



# The Meridian

The newsletter of the  
Quad Cities Astronomical Society

November 2008

<http://www.qcas.org>

---

## October Meeting Minutes

Joe Bannon, Secretary

Karl called the meeting to order at 7:35 with a note that dues are payable now. Steve mentioned that eight people have paid so far and encouraged others to submit their payments.

Karl next opened the elections. The membership was asked if there were any additional nominees or any statements to be made by any of the candidates. No additional nominees were submitted and no statements were offered. Karl then noted that in situations where all candidates are unopposed, the bylaws allow voting for the slate of candidates. Joe made such a motion and Chris seconded. Ten votes for and no votes against the slate were recorded and the following officers were elected:

President – Dana Taylor  
Vice-president – Chris Hebel  
Treasurer – Steve Van Hyfte  
Secretary – Joe Bannon

It was noted that as the immediate past President, Karl now is the Director at Large, replacing Gary.

Dana made some remarks on the history of the club, noting members who have gone on to work at Kitt Peak Observatory, like John Waack, and his hope to be an asset to the club.

Cecil made a presentation on an eyepiece he recently purchased. He found a 28mm, ultra wide angle (82° FOV) from Williams Optics. He pointed out that bargains can be found, if you're willing to take the time to shop. The list price he initially saw was \$600. At the Williams Optics site it was advertised for approximately \$380 and OPT had it for \$350. But on the demo/clearance portion of the Williams site, there was one advertised for \$288.

The EP can cover 7/10<sup>0</sup> at 115x with a 6mm light cone. A few folks noted how good this was since a 7mm cone was "pushing it for guys our age." Others then thanked Cecil for buying such a nice eyepiece and causing the run of cloudy skies that precluded any decent observing.

Shortly after, Dana adjourned the meeting and members enjoyed the food all brought as part of the pot luck. Thanks to everyone who contributed.

# Observations

Joe Bannon

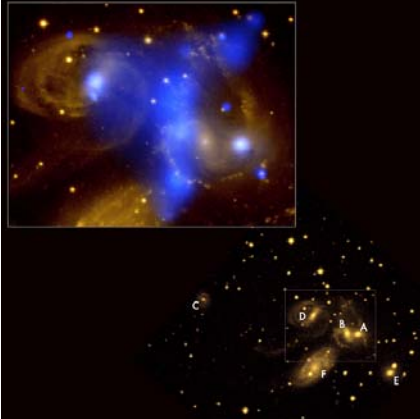


Some kudos are warranted to those who helped install the new drive on the telescope. I wasn't part of that group (and with my lack of mechanical skills that's probably for the best) but there were several people who donated time and expertise. Steve found the drive and then helped develop the plan to install it; Karl drew up engineering diagrams that helped; Craig helped figure out how the drawing would be implemented in real life. I'm certain I've left someone off this list, and if that's you, my apologies. The club is better for your efforts as anyone who's seen some of the latest astrophotographs through the 20" can tell (see the Member Astrophotos section later).

New year...new officers...new directions? With our elections behind us some people have new responsibilities, others have been relieved of some duties, but all of us have opportunities to contribute. And you don't have to come to Sherman Park, though you're almost guaranteed to enjoy the view. Come to a meeting and share your interest with fellow club members. Astrophotography will probably be discussed at a future meeting. The Constellation of the Month has provided tips for newbies and allowed the more seasoned among us to share their experiences. The point is: This is your club. What you put into it will help make it what it is.

# Observations

Karl Adlon

Plan A: Observe Pegasus and objects in it and report what I saw. In the process I was reminded that Stephan's Quintet is in Pegasus so I implemented Plan B: Steal pictures and text from space telescope websites. SEE THEIR WEBSITES FOR FULL ARTICLES, which have been heavily cropped here.

Chandra X-Ray Space Telescope:	Spitzer IR Space Telescope:	Hubble Space Telescope:
 <p data-bbox="167 1608 583 1709">Credit: X-ray: NASA/CXC/INAF-Brera/G.Trinchieri et al.; Optical: Pal.Obs. DSS</p>	 <p data-bbox="605 1650 1005 1709">A Shocking Surprise in Stephan's Quintet</p>	 <p data-bbox="1044 1713 1443 1883">Star Clusters Born in the Wreckage of Cosmic Collisions</p>
<p data-bbox="167 1717 583 1879"><i>The hurly-burly interactions in the compact group of galaxies known as Stephan's Quintet are shown in the upper left where a Chandra X-ray Observatory image (blue) is</i></p>	<p data-bbox="605 1717 1005 1879">Written by Michelle Thaller</p> <p data-bbox="605 1787 1005 1879">When astronomers using NASA's Spitzer Space Telescope turned their attention to a well-known</p>	<p data-bbox="1044 1818 1443 1879">In the beginning of the 1946 holiday film classic "It's a</p>

<p><i>superimposed on a Digitized Sky Survey optical image (yellow).</i> Shock-heated gas, visible only with an X-ray telescope, appears as a bright blue cloud oriented vertically in the middle of the image and has a temperature of about 6 million degrees Celsius. The heating is produced by the rapid motion of a spiral galaxy intruder located immediately to the right of the shock wave in the center of the image (galaxy labeled B in the wide field optical image on the lower right).</p> <p>Stephan's Quintet is an excellent example of the tumultuous dynamics of a compact group. The motion of the galaxies through the hot gas, and the gravitational pull of nearby galaxies are stripping cool gas from the galaxies, thereby depriving them of the raw material from which to form new stars. In a few billion years the spiral galaxies in Stephan's Quintet will likely be transformed into elliptical galaxies.</p> <p>During the past few billion years additional gas may have been stripped from the galaxies in the group and heated by collisions such as the one seen in these images. An intruder that may have passed through the center of the group at least twice is the faint galaxy C seen in the wide field optical image. The fainter blue cloud in the X-ray/optical image may be a relic of past collisions.</p> <p>The four galaxies A, B, D and E strung out diagonally across the wide field optical image are at a distance of about 280 million light years from Earth. The large-appearing galaxy F in the lower left of this image has now been</p>	<p>cluster of galaxies called Stephan's Quintet, they were, quite simply, shocked at what they saw. There in the middle of the cluster, invisible to our eyes, lurked one of the biggest shock waves, or "sonic booms," ever seen. Astronomers hope that observing how galaxies generate such huge shock waves will lead to a better understanding of what powers the most luminous galaxies in the universe.</p> <p>For some time now, astronomers have known that four galaxies in this distant cluster (and a 5th unrelated foreground galaxy -- hence the name "Quintet"), located about 300 million light-years away from Earth, are involved in a violent collision. In visible light, the galaxies are clearly distorted, indicating that they have experienced gravitational encounters in the past. But that, as it turns out, is only part of the drama.</p> <p>One of the four galaxies, called NGC 7318b is currently falling toward the others at high speed, generating a giant bow shock in front of it which can be seen in X-ray, infrared, and radio light. Amazingly, the surface of the shock wave is larger than our own Milky Way galaxy, and stretches across intergalactic space between the colliding galaxies.</p> <p>Spectrographs have the ability to break light down into its component wavelengths, where the chemical signatures of the material that produced it can be seen as spectral lines. The width of these lines allows astronomers to determine the velocity of the gas, with wider lines indicating gas at a higher velocity. Appleton</p>	<p>Wonderful Life," angelic figures take on the form of a famous group of compact galaxies known as Stephan's Quintet. In reality, these galaxies aren't so heavenly. Pictures from NASA's Hubble Space Telescope show that Stephan's Quintet has been doing some devilish things. At least two of the galaxies have been involved in high-speed, hit-and-run accidents, which have ripped stars and gas from neighboring galaxies and tossed them into space.</p> <p>But the galactic carnage also has spawned new life. Arising from the wreckage are more than 100 star clusters and several dwarf galaxies. The young clusters, each harboring up to millions of stars, are shown clearly for the first time in pictures taken by Hubble's Wide Field and Planetary Camera 2. Many of the clusters were born in the gaseous rubble between galaxies, far away from cozy galactic homes. Some were spawned several million years after an encounter. The clusters formed from the gravitational interactions between some members of the quintet, which compressed clouds of hydrogen gas and created stars.</p> <p>"The importance and perhaps uniqueness of Stephan's Quintet is that it may be a local example of phenomena typical of the early universe when encounters were much more common," says astronomer Sarah Gallagher of Pennsylvania State University in University Park, PA. "We may be able to look between the galaxies in other compact groups for the counterparts of the young clusters we see in the quintet as relics of similar events."</p>
---	---	--

<p>identified as a foreground galaxy at a distance of about 35 million light years, leaving the group originally identified as Stephan's Quintet with only a quartet of galaxies. However, if we include galaxy C, which is at the same distance as the other four galaxies, it becomes a quintet again!</p> <p>Ginevra Trinchieri of the INAF-Brera Observatory in Milan, Italy, Jack Sulentic of the University of Alabama in Tuscaloosa, and Dieter Brietschwerdt and Wolfgang Pietsch of the Max-Planck Institute for Extraterrestrial Physics in Garching, Germany are co-authors of a paper that describes the Chandra data on Stephan's Quintet. The paper will appear in an upcoming issue of the journal <i>Astronomy &amp; Astrophysics</i>.</p>	<p>and his team measured the widest lines ever observed for hot hydrogen molecules, corresponding to turbulent gas motions of 870 kilometers per second (2 million mph)!</p> <p>"In Stephan's Quintet," says Appleton, "the shock wave is due to the intruder galaxy (NGC 7318b) traveling at speeds greater than Mach 100 as it plows into intergalactic gas within the cluster. Hydrogen molecules are apparently forming either in or behind the shock, similar to the water droplets condensing in the jet image -- but on an enormous scale!"</p> <p>It is likely that in about two billion years from now, we will collide with the slightly larger Andromeda Galaxy, creating shocks of our own. In that case, our future descendants will have a ring-side seat!</p>	<p>Using Hubble's sharp "eyes" to pinpoint the ages of the clusters, Gallagher and her team have tracked the rough-and-tumble history within the group of five galaxies, also known as Hickson Compact Group 92. Galaxies in compact groups are so close that most of them are bound together by gravity.</p> <p>Peppered among many of the star clusters are several young dwarf galaxies. Stephan's Quintet possesses the richest known harvest of dwarf galaxies born in gaseous debris. Perhaps as many as 15 of those galaxies are in NGC 7319's long tail. The Hubble observation supports previous studies that some dwarf galaxies form in tidal tails. The telescope's clear view also revealed knots of star formation within the dwarf galaxies, as astronomers would expect in young galaxies.</p>
--	--	--

---

## Upcoming Celestial and Club Events

Nov. 10	Monday	Presentation to Bettendorf Boy Scout troop (Dale and Joe)
Nov. 17	Monday	Monthly Meeting (19:30) @ Deere-Wiman Carriage House
Nov. 29	Saturday	Jens-Wendt Observatory – Star Party
Nov. 30	Sunday	Jupiter is 2 degrees to the upper right of Venus (Evening)
Dec. 8	Saturday	Jens-Wendt Observatory – Star Party
Dec. 9	Sunday	New moon
Dec. 13-15	Thu. – Sat.	Geminid meteor shower
Dec. 16	Monday	Monthly Meeting (19:30) @ Deere-Wiman Carriage House
Dec. 22	Saturday	Winter solstice

Jens-Wendt Observatory – Quad Cities Astronomical Society – Located at Sherman Park in Dixon, Iowa

Monsignor Menke Observatory – St. Ambrose University – Located at Wapsi River Environmental Education Center in Dixon, Iowa

---

# Member Astrophotos



John and Gary took these photos in late October. Clockwise from the upper left are the Veil, Crab and Orion nebulae, and M33. In John’s words, “The scope seems to work MUCH better than before. Gary was able to take up to 5-6 minute exposures before he started noticing star trails depending on what part of the sky we were pointing at. I took a 3 minute exposure of M13 that did not turn out real well. It was hanging low in the western sky when I took the picture. Attached are a few shots that came out fairly well. Most of them I took at least 3 shots and stacked them with Photoshop. I’m not sure if it is my focus, the focal length of the scope, or that fact that I have a smaller sensor in my camera but I cannot seem to get the focus as sharp as I would like.”

## QCAS Contacts

Elected Officers			Volunteers and Committees		
President	Dana Taylor	<a href="mailto:dana@nelsontaylor.com">dana@nelsontaylor.com</a>	Facilities	Jim Rutenbeck	<a href="mailto:jim@qconline.com">jim@qconline.com</a>
Vice-president	Chris Hebel	<a href="mailto:Chrishebel57@yahoo.com">Chrishebel57@yahoo.com</a>	Web Master	Dana Taylor	<a href="mailto:dana@nelsontaylor.com">dana@nelsontaylor.com</a>
Secretary	Joe Bannon	<a href="mailto:mzbannon@aol.com">mzbannon@aol.com</a>	Outreach	Joe Bannon	<a href="mailto:qcas@mchsi.com">qcas@mchsi.com</a>
Treasurer	Steve VanHyfte	<a href="mailto:vanhyfte@mchsi.com">vanhyfte@mchsi.com</a>	Programming	Jim Rutenbeck	<a href="mailto:jim@qconline.com">jim@qconline.com</a>
Director	Karl Adlon	<a href="mailto:kmja@mchsi.com">kmja@mchsi.com</a>			

All other contacts can be sent to [qcas@mchsi.com](mailto:qcas@mchsi.com) or mailed to the club at P.O. Box 3706, Davenport, IA, 52808.

Members are also reminded that anyone can submit articles for *The Meridian*. Submit articles to Joe Bannon at [jbannon@midamerican.com](mailto:jbannon@midamerican.com) and [mzbannon@aol.com](mailto:mzbannon@aol.com).