AURORA

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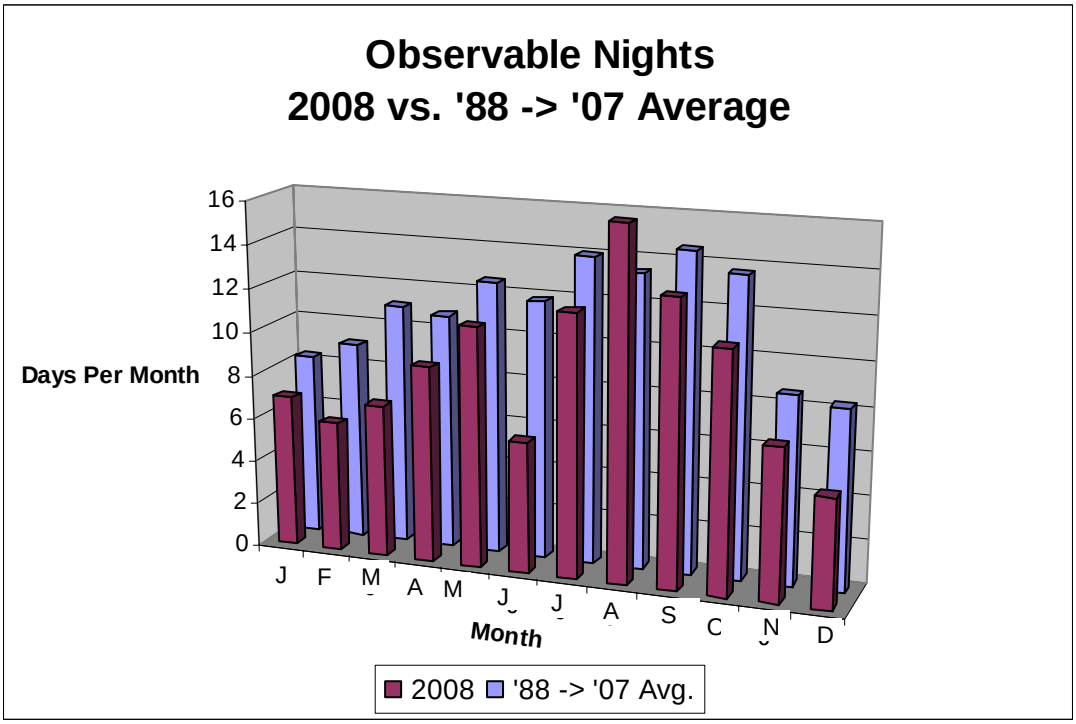
The Royal Astronomical Society of Canada - Windsor Centre

March 2009

2008 Observable Nights Report by Dan Taylor



This report finally catches up on the previous three years of recorded data on clear nights I have logged in our region. Further, it concludes the first twenty years of tracking our observable nights.

It would be too simple (and quickly dulling) to roll off a string of statistics. So I'll tender just two. In twenty years we have witnessed 2,857 observable nights, and September just edges out July as the month most likely to have a clear night.

The working definition I have used to define an observable night throughout these years is as follows: one hour of mostly clear conditions before midnight.

The graph illustrates how 2008 compares to the long term average.

Hopefully your year ahead is filled with many clear observable nights!

Editor's Note: It is interesting to see how much last year differed from our "typical" year with June being much cloudier as was the period from September through December. The only month above normal last year was August!

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Calendar of Events

Our next meeting…

Tuesday, April , 2009
7:30 p.m.
at
Maidstone K of C Hall
10720 County Road 34 (Old Highway #3)

Main Speaker...

Steve Pellarin

Topic…

"New Telescope Project"

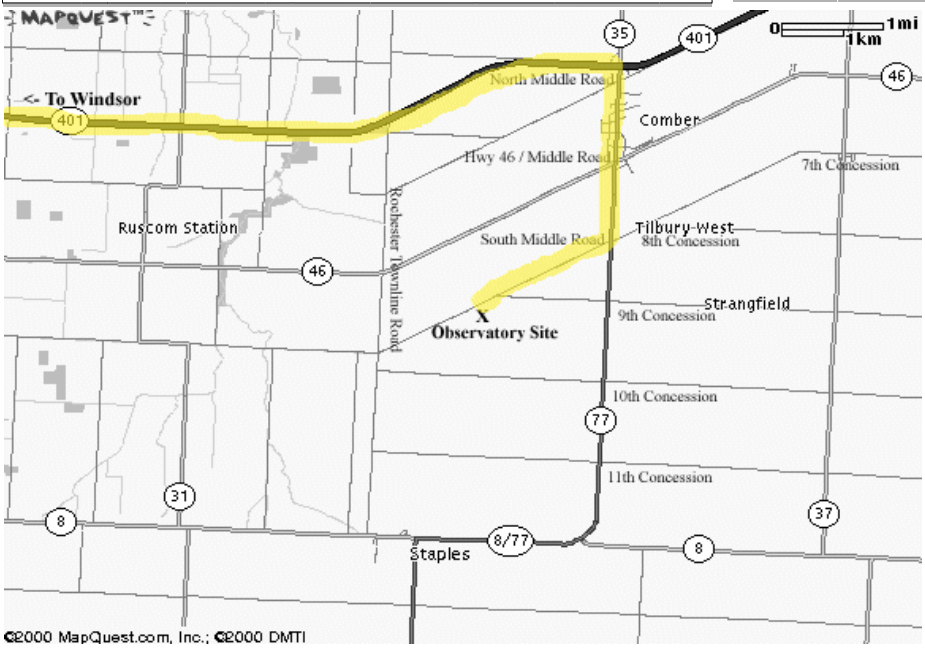
Activities...

Vernal Equinox: On March 20 at 7:44 a.m. EDT Spring official begins in the Northern hemisphere.

Venus at Inferior Conjunction: On March 27 Venus will pass between the Earth and the Sun however this year it will be passing 8 degrees above the Sun. It will possible to find Venus on a couple of days before and after this date to view and extremely this crescent Venus—**Warning the Sun will be very close and dangerous to look at with unfiltered optical aid.**

100 Hours of Astronomy: On the nights of April 2, 3, and 4 at 8:00 p.m. we will be having a special series of open house nights at Hallam Observatory to support this IYA 2009 activity.

Earth Day: Sunday April 26 from 10:00 a.m. to 4:00 p.m. at Mic Mac park.



Hallam Observatory Site

Directions: The map above 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 and December. The August, October, January, March and May issues are full newsletters (usually 6 pages) with a number of member submitted articles. The September, November, February, April and June issues are short flyers (2 pages) with one short article.

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 Ken Garber at (519) 966-3478 or visit our website at: http://www.rascwindsor.com for more information.

February 2009 Meeting Minutes by Dave Panton

Minutes from the meeting of February 17, 2009 held at the K of C Hall in Maidstone and chaired by past president Steve Mastellotto.

Steve welcomed members and guests explaining Pierre Boulos was unable to chair the meeting as usual. He also noted the main presentation planned by Steve Pellarin had to be postponed at the last minute by unforeseen circumstances and it will be presented in April.

Main Presentation

Rick Marion brought an Imax film on DVD produced by Lockheed Aviation during the earlier stages of the Space Shuttle program. Titled Destiny in Space it proved to have an enormous amount of interesting material and wonderfully graphic footage of the Hubble Space Telescope launch and outside work on the space station by astronauts in space suits. Then it returned to the Hubble and showed astronauts installing the corrective optics and discarding a damaged solar panel. It also explored the physiological difficulties faced by astronauts adapting to zero g environments and then readapting to life back in Earth's gravity.

Business

Minutes from the January meeting were read. A motion to accept them was made by Mike Mastronardi, seconded by Rick Marion and carried.

Steve welcomed members and guests to the meeting .

Secretary: Dave Panton reported all is in order in this department.

Treasurer: Ken Garber reported our bank balance has shrunken by payment of the near $1,500 per year observatory insurance premium and now is $5,055.85. Membership stands at 99 in spite of the recently increased membership fee set by National. Only one big expense remains for the year, approximately $1,000 for observatory land rental and hydro costs.

Hallam Observatory: Dave Panton reported there has been some confusion over snowplowing done on the date of the January open house. The contractor did the work, left the gate open and the light on the silo was left switched on for the first time in years. We can not identify who authorized this work. Walking in from the road is our standard mode of entry in Winter. The contractor will be contacted when he returns to Comber in a few days time. Our security light tripped normally during last night but failed to do so on lockup. (It has since operated normally). All equipment is operational.

International Year of Astronomy 2009: Mike Mastronardi has a committee of five to six members and more people able to provide help at individual events. He briefly described some events in the planning stage and others already firm.

- Science Centre sleepover for children with an astronomy theme where we might be able to help with advisers.
- Point Pelee observing event on the West beach. Park authorities want to host two this year following the success of the 2008 event. They will be set for late Summer or early Fall.
- Earth day April 26th at Mic Mac park is normally shut down at 3:00 p.m. The plan is to have some members with telescopes on hand in the evening, staying to 11:00 p.m.
- Pelee Island Winery event, same as last year. Steve and Randy will work with the Winery people on this event's organization.
- Three consecutive open house nights (100 Hours of Astronomy) are planned at our observatory early in April. Assistance will be needed each night to host visitors.

National Council: Mike Mastronardi will attend the March National Council meeting in Toronto if possible, otherwise he will participate via teleconference. One of the main items is the matter of life membership funding, currently inadequate and likely to be turned over to local centres in a principle sharing arrangement. IYA 2009 will be an important part of the meeting. National is keeping a record of events held by local centres on a Canada wide basis.

Surplus Books: Alan King from the Windsor Essex Public Library system has provided another carton of books culled from the system for members to peruse and choose.

Newsletter Editor: Steve Mastellotto reminded all the newsletter is now on our website. Articles for it are always needed and if time sensitive must meet a first of the month deadline.

Public Education: Randy Groundwater has several groups of Cubs and Brownies wishing to visit the observatory. Dates will be set for warmer weather. Steve Mastellotto has a group of about 40 members of the new Windsor Photo Guild group preparing to visit the observatory March 6th. Helpers were requested.

Public Relations: Tina Chichkan was unable to attend the meeting.

Light Pollution Abatement: Dan Taylor indicated to save time, his reports would soon be all on line and encouraged members to raise lighting concerns at meetings. Several items were covered briefly. Dave Panton has already attended the first public meeting for new prison project and left written indication it should only be built if LPA lighting is specified and installed. Dan noted the recent National Geographic magazine featuring light pollution is a very useful aid. Donna Ronconi reported the Windsor Disposal Service facility has been refurbished and fitted with blindingly bright lights facing E.C. Row expressway.

Membership Director: Paul Pratt was not available for the meeting.

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Hallam Happenings by Dave Panton

Our observatory has been socked in by poor sky conditions for all but a very few days over the entire Winter. Observers venturing out in the coldest weather clear nights found the telescope might not perform properly. It may be possible to change gear lubricants to solve this problem. Pointing accuracy is an ongoing issue with a solution in sight after re leveling the mount last Fall and when weather improves a new "T-Point" model can be created.

In the interim, observers must first set the computer clock 51 seconds fast before entering "Sky 6" after which most targets will be found in or very near the field of view in the 40 mm eyepiece.

Snow at times was deep but access still possible by parking on the ploughed road shoulders and walking in, suitable attired. In the past snow has blown into the dome through small gaps in the shutter. Changing the park position to place it out of the prevailing wind seems to have reduced snow infiltration to near zero.

The padlock and shutter can both freeze solid and require antifreeze soaking in the case of the lock and both anti freeze soaking of the lower shutter seal and leaving the shutter parked slightly open, above the seal.

Double stars and Comet Lulin has been the most observed and photographed targets over this past Winter.

Should the light on the North Silo be illuminated, shut it off using the labeled breaker switch in the box below. Do not kill power to the observatory by shutting off the RASC switch. Leave the light in the off position on departure.

February 25, 2009

Comet Lulin image by Rick Marion on February 28. Image made with the AT111 at Hallam Observatory and is a stack of 3—1 minute exposures at ISO 1600 and 7—1 minute exposures at ISO 800 using Rick's Canon 20D. Images were stacked with Maxim DL software and dark frames subtracted.

Saturn was shot on March 13 by Paul Pratt using the video mode of his Canon 5D Mark II through the C-14 at Hallam Observatory. Paul said the original movie didn't look like much but the processed stack (of about 80 of the 750 frames) actually shows some bands on the planet.

International Space Station News

The following article appeared on the Space fellowship website and is provided by Ken Garber. Here is the link to the original article: http://spacefellowship.com/News/?p=8379

Move over, Morning Star. Once Canadarm2 helps install the fourth and final set of solar array wings to the International Space Station later this month, the Station will surpass Venus as the brightest object

The Space Shuttle Discovery is set to deliver the power-generating solar panels and Starboard 6 (S6) truss segment to the ISS on the 125th mission in the Shuttle program, known as STS-119/15A (slated for launch on March 11, 2009 at 9:20 p.m. Eastern). This final piece of the Station's backbone will bring the ISS to its full length of 102 metres (roughly the size of a Canadian football field), and will increase the quantity of electricity available for science experiments by 50%. This additional power also means that the Station will be closer to being ready to house a crew of 6 astronauts instead of the current 3. Canadian Space Agency Astronaut Dr. Robert Thirsk will be a member of Expedition 20/21-the first 6-person Station crew set to launch in late May 2009.

Weighing in at 14 metric tons, the S6 truss segment containing the solar array wings takes up the Shuttle's entire payload bay. On Flight Day 4, astronauts Sandra Magnus and John Phillips will use Canadarm2 to lift the S6 segment from the payload bay and hand it to the Shuttle's Canadarm, controlled by astronauts Tony Antonelli and Joseph Acaba from inside Discovery's aft flight deck. As Canadarm holds the truss segment, Canadarm2 will move to the worksite where it will install the S6, then reach back to grasp the truss segment from the Shuttle's robotic arm, where it will remain parked overnight. It will take a full day to move the S6 from the Shuttle bay to its overnight position, and will require Canadarm2 to stretch out to its full length of 17 metres-a delicate maneuver with such a heavy payload. As always, Canadarm2's operations will be monitored closely by American and Canadian flight controllers on the ground in Houston and at the Canadian Space Agency's headquarters in Quebec.

The first of the mission's four spacewalks will take place on Flight Day 5 to install the S6 truss segment. Spacewalkers Steve Swanson and Richard Arnold will work outside to assist John Phillips as he operates Canadarm2 from inside the Station to manoeuvre the S6 truss into place. The spacewalkers will then complete the installation of the truss segment and prepare the solar arrays for deployment. After more preparatory work during a second spacewalk on Flight Day 7, the solar panels will be deployed on Flight Day 8, which will make the Station look even brighter to stargazers around the world.

Canadarm2 and Dextre get a tune-up

Astronauts Acaba and Arnold will conduct the mission's third spacewalk on Flight Day 9, during which time they will reposition a Crew and Equipment Translation Aid for use during STS-127, which will see Canadian Space Agency Astronaut Julie Payette return to the ISS in June 2009. Acaba and Arnold will also perform some maintenance on Dextre, the Station's Canadian robotic "handyman," by reconfiguring some of the thermal blankets covering one of its arms and "hand" (the Orbit Replaceable Unit & Tool Changeout Mechanism) and removing a temporary thermal cover from an electronic platform on Dextre's torso. The spacewalkers will then lubricate one of Canadarm2's end effectors (its "hand") to prepare the robotic arm for an unprecedented operation in September 2009, when Canadarm2 will reach out and capture the free-flying H-II Transfer Vehicle (an unmanned cargo transport system built by the Japan Aerospace Exploration Agency) and dock it to the International Space Station-a move that has never been attempted.

Discovery's crew will round out the final two days of the planned 14-day mission by using the Shuttle's Canadarm and Canadian-built Orbiter Boom Sensor System to inspect the Shuttle's tiles. Discovery should also provide us with our first glimpse of the new configuration of the Station with its full backbone when it undocks on Flight Day 13 and flies a full lap around the Station.

November Meeting Minutes (continued)

(Continued from page 3)

Coffee Break and 50/50 Draw: Members enjoyed Tom Sobocan's selection of Tim Horton's goodies with coffee, hot chocolate or tea. 50/50 draw was held and won by Tom.

Short Talk: Steve Pellarin discussed variable stars and he gave a thorough, well illustrated presentation on the appearance of variable stars, their cycles of variability and the numerous causes for their variation. Steve thanked him for his presentation.

Director of Observing Report: Susan Sawyer-Beaulieu started by showing a shot of our Sun, completely devoid of Sun spots during it's 11 year cycle minimum. Then she showed a collection of Moon shots and explained some of the unusual features observable with modest equipment from Earth. Saturn is visible early in Eastern evening skies rising high in the late hours. It is a wonderful time to see some of it's moon Titan shadows on it's surface while it is oriented with the plane of it's moon's orbits and rings nearly edge on from Earth. We are approaching Messier Marathon time in March with lots of Messier objects becoming visible.

Steve thanked Susan and adjourned the meeting at 10:10 p.m..

Windsor Photo Guild

On Friday March 6th we hosted about 40 members of the Windsor Photo Guild www.windsorphotoguild.com at Hallam Observatory. Although the night was mostly cloudy it was very warm (in the 50's) and everyone got a chance to shoot the moon.

So what do photographers shoot when they get clouded out? The photo at left illustrates Jim Wilson's solution—Jim shot a long exposure of the equipment shed while I painted a message with my green laser pointer. Top photo by Paul Pratt.

Thanks again to all of the volunteers