



The Meridian

Newsletter of the Quad Cities Astronomical Society • January 2015

Upcoming QCAS Meetings

All meetings start at 6:30pm.

February 2nd, Astronomy dialogs/meeting.

February 16th, monthly business meeting.

Meeting Notes

From January 15th. Notes by John Robbins. The meeting was called to order by Dale Hendricks at 6:35pm. The meeting was attended by 16 members. Members included: Craig Cox, Mitch White, Bruce Brooker, Dana Taylor, Sam Snow, Jason Bowden John Robbins, Robert Mitchell, Deake Schneider, Ken Boquist, Steve VanHyfte, Jeff Struve, Karl Adlon, Bob Miller, John Baker and Dale Hendricks.

Bruce started off the meeting by sharing photos he had taken of Comet Lovejoy (photo on page 3) and of the Orion Nebula.

Steve VanHyfte gave the main presentation which was a fine series of photos and short videos from his trip to the Kennedy Space Center, Florida on March 24th, 2014.

Treasurer's Report: Balance in account is \$2,200.63, not including at least two annual membership dues collected during the evening.

Old & New Business: Dale offered some further comments about his communications with Anthony Watt, the editor of *The Radish*. *The Radish* is a local magazine/publication and the next issue will feature an article about winter sky watching and astronomy. The issue's cover will feature a photo silhouette of a telescope with Dale and his wife Alison,

taken on a very cold day!

The new, proposed building at Sherman Park is still in the works. Some effort for grant writing is required. Last month's Meridian reported that Dale, John Baker and Dana will meet with the CCC Board at a date TBD. That meeting has not yet taken place.

Open House evenings came up for discussion given that the lunar phase is full, or nearly full, during the last Saturday's of the month, when QCAS open houses are scheduled to take place. Karl Adlon distributed this list of Moon phases:

Date	Phase
April 25	51%
May 30	93%
June 27	83%
July 25	69%
August 29	100%
Sept 26	98%

Discussion centered on possibly moving the open house evenings to times of the month when the Moon wouldn't be quite so bright. Arguments for moving the nights suggested that it would better permit visitors to see deep sky objects through the observatory telescopes; clusters and nebulae, for example.

Opposing arguments include: (1) that QCAS' main mission is public outreach; (2) that the open houses have always been on the last Saturday of the month which repeat visitors might be surprised not to find anyone at the observatory on last Saturdays; (3) many folks, having never looked through a scope before, find it difficult and frustrating to see fainter

objects—most of our visitors come out to observe the Moon, planets and other brighter celestial objects.

After asking for a show of hands of those who would be willing to attend open houses, regardless of Moon phase issues, the consensus was to continue to host open houses on the last Saturday of the spring, summer and fall months. A formal vote was not taken.

Menke Observatory telescope issues were further discussed by Dr. Mitchell and the society. The club acts more as a sounding board, with a suggestion coming from Bruce Brooker to have the 12-inch “re-silvered” with Dana suggesting that an enhanced dielectric coating be considered (perhaps with work

done by Optical Mechanics Inc. of Iowa City). Several of the club membership recommitted themselves in offering their help to assist Dr. Mitchell.

Related to the open house discussion was a side discussion about the use of additional display technologies so that more people could enjoy the views through telescopes fitted with CCD cameras. John Baker mentioned his working on a C++ program which would be capable of near real-time stacking and registration of images. The idea is to (say) a couple minutes worth of images, then process them for display on a large monitor screen, thus providing near real-time views of more detailed objects.

The meeting adjourned at 8:17pm.

High Resolution Andromeda Galaxy Image

from ScienceDaily.com, January, 5, 2015



The largest NASA Hubble Space Telescope image ever assembled, this sweeping bird's-eye view of a portion of the Andromeda galaxy (M31) is the sharpest large composite image ever taken of our galactic next-door neighbor. Though the galaxy is over 2 million light-years away, the Hubble telescope is powerful enough to resolve individual stars in a 61,000-light-year-long stretch of the galaxy's pancake-shaped disk. It's like photographing a beach and resolving individual grains

of sand. And, there are lots of stars in this sweeping view—over 100 million, with some of them in thousands of star clusters seen embedded in the disk.

This ambitious photographic cartography of the Andromeda galaxy represents a new benchmark for precision studies of large spiral galaxies that dominate the universe's population of over 100 billion galaxies. Never before have astronomers been able to see individual stars inside an [continued on page 4]

Comet C/2014 Q2 Lovejoy



Photo that Bruce Brooker took of Comet C/2014 Q2 Lovejoy on January 15th at Sherman Park. Image taken with a Canon T3i piggy-backed on the 20in. telescope with a 250mm telephoto lens at ISO 800. 155sec exposure. Photogallery mods. Note the multiple tails. The image contains stars right at the boundary between Taurus and Aries. Two yellowish-red stars close together to the right of the comet are: Hip 15777 (mag 7.8) Tyc 1233-635-1 (mag 8.3). Hip 15823 (mag 8.5) is just right, and up a little, of the comet.

[Notes that follow were based on notes by Jerry Lodriguss and posted on the Cloudy Nights Forums.] The comet has been a naked-eye object at about magnitude 4, and is presently (end of January) moving higher in the sky through the constellation Triangulum into Andromeda.

The blue-green color of the coma comes from diatomic carbon molecules fluorescing from ultraviolet light from the Sun. The blue color of the faint ion tail, seen here stretching out from the coma to the upper left, comes from fluorescing carbon monoxide ions. The ion tail points directly away from the Sun.

C2014 Q2 passed closest to the Earth on January 7 at a distance of 0.47 a.u. (44 million miles or 70 million km) and reaches perihelion on January 30, 2015 when it passes 1.29 a.u. (193,000,000 km or 120,000,000 mi) from the Sun.

This long-period comet was discovered in August 2014 by Terry Lovejoy in Puppis with an 8-inch wide-field telescope. It was Lovejoy's fifth comet discovery.

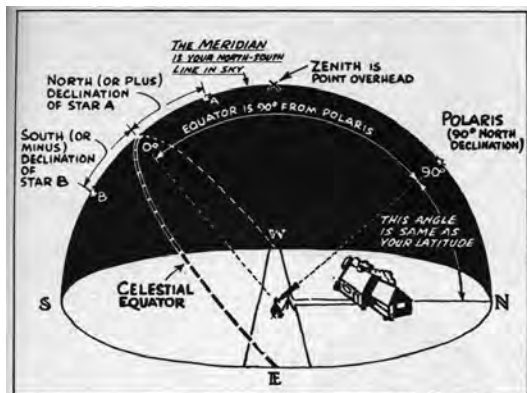
external spiral galaxy over such a large contiguous area. Most of the stars in the universe live inside such majestic star cities, and this is the first data that reveal populations of stars in context to their home galaxy.

Hubble traces densely packed stars extending from the innermost hub of the galaxy, seen at left. Moving out from this central galactic bulge, the panorama sweeps from the galaxy's central bulge across lanes of stars and dust to the sparser outer disk. Large groups of young blue stars indicate the locations of star clusters and star-forming regions. The stars bunch up in the blue ring-like feature toward the right side of the image. The dark silhouettes trace out complex dust structures. Underlying the entire galaxy is a smooth distribution of cooler red stars that trace Andromeda's evolution over billions of years.

Because the galaxy is only 2.5 million light-years from Earth, it is a much bigger target in the sky than the myriad galaxies Hubble routinely photographs that are billions of light-years away. This means that the Hubble survey is assembled together into a mosaic image using 7,398 exposures taken over 411 individual pointings.

The panorama is the product of the Panchromatic Hubble Andromeda Treasury (PHAT) program. Images were obtained from viewing the galaxy in near-ultraviolet, visible, and near-infrared wavelengths, using the Advanced Camera for Surveys and the Wide Field Camera 3 aboard Hubble. This cropped view shows a 48,000-light-year-long stretch of the galaxy in its natural visible-light color, as photographed with Hubble's Advanced Camera for Surveys in red and blue filters July 2010 through October 2013.

The panorama was presented at the 225th Meeting of the Astronomical Society in Seattle, Washington.

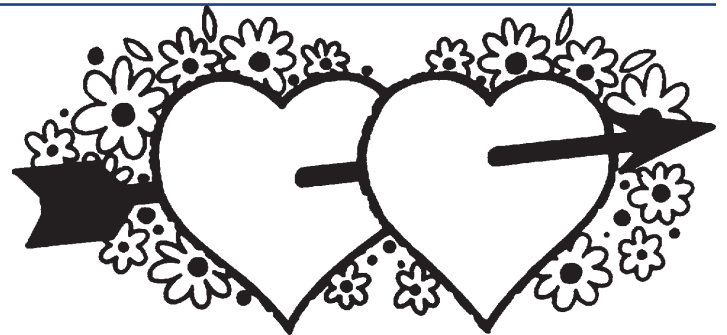


The Celestial Sphere is merely an extension of Earth coordinates. Sight your telescope on North Star to lock equatorial mount for your latitude. From then on objects can be found by using their coordinates.

A throwback diagram, from *Exploring Space with Astronomy*, 1967, by Lloyd Mallan, Fawcett Books.

Celestial Calendar

- Jan 26 22:48 FIRST QUARTER MOON
- 29 11:07 Aldebaran 1.2°S of Moon
- 30 08 Mercury at Inferior Conjunction
- Feb 03 17:09 FULL MOON
- 04 02:35 Jupiter 5.2°N of Moon
- 05 02:17 Regulus 4.0°N of Moon
- 06 00:25 Moon at Apogee: 406155 km
- 06 11 Jupiter at Opposition
- 08 11:10 Moon at Ascending Node
- 09 10:23 Spica 3.3°S of Moon
- 11 21:50 LAST QUARTER MOON
- 12 18:10 Saturn 2.1°S of Moon
- 17 00:20 Mercury 3.5°S of Moon
- 18 17:47 NEW MOON
- 19 01:29 Moon at Perigee: 356992 km
- 20 18:56 Venus 2.0°S of Moon
- 20 19:28 Mars 1.5°S of Moon
- 21 10:05 Moon at Descending Node
- 24 10 Mercury at Greatest Elong: 26.7°W
- 25 11:14 FIRST QUARTER MOON
- 25 17:02 Aldebaran 1.0°S of Moon
- 25 22 Neptune in Conjunction with Sun List from www.astropixels.com



QCAS Officers and Contacts:

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|----------------------------|--------------------------|
| President: Dale Hendricks | Vice-Pres: Bruce Brooker |
| Secretary: John Robbins | Treasurer: John Baker |
| Director: Dana Taylor | Facilities: John Baker |
| Web Master: Dana Taylor | Outreach: Tom Bullock |
| Programming: Jim Rutenbeck | |

QCAS Meetings: First Monday (workshop) at 6:30pm, and third Monday, (business), at 6:30pm, Bettendorf Library, 2950 Learning Campus Dr., off of 18th Street, Bettendorf.

QCAS Correspondence:

Please contact the society at:
P.O. Box 3706, Davenport, IA, 52808.
Members are welcome and encouraged to submit articles for The Meridian. Submit Any and all interesting items (via e-mail) to: John Robbins or Dale Hendricks.