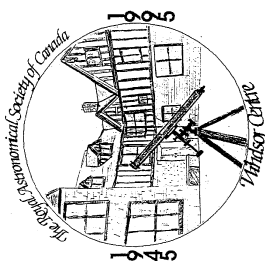




# AURORA



May 2015

The Royal Astronomical Society of Canada - Windsor Centre

Volume 40, No. 8

## Science Rendezvous 2015 (continued on back page)



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## Calendar of Events

### *Our next meeting...*

Tuesday June 16, 2015

7:30 p.m.

at

Ojibway Park Nature Centre

5200 Matchette Road

### *Main Speaker...*

Juliana Grigorescu

### *Topic...*

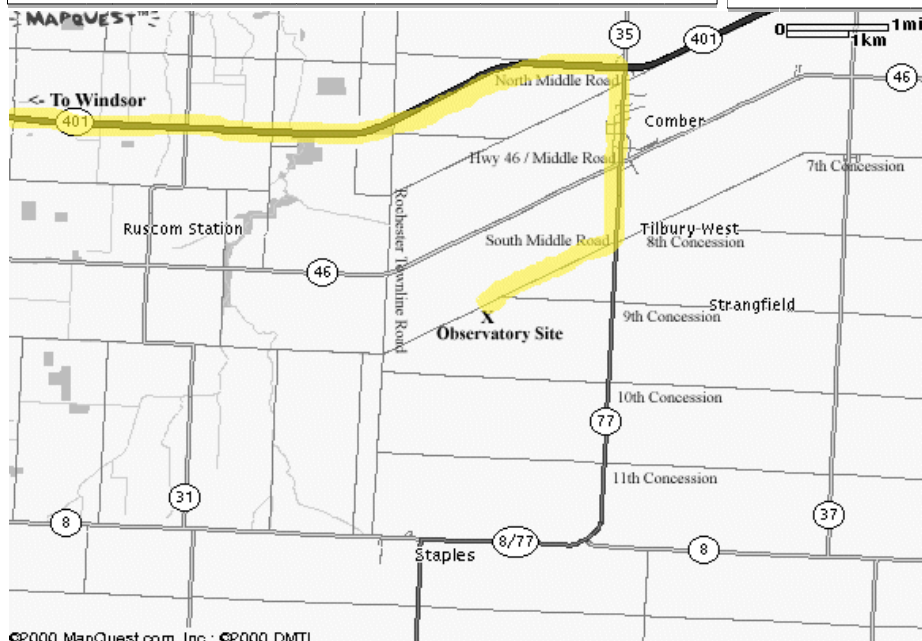
*Massive Stars*

### *Activities...*

**Open House Night at Hallam:** The next open house night at Hallam is on Saturday May 23rd at 9:15 p.m..

**Double Shadow Transit on Jupiter:** Look for the shadows of Io and Ganymede crossing Jupiter's disk on Wednesday May 27th from 10:01 p.m. until 12:18 a.m.. Note that this event will also include an eclipse of Io by Ganymede's shadow which will be projected onto Jupiter and appear as two merged shadows. A double transit of these moons occurs on June 3rd beginning at 10:45 p.m..

**June Picnic:** The Windsor Centre will hold our annual picnic on Saturday June 13 at Hallam Observatory. The picnic will be "Pot Luck" style with the Centre providing BBQ'd hot dogs and hamburgers. We ask that you bring a side dish or dessert and something to drink - a reminder alcohol is not permitted at Hallam Observatory.



### 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 Tawnline 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.

## April 2015 Meeting Minutes by Steve Pellarin

The monthly meeting of the Royal Astronomical Society of Canada - Windsor Center was held at the Ojibway Park Nature Centre on Tuesday April 21, 2015.

Windsor Centre **President, Randy Groundwater**, chaired the meeting and called the meeting to order at 7:35 p.m. and welcomed members and guests. Mike Mastronardi reminded the audience that tickets are still being sold for our monthly 50/50 draw and for the raffle that the club is having for the two large framed Jupiter photos taken and donated by club member Mike Pataky. The raffle will take place at the end of the June monthly meeting. To win, the ticket holder must be present. Tickets are \$1 each for the draw. Randy reinforced the value of these prizes by noting that one of Mike's photos of the rare triple shadow transit of Jupiter's moons was featured in Sky News magazine along with a photo of his telescope and observatory in the letters section of the magazine.

Randy invited the audience to review the minutes of the March meeting which were printed in the monthly newsletter. A motion to accept the minutes of the March 17, 2015 membership meeting was made by Brian Thomas, seconded by Susan Sawyer-Beaulieu. **MOTION CARRIED.**

### Main Presentation

Randy then went on to introduce the **guest speaker for the evening, Michael Watson**, a long-time RASC member from the Toronto area. Randy noted that Michael has held several posts at the National level within our organization (2nd vice-president, treasurer as well as legal counsel). Michael has also been recipient of the National Service Award of the RASC and the Simon Newcomb medal of the Society. Mike is well known across the RASC for his expertise in astrophotography, particularly with 35mm film. His fantastic images were crowd pleasers at many astronomy conventions and presentations going back to the early 1980s.

While he took a break for decade or so to raise his family, technology went digital in the camera world. Since his return to imaging the sky in recent years, Mike has been playing catch-up. However, many of the skills he mastered while shooting film still apply and **Michael's presentation was intended to show us what can be accomplished when taking pictures of the night sky without a telescope.**

Michael started his presentation by pointing out that to take interesting images of the night sky, all you really need is a camera (most now use a light-sensitive ccd chip instead of film) and some way to hold the camera steady. While having other gadgets and attachments is useful, they are not a requirement. He explained that for some types of photos that don't require exposures of a second or more (such as wider field images of the moon, auroral displays, etc.), even just bracing your two arms on a solid surface may be enough to hold the camera steady and avoid a blurry image. Many pictures of this type can also bring in elements of the landscape that can add to the aesthetics of the image. Of course, the longer the exposure, the more light that can be captured and the dimmer and more subtle the celestial

objects that can be recorded. Michael then went on to show us examples of many different astronomical objects shot with just a camera and tripod. He explained exposure and lens settings and some of the techniques and types of lenses he used to achieve different effects. These included everything from star trails around the pole star to beautiful sky-spanning images of the Milky Way shot from very dark locations. Mike noted that most photographic lenses perform best between f/3 and f/11, so he often chooses not to open a lens to its widest aperture to allow the maximum of light in to the chip. Instead, new cameras with their very sensitive CCDs allow the photographer to compensate by setting the camera's ISO value to a much higher level than was previously possible - perhaps as high as 3200 or 6400 ISO without much loss of image quality.

Michael then went on to also explain the use of newer tracking mounts that allow the astrophotographer to take much longer exposures while still maintaining pin-point star images in the frame. He talked briefly about the ease of performing image stacking and processing in digital photography as compared to older techniques with film. His beautiful images taken from exotic places like the outback of Australia and the grasslands of Africa were definite crowd pleasers.

Steve Mastellotto thanked Michael for his presentation.

**Break and 50/50 Draw** - Steve Pellarin winner, donated his \$10 winnings back to club.

### Announcements

- **10th Annual Earth Day Dinner** taking place on Sunday, April 26th, sponsored by Canada South Science City at the Caboto Club. Because this is the International Year of Light, the featured dinner speaker will be Dr. Melanie Campbell, award-winning researcher in the departments of Physics and Optometry and Vision Sciences at the University of Waterloo. This dinner is an important fundraiser for the local science centre.
- **Science City** - they have been informed that city council will be ending their support for the group in terms of providing them with their current building on Marion Avenue sometime after July as a cost-cutting move. As a result, the science centre will be forced to find a new home for their daily operations. More information will be forthcoming.
- Mike Mastronardi, standing in for treasurer Greg Mockler, announced **1 new member** had joined at the meeting.
- Next **Open House for Hallam Observatory** is Saturday, April 25th, starting at 8:45 pm. Last month's had more than 45 people in attendance with clear skies - a great night for all who came.
- **Science Rendezvous** event at the University of Windsor coming up on Saturday, May 9th from 10:00 a.m. to 4:00 p.m.. The club will have a large booth with displays, telescopes set up for solar observing, sky wheels, handouts for kids and information about the Windsor Centre and Hallam Observatory. Steve Pellarin is organizing the event and looking for volunteers. Please contact him if interested in

(Continued on page 5)



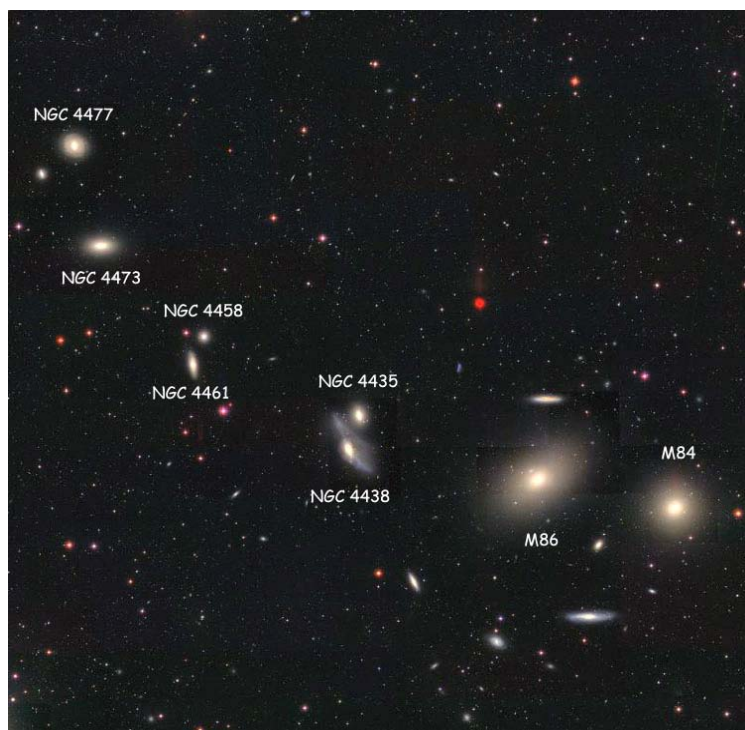
## At The Eyepiece: Adventures with Smaller Apertures: Chain, chain, chain... by Deb Ethier

...but of galaxies, not fools! Spring is hunting season for amateur observers; *galaxy* hunting, that is. Virgo and Coma Berenices are in perfect position, and the border between these two constellations is an embarrassment of riches. In this incredible field, a feature stands out that invites many return visits – Markarian's Chain. It belongs to the larger Virgo Cluster, our nearest galaxy cluster encompassing around 2000 galaxies, and lies approximately halfway between Denebola in Leo and Vindemiatrix in Virgo.

In the December, 1961 issue of *The Astronomical Journal*, Armenian astronomer Benjamin Markarian published his findings concerning the apparent motion of this pleasing curve of seemingly-related galaxies, concluding that at least seven of them moved coherently (the original article is available for your perusal from Harvard's *Astronomy Abstract Service*), indicating that they are related by more than a pleasing visual association.

The seven main members of the chain are shown at right, and are easily viewed in a 6" f5 reflector. Between May 18-24 of 2014, I spent some time with the chain with just such an instrument. All were visible at 42x, but quite beautiful at 94x. I considered M84 to be the "beginning" of the chain, and it, M86, NGC4435 and 4438 make a "Sagitta-like" formation as you move down the line. NGC 4435 and 4438, the fletching of the "arrow", are called "The Eyes" for good reason. In the 6", NGC 4473 and 4477 are almost twins.

After driving around the chain for a while and familiarizing yourself with the main components, it's well worth broadening your field to other galaxies associated with the chain, such as NGC 4425, 4459, 4474, 4488, 4501 (M88), 4548 (M91)... really, the field here is so rich even with a small aperture that it almost boggles the mind. Even so, the Chain stands out with its beautiful curved line, well worth a visit on a warm(ish) Spring night.



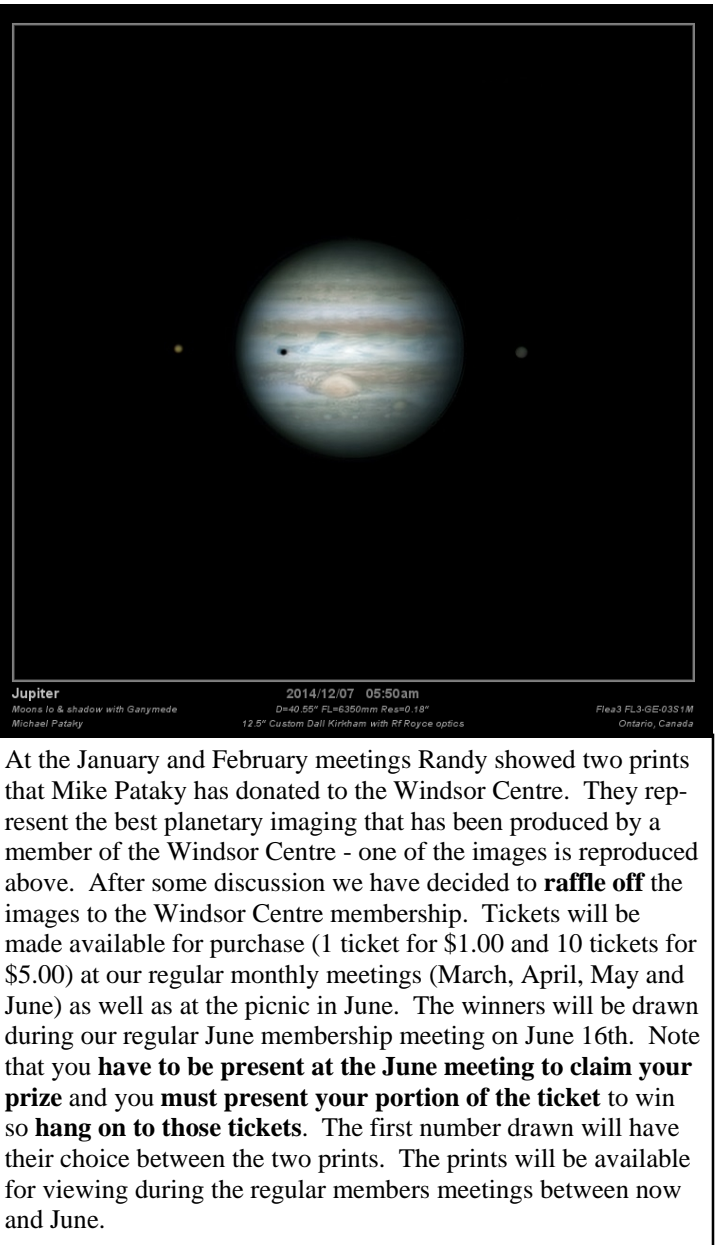
ID	Constellation	Magnitude	Size
<b>4374 eg M84</b>	Virgo	9/12.3	5x4
<b>4406 eg M86</b>	Virgo	9/14	12x9.3
<b>4435 eg</b>	Virgo	11/13	3.2x2
<b>4438 eg</b>	Virgo	10.2	9x3.6
<b>4461 eg</b>	Virgo	11/13	3.7x1.4
<b>4473 eg</b>	Coma Berenices	10/12	3.7x2.4
<b>4477 eg</b>	Coma Berenices	10/13	3.9x3.6

## April Meeting Minutes (continued)

(Continued from page 3)

helping out.

- **Dark sky nights at Point Pelee National Park:** Next is Saturday, May 16th (dusk until 12 am) - Our club is hosting this event - anyone interested in being a part of the event will be meeting in parking lot at the Visitor's Centre inside the park. Check park's website for details on more involved summer schedule of astronomy events.
- **Stargazing and Wine-Tasting Event** at Colchester Ridge Estate Winery (CREW) in Harrow - fundraiser for the club. Susan-Sawyer Beaulieu says proposed event would take place Saturday, August 8 (rain or shine). Each guest will be asked to donate minimum \$5 to go to the Windsor Centre. Looking for volunteers from club to help with stargazing, people to bring telescopes and someone to do a talk on the night sky.
- Dan Perissinotti presented to the **club a new poster** he has designed to advertise our open house nights out at Hallam Observatory. The beautiful colour image is available from Dan for distribution and posting at workplaces and public spaces - check club facebook page for the image - contact Dan to obtain copies.
- Steve Pellarin noted that he had given an astronomy talk at the **Essex County Agricultural Hall of Fame** late last month, at the farming association's annual banquet in Harrow. His talk on astronomy in Essex county was a presentation to introduce amateur astronomy and stargazing to their group and to advertise and inform them about our club and observatory. Steve said the talk was well received and many were interested in learning more about our group and our open house nights out at Hallam.
- Susan-Sawyer Beaulieu gave the group an update about the information she volunteered to gather last month regarding the **ASTROCATS** astronomy convention that club members were hoping to attend again this year. Susan stated that the convention would be held at the Ontario Science Centre this year on the last weekend in June 27/28. The plan is for local members travel as a group, leaving early Saturday morning and returning home later that evening. It will not interfere with the Canada Day holiday.



At the January and February meetings Randy showed two prints that Mike Pataky has donated to the Windsor Centre. They represent the best planetary imaging that has been produced by a member of the Windsor Centre - one of the images is reproduced above. After some discussion we have decided to **raffle off** the images to the Windsor Centre membership. Tickets will be made available for purchase (1 ticket for \$1.00 and 10 tickets for \$5.00) at our regular monthly meetings (March, April, May and June) as well as at the picnic in June. The winners will be drawn during our regular June membership meeting on June 16th. Note that you **have to be present at the June meeting to claim your prize** and you **must present your portion of the ticket** to win so **hang on to those tickets**. The first number drawn will have their choice between the two prints. The prints will be available for viewing during the regular members meetings between now and June.

Steve Mastellotto presented a **short time-lapse video of an auroral display** visible out in the county on the night of our last meeting in March and captured by Brian Thomas. Brian noted that the video showed some colour changes in the aurora although it had been much more intense while he was still traveling on the 401 on his way home. Other spectacular photos of the aurorae taken in northern Alberta by Tim Bennett's niece were shown.

Matt McCall then presented the **Director of Observing Report** for the month. Matt reviewed sky events that had occurred since the last meeting, including images by members of the **early-morning lunar eclipse** and star shots from Point Pelee. Donna Ronconi stirred discussion about **unusually colourful recent sunsets and sunrises**, perhaps due to volcanic dust in the atmosphere. Matt also mentioned the upcoming peak of the **Lyrid meteor shower**, **Mercury's** nice apparition in the early evening sky over the next few weeks, and **Saturn's** movement into earlier evening skies as it approaches opposition. A discussion of **Nova Sagittarius 2015** also occurred. Matt concluded with a survey/starhop of some fairly easy **spring-time galaxies** found in Leo and Virgo with small and moderate-sized telescopes.

Randy thanked Matt for his presentation and reminded the audience that the **next regular membership meeting** of the Windsor Centre RASC would take place on Tuesday, **May 19th at 7:30 p.m.**

Randy **adjourned the meeting at 9:45 p.m.**



## Science Rendezvous 2015 (continued from front page)



The **2015 Science Rendezvous** was another great success. Steve Pellarin coordinated our efforts by making sure we had plenty of volunteers and materials at our table. Unfortunately the skies did not cooperate for solar observing. A special thank you to the volunteers: Steve Pellarin, Randy Groundwater, Mike Mastro-nardi, Tom Sobocan, Dave Sobocan, Matt McCall, John Marn and Dan Perissinotti. The photos on the cover and on this page were provided by Dave Sobocan, Tom Sobocan, Mike Mastro-nardi and Randy Groundwater. I particularly like Dave's photo on the cover of Randy helping out a couple of young scientists understand how a star wheel works - this is what Science Rendezvous is all about!