



Astronomy Club of Tulsa

Observer

May 2013



Photo: Members enjoy the sky at the Observatory, by Tamara Green.

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Photo: Leo Rising above the Microwave Tower at the Old AT&T Building, by Tamara Green.

May 2013

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

UPCOMING EVENTS:

Members' Night	Fri May 10	ACT Observatory	8:00 PM
General Meeting	Fri May 17	TCC NE Campus	7:00 PM
Sidewalk Astronomy	Sat May 18	Bass Pro	8:30 PM
Public Star Party	Fri May 31	ACT Observatory	8:30 PM
Members' Night	Fri Jun 7	ACT Observatory	8:30 PM
Sidewalk Astronomy	Sat Jun 22	Bass Pro	8:30 PM
Public Star Party	Fri Jun 28	ACT Observatory	8:30 PM

Midstates Region of the Astronomical League Convention

Friday & Saturday, May 17 & 18, 2013

Eugene T. Mahoney State Park - Peter Kiewitt Lodge

<http://msral2013.org>

http://outdoornebraska.ne.gov/parks/park_pages/mahoney_SP

Friday, May 17	8:45 am to 4:45 pm	Starbeque 6:00 pm (\$18)	
Saturday, May 18	10:00 am to 4:45 pm	Banquet 6:00 pm (\$25)	Speaker: Richard Harshaw

Registration \$40 per person until April 15, 2013
\$50 per person after April 15
Nebraska state park pass included. (Sign in at park entrance or Kiewitt Lodge.)

Register online at <http://www.msral2013.org> or
mail to Omaha Astronomical Society, PO Box 6257, Omaha, NE 68106-0257

20 rooms at the Peter Kiewitt Lodge are being held until April 15, 2013. Room rate, taxes included, is \$96.14 for one night and \$88.40 for additional nights. To make reservations, call 402-944-2523, ask for Group Functions, and request one of the rooms being held for the Omaha Astronomical Society. (This the only way to reserve these rooms.) Any unsold rooms will be released after April 15.

After April 15, or if all 20 rooms have been reserved, call the same number or reserve online at <http://nebraskastateparks.reserveamerica.com>. Neither availability nor rate is guaranteed.

Mahoney Park also has cabins and RV and tent camping. See park web site for more information.

Mahoney Park is a popular vacation destination and accommodations fill up quickly. If you want to stay at the park, it will be wise to make reservations as soon as possible.

Nearby Attractions:

Strategic Air and Space Museum (<http://www.sasmuseum.com>)

Lee G. Simmons Conservation Park & Wildlife Safari (<http://www.wildlifesafaripark.com>)

Henry Doorly Zoo (<http://www.omahazoo.com>)

Durham Museum (<http://www.durhammuseum.org>)

Joslyn Art Museum (<http://www.joslyn.org>)



President's Message

By Lee Bickle

A Word From the President

What is going on with the weather recently? I am ready for some clear skies! At least we had a few good hours at Ron and Maura Wood's place for the Messier Marathon. The company, the food, and looking through BART (their 24" Newt) was a real treat. Thanks Ron and Maura! And even though it was clouded out for the sidewalk astronomy at Bass Pro, a few of us met there anyway and chatted about astronomy with a new prospective member. Maybe May will cooperate a little better for us than April did.

At last month's regular meeting, Sansonthe Boonyothayan from Thailand spoke to us on some recent research and projects he has been involved in. The talk was very interesting again as it was last year. We also elected Stan Davis and James Taggart to the Vice President position and Director at Large position, respectively. Mandy Nothnagel as Group Director also ... Stan, James, and Mandy, thank you for recently stepping into these volunteer positions.

We held a board meeting recently where we fleshed out some older ideas and have a few new ideas, some of which we presented at the April meeting. One such idea is a public night itinerary of activities that Mandy Nothnagel put together for us. Check it out on our website or on Facebook and let us know if you are interested in getting involved with that during our next public night. Some other items such as sealing the dome and repairing a leak in the classroom roof require a little volunteering and a little money, so please say so if you are interested in helping out in some way. If anyone has questions, concerns, comments, or brilliant statements about the club, the direction we are going, volunteering, or anything at all please feel free to contact me anytime!

Personally I have not observed much lately, but I'm itching to get to some darker skies again. We have at least a couple of members attending the Texas Star Party as I am writing this, and I'm a little jealous. Can't wait to hear how it went!

Wishing you all better weather and clear skies,

Lee Bickle



Treasurer's and Membership Report

By John Land

Astronomy Club of Tulsa 117 members, including 17 new members

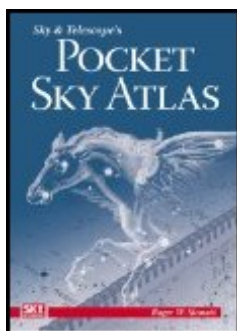
New members this month Ray Slovacek, Joe Eversole, James Ruffin, Cindy Cooper

Club Accounts May 07, 2013

Checking \$ 3,138.03 Savings \$ 7,012.27 Investment account \$ \$18,623.54 Value Fluctuates with Market



Coming Soon ! The Club will soon have the option of using your credit or debit cards to pay or renew memberships on line.



Pocket Sky Atlas by Sky & Telescope

On Amazon.com for \$ 15.85 regular \$ 20

*** Also Now on KINDLE at \$ 9.99**

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 per year includes Astronomical League Membership

Sr. Adult \$ 35 per year for those 65 or older, includes Astronomical League Membership

Students \$ 30 with League membership Students \$ 25 without League membership.

Additional Family membership \$ 20 with voting rights and League membership.

\$ 15 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 for 1 year or \$ 60 for 2 years. www.astronomy.com

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

Sky & Telescope is \$33 / yr www.skyandtelescope.com

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

Treasurer's and Membership Report, by John Land, Ct'd.

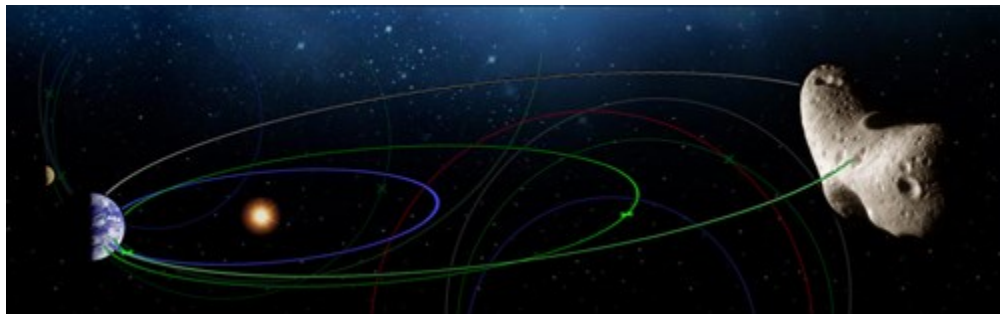
Note: You may renew your **Sky & Telescope subscription** **Directly Online** without having to mail in the subscriptions to the club. **NEW SUBSCRIPTIONS** must still be sent to the club treasurer.



Get your reservations in ASAP <http://www.msral2013.org/>

Amateur astronomers from Oklahoma, Kansas, Arkansas, Missouri and Nebraska gather each year to share stories, listen to great speakers and check out the astronomy vendors. The MidStates region is one of the most active in the nation.

The Omaha Astronomical Society is excited to host the 2013 convention of the Mid States Region of the Astronomical League. This years convention is being held May 17-18 at the Mahoney State Park, conveniently located between Omaha and Lincoln, Nebraska. Amateur astronomers from Oklahoma, Kansas, Arkansas, Missouri and Nebraska gather each year to share stories, listen to great speakers and check out the astronomy vendors.



Try your skills at launching a spacecraft to a sister planet or near earth asteroid. NASA has released to the public an online tool for calculating and animating such voyages.

<http://www.skyandtelescope.com/news/Mission-Planning-for-the-Public-200290401.html>

Designing missions to near-Earth objects (NEOs) just got a little easier. NASA's tool for preliminary mission planning is now publicly available as the [Trajectory Browser](#). The web-based utility draws from a database of pre-computed trajectories to plot your way from Earth to any planet or known NEO. All you have to do is enter your destination.



The Secretary's Stuff

By Tamara Green

ASTRONOMY CLUB OF TULSA – MINUTES – GEN. MEETING FRI APR 26, 2013

PRESENT:

Lee Bickle, President

Open – Vice President

Tamara Green, Secretary

Stan Davis, Board

Tony White, Board

Mandy Nothnagel, Board

NOT PRESENT:

John Land, Treasurer

Jody Ray-Fleetwood, Board

Michael Blaylock, Board

The meeting was held at Tulsa Community College, Northeast Campus. There were 23 attendees.

WELCOME AND INTRODUCTION: Lee called the meeting to order at 7:05 PM and welcomed all members and guests.

PROGRAM: Official Election of President, VP and vacant board/staff positions and Guest Speaker Sansonhi Boonyothayan, “Operation Doomsday 2012: Scientific Challenge to the Mayan Prophecy”, and “Operation Eratosthenes: Measure Earth With One Stick”

OFFICERS’/STAFF REPORTS:

PRESIDENT – Stan Davis has been nominated as VP, and James Taggart has been nominated to replace Chris Proctor as Board and Facilities Manager. Lee put himself on the ballot as well for President, just to make sure everything is done right. We have our PayPal account set up, and are waiting on webmaster Jennifer Jones to get it on our website. Mandy has pictures of the Messier Marathon to share this evening as well. Mandy is our new Group Coordinator.

VICE PRESIDENT- This position is open as of tonight.

SECRETARY – Tamara said that if anyone wants a copy of the minutes from the March meeting, or from any other meeting, to email her.

TREASURER – Not present, no report.

FUNDRAISING – This position is open as of tonight.

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

GROUPS – Mandy mentioned that there is a gentleman who is going to propose to his girlfriend at our observatory. She has other groups scheduled as well. Mandy then showed us pictures from the Messier Marathon. She also asked for volunteers to help with group events.

The Secretary's Stuff, Ct'd.

FACILITIES – Per Mandy, James will send his report out on the Yahoo groups, and has a list of things we need to have done.

PR/OUTREACH/SIDEWALK – Tamara told those who want to go out to Bass Pro to go out and she will plan on being there.

NIGHT SKY NETWORK – Teresa not present, no report.

ELECTION - Unanimously, Lee Bickle was officially elected President, Stan Davis as VP, and James Taggart as Board/Facilities Manager.

OTHER BUSINESS – Mandy came up with an itinerary for the public star parties (classroom presentation, constellation show, dome show, observing, etc.), so members and guests alike can know what to expect. Lee mentioned that Stan is vacating a board spot for the Vice Presidency, and we will have one open board spot. Club picnic is July 5 at the observatory.

Lee adjourned the meeting at 8:45PM.

So many galaxies.... so little time.

NITELOG - Norway INTErurban Local Observing Group , by Tom Hoffelder

FUN CONFERENCE: Planning very slightly beyond May, StarConn is scheduled for June 1st. This year the theme is Having Fun with Amateur Astronomy and I am scheduled to be the keynote speaker. (No, I don't know what they were thinking!) <http://www.asgh.org/starconn/StarConnSchedule.htm>

OBSERVING: For the Mainers, the Twitchell Observatory will be open on Monday the 6th at 8:30, weather permitting. Note that PanSTARRS will be in a one degree field of view with the planetary NGC 40 on that evening. Not as exciting as when it was near M31, but something of added interest.

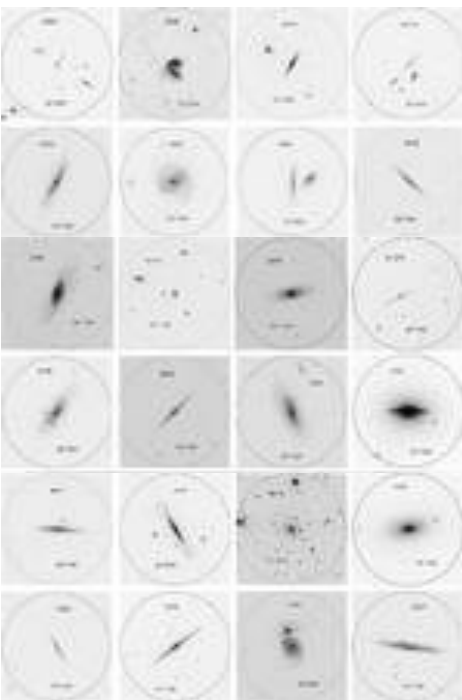


COMETS: PanSTARRS (the speck, not the spectacular) should be around 6th mag; attached chart is for its location on 5/6 thru 17 - the last day will find it less than ten degrees from Polaris. You will only need to know one star, gamma Cephei, to find the comet. According to some predictions, Comet Lemmon will also be 6th magnitude, a rather unusual situation having two comets that bright. The problem (for some of us) is that it is only visible before dawn; chart also attached. (All comet location info is for 8 PM EDT on the date noted.)



PLANETS: Jupiter sinks slowly in the west, while Venus does the opposite, but by the time they meet at the end of the month the pair sets at the end of nautical twilight. On the other side of the sky, Saturn is high enough for viewing by the end of nautical twilight on the 1st, and doesn't get too low for observing until around 4

AM. (Opposition was 4/28.) Rings are looking great; would be nice if it wasn't so far south, but you can't have everything. (Timing etc for planets is for Maine; if you are at more southern latitudes you need to check Heavens-Above for your location.) S&T has a good link for determining the location of the five bright moons, http://www.skyandtelescope.com/observing/objects/javascript/saturn_moons.

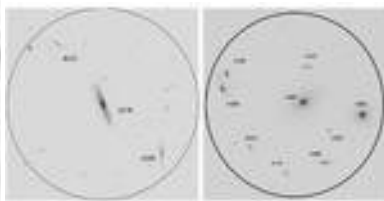


STARS: None! Too many fab galaxies to bother with stars!

THE GOOD STUFF: A nice planetary nebulae, two globulars (both M's, one way up on the list of knock-your-socks-off views) and a bunch of glorious galaxies, eight of them being Messier objects.

BEYOND THE GOOD STUFF: How far back in time will your telescope take you? If it shows 13th magnitude stars, the answer is 2.4 billion years, via quasar 3C 273. If you haven't checked it out, you should; if you have sometime in the past, check it out again! And try to imagine the age of those photons activating your optic nerve, photons about half the age of our solar system.

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.*

5/6						5/11					
SS	CTE	NTE	ATE	MR	SS	CTE	NTE	ATE	MS		
19:52	20:25	21:06	21:52	03:39	19:58	20:32	21:13	22:01	21:31		

Comet	RA ²	Dec ²	Star	N/S	E/W	N/S/day	E/W ¹	Mag ¹	Mag ²	Urano	Date*
PanSTARRS C2011 L4	00 00.3	+72 15	γ Cep	5.3 S	1.5 E	0.8 N	0.1 W	6	8	3	5/6
PanSTARRS C2011 L4	23 44.5	+76 14	γ Cep	1.5 S	0.3 E	0.8 N	0.2 W	6	8	3	5/11
Lemmon C2012 F6	00 19.2	+17 32	γ Peg	2.3 N	1.3 E	0.8 N	---	6	12	170	5/11

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

²from <http://www.minorplanetcenter.net/iau/Ephemerides/Comets/>

Object (Type)	RA	Dec	Star	N/S	E/W	Mag*(# of Stars)	Size (")/ Sep (")	Spect/ M# or H#	Dist (ly)	Urano l Page	Comment (optimum x)
NGC 3993* (Sb)	11 57.6	+25 14	93 Leo	5.0 N	2.2 E	[13.3]	1.6x0.4	---	240M	147	3987/89/97
NGC 4038* (SB)	12 01.9	-18 52	γ Crv	1.3 S	3.3 W	[12.1]	3.4x1.7	H28.1-4	45M	328	4039
NGC 4111* (SO)	12 07.0	+43 04	χ UMa	4.7 S	3.8 E	[12.3]	4.6x1.0	H195-1	50M	74	4109
NGC 4173* (Scd)	12 12.4	+29 12	γ Com	0.9 N	3.1 W	[13.9]	5.0x0.7	H372-2	30M	107	4169/74/75
NGC 4192* (SBb)	12 13.8	+14 54	β Leo	0.2 N	6.0 E	[13.5]	9.8x2.8	M98	60M	193	
NGC 4321* (SBbc)	12 22.9	+15 49	prv	1.0 N	2.2 E	[13.3]	7.5x6.1	M100	45M	193	4322/28
NGC 4302* (Sc)	12 21.7	+14 36	prv	1.3 S	0.2 W	[13.6]	5.3x1.0	H112-2	55M	193	4298
NGC 4216* (SBb)	12 15.9	+13 09	β Leo	1.5 S	6.7 E	[13.1]	8.1x1.8	H35-1	55M	193	4206/22
NGC 4244* (Sc)	12 17.5	+37 48	α CVn	0.5 S	7.8 W	[13.6]	17x2	H41-5	14M	108	
NGC 4258* (SBbc)	12 19.0	+47 18	χ UMa	0.4 S	5.8 E	[13.5]	18x7	M106	25M	74	4248

NGC 4273* (SBc)	12 19.9	+05 21	η Vir	6.0 N	-	[12.9]	2.3x1.5	H569-2	120M	238	4268/70/77/81
NGC 4274* (SBab)	12 19.8	+29 37	γ Com	1.4 N	1.6 W	[13.4]	6.8x2.4	H75-1	47M	108	
NGC 4361 (PN)	12 24.5	-18 47	δ Crv	2.3 S	1.2 W	10.9	2.1	H65-1	4300	328	
3C 273* (Q)	12 29.1	+02 03	η Vir	2.8 N	2.2 E	12.9	---	---	2.4B	238	
NGC 4517* (Sc)	12 32.8	+00 07	γ Vir	1.5 N	2.3 W	[13.3]	10x1.5	H5-4	43M	239	
NGC 4536 (SBbc)	12 34.4	+02 11	priv	2.1 N	0.5 E	[13.6]	7.6x3.2	H2-5	50M	239	(listed mag is 10.3)
NGC 4559* (SBc)	12 36.0	+27 58	γ Com	0.3 S	2.0 E	[13.6]	11x4	H92-1	25M	108	
NGC 4565* (Sb)	12 36.3	+25 59	γ Com	2.2 S	2.1 E	[13.2]	16x2	H24-5	40M	149	4562
NGC 4569* (SBab)	12 36.8	+13 10	ε Vir	2.3 N	6.3 W	[13.3]	9.5x4.4	M90	50M	194	
NGC 4406* (E3)	12 26.2	+12 57	priv	0.3 S	2.5 W	[13.3]	8.9x5.8	M86	50M	193	+ M84 + 7 NGC
NGC 4594* (Sa)	12 40.0	-11 37	δ Crv	4.8 N	2.4 E	[12.0]	8.6x4.2	M104	35M	284	
NGC 4631* (SBcd)	12 42.1	+32 33	α Cvn	5.8 S	2.9 W	[12.9]	15x3	H42-5	25M	108	4627
NGC 4762* (SB0)	12 52.9	+11 14	ε Vir	0.3 N	2.3 W	[12.9]	8.7x1.7	H75-2	50M	194	
NGC 4874* (E)	12 59.6	+27 58	β Com	0.2 N	2.8 W	[13.4]	1.9	---	250M	149	a bunch
NGC 5024 (GC)	13 12.9	+18 10	α Com	0.6 N	0.7 E	7.7	13	M53	65K	150	
NGC 5055* (Sbc)	13 15.8	+42 02	α Cvn	3.8 N	3.8 E	[13.2]	12x7	M63	35M	75	
NGC 5023* (Sc)	13 12.2	+44 02	priv	2.0 N	0.7 W	[13.6]	5.8x0.8	H664-2	25M	75	
NGC 5170* (Sc)	13 29.8	-17 58	α Vir	6.8 S	1.3 E	[13.5]	8.2x1.0	H22-5	100M	285	
NGC 5194* (Sbc)	13 29.9	+47 12	η UMa	2.1 S	3.0 W	[12.7]	11x7	M51	25M	76	5195
NGC 5272 (GC)	13 42.2	+28 23	β Com	0.5 N	6.8 E	6.3	18	M3	45K	109	

*DSS image
*[Surf Brtnss for GX's] - ni=shown but

mag per square arcmin
not identified

Report on the May Objects

By Tom Hoffelder

It was very clear last night and the Red Sox were losing, so I gave up on them around 10 and took the 8-inch scope out to find out how many of the May objects I could see in it. The answer is 25 and 1/2 out of the 30. There wasn't any question about most of them, but I wanted to try all anyway. The ones I couldn't see were 3993, 4173 and 4874; I didn't try for the quasar since I forgot to print out the photo. The 1/2 is 5170 as it may have been averted imagination. Interestingly four of the non-Messier galaxies (4216, 4244, 4565 and 4631) were better than most of the M galaxies (except M106 and 51), but most of you know that.



A few things noted that didn't make the comments section on the spreadsheet: 4527 is 1/2 deg N of 4536 and the two appear similar at low power in an 8; 4245 and 4278 are 1/2 deg W and 1/3 deg S of 4274; 4656 is 1/2 deg SE of 4631; and 4762 w/4754 is a nice view. (No, it didn't look "exactly" like that in the 8!)

After the one PN, two GC's and the galaxies, I checked PanSTARRS around 12:30. The good news is that it was easier to see than all the deep sky objects except for M3. I mean it's good news if you haven't seen it yet but want to add it to your list of observed comets.

Tom

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"Time is the coin of your life. It is the only coin you have, and only you can determine how it will be spent. Be careful lest you let other people spend it for you." ~ Carl Sandburg



the Space Place

May – June 2013 / Vol. 6, Issue 3

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.

More and more of our readers are using mobile devices. For that reason, we have recently optimized the design of The Space Place to work well on even a mobile phone screen. You will see only what fits comfortably (at a readable size) on even the smallest screen, with the rest of the page accessible at your touch. Here's what else we've been doing . . .

What's new?

Why would a pigeon racer phone the Space Weather Prediction Center In Boulder, Colorado, for a report before entering a prized pigeon into a big race?



It's surprising how many ways the Sun affects Earth and its living things. Solar storms can cause "bad space weather" on Earth. Bad space weather can damage communication and navigation satellites, power grids, and hurt astronauts on the Space Station. But that's not all. Read this new article on The Space Place to find out why homing pigeons and their human handlers might care about space weather. Go to spaceplace.nasa.gov/pigeons.

Un rescate en español



We have all heard stories in which it took many days and a lot of trouble and expense to rescue or find people who were lost in the wilderness or at sea. Sometimes, the rescue comes too late. Here's a story with a much happier ending, thanks to advance planning and the help of a well-designed and managed system involving weather satellites and a ground support system. This new feature on Space Place is in both English and Spanish, with Spanish perhaps being the story's original form. Go to spaceplace.nasa.gov/sarsat/sp.

Spotlight on a dream career

A Mars mission is good example to show how different scientists and engineers can be. The engineers build and operate the spacecraft, and the scientists determine what information the it will gather once it is on the ground or in orbit. Engineers and scientists have different priorities. So there is a special kind of engineer who designs and sets up tools that allow these two types of people to work smoothly together. That's

the job of our latest Mission Chronicles blogger. Sarah Milkovich gives a unique view of how a diverse mission operations and science team can work together even though they are spread all around the country. Check it out at spaceplace.nasa.gov/mission-chronicles/#milkovich.



For the classroom



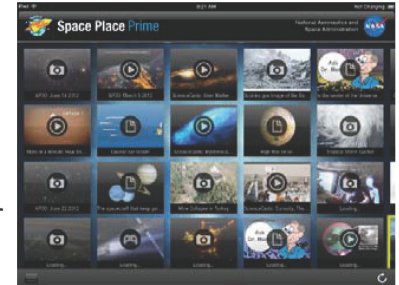
No matter what kind of science lesson or activity you are doing with your class, the most important lesson is how to think like a scientist. Science isn't just a bunch of facts. And although there is a formal process known as the scientific method, it is not always necessary to follow it in order to "do science." So what is science? That is the weighty topic, dealt with lightly at spaceplace.nasa.gov/science. Along with this discussion is an introduction to doing a science fair project, spaceplace.nasa.gov/science-fair. Although it may be a bit late in the year to think about science fairs, such projects can also be encouraged just to satisfy students' ordinary curiosity—or, if that isn't enough—for extra credit!

For out-of-school time

A menu full of games will entertain kids all summer, while sneaking in a few informal science and technology lessons—but don't let them know about this latter advantage! See them all in one place at spaceplace.nasa.gov/menu/play.

Also, don't forget about our mobile apps over the summer. Space Place Prime updates daily with new images, videos and articles from The Space Place.

Games "Satellite Insight" and "Comet Quest" are also fun challenges. Find out more at spaceplace.nasa.gov/ios. (Sorry, so far they are only for iPhone and iPad.)



Make these days special

May 3: National Space Day.

Pick a beautiful space poster to download and print for the classroom at spaceplace.nasa.gov/posters/#stars.

May 7: National Teacher Day.

The students should be celebrating you today. On other days, our resources for Parents & Educators should help. Visit spaceplace.nasa.gov/menu/parents-and-educators.

May 12: Mother's Day.

Our tortilla spacecraft contest continues to inspire young engineers. Students can make Mom a spacecraft for lunch today, getting ideas from spaceplace.nasa.gov/tortilla-spacecraft.

June 8: World Oceans Day.

Pick from a diverse set of ocean-related pages and activities at spaceplace.nasa.gov/search/ocean.

June 16: Father's Day.

Any dad would love a Cloud Mobile or a Galactic Mobile. Check them out at spaceplace.nasa.gov/cloud-mobile or spaceplace.nasa.gov/galactic-mobile.

June 21: Summer Solstice, first day of summer.

There's a simple explanation of why we have seasons at spaceplace.nasa.gov/seasons.

We love feedback

Thanks to the many of you who have written to info@spaceplace.nasa.gov to tell us how you use our website in your teaching and informal work with kids. We are happy to be able to bring you this valuable resource to enhance and supplement your curriculum.





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, May 17 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!

CLUB OFFICERS

PRESIDENT	LEE BICKLE 918-872-8744
VICE PRESIDENT	STAN DAVIS 918-294-3196
SECRETARY	TAMARA GREEN 918-851-1213
TREASURER	JOHN LAND 918-695-3195

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OBSERVING CO-CHAIRS	OWEN & TAMARA GREEN 918-851-1213
GROUP DIRECTOR	MANDY NOTHNAGEL 918-269-4112
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NIGHT SKY NETWORK	TERESA DAVIS 918-637-1477
WEBMASTER	JENNIFER JONES 918-629-8732
FUNDRAISING CHAIR	OPEN

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.

