

Norm "Sky Guy" Welbanks 1951-2009

2009 ENDED ON A SAD NOTE WHEN HANK INFORMED US ALL OF NORM'S PASSING: "At approximately 3:30 this morning (Dec. 8, 2009) our friend and fellow astronomer Norm 'Sky Guy' Welbanks succumbed to a lengthy illness in the company of his wife Nancy. Nancy said Norm had become restless about 1:30 and she had put on some of his favourite music and stayed by his side at which time his moans changed to softer sighs. We shall all miss his laughter, his engaging conversation, his love for astronomy and buying and selling its toys!"

Thank you for taking the time to e-mail me about Norm's death. I didn't realize that he was in such serious condition. We had talked on the phone a couple of months ago and he seemed to be handling the situation as well as could be expected and was fighting it in mind and body. I always enjoyed our technical e-mails. I used to refer to us as "Nerds of a feather." Norm's enthusiasm and energy (as well as that of Leo) will be missed by the Kingston Chapter. Here's hoping 2010 brings less bad news and more clear nights.

Peace and love to all, John & Deb Crossen



Norm at Astronomy Day 2003.

Norm joined KC in January 1996 and was very active in many public outreach events like KAON, Charleston Lake, Astronomy Day, and others. In 2000 he built a giant 10'x23' roll-off roof observatory. While the size of this structure might seem excessive to some, Norm really did need the generous space to house his constantly-evolving menagerie of telescopic equipment! He received his Messier certificate in 2003 and served as Vice-President in 2005 and 2007. In recognition of Norm's significant contributions to the Centre, he was awarded the A. Vibert Douglas Award in 2005. ★

Upcoming Meetings

Friday, January 8, 2010

Members' Night 7:30-9:30 p.m.

Friday, February 12, 2010

Regular Meeting 7:30-9:30 p.m.

The Antikythra Mechanism

Dr. Daryn Lehoux, Queen's University Department of Classics

Friday, March 12, 2010

Regular Meeting 7:30-9:30 p.m.

Friday, April 9, 2010

Regular Meeting 7:30-9:30 p.m.

Meetings are held at 7:30 p.m. at Stirling Hall Theatre "A" on Bader Lane at Queen's University in Kingston, Ontario. Our meetings are co-sponsored by the Queen's Physics Department and include astronomy lectures open to the public. ★



KAON Public Observing

Saturday, January 9 7:30 p.m.

Saturday, March 13 7:30 p.m.

KAON (Kingston Astronomy Outreach Network) sessions are held at Queen's Observatory on the 4th floor of Ellis Hall. ★

More info at kingston.rasc.ca

Web Links

Obituary in the Whig-Standard:

<http://yourlifemoments.ca/sitepages/obituary.asp?oId=352973&source=Kingston%20Whig%20Standard>

Observatory Building 101, *Regulus*, 2000 May/Jun:

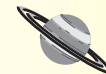
<http://www.kingston.rasc.ca/Regulus/2000s/reg200909public.pdf#page=2>

The 2005 A. Vibert Douglas Award, *Regulus*, 2005 Dec:

<http://www.kingston.rasc.ca/Regulus/2000s/reg200512public.pdf#page=3>

Newt, *Regulus*, 2009 Sep:

<http://www.kingston.rasc.ca/Regulus/2000s/reg200909public.pdf#page=12>



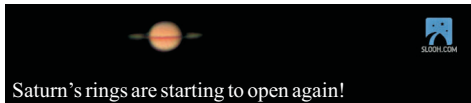
In this issue:

- ▶ KAON Report: December 12 . . . 2
- ▶ Directors & Coordinators 2
- ▶ *Regulus* Needs You 2
- ▶ Meeting Report: December 11 . . . 3
- ▶ Newt. 3
- ▶ Blast from the Past. 4
- ▶ December Observing Reports . . . 5
- ▶ Bonus Blasts 6

KAON Report: Dec. 12

Susan Gagnon

THE LAST KAON of 2009 brought 37 visitors to the Observatory. **Joel Roediger** presented a talk entitled *Astrophysical Collisions*, better than NASCAR. **James Silvester** was our guest host for the evening. We had cake to celebrate a very successful year of KAON in IYA which saw close to 1000 visitors. We had door prize draws for a Galileo scope (KC donation), and 3 IYA T-shirts (Stephane's donation). There were tours of the dome and a bit of observing. Thanks to KC volunteers, **Kim, Kevin, Steve, Hank and Brian.** ★



Regulus Needs You!

Items of interest from members—full articles, or even just a couple of paragraphs are always welcome. Items are gratefully accepted on each and every day of the year! Send items to:

walter2 (at) starlightccd (dot) com
or:

Walter MacDonald
PO Box 142
Winchester ON K0C 2K0

The Fine Print:

Members of the Kingston Centre receive *Regulus* as a benefit of membership. Non-commercial advertisements are free to members of the Centre. Paid commercial advertising is also welcome and should be in electronic format.

Submitted material may be edited for brevity or clarity. © 2010, all rights reserved. Permission is granted to other publications of a similar nature to print material from *Regulus* provided that credit is given to the author and to *Regulus*. We would appreciate you letting us know if you do use material published in *Regulus*. ★



RASC Kingston Centre
PO Box 1793
Kingston ON K7L 5J6

E-mail:
kingston@rasc.ca

Infoline:
(Discontinued)

Website:
kingston.rasc.ca

RASC-KC Board of Directors

President:	Susan Gagnon
Vice President:	<i>vacant</i>
Secretary:	Steve Hart
Treasurer:	<i>vacant</i>
Librarian:	David Maguire
Editor:	Walter MacDonald
National Council Rep:	Brian Hunter

2009-10 Committee Chairs/Coordinators

Astronomy Day:	<i>vacant</i>
Amateur Telescope Makers:	<i>vacant</i>
Awards:	Kevin Kell
Banquet:	<i>vacant</i>
Education:	<i>vacant</i>
Equipment Loan:	Kevin Kell
Fall 'N' Stars:	<i>vacant</i>
KAON:	Susan Gagnon
OAFN Instructors:	<i>vacant</i>
Observing:	<i>vacant</i>
Publicity:	<i>vacant</i>
Relay for Life:	<i>vacant</i>
Responsible Lighting:	<i>vacant</i>
Webmaster:	Walter MacDonald

EXECUTIVE INTRODUCTIONS WERE MADE and a reminder of the Saturday night KAON was mentioned, our last KAON of IYA. We also announced the funeral arrangements for **Norm Welbanks** that would take place on Saturday in Yarker. Norm was a fun and enthusiastic member who enjoyed public outreach and was a huge asset to the Centre in this regard. Even in 2009 when he was very ill he made it out to several events. Norm will be missed.

A notice of our speaker and of the potential interest to high school science teachers was sent by email to the local school boards but there was no one in the audience to confirm or deny arrival of the information. This will be attempted again, but through different channels perhaps.

Our speaker for the evening was 2nd Lieutenant **Raymond Francis**, a reservist and Masters student at RMC (undergrad, University of Ottawa). Raymond is a previous member of the European Space Agency and is very interested in space technology and its application to the betterment of mankind's existence on Earth as well as in space. His challenge was to give us a perspective of space programs beyond North America. What a change in perspective we were presented with! The funding formula alone was so rational, with basic funding that was mandatory from the 18 member states and a list of optional funding projects that

countries could choose to participate in. The talk covered a lot of ground but Raymond kept to the 30-35 minute time limit and that was good because there were a lot of questions.

To recreate the talk content would be impossible but I will list some factoids that I jotted down.

Many of the European and Asian players have been in the space technology game since the 60s.

Who has launch capability in the world today: China, ESA, Japan, India, Iran, Israel, Russia, Ukraine and the USA.

India has launched 50 satellites and has a major commercial launch program, plenty of spin off technology.

Africa: at least 6 countries have space programs with an interest in remote sensing, South Africa, Algeria and Nigeria are the largest. There are many players, on many scales with many motivators.

Canada is a participant with the 18 European countries.

One set of studies that did resonate in light of recent climate change debates were the launches of 2009 through 2013. This Living Planet Program consists of 5 Earth Explorers: GOCE (earth gravity), SMOS (soil moisture and ocean salinity), CryoSat (polar ice sheet thickness), ADM (atmospheric dynamics), and Earth Care (interactions between cloud, radiation and aerosols).

Raymond was an excellent speaker and was very able in his

elaboration on points that arose in the question period.

During the break we had some snacks and had a chance to chat. After the break **Brian Hunter**, our national rep, gave us a brief report on highlights from the last council meeting in November. For his full report see the November issue of *Regulus*. Brian would be very interested in opinions and ideas around the proposed re-invention of the National Executive with the desire to hire a chief executive officer.

As your new president I made a plea for someone to come forward to take on the position of Treasurer but as I write there has been no offer of new blood. This is indeed unfortunate as this is essential to the running of the Centre. The books have never been in better shape and your choice of method to run the books is up to you: the existing program, a program you prefer, or even just good old paper. We are also in need of a VP. Of course many hands make light work, but a full executive also gives a broader reflection of the Centre's wants and better feedback with decisions that must be made. This is where my note taking seems to have given out so there you have it.

Kevin Kell adds: Raymond Francis spoke very well, NOT reading from the slides (which I can't stand), and was ultra-knowledgable about everything he brought up.

The pre-meeting dinner at the Queen's Inn (eastern pub side) was also great, and inexpensive. Sorry we couldn't stay later after the meeting for the Wendy's meet-up...

We did sell out of 2010 Calendars and we sold all of the Galileoscopes that were brought to the meeting as well... excellent! ★

NEWT^{by E. Kliptik}



Some characters in this cartoon are adapted from The Print Shop Ensemble III

MR. HARVEY READ the following memorandum upon a subject in which the Society had been taking some interest, *i.e.*, the photographing of the sidereal heavens :—“ I am permitted to bring for your inspection, from the Canadian Institute, the Third Annual Report of the Vatican Observatory, and I think the beautiful plates will interest you very much. Especially instructive is the plate of the star-cluster in Cancer, Præsepe or the Beehive. As you are aware, a photographic charting of the heavens is now in progress, in which several leading observatories are taking part. This is a reproduction of one of the standard plates. The faint lines—like those of latitude and longitude on an ordinary map—supply the means for comparing the places and movements of stars: in 10, 20 or 50 years, another photograph, on the same scale, will show the changes with much greater ease than any system hitherto adopted, however delicate the measurements or perfect the drawings may have been. The astronomer, with a magnifying-lens, will examine and compare square by square, note the proper motion of each star, see which are variable, which are the binaries and trinaries and the rate of their revolutions, while by a series of such plates we may hope even to approximate, by noting the inequalities or variations of motions, to an estimate of the number of dark stars—stars which do not emit light—which should be, if the nebular hypothesis has a basis in fact, far more numerous than the luminous or visible orbs. I have brought a magnifying-glass that you may see the beauty of the work, the admirable distinctness of the plate, on which you can note the several stars which appear to be connected with each other and not mere optical doubles. Thus you can, in a way, anticipate what the work of the astronomer is to



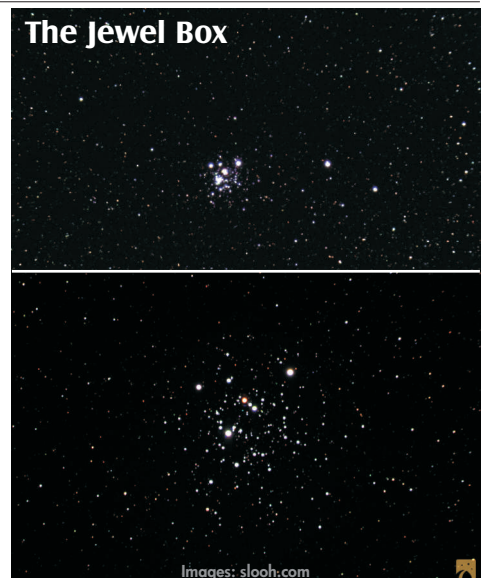
Picture credit: NOAO/AURA/NSF

M44, the Beehive Cluster, also known as Praesepe (Latin for manger), is an easy naked eye object more than twice the size across of the full moon, and has thus been noted since prehistoric times. It was one of the first objects on which Galileo trained his newly acquired telescope. M44 is one of the nearest open clusters, close to 600 light-years away.

This approximately true-color picture was created from fifteen images taken in January 1997 using BVR colors, at the Burrell Schmidt telescope of Case Western Reserve University's Warner and Swasey Observatory located on Kitt Peak, near Tucson, Arizona. Image size 60.9 arc minutes. *Picture and caption credit: NOAO/AURA/NSF*

be and enter into the observatory of the future, or at least an important part of it: a quiet room, with a good light, apparatus for super-imposing the image of one square from one plate on one from another taken years before, a note-book, a microscope, and no telescope at all.”

—*This is part of a report on the Astronomical and Physical Society of Toronto's 17th meeting of 1893, held on September 5. (Source: Transactions of the APST 1893, pp. 84-85.)* ★



The Jewel Box

Images: slooh.com

December 12/13

Mark Kaye: Last evening, I witnessed a pretty bright fireball. It started as a bright blue slow moving point of light, reminded me of those blue LED Christmas lights. It happened at approximately 17:54 and fell slowly to the east getting brighter and beginning to become a streak instead of a point, in between the Pleiades and Capella going straight toward the horizon. Before it reached the horizon, it flared red briefly, fattened and then went out with a small explosion. I would say it got a lot brighter than Venus ever does, but doing magnitude estimates whilst driving is not that easy.

The slow speed and colour of the object makes me think that it might have been a human made object de-orbiting and not a meteor.

Kevin Kell: On Saturday afternoon at 17:53 EST, a large slow-moving fireball was spotted while we were on the way into Kingston from Yarker for the KAON public observing session.

It lasted about 5 seconds(?), was about on the order of magnitude -10 and was approximately 25-40° above the eastern horizon from where we were, just west of highway 38.

It was a bright blue, reminiscent of an aircraft search and rescue flare and at first I dismissed it for a couple of seconds, thinking that is what it was.

Afterwards, a few glances out the window showed it to be long lasting and moving faster than a flare but slowed than most meteors...

A minute later Mark Kaye called in with a similar sighting, adding in more details like a red colour ending.

After reviewing a Starry Night chart from last night's time, I think it would have been under Taurus, but cannot place it closer than that. Did anyone else spot it?

Our all-sky camera does not turn on until 18:00 EST as it does not

work in bright light... We'll be moving that back to 17:00 EST methinks right about now.

Conrad Muis: Yes, I saw the fireball here in Bancroft while I sat in front of the fireplace and just happened to look outside.

December 15/16

Kevin Fetter: The sky was clear for a short time tonight, allowing me to satellite observe again, after so many nights of cloudy skies.

I observed the Intelsat 1R geo sat, as it's easy to see compared to other geo sats. Also, I observed three Glonass satellites, two of them were flashing and the other was stable as they are still using it. Glonass is the Russian GPS system.

Then I went to check on Hotbird 1, and was rewarded with bright flashing. It gave a magnitude 3 or brighter flash, every 203 seconds:

kfetter.com/satvideo/flashing-geosat/23537.wmv

December 18/19

Kevin F: I had a good night of satellite observing, and observed three flashing geo sats, which gave some bright flashes: Anik E2, Satcom C4 and Kazsat 1. You can see the flash from Kazsat 1 here:

kfetter.com/satvideo/flashing-geosat/29230.wmv

December 20/21

Kevin F: It was one of those nights when I never know what will happen while I am satellite observing: I had observed a few flashing geo sats, and observed a US military geo sat called Milstar 1 in order to get positional info on it, so that its orbit could be updated, since official orbital data is no longer available for US military satellites. Milstar 1 was where it was predicted to be. Later I went to observe Milstar 6 and I ran into a problem—I couldn't see it, which was strange. I looked around the area and still couldn't see it. So I decided to do a scan of the sky, since it clearly

wasn't where it should be, i.e. in its orbital slot. I thought it must be drifting across the sky, i.e. it is being moved to a new orbital slot. So I started to scan for it, and as I was scanning, I came across a unid, which followed a path I expected Milstar 6 to follow.

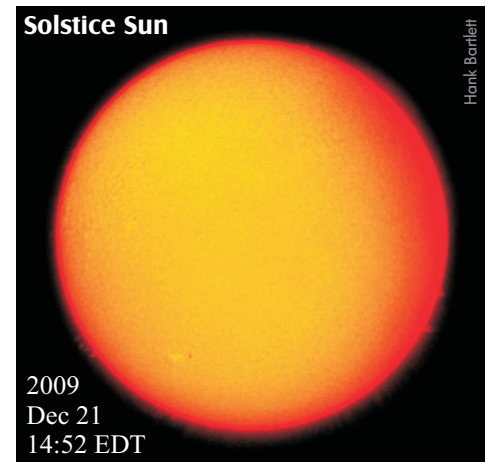
After observing it for a while, I was darn sure I had found Milstar 6. That was fun! [Thanks for this very interesting report Kevin. A big hello goes out to our new readers at various US intelligence organizations! We hope you enjoy our newsletter!—Ed.]

Geoff Gaherty: Just remember, the next time somebody knocks loudly on your front door, head out the back door FAST!

Mark Kaye: Or try to cross the border or fly anywhere that may take you over US air space...

December 21: Winter Solstice!

Hank Bartlett: Every day we are one day closer to re-opening the POOL! I'm looking forward to the "hard water" problem being gone.



Walter MacDonald: December was not a stellar month at Winchester Observatory, with only two nights of imaging: an all-nighter on Dec 21/22 and a three-hour evening session on Dec 29/30 before the sky crapped out. Fortunately this lull in imaging provided a chance to clear some of the photometry backlog from the

...December Observing Reports

Various Members

seven nights of imaging in November! One thing I noticed was all those darn satellites cluttering up the skies (and my images) around -7° declination. (See Ken Kingdon's article on "Geostationary Satellites" in the September 2003 *Regulus*, pp. 3-5 for an explanation of the geometry involved.) Actually, they're not so bad, as long as they stay well clear of my variable and comparison stars! But of course, they don't always do that and then I have to go back and re-stack the images for those variables (leaving out the 'ruined' frames of course).

An example of this is shown in the image below. This is the field of variable star SDSS J031051.66-075500.3. The complete trail to the right of the gap occurred during the final 30 second exposure. In images like this, it is therefore possible to make a pretty precise determination of the satellite's position in time and space—in this case just measure the position of the start of the trail to the right of the gap with PinPoint (typical residual is less than one arc second) and look at the FITS header for the exposure start time (which is usually within a fraction of a second since I use software to resynch my computer clock each hour and record the discrepancies).

Of course this satellite and its orbit are probably well-known but I wonder how many CCD images out



A pesky geo sat attempting to interfere with a variable star observation on 2009 November 14. Exposure 5x30s, midpoint 00:53 UT, Johnson V filter, 3"/pixel.

there serendipitously record fainter satellites in this manner and could be mined for information useful to the satellite community?★



Bonus Blasts

The following bonus blasts are taken from John A. Paterson's *Annual Address, given at the Astronomical and Physical Society of Toronto's 4th annual meeting held on 1894 January 9th.* (Source: Trans. APST 1893, pages 148 and 152.)

The Progress of Astronomy

THE PROGRESS OF ASTRONOMY has been a progress of triumphs. The Astronomer has ever lived; he never dies. The palaces of Babylon, the plains of Shinar, the temples of India, the pyramids of Egypt, the schools of Greece, the deserts of Arabia, the rude cloisters and roofless temples of Druidic and Scandinavian Mythology, have been his observatories. From age to age the torch has been kept blazing. When Copernicus laid it down, Tycho picked it up and passed it on to Galileo, who, in turn, gave it to Kepler, and then Newton took it, and so the light has grown until the hands that are reached out to grasp the torch, circle the world. The watch towers of Science now cover the whole Earth and their sentinels keep an unbroken vigil; they are under the shadow of Eternity. No star or nebula can ever set; if it escapes the piercing gaze of one astronomer, it will meet the far-reaching scrutiny of another, and if any is so far buried in the depth of space that no human eye can reach it, then the eagle intellect of man has contrived means whereby the orb, or fiery haze, can record its own existence and measurement on a photographic plate.



John A. Paterson

Asteroid Discoveries

THE ROLL CALL OF THE ASTEROIDS still continues to increase. Since Bode's law showed a gap between Mars and Jupiter and observation in that belt of the sky commenced, 346 have been discovered, and in 1893 fifty of this number have been catalogued, and thirty-eight of these fifty are credited to one astronomer, M. Charlois, of Nice. These pigmy children of the Sun are so numerous that the stock of distinctive names has been exhausted, and only one of these new strangers has been named, and she is "Dembowska," which name indicates surely, that the brain has grown weary of inventing names. Only one of these asteroids in 1893 was discovered without the aid of photography.

Comet Holmes

HOLMES' COMET BELONGS TO 1892, but it chose 16th January, 1893, for a display of unusual behaviour. Instead of proceeding in its course, minding its own business, as a well trained comet ought to do, at 20.10 o'clock that evening, right before Professor Barnard's eye, it commenced to grow and grow until, at 22.43 o'clock, puffed up with pride and self-importance, it became nearly twice its original size. It first registered 29".4 on the micrometer wire, and ended, with a registry of 47".9. Barnard says "This is certainly the most remarkable comet I have ever seen."★