

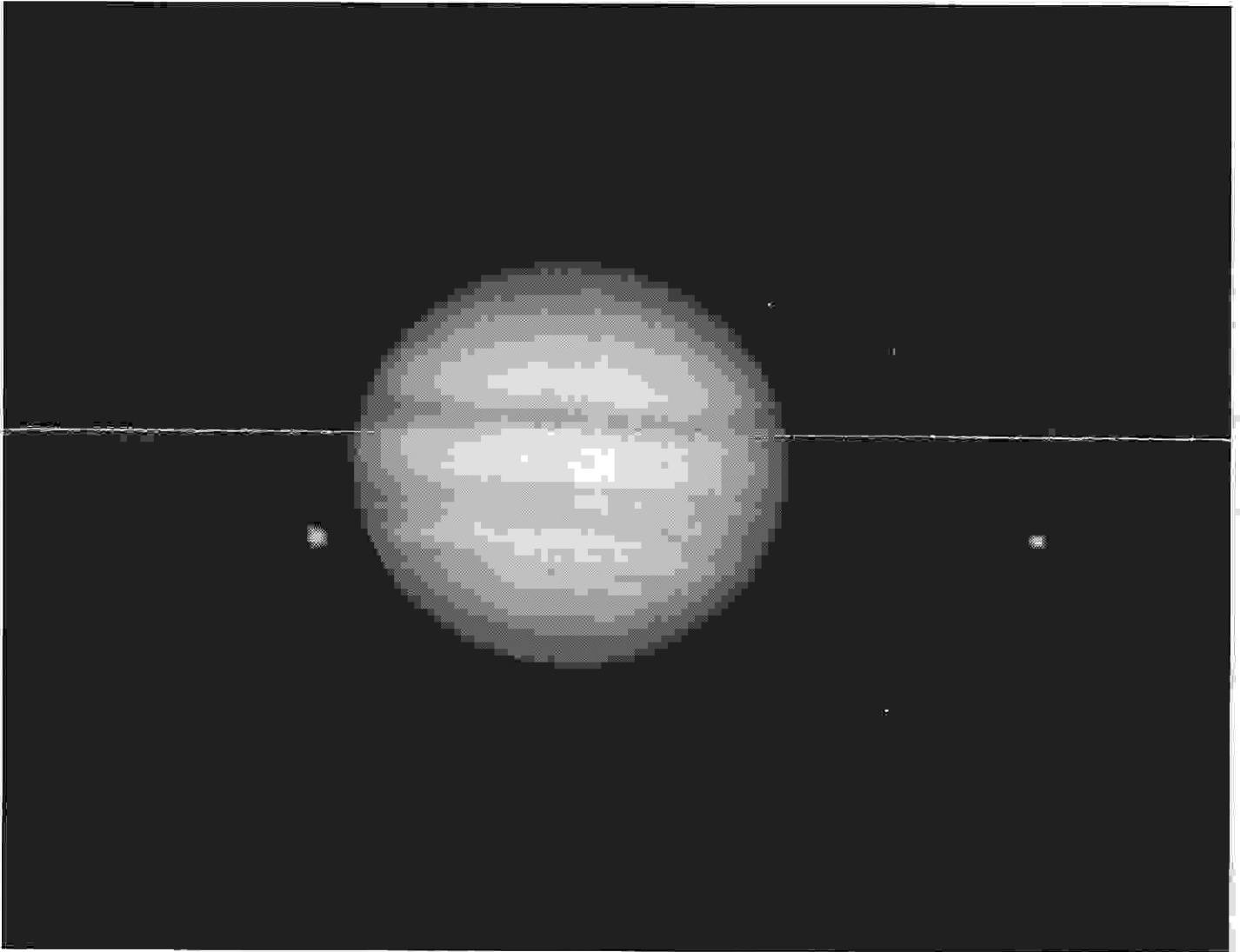


Desert Skies

Tucson Amateur Astronomy Association

Volume L, Number 4

April, 2004



A webcam captures Jupiter and two moons

Cover Photo: A result of the astrophoto SIG imaging workshop held in March. Jupiter taken with a C11 and a Philips Toucam Pro and a 2x barlow February 24th, 500 of 1000 frames processed with Registax. Ganymede on the left and Europa to the right. Imaged by Andrew Cooper.

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

TAAA Phone Number: (520) 792-6414

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|--|----------------|----------|--------------------------------|
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| Equipment Loan Coordinator | Jerry Penegor | 320-1872 | penegor@dakotacom.net |

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\$ | 5.00 |
| Sky & Telescope Magazine | \$ 32.95 |
| Astronomy Magazine | \$ 29.00 |
| Postage for New Member Pack..... | \$ 3.50 |

Donations are accepted for any of the TAAA funds: SAIDA/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. 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

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President's Message

This month the meeting coincides with the Aronson Lecture. We will be treated to a great talk and I encourage everyone to attend. The meeting time, please note, is 7:00PM! We will have club business following the Lecture. There is quite a bit to do. There are articles in this newsletter that will need attention.

May is election month for the Board of Directors for the TAAA. April is the month we gather the nominations for officers (at least one month before the May elections). Anyone over 18 years old and a member in good standing for at least one year is eligible. It appears there are willing souls to run for office this year, and even an over-

population of Members-At-Large. If you would like to run for office, please contact one of the members of the nominating committee (Sam Turner, Michael Turner, or Steve Ratts). Thanks go out to all who contributed this past year.

Our thoughts are with Dan Ketelsen at this time. You may know that Dean, a past TAAA president and the coordinator of the Grand Canyon Star Party, had a heart valve replaced on March 17th. He is recovering well and we can't wait to get him back with us.

Meeting Information and Calendar of Events

TAAA MEETING DATE: Friday, April 2 at the Steward Observatory Auditorium - Room N210

SPECIAL LECTURE: 7:00 pm

Title: Light from the Edge of the Universe:
Our Oldest Fossil

Speaker: Dr Lyman Page

This month we are honored to present the Marc Aaronson Lecture as part of our April meeting. It will begin at 7pm in our regular meeting room, N210. The 2004 Marc Aaronson Award recipient is Dr. Lyman A. Page Jr. from Princeton University. Over the past decade Dr. Page has looked for and characterized small temperature variations in the cosmic microwave background radiation left by the Big Bang. Through a diverse series of precision instruments, Dr. Page and his group have determined that the curvature of the universe is nearly flat - meaning that it will expand but will never reach a point when it will start to contract. More recently, he has been a key member of the WMAP satellite project, whose results are now the centerpiece of the standard model of cosmology. Dr Page received his Ph.D. in Physics from Massachusetts Institute of Technology in 1989. Since 1991 he has been on the faculty at Princeton, becoming a Full Professor in 1998.

Marc Aaronson was an Associate Professor at Steward Observatory where his specialty was cosmology. He died in 1987 while observing on Kitt Peak. Family, friends, and colleagues established the Marc Aaronson Lectureship to promote and recognize excellence in astronomical research. The Lectureship is administered through the University of Arizona; funding comes from Steward Observa-

tory, the National Optical Astronomy Observatory, and private donations.

Our regular meeting activities will continue after the lecture. **THERE IS NO BEGINNERS LECTURE THIS MONTH.**

BOARD OF DIRECTORS MEETING: Wednesday, April 14, 6:30 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:

Apr 02 - 03 - Flandrau 5-Planet Public Viewing Event
Apr 08 - Astro-photo SIG Meeting
Apr 10 - TAAA Star Party at TIMPA
Apr 12 - Holy Family Home Educators Star Party
Apr 16 - Catalina Foothills High School Star Party
Apr 17 - Audobon Boys and Girls Club of Tucson Star Party
Apr 17 - TAAA Star Party at Las Cienegas
Apr 18 - UofA Astronomy Students Star Party
Apr 21 - Agua Caliente Elementary Star Party
Apr 22 - Copper Creek Elementary Star Party
Apr 23 - Institute of Desert Ecology Star Party
Apr 24 - Arivaca Branch Library Star Party
Apr 24 - Flandrau Astronomy Day
Apr 26 - Amphi Middle School Star Party
Apr 29 - Vesey Elementary Star Party

NEWSLETTER SCHEDULE: Deadline for articles: Sat, April 24. Printing: Mon, April 26. Folding Party: Tues, April 27. Mailing: Wed, April 28. The newsletter is mailed at least one week prior to the following month's General Meeting.

Club News

Member News

We welcome the most recent members to join the TAAA: Bernard Bell, John Gentry and family, Dennis James, Beverly McCune and Robert Yarrington. Glad to have all of you join! New members should be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available to any member at

most regular meetings, so pick one up if you need it.)

TAAA TO INITIATE A STRATEGIC PLANNING PROCESS

By Bill Lofquist, Board Member

The Board of Directors of TAAA at its February meeting made a decision to hold a special session to begin a

Club News

strategic planning process for the organization. I have been asked to facilitate the process.

The special session will be on Saturday, April 3, 2004. The session will be held in the 3rd floor meeting room where the Board of Directors usually meets. It will begin at 9:00 and end at 3:00. Food will be ordered in for a working lunch. The Board of Directors and all of those carrying other official roles will be participating, as well as any TAAA members who would like to contribute.

We are interested in getting as much input from the membership as possible. We are also inviting members to give their ideas to Board members to bring to the session. The members will be notified via the Yahoo mailing list and can contribute ideas through that means. The April 3 session will be open to any member who wishes to attend. We will ask those planning to participate to RSVP so we will know how many to expect. We need to plan for space and lunch.

We hope during this special session to create a detailed strategic plan that looks at all aspects of the organization. At best, we will continue to keep the planning process alive over time to keep it dynamic and relevant as we move into the future. We hope members will contribute to this process to make it as useful as possible. We have many things going for us that we can build upon. Please think about this, participate if you can, and help to make the organization even stronger and more meaningful to members and the larger community.

If you cannot be at the meeting and have some suggestions, please send them to Bill Lofquist at wlofquist@comcast.net, or call him at 297-6653. If you can come, please RSVP to Bill so we will have a lunch for you. We hope to see you there.

Support TAAA with Basha's Thanks a Million Program

Basha's shoppers can designate the TAAA to receive up to \$1 for each \$100 spent when they use their Basha's "Thank You" card. The program ends this month. If you've been participating, thanks for your support! There's still time for you to join if you want. To participate, Basha's shoppers should give the cashier our 5-digit number (23178) when they check out. You only do this one time. Bring your first receipt, which will show the TAAA as your benefactor, into a meeting for \$1 off club apparel or membership dues. If you have questions contact Terri Lappin, tkilappin@earthlink.net, 579-0185.

Basha's Thanks a
Million
TAAA number
23178

Astro-photo SIG Meeting

8 April, 7pm

China Rose, NE corner Speedway/Rosemont

The astrophotography special interest group will be holding its usual meeting at the China Rose on the 8th. We've had some incredible images lately, from advanced CCD images, to some good old film images of star trails and everything in between. Come join us to enjoy the images, or don't be shy to jump up and show us what you've got!

Upcoming Lecture Schedule

The TAAA General Meeting schedule is given below. Please note that the May 7th Beginners Lecture is open, so don't everyone volunteer at once. Give suggested speakers for the future lectures (either Beginners or Invited) to Terri Lappin.

| Date | Lecture | Speaker | Topic/Title |
|-------|---|--------------|-----------------------|
| May 7 | Beginners, 6:30pm | Open | |
| | Invited, 7:30 pm | James McGaha | Asteroid Occultations |
| Jun 4 | Members Night (no Beginners Lecture), 6:30pm | | |

TAAA Dues Increase on the Horizon

The TAAA Board of Directors has discussed increasing the membership dues. If an increase is deemed necessary, a vote will be taken at the May General Meeting. The last time dues were increase was 1994. Since that time we have added several membership benefits. For example, we now have the TIMPA site available for star parties. This costs us \$100/month for maintenance of the grounds. In 1999 we licensed the tucsonastronomy.org website. We also have added a phone service that is mainly used for publicity purposes, although members can call for meeting information or contact us for other reasons. Our newsletter has been expanded since 1994, not to mention increases in the cost of printing and postage. Additionally, our operating costs have increased; insurance rates have increased and a CPA now prepares our tax forms each year. With the exception of the newsletter increases, none of these increases is much per membership, but they all add up. Alone, newsletter costs have increase by about \$4 per membership since 1994.

Over the past 10 years we have been able to squeak out these added services without having to increase dues. A lot of credit goes to Roger Tanner who had been printing our newsletters using the UofA Lunar and Planetary Lab high-speed copier. Roger's work schedule and, more importantly, a decrease in the reliability of those

Club News (cont.)

machines resulted in our newsletter being copied by Kinko's. While we receive a 25% discount off their regular price, there is a net increase over our doing it ourselves at the UA-LPL.

In light of these issues and the results of our strategic planning meeting scheduled for April 3rd, the TAAA Board of Directors will look at our costs of doing business and the services that our members want. This will determine the dues increase that the board will propose. A dollar figure and its justification will be published in the May newsletter, in time for the vote. The board is also looking at cost cutting methods that could put a dues increase off a year or more.

Stay tuned till next month....

CLOSEOUT -- TAAA 50TH ANNIVERSARY SOUVENIRS

All that is left are: Two XXL T-Shirts @ \$13.00 each; one Sweatshirt @ \$17.00; and four Tote Bags @ \$7.00 each. If you want any of these items, please contact Twila Peck right away at 520-327-7825, or twilap@email.arizona.edu.

If you placed an order with Twila and don't have it yet, please contact her IMMEDIATELY to arrange to get your item(s) to you. Thanks!

Grand Canyon Star Party

12-19 June 2004

The National Park Service has approved the 14th annual Grand Canyon Star Party. With the arrival of the New Year, these dates are being made public so that our members and friends can plan their vacation or reservations at the park to join us. The largest crowds (of astronomers and public) are at the south rim, but don't forget that we've got a group of Utah astronomers that also operate a north rim star party if you feel like checking out that side of the Canyon.

For those who plan to stay all week, free campsites are

available again this year on a first-come, first-served basis. More details will be announced later.

TAAA Supports Science Education - SARSEF and SMART

Last month the TAAA participated in several youth educational events. It began with the 2004 Southern Arizona Regional Science and Engineering Fair. We awarded 3 projects with gift certificates that were co-sponsored by Starizona. The grade school award went to 5th graders Amelia Paul and Natalie Hall of St Cyril School for their project titled "Chasing Sunspots". Using images taken by SOHO that were obtained from the Internet and knowing the solar rotation rate, they were able to predict the positions of sunspots. The middle school award went to 6th grader Janell Farler of Butterfield Elementary for her project "Will Mars or Saturn Drift Farther?" Janell predicted that Saturn would move faster but after making 10 observations she found that it was Mars that moved fastest. The high school award was presented to Elizabeth Boroson who is a junior at Catalina Foothills High for her project "Locating the Black Hole at the Galactic Center". Using positions of three stars near the center of the Milky Way galaxy, Elizabeth calculated best-fit orbits and determined the position of the supposed black hole that these stars orbit. She compared this to the known position of Sagittarius A*, the radio source which is believed to mark the position of the black hole. She used data collected by the 10m Keck telescope in Hawaii. She was inspired after hearing a lecture by Dr Fulvio Melia, of the UA Physics and Astronomy Departments. You may remember the lecture he presented to the TAAA last December. The TAAA is proud to encourage these students and hope they will keep up the good work. The 2004 TAAA SARSEF panel of judges were Molly Hancock and Terri Lappin. We appreciate all the work they put in.

Also during the science fair, there was a Raytheon sponsored Funfest event taking place right next door for students from all over southern Arizona. Many TAAA

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Club News (cont.)

members participated in this three-day event. An article about that activity appears elsewhere in the newsletter.

The Girl Scout "Science, Math, And Related Technologies" (SMART) program took place on Saturday, March 20th. The day was pretty cloudy but that didn't stop John Kalas, George Barber, Mike and Mary Turner, and Ken Wheelock from setting up solar observing for the girls. David and Wendee Levy presented a lecture about solar eclipses several times during the day. In another room, Terri Lappin made 10 comets. All involved had a great time. A special thank you goes to George Barber who put in a lot of solar observing between the Funfest activities (all three days) and the SMART program. He has quite a suntan now.

TAAA Elections 2004, You Decide...

The 2004 TAAA Board of Directors elections are upon us. Your diligent Nominating Committee has been hard at work to put together a slate of candidates that will both represent the TAAA and provide stewardship as we begin our next 50 years of observing the skies. To that extent, here is the current list of candidates and the offices they are seeking:

| | |
|-----------------|----------------|
| President | Thom Peck |
| Vice President | Michael Turner |
| Treasurer | Terri Lappin |
| Secretary | Steve Marten |
| Member at Large | Bill Lofquist |
| Member at Large | Ed Finney |
| Member at Large | Ray Toscano |
| Member at Large | John Polacheck |

Please note that ALL of the positions are open for candidates. Nominations for elective offices must be submitted prior to the published deadline of April 2, 2004 to be officially included on the ballot. However, nominations for write-in candidates shall be accepted from the floor at the May 7, 2004 General Meeting. Write-in candidates must accept their nomination in person or in writing before the vote is taken. The qualifications for becoming a member of the Board of Directors are listed in the TAAA Constitution, Article III, Section 5. The voting process is explained in Article IV, Section 6 of the TAAA Constitution. (<http://www.tucsonastronomy.org/constitution.html>).

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

The Nominating Committee:

Michael Turner (mrmgturner@earthlink.net)
 Sam Turner (clearskys@cox.net)
 Steve Ratts (sdratts@cox.net)

Tech Fair a Success

By Ken Wheelock

On March 17, 18, and 19, TAAA joined forces with the U of A, Raytheon, IBM, the U.S. Air Force, Tucson Water, and many other entities to bring the concept of analytical thinking to the young minds of the greater Tucson region during the 2nd annual Tech Fair at the TCC. Both exhibit halls and the south courtyard was filled with displays, demonstrations, and activities all designed with one purpose: stimulate children and excite them about science and engineering. There were from 2500 to 3,000 students each of the three days. Most of the schools recognized the TAAA from the many Star Parties we perform during the year, and others will be calling us for a Star Party. Our volunteers were: George Barber, Gil Jones, Doug Nelson, Ray and Nora Toscano, Connie Walker, Robert Wilson, and Ken Wheelock. Ray temporarily lost his voice, Ken developed strep throat, and George got a good suntan. Doug proved his solar immunity by not taking a single break in 3 days! Everyone had fun, and the event was a success. This surely fulfilled our mission of public outreach and education, and I thank my associates for their enthusiastic work on behalf of tomorrow's adults.

Telescope Stolen

Paul Lorenz, one of our members, had a telescope and mount stolen from a storage shed. The missing scope is a home-made 12 1/2" primary mirror, 3.1" minor axis secondary mirror, and a 16" diameter, 68" long baffle tube, painted deep-sky blue. The scope featured a brass Byers worm gear drive and NGFDX1 Crayford focuser. The mount was a Big Foot mount, varnished with red trim. An Orion 80mm Short-tube scope served as the finder. Vail police and the 3 local astronomy shops have been notified. If anyone has any information regarding the whereabouts of this equipment, please contact Paul at 647-0014.

Newsletter correction

In the March newsletter, it was incorrectly indicated that the April 10 TIMPA star party had been cancelled. The TIMPA star party that was cancelled was the March party. Our star party for April 10 will occur as scheduled.

Reminder:

*The August meeting starts at 7:00 pm
 The TIMPA star party will be held on April 10*

Star Parties & Events

Flandrau 5 Planet Public Viewing Event

April 2 (Friday) and 3 (Saturday)

Here are two chances to show the 5 classical planets and the gibbous Moon on the UofA mall with the folks at Flandrau Science Center. The 6 solar system objects still up (and the fact that the UA basketball team is not playing), make this an excellent opportunity for public outreach. Join Flandrau Science Center on Friday, April 2 (yes, a meeting night) and Saturday April 3, 2004 from 6:45 p.m. (setup) to 9:30 p.m., weather permitting (set up recommended at 6:45 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. 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 April meeting.

TAAA Star Party at TIMPA

Saturday, 10 April, 2004

Come on out and enjoy the spring skies! 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 anyways, 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. There is no scheduled talk for this activity, just come out and enjoy. 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. Be prepared for cool temperatures. Directions to the TIMPA site are located on the outside flap of this newsletter.

Holy Family Home Educators Star Party

Monday, 12 April 2004

Vail

No. of Scopes: 2

Holy Family Home Educators will be hosting "The Planets" at 18180 S. SONOITA WAY, VAIL. Take I 10 east to Hwy 83 (Patagonia Sonita Scenic Highway). Go south on 83 for about 6 miles (till you get to milepost 54. There will be a bank of mailboxes on your LEFT and a dirt road. Take that road. Drive about 1.8 miles. The road will turn and go over about 8 hills. When you see the yellow horse trailer on your right there will be a road right after it. (The horse trailer is our neighbor's property marker and the road is our driveway.) The home is a big, boxy straw bale house.

Bright purple front door, big wooden playground in the back yard (visible from the road). Please follow directions to the observing site. Contact person Diane Willmann can be reached at 219.9299 or email clownesq@yahoo.com. Set-Up Time: 6:45 pm. Observing will be from 7:15 pm to 8:45 pm. Sunset: 6:51 pm Dark Sky: 8:17 pm Moon Phases (no moon during viewing).

Catalina Foothills High School SP

Friday, 16 April 2004

Foothills

No. of Scopes: 5

Catalina Foothills High School will be preparing for their "Foothills Spring Star Gazing Party" at 6085 N Kolb Rd. This event will take place at Ventana Vista Elementary School. Take Sabino Canyon north past Sunrise to first entrance on left (just beyond entrance to Sabino Canyon Rec Area). As you enter school driveway, stay to left and proceed through the gates straight ahead to the faculty parking lot. Contact person DaNel Hogan can be reached at 577-5090 or email dhogan@fc.cfsd.k12.az.us. Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 10:00 pm. Sunset: 6:54 pm Dark Sky: 8:20 pm Moon Phase: (No moon during viewing).

Audobon Boys and Girls Club of Tucson Star Party at Colossal Cave

Saturday, 17 April 2004

No. of Scopes: 4

Audobon Boys and Girls Club of Tucson will be celebrating the "Ultimate Journey" at Colossal Cave Mountain Park. Take I-10 east from Tucson to exit 279 (the Vail Exit), turn north, and follow the signs for about 7 miles. For map see <http://www.colossalcave.com/map.html>. Viewing will be at the El Bosquecito - large campground at Colossal Cave. For campground map check <http://www.colossalcave.com/map.html> and SCROLL down to the Map of the Park. Contact person Suzanne Dhruv can be reached at email sumaer@mindspring.com. Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:00 pm. Sunset: 6:55 pm Dark Sky: 8:21 pm Moon Phase: (no moon during viewing).

TAAA Star Party at Las Cienegas (Empire Ranch)

Saturday, 17 April, 2004

Las Cienegas (formerly Empire Ranch) has been our normal dark-sky observing site for quite a number of years. Please try to arrive before sunset. Stay as long as you like, but let everyone know when you are ready to leave; someone may be taking astrophotos. Bring a telescope if you have one, but you don't need one to attend. Any member would be glad to let you look through their telescope. There are no restroom facilities at the site, so be prepared. Las Cienegas is at 4000 feet so be prepared for cold temperatures after sunset. Attendees should park their vehicles either perpendicular to the airstrip facing toward the center of the strip, or parallel to the airstrip along either side facing west. That way, when you are

Star Parties & Events (cont.)

ready to leave, you will not have to back up and turn on your bright white backup lights. See the directions to Las Cienegas on the outside flap of this newsletter.

UofA Astronomy Students Star Party West April 18 (Sunday) No. of Scopes: 10

The TAAA will support the second of two star parties in 2004 for astronomy students from the UofA. The event will be held at the Saguaro National Park West in the parking lot at the Visitors Center. The activity runs from 7:30 to 9:30 pm. Set-up will start at 6:30 pm and must be completed before 7:30 pm when the students arrive by vans. Approximately 100 people are expected to attend. This is a fun event. The students are very interested and appreciative and will be asking lots of questions to complete their assignments for the evening. John Kalas is the coordinator. There will be a sign-up sheet at the April 2nd meeting. If you are interested in helping out but are unable to attend the meeting, please send an e-mail message to jckalas@cox.net or give John a call at 620-6502 to volunteer. Observing will be from 7:30 pm to 9pm. Sunset: 6:56pm Dark Sky: 8:22pm Moon Phase: New Moon.

Agua Caliente Elementary Star Party East Wednesday, 21 April 2004 No. of Scopes: 5

Agua Caliente Elementary will be preparing for their Star Party/Family Fun Picnic at 11420 E. Limberlost Rd. Go east on Tanque Verde, turn left (north) on Catalina Hwy. Turn right (east) on Prince, past Houghton, then to Melpomene and go to the end (Homestead), and take a left (north). It's less than a block on the left side. Viewing will be on the playing field east of school building. Go past school, take right onto Homestead. Access gate to field/setup is on right. Drive onto field. Contact person Karen Tilden can be reached at 794-8398 or email Karen_A.Tilden@raytheon.com for further directions or questions. Pizza & coke will be available for TAAA volunteers! Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:00pm. Sunset: 6:59pm Dark Sky: 8:48:28pm Moon Phase: First Quarter.

Copper Creek Elementary Star Party Northwest Thursday, 22 April 2004 No. of Scopes: 7

Copper Creek Elementary will be celebrating their annual Star Party at 11620 N. Copper Spring Trail. Take Ina Rd. west past Oracle to La Canada, turn right (north). Proceed about five miles, continuing past McGee, Lambert, Oro Valley Town Hall and Naranja to W. Silver Leaf Drive, turn right (east). Continue to the end of street and turn right (south). Viewing will be north of the school on the basketball court near the north field. Contact person Marian Shultis can be reached at 696-6871 or email MARI-ANSHU@msn.com Set-Up Time: 7pm. Observing will be from 7:30pm to 9pm. Sunset: 6:58pm Dark Sky: 8:26pm Moon Phase: Crescent.

Institute of Desert Ecology Star Party Northwest Friday, 23 April 2004 No. of scopes: 3

Institute of Desert Ecology will be hosting "Stargazing at Catalina State Park." From Ina Rd. go north on Oracle Rd. past McGee, Calle Concordia and 1st Ave to Catalina State Park (park entrance is about 2.5 miles north of 1st Ave. on the right). Please follow signs for "Institute of Desert Ecology" to the group camping area. Contact person Jessie Shinn can be reached at or email jessieshinn@qwest.net. Set-Up Time: 7:30 pm. Observing will be from 8:00 pm to 9:30 pm. Sunset: 6:59pm Dark Sky: 8:27pm Moon Phase: Crescent.

Arivaca Branch Library Star Party Far South Friday, 24 April 2004 No. of Scopes: 2

Arivaca Branch Library will be planning for their annual Star Party at 17050 W. Arivaca Road. Come out and enjoy beautiful totally dark skies with the friendly Arivaca enthusiasts! Go south on I-19 towards Nogales, past Green Valley, take Exit 48, go right to frontage road. Go right (north) on frontage road about one block, turn left on Arivaca Road in front of Longhorn Restaurant. Go 23 miles (winding) to Arivaca. Library is Viewing will be in the Arivaca Library parking lot. Contact person Mary Kasulaitis can be reached at 398-2764 or email MKasulaitis@ci.tucson.az.us will be available for TAAA volunteers! Set-Up Time: 7:00 pm. Observing will be from 7:30 pm to 9:00 pm. Sunset: 6:54pm Dark Sky: 8:26pm Moon Phase: (no moon during viewing).

Flandrau Astronomy Day April 24 (Saturday)

4 Planets and the Moon at Flandrau
Here's another chance to show the public the planets and the Moon at Flandrau Science Center, this time for Astronomy Day on Saturday April 24. 4 of the 5 classical planets and the crescent Moon (near Saturn) will be visible. Join Flandrau Science Center on Saturday April 24, 2004 from 12 noon-5 p.m. for solar observing OR from 7 p.m. (setup) to 9:30 p.m., weather permitting for planet viewing on the UA mall. Parking on the grassy portion of the mall near or at the observing area will be 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 April meeting.

Amphi Middle School Star Party Central Monday, 26 April 2004 No. of Scopes: 4

Amphi Middle School will be preparing for AMS Annual Star Party at 315 E. Prince Rd.. From Speedway and Stone, take Stone north 2.5 miles to Pastime (two blocks north of

Star Parties & Events (cont.)

Prince); turn right (east). Halfway down the block on right side is entrance to football field (between Stone and 1st). The gate will be unlocked for you. Viewing will be on the football field. Contact person Marta Spears can be reached at 696.6284 or email mspears@amphi.com. Pizza & Coke will be available for TAAA volunteers! Set-Up Time: 7pm. Observing will be from 7:30pm to 9pm. Sunset: 7:01pm. Dark Sky: 8:30pm. Moon Phase: First Quarter.

Vesey Elementary Star Party
Thursday, 29 April 2004

Southwest
No. of Scopes: 4

Vesey Elementary will be planning "Vesey Science Night" at 5005 S. Butts Road. Go south on Palo Verde or Interstate 19 to Ajo. Turn right (west) and continue to Camino De Oeste and turn left (south). It's a cut-out turn on Ajo-- watch carefully! Continue south on Camino De Oeste to Irvington and turn right (west). Come into the school through the front doors (very easy to find) then continue down the hall, past the library and a small hallway. Our Room 11 pod is on the right. Contact person Claire Dunham can be reached at 908-4600 or email claire.dunham@usd.k12.az. Set-Up Time: 6:00pm. Ob-

TAAA Board of Directors Meeting - March 2004

The Board: absent: Cooper, Peterson
Members present: Steve Marten, Nora Toscano
Others present: Tom Cariseo and Bart Schanep of S.I.A.
President's Call to Order: 6:40PM

1. Agenda changes
2. Announcements: Andrew has received 20 keys from Mike Cummings; Sabino Canyon's closing could affect T4T (lion presence); Ray reports that a member has suggested more tours; a need for more TechFair FunFest volunteers.
3. Star Party Schedule: a busy season w/ make-ups due to weather; solar observing and laptop demos at the TechFair from March 17-19; Int'l. Wildlife Museum Party is 03/26.
4. Treasurer's Report: Terri provides a 4 year comparison of TAAA statements; a discussion of TAAA phone listing in white and yellow pages; a unanimous vote not to have a yellow page ad line @ \$19/month; Terri will ask Steve P. to clarify Raytheon's valuation of the donated projectors; Ken will fax receipts to Meade to facilitate eyepiece donations.
5. ASDM Spring Party: a report by Ken of his meeting w/ Museum personnel; ASDM security concerns are debated, along with a critique of their proposed remedies; Ed poses valid, important questions about their handling of alleged security breaches; alternate sites are discussed; Bill motions to proceed with party only if ASDM waives security fee; a 2nd from Ken, passes 4 in favor, 2 members abstain. Ken will contact the ASDM with the proposal.
6. Member Dues Increase: last increase was '92; several major expense increases since; Ken motions for an article in newsletter about proposed increase; modified by Bill: state that the Board is considering an increase; a 2nd by Terri; Board votes 5-1 in favor of an article in April newsletter (Terri will author this) listing the factors and setting a membership vote at the May meeting.
7. TAAA Annual Picnic: location and date is discussed; possibly a party w/o scopes; a great opportunity for new members to socialize; candidate locations include Reid Park, Catalina State Park, Mt. Lemmon, and Himmel Park; 9/25 and 10/28 are candidates for this event.
8. Investment Strategies: via Steve Marten, the Board is introduced to Tom Cariseo and Bart Schanep of Schanep Investment Advisors. After a lengthy presentation, Ray motions to transfer the TAAA account to S.I.A.; a 2nd from Bill and passes unanimously. The Board is confident that this both improves our investment position and offers a better interface between the Assoc. and the financial advisors.
9. Strategic Plan Meeting: Bill is the point man for this important meeting. He will create an opportunity to send suggestions via the Internet forum; a reminder in the April newsletter; all Board members and officers must attend the April 3rd meeting (Steward Addition, Room N305). All members are encouraged to attend; a questionnaire will be designed after 4/3 and will be sent as an insert and an e-version for 2 months to gather suggestions; this could result in a new TAAA mission statement.
10. Amado Territory: the Board proposes a Star Party on April 24th comprised of Board members and officers to determine site appropriateness for a partnership; Thom directs the Secretary to draft and send a letter to Mr. Gould and Mr. Powell of Amado Territory.
11. SEDS Donation: a discussion of the cost/benefit ratio concludes in favor of continuing this relationship; Terri advises the TAAA make a cash donation to their upgrade plan; Ray suggests \$250-\$500; Terri motions to contribute \$500 from unrestricted funds; a 2nd from Ray, and passes unanimously.

Adjourned: 10:43PM
Respectfully Submitted,
Ken Wheelock, Secretary

Dark Skies for April 2004

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

| | | | | | |
|-------------|---------------|-------------|--------------|-------------|--------------|
| We/Th 31/ 1 | 4:16 - 4:49 | Su/Mo 11/12 | 20:16 - 2:07 | Th/Fr 22/23 | 22:15 - 4:18 |
| Th/Fr 1/ 2 | - - - | Mo/Tu 12/13 | 20:17 - 2:54 | Fr/Sa 23/24 | 23:11 - 4:17 |
| Fr/Sa 2/ 3 | - - - | Tu/We 13/14 | 20:18 - 3:33 | Sa/Su 24/25 | 0:04 - 4:15 |
| Sa/Su 3/ 4 | - - - | We/Th 14/15 | 20:19 - 4:07 | Su/Mo 25/26 | 0:52 - 4:14 |
| Su/Mo 4/ 5 | Full Moon | Th/Fr 15/16 | 20:20 - 4:28 | Mo/Tu 26/27 | 1:35 - 4:13 |
| Mo/Tu 5/ 6 | - - - | Fr/Sa 16/17 | 20:21 - 4:26 | Tu/We 27/28 | 2:13 - 4:11 |
| Tu/We 6/ 7 | 20:12 - 20:32 | Sa/Su 17/18 | 20:22 - 4:25 | We/Th 28/29 | 2:47 - 4:10 |
| We/Th 7/ 8 | 20:13 - 21:44 | Su/Mo 18/19 | 20:23 - 4:23 | Th/Fr 29/30 | 3:18 - 4:09 |
| Th/Fr 8/ 9 | 20:14 - 22:57 | Mo/Tu 19/20 | 20:24 - 4:22 | Fr/Sa 30/ 1 | 3:48 - 4:08 |
| Fr/Sa 9/10 | 20:14 - 0:07 | Tu/We 20/21 | 20:25 - 4:21 | Sa/Su 1/ 2 | - - - |
| Sa/Su 10/11 | 20:15 - 1:12 | We/Th 21/22 | 21:17 - 4:19 | | |

| Weekend | Sun | Sun | Mercury | Venus | Mars | Jupiter | Saturn | |
|---------|-------|------|---------|----------|---------|---------|---------|--------------------|
| Sa/Su | Set | Rise | Set Vi | Set Vi | Set Vi | Set Vi | Set Vi | Vi=Visibility |
| 3/ 4 | 18:44 | 6:06 | 20:05 5 | 22:28 -4 | 23:03 2 | 4:45 -2 | 1:05 0 | -3 brilliant |
| 10/11 | 18:48 | 5:57 | 19:35 - | 22:33 -4 | 22:57 2 | 4:16 -2 | 0:39 0 | 0 conspicuous |
| 17/18 | 18:53 | 5:49 | Rise: - | 22:34 -4 | 22:50 2 | 3:47 -2 | 0:14 0 | 3 moderate |
| 24/25 | 18:58 | 5:41 | 5:06 - | 22:32 -4 | 22:43 2 | 3:18 -2 | 23:48 0 | 6 naked eye limit |
| 1/ 2 | 19:03 | 5:34 | 4:42 8 | 22:24 -4 | 22:36 2 | 2:50 -2 | 23:23 0 | 9 binoculars limit |

By Erich Karkoschka

Desert Skies Classified

| | |
|----------|--|
| For Sale | SBIG ST-6A CCD camera outfit. Complete with Daskocli case, cables, manual and software. Like-new condition. Originally over \$3000.00; yours for \$900.00 obo. CB245 Cookbook CCD camera, complete with book, software, cables, and heat exchanger (No Peltier supply). Has dark current modification performed by Veikko Kanto himself! Works great! \$400.00 obo. Phone Steve Peterson @ 762-8211 or email at swpeterson@theriver.com. [05/04] |
| For Sale | 8" f/10 Meade LX50 SCT, good optics, heavy duty fork arms, equatorial wedge, custom machined and anodized wedge plate and latitude adjustment bar, heavy duty adjustable field tripod modified for easy mounting of the wedge, declination motor, 1-1/4" diagonal, visual back, piggyback camera adaptor, Thousand Oaks full aperture solar filter, scope is modified for use with rechargeable Lilon battery packs, two packs and charger included, full hard case with wheels. Asking \$1000, contact Andrew Cooper, 520/795-3585 or acooper@pobox.com [05/04] |
| For Sale | Starry Night Pro, version 3.0, \$70. Soft case for 8" Celestron, \$125. Call Richard at 245-5441. [06/04] |
| For Sale | Celestron C80 F/5 OTA with rings and case \$100. Meade ETX125 with #884 tripod, #497 hand controller, power supply \$750. Meade ETX60 with tripod plate and power supply \$100. Celestron Orange Tube C8 with many acc. \$500. Orion SteadyPix camera mount \$25. Orion 7-21mm zoom eyepiece \$60. 14mm ifocus for SBIG 237 \$80. Meade electronic eyepiece \$40. Contact Richard at 721-0694 or email at richard.schulze@cox.net. [06/04] |
| For Sale | Celestron NexStar 114GT Mount. Mount only - no OTA. Includes GoTo hand controller with 4,000 object database, tripod and manual. Adapters for attaching small refractors are commercially available. One year old, \$75.00. Also, Televue 12mm Nagler (Type 2), Fits 2" or 1.25" focuser, \$150.00. Can deliver to Messier Marathon. Contact Sam at sam&anne@pobox.com or (480) 924-5981. [06/04] |
| For Sale | Orion 4" APO F/9 refractor Vixen VX102FL on GP mount with dual drive motors/ controller and JMI moto-focus. Four years old in very good condition. 9X50 finder scope. Asking \$2400 John Bianchi, bbianchi6@comcast.net, 520-572-2246 [07/04] |

Reminder:

The August meeting starts at 7:00 pm
The TIMPA star party will be held on April 10

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.

Object of the Month by Alfredo Garcia, Jr.

It is April now and early spring is well upon us! The clear skies of April will lend themselves to some great stargazing opportunities. As such, I have chosen an OTM that is best viewed in this month's timeframe when the constellations of Antlia and Vela are best placed above the southern horizon (from Tucson, AZ). At other times during the year when the object is visible, it is too low in the southern sky for favorable observation.

I have decided to return to the nebula class of objects for this month and once again select the particular type known as a planetary nebula and in particular NGC3132. Also known as the Eight-Burst and Southern Ring Nebula, it is a striking example of this type of object. Like all planetary nebulae, it has an expanding cloud of gas surrounding a dying star. Of course, the name "planetary nebula" refers only to the round shape that many of these objects show when examined through a small telescope. In reality, these nebulae have nothing to do with planets.

The accepted distance to the Eight-Burst Nebula is about 2,000 light-years making it one of the nearer known planetary nebulae. It is about one-half the size, but similar in shape to its more famous cousin, M57 in Lyra. The gaseous shell is expanding at a rate of about 9 miles per second. Its apparent dimension in the sky of 0.8 arcminutes equates to a linear diameter of about 0.5 light-years. That's over 3 trillion miles in size!

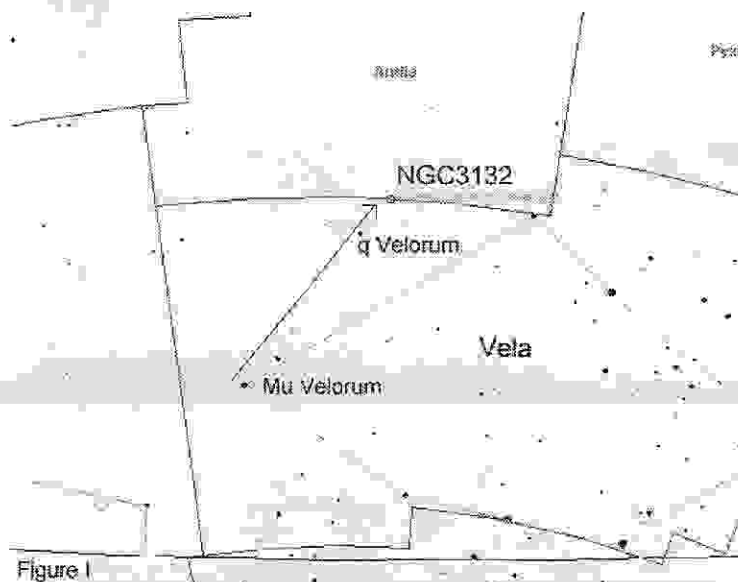


Figure I

NGC3132 has a visual magnitude of 8.2 and it does contain a 9.0 magnitude star near its center. This star, however, is not responsible for illuminating the nebula. This star is in an earlier stage of stellar evolution, but in the future it will probably eject its own planetary nebula. The "real" central star is a much fainter one. This star is now smaller than our own Sun and extremely hot. You can easily see this star in the HST image shown in Figure III below.

On star maps, the Eight-Burst Nebula appears to be located right on the northernmost border of the constellations of Antlia and Vela, but in reality it is located in Vela. If you go out observing (from the Tucson area) around mid-April at about 10:00 PM and look to the southern horizon, you will find this nebula at an altitude of about 15 degrees above horizon. It is of course not visible to the naked eye. The stars that make up Antlia are quite dim, so the best stars to use to starhop to NGC3132 are in Vela. Start by locating the constellation of Vela almost due south at this time of the year. Next, find the 2.8 magnitude star in Vela known as Mu Velorum near the easternmost Vela border. "Draw" a

line northwest between this star and the 4.1 magnitude star known as q Velorum. NGC3132 is located about two and a quarter degrees to the northwest west of the dimmer star (See Figure I) on the same line. For those with telescopes that have setting circles or automated go-to capability, the coordinates are: RA: 10hrs 42mins 00secs and DEC: 40deg 26mins 00secs.

The Southern Ring Nebula is a striking object through a telescope. The "ring-shape" is visually unmistakable especially with an O-III filter. It is, however, also an excellent astrophotographic or CCD imaging target. The internet is full of many amateur images of this object. A Meade 10" f/6.3 LX200 and a Starlight X-press

MX5C CCD camera were used to produce the image at Figure II. It shows detail in the nebular shell despite its low location in the sky. For contrast (yeah, right!), Figure III shows an image the HST took that I pulled off the internet. Now that's impressive! So if you get a chance to image this nebula, I recommend you do so. See how "good" of an image you can produce! J

Figure II, 10" LX200/f6.3

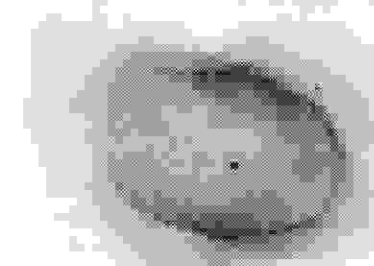


Figure III, HST image

One last tidbit about the Eight-Burst Nebula is that it exhibits a strong blinking effect due to the bright star in the nebula. This is because the nebula is faint compared to the centrally-located bright star. When viewed directly, the star is easily visible through the cones of the eyes, while the fainter outer nebula is seen with peripheral vision using the more sensitive rods of the eye. Using averted vision, the nebula shows up strongly in an eyepiece. However, if the object is stared at, the nebula disappears leaving only the star. This is very similar to the blinking effect of its more famous cousin, NGC6826 known as the Blinking Nebula.