



Astronomy Club of Tulsa

OBSERVER

March 2005

<http://www.AstroTulsa.com>

ACT, Inc. has been meeting continuously since 1937 and was incorporated in 1986. It is a nonprofit, tax deductible organization dedicated to promoting, to the public, the art of viewing and the scientific aspect of astronomy.

What

The Astronomy Club of Tulsa Meeting

When

Friday, 25 March 2004 at 7:30 P.M.

Where

Room M1 inside Keplinger Hall, the Science & Engineering Building at TU. Enter the parking lot on the East Side of Keplinger Hall from Harvard and 5th Street. This will take you directly toward the staircase to enter the building. Room M1 is the first room on the left.

President's Message

Craig Davis

Things are a changing! Our annual orbital path has turned up Mother Nature's thermostat along with sliding several more clear sky nights now available to all of us. Needless to say there will be a few days that won't be the best but even so, who can really complain in comparison to what we've been inundated with the past three months? And with this change what have we to look forward too? Quite a lot, that's for sure!

Our guest speaker for the March club meeting, 25th, will be Dr. Eric Abraham, OU. Dr. Abraham will present to the club a very interesting topic area entitled "What's With Light These Days? The Real Story About Recent Experiments Claiming to Stop Light and Claiming Faster-Than-Light Communication" Now this should really be an interesting area to hear about. Who knows exactly what it may encompass. Can't ever tell, as imaginations can do, we may very well be inching closer and closer to Star Trek subspace communications levels. Whatever it may specifically be will still turn up the interest juices in all of us.

The weekend of the 12th was the Annual Messier Marathon down at TUVA. Several of our club members attended and had a wonderful time - all night! At this point in time we now have amongst us the first three-time Marathon win-

ner - Rod Gallagher! Right behind Rod was David Stine and then Tom McDonough. There were many more people at this years Marathon also. More than the number that has attended before but that in and of itself is great. The more the merrier! Hopefully next year I personally will be able to make it to the Messier Marathon. Even so, a well-deserved "Congratulations" goes out to Rod Gallagher for winning again this year! All of us need to remember that we will always have an open standing invitation each year. With that, our annual convoy down should build up considerably in the years to come.

We have something to really look forward to in the not so distant future - Prairie Thunder! Prairie Thunder is an event to be held in Pawhuska, OK that will involve The Tulsa Rocket Club - plenty of exciting launches! A formal invitation has been presented to our club to attend and provide all with the wonders of astronomy. Even more so, the event will be hosting an exciting guest speaker via one of our club member's hard work, Neta Apple. Lou Mayo, planetary scientist from the Goddard Space Flight Center will arrive in time for both our club star party on the 3rd as well as accompany us to Prairie Thunder. Lou Mayo has been closely involved with both the Voyager and Cassini-Huygens lander projects for quite some time. The upcoming events for the weekend of June 4th & 5th will be a truly rewarding time for all. Further information concerning this will be relayed at our next club meeting, Friday, March 25th. This will keep everyone up to speed on what's being planned, what help may be needed and all that may be involved. Without a doubt it will definitely be something totally worthwhile to look forward to!

As I have mentioned before, several things are planned to be accomplished this coming summer at the club's observatory. New paint, new concrete setup pads wired with power outlets and several other things that hopefully will make our observatory much better. With a new coat of paint, inside and outside, I do believe that it will take on a fresh new look and smell. The new setup pads will also be welcomed by many. We have three at present but by the end of the summer we should have at least six. I would like to form a group of volunteers that will be openly available to help out when these projects begin. Dates for each project will be announced with sufficient lead-time. With that, there should be no confusion of exactly when and where all will start. Again, dates will be announced and volunteers will be openly welcomed.

Clear Skies to all,

Craig D. Davis President

Night Sky Network

By Neta Apple

First of all, I would like to thank those of you that came before our last regular meeting at TU to hear about our NSN materials. I apologize once again for being late due to my vehicle accident. I also thank you for your great response to the presentation and to my request for sign-ups for the upcoming Prairie Thunder event. Several after the meeting told me that the list didn't make it all the way around to everyone so some of you didn't get on the list. If you didn't get on the list and want to be added please let me know. John Land has graciously volunteered the use of his home in Broken Arrow for our first organizational meeting for Prairie Thunder at 10 a.m. on Saturday April 2. Please put that on your calendar and contact either John or myself for directions to John's home. He will try to have some maps at the meeting on March 25 to give to those that are there and want to attend on April 2.

Last Friday night at South Park Christian School we had a great turn out of astronomers. I was really proud to see how many members came to help out that night! There were at least ten or twelve telescopes set up on the field and the kids and their parents were going from scope to scope with big grins on their faces. I heard over and over from various parts of the field, "WOW!" We started off the evening indoors in the sanctuary, where I spoke for about half an hour giving them a bit of a tour of the solar system and using some of the same materials and activities that I was able to share with you at our pre-meeting last month. They were an excellent group of kids and adults and were easily drawn into answering questions that I posed to them. They also had some really good answers and some really good questions of their own!

We are just a few weeks away from getting our box of materials about black holes. That should include some really interesting things!

Also I will be attending the AAVSO High Energy Astrophysics Workshop. I received a travel grant to go to the meeting and will be bringing back information to share with our club and others information about the SWIFT and GLAST missions as well as about GRBs, magnetars, polars and other strange members of the high energy star zoo.

Now I have saved the very best for last! As some of you know I participate in another group known as After School Astronomy Clubs that is headed up by a planetary scientist named Lou Mayo from Goddard Space Flight Center. Members of the ASAC group were on a teleconference last month and were discussing our various projects both past and upcoming. One of the other members who had already heard a little about Prairie Thunder from me asked me to talk about it. Lou listened and asked some questions, then said that he

thought he might like to come. I thought he was joking at first, but soon realized he was serious. He asked me to send him a written description of the event so I did. Last Friday afternoon he called to talk to tell me that he is going to come to participate in Prairie Thunder! So we are going to have a NASA Planetary Scientist coming to the event to work with us. Now if that is not enough, I mentioned to him that we have a regularly scheduled star party on the calendar for June 3 and asked him if he would like to come. He accepted gladly. We discussed it briefly and the plan is that he will arrive in Tulsa sometime the afternoon of Friday June 3. Those of our club that can and would like to come will meet him for dinner someplace in Tulsa. He said he would bring some materials and talk to us about something, no topic set as yet. Then weather permitting, we will all go to Mounds to the observatory for the star party and he will go with us. He enjoys visual astronomy and owns a 10" SCT. If the weather is not good, Craig is working on arranging for us to possibly be able to use room M1 at TU, our regular meeting room as a back up location so we can all meet and talk to Lou. He was a member of the Voyager Infrared Team for 12 years and was project manager for the technical contracting group during the development of the Cassini/CIRS instrument. He served on the Cassini Ground System design team and has published and presented many times on the atmosphere of Titan. Lou Mayo is a member of the NASA Sun Earth Connection Education Forum, the DC Space Grant Consortium, and co-leads the AAS Division for Planetary Sciences Education program. He has authored numerous articles on astronomy and runs an after school astronomy club in Silver Spring, MD.

I thought it was very kind that Lou should not only come to Oklahoma, but that he would be so interested in coming to meet all of us on the Friday before the main event. This should be a very interesting evening so be sure to mark the date on your calendars!

The next morning he and those of us going to Pawhuska will go there bright and early and work there all day. He will stay for the star party at Prairie Thunder on Saturday night (I told him I was told the sky is dark and promised him the use of my C11 as bribery LOL), and then he will fly home on Sunday. When I know more about what he plans to do and to talk about I will be sure to post it in the newsletter.

I will look forward to seeing all of you at the meeting at TU on March 25 and again at John's home on April 2!

GO - DON'T GO?

By Jerry Mullennix

Over the last few decades there has been a yo-yoing back and forth on the topic of going to Mars. It seems one minute Congress and NASA are on board, public interest is high and all that is left is the planning of the mission. Then the same segment of society that cut the manned missions to the moon short in the 70's revive their old gripe, "How can we spend so much money in space when we have so many problems, starvation and other humanitarian issues here on earth? We should solve these problems first."

Then interest seems to wane, Congress chops the budgets and we go about the task of aimlessly planning a mission to Mars. To boot the task is burdened with too little money and a narrow-minded popular press that just does not care about space. They even have the audacity to go on the air and proclaim the public has lost interest so Congress should lose interest. I was never given the opportunity to vote them as a representative of what I think.

What is hard to explain is that the answer to the very problems they protest could well be in the research we do in space. Because it is not immediately apparent, they fail to see that all of the recent technological advance we have made in agriculture, computer science, medicine and many other aspects of daily life here on earth are a direct result of the technology developed to get us to space. This is just the technology to get us there; never mind the fact we have not yet harvested any of the resources out there or the benefits of that to humanity.

When it comes to the money we spend on various and numerous space missions its important to grasp the fact that first we must understand what we are seeing and know how it relates to us before we can benefit from potential resources. Just like here on earth, if you kill off all of the Zebra in Africa, the lion dies as a result. In space, understanding is critical because the ramifications to what we do could be irreversible or have long-term effects, regardless of our intentions.

In a recent discussion with Neta Apple (Night Sky Network) we weighed the possibility of man going to Titan someday, or even the possibility of life on Titan today. "Impossible you say!" With the extreme cold -250F the enormous pressure, nearly twice the pressure of the earth at sea level and an atmosphere consisting of mainly methane (both liquid and gas forms). Along with, the explosive effects of introducing the life sustaining gases that support our life to that atmosphere. (Oxygen and fuel added to Titans methane - well you do the chemistry and contemplate the risk).

I'm sure most of you have heard of the microbes that live in the volcanic hydro-vents on the ocean floor in +400F temperatures. Fascinating to say the least, to say the most, these creatures opened our eyes to the durability and flexibility of life and that it can adapt in very harsh environments. But lesser known are methane worms that live and flourish on the methane ice in the crushing cold depths of the sea.

A team of university scientists using a mini research submarine on a NOAA-funded research cruise discovered and photographed, a new species of centipede-like worms living on and within mounds of methane ice on the floor of the Gulf of Mexico, about 150 miles south of New Orleans. "These worms are the major players in a new and unique marine ecosystem," said expedition Chief Scientist Charles Fisher, an associate professor of biology at Penn State, who discovered the methane ice worms in waters 1,800 feet deep.

"These are not just another common worm in the mud. We now know that these higher-order organisms can live right on methane hydrates. If these animals turn out to be ubiquitous on shallow seafloor gas deposits, possibly worldwide, they could have a significant impact on how these deposits are formed and dissolve in seawater." Fisher said.

I know what you are thinking and you are correct, Titan is much colder and vastly different. Plus both of these creatures share in the one common thread we know supports life on Earth "SEAWATER." But the fact that these methane worms metabolize methane hydrates and live right on the methane ice makes the slightest possibility that our environment and chemistry is not the only way life can flourish. Just the possibility it could.

I have to agree with Neta it would be possible someday for humans to venture to Titan but the current trend towards robotics would dictate it the most likely and safest path for now. However, there is research into the idea that it would be possible someday for us to actually change our own physical properties and biological structures and actually take on a new form, say for instance, be able to breath methane and have the nutrients extracted from methane support the new physical structure we have taken on. The life structure could be adapted to be quite comfortable and suitable for the extreme cold or crushing pressures you would experience in these strange environments.

This seems far-reaching but understanding places like Mars, Titan or possible life in the sub seas of Europa are first steps towards this or similar ideas. Finding life or some facsimile of life (past or present) could answer questions as to how an organism can survive in these seemingly hostile, impossible environments thus giving us the opportunity to use nature, yet again, to answer key questions. After all we saw the bird flying and the structure of that wing answered the question; "How could man ever fly?"

Pushing towards Mars is vital, more and more it is starting to look like life has been there or possibly still is. It is also apparent from the geological and chemical composition data collected from the rover missions that Mars has been a vibrant, volcanic, water flowing planet. It is also highly likely that large volumes of water exist just below the surface, particularly in the Kasai Vallis region and Polar Regions of Mars. A 3D view of the Martian North Pole created from Mars Global Surveyor laser altimeter data concluded the polar cap is mainly solid water ice. Mars is a goal we have the technology for right now and we could go now if the interest was greater or people had a greater understanding of the benefits we could gain from a manned mission to Mars. We went to the moon with far less capabilities!

The President intends to nominate Michael D. Griffin, of Virginia, to be Administrator of the National Aeronautics and Space Administration. Dr. Griffin currently serves as Space Department Head at Johns Hopkins University Applied Physics Laboratory.

Perhaps with some gentle persuasion Dr. Griffin and President Bush could stand up in front of the country and utter the words "Our goal is to get to Mars before 2015 or 2020" and then NASA go and do it. Lay out a flight plan, graph the progress, send the supplies, housing and oxygen now, maybe put a space station in Mars orbit to run back and forth to the surface. Whatever the approved plan is, stick to it and when you miss part of it, hang your head, then go figure out how to catch up. Congress could help by passing a law that would allow the sciences to advance regardless of current presidential or congressional party affiliation. These are pursuits that will outlive any current congressional or presidential term and people working on these projects need to know their job won't end with the new elections.

However severe the sticker shock is - it will come back to us many fold and in ways we have not even dreamed. Strictly from an economic standpoint it is an investment in the future and it will pay dividends. From a prestige standpoint it would allow America to continue to determine the path of space exploration from this planet well into the future.

David's Astro Corner

By David Stine

This years Messier Marathon was one of the best that I have been associated with in several years. The turnout was great with over 20 people attending from both the Astronomy Club of Tulsa and TUVA Club. Many of us caravanned to the site to start out the exciting evening awaiting us. We arrived to the hospitality of the hosts Ron and Maura Wood and they showed everyone where they could set up. Most of us set up around the club house that provided rest, warmth and snacks all through the night. Bart, the TUVA clubs 24" telescope stood like a huge guard by the club house while we began setting up. Some members set up on the north side of the club house to block the south strong wind, however were they in for a surprise later when the winds switched to the north. After we set all of our equipment up we ventured into the club house for pre-dinner feast and to view Gerald Millers and Ron Gallagher, latest photos, which were awesome. As it grew darker the strong south winds died down and it was starting out to be an enjoyable night. The defending champ Rod started out strong, locating 40 objects before anyone else had 20. Rod even had to take a break to wait for more objects to rise. Ron was able to show several objects through Bart that people thoroughly enjoyed. I have never seen so many of Saturn's minor moons. This is the first marathon that I can remember that I started out in shorts and a tank top but that was all going to change drastically. The first part of the night had calm winds, at one time there was hardly any winds, then sometime between 11p.m. and 1a.m., which I can't remember exactly, all of a sudden it was like out of nowhere from the north came hurricane force winds. When it hit, it hit, tarps were flying, papers going everywhere, and I was surprised that half the scopes didn't blow over. This didn't discourage the hardy ones and we continued on with our observing, but with more layers of clothes on. I was glad to see some of our new members stick it out as long as they could. While viewing some of the Messier objects other NGC objects would come into view that many people had never seen before. Very near M81-82 there is another dimmer galaxy NGC 3077 that at our dark site that night was easy to see. Anywhere else you probably would have missed it. Then there is the little ring nebula inside M46 and the galaxy in M13. These are just a few of the hidden treasures that you run across under dark skies like TUVA. Even though the winds never did stop the skies stayed crystal clear all night. It was pretty much assumed that Rod was going to win as he stayed at least 20 objects ahead of everyone all night, but he did face some competition as me, Steve Chapman, and Tom McDonough gave him a run for their personal bests. Rod had found all that could be observed and was resting while the rest of us were closing in. The sky was starting to brighten, but Rod wanted one more while the rest of us had thrown in the towel. Rod ended the night with capturing his 105th object M15 a globular cluster in Pegasus. The final results had Rod with 105 making him a 3-peat winner, the followed by myself with 100(my best ever), Tom McDonough 90(his first mara-

thon), Steve Chapman 86(his best ever). Others that are to be congratulated for attempting the marathon were Randy Henry with 36, Ann and Lina with 17, Gerry Andries with 14 and others such as Ken Black, Owen and Tamara Green, Ron Patrick. and Phillip Dunbar. During the early part of the evening Steve Chapman took several photos of the event and they are now posted at our website. You can also find pictures at the TUVA Club site also. As I said it was a great evening and we will be reliving the memories from this year's marathon for some time. If you missed it this year, start planning for a bigger and better marathon in 2006.

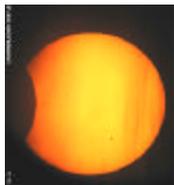
Although she was unable to attend the TUVA Messier Marathon, Neta Apple completed her own marathon at her place and was able to log 83 objects before the hurricane winds and smoke from brush fires drove her in. Congratulations Neta!

That's it from my corner this month, don't forget the partial eclipse of the Sun April 8th that John Land talks about in his article, and keep your eyes to the skies until next time.

Lands Tidbits

By John Land

Celestial Navigation - Did you ever wonder how those ancient sailors found their way across the sea without the use of radio or GPS systems? Or would you just like a better understanding of the mathematics of the cosmos. Jennifer Land ran across this very thorough and complete discussion of celestial navigation complete with illustrations and equations. Its in Adobe PDF form like the club's newsletter. There is an index to topics and you can view them individually instead of the whole site at once. Most are only 3 or 4 pages long. <http://home.t-online.de/home/h.umland/page2.htm>



Partial Solar Eclipse

April 8, 2005

1st Contact 4:45 PM CDT - Central DAYLIGHT Time

Maximum 5:15 PM CDT about 10 % covered

Last Contact 5:40 PM CDT

This picture taken by club member Ken Black of the June 10, 2002 eclipse. Illustrates approximately what the eclipse will look like. (Note I rotated the image to match the appearance of this year's eclipse.)

While this is not a spectacular eclipse it will be our last eclipse until 2008. So take the opportunity to show your fellow workers or neighbors a little bit of celestial magic. Even though we are nearing Solar Minimum there have still

been some nice sunspot groups from viewing. Be sure you use a safe solar filter or projection system and explain a bit how to safely view the sun.

You can keep yourself up to date on the eclipse and other solar activity as it approaches by going to www.SpaceWeather.com Their March 10, 2005 page had a nice animation of the eclipse at different latitudes plus a link to Fred Espenak's NASA Eclipse page. You can view old pages by changing the date on the upper right corner of the page.

Speaking of the moon I ran across an excellent page I have mentioned before www.inconstantmoon.com This award-winning site from the UK not only gives you a vast wealth on images and information on the moon but also lets you listen to musical selections celebrating the moon. They have selection to fit almost any taste from Beethoven to U2.

Welcome to our new members: Glenn Keys, Leslie & Ben McDannald and Shannon DelloIacono

Changing EMAIL - When you change your email or mailing address be sure to send me the new information so I can update the club records. You can use the Join feature on the club web page to make changes.

ON LINE Club Memberships and Renewals: Club memberships are \$25 per year for adults and \$15 per year for students. 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. Astronomy Club of Tulsa - 25209 E 62nd St - Broken Arrow, OK 74014

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 \$29 for 1 year or \$55 for 2 years. www.astronomy.com

Sky & Telescope is \$33 / yr www.skyandtelescope.com Sky and Telescope also offers a 10% discount on their products. NIGHT SKY is \$18 / yr A exciting new bi-monthly magazine for beginning or casual astronomers. <http://nightskymag.com/> The club has coupons for a free issue

Address Corrections- Email changes - Questions: You may forward questions to the club call our message line at 918-688-MARS (6277) by email membership@astrotulsa.com Please leave a clear message with your name, phone

number, your question - along with address or email Please make email subject lines that address your question. The spam filters may DELETE emails without clear identification!

ASTRONOMY EVENTS

By Gerry Andries

NOTE:

Tentatively scheduled dates below are bracketed with question marks. The number of persons expected is in parenthesis.

EVENTS AT RMCC OBSERVATORY:

MAR

- 19 Sat 06:00 Brownie Troop 637 (30)
- 22 Tue 06:00 CS Pack 199 (20)
- 24 Thu 06:00 Claremore Adventist School (20)

APR

- 08 Fri 07:00 Club Star Party
- ? 09 Sat 07:00 Back Up for 04/08 ?

MAY

- 06 Fri 07:30 Club Star Party
- ? 07 Sat 07:30 Back Up for 05/06 ?
- 14 Sat 06:30 Model T Club (20)

EVENTS AWAY FROM OBSERVATORY

MAR

- 25 Fri 07:30 Regular Club Meeting at TU Keplinger Hall

APR

- 22 Fri 07:30 Regular Club Meeting at TU Keplinger Hall

MAY

- 20 Fri 07:30 Regular Club Meeting at TU Keplinger Hall

Gerry Andries
Observatory Group Director
Astronomy Club of Tulsa

Astronomy Club of Tulsa membership (\$25/year) includes membership in the Astronomical League and subscription to ACT's "Observer" and AL's "Reflector". "Astronomy" (\$29/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.

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LARGE**

- Neta Apple
- Steve Chapman
- Rod Gallagher
- Rocky Keys
- Dan Lamoreaux
- Tom McDonough
- Jim Miller
- David Stine

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