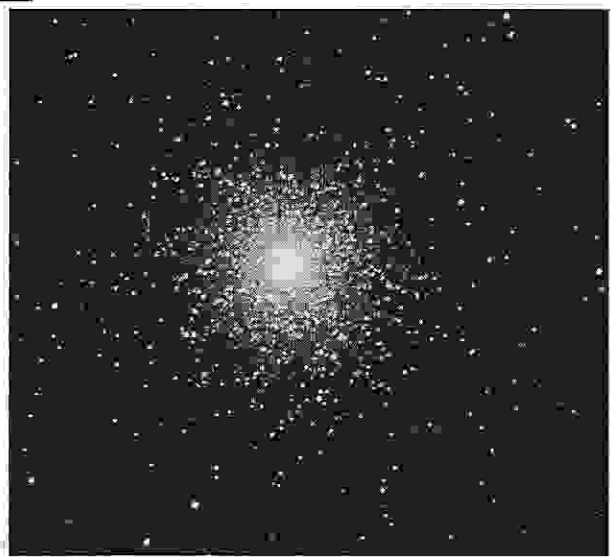
Desert Skies

Tucson Amateur Astronomy Association

Volume LI, Number 5 **May, 2005**



Galaxies and Globular Clusters

Cover Photo: Spring observing features distant globular clusters like M13, and our galactic neighbors, like M65, M66, and NGC3628. Photos courtesy Dean Salman, www.galaxies.com.

TAAA Web Page: http://www.tucsonastronomy.org **TAAA Phone Number: (520) 792-6414**

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Membership in the TAAA

Annual Dues

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

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

Options (add to above membership rates)

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

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

Renewal Information

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

Tucson Amateur Astronomy Association
PO BOX 41254 Tucson, AZ 85717

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

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

Desert Skies Publishing Guidelines - All articles, announcements, news, etc. must be submitted by the newsletter deadline. Materials received after that date will appear in the next issue. The editor retains all submissions unless prior arrangements are made. Partial page submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full-page articles, artwork, and photos can be submitted camera ready. 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:

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President's Message

It's election time for next year's Board of Directors. We have some new names on the ballot, so be sure to come to the meeting to cast your vote. There are 6 candidates for the 3 open positions of Member-at-Large. There is also a membership vote to be taken concerning the allowing of past presidents to have membership dues waived.

On a different note, the 16-foot dome project has new leadership. Steve Ratts and Shawn Hermann will co-manage the efforts to get the 16-foot dome constructed at TIMPA. We could use physical labor help when things get rolling--which could be very soon. And thanks to Steve and Shawn.

The TAAA is still looking for those interested in doing publicity for the club. Anyone game? How about any of the three Member-at-Large candidates that don't get elected? Just a thought.

Members, please update your phone numbers and e-mail addresses with Terri Lappin.

The weather is breaking and we still have school star parties to present. Help out in any way you can.
Clear skies are coming.
Thom Peck

Meeting Information and Calendar of Events

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

ASTRONOMY ESSENTIALS: 6:30 pm
Title: The Eye at Night
Speaker: Luke Scott

How do our eyes adapt to and function during darkness? Are there things we can do to improve the process? The topics of dark adaptation and averted vision will be the key items for this month's Essentials. Also covered will be atmospheric seeing and transparency.

GENERAL MEETING: 7:30 pm
Title: Exploring Titan's Surface: Recent Observations by Cassini-Huygens
Speaker: Dr Elizabeth Turtle

Until recently the surface of Titan was the largest essentially unexplored area in our Solar System because of Titan's unique, thick atmosphere. The joint NASA-ESA Cassini-Huygens mission is, at last, revealing details of the surface and the processes that have acted, and are acting, to shape it. Dr. Elizabeth Turtle will present some background about Titan itself as well as about the Cassini-Huygens mission, and then describe the recent observations and what has been learned about Titan from them.

Dr. Turtle received her Bachelor of Science degree in Physics from MIT and her PhD in Planetary Sciences from the U of A. She is currently an Assistant Research Scientist at the U of A Lunar and Planetary Lab. She was an associate member of the imaging team for the Galileo mission to Jupiter and currently an associate member of the Cassini imaging team. Her major research areas are investigations into the processes that shape planetary surfaces, such as impact cratering and tectonic deformation (e.g., faulting and mountain building), and their implications for the properties of the planets and satellites. For example, she studied the impact craters on Jupiter's satellite Europa to put a constraint on the thickness of the ice layer above the liquid water ocean.

BOARD OF DIRECTORS MEETING: Wednesday, May 11, 6:30 pm at Steward Observatory Conference Room N305

STAR PARTIES AND EVENTS:
29-30 April – Telescopes for Telethon
03 May - Henry Elementary Star Party
04–08 May - Desert Sunset Star Party
07 May – Beginners SIG at TIMPA
07 May – TAAA Star Party at TIMPA
07 May – TAAA Star Party at Las Cienegas
12 May – Astrophoto SIG
13 May - Mission Manor Elementary Star Party
28 May – TAAA Star Party at TIMPA
28 May – TAAA Spring Star-B-Cue at Kitt Peak

NEWSLETTER SCHEDULE: Deadline for articles: Sat, May 21. Printing: Mon, May 23. Folding Party: Tues, May 24. Mailing: Wed, May 25. 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: John and Gayle Bair, Dick and Lois Hanson, Abigail McVey, Willow Savage, Larry Taylor, Elena Tesluk, and Ron Thevenot. This list includes a few of the young people who received awards from the TAAA for the projects they entered into the science fair. Glad to have all of you join! New members should be sure to pick up a new members pack at a meeting. Hope you'll make it to our star parties or meetings so we can all get to know you. (Updated membership lists are available to any member at most meetings, so pick one up if you need it.)

Telescopes for Telethon 2005 – Final Call

By John Kalas

The TAAA will be supporting the Muscular Dystrophy T4T activity again this year on Friday and Saturday, April 29th and 30th. The activity on Friday, April 29th involves two-telescope teams at each of six different Wal-Mart stores around Tucson from 6:00 to 9:00 pm. Helpers are needed for three of the stores; Marana on Cortaro Farms, Foothills Mall @ Ina and La Cholla, and Valencia @ 12th Ave. Saturday's activity will have solar viewing taking place from 3:00 to 6:00 pm with evening observing running from 6:00 to 10:00 pm at the University of Arizona Mall across from the Flandrau Science Center. David and Wendee Levy will be hosting the event. It is anticipated that Starizona, Sky Works, Stellar Vision and Flandrau Science Center will also be participating.

John Kalas is the TAAA coordinator for the event. Many volunteers will be needed to operate telescopes (solar and evening), staff donation areas and assist in general public support. Please consider supporting this worthwhile event and contact John at 620-6502 or via e-mail at jckalas@cox.net.

TAAA Elections 2005

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

The following candidates have agreed to run for office and serve if elected. The current club officers are listed on page 2 of the Desert Skies newsletter. The qualifications for becoming a member of the Board of Directors are listed in the TAAA Constitution, Article III, Section 5. The voting process is explained in Article IV, Section 6 of the TAAA Constitution. (http://www.tucsonastronomy.org/constitution.html).

The current list of candidates for officers of the TAAA:

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

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

The Nominating Committee

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

TAAA Apparel

Looking for a special gift, or a way to make that fashion statement? Try on something from our fine line of club apparel. We've got hats, T-shirts, denim shirts, and patches. We take cash and checks.

Desert Sunset Star Party

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

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

Astro-photo SIG Meeting

May 12, 7pm
China Rose, NE corner Speedway/Rosemont

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

Club News (cont.)

THE NEW TAAA BEGINNER'S SPECIAL INTEREST GROUP IS UP AND RUNNING

Bill Lofquist

The new TAAA Beginner's Special Interest Group (SIG) met on Saturday night, April 16, on the astronomy patio at the home of Bill Lofquist. Everyone there agreed it was a great way to start. We had a lot of moon, but we still got in some good observing of some planets and deep sky objects. Now that the SIG is officially under way, we hope it will grow and include others, both experienced observers and those new to astronomy.

Thirteen TAAA members attended. Mary and Michael Turner had their 13" DOB there. Mary gave an excellent introductory presentation about ten objects, some of which we were able to view in spite of the moon. Mary has offered to prepare her presentations for us so we can distribute copies to new members of the SIG. After a while we should have quite a nice library.

J. D. Metzger brought his Astrophysics refractor, which displayed Jupiter and Saturn beautifully. Carter Smith had his ten-inch DOB and shared his observing skills. Terri Lappin also helped some new members become familiar with their scopes. I had an eight-inch Schmidt-Cassegrain scope and an eight-inch DOB for the group to use.

Others present were Bill Barnitz, Mike Grindle, Brett Inman, Brent Asafaylo, Denise Novotny and Bob Gilroy.

We agreed that for starters we would plan to use the regularly scheduled TIMPA observing night for our regular meetings. A committee made up of Tom Watson, Bob Gilroy and Bill Lofquist will help with the organizational aspects of the SIG. If others would like to join us, you are more than welcome. That group will probably not ever need to meet, but we will keep things organized and put notices out.

According to the TAAA calendar on the web site, the May TIMPA night is scheduled for May 7. Be sure to check the Desert Skies each month to make sure this is the correct night. There will be others observing, so there should be plenty of scopes and experienced observers to help out.

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

TAAA Spring Star-B-Cue at Kitt Peak

May 28 (Saturday)

The TAAA has scheduled a star party and pot-luck barbecue at the picnic grounds up on Kitt Peak on Saturday, 5/28, starting at 4:00 pm. A maximum of 70 TAAA Members and families will be allowed to participate. The ramada gas-fired barbecue grill will be fired up starting at 4:30 pm and members are invited to cook their dinners between 4:30 and 6:30 pm. Bring a dish to share with other members. The grill will be turned off at 6:30 pm. Telescope observing will commence after sundown and will be concluded by 11:30 pm. All members must be heading down the mountain by midnight. Be prepared for cool temperatures.

There will be a sign-up sheet on the table at the back of the lecture hall at the start of the May 6th meeting. Because of the popularity of this event, attendance will be initially limited to TAAA Members and their immediate family members only. If, after all TAAA Members have had an opportunity to sign up, there are any openings or cancellations, the attendance of guests will be considered. If you are unable to attend the May meeting, phone and e-mail reservation requests will be taken on a first-come, first-serve basis ***after*** 9:00 am Saturday, 5/7. Contact John Kalas at 620-6502 or via e-mail at <jckalas@cox.net>.

It is very important for all attendees to abide by the rules established by Kitt Peak and respect the facility. Adherence to the rules will help to continue TAAA activities on Kitt Peak in the future.

Club News (cont.)

1. No vehicles are allowed above the picnic grounds after 4:00 pm.
2. Only the ramada gas-fired barbecue grill is permitted for cooking food at the picnic grounds. No open fires or use of personal barbecue grills is permitted.
3. All trash must be placed in the garbage receptacles.
4. Use of cellular phones and radio walkie-talkies is prohibited.
5. No alcoholic beverages are permitted.

When leaving the picnic grounds after dark, if possible, use your parking lights until you have reached the main road and are headed downhill after exiting the picnic area.

Upcoming Lecture Schedule

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

TAAA Speaker Schedule		
June 3	Astro Essentials	Open
	General	Open
Jul 1	Astro Essentials	Open
	General	Tom Evans, NWS Weather and Astronomy
Aug 5	Astro Essentials	Open
	General	Open
Sep 2	Astro Essentials	Steve Marten, TAAA TAAA Outreach
	General	Open
Oct 7	Members Night No Astronomy Essentials Lecture	
Nov 4	Astro Essentials	Open
	General	Bill Stoeger Cosmology

Grand Canyon Star Party

4-11 June 2005
South and North Rims

Here we are about 5 weeks before the 15th Grand Canyon Star Party. The concept is simple - I talk you into setting up your telescope to show the public the sky at one of the darkest sites around. They are amazed, we win some converts to the beauty of the sky as well as Canyon, and we educate people about the universe and why light pollution where they live cuts into what they can see. It is really a great time and very rewarding.

Believe it or not, even at this late date you can find rooms - on the internet I found rooms for a few nights at Yavapai Lodge near the rim and more generally available at the Best Western down in Tusayan. Other motels likely have space too, and of course, you can also get camping for a lot less. For those phone numbers head over to www.tucsonastronomy.org/gcsp.html or e-mail me at ketelsen@as.arizona.edu. Come for a night or come for all week, you will have a great time.

Dean Ketelsen

Project and Family ASTRO 2005

NOAO is looking for a few good astronomers to join the ranks of Project and Family ASTRO. This year we are doing multiple workshops so prospective astronomer partners have choices. The dates for Project ASTRO are June 9 and 10 and October 7 and 8. Project ASTRO forges partnerships between astronomers and teachers in grades three through nine to bolster astronomy education. The partners attend a two-day workshop and astronomers commit to four visits to the teacher's classroom during the academic year. The tremendous success of this program is a testament to the power of these partnerships and would not be possible without the generous participation of the amateur community. The program is free and the training is thorough.

Family ASTRO is a variation on the Project ASTRO theme. Four thematic events offer fun hands-on astronomy activities to students and their families: Moon Mission, Race to The Planets, Night Sky Adventure, and Cosmic Decoders. Astronomer partners are beneficial to this program also as a resource for the teachers and other individuals who sign on as event leaders. The training is by event so astronomers may choose the events that most interest them. Events are approximately two hours long. The atmosphere is relaxed. Please help families get involved in their children's science education by volunteering for one or more of the following free training sessions: September 10, Moon Mission; September 23, Race to The Planets; October 1, Night Sky Adventure; October 28, Cosmic Decoders.

Additional information and applications are available at http://www.noao.edu/education/astro/. Applications may be mailed to Connie Walker for Project ASTRO and Robert Wilson for Family ASTRO at 950 N. Cherry Ave., Tucson, AZ 85719.

The TAAA List Servers -

Club News (cont.)

Announcements and Forum

The TAAA has two email distribution lists hosted by Yahoo!Groups. Members of the "TAAA Announcement List Server" receive reminders and information about TAAA events. The "TAAA Forum" is available for any TAAA member wanting to communicate with other members on the forum (currently 117 members). All other Forum members will see your message. TAAA members can join either or both of these lists. Since Yahoo!Groups hosts these list servers, they insert ads into the email messages. The TAAA has no control over the content of these ads; however, your email program or Internet security software may be configurable to block the ads so you won't see them.

There are two levels of joining each list: Email only (Yahoo membership not required) and Email plus website access (requires Yahoo membership). Members of Yahoo will have access to the websites for these lists where they will find information, such as TIMPA access rules, and locations where files and images can be uploaded for others to see. Before joining Yahoo, you should visit the Yahoo!Groups website (http://groups.yahoo.com/) to learn of their privacy policy if such things are of concern to you.

TAAA Announcements (about 30 messages per month): For emails only send an email to tucsonastronomy-subscribe@yahoogroups.com from the email address where you want to receive messages. For website access, join by clicking the "Join this Group" button at http://groups.yahoo.com/group/tucsonastronomy. You will be asked for your Yahoo ID and password.

TAAA Forum (about 50 messages per month): For emails only, send an email to taaaforum-subscribe@yahoogroups.com from the email address where you want to receive messages. For website access, join by clicking the "Join this Group" button at http://groups.yahoo.com/group/taaaforum. You will be asked for your Yahoo ID and password.

NOTE: The TAAA website (www.tucsonastronomy.org) is unrelated to the list servers. Anyone with Internet access can reach the TAAA website.

Your TAAA membership must be verified before your membership on these list servers will be granted. If your name can't be guessed based solely on your email address, please send an email to Terri Lappin (tklappin@earthlink.net) giving your name and email address so she can verify your membership status. For more information, contact Terri (see page 2).

Items of Interest

WEBSITES: TRIPS ON THE INTERNET SUPER-SKYWAY - Rik Hill

Pooooor Rima

Think this one's about the moon? Guess again.

Amateur astronomers that don't usually observer double stars have an unusual opportunity before them in the next few years. The star Porrima, or Gamma Virginis, has passed or is just passing through periastron, the point where the two stars are closest in their orbital travels about their common center of gravity (barycenter). What does all that mean? Let me explain.

Porrima is the star at the point where the arms of Virgo diverge, or in more astronomical terms, it is located at right ascension 12h 41.660m and declination -1Â° 26.967', very near the celestial equator. It is not a particularly bright star at a magnitude of 3.65 but plenty bright enough for amateur instruments. It is also one of our nearer neighbors at only about 40 light years. I talked some about this star in this column for April, 2002. A comprehensive listing of information on this system can be found at:

http://www.alcyone.de/SIT/mainstars/SIT000835.htm

As I said above, it is a double star with both components a little hotter than the sun (spectral types F0V for both). About 50% bigger than the sun, each star is shining around 3.5 magnitude (only 0.02 mag difference between them!). There is some discrepancy here with the Hipparcos catalog listing the magnitudes as 2.7 and 2.8 in 1997, and the Tycho-2 catalog giving 3.5 and 3.6 in 2000! This is a bit surprising in that the combined magnitudes can accurately be photometrically measured and the formulae for determining the brightness's of two equal stars whose light is combined to make that brightness is well known. On the page cited above you can see the discordant values. With a color index of only 0.36 this cannot be the reason for the disagreement.

A nice detailed color spectrum of this pair can be seen at:

http://www.epsilon-lyrae.de/Spektroskopie/Sternspektren/Porrima.html

(I know it says Epsilon Lyrae in the URL but it is Gamma Vir.)

The Washington Double Star Catalog (WDS) gives an orbital period of 168.7 years for "12415-4858HJ 4539AB" as Porrima is known there. But here's where things again get interesting. There have been several orbit solutions

Items of Interest (cont.)

for the historical observations of this pair. In recent years, as the two stars closed upon their barycenter the predicted separations and position angles (PA - the angle of the alignment of the pair as measured from north, through east) as measured by both professionals and amateurs, clearly favored one orbit over the other. The measurements became quite good as the two star's separation passed through the resolution limits of the various telescopes giving very sensitive determinations. Most recent values for the separation are between 0.4 and 0.5 sec. A nice article on this situation appears at the webpage of the Hanwell Community Observatory (UK):

http://myweb.tiscali.co.uk/hanwellobservatory/gammavirginis.htm

A couple graphical orbital representations and high-resolution images of the pair can be seen at:

http://home.hetnet.nl/~nbhogeveen/gamma_vir.htm

One can immediately see how subtle the differences in the orbits are, until you near periastron (closest separation).

In 1920 this pair was over 6" separation. Within the lifetime of a person, this pair goes through dramatic change. Watch this duo over the next decade or so, make drawings or measurements carefully noting things like position angle, and you will see change in the night sky, right before your eyes.

If seeing these changes is interesting to you, I suggest you go to:

http://www.prairieastronomyclub.org/dblstar1.htm

for an excellent series of articles on other stars that are bright and display motion on a time scale that can be appreciated by the most impatient observer. After all, we are the generation that puts Minute Rice in a microwave!

As always, if you know of a particularly good website you would like mentioned here, or have a topic you would like written up and web searched, drop me a line at: rhill@lpl.arizona.edu

THE WINNER IS...

By Dave Bilgray

The winner of the SA-IDA lighting improvement prize is Marlene Hilligoss, who turned a simple observation into a way to reduce both light pollution and energy costs.

The $25 prize was offered by the Southern Arizona section of the International Dark-Sky Association (SA-IDA) for the best improvement in outdoor lighting.

Marlene is a docent at Kitt Peak, and learned about light pollution when the Dark Sky folks made a presentation there.

At the time, she was using a set of three 60-watt bulbs to light her outdoor walkway. During the holidays, she replaced them with 7-watt colored bulbs and noticed that the lower wattage worked just fine. So when the holidays were over, she stayed with 7 watts, replacing the colored bulbs with clear ones. For the three bulbs, the reduction was from 180 watts to just 21— a low-energy way to greet visitors, with almost no light pollution. In this case, she saved money on bulbs, too. The 60-watters were chandelier-type bulbs, which are pricey. The 7-watt bulbs are the same socket size, but a lot lower in cost.

Congratulations, Marlene, for an excellent example of a simple but a most effective change. It frequently doesn't take much of an effort to bring about an improvement. All we need to do is keep our eyes open and notice ways to make things better - - - and darker.

Submitted by John Polacheck
President of SA-IDA
E-Mail address: jpolach@dakotacom.net

Star Parties & Events

Henry Elementary Star Party

Tuesday, 5/3/2005 East
No. of Scopes: 3

Henry Elementary will be hosting "Family Astro Night" at 650 N Igo Way. Go east on Speedway and turn right (south) on the 2nd street past Camino Seco. Continue about ¼ mile to school (on left). Viewing will be on the soccer field behind school. Contact person Jill Backherms can be reached at 731-4758 or email Jill.Backherms@tusd.k12.az.us. Star Party Leader for this event is Catt Kestler. Soda & Snacks will be available for TAAA volunteers! Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 8:45 pm. Sunset: 7:06pm Dark Sky: 8:04pm Moon Phase: (no moon during viewing).

TAAA Star Party at TIMPA

Saturday, 5/7/2005

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 anyway, because there are lots of telescopes set up and everyone is invited

Star Parties & Events (cont.)

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. The TAAA Beginners SIG will meet at this activity. Directions to the TIMPA site are located on the outside flap of this newsletter.

TAAA Star Party at Las Cienegas (Empire Ranch)
Saturday, 5/7/2005

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

Mission Manor Elementary Star Party South
Friday, 5/13/2005 No. of Scopes: 5

Mission Manor Elementary will be presenting "MoonScope" at 600 W. Santa Rosa. Go south on Alvernon Way to Valencia, turn right. Continue west to 12th Ave, turn right (north), go past stoplight (12th&Bilbee). School is on northwest corner. Viewing will be on the basketball court of the playground. Contact person Yvonne Flores can be reached at 545.3533 or email YvonneF@susd12.org. A Star Party Leader is needed for this event. Sandwiches & coke will be available for TAAA volunteers! Set-Up Time: 7:00pm. Observing will be from 7:30 pm to 8:45 pm. Sunset: 7:14pm Dark Sky: 8:13pm Moon Phase: Crescent.

TAAA Spring Star-B-Cue at Kitt Peak
Saturday, 5/28/2005

See article in the ***Club News*** section.

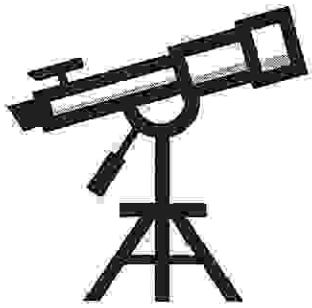
TAAA Star Party at TIMPA
Saturday, 5/28/2005

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 anyway, because there are lots of telescopes set up and everyone is invited to look through them. This is a great way to check out different telescope designs before you make that all-important decision to buy. 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.

Telescopes for Borrowing

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

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



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

Desert Skies Classified

For Sale	Meade 6" ED APO refractor (OTA), FL 1380mm. Essentially new and has seen little use. Comes with Meade mounting saddle with Losmandy mounting plate, and an Orion 60mm guide scope mounted on top of the saddle with three point adjustable rings. $2400. Steve Aragon 909-792-0072 [06/05]
For Sale	SBIG STV deluxe camera/guider with FR-237 and E finder assembly. $2000, Steve Aragon, 909-792-0072 [06/05]
For Sale	Cannon 10D digital camera, body only. 1yr old.6.3 megaPixl, 2 batteries, batt grip, 640K memory card, EF mount, all cables, charger, manuals incl.$1000, contact: Jerry Farrar at 520-731-1104 or 520-404-9858. e-mail jandkfarrar@earthlink.net [06/05]
For Sale	Canon 12 X 36 IS Binoculars with Canon's "Vari-Angle Prism" Image Stabilization system. Image remains steady with the press of a button, no need for a tripod. Includes hard case, neck strap, removable switch lock, and manual. Rubberized (not water-proof) body. Great for both astronomy (Messier objects like M51 and M81/82 visible) and bird watching (close focus of ~12 feet). Excellent color correction. Clean, well cared for optics. $350.00 Terri Lappin, 579-0185, tklappin@earthlink.net. [05/05]
For Sale	Celestron Firstscope #114 4.5" Diameter Newtonian reflector telescope on a German equatorial mount with adjustable wooden tripod. Includes: three eyepieces (4mm .96" dia., 20mm .96" dia. and 25mm 1.25" dia.), a 2x .96" dia. Barlow lens and a .96" dia. moon filter. Asking price: $100. Contact Matt at nowayout@earthcorp.com. [07/05]

Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list, call George Barber at 822-2392or e-mail at barbergj@flash.net.

Dark Skies for May 2005

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

Sa/Su	30/ 1	20:34 - 1:51	Tu/We	10/11	21:56 - 3:56	Sa/Su	21/22	- - -
			We/Th	11/12	22:51 - 3:55			
Su/Mo	1/ 2	20:35 - 2:29	Th/Fr	12/13	23:39 - 3:54	Su/Mo	22/23	- - -
Mo/Tu	2/ 3	20:36 - 3:02	Fr/Sa	13/14	0:21 - 3:53	Mo/Tu	23/24	Full Moon
Tu/We	3/ 4	20:37 - 3:32	Sa/Su	14/15	0:57 - 3:52	Tu/We	24/25	- - -
We/Th	4/ 5	20:38 - 4:01				We/Th	25/26	20:59 - 22:01
Th/Fr	5/ 6	20:39 - 4:02	Su/Mo	15/16	1:28 - 3:51	Th/Fr	26/27	21:00 - 23:00
Fr/Sa	6/ 7	20:40 - 4:01	Mo/Tu	16/17	1:57 - 3:50	Fr/Sa	27/28	21:01 - 23:49
Sa/Su	7/ 8	20:41 - 4:00	Tu/We	17/18	2:23 - 3:50	Sa/Su	28/29	21:01 - 0:30
			We/Th	18/19	2:49 - 3:49			
Su/Mo	8/ 9	20:42 - 3:59	Th/Fr	19/20	3:16 - 3:48	Su/Mo	29/30	21:02 - 1:05
Mo/Tu	9/10	20:57 - 3:58	Fr/Sa	20/21	3:45 - 3:47	Mo/Tu	30/31	21:03 - 1:36

Weekend	Sun	Sun	Mercury		Venus		Mars		Jupiter		Saturn		
Sa/Su	Set	Rise	Rise	Vi	Set	Vi	Rise	Vi	Set	Vi	Set	Vi	Vi=Visibility
30/ 1	19:02	5:36	4:32	5	19:39	6	2:26	1	4:21	-2	0:21	0	-3 brilliant
7/ 8	19:07	5:29	4:30	6	19:53	4	2:14	1	3:52	-2	23:55	0	0 conspicuous
14/15	19:12	5:24	4:32	6	20:07	3	2:01	1	3:23	-2	23:30	0	3 moderate
21/22	19:17	5:20	4:40	8	20:21	2	1:47	1	2:55	-2	23:05	1	6 naked eye limit
28/29	19:21	5:17	4:57	-	20:34	1	1:34	1	2:26	-2	22:40	1	9 binoculars limit

By Erich Karkoschka

Object of the Month by Alfredo Garcia

Wow! Here we are at May 2005 already! Where is the year going? Anyway, I hope you enjoyed some of the clear skies we had last month and were able to observe OTMs of months past. This month, the OTM is an integral part of our solar system. The Italian astronomer Giuseppe Piazzi discovered the first of these objects in 1801. At first, he thought the object was a new comet, but it was later determined that it was not a comet, but more like a small planet. In fact, this month's OTM was discovered a year later in 1802 by the German astronomer Heinrich Wilhelm Olbers.

These "small planets" belong to the class of objects known as asteroids. The word asteroid has its derivation from the ancient Greek word "asteroeid Es", meaning star-like. You can easily see where the name comes from because when you observe asteroids thorough a telescope, they basically look like a star except that these "stars" wander among the background stars.

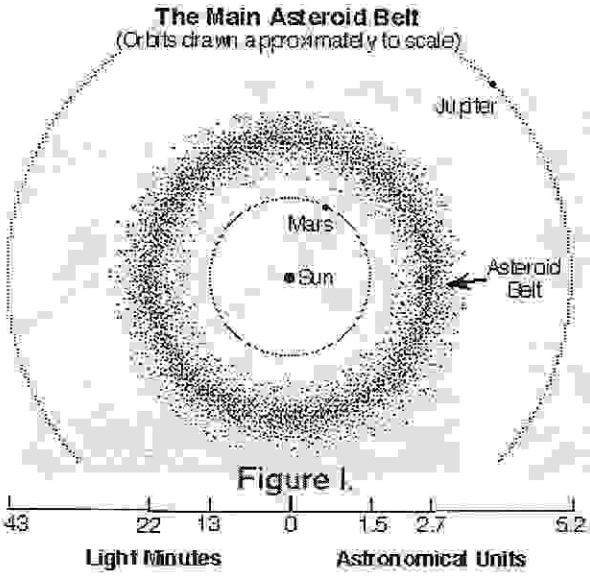


Figure I.

In reality asteroids are not stars, but rocky and metallic objects that orbit the Sun. They are too small to be considered planets and are often referred to as minor planets or planetoids. They range in size from over 1000 kilometers down to the size of pebbles. Sixteen of these asteroids have a diameter of 240 kilometers or greater. Their orbits bring them inside Earth's orbit to beyond the orbit of Saturn. The majority of them, however, are contained within a main belt that exists between the orbits of Mars and Jupiter known as the Asteroid Belt (Figure I).

Without any further introduction, I present to you the May 2005 OTM, the asteroid known as 2 Pallas. As the number in front of the name infers, this asteroid is the second largest of these objects. The German astronomer Heinrich Wilhelm Olbers discovered this asteroid on 28 March 1802. It was named after Pallas (of Greek mythology), the daughter of Triton and friend of the Goddess, Athena. Incidentally, Olbers discovered another asteroid known as 4 Vesta in 1807 and a periodic comet (13P/Olbers) in 1815. The asteroid 1002 Olbersia is also named in his honor.

Asteroid 2 Pallas has a maximum size of about 570 kilometers and is actually not circular in shape. 2 Pallas' dimensions are 570 x 525 x 482 kilometers. The asteroid has a rotational period of about 7.8 hours and an orbital period around the Sun of 4.61 years. Its orbit brings it as close as 2.13 astronomical units (AUs; 1 AU = ~93,000,000 miles) to the Sun and as far away as 3.41 AUs. During the month of May (at 2200 MST) 2 Pallas will be as close as 1.69 AUs from Earth on 1 May and as far way as 2.09 AUs on 31 May. Its speed of apparent motion across the sky ranges from about 18.1 arc-seconds/hour at the month's beginning to about 20.1 arc- seconds/hour by month's end. This degree of apparent motion will allow you easily see it "move" from hour to hour with respect to the background stars.

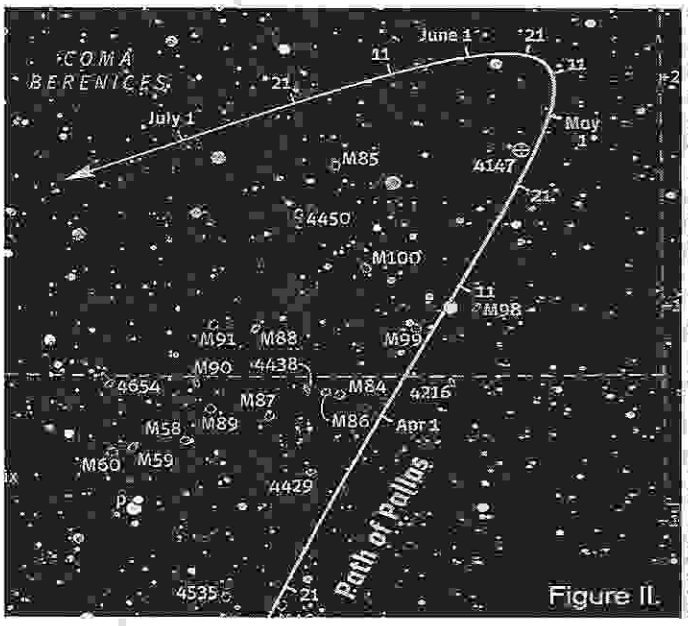


Figure II.

Asteroid Pallas 2 will be well placed for observation during the entire month of May at around 2200 MST from Tucson, AZ. It will be situated from about 77 to 61 degrees in altitude above the horizon in the constellation of Coma Berenices. The asteroid will continue to move through Coma Berenices as the month progresses and its magnitude range will be from 8.2 to 8.9. This range places it well within the observation capabilities of even the smallest telescopes. The map at Figure II shows the asteroid's path in the sky throughout the month and it can used it to star hop to the asteroid. The dimmest stars shown on the map are magnitude 10.0. 2 Pallas is best observed later in the evening when it is highest above the horizon and also during periods when there is no bright moonlight, though this is not absolutely necessary due to 2 Pallas' magnitude range.

For those with setting circles and/or automated GO TO telescopes, see Table I to locate the asteroid using RA and DEC coordinates. I picked an arbitrary time of 2200 MST from Tucson, AZ, and show the asteroid's position at 5-day increments throughout the month. I also have shown the asteroid's altitude above the horizon and associated magnitude on the respective dates. These coordinates may be necessary if you are observing the asteroid from light-polluted skies and/or in bright moonlight.

Object of the Month by Alfredo Garcia (cont.)

Though 2 Pallas is visible as a star like object in a telescopic field of view and you can trace its movement from hour to hour against the background stars, the motion is not always easy to perceive. But, this apparent movement can be easily "captured" in astrophotographs or CCD images over time by employing some asteroid imaging techniques. This author was not able to image 2 Pallas prior to the deadline date for the newsletter input. However, I have produced some simulated images of 2 Pallas (or for that matter any asteroid), as they would look if you employed the imaging techniques that follow. If you track on the background stars during your exposure, then the asteroid movement will be recorded as a trail on the image (Figure III). If you track on the asteroid during exposure, then the stars will be trailed (Figure IV). You can also take shorter exposures over time to minimize star and asteroid trailing and then combine the images to show the asteroid as a star like object moving across the exposure field (Figure V). All of these imaging techniques are good and fun to use and also help you to improve your imaging skills. So all you astrophotographers and CCD'ers, get your cameras ready for what should be a nice imaging opportunity outside of the usual planetary and deep space objects we "shoot". Good luck on your imaging endeavors.

Table I. May 2005 Position/Altitude/Magnitude For 2 Pallas At 2200 MST, Tucson, AZ

Date (May)	1	5	10	15	20	25	31
RA (hrs min sec)	12 07 35	12 07 19	12 07 32	12 08 20	12 09 43	12 11 38	12 14 36
Dec (degs min secs)	+19 29 23	+19 55 06	+20 19 16	+20 35 13	+20 43 51	+20 45 57	+20 40 53
Alt (degs)	77	76	74	72	68	65	61
Magnitude	8.2	8.3	8.4	8.6	8.7	8.8	8.9


Figure III.

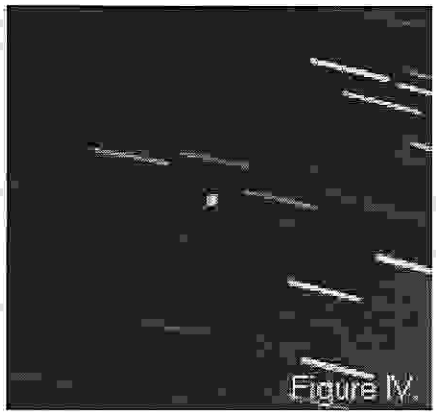


Figure IV.

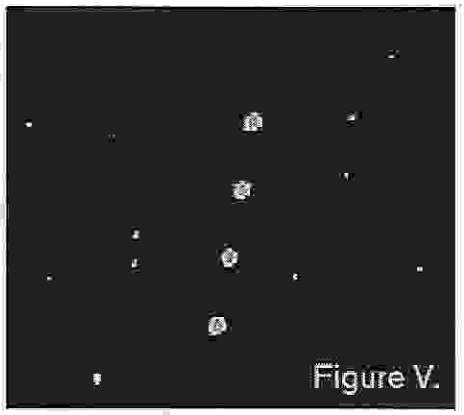


Figure V.

TAAA Board of Directors Meeting - April 13, 2005

Attending: TAAA Board members: Peck, Turner, Marten, Lappin, Lofquist, Toscano TAAA Members: Steve Ratts, Nora Toscano.
President's Call to Order: 6:40PM

1. Review of March Minutes. Accepted
2. Announcements. None
3. Member Feedback.
   - Via note, Karel Bott requested Thom Peck consider a presentation on making mirrors. She also suggested using a poll to determine which presentations the membership would prefer. Board consensus to include presentations in survey to be presented to membership.
   - Some public announcements have noted "no fee." All future public announcements will note fee or no fee.
4. Treasurer Report. Terri Lappin noted a slight loss for the quarter ($860) due to slightly higher expenses. The Board voted to move all unrestricted donations to the general fund (unanimous) and to redirect future paid star party income from the TIMPA fund to the general fund. Drafting a budget for each year was discussed; further information will be gathered for May Board meeting.
5. 16' Dome. Steve Ratts & Shawn Hermann volunteered to modify Kitt Peak blueprints to complete the project. Steve Ratts discussed evaluation of structural drawings, dome and accessories. A report will be provided at the May BOD meeting.
6. 6' Dome. Ed Finney is working on several bids received for the 6' Dome. The Board directed Ed to consider other Southern Arizona groups that may be interested if the bids do not result in a sale.
7. Donation Policy draft as amended via email passed 4-0.
8. Paid Dues for Past Presidents was reported as passed by the Board via electronic voting 6-1.
9. 30" Scope Project. A written status report was provided by Mike Grindle. In regard to hiring a person to complete the drawings, Mike was directed to collect professional biographies for Board review and approval.
10. SEDS Thank You. A thank you letter to SEDS for supporting the TAAA website for many years was signed.
11. Action List. In addition to the above, the Action List was updated with status reports on the following ongoing projects: Electronic Board of Directors Voting (completed), Telescope Loan Update, Publicity Director, Publication Guidelines, Outline Development for Beginner's SIG (completed), Directors and Officers Insurance, Star Party Policy, and Web Site Re-design.

Adjourned at 9.36pm
Respectfully Submitted, Steve Marten, Secretary

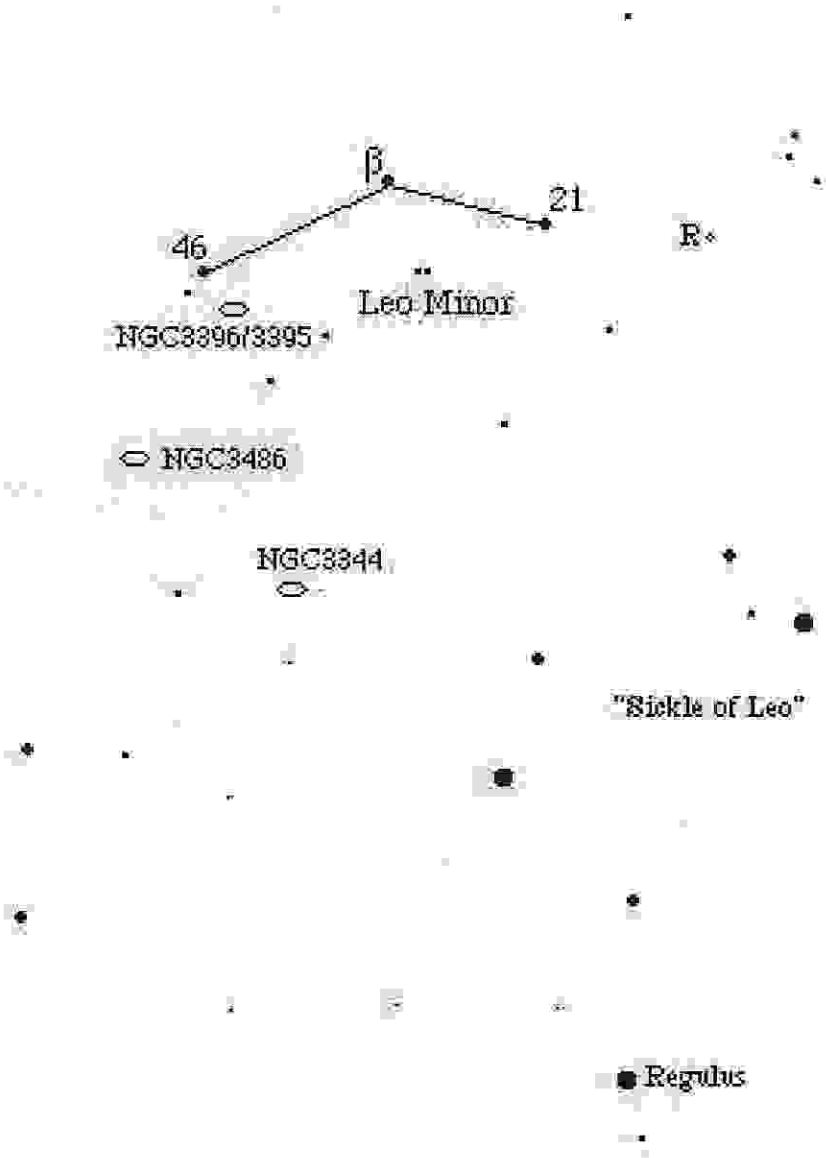
Constellation Report by Chris Lancaster

Leo Minor

The Little Lion

If you look to the well known and well formed constellation of Leo, the lion, and then move your gaze slightly north toward equally impressive Ursa Major, you'll come to one of the most uninteresting and uninspiring constellations to the eye that there is. Sorry to be so harsh, but the brightest star of Leo Minor, Beta Leonis Minoris (Alpha has somehow been dropped), is only magnitude 3.8, and the others are 4.5 or less. In fact, Leo Minor sits in an area of the sky which the ancient Greeks called amorphotoi, meaning "undeveloped." Johannes Hevelius came along in the late 1600's to give these stars their present name to fill in this comparatively empty part of the sky.

Leo Minor is a fair distance from the winter Milky Way, so what we expect to find here are no star clusters, and a good amount of galaxies and stellar objects. Looking to the west side of the constellation we find R Leonis Minoris, a cool M type star which is a long period variable (LPV) pulsing from magnitude 6.3 to a virtually invisible (depending on your telescope) 13.2 over a period almost matching a year – 372 days. Included is a representation of the field surrounding R. The brightest star to the lower right (southwest) is of magnitude 7.2. R is roughly 4.5 degrees west of 21 Leonis Minoris, or, specifically, RA 9h 45m 35s Dec +34d 30' 45". The chart spans approximately 30'. North is at the top.



There are several galaxies in Leo Minor. Most are small and in the vicinity of 12th to 13th magnitude. A couple are brighter and within the grasp of most backyard telescopes.

We find one of these galaxies, NGC3344, at RA 10h 43m 31s Dec +24d 55' 25". It's one of Leo Minor's brightest ones at magnitude 10.7. It spans an area of 7.0'x 6.5'. NGC3344 is a wonderful face-on spiral galaxy with a sharp nucleus and diminishing spiral arms. Its general orientation with respect to the Earth is similar to the nearer galaxies M33 in Triangulum and M51, the Whirlpool Galaxy, in Canes Venatici. While not as large as these two other galaxies, NGC3344 rivals their appearance nonetheless if we allow for the greater distance.

NGC3486 is of similar brightness (magnitude 10.7) a bit farther east at RA 11h 00m 24s Dec +28d 58' 33". This galaxy is of a very similar appearance, also being face-on to us and a size of 7.0'x 5.2'. You'll see a galaxy with a bright, broad nucleus.

Those of you will larger aperture can try for the interacting pair of galaxies NGC3396 and 3395 1.4 degrees southwest of 46 Leonis Minoris. Both of these are of magnitude 12.5 and a small 3.0'x 1.2' for 3396 and 2.1'x 1.2' for 3395. The centers of these galaxies are only 1.7 arc minutes apart, and long exposure images show distinct nuclei, but their adjacent edges are being smeared together from gravitational interaction. You can find the pair at RA 10h 49m 53" Dec +32d 59' 10".