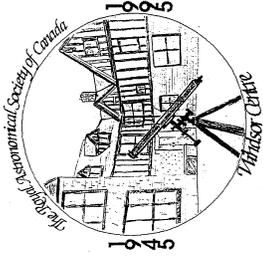




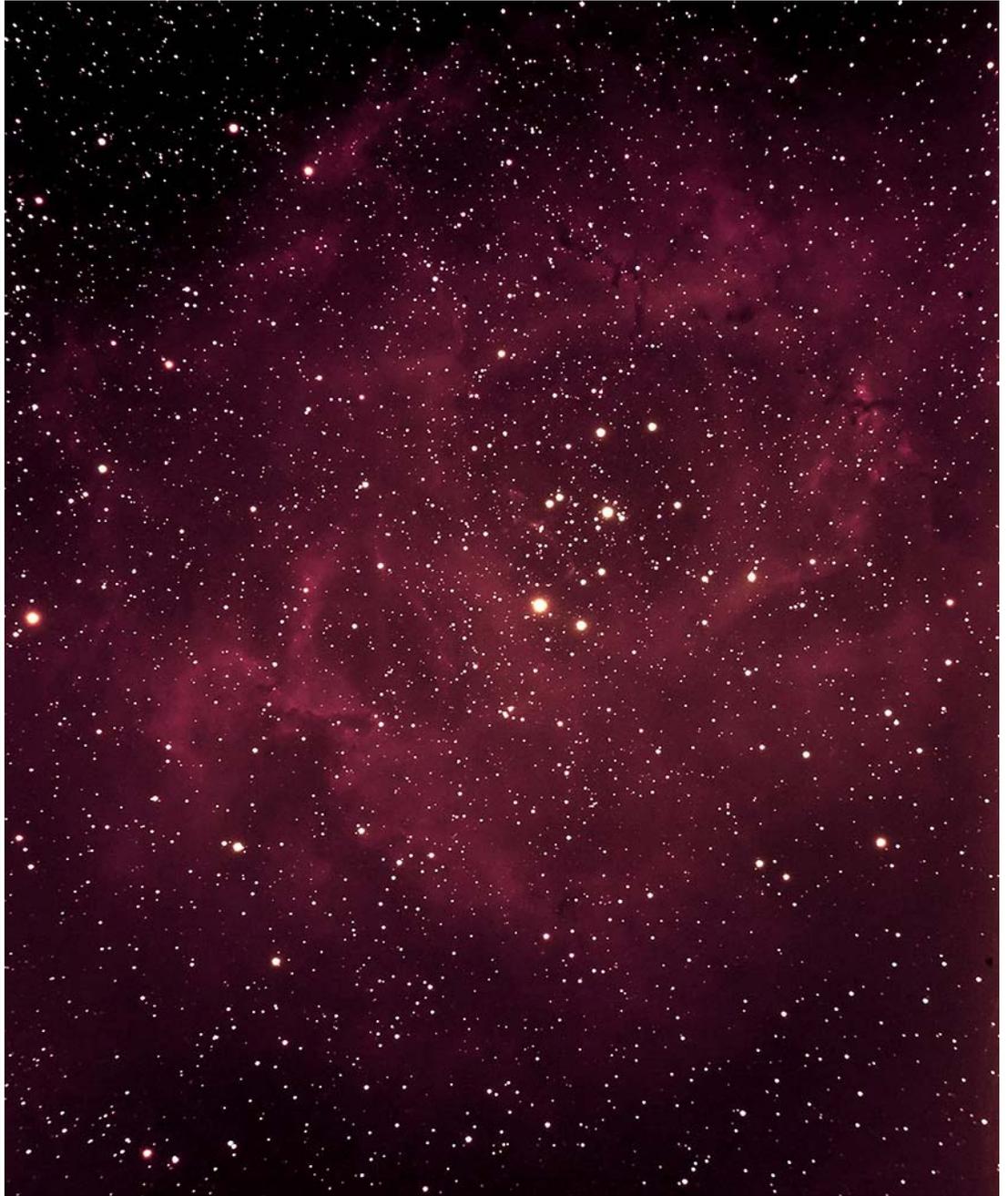
# AURORA



March 2011

The Royal Astronomical Society of Canada - Windsor Centre

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*Photo by Rick Marion. The Rosette Nebula (NGC 2237 nebula & NGC 2244 cluster) was imaged on March 6, 2011 through the AT111 at Hallam Observatory. Rick used his QHY8 CCD camera (a cooled one shot colour device) for this image. The image is a combination of 5x5 minute exposures with some minor post-processing (no dark or flat frame calibration, just contrast stretch, colour balance and noise reduction).*

## *In This Issue*

The Rosette Nebula Astrophoto by Rick Marion	Cover
Events; Housekeeping Items	Page 2
February Meeting Minutes / Astrophotography Group	Page 3
Hallam Happenings	Page 4
Challenging Targets	Page 5
Member Astrophotos	Page 6

# Calendar of Events

## Our next meeting...

Tuesday April 19, 2011

7:30 p.m.

at

Maidstone K of C Hall

10720 County Road 34 (Old Highway #3)

## Main Speaker...

Steve Pellarin

## Topic...

“The Search for Exoplanets, Part II”

## Activities...

**Member's Night:** Saturday March 26th starting at 8:00 p.m. at Hallam Observatory. Have you ever wondered how to get there, what equipment is there, what the site is like to observe from or how dark the skies are? Regular visitors are available to “buddy up” with to answer these questions and guide you once you are onsite so come on out to Hallam.

**Open House Night at Hallam:** The next open house night at Hallam is on Saturday April 9th at 8:30 p.m..

**Earth Day/Astronomy Day:** Sunday May 1st from 10:00 a.m. - 4:00 p.m. at Mic Mac Park.

**Science Rendezvous 2011:** Saturday May 7 from 10:00 a.m.- 4:00 p.m. at the University of Windsor. Also there will be observing at Hallam Observatory that night starting at 8:30 p.m.



## 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.

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 K of C Maidstone Recreation 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. And optionally the RASC Journal 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 2011 Meeting Minutes by Art Rae

Minutes from the meeting of February 15, 2011 at the Maidstone Recreation Centre.

Windsor Centre President Paul Pratt chaired the Meeting. Paul called the Meeting to order at 7:00 p.m. and welcomed members and guests.

Motion to accept the Minutes of the last meeting of January 18, 2011. Moved by Pierre Boulos, Seconded by Brian Thomas.  
MOTION CARRIED

### Business

**Secretary, Arthur Rae:** No correspondence to report.

**Librarian, Rick Marion:** Rick could not attend the meeting.

**Newsletter Editor, Steve Mastellotto:** As always looking for articles and Steve mentioned the book review in the February Flyer as an example of something that would be of interest to the membership.

**Education Director, Randolph Groundwater:** The Windsor Centre has signed on for the upcoming Science Rendezvous event at the University of Windsor. Need volunteers to staff display, talk to visitors.

**Public Events Chair, Peter Bondy:** Pete could not attend the meeting.

**National Council Representative, Mike Mastronardi:** No Report - he will be attending the upcoming National Council Meeting in Toronto.

**Director of Observatory, Dave Panton:** Reported snow has been cleared out to make a pathway to observatory building by Al DesRosiers.

**Treasurer, Greg Mockler:** Bank account balance \$5,700 and membership at 95 members.

Paul showed a number of **recent images** taken at Hallam Observatory by Brian Thomas. They included M42 the Orion Nebula.

Another **photo presentation** by Dave Panton demonstrated the light pollution issue facing our Hallam Observatory. Dave also showed images he has compiled to demonstrate the proportions of sizes of the wind turbine towers that will be situated around the Hallam Observatory.

President Paul introduced the main speaker for the night, Windsor Centre member, Juliana Grigorescu.

### Main Presentation

**Juliana Grigorescu, "It's All Stars":** Juliana led us through the historic study of stars and their evolution and lifetime cycles. Star magnitude was defined then luminosity. Star distances and

measuring techniques were explained. Stars types are classified into various groups based on their mass. The fuel burning process was then explained for the various star types including low mass Red Dwarfs, intermediate and high mass objects. The evolution sequence of a star was laid out including the chemical reactions of fuel and pressure that lead to the end of a star's life as a Red Giant then a Supernova. Super giant stars, Planetary Nebulae, Supernova fading and types, Pulsars and Black Holes were further defined.

### Announcements

The next **Open house** at the Hallam Observatory will be March 12, 2011 starting at 7:00 p.m.

Dr. Baylis notified the members that the next **Science Cafe** meeting titled "Science and Medicine" will be held on February 16th in Windsor at Science City.

**Director of Observing, Steve Pellarin:** Steve presented a video of ESA weekly newscasts showing the latest furthest galaxy found by the ESO large array telescope.

Steve then showed the latest images of the day's Stardust space probe encounter with Comet Tempel 1 and the latest Solar Flare report, the largest flare of the year this far.

February Sky Report included planetary targets Jupiter, Saturn, Venus and Mercury visibility opportunities. Of special interest is Jupiter with the return of it's southern equatorial band and Saturn showing a northern hemisphere storm that has the brightest cloud feature ever seen on that planet. Other February and March objects of interest included a morning conjunction of Venus, the Moon and asteroid Juno. With winter transparency still here deep sky objects are at their best including the Rosette Nebula, Duck Nebula (NGC2359) and M93. Steve referred back to Brian Thomas' image of the Rosette nebula and NGC891 in Andromeda as objects to look for.

The Meeting was adjourned at 10:30 p.m.

## Astrophotography Group

A group of Windsor Centre members have started an email distribution list for members interested in astrophotography. So far the typical traffic is about 1 email a day so you won't be overloaded with messages. The intent is to have a place to ask questions about astrophotography and discuss topics of interest to those of us doing astrophotography either from our backyards or Hallam Observatory. There are no definite plans to have any face to face meetings or group projects at this point but it is really up to the group to decide what we want to do.

A couple of items that may be of interest to the group are an online photo hosting site (like Zenfolio or Smugmug) and a calendar based on our astrophotos.

If you are interested in participating please send an email to Steve Mastellotto at [mmastellotto@cogeco.ca](mailto:mmastellotto@cogeco.ca)

## Hallam Happenings by Dave Panton

Winter 2010/2011 has been brutal in every way. Too cold, too much snow and now another threat to our skies at Hallam. The brightly lit Mortenson wind turbine project construction yard on Knapp road was bad enough. A kilometer West the Cangen company seems to have enlarged their yard, festooned it with big mercury vapour lights and is currently filling it with giant coils of transmission wire and a fleet of boom trucks. Two of the South facing lights glare directly at our deck, brighter than any we have seen in the past. Channels are being pursued to have at least these two lights tipped down to face the ground.

Heavy snows have come and gone at least once allowing easy access to the observatory. Other times walking through deep snow was the only way in from the road. One open house was a wipeout when a snow storm nearly stranded one of our volunteers on the roadside. No visitors came. Later Al DesRosiers and a friend did a lot of digging through drifts to open a one lane access to the snow free wind blown area around Moe Trepainier's machinery building.

Winter skies have been largely overcast. The few clear nights (even with a full Moon in the sky) have not been wasted. Only Al has observed out on the deck. Inside the telescopes have been put to wonderful use imaging some of those great Winter sky objects we read about but rarely see. Brian Thomas has been taking some really class astro images, many included in full color in recent newsletters.

Canadian cold has not affected any of our equipment. One astroimaging session was conducted at a dome temperature of  $-17^{\circ}\text{C}$  while the warm room was just a bit above freezing. Warmer nights will soon make visits to Hallam ever more enjoyable.



*The above photo was taken from the deck at Hallam Observatory on the night of February 22, 2011 by Brian Thomas and clearly shows the light issues from the wind turbine project construction yard described in the article.*

## Challenging Targets by Matt McCall

From Philip Harrington's *Cosmic Challenge*

' = arc minute, " = arc second

**Galaxies beyond M44 (for a 10+ inch telescope)** The Beehive Cluster in Cancer has 2-3 galaxies in it visible to large scopes & high magnification. *NGC 2647* at 15.1 mag. is 1' northeast of a 13th mag. star on the cluster's east flank, go out to a dark sky site to see if you can see a faint, round glow with two dim stars on each side. On the west side of M44, 8' east of 8th magnitude SAO 97973, is another circular glow, the tiny spiral galaxy *NGC 2624* at 14.6 mag. A very dim star is to the southwest of the 25" long galaxy, with the smaller, elliptical *NGC 2625* about 3' east-southeast.

**Leo Triplet (binoculars)** Leo has 3 galaxies ranging from mag. 10.3 to 9.7. *M65*, the faintest, is a type Sa spiral, with tight spiral arms, while brighter *M66* is type Sb, and structured more loosely. To find it, use 10x50s in good seeing, look 2 1/2 degrees south-east of Chertan (that marks the right angle of the triangle that forms the Lion's rear), watch half a field east of three 7th mag. stars for a faint smear of light just beneath a dim star. To the immediate west is M65. At the same magnitude as M66 is *NGC 3628*, a grayish smudge right above the others. A tripod helps view the central core & surrounding fuzz.

**M3 (Naked-eye)** Find Arcturus in Bootes & draw a line 25 degrees northwest to Cor Caroli in the very dim constellation Canes

Venatici, below Ursa Major. The 6.2 mag. globular cluster *M3* is midway between them, 6 degrees east of 4 mag. Beta Comae. Binoculars help show the difference between the Messier cluster & the nearby bright star SAO 82944, if your eyes can't discern it well.

**The major satellites of Uranus (for a 10+ inch telescope)** Of its 27 moons, 4 are big enough to see in large scopes, but none are brighter than 14 mag. *Titania* is largest, and *Oberon* orbits farther, but is still under 1' from Uranus at all times. *Umbriel* & *Ariel* are extremely difficult to see as their orbits keep them closer to the planet, with the latter coming 15" away at most. *Uranus* is listed by the author as a naked-eye target, so try that while waiting for it to get closer to Earth, as the moons are harder to see now as a result. Also check online to see when they are farthest from the planet.

If you want a different challenge, team with amateurs around the globe to track the second *X-37* spaceplane, just launched earlier this month on its secret six-month mission. The first orbiter, launched last year, had an orbital inclination that took it nearly 40 degrees N & S over various regions of conflict. The current craft may perform similar reconnaissance as well as deploy satellites, with hobbyists likely to get some fix on its orbit in the next several weeks. Tracking X-37 consistently is very difficult, even for pros, but research how to find man-made objects and perhaps we can assist in opening the skies to observers even more.



Uranus and its moons by Massimo Torri. This is a 5'x4' crop from an original image which is a stacked of 33x30sec unguided exposures (16.5min in total) taken on Friday September 17, 2010 at around 11:30 p.m. Taken at the prime focus of a 10" Newtonian telescope f/4.7 using a unmodified Canon 450D. Three moons are clearly visible and Ariel was only about 4.5" away from Uranus and completely lost in the glare. This image also captured the faint glow of the core of two distant galaxies.

The Leo Triplet M65, M66 and NGC 3628 photographed from Hallam Observatory by Paul Pratt using his Canon 5D and the AT111.

## Member Astrophotos



Clockwise from Top Left: *The Crescent Moon and Jupiter* on the evening of March 6, 2011 over Hallam by Brian Thomas (Modified Canon 5DMkII, 70mm, 1 sec., f/5, ISO 800), *The Moon* by Steve Mastellotto (C14, Canon 5DMkII, 1/250 sec., f/11, ISO 400), *NGC 2903* by Brian Thomas (C14, Canon 5DMkII, 12x5min. stack, ISO 800, M2 by Pete Barbaro (8" SCT, Nikon D60, 3x170 sec. stack, ISO 400) and the *Crescent Moon and Venus* on the morning of March 1, 2011 by Dave Williamson (Canon 50D, 70-200mm L IS II @70mm, 1/10 sec., f/2.8, ISO 1600).