



Carpe Noctem



The News of Central Texas Astronomical Society

November - December 2016

VOLUME XXII, NUMBER 6

President: Aubrey Brickhouse

Editor: Kent Swarts

ITEMS WILL BE AVAILABLE AT THE CHRISTMAS PARTY

New Discovery: First Pulsing White Dwarf

January S&T – Really?

by Brad Walter

If you read the two article titles in the January Sky & Telescope, “Pro-Am Team Finds First Pulsing White Dwarf” in the “In Brief” sidebar on page 11 and “The First Pulsing White Dwarf” on page 89, you might think that those pulsating white dwarf stars that Willie Strickland and a few of our other members have been looking at for the past 10 years as part of Whole Earth Telescope were all imaginary. According to the headlines in Sky & Telescope, the first pulsing white dwarf was discovered this past September. Really?

If you read the article on page 89 you see that this is different from a normal pulsating white dwarf star, but it isn’t clear from the article what it is.

These stories are actually about an important new discovery of what appears to be a white dwarf pulsar. This is something that has been theoretically predicted but not previously observed. Other candidates for white dwarf pulsars have been observed, such as AE Aqr, but the variability was shown to originate from an accretion disc rather than synchrotron non-thermal radiation coming from electrons highly accelerated by the strong magnetic field of a rapidly rotating star. In this case, the synchrotron radiation is caused by the interaction of the magnetic field of the rapidly



CTAS Christamas Party

December 10th at 6:00 p.m. is the date for our annual Christmas/Holiday Party at the Feed Mill in Gatesville. I hope this event is already on your calendar and you plan to attend. We need to know who is coming so we can finalize plans. Please go online to register. If you have problems with registering, just send me an email at: abrickhouse1@att.net

CTAS HAS A FEW PROMOTIONAL ITEMS FOR SALE THAT YOU MIGHT WANT TO GIVE AS CHRISTMAS PRESENTS. WE HAVE SPECIAL PRICES ON THE HATS AND SHIRTS.

CTAS HATS \$10

CTAS POLO SHIRTS (ONLY MEDIUM) \$15

PAUL DERRICK BOOK "NIGHT SKY OBSERVING" \$20

rotating WD and the strong solar wind from its MV class companion.

Immediately upon seeing these articles, one of our club members e-mailed Sky & Telescope and received the following gracious reply from a member of the magazine's editorial staff:

Thank you very much for writing in. I'm afraid I [made a mistake]: in trying to succinctly convey that this system seemed to be the first pulsar-like white dwarf binary (i.e. in terms of the process behind the pulsations), I phrased the headlines in a way that instead were misleading—as you have so rightly pointed out. This is entirely my error. We will run a correction in an upcoming issue.

The article titles are unfortunate because they are so obviously incorrect that readers might be tempted to simply skip the articles as nonsense when, in fact, amateur astronomer Josch Hambsch, made some observations of an interesting object and followed through on them to create a pro-am collaboration resulting in an important observational validation of a previously unsupported theoretical hypothesis. That is a truly impressive amateur achievement.

Want to know more about this new discovery? Look here for some background on WD Pulsars:

<http://www.universetoday.com/74300/white-dwarf-pulsars/> Possibility of white dwarf pulsars

https://www.nasa.gov/centers/goddard/news/topstory/2007/whitedwarf_pulsar.html AE Aqr possible WD pulsar

https://www.noao.edu/meetings/wildstars2/talks/wednesday/Mauche_AEAqr_WildStars2.pdf AE Aqr pulsations from accretion not a pulsar mechanism

And look here for three papers on this new discovery:

<https://arxiv.org/find/all/1/all:+AND+AR+Scorpii/0/1/0/all/0/1>

CTAS 20 YEARS AGO (1996):

(Summarized by your President from old issues)

Carpe Noctem December 1996 Volume III, No. 12

The President of McLennan County Astronomy Club was Mike Green. The lead off article was the Star Parties at Mother Neff Park along with reporting that Rusty Garrett (of Channel 10 weather showed on air a beautiful photograph of Comet Hal-Bopp captured by John McAnally. There was a list of Star Party dates for all of 1997 at Mother Neff Park.

CTAS 10 YEARS AGO (2006):

Carpe Noctem November 2006 Volume XIII, No. 11

During the afternoon of Wednesday November 8th, Johnny Barton, Brady Richardson and Dave Eisfeldt gave over 200 science students at Robinson High School the opportunity to witness one of astronomy's rare events. That is the transit of Mercury across the Sun and one large sunspot. Several positive comments came from teachers and students as they saw Mercury moving across the Sun using a 4.5 inch refractor.

President's Letter for Carpe Noctem

November & December 2016

Many of our members like to make a yearend donation to CTAS for the year end as it's a good deduction on your income taxes and it helps CTAS meet the expenses of the many events that we handle each year. This coming year (2017) will be especially interesting as we will need to raise a dedicated fund of about \$15,000 to upgrade our Meyer Telescope that was built with 1990's technology. We are still operating with Windows XP computers and our telescope and equipment are no longer in sync with the telescopes that are in service by Peter Mack. So we are planning to bring our computers, software and instrument panel into conformity with Peter's other installations in the first part of 2017. This will make it easier to keep our telescope operational and should improve all of the tracking, guiding and other issues that need to be improved.

As we close out 2016, I want to thank all of the members, officers and directors who have pitched in to handle the many events we have

conducted for the public in 2016 and for the very successful member Star B Que's we hold each summer. As we are becoming more and more known, I get 10 to 15 calls a week about our events and questions about becoming a member. So keep up the good work.

I am looking forward to the Christmas Holiday Event for CTAS at the Feed Mill in Gatesville TX. I find the staff and food very good at the Feed Mill and we want to thank Johnny Scarborough for helping get us set up there. As you know, we said a sad goodbye this year to Raymond's in Lorena. Raymond hosted CTAS for many years in Lorena but he finally had to shut down from the ravages brought on by the highway I-35 construction and loss of customers due to traffic issues.

We will be moving our General Business meetings around in 2017 so everyone will get a chance to have one meeting close to them. The January Business meeting will be held in Waco at Uncle Dan's BBQ, 1001 Lake Air Drive, Waco, TX 254-772-4744 on January 17 from 5:30-8:00. Forrest Marler will be our host for this event.

One final note, my image of Antares that I shot this summer at my new POS on the Meyer Field was published in the Astronomical Leagues' Reflector magazine just delivered last week.

See you at the Christmas Party!

Aubrey Brickhouse

President

Donations for a bright CTAS Future

Many of our members like to make a yearend donation to CTAS for the year end as it's a good deduction on your income taxes and it helps CTAS meet the expenses of the many events that we handle each year.

This coming year (2017) will be especially interesting as we need to raise a dedicated fund of about \$15,000 to upgrade our Meyer Telescope that was built with 1990's technology. We are plan to bring our computers, software and instrument panels into conformity with Peter's current installations in 2017. This will make it easier to keep our telescope operational and should improve tracking, guiding and other issues that plague our scope.

If your can help now and get the deduction for 2016, you can go online and donate or you can send a check to our treasurer,

Dave Eisfeldt

10509 Lone Star Dr.

Waco, TX 76708

Make checks payable to CTAS

Mark your check "Meyer 2017 upgrade".

Thank you for your donation!

Aubrey Brickhouse

President

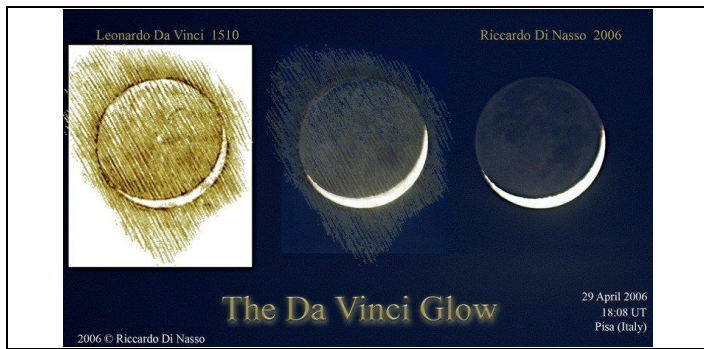
WATCH FOR DA VINCI GLOW

If you go outside, pay special attention to the new crescent Moon. Cradled between the arms of the slender crescent is a display of light and shadow that puzzled sky watchers for thousands of years until Leonardo da Vinci figured it out. It's the "Da Vinci glow," also known as Earthshine:



For much of human history, people marveled at the faint image of the full Moon inside the arms of the crescent. Where did it come from? No one knew until the 16th century when Leonardo figured it out. He realized that dark lunar terrain was being illuminated by sunlight reflected from Earth.

Visualizing this in the 1500s required a wild kind of imagination. No one had ever been to the Moon and looked "up" at Earth. Most people didn't even know that Earth orbited the sun. Copernicus' sun-centered theory of the solar system wasn't published until 1543, twenty-four years after Leonardo died.



In Leonardo's Codex Leicester, circa 1510, there is a page entitled "Of the Moon: No Solid Body is Lighter than Air." He states his belief that the "ghostly glow" is due to sunlight bouncing off Earth's oceans and, in turn, hitting the Moon. 500 years later, we know that Earth's clouds do most of the reflecting; but that is a quibble. Leonardo understood the basics well enough.

Duke Offers an Introduction to Astronomy Course for Free

By: Brad Waler

The Duke University Introduction to Astronomy Course is one of the best advanced high school to college undergraduate level introduction to astronomy courses for non-astronomy majors it had been offered Duke is now offering the course on a free basis and I highly recommend it. It is one of the best organized, and it is thorough without getting bogged down in advanced math. If you are interested the sign up details are below.

This is a really good one with great graphics videos and animations. If we want to form a club discussion and study group, I am up for it.

Duke University is offering the course again for free on Duke Extend, a new platform the university has launched for open online courses. The new session of Introduction to Astronomy starts November 28, and you can learn more and register at

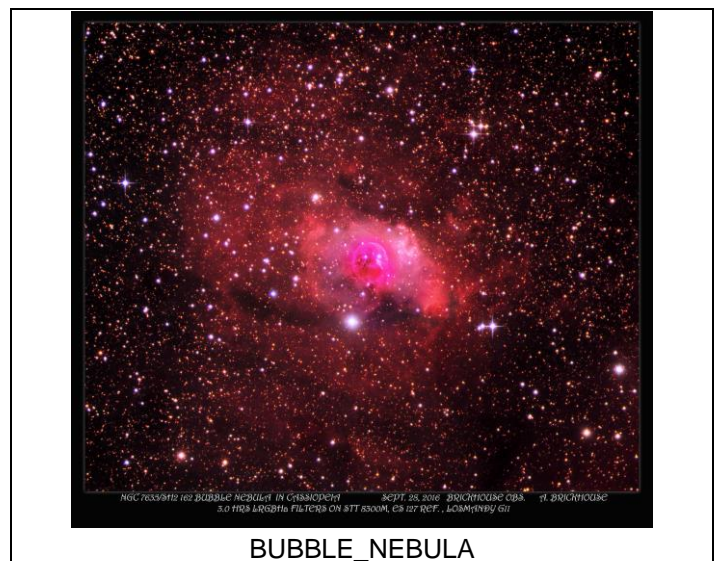
https://extend.duke.edu/courses/course-v1:DukeExtend+introastro+2016-2017/about?utm_source=courseraemailist&utm_campaign=new_course102516&utm_medium=email

This is an exciting opportunity for us to continue the course and help develop new ways for Duke to reach learners around the world.

Astrophotography Aubrey Brickhouse.



NGC253_SCULPTUR_GALAXY



BUBBLE_NEBULA

Johnny Barton

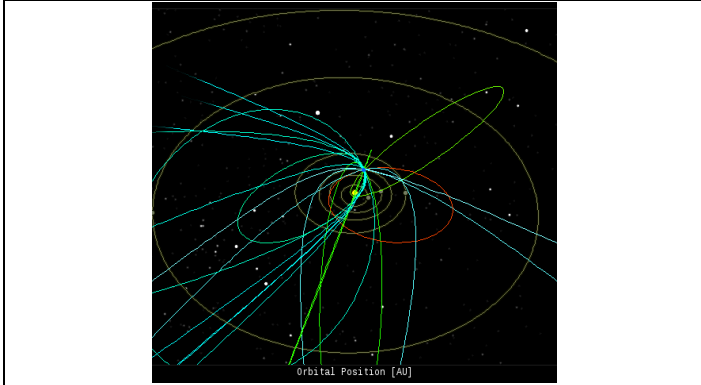


NGC1501

All Sky Fireball Network

Every night, a network of [NASA all-sky cameras](#) scans the skies above the United States for meteoritic fireballs. Automated software maintained by NASA's Meteoroid Environment Office calculates their orbits, velocity, penetration depth in Earth's atmosphere and many other characteristics.

On Dec. 7, 2016, the network reported 17 fireballs



Member Star Party is December 31, at TRS.

CENTRAL TEXAS ASTRONOMICAL SOCIETY
528 Wildwood Trail
Lorena, TX 7665