



Astronomy Club of Tulsa

Observer

July 2013



Photo: Sunset at the Observatory, by Stan Davis

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*EDITOR'S NOTE: Per NASA's "The Space Place" website,

<http://spaceplace.nasa.gov>, there is no July/August 2013 Issue of *The Space Place Newsletter*.

July 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5 Members' Night	6 Members' Backup
7	8	 9	10	11	12	13
14	15	 16	17	18	19	20 Sidewalk Astronomy
21	22	 23	24	25	26 Public Star Party	27 PSP Backup/Groups
28	29	 30	31			

UPCOMING EVENTS:

Sidewalk Astronomy	Sat Jul 20	Bass Pro	8:30 PM
Public Star Party	Fri Jul 26	ACT Observatory	8:30 PM
Members' Night	Fri Aug 2	ACT Observatory	8:30 PM
Sidewalk Astronomy	Sat Aug 17	Bass Pro	8:30 PM
Public Star Party	Fri Aug 23	ACT Observatory	8:30 PM



President's Message

By Lee Bickle

Hello everyone! June weather has been relatively kind to those of us who are fairweather observers. And I hope everyone has been taking advantage of some of the clearer skies and the little 'cool front' we had recently to enjoy whatever kind of observing is your favorite.

The last few weeks have been eventful for our club. The club was invited to show the sky to concertgoers at the River West Festival Park on Tuesday, June 18. It was a free concert put on by the Starlight Band, and I understand we had several volunteers who took their telescopes and their knowledge to the concert and helped make the evening even more memorable to the families who went to hear music, eat hotdogs, and have a good summer evening under the stars. Not as many stars as from Mounds, but magical I'm sure nevertheless! Thank you to everyone who volunteered for this event. Be sure to check out the pictures on our Facebook page.

We also held our monthly full-moon sidewalk astronomy viewing at the Bass Pro Shop in Broken Arrow on Saturday, June 22. That night, we earthlings experienced something known as a perigee-syzygy of the Earth Moon Sun system -if you knew that, please send me a note and let me know, so I can be genuinely impressed (I had to look it up) - commonly known as a supermoon. Basically a supermoon is simply a full moon near perigee, when the moon is nearest the point in its elliptical orbit when it is closest to earth, making it appear a few percent larger and brighter than it does during an average full moon. The difference is slight, but media outlets on local and national levels all gave it press, and we had a very nice turnout on a very nice evening by the pond at Bass Pro. If you have not been to one of our sidewalk astronomy events, you ought to come sometime. There is often live music at Los Cabos on Saturday evenings - it's not exactly the London Philharmonic, but sometimes it adds a nice ambiance to the gathering. Of course many of our members are there to guide the public and to show various kinds of telescopes, binoculars, and other equipment. There is enough lighting to see people and to get a good look at what is going on, so if you are new to the hobby, this is a good place to meet people and become familiar with some of the gear you have been thinking about getting for yourself. A big thanks to Tamara and Owen putting this on for us every month and of course to everyone who comes and contributes to making this such a successful occasion. The next sidewalk astronomy will be on Saturday, July 20. See you there!

The following week we had our monthly public event at the observatory in Mounds. By several estimates, we had between 75 and 100 people in attendance! As you might imagine, and know if you were there, we were a little strained at times, but overall I think our club put on a very nice showing for everyone. Tamara hosted her fascinating laser light shows, Chris ran several very popular dome shows, and many other members had some great gear out and were very helpful showing first-time guests around the sky at all kinds of popular and even a few lesser seen objects. Let me also take this opportunity to encourage would-be volunteers to offer your services at the next event. If you would like to be added to our volunteer email list, please contact me. Mandy and John have been great about keeping volunteers up to speed on upcoming events, thank you! Our next monthly public viewing will be on July 26, weather permitting as usual.

Finally, we held our annual club picnic last Friday evening at the observatory. Again, pictures on Facebook and on our Yahoo group. I wasn't able to attend personally, but I understand it was a nice time and a nice looking evening judging from the pictures and the reports from those who had the privilege of attending.

As you may know, we do not hold monthly meetings at TCC during the summer. We will be picking those up again in September, and we are in the process of lining up some great speakers, so stay tuned!

Wishing everyone fine weather and clear skies,

Lee Bickle



Treasurer's and Membership Report

By John Land

Astronomy Club of Tulsa has 113 members, including 25 new members.

New members this month: Justin Faulk, Bill Martin

Club Accounts June 10, 2013: **Checking: \$3,121.61; Savings: \$7,014.89; Investment account: \$18,278.85 (Value Fluctuates with Market); PayPal: \$135.03**

NOTE: The Club has two large annual payments due in mid Summer:

Our Astronomical League membership of \$585.00 – Paid June 24th

Annual Property and Liability Insurance is due July 19

Currently we are negotiating for better rates. Will report in Aug newsletter.

The club now has PayPal available for you to start or renew memberships and subscriptions using your credit or debit cards. Fill out the registration form at <http://astrotulsa.com/page.aspx?pageid=16> **Click Submit** and you will be given the choice of either **mailing in your dues** with a check **or using PayPal** which accepts most major credit cards. A modest processing fee is added to PayPal transactions.

NEWS NOTE: Both Sky & Telescope and Astronomy have **free Digital subscriptions** available with print subscriptions or Digital subscriptions may be purchased separately. Contact their websites for details.

Membership rates for 2013 are as follows:

Adults - \$45.00 per year, includes Astronomical League Membership

Sr. Adults—\$35.00 per year for those 65 or older, includes Astronomical League Membership

Students—\$30.00 with League membership, Students—\$25.00 without League membership.

Additional Family membership—\$20.00, with voting rights and League membership.

\$15.00, with voting rights but without 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**.

Join Online – Add or renew magazine subscriptions: <http://www.astrotulsa.com/page.aspx?pageid=16>

Magazine Subscriptions: If your magazines are coming up for renewal, try to **save the mailing label** or renewal form you get in the mail. Forms are available on the club website.

Astronomy is \$34.00 for 1 year or \$60.00 for 2 years. www.astronomy.com

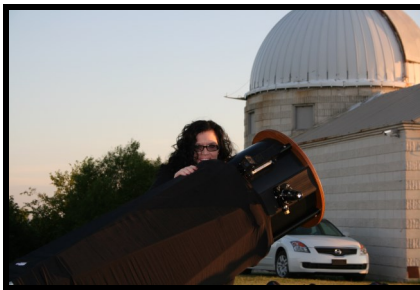
To get the club discount you must go through the club group rate

Sky & Telescope is \$33.00 / yr www.skyandtelescope.com

Sky and Telescope also offers a 10% discount on their products.

Note: **You may renew your Sky & Telescope subscription directly** by calling the number on the renewal form – be sure to ask for the club rate.

NEW SUBSCRIPTIONS must still be sent to the club.



The Secretary's Stuff

By Tamara Green

Since There was no General Meeting in June, and, therefore, no minutes, how about some pics from some of our June and July events?



Sidewalk Astronomy at Bass Pro, Jun 22



Public Star Party, Jun 28

More on the next page!

The Secretary's Stuff, by Tamara Green, Ct'd.



Club Potluck, Jul 5

More great pictures from more of our members on the next pages!

Sidewalk at Bass Pro, pictures by Richard Brady



Banner with Trees



Club Banner at Bass Pro



Moon Over Los Cabos



Moonrise Over Los Cabos, Wide Shot



Moonrise Over Los Cabos



Sidewalk Members and Guests

Club Potluck, pictures by Stan Davis



Members in a Circle



Circle of Friends



Good Food and Good Fun



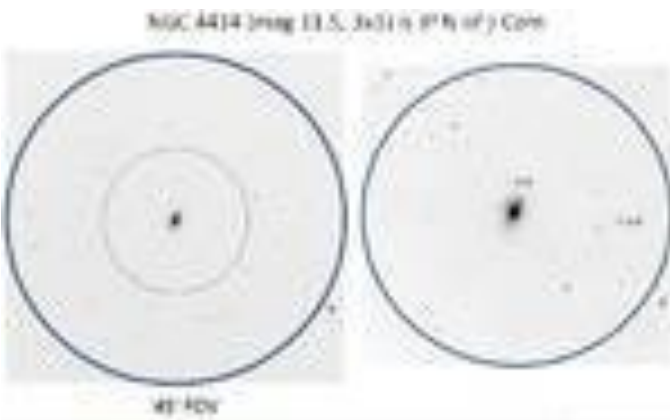
A Lovely Sunset

Some Stunning Images of the Milky Way, Taken at our Observatory, by Jerry Mullenix!



NITELOG, by Tom Hoffelder

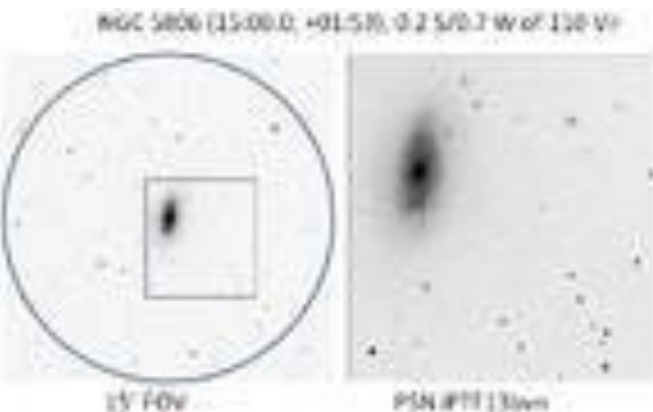
Usually only the sunset times etc for Norway are listed, but on this month's file you will see two other locations. Comparing the hours of darkness for each may indicate why I am not highly motivated to spend the effort of creating the regular list. There are two comets which may be bright enough for small scopes, and I've included a list of globular clusters. The idea is to hop from one to the next using the Right Angle Sweep. I did it easily a couple years ago with our 120 mm refractor in Tolland, so they definitely can be seen in small scopes.



For bigger scopes, the question is SN 2013df. When I saw it back on 6/9, it was mag 13.5 to 14. In a few days it had dropped to around 15th, as would be expected of a Type IIb. If it is a typical IIb, it should now be brightening back to 14 or even more. However, I have found no mag estimates for the last 10 days, so maybe one of you will be the first to know!

I'm finding very little info on the subject SN, but it appears it is still around 15th, so maybe it will not follow

the typical type IIb curve. I think it is still worth checking tho, so I wanted to make sure you all noticed that the SN photo sent with the note below included two star magnitudes for comparison. If you do observe it, please let me know your mag estimate. Looks like it is going to continue raining here until about Nov!



It appears that SN 2013df continues to slip slide away (~15.5 per reports), so does not look to follow the "typical" Type IIb curve. However, there is another relatively bright possibility, the subject, in NGC 5806. At 12th mag and 3'x1.5', the relatively large/bright galaxy is easily located very near 110 Vir, per the attached. The reported mag of the SN is 14.5; I haven't been able to find any info on nearby comparison stars but will send if I do.

Tom

7/6						7/12					
SS	CTE	NTE	ATE	MR	SS	CTE	NTE	ATE	MS		
20:28	21:04	21:51	22:50	-	20:25	21:01	21:47	22:43	22:16		
20:22	20:49	21:20	21:54	-	20:21	20:47	21:19	21:52	22:55		
20:44	21:14	21:51	22:33	-	20:42	21:12	21:49	22:29	22:59		

Norway, ME
Fort Drum, FL
Tulsa, OK

7/6	7/7	Dark
ATE	ATB	(hrs)
22:50	02:44	3.9
21:54	05:03	7.1
22:33	04:26	5.9

Norway,
ME
Fort
Drum,
FL

Tulsa,

Comet	RA ²	Dec ²	Star	N/S	E/W	N/S/day	E/W/	Mag ¹	Mag ²	Urano	Date*
PanSTARRS C2011 L4	14 30.5	+63 37	α Dra	0.8 S	3.0 E	0.5 S	-	9		27	7/6
PanSTARRS C2011 L4	14 31.5	+60 26	α Dra	4.0 S	3.2 E	0.5 S	-	9		27	7/12
Lemmon C2012 F6	23 44.1	+59 05	β Cas	-	3.3 W	0.6 N	0.3 W	10		35	7/6
Lemmon C2012 F6	23 26.8	+62 29	β Cas	3.3 N	5.0 W	0.5 N	0.4 W	10		15	7/12

¹from <http://www.aerith.net/comet/future-> *at 8 PM EDT

NGC	M	star	N/S	E/W	Mag	Size
6121	4	α Sco	0.1 S	1.3 W	5.4	36
6093	80	prv	3.5 N	1.4 W	7.3	10
6171	107	prv	10.0 N	3.8 E	7.8	13
6218	12	prv	11.0 N	3.8 E	6.1	16
6254	10	prv	2.2 S	2.4 E	6.6	20
6402	14	prv	0.9 N	10.2 E	7.6	11
6333	9	prv	15.2 S	4.4 W	7.8	12
6273	19	prv	7.8 S	3.7 W	6.8	17
6266	62	prv	3.8 S	0.3 W	6.4	15
6356	-	η Oph	2.1 S	3.3 E	8.2	10
6333	9	prv	0.7 S	1.0 W	7.8	12
6342	-	prv	1.1 S	0.5 E	9.5	4
6287	-	prv	3.2 S	3.7 W	9.3	4
6325	-	prv	1.1 S	2.9 E	10.2	4
6284	-	prv	1.1 S	3.1 W	8.9	6
6273	19	prv	1.5 S	0.4 W	6.8	17
6293	-	prv	0.2 S	1.8 E	8.3	8
6355	-	prv	0.2 N	3.2 E	8.6	4
6316	-	prv	1.8 S	1.7 W	8.1	5
6304	-	prv	1.3 S	0.4 W	8.3	8

There is No Such Thing as a “Dumb” Question

July 2013 by Ed Downs

Ed writes a monthly column on astronomy for In Flight USA Magazine

As pilots, we have all taken adults and kids for their first airplane ride. We aviators hope that our “newbie” will thrill at the wonder of flight. As a CFI, (Certified Flight Instructor), who grew up in the San Fernando Valley of Southern California, the first reaction I saw was almost always, “wow, look at all the swimming pools!” Not exactly the wonder of flight I was hoping for.

The same can be said of those who take their first look through a telescope. One would expect wonder at the size of the universe, a thrill at seeing planets “first hand,” and amazement when stars disclose magnificent color differentials. But, the actual observations of “newbies” are often quite different than one might expect. Recent events offered an opportunity to hear unexpected questions first hand. With broad media coverage of the “Super Moon” in late June, a good friend and astronomy enthusiast invited this writer to attend a large family gathering, complete with great food. The catch was, “would I bring my telescope so his family and guest could see this uncommon lunar event.” Good food and astronomy, it was a deal!

The “Super Moon,” meaning the Moon is at its closest to the earth (About 221,700 miles away) and fully opposite the Sun (meaning a very bright full Moon), makes for poor viewing. Media also encouraged Moon fans to view the Moon close to sunset, as an additional optical illusion makes it appear even larger. Regrettably, being close to the horizon means a telescope must look through a lot of atmosphere which obscures lunar topographical features. None the less, we were on for a grand feast at my friends semi-rural residence and an early evening viewing. High trees along the horizon delayed a good visual lock on the Moon, so this amateur astronomer set up to kill time by viewing the popular planet, Saturn. Even with mediocre viewing conditions (clouds and dust), the Orion 12” reflector telescope liked this ringed wonder, and it shown bright and clear. A quick flash with the scope-mounted laser finder allowed rapid alignment with Saturn and started a series of surprising questions. This simple, \$80 device, allows one to “touch” the celestial object with a beam of light the quickly points the entire scope where it needs to be. Bright, and dangerous, special care must be taken to make sure no person or aircraft becomes an unwilling target.

But the real “oohhs and aahhs” rippled through the line of 30+ adults and kids when Saturn was focused into the eyepiece. As the line of viewers moved slowing forward, several high school age guests commented on my need to manually realign the scope after each look to keep Saturn in view, a quick and easy task. They were amazed at how fast Saturn was moving, in that it quickly moved out of sight. With a solar orbit of over 29 years, it was not Saturn that was moving, but the earth. At my latitude (Tulsa, OK) the Earth is rotating toward the east at approximately 860 mph. The telescope’s magnification not only made the image of Saturn larger but magnified the Earth’s apparent rotation as well. They were seeing, and experiencing, the rotation of the earth for the first time. These kids could now see firsthand that their home planet is spinning through space. Several of the middle school aged kids thought the magnified image they saw in the eyepiece was actually a photo inside the scope. They thought they were being tricked, unable to understand that they were seeing the real Saturn nearly 798 million miles away.

There is No Such Thing as a “Dumb” Question, by Ed Downs, Ct’d.

The concept of a telescope was completely unknown to them. A quick “scope tour” convinced them that they were, indeed, seeing the “real thing.”

The Moon offered even more surprises to guest. As expected, the brightness (even with a Moon filter installed) made the surface appear somewhat flat and featureless, so focus was set on the Moon’s horizon, near the dramatically cratered southeast hemisphere. Some shadows existed in this region and the high magnification clearly showed the rough and mountainous terrain against a black sky. Amazement was expressed that the Moon had mountains. A number of guests had thought the moon was smooth, as it looks with the unaided eye. A brief mention of the challenges faced by Neil Armstrong as he hand flew the LEM over rough terrain during the first Moon landing were met with surprise by some of the kids, not knowing that we had ever landed on the moon. This writer quickly educated those unfamiliar with the Apollo missions and gained some enthusiastic “space fans.”

The evening ended with one and all viewing the first double star system they had ever seen, the ever popular Mizar / Alcor pair in the center of the Big Dippers (Ursa Major) handle. Most viewers did not know that stars often live in pairs or multiple clusters. To be sure, some of the questions asked were disappointing, but the opportunity share our galaxy with first time viewers was rewarding. New interest in astronomy was borne and curiosity was peaked. But then again, isn’t that similar to what we are after when we give that first airplane ride?

Some Links to images of the “Super Moon” Images at

<http://apod.nasa.gov/apod/ap121129.html>

Text and YouTube Video explanation

http://science.nasa.gov/science-news/science-at-nasa/2011/16mar_supermoon/

Inventing Astrophotography: Capturing Light Over Time

By Dr. Ethan Siegel

We know that it's a vast Universe out there, with our Milky Way representing just one drop in a cosmic ocean filled with hundreds of billions of galaxies. Yet if you've ever looked through a telescope with your own eyes, unless that telescope was many feet in diameter, you've probably never seen a galaxy's spiral structure for yourself. In fact, the very closest large galaxy to us—Andromeda, M31—wasn't discovered to be a spiral until 1888, despite being clearly visible to the naked eye! This crucial discovery wasn't made at one of the world's great observatories, with a world-class telescope, or even by a professional astronomer; it was made by a humble amateur to whom we all owe a great scientific debt.

Beginning in 1845, with the unveiling of Lord Rosse's 6-foot (1.8 m) aperture telescope, several of the nebulae catalogued by Messier, Herschel and others were discovered to contain an internal spiral structure. The extreme light-gathering power afforded by this new telescope allowed us, for the first time, to see these hitherto undiscovered cosmic constructions. But there was another possible path to such a discovery: rather than collecting vast amounts of light through a giant aperture, you could collect it *over time*, through the newly developed technology of photography. During the latter half of the 19th Century, the application of photography to astronomy allowed us to better understand the Sun's corona, the spectra of stars, and to discover stellar and nebulous features too faint to be seen with the human eye.

Working initially with a 7-inch refractor that was later upgraded to a 20-inch reflector, amateur astronomer Isaac Roberts pioneered a number of astrophotography techniques in the early 1880s, including "piggybacking," where his camera/lens system was attached to a larger, equatorially-mounted guide scope, allowing for longer exposure times than ever before. By mounting photographic plates directly at the reflector's prime focus, he was able to completely avoid the light-loss inherent with secondary mirrors. His first photographs were displayed in 1886, showing vast extensions to the known reaches of nebulosity in the Pleiades star cluster and the Orion Nebula.

But his greatest achievement was this 1888 photograph of the Great Nebula in Andromeda, which we now know to be the first-ever photograph of another galaxy, and the first spiral ever discovered that was oriented closer to edge-on (as opposed to face-on) with respect to us. Over a century later, Andromeda looks practically identical, a testament to the tremendous scales involved when considering galaxies. If you can photograph it, you'll see for yourself!

Astrophotography has come a long way, as apparent in the Space Place collection of NASA stars and galaxies posters at <http://spaceplace.nasa.gov/posters/#stars>.



Great Nebula in Andromeda, the first-ever photograph of another galaxy. Image credit: Isaac Roberts, taken December 29, 1888, published in *A Selection of Photographs of Stars, Star-clusters and Nebulae*, Volume II, The Universal Press, London, 1899.



And For The Young Stargazers:
Check out these fun websites from
NASA!

<http://climate.nasa.gov/kids>

<http://scijinks.gov>

<http://spaceplace.nasa.gov>



EDITOR'S NOTE: THERE IS NO JULY/AUGUST ISSUE OF "THE SPACE PLACE" NEWSLETTER, PER THE WEBSITE.



Where We Meet:

TCC Northeast Campus, 3727 E. Apache St., Student Union Bldg. 2, Room 1603

There is PLENTY of parking, lighting and security on this campus.

To get to TCC NE Campus, take the Harvard Exit off of Hwy. 11 (Gilcrease Expressway). Go south for about 1/2 mile to the campus located at the corner of N. Harvard and Apache. Turn east on Apache and take the entrance in front of Bldg. 3 (the large round building). Then turn right and park in front of Student Union Building #2. Room 1603 is just off of the lobby.

Google-type driving direction map at <http://www.tulsacc.edu/13273/>

We hope to see you there!



Our next General Meeting will be on Friday, September 20 at 7:00 PM.

Please note that we do not have General Meetings during the months of June through August. Please join us at our observatory for our Public Summer Star Parties!

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MEMBERSHIP INFORMATION

MEMBERSHIP RATES FOR 2012 WILL BE AS FOLLOWS:

Adults - \$45 per year. Includes Astronomical League membership.

Senior Adults - \$35 per year. *For those aged 65 and older.* Includes Astronomical League membership.

Students - \$30 per year. Includes Astronomical League Membership.

Students - \$25 per year. *Does not include Astronomical League membership.*

The regular membership allows all members of the family to participate in Club events, but only ONE voting membership and ONE Astronomical League membership per family.

Additional Family Membership - \$15 with Astronomy Club of Tulsa voting rights, \$20 with Club voting rights *and* Astronomical League membership.

THOSE WISHING TO EARN ASTRONOMICAL LEAGUE OBSERVING CERTIFICATES NEED TO HAVE A LEAGUE MEMBERSHIP.

MAGAZINES:

Astronomy is \$34 for one year or \$60 for 2 years.

www.astronomy.com

Sky & Telescope is \$33 per year.

www.skyandtelescope.com

Sky & Telescope offers a 10% discount on their products.

If you are an existing S&T subscriber, you can renew directly with S&T at the same Club rate. Both S&T and Astronomy now have digital issues for computers, iPads and smart phones.

ONLINE REGISTRATION

We now have an automated online registration form on the website for new memberships, membership renewals and magazine subscriptions. Just simply type in your information and hit "send" to submit the information. You can then print a copy of the form and mail it in with your check. At this time we do not have an option for credit card payment, but we may explore that at a later time.

Link: <http://www.astrotulsa.com/Club/join.asp>



THE ASTRONOMY CLUB OF TULSA INVITES YOU TO
MAKE PLANS THIS SUMMER TO JOIN US AT AN ASTRONOMY CLUB OF TULSA STAR PARTY!
OPEN TO THE PUBLIC

For more information please visit www.astrotulsa.com.



The Observer is a publication by the Astronomy Club of Tulsa. The Astronomy Club of Tulsa is a 501C 3 non-profit organization open to the public. The Club started in 1937 with the single mission to bring the joy and knowledge of astronomy to the community of Tulsa, OK and the surrounding area. Today our mission remains exactly the same. We travel to local schools, churches and many other venues with scopes and people to teach. Our observatory is located in Mounds and many public programs are offered there. To join the Astronomy Club of Tulsa please visit www.astrotulsa.com where you will find all the information necessary to become a member.

