# The Meridian

The newsletter of the
Quad Cities Astronomical Society

January 2009
http://www.qcas.org


## December Meeting Minutes

Joe Bannon

Extremely cold temperatures and slippery roads kept most (and some might say wiser) members at home but a small group met to discuss club business.

Dana began the meeting with a discussion of a projector for the club. At the November meeting Dale said something about looking into getting one for the club and Dana and Steve mentioned possible Internet sites or companies like Dell that may have something.

Topics for the next meeting were discussed and Dana said he'll make a presentation on astrophotography. Craig mentioned something on color (what makes red? What makes blue?). Joyce suggested a discussion on the lifecycle of stars and how that relates to the creation of elements. Gary briefly explained how the heavier elements are a limiting factor because of the energy it takes to produce them. This topic wasn't committed to but Joyce volunteered to take on the Constellation of the Month for the January meeting.

Gary and Joyce discussed some of the presentation made at Astrofest, particularly the public outreach effort associated with the Sloan Digital Survey. Researchers have found that there is much more information than they can analyze timely and they've set up a Web site (http://www.galaxyzoo.org) where amateurs can take a test that if they pass, will allow them to help analyze images of galaxies. Robert mentioned a mystery they're currently trying to solve: the presence of red galaxies where blue ones are expected.

Gary made a presentation on Meade's My Sky, a competitor to Celestron's Sky Scout. He wryly noted that after going to Astrofest for 6 years, this was the first time he won something. My Sky is essentially a hand-held computer that allows you to point at different objects in the sky, identify and learn about them once you've calibrated the unit. Gary said it's pretty easy to use, has decent information on the objects and the audio portion allows you to observe while listening to a description of the object. Negatives include a poor location for the power button, which can lead to draining the batteries, locking up of the computer and the fact that for some objects, like the Pleiades, the unit it too distinct: it will identify individual stars but not the entire object. Still, it can be helpful for people new to astronomy as a guide to the night sky.

A discussion about setting up a phone tree so members can be notified when someone plans to go out to the observatory followed, but ultimately members opted to use either the Web site or the e-mail distribution list associated with the Meridian.

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# Presidential Ramblings

## Dana Taylor

Today, I read something very interesting on the SPACE.COM website. It seems that Inventor Eric Knight, a co-founder of the rocket firm UP Aerospace, has offered a proposal to send astronauts on a one-way trip to Mars using a pair of tethered U.S. space shuttles. The shuttles would first be launched into Earth orbit where they would be connected together, cargo-bay to cargo-bay, by a truss containing a rocket engine that would be used to boost them towards Mars. After the engine is spent the truss would be jettisoned and the two shuttles would be tethered a few hundred feet apart. The shuttle engines would then be used to cause the whole assembly to spin slowly, thus providing partial artificial gravity for the rest of the mission. Upon reaching Mars the shuttles would each descend to the planet's surface using very large parachutes contained in their cargo bays.

The article also points out that there are still some issues that would need to be resolved (ya think?). One is that the space shuttles are only designed to support a crew for a couple of weeks. Another is that they do not have radiation shielding that would be required for a trip of that duration. And, did I mention that this would be a one-way trip? That would make the astronauts colonists instead of visitors. A link to the full article is here:

http://www.space.com/missionlaunches/090106-space-shuttle-mars-flight.html

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# Observations

## Karl Adlon

*The following captures the efforts made by various club members to improve the club's telescope. We aren't all this handy and scheduling can be difficult, but for 2009, see what you can do to help the club.*

### Installing the Byers Drive

Several times I've heard something along the lines of "I don't know the details of how the drive got installed, but . . .", so, even though this may sound like I'm patting myself on the back, that isn't my intention. I just want to provide sufficient information that members will know how it happened.

Once upon a time in a place not too far away, an astronomy club wanted a better clock drive. They looked high and low for one that would fit; one that was high quality and one they could afford. Then one day, Steve found a drive that fit all requirements except cost. Steve told the club members and several volunteered to subsidize acquisition of the drive, which, with Steve's shrewd dealings, was successfully accomplished.

Then came forth a clamor from the club members, "Why isn't the drive installed?", "Install the drive!" and "When will the drive be working?"

And this is where I became more involved. My story is:

- I thought "it'll probably take two, maybe three work sessions to get the drive successfully installed."
- "Give me the drive and I'll take care of it!" I said.
- But, what did I mean by that? I meant I'd sit on it (figuratively). I'd wait until the summer observing sessions were complete. But in the meantime, I schemed how to install the drive. I thought to replace the bearing studs with longer studs; then bolt a mounting plate to the longer studs. But my memory had failed. When I next encountered the telescope, I saw that the studs might be welded in place.
- Back to the drawing board. I thought, "How do they joint two threaded rods when one isn't long enough? Couplings!" I bought 4 - and bolts to go with them.
- Next I went to Milan surplus and bought two 16" length of 3"x3"x1/4" aluminum angle.
- Now, using a previously purchased aluminum plate ½" thick by 6" by 12" from an abandoned project I planned to bolt the angles to the couplings; bolt the plate to the angles and bolt the worm housing to the plate.
- I drilled the angles with ¾" holes to accept the 5/8" bolts and drilled two of the holes in the plate for connection to the angles. The other two I left to drill at the observatory, rather than assume everything was square and drill them now. I drilled the 4 hole for the worm housing in the plate.
- While thinking about the actual installation sequence, a sudden realization hit. I had absent-mindedly forgotten about drilling setscrews in the worm gear adapter! No setscrews – no drive.

I remembered Craig Cox said he could do this, but I didn't know if it was too late for EISP installation. I sheepishly called him and apologized about my forgetfulness. This was the Wednesday before EISP, leaving him only one day to do it. I delivered the adapter to him.

Friday I packed up and headed to EISP. I went first to the QCAS observatory and transferred the tools, small drill press, parts and drive into the observatory. Friday night I did some observing with my Orion 10" XT. I returned the next day and I, together with Craig Cox and Howard Cox went to the observatory and got to work. Actually, they did most of the work and I was more of an assistant, supplying them with parts and tools at each step.

First we went to work removing the old drive. We paused to take a look at the old clutch, which consisted of a spring holding three brake pads against a plate. Have to admire that this simple device worked pretty well for all these years.

Once the polar shaft was bare of the old drive, we – I'll just mention one more time that Howard and Craig did most of the physical work – cleaned up the shaft and tried the adapter. It only fit part way up, with rough spots on the shaft causing binding. After scrounging for some time, we found a piece of Emory cloth in the block house, probably used in the observatory painting project, and managed to clean up the shaft sufficiently to mount the adapter.

Next, one-by-one we removed the bearing nuts and installed the couplings.

Help arrives! Jim Rutenbeck, Gary Charnoski and Jim Lewis show up. The angles get mounted to the couplings and the plate gets bolted to the angles.

Next, the drive is placed on the coupling so that the fit can be judged.

Once we are happy, the two remaining holes are drilled in the plate and angles and the bolts are inserted and tightened.

Next the worm mounting is bolted to the plate. This took some elongating of the holes I had drilled. Now that I think back, I probably didn't have the worm teeth fully engaged with the worm gear when I did my measuring. But the guys make it work!

At first, the clutch was tight. So we took it apart and found the plastic ring was pinched between the parts. We reassembled that and adjusted the clutch. Everything looked good.

Connect the wires.
Throw the switch.
**IT'S ALIVE!**

If I left anyone out or don't remember something correctly, I blame my faulty memory.
**REALLY, THANKS TO EVERYONE WHO HELPED!**
I can't believe it all went together in one afternoon!

# Upcoming Celestial and Club Events

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| Jan. 1 – 10 | Mercury is $8^0$ to $10^0$ above SW horizon a half-hour after sunset. |
| Jan. 14 | Venus at maximum elongation but Moon near full. |
| Jan. 21 – 23 | Venus passes within $1.5^0$ of Uranus |
| Jan. 26 | New moon |
| Jan. 29 – 30 | Moon and Venus pair up in the WSW |

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

# QCAS Contacts

| Elected Officers | | |
|---|---|---|
| President | Dana Taylor | dana@nelsontaylor.com |
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| Volunteers and Committees | | |
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| Facilities | Jim Rutenbeck | jim@qconline.com |
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All other contacts can be sent to 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 and mzbannon@aol.com.