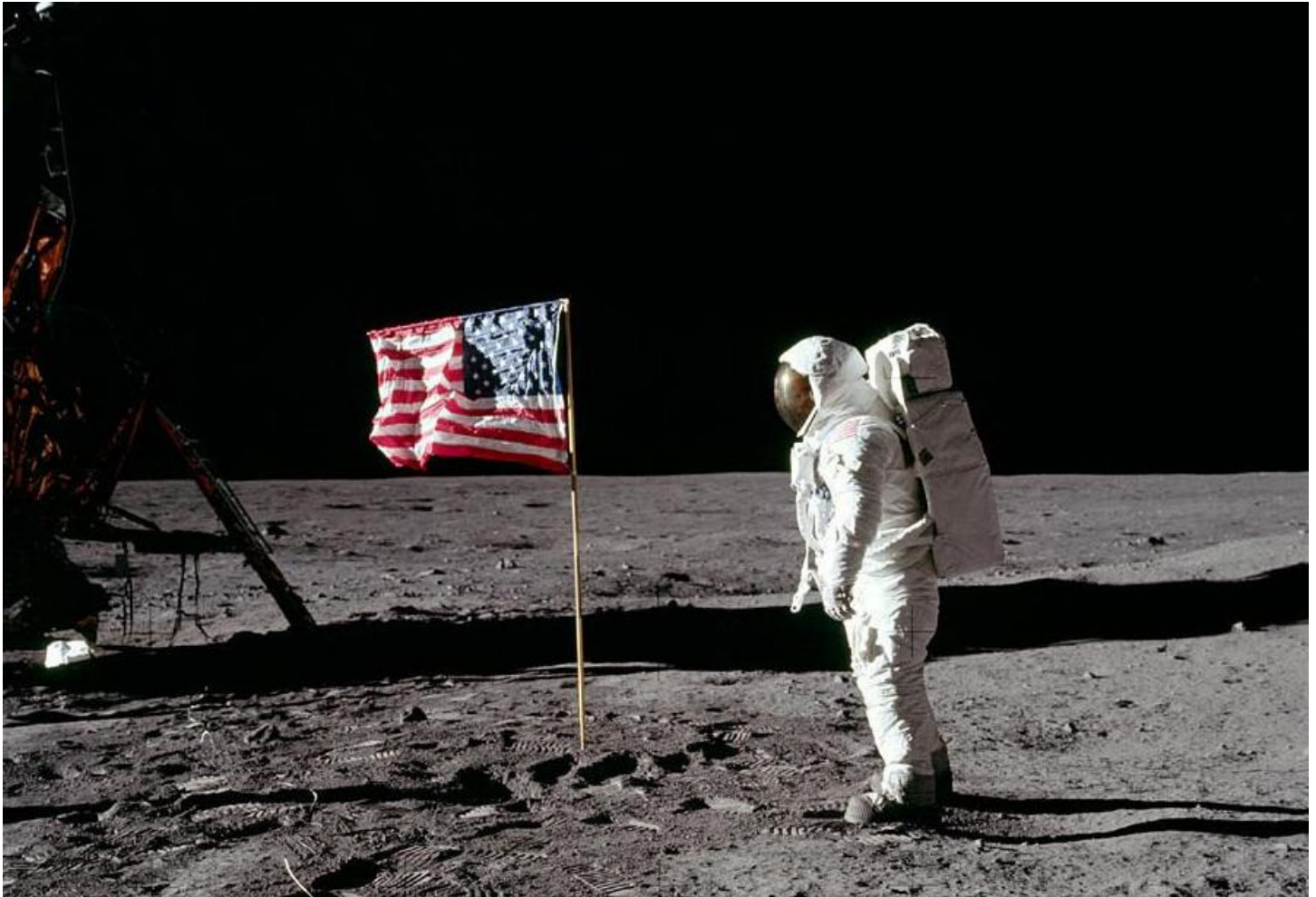


*Astronomy Club of Tulsa*  
**Observer**



**July 2009**

**Picture of the Month**



***Apollo 11 / 40 Years Ago... Buzz Aldrin & The American Flag***

Photographer: Neil Armstrong (NASA Archive)

***Inside This Issue:***

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***Important ACT Upcoming Dates:***

- Starlight Band Concert ... Tue July 7, 2009 (7pm)
- RMCC Work Day – Sat July 11, 2009 (9am)
- Member Star Party... Fri July 17, 2009
- Sidewalk Astronomy... Fri & Sat June 24-25, 2009
- Public Star Party... Fri July 31, 2009 (p12)

## July 2009

Tulsa, Oklahoma

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Sunrise: 6:10am Sunset: 8:45pm Moonrise: 4:03pm Moonset: 1:44am	2 Sunrise: 6:10am Sunset: 8:45pm Moonrise: 5:05pm Moonset: 2:17am	3 <b>Pawhuska - 100th Anniversary of Boy Scout Troop 1</b> Sunrise: 6:11am Sunset: 8:44pm Moonrise: 6:04pm Moonset: 2:55am	4 <b>Pawhuska - 100th Anniversary of Boy Scout Troop 1</b> Sunrise: 6:11am Sunset: 8:44pm Moonrise: 6:59pm Moonset: 3:38am
5 Sunrise: 6:12am Sunset: 8:44pm Moonrise: 7:49pm Moonset: 4:27am	6 Sunrise: 6:12am Sunset: 8:44pm Moonrise: 8:33pm Moonset: 5:21am	7 Sunrise: 6:13am Sunset: 8:44pm Moonrise: 9:11pm Moonset: 6:18am Full Moon: 3:22am	8 Sunrise: 6:14am Sunset: 8:44pm Moonrise: 9:44pm Moonset: 7:17am	9 Sunrise: 6:14am Sunset: 8:43pm Moonrise: 10:12pm Moonset: 8:15am	10 Sunrise: 6:15am Sunset: 8:43pm Moonrise: 10:39pm Moonset: 9:13am	11 Sunrise: 6:15am Sunset: 8:43pm Moonrise: 11:03pm Moonset: 10:11am
12 Sunrise: 6:16am Sunset: 8:42pm Moonrise: 11:28pm Moonset: 11:09am	13 Sunrise: 6:17am Sunset: 8:42pm Moonrise: 11:53pm Moonset: 12:07pm	14 Sunrise: 6:17am Sunset: 8:41pm Moonrise: none Moonset: 1:08pm	15 Sunrise: 6:18am Sunset: 8:41pm Moonrise: 12:21am Moonset: 2:12pm Last Qtr: 3:54am	16 Sunrise: 6:19am Sunset: 8:41pm Moonrise: 12:54am Moonset: 3:20pm	17 <b>MEMBERS</b> Sunrise: 6:19am Sunset: 8:40pm Moonrise: 1:32am Moonset: 4:30pm	18 Sunrise: 6:20am Sunset: 8:43pm Moonrise: 2:19am Moonset: 5:39pm
19 Sunrise: 6:21am Sunset: 8:39pm Moonrise: 3:17am Moonset: 6:44pm	20 Sunrise: 6:21am Sunset: 8:38pm Moonrise: 4:25am Moonset: 7:42pm	21 Sunrise: 6:22am Sunset: 8:38pm Moonrise: 5:40am Moonset: 8:30pm New Moon: 8:35pm	22 Sunrise: 6:23am Sunset: 8:37pm Moonrise: 6:57am Moonset: 9:11pm	23 Sunrise: 6:24am Sunset: 8:36pm Moonrise: 8:14am Moonset: 9:46pm	24 <b>SIDEWALK BASS PRO &amp; RIVERWALK 8:30 – 10:00</b> Sunrise: 6:24am Sunset: 8:36pm Moonrise: 9:27am Moonset: 10:17pm	25 <b>SIDEWALK BASS PRO &amp; RIVERWALK 8:30 – 10:00</b> Sunrise: 6:25am Sunset: 8:35pm Moonrise: 10:37am Moonset: 10:47pm
26 Sunrise: 6:26am Sunset: 8:34pm Moonrise: 11:44am Moonset: 11:15pm	27 Sunrise: 6:27am Sunset: 8:34pm Moonrise: 12:50pm Moonset: 11:45pm	28 Sunrise: 6:27am Sunset: 8:33pm Moonrise: 1:55pm Moonset: none First Qtr: 4:00pm	29 Sunrise: 6:28am Sunset: 8:32pm Moonrise: 2:57pm Moonset: 12:18am	30 Sunrise: 6:29am Sunset: 8:31pm Moonrise: 3:58pm Moonset: 12:55am	31 <b>RMCC PUBLIC</b> Sunrise: 6:30am Sunset: 8:30pm Moonrise: 4:55pm Moonset: 1:36am	

## Lands Tidbits – by John Land

Regional Astronomy Observing events: Many clubs across the country sponsor extended Astronomy observing events. Your June issue of the Astronomical League Reflector gave details on dozens of them. Below are three of regional interest. MOST REQUIRE EARLY REGISTRATION or offer DISCOUNTS for early registration.

**July 19–24 Nebraska Star Party** (<http://www.nebraskastarparty.org/>) Ann Brunn and others from the club are going to this one.

**Sept 12–20 Okie-Tex Star Party** (<http://www.okie-tex.com/>) This annual gathering in the tip of the Oklahoma panhandle is attended by 300 plus astronomers including dozens from our club. Read Brad Young's review of last year's Okie-Tex on Page 6 of the Nov. 2008 club Observer newsletter. <http://www.astrotulsa.com/Archive/200811.pdf>

**October 15–18 Heart of American Star Party in Butler Missouri** (<http://www.hoasp.com/>) There is an excellent article on this event and its origins in the June AL Reflector.

### Welcome Recent New Members: Monetha Williams, Paul Mullen & Jerry Young

Our membership rates for 2009 – 2010 will be as follows:

**Adults** - \$35 per year (includes Astronomical League Membership)

**Sr. Adult** - discount \$25 per year for those 65 or older (includes Astronomical League Membership)

**Students** - \$15 (without Astronomical League membership)

**Students** - \$20 (with Astronomical League membership)

The regular membership allows all members in the family to participate in club events but only ONE voting membership and one Astronomical League membership. If an additional member of the family would like to join with voting rights the additional cost is \$15, and/or additional Astronomical League memberships within a family are \$5 each.

**Magazine Subscriptions:** If your magazines are coming up for renewal, try to save the mailing label or renewal form you get in the mail. Do NOT mail renewals back to the magazine! To get the club discount you must go through the club group rate.

Astronomy is \$34 for 1 year or \$60 for 2 years. "www.astronomy.com"

Sky & Telescope is \$33 / year. [www.skyandtelescope.com](http://www.skyandtelescope.com) (Sky and Telescope also offers a 10% discount on their products.)

Note: You may renew your Sky & Telescope subscription directly without having to mail in the subscriptions to the club.

NEW SUBSCRIPTIONS must still be sent to the club treasurer. Forms are available on the website.

We now have an automated on line registration form on the website for new AND renewal memberships plus magazine subscriptions. You simply type in your information and hit send to submit the information. "<http://www.astrotulsa.com/Club/join.asp>"

You can then print a copy of the form and mail in your check to:

**Astronomy Club of Tulsa  
25209 E 62nd St  
Broken Arrow, OK 74014**

#### Address Corrections- Email changes – Questions:

You may forward questions to the club by going to our club website (<http://www.astrotulsa.com/>) and fill out an online form or just click on John Land and send an email. Please leave a clear subject line and message with your name, phone number, your question – along with email.

## Secretary's Corner:

Our club and many of the members have been very busy this past spring and so far this summer. Thank you so much Peggy Walker and her husband Rick Walker for all the work you have done on public outreach. They have organized volunteers with telescopes as well as working with Bass Pro, the River Walk authorities, and others for permissions and all the other contacts to set up several events.

Our facilities at the observatory have been kept up by several volunteers including Chris Proctor, Tim Davis, and others all organized by Dennis Karcher. I know I have missed some of you that have participated in the mowing, brush hogging, and cleaning but you are appreciated.

We have not had a lot of luck with the weather during our star parties but if you go to our yahoo group you will find many of us have shared messages about observing sessions that we have had.

I usually give a summary of the board meeting minutes in the newsletter that follows the board meeting. I apologize for the delay in June. No excuses, I should have given a summary. This time I decided to share the full minutes from our meeting. In the future I would like to send each member a notice of our next board meeting so that anyone that wants to attend my do so.

If you have any comments, ideas, questions for the board, please email me directly so I can have the president or vice president include this on the agenda for the meeting.

Teresa Kincannon  
 ACT Secretary/Observatory Director  
[act\\_sec@astrotulsa.com](mailto:act_sec@astrotulsa.com)

## Astronomy Club of Tulsa Board Meeting / May 1, 2009 At John Land's House

Those present: John Land, Tom McDonough, Denny Mishler, Rich Walker, Rod Gallagher, Chris Proctor, Ann Bruun, Dennis Karcher, Craig Davis, Jim Miller, Teresa Kincannon, Bill Steen, Tamara Green.

1. By – laws Update: Teresa has the latest version on her laptop and plans to make a copy of just the new by-laws and send this to the committee members for more adjustments.
2. Group Requests: Teresa is getting an astrotulsa.com email address to help with the communications with Secretary and Group Requests. Tom will be setting this up with Teresa today.
  - Rod requested getting image interest email for astro photography with an email address.
  - Teresa is going to get a wireless hook up for her laptop and watch the emails more diligently.
  - Discussion over email accounts with helpful information including what about getting a discussion group for imaging.
3. RCX Reinstallation: Rick has sample of material that Peg is willing to make for cover on the telescope. We are planning to be prepared with a cover of some time before installing in order to prevent spiders etc from entering again.
  - Suggestions were brought up with purchasing a cover.
  - John suggested high density foam.
  - What about the covers made for the scope.
  - New parking position will be horizontal rather than vertical like we did before.
  - Heater rod should be installed to prevent moisture.
  - How about having a leather belt made to attach to the close the cover.
  - Rick explained that the material is \$25 bucks a yard.
- Motion mad from Dennis to have Peg purchase and make the cover with the material Rick brought. Rod seconded the motion. All were in favor.
  - zipper will go on the cover on the front.
  - Set up scaffolding and work on dome before installing RCX. Possibly all done on one work day.
4. Website: We need another web master. We need a full time webmaster. Tom has worked on it for 7 years now and is taking care of it when Richard needed to resign for health issues.
  - We need to change the domain name.
  - Announcement needs to be made at next meeting for new webmaster.
5. Observatory Policy Maintenance on the observatory –
  - Chris: around the base of the dome – sheet metal around bottom, Craig,
  - Rod, and Chris discussed possibilities of what to do. Brushes maybe,
  - Chris volunteered to shop for possible materials for this problem.
  - Rod brought out: the floor of dome has been protected with good coats of paint by Craig.
  - Dennis suggested that we are serious with safety working on the roof or dome. He will be looking into safety equipment and training.
  - We need to plan another work day for preventive maintenance.

- What about bug stuff: Craig says it takes 6 bags of what ever. Dennis volunteered to bring the bug stuff for the workday.
- This next work day: mow, work, then spread seven dust. (next work day is May 9, 2009)
- For mowing: Dennis is going to get a list going. Training for mower and watch out for the rocks, etc....
- a. Smoking: Winter problem mostly, because smokers are inside to get warm. A statement was made that no smoking should take place on the grounds. A bucket for cig butts should be provided. Rod pointed out that most star parties provide a smoking area.
- Motion from Tom: Smoking area on south side of the building by the door. Motion 2<sup>nd</sup> with amended by Dennis Karcher: have smoking area on south side of building for the purpose of providing a place for smokers out of the weather during winter, not to reserve only one place for smokers and to keep the policy of no smoking in the building. Vote: all in favor.
- b. Maintenance (see above in information on RCX)
- c. Canceling: Open discussion: observing chairman? President? Vice President? Who makes decision? Starts with Observing Chairman, Observatory Director, President, Vice President any one can call this by 4pm. Notice on Yahoo Group, Public will get to this information through the website.
- d. Locks: Tony has extra lock set to change the keys and the main door key will be the only key change. Gate key will remain the same.
- 6. Adams Ranch Planning:
  - Rates are raised to \$30.
  - Not many signed up, about 6 bunks signed up. Others are bringing a camper. Some may be waiting to watch the weather before deciding.
  - What about meals? Friday night on your own. Sat night Frozen meal from SAMS: Lessonia, with salad and French bread. Sun. night: everyone bring your own meat for the grill. Dennis will get Lessonia from SAMS and big bag of charcoal.
  - Every individual must sign a safety waiver document. See John Land.
- 7. Corporation Business
  - a. Signing financial papers. We need to sign new papers because Wachovia bought out A.G. Edwards. We have a new agent: Paul Eagleton.
  - b. Corporate Seal: we need a cooperate seal or do we need one? Motion from Dennis Karcher to get a seal, Bill Steen 2<sup>nd</sup> the motion. All were in favor.
- 8. 100mm Binocular Purchase: We had a donation without eye pieces, without tripod adaptor. Zac will donate tripod adapter. Approximately 530mm focal length , John suggested that we buy a match set from Zac Garrett. We need a tripod.
  - Ideas flowed in a discussion: we could bring the huge binoculars to the next meeting and asked for donations for mount.
  - We need to prepare for keeping up with the binoculars: all were agreeable to having one of our members keep them and bring them up for events.

Motion from Tom to sell the Japanes binoculars to apply toward the purchase of a mount for the 100mm binoculars 2<sup>nd</sup> by Chris Proctor, all were in favor.

#### New business:

Dennis Karcher – would like to look for additional sources for the club funding. Possibly looking into getting a new dome.

Dennis Ask permission to approach Quick Trip for donations.

Teresa Kincannon suggested that we get some interest from TCC with the idea that we provide the place and facility for all the Astronomy Lab classes at TCC metro campus.

John Land gave Treasurer report: see handout or email John for a copy.

Tom reported that the donation to Ron and Mira Woods was taken with heart felt gratitude.

Dennis Karcher also brought up that we should have board meetings more often.

Craig Davis: try this have a board meeting on Tuesday's prior to the public meeting. Have them on a more regular basis.

Teresa needs to get the minutes to the meeting published for the club and all board members that could not meet could

Dennis Karcher made a motion that we set regular board meetings on the Saturday before our public meeting.

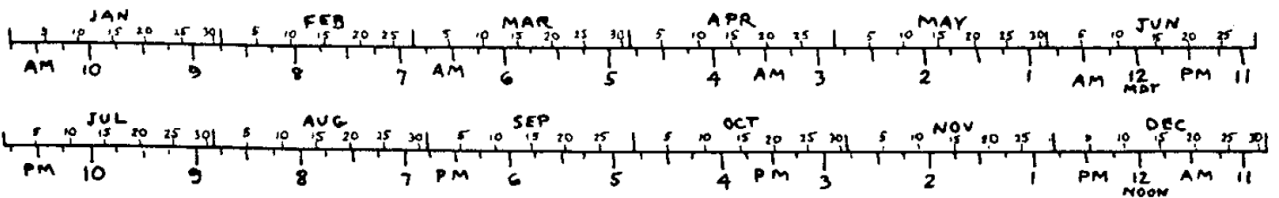
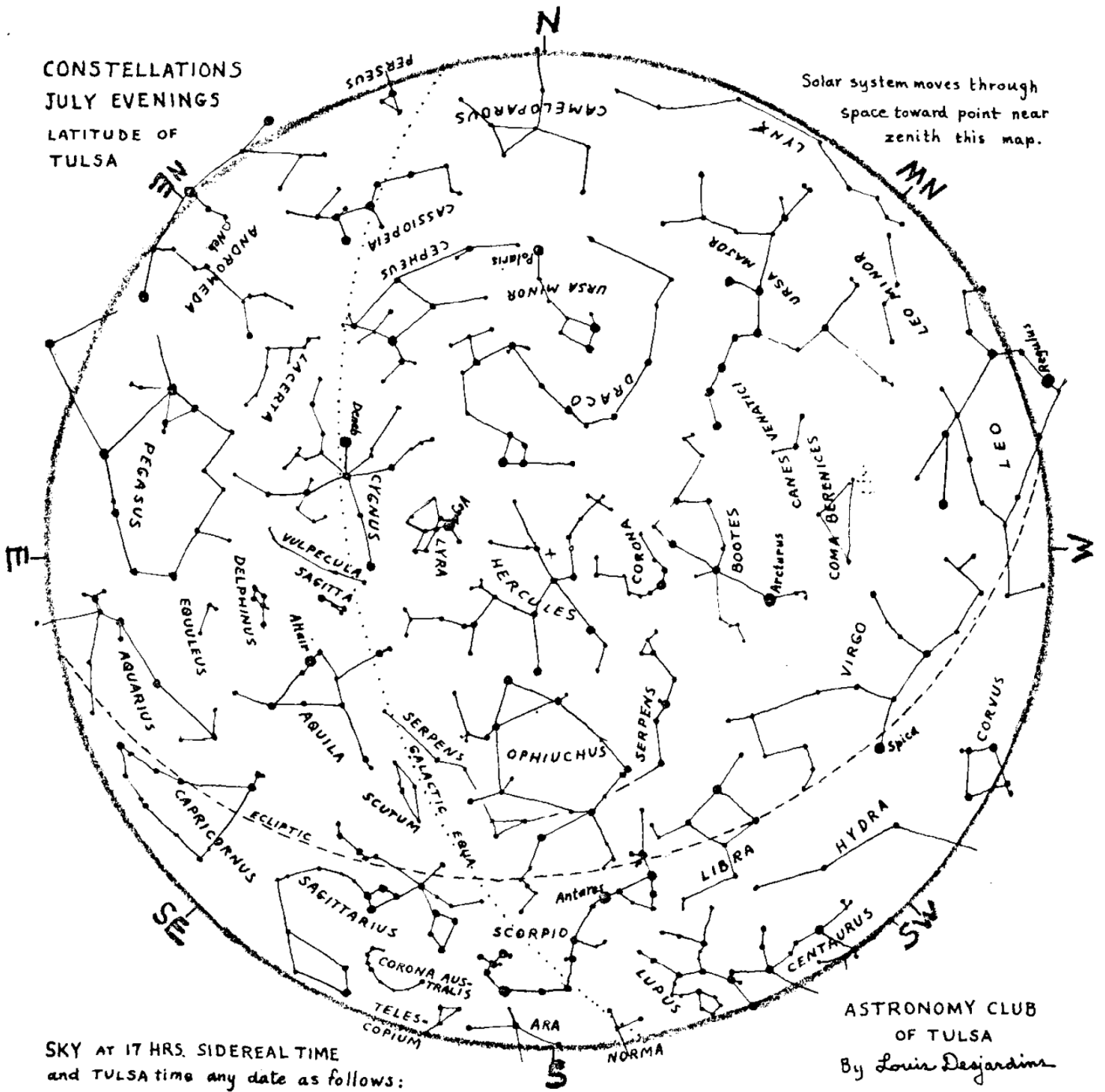
Rick Walker: We would have meetings through the summer, could not have at TASM. Suggested that we combine the regular public meetings for all summer with the Club public Star Parties. All present seemed to think this would be appropriate..

Annual Dinner meeting: Rick booked at Bass Pro. Everyone was pleased with Nov. 6<sup>th</sup> Bass Pros Isle Marada Fish Company.

Dennis: Tony is unavailable much of the time so we need to keep up with the minutes

Next Board Meeting: Saturday, June 6, 2009

Meeting adjourned 1:20pm

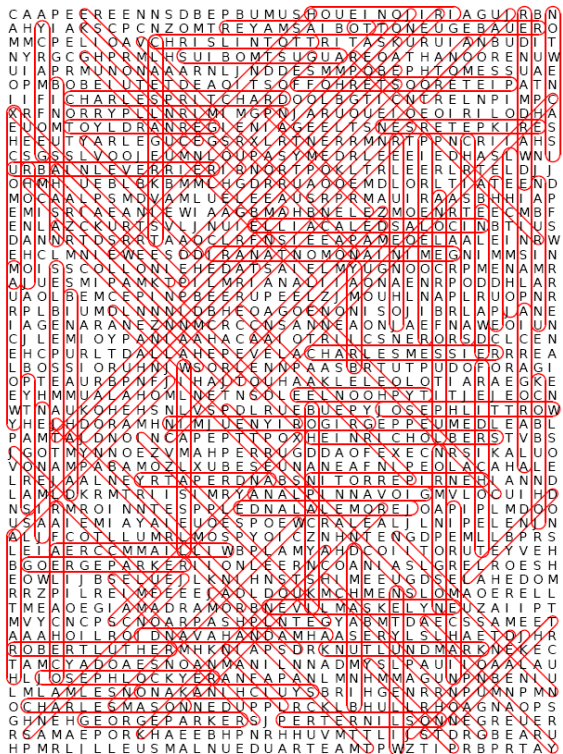


Full Moon.....July 7<sup>th</sup>  
 Last Quarter.....July 15<sup>th</sup>  
 New Moon.....July 22<sup>nd</sup>  
 First Quarter.....July 28<sup>th</sup>

July 7<sup>th</sup> – Penumbral Lunar Eclipse  
 July 13<sup>th</sup> – Jupiter 0.6° South of Neptune  
 July 22<sup>nd</sup> – Total Solar Eclipse (Asia)  
 Evening - Saturn / Morning – Mercury, Venus, Mars & Jupiter

(Answers from June, 2009 Word Search Puzzle)

**Male International Astronomers L-P  
Astronomy Club of Tulsa**



investment in the state of the art Canon IS binoculars now on the market. His first attempts were futile but a friend, Eric Johansson, of the Armature Telescope Makers of Boston, came up with an idea. The two designed a rectangular frame they fashioned out of scrap lumber. It worked! The device consists of two 5' long 1x2's separated by 8" long cross members at each end. Here is a link to the article in S & T that perfectly describes the history and construction of the stabilizer frame.

<http://www.skyandtelescope.com/howto/diy/Image-Stabilize-Your-Binoculars.html>. I made a similar frame and was very

pleased with the results. It greatly reduced the jiggles while holding the binoculars to my eyes. I was able to hold pretty steady on the objects I wanted to see with my Celestron 15x70's, (which by the way still sell for under \$100.00 last time I checked). I gave John Land a similar rig and he added to it by placing foam air condition pipe insulation along the length of the 1x2's to provide padding for the shoulders. Four feet long is plenty for the project and it cost less than \$5.00. In Alan's article he recommends attaching the binoculars to the frame with a bungi cord or a 1/4"x20 screw running through the upright on the pivoting 2x6 near the front of the frame. I highly recommend against using a bungi cord. If it comes loose during use the metal hooks on the cord could cause serious injury to an eye. I used the 1/4"X20 screw to attach my binoculars as described in the article. You can make yours 5' long as Alan and I did or, whatever length serves you and your needs best. Depending on the size of your car, you may need to make the frame shorter, but the longer it is the more stable it will be. Also, the more heads you'll accidentally clunk. This really is a marvelous device. If you're like me, you probably have some scrap lumber that will work for most if not all of the project. Just follow the directions in the article I've linked and you can't go wrong. The only place you may run into a problem is positioning the binoculars so the distance between the two eyepieces is right for your pupil width. Problems? Contact me at 'thebostons@cox.net'.

**From your new RMCC Facilities Manager**

Greetings!

Dennis Karcher, who has been overseeing our workdays since Craig Davis retired from the position earlier in the year after a long and well-executed tenure, has found it necessary to pass the mantle on to another. I am pleased and excited to be taking over this position.

For those who have not met me, I have been with the club for 2 years and was voted onto the Board this past year My principle background is in hospitality as a fine dining chef with forays into private law enforcement. Currently I am the "technical support ombudsman" for the Tulsa contact center of one of the nations largest wireless telco's. I hope to bring the lessons learned in all of these area's plus the time spent on my grandfathers farm to the table in an effort to make sure that our observatory performs to its fullest potential.

Our monthly workdays will continue as normal but with a few changes. I plan to email an agenda at least a week ahead of the workday so that everyone knows what to expect and what we are going to need. I would ask that everyone give

Predicted MAXIMA of long period variables - June 2009  
North of -55° Declination ~ Tulsa, OK Viewing Limit  
(Predicted Maxima > 8.0 - Easy Binocular Range)

Designation	Name	Code	Range	Est Max Date
0211+43A	W And		<7.4-13.7>	Jul 5
0228-13	U Cet	#	<7.5-12.6>	Jul 24
0430+65	T Cam		<8.0-13.8>	Jul 12
0848+03	S Hya		<7.8-12.7>	Jul 25
1144-41	X Cen	@	<8.0-13.4>	Jul 9
1220+01	SS Vir		<6.8-8.9>	Jul 10
1239+61	S Uma		<7.8-11.7>	Jul 4
1336-33	T Cen		<5.5-9.0>	Jul 21
*1353-04	SY Vir		9.0-15.0	Jul 23?
1425+39	V Boo		<7.0-11.3>	Jul 25(II)
1432+27	R Boo		<7.2-12.3>	Jul 28
1518-22	RS Lib		<7.5-12.0>	Jul 6
*1657+22	SY Her		7.8-13.2	Jul 23?
1910-17	T Sgr		<8.0-12.6>	Jul 20
1940+48	RT Cyg		<7.3-11.8>	Jul 22
2357-15	W Cet	#	<7.6-14.4>	Jul 11

Codes:  
# - needs more observations  
& - needs more observations urgently  
@ - needs more observations very urgently  
% - has good CCDV or multicolor photometry, but more visual observations are needed (usually more visual observations are needed very urgently)

Source: AAVSO Bulletin 71

**Homemade Binocular Stabilizer – Bob Boston**

Do you struggle to keep your binoculars from vibrating so badly that you give up your search for a difficult to find and observe object? I had great difficulty with this challenge until "I hit the jackpot"! A couple of years ago I ran across an article in Sky and Telescope by Associate Editor Alan MacRoberts. He tried to conceive of a device that would stabilize a pair of binoculars without making a \$1,000

consideration to pitching in at least once or twice a year. No-one will be denied access or otherwise sanctioned in anyway shape or form and I don't mean to guilt anyone into coming out to help but just remember it makes for a much nicer club and facility when lots of people lend a hand. We have some ambitious projects ahead of us over the next year and the more folks and their varied talents we have for some of them the easier they will be.

Mowing will continue on as-needed basis usually by me or a designee. As we move later into the summer this will be about once every other week. The club has a very substantial amount of money invested in our new mower and recently the deck was bent by someone I'm positive was just trying to help out-but was not used to either the machine or the terrain. If you are planning on having group up to the observatory on a night that we don't otherwise have a star-party planned and feel that it needs to be mowed or if you think its just looking too scruffy, please drop me a line.

On the subject of accessibility, if you see something amiss, broken or just have a suggestion for something that needs to be done, please drop me an email to observatory-fixit@busoutoshi.net and I will endeavour to address the issue with all possible speed.

Chris Proctor

### ***JULY IS BLACK HOLE MONTH!***

For those of you who missed the April 5th, 100 Hours of Astronomy Black Hole Presentation at the Hardesty Library here's your chance! At our July 31st Public Star Party, in the observatory classroom, the speaker, that would be me, will not be operating in an official Deep Space 9 capacity. (spandex does not breathe it will be too hot!) However, the presentation will have the same great information. In fact, on June 18th I had the opportunity to listen to Dr. Eliot Quartaert a theoretical astrophysicist from U.C. Berkeley talk about his work with black holes on the Night Sky Network

His presentation was about 20 slides and forty-minutes long and he allowed for a few questions. The scientific community is not trying to find out what these black holes are or not, but more along the lines of how do these objects play a role in galaxy formation? He did share another aspect of how a black hole's mass is estimated and I have included that information in my presentation. I did feel pretty good since a couple of aspects he talked about, are ones I also cover in my presentation.

So, if you aren't too busy, and didn't get a chance to see this before, this is actually the day I was to present this information. I will have a list of confirmed and non-confirmed black hole objects and a star chart that we can all go out and take a peak at afterward. There will also be black hole games one for adults and one for children both available on c.d. for a modest donation to re-coup the cost of the c.d.

What I will cover will be very general and not too complicated but it is focused for an audience of middle school and above. Besides having a fantastical You Tube video at the beginning, I have included tons of NASA press releases showing the validation of the information I am sharing. I couldn't make

this stuff up! I will define what a black hole is, their sizes, how to determine mass and if they rotate, the process of a stellar black hole, the anatomy of a black hole, three possible solutions of black holes, black hole locations in our Milky Way Galaxy, actual tracking of our super massive black hole, how we discover black holes, radio astronomy and the electromagnetic spectrum, the Einstein-Rosen Bridge and the question of white holes and the possibility to travel through them like on Deep Space 9.

See you on the 31st! – Peggy Walker

### **RMSS Road Trip Report**

Thought this might possibly be of interest to others in ACT.

Rod Gallagher and I had the opportunity to attend the RMSS 2009, June 17 - 21. Here is a link to their web site. <http://www.rmss.org/>

The Rocky Mountain Star Stare was held for the first time on their newly acquired property near Gardner, CO, just off of Colorado state highway 69. The location is quite arid, but it did manage to cloud up and sprinkle for the most of one day. The good news was I did get a full night rest, and it stopped the dust problems for the rest of our visit. The bad news was I did get a full night's rest. There were some trees that provided some shade and wind break for tent and RV campers. It is always a plus to have some shade to escape the sun during summer day time.

This star party seemed to be more kid friendly than some I have attended. For those of you that have young children, teenagers and/or grandchildren that you may want to bring along, but were unsure of star parties acceptance, this star party is one that you may want to consider. They had a photography contest, compass or GPS course contest, kite flying and other kid & adult activities. The only on site facilities were a main meeting tent and porta-potties. It is you need it, you bring it star party.

I would say the overall organization was good. One of the presentations was by Bryan White, author of the book Prelude Lake. It was reviewed in July's Sky & Telescope page 41. He specializes in 3-D photography, so there we were huddled in the main tent with our 3-D glasses on watching his presentation. It was great! He had three slide shows, one from Yellowstone National Park at night, second was Chaco National Park at night, and the third was his Prelude Lake auroras. If you have not visited these places, after watching his presentation, they will be on your updated bucket list.

You will need to check with Rod for a more qualified opinion of the skies. I thought they were very good. It sure beats Broken Arrow skies. It is a good thing that the club has its monthly observing lists. In hustle and bustle of everyday life and getting everything packed I did not have an observation plan. So I download the June observation list from the Yahoo site and took it with me. Ann, I did observe all of Junes objects during my three nights of viewing. Rod thanks for all of the work in preparing the monthly lists.

Here are a few photos showing the location and the natural beauty of the south central Colorado. If possible I plan on attending the Rocky Mountain Star Stare in the future.

## Astronomical Society of the Pacific

San Francisco, California

☆ ☆ ☆

Leaflet No. 329 — October, 1956

☆ ☆ ☆

### SOME ASTRONOMICAL TERMS

By OLIN J. EGGEN

*Lick Observatory*

*University of California*

**ASTEROID.** This word was introduced for the two “moving stars” discovered by Piazzi and Olbers in 1801 and 1802. Sir William Herschel, in a paper delivered to the Royal Society in 1802, said: “Since, therefore, neither the appellation of planets, nor that of comets, can with any propriety of language be given to these two stars, we ought to distinguish them by a new name. . . . With this intention, therefore, I have endeavored to find out a leading feature in the character of these new stars; and, as planets are distinguished from the fixed stars by their visual change of situation in the zodiac, and comets by their remarkable comas, so the quality in which these objects differ considerably from the two former species is that they resemble small stars so much as hardly to be distinguished from them. . . . From this, their asteroidal appearance, if I may use that expression, therefore, I shall take my name, and call them *asteroids*; reserving to myself, however, the liberty of changing that name if another, more expressive of their nature, should occur.”

Among other designations which have been suggested, *minor planet* and *planetoid* have found much use. Minor planet is the name applied to the commission of the International Astronomical Union which has charge of the ephemerides of these bodies.



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Garrett Optical® stocks over 50 astronomy binoculars from six different manufacturers, and we're based right here in south Tulsa.

Visit our websites  
[www.GarrettOptical.com](http://www.GarrettOptical.com)  
[www.AstronomyBinoculars.com](http://www.AstronomyBinoculars.com)  
for more information!





**Special Notice:  
TASM Holiday Closing  
July 4<sup>th</sup>**

## Planetarium Shows



**July 1<sup>st</sup> - 31<sup>st</sup> 2009  
Presentation Schedule Changes Monthly**

**Doors open 10 minutes prior to show time for general seating.  
All shows begin on the hour. Admission applies to one show.**

### Monday PLANETARIUM CLOSED

### Tuesday through Friday

11:00 AM	<b>BIG</b>
12:00 Noon	<b>Extreme Planets</b>
1:00 PM	<b>Secret of the Cardboard Rocket</b>
2:00 PM	<b>BIG</b>
3:00 PM	<b>Night Skies over Green Country</b>
4:00 PM	<b>Extreme Planets</b>

**BIG:** The Universe is Big, but how Big is Big? Journey to the farthest observable reaches of the universe to find out! Computer animation, claymation, laser graphics and a surround sound musical score bring a really BIG subject down to Earth.

#### **Secret of the Cardboard Rocket:**

Join two children, Bonnie and Marcus, on a magical journey through the Solar System, aided by a talking astronomy book, a cardboard rocket, and a vivid imagination. Take an up close look at all of our planets and learn the secret that makes this entire journey possible. Great for young children and their families. *Funded by Sam Viersen Family Foundation and The Oxley Foundation. Community Sponsor -- Tulsa City-County Library.*

### Saturday

10:00 AM	<b>Secret of the Cardboard Rocket</b>
11:00 AM	<b>BIG</b>
12:00 Noon	<b>Extreme Planets</b>
1:00 PM	<b>Secret of the Cardboard Rocket</b>
2:00 PM	<b>BIG</b>
3:00 PM	<b>Night Skies over Green Country</b>
4:00 PM	<b>Extreme Planets</b>

**Extreme Planets:** For ages, humanity has wondered whether we are alone in the Universe. Fifteen years ago we were unaware of planets outside our solar system, but today these "extrasolar" planets appear to be quite common. As the search continues, the possibility exists that one day we might find life elsewhere in the Universe, born in the light of another sun. Join us in the adventure as we explore Extreme Planets.

### Sunday

1:00 PM	<b>Secret of the Cardboard Rocket</b>
2:00 PM	<b>BIG</b>
3:00 PM	<b>Night Skies over Green Country</b>
4:00 PM	<b>Extreme Planets</b>

**Night Skies over Green Country:** Live Planetarium presentation takes the audience on a journey of the current local night sky. Visual demonstrations will include what constellations and planets are visible that night and include upcoming celestial events like comets, meteor showers, and eclipses. Program changes as the night sky changes.

**Notice: Shows are subject to change. Seating is for 110. Admission and seating is on the basis of first-come, first-served. Seating may not be available for all showings. Visitors must be seated before presentation begins. No entry after doors are closed, late arrivals attend next presentation. No food or drinks allowed in Planetarium. Please contact the Planetarium to confirm shows and information at (918) 834-9900 x400.**

## Observing Pages

### Information Exchange

The Astronomy Club of Tulsa has started a new Yahoo Group for the club. For those of you who are unfamiliar with Yahoo groups, it is a forum that allows for messages, photos and files that can be shared among the group's members. As stated in the group's description, "This group is for the members of the Astronomy Club of Tulsa to ask questions, share ideas, get information, plan observing sessions, or just communicate in general. Informal club business communications may also be announced here." This group can be found on the web at <http://tech.groups.yahoo.com/group/AstroTulsa/>. It is open to all club members so be sure to check it out! Tony White, our new Club President is the group's moderator.

## July Observing List

	<i>Double Star</i>	<b>Caldwell</b>	<b>Messier</b>	<b>Herschel-1</b>
1	Xi Scorpii	C69 (NGC6302)	M4	NGC6118
2	Struve 1999	C75 (NGC6124)	M6	NGC6144
3	Beta Scorpii	C76 (NGC6231)	M7	NGC6171 *
4	Kappa Herculis	C81 (NGC6352)	M8	NGC6207
5	Nu Scorpii, Jabbah	C82 (NGC6193)	M9	NGC6217
6	Sigma Corona Borealis	C86 (NGC6397)	M10	NGC6229
7	16/17 Draconis		M12	NGC6235
8	Mu Draconis, Alrakis		M13	NGC6284
9	Alpha Herculis		M14	NGC6287
10	Delta Herculis, Sarin		M19	NGC6293
11	36 Ophiuchi		M20	NGC6304
12			M21	NGC6316
13			M23	NGC6342
14			M62	NGC6355
15			M80	NGC6356
16			M92	NGC6369
17			M107 (NGC6171) *	NGC6401
18				NGC6426

Details of this list are located in the folder, "ACT Observing Lists" in the AstroTulsa Yahoo group's files section. This list contains too many objects to "observe" in one evening, but we will recognize anyone who observes 20 or more of these objects. The reason there are many objects is to give the observer a variety of objects that can also be used for completion of a Astronomical League (AL) Observing Club. For more information on the Astronomical League and the observing clubs, check it out at <http://www.astroleague.org/observing.html>. All of the objects cross the meridian between 10 PM and midnight. For this month, the list contains 11 double stars (AL Double Star Club), 6 Caldwell objects (AL Caldwell Club), 17 Messier objects (AL Binocular Messier & AL Messier Clubs), 0 deep sky objects (AL Deep Sky Binocular Club) and 18 Herschel objects (AL Herschel-1 Club). One of the Herschel objects is also on the Messier list, so observing this object will count toward both observing clubs.

After the last few months, we reached the end of the "galaxy" season. Most of the objects on these lists are now globular clusters, open clusters and nebula. Here's a couple of images that I did of these objects.



M20 Trifid Nebula



M92

As we continue these lists, one should be able to complete several of the AL observing clubs in only one year. Of course the Herschel list with its 400 entries, will probably take longer.

Please take a look and give feedback to either Ann Bruun or Rod Gallagher. Also, please provide a copy of your observing logs to Ann Bruun.

Thanks – Rod Gallagher

# ASTRONOMY CLUB STAR PUBLIC PARTY

**FRIDAY JULY 31<sup>ST</sup>** - ALTERNATE DATE WILL BE SATURDAY AUGUST 1ST IF SKY IS CLOUDY ON FRIDAY.

GATES OPEN AT ~7:30 PM SUNSET -8:41 P.M. / END CIVIL TWILIGHT - 9:12 P.M.

FIRST QUARTER MOON ON 28 JULY 2009 AT 5:00 P.M. CENTRAL DAYLIGHT TIME.

PHASE OF THE MOON ON 31 JULY: WAXING GIBBOUS WITH 76% OF THE MOON'S VISIBLE DISK ILLUMINATED.

**PRESENTATION AT 8:30 P.M. IN CLASSROOM – BLACK HOLES... **DON'T MISS THIS ONE!!****

Due to the uncertain weather reports, always check your local weather reports for sky conditions. Our club has an excellent resource for predictions of cloud cover on the observe section of our website: (<http://www.astrotulsa.com/Observe/observe.asp>). Also check the Astro-Tulsa Yahoo Group Page: (<http://tech.groups.yahoo.com/group/AstroTulsa/>) for cancellations if weather is uncertain!

- Beginners Telescope Set Up on Center Pad: Several of our new members and guests have new telescopes they are trying to learn how to use. We would like to invite you to set up your equipment near the center concrete observing pad. Members let's all take time to meet these novice astronomers and help them get a good start with their equipment.
- Wireless Internet now available at the Observatory: For laptop users - Rod Gallagher has made arrangements for wireless Internet to be broadcast on the observing field. Details for log on are available at the observatory. This is available for members to use for astronomy, observing and weather information and should not be abused for other types of browsing and gaming.
- Things to bring to a star party: Of course a telescope or binoculars are great for observing but you don't have to have one to enjoy the evening. You don't have to own a telescope to enjoy an observing night. Our members are eager to share their views with others. There will be plenty of people willing to share the view if you just ask. Also bring a red colored or covered flashlight to see your way around. We have plenty of folding chairs and a clean restroom.
- Children are always welcome but must be supervised and must stay on observatory grounds. It's always wise to have an alternate activity such as a favorite book or tapes for younger children who may tire early. Closed toed shoes are preferred and a light jacket as needed.
- We would like to encourage our new members and guests to join us
- Plan to arrive before dark. We have plenty of chairs and a classroom area.
- We have a microwave and you can bring your own snacks. You need to bring your own drinking water!

**PARKING MAY BE AT A PREMIUM.** Reserve Parking is available next door in old ATT lot for those without equipment or planning to leave early. PLEASE DO NOT PARK VEHICLES near the center-observing pad blocking the view and traffic access.

**SAFETY ISSUE:** When large groups are present it is better to turn on your park lights or headlights on low beam rather than to try driving in or out without lights... especially if those groups include children. Just warn everyone when you are getting ready to leave.

**NEVER try driving down the hill without lights.**

*A donation of \$1.00 per guest would be appreciated to help us maintain the observatory.*



Sunset at Camp Billy Joe, Kenton, OK '06 – K. C. Lobrecht / Get ready for Okie-Tex 2009

ACT Word Search Puzzle by Peggy & Rick Walker

Male International Astronomers R-Z  
Astronomy Club of Tulsa

ENXK DADGOITZ OA OELR AREREREHI EENSLHSLLY ROSG  
ITRNAEWOEVURTS VATSUGACLGS AMSCHWABEFRTOK  
EYBZSALUYGPIRI DAADNI BOGAHDARARDNAHCLLEA  
INRNHLARBI FWLROFSNAUVNVRSDONTVTSSCLSPN  
RENAFDNREGNIZNARALVAPAEAO LUEDOI NOTNADEE  
STRARRUWTI BAHTRI IWNNEYORNNAVDRORBELI WOOR  
CORNELI SVANHOUTENNONEZLAVNI MAJNEBHREZSV  
ARESIBSEOFMMTVIDIZUCHONGZHI TWSLLOORSI UNH  
ZIGODBIVDEAUUCSRERDNARESSITSI OCNARFI EII  
HERGERTTURNERTI I I MWLNOTARTS KCI REDERFHZL  
RIEAREJRCEI AI CHCJ EANRI CHEROPKHPLENI WOSF  
SYBRI TUDGOZC CHAHD TI GMUAY YADURDI ANHGSAAE  
YANHCSLESII I HF MWALEXANDREDC HAUMASSENND C  
I KEHHUI IYDOAAVAI HVUUESCHLVAENOMCPI RHWAD  
I OSOSHUCELDWRONAZCZSLOWREDNASKELAAASIH  
YVOTPCSI IHLTD OXNELYRNI TRAMI SSORONURBWUD  
TZRHOSWPEUNSNBESUAWHHTYMSMAILLI WDDEAOI  
LEOORSEABATI HITC HTUSDDSSNEWHNSLASUDELAS  
T LTMENSA AOTUETLKEERLILWYLHHDGRHAUMEDCLU  
VDTARATYNKI SETAERNNUUA OUCURGHI BLNEVRHAI  
EOOSAHPVELBNPBSZTONRVGOS EOHAEI LAAGANESY  
NVFWS SHLBRRASKRNHADWIEHJ NELENYACI NUCRIS  
NI XI MTAI OPEUHCVR OEULOCVBRUZEDTANUYCSOMO  
SCDDUAL ESECDATGIMVOAIDHSEYTMRNSNHVVOUFON  
SHEESSCHNIRNNRAOAZLRLHESKGI HIOANFOUAMER  
UHSMRKI TRENNKAZSSDDRSLCRCLGZCTMVANLEALG  
ARAAECODKRI SSSXEW EANAGOSAHAEUESEKVENLAY  
TAENI I NLNVKITSLEIWSWJKOZZRUTSURHRI UAVHD  
SSRNNECANEGSLSDRLKMCNI HDI RTMBGV BGLREEPT  
NYDWHTOVT VYHYOFDLAACEUHH ECANARJ NLLSDRTI  
OJETONSRAOHVUKLRI EAERI SRWFRWKCOAEASNSR  
TOAALS WONHLAAI CLAWRARNI ANLRI HSHHERNS EEO  
NNRHDELHOERAWNLIMNVLI MLSOANOUCNESCRSRWH  
AAFRSISTIDDI XI DTWI 7DST7HVI VSYSSHRFHFGNI  
HTTG FYHESNUFWNSE E ZDRHEI LAYRZWKLEAAFMNO  
MDES NMRTI AEROHOVBEZAAI VDRHFTESEERUAOAOAH  
FAPHJ AEOPVOEEHAGBEUTWCRS AHLANTJ NEANSRHD  
MNLNAPVNGNEDLILTATRLIRHUKNO CRVELDEKTTOR  
EAATHXUKLIEWNI UUSNSGCRLNROWNEJLIREDAJ C  
LLSASRRRI TREWQTEHUGEHRFYWCNGTSL EPI LHTEI  
TANRAULERRCGTDI MHCSNETRAAMAETYEEMZEI GGS  
IAICYITTI ADEEDT XPDISHARSEROI RIRRHANANNTD  
ANWREGI ONMONTANUSAHTEI ENVHTLXSKCRZRHD EBC  
SODAGNARMLTEEI VHATEEOTGHNIAESUI OEAIBDU  
ACEIAUHH DURRSHAINGNIPACTNMODV PHEHSSHNK  
AIVDLYKCOYSSCTI DUI AOVIKGRXRMOZNGEDGZTI  
DAULEOESAUEEWVHLT SERERHLAAAOELEHVAARI HN  
UERBPOZNP I KLKI GRLNTFDREOMHMLKSUAMNI WAL  
AATRR E I NYGENOI I RVOEEUNSVNEAHI HTLRNHCSUE  
SRSI CAZASFOLEORNEJRAVDAREAESWSAGPCGIARS  
PENRKDMHGALGYHWMZFVDEENAPNRHFNBCLEHIL D  
AIAUHAROLDJONESD HVANRBNL RMP CNI VEDRMCEKI  
TEVHMEVJUTE EVRAORUNTI OBSHEI IQSSDTAHNANI  
VNOOYWAUOTUCAZMAHARBAHSI ORFALOTUEALRLTG  
ROTNEZSR OANARNOWACHMANNSDNDALI STRTLSUAU  
ROTTOVONSTRUVEHCARI CCP I IEGHEAI HDESRNUHH  
EJOHANSTEINROWTZCGJDIHEONAGRHAWPTMHI GFT  
KRNI RTHBTKERATRNI MNHERMANNVOGELRORPI HI I  
EHSDIUAUANKLWERCR L SDFLHJAMESSOUTH SREWIS  
VESRREUFEMESWOZHANGYUZHEGUSTAVWITTRALEM  
IOHUREI CUOCFNST OCCATEOIIINSSELLOOKKARNYR

Chandra Radhagobinda  
Pieter van Rhijn  
Karl von Weizacker  
Arjen Roelofs  
Thomas Wright  
Yakov Zel'dovich  
Otto Rosenberger  
Alexandre Dchaumasse  
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Anton Scauss  
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Thorvald Thiele  
Antonio de Ulloa  
Sidney van de Bergh  
Philippe Veron  
Abul Waif

Sam Ramsden  
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Godefroy Wendelin  
Paul Wild  
Issei Yamamoto  
Zhang Deqing  
Lord Rosse  
Giovanni Schiaparelli  
Sam Schwabe  
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Karl Schwarzschild  
Richard Sheepshears  
William Smyth  
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Karl Struve  
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Francois Tisserand  
Mu ayyed Urdi  
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Gustav Witt  
Franz Zach  
Zhang Yuche  
Edward Sabine  
Maarten Schmidt  
Friedrich Schwassmann  
Shen Kuo  
Wilebrod van Royen  
Edouard Stephan  
Gustav Struve  
Atsushi Takahashi  
Johann Titius  
Tpo itasaka  
Hendrik van Gent  
Friedrich von Struve

Regionmontanus  
Thomas William Webb  
Johann Westphal  
Maximilian Wolf  
Ole Romer  
Lydmila Zguravleva  
Megh Nad Saha  
Johann Schroeter  
Angelo Secchi  
Shi Shen  
James South  
David Stevenson  
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Gonzalo Tancredi  
Hergert Turner  
Benjamin Yale  
Cornelis van Houten  
Otto von Struve

Erasmus Reinhold  
Alfred Wegener  
Chandra Wickramasinghe  
Aleksander Wolsczcan  
Abraham Zacuto  
Zu Chongzhi  
Edwin Salpeter  
Lipot Schulhof  
Waltraut Seitter  
Qutb eddin Shirazi  
Harold Jones  
Edward Stone  
Su Song  
Ernst Tempel  
Nasir Tusi  
George van Biesbroeck  
Pieter van Rhijn  
Alexander Vyssotsky

Karl Reinmuth  
Wei Pu  
Thomas Wildemann  
Richard Wooley  
Tim Zeeuw  
Fritz Zwicky  
Hendricus Bakhuyzen  
Henrich Schumacher  
Tsutomu Seki  
Iosif Shklovsky  
Frederich Sporer  
Frederick Straton  
Abd al Sufi  
Thabit Wurra  
Ulugh Beg  
Hendrik van de Hulst  
Gerard de Vaucouleurs  
Arno Wachmann

(Answers Next Month...)

### CLUB OFFICERS

POSITION	NAME	PHONE
President	Tony White	918-258-1221
Vice-President	Tom McDonough	918-665-1853
Co-Treasurers	John Land	918-357-1759
	Jim Miller	918-627-4551
Secretary	Teresa Kincannon	918-637-1477

### BOARD MEMBERS AT LARGE

NAME	PHONE
Ann Bruun	918-834-0757
Steve Chapman	918-342-1643
Rod Gallagher	918-369-3827
Bill Steen	918-251-3062
Chris Proctor	918-810-6210
Rick Walker	918-451-9235
Dennis Karcher	918-619-7097

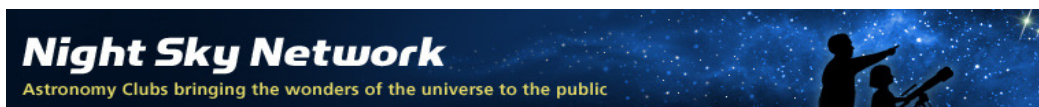
### APPOINTED STAFF

POSITION	NAME	PHONE
RMCC Facility Manager	Chris Proctor	918-810-6210
Membership Chairman	John Land	918-357-1759
Observing Chairman	Ann Bruun	918-834-0757
New Members (co-Chairmen)	Owen Green	918-851-1213
	Rick Walker	918-451-9235
Observatory Director	Teresa Kincannon	918-637-1477
Webmaster	Tom McDonough	918-665-1853
Newsletter Editor	Dennis Karcher	918-619-7097
Night Sky Network	Peggy Walker	918-640-0832

### MEMBERSHIP INFORMATION

Astronomy Club of Tulsa membership (\$35/year) includes membership in the Astronomical League and subscription to ACT's "Observer" and AL's "Reflector". "Astronomy" (\$34/year) and "Sky and Telescope" (\$33/year) are also available through the club. For more information contact John Land at 918-357-1759. Permission is hereby granted to reprint from this publication provided credit is given to the original author and the Astronomy Club of Tulsa Observer is identified as the source.

The Astronomy Club of Tulsa is a proud member of the Astronomical League and the Night Sky Network



<http://www.astroleague.org>

<http://nightsky.jpl.nasa.gov>

ACT welcomes your questions, suggestions, comments, and submissions for publication. Please send all inquiries to [Newsletter@astrotulsa.com](mailto:Newsletter@astrotulsa.com)

**Deadline for August Article submissions: July 25, 2009**  
**Target Publication for August Observer = July 31, 2009**  
 eMail article submissions to: [djkarcher@cox.net](mailto:djkarcher@cox.net)