



Astronomy Club of Tulsa

Observer

October 2013



Photo: The Big Dipper over Black Mesa, Okie-Tex 2013. by Tamara Green.

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Please note: Due to the government shutdown, NASA's "The Space Place" people will be unable to submit their monthly article. They send their apologies for any inconvenience. The Space Place newsletter is for September and October, and came out last month, so it will be ran in this edition of *The Observer*.

October 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4 MN 	5 MNBU
6	7	8	9	10	11 	12
13	14	15	16	17	18 GM 	19 SW
20	21	22	23	24	25 PSP 	26 PSPBU 
27	28	29	30	31		

November 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 MN	2 MNBU
3 	4	5	6	7	8	9 
10	11	12	13	14	15 DM	16 SW
17 	18	19	20	21	22 PSP	23 PSPBU
24	25 	26	27	28	29	30

UPCOMING EVENTS:

OKIE-TEX STAR PARTY Sat, Sep 28 thru Sun, Oct 6, at Camp Billy Joe, Kenton, OK

Members' Night Fri, Oct 4 ACT Observatory 6:30 PM

General Meeting Fri, Oct 18 TCC NE Campus 7:00 PM

This meeting will be the election of Officers and Board for 2014!

Sidewalk Astronomy Sat, Oct 19 Bass Pro 6:30 PM

Public Star Party Fri, Oct 25 ACT Observatory 6:00 PM

Halloween Thu, Oct 31

Members' Night Fri, Nov 1 ACT Observatory 6:00 PM

Annual Dinner Meeting Fri, Nov 15 TASM Planetarium 6:30 PM

(Please note: This event is for Club members and their families only.)

Sidewalk Astronomy Sat, Nov 16 Bass Pro 5:00 PM

Public Star Party Fri, Nov 22 ACT Observatory 6:00 PM

Thanksgiving Thu, Nov 28



The Astronomy Club of Tulsa cordially invites all members and their families to
our Annual Dinner Meeting!

Friday, November 15, 2013 at 6:30 PM

Tulsa Air and Space Museum Planetarium Lobby



Festivities to include:

Prize Drawing

Planetarium Show

Group Photo



Great Food, catered by Billy Simms BBQ!

Come and enjoy the fun with us!





President's Message

By Lee Bickle

Hello all,

This would have been my last message as president of the club, as club elections were originally slated for the October general meeting. However, we are going to push the elections back to the November dinner meeting (Nov 15th) just as last year. This takes care of a few things, including a full year's term for the current board, time to receive more nominations (as we've had very few thus far), and allows for much wider participation in voting from the club membership. So if you are interested in becoming more involved in the club in the way of an elected position, or if you know of someone who would be an asset in an elected position, or even if you are a current board member and would like to continue on, please let me know!

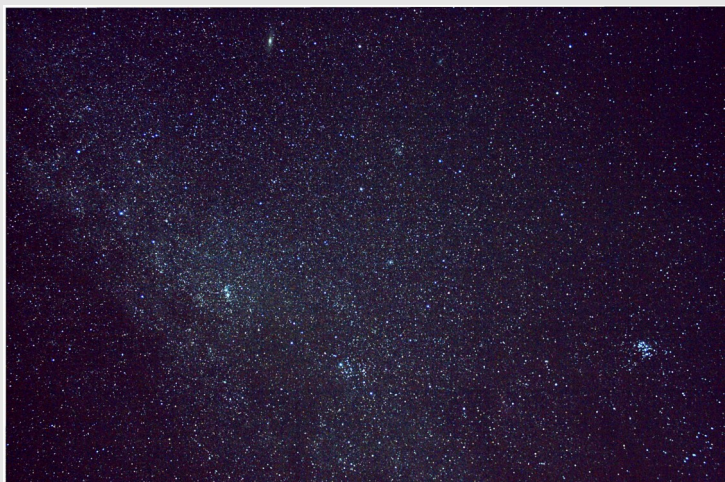
I want to extend a very sincere thank you to those of you who have volunteered in both official and unofficial capacities in any way these past few months since I've been president. As you may or may not know, Owen Green was elected president last year and served quite admirably in the face of some health issues, but eventually reached out to me early this year for help taking over his duties as I was then VP. Since then he has supported the club and me as well and I want to say a special thank you for that Owen. And to those who have helped smoothly guide the club this last year through a few bumps and toward some positive new changes deserve my thanks as well. And to our membership and guests who make the club what it is, thank you for your eager participation in whatever parts of our shared hobby interest you. Thank you one last time to our volunteers from the hero who mows the grass, the wizard who runs our website, the brilliant minds who run our club telescope, organize field events at several locations, keep in contact with outside groups, on down to the members who simply strike up conversation with guests - it cannot be said too many times and we'll try to reiterate that at the club dinner in some way.

There have been quite a few nice night skies lately and I hope everyone has had an opportunity to take advantage of some of them! Besides that the nice weather brings more people out than usual, those guests and members who have attended our recent club events have been especially interested and helpful, making our events enjoyable all around. And we've also just wrapped up another great Okie Tex star party, which I am looking forward to hearing more about from others as I was only there for two nights of it, one being clouded out. We have coming up as usual, after the next general meeting, sidewalk astronomy at Bass Pro, our public star party at the ACT observatory, and our members star party the following week. Don't forget to renew your memberships if you are already a member, and if you have been thinking about becoming one but have not yet signed on the dotted line, you can sign up & pay online at our website or come on out to a club event and we will get you set up.

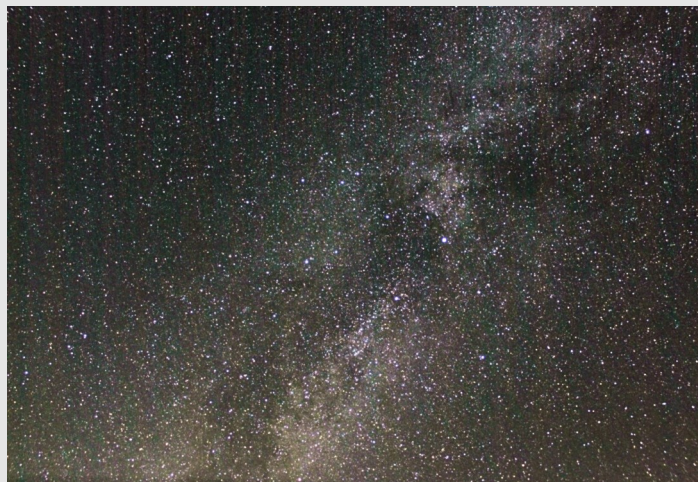
This newsletter is a couple of days late, but that is my fault - Tamara, our tireless newsletter editor, has had it ready for a couple of days now and has just been waiting for me to send her this message. So my apologies, and I hope you enjoy reading this month's edition!

Lee Bickle

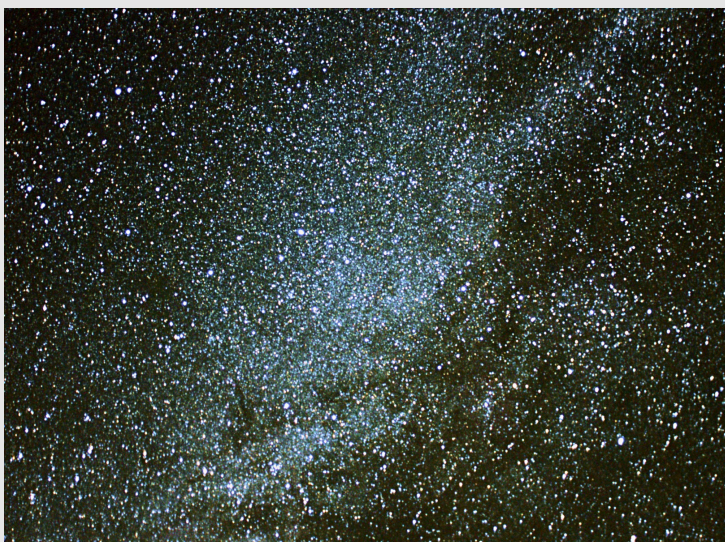
Here are some pictures taken by Lee at Okie-Tex!



Andromeda, Perseus and Cassiopeia



Cygnus



Milky Way



Orion



Treasurer's and Membership Report

By John Land

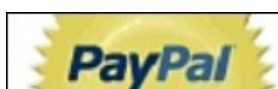
Astronomy Club of Tulsa now has 118 members, including 33 new members.

New members this month: Warren Grigsby, Laura Bottoms, Frank DeBon

Club Accounts Oct 8, 2013:

Checking \$3,247.62; Savings \$ 7,017.54; Investment account \$18,832.68 (Value Fluctuates with Market);

PayPal \$80.65



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 as follows.

Adults: \$45 .00 per year, includes Astronomical League Membership

Sr. Adult: \$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 per year 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.

Annual Astronomy Club Dinner will be held at Tulsa Air & Space Museum

Friday Nov 15 starting at 6:30 PM Tickets are \$ 10 per person.

Spouses and Family of members welcome.

Please RSVP before Nov 9 so will we can get a head count.

Go to <http://astrotulsa.com/Contact.aspx> Click Treasurer

In the comments section specify the number of people attending counting yourself.



2014 Astronomy Wall Calendars are here !!!

Each month of these wall sized calendars features stunning photos worthy of framing on their own. The generous date squares feature astronomical events for that month as well as historical events.

There is still room for you to add your notes of special dates.

Your discounted Price is \$ 10 each - (check or exact cash please)

They make great Gifts. Supply is limited. **Available at club meetings**

or **Contact John Land Via the website to reserve yours**



Build your Own Solar Filter

AstroPhysics sells a specially coated BAADER Mylar that gives excellent resolution for observing sunspots. Several of the members were interested in going into together and buying the material to split up the cost. **Contact John Land Via the website to pre-order an approximately 9 by 9 inch sheet of the material for \$ 13 each**

Details at http://astro-physics.biz/index.htm?products/accessories/solar_acc/astrosolar

Astronomy Software Discount Purchase Opportunity.

Discounts of 25% to 40% depending on the number of people participating.

SkyTools 3 is an computer program designed for and by observers.

It allows you to plan observing sessions in advance. Organize your list by times for best viewing. View and Print custom charts specifically for your telescope and much more.

Take time to view the short videos demonstrating is many features.

<http://www.skyhound.com/skytools.html>

Discount Price list at http://www.skyhound.com/club_discounts.html

Reserve your order in advance. Contact John Land Via the website contact page.



The Secretary's Stuff

By Tamara Green

ASTRONOMY CLUB OF TULSA – MINUTES – GEN. MEETING FRI SEP 20, 2013

PRESENT:

Lee Bickle, President

Stan Davis, Vice President

Tamara Green, Secretary

John Land, Treasurer

Mandy Nothnagel, Board, Group Director

Michael Blaylock, Board

NOT PRESENT:

James Taggart, Board, Facilities Manager

Jody Ray-Fleetwood, Board

Tony White, Board

The meeting was held at Tulsa Community College, Northeast Campus. There were 35 attendees, including guests.

WELCOME AND INTRODUCTION: Lee called the meeting to order at 7:03 PM and welcomed all members and guests.

PROGRAM: There was no guest speaker, so Lee invited members to talk about anything that they have done over the summer. Stan Davis demonstrated the SkyTools 3 software, then Richard Brady brought out a telescope that he bought on the Astronomers Without Borders website and talked about it. It is a 130 mm (5-in) f5 scope. All proceeds go to AWB's activities. Imported from China by Celestron exclusively for AWB. \$200.00. www.astronomerswithoutborders.org. After that, Judy Lieser talked about her and Bob's trip to The Badlands, then John Land talked about his trip to Mt. Palomar and shared pictures with us. Then, Mandy showed a powerpoint presentation of pictures of our Hulah Lake event back in June and cool photos from her recent trip to air and space museums in the Seattle, WA area. (look up the names of the museums)

OFFICERS'/STAFF REPORTS:

PRESIDENT – Lee mentioned the elections are next month, get w/Tamara or Lee w/nominations. The then said to be on the lookout for Comet Ison.

VICE PRESIDENT- Stan demonstrated the SkyTools software.

SECRETARY – Tamara said that if anyone wants a copy of the minutes from the May meeting, or from any other meeting, to email her. Also, she made a call for articles for the October newsletter, to be out on October 7. The newsletter will be a bit late because Owen and Tamara are going to Okie-Tex.

TREASURER – John Land made announcements about the Astronomy Deep Space Calendar for 2014 for \$10 apiece, then about the Baader film that club members can purchase to make their own solar filters with, all who are interested can get with John.

Stan Davis will demo a product called "SkyTools 3", and the more people who are interested and buy, the bigger the discount we get. November 15 is the Annual Dinner Meeting at TASM.

This coming week they are having an exhibit on an Oklahoma pilot who was the first African-American commercial pilot. For the Treasurer's report, he announced that we have \$2,969.52 in checking, \$7,014.89 in savings and \$18,529.95 in our investment account.

FUNDRAISING – No report. This position is still open.

OBSERVING – Tamara told everyone that if they had any projects that have been completed or if there are any questions about observing to call, email or text her.

The Secretary's Stuff. Ct'd.

GROUPS – Mandy talked about some of the groups we had over the summer, we did not have very many due to the weird weather we have had. We did have the ORU group, about 50 participants, and good Public Star Party nights. There are a lot of groups who want to come out between now and November, so any volunteers will be appreciated. She then mentioned that we might want to start talking about changes that need to be made for handling groups, maybe at the next board meeting.

FACILITIES – James not present, Lee said that James was trying to get a bid for roof repair at the observatory, but does not have an update yet. Also, if anyone wants to donate a wi-fi router to the observatory, get with Lee or James.

PR/OUTREACH/SIDEWALK – Sidewalk Astronomy will be at Bass Pro, 6:30 PM, but Owen said he planned to be out there early as he does solar observing.

NIGHT SKY NETWORK – Teresa Davis not present, no report.

OTHER BUSINESS – None.

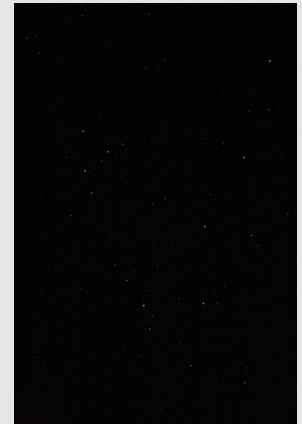
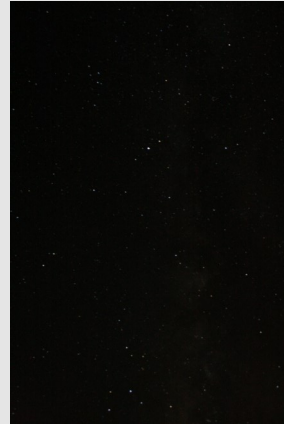
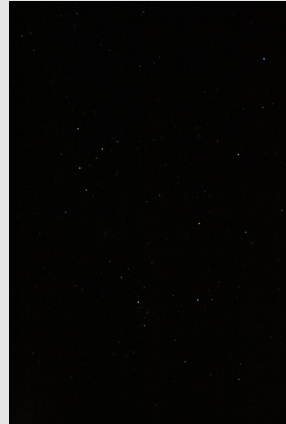
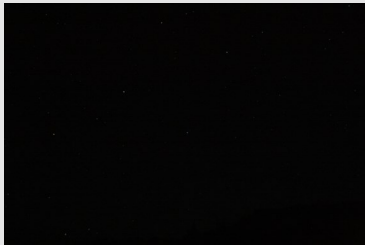
Lee adjourned the meeting at 9:00 PM.

Also, check out this cool picture I took of the Summer Triangle at Okie-Tex!



The Summer Triangle, by Tamara Green. Image shot with a Canon Rebel XTi on a tripod, 20-30 second exposure with ISO of 1600.

Some Pictures from Okie-Tex 2013, by Tamara Green!



NITELOG - Norway InTErurban Local Observing Group, by Tom Hoffelder

This is your third installment of all the M's in 12 months and the H 400's in 24. Prior to starting that, each month I listed objects in a two hour RA section of the sky that was well placed for viewing at the end of twilight, but that doesn't work with the current project because so many of the objects are in the spring skies. That is why this month's list covers nearly four hours and for awhile we will be running a bit "ahead of the sky."

OBSERVING: Summer is over in Maine and the monthly observing schedule is back in swing at the Twitchell Observatory! **Monday Oct 7th at 7 PM!!!**



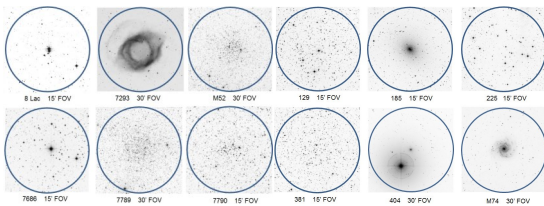
LUNAR X: For us on the east coast a Lunar X will be visible this month starting around 4 PM, obviously still daylight, but we know from the last one that it is easily observed in daylight. The moon is not very high at 4, somewhat less than 20 degrees, however since the X can be seen for a few hours this is not a problem either. The next X occurs in December after sunset, and not only for us, but the whole U.S. of A., so everyone stand by for that one!

COMETS: A three-comet night? Well possibly, if we DIDN'T have that stupid moon. (Sorry Lunatics, but I'd rather see three comets in one night than the Lunar X anytime.) By the end of the month there are three comets that might (it's always might!) be 10th mag or brighter, but they are all in the morning sky and so is the moon then. Three comets next month for sure! (Meaning probably, and being ISON, Encke and Lovejoy.) All I've listed for Oct is Encke during the first part of the month when the moon is out of the comet's way. Checking my comet log, I was surprised to note that I've only seen it on two previous apparitions, even tho its orbit is only 3.3 years. And when I checked Wiki to see what the orbit was, I found out that it was discovered by Mechain in 1786, but Encke in 1819 determined it was the same as comets that had been seen three different times since 1786, becoming the first person since Halley to predict the return of a comet (thus the 2P). You will note that Encke is moving right along so, since the locations are always for 0 hr UT, if you are observing at 4 AM, it could have moved up to a degree away. That is one reason the daily motion is always listed; the other is so you can compute sweeps for a few days before and after the date given.



PLANETS: The only thing on my radar for the naked-eye-5 is a triple moon shadow event on Jupiter from 12:30 to 1:00 AM (EDT on the 12th. As you can see from the attachment, Callisto's shadow is a little iffy. Uranus and Neptune are still well placed in the evening if you want to give them a shot. On the 7th, Neptune is at 22 20.6, -11 04 (3.3 south, 1.0 east of theta Aqr) and Uranus 00 39.2, +03 26 (4.2 south, 2.4 west of delta Psc). They aren't "wandering" much, Uranus a quarter of a degree west per week and Neptune only a tenth of a degree.

STARS: Two carbons, three doubles (one being a rather famous nearby pair of red dwarfs), a triple and even a quad.



THE GOOD STUFF: Eight Messier objects (2 OC's, 1 planetary and 5 GX's) and sixteen H400's, mostly GX's and OC's, three of which double as M's. The one object that is not a Herschel or Messier happens to be one of my favorites, the Helix planetary. An O3 filter is needed to see it well, or maybe at all depending on conditions.

QUESTIONS: As always, questions and comments are welcome!

tom hoffelder
rocksnstars@gmail.com

*Come with me now, Pilgrim of the stars,
For our time is upon us and our eyes
Shall see the far country
And the shining cities of infinity ~ Robert Burnham, Jr.*

Jupiter



Mirror reversed

Please choose your view:

<input type="radio"/> Direct view <small>(Erect-image system)</small>	<input type="radio"/> Inverted view <small>(Newtonian / Dobsonian)</small>	<input type="radio"/> Mirror reversed <small>(SCT/Mak/refractor + diagonal)</small>
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Date: Time: UT Time-zone offset from UT in hours (from your Web browser):

Jupiter



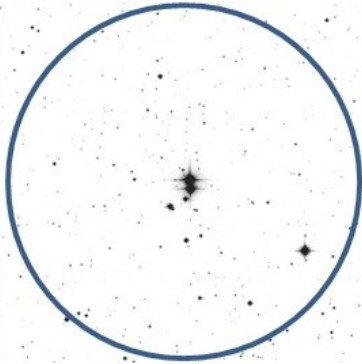
Mirror reversed

Please choose your view:

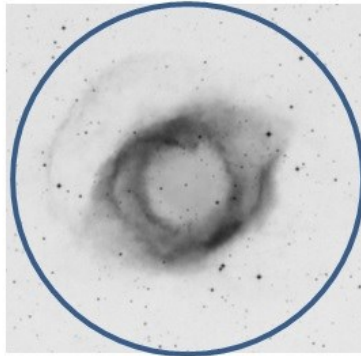
<input type="radio"/> Direct view <small>(Erect-image system)</small>	<input type="radio"/> Inverted view <small>(Newtonian / Dobsonian)</small>	<input type="radio"/> Mirror reversed <small>(SCT/Mak/refractor + diagonal)</small>
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Date: Time: UT Time-zone offset from UT in hours (from your Web browser):

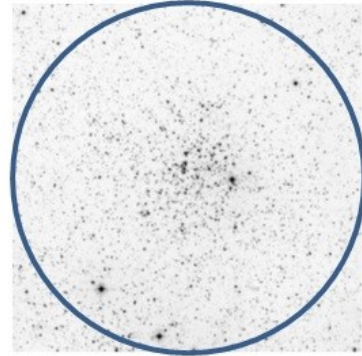




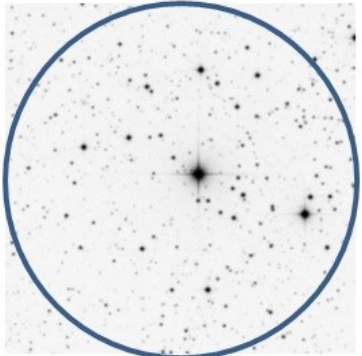
8 Lac 15' FOV



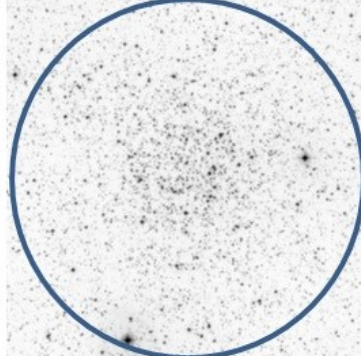
7293 30' FOV



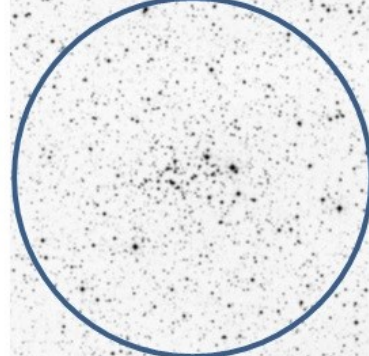
M52 30' FOV



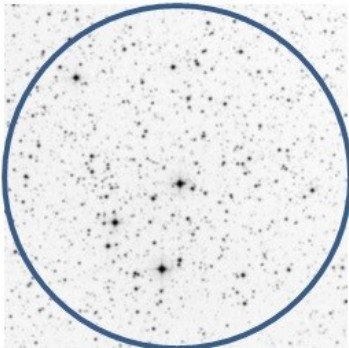
7686 15' FOV



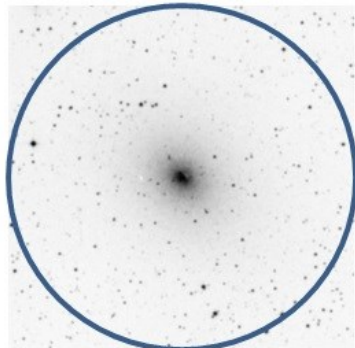
7789 30' FOV



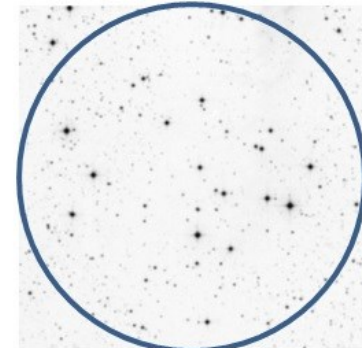
7790 15' FOV



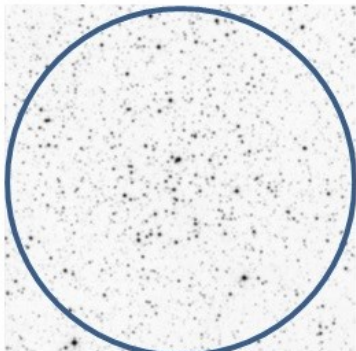
129 15' FOV



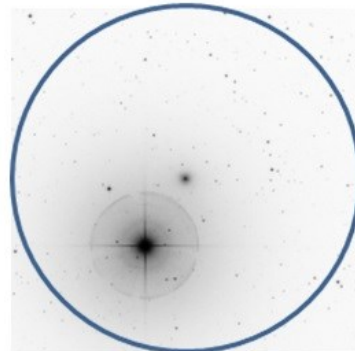
185 15' FOV



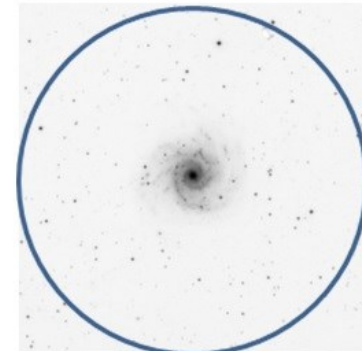
225 15' FOV



381 15' FOV



404 30' FOV



M74 30' FOV



the Space Place

September – October 2013 / Vol. 6, Issue 4

NEWS AND NOTES FOR FORMAL AND INFORMAL EDUCATORS

The Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

- It's colorful!
- It's dynamic!
- It's fun!
- It's rich with science, technology, engineering, and math content!
- It's informal.
- It's meaty.
- It's easy to read and understand.
- It's also in Spanish.
- And it's free!

It has over 160 separate modules for kids, including hands-on projects, interactive games, animated cartoons, and amazing facts about space and Earth science and technology.

The National Science Teachers' Association has recently published the Next Generation Science Standards. From the NSTA website, these K-12 standards "... establish learning expectations for students that integrate three important dimensions—science and engineering practices, disciplinary core ideas, and crosscutting concepts ..." After reviewing these new standards carefully, we have found that many of the modules on *The Space Place* website support one or more. Stay tuned for a helpful index page that will allow you to search for *Space Place* content by each of the three dimensions in the NGSS.



What's new?

Kids end up with their own wacky, loopy stories in our new "Loopy Legends" activity. As with "Mad-Libs," they fill in requested words with whatever they can imagine. Then, their words are folded into a story about an interesting science-related event. For example, a meteor falls through a boy's roof and lands on his bedroom floor in the middle of the night . . . or some loopy variation thereof. The student's version of the story is followed by a short explanation of the science. Earth science and physical science (astronomy and heliophysics) topics are included. Check it out at spaceplace.nasa.gov/loopy-legends.

Spotlight on The Space Place Calendar



Have you discovered The Space Place Calendar? It's at spaceplace.nasa.gov/calendar. Each month is its own page, with a beautiful space- or Earth-related image. The images, plus 10 or 12 "special days" for each month are highlighted with links to relevant pages on the website. It is a valuable resource to help you make connections with history, science, and just plain silliness, in some cases. For example, September 5 is "National Cheese Pizza Day." That means you can use the round cardboard from the take-out pizza to make our beautiful [Galactic Mobile](http://spaceplace.nasa.gov/galactic-mobile). Other real-life events may connect with science articles. September 22 is the Autumnal Equinox. What does that mean? What causes the seasons, anyway? That date links to spaceplace.nasa.gov/seasons.

Spotlight on cool subjects—birds and radar

As the Sun sets in late Fall, migratory birds all across North America take to the skies for a long journey. Direct your students to the latest Space Place article so they can find out how NASA radar helps scientists better understand these birds' travels. When they are done, be sure they check out our fun new hands-on activity—make your own bird-feeder wreath! Kids can use their bird feeders to see what birds are in their neighborhood. Check it out at spaceplace.nasa.gov/birds.



For out-of-school time

Board games are in. Of course, so are video games. What we have, though, is a hybrid of the best of both, plus it's educational! The Wild Weather Adventure game is an online board game for 1 to 4 players. If there's only one player, the computer is the opponent, its skill level selectable. Two or more players take turns, as in any other board game. There are playing pieces (Research ships with different colors and names), a spinner (in lieu of dice), a map of the world for a playing "surface," and blocks and boosts along the way. To advance, players must answer weather and Earth science related multiple choice questions. They can choose whether their question will be easy, medium, or hard. Of course, right answers to harder questions are rewarded proportionally. Decision points present unknown risks and rewards. Check it out at spaceplace.nasa.gov/wild-weather-adventure.

www.nasa.gov

Make these days special

September 6: Read a Book Day.

There are several fun books on the Space Place at spaceplace.nasa.gov/menu/storybook/.

September 11: Make Your Bed Day.

Ask students, "How would your bed look through an infrared camera if you had just gotten out of it?" The Infrared Photo Album will give a clue. spaceplace.nasa.gov/ir-photo-album.

September 23, 1846: Neptune discovered.

Students can find Neptune's place in the solar system and play mini-games with the planets at the Solar System Explorer, spaceplace.nasa.gov/solar-system-explorer.

October 1-31: Computer Learning Month.

Introduce the simple on/off language of computers at spaceplace.nasa.gov/binary-code2.

October 4, 1957: Sputnik, the first satellite, was launched by the Soviet Union.

All sputnik did was beep! Show your students what satellites can do now by directing them to the Missions to Planet Earth Card Game at spaceplace.nasa.gov/earth-card-game.

October 21: Orionids Meteor Shower.

Check out spaceplace.nasa.gov/meteor-shower. Then look for "shooting stars" in the part of the sky near constellation Orion the Hunter.

A personal note...



As webmaster and writer of The Space Place for 14 years (and 30 years at NASA's Jet Propulsion Lab), it was with mixed feelings that I retired this summer. Being part of this creative team has been challenging, grueling, and more fun than any job I could have ever imagined for my English major self. It has been a joy to create resources intended to help students and educators to enrich their experience and, I hope, make learning more fun.

Our new writer and webmaster is Alex Kasprak, a young man with glowing credentials, great new ideas, and a lot of enthusiasm. He will bring his own unique touch to The Space Place.

We wish you a wonderful year, and remember to smile and laugh.

Diane K. Fisher



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

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

<http://scijinks.gov>

<http://spaceplace.nasa.gov>



Where We Meet:

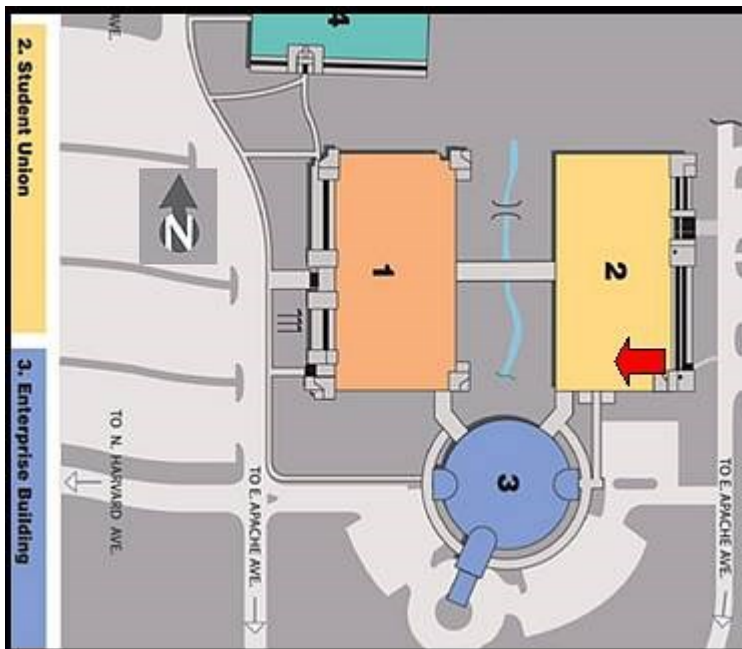
TCC Northeast Campus, 3727 E. Apache St., Student Union Bldg. 2, Room 1603

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, October 18 at 7:00 PM.

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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>



Astronomy Club of Tulsa



THE ASTRONOMY CLUB OF TULSA INVITES YOU TO
MAKE PLANS THIS FALL 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.

