

Astronomy Club of Tulsa  
*Observer*



March 2009

Picture of the Month



*Ptolemaeus-Alphonsus-Arzachel mosaic  
 ( by Wes Higgins)*

One of my favorite lunar areas, beautifully captured by Wes Higgins of Techumsa, Oklahoma, is the Ptolemaeus–Alphonsus–Arzachel chain of craters. This area is almost dead center on the near side of the Moon, just south of the lunar equator and the northeastern shores of Mare Nubium, the lunar Sea of Clouds.

*Ptolemaeus* (Ptolomy in English) is the northernmost and largest of the group. It is also the oldest – formed early in lunar life and flooded with lava when the asteroid or other impactor fractured the crust and allowed the mantle to seep through and fill the crater.

*Alphosus*, the center crater further to the south, is a little smaller and younger. Not having filled completely with lava, it's central peak still remains above the flooded floor of this crater.

*Arzachel*, furthest south, is a young crater, similar to Copernicus or Tycho – formed later in the Moon's life when the crust had solidified to such an extent that impacts no longer broke through to the mantle below.

While you're in the area, check to the southwest of this trio and see if you can spot Rupes Recta (or in plain English, "The Straight Wall"). Remember, just because the Moon's up is no reason to put your scope away!

*Credit & Copyright – Wes Higgins / Techumsa, OK*

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***Important ACT Upcoming Dates:***

- Sidewalk Astronomy – Thu/Fr/Sa: March 5-7, 2009
- ACT Meeting @ TCC - Fri. March 13, 2009, (7pm)
- Public Star Party... Fri. March 20, 2009 (page 15)
- Members Only Star Party ... Fri. March 27, 2009

## President's Message by Tony White

Is it March already? In like a lion, indeed!

I want to open by expressing my excitement not only with the number of club members who are pitching in and helping with the events, but also the numbers of inquiries we are receiving from the public, and the numbers of the public who are showing up. We had a very good turnout for our Public Star Party on the 20<sup>th</sup> – it was just a shame that the skies didn't cooperate. We also had a nice small group come up on the 19<sup>th</sup>, and they had a wonderful time, too, and I expect we will see some of them again! As the weather starts to warm, I think we'll see more and more visitors and guests at our events, so please come and help at as many of these events as you can. The more we help we have the less work it is on everyone, and the more fun it is for everyone, too – especially the visitors that don't have to wait so long to share the views!

March also brings an club event I particularly enjoy – the Messier Marathon, which will be held this year on March 28<sup>th</sup> at the TUVVA Observatory near Checotah. Ron and Maura Wood are once again graciously hosting us for the MM, and I hope to see a good turnout. It's such a fun event. The challenge of trying to locate and log all 110 Messier objects in a single night combined with the social interaction we always have makes it an event not to miss. Don't forget to bring your favorite dish for the potluck. I'm looking forward to Tom's Oklahoma Caviar!

Right on the heels of that is 100 Hours of Astronomy on April 2<sup>nd</sup>-5<sup>th</sup>, a cornerstone event of International Year of Astronomy. It will see public outreach events all around the world. We'll have our share, too, and I also hope will see a good turnout not only by club members but also by the public. I hope that all of you are telling your family and friends about these events. Spread the word!

Also, don't forget to try to see Comet Lulin soon. It is departing our solar system this week (as I write this on Feb. 25), and will fade quickly. For those who got to see it, it was a large and easy-to-spot object in binoculars that came closest to earth on 2/24. Lulin (C/2007 N3) was discovered in July 2007 – a great example of the surprises from our solar system that may yet await us. But, we won't get to see it again in our lifetime, since it appears to have an orbital period of over 1,000 years!

And – for those who are interested in radio astronomy, Chris Proctor will be hosting the first ACT Radio Astronomy SIG (Special Interest Group) meeting this Sunday, March 1, 4pm at the Cosmo Café, 6746 S. Memorial. Those who might be interested in pursuing some radio astronomy projects in the club, please plan to attend. This is something our club has not done before, and I'm thrilled that Chris is running with this. It opens up a field of the hobby that may attract even more members to our club. Chris was able to secure the donation of a satellite dish system to the club last year that could be easily converted to use for radio astronomy, and that is on our list of things to do this year.

Of course, with all the fun, there's a little bit of work involved, too. We have returned to the time-honored tradition of having Observatory Work Days on the Saturday after our regular club meetings. We did have a work day in February, which had a few people turn out to help. We did make progress on getting some of the underbrush and fallen limbs cleared away from the road up the hill, but there's a left to do, and weather permitting we'll work on it some more this month. Bring your chainsaws, pole saws, gas-powered trimmers, and other implements of destruction and let's get that back in good shape before spring so that it will be easier to maintain through the summer months as well as more attractive to our visitors.

And, also, keep in mind that we will soon be changing the locks at the Observatory due to concerns about security. If you have any questions or concerns about this, please don't hesitate to contact me directly. I'll be happy to talk to you about this.

So, I hope to see many of you at our events in the coming months, both public and club-only events. This year just keeps getting better, and I can't wait to see what happens next!

Ad Astra, Tony

# Star-gazing trip back in time

*From  
The  
Archives  
Of  
K. C. Lobrecht*

*Master Observer #17  
First Woman to attain the Herschel II Certificate #10.  
Astronomer of the Year, Mid States Region 2003*

**Editor, The Transcript:**  
Look to the east on a late February or early March evening and you will see Leo the Lion, a conspicuous sickle and right triangle of stars, striding into the night sky. These stars shine from a relatively nearby distance and, like the sun and all other visible stars, are members of the Milky Way Galaxy.  
A small telescope aimed a few degrees south of Leo's triangle will reveal three hazy patches of light known as M65, M66 and NGC 3628. These objects are in fact other galaxies, star cities each composed of one hundred billion suns, lying more than three hundred thousand times farther away than the neighboring stars of Leo.  
Long ago in M66 — a galaxy far, far away — a giant sun, not an average star like ours, ran out of fuel, collapsed and then rebounded in the titanic explosion of a supernova. For a few months, this single star became more than a billion times brighter than the sun! A spherical shell of photons, a few light months thick, began to expand at the speed of light in all directions: first through M66, then out into the universe.  
When this shell of light was created, the Hawaiian Islands did not exist. "Modern" mam-

mals were only beginning to dominate the land; the first true mastodons stood barely 5 feet tall and the horse was no larger than Lassie. As the light reached the halfway point on its journey toward the Milky Way, the present day Rocky Mountains and the Alps were rising to meet the sky. The horse was approaching pony size and millions of years would pass before hominids walked the Earth.  
Finally on Jan. 30 of this year, a twelfth magnitude star, barely visible in a small telescope, was discovered in M66. The light from the stellar explosion had at last reached the Earth.  
On Feb. 25, members of the Odyssey Astronomy Club of Midwest City and the Norman Interurban Local Observing Group gathered at a dark site near Lake Thunderbird. After Leo had climbed above the misty horizon and before moonrise, the observers trained their telescopes on M66. A dim star could be discerned on the galaxy's disk where none had been seen before. Gazing at the tiny point of light, they witnessed the death of a star. From across 30 million light years of space, they watched a supernova blaze forth 30 million

years after the actual event!  
T.C. HOFFELDER  
Norman

THE END

The Norman (Okla.) Transcript, Sunday, March 12, 1989 7

## March 2009 Tulsa, Oklahoma

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise: 6:54am Sunset: 6:18pm Moonrise: 8:59am Moonset: 11:32pm	2 Sunrise: 6:53am Sunset: 6:19pm Moonrise: 9:38am Moonset: none	3 Sunrise: 6:51am Sunset: 6:20pm Moonrise: 10:25am Moonset: 12:41am	4 Sunrise: 6:50am Sunset: 6:20pm Moonrise: 11:21am Moonset: 1:49am First Qtr: 1:46am	5 <b>SIDEWALK HARDESTY</b> 7-9 PM Sunrise: 6:49am Sunset: 6:21pm Moonrise: 12:26pm Moonset: 2:51am	6 <b>SIDEWALK BASS PRO &amp; RIVERWALK</b> 7-10 PM Sunrise: 6:47am Sunset: 6:22pm Moonrise: 1:37pm Moonset: 3:45am	7 <b>SIDEWALK BASS PRO &amp; RIVERWALK</b> 7-10 PM Sunrise: 6:46am Sunset: 6:23pm Moonrise: 2:50pm Moonset: 4:31am
8 DST Begins Sunrise: 7:45am Sunset: 7:24pm Moonrise: 5:03pm Moonset: 6:09am	9 Sunrise: 7:43am Sunset: 7:25pm Moonrise: 6:13pm Moonset: 6:42am	10 Sunrise: 7:42am Sunset: 7:26pm Moonrise: 7:22pm Moonset: 7:12am Full Moon: 8:38pm	11 Sunrise: 7:40am Sunset: 7:27pm Moonrise: 8:29pm Moonset: 7:40am	12 Sunrise: 7:39am Sunset: 7:28pm Moonrise: 9:34pm Moonset: 8:08am	13 <b>ACT MEETING</b> Sunrise: 7:38am Sunset: 7:29pm Moonrise: 10:39pm Moonset: 8:37am	14 <b>OBSERVATORY WORK DAY</b> Sunrise: 7:36am Sunset: 7:29pm Moonrise: 11:43pm Moonset: 9:09am
15 Sunrise: 7:35am Sunset: 7:30pm Moonrise: none Moonset: 9:45am	16 Sunrise: 7:33am Sunset: 7:31pm Moonrise: 12:45am Moonset: 10:25am	17 Sunrise: 7:32am Sunset: 7:32pm Moonrise: 1:43am Moonset: 11:11am	18 Sunrise: 7:30am Sunset: 7:33pm Moonrise: 2:37am Moonset: 12:02pm Last Qtr: 11:48am	19 Sunrise: 7:29am Sunset: 7:34pm Moonrise: 3:24am Moonset: 12:57pm	20 <b>RMCC PUBLIC</b> Sunrise: 7:28am Sunset: 7:35pm Moonrise: 4:05am Moonset: 1:56pm	21 Sunrise: 7:26am Sunset: 7:36pm Moonrise: 4:41am Moonset: 2:55pm
22 Sunrise: 7:25am Sunset: 7:36pm Moonrise: 5:12am Moonset: 3:55pm	23 Sunrise: 7:23am Sunset: 7:37pm Moonrise: 5:41am Moonset: 4:56pm	24 Sunrise: 7:22am Sunset: 7:38pm Moonrise: 6:07am Moonset: 5:57pm	25 Sunrise: 7:20am Sunset: 7:39pm Moonrise: 6:33am Moonset: 7:00pm	26 Sunrise: 7:19am Sunset: 7:40pm Moonrise: 7:00am Moonset: 8:05pm New Moon: 10:07am	27 <b>MEMBERS</b> Sunrise: 7:17am Sunset: 7:41pm Moonrise: 7:28am Moonset: 9:12pm	28 <b>MESSIER MARATHON @ TUVA</b> Sunrise: 7:16am Sunset: 7:41pm Moonrise: 8:00am Moonset: 10:21pm
29 Sunrise: 7:14am Sunset: 7:42pm Moonrise: 8:38am Moonset: 11:32pm	30 Sunrise: 7:13am Sunset: 7:43pm Moonrise: 9:23am Moonset: none	31 Sunrise: 7:12am Sunset: 7:44pm Moonrise: 10:16am Moonset: 12:41am				

ACT Word Search Puzzle by Peggy & Rick Walker

Male International Astronomers A-E  
Astronomy Club of Tulsa

AEBLCUSUCI NORDNAJ OHANNBODE HARBOHCYTGMND
VBDOI ARANEF RANKDYSONRLGNRJ WDUZAARCSJ EIG
SUCINREPOCSUALOCINNAMREIBGIWDULEODEBALL
LADRI AANBLAAUWEBESI UDDCFNYLI ABSI CNARFOE
RHEESKVJ OHNDREYEROMLAERPHWLSGVEBLT WRAW
HSHLSBDEREPOOC. J. EHALIJ DAEI JHI ANAGHDTRT
SUBRAHMANY ANCHANDRASE KHARLAHHUNLAESAUSA
MIWNCI I SRTNENI ASOPTDI LERACMWPSTAI GHANOT
ISLVSATEHPUTC DRTS GRUEDBI QNDTAE EATBLRETR
HLOWEORICHARDCARRI NGTONUEBEAI PAVATEBEKH
IEOTUOIFSEWOANALCGNAROEALANLI PRYCLAEOTC
HCNOQAJXTLAPACIHIUAILSCIVLNI UERRICDBNHW
TSSYCEDEUEI LHA AOEA VHDCSGEEI DTAHMYMTPLIN
GRSEAUUGELREN RVVGBL' EESERDNALS EDIRNEHAN
AETSJ CGSDSLDGAVIAGAEGNTENAGIDCNGANYT CED
EDEEE OYDRLRENLRK KLDUI RRHTEHNWLI BUNCRDLO
RNANOEA OEE LNNAETLOI SSVAI USHOOEULNTI UTES
EAI GESGADAI EDSUOHLMEFMNTDRETAPSSLUE SELD
RBNWAE OANBSGAENRLUI RRS AOU EYNSI SOTOEAAOR
AFADERNDACRUOV DATRRGI ITPVVBARORHOZLLDES
RNI EEJ ETXVCEI FUMHAAEEEAHEPMKEUETE HUEPETE
AEGHORTEERDLNMEBMBLI DAANOI LNHRNAEAAHAHM
IAYNRI SSLRLAEETAI EBBRDNL LBREOOOARNL OKON
ESDOSPPAAEEBHNDRADIEI AI AJ WS GHLGTNEANOMD
SARTBHHSNHI NJAUTGLTLCNENNELUALNNAIYSIAR
MLANI SEHYGANCNLSSAZYHEL IGLCEOEI LERUI RSU
NFVCI RIR OASLIEAUFOKABRBNSTTONOVWEDAII CR
VRUNHWNUBANTPS DMDAYVEBLEUEMOEOAOHEARE AOL
AEOOARRE OUDURHSINBBSUI RBRANSHCANAOADAWO
CDBNLDI AVLRAAOACI AKSI SAEMADRI RASAMUBLA
OBSAAECSDFPNSL MNCKBYEESDNJHJ AMESCHALLIS
YOINLLHMT ELAEAE GSEI OLCOSJ NOLVNUOCEI GANE
EHXHWTD CROGAYBUDRE DNASELANOHOPHONVGOEGW
LREEI P' BANPRSSUYSPBESNS DMKKUNATOARGMEI A
DMLDL LAERZI HOESRREHOUOHEIYI GOBRDJ DOALSU
AAULRRUZARTAEINI NOLTRQNNI FUSLADBACHHEE
RNNSEJ RGLNCATRGN OHGRI RIRBSHDRONI CI ERUOP
BNDIMEENHASEWENAALAOASENACOIOCTMNLMD SAD
SRRDNSTFGHEWT BOSHMSHCLI VLP CONYMBOREVE
EERNESTBROWNHEKALWOACGCVLMCRITIBDXREWEV
MIRASWKAATREEFLL ODC AHEOALYOEI TE OULEI ASN
ATI VINCENZOCERULLLI ACNAADEDBEESAIJLDEL
JTAATHORJDI EHG TANI NRSREAU EAWRNR SANORMGL
VEODTMYAQUI SJJ ONMSEOCGTTDSEAOOIZESCAAGE
DBJUEJNRDMNARLADENBVTAAHSBHGNTPNKLOHI IW
GAAPRI BOOSMBMVUMRRARENI NUUATRDSAOECC LDO
GOLFI RIBMNLEOYEAELEKEAASNRRGGSKRPATBLLSV
RIEIO MJEIYCILAVJESGRMZUWAHAURBAEAA NR IAP
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ARSRGDARKJ OLGUNAABLACPI LPNCEWFC HLCACLOL
CENAE EEEAOASIRJ OHNVARROL LAEKCNENNAHOJ IHI
NII LOPRAREWUORBKRI DAECPCESLCELTRRALOMSTH
LGKUEENLELJOHNBOLTONREEEUALOSPES OJ IIMBP
ISWOLFBI CKELAHNOSWADDRANREBI NI WDLABNH OJ
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GOERGEAIRYCSTI REF CUURHKOEEDAABRET LAWUI O
ROGERDAVIESKDAVIDDODGENR PAREYABNNAHOJ WL

- Abdul Ahad
Agrippa
Albumasar
William Denning
Terence Dickinson
Franjo Dominko
Frank Dyson
Eratosthenes
Viktor Ambartsumian
Francois Arago
Arzachel
Aryabhata
John Bainbridge
Wilhelm Beer
Wolf Bickel
Johann Bode
Rudjer Boscovich
Tycho Brahe
Sherburne Burnham
Cesar Cassini de Thury
Anders Celsius
Auguste Charlois
Andrew Common
Arthur Covington
Andre Danjon
Bernard Dawson

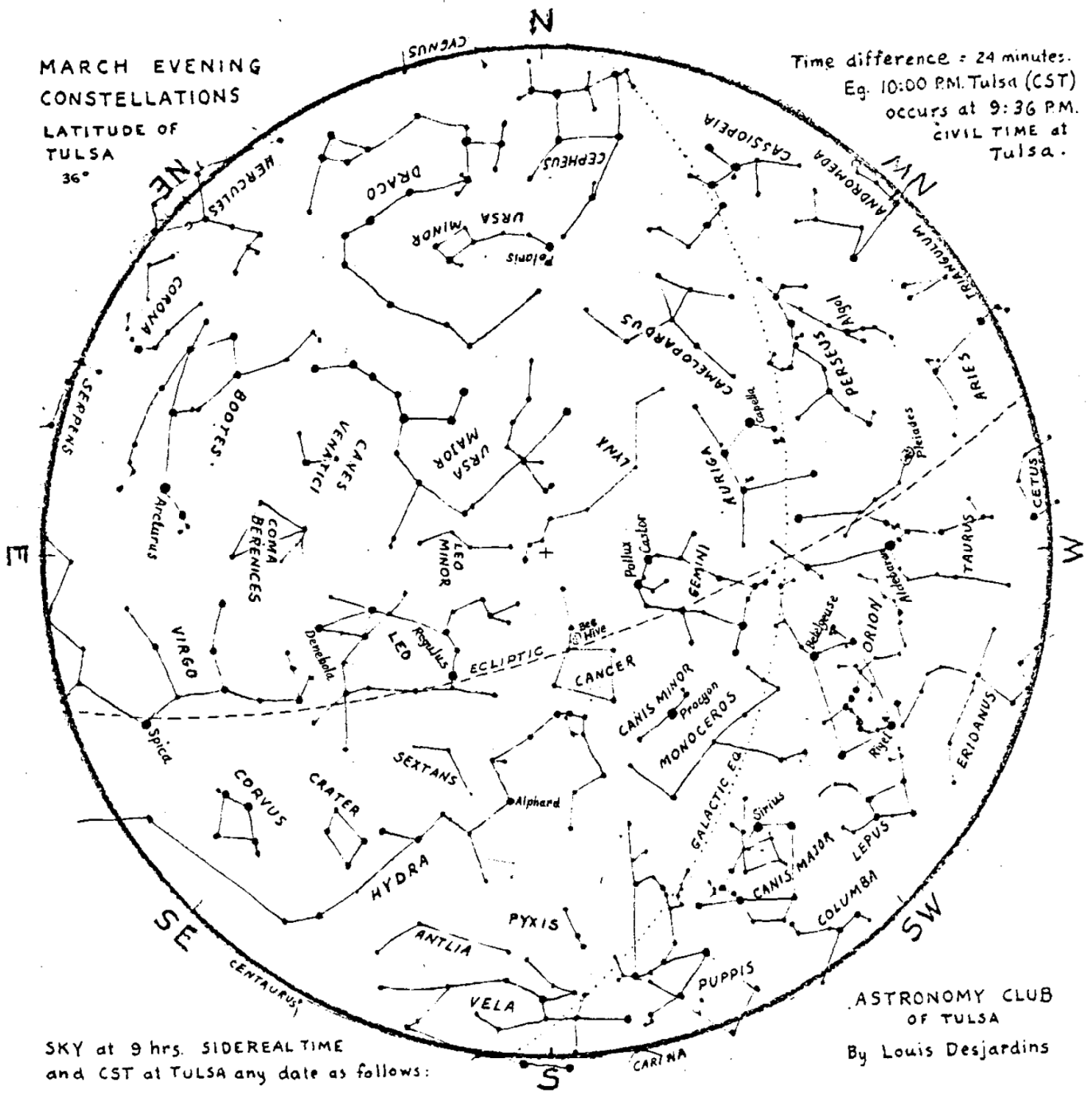
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Paul Ahnert
Leo de Ball
Aliz Derekas
George Alcock
Giovanni Battista
Arthur Eddington
Emil Ernst
Andronicus
Friedrich Argelander
Goryu Asada
Walter Baade
John Baldwin
Sergei Belyavsky
Guillaume Bigourdan
Alfred Bohmann
Alexis Bouvard
Theodor Brorsen
Luigi Varnera
Dominique de Cassini
Vincenzo Cerulli
Lyudmila Chernykh
E.J. Cooper
Philip Vowell
Heinrich d'Arrest

- Giorgio Abetti
Goerge Airy
Henri Debehogne
Willem de Sitter
Thomas Digges
John Dreyer
Hannes Alfven
Ernest Esclanong
Anders Angstrom
Aristarchus
Giuseppe Asclepi
Oskar Backlund
Zoltan Balog
Friedrich Bessel
Biruni
Bart Bok
Louis Boyer
Dirk Brouwer
James Carpenter
Giovanni Cassini
James Challis
Nikolai Chernykh
Nicolaus Copernicus
Thomas Cowling
George Darwin

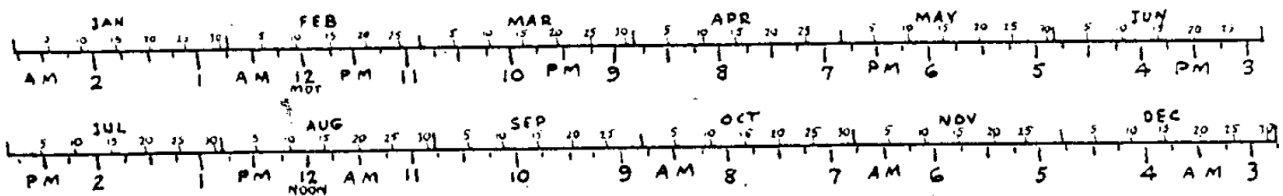
- John Adams
Al Battani
Charles Delaunay
Henri Deslandres
Ewine van Dishoeck
Alesander Dobyago
Eric Elst
Eudoxus
Eugene Antoniadi
Christoph Arnold
Arthur Auwers
Benjamin Baillaud
Johann Bayer
Wilhelm von Viela
Adriaan Blaauw
John Bolton
Ronald Bracewell
Ernest Brown
Richard Carrington
Jacques Cassini
Subrahmanyan Chandrasekhar
Jerome Coggia
Corsono Varsono
Andrew Crommelin
Roger Davies

- Petrus Alphonsi
Vladimir Albitzky
Eugene Delporte
Alexander Deutsch
David Dodge
Dmitrij Dugyago
Johann Encke
Abd Al Sufi
Petrus Apianus
Svante Arrhenius
Adrien Auzout
Francis Baily
Antonin Becvar
Ludwig Biermann
Nathaniel Bliss
Alphonse Borrelly
James Bradley
Ismael Bulliadus
Sir John Varroll
Bonaventura Cavalieri
Carl Charlier
Josep Sola
Pablo Cottenot
Jacques d'Allonville
William Dawes

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



SKY at 9 hrs. SIDEREAL TIME  
and CST at TULSA any date as follows:



First Quarter - 03/04/09 - 01:46 CST	March 8 <sup>th</sup> - Daylight Savings Time Begins
Full Moon - 03/10/09 - 21:38 CDT	March 8 <sup>th</sup> - Saturn at Opposition
Last Quarter - 03/18/09 - 12:47 CDT	March 20 <sup>th</sup> - Equinox
New Moon - 03/26/09 - 11:06 CDT	March 27 <sup>th</sup> - Venus in Inferior Conjunction



## Planetarium Shows

March 1<sup>st</sup> – 31<sup>st</sup>, 2009  
Presentation Schedule Changes Monthly



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

### Monday PLANETARIUM CLOSED

### Tuesday through Friday

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

### Saturday

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

### Sunday

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

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

#### Secret of the Cardboard Rocket:

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

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

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

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

**INTERNATIONAL YEAR OF ASTRONOMY 2009**  
**Hardesty Library Events**

Astronomy Club of Tulsa is holding two meetings at the Hardesty Library in celebration of the International Year of Astronomy.

**A.C.T.'s first feature presentation is:**

**Astrophotography presented by Rod Gallagher**  
**Thursday, March 5<sup>th</sup> from 7:00pm to 9:00pm in the Maple Room**  
**(after presentation there will be night observing opportunities outside)**

Mr. Gallagher has been observing the cosmos for over forty years, has been a member of the Astronomy Club of Tulsa for 8 years and has been/currently is an active board member.

He has been photographing for the past 6 years and has some photos on [www.astrotulsa.com](http://www.astrotulsa.com) website under the gallery section. Rod particularly enjoys photographing galaxies and globular clusters.

He has also presented an Intro to Astrophotography at the Astronomy Club of Tulsa meetings and is currently assembling a Special Interest Group within the club for those interested in pursuing astrophotography as a hobby.

Mr. Gallagher has also completed several Astronomical League observing programs they include:

Asteroid (Gold), Lunar, Messier, Binocular Messier, Urban Club, Arp Peculiar Galaxy, and Double Star

His current projects are Herschel I objects, Caldwell objects and Binocular Deep Sky objects

He has a wealth of knowledge and is a must see for 2009.

**A.C.T.'s second feature presentation is:**

**Black Holes presented by Peggy Walker**  
**Sunday, April 5<sup>th</sup> from 2:00 – 3:00pm in the Conner's Cove Theater**  
**(after presentation there will be solar observing opportunities outside)**

Peggy Walker will be bringing the most up to date information on black hole discovery for the past sixteen years provided by NASA and Jet Propulsion Laboratories.

Ms. Walker is currently the International Year of Astronomy Coordinator and is a two year member of the Astronomy Club of Tulsa. She is currently working on her Messier object observation as well as her Lunar certificate. One thing about her is that she has an interest in black holes and worm holes and the many theories associated with these objects. She's even dabbling in quantum mechanics and the ten dimensions!

The presentation will include:

- What exactly is a black hole?
- How many sizes?
- How they are formed
- How are they categorized
- How mass and spin are determined
- Black Hole anatomy
- Do Black Holes really suck everything in?
- Einstein's brilliant idea
- The Schwarzschild, Kerr, Reissner-Nordstrom Solutions
- How they are discovered, movement, matter, gases & oscillations
- Current information on our own Milky Way Black Hole
- Radio Telescopes
- The role of electromagnetic waves
- Worm Hole and White Hole possibilities

**HARDESTY LIBRARY 8316 E. 93<sup>rd</sup> Street**  
**Off Memorial behind Jackie Cooper**  
**918-250-7307**

**A.C.T.'S 100 Hours of Astronomy**

Plans are being formalized for our 100 Hours of Astronomy activities scheduled for April 2nd through April 5th. This is the brainchild of the International Year of Astronomy website and is an awesome way to make the world a much smaller place.

We have been tasked to provide various astronomy related events for the public in any venue that we can. Our mission is to have the public fall in love with the cosmos and feel a part of the excitement and wonder of the telescope. The main objective is to provide presentations or lectures in a classroom

setting, have web casts, sidewalk observing and public star parties. So here we go.....

Thursday, April 2nd – we will have Sidewalk Astronomy at our new hot spot the BassPro Shop of Broken Arrow. We will have scopes set up and ready for viewing by 7:30pm and will finish around 10:00pm. From there we head down south for Friday's event.

Friday, April 3rd – we will have our monthly Public Star Party at our Ronald McDonald Children's Charities Observatory in Mounds. The feature of the night will be the presentation of Galaxies and Universes in the observatory classroom followed by the opportunity to view these in the night sky. We start viewing at dark and run until the last one leaves!

Saturday, April 4th – is the official International Sidewalk Astronomy Night II - (ISAN). Our venue moves northward to Mohawk Park/Tulsa Zoo area where the Astronomy Club of Tulsa will take the polo field and set up their scopes. This event starts at 7:00pm and will run until 10:30pm.

Sunday, April 5th – is our last day of the 100 Hours of Astronomy where we will have a presentation on black holes in the 400 seat auditorium – Conner's Cove at the Hardesty Library at 2:00p.m. Following this presentation, the audience will be able have a Sidewalk Astronomy opportunity to safely view the sun through solar telescopes.

All events are free to the public and everyone is welcomed.

**SIDEWALK ASTRONOMY IS GROWING FAST**

The sidewalk events are growing. In February, on the 5th at Hardesty Library, after Dennis' presentation on the telescope the guest got to go view the night sky with the six telescopes set up on the premises. About 70 people came through the line of scopes for the night. Almost all filled out a drawing form.

At Bass Pro, Friday, February 6th since Saturday was clouded out.... had 110 people fill in drawing tickets with about another 40 to 50 just peeking through the scopes.



Our are numbers are climbing and we need your continued support with your telescopes for Friday and Saturday nights at Bass Pro. If you have not been up where the action is, you are truly missing out. People can't get enough and every month we get more and more of the teaching staff and students from Broken Arrow schools.

We have been pursued by the RiverWalk Crossing establishment and they would like us to have a presence there as well. So as you have heard me say in the meetings, "It's all scopes on deck!" If things can be worked out, Riverwalk would only need a few people. Initial dates are same as Bass Pro Shop dates below and if you would like to help at either site, please call Rick at 645-2136.

As a reminder, our remaining schedule for the Broken Arrow Bass Pro Shops is as follows:

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

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

**Astronomy Antique collectibles**

I have recently been trying to clean out my cabinets and closets. In order to keep from having to build on to the house it is necessary to clean out some of my existing collections. I have Sky and Telescope and Astronomy magazines dating back to about 1977. I also have two DC to AC inverters to run a telescope off of a car battery. If you are interested in giving them a home contact John Land at 357-1759.

Giant coffee table sized Antonin Becvar COLOR Star Atlas Borealis 24" by 19" - This 1962 edition is in excellent condition. Yours for donation to the club.

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

Designation	Name	Code	Range	Est Max Date
0515-33	T Col	&	<7.5-11.9>	Mar 05
1910-19	R Sgr		<7.3-12.5>	Mar 10
*0014+44	VX And		7.9-9.6	Mar 11?
1650-30	RR Sco		<5.9-11.8>	Mar 12
1233+07	R Vir		<6.9-11.5>	Mar 14
1621-12	V Oph		<7.5-10.2>	Mar 17
1425+39	V Boo		<7.0-11.3>	Mar 24(I)
1648-44	RS Sco		<7.0-12.2>	Mar 24
*1657+22	SY Her		7.8-13.2	Mar 28?
0816+17	V Cnc		<7.9-12.8>	Mar 31

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



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

**Visit our website at [www.GarrettOptical.com](http://www.GarrettOptical.com) for more information!**

**Astrotulsa.com Vanity Email Addresses Now Available**

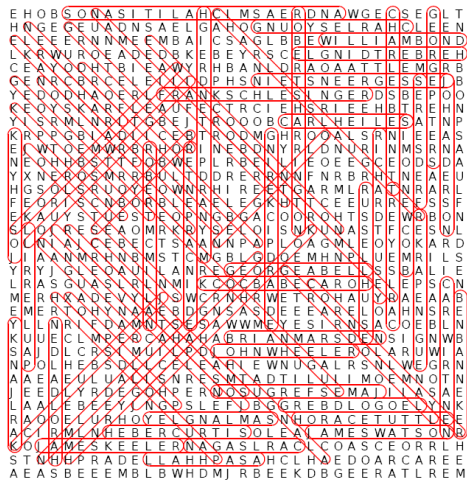
Show your pride in being a member of the Astronomy Club Of Tulsa by getting your own Astrotulsa.com email address! Each address will be in the form of [your\\_name@astrotulsa.com](mailto:your_name@astrotulsa.com) and costs only \$12 per year, payable at the time of membership renewal. If you decide to get an address at another time, the fee will be prorated at \$1 per month until your membership renewal date.

Each Astrotulsa.com email account includes 1GB of storage, anti-spam filtering on incoming emails, as well as the ability to access and send emails from anywhere in the world using either WebMail or traditional POP3/SMTP services with popular email clients such as Outlook and Thunderbird. Additionally, mail sent to an Astrotulsa.com account can be forwarded to any other existing email account.

If you would like to obtain an address, please email Tom McDonough at [actpm@astrotulsa.com](mailto:actpm@astrotulsa.com) and include the name you would like to have.

**U.S. Male Astronomers Part 2**  
 Astronomy Club of Tulsa

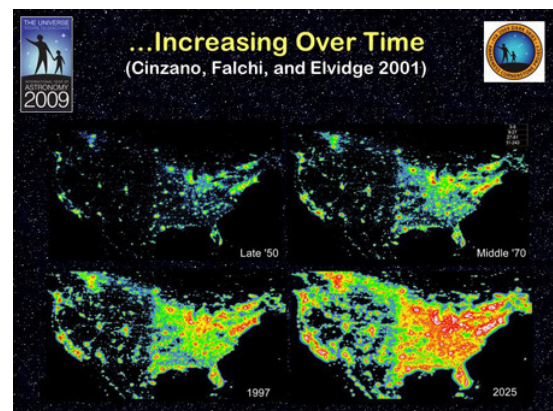
Puzzle 2 of a 2 puzzle set listing Male Astronomers from the United States



Answers for February 2009 Word Search

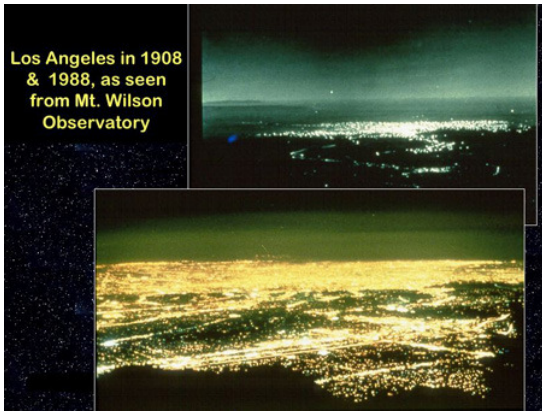
**A.C.T. WILL PARTICIPATE IN GLOBE NIGHT COURTESY OF NIGHT SKY NETWORK**

On Thursday, February 19<sup>th</sup>, Peggy logged on to the Night Sky Network's monthly conference call and got to hear Connie Walker talk about the GLOBE NIGHT event coming in March. It will be March 16<sup>th</sup> to March 28<sup>th</sup>, 2009 and everyone is invited to participate as citizen scientists. It is a global campaign to observe and record the magnitude of visible stars as a means of measuring light pollution in a given location. People are asked to use the constellation Orion and view him from various places and take the readings. Connie's presentation was good and so a few points are added for your information.



This is the rate of light pollution and the decay of the atmosphere over the years and the forecasted future.





Los Angeles in 1908 & 1988, as seen from Mt. Wilson Observatory

This slide is taken from California's Mount Wilson, which I saw everyday growing up in southern California.

### Shielding the Streetlight - a Demonstration

- Make sure you are in a very dark room with a low ceiling and a white surface.
- Unscrew the reflectors from both "mini-lights" and turn 1 on ("candle mode").
- Place the bulb top of the "mini-light" barely into the big hole at the bottom of the white paper cube.
- With the room lights off, project the "stars" from the white paper cube onto the ceiling.

"candle mode"

Planetarium with light inside

### Shielding the Streetlight - a Demonstration continued...

- Using a 2nd "mini-light" as a "street light", place it on a table and turn it on.
- What do you notice about the number of stars?
- Now place the PVC cap (or another shield) above the 2nd "mini-light" to represent a shielded streetlight.
- What difference do you notice with and without the shield?

"streetlight"

shielded light

This experiment was done here in Oklahoma near Edmond, in a meeting with city officials. It was so compelling that the city officials will be taking this information to task and make proper lighting decisions for the city!! A few slides showed how car lots are so over lit, that stealing cars is easier because the light is not focused downward to the ground. So a person could literally be under the light and not be seen.

### The GLOBE at Night Program: 2 Ways to Participate

- The "classic" GLOBE at Night observations that anyone can have fun doing with their unaided eyes
- An effort to obtain more precise measurements of the night sky using digital sky-brightness meters

### The GLOBE at Night Program

- To learn about the impact of artificial lighting on towns and cities, and the ongoing loss of a dark night sky as a natural resource for much of the world.
- Citizen-scientists (YOU!) record the brightness of the night sky by matching its appearance toward the constellation Orion with charts of different limiting magnitudes.
- You can also measure sky brightness with Sky Quality Meters.
- Measurements are submitted on-line and resulting maps of all worldwide observations are created.

Here's how to participate.

### Almost 7000 measurements, over 60 countries

### GLOBE at Night 2008 Results

Legend  
2008 GLOBE at Night Magnitude

- Limiting Magnitude 1
- Limiting Magnitude 2
- Limiting Magnitude 3
- Limiting Magnitude 4
- Limiting Magnitude 5
- Limiting Magnitude 6
- Limiting Magnitude 7

Here are 2008 results.

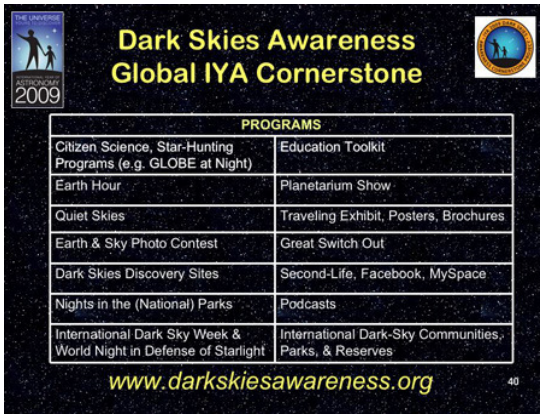
### Take Back the Night! Participate in the GLOBE at Night Campaign

- At least 2 out of 5 Americans have never seen 90% of the stars in our night sky.
- With half the world's population now living in cities, this problem is only getting worse.
- Yet you can easily be part of a local solution to a global problem.
- Become a local coordinator.
- Take a few minutes to monitor your local night sky brightness.
- Help preserve our natural heritage for generations to come.

### GLOBE at Night How Many Stars? Great World Wide Star Count

- GLOBE at Night**
  - Next GLOBE at Night campaign is March 16 - 28, 2009
  - Orion and Sky Quality Meters
  - [www.globe.gov/globeatnight/](http://www.globe.gov/globeatnight/)
- How Many Stars?**
  - Jan, Feb, April-Sept, Nov, Dec 2009
  - Little Dipper and 3 belt stars in Orion
  - [www.sternhell.at/](http://www.sternhell.at/)
- Great World Wide Star Count**
  - Oct. 9 - 23, 2009
  - Cygnus and Sagittarius
  - [www.starcount.org](http://www.starcount.org)

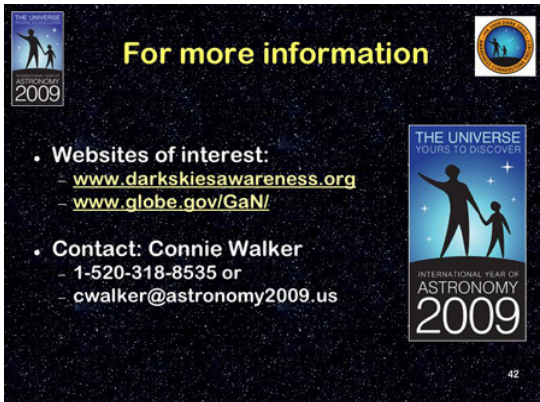
For more information go to [www.globe.gov/GaN/observe.htm](http://www.globe.gov/GaN/observe.htm).



**Dark Skies Awareness  
Global IYA Cornerstone**

PROGRAMS	
Citizen Science, Star-Hunting Programs (e.g. GLOBE at Night)	Education Toolkit
Earth Hour	Planetarium Show
Quiet Skies	Traveling Exhibit, Posters, Brochures
Earth & Sky Photo Contest	Great Switch Out
Dark Skies Discovery Sites	Second-Life, Facebook, MySpace
Nights in the (National) Parks	Podcasts
International Dark Sky Week & World Night in Defense of Starlight	International Dark-Sky Communities, Parks, & Reserves

[www.darks skiesawareness.org](http://www.darks skiesawareness.org)



**For more information**

- **Websites of interest:**
  - [www.darks skiesawareness.org](http://www.darks skiesawareness.org)
  - [www.globe.gov/GaN/](http://www.globe.gov/GaN/)
- **Contact: Connie Walker**
  - 1-520-318-8535 or
  - [cwalker@astronomy2009.us](mailto:cwalker@astronomy2009.us)

After this presentation, the clubs listening via phone were informed there was going to be a drawing for 5 of these meters. N.S.N asked us to 1) have a meeting or party, 2) take visual readings, 3) take meter readings and 4) log our information into their site for data collection for 2009. We had to star 1, if we were interested and they pulled names and A.C.T. won a sky quality meter. The specifics are below! It was pretty exciting since Rick ALWAYS wins stuff it's finally my turn!

**Sky Quality Meter**

*"You've got to kick at the brightness 'til it bleeds starlight." - with apologies to Bruce Cockburn*



An affordable meter for measuring sky brightness for astronomers!

The "Sky Quality Meter" measures the brightness of the night sky in magnitudes per square arc second.

Unprecedented sensitivity in a handheld meter!

Designed by Dr. Doug Welch and Anthony Tekatch

**Uses:**

- Find out how good the night or site REALLY is.
- Compare the sky brightness at different sites quantitatively.

- Document the evolution of light pollution in your area.
- Set planetarium dome illumination to mimic the skies people are likely to experience elsewhere in the city.
- Monitor sky brightness through the night, night-to-night, and year-to-year.
- Determine which nights show the greatest promise for finding the 'faintest fuzzies'!
- Calibrate the effect of sky brightness on qualitative measures such as the Bortle Scale.
- Investigate how sky brightness correlates with the solar cycle and month-to-month sunspot activity.
- Help provide local ground truth for future sky brightness prediction with the [Clear Sky Clock](#).
- CCD users can make a correlation between the SQM reading and when the background reaches some ADC level.

**Features:**

- Audible signal while measurement is in progress.
- Sky brightness displayed in visual magnitudes per square arc second.
- Infrared blocking filter restricts measurement to visual bandpass.
- Temperature in both Celsius and Fahrenheit as well as model number and serial number can be displayed with different button press sequence.
- Precision readings at even the darkest sites.
- Power-saving features designed in for maximum battery life.
- Reverse battery protection.

**Specifications:**

- The Half Width Half Maximum (HWHM) of the angular sensitivity is ~42°.
- Operates from 9V battery (included).
- Size 3.8 x 2.4 x 1 in.
- Maximum light sampling time: 8 0 seconds.
- Specifications are subject to change without notice.



Unihedron supports the goals of the [International Dark-Sky Association](#).

**February Public Star Party Pictures**  
(February 20, 2009)



Jerry Koenig (Connie too) arrive early and sets up his two scopes for the night



President Tony White comes ready with his trailer full of equipment



Tim chats with a visitor, Justin who brought up his 10 inch scope he made when he was 15 years old



The classroom was full with standing room only



Tom shares the power point presentation on the Solar System with the group



Peggy hands out NASA planet lithographs and holographic solar system rulers to the guests

**Book Review: Bright Star Atlas**  
*Will Tirion & Brian Skiff's Bright Star Atlas 2000.0*



**Publisher:** Willman-Bell  
**Publish Date:** 1990-2001  
**ISBN-10:** 0-943396-27-1  
**ISBN-13:** 978-0943396279  
**List Price:** \$9.95

Published in 1990 & revised again in 2001 this is an excellent volume to toss in the car and leave for occasional field trips and binocular observing sessions. The Bright Star Atlas is intended just for this purpose. This 10 map atlas of the night sky is drawn by Wil Tirion and is based upon the Hipparcos and Tycho Catalogs with a stellar limiting magnitude of 6.5. Opposite each full page map Brian Skiff of the Lowell Observatory has prepared a tabular listing of interesting objects visible in binoculars or small telescopes. These include galaxies, open clusters, diffuse nebulae, bright nebulae, planetary nebulae, double stars, and variable stars. Atlas includes a set of seasonal star maps to help orient the user to the night sky throughout practically the entire populated world.

The 10 maps cover over 600 objects with map-facing 'mini-catalogs' of info written by Brian Skiff of the Lowell Observatory. The 600 objects include double stars and variables. Criteria for doubles and variables are:

Doubles are those whose brighter star is brighter than or equal to magnitude 6.50; fainter star is brighter than or equal to magnitude 8.0; separation varies from 2" to 30". Variables included are the brightest of all types, with a range of more than 0.5 magnitude.

**4**

DEEP-SKY OBJECTS										DOUBLE STARS											
Name	R.A. h m	Dec. ° ' "	Con	Type	V	Dimensions	Notes	Name	R.A. h m	Dec. ° ' "	Con	V	Sep (Date)	Notes	Name	R.A. h m	Dec. ° ' "	Con	V	Sep (Date)	Notes
<b>GALAXIES</b>										<b>GALAXIES</b>											
N1300	3 38.5	-35 27	Fov	E1	9.8	69 x 65 (5)		ADS 2582	3 31.3	+27 34	Tau	6,6,7,0	11/3 (1973)		ADS 2582	3 31.3	+27 34	Tau	6,6,7,0	11/3 (1973)	
N1407	3 40.2	-19 35	Er	E0	9.7	48 x 43 (5)		ADS 2582 + 32 Eri	3 48.6	-37 37	Eri	4,7,5,4	8/0 (1975)		ADS 2582 + 32 Eri	3 48.6	-37 37	Eri	4,7,5,4	8/0 (1975)	
N1433	3 42.0	-47 13	M3	SAB	9.0	65 x 53		ADS 2582 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 2582 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1808	5 07.7	-37 31	Cl	SAB	9.0	65 x 39		ADS 2582 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 2582 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
<b>OPEN CLUSTERS</b>										<b>OPEN CLUSTERS</b>											
Pleiades	3 37.0	-24 07	Tau	OC-g	1.2	120'	M45	ADS 3409 + 55 Eri	4 43.8	-04 48	Eri	6,7,6,8	9/3 (1973)	(16)	ADS 3409 + 55 Eri	4 43.8	-04 48	Eri	6,7,6,8	9/3 (1973)	(16)
N1045	4 29.0	+10 00	Tau	OC	4.4	39'		ADS 3627	6 00.8	-3 37	Chi	6,7,7,0	2/13 (1973)	(17)	ADS 3627	6 00.8	-3 37	Chi	6,7,7,0	2/13 (1973)	(17)
N1642	4 46.0	+10 04	Tau	OC	6.4	49'		ADS 3627 + 9 Chi	6 00.8	-3 37	Chi	6,7,7,0	2/13 (1973)	(17)	ADS 3627 + 9 Chi	6 00.8	-3 37	Chi	6,7,7,0	2/13 (1973)	(17)
N1662	4 48.5	+10 06	Chi	OC	6.4	12'		ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1748	5 03.6	-23 40	Chi	OC	6.4	12'		ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1912	5 28.7	-38 50	Aur	OC	8.4	19'	M38	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1951	5 35.2	-4 58	Chi	OC	4.2	20'		ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1978	5 35.4	- 8 23	Chi	OC-g	3.7	45'	M42, (9)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1980	5 35.4	- 8 24	Chi	OC	2.8	16'	(7)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1977	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
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N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
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N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
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N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
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N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
N1981	5 35.5	- 4 52	Chi	OC-g	4.2	20'	(5)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)	ADS 3627 + 14 Aur	4 20.7	+15 52	Tau	3,4,3,8	5/6 (2000)	(14)
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## 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.

### March 2009 Observing List

	Caldwell	Deep Sky Binocular	Double Star	Messier	Herschel-1
1	C59 (NGC3242) *		Iota Cancri	M44	NGC2627
2	C74 (NGC3132)		38 Lyncis	M67	NGC2655
3	C48 (NGC2775) *		Alpha Leonis	M81	NGC2681
4	C85 (IC2391)		Gamma Leonis	M82	NGC2683
5	C79 (NGC3201)				NGC2742
6	C53 (NGC3115) *				NGC2768
7					NGC2775 *
8					NGC2782
9					NGC2787
10					NGC2811
11					NGC2841
12					NGC2859
13					NGC2903
14					NGC2950
15					NGC2964
16					NGC2974
17					NGC2976
18					NGC2985
19					NGC3034
20					NGC3077
21					NGC3079
22					NGC3115 *
23					NGC3147
24					NGC3166
25					NGC3169
26					NGC3184
27					NGC3190
28					NGC3193
29					NGC3198
30					NGC3226
31					NGC3227
32					NGC3242 *

\* - 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 4 double stars (AL Double Star Club), 4 Messier objects (AL Binocular Messier & AL Messier Clubs), 0 deep sky objects (AL Deep Sky Binocular Club), 6 Caldwell objects (AL Caldwell Club) and 32 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

## **Surviving the Messier Marathon By Ann Bruun – ACT Observing Chairperson**

*Note: The 2009 Messier Marathon is on Sat. March 28 at TUVA. Trip details later.*

It's time once again for the Messier Marathon. During a Messier Marathon the goal is to see how many of the Messier objects you can find in one night. Sure, you can have a marathon any time of the year but only March gives you a chance to see most and sometimes all 110 Messier objects.

It is a wonderful experience gathering with your fellow astronomers all pursuing the same goal. This is not a time to work on your Astronomical League Messier certificate. All you have time for during the marathon is to spot the object, log it and move on. You have to keep up the pace, the sky will take objects out of your view if you don't get to them quickly enough.

The marathon itself is fairly simple, and once you get into a groove, you can just keep moving. The observing starts to seem almost easy compared to the main challenge of the marathon – staying awake! This is where the problem lies. During a March marathon the temperature will usually still be cool and the wind will probably be blowing. A nice warm bed or even a sleeping bag will start to sound awfully good.

You must arm yourself to fight against this marathon stealing bandit. The first thing you need to do is be sure you stay warm. As always wear layers and be sure your feet don't get cold. The goal is to stay comfortable.

Snacks can also help. Peppermint can perk you right up. Also nuts, carrots, beef jerky, chips and a thermos of your favorite warm beverage, anything that might help you stay awake. Take your toothbrush along, this is another good way to rejuvenate. Taking short breaks is also important. This will help you stay focused while you are observing.

Use any other tricks you can think of that might help you stay awake. Once the eastern sky brightens to the point observing is no longer possible it is a good idea to take a nap before driving home. The marathon is hard work and you may be more tired than you realize. Still, it is worth sacrificing this one night of sleep to watch the sky turning overhead while you pursue the Messiers.



### **Messier Marathon Charts Available**

Finder charts and log sheets for this year's Messier Marathon March 28 at TUVA are available here:

<http://astrotulsa.com/pub/Messier/MessierMarathon2009.pdf>

For more charts and information about the marathon:

<http://astrotulsa.com/pub/Messier/MessierMarathonLinks.pdf>

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### **SPECIAL INTEREST GROUPS / S.I.G**

The Astronomy Club of Tulsa – A.C.T. has organized groups within the matrix of the club, which provide avenues of learning on key astronomy topics. These groups were formed because of the consistent influx of new members and the experience of current members merging the love of astronomy and the desire to take it to new dimensions.

Tony White will lead the A.T.M. group which will focus on Dobsonian telescopes. The first project that is scheduled is to build a platform for a Dobsonian for better tracking or ability to observe as objects move. This group will discuss making a Dobsonian telescope with mirror kits in the future.

Our second group, Astrophotography will cover those interested in not only observing the night sky, but the photographing of the objects.

This group will be lead by Rod Gallagher who has been observing the cosmos for over forty years. He has been imaging for the past 6 years and has some photos on [www.astrotulsa.com](http://www.astrotulsa.com) website under the gallery section. Rod particularly enjoys galaxies and globular clusters.

Rod will discuss the process of photographing the cosmos and the type of equipment and resources available for the various levels of photography.

Our last group is Radio Astronomy. Chris Proctor has been the catalyst for this particular group. He had the opportunity to coordinate the donation of two large satellite dishes for the club.

Chris is continues to push this club forward into a most active group by providing the club with the information needed on the resources and equipment this group will need to be on the cutting edge of observing.

This group will explore how radio waves reveal many types of objects in the universe.

This same process is used by Radio Telescopes all over the world used to track down black holes in the hundreds of galaxies – including our very own super massive black hole.

To receive information about the Our Special interest groups visit: [www.astrotulsa.com](http://www.astrotulsa.com) and select “Contact”

President - Tony White: Dobsonian Telescopes

Board Member - Rod Gallagher: Astronomy Imaging

Board Member - Chris Proctor: Radio Astronomy

## Lands Tidbits – by John Land

**Welcome Recent New Members: Jason Fields, Terry Koch, Jim Benedict, Michael Rushing, Dian Dowell & Gary Earle**

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.

## ASTRONOMY CLUB PUBLIC STAR PARTY

**FRIDAY MARCH 20<sup>TH</sup>** - ALTERNATE DATE WILL BE SATURDAY MARCH 21<sup>ST</sup> IF SKY IS CLOUDY ON FRIDAY.

*GATES OPEN AT 6:30 PM SUNSET -7:36 P.M. / END CIVIL TWILIGHT - 8:01 P.M.*

*PHASE OF THE MOON ON 20 MARCH: WANING CRESCENT WITH 32% OF THE MOON'S VISIBLE DISK ILLUMINATED.*

*LAST QUARTER MOON ON 18 MARCH 2009 AT 12:47 P.M. CENTRAL DAYLIGHT TIME.*

**IYOA PRESENTATION @ 7:00PM OBSERVATORY CLASSROOM: OBSERVING DAY AND NIGHT**

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 30's or colder you should plan to bring a **HEAVY COAT AND DRESS IN LAYERS. *IT GETS VERY COLD ON OUR OBSERVATORY HILL – Especially with a little (or lot) of wind!!***

- 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.*

**CLUB OFFICERS**

POSITION	NAME	PHONE
<b>President</b>	Tony White	918-258-1221
<b>Vice-President</b>	Tom McDonough	918-665-1853
<b>Co-Treasurers</b>	John Land Jim Miller	918-357-1759 918-627-4551
<b>Secretary</b>	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

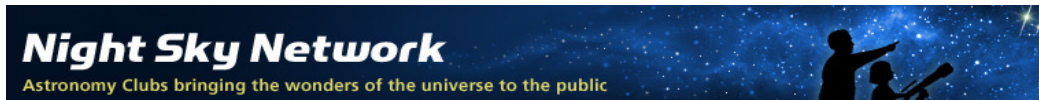
**APPOINTED STAFF**

POSITION	NAME	PHONE
<b>RMCC Facility Manager</b>		
<b>Membership Chairman</b>	John Land	918-357-1759
<b>Observing Chairman</b>	Ann Bruun	918-834-0757
<b>New Members (co-Chairmen)</b>	Owen Green Rick Walker	918-851-1213 918-451-9235
<b>Observatory Director</b>	Teresa Kincannon	918-637-1477
<b>Webmaster</b>	Richard Alford	918-855-9986
<b>Newsletter Editor</b>	Dennis Karcher	918-619-7097
<b>Night Sky Network</b>	Peggy Walker	918-640-0832

**MEMBERSHIP INFORMATION**

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

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



<http://www.astroleague.org>

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

**Astro-Trivia** – Julian Day: The Julian Day (JD) was introduced by Joseph J. Scaliger in 1583. Beginning with January 1, 4713 B.C. the days are numbered in order, irrespective of the various calendars. The Julian Day is reckoned from Greenwich Mean Noon. On January 1.5, 1956, the day numbered 2,435,474 began. The use of this system is convenient in comparing events separated by considerable intervals of time. Although it is often assumed that the term has something to do with the Julian Calendar, it actually was named for Julius Scaliger, Joseph's father. (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](mailto:Newsletter@astrotulsa.com)

Deadline for April Article submissions: March 27, 2009  
Target Publication for April Observer = March 30, 2009  
eMail article submissions to: [djkarcher@cox.net](mailto:djkarcher@cox.net)

March 2009