



Astronomy Club of Tulsa

Observer



February 2009

Picture of the Month



IC1805 and IC1848 - The Heart and Soul Nebulae

In honor of Valentine's Day, from the Digital Sky Survey... the Heart (right side) and Soul (left) Nebulae in the constellation Cassiopeia approximately 6,000 light years from our solar system toward the outer rim of our Milky Way Galaxy. *Credit & Copyright – DSS image. © CalTech/Palomar (Image size: 5.3°x4.3°)*

<i>Inside This Issue:</i>		<i>Important ACT Upcoming Dates:</i>
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IYoA ----- pp 6 - 7	2008 Treasurer's Report – p13	Members Only Star Party ... Fri. February 27, 2009

President’s Message by Tony White

Greetings again! I hope that every one of you is not too seriously affected by this latest round of weather. Weeks like this makes one seriously wonder about global warming. It’s globally cold around here!

I am very encouraged by the response from club members in support of the International Year of Astronomy. Although I was not able to attend either night of the event at Bass Pro Shops in January, I have heard excellent reports. I hope that these events not only allow us to make our hobby accessible to the public, but generate interest and attract new members as well. I hope that everyone in the club who is able to help with one of these events does so at least once. The events at Bass Pro are just some of the events we will do this year, and there are many more opportunities out there for us! And don’t forget about the 100 Hours of Astronomy coming in April... that will be the biggest weekend for IYoA worldwide, and we want to play our part in that.

I also hope that each of you is finding the Astronomy 101 segments of the meeting useful – especially the newer members. This month’s segment will be on telescope mountings, and I’m sure it will answer a lot of questions some of us have about our mounts.

The Board did hold a meeting this past Saturday, and we have several important announcements to make as a result of the business that we discussed. There are some changes that we need to make in light of some recent events. There are some opportunities for service and assistance that we will discuss. There are also some cool opportunities that we want to make available to our members as well. (See, we’re not all about work!)

I’ll look forward to seeing all of you at the meeting. And don’t forget to join us afterwards at Hideaway Pizza on Cherry Street for dinner and conversation.

Tony

February 2009

Tulsa, Oklahoma

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise: 7:25am Sunset: 5:50pm Moonrise: 10:23am Moonset: none	2 Sunrise: 7:24am Sunset: 5:51pm Moonrise: 10:57am Moonset: 12:31am First Qtr: 5:14pm	3 Sunrise: 7:23am Sunset: 5:52pm Moonrise: 11:39am Moonset: 1:41am	4 Sunrise: 7:22am Sunset: 5:53pm Moonrise: 12:30pm Moonset: 2:51am	5 SIDEWALK HARDESTY 7-9 PM Sunrise: 7:21am Sunset: 5:54pm Moonrise: 1:31pm Moonset: 3:59am	6 SIDEWALK BASS PRO 7-10 PM Sunrise: 7:20am Sunset: 5:55pm Moonrise: 2:41pm Moonset: 5:00am	7 SIDEWALK BASS PRO 7-10 PM Sunrise: 7:19am Sunset: 5:56pm Moonrise: 3:56pm Moonset: 5:53am
8 Sunrise: 7:18am Sunset: 5:57pm Moonrise: 5:12pm Moonset: 6:37am	9 Sunrise: 7:17am Sunset: 5:58pm Moonrise: 6:26pm Moonset: 7:14am Full Moon: 8:50am	10 Sunrise: 7:16am Sunset: 5:59pm Moonrise: 7:36pm Moonset: 7:46am	11 Sunrise: 7:15am Sunset: 6:00pm Moonrise: 8:44pm Moonset: 8:15am	12 Sunrise: 7:14am Sunset: 6:01pm Moonrise: 9:50pm Moonset: 8:43am	13 ACT MEETING Sunrise: 7:13am Sunset: 6:02pm Moonrise: 10:54pm Moonset: 9:10am	14 OBSERVATORY WORK DAY Sunrise: 7:12am Sunset: 6:03pm Moonrise: 11:57pm Moonset: 9:40am
15 Sunrise: 7:11am Sunset: 6:04pm Moonrise: none Moonset: 10:12am	16 Sunrise: 7:10am Sunset: 6:05pm Moonrise: 12:59am Moonset: 10:49am Last Qtr: 3:38pm	17 Sunrise: 7:09am Sunset: 6:06pm Moonrise: 1:58am Moonset: 11:31am	18 Sunrise: 7:08am Sunset: 6:07pm Moonrise: 2:54am Moonset: 12:18pm	19 Sunrise: 7:07am Sunset: 6:08pm Moonrise: 3:45am Moonset: 1:11pm	20 RMCC PUBLIC Sunrise: 7:05am Sunset: 6:09pm Moonrise: 4:30am Moonset: 2:08pm	21 Sunrise: 7:04am Sunset: 6:10pm Moonrise: 5:09am Moonset: 3:07pm
22 Sunrise: 7:03am Sunset: 6:11pm Moonrise: 5:43am Moonset: 4:08pm	23 Sunrise: 7:02am Sunset: 6:12pm Moonrise: 6:13am Moonset: 5:08pm	24 Sunrise: 7:01am Sunset: 6:13pm Moonrise: 6:40am Moonset: 6:09pm New Moon: 7:36pm	25 Sunrise: 6:59am Sunset: 6:14pm Moonrise: 7:06am Moonset: 7:11pm	26 Sunrise: 6:58am Sunset: 6:15pm Moonrise: 7:31am Moonset: 8:13pm	27 MEMBERS Sunrise: 6:57am Sunset: 6:16pm Moonrise: 7:58am Moonset: 9:17pm	28 Sunrise: 6:55am Sunset: 6:17pm Moonrise: 8:27am Moonset: 10:23pm

ACT Word Search Puzzle by Peggy & Rick Walker

U.S. Male Astronomers Part 2

Astronomy Club of Tulsa

Puzzle 2 of a 2 puzzle set listing Male Astronomers from the United States

E H O B S O N A S I T I L A H C I M S A E R D N A W G E C S E G L T
 H N G E G E U A D N S A E L G A H O G N U O Y S E L R A H C L E E N
 E L E E E R N N M E E M B A I C S A G L B B E W I L L I A M B O N D
 L K R W U R O E A D E D B K E B E Y R S C E L G N I D T R E B R E H
 C E A Y O D H T B I E A W Y R H B A N L D R A O A A T T L E M G R B
 G E N R C B R C E L E I I I D P H S N I E T S N E E R G E S S E J B
 Y E D O D H A O E R L F R A N K S C H L E S I N G E R D S B E P O O
 K E O Y S K A R F L E A U F E C T R C I E H S R I E E H B T R E H N
 Y I S R M L N R I T G B E J T R O O O B C A R L H E I L E S A T N P
 K R P P G B I A D I I C E B T R O D M G H R O O A L S R N I E E A S
 E J W T O E M W R B R H O R I N E B D N Y R L D N U R I N M S R N A
 N E O H H B S T T F O B W E P L R B E I L I E O E E G C E O D S D A
 Y X N E R O S M R R B U L T D D R E R R N N F N R B R H T N E A E U
 H G S O L S R U O Y E O W N R H I R E E T G A R M L R A T N R A R L
 F E O R I S C N B O R B L E A E L E G K H T T C E E U R R E F S S F
 E K A U Y S T U E S T E O P N G B G A C O O R O H T S D E W R B O N
 S L O J R E S E A O M R K R Y S E L O I S N K U N A S T F C E S N L
 O L N I A J C E B E C T S A A N N P A P L O A G M L E O Y O K A R D
 J I A A N M R H N B M S T C M G B L G D O E M H N P L U E M R I L S
 Y R Y J G L E O A U I L A N R E G E O R G E A B E L L S S B A L I E
 L R A S G U A S L R L N M I K C O C B A B E C A R O H E L E P S C N
 M E R H X A D E V Y L J S W C R N H R W E T R O H A U Y R A E A A B
 E M E R T O H Y N A A E B D G N S A S D E E E A R E L O A H N S R E
 Y L L N R I F D A M N T S E S A W W M E Y E S I R N S A C O E B L N
 K U U E C L M P E R C A H A H A B R I A N M A R S D E N S I G N W B
 S A J D L C R S I M U I L P D J O H N W H E E L E R O L A R U W I A
 N P O L H E B S D L L C E L E A H I E W N U G A L R S N L W E G R N
 A A E A E U L U A L I S N R E S M T A D T I L U I I M O E M N O T N
 J E E D L Y R D E G O H P E R N O S U G R E F S E M A J I I A S A E
 L A A L E B E E Y J N G P S L E F J B G G R E B D L O G O E L Y N K
 R A O O E L U R H O Y E L G N A L M A S N H O R A C E T U T T L E E
 A C I R M L N H E B E R C U R T I S O L E A J A M E S W A T S O N R
 K O J A M E S K E E L E R N A G A S L R A C L C O A S C E O R R L H
 S T N H H P R A D E L L A H H P A S A H C L H A E D O A R C A R E E
 A E A S B E E E M B L B W H D M J R B E E K D B G E E R A T L R E M

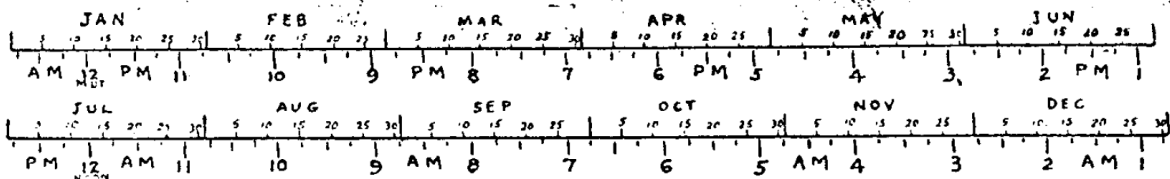
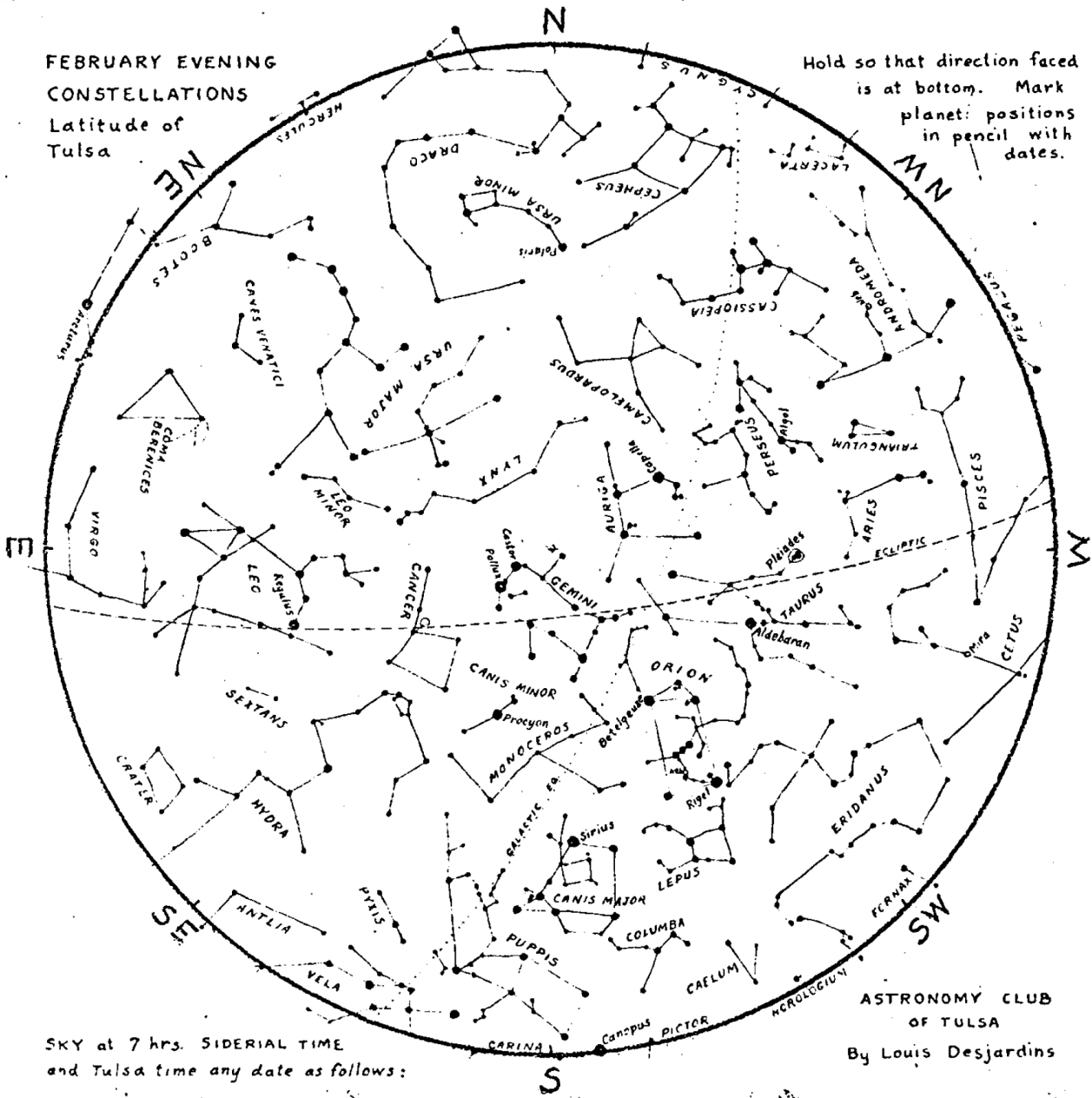
GeorgeAbell
 JohnAnderson
 CharlesBennett
 WilliamBrooks
 EdwinCoddington
 RayDugan
 HerbertFriedman
 JesseGreenstein
 CarlHeiles
 KarlJansky
 CornellMayer
 SimonNewcomb
 EdwardPickering
 FrankSchlesinger
 CharlesSlaughter
 KipThorne
 JamesVanAllen
 RobertWilson

CharlesAdams
 JosephAshbrook
 WilliamBond
 JamesBullock
 HeberCurtis
 OlinEggen
 HenryGiclas
 AlanGuth
 GeorgeHill
 JamesKeeler
 RobertMcMillan
 GerardONeill
 MaynardPittendreigh
 FredSeares
 GeorgeSmoot
 RichardTousey
 JamesWatson
 CarlWirtanen

SaulAdelman
 HoraceBabcock
 RychardBouwens
 BobbyBus
 HerbertDingle
 JamesFerguson
 LeoGoldberg
 AsaphHall
 RussellHulse
 SamLangley
 PaulMerrill
 EugeneParker
 GroteReber
 CarlSeyfert
 JoelStebbins
 RobertTrumpler
 JohnWheeler
 CharlesYoung

HaroldAlden
 BenBanneker
 IraBowen
 EdwinCarpenter
 FrankDrake
 PhilipFox
 PaulGoldsmith
 RobertSHarrington
 JosefHynek
 BrianMarsden
 AndreasMichalitanos
 GeorgePeters
 CarlSagan
 EugeneShoemaker
 JosephTaylorJr
 HoraceTuttle
 AlbertWhitford
 LouisStrigari

(Answers next month in ACT March, 2009 Newsletter / Answers to January Puzzle on page 6)



First Quarter – 02/02/09 – 17:13 CST	February 13 th – Mercury Greatest West Elongation (Morning)
Full Moon – 02/09/09 – 08:49 CST	February 19 th – Venus Greatest Brilliancy Mag -4.8 (Evening)
Last Quarter – 02/16/09 – 15:37 CST	February 22 nd – Moon/Mercury/Jupiter/Mars low ESE before sunrise
New Moon – 02/24/09 – 19:35 CST	February 25 th – Asteroid Ceres at Opposition

INTERNATIONAL YEAR OF ASTRONOMY 2009

to be held at the
**Sam Noble
University of Oklahoma
Museum of Natural History**

Cost! **FREE, FREE, FREE!**

Times: Public Lecture: 7 - 8pm, with telescopes set up outdoors for public viewing afterwards (weather permitting)

Location: 2401 Chautauqua Avenue, Norman, Okla.

Topics

Jan. 21, 2009

The Works of Galileo, From Telescope to Trial Dr. Kerry Magruder, History of Science, OU

Feb. 5, 2009

GLOBE at Night Dr. Constance Walker, NOAA

March 5, 2009

Suited for Space Lindsay Aitchison, NASA-JSFC

April 2, 2009

Water on Mars: An Environment for Life? Dr. Megan Elwood-Madden, Geology, OU

May 7, 2009

Black Holes! Dr. Karen Leighly, Physics, OU

June 4, 2009

Einstein's Time Dr. Bruce Twarog, Physics, KU

July 2, 2009

Basics of Visual Astronomical Observing Nick Lazzaro, Odyssey Astronomy Club

August 6, 2009

Lunar Eclipses Jeff Thibodeau, Oklahoma City Astronomy Club

Sep. 3, 2009

Measuring the Universe with Supernovae Dr. Eddie Baron, Physics, OU

Oct. 1, 2009

What's New in the Neighborhood: A Solar System Update Dr. Susan Postawko, Meteorology, OU

Nov. 5, 2009

The Age of the Milky Way Dr. John Cowan, Physics, OU

Dec. 3, 2009

The Dark Side of the Universe Dr. Yun Wang, Physics, OU

Sponsored by:

The University of Oklahoma's Homer L. Dodge Department of Physics and Astronomy,
The Sam Noble Oklahoma Museum of Natural History, Norman Public Schools,
Oklahoma City Astronomy Club, Odyssey Astronomy Club,
Ten Acre Observatory, Astrohomics, and R. A. Graphix.



INTERNATIONAL YEAR OF
ASTRONOMY 2009



THE UNIVERSE : YOURS TO DISCOVER

These events are free and open to the public.

The University of Oklahoma is an equal opportunity institution. Accommodations on the basis of disability are available by contacting Dr. Richard Henry as soon as possible at 405-325-3961 Ext. 36225

For a complete schedule, Please visit our web site: <http://www.nhn.ou.edu/iya09>

Sidewalk Astronomy – Bass Pro Style

INTERNATIONAL YEAR OF ASTRONOMY 2009



Friday, January 16th was the first side walk endeavor at the Bass Pro Shop in Broken Arrow. Astronomy Club members came with telescopes and binoculars and were bundled to the point of almost being unrecognizable. Although it felt like the observing was taking place at the North Pole, the atmosphere was charged with excitement.

The Greens, The Walkers, Steve Chapman, Rod Gallagher, Dennis Karcher, Bob McCallum was handing out the drawing tickets, Jerry Mullennix, Jerry Koenig John Land, and Tom McDonough were all in place and ready for passers by.

An elementary school teacher from Haskell Middle School got the email from Landon Holcomb that was sent through the school system. Her son and she engaged the astronomers in lengthy conversations and lots of observing. They even went inside to warm up and returned later. One by one, folks going to dinner came through and took a peek at Orion's sword. When club members went inside to warm up, get coffee or use the facilities, it did strike a few conversations with the customers and Bass Pro employees.

The event on Friday was successful in the eyes of the club since we knew that the weather was a major deterrent for non-astronomers. Eighteen people filled out forms and dropped them into the buckets. The members had commented on how they have missed hosting these type events and also committed to be at Bass Pro one night each month.

On Saturday, we had a different mix, the Greens, Rick Walker, Dennis Karcher, Ann Bruun, Dewey Smith, John Land, Judy & Bob Leiser, Landon Holcomb, Bob Boston, Chris Pagan and Stan Davis. Saturday night had more people our since it was eight to ten degrees warmer than Friday night. Mr. Holcomb had several of his students in attendance and Pious the X's, Cathie Kinnaman who attended the A.C.T. meeting last January 9th, came with her son. In fact a former club member came to go to dinner and stopped and talked for a few minutes and informed the members, that he would be coming back to the club on a regular basis.

There was an informal race to find Andromeda since the parking lot lights really made it difficult to spot anything. As the astronomers were asking each other and were all behind scopes or binoculars the race was on until... a student asked John Land and he came over to the Walker's 15 x 70 Binoculars and popped right on it. All the astronomers let out an "aahhhh!" of disappointment. John had no idea that there was such fervor in finding Andromeda.



The crowd filled out the drawing cards and almost all 30 cards, were marked wanting more information on other events, public star parties, and astronomy classes. So the club will send them the information they requested and they will be kept abreast of our activities. Hopefully, we will see them at future meetings.

Thank you to all of you dedicated astronomers we'll see you at Bass Pro next month.

Our remaining schedule for the Broken Arrow Bass Pro Shops is as follows:

Jan 15-16	Feb 6-7	Mar 6-7
Apr 2	May 1-2	Jun 26-27
Jul 24-25	Aug 28-29	Sep 25
Oct 30-31	Nov – none/Holidays	Dec – none/Holidays

Note – these dates revised to better coincide with first quarter moon

February 2009 Events at the Planetarium



The Tulsa Air and Space Museum & Planetarium (TASM) will be hosting its second annual Romance under the Stars event on Saturday February 14th from 7:00 pm – 10:00 pm. Once again we will take a look at the more colorful side of the Greek sky myths as they relate to love, romance and seduction. The evening starts off with dinner and drinks before moving into the planetarium for this special presentation. Following the presentation guests can stay awhile to dance under the stars in the planetarium. Tickets for the event are \$140 per couple for

seating in the planetarium lobby or \$165 per couple for dinner under the stars. Reservations are required and can be made by contacting Chris Pagan at (918) 834-9900 ext. 401.

Also TASM will celebrate the International Year of Astronomy on Thursday, February 26th by unveiling new breathtaking mural-sized images of the well-known spiral galaxy Messier 101 from all three of NASA's Great Observatories: the Hubble Space Telescope, Spitzer Space Telescope, and Chandra X-ray Observatory.

One 6-foot-by-3-foot image shows three striking full-color images that showcase the galaxy's features in the infrared light observed by Spitzer, the visible light observed by Hubble, and the X-ray light observed by Chandra. These multi-wavelength views provide both stunning beauty and a wealth of scientific information not even dreamed of by Galileo. Another 3-foot-by-3-foot image of Messier 101 combines the views from all three telescopes into an amazing composite. It's like seeing with your eyes, night vision goggles, and X-ray vision all at once!

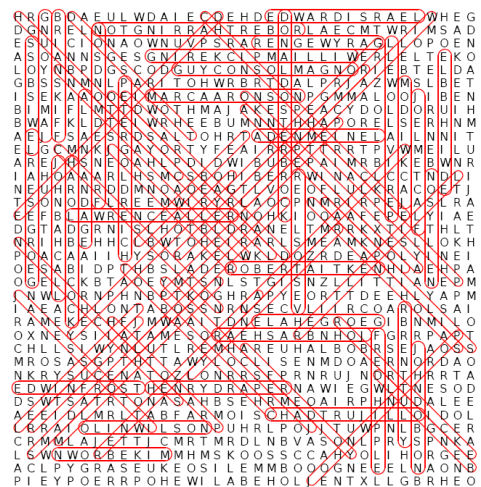
TASM was one of 118 sites around the country to receive these images and the only institute in Oklahoma. The event is from 5:00 pm to 7:00 pm with various activities throughout the evening.

For more information:

<http://www.tulsaairandspacemuseum.com/planetarium.asp>

U.S. Male Astronomers Part 1 Astronomy Club of Tulsa

Puzzle 1 of a 2 puzzle set listing Male Astronomers from the United States



Answers for January 2009 Word Search

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

Designation	Name	Code	Range	Est Max Date
1327-06	S Vir		<7.0-12.7>	Feb 4
1214-18	R Crv		<7.5-13.8>	Feb 7
1632+66	R Dra		<7.6-12.4>	Feb 12
1647+15	S Her		<7.6-12.6>	Feb 14
0549+20A	U Ori		<6.3-12.0>	Feb 15
1951-42	RU Sgr	@	<7.2-12.8>	Feb 16
2307+59	V Cas		<7.9-12.2>	Feb 23
1621-12	V Oph		<7.5-10.2>	Feb 27
0515-33	T Col		<7.5-11.9>	Feb 28

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

Broken Arrow - Bass Pro – Sidewalk Astronomy Pictures
(January 16+17, 2009)



Finally, our long awaited and greatly anticipated first Sidewalk event for 2009. The Bass Pro Shop of Broken Arrow will be our featured monthly site for the International Year of Astronomy.



In spite of the cold, guests gather around the many scopes provided by the members of the Astronomy Club of Tulsa.



A curious young lady is introduced to the sight of Venus' phases in the telescope – repeating Galileo's observations of 400 years ago.



In the midst of visitors, several of our chilly ACT members, enjoy a moment around a scope and graciously posed for a quick picture.



After taking a peak for himself, a father lifts his young daughter to give her an opportunity to view the cosmos for herself on Friday night.



No matter where the telescopes were located, curious visitors went scope, to scope to see a variety of sights in the night sky.

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.

February 2009 Observing List

	Caldwell	Deep Sky Binocular	Double Star	Messier	Herschel-1
1	C58 (NGC2360) *	NGC2281 *	12 Lyncis	M41	NGC2281 *
2	C64 (NGC2362) *	NGC2301 *	Epsilon Canis Majoris	M46	NGC2286
3	C39 (NGC2392) *	NGC2343 *	Delta Geminorum	M47 (NGC2422) *	NGC2301 *
4	C07 (NGC2403) *	NGC2360 *	19 Lyncis	M48 (NGC2548) *	NGC2304
5	C25(NGC2419) *	NGC2403 *	Alpha Geminorum	M50	NGC2311
6	C71 (NGC2477)	NGC2527	Kappa Puppis	M93	NGC2324
7	C54 (NGC2506) *	NGC2539 *	Zeta Cancri		NGC2335
8		NGC2571 *			NGC2343 *
9					NGC2353
10					NGC2354
11					NGC2355
12					NGC2360 *
13					NGC2362 *
14					NGC2371
15					NGC2372
16					NGC2392 *
17					NGC2395
18					NGC2403 *
19					NGC2419 *
20					NGC2420
21					NGC2421
22					NGC2422 (M47) *
23					NGC2423
24					NGC2438
25					NGC2440
26					NGC2479
27					NGC2482
28					NGC2489
29					NGC2506 *
30					NGC2509
31					NGC2520
32					NGC2539 *
33					NGC2548 (M48) *
34					NGC2567
35					NGC2571 *
36					NGC2613
					* - Multiple entries

Details of this list are located in a folder in the AstroTulsa Yahoo group's files section, "ACT Observing Lists." The list contains too many objects to "observe" in one evening but we plan to recognize anyone who observes 20 or more of these objects. The reason that there are so many objects is to give the observer a variety of objects that can also be used for Astronomical League (AL) Observing Clubs. For more information on the Astronomical League and the observing clubs, check it out on the web at: <http://www.astroleague.org/observing.html>. All of the objects cross the meridian between 9PM and 11PM. For this month, the list contains 7 double stars (AL Double Star Club), 6 Messier objects (AL Binocular Messier & AL Messier Clubs), 8 deep sky objects (AL Deep Sky Binocular Club), 7 Caldwell objects (AL Caldwell Club) and 36 Herschel objects (AL Herschel-1 Club). Several of the Herschel objects are also on the AL Deep Sky Binocular and Caldwell lists, so observing any of these with binoculars is the same as multiple observations.

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

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

February 2009

Moon Schmoon!

Ann Bruun – ACT Observing Chairperson

I recently discovered the most fascinating astronomical object. It is easy to find, even in the city, does not require a large scope and is constantly changing. Yes, it's the Moon! Before you say moon schmoon and stop reading let me say I used to feel the same way. I started the Astronomical League's Lunar List over a year ago thinking it would be easy and not very exciting. The first thing I noticed was that it was not easy. I would get confused about where I was looking, which Mare was which; stuff I thought should be simple. The moon had a way of looking nothing like the fancy Sky and Telescope Moon map I was using. I made a few observations but it was just a struggle and I was not enjoying myself. Come on, I had navigated the Virgo cluster how could the moon be so hard.

At Okie Tex I talked to an amateur astronomer from Houston and he had the same feelings about the Lunar List that I had. That forced me to rethink my approach to the moon. Maybe it wasn't supposed to be easy and require no effort. I decided to use the same system to learn the moon that I had used for the constellations – start with just one item I could identify. For me that item is Mare Crisium, a big round, very noticeable dark patch on the moon. From there I can always get oriented. As I started to learn my way around I discovered other objects I can use as makers when Mare Crisium is in the shadow. It is just like star hopping only you are moon hopping.



Courtesy Rod Gallagher

Now that I can find my way around I can really appreciate how much the view changes from night to night. A crater that looks very dramatic one night might be nearly indistinguishable the next night. Also the more you look the more you will see which adds to the excitement. With the international Year of Astronomy here we will all be doing a lot more lunar observing at the sidewalk astronomy events so it is a good time to discover or rediscover the moon. If you are still not convinced the moon is worth a look just do one thing – find the Messier-Messier A craters with the double rays coming off of them. This is one of the coolest things I have ever seen through a telescope and my whole attitude towards the moon changed after I saw it. Take a look and tell me what you think.



Courtesy Rod Gallagher

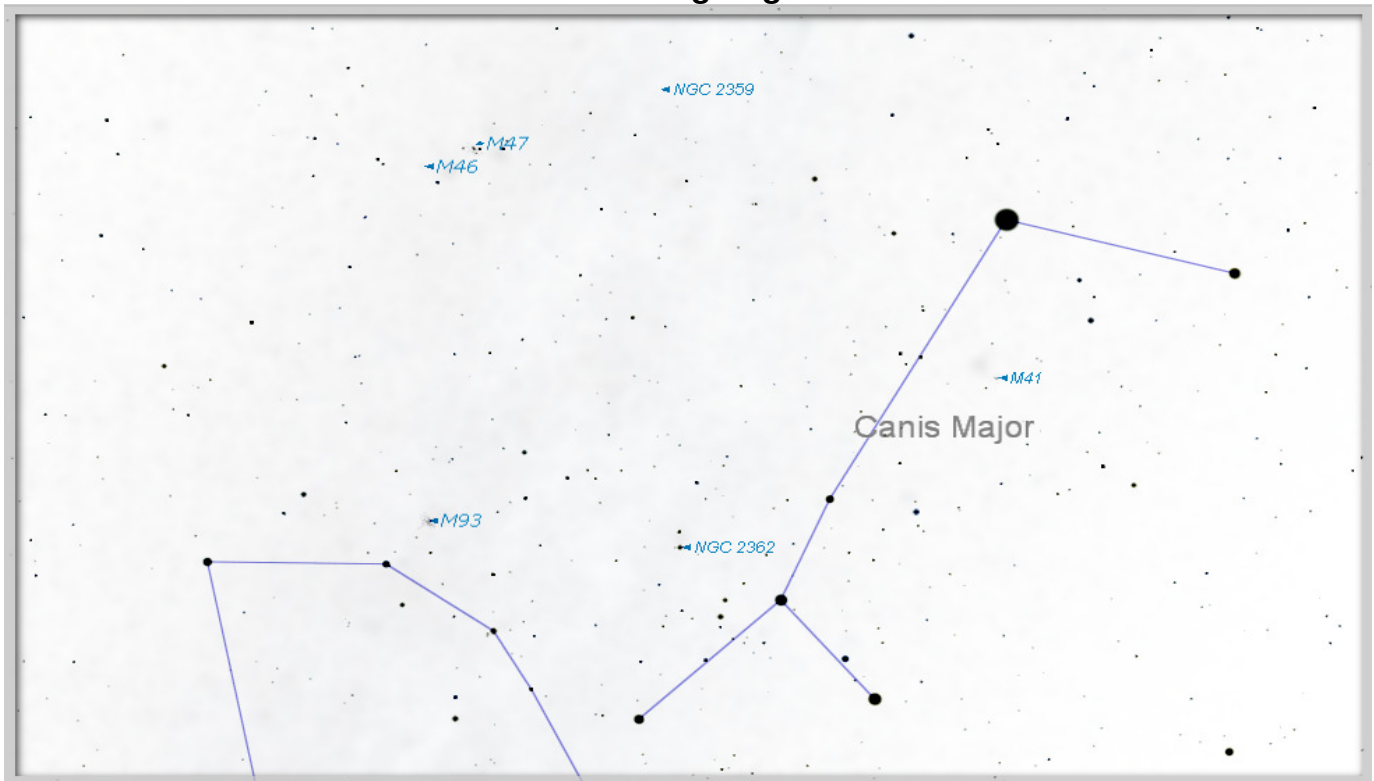
Check-out these AL Lunar Clubs & Pins

<http://www.astroleague.org/al/obsclubs/lunar/lunar1.html>



<http://www.astroleague.org/al/obsclubs/lunarII/lunarIII.html>

The Big Dog



M41 – (Open Cluster) The heart of the dog. A very bright open cluster, to the right of the line that runs between Sirius and Delta Canis Major. This one can be seen with binoculars in the city on a good night.

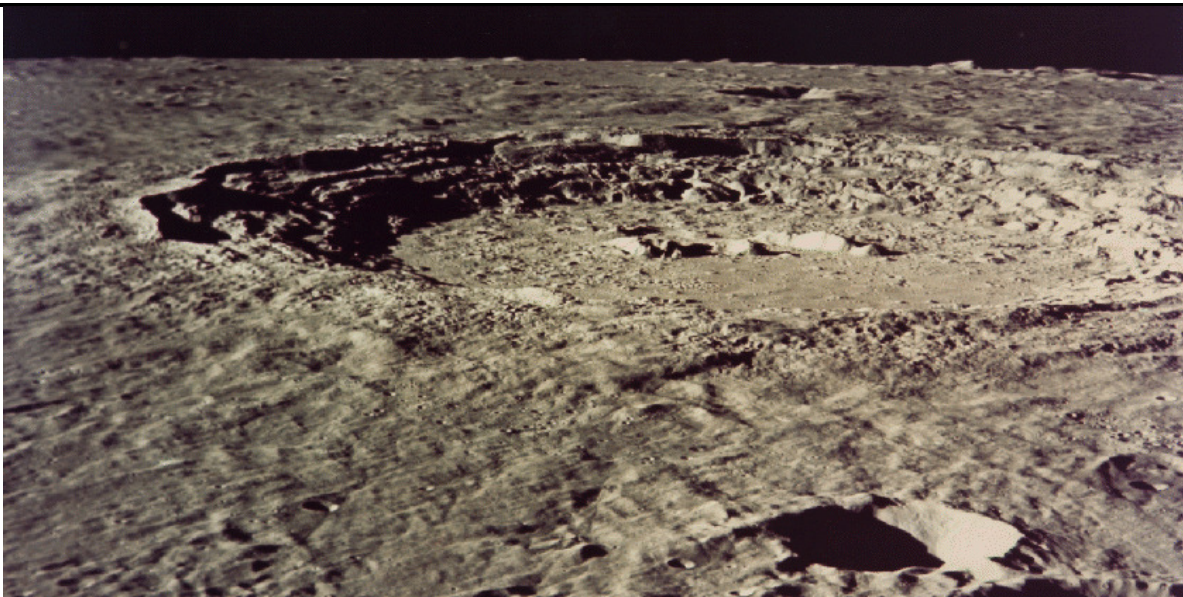
NGC 2359 – (Emission Nebula) Follow the line from Beta to Sirius on out, not quite doubling the distance. The nebula will be just above the line. Use a narrow band or OIII filter to really bring it out. Some people have nicknamed it Thor's Helmet because it is dome shaped. Others think it looks like a duck, quack!

M47 & M46 – (Open Clusters) Follow that same line from Beta to Sirius and more than double the distance. Just below the line is M47, a large bright cluster. To the left and a little down is M46 which is fainter and has finer stars. It also has a planetary nebula which will look like a fuzzy star at low power.

NGC 2362 – (Open Cluster) Above the dog's hind legs you will find Tau Canis Major. Surrounding Tau is a tight cluster of stars. This is also Caldwell 64.

M93 – (Open Cluster) Up and to the right of Xi Puppis. The cluster forms a wedge shape with gaps in the center.

Ann Bruun – January 2009



The Crater "Copernicus" from lunar orbit

Credit – Apollo 17 Lunar Mission Crew / NASA (1972)

February 2009

Land's Tidbits – by John Land

Our membership rates for 2008 – 2009 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"

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

Note: You may renew your Sky & Telescope subscription directly with out 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.

2009 Mulberry Mountain / AOAS Star Party

The Arkansas/Oklahoma Astronomy Society is proud to announce their second annual 2009 Mulberry Mountain / AOAS Star Party, to be held on June 19th & 20th, 2009. <http://www.aoas.org/>

Once again, this year's event will take place at Mulberry Mountain Lodging & Events, which is a 650-acre facility located 16 miles north of Interstate 40, on Arkansas Hwy 23, near the city of Ozark, Arkansas. Highway 23 is otherwise known as the Pig Trail Scenic Byway. The facility boasts some of "The Darkest Skies in Arkansas," at GPS coordinates N 35° 42' 36": W 93° 47' 44". <http://mulberrymountainlodge.com/index.htm> Mulberry Mountain offers cabins, pull-through RV sites and improved tent campsites with water, electricity & showers. Virtually unlimited primitive campsites are also available. Contact Mulberry Mountain Lodging & Events by phone at (866) 667-1919 or by e-mail at mulberrymountain@aol.com for lodging information and reservations. AOAS plans to set up a Public Observation Area on the south side of the resort on Friday and Saturday evenings. Several of our members' telescopes will be available. Non-members may set up their equipment in the Public Observation Area if they wish. All scopes are welcome.

Amateurs who do not wish to participate in public viewing or who require a "lights-free" area will be located away from established light sources.

NOTE: It is our sincere hope that this event eventually grows to the point that we will someday require enforceable lighting regulations. Vendors are being invited, and a "Swap Meet" will take place Saturday afternoon in the Main Lodge Meeting Room, where anyone will be able to buy, sell, or trade any astronomical items.

The newly formed Arkansas Section of the International Dark Sky Association will also conduct their 2009 Annual Meeting in the main Lodge meeting Room during the weekend.

This year's Star Party includes an exciting line up of speakers. High-lighting this line up is Arkansas' own Dr. P. Clay Sherrod, world renowned astronomer, educator, author and lecturer. His topic of "Near Earth Asteroids" presents an informative and educational picture of the clear and present danger posed by these objects.

For more information, contact Leonard Lynch, AOAS Mulberry Mountain Star Party Coordinator:
 Phone: 479-782-1131, E-Mail: nspace01@swbell.net.

2008 Treasurer's Report – Expense Summary

Astronomy Club of Tulsa Expense Summary 2008

Dec 31, 2008.
Treasurer - *John Land*

Regular Club Income

New Memberships	43 New Members	\$	1,415.00
Renewal Memberships	80 renewals	\$	2,490.00
Bank Interest on Savings		\$	12.03
Observatory Donations		\$	250.00
Events & Sales		\$	35.21
Total 2008 Income			\$ 4,202.24

2008 Major Expenses

Club Operations		\$	1,289.76
Observatory		\$	2,409.76
Total 2008 Expenses			\$ 3,699.52
Club Income minus Expenses			\$ 502.72

Capital Improvements to Observatory

Snapper Mower		\$	1,620.00
Total Expenditures minus Total Income			\$ (1,117.28)

Expenses

Astro League dues 08-09 - 135 AL memberships		\$	685.00
Club Meeting costs -- Guest Speakers Etc.		\$	277.80
PO Box Rent		\$	94.00
News Letter & Postage		\$	18.47
AstroTulsa Web Site		\$	41.25
Misc Costs		\$	173.24
Club Operation Expenses			\$ 1,289.76

Events & Product Orders Paid in Advance by Club members -

	Received	Paid out	
Astronomy Magazine Subscriptions	\$ 995.00	\$	1,030.00
Sky & Telescope	\$ 990.00	\$	1,087.35
2008 Astronomy Wall Calendars	\$ 75.00	\$	-
2009 Astronomy Wall Calendars	\$ 396.00	\$	412.46
Astronomy Wall Calendars left over 13 cost \$ 84.50			
08 Canadian Observing Handbooks	\$ 74.00	\$	-
09 Canadian Observing Handbooks	\$ 192.00	\$	204.98
Adams Ranch event	\$ 508.00	\$	460.00
Net Recieved vs Paid Out	\$ 35.21	\$ 3,230.00	\$ 3,194.79

Observatory Operation Costs

Annual Fee	Liability Insurance	\$ 750.00	average cost
	Wireless network	\$ 300.00	\$ 25.00 /mo
	Electricity	\$ 478.03	\$ 39.84 /mo
	Water	\$ 132.30	\$ 11.03 /mo
Observatory Maintance & Repairs		\$ 749.43	for 2008 yr
Observatory Total cost		\$ 2,409.76	\$ 200.81 /mo
Minus Observatory Donations		\$ (250.00)	
Net Observatory Costs		\$ 2,159.76	\$ 179.98 /mo

Annual Report of Accounts

	Dec 31-08	Dec 31-07	Dec 29-06
1st Nat BA - Checking	\$ 1,520.11	\$ 1,043.80	\$ 645.14
1st Nat BA - Savings	\$ 302.60	\$ 1,889.19	\$ 4,367.40
Total Liquid Assets	\$ 1,822.71	\$ 2,932.99	\$ 5,012.54

Club Investment Accounts

Wachovia Accounts	Dec 31-2008	(Formerly AG Edwards)	Dec 31-2007
Cash Balance	\$ 220.92		\$ 4.88
Franklin Income Fund	\$ 6,561.00	at \$ 1.68 / share	\$ 9,725.44 at \$ 2.60 / share
American Balanced Fund	\$ 1,892.58	at \$ 13.78 / share	\$ 2,573.52 at \$ 19.31 / share
Washington Mutual Inv Fund	\$ 1,748.66	at \$ 21.41 / share	\$ 2,652.02 at \$ 33.63 / share
Total Club investments	\$ 10,423.16		\$ 14,955.86

2008 AG Edwards reported dividends \$ 758.30
Net Decrease of Investments accounts **\$ (4,532.70)** 30.31 % decrease

Investments gain

Franklin Income fund	\$ (3,164.44)	-32.54%	decrease
American Balanced Fund	\$ (680.94)	-26.46%	decrease
Washington Mutual Inv Fund	\$ (903.36)	-34.06%	decrease

ASTRONOMY CLUB PUBLIC STAR PARTY

FRIDAY FEBRUARY 20TH - ALTERNATE DATE WILL BE SATURDAY FEBRUARY 21ST IF SKY IS CLOUDY ON FRIDAY.

GATES OPEN AT 5:30 PM SUNSET -6:10 P.M. / END CIVIL TWILIGHT - 6:36 P.M.

PHASE OF THE MOON ON 20 FEBRUARY: WANING CRESCENT WITH 17% OF THE MOON'S VISIBLE DISK ILLUMINATED..

LAST QUARTER MOON ON 16 FEBRUARY 2009 AT 3:38 P.M. CENTRAL STANDARD TIME.

IYOA PRESENTATION @ 7:00PM OBSERVATORY CLASSROOM:

THE SOLAR SYSTEM

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>). Since night-time temperatures can dip to the mid 20's or colder you should plan to bring a **HEAVY COAT AND DRESS IN LAYERS. IT GETS VERY COLD ON OUR OBSERVATORY HILL!!**

- 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.

Astronomy Club of Tulsa – Mounds Observatory Workdays Scheduled for 2009



One of the greatest benefits of membership in the Astronomy Club of Tulsa is our use of the observatory site south of Mounds, OK that affords us relatively dark skies and some great opportunities to log some quality observing time or meet with our fellow club members for stellar social time. Ahhh... you're thinking, "now comes the pitch" – and to be honest, you're correct! We need the help of our membership to work at the observatory throughout 2009 to do routine maintenance and improve the building and grounds so that our facility is in good shape for public events in this International Year of Astronomy and for future generations of ACT members. I'm asking each member (on behalf of our board) to volunteer at least 8 hours of time spread out over the course of 2009 for workdays to be scheduled on the Saturdays immediately following our regular club meetings or for special events to be determined as needs arise. (Of course, you'll be pleased to know that we won't turn down any additional time if you're so inclined... and the only penalty for non-participation will be guilt... gnawing, perpetual, sleep depriving, torturous guilt!!!) Normal workdays will involve cleaning of building, dome and grounds maintenance like mowing and roadside brush/tree trimming.

Special events will focus on dome & roof repair or any other "construction" type projects. Anyone having any specialized skills such as roofing, masonry, concrete finishing, woodworking or fencing will be most welcome to show off their talents! The first work day of 2009 will be scheduled for Saturday, February 14th from 10:00am to 4:00pm so plan on bringing your Valentine for a special date as we'll be getting ready for the Public Star Party on 2/20/09 and focusing on roadwork along the drive leading up to observatory hill. I'll send out an "email" reminder the week prior to the event and also announce the event at the ACT meeting on Friday the 13th. Thanks and hope to see you there - Dennis Karcher

CLUB OFFICERS

POSITION	NAME	PHONE
President	Tony White	918-258-1221
Vice-President	Tom McDonough	918-665-1853
Co-Treasurers	John Land Jim Miller	918-357-1759 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

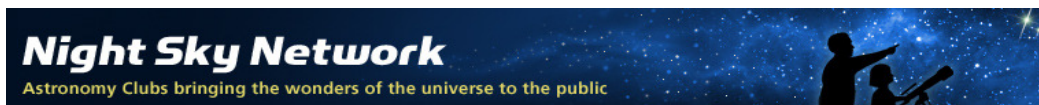
APPOINTED STAFF

POSITION	NAME	PHONE
RMCC Facility Manager		
Membership Chairman	John Land	918-357-1759
Observing Chairman	Ann Bruun	918-834-0757
New Members (co-Chairmen)	Owen Green Rick Walker	918-851-1213 918-451-9235
Observatory Director	Teresa Kincannon	918-637-1477
Webmaster	Richard Alford	918-855-9986
Newsletter Editor	Dennis Karcher	918-619-7097
Night Sky Network	Teresa Kincannon	918-637-1477

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 member of the Astronomical League and the Night Sky Network



<http://www.astroleague.org>

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

Astro-Triva - Telescope: This word was probably coined by John Demisiani, a Greek mathematician and poet and first used in print by Julius Caesar Lagalla in a book, *Lunar Phenomena*, published in 1612. (Source: Olin J. Eggen - *Astronomical Society of the Pacific Leaflets*, Vol. 7, p.233 – 1956)

ACT welcomes your questions, suggestions, comments, and submissions for publication.
Please send all inquiries to Newsletter@astrotulsa.com

Deadline for March Article submissions: February 23, 2009
Target Publication for March Observer = February 28, 2009
eMail article submissions to: djkarcher@cox.net

February 2009