



# The Niagara Whirlpool

## President's Report By Stan Sammy

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Here we are poised at the start of another year with great hopes that we will have many, many days of stargazing in 2011.

The total eclipse of the Moon was a washout for us here in Niagara. Fortunately there is the internet which afforded us great live footage and still frames.

Over the last 6 years, the membership of the Niagara Centre has dropped considerably from a high of 125 to 71 in December 2010. This reduction in membership is being experienced by all Centres and thus the National.

The RASC National Executive Committee is implementing a strategic plan which has started to unfold and will continue to do so in stages during the next three years. This endeavor should boost the membership throughout Canada and increase the revenues of the National Centre.

To this end, the National committee has developed a mission statement:

*-The Royal Astronomical Society of Canada (RASC) encourages improved understanding of astronomy for all, through education, outreach, research, publication, partnership, and community. Founded in 1868,*

*the RASC is Canada's leading astronomy organization with local Centres throughout the country.*

The mission statement captures the essence of why the organization exists and expresses the core values that differentiates it from others.

***There are 7 Strategic Objectives to be implemented during this period:***

*-Implement Centre Support Program*

*-Implement Volunteer Support Program*

*-Improve response time for customer service delivery*

*-Increase revenues from present and new sources*

*-Increase RASC membership*

*-Executive Director and MAP Committee will develop*

*m a r c o m p l a n*

*(Marketing+Communication)*

*-Make recommendations on*

*By Law reform*

My personal reaction to this plan is that the committee has gone through great lengths to compile this proposal (strategic plan) for us with a lot of corporate jargon and no specific details, except, our membership dues will be raised.

I, like many members of the Niagara Centre am retired or are on permanent layoffs. As such we cannot afford any

more increases to our dues .

During IYA2009, there were approximately 1.9 million Canadians introduced to a Galileo Moment.

We members of the Niagara Centre visited many communities from Smithville, to Dunnville to Niagara on the Lake to Fort Erie. For the hundreds of Niagara residents we introduced to the night sky, the "wow" or GM, or call it whatever you may, they were in awe.

This should have been our best membership drive, yet our membership numbers dropped. It was the same for almost all Centres across Canada.

I am not sure at this time what we can do to increase our membership, so I am asking you for your suggestions and input. Invite your family, friends and neighbours to attend our Workshops and Public Observing Nights

Respectfully Submitted  
Stan Sammy  
President

Should any one like a full copy of the National Strategic Plan, please send me an email at: [stansam@niagara.com](mailto:stansam@niagara.com).



Special thanks to David Perry for photos submitted that have helped accentuate this edition of "The Whirlpool"



## Vice-President's Report By Dr. Brian Pihack

Greetings all, I hope each of you had a great introduction to the New Year. Firstly, I would like to thank Mariek Schmidt for presenting her talk on Mars. You will remember her as the navigator for the Opportunity mission. It was interesting listening to someone who went "driving" on a world we can only see visually!! As well I would like to thank the presenters at our December meeting, Dave, Bob, Mark, Phil, and Les. They did a fantastic introduction to Astro-photography. So much so that several members approached myself to ask if this venue can be continued, but with an actual picture being processed in a way that it can be visualized at a regular meeting. Since Phil set up this presentation, I will leave it in his hands and see what he comes up with.

The post meeting debate continued at Chatter's where we enjoyed our Christmas celebration. Chris once and

yet again outdid himself, the food was phenomenal. Thanks Chris.

At one of the executive meetings Mark asked about having a "panel" type discussion again as he enjoyed this format. So because he asked, [and I haven't found a presenter] we will follow that format for January.

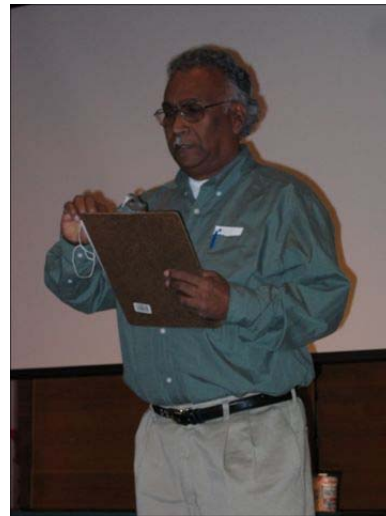
The workshops at A.N.Myer will start up again in February [the first Thursday of each month]. The first talk will include recent findings of an ancient "Stargate" like computer, from about 100 B.C. Should prove to be an interesting meeting. Any member of our Centre is invited, starts at 7:00 at the planetarium. For more information please contact me.

Observatory fees are on hold for the moment as we try and solve the problem of people not paying their annual fees. More to follow.

Also another Observatory is being planned for, a little closer to home. So if you have access to materials, or labour, or would like to be on the planning committee we would be interested in hearing from you !



The workshops at A.N.Myer will start up again in February [the first Thursday of each month].





**Once again, the Centre members eat...good times at Pegasus Tap and Eatery**





# Secretary's Report By Philip Downey

We have had one new member join our club since my last report. Please join me in welcoming Beata Melinyshyn to the club. Our membership stood at 71 at the end of 2010. This is a sizeable decline from our total at the end of 2009, which was 82. If you have any friends or family who you think might

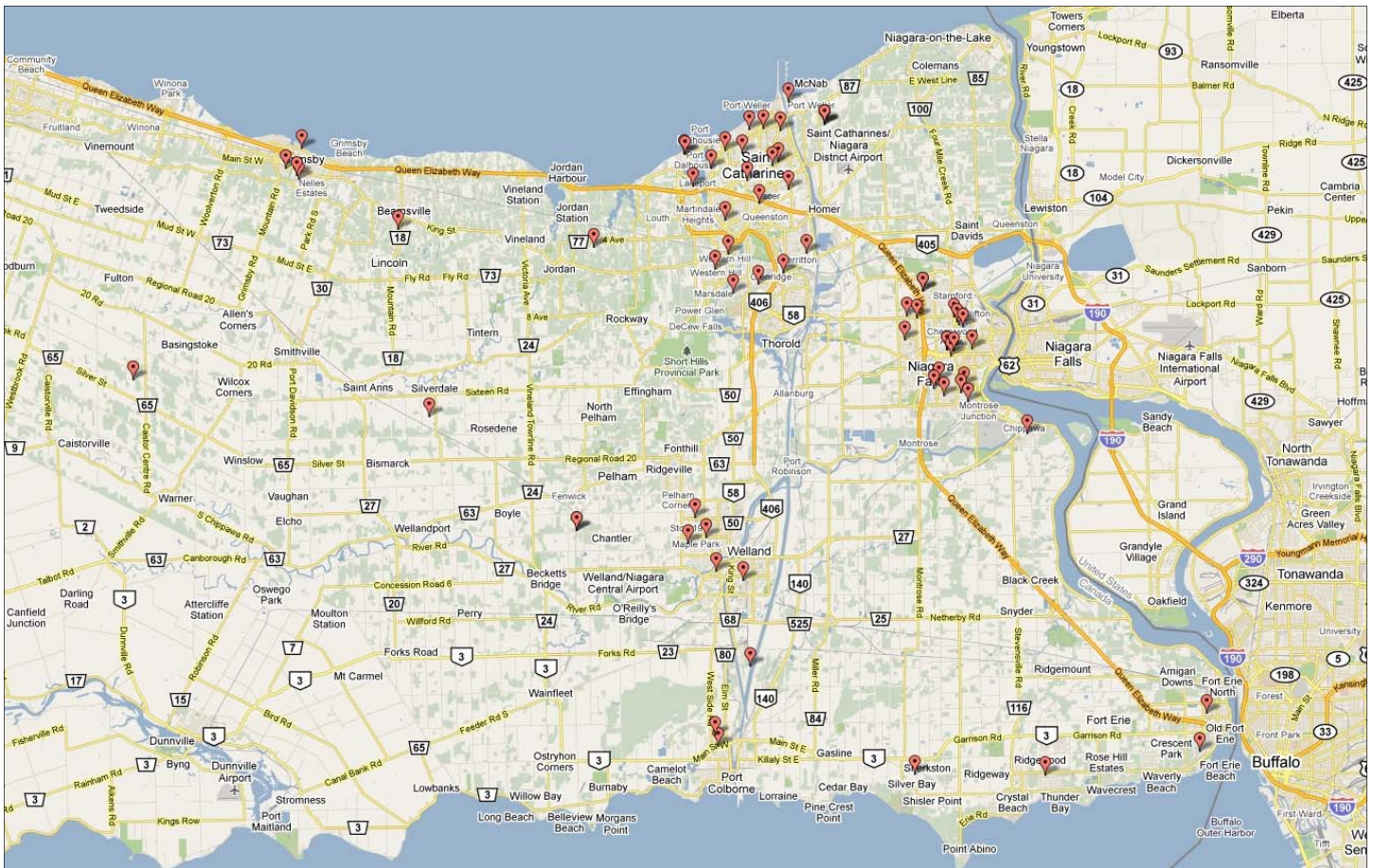
be interesting in joining the club or learning more about astronomy, please invite them to attend a monthly general meeting or take them with you to a public starnight. Maybe they'll get hooked!

As a small amusement, I used the website [www.batchgeo.com](http://www.batchgeo.com) to map

where we come from. Most of us are from St. Catharines and Niagara Falls. Of our 71 members, a few lie outside the range of this map - some just a little bit, in Simcoe, Ontario, and some quite far Tucson, Arizona and Matthews, North Carolina.



Please join me in welcoming Beata Melinyshyn to the club.



Locations of Niagara Centre Members



# Dark Sky Chairman's Report By Wayne Liebau

Niagara Falls area members, please take special note!

Our Centre was recently made aware, courtesy of Dan Taylor of the Windsor Centre, of a streetlighting project right in our own backyard.

The Niagara Luminaire Initiative is a project by Niagara businesses that recognize the need for renewal of local infrastructure, believing that LED lighting fixtures are a replacement for aging streetlight fixtures that use inefficient, obsolete technology.

A partnership among Ground Aerial Maintenance Service Ltd., the Devon Group public relations firm, and Niagara Peninsula Energy, plans pilot projects to install LED streetlights in 21 test locations in Niagara Falls.

For details about each location, see <http://www.niagaraluminaire.com/pilot.asp>

LED lighting may be good news or bad news. Besides lower costs, LEDs offer the possibility of improved night lighting. LEDs can be aimed, focused, and colored much more precisely than current luminaires.

BUT, just because LED lighting CAN be more

dark-sky friendly does not necessarily mean it WILL be.

Some potential pitfalls:

- 1) Colour: current streetlighting tends to be yellowish, whereas much new LED lighting is white or even somewhat bluish. This is obviously bad news, but if colour temperatures are selected carefully it could be good news.
- 2) More light: because more light can be produced more cheaply, it can be tempting to increase lighting levels.
- 3) Poorly aimed light: using LED luminaires does not necessarily guarantee proper shielding and aim.

Thus it would be entirely possible to end up with brighter, whiter lighting that is bad for sky glow and light trespass.

This is perhaps a unique opportunity for Niagara Centre members to have some say in the future of our night skies. Decisions based on these projects will influence local lighting for decades to come.

We will present our concerns and recommendations to the project partners.

And we can monitor developments as they occur, and make appropriate submissions while things are still in a testing phase.

### **We need YOUR help.**

Please check the Website for details about the pilot projects. Select some near you, then go to the sites. Please take photos of current lighting; make careful observations and detailed notes so you can make accurate comparisons later on.

Remember that foggy or snowy nights are best for showing light distribution patterns (you can't be in the observatory on those nights anyway!).

When the luminaires are replaced, take photos and notes again, preferably with the same exposures in the same locations.

Send your photos and notes to Philip Downey and Wayne Liebau.

This may also present chances for some public outreach. If people notice you out photographing lighting, do some dark-sky education: the more people who are aware and onside, the better our chances for better night lighting in the future.

As always, if you have questions please get in touch with Phil or Wayne.

Your participation is not only appreciated, it's essential to allow us to analyze the test projects. Thank you!





# David Perry Photo Page

The Veil Nebula comprised of 6 minute shots stacked together adding up to about 2 1/2 hours of exposure.



Attached is the photo that I was hoping to show at the last club meeting. It's the Bubble Nebula in Cassiopeia. 25 exposures @ 8 minutes each. Taken December 8th at the observatory. Once again, I'm not very happy with it. There is enough information to pull-out a decent photo (3 hours), but for some reason, my tracking was pretty bad that night, causing the stars to be a bit egg-shaped & blurring the target a little. When you think you've achieved excellence, is when you stop improving. Hopefully I never stop trying to improve.

## Events Horizon

### Thursday, January 13th

Board meeting at 7:00pm. Chatters Eatery. Banquet room next to restaurant.

### Thursday, January 20th

Beginners' Astronomy Workshop. 6:45pm to 7:30pm.  
General Meeting starts 7:30pm Everyone welcome. No Charge.  
Niagara Falls Library at Victoria and Morrison Streets

### Thursday, February 3rd

Beginners' Astronomy Workshop at AN Myer High School  
7:00pm—9:00pm. (Centre Members Only)

### Saturday, February 5th

Members Night  
CCCA Observatory

### Thursday, February 10th

Board meeting at 7:00pm. Chatters Eatery. Banquet room next to restaurant.

### Saturday, February 12th

Public Star Night  
Heartland Forest, Niagara Falls

### Thursday, February 17th

Beginners' Astronomy Workshop. 6:45pm to 7:30pm.  
General Meeting starts 7:30pm Everyone welcome. No Charge.  
Niagara Falls Library at Victoria and Morrison Streets

### Thursday, March 3rd

Beginners' Astronomy Workshop at AN Myer High School  
7:00pm—9:00pm. (Centre Members Only)



## RASC Niagara News

-Please visit our website regularly at [www.astronomyniagara.com](http://www.astronomyniagara.com) for updates or changes to the Events Horizon

-For the full colour version of the *Whirlpool*, please visit our website at [www.astronomyniagara.com](http://www.astronomyniagara.com)



## Members Observing Coordinator's Report By Mark Roberts

The holidays are over and I hope that everyone had a great Christmas. We are at the start of a New Year; one that I hope will be great for observing. I am hoping that all of you with new astro toys will start to put them to good use right away. In January and February 4 out of 5 of the naked eye planets will be well placed for observing.

### In January

In the evenings, Jupiter along with a couple of double shadow transits will be visible, one on the 17<sup>th</sup> and another on the 24<sup>th</sup>.

Saturn will be visible in the early mornings along with bright Venus.

Mercury will be hanging low in the sky in the early morning twilight through-out the month. Try to see if you can observe it if you have a good view of the Eastern horizon.

### In February

Jupiter can still be viewed in the early evenings but its sinking fast. Get out and view it as much as you can before it's gone.

Mercury will still be visible very low in the East-South East at the beginning of the month.

Saturn will be rising in the east by midnight and will be visible till morning. We will be getting much better views of the rings than the last couple of years. Definitely try to get out and observe the jewel of our solar system.

Venus will be visible in the South-Eastern sky the entire month.

Add to these the staple Messier objects and we have an interesting couple of months to kick off the new observing year.

It is my hope that membership use of the clubs dark sky site, The CCCA Observatory will continue to increase. I realize that driving to the observatory can be a bit of a hike for many members (especially if you do not have a key). To make the drive and be greeted only by a locked gate would be quite depressing. As discussed at the general meeting, I would like to try to implement an e-mail list of people that would like to be notified of impromptu observing sessions. This will be separate from the mass e-mailing I do for our scheduled monthly Members Nights. It will basically be a call list that the Observatory key-holders will use to let others know when they are planning to be out at the CCCA. Notices could come from any key-holder that has the time and the clear skies to attend, many times on short notice. Please drop me an e-mail at [str1701ncc@cogeco.ca](mailto:str1701ncc@cogeco.ca) if you are interested. It would be great to be able to include you.

I will be looking forward to seeing you all at our monthly members nights and CCCA events this year.

Best Wishes for 2011



Gibbous Moon- Imaged from Mark's backyard in Welland Aug 29<sup>th</sup> 2010. Single exposure 1/1600 sec



M-33 The Pinwheel Galaxy- Imaged from the CCCA November 6<sup>th</sup> 2010. 3hrs total exposure. Photo by Mark Roberts.



## THE BIG BANG THEORY

### When will we return to common sense?

by David Klooz

Since the 1960s there has been a relatively strong consensus within the scientific community that our universe was born in a “big bang”, i.e., first there was nothing, then there was everything. Recently, there has been growing opposition, not only to this theory, but in the failure of its proponents to honestly evaluate evidence that disputes its overall premise and lack of supporting evidence.

The Big Bang hypothesis rests on three unconfirmed and very precarious assumptions. Cosmologists and theoretical physicists assume –

- (a) that the red-shifts of objects in deep space indicate primarily that the objects are receding, and
- (b) that gravity alone, the weakest force in the universe, determines the structure and behaviour of matter on the cosmic scale, and
- (c) that the cosmological principle that the universe at the largest scale is isotropic and homogeneous (it looks and is the same in all directions) is true.

It is time to review the evidence and allow observations and experiments to take precedence over ‘thought experiments’ and purely mathematical adventures. It is too easy to introduce new theoretical assumptions and change existing parameters after each discovery to explain away

‘uncomfortable’ or non-supportive data. When things become oddly coincidental or improbable, that is a good reason to reconsider theoretical assumptions, no matter how far-reaching the implications.

Briefly, some major problems with the ‘Big Bang Theory’ include the following:

(1) Four leading competitor models: Quasi-Steady-State, Plasma Cosmology, Meta Model, and Variable – Mass Cosmology all meet the great majority of critical observations without using ‘adjustable parameters’, as is necessary in the Big Bang Theory. These four models require no ‘fudge factors’ such as Dark Energy, Dark Matter, Black Holes or Super Massive Black Holes to explain observations.

(2) The microwave ‘background’ as the limiting temperature of space heated by starlight, meets observations and makes much better sense than that caused by the remnants of a big bang ‘fireball’.

(3) Element abundance predictions using the Big Bang require too many adjustable parameters to make them work. With the exception of lithium, universal abundances of elements were predicted correctly by Hoyle, using the original Steady State cosmological model.

(4) The universe has too much large scale structure (interspersed “walls” and voids) to form in a time as short as 10-20 billion years.

(5) The requirement by the Big Bang Model that the average luminosity of quasars must decrease with time in just the right way so that their average apparent brightness is the same at all red-shifts is all but impossible.

(6) The ages of globular clusters appear older than the universe. Even though the data have been stretched in the direction supporting the Big Bang Model, the error bars on the Hubble Age of the universe (12+/-2 billion years) still do not overlap the error bars on the oldest globular clusters (16+/-2 billion years).

(7) The Big Bang Model requires that invisible dark matter of an unknown nature be the dominant ingredient of the entire universe. This is one of the better examples of the Big Bang Model proponents using a ‘fudge factor’ to explain away non-supportive data.

(8) If the open universe we see today is extrapolated back near the beginning, the ratio of the actual density of matter in the universe to the critical density must differ from unity by just one part in  $10^{59}$ . Any larger deviation would result in a universe already collapsed on itself or already dissipated. Hence, the ‘ultimate fudge factor’ was created to sustain the Big Bang Model - dark energy.

In general, this evidence, as well as evidence in recent studies, is ignored. Research by Halton Arp, Anthony Peratt and Walter Thornhill, to name but a few, have shown the universe to be heterogeneous with an axis of a potentially organizing structure that has always existed, that plasma (charged particles in space) explains structure and behaviour of matter in space much better than gravity and is scalable in laboratory experiments, and that the red-shift of galaxies via the Doppler Effect is non-existent.

And so, in the current philosophy of modern science, The Big Bang Model and its proponents, like Darwinism, and its proponents, is a paradigm that is materialistic and describes a universe with a total absence of purpose and a predominance of random processes. It describes an apparently orderly universe existing as a result of an extremely high number of accidental, random, non-purposeful events. This, in spite of the fact that a cosmologist, Lee Smolin, has shown that the chance of the physical constants of the universe, i.e., the strong force, the weak force, the electromagnetic interaction, and gravitation existing with their current values, is  $10^{220}$  - a number greater than the total number of atoms in the universe. Certainly, no unified theory has been proposed to account for this. Regardless,





# THE BIG BANG THEORY (cont'd)

the currently endorsed view of the universe that science has offered is that it is pointless.

Black holes, super black holes, dark matter, dark energy, and wormholes are nothing more than mathematical constructs – infinite energy densities do not exist – time travel does not exist – faster than light travel does not exist. As Tesla astutely wrote; “Today’s scientists have substituted mathematics for experiments, and they wander off through equation after equation, and eventually build a structure which has no relation to reality”. Unlike today’s theoretical physicists and cosmologists, we need to remember that nature doesn’t do things the hard way.



The Triangulum Galaxy, catalogued as M 33 or NGC 598 is a spiral galaxy approximately 3 million light years from Earth in the constellation Triangulum. It is sometimes referred to as the Pinwheel Galaxy, a name it shares with M 101. The Triangulum Galaxy is the third-largest member of the Local Group of galaxies, which includes the Milky Way Galaxy, the Andromeda Galaxy and about 30 other smaller galaxies.



M 42 and NGC 1977 form the middle part of the Hunter’s sword in the famous constellation Orion. M 42 is primarily an emission nebula where red light is emitted due to excitation of hydrogen gas as a result of radiation from newly formed stars. NGC 1977 is a reflection nebula that derives its blue colour from reflected light of nearby stars.

Like much of its parent constellation, Orion’s Belt is a highly nebulous region of the sky. This is especially true in the direction of Alnitak, where numerous nebulous structures are found. The most famous of these is undoubtedly the Horsehead Nebula, a dark cloud blotting out the light from the red-pink background emission nebula IC 434. Also occupying this region are the less well known Flaming Tree Nebula (NGC 2024) and the so-called Lump Star (NGC 2023).



NGC 2237 is a diffuse nebula which forms part of the Rosette Nebula and Cluster NGC 2244 in Monoceros. It is located 5,000 light years away.



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**Moon Phases  
For January, February and  
March 2011**

**New Moon**

Feb 2  
Mar 4



**First Quarter**

Feb 11  
Mar 12



**Full Moon**

Jan 19  
Feb 18  
Mar 19



**Last Quarter**

Jan 26  
Feb 24  
Mar 26



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