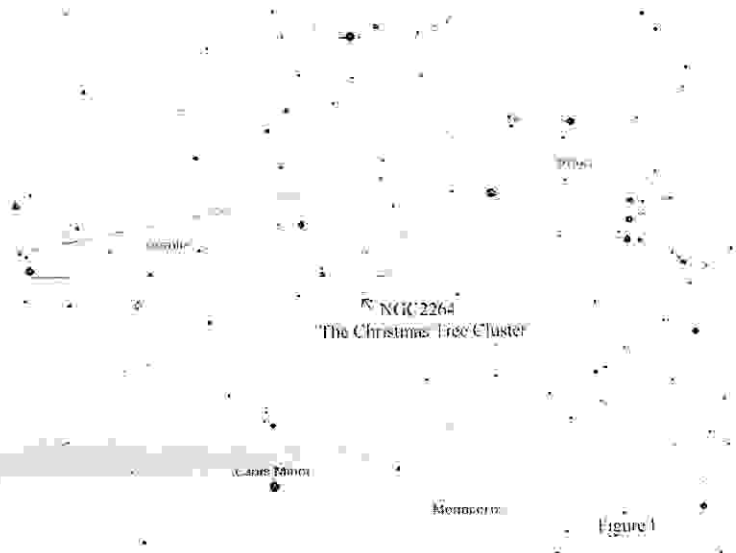

Figure I

Without any further introduction, I present to you the December 2002 OTM: NGC2264 or the Christmas Tree Cluster (now you see what I meant about its appropriateness for the time of the year!). For those of you who have observed NGC2264 before, you will most certainly agree that it is one of the best stellar jewels in the sky. If you have never observed it, then you are in for a treat!

NGC2264 was discovered by William Herschel in 1783 from his observatory in Bath, England. It later was christened "The Christmas Tree Cluster" by the astronomer L.S.. Copeland. The estimated distance to NGC2264 is about 3,000 light-years and spans some 20 light-years. It has a visual magnitude of 3.9 and can be easily observed with just about any size telescope.

The best time to observe the Christmas Tree Cluster during this month (if you can bear the cold nights!) is during periods when the Moon is not visible. If you go out observing (from the Tucson area) in early or late December at about midnight, you will find NGC2264 at an altitude of about 52 degrees above the southeast horizon (early month) to about 65 degrees above the south horizon (late month). If you use setting circles or have an automated go-to telescope, you can find it at RA 06hr 41min 06.0sec and DEC +09deg 53min 00.0sec

Since the stars that make up the constellation of Monoceros are not that bright, you can not easily "starhop" to it by using this constellation's stars. So you must use the stars from another constellation to find it. I like to use the stars in the constellation of Gemini. Start by finding Gemini's brightest star, Pollux. Almost opposite from it at a distance of about 20 degrees is the 1 9 magnitude star known as Alhena. NGC2264 is about six and a half degrees from Alhena (see Figure I). At a magnitude of 3 9 and an apparent size of a little over one degree (or two Full Moon widths), you should be able to easily spot the cluster with or without optical aide.

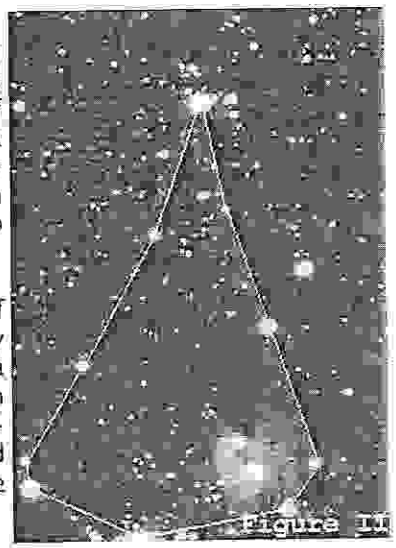
Figure II

The Christmas Tree Cluster presents a very nice view even through the smallest of telescopes. Some 20 bright stars are easily visible and they are surrounded by extensive, but tenuous luminosity. In addition to being a great visual object, it is also a very nice and easy target to astrophotograph or CCD image. I used an 80mm f/5 Orion ShortTube Refractor to produce the Image at Figure II. It was taken using a Starlight X-Press MX5C CCD camera and is a composite image of two 10-minute exposures. To lend more impact to its proper name, I have outlined the stars in the image that form the "Christmas Tree".

As a side note of interest, the "ornament" that tops this celestial Christmas Tree (running to the south of the top magnitude 7 star) is the famous "Cone Nebula". It is a dark nebula stretching for a distance of six light years and was recently imaged by the Hubble Space Telescope. It is a fantastic image! You can view the image at: http://ngst.gsfc.nasa.gov/PictureOfTheWeek/2002-09-06.html.

So take advantage of some of the clear, moonless winter nights this month has to offer and go out and observe this celestial Christmas Tree.. Happy holidays!

TAAA Board of Directors Meeting - November 13, 2002

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

Meeting opened at 7:07 pm.

1. Changes to the agenda: Andrew asked for additions to the agenda, items added are Kitt Peak Star B'Que sign up and overflow, recognition certificates for club sponsors and a telescope loaner program.

2. Events: Andrew reviewed upcoming events for November. Terri commented that she would rather see what is happening currently and into the next month not what's already happened. It was also mentioned that TIMPA would be open for the Leonids.

3. Treasurer's Report: Terri handed out her report. The Raymond James investment is up this month. Terri has purchased the certificate of deposit, Andrew and Thom will need to submit signatures to the bank. The club has obtained discount pricing at two of the Kinko stores for printing the newsletter. Roger Tanner will obtain estimates.

4. PA System for Holiday Party: Terri presented information gathered by Sheila Conrad and Twila Peck regarding purchase of a PA system for the club. It was motioned by Terri and seconded by Steve to purchase a system in place of renting. The system could be used at other TAAA functions. Motion passed unanimously.

5. TIMPA. Andrew reported that a work party is scheduled for November 23. Light covers, coat hooks and gravel will be spread.

6. Desert Sunset Star Party. Andrew informed the Board of a request for support for this event to held May 1-4, 2003, at Karchner Caverns State Park. This conflicts with the annual Texas Star Party. Andrew wondered if TAAA is interesting in promoting this event in anyway. There is specific request to sponsor a meal. It will be proposed to the general membership and in the December newsletter. The club will need to know how many attendees.

7. Recognition Certificate: Bill presented a certificate to be presented to our sponsors. It was approved by the Board to also include the club logo. Bill will get them printed and obtain the President and Secretary signature.

8. Kitt Peak Star B'Que Overflow: Presented by Steve and Robert. Guidelines were presented by Robert and discussed and a plan approved. The change will take effect for the May 24 Kitt Peak event.

9. Loaner Telescope Program: Andrew presented the idea to the Board and will bring up at the meeting.

Old Business: Among several items were: lifetime membership, SP mentor program, constitution revision, 30" and 16" telescopes, 6' and 16' dome, and TAAA handbook.

Meeting adjourned at 9:07 pm.

Respectfully submitted,

Jane Tongate
Secretary

Desert Skies Classified

FOR SALE:	FOR SALE: 8" Orion Deep Space Explorer Dobsonian telescope. 1200mm focal length (f/5.9). Helical focuser. 4 years old. Includes Orion EZ finder reflex sight. The scope needs a counterweight due to the heavy focuser. $300. Please e-mail at ctlancaster@msn.com (01/03)
FOR SALE:	TAKAHASHI Epsilon-130 Astrograph (f 3.3 reflector corrected for photography) on EM-1 equatorial mount; 4.2 mm and 7 mm Televue Nagler eyepieces, 12 mm illum. crosshair eyepiece; Olympus OM-1 for 35 mm photos (plus 24, 50 & 200 mm Olympus lenses); Mamiya attachments for: 6x7 rollfilm (120/220 Ektachrome etc.), Polaroid pack or sheet-film for medium format. Mamiya Universal Press camera w/ f2 8, 100 mm goes with the ensemble. $1,275 Jim Jondrow, 529-0933 ; jjondrow@fastucson.net

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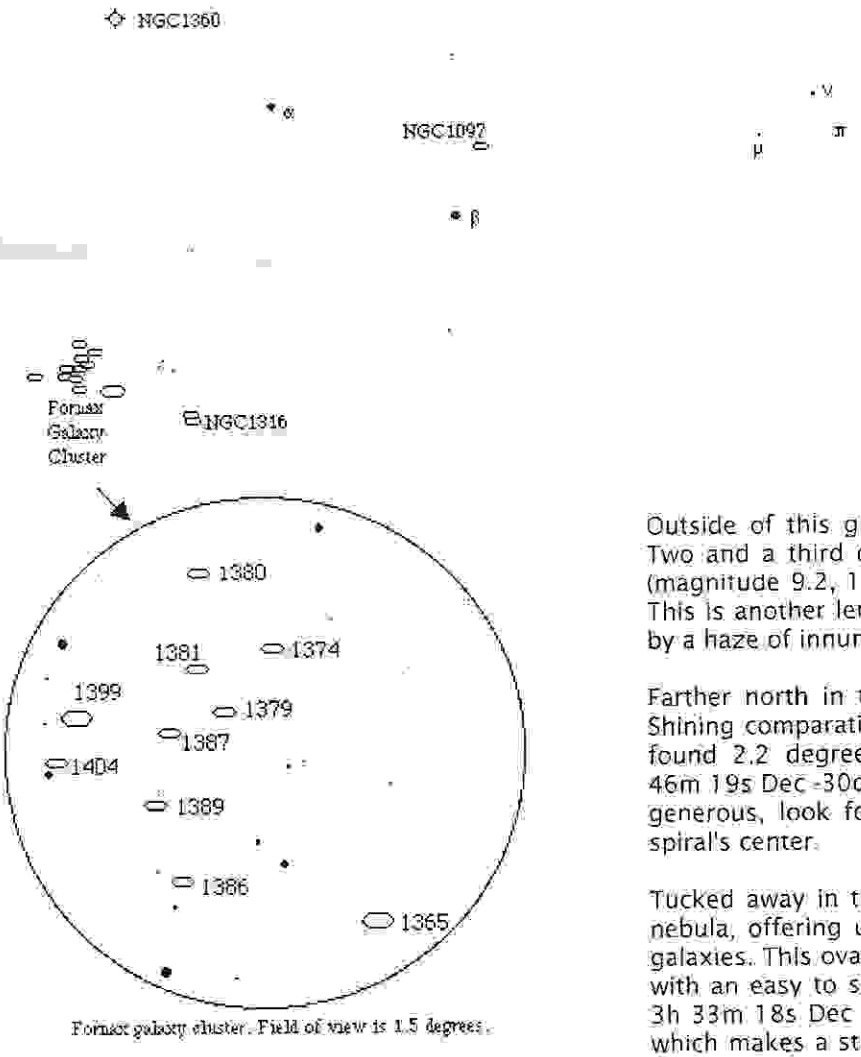
Constellation Report by Chris Lancaster

Fornax

The furnace

Many of the faint constellations were created by the German astronomer Johannes Hevelius, but the credit for this particular group of stars goes to the Frenchman Nicolas-Louis de Lacaille, who studied astronomy in the 18th century. Originally he named it Fornax Chemica, or the chemical furnace. The neighboring constellation Eridanus winds its way around Fornax, which is composed of 4th and 5th magnitude stars which find themselves between 2 hours and 4 hours of RA and -40 and -25 degrees declination. Perhaps the best way to find Fornax is to orient your view with respect to the constellations Orion and Cetus. Make a line from Alnitak, or the eastern most star or Orion, follow it through Rigel, Orion's western foot, and continue to a point directly below the head of Cetus. The scattered stars of Fornax trace out no particular shape.

Near Fornax's border with Eridanus is this constellation's main draw. Here is a cluster of 23 galaxies, ten of which are visible in the same eyepiece if your scope is capable of a very wide field of view (about 1.5 degrees). Sweeping the area with high power, on the other hand, will bring galaxies randomly into the eyepiece, allowing you to stop and study each one individually. The specific ones which stand out in this compact group are as follows:



Fornax galaxy cluster. Field of view is 1.5 degrees.

NGC1399--Magnitude: 9.8/Size: 6.9'x6.4'/Position: RA 3h 38m 28s Dec -35d 26' 58". Here is a bright elliptical galaxy with a bright core and diminishing haze surrounding it.

NGC1365--Magnitude: 10.1/Size: 11.2'x6.2'/Position: RA 3h 33m 36s Dec -36d 08' 17". A remarkable double armed barred spiral

NGC1380--Magnitude: 11.0/Size: 4.7'x2.3'/Position: RA 3h 36m 27s Dec -34d 58' 33". This one is a lenticular galaxy with a bright center.

Outside of this group are two other bright galaxies of note. Two and a third degrees southwest of NGC1365 is NGC1316 (magnitude 9.2, 11.9'x8.5', RA 3h 22m 42s Dec -37d 12' 28"). This is another lenticular galaxy with a bright core surrounded by a haze of innumerable stars.

Farther north in the center of the constellation is NGC1097. Shining comparatively brightly at magnitude 9.9, this galaxy is found 2.2 degrees north-northwest of Beta Fornacis (RA 2h 46m 19s Dec -30d 16' 21"). If the sky is dark and your aperture generous, look for the stream of stars spanning this barred spiral's center.

Tucked away in the northeast corner of Fornax is a planetary nebula, offering us a nice change of pace from the wealth of galaxies. This oval shaped nebula measures 6.5' in its long axis with an easy to spot 8th magnitude central star. Find it at RA 3h 33m 18s Dec -25d 51' 00", or center your scope on a spot which makes a straight line and equal distance with Alpha and Beta Fornacis. When spotted, this nebula shows no particular structure except perhaps some mottling on its southeast side.