

AURORA



Volume 32, Number 1

The Royal Astronomical Society of Canada - Windsor Centre

Sept 2006

Message from the Prez.... by Steve Mastelotto

I want to welcome everyone back from their summer holidays. I hope you all had an enjoyable summer and were able to get some observing in despite the weather. Of course with the cooler fall weather upon us we should be getting into our typical clearing pattern and we should have a number of opportunities to observe.

I also want to thank everyone who sent me emails over the summer in particular all of the Mars hoax messages which now appears to be a regular part of our summer education process. Depending on what form of message you received (either just an email or complete Powerpoint file) some of the facts are indeed correct but for the year 2003 when the close approach of Mars actually occurred. This story has spread every year since and gets more fantastic each year. It now says that Mars will be as big as the full moon to the naked eye. Originally it said that Mars would look as big as the full moon does with the naked eye if you look at it with a telescope at 75 power. Each year the story gets stretched a bit farther from the truth. Ken Garber relayed a story of a women (and others) that reportedly paid ~\$40 via a web site to have a look at Mars from a telescope somewhere in the Maritimes. When she got there it was raining and in the middle of nowhere, the scientist on duty had no idea what she was talking about and of course Mars was not visible even if it wasn't overcast.

We have a good line up of speakers for the fall with Walter MacDonald kicking things off at the September meeting with his talk "A Dome on a Home: The Story of Winchester Observatory". Walter will discuss the construction phase as well as the adventures from the first three years of operation of his home observatory. Our new National President should be making a visit to Windsor for our October meeting (details are not final). November brings our annual elections and Past President Randy Groundwater will be looking for a few good men and women to volunteer. Seriously, if you are interested in getting more involved with the operations of the Centre there are many roles you could play. You don't have to step forward and be President. You can bite off as much as you want and get your feet wet by just helping out. We are always looking for help with coffee at the meetings, helping with the annual picnic, Astronomy/Earth Day, the December Social or at the Hallam observatory. If you want some ideas of where we need help or where your skills might be put to use just talk to Randy or me at any meeting.

Included with this newsletter (and emailed to you if we have your email address on file) you should have received a survey. It has been quite a while since the RASC - Windsor Centre surveyed our membership and your input is critical to our delivering services that meet your needs. Please be sure to follow the instructions and complete and return the survey - it shouldn't take more than 10 minutes. Over the years I have been a member of the Windsor Centre we have gone from a fairly stuffy group to a more casual group focused on observe ring and now the pendulum has swung more to the middle. That said we have put a lot of focus and energy into the Hallam observatory over the last 5 years and some of you may not agree with that focus. We want to hear from all of you so please complete the survey.

I'll see you on the 19th, Steve

In This Issue

Centre Information	Page 2
Arrived!! And also available...	Page 3
Pluto is demoted	Page 4
Amid the Vast Expanse—by Joady Ulrich	Page 5
Gravity Waves from Astronomical Violence	Page 6

Calendar of Events

Our next meeting...

Tuesday, Sept. 19 , 2006 8:00 p.m.

at

K of C Maidstone Recreation Centre
10720 County Road 34 (Old Hiway 3)

Main Speaker...

Walter MacDonald

Topic...

A Home on a Dome.

Construction phase as well as the adventures from the first three years of operation of his home observatory.

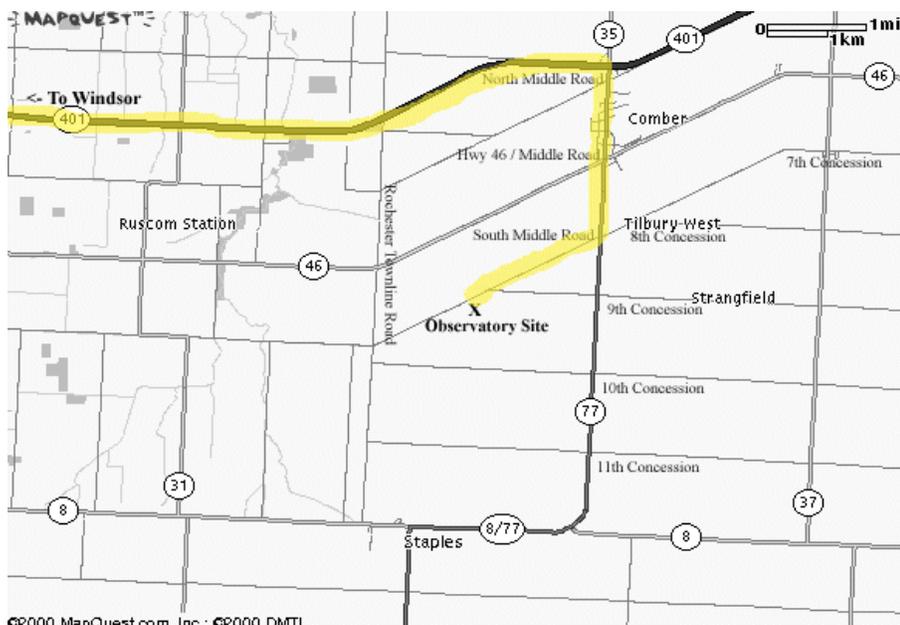
Coming Events

Astronomical Events:

September 5 Uranus at opposition
September 7 Moon at perigee
September 7 Full Moon
2:42 P.M. EDT; partial lunar eclipse
September 23 Autumnal equinox; 12:03 A.M. EDT
October 8 Draconid meteors
October 20 Orionid meteors

Observatory Open Houses for the rest of 2006:

September 30th 8:00 p.m.
October 28th 7:00 p.m.
November 25th 7:00 p.m.
December 9th 7:00 p.m.



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 401 East to Highway 77 South to South Middle Road. While on South Middle Road you go about 1 kilometer and just after the barely discernable point where Concession 9 joins it you will find the observatory site on the South side of the road.

If you hit the Rochester Townline Road (i.e. you come to a stop sign and have to turn left or right) you have gone too far.

Submissions

Aurora is published monthly except for July and August. The October, December, February, April and June issues are full newsletters (usually 6 pages) with a number of member submitted articles. The November, January, March, and May issues are short flyers (2 pages) with one short article. September is a dual issue with the full 6 page newsletter mailed just **before** the meeting and a flyer available **at** the meeting. 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. Submission deadline is the 1st of the month.

Editor: Ken Garber Email: kgarber@cogeco.ca
Ass't: Dan Anzovino Email: danzovino@sympatico.ca

Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July, August and December) 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, web access to the RASC Journal, a subscription to SkyNews magazine and access to the Centre's library and telescopes.

Annual Membership Fees are Regular - \$55.00, Youth - \$34.25 and Life - \$2100.00. **** NOTE New Rates ****

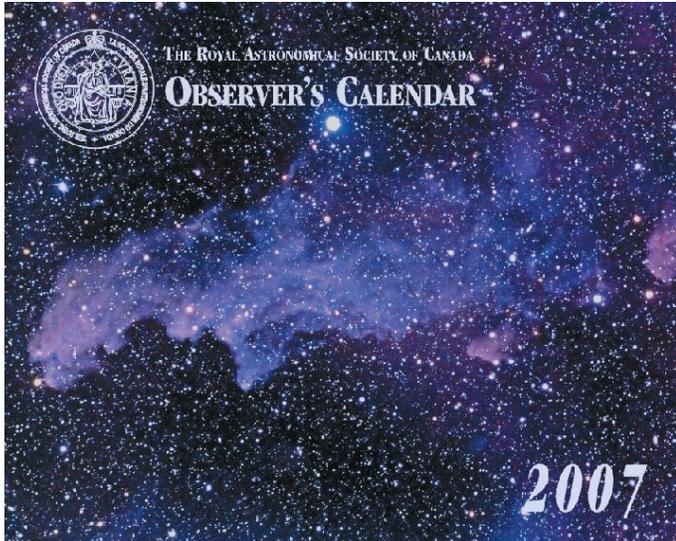
Contact Ken Garber at (519) 966-3478 or visit our website at: <http://www.mnsi.net/~rasc> for more information.

ARRIVED!!!

The 2007 RASC Calendars have arrived. They'll be the same price as last year for Windsor Centre Members.

Bring cash (close to exact change would be appreciated) or cheque for \$12 to the first meeting of the year in a few weeks, and a copy of the calendar fresh off the press can be yours.

Observer's Calendar FRONT View



Observer's Calendar REAR View

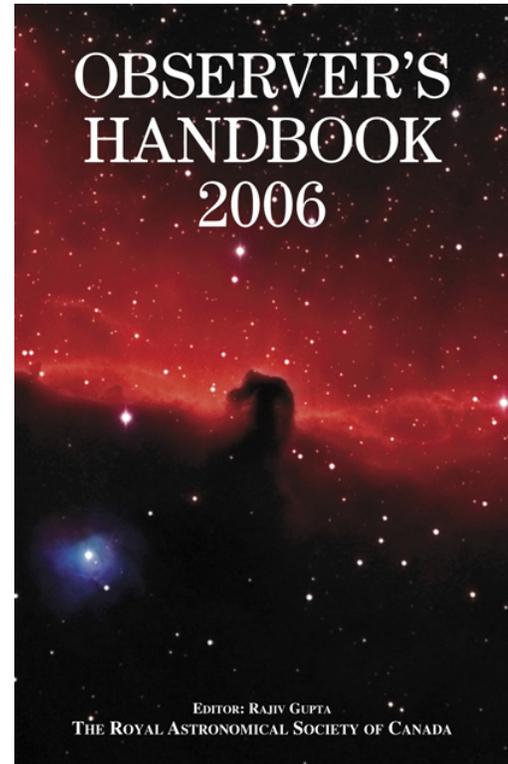


Also Available in limited numbers

Need an extra copy for the car?

Ask at the Treasurer's table

The 2006 Observer's Handbook



Beginners' Observer Guide



Planet Pluto is Demoted Rod Clark

"Poor New Horizons," says the NASA web-site."

When it launched in January 2006, it was with the prestige of the first spacecraft to study Pluto, the last unvisited planet of the solar system. That changed seven months later when astronomers decided that Pluto was not a planet.

Now, New Horizons is at least, the first mission to a dwarf planet and the mission remains the same, to unlock one of the solar system's last great secrets."

It is understandable that NASA scientists are quite concerned about down-grading Pluto to 'dwarf-planet' status.

Last January, NASA launched Spacecraft New Horizons for a one-way trip to Pluto, the solar system's last remaining unexplored planet. It is scheduled to arrive at Pluto in July, 2015 where it will take close-up photographs for analyzing the physical characteristics of both Pluto and its large satellite, Charon.

In the early days of the last century, Harvard's famous astronomer Percival Lowell, noticed inconsistencies in the orbit of Neptune that suggested the influence of gravity from some undiscovered celestial body which he referred to as Planet X.

It was Clyde Tombaugh (pictured below) , using

Harvard's Lowell observatory, who discovered Planet X in February 1929 and named it Pluto.

At that time, with no Hubble telescope and no sophisticated mountain-top observatories, it was a marvellous and an exciting discovery. Clyde Tombaugh became famous and lived a long life in which he achieved many new discoveries in the field of astronomy. He died in 1998.

New Horizons is now halfway between Mars and Jupiter, moving along at 3600 km/hr. Next February, it will receive a gravity boost from Jupiter that will bring it back to cruising speed. Clyde Tombaugh was a colourful figure in the world of astronomy. He visited Windsor in 1988 and was guest-speaker at a meeting of the Windsor Centre. We remember him as a gentle man who took pleasure in sharing his experience and for making us laugh with his use of the puns for which he was also famous.

It is fitting that spacecraft New Horizons is carrying his ashes to his final resting place on the planet that he had discovered..

Pluto is in excellent viewing position for anyone interested in a 'dwarf planet'. It is in the southwest by 9.30 pm, one degree to the southwest of the bright star Epsilon Serpentis. The serpent constellation has four aligned bright stars in the tail of the snake. Epsilon is the fourth star toward the horizon.



When I was a child the stars were just beautiful points of white light
Comforting in the dark, somehow friendly and reassuring.

Then my vision and inner imagination were fired up in cosmic reverie by
The flights of Mercury, Gemini and Apollo.
With their space walks and moon walks and photographs of
Our home, Earth, as a planet, like a telescopic view of Mars.

Later, while observing the projected Sun in partial eclipse,
I met one who shared my fascination for the heavens.
I felt not alone. I felt encouraged to explore.

Then for six years, there formed and sustained, those of us,
Nova, six in number, then more,
Being colleagues in the awe of the ordered cosmic expanse, got closer
To the stars, through viewing through modern descendants of
That simple ingenious instrument built by Newton himself.
We saw magnified:
The Moon, better than Galileo saw, not just craters but even rills and
Jupiter as a mini solar system still with its four largest moons though
Brighter than their discoverer glimpsed.

Also too,
Objects far superior perceived than their recorder, Messier peered,
Such as:
M11, that brilliant V shaped sparkle of stars with one lone star at apex,
M42 with its dusty consoling swirl of illumined grandeur,
M31, like our Home Galaxy with its own two satellite galaxies and
M45, blazing blue white sparks tapering to Groundwater's Trail.

Deeper still the mind of humankind reached, now with
Voyager, Cassini and Hubble.
Such sights we now see that even Bonestell could not artistically imagine:
A golden crescent Saturn,
Inscribed riverbeds on Titan.
Thousands of far distanced galaxies from what had appeared as empty night sky.

Yet we wonder still what new imaged revelations will be relayed by
The mission to explore a Martian polar cap by 2009,
The James Webb Space Telescope by perhaps 2011 and
The New Horizons probe to Pluto by 2015?
We are encouraged to wait from the tantalizing vistas already brought to light.

Note: "Nova" refers to the Nova Astronomy Club that was founded in 1972 in Windsor having had six members in its first year of existence.

Gravity Waves from Astronomical Violence

by Bert Huneault

The July 2006 issue of SPECTRUM, a publication of the Institute of Electrical and Electronics Engineers, contains an article titled "Waiting for Gravity" which explains attempts by U.S. scientists to search for the first evidence of gravitational waves which, according to the general theory of relativity, should be generated by powerful cosmic events such as supernova explosions and galactic collisions.

The article begins with the following paragraph which I thought would get the interest of AURORA readers: "Many millennia ago, in a distant patch of space some 6500 light-years from Earth, a hot blue giant star exploded in catastrophic but glorious stellar suicide. In one stupendous runaway thermonuclear reaction, the star blasted off 95 percent of its gaseous outer layers, and its core collapsed, blazing so fiercely that for a few magnificent days that single star rivaled the total brilliance of all the other million or so stars around it. Over the next few months, the star's naked core cooled and faded away, leaving a dim, dense neutron star one twentieth of its original mass surrounded by a rapidly expanding multi-colored cloud of gases. Eventually the star's outer layers attained immortality as the gorgeous, gaseous Crab Nebula."

The article goes on explaining that when a star explodes, the powerful acceleration of star matter should, according to Einstein, generate distortions in the normal curvature of space. These distortions, known as gravitational waves, would ripple outward into the universe at the speed of light,

stretching and compressing the space around any objects they happen to pass through. Other acts of astronomical violence, such as galaxies colliding or black holes cannibalizing other black holes, should also emit gravitational waves.

Current astronomical observations in visible light, radio waves, X-rays, or any other type of electromagnetic radiation fall short in one important aspect: once photons leave the source, they may be altered or blocked by gas and dust in space before ever arriving at a detector on Earth. But scientists believe gravitational waves pass unaffected through all intervening matter, carrying with them intimate secrets about the universe's most brutal and exotic events. The problem is that because gravitational waves travel right through matter unaltered, they are extraordinarily difficult if not impossible to detect. Undeterred, astronomers, physicists and engineers have combined their talents and built a couple of ingenious gravitational-wave detectors; one in Louisiana and the other in Washington state. These large laser interferometers comprise an L-shaped pair of 4-kilometer-long beam tubes featuring optics that are said to be so sensitive as to detect the extremely-minute changes in length (perhaps a thousandth of the diameter of a neutron!) of the detector's two arms, which would occur when a gravitational wave passes through and distorts the fabric of space around those 4000-metre-long tubes.

Only time will tell if these experiments fail or eventually yield exciting results affecting "our understanding of general relativity and of what's out there in the universe".

Continued >>>

A Little Fund Raising

Got any Canadian Tire money lying around that you'd like to get rid of? Why not donate them to the Centre?



To date we've collected almost \$50. Some of this will go towards preparing the site against wasps and other creepies. We're always buying bits and pieces - be it hardware or a can of bug spray. Bring them along to any meeting and throw them into the box on the treasurer's table, and they will be made to good use.

Time to Renew??

Don't forget that you can renew your membership at the treasurer's desk by using cash or by paying by cheque payable to the RASC. You can renew via snailmail to the National with a cheque or charge card. And finally, you can renew on-line at the RASC 'store' at:

<http://www.store.rasc.ca/>

And don't forget that the printed Journal is now optional extra. Look for the option on your form.