

Niagara Whirlpool

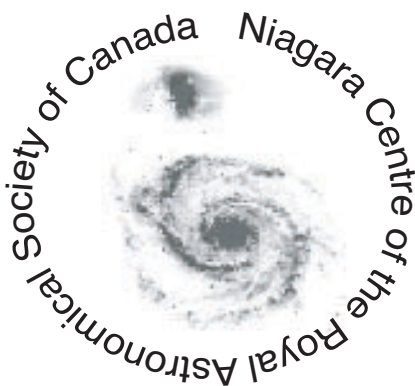
Volume 24 #2

March/April 2003

R.A.S.C. National President Visits Niagara Centre



National R.A.S.C. President Rajiv Gupta enjoys a friendly chat with Hugh Maclean during a break at the February 20 General Meeting. Rajiv's presentation "Composite Digital Techniques for High-Resolution Astrophotography with Film" was informative and enjoyed by all.



The upcoming March 20 General Meeting will be your final chance to easily purchase tickets for the Annual Banquet to be held on April 12. Join us for the meeting and pick up your tickets as well.

www.rasc.ca/niagara

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Niagara Centre Store

RASC 2003 Calenders.....\$13.00

Beginner's Observer's Guide.....\$13.00

RASC 2003 Observer's Handbook.....\$16.00

Planispheres...\$15.00 RASC Lapel Pins...\$6.00

Centre Crest...\$5.00 Bumper sticker...\$3.00

RASC Cloth Crest.....\$13.00

Niagara Centre T-shirts are available.

See Dave Stremlaw for above items.

The Niagara Whirlpool is an official publication of the Royal Astronomical Society of Canada, Niagara Centre.

It is published bimonthly, except for July and August, and is distributed free to all Centre members. The subscription rate for non-members is \$12.00 per annum.

Original articles on astronomy and related subjects, observation reports, book reviews, letters, and other items are welcome. Please submit them at General Meetings, mail them to the Editor at his email address, or c/o the Niagara Centre, RASC mailing address.

Classified advertising is free for Niagara Centre members (space permitting). Commercial advertising rates are available on request.

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Niagara Centre Website: E-mail Discussion List & Member's Area

The Niagara Centre has an email discussion list and a member's area on the website. By subscribing to the e-mail list you will be able to post messages and have discussions about astronomy and activities with other Niagara Centre members. This is a great way to interact and get to know members, or enhance your knowledge of astronomy. A login procedure is required to join the Discussion List. Complete instructions are on the discussion list page on the website.

A member's only area of the website is also available. This area contains Niagara Centre information for the use of its members only. The member's area contains astrophotography by Niagara members, the Niagara library book list, and lots of other Centre related info of interest to members.

To receive the logins and passwords for the email discussion list and member's area, contact John VanderBrugge or Ron Gasbarini. They will send you the needed information by e-mail.

As you know we had two members of our executive resign in February due to conflicts with work schedules, Vice President John Dean, and from the Board of Directors, Denis Maheu. Both of these positions have been filled. Tim Barnes went from Board of Directors to Vice President, Joanne Olsen now fills his space as a member of the Board, and Joyce Sims fills the other vacancy on the Board. I feel very confident our completed council can fully represent the needs of the Niagara Centre RASC.

Construction of the Centre's new observatory is now back on track. Pouring the floating concrete pad will be the first step, and the groundbreaking should commence as soon as the weather breaks. If any members wish to volunteer their time or construction materials, please contact John VanderBrugge.

The club is in the process of photographing and cataloging all of its equipment. This is primarily for the purpose of insuring our equipment in case of damages or losses, and also to list all items on the club's web page so all the members know what's available to borrow. If you have any of the club's loaner scopes or other equipment, please bring it to the March meeting so it can be photographed and recorded. If you can't attend the meeting, contact me. Thanks.

Banquet Speaker for 2003 Spring Banquet

The Niagara Centre is pleased to welcome Ivan Semeniuk as our guest speaker for this year's banquet. Ivan was the club's guest speaker in the early 1990s, and is looking forward to visiting again with the Niagara Centre.

The banquet will be held Saturday, April 12, 2003, at the Delphi Hall in Niagara Falls. The doors will open for cocktails at 5:30 p.m. Dinner follows at 6:30, and Ivan's talk begins at 8:00. After that comes the door prizes, then, as a result of many requests – the music and dancing begins. We will also have a special performance of mid-eastern dancing by two very lovely, talented ladies before music and dancing begins.

Only 80 tickets are available, so get yours soon from Joyce Sims. Tickets are \$45.00. Full details and directions can be found at <http://www.vaxxine.com/rascniag/banq2003.htm>

Here is a summary of Ivan's talk:

ARISTOTLE'S FOREST - EXPLORING THE NEW COSMOLOGY

We are living in the golden age of cosmology. For the first time in history a coherent picture of the universe and our place in it is beginning to emerge. The result is rather like finding our way out of a vast forest that our intellectual ancestors, the ancient Greeks, first plunged into 2,500 years ago.

In this wide-ranging presentation, Discovery Channel producer and astronomy columnist Ivan Semeniuk explores the results and implications of a new scientific revolution by focusing on three questions: Where in the universe are we? How did we get here? Are we alone?

RASC President Visits

Rajiv Gupta, President of the RASC, visited the Niagara Centre on February 20 for our monthly meeting. Rajiv dazzled us with his deep-sky astrophotos. He gave a talk on his experiences in astrophotography, his techniques for merging black and white and colour pictures to create superlative detail, and the Registrar computer program he co-developed, which automates the alignment of astro images. Rajiv joined us afterwards for beer, pizza and wings at Chatters. Thanks to Rajiv for giving us something to aspire to, and to Glen Pidsadnick, who hosted Rajiv overnight at his house

Messier Marathon Time Again

by Tim Barnes

March is the best time of year for seeing all the Messier objects, especially when the moon is near or in its new phase. The Messier Marathon is an informal competition to locate the Messier objects during a one-night dusk to dawn marathon. By doing the marathon you are practicing and honing your astronomical skills of location, identification and verification in a race against one star, the sun. Any telescope on a stable mount with an aperture of 60mm or larger is suitable for such a quest.

The Messier objects are 110 prominent deep-sky objects that are located in the Northern hemisphere and are named after the great French comet hunter Charles Messier (1730-1817). As a comet hunter Messier became frustrated with objects in the sky that were fuzzy and bright and often confused with a comet. He began logging these objects so he wouldn't mistake them for the comets he was seeking. His list became known as the Messier list. Within it are the building blocks of our own galaxy, open and globular clusters, diffuse and planetary nebulae, along with other galaxies outside of our galaxy. Funny thing is that Messier became better known for his list of comet-like objects than his 60 cometary discoveries.

Since Messier did most of his observations from Paris (45 degrees North) we are able to see most if not all the objects in one night depending on what location we are observing from.

The Messiers are denoted by M followed by a number from 1 to 110. M57 is also more commonly known as the Ring Nebula, M31 as the Andromeda Galaxy, and M13 as the Hercules cluster. Observing all 110 objects is possible but only under good observing conditions (no clouds) at a dark location with an open horizon. A good set of charts denoting the objects (most do) is a good start and a book or two on the marathon are also helpful aids to spur one on to success.

Although you may spend the night rushing through the Messier list nothing prevents you from going back to study them on other nights. Many experienced amateur astronomers never see the whole catalogue in their lifetime, let alone in one night. You do not have to observe the whole list to feel the satisfaction. For some viewing 35 objects will be a rewarding experience, a triumph. The marathon is more than just a race – it also involves the camaraderie of friends, acquaintances, and total strangers helping each other set up, compare equipment, and share in the hobby that has united us that one night.

Weather permitting, Niagara Centre members are invited to try their luck this year at the observatory. The best observing period will be throughout the weekend of March 29. Contact me if you are interested in participating.

More information and detailed observing plans can be found in Don Machholz's book *Messier Marathon Observer's Guide* and at <http://www.seds.org/messier/xtra/marathon/marathon.html>

Lately the weather has not cooperated on most of the member and public nights. It's been a while since I've done any observing or astrophotography with any members. There has been the odd break in what seemed to be perpetual cloud cover. As far as any reports or observations go, I can only add a few of my own.

The planets have provided some wonderful views, if you can stand the subzero temperatures. Even when it has been slightly hazy, the images still show quite a bit of detail. Actually this can be of help when observing the near full moon.

Saturn gave me some of the most pleasurable planetary observing this winter. Tilted to their maximum, the rings are in a perfect observing position. The Cassini Division can be seen easily with a 4" telescope. It doesn't get any better than this. Now that we are into March, Saturn rises earlier. This has placed it in a bad part of the sky from where I observe normally. So it's off to the next gas giant to rise.

Jupiter and its moons have put on quite a show lately. I have photographed and observed a couple of these events over the past few weeks. Detailed views of the Great Red Spot, barges and festoons were quite visible. The angle of the moons orbital path (plane) is almost even with ours (we can see the transits on or near Jupiter's equator), which reveals very nice and rare shadow transits, satellite transits, and occultations (I like to call them mini-eclipses). The shadow transits are my personal favorites. An Io disk and shadow crossing (transit) in late February was fabulous, as observed and photographed with a 125mm telescope. I attribute these exceptional images to cold clear skies and chilled optics.

I have been keeping the telescopes I use in my unheated garage. This eliminates cool down time by a good hour and a half. No more sitting and waiting for all that heat to get out of your scope. Believe me your telescope must be cold to get good planetary images. I keep mine covered with a tarp for safe, dust-free storage. If you only have an hour or two to get out, this is by far one of the best ways to store your scope at this time of year (unless of course, you're lucky enough to have your own observatory).

This brings me back to the unpredictable and undesirable weather we've been having. When holes open up it may be our only chance to see the stars for days, or worse – weeks. That's why being prepared to set up quickly is essential to getting any quality observing done. We're stuck with this climate, so we may as well learn how to adapt and work around it.

Remember the best telescope is the one that gets the most use. I find it easier and quicker to set up my 90mm or the 125mm, then hauling my 250mm LX-200 out. It's not that I mind, but in the time it takes to set up the larger scope, my brief moment of clear sky could be gone. Dobsonian type telescopes are also great for fast setups, and we can't leave out binoculars.

Don't forget, cold optics are cool! And collimation is crucial for good planetary observing. I look forward to seeing you at the next meeting and public/member nights. Coming member nights at the observatory are the Messier Marathon night on the weekend of March 29, April 5, and May 3. Clear skies!

The International Space Station, the world's first international orbital outpost celebrated the second anniversary of continuous residency and permanent human presence in space November 2, 2002. The American space shuttle program has played a major role in the Space Station's development. The loss of the space shuttle Columbia will dramatically affect the future of the ISS (International Space Station).

At the present time, the ISS is occupied by its sixth crew of astronauts. They are Commander Ken Bowersox, Station Science Officer Don Pettit, and Russian cosmonaut/Flight Engineer Nikolai Budarin, are three months into their four month mission on board the Space Station. The three astronauts were due to return to Earth on March 1, when the shuttle Atlantis was scheduled to deliver a replacement crew. That mission and all future shuttle flights are on hold until investigators learn what caused Columbia to disintegrate 40 miles above Earth on Saturday, February 1st.

Along with the shuttle the ISS also relies on unmanned Russian rockets to provide life support supplies. The Russian cargo ship, Progress 10, launched from Baikonur Cosmodrome, Kazakhstan on Sunday, February 2, docked with the station on Tuesday, February 4. Progress 10 delivered new supplies, equipment and fuel to the station.

At the time of the loss of Columbia, it seemed that the cargo aboard the Russian supply ship would be enough to sustain the current crew of the ISS until June, if necessary. The continued assembly and future existence of the ISS depends on space flight.

The first component of the ISS was placed into orbit November 20, 1998. Since then, 16 space shuttle flights, 17 manned and unmanned Russian flights and 50 spacewalks have serviced the Station. In six visits by crews to the station 6000 meals and 4000 snacks weighing 3629 kilograms (8000 pounds) have been consumed. The international effort to make the ISS a reality involves more than 100,000 ground personnel and 500 contractors.

Canada's major contribution to the Station is the Canadarm2. The next generation of this famous robotic arm uses a Mobile Base System. The system allows the arm to travel along the ISS. The Canadarm2 is also more flexible than the original Canadarm, giving it a greater ability to bend, rotate, and manoeuvre around the large and complex environment of the Space Station. The arm is also designed so that certain components can be swapped in space for new units when the old ones wear out or fail. Unlike the Canadarm, the Canadarm2 is designed to be repaired in space and probably will never return to earth.

The entire Space Station is designed to never return to Earth. Even at such a high altitude (400 kilometres above earth) the Station barely skims over Earth's thin atmosphere. Our atmosphere combined with the solar wind causes the ISS to slow as it travels around Earth. The space station requires an occasional external boost to keep it in orbit. This is one of the space shuttle's main roles.

The last shuttle to the ISS was the Endeavour in late November. It remained until early December 2002. The docked space crafts made several orbital passes over the Whistler region during that mission. On December 2, 2002 at 17:35 PST the ISS and Endeavour made a historic pass as the last time a shuttle and the ISS were seen together.



Space Shuttle Endeavour and the ISS as they passed over Blackcomb Mountain, Whistler, B.C., December 2, 2002, 17:35 PST. The Shuttle and ISS had undocked 5 hours prior to this photo. This was the last time a shuttle and the ISS were seen together from Whistler. Video clip by Carol Legate and John Nemy of The Pacific Observatory.

Unfortunately our public starnights for the 2002/2003 season continue to be a non-event. While I would normally write about our past and upcoming star nights, I found it timely and more interesting to write about a recent event that touched the hearts of many people in North America.

My family and I were in the process of planning our dream vacation to the Kennedy Space Centre, when we watched in disappointment and with great sadness as the space shuttle Columbia and its crew became nothing more than a memory to those that loved and envied them. It's unfortunate that it takes a disaster like that of February 1st to make us really appreciate the complexity of the machine, the talent of the crew and the contribution to science of all those involved in the various shuttle missions.

Columbia was the second vehicle of the orbiter fleet to be manufactured and was put into commission in March 1979. But it was the first to go into space when it made its maiden voyage on April 12, 1981. Amongst the achievements of the Columbia missions were the Orbital Flight Test Program (Space Transportation System missions 1 through 4), recovery of the Long Duration Exposure Facility Satellite (mission STS-32, January 1990) and the Spacelab Life Sciences (mission STS-40, June 1991) which was the first mission totally dedicated to human medical research.

Columbia was the oldest of the shuttle fleet. On several occasions from 1984 to 1999, the shuttle was transferred to Rockwell International's assembly plant in California where it underwent modifications and updates. Within a year it was always back in orbit again. It made 28 successful flights in its lifetime.

The final flight, Microgravity Research mission STS-107, commenced on the morning of January 16, 2003. On board were Flight Commander Rick Husband, Pilot William McCool, Payload Commander Michael Anderson, Mission Specialists Kalpana Chawla, David Brown, Laurel Clark, and Payload Specialist Ilan Ramon. Fifteen days, 22 1/2 hours into their mission, the shuttle and crew were lost while traveling at 12,500 mph (mach 18.3) at an altitude of 207,135 feet.

NASA continues to collect and examine data from the lost flight and has temporarily suspended all flights until further notice. I, like most of us who have been fascinated by space flight since childhood, anxiously await for the shuttle missions to resume.

There is a wealth of information on the history of space flight, vehicle specifications, and great shots of the shuttle fleet on the NASA Kennedy Space Centre website at www.ksc.nasa.gov.

Back on earth, our next public star nights are planned for Saturday, April 5th and May 10th. In June and July, we will be moving our starnights out to Chippawa Creek Conservation Area in Wellandport where we will put on starnights for the campers. We are in the process of scheduling our annual starnight and camping weekend at Rockpoint Provincial Park in Dunnville. There appear to be some problems with the date we selected but we should have a decision soon. Please join us at any or all of our public nights. It's a great way to meet new people, discuss the club and do what we love the most!!!

A Niagara Centre Wedding

The Niagara Centre has had its first inter-member wedding. Les Welgan and Deloris Wiens were married on February 14 at a private ceremony with their families in attendance. They enjoyed a short honeymoon in Ottawa taking in Winterlude events.

Les and Deloris met last year on International Astronomy Day shortly after Deloris became a member of the Niagara Centre. They are currently working on their Messier observing certificates and adding to their astrophotography album. Deloris has expressed a keen interest in astrophotography. As we all know from seeing Les' shots, she has a great teacher.

The club congratulates them on their wedding and wishes them all the best in the future.



Phil Downey and Les Marczi photographed the moon on February 9, from St. Catharines and Welland. Phil took in the entire first quarter, while Les zoomed in on the Apennines mountain range.

Digital Lunar Photography



Niagara Current Events

Niagara Centre turtleneck sweaters are now available for order. The turtlenecks are black with 'RASC Niagara' stitched into the neck in red and white. They look very sharp and are perfect for cool weather observing. The turtlenecks come in small, medium, large and extra-large. To place your order please call Joanne at (905) 295-0972 or talk to her at the March meeting.

A committee is being formed by Glen Pidsadnick to learn how to use the club's CCD camera and develop guidelines to allow members to share it. Contact Glen if you are interested in participating or helping out.

A conjunction occurs when two celestial objects are very close in the celestial sphere usually in right ascension and often in declination as well. An occultation occurs when one object passes in front of another object as viewed from the Earth. An eclipse is a special kind of occultation involving planets and their moon(s).

On January 4, 2003 we were expecting a conjunction and an occultation when the planet Saturn while in retrograde motion passed in front of the object Messier 1, a.k.a. the Crab Nebula. As usual, in the Niagara area we were clouded out and didn't get to observe the great event! After some thought I wondered what would happen when Saturn stopped retrograde motion and resumed prograde motion. Would another conjunction and/or occultation occur?

The coordinates of M1 are R.A. 5hr 34.5 min.; Declination 22 deg. 1 min. The answer to the question can be found in the 2003 Observer's Handbook on the April page. Good hunting.

Secretary's Report

by John VanderBrugge

We have two new members to welcome to the club this month. They are Rene Cote and Thomas Dougan. Welcome to the club both of you. Enjoy all we have to offer and ask questions.

It's that time of the year again. Time for me to harass the membership about changing their Whirlpool subscriptions to email and PDF format. If you are one of the members still receiving the Whirlpool through the mail, and you have Internet access, consider changing over. It not only saves the club money, it also saves me work in publishing the Whirlpool.

When receiving the email version, you also have the option of printing out the Acrobat PDF off the website. This gives you a full colour version of the newsletter which is far superior to the photocopied version we mail out. This allows you to appreciate the member's photography as it should be seen. Currently 70% of the center receives their Whirlpool via email and PDF. If you prefer the mailed version that's fine. I'm not forcing any member to change who doesn't wish to.

Please take note of my new email address for members wishing to contact me for club business.

Anyone who is interested in getting the club discount for subscriptions to Astronomy or Sky & Telescope magazines should contact Dave Stremmlaw. With a group subscription plan you also receive 10% discounts on Sky & Telescope's wide selection of astronomy books. Sign up with Dave at the next General Meeting, or call or email him to get these great discounts.

Sky Optics
905-631-9944
Burlington ON
www.skyoptics.net

Khan Scope Centre
416-783-4140
Toronto ON
www.khanscope.com

Niagara Centre Ads

Slide/Negative Scanning:

For anyone wanting to have their slides/negatives converted to digital files, I can scan them at high resolution, 2800 dpi, and save them onto a CD-R.

Cost: \$1.00 per file, \$5.00 for CD-R.
Contact Les Welgan at 905-934-4680, or
astro_nuts@cogeco.ca

Niagara Centre Event Horizon

- March 20 General Meeting, 7 p.m., Niagara Falls Public Library. Spring equinox, 8 p.m.
- March 25 Mars and Moon make close pair in early morning.
- March 26 Asteroid 4 Vesta becomes visible to naked eye. (Barely – magnitude 5.88.)
- March 28 Venus 0.05° North of Uranus in early morning.
- March 28 -April 3 Best opportunity to complete a Messier marathon. CCCA Observatory
- April 1 New Moon.
- April 5 Members' Night, CCCA Observatory & Public starnight, Firemen's Park, N.F., 7 – 9 p.m.
- April 6 Daylight Savings Time begins.
- April 7 Saturn 3° South of Moon.
- April 12 Annual banquet with guest speaker Ivan Semeniuk. Delphi Hall, Niagara Falls.
- April 16 Full Moon, largest of year. Mercury at greatest elongation, best view of year.
- April 17 General Meeting, 7 p.m., Niagara Falls Public Library.
- April 22 Lyrid meteors peak, Mars 3° North of Moon.
- April 28 Venus and crescent Moon make close pair in morning.
- May 1 New Moon., Frozen Banana Star Party held by Sudbury Astronomy Club, Munro Park, Powassan, ON, Contact Harold Healy at 705-524-1524, hhealy@sympatico.ca
- May 3 Members' Night, CCCA Observatory.
- May 5 Aquarid meteors peak.
- May 7 Mercury transits the Sun. Ending may be visible as Sun rises in morning. Best view from Southern Hemisphere.
- May 10 International Astronomy Day. Public starnight, Firemen's Park, Niagara Falls.
- May 10 Hamilton Centre Banquet featuring guest speaker Alan Dyer. Alan is an experienced astrophotographer and astronomy equipment reviewer who will give a presentation of pictures, music and animations. Tickets are \$45 and are available through Sky Optics. www.rasc.ca/hamilton
- May 15 General Meeting, 7 p.m., Niagara Falls Public Library. Total lunar eclipse, peaks at 11:40 p.m.