

# OBSERVER

The Astronomy Club of Tulsa's Newsletter

Published Since 1937

February 2011

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DIALOGO  
DI  
GALILEO GALILEI LINCEO  
MATEMATICO SOPRAORDINARIO  
DELLO STUDIO DI PISA.  
*E Filosofo, e Matematico primario del*  
SERENISSIMO  
GR.DUCA DI TOSCANA.

Due ne i congressi di quattro giornate si discorre  
sopra i due  
MASSIMI SISTEMI DEL MONDO  
TOLEMAICO, E COPERNICANO,  
*Tropondo indistintamente le ragioni Filosofiche, e Naturali  
l'uno per l'una, quanto per l'altra parte.*

CON PRI VILEGI.

IN FIRENZA, Per Gio. Batista Landini MDCXXXII.  
CON LICENZA DE' SUPERIORI.

*All'U. di Cosm. Gio. Comelli, e Autori.*

[www.astrotulsa.com](http://www.astrotulsa.com)

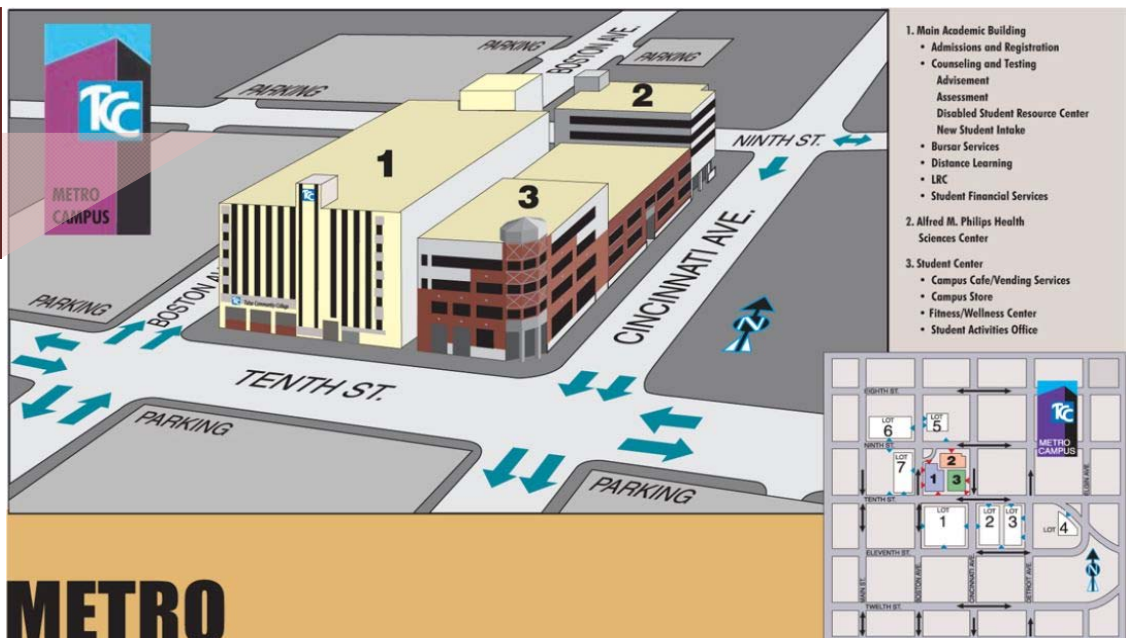


## EVENTS :

EVENT	PROGRAM	WHERE	DATE	TIME
Feb Meeting	Exobiology Lecture Virgil Reese	TCC Metro Campus	2-18-2011	7:00 PM
Sidewalk Astronomy	Public Observing	Bass Pro	2-19-2011	6:00 PM
February Star Party	Monthly Star Party	ACT Observatory	2-25-2011	6:00 PM
March Star Party	Members Night	ACT Observatory	3-4-2011	6:30 PM
Messier Marathon	Messier Marathon	TUVA Observatory	3-5-2011	4:00 PM
March Meeting	Open	TCC Metro Campus	3-18-2011	7:00 PM
Sidewalk Astronomy	Public Observing	TCC Metro Campus	3-19-2011	7:30 PM

TCC Metro Campus -  
Philips Auditorium  
Located in Building 2 at  
the corner of 9th and  
Cincinnati. Park in Lot 5  
to the north on Boston  
Ave.

It's not Dark  
Matter; take  
the cover off.



## Message From The President

By Owen Green

This month we have a fellow local astronomer who will be our guest speaker at this month's meeting. He is Virgil Reese from the Bartlesville Astronomical Society giving a talk on Exobiology, the study of life on other planets.

This has always been a question of mankind that "Are we alone in the universe, and if not where are they or have they already been extinct" I look forward to this talk because it is something we can talk about that could affect the whole planet.

Sadly there was a Snowpocalypse that caused the cancellation of our Feb Star Party and with the forecast showing more on their way I would like for everyone to be safe.

## As The Dome Turns

Second Time Around

By Jerry Mullennix

After a long absence from this newsletter and a bitter contract dispute with ACT over money and reputation, I'm back baby. That's right, they finally caved and agreed I would not have to pay them to

submit articles and publish the newsletter. In return I have agreed to serve coffee and doughnuts at the board meetings dressed in a Hubble costume. All of that aside, both of you guys who regularly read my column will be happy to know As The Dome Turns is back in print on a regular basis.

Many of you may not know who I am so let me take a brief second to introduce myself. My name is Jerry Mullennix and I joined the Astronomy Club of Tulsa back when Eisenhower was President, no wait, wrong president; back when K.C. was President. I have served as Vice-President and a Board Member for several years. I was a regular contributor to this newsletter and this is my second time as the Observer's Editor and Chief. Though I am no longer active as a board member

*"I thought, to join an astronomical society you had to have a PHD, smoke a pipe wearing a doctor's smock while you stood next to your telescope and pat little children on top of their heads."*

I still make regular trips to most star parties and every now and then I pitch in and help with groups or visitors.

For the last 42 years there has never been a time I did not own a telescope or pursued the science in one way or another. For so many years I did my astronomy alone not aware that they actually had astronomy clubs. I did read Sky and Telescope as a boy but I thought, to join an astronomical society you had to have a PHD, smoke a pipe wearing a doctor's

[\(Continued Page 5\)](#)





## Messier Marathon Coming Soon

By Ann Bruun

It is already time to start preparing for the Messier Marathon. It is scheduled for March 5<sup>th</sup>. This is the optimum date on which we have a chance to see most of the Messier objects. In case there is a snowstorm or a flood on that date, like the last two years, the backup date will be April 2<sup>nd</sup>. Ron and Maura Wood at TUVa are once again going to host the event. We usually caravan down to TUVa and hold a potluck supper before working the night away gathering Messiers. The caravan will meet at the Burger King at Elm and the Broken Arrow expressway. That is at the Bass Pro exit but you turn south to go to the Burger King. If your not sure what the Messier Marathon is see the February 2010 newsletter article, <http://www.astrotulsa.com/Archive/201002.pdf> it will explain the event.

Whether the skies cooperate or not we always have a great time. If you think you might be interested in going or have any questions please contact me at [act\\_obs@astrotulsa.com](mailto:act_obs@astrotulsa.com).

JOIN US AT THE MONTHLY MEETING WHERE WE WELCOME VIRGIL REESE AND HIS PRESENTATION ON EXO BIOLOGY

Virgil Reese from the Bartlesville Club will talk to us about exobiology, and the relevance of recent developments in biology, to our estimation of the likelihood of other living worlds. Obviously, with recent news about the possible discovery of Earth-like exoplanets, this will be a very timely presentation. The Kepler space telescope mission just released its data from its first year of data collection and announced 1200 NEW exoplanets including one system with six planets. This pushes the number of know exoplanets to well over 1500. <http://apod.nasa.gov/apod/ap110203.html>

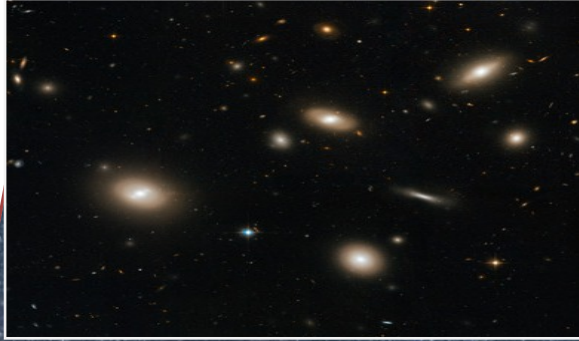
The possibility of life forms on other worlds has long been a fascination of astronomers and space enthusiasts.

[Read more about Virgil Reese and Exobiology on page 6](#)



## The Zooniverse

by Ann Bruun



(Photos courtesy Hubble Heritage)

The Galaxy Zoo has been around for years. I was always intrigued but assumed it would be too complicated or time consuming. Curiosity finally won out and I went to the website, [www.galaxyzoo.org](http://www.galaxyzoo.org), to find out what it is all about. I learned there is so much data being collected by remote controlled telescopes that scientists do not have time to sort it or even look at most of it. That's where volunteers come in, by looking at pictures of galaxies and answering a few questions about them they are helping to create databases of categorized galaxies scientists can go to in order to find objects they are interested in studying further. Some of the images might never have been viewed before by anyone.

*"So it seems the scientists really do need our help, but what is involved?"*

The basic concept is to let several volunteers view an image of a galaxy and answer a few question about its appearance. The answers for each galaxy are collected and a consensus of the most frequent answers is tabulated to form a database. The hu-

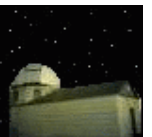
man brain is uniquely programmed to find patterns, something computers, at least for now, are not clever enough to do. So it seems the scientists really do need our help, but what is involved?

When I visited the website the first thing I noticed is that you are not required to register. Registration is only used to give credit if any of your observations are used in a published paper or if you wish to post on the forum. If you are not interested in being given credit simply don't register. From the home page click on "How to Take Part". There are other links too, if you are interested in the history of the project, etc. The "How To Take Part" page starts with a brief description of what you will be doing, including assurances to not worry if you are not sure about how to answer a question about one of your galaxies. Then there is a tutorial, which takes you through all the questions that will be asked with sample photos that show the correct answers when you click on them. Study the tutorial very carefully because the next thing you will do is start classifying galaxies for real.

(Continued Next Page)



# Astronomy Club of Tulsa





*(The Zooniverse Continued)*

Just select "Click here to start classifying" at the bottom of the tutorial and your first galaxy will pop up.

At first I had that, "who me, you want me to classify a galaxy?" feeling, but after the first couple I got into the groove. When I start to have too many doubts I just return to the tutorial and look at the examples again. I have found participating to be simple and fun. I can categorize a few at a time and stop whenever I get tired or run out of time on my lunch break.

There are also other Zooniverse Projects in which you can participate. Just go to [www.zooniverse.org/home](http://www.zooniverse.org/home). You will find Planet-hunters, Milkyway, MoonZoo and many others. It is exciting to know you can assist professional astronomers by helping sift through mounds of data which you may be the first person to see. During these cloudy winter months GalaxyZoo can be a nice alternative when you can't get out under the stars.



*(As The Dome Turns Continued)*

smock while you stood next to your telescope and pat little children on top of their heads. At least all of the scope ads back then had that guy. Then came the internet and the day I goggled "astronomy and Tulsa" and found the Astronomy Club of Tulsa. I don't know if it was a relief to discover other loons like myself or a sign of the Apocalypse that so many were out there. This isn't to say all members of ACT are loons but there are a few of us.

I hope you like the new look of our newsletter and the content selected and I hope you find it a valuable source of information where ACT is concerned. I would like to encourage you to submit articles and astronomy pictures of your own. If you have any suggestions to help improve the newsletter please feel free to drop me a line.

## THIS MONTHS BEST ASTRONOMY PICTURE



Picture taken in my backyard and those are not stars.

J. Mullennix



*Astronomy Club of Tulsa*

## Exobiology— Virgil Reese

From the Bartlesville Astronomical Society's Website.

<http://sites.google.com/site/bartlesvilleastronomyclub/notes/november-2010-meeting-notes>

The possibility of life elsewhere in the universe is a topic full of compelling questions and endless speculation. Over time, as our understanding of the fundamental interactions that drive the processes of life has expanded dramatically, and our insights about the mechanisms of evolutionary development have deepened, investigations into the likelihood of exobiology have become more refined and realistic. Discoveries of conditions possibly favorable to life within our own solar system, and in recent years, the steadily accelerating rate of exoplanet discoveries, have transformed the study of exobiology from vague speculation into serious scientific research.

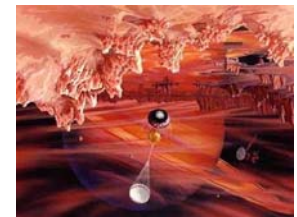
Virgil's presentation began with a fascinating exploration of the diversity of life on Earth, demonstrating that evolution has created creatures far more imaginative and bizarre than science fiction. He then established a list of attributes that are likely to be necessary for life anywhere in the universe. Prime among them is some form of heredity, which can make possible both replication and gradual evolution. He came to the tentative judgment that "multicellular life will probably only evolve on planets (or moons) containing liquid water, in stable orbits around stable, long lived stars." However, life, once established, might evolve the tools (such as intelligence) that could enable it to expand into previously uninhabitable environments.

If extraterrestrial life is common in our galaxy, there are several ways that it could occur. It may

arise independently when conditions are right. Recent astronomical evidence suggests that planets are very common around stars in the Milky Way and by some estimates, 25% of the stars may have Earth-like planets. Virgil pointed out though, that as far as we know, life only started once in the 5 billion year history of the Earth. One possibility is that life arises independently all of the time, but that these newcomers are invariably unable to compete against earth's already established organisms. Another possibility is that life is much harder to start than we would like, and beyond the Earth it may be very rare. Various hypotheses for life spreading from star to star (panspermia) have been invoked to offer the hope of more widespread extraterrestrial life, but all of these have significant problems. In addition, they bring us face to face with the Fermi Paradox. If life has spread throughout the galaxy, we should be able to detect signals from intelligent civilizations. Why haven't we?

The thrust of Virgil's presentation was to investigate the likelihood of life that has evolved to a civilization with spacefaring capabilities, since without this, all life is confined to its own stellar system and will disappear at the end of its star's life. His conclusion is that the most likely explanation for our failure to detect such signals is that the probability of life developing elsewhere in the galaxy is quite low.

The program was fascinating and thought provoking. Discussion was lively and enthusiastic, and didn't stop until the library kicked us out of the meeting roomed and closed for the night.



## Astronomy Club of Tulsa

123 Members

## Expense Summary 2010

Treasurer - *John Land*

12/31/2010

Closing 2010 94 Long term members - 29 New Members

Annual Report of Accounts	Dec 31-2010
Checking	\$ 1,557.29
Savings	\$ 6,484.65
Total Liquid Assets	\$ 8,041.94
<b>Club Investment Accounts</b>	<b>\$ 14,841.10</b>

Regular Club Income	
Membership Dues	\$ 3,615.00
Bank Interest on Savings	\$ 16.19
Monetary Donation	\$ 1,133.00
Observatory Donations	\$ 1,134.45
AstroTulsa Email accounts	\$ 36.00
Net Events & Sales	\$ 1,477.14
<b>Total 2010 Income</b>	<b>\$ 7,411.78</b>

Observatory Donations	
Guest Nights	\$ 357.00
Group Tours	\$ 524.95
Other Donation	\$ 252.50
<b>Total</b>	<b>\$ 1,134.45</b>

### 2010 Major Expenses

Club Operation Expenses	\$ 3,720.38
Observatory Operating Costs	\$ 1,253.68
<b>Total 2010 Expenses</b>	<b>\$ 4,974.06</b>
<b>Club Income minus Expenses</b>	<b>\$ 2,437.72</b>

Expenses	Paid out
Philidelphia Ins Liability	\$ 1,371.00
Philidelphia Ins Board and officers	\$ 850.00
Astro League dues -210 - 140 AL memberships	\$ 710.00
Club Meeting costs -- Guest Speakers Etc.	\$ 536.21
PO Box Rent	\$ 96.00
Club Safety deposit box	\$ 45.00
News Letter & Postage	\$ 17.60
Legal papers expenses	\$ 13.34
AstroTulsa Web Site	\$ 41.25
Misc Costs	\$ 39.98
<b>Club Operation Expenses</b>	<b>\$ 3,720.38</b>

### Observatory Operation Costs

Annual Fee	Liability Insurance	average cost	
	Wireless network	\$ 150.00	\$ 25.00 /mo for 6 months
	Electricity	\$ 527.62	\$ 43.97 /mo
	Water	\$ 268.00	\$ 22.33 /mo
	Observatory Maintance & Repairs	\$ 308.06	\$ 25.67 /mo
	<b>Observatory Total cost</b>	<b>\$ 1,253.68</b>	<b>\$ 104.47 /mo</b>
	<b>Minus Observatory Donations</b>	<b>\$ (1,134.45)</b>	
	<b>Net Observatory Costs</b>	<b>\$ 119.23</b>	<b>\$ 9.94 /mo</b>

Events & Product Orders Paid in Advance by Club members	Received	Paid out
Astronomy Magazine Subscriptions	\$ 886.00	\$ 902.00
Sky & Telescope	\$ 726.00	\$ 724.90
2011 Astronomy Wall Calendars	\$ 489.00	\$ 323.75
2010 Astronomy Club Calendars	\$ 1,113.00	paid out Dec 2009
2011 Canadian Observing Handbooks	\$ 167.00	\$ 173.32
Adams Ranch event	\$ 990.00	\$ 769.89
<b>Net Recieved vs Paid Out</b>	<b>\$ 4,371.00</b>	<b>\$ 2,893.86</b>

Capitla Equipment Donations to Club	Est Value
Propane Grill Donation	\$ 250.00



## Astronomy Club of Tulsa

## Expense Summary 2010

Treasurer - *John Land*

Annual Report of Accounts			Dec 31-2010	Dec 31-09	Dec 31-08	Dec 31-07
Checking			\$ 1,557.29	\$ 2,076.01	\$ 1,520.11	\$ 1,043.80
Savings			\$ 6,484.65	\$ 3,568.46	\$ 302.60	\$ 1,889.19
<b>Total Liquid Assets</b>			<b>\$ 8,041.94</b>	<b>\$ 5,644.47</b>	<b>\$ 1,822.71</b>	<b>\$ 2,932.99</b>

## Club Investment Accounts

Dow Jones close Dec 31, 2010 \$ 11,577.51

	Dec 31-2010		Dec 31-2009	Dec 31-2008	Dec 31-2007
Cash Balance	\$ 933.88		\$ 888.35	\$ 220.92	\$ 4.88
Franklin Income Fund	\$ 9,110.07	at \$ 2.20 / share	\$ 8,162.21	\$ 6,561.00	\$ 9,725.44
American Balanced Fund	\$ 2,516.17	at \$ 17.93 / share	\$ 2,226.33	\$ 1,892.58	\$ 2,573.52
Washington Mutual Inv	\$ 2,280.98	at \$ 27.21 / share	\$ 2,012.47	\$ 1,748.66	\$ 2,652.02
<b>Total Club investments</b>	<b>\$ 14,841.10</b>		<b>\$ 13,289.36</b>	<b>\$ 10,423.16</b>	<b>\$ 14,955.86</b>

Net Increase from 2009	<b>\$ 1,551.74</b>	11.68% increase
2010 reported dividends	\$ 641.72	

Investments gain			
Franklin Income fund	\$ 947.86	11.61%	increase
American Balanced Fund	\$ 289.84	13.02%	increase
Washington Mutual Inv	\$ 268.51	13.34%	increase





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 for more information!



*Astronomy Club of Tulsa*



## Lands Tidbits – by *John Land* for Feb 2011

**Welcome Recent New Members:** Ray Amstutz, Tricia Pickering, Sean Murray,  
Robert Sonnenschein, Nick Gould, Paul Giessen

Membership rates for 2011 will be as follows.

**Adults - \$ 45 per year** includes Astronomical League Membership

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

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

**Additional Family membership \$ 20** with voting rights and League membership. **\$ 15** without League Membership

The regular membership allows all members in the family to participate in club events  
but only ONE Voting Membership and one Astronomical League membership.

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

**Astronomy is \$ 34 for 1 year or \$ 60 for 2 years.** [www.astronomy.com](http://www.astronomy.com)

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

**Sky & Telescope is \$33 / yr** [www.skyandtelescope.com](http://www.skyandtelescope.com)

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

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

**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> To Join or Renew Memberships

You can then **print a copy of the form and mail in your check.**

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 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



**CLUB OFFICERS**

President	Owen Green	918-851-8171
Vice-President	Teresa Kincannon	918-637-1477
Treasurer	John Land	918-357-1759
Secretary	Tamara Green	918-581-1213

**BOARD MEMBERS AT LARGE**

Bill Goswick	
Allen Martin	918-407-9706
Tim Davis	
Chris Proctor	918-810-6210

**APPOINTED STAFF**

Newsletter Editor	Jerry Mullennix	
Facility Manager	Chris Proctor	918-810-6210
Membership Chair	John Land	918-357-1759
Observing Chair	Ann Bruun	918-834-0757
New Members	Owen Green	918-851-8171
Group Director	Tamara Green	918-581-1213
Webmaster	Jennifer Jones	
Night Sky Network	Teresa Kincannon	918-637-1477

**MEMBERSHIP INFO**

Astronomy Club of Tulsa membership (\$45/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.

**Be sure and catch the comedy styling's of Jiggles O'Shae Chapman at our next Star Party.**

ACT welcomes your questions, suggestions, comments and submissions for publication. Please send all inquiries to [act\\_pm@astrotulsa.com](mailto:act_pm@astrotulsa.com)

**Night Sky Network**

Astronomy Clubs bringing the wonders of the universe to the public



*Astronomy Club of Tulsa*

