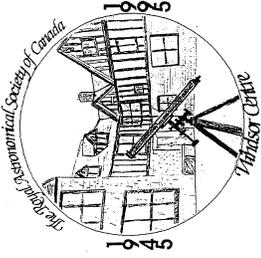




# AURORA



March 2013

The Royal Astronomical Society of Canada - Windsor Centre

Volume 38, No. 6



A great capture of M42 by Scott Stuckless. The final image is a stack of 4 x 6 minute exposures at ISO 800 shot through an AT 72ED f/6 riding on top of a CGEM mount. All post processing was done using Photoshop CS5. Scott was testing his new KWIQ Guider - I would call this a success!

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# Calendar of Events

## Our next meeting...

Tuesday April 16, 2013

7:30 p.m.

at

[Ojibway Park Nature Centre](#)

5200 Matchette Road

## Main Speaker...

TBD

## Topic...

“TBD”

## Activities...

**Spring Equinox:** Spring officially begins in the Northern Hemisphere on Wednesday March 20 at 7:02 a.m. EDT.

**Comet PanSTARRS:** Will be near the Andromeda Galaxy from April 2 - 4.

**Open House Night at Hallam:** The next open house night at Hallam is on Saturday April 13 at 8:30 p.m..

**Lyrid Meteor Shower:** Peaks in the predawn hours of April 22.

**Earth Day 2013:** Once again the RASC Windsor Centre will be celebrating Astronomy Day at the annual Earth Day event on Sunday April 28 from 10:00 a.m. - 3:00 p.m. at Malden Park (4200 Malden Road). <http://www.facebook.com/EarthDayWindsorEssex>



## Hallam Observatory Site

**Directions:** The map at left shows the Comber area and it includes the major highways (401, 77, 8 and 46) that are in the area of the observatory.

The most direct route from Windsor is "highlighted" on the map which is to take Highway 401 East to Highway 77 South to South Middle Road. Turn right onto South Middle Road and go about 1 kilometer and just after the point where Concession 9 joins it (it is hard to see this intersection) you will find the observatory site on the South side (left) of the road. 3989 South Middle Road.

If you hit the Rochester Townline Road (you come to a stop sign) you have gone too far.

## Submissions

Aurora is published monthly except for July, August and December. The September, October, January, March and May issues are full newsletters (usually 6 pages) with a number of member submitted articles. The November, February, April and June issues are short flyers (2 pages).

Submitted articles can be of any length from a paragraph to multiple pages. I can scan pictures and/or diagrams (both prints and film) to support your article and the originals will be returned to you.

Submission deadline is the 1st of the month.

Editor: Steve Mastellotto Email: [mmastellotto@cogeco.ca](mailto:mmastellotto@cogeco.ca)

## Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July and August) at the Ojibway Park Nature Centre. In addition to regular meetings the centre hosts a number of observing nights, a picnic and a December social. Members receive a copy of the Observer's Handbook, a subscription to SkyNews magazine and access to the Centre's library and telescopes. Optionally the RASC Journal is available in print form—online version free.

Annual Membership Fees: Please see the RASC website at [www.rasc.ca](http://www.rasc.ca) for current rates.

Contact Greg Mockler at (519) 326-7255 or visit our website at <http://www.rascwindsor.com> for more information.

## February 2013 Meeting Minutes by Matt McCall

The monthly meeting of The Royal Astronomical Society of Canada - Windsor Centre was held at the Ojibway Park Nature Centre on February 19, 2013.

Windsor Centre **President Rick Marion** chaired the Meeting. Paul called the meeting to order at 7:44 p.m. and welcomed members and guests to the Ojibway Nature Centre.

A motion to accept the Minutes of the January 15, 2013 members meeting was made by Brian Thomas, seconded by Art Rae. **MOTION CARRIED.**

**Main Speaker,** Rick introduced the main speaker Steve **Pel-larin**, with a presentation he'd used at past star parties, **Plu-toids, Centaurs & KBOs:** He said it was appropriate to talk about solar system objects we have tendency to ignore. Starting with the formation of the solar system, Steve mentioned the current most popular theory is the nebular hypothesis, and showed photos of the Orion Nebula as an example. Artist conceptions of formations demonstrated that larger bodies grow from accretion of solids, not gases, through collisions. He continued by saying they hit with just enough force to form big rocky objects that later became known as planetesimals, and these are all part of the theory that scientists have regarding the gradual developments from a star's accretion disk.

Actual planets, when formed, may have their orbits' modified as a result of interactions with either a gas disk, other planets, stars, or small bodies present in the system. Any planetary migration would have happened early in our solar system's history. Steve later said that all hell broke loose afterwards when the gas and ice giants began to scatter large numbers of small icy bodies inward while the planets moved outward. A few objects sent outside Neptune's orbit form a zone of comets; the Kuiper Belt.

In the late 80s, detectors became good enough that we were able to take pictures of stars such as Fomalhaut and its donut-shaped cloud orbiting far out in the system. This resembles our own Kuiper Belt, which is where scientists came up with the Scattered Disc theory. His next slide explained that our system's Scattered Disc Objects are among the coldest, most distant objects from the Sun, at 30-56° K, and have similar composition to other trans-Neptunian icy objects. UV radiation turns these bodies red in colour if carbon is in abundance, but most of their volatiles are frozen as bright, shiny, water ice and aren't exposed to enough radiation to change colours/not enough carbon.

Eris (Xena) is a dwarf planet discovered in 2005, three times the Sun's distance – so cold even nitrogen freezes on the surface. Its orbital plane is inclined 43°. Dysnomia is the name of its only currently-known moon.

The theory of the Oort Cloud was proposed by Ernst Opik (1932) and Jan Henrik Oort (1950). Oort added to the original hypothesis by refining the data and adding to it. Not many objects have been found here, and the cloud is believed to be made up of two parts – and outer and inner disc – the latter called the 'Hills Cloud' at 20,000-50,000 astronomical units (AU) away from the Sun. The spherical Oort cloud has been thought to be

where long period comets come from.

Steve returned to talking about dwarf planets briefly as he spoke of Sedna.

Centaurs are an unstable class of minor planets that behave in ways characteristic of asteroids and comets, generally laying between the orbits of Saturn and Neptune, with average orbital distances between 10 AU and 30 AU. Estimated to be about 44,000 of them. In 1920, 944 Hildago was the 1<sup>st</sup> Centaur-like object discovered, but was not recognized as such at first. Saturn's moon Phoebe may be captured Centaur.

Plutoids are similar in size/composition to Kuiper Belt objects and remain around the general area of the belt, but any dwarf planet beyond the orbit of Neptune is considered a Plutoid. Makemake is one of them, 2/3rds size of Pluto, no known moons, temp. of - 423°, and takes 331 years to complete an orbit. Haumea is extremely elongated in a somewhat egg-shaped form, with two moons.

Before the presentation's end Steve asked a question to the audience.

**Question:** What is the most distant object in our Solar System? After an audience member asked about Voyager 1, he affirmed that it is the farthest man-made object, at 123,600 AU from us.

However, Steve then told everyone that Comet 1999 F1 has an aphelion that may very well make it the furthest object in our star system. The robotic spacecraft Voyager 1 is just past the edge of the heliopause, but scientists don't know for sure if there has been a bowshock, not certain if there is pressure or if it resembles something like a light breeze. Controllers are still working on the mission as its nuclear RTGs are still operating, but are having to shut down various onboard systems. They want to keep the probe going until around 2020.

Rick thanked Steve for his presentation and invited members **Paul Preney and Joady Ulrich** to the front for an awards committee presentation.

**Steve Mastellotto** was chosen to receive the **Service Award** for members who make various efforts for the betterment of the centre, having served in the past as President, Secretary, Alternative National Council Representative, Director of Observing, Councillor, Newsletter Editor and Web Master and his astro-photo work. The group congratulated him as he accepted the award.

**Break and 50-50 Draw:** Winner of the 50-50 Draw was Matt McCall.

**Announcements:** Eugene Kim's "Law and Order of Quantum Corral Physics" lecture at **Science City on Wednesday Feb. 20<sup>th</sup>**.

**Randy Groundwater** gave a brief talk referencing "The Win-

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## Member Astrophotos



Clockwise from top left: Scott Stuckless constellation of Orion, Randy Groundwater 1st Quarter Moon, Pete Barbaro Jupiter and Ganymede, Brian Thomas Star Trails over Hallam Observatory and Brian Thomas Bode's Galaxy - M81.

## February Meeting Minutes (continued)

**dsor Star'** article he wrote for the Centre's February Flyer, regarding the fact that his monthly night sky articles are now discontinued in the local newspaper. He added that Dan Taylor had been the brain-child of the idea back when he had been President of our Windsor Centre in 1992. Randy praised the late Bert Huneault for having also written for the publication during the first two years, and also thanked the Star for allowing him to continue for over 20 years.

**Steve Pellarin** made a short statement about the upcoming **Dark Sky Night at Point Pelee on March 9<sup>th</sup>**; discussing that some people had been in favour of making it an **'Omega Centauri Star Party'**. After speaking to the park staff, we'd been given permission to stay the whole night until about 5 a.m., mainly to shoot for the Centaurus A galaxy and Omega Centauri star cluster. He spoke about possible camping privileges, with the West Beach area remaining open all night, and some publicity possibly being done for the event. Steve invited anyone to drive down to meet him for a meeting with management on Thursday.

**Next Hallam Observatory Open House is March 16<sup>th</sup>.**

**Dan Taylor** also finished up announcements by commenting on the new lighting fixtures being placed on remaining intersections in Essex County. He would be presenting facts on alternative ideas at the Essex County Council meeting at the **Civic Centre in Essex on March 6<sup>th</sup>**, invited anyone willing to come and lend support by attending with him.

**Director of Observing Report, Juliana Grigorescu:** Due south are Orion and Taurus, with Jupiter quite high and now moving more quickly through the sky. Bright winter stars quickly passing through the western sky in the middle of the evening, such as Sirius, Procyon, Castor and Pollux, also the thick arm of the Milky Way.

- **Feb. 14** had asteroid 2012 DA14 pass by, with a large meteor strike over Chelyabinsk, Russia a few hours earlier. Video compilation of the fireball streaking through the lower atmosphere and exploding was shown.
- **Feb. 17** had Mercury at highest point in the sky.
- Feb. 27 will mark beginning of Zodiacal Light becoming visible in the evening, to the west where the Sun is setting.
- **Mar. 9** is the start of the prime time for viewing the new Comet PANSTARRS in Northern Hemisphere.
- **Mar. 12** has the bright comet only 4° from very slender crescent Moon.
- **Mar. 13-24** are also going to be good dates for trying to locate it 45 minutes after sunset in the western sky.

Rick thanked Juliana for her report and also thanked Members for coming out.

The meeting was **adjourned at 10:00 p.m.**

## Hallam Happenings

After 4 years of writing the Hallam Happenings article and a longer period as the Hallam Observatory Director Dave Panton had to step down from this role with our club last month. As many of you know Dave has suffered from chronic pain for some time and unfortunately it has become worse over the Winter and he needed to pass on this role to someone who could handle the physical requirements of the job. At this point that role has not been filled. Dave will continue to help us figure out problems and come up with solutions he just will not be able to implement them. The numerous contributions Dave has made to Hallam Observatory are both obvious and subtle. It is the subtle things that I appreciate and make Hallam such a joy to use. When you need something and reach out and your hand falls to a natural place and there is the knob or accessory you need under your fingers. That is because Dave thought about it, made a prototype, tried it out and then tweaked it. He most likely then milled it out of aircraft aluminum and improved it again.

Your craftsmanship and engineering logic will be missed Dave. Someone has some big shoes to fill.

*The Editor*

## Omega Centauri

As noted in the February meeting minutes at right the RASC Windsor Centre turned the March 9 Dark Sky Night at Point Pelee into an Omega Centauri Star Party. The following summary of the event was posted to our Facebook page (<http://www.facebook.com/groups/rascwindsor/>) by Steve Pellarin...

Well, we gave it a shot, but the Omega Centauri Star Party was more or less clouded and rained out. A group of about 8 members of the club were present during the evening (those of you that came, a BIG THANK YOU) and we had about 20 to 25 people show up for viewing the comet in the first hour or so in spite of the heavy cloud cover. As the sky darkened, we did have a large hole in the cloud develop for about a half hour or so and we were able to show people Jupiter, the Pleiades, the Great Nebula in Orion and a few other object through binoculars and Matt McCall's Newtonian telescope through a slight high-altitude haze. We spotted two satellites but the ISS was not visible from our location last night. I gave a little tour of the constellations and point out some interesting stars using Greg Mockler's laser (thanks for that, Greg) and everyone was involved in conversations about the sky as we waited for another clearing opportunity. Another group of visitors (probably about 10-15 showed up in the second hour after sunset, but still the sky was well socked in. A reporter from the Essex Free Press came by and interviewed a few of us and took a group photo (link to article here: <http://sxfreepress.com/?s=astronomy&x=11&y=2>). By about 9:00 the weather satellite imagery was showing no hope of clear skies for hours and bands of rain heading our way. Most club members and a few hearty visitors stuck it out until the rain arrived at 9:30 p.m.. After that, the night was a washout, so the last few of us packed it in. Surprisingly (or maybe not so much) one or two cars arrived with the rain as we were pulling out of the gate asking if they could come in to observe with us. We had to point out that stars are not visible when rain is falling but we invited out next weekend to the club's open house. They went into the park anyway, apparently just to walk the park trails in the dark with the rain falling! And they say we amateur astronomers are a little out there for standing outside and looking at the sky in the dark!

## Comet C/2011 L4 (PanSTARRS) Puts on a Show

RASC Windsor Centre members were busy on the night of March 13 and 14th imaging Comet PanSTARRS. Left: Art Rae, Right: Dan Taylor, Middle Left: Brian Thomas, Middle Right: Jeff Peacock, Lower Left Al DesRosiers and Lower Right: Scott Stuckless. All images from March 14 except Brian and Scott's which are from the 13th.

Note the sharp edged bluish ion tail on the right side in Dan's image and the more diffuse gold dust tail on the left.

