ORBIT

The Official Publication of the Hamilton Centre RASC

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From the President

Les Nagy, President, Hamilton Centre

Welcome to 2006. This is turning out to be another year of controversy. Yet again the RASC finds itself declaring financial distress and is seeking to change how it operates in an attempt to make things better. There is question as to what to do.

There are two important motions to be voted on during a special meeting of National Council on February the 11th. The details of this can be found at http://www.hamiltonrasc.ca/orbit/RASC-SGM2006.pdf . In this document there is also a proxy form so that you can send in your vote.

In a nutshell the two motions are as follows.

1) To remove the fixed relationship of National's fees to the centres' fees. This could lead to centres not having as much control over their fee income. There are many arguments on both sides and I will leave it for you to decide if the motion is

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INSIDE THIS ISSUE

From The Editor

Ev Rilett

Ursa Major, the Big Bear or Big Dipper – There is a great deal of literature to offer for this most common and important constellation. Being circumpolar and therefore never setting we watch the giant dipper circle yearly and use it as the guide constellation to most any part of the sky. Ursa Minor, the Little Bear or Little Dipper, holding our pole star Polaris, sure and steadily pours it's contents into the Big Dipper.

In this article I will talk of Ursa Major as the Big Bear. Zeus had an affair with Callisto, of Arcadia, daughter of King Lycaon, and he transformed her into a bear to disguise her from his jealous wife Hera. Callisto's son Arcas was hunting one day and not recognizing his mother, killed her. When he realized what he'd done he was horrified. Zeus took pity on them both, turned Arcas into a bear and;

"flung them through the air,
In whirlwinds to the high heavens,
and fixed them there,
Where the new constellations nightly rise,
Lustrous in the northern skies."

Why do the bears have long tails? Here is a memoir dating to about 1590, a master and his pupil debating the question.

Scholar *I marvell why (seeing she hath the forme of a beare) her tayle should be so long…*

Master *I imagine that Zeus, fearing to come too nigh unto Her teeth, layde holde On her tayle, and there by drewe her up into the heaven; so that shee of herself being very weightie, and the distance from the earth to the heavens very great, there was great liklihood that her tayle must stretch. Other reason know I none.*

James Russell Lowell pictures the titan Prometheus, chained to his rock on a summit of the Caucasus, watching the eternal circling of the stars:

"One after one the stars have risen and set,
Sparkling upon the hoar-frost of my chain…
The bear that prowled all night about the fold
Of the North Star hath shrunk into his den,
Scared by the blithesome footsteps of the dawn…"

SCHEDULE OF EVENTS

Hamilton Steam Museum located at **106 Parkwood Crescent, Hamilton, ON L8V4Z7**, *hosts our General Meeting on the 1st Thursday of each month*
January
5 – General Meeting Subject – How to use your new telescope
*6 – @ Observatory – Hands on - Using your new telescope (**snow date Jan 7**)*
13 – Board Meeting @ CFS - @ 8.00 pm
February
2 – General Meeting – Speaker - TBA
9 – Board Meeting – place TBA @ 8.00 pm

THE HAMILTON CENTRE OBSERVATORY:

From Highway 6 North of Hamilton.

Take Concession 7 East eastbound, cross Centre Road.
Continue on 7E, keep going past railroad tracks, to near end.
Observatory driveway is on the right just before the stop sign.

From Mississauga or Milton.

Britannia Road past Highway 25, Guelph Line, Cedar Springs Road to End. South 1 Block on Milborough Townline to Concession 7 East.
Our gate is on the south side of the last lot (south west).
The observatory phone number is (905) 689-0266.

YOUR BOARD OF DIRECTORS

President - Les Nagy - 905 388 1011 – president (at)hamiltonrasc(dot)ca
Past President – Steve Barnes – sbarnesat)worldchat(d0t)com
Telescope Scheduler – Steve Barnes - sbarnesat)worldchat(d0t)com
Treasurer – John Williamson – John.Williamson(at)sympatico(dot)ca
Secretary – Victor Grimble – secretary(at)hamiltonrasc(dot)ca
Recorder – Roger Hill – 905 878 5185 – Roger.Hill(at)simpatico(dot)ca
Director at Large – Ken Lemke – klemke(at)worldchat.com
Orbit Editor – Ev Rilett – 905 319 8864 – erilett(at)cogeco(dot)ca
Curator – Mark Kaye – 416 885 6134 – Mark(dot)Kaye(at)simpatico(dot)ca
Observatory – 905 689 0266

PUBLIC EDUCATION

Public Education is very important at the Observatory. Among other events, our Centre is involved with Girl Guides, Scouts, and other groups interested in a guided tour of the night sky. We generally give a brief discussion, a slide show or other visuals, and then a tour outside with two or three different scopes. This gives the guests a chance to decide for themselves which type of telescope they like best.

It is wonderful to see the look on a child's face the first time they look through a telescope. Also, if you know of a group that may be interested in an evening under the stars call for a booking.

Call a board member to find out more. Your help is always welcome.

MONTHLY SWAP MEET

Feel free to bring in any astronomical items you no longer need in your collection. It might be just what someone else is looking for. A table will be set up each month for items to be swapped that evening. So, clear out that closet space and make room for some new, slightly used astro ware.

LIST SERVERS

Check out our newest addition of communications. We have a **new website** found at http://www.hamiltonrasc.ca/new . Also, we have a new forum linked from the new homepage including an interactive calendar which members can contribute to, found at the following: http://www.hamiltonrasc.ca/forums
Les Nagy will be making improvements to their appearance and function as the weeks go on.

There are two list servers available for members to receive and contribute with informative conversation. Our local centre list. Get in touch with Mark Kaye (see Board of Directors List) and he will sign you up.

There is also the national list. Members must go the national web page to sign up for. http://www.rasc.ca/computer/rasclist.htm

An Apology

In the December issue of Orbit I wrote an article about supernova hunting. I included some comments about Tim Puckett which he found offensive and insulting. I didn't mean for them to be taken that way but that's how he reads them so I apologize to Tim for my comments. He is a helpful but busy guy and I shouldn't have implied anything else about him. I'm sorry, Tim.

Sincerely,
Harry Pulley

Observing Aid

Ken Lemke

When you're out observing, do you like to make notes or sketches of your observations, but have a hard time juggling the clipboard or note pad, your red flashlight and pen? I know it's been a frustration for me since I started observing. During the Christmas break, I was scanning the latest flier from Lee Valley and there was the solution. It was a small plastic holder ($ 2.95, Catalogue # 45K16.61) for their line of "Photonpumps" (fancy name for a little, but powerful line of $ 12 flashlights, available in white or red light, catalogue # 45K16.66). The holder is designed to hold the flashlight and firmly attach to the edge of a clipboard, notepad etc . I dashed out to buy one and found that it was the perfect, low cost solution to my night time juggling. Now if only we could get a stretch of clear skies.

Enjoy the Night Sky

Congratulations Carl Roussell

The Board and members of the RASC Hamilton Centre wish to congratulate Hamilton Centre member Carl Rousell on completing the RASC's Explore the Universe Certificate, as recently confirmed by the Christopher Fleming, Chair of the RASC's Observing Committee.

Discovery of Fast Moving Objects

Colin Haig

Recently a few members of the RASC have been fortunate enough to make astronomical discoveries. One that struck close to home, mind the pun, was the discovery of a fast moving objects (FMO's), which is basically an unknown asteroid passing through our solar system, that has not been previously detected. Michael Boschat of the Halifax Centre has been recognized for his confirmed discovery of an asteroid designated 2005 TV51, which is about 16 metres in diameter. For more info on this FMO and Mike's discovery, visit the Minor Planet Center at Harvard: http://cfa-www.harvard.edu/mpec/K05/K05T92.html

Mike's technique was to review large numbers of images in a particular patch of the sky. I felt it was a worthwhile project to consider, as it is not dependent on the weather when other people supply the images. I've been spending more time at the computer with the intent to plan upcoming observing runs, and thought I should study some areas of the sky further. On *December 24th, very late, I made an interesting discovery of my own FMO. The image is attached, courtesy of those great minds that developed Starry Night Pro Plus software for the PC and Mac.* *(*see end of article*)*

Congratulations to Mr. Boschat, and hopefully you made your own discoveries under your Christmas tree or in some clear skies above! Congratulations also go out to pioneer Ed Majden of RASC Victoria Centre for his July 11th discovery of 2005-NX55 and most recently, RASC Kingston's Kevin Fetter for 2005 XZ7 on December 7th. Mike Boschat's discovery was made October 13th.

For more information on the FMO Project of the University of Arizona's Spacewatch near earth asteroid search, visit:
http://fmo.lpl.arizona.edu/FMO_home/

Anyone who discovers an FMO may get credit for discovering the object on the image, but does not get credit for actually taking the observation, which is done by the 0.9m Spacewatch telescope on Kitt Peak. See last month's Orbit for more info on Kitt Peak National Observatory in Arizona.

The basic process consists of reviewing CCD images on the University of Arizona's FMO Internet web site. Sequences of images are taken by the Spacewatch telescope. The person must review these sequences to detect any motion on them. An FMO will show up as a fuzzy streak a few pixels wide and many pixels long, combined with background stars and noise in the image.
False alarms may contain a sharp bright streak caused by cosmic rays hitting the CCD chip. Asteroids and other slower moving objects may also show up, as distinct objects that move from frame to frame, without the streak of light. The length of the streak is mostly related to the exposure time, as the object is moving so quickly across the sky that its light lands on multiple pixels.

Other false alarms can be caused by diffraction spikes from the secondary mirror spider (mirror holder), elongated galaxies, or blooming of pixels caused by really bright stars. Usually these are easy to detect, as you can see the same streak on multiple images of the same time. Blinking between images will show no movement. Lastly, artificial satellites will streak across the entire frame during the exposure time, as they travel much faster in earth's orbit.

If you would like to learn more about FMO's, I strongly recommend that you do the tutorial's on the University of Arizona FMO web site.

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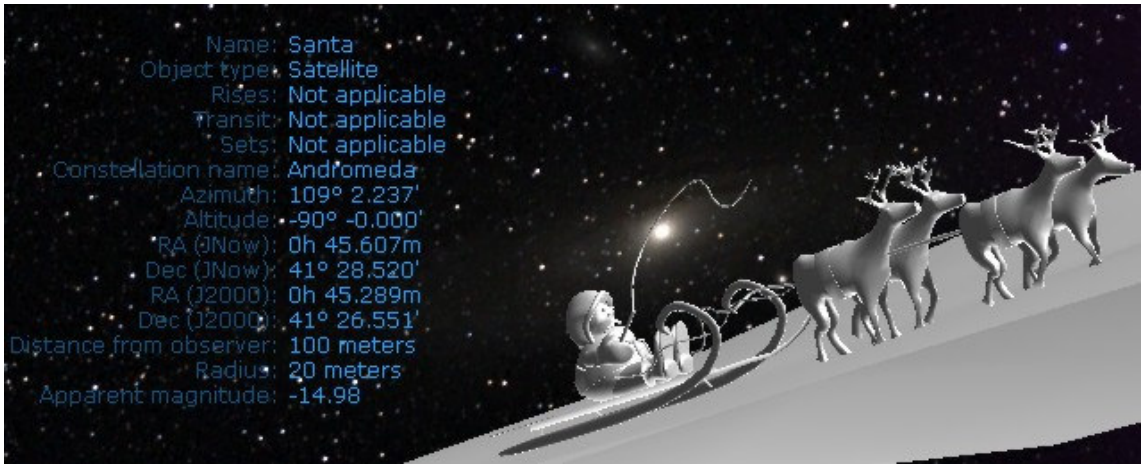
FMO's cont'd

There is a comprehensive tutorial, followed by two quizzes. Each quiz consists of a number of images for you to review, and indicate whether to report it or not. I tried the first quiz, and it was pretty easy after doing the tutorial. The second one has really raw unprocessed data, and is much harder to analyze. Either way, it was a lot of fun, only takes about 10 minutes, so why not give it a try?

Now, as for my FMO, the image came from Starry Night Pro Plus 5.7.2, and is kind of a christmas present that they put in. You had to update the comet/asteroid/satellite emphemerides close to Christmas eve, in order to get the Santa satellite. Then you go to the satellite and zoom all the way in, in order to see Santa. Who knows what surprises we may have next year?



Warm wishes for the New Year!

Winter Skies – Part 2

Ken Lemke

Well, we're officially into winter, but as I sit and look out the window, there is virtually no snow on the ground, the temperature is a few degrees above zero, and it's raining. The long stretches of cloudy, overcast skies are consistent with my observing diary. The good news is that (according to past diary observations) we should start having some nice clear (but cold) observing by mid month. With visions of clear nights just around the corner, here's a few more favourite winter targets.
- Draw an imaginary line from Gamma Cassiopeiae through Ruchbah (Delta Cassiopeiae) to Eta Persei, about two-thirds along this line, you'll spot the famous double cluster (NGC 869 and NGC 884). Under dark skies, the double cluster is a naked eye object. To enjoy the cluster, use binoculars or a small aperture telescope.
- Go back to Ruchbah, and about 1 degree to the east (towards Segin) you'll spot a small but lovely open cluster (M103). If after observing M103 you move a little further along towards Segin there are three more open clusters (NGC 654, 663 and 659).
- Now draw an imaginary line from Segin, through Ruchbah and then go about fifty percent further along the line and you'll spot another open cluster NGC 457, which has a nice double star (Phi Cas) on the southeastern edge of the cluster. This cluster is often referred to as the "Owl Cluster" or the "ET Cluster".
- To finish our brief tour of Cassiopeia, find Alpha Cas and locate a naked eye star which is about one-third along the way towards Gamma Cas. This is Eta Cas, another nice double with magnitudes of 3.4 and 7.4. The primary is a yellowish star with the secondary being reddish.

As we leave Cassiopeia, if you have never explored this constellation, I would encourage you to do so (using a star atlas). It is part of the Milky Way and is an extremely rich observing target.
- Now, locate Alpha Cep in nearby Cepheus, and with binoculars look for a triangular grouping of stars in the southeastern corner of the constellation. At the apex of the triangle is the famous variable Delta Cep. This star brightens from about magnitude 4.3 to 3.6 in one and a half days and then back to 4.3 in another 4 days. It is quite interesting to follow the brightness change over the course of only a few days (full cycle in 5.5

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days). Now if you examine Delta Cep with a telescope, you'll find it is also a double star composed of yellowish and blue components.
- Next, locate Eta Gem (at the base of the Northern twin) and about 2 degrees northwest you'll spot M35, a fairly large open cluster. Sharp eyed observers will spot a small cluster (NGC 2158) about one quarter of a degree south of M35.
- To finish up our mini tour, swing your scope over to Sirius in Canis Major and about 4 degrees south of Sirius you'll spot an open cluster (M41). Then draw an imaginary line between Beta Canis Majoris and Sirius, extend it about 12 degrees east of Sirius to spot open cluster M47 in the constellation Puppis and about one and half degrees east, southeast of M47 is another open cluster M46. A bonus (magnitude 11) is the small planetary nebula (NGC 2438) on the northeast edge of M46. Finally, just slightly north of M 47, there is another small open cluster (NGC 2423). This latter group is best observed around midnight during January.

Some upcoming events:

- On January 4, earth is at perihelion, it's closest approach to the Sun for the year.
- Asteroid Vesta is a good binocular target in the constellation Gemini during January. A nice chart can be found on page 69 of the January/06 issue of Astronomy.
- Mars will be just to the right of the Moon early on the evening of January 8/06
- On the evening of January 9/06, there will be a partial occultation of the Pleiades by a gibbous Moon for parts of North America.
- During the period of about Jan 23 to Feb 12/06, Saturn will be about 1 degree from M44 (the Beehive). On Feb 11, a waxing gibbous moon will join (about 4 degrees away) the grouping.
- Saturn is at opposition on Jan 27/06

Enjoy the Night Sky

President's Report cont'd

a good or bad thing.

2) To change the Journal from a printed-only version that you have a right to receive, to an electronic version which members can download, or pay optionally to receive in printed form. This in the face of keeping a third party, profit-making publication as a right of membership. Personally, I think that the Journal is a unique publication that if turned into a PDF with no large scale printing would become a less important and viable entity. A third party magazine is a cost too. Why would the RASC want to demote its own publications instead of removing a third party publication? That is what you need to ask yourself when you vote, in my humble opinion.

Much discussion has centred around the survey that National circulated back in 2004 and its validity. Was it a valid survey? Was it worded in such a way as to make certain answers more likely? Was it a random sample, or was it only likely to be answered by those who had a particular view?

These and many other questions about how we might make the financial situation of the RASC better have been discussed on the RASCALS email list, and amongst individuals. Some think that there are better ways to save money, some think that a big fee increase is a better idea than dropping a print version of the Journal, and obviously some think that the proposed actions as stated in the motions is the only right thing to do.

This is the one time you really should consider voting by proxy at a National Council meeting. I will be, and I know many others will be too. This is one time your vote could really shape the future of the RASC.

president(at)hamiltonrasc(dot)ca

Hamilton Centre, Royal Astronomical Society of Canada
Board Meeting, Thursday, November 10th, 2005, at the L. V. Powis Observatory, Flamborough, Ontario.
Board Members present:

Les Nagy	**President**
Roger Hill	**Recorder**
John Williamson	**Treasurer**
Victor Grimble	**Secretary**
Steve Barnes	**Telescope Scheduler**
Ev Rilett	**Orbit Editor**
Ken Lemke	**Observing Director**
Mark Kaye	**Curator**
Guests:	**Bert Rhebergen** and **Colin Haig**.

The meeting was called to order at 8:01 by **Les Nagy**.
Motion 2005-11-10-A; That the minutes of the October 14th Board meeting be approved.
Moved by **Victor Grimble** and seconded by **Ken Lemke**. The motion carried.
Directors reports:
Orbit Editor: Apart from wanting articles, **Ev Rilett** had nothing to report.
Observing Director: Ken Lemke reported that Andy Blanchard had been recruited for the Finance Committee.
- As for the trees, Ken emailed the following report: Spoke with "Tom" at the Forestry section of Hamilton Parks and Recreation. While "Tom" can't give out last name under some new policy, he gave me his private phone line. He explained that the department was reluctant to cut down healthy trees, but since the site was open to the public and that the trees were obstructing the view and full use of the telescope, they might be willing to work with us. He said that if the trees couldn't be removed, they might consider "topping" the trees. He put in a request to have an inspector meet me at the observatory to review the situation. With the recent storms in Hamilton it might be a few days before we hear anything as they are currently dealing with a lot of downed trees.
- On the subject of upcoming workshops, **Mark Kaye** will do one on dew heaters in the spring, **Harry Pulley** will do one on supernova searching.
- The Mars Nights saw 6 people of the public out. **Ken Lemke** offered that some events should be moved to Hamilton.
Secretary: Victor Gimble reported that we have three groups coming over the next three weeks, and perhaps we should solicit help for these events via the Centre email list.
- Thanks were extended to **Les Nagy** for the new web-site, particularly the calendar and web-log facility.
Treasurer: Motion 2005-11-10-A; That Quinn Mitchell, Michael Alonzo, Rick Cudmore, and Mark Pickett be accepted as members into the Hamilton Centre. Moved by **Roger Hill** and seconded by **Victor Grimble**. The motion carried
- We made $47 from the last raffle.

Recorder: Roger Hill had nothing to report.
Curator: Mark Kaye had nothing to report.
Telescope Scheduler: Steve Barnes had nothing to report.
President: Les Nagy received a message from the lawyer regarding the Mike Spicer lawsuit.
- Andy Blanchard will try to finish off the CCD training manual.
- The web site is up and running; pictures can be posted by board members. There are some 'dead' pictures, but they will be cleaned up early next week.

Old Business: Finance committee: Andy Blanchard is willing to volunteer, but wants to talk to Les Nagy first about the Mike Spicer issue. Then he will talk to John Williamson.
Other: The next general meeting in December will have a presentation on "how to choose a telescope." There will be a meeting on Leonid night---after 9 o'clock.
- The organizing of the outhouse roof replacement will be done by email.
- Roofing debris removal will be done after the outhouse roof is done.
- Observatory roof: No-one was sure if the Trillium scope will fit in the Chilton Building, so Les Nagy went to check using a tape measure. He reported that it will not fit, so we need to get the dome replaced with a new roll-off roof assembly. Victor Grimble offered to contact an engineer, and give him Les' phone number.
New business: Harry's Supernova proposal was approved by consensus of the Board.
Errors and Omissions Insurance. Perhaps we need an insurance broker. Les Nagy will contact Lisa Hobbes (Kevin Hobbes' wife) and invite her to bring information to a Board meeting.
Next Board Meeting: Thursday, December 8th at the L. V. Powis Observatory.
Motion 2005-11-10-C; That the meeting be adjourned. Moved by **Victor Grimble** and seconded by **Steve Barnes**. The motion carried.
Respectfully submitted by Roger Hill, Recorder.