

AURORA



Volume 36, No. 8

The Royal Astronomical Society of Canada - Windsor Centre

May 2011

Clear Sky Nights in River Canard 2008 - 2010 by Art Rae

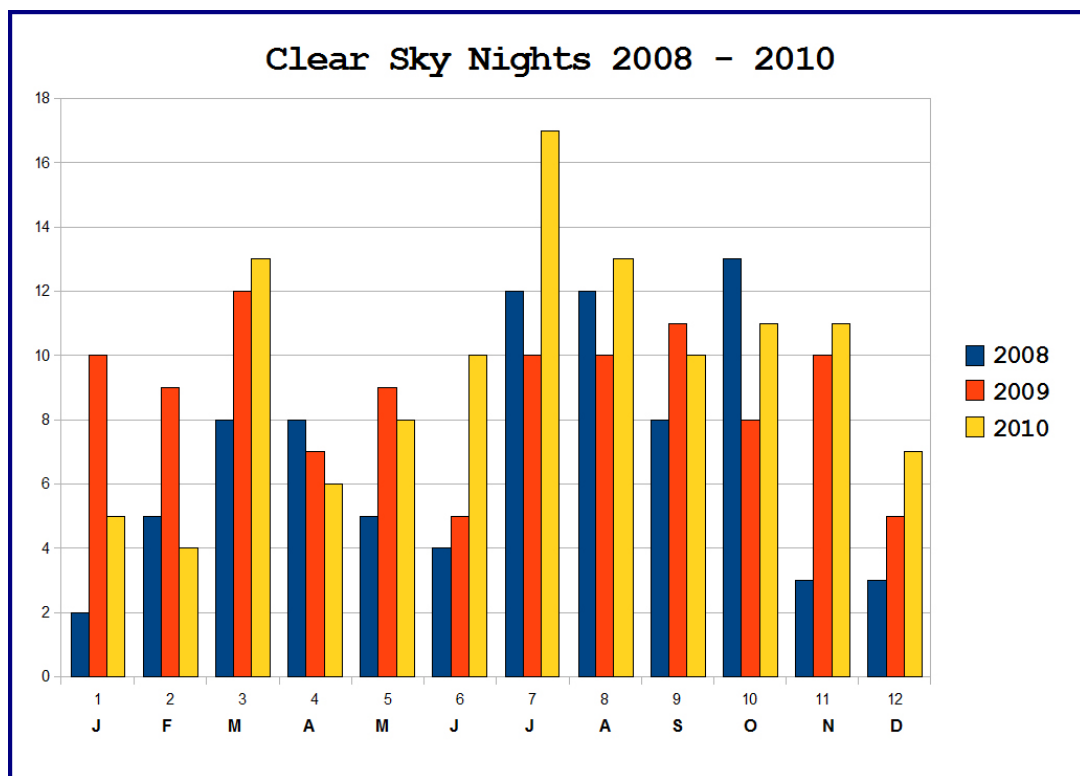
I try to keep track of the number of clear nights throughout the year here in River Canard. My idea of a "clear night" is if I check a couple of times in the night and the sky is clear I record it as a clear night. Unscientific maybe but better than nothing.

The year 2010 just ended appears to be a better year than the previous two years, 2008 and 2009. My statistics show that in 2010 there were 115 clear nights while 2009 only showed 106 and 2008 was down at 83.

Last year, 2010 showed the best month as July with 17 clear nights with March and August tying for 13 nights each.

In 2009 the best month was March with 12 nights clear while 2008's best was in October with 13 clear sky nights.

See the chart below for other months.



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Calendar of Events

Our next meeting...

Tuesday June 21, 2011

7:30 p.m.

at

Maidstone K of C Hall

10720 County Road 34 (Old Highway #3)

Main Speaker...

Randy Groundwater

Topic...

"To Be Determined"

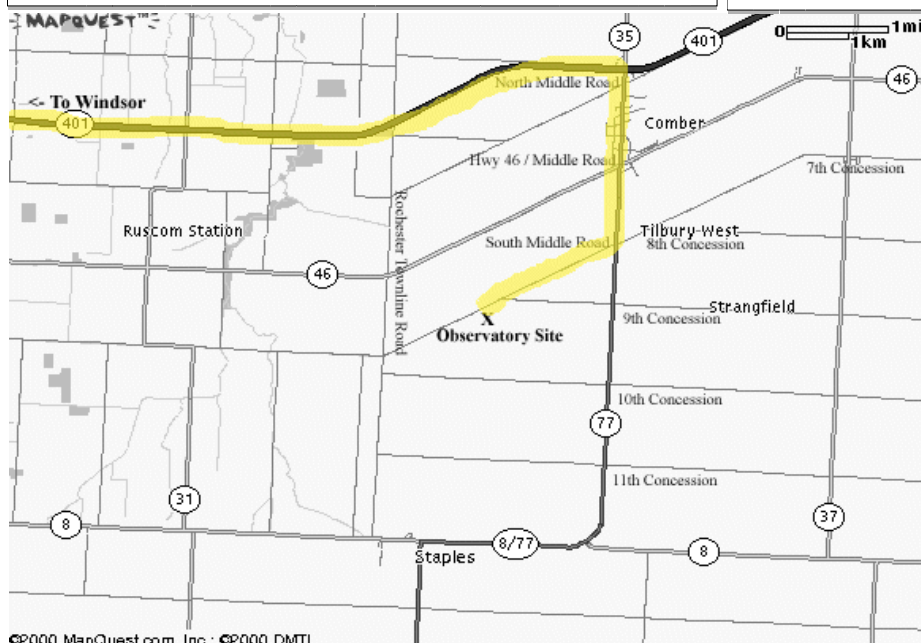
Activities...

Open House Night at Hallam: The next open house night at Hallam is on Saturday June 4th at 9:30 p.m..

Conjunction: Thursday/Friday June 9th and 10th look for Saturn 1/4 degree away from Porrima (gamma Virginis) and the gibbous Moon below them.

Council Meeting: Tuesday June 14th at 7:30 p.m. at the new Ojibway Park Nature Centre.

Windsor Centre Picnic: Saturday June 18th at Hallam Observatory beginning at 6:00 p.m. The Centre will be providing BBQ'd hot dogs and hamburgers and you are asked to bring a side dish, something to drink (remember no alcohol is allowed at Hallam) and your lawn chair. Weather permitting we will also be observing after the sun sets so bring some warm clothes and mosquito repellent.



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.

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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 for current rates.

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

April 2011 Meeting Minutes by Art Rae

The monthly meeting of The Royal Astronomical Society of Canada - Windsor Centre was held at the Maidstone Recreation Centre on April 19, 2011.

Windsor Centre President Paul Pratt chaired the Meeting. Paul called the Meeting to order at 8:00 p.m. and welcomed members and guests.

Motion to accept the **Minutes of the meeting of March 15, 2011** moved by Greg Mockler, Seconded by Dan Taylor. MOTION CARRIED.

Main Talk

President Paul introduced the speaker for the night, **Steve Pel-larin** for his lecture **"Taking A Stroll Through The Exoplanet Zoo"**.

The study of exoplanets is the most popular subject of current astronomy research fields. Steve took the audience through a review of the short history of the detection of these new worlds starting with the first one in 1985 and right up to 2010 when eighty-five were found. The lecture was well illustrated with many slides demonstrating the objects and mechanics of finding them.

Steve went on to describe the differing methods that have evolved to detect these far distant planets. Until 2010 discovery was a slow process but with the launch of the Kepler science research spacecraft that uses a photometer to scan 150,000 stars the use of that observatory alone has brought the count to date up to 1,235 exoplanets.

Classification of exoplanet types has three categories: Gas Giants like our Jupiter, Ice Giants like Neptune and Terrestrial as our Earth.

The techniques used to locate these far distant planets was detailed with illustrations of how astronomers have been able to measure mass, orbit size and shape, distance from the object's sun and speed of orbital rotation. Spectral analysis has shown the composition of these objects and studies of our own planets and satellites has been used to help explain some of the data that has been collected.

Some exoplanets have exhibited the possibility of an atmosphere and one of the first low density super earths, GJ1214b, already has been postulated to have water.

Following the **break** Paul Pratt made the following **announcements**:

The RASC - Windsor Centre will participate in **Earth Day** at MicMac Park on May 1 2011.

The Centre will be participating at the **Science Rendezvous** at the University of Windsor on May 7 including our monthly open House at the Hallam Observatory.

Monthly 50/50 Draw: \$15.00 won by Ryan Chichkan.

Business Reports

Director of Observatory, Dave Panton: Power lines have just been installed on the north side of the observatory road and they are very big.

The observatory dome shutdown procedure has changed due to a bird nesting problem.

The new SkyX control software program is initially difficult to use due to a new interface.

The C-14 dew heater still needs to be repaired and a vent has been put in the dew cap to ease in the installation of the light box.

Light Pollution Abatement Director, Dan Taylor: It was noticed that two new non standard interfering light fixture towers at the highway 77 struck stop. Dan will talk to the Town of Lakeshore about the issue of the fixtures being non full cut-off types.

Public Education Director, Randolph Groundwater: A third attempt due to poor weather will be made this coming Thursday to have a young group out at the Hallam Observatory.

The Science City Earth Day Dinner will be held this Wednesday at the Cabot club.

Director of Observing Report, Juliana Grigorescu: Saturn is in retrograde motion this month and into May. Normally, Saturn moves east but in retrograde goes west.

The Sun is active but still showing a below normal number of sunspots.

A conjunction of the Moon and planets Mercury, Mars, Venus and Jupiter will be occurring between April 30th and May 23rd with a gathering of morning planets.

Saturn is now in the night sky at magnitude 0.4 and it's rings are now showing at an inclination of 2%.

Juliana discussed binocular objects now visible including Messier object M3, M65-66, NGC 3268 in Leo.

Meteor showers upcoming include the Lyrid shower on April 22-23 and the Eta Aquarid May 5-7.

This month includes the celebration of the first spaceflight by a human, Uri Gagarin on April 12 1961.

Paul Pratt, Centre President, thanked the presenters and members for attending.

The Meeting was adjourned at 10:20pm.

Hallam Happenings by Dave Panton

The few clear nights the past couple of months have been used mainly by Brian Thomas to obtain some very fine astro images via the C14 reflecting telescope and AT111 refractor. Three tries were made to host the Belle River Beavers for a Hallam session. On the third, good fortune smiled for a couple of hours providing a clear sky for Randy Groundwater to host the group. Saturn was their prime target in the C14.

Our first members night was held at the observatory to encourage regular members to come out and see the whole operation to see if they might like to join the group of key access members. One person came. We must all recall, use of the grounds is open to all with the request only that they contribute \$10 annually to help with grounds maintenance.

The Brookfield Power wind turbine project progress is evident South of the 401 all the way from Belle River Road to Tilbury. At Hallam a row of tall wooden power line poles have been installed on the North side of the South Middle Road past our observatory. They will be strung with six conductors bringing power from wind turbines from our West to the new sub station being built North of the South Middle Road approaching Highway 77. A smaller row of poles along road 309 will bring power in from TC_65, the most distant (and the only one to be lighted) of the four wind turbines closest to Hallam Observatory.

Moe Trepanier has agreed (along with us) to have four rows of the dead Ash trees South of the observatory removed to allow heavy equipment (presumably the enormous crane) to be driven from one turbine site to the other along this path. We requested they stay well away from our dome do avoid shifting it in the soft Essex clays. They have been removed at this writing. The visual effect is minimal and a taste of what will eventually come when nature's course takes place with the many other rows of dead trees.

Some fairly heavy maintenance has been needed in the observatory. First we suffered an intrusion of birds bent on filling the dome with pieces of straw. In only a few days they would leave a large tangle of it hanging from the dome shutter drive. Al was able to install a mesh of gutter screen on the upper outside end of

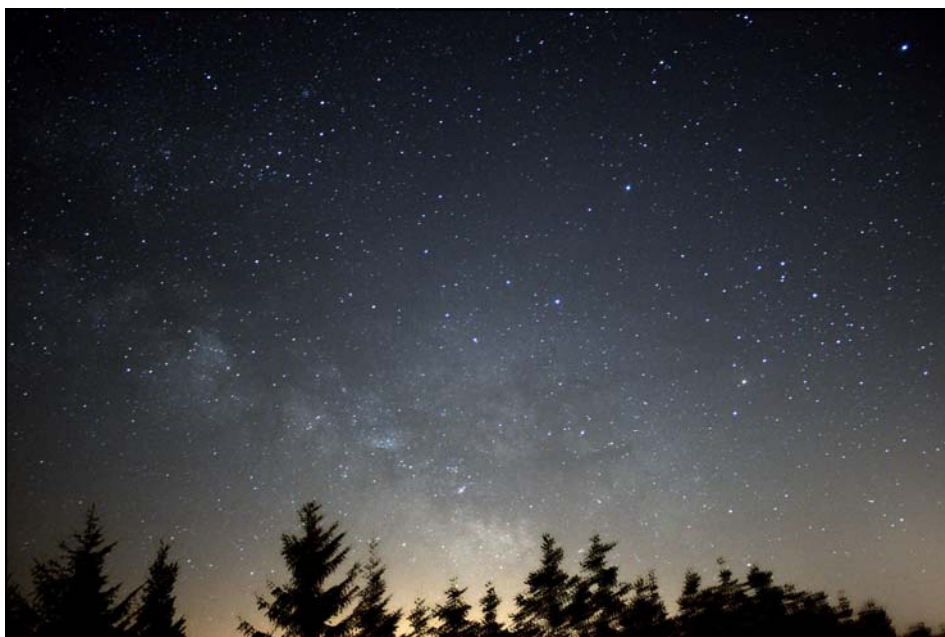
the top shutter. It seems to have blocked access. When it opens or closes don't be alarmed by the new sounds as the screen scrubs on the dome.

Then the four year old auto battery that powers the shutter motors died and had to be replaced. Al DesRosiers happened to have a surplus marine battery to replace it. This is the really "heavy" part of maintenance. The batteries are weighty and of necessity located well above convenient height.

Dome rotation became problematical and sometimes the drive needed a little manual help by pulling on the big handle. The trouble proved to be simple in a collapsed spring and need for shaft drive clearance through the upper plate of the dome wall. Again, the solution proved messy, spraying wood, metal chips

and dust in all directions including down onto the dome rotate drive. Al removed the covers, vacuum cleaned and reinstalled them all. A double spring was installed and so far all seems OK.

In the telescope mount a random open fault prevented use of the dew heater on the C14, an absolute necessity on humid or freezing cold nights. Trouble shooting the source of the fault proved more complex than expected when a connector of an unfamiliar type was



Summer Milky Way photo by Scott Stuckless from Hallam Observatory on May 4, 2011. Fixed tripod mounted Canon T1i. According to Scott "The final image is a combination of 3 separate exposures of 20, 25 and 30 seconds all taken at an ISO of 1600 and the reason the trees are a bit "blurred" is because DeepSkyStacker aligns the stars so naturally any stationary ground objects won't be perfectly aligned."

found to be damaged internally when wires pulled free from telescope operation. At one point operation of the telescope was lost entirely. Al solved it all in the end and the telescope mount and dew heater are back in operation.

The telescope can be controlled by either our old familiar "TheSky 6" program or the new "TheSky X" software. It is very different and will require some learning to operate. It has lots of visually pleasing charts and images and is very impressive when operated by one familiar with it (Steve Mastellotto). He has printed a manual for the observatory. It has additionally been split into sections by adding dividers to make finding information as convenient as possible. It can be found tucked conveniently beside the computer monitor.

Al has mowed the grass twice already and the whole facility looks great.

Earth Day and Science Rendezvous 2011



A sampling of photos from our 2011 participation in Earth Day (May 1) and Science Rendezvous (May 7). Thank you to the photographers Tom Sobocan, Brian Thomas, Paul Pratt and Mike Mastronardi.



Member Astrophotos



Top Left: **M51 The Whirlpool Galaxy** by Brian Thomas on March 25. Canon 5D, Celestron 14, 12x5 minute subs at ISO 400. Top Right: **M62 The Blackeye Galaxy** by Brian Thomas on April 2. Canon 5D, Celestron 14, 20x3 minute subs at ISO 400. Middle Left: **M87** by Steve Mastellotto on March 28. SBIG ST10XME, Celestron 14, 61x30 second subs. Image shows a closeup of the galaxy's nucleus with the famous jet of material. Middle Right: **Moon** by Scott Stuckless on May 11. Canon T1i, Celestron 8. Bottom: NGC 4222/4216/4206 respectively by Brian Thomas on March 28. Canon 5D, Celestron 14, 18x3 minute subs, ISO 400.