Astronomy Club of Tulsa

OBSERVER

August 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 Star Party

When

5 August about 8 P.M.

Where

RMCC Observatory near Mounds

President's Message

Craig Davis

A hot summer we have and it will continue for a bit longer, for sure. Even though it may be hot there are plenty of clear nights that have finally come our way. And from the looks of things they will just keep right on coming for the next two months. Who can complain?

At our next club star party, August 5th, we will openly welcome a guest speaker that is one of our own. Aaron Coyner, an active club member since 1996, will speak to us on research data that he both is and has been dealing with in relation to solar flares.

Since Aaron first joined the club almost ten years ago, he has followed a route that has led him to not only completing his Bachelors degree, Physics Engineering, at TU but a continuation at Rice University to obtain his Master of Science degree. Upon completion of his masters this year, May 2005, Aaron has been conducting research in solar physics at Rice with focus on C.6.5 solar flare which occurred this month. From his research he will present to us information and data that has been obtained from the use of both the TRACE and RHESSI spacecrafts. This data info will be dealing with the development of spatially localized UV and hard X-ray sources in solar flares and discuss the implications to flare energy releases. Obviously the level and amount of energy releases from solar flares will be staggering. Overall it should be very interest-

ing to learn more of just what occurs both during and after a solar flare erupts and what effects it has in a variety of different applications.

Without a doubt it will be a true pleasure to have Aaron back with us and relay some very interesting and intriguing solar information. Look forward to it, I am!

At the beginning of this month a troop of 6 club members trekked out to the desolate regions of Chaco Canyon, New Mexico. In a grueling and concerted effort all six of us decided it would be well worth the trip to witness the impact with comet Temple 1 on the early morning of the 4th of July. This troop of star and comet wanderers consisted of me, my wife Debbie, Tim Davis, Jerry Mullenix, Steve Chapman and Neta Apple. Neta had both her sons with her too. It was fun having them and Jerry's nephew Devon there too.

Everyone except Debbie and I camped at the canyon. We made a daily run from Farmington, NM, about 50 miles north. With Hwy 550 being more or less a brand new road, that was of no problem whatsoever. Only one exception though - watch out for the Jack Rabbits. Every night when we'd be heading back to Farmington we'd have anywhere from 25 to 50 of them run across the road in front of us.

Chaco Canyon, clear, unobstructed deep dark skies! Beautiful! You could simply sit there for hours and enjoy every second of it, absolutely!

Not a sign of city glow on the horizons at all. Absolutely nothing but deep dark black skies with the stars simply shining and twinkling as you'll not see around here locally. A welcomed light breeze was also available to cool us down early in the evenings and progress to a much cooler level overnight. Hot in the day time, cool to cold at night - typical desert environment. The results of which were very rewarding. There were so many objects that were easily naked eye obtainable let alone what more you could capture with a telescope. Even binoculars would reveal so much more than you would ever imagine possible. All of us, Tim, Steve, Neta, Jerry, Debbie and I were simply in seventh heaven.

We did witness the impact with Temple 1 but even though we were in such definite dark skies it was not easily seen. From an extremely very minor smudge to what seemed as somewhat of a slight brightening. It was so dim that if it hadn't been for Tim I seriously doubt if we may have even been able to locate the comet to begin with. It must have been something in the MRE's (Meals Ready to Eat) that Tim had taken along for camping food that gave him extra sharp sighting capabilities. Unfortunately the impact did not fulfill what so many had anticipated and expected as a beautiful brightening to a 6th magnitude level of Temple 1, or as it had been predicted. Even so, the overall observing time and desert experience out weighed that disappointment. Example,

using nothing more than a 22mm Nagler you could get definitive arm structure detail on M-51. That is most definitely more than we could ever get here with that size eyepiece. Another unusual sight was as a lazy stretched out cloud one night that rolled through the southern sky and from just the combined star glow around Scorpius and Sagittarius was back lighted. That region of the sky made the cloud, one alone; stand out like a sore thumb. In it's own right, very pretty. I tried some simple thirty second exposure shots with my digital camera and it's very surprising what it captured. Lovely digital pictures of whole constellations were obtained as well as say M-5, M-20, M-31 etc. No, they are nothing like the results of committed astrophotography but even so, a slight smudge is still a very nice reminder of what we had above and before us for three days.

The "Chaco Canyon Troop" is ready and available to tell you about where, what and why it is a very remote and welcome sight for some of the best observing time you will ever get.

If at any time in the future any of you might like to enjoy very dark skies one of the best directions to go is due west - New Mexico. Yes, it's a drive, but even so it's well worth it. I can assure you, you will not be disappointed!

Before I close I must say one thing for Neta - even though we won't have Neta with us much longer since she has to move to the Kansas City area, she has done so much for the club and the events that we have been involved with over the past. An exceptionally strong and special thanks goes to Neta for all that she has contributed to our club and what she has accomplished! When Neta sets her mind to it, by gosh it gets done! Again, Thank You Neta, we all deeply appreciate all that you have done for so many!

Clear skies to all,

Craig D. Davis
President

Chris Brown

1 December 1943—1 July 2005

Chris Brown, a longtime Tulsa Community College professor and the founder of the Tulsa Duathlon, died Friday, July 1st. He was 61.

Brown was born Dec. 1, 1943, in Santa Monica, Calif., to Mary (Young) and William Brown.

He graduated with a master's degree in 1974 from Northeastern State University in Tahlequah.

For the next year, Brown taught at Tulsa Public Schools. He then began working as an instructor in math and physics at Tulsa Junior College, now Tulsa Community College.

In 1980, to fulfill a pledge to stop smoking and improve his health, he began running, swimming, bicycling and competing in triathlons.

In the late '90s, Brown started the annual Tulsa Duathlon, in which participants compete in consecutive running and bicycling events. It was designed to promote health and a sense of community.

This year's duathlon was renamed the Chris Brown Tulsa Duathlon, and its host will be the Tulsa Area Tri-Athletes. The event will begin at 7:30 a.m. July 24 at Mohawk Park and will comprise two 5k runs and a 30k bike race.

Brown was a member of the Astronomy Club of Tulsa, Tulsa Area Tri-Athletes, and the Hog Harley Davidson owner's group.

He is survived by two daughters, Dana Vaughn of Tulsa and Danielle Brown of Norman; his mother, Mary (Brown) Martin of Tulsa; a sister, Kate Brown-Matousek of Centennial, Colo.; and two grandchildren.

NIGHT SKY NETWORK

By Jerry Mullennix

I would like to take a moment to extend a special thank you to Neta Apple for all of the hard work she contributed to our club. She will be sorely missed and I am sure you all join me in extending her our best wishes for all of her future endeavors. For a few others and myself we got to send Neta off in style by spending three of the best astronomical nights together you could imagine in Chaco Canyon, New Mexico. As for Neta, this is not really good-bye but more like see you later.

When Neta first approached me a few months ago about taking over as the NSN Coordinator for our club my immediate thought was "NO (insert explicit) WAY". I then proceeded to run home so I could book a flight to Antarctica and ditch my cell phone. I could then cover my tracks by growing a long beard and hiding with the nomads in the desert for a few years. After all it would take three or four people to do the job Neta has been doing and at that probably not as well.

I spent a lot of time studying the material available on the web and talking to Neta every chance I could about how we might best make a transition so our club could continue to benefit from NSN and not just let the program die. And while I still have some of that initial apprehension that I might disappoint I am more confidante now then ever that we can actually make the program grow and flourish, even with a change as huge as the loss of Neta.

I would like to ask all of your patience while I review the large amount of material Neta has left with me. I will need some time to comprehend what is here and expected of me. I have Neta's assurance I can count on her to get things going and her assistance is vital. As Neta stated in last months newsletter "There is a strong outreach foundation here in Tulsa and all we need to do is build upon that." Make no mistake, I am not trying to replace Neta nor could I. My mission is to take the program to the next level by building on the foundation already laid. The Outreach program belongs to all of us and as such your involvement in project planning and ideas are not only welcome but also essential to the success of the program.

I look forward to seeing and hearing your thoughts and criticisms as we proceed. Please feel free to drop a line via email jerrym@pantherenergy.us anytime. I look forward to seeing all of you at future gatherings.

Now I would like to discuss two of my favorite topics "Space Exploration" and "Space Science." All of you have heard of the Hubble, Spitzer and Chandler space telescopes and the beautiful images they have sent us. However, a lesser-known scope was launched April 28,2003 and goes by the name Galaxy Evolution Explorer. Its primary focus (pardon the pun) is the formation and evolution of stars. It measures in the ultra-violet wavelengths and can look about 80 percent of the way back to the big bang. The spacecraft's mission is to observe hundreds of thousands of galaxies, with the goal of determining

how far away each galaxy is from Earth and how fast stars are forming in each galaxy.

Now I mention this scope because a recent observation has the potential to shatter current beliefs in how and where stars form. In fact we really do not know that much about star formation and it is important to not let small pieces of knowledge we acquire get lodged in our brains as fact.

A recent image from NASA's Galaxy Evolution Explorer spotted a galaxy (NGC-4625) many considered to be old and common. This galaxy is sporting a set of young spiral arms. Now this galaxy is close by and astronomers had thought that this kind of glow and youth had long ago fizzled out in our universe.

"This galaxy is an amazing surprise," said Dr. Armando Gil de Paz of the Carnegie Observatories, Pasadena, Calif., and lead author of a paper appearing in the July issue of Astrophysical Journal Letters. "We are practically up-close and personal with a galaxy undergoing an evolutionary stage that was thought to occur only at the dawn of the universe, in very young and faraway galaxies."

What I found interesting here is the fact the stars actually formed in the new spiral arms as opposed to forming in the core and moving out. The stars in the arm are about 1 billion years old while their counterparts in the galaxy average about 10 billion years. Dr. Barry Madore of the Carnegie Observatories, co-author of the new paper. "This nearby galaxy represents one of our possible histories."

In visible light the galaxy only shows an oval shaped ball of light, but in the ultra-violet the new arms extend 10 times further out than the oval shaped core. If you get a chance go take a look at the pictures. The image can be found at http://www.nasa.gov/centers/jpl/missions/galex.html or http://www.galex.caltech.edu/. Also make a point to look at the galaxy, as we would see it in our scopes, better yet go out and find it in yours. I am sure over the next few weeks and months you will see many articles from this discovery and one of the things I find fun is to try and form my own analysis of the discovery and then wait to see if the main stream duplicates my conclusions. In this instance my immediate thoughts are that this has the potential to stand many theories on their ears, I have yet to begin to understand why an old galaxy would still be forming new arms and in a manner only consistent with our young universe. I was pretty comfortable with the formation at the core and then moving out. However comfortable I am with a theory I do enjoy when things get turned inside out and truthfully it is what drives me to keep studying.

HOPE TO CATCH ALL OF YOU AT OUR NEXT STAR PARTY

DAVIDS ASTRO CORNER

"The Best Meteor Shower of 2005"
By David Stine

August brings thoughts of a Milky Way shining high overhead, Mars starting to be able to be observed at a decent hour and meteors. Every year just about at the same time of August the sky lights up with numerous meteors from an area between the constellations of Perseus and Cassiopeia. This event is known as the Perseid Meteor Shower and is one if not the best meteor shower of the year. Some years the shower has been poor, but last year was an exceptional year and this year should be no different and maybe even better. You begin seeing Perseids around mid July and you may have even seen one already while viewing lately. This debris from 109P Comet Swift Tuttle begins encountering Earth at this time. Not allot of activity can be seen at first but the activity increases as the beginning of August arrives and Earth moves closer to the central portions of the debris. Early August the radiant lies near the northern horizon at dusk, so it climbs through the night and more meteors can be seen.

The Earth is predicted to pass closest to the core of Swift Tuttle near 1800UT which is in the afternoon for Tulsa. This is not favorable for us at least for the peak, however an impressive show is still in order on Friday morning August 12th for us, similar to last years show. At this time the nearly first quarter moon will set near midnight and viewing should improve from acceptable an hour before midnight to absolutely fantastic after midnight. Actually since the moon is completely opposite of the radiant, good counts will probably be able to be seen even earlier in the evening of the 11th. The highest counts will occur between 4 and 5a.m. Friday morning the 12th, so you are going to have to sacrifice some sleep and maybe even take Friday off of work to see the best of the shower. From past experience even the hours from 10p.m. - 2a.m. should be decent with a meteor or more a minute. Between 10p.m.-3a.m. you should see 40-60 an hour and this total will increase as dawn approaches to somewhere between 60-100. Perseids are usually bright white or yellow in color and very fast, not like the slow graceful Geminids in August. The brighter ones usually leave persistent smoke trails that last several seconds. This is not really smoke but rather ionized gas created by the meteor passing through the atmosphere at tremendous velocities. During meteor showers I like to log the meteors I see with a description, magnitude, color, velocity but you can also just lay back and enjoy the show. We have scheduled a Perseid Meteor Watch at the observatory for the night of August 11 Thursday and the morning of August 12 Friday, so mark your calendars for this great event. This will be the last time you will be able to view the Perseids under moonless skies until 2007 and the remaining meteor showers this year will be spoiled by moonlight, so you don't want to miss this years Perseids. If we get clouded out Thursday night, Friday night and Saturday morning will be an option and the meteors

will only decrease slightly. So plan on being at the Observatory Thursday and Friday morning Aug. 11-12 for the best meteor shower of the year. For more Perseid information go to http://www.amsmeteors.org/visual.html

The great Comet Crash turned out to be a very successful project and many were able to see the comet brighten after impact with backyard telescopes.

I hope our group from the club of their trip to Chaco Canyon will be in this newsletter telling of their experience. There are many many new photos, and information on Deep Impact, too much info to include here, so I will list the sites to go to and I urge you to try and visit each one as you will find some amazing photos and information.

This is an image of the dark black nucleus of Comet Tempel 1 showing the ejecta plume caused by the impactor crashing into the surface

http://deepimpact.jpl.nasa.gov/gallery/HRI_937_1.html

Take a look at the following kinds of images that the science team will use to compare and confirm their theories about Tempel 1 and comets in general:

From the Impactor: http://deepimpact.jpl.nasa.gov/gallery/images-impactor.html
From the Flyby: http:deepimpact.jpl.nasa.gov/gallery/images-flyby.html
From the Spacecraft: http://deepimpact.jpl.nasa.gov/gallery/images-spacecraft.html
From large telescopes on Earth: http://deepimpact.jpl.nasa.gov/gallery/images-telescopes.html
From small telescopes on Earth: http://deepimpact.jpl.nasa.gov/gallery/images-amateur.html
From collaborative observers on Earth: http://deepimpact.jpl.nasa.gov/gallery/images-collaborating.html

If you missed the spectacular evening of the crash, there is a program which chronicles NASA's Deep Impact mission from the very beginning to the explosive finish that is to air on the Discovery Channel on Sunday July 31st at 9p.m. Check your local listings for this exciting program.
http://www.nasa.gov/mission_pages/deepimpact/multimedia/DI_disc_channel.html

Mars is back and better than ever rising around midnight. By October and into November it will be the talk of the town shining brighter than anything in the sky in the evening. There have been rumors going around about Mars so lets clear those up right now.

1. Mars is going to be as large as the full moon. First of all if Mars was as

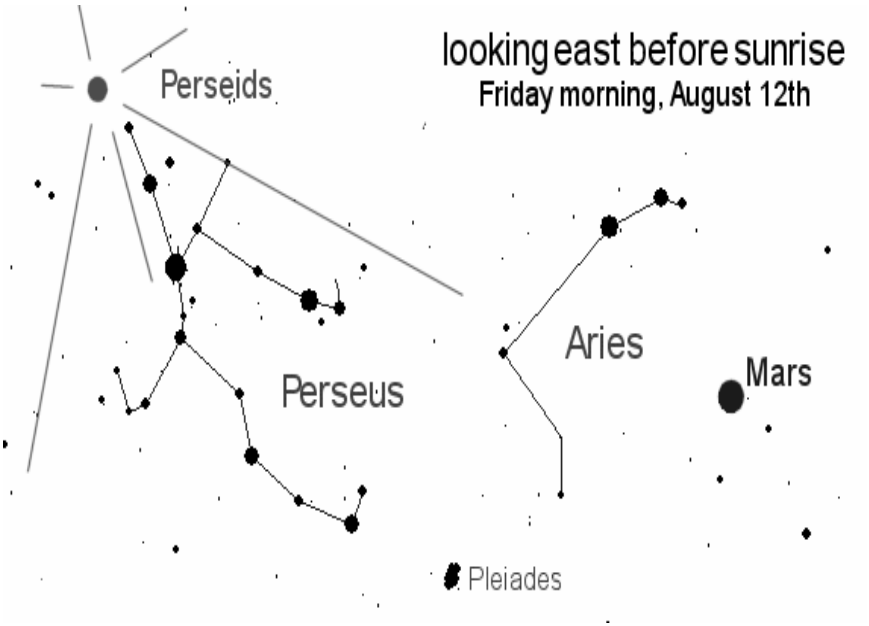
large as the full moon it would be just about as close to us as the full moon. In reality it will look like a very bright red star.

2. No one alive today will ever see this again. Well unless Mars disappears completely you will be able to see Mars anytime it is in your sky, maybe not as bright or as close but it's not going away.

3. This will be the closest approach by the planet in recorded history. Wrong, you remember two years ago was its actual closest approach and it will be just a little farther out at 69 million km than in 2003 when it came to within 56 million km. To the casual observer you want be able to notice the difference.

It will be something the general public will notice and ask questions about. So be prepared to answer and stop all the silly rumors. The Astronomy Club of Tulsa and Oxley Nature Center are in the process of planning another Mars observing session for the public which will be around its closest approach probably after on November 11-12. As you know in 2003 we had Mars Watch I and thousands came out to view the planet. More information on this event will be forthcoming in the near future and I hope you will plan to participate in this public event and help showcase the Astronomy Club of Tulsa. I will also have more information on observing Mars in next months Astro Corner.

That's it from my corner this month, keep your eyes to the sky and bring on the Perseids.



M51 Supernova

By Rod Gallagher

Davids Astro Corner Latest Alert

David Stine

The Sun is acting up again and for those of you with the proper filters could be in for an exciting two weeks of solar observing. Two weeks ago active sun spot region 786 increased in its complexity as it went behind the Sun out of our reach. However while it has been behind the Sun it has been associated with numerous strong coronal mass ejections directed away from the Earth. This region is due to return by the last weekend of July. The region will be assigned a new number. Astronomers are very excited about its return because of the potential volatility anticipated. If the region produces as expected it has the potential to ignite several major solar flares during the next two weeks. It also should be in a fairly good position for producing Earthward directed coronal mass ejections which in turn means auroras for us. This will be a great time for solar observers to start monitoring the Sun for this region and watch for unusual prominences erupting from the Sun. Begin looking on the eastern limb of the Sun for activity. More info will be forthcoming as the region rotates into view between July 28-August 3.

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Astronomy Club of Tulsa membership ($35/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.

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