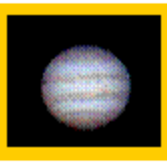
BULLETIN





OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

January 2013 - Volume 8, Number 1 **David Garner, Editor**

We welcome your comments on the ***Bulletin***. Email them to the Editor at bulletin@rasc.ca.

A **PDF** version of the *Bulletin* is available here.
A **Web-based** version of the *Bulletin* is available here.

➢ Editor's Notebook by David Garner

January's Sky

According to the 2013 *Observer's Handbook*, the Quadrantid meteors peak on January 3rd. Mercury will not be visible all month but will reappear in the evening sky at month's end. Venus continues dropping lower in the early morning eastern sky whereas Mars is low in the SW evening sky. Look for Jupiter on the northern edge of the Hyades and will be occulted by the Moon on the night of the 21st/22nd (for some observers). Saturn is in the dawn sky whereas Uranus and Neptune are low in the western evening sky. The next full Moon occurs on January 27th.

In Memoriam

British astronomer and broadcaster Sir Patrick Moore has died on 2012 December 9, aged 89. He presented the BBC programme *The Sky At Night* for 55 years, making him the longest-running host of the same television show ever.

➢ News @ RASC.ca

29 Things About Comets

by **Ron Macnaughton** Toronto Centre, Chair, Education Committee

Here is a list of 29 things about comets that you might not know:

• Edmund Halley noticed that comet sightings in 1531, 1607 and 1682 all had similar retrograde motion.

• He suggested in 1705 that all were the same comet and calculated the orbit – a first for an object that was not a planet.

• In 1759, it returned later than Halley predicted because Jupiter and Saturn affected its orbit.

• Edmund Halley neither saw “his” comet again, nor knew it would be named after him.

• In 1986, when Comet 1P/Halley returned, RASC membership surged by 650.

• So did the number of substandard telescopes.

• It's a hoax that Comet Halley was excommunicated in 1456 to make it go away; the original account was transformed by Laplace in the 18th century.

• A popular demonstration is to make a comet from dry ice, mud and water.

• Icy comets cannot form in the inner Solar System.

• Colder conditions beyond the frost line (just inside Jupiter's orbit) are needed.

• Comets lose mass as they pass through the inner Solar System.

• New comets are continually being deflected inward by various objects including possibly passing stars.

• The mostly flat Kuiper Belt outside Neptune's orbit is the source of most short-period comets (<200 years).

• Most long-period comets are thought to come from the spherical Oort cloud, which extends to about a light-year from the Sun.

• The brightest comets such as Hyakutake, Hale-Bopp and McNaught are long-period ones.

• In 1973, Comet Kohoutek was hyped as the “comet of the century,” but it disappointed.

• One explanation is that it might have really been a rocky Kuiper belt object rather than a pristine icy Oort cloud one.

• Comet ISON might be very bright next fall, especially near its November 29 perihelion.

• It and Comet Hale-Bopp were discovered much further away than Kohoutek.

• The International Scientific Optical Network’s 40-cm telescope in Russia took the discovery image on 2012 September 21.

• A “precovery” image from 9 months earlier was found to help establish the trajectory.

• The formal name “Comet C/2012 S1 (ISON)” means it was the first long period comet discovered in the 18th half month of 2012.

• Many think it should have been called Comet Nevski-Novichonok after the discoverers.

• Comet ISON’s eccentricity is 1.000 00234. That means it now has a hyperbolic path and would leave the Solar System if not for the gravity of planets.

• If a comet had an eccentricity of well above 1, then it might have come from another star.

• No unambiguously extrasolar comet has been observed yet.

• Comet ISON will be visible in the SOHO field as it rounds the Sun on 2013 November 29.

• Other than the weeks next to perihelion, this comet might not be especially bright.

• Some comets under high power have a pinwheel appearance, possibly from a rotating nucleus with jets that emit most of the dust.

Thank You for Your Support!

by **Deborah Thompson**, Executive Director

The mission of the Royal Astronomical Society of Canada (RASC) is to encourage improved understanding of astronomy for all people, through education, outreach, research, publication, enjoyment, partnership and community. In order to provide continued service to our astronomical communities, we rely on the generosity of individuals just like you. We wouldn't be able to serve our astronomy community each year without your help.
We ask for your support of our year-end appeal. If you have already given, we would like to sincerely thank you!
If not, we hope you will consider making a contribution as your generosity will make a difference.
The Society is pleased to be able to offer donors several giving options. Donations can be directed to one or more of the following areas:

• **General Purposes of the Society or a specific Centre of the Society**

• **Sustaining Members (donations made at time of membership renewal)**

• **Ruth Northcott Memorial Fund (for Society publications, education outreach activities)**

• **Millman Endowment Fund (for long term growth of the Society)**

Please remember that every donation makes a difference, regardless of size. Donate by telephone at (416) 924-7973 or (888) 924-7973, or online at www.rasc.ca/donate.
Happy Holidays and thank you for your support.
Please note: the Society will issue a tax receipt for all donations over $25 CDN.

RASC Membership Development News

by **Deborah Thompson**, Executive Director

The RASC Membership Development News for December 2012 is available at: RASC Member Development News Dec 12.

New RASC Member Presentation Now Online

by **Deborah Thompson**, Executive Director

This presentation is now available at www.rasc.ca/resources/brochures under the RASC Member Area; Centre Resources; Brochures and Outreach; RASC Member Presentation.

As previously mentioned, the RASC Member presentation deck can be used by Centres at their meetings for information sessions to assist in the acquisition and renewal of members. Please feel free to custom fit the presentation with local logos, messaging, services and programs, images, fees, etc.

Thanks to all of you who provided improvements and feedback.

New Canadian Asteroids

by **Eric Briggs**, Toronto Centre

Several new asteroids have been named to the List of Asteroids with Canadian Connections:

MPC 81935

(246345) Carolharris = 2007 TH298
Discovered 2007 Oct. 11 by L. H. Wasserman at the Anderson Mesa Station of the Lowell Observatory. Carol E. Harris (b. 1940) is Professor Emeritus at the University of Victoria. She has worked as an arts educator in Nova Scotia and Newfoundland, and continues her research on community development, aesthetic and moral philosophy, and organizational theory. Name suggested by E. Shkolnik.

(249061) Anthonyberger = 2007 TG298
Discovered 2007 Oct. 11 by L. H. Wasserman at the Anderson Mesa Station of the Lowell Observatory. Anthony R. Berger (b. 1937) is a distinguished Canadian geologist. He has helped launch many international scienti?c NGOs, including the Association of Geoscientists for International Development. He has authored over 130 publications in earth science, science policy and environmental issues.

(254422) Henrykent = 2004 VR122
Discovered 2004 Nov. 9 by P. A. Wiegert and A. Papadimos at Mauna Kea. Henry Kent is an inventor with a passion and curiosity for science and engineering. He worked at the Ontario Science Centre in Toronto, Canada, for twenty years.

(262536) Nowikow = 2006 UJ349
Discovered 2006 Oct. 26 by P. A. Wiegert and A. Papadimos at Mauna Kea. Igor Nowikow is a physics teacher at Markham District High School in Markham, Canada. He received a Master's degree in physics from McMaster University and has inspired his students to pursue degrees in physics and science. He has written several high-school physics textbooks.

These are all listed on the Web site, www.rasc.ca/canadian-asteroids.

Environmental Impacts of Light Pollution and its Abatement

by **Robert Dick**, Ottawa Centre, Chair, LPAC

This special report presents a selection of articles covering a few diverse aspects of lighting and light-pollution abatement (LPA) with authoritative summaries. We hope the range of topics in this article will carry you out of your knowledge comfort zone and expose you to additional issues and information. Light Pollution (LP) is not an issue only for astronomers—it fundamentally changes the world—for good and ill. This PDF can be freely downloaded at www.rasc.ca/sites/default/files/LPA_Special_Issue.pdf.
No password required. We encourage people to order and distribute the Special Issue at their local level.

Observer's Handbook 2013 Update

by **David Chapman**, Editor, Observer's Handbook

By now, all members should have received their 2013 Handbook (if not, please contact National Office: Kate at mempub@rasc.ca). Helpful readers have already found the inevitable typos, and these are listed as they are identified at the site www.rasc.ca/2013-edition-updates. You may want to make notes of these in your personal copies. We are sorry about the errors, and we believe we have made great strides in reducing them.
Clear skies!

Across the RASC

RASC Charlottetown

by **Jane Vicary**, Charlottetown Centre, Secretary

RASC Charlottetown held their Christmas party for members and family at Papa John's on December 9th. Astro Jeopardy was held and again enjoyed by all. Happy New Year to all.
Jane Vicary

Ottawa Centre Announcements

by **Charles O'Dale**, Ottawa Centre

Simon Hanmer's series on planetary geology has been updated to include Part 2 on Valles Marineris:

Simon Hammer's Planetary Geology.

The impact crater explorer's Web site of the Ottawa Centre has been updated in January to include all the impact structures in Saskatchewan. :

Charles O'Dale's Articles.

New Telescope Owner Clinic

by **Blake Nancarrow**, Toronto Centre, Chair, Information Technology

The Toronto Centre is putting together a little program to help out the new telescope owner. In January we're going to run an open free clinic wherein people can visit us with their astronomical gear, and a number of our expert telescope users, volunteer members, will be on hand to help them with setup, connecting things, powering up, finder-scope alignment, and more.

There's a bit more info here: http://toronto.rasc.ca/content/scopeclinic.shtml.

Here's the registration form: http://signup.rascto.ca/scopeclinic .

ASX Symposium

by **Eric Briggs**, Toronto Centre

This year we celebrate the 10th anniversary of the Astronomy and Space Exploration Society's symposium.

For more information, go to: asxsymposium2013.eventbrite.ca.

Bulletin Photo of the Month

The Flaming Star Nebula

by **Ron Breacher**, Kitchener-Waterloo Centre

IC 405 is known as the Flaming Star Nebula. Most of the nebula is dominated by the red light of glowing hydrogen gas, and there is a blue reflection nebula patch near its "core." I used an H-alpha filter to shoot the black-and-white image of IC 405 and left the image as monochrome. Nothing matches the monochrome H-alpha image in its ability to reveal detail, especially in the faint outer reaches of the nebula.

SBIG STL-11000M camera, Baader LRGB filters, 10" f/3.6 ASA astrograph, MI-250 mount. Guided with STL-11000's internal guider. Acquisition, guiding, calibration, registration and integration all done using Maxim-DL. All other processing in PixInsight. Shot from my SkyShed in Guelph, Ontario. Below average transparency and average seeing.

The Sky this Month

What's New in the Sky

Members are encouraged to check out the **Northern Skies** section of the RASC Web site. Thanks to **Gary Boyle** for keeping us all in the know.

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is a benefit of membership in the Society.