

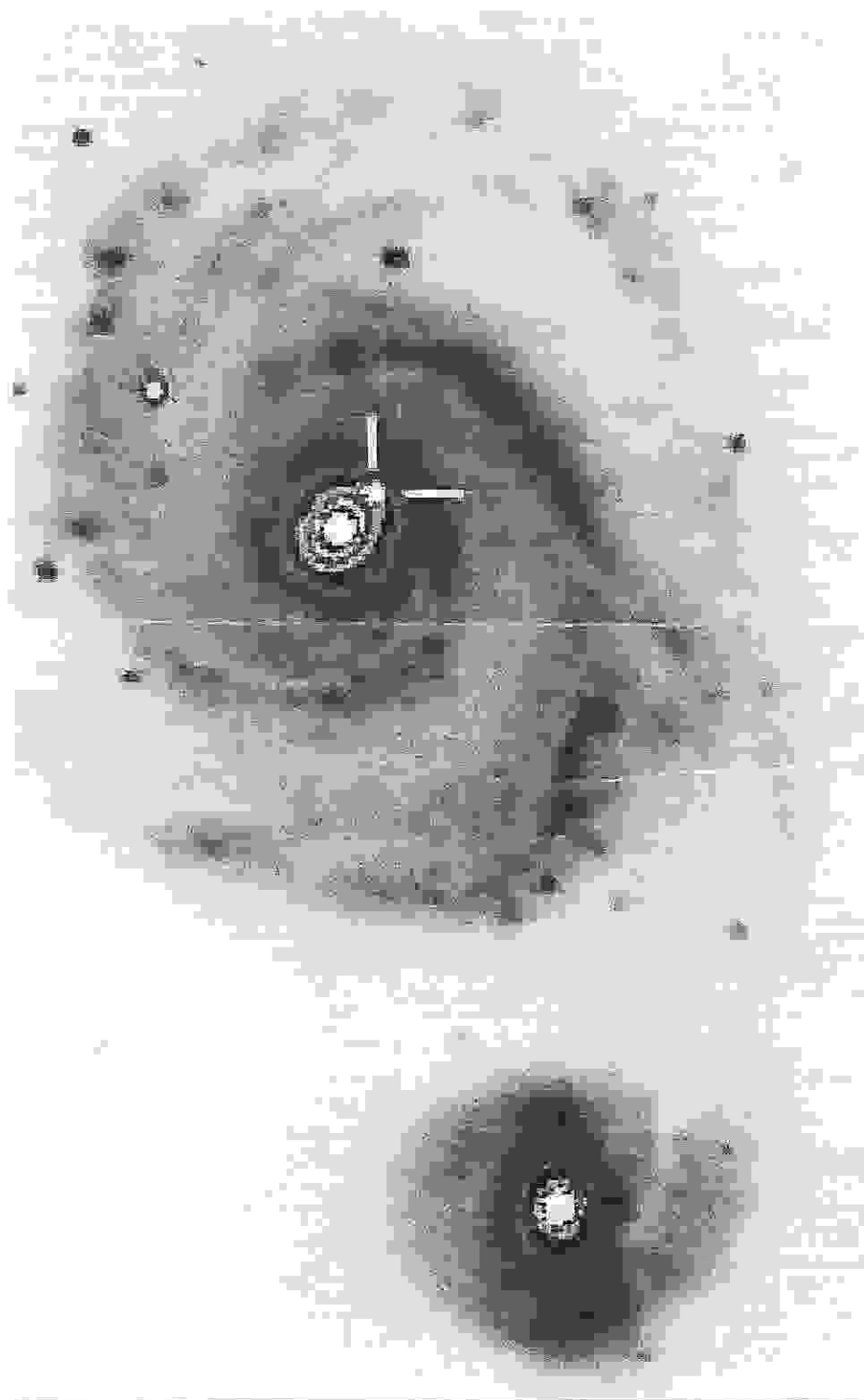


Desert Skies

Tucson Amateur Astronomy Association

Volume XLVI, Number 3

March, 2000



SUPERNOVA !

Calendar of Events

BEGINNERS LECTURE: Friday, March 3, 6:30 pm at the Steward Observatory Auditorium - Room N210. This month's topic is *Supernova Basics* by Wayne Johnson.

GENERAL MEETING: Friday, March 3, 7:30 pm at the Steward Observatory Auditorium - Room N210. Topic is *Searching For Supernovae* by Wayne Johnson.

BOARD OF DIRECTORS MEETING: Thursday, 9, 7:00 pm at Steward Observatory Conference Room N305.

STAR PARTIES & EVENTS:

- Mar. 4 - TAAA Empire Ranch Star Party
- Mar. 4 - Immaculate Heart School Star Party
- Mar. 8 - Desert View High School Star Party
- Mar. 8 - Erickson Elementary School Star Party
- Mar. 9 - Rincon Country West RV Resort Star Party
- Mar. 10 - Donaldson Elementary School Star Party
- Mar. 13 - Tucson Urban League Academy Star Party
- Mar. 24 - Hudlow Elementary School Star Party
- Mar. 25 - Whipple Observatory Public Star Party
- Apr. 1 - Messier Marathon 2000
- Apr. 1 - TAAA Empire Ranch Star Party
- Apr. 5 - Desert View High School Star Party

Newsletter Schedule: Deadline for articles: Monday, Mar. 20. Printing: Tuesday, Mar. 28. Folding Party: Wednesday, Mar. 29. Mailing: Thursday, Mar. 30. The newsletter is scheduled to be in the mail at least one week prior to the following month's General Meeting.

Cover: Supernova SN1994I in the Whirlpool Galaxy (M51) was discovered by TAAA Member Wayne Johnson and others on April 1, 1994.

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

TAAA Phone Number: (520) 882-1950

Office/Position	Name	Phone	E-mail Address
President	John Kalas	620-6502	jckalas@aol.com
Vice-President	Andrew Cooper	795-3585	acooper@pobox.com
Secretary	Ingrid Saber	797-3834	
Treasurer	Terri Lappin	579-0185	tlappin@as.arizona.edu
Member-at-Large	Robert Callanan	818-1315	tucsonbac@aol.com
Member-at-Large	Daniel Manrique	762-8192	dcmnrique@aol.com
Member-at-Large	Bill Lofquist	297-6653	wlofquist@aol.com
Chief Observer	Wayne Johnson		
AL Correspondent (ALCor)	Laurel Dunlap	544-7780	T4T@jarnac.org
Astrophotography SIG	Ray Wallace	294-1197	raywallace@altavista.com
Computers in Astronomy SIG	Roger Tanner	574-3876	rtanner@seds.lpl.arizona.edu
Newsletter Editor	John Kalas	620-6502	jckalas@aol.com
Star Party Coordinators	Maggie & Jeff Buzek	760-4578	jeffbuzek@aol.com

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 solar system and beyond. 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.

Annual Membership in the TAAA:

Regular membership	\$ 23
Senior membership (over 60)	\$ 21
Student membership	\$ 15
Add for Family membership	\$ 5
Add for Astronomical League (optional)	\$ 3
Add for contribution to Southern Arizona Section of I.D.A. (optional)	\$ 3 (recommended minimum)
Add for Sky & Telescope Magazine Subscription	\$ 29.95
Add for Astronomy Magazine Subscription	\$ 29

Rates for membership are given above. Family Membership includes two adults plus minor children. Members may subscribe to Sky & Telescope or Astronomy magazine (or both) at the time of membership renewal, saving substantially over the regular subscription rates. To assure we understand what you are paying for, please identify which class of membership and what options you want. Send one check made payable to TAAA to cover membership dues, magazine subscription(s) and any contributions to:

Four Easy Steps to Membership Renewal:

1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label.
2. Find your membership class and its rate. Add the Family Membership rate to this, if applicable.
3. If you desire membership in the Astronomical League or magazine subscription(s) or wish to make a donation, add the appropriate amounts to your membership rate. If a magazine subscription renewal is desired, include the magazine renewal notice, if possible. Be sure to identify which options you are paying for.
4. Write one check, payable to TAAA, and send it to the address given above.

- Call the Treasurer if you have any problems.
- Send address changes to the above address.

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. All submissions are retained by the editor unless prior arrangements are made. Partial page article submissions should be submitted in Word compatible files via e-mail or on a floppy disk. Full page articles, artwork, and photos should be camera ready. We will not publish slanderous or libelous material! Send articles, announcements, etc. to:

TAAA - Desert Skies
c/o John Kalas
3470 W. Red Bird Court
Tucson, AZ 85745

or e-mail: jckalas@aol.com

Tucson Amateur Astronomy Association
P.O. BOX 41254
Tucson, AZ 85717

Desert Skies is published monthly by the Tucson
Amateur Astronomy Association, PO Box 41254, Tucson,
Arizona 85717

President's Message

Weather has had an effect on some of the club's activities in February. The TAAA Empire Ranch Star Party on 2/5 was cut short by clouds. It was unfortunate because there was a good turnout, too. The Desert View High School Star Party on 2/16 also fell victim to the clouds.

On a more positive note, I heard that the star party for Our Mother of Sorrows Elementary School had a surprise attendee. I thought that a comment stating that a 28" telescope showed up was an exaggeration, only to find out that Dennis Young from Sedona happened to be in Tucson and decided to help out at the school star party. It was a great addition to the other TAAA telescopes and everyone enjoyed the activity. Thanks, Dennis.

Due to a lack of important information necessary to continue with the TIMPA planning activities, two of the three

meetings in February were cancelled (2/21 and 2/23) and the other meeting on 2/15 was poorly attended. Hopefully, the sub-committees will get back on track in March.

I am pleased to announce that TAAA Members Maggie and Jeff Buzek have volunteered to take over the School Star Party Coordinator responsibility. This was one of the positions that I was really interested in transferring. Their offer to help out is greatly appreciated. Although I did not have an opportunity to work with him on this newsletter, I am pleased to mention that George Barber has voiced an interest in learning more about the Newsletter Editor position and responsibilities. I will be working with George in March and April. His offer to help out is also greatly appreciated.

John Kalas

Meeting Information

Beginners Lecture

"Supernova Basics"
by Wayne Johnson

Wayne will cover some of the more basic aspects of supernovae in the Beginners Lecture.

Main Lecture

"Searching For Supernovae"
by Wayne Johnson

TAAA Member, Wayne Johnson will present a talk about everything you ever wanted to know about supernovae, but were afraid to ask. What are they and how are they classified? What do they look like and how do you go about finding them? When you do find one, what do you do? How are they named?

Wayne is an Integration and Test Engineer for Raytheon. He started his college education at the UofA in Astronomy and received his BSEE degree from NAU Flagstaff in 1979. Wayne has been interested in astronomy since he was five

years old and he built his first telescope, an 8" Newtonian, when he was thirteen. He started out as a visual observer with a passion for galaxies but, in 1991, after the visual discovery of his first supernova (SN1991T), Wayne had the opportunity to use a CCD camera owned by the Orange County Astronomers. During eighteen years with the OCA (president twice), he has taken over 3,000 images of galaxies, comets, globular clusters, and planetary nebulae. Wayne is currently Region Chair of the Astronomical League (AL), member of the board of the Western Amateur Astronomers (WAA) and Riverside Telescope Makers' Conference (RTMC). He is also speaker chairman for the International Amateur-Professional Photoelectric Photometry (IAPPP) organization and he helped organize the Starry Nights Festival in Yucca Valley, CA and the AstroImage Seminar sponsored by the OCA.

Wayne and his wife, Arlene, suffered a devastating fire at their home in Vail recently but, as he rebuilds his residence, Wayne plans on installing several automated CCD-imaging telescopes to continue his search and follow-up of supernovae and to have some fun, too!

Club News

Monthly Meeting Format Changes

In an effort to shorten the length of monthly meetings, the following changes will be tried, starting with the March meeting. Beginners Lectures will start at their normal time of 6:30 pm and be restricted to a maximum of 40 minutes including lecture and questions and answers. Immediately after the Beginners Lecture question and answer period, but not later than 7:10 pm, the club announcements will be reviewed and kept as brief as possible. The Main Lecture will commence at 7:30 pm, as usual, and be restricted to a maximum of 45 minutes of presentation followed by a maximum of 15 minutes of question and answers. If the presentation runs over and takes up the entire one hour Main Lecture period, there will be no question and answer period. The Door Prize raffle drawing will be held immediately after the Main Lecture. There will then be a 15-20 minute break for refreshments followed by any second-

half member presentations. The ultimate intent of these changes is to have the monthly meeting end by 9:30 to 10:00pm at the latest.

New School Star Party Coordinators

Just prior to the February meeting, TAAA Members Maggie and Jeff Buzek notified John Kalas that they were interested in volunteering for the School Star Party Coordinator position. Needless to say, John was elated. Maggie and Jeff met with John to review the responsibilities. Maggie will be the primary contact person with Jeff as a backup. They will start logging new star party requests immediately. The Buzek's will, no doubt, make improvements to the system as they become more familiar with it. Their support is greatly appreciated.

Club News (cont.)

Help Offered for Newsletter Editor Position

TAAA Member, George Barber, has offered to consider the position of Newsletter Editor. Needless to say, John Kalas was again elated. George will start working with John in March to learn about the responsibility. George's offer of help is very much appreciated.

Nominating Committee

As required by the club's Constitution, a nominating committee, consisting of Andrew Cooper, Ingrid Saber, and Mike Turner, was elected by a unanimous show of hands at the February meeting. Their responsibility is to present a slate of candidates to the general membership at the April monthly meeting in preparation for the general elections at the May monthly meeting.

Ingrid Saber, the TAAA's current Secretary, will not be running for reelection. It will be necessary to replace Ingrid on the Board of Directors. If you would be interested in running for the office of Secretary or any other position, please contact any of the Nominating Committee members: Andrew Cooper at 795-3585, Ingrid Saber at 797-3834, or Mike Turner at 743-3437. Your help would be appreciated.

TAAA Continues Support of S.A.R.S.E.F.

The TAAA will again be sponsoring awards for the Southern Arizona Regional Science & Engineering Fair to be held on Tuesday, March 14th at the Tucson Convention Center. In the past, the club had three members perform judging duties to select the astronomy-related project award winners in all age categories. John Polacheck and Ingrid Saber have volunteered to be judges for this year's event. The club needs one more judge. The festivities start at 7:00 am with a breakfast and briefing. After breakfast, the judges review the projects and talk to the students about their work. Award decisions are made by the three TAAA judges in the afternoon. If you would like to participate as a judge, please call Ingrid Saber at 797-3834.

Telescopes For Telethon 2000 Star Party

Saturday April 8, 2000 6pm-10pm

Sabino Canyon Main Parking Lot and Tram Ramadas

Mark your calendars! You're not going to want to miss this one. The T4T Tucson planning committee has been busy organizing this "sure to be" exceptional evening under the stars. We will have prize drawings throughout the charity event for some great stuff donated by Flandrau Science Center, and several of our fabulous local astronomy stores here in Tucson.

There will be a sign up sheet at the March TAL/TAAA club meeting for volunteer telescope operators. In addition, if anyone wants to help out directing the flow of traffic, or being one of our prize drawing helpers, we're taking names for any volunteers at this time. You don't need to bring a telescope to help out. Come join in the fun! Hope to see all of you there. For additional questions about the event or to volunteer e-mail Laurel Dunlap at <T4T@Jarnac.org> or call 544-7780.

TRIPOD WANTED!

If anyone has an old, sturdy tripod they would like to donate for the ETX awarded to the TAL/TAAA for use at star parties, contact either Laurel Dunlap or John Kalas. Any donation would be appreciated.

Member News

We welcome the most recent members who have joined the TAAA: Robert Crawford, Clinton E. Davis, Donald Doemling, Andrew Douglas, Jim Douthitt, David B. Dowling, Don Higgins, Jack Kennedy, Greg Krisher, Bob Levine, and James N. Reifschneider. We also welcome back Stephen C. Nelson who was a member a couple years ago. Glad to have you join! Please be sure to pick up a new member's pack at a meeting. Hope you'll make it to a star party or a meeting so we can all get to know you.

Tucson Astronomical League (TAL) News:

by Laurel Dunlap ALCor TAL/TAAA

Thanks to the effort of Mike and Matt Dunlap and the assistance of our awesome web master, Andrew Cooper, the TAL now has a new web page posted on the <tucsonastronomy.org> site. Follow the TAL link on the main page, and get some of the latest news on the Astronomical League's activities and events.

Through this new tool, I hope to post current events and communicate new information to our TAL members. Take a look at the site, it's located at:

<<http://www.tucsonastronomy.org/tal/tal.html>>.

The new page was reviewed by the Astronomical League's web master Bert Stevens who now informs me that he has posted the site on the Astronomical League's member society page.

Thank You to all of those who helped me with this project, and especially to Michael and Matt who were determined to teach me HTML, because after all, "It's really easy, Mom! Here I'll show you..."

Grand Canyon Star Party

3-10 June, 2000

I hope you are all making your plans for the new millenium's greatest public star party this June. By now, lodging is getting hard to come by, though campsites will be available for some time, in fact, you won't be able to reserve a campsite until early April. However, if you want to hang with us the full week and want to take advantage of the Park Service's offer of a free campsite, I will be taking names starting 1 March. Last year, the 16 sites lasted all of 5 days, so let me know then if you want one. Be aware that this is only for those staying at least 7 of the 8 days of the star party. If any remain, we will open them up on April 15 to folks staying only a few days.

The star party is a great time and, of course, at a great location. Almost as popular as the observing has been the twilight talks that occupy the public while it gets dark enough to observe. If you want to give one, think about it

Club News (cont.)

Grand Canyon Star Party (cont.)

and let me know. I'd be glad to give you your chance at public speaking. You might want to consider volunteering for a beginner's talk for practice! As always, for more information, check out the TAAA website at <www.tucsonastronomy.org> for more information, or call me at 293-2855.
Dean Ketelsen

Mirror Lab Open House

14 April, 2000

The Mirror Lab will be casting its next 8.4 meter mirror in April, and the hot, spinning part will occur on the afternoon and evening of Friday, 14 April. TAAA members and guests are welcome to attend if the lab knows in advance that you are coming. I will have a signup sheet at the April meeting to list your name and the number of people that will be accompanying you. If you will not make the April meeting, you can likely register thru my office voice mail, but check the April newsletter for latest information.
Dean Ketelsen

Kartchner Caverns Bats Perform Fly-By For Vega-Bray Viewers

by Sam Turner

On Friday, 2/11, moments after sunset, hundreds of bats swarmed over the small ponds below the Vega-Bray viewing

site, their high frequency squeaks competing with the quacks of resting Wood Ducks. They zigzagged their way out of sight as Mercury sparkled into view. Using the two mounted binocular scopes, early arriving guests were able to view the wildlife and the Moon in the dusk. With sunset, the breezes died and some 200-250 teachers and administrators from the State Science-Math Conference, having completed their visit to Kartchner Caverns, gradually filed their way up the steps to the scopes.

Rosemarie and Ken Reiser, Larry Brown, Roger Tanner, Bob Callanan, Sandi McCormick and Sam and Phyllis Turner treated viewers to a variety of objects from Jupiter and Saturn to star clusters and double stars. The guests learned the difference between binoculars, a Dobsonian, a Schmidt-Cassegrain and a refractor scope. They also had the opportunity to view through one of the new Celestron NexStar instruments. Vega-Bray personnel provided us with salmon sandwiches, cream cheese and coffee. It was a pleasure answering knowledgeable questions and discussing what books their departments might want to purchase for their schools. A large contingent of Mesa-Tempe teachers were amazed at how dark the sky was compared to their community. We, on the other hand, noticed the increased lighting from Benson, particularly the McDonalds' billboard at the Kartchner exit. By 9:30 pm, most of the guests had left and we packed up our equipment, returning to Tucson by 11:00 pm.

Items of Interest

Websites: Trips on the Internet Super-Skyway

by Rik Hill

So you just got a CCD, or maybe you've had one for a while and taken pictures of all the bright M-objects and are looking for greener pastures. There's a bare-bones website that gives you the basics to get you started. It's a site put together by Arne Henden, the co-author of ASTRONOMICAL PHOTOMETRY by Henden and Kaitchuck. It can be found at: <<http://www.flagstaff.az.us/~ccdir/tutorial.html>>. I say "bare-bones" because there are no images here. In fact, there are not even links to images. This makes for a fast loading website. Even so, the information there is concise and precise. Dr. Henden lays out the basics in a no nonsense but plain language manner that should be the quick guide to all CCDers.

But maybe you're not so technically inclined but want to do something of a more serious nature where photons hit the retina. Then you might want to take a look at the website for the magazine called the Double Star Observer at: <<http://www.cshore.com/royce/dso/>>.

Here long time Editor Ronald C. Tanguay has compiled a good reference site for those who want to go beyond the article about double stars in Orion that appeared in Sky & Telescope several months ago. He has links to some of the most comprehensive catalogs of double/binary star systems that are available. Justifications for amateur involvement are presented and guides to effective observing are included.

But before you can do either of these you need to know what the weather will be. This too is available on the web in abundance but most of that abundance is not of good quality. What you need is a website that will give you local forecasts from the National Weather Service as well as satellite imagery at various wavelengths. One of my favorite sites is maintained by Univ. of Colorado Atmospheric Research center at:

<<http://www.rap.ucar.edu/weather/satellite.html>>.

It contains links to all the available satellite imagery with images being uploaded hourly on most of these links. For a written forecast the most direct one is at:

<<http://claret.kpno.noao.edu/Includes/forecast.shtml>> or <<http://www.wunderground.com/forecasts/TUS.html>>.

These come directly from the National Weather Service. Lastly, I would also recommend the one created by Carl Hergenroether of the Catalina Sky Survey at:

<http://www.lpl.arizona.edu/css/weather.html>.

It contains a number of links to technical weather information and images that should help anyone be an expert forecaster!

As always, if you know of a particularly good website you would like mentioned here, drop me a line at:

<rhill@lpl.arizona.edu> or visit my website at:

<<http://www.lpl.arizona.edu/~rhill>>.

Items of Interest (cont.)

Mars Exploration is Lecture Topic

Author Ronald Greeley will be giving a presentation in Tempe on March 1st about his life's work as a planetary geologist. There is a \$10 fee for this lecture. Call 480-965-1441 for tickets and more information.

Whipple Observatory Gamma Ray Project Needs Your Support

The Whipple Gamma Ray Project is seeking community support for their proposed gamma ray telescope array. Called VERITAS, this would be the most sensitive gamma detector of its type in the world. The Whipple 10m Gamma Ray Telescope is currently the largest and most sensitive gamma-ray telescope in the world, but new gamma ray telescopes under construction outside the US will soon surpass the sensitivity of the 10m telescope. VERITAS, which stands for Very Energetic Radiation Imaging Telescope Array System, would be an array of seven telescopes and would be ten times more sensitive than the single 10m telescope. The proposed site for the array is within one mile of the visitor's center. An alternate site closer to the visitor's center, is less protected from light pollution in the valley and considered inferior on scientific grounds. Funding for the VERITAS will be from the US Dept of Energy, NSF, the Smithsonian Institution, and agencies of Ireland and the United Kingdom.

The earth's atmosphere protects us from the influx of gamma ray radiation that bombards the earth from space. As a high energy gamma ray enters the earth's atmosphere, it interacts with air molecules about 10 miles above the ground. It is in this interaction that a faint blue, incredibly short, flash of light occurs. This is called a Cerenkov flash. Dark skies, a large telescope, and fast electronics are required to detect these flashes of light. It's important to know that ground based gamma ray astronomy does not produce gamma ray radiation.

The field of gamma ray astronomy is still in its infancy. Only a dozen or so gamma ray sources are visible from the ground, but among these are some of the universe's most bizarre and powerful objects like supernova remnants and active galactic nuclei. By supporting this project, you can help southern Arizona remain at the forefront of astronomical research and help astronomers learn more about these unusual objects. The forest service is accepting letters from the public through March 17. Send your comments to John McGee, Forest Supervisor's Office, 300 W. Congress, Tucson, AZ 85701; phone 520-670-4552, or email at <blewis/r3_coronado@fs.fed.us>.

Additional information will be available at the March meeting.
Terri Lappin

Course Offered

TAAA Members Sam and Phyllis Turner and Sandi McCormick are teaching the following beginning astronomy course:

"FLY ME TO THE STARS"

A Beginning Tour of the Spring Sky

Using small telescopes, binoculars, or just your eyes, you can enjoy finding hundreds of celestial objects. All you need is a little curiosity and a jacket. You will participate in star parties and guided celestial tours.

- Thursday evenings 7:00 - 9:00 PM
- WILLIAM M. CLEMENTS CENTER
8155 E. Poinciana Drive.
(East of Pantano between Escalante and Irvington)
- Register through Tucson Parks and Recreation by calling: 791-4877 March 16 through May 18.
- Cost \$55.00
- Ages 17+ Class limited to 20 members.

2000 Arizona Messier Marathon

Where: Arizona City Site

When: Saturday evening 4/1 thru Sunday morning 4/2

Solar Data:

April 1: 3:57pm Moon set

6:49pm Sunset

8:11pm astronomical twilight

April 2: 4:50am morning twilight

5:14am Moon rise

6:11am Sunrise

The Messier Marathon is designed to encourage Deep Sky observing. By joining in with other marathoners, you will enjoy companionship of those also involved. It will test your observing skills. If you are a club member in good standing, then join in and do so just for the FUN OF IT. If you decide to participate then be sure to read ALL of this information.

There will be a check off list available at the site to record your observations. Be sure to pick one up, preferably before you start marathoning and fill in the top portion so awards can be made. It is important to remember that you must turn in your form to one of the Coordinators before leaving the site or by sunrise. We cannot accept any after these times.

Although it is possible to do the marathon with a 4" telescope, I wouldn't suggest this unless you are an experienced observer. Don't forget to check off each object as it is observed.

Plan on arriving at the site early enough to set up the telescope and allow it to reach thermal equilibrium. Be sure to fill out the heading of the check off form!

The Marathon this year affords the optimum conditions of finding 107 objects. The three most difficult to impossible ones are M33, M74 and M77. Next in line for difficulty are M31, M32, M110, M30 and M76.

If you plan on participating in the Marathon, then doing some homework ahead of time will pay dividends. If interested, the check off list can be made available prior to the marathon. Study the catalog along with your star atlas to develop your own process. Be prepared in case it becomes cloudy and the sequence has to be altered.

Items of Interest (cont.)

2000 Arizona Messier Marathon (cont.)

Your involvement will not go unnoticed, as there will be awards in recognition of effort. People observing 50 or more objects will receive an 8 1/2 x 11 certificate. For first, second and third places there will be plaques suitable for mounting on a telescope. Duplicate awards will be made for ties. We need your club's support to help purchase the awards for its members.

Not interested in the marathon? Come anyway, you are also invited for deep sky observing, planetary observing, astrophotography or just plain old relaxing under a dark sky!

AJ Crayon, e-mail - acrayon@primenet.com
Rick Rotramel, e-mail - Rick.Rotramel@CAS.honeywell.com
Messier Marathon Coordinators
Saguaro Astronomy Club

Dark Skies for March 2000

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

Tu/We 29/ 1	19:43 - 3:54	Sa/Su 11/12	0:21 - 5:16	Tu/We 21/22	19:59 - 20:21
We/Th 1/ 2	19:44 - 4:40	Su/Mo 12/13	1:25 - 5:15	We/Th 22/23	19:59 - 21:19
Th/Fr 2/ 3	19:44 - 5:23	Mo/Tu 13/14	2:27 - 5:14	Th/Fr 23/24	20:00 - 22:16
Fr/Sa 3/ 4	19:45 - 5:26	Tu/We 14/15	3:25 - 5:13	Fr/Sa 24/25	20:01 - 23:11
Sa/Su 4/ 5	19:46 - 5:25	We/Th 15/16	4:17 - 5:11	Sa/Su 25/26	20:02 - 0:05
Su/Mo 5/ 6	19:47 - 5:24	Th/Fr 16/17	5:04 - 5:10	Su/Mo 26/27	20:03 - 0:58
Mo/Tu 6/ 7	19:47 - 5:23	Fr/Sa 17/18	- - -	Mo/Tu 27/28	20:03 - 1:47
Tu/We 7/ 8	20:08 - 5:21	Sa/Su 18/19	- - -	Tu/We 28/29	20:04 - 2:34
We/Th 8/ 9	21:10 - 5:20	Su/Mo 19/20	FULL MOON	We/Th 29/30	20:05 - 3:18
Th/Fr 9/10	22:12 - 5:19	Mo/Tu 20/21	- - -	Th/Fr 30/31	20:06 - 3:59
Fr/Sa 10/11	23:16 - 5:18			Fr/Sa 31/ 1	20:07 - 4:37

Weekend	Sun	Sun	Mercury	Venus	Mars	Jupiter	Saturn	
Sa/Su	Set	Rise	Rise Vi	Rise Vi	Set Vi	Set Vi	Set Vi	Vi=Visibility
4/ 5	18:22	6:44	6:11 -	5:37 1	20:50 2	22:08 -2	22:51 1	-3 brilliant
11/12	18:28	6:35	5:37 7	5:36 1	20:47 2	21:47 -2	22:26 1	0 conspicuous
18/19	18:33	6:27	5:18 5	5:34 2	20:44 3	21:27 -1	22:02 1	3 moderate
25/26	18:37	6:17	5:09 5	5:30 3	20:41 3	21:07 -1	21:38 1	6 naked eye limit
1/ 2	18:42	6:08	5:04 5	5:26 4	20:38 3	20:47 0	21:14 1	9 binoculars limit

By Erich Karkoschka

Star Parties & Events

TAAA Empire Ranch Star Party

March 4 (Saturday)

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

NOTE: TAAA Members Jim and Delia Brix will be spending the entire evening practicing for next month's Messier Marathon. If anyone else is interested in doing the same, this will be a great opportunity.

Immaculate Heart School

March 4 (Saturday)

[Northwest]

No. of Scopes: 5

This activity is in support of a school fundraiser being held at the White Stallion Ranch for parents of the school's students. The ranch is located on Twin Peaks Road. Take Silverbell Road north past Cortaro Road. After passing all of the Continental Ranch developments, Silverbell Road bends left and turns into Twin Peaks Road. Proceed through Rattlesnake Pass and, as the road drops on the western side of the pass, there will be a gate on the left into White Stallion Ranch. Follow the dirt road about a mile until you reach the lodge. You will have gone through two additional gates along the way. Set-up will be at 5:30 pm with observing starting at 6:00pm. Observing will end at 9:30 pm. John Kalas will be the Star Party Leader for this event. A sign-up sheet will be at the March meeting.

Star Parties & Events (cont.)

Desert View High School

March 8 (Wednesday)

[South-Central]

No. of scopes: 3

Jim Treat, an astronomy instructor at the school, wants his students to do some near New Moon observing. The school is located at 4101 E. Valencia (on the north side of Valencia, east of Alvernon and west of I-10). Setup will be at 6:00 p.m. in the Faculty parking lot's SE corner. Observing will run from 6:30 pm to about 8:30 pm. A Star Party Leader is needed for this event. A sign-up sheet will be at the March meeting.

Erickson Elementary School

March 8 (Wednesday)

[East]

No. of scopes: 5

This star party is for students and families from three different elementary schools near Stella and Kolb Road. Set up at 6:00pm with observing starting at 6:30pm. Erickson Elementary School is located at 6750 E Stella Rd. Take Kolb Road south to Stella, turn right on Stella. Go about 0.5 mile west to Mann. The school is on the SE corner of Stella and Mann. The exact location for setting up telescopes isn't known at this time but most likely will be one of three basketball courts. Terri Lappin (home - 579-0185, work - 626-6275) is the Star Party Leader and can be called about where to set up. A sign up sheet will be at the March meeting.

Rincon Country West RV Resort

March 9 (Thursday)

[Southwest]

No. of Scopes: 3

Bill Lofquist stirred up the interest in this event and will be the Star Party Leader. The resort is located at 4555 S. Mission Road, about midway between Ajo and Irvington on the east side of Mission. Take I-10 to I-19 and exit at Irvington Road. Turn right (north) at Mission Road. Look for Rincon Country RV Resort sign on the right. Turn right and then turn right again into the resort entrance. As you approach the entry gates, stay in the left lane. Tell the gate attendant that you are there for the star party. When you pass through the gate, turn right at "B" Street. Follow "B" Street around to the left to the picnic area for set-up at 6:30 pm. Observing starts at 7:00 pm and ends at 9:00pm. The TAAA will receive a donation for this activity. There will be a sign-up sheet at the March meeting.

Donaldson Elementary School

March 10 (Friday)

[Northwest]

No. of Scopes: 8

This is a whole school star party, K through 5th grade. The school is located at 2040 W. Omar Drive (just east of La Cholla Blvd. and south of Ina Road). Set-up will be at 6:30 pm on a soccer field north of the school. The gate onto the soccer field is on La Cholla Blvd. Observing starts at 7:00 pm and ends at 8:30 pm. The TAAA will receive a donation for this activity. A Star Party Leader is needed for this event. There will be a sign-up sheet at the March meeting.

Tucson Urban League Academy

March 13 (Monday)

[South]

No. of Scopes: 4

The Academy is located at 2305 S. Park Ave. at the corner of Park Ave. and 34th Street. Set-up will be at 6:30 pm on the basketball court behind the school. Head south on Park and turn left (east) onto 34th. There is a small parking lot just off the corner on the left side of 34th. Telescopes will have to be

carried onto the basketball court. Observing starts at 7:00 pm and ends at 9:00 pm. A Star Party Leader is needed for this event. There will be a sign-up sheet at the March meeting.

Hudlow Elementary School

March 24 (Friday)

[East]

No. of Scopes: 8

Three third grade classes will participate in this event plus parents. 150 people are expected. Set-up will be at 6:30 pm on a basketball court area. Observing starts at 7:00 pm and ends at 8:30 pm. The school is located at 502 Caribe Ave. Take Kolb Road south past Speedway Blvd. Turn right (west) onto 5th Street. Go about one block until 5th St. intersects Green Hills Ave. A gate to the playground will on 5th St. near the intersection. Go through the gate and proceed to the basketball court area. A Star Party Leader is needed for this event. There will be a sign-up sheet at the March meeting.

Whipple Observatory Visitors Center Public Star Party

March 25 (Saturday)

Observing will begin at 7:15 p.m. courtesy of telescopes provided by the Tucson Amateur Astronomy Association and Sonora Astronomical Society.

- 3:30 p.m. Visitors Center opens
 - 6:00 p.m. Informal lecture on astronomy by Observatory staff
 - 7:15 p.m. Observing begins (next to Visitors Center)
- Binoculars and small flashlights are useful to bring. Please cooperate with staff directing parking when you arrive. The parking spaces nearest the building are reserved for TAAA members and their telescopes. Visitors should park along the driveway or in the parking area outside the gate or along the road as directed. (Please note: Visitors will be allowed to park cars next to the building in the space usually reserved for telescopes until 5 p.m. At that time, visitors will have to move their cars to other parking spaces so that telescopes may be set up.)

For more information call 670-5707. In case of threatening weather, call 670-5707 after 4 p.m. on the 25th for information about star party cancellation. See website <<http://linmax.sao.arizona.edu/help/FLWO/whipple.html>> for location and background information.

Arizona Messier Marathon 2000

April 1 (Saturday)

- See article under **Items of Interest** in this newsletter.

TAAA Empire Ranch Star Party

April 1 (Saturday)

- See announcement dated March 4 (above).
- Members are welcome to enjoy an all-night Messier Marathon at Empire Ranch if they prefer not to attend the event at Arizona City.

Desert View High School

April 5 (Wednesday)

[South-Central]

No. of scopes: 3

- See announcement dated March 8 (above) except set-up time will be 6:30pm. Observing starts at 7:00pm and ends at 9:00pm.

TIMPA Site News

TIMPA Update

There was not a lot of activity on the TIMPA Site in February. Two of the three meetings were cancelled for lack of important information to continue the planning process. Since the next month's general and sub-committee meetings are established at one of the meetings that were cancelled, a schedule for the March meetings has not been determined at the time of this newsletter printing. A schedule should be available by the March 3rd meeting. If you are interested in attending some of the meetings and cannot make the March meeting, call John Kalas at 620-6502 for details.

We are still waiting for an accurate estimate from Kitt Peak for the cost to transfer the dome and support structure out of the storage area and up to the parking lot. Once that information is available, the means of transporting the pieces to the TIMPA Site will be established.

Next TIMPA Site Committee Meetings

Note: All meetings are held at 7:00 pm in the Steward Observatory Conference Room N305

- Site Prep Sub-Committee Meeting - To Be Announced
- Long Range Planning Sub-Committee Meeting - To Be Announced
- General TIMPA Site Committee Meeting - To Be Announced

What is TIMPA, Anyway?

We forget that not all TAAA members know about the TIMPA project. For our new members, this explanation will appear in all future newsletters.

TIMPA stands for Tucson International Modelplex Park Association. It is a parcel of land (approx. 160 acres) located about seven miles west of the Saguaro National Park West. The property is leased from the City of Tucson by the TIMPA organization and is to be used as a specialty park. The TIMPA

organization flies radio-controlled model airplanes at the site. The Southern Arizona Rocketry Association (SARA) also uses the site to launch model rockets.

About three years ago, TAAA member, John Polacheck, heard about the site and inquired if the TIMPA organization would be interested in acquiring another partner, the TAAA. The TIMPA group was very interested because the relationship would be non-competing. TIMPA and SARA use the site during the day and the TAAA would utilize the facility at night. The TAAA has used the site, by permission, for about a year for scheduled star parties, such as Beginners Star Parties. On July 14th, the TAAA and the TIMPA organization signed a letter of agreement allowing the TAAA unlimited use of the site for scheduled star parties as well as member use at other times. Ultimately, the TAAA intends to develop an observing area on the site that will include an observatory for the club's 16" reflector telescope. Many club and joint benefit projects will be undertaken in the next several months to improve the facilities at the site:

1. Run electricity and telephone line to our observing area and on to TIMPA's ramada. Also, run a water line to our site. (Completed - 10/9/99)
2. Construct a secure storage cage in the TIMPA Barn. (Completed - 12/11/99)
3. Move the TAAA property from the mini-storage unit to the new security cage in the TIMPA Barn. (Completed 12/12/99)
4. Construct permanent bathroom facilities. (Tentative schedule 1st quarter 2000)
5. Construct observatory to house club's 16" telescope. (Tentative schedule 2nd quarter 2000)
6. Upgrade club's 16" telescope. (Tentative schedule 2nd quarter 2000)
7. Construct additional site improvements. (Schedule to be determined)

Watch the newsletter for announcements about TIMPA activities and how you can help.

TAAA Board of Directors Meeting - February 10, 1999

EDITOR'S NOTE: The following information are summaries of the topics discussed at the board meeting. Complete minutes of this meeting are available for review at the next monthly meeting from Ingrid Saber, TAAA Secretary.

Location: Steward Observatory Conference Room N305, University of Arizona

Call to Order: 7:08 pm

Board Members Present: John Kalas, Andrew Cooper, Ingrid Saber, Terri Lappin, Robert Callanan, Bill Lofquist

Board Members Absent: Daniel Manrique

1. Treasurer's Report - Terri Lappin distributed copies of the monthly financial statements to the board members and reviewed the significant items. Copies of the club financial statements are available for review by members at the monthly meetings. Terri requested board consideration for purchasing an updated version of the QuickBooks computer accounting program used by the TAAA Treasurer. The board verbally authorized the \$50. expense.
2. Nominating Committee - John Kalas mentioned that the committee, elected by the general membership at the February meeting, consisted of Andrew Cooper, Ingrid Saber, and Mike Turner.
3. Monthly Meeting Format Change - John Kalas expressed his interest in shortening the monthly meetings to a goal of 9:30 pm. He suggested that it might be possible to utilize the time between the end of the Beginners Lecture and the start of the Main Lecture for refreshments. There was also a discussion about ways to make the refreshment break more efficient by changing the layout of the refreshments. John mentioned that the door prize drawing should be moved up in the schedule because many members and visitors have been leaving before the drawing takes place. He also stressed that the Main Lecture must be controlled to 45 minutes with a 15 minute question and answer period (1 hour total). Bill Lofquist disagreed with holding the Main Lecture to a strict schedule because some interesting talks may be cut short. John responded that the current club trend of long meetings is not enhancing the attractiveness of the organization to new members and that too many members and visitors are leaving early.

TAAA Board of Directors Meeting - February 10, 1999 (cont.)

4. TAAA Website E-Mail Address Listing - John Kalas inquired of Andrew Cooper about the progress toward reestablishing the club member e-mail listing on the TAAA website. Andrew responded that he was waiting for an updated listing from Treasurer, Terri Lappin. Terri said that she would get Andrew the information soon.
5. TAAA E-Mail Exploder - John Kalas inquired of Andrew Cooper about the progress toward establishing our own listserver on the SEDS computer system. Andrew had not had a chance to investigate the requirements with the SEDS group and was waiting for the updated e-mail address listing from Terri.
6. "Telescopes for Telethon" Insurance Issue - John Kalas advised the board that all of the insurance needs for the April 8 event will be covered by MDA.
7. "Reach for the Stars" Program - Bill Lofquist distributed copies of updates for the project. He advised the board that the Pima Prevention Partnership (PPP) had voted to officially enter into a cooperative relationship with the TAAA as a co-sponsor of the "Reach for the Stars" program. Bill mentioned that he was coordinating star parties for the PPP as well as a Catalina High School math, engineering, and science group. Bill and Kevin Bays had already performed a star party for about 25 kids at the Arizona Children Association. John Kalas suggested that it might be time to make a presentation to the general membership for the purpose of explaining the program and starting to solicit interest from members to participate. Four TAAA Members are already involved with the project; Bill, Ed Piggott, Kevin Bays, and Sam Turner. Bob Callanan asked about adult participation from recipient groups in the program activities. Bill emphasized that equal participation from the recipient groups is mandatory. Additionally, these groups must provide any required transportation and insurance. John Kalas recommended that Bill work through the TAAA Star Party Coordination system for additional support for star parties in the future.
8. 4th Avenue Street Fair - Terri Lappin announced that the club's application for a booth in the upcoming fair was denied.
9. S.A.R.S.E.F. Participation - Ingrid Saber reported that the annual Southern Arizona Regional Science and Engineering Fair will be held on March 14th at the Tucson Convention Center. Ingrid, John Polacheck, and Bob Schwartz had volunteered to be judges for the event. (EDITOR'S NOTE: Bob Schwartz has since announced that he will not be able to be a judge.) Ingrid requested board consideration for support of the event again this year. The board gave verbal approval to spending \$60. for the award prizes.
10. School Star Party Coordinator - John Kalas announced that TAAA Members Maggie and Jeff Buzek had volunteered for the position. He will arrange for a meeting with the Buzeks to start to transfer the responsibility. Maggie and Jeff will be introduced to the general membership at the March meeting.
11. Newsletter Editor - John Kalas mentioned that TAAA Member George Barber had expressed an interest in learning more about the responsibilities of newsletter editor. John will be setting up a meeting with George to review the responsibilities in the near future.
12. Project ASTRO - Terri Lappin mentioned that the Project ASTRO Program has been funded for another year. The funding also covers a half-time coordinator for the next three years. The future activity may be at a lesser scale than in the past as far as the number of teacher/astronomer partnerships go.
13. TAAA's 14" Telescope - It was decided that the effort required to get the telescope fully operational was excessive at this time. Therefore, it should be removed from Robert's garage and returned to the TAAA security cage until such time as the club has the time and resources to work on it.

Meeting Adjourned: 8:43 pm

Desert Skies Classified

- FOR SALE:** Tele Vue wide field 1 1/4" eyepieces, each in excellent condition; 24mm \$110., 15mm \$90. Celestron Light Pollution Rejection filter for 1 1/4" eyepiece \$20. Contact Duane Niehaus at 290-1722. (4/00)
- FOR SALE:** Hard case for 10" SCT (broken fastener), \$10. Contact Hazel Lawler at Arizona City (520) 466- 9845 or e-mail at lawler@cybertrails.com (4/00)
- FOR SALE:** 11" Celestron Starhopper Dobsonian with 2" JMI Crayford focuser. Includes Telrad base and 26 and 17mm Plossl eyepieces. Scope was used mainly for planetary work and the optics are excellent. \$950. Call Frank at 825-5540 or E-mail at Fcathell@aol.com (5/00)
- FOR SALE:** Meade 16" Dobsonian tube and base (no optics) \$50.00, 1 1/4" Meade focuser \$40.00, 4" diagonal mirror \$40.00, 6x30 Meade finder scope with bracket \$35.00, 9x50 Celestron finder scope with bracket \$50.00. Buy one item or whole package. Negotiable. Call Jim Brix (520) 281-8759 evenings. (5/00)
- FOR SALE:** Starmaster 12.5" dia. f/5.2 true truss Dobsonian with Zambuto mirror. It comes with NGF (DX1) 2-speed focuser, telrad finder and black shroud to block stray light from the mirror. Asking for \$2400. Contact Ted via e-mail at CTGWC@aol.com (5/00)
- FOR SALE:** Celestron 90mm Spotting Scope, Includes: tripod, two 1 1/4" eyepieces (12mm & 32mm), glare filter, reflex finder, and hard case. Very good condition. \$200. cash. Call Eric at 323-8435. (6/00)
- SERVICE:** Custom machine shop work - design and manufacture of telescopes and mountings. Fabrication of small parts or repair of existing hardware. For consultation and price quotes, call Duane Niehaus at 290-1722.

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 John Kalas at 620-6502 or e-mail at <jckalas@aol.com>.

Constellation Report by Chris Lancaster

Leo

Lying on the ecliptic and making its appearance just above the horizon as the sun sets in March is one of the more recognizable constellations of the zodiac, Leo the Lion. The vast majority of ancient civilizations indeed saw a lion in this collection of stars. The exceptions include the Chinese, who saw a horse, and the Incas, who thought the stars outlined the figure of a puma. Other than its regal shape, one reason for a lion being connected with the constellation is the observation that lions came to the Nile to cool themselves when the sun was passing through Leo during the hot days of late summer. The Greeks considered that Leo specifically represented the mythological Nemean Lion which terrified Corinth until Heracles came to the rescue.

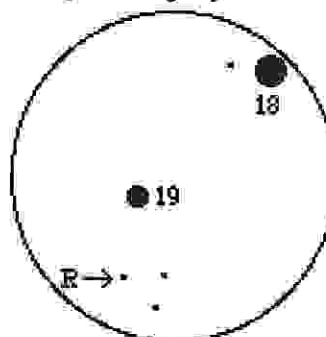
Leo contains several bright stars, so finding it in the sky is simple. If you are familiar with the pointer stars of the Big Dipper which lead you to Polaris, the North Star, just follow that line formed by those pointers in the opposite direction and your eyes will land firmly on Leo's back.

Gamma (γ) Leonis (named Algieba) provides a good first target to view. It is an excellent double star whose components shine at magnitudes of 3.3 and 3.5 with an identical yellow-orange color. It will take high magnification to overcome its close separation of $4.5''$, which is slowly increasing toward about $5''$ during the next 100 years. Gamma is the brightest star in the curve of stars forming Leo's head and shoulder, often seen as a sickle.

Sitting 9.5 degrees northeast of Algieba is 54 Leonis. This double star is a close copy of Algieba in that it has an almost identical PA and a similar difference of magnitudes between the two (4.5 and 6.5), but they have a slightly wider separation of $6.5''$ and a color of white or slightly blue.

One of the best variable stars to observe is R Leonis. It is easily found $21'$ in RA (or just over 5 degrees) west of Regulus near 5.6 magnitude 18 Leonis and 6.3 magnitude 19 Leonis. R is a long period variable of the Mira class, pulsating from minimum near 10th magnitude to a maximum of about 5.5 magnitudes in a span of about 156 days. It forms one point of a triangle south of 19 Leonis with two other 9th magnitude stars,

and it's easy to determine which one it is by its red color. My observations made in January show that R is near its minimum phase, so it should show its brilliance either in June when Leo is still visible low in the west at sunset or in late September after Leo returns to the early morning sky.



Field of R Leonis $1/2^\circ$ Field of view

Galaxies in Leo are too numerous to mention in detail. There are several, however, that deserve special attention. Starting 2.5 degrees southeast of Theta (θ) Leonis is the trio of galaxies M65, M66, and NGC3628. M65 and M66 both measure $8'' \times 4''$ and so appear as parallel stripes south of the more distended NGC3628. All are in the neighborhood of 10th magnitude and can be framed in the same field of view in a low power eyepiece centered at RA 11h 20m Dec $+13^\circ 15.5'$. Half the distance between these and Alpha (α) Leonis (Regulus), is another trio of bright Messier galaxies—M95, M96, and M105. M95 is the dimmest of these three at magnitude 11.5, but, being a barred spiral, perhaps the most photogenic. M96 is a tight spiral with a bright central bulge, while M105 is a bright elliptical of magnitude 10.1.

An isolated galaxy, NGC2903, can be found 1.5° degrees south of Lambda (λ) Leonis. Its bright 9.6 magnitude glow and fairly large size of $12.5' \times 6'$ make it an easy target. NGC2903 is located at RA 9h 32.2' Dec $+21^\circ 30'$.

