July 2010

Regulus

RASC Kingston Centre

HiRISE Catches an Avalanche on Mars

This HiRISE image shows at least three isolated clouds of particles near a steep cliff in the northern polar region of Mars. You can see the full story, plus more images at: uahirise.org/ESP_016423_2640

–NASA/JPL/University of Arizona image ESP_016423_2640

Upcoming Meetings

(Summer Break: July-August)

Friday, September 10, 2010
Members' Night 7:30-9:30 p.m.

Friday, October 8, 2010
Members' Night 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 sessions will be held at Queen's Observatory, October 9 and December 11

More info at kingston.rasc.ca

In this issue:

Editorial: A Declining Kingston Centre

Walter MacDonald

WITH SUMMER UPON US, it is a time to enjoy the great outdoors, and whether you are in motion or at rest why not spare a few brain cycles to think about the past, present, and future of our Centre? Especially the future. Will things somehow go onwards and upwards, or will this editorial provide the opposing bookend to **Leo Enright**'s piece (*A Resurgent Kingston Centre*) in the December 1981 issue of *JRASC?* As always, *Regulus* welcomes its readers' thoughts on this topic.

KC turns 50 next year. From small beginnings, KC came of age by the late 1970s and arguably reached its zenith (in terms of activities and membership numbers) in the late 1990s. Longtime members will still remember the very enjoyable gatherings at **Ruth** and **Terry Hicks**' house, the excitement of the grand meetings where **David Levy** or **Terry Dickinson** were the featured speakers, or the visits of **Clyde Tombaugh** and **Jack Newton**, not to mention the hosting of the General Assembly in 1997.

Much of that momentum spilled into the decade just past (2000-09) with three more visits from David Levy, regular youth group meetings, monthly KAON sessions, annual OAFTN courses, and many telescope making activities (including the fabrication of the crown jewel of KC, the 24" Venor telescope).

All of these past activities and accomplishments have built a history of our Centre in which we can all take great pride. But is that past energy and vitality now running out? In terms of meeting attendance we are pretty much back to where we were in the 1980s and though our membership numbers are still a couple dozen higher, we are in the midst of a significant downward trend. Where is the bottom?

Mirroring this recent decline is a drop in the number of active members volunteering to do the things that power the Centre, as well as a drop in the number of centre activities due to burnout of the remaining core of volunteers. A look at the list of KC positions on page two of the January 2010 *Regulus* shows this less-than-ideal situation.

In 2004 the Centre experienced a shortage of volunteers which made

Continued on next page...

...Editorial

for a rather tough year for KC (not to mention the remaining volunteers!). Still, the Centre survived and even thrived for several years afterwards. We should keep the memory of 2004 in the back of our minds always, in the hopes that such a thing can be made not to recur.

Looking back on our Centre's history, are we seeing a great cycle at work? Is KC tied to the overall demographic trends in Canada? The question I ask is, "Where are all the old people?" With boomers starting to retire you would think KC would have a good core of active volunteers from this group. Have the boomers moved on from Astronomy? Perhaps they have "been there and done that" and are off to the next Great Thing. Perhaps they prefer to cocoon at home rather than go out?

Many have asked, "Where are all the young people?" Look at the last 50 years of GA group photos: you can see the boomer wave come in! There are fewer youth today because the boom is past. Things are simply back to 'normal' in this department.

The question now is, what events and services can KC provide to attract and retain members both young and old and continue our great history into the future?★

Editor's Notes

WELCOME TO THE JULY ISSUE of *Regulus*! OK, it starts with a shocker on page one, but you were warned this editorship would be a wild ride! (See *Regulus*, January 2009, page 1.)

Normally (the new normal, that is) there would not be a summer issue, but that is at the discretion of the editor. Since there was an adequate amount of material available, and I felt like it, the July issue has materialized (at least for those of you still receiving your *Regulus* on paper!). Also, there were a handful of observing reports, the Chilton Prize citation, and a book review that got missed for inclusion in the June issue (hey, it happens!), and it seemed better to get them published before September. As **Leo Enright** once pointed out, if not published in a timely fashion, *Regulus* ceases to be a *news*letter.

Speaking of Leo and *Regulus*, Regulus (α Leonis) is also busy this summer with three syzygies: Mars last month (see the observing reports on page 6), Venus now (mid-July), and Mercury near the end of this month (this will be a challenge to observe low in the west). With our stellar namesake busy being at the centre of all this activity how could we not have a July newsletter?★

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:
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Relay for Life Napanee, June 11

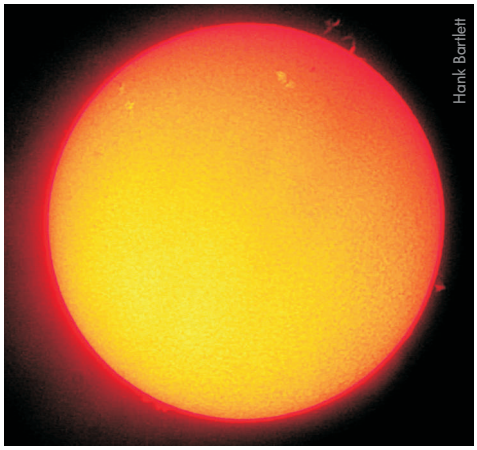
Kim Hay

HANK BARTLETT, KEVIN KELL AND MYSELF showed up at Napanee District High School, at 6:00 p.m. to set up our scopes for the evenings event. Getting to the field can be quite a trek, with everyone dropping off items, and golf carts carrying the items to the designated areas. We were able to unload on the field, but had to remove the vehicles and park elsewhere for the evening.


Hank relay likes solar observing!

Kevin Kell

We set up on the inner field of the track and showed the sun with its two new groups. We had the Douglas on hand using Baader film and Hank had his SM60 along with his 4.5" refractor, using a 1000 Oaks solar filter. We showed a few people the sun with and without clouds before the main kick off of the evening. (Hank took some solar images including the ones in this article.)


Hank Bartlett

There was live music, My FM radio station, and the Sweet Adelines singing. The large screen showed those who were taken by cancer over the year and the sponsors of the Napanee Rely for Life. The starting of the event was the Survivor lap. It is such a great way to start the event with people clapping as the survivors walked by to cheer them on, they had conquered a great mountain.

At 9:00 p.m., there was the lighting of the remembrance luminaires for the survivors, the fighters, and the not forgotten members of families who passed on. This year was especially tough for us, since we lost two great friends to cancer over this last year.

As the night progressed it got darker, and Venus showed its brilliance. Though we were in the infield and the battlefield lights were on, we were able to show Saturn and Mars. The green laser was a hit, and of the 95 kits we made up over 60 were handed out, many to young children, public and high shcool children, and some to older individuals, who wanted to start learning about Astronomy. Some

Continues on page 10...

Reports & Other Items

From Kingston Centre, the RASC, and Beyond...

Clear Sky Chart Team Honoured

The Astronomical Society of the Pacific has issued the following citation: *The Amateur Achievement Award recognizes significant observational or technical contributions by an amateur astronomer. This year's recipient is* ***Allan Rahill*** *on behalf of the Clear Sky Chart team comprising of Rahill and* ***Attilla Danko****. Rahill, a meteorologist with the Canadian Meteorological Centre (CMC), adapted CMC forecast products for the purpose of planning observing sessions with highly accurate high resolution point forecasts of cloud cover, transparency, seeing, darkness, wind, temperature and humidity over North and Central America. Danko developed the web page that presents these forecasts. The universal acclaim received by the Clear Sky Charts in both the amateur and professional astronomy communities wins the team the Amateur Achievement prize for 2010.* This is a well-deserved honour: can any of us imagine life without CSC?

A Close Encounter

In a recent arxiv paper, V.V. Bobylev of the Pulkovo Astronomical Observatory in Russia has used Hipparcos data to determine that there is a high probability that the star Gliese 710 will closely approach our solar system in 1½ million years time and probably close enough to pass through the Oort Cloud. The full paper is at: arxiv.org/abs/1003.2160.

If only this encounter was happening now! Having a star approach to within ½ light year or so might encourage us to send out our first interstellar probe much sooner than we might otherwise. Also, we would get some awesome comet apparitions out of the encounter (though hopefully not *too* awesome!).

Gliese 710 is a 9th magnitude star in Serpens. No need to rush out and observe it though—it will be naked eye in a million years or so!

IYA Final Report

The IYA Consortium has issued a final 37-page report detailing the activities and successes of all the IYA efforts across Canada. Amongst the seven member team that put this report together is none other than KC's own **Kim Hay**. The report is available at astronomy2009.ca. It should be mentioned that Kim is also amongst the IYA Team members who were awarded the RASC's Ken Chilton prize this year (see page 5). Congratulations Kim!

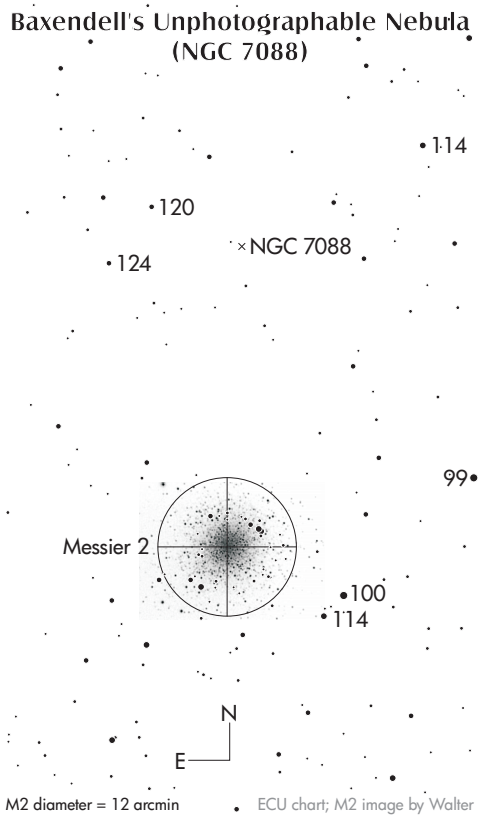
Continues on page 4...

For Your Compendium of Esoteric Facts

Walter MacDonald

As telescope apertures have increased over the last few centuries and imaging technologies like film, PMT, and CCD have extended the grasp of telescopes, these instruments have naturally been pushed to record ever fainter objects. But did you know that there are some challenge objects out there that will be forever beyond our grasp? (No we're not talking about the Hubble Deep Field galaxies—surely some enterprising amateur will be imaging these before too much longer!) This is because, occasionally, non-existent objects make their way into the official astronomical catalogues (and once they're in one catalogue, they get propogated into other, subsequent catalogues).

On 1880 September 28 **Joseph Baxendell** observed a large, faint nebula ½° north of M2 with his 6" refractor. Interestingly, other observers subsequently reported also seeing this object, yet all attempts to photograph it failed—hence its monicker "Baxendell's Unphotographable Nebula." One of these confirming visual observers was Dreyer, and so this object came to be designated NGC 7088; thus it is still with us (if only in spirit!) today.



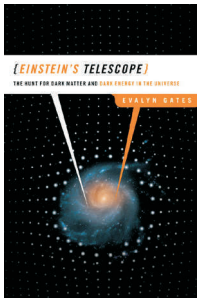
M2 diameter = 12 arcmin ECU chart; M2 image by Walter

Was this just another case of bandwagonism like the canals of Mars? Was it just a reflection in the telescope? Why not check this out on a clear night this summer?

The next time you hear somebody brag about their observing or imaging prowess, why not knock them down a peg or two by challenging them to successfully record NGC 7088? Esoteric facts have their uses! ★

Book Review: Einstein's Telescope

Hal Boden



The approach to the nature of the universe followed in this book is very much the standard one of the Big Bang, inflation, and the presence of dark matter and dark energy. It rejects alternative gravity theories and claims that the Bullet Cluster 'proves' the existence of dark matter. This is contrary to the opinion of Moffat as expressed in *Reinventing Gravity* (see *Regulus*, Dec. 2009, pg. 10). There appears to be an impasse on this matter. (He said, She said.)

The other major theme is gravitational lensing (Einstein's Telescope) and its uses in observational astronomy. One application of this technique has been for the detection of planets around stars more distant than can be studied by eclipsing or Doppler Shift. Also objects which are more distant than can be imaged directly have been observed using a nearer galaxy, etc. to provide the lensing. As the size of the so-called Einstein Ring is dependent on the mass producing the lens then this apparent mass can be estimated. In this way the apparent masses of galaxy clusters can be estimated. Unfortunately Moffat does not discuss gravitational lensing.

Both of the above mentioned books suggest that refinement of the matter distribution in the universe (smooth due to dark matter and 'saw tooth' due to baryonic control) should provide an indication of which approach fits the data better. This still leaves the mystery of the missing anti-matter and other anomalies to be resolved. ★

Einstein's Telescope, by Evalyn Gates, published by W. W. Norton & Company
http://books.wwnorton.com/books/detail.aspx?ID=6049

...Reports

...continued from page 3

The FULL Moon

Using *Clementine* imagery, a YouTube video shows the entire Moon as a rotating globe. This video reveals everything we are missing by having the moon's rotation period locked to its orbital period. How much more interesting lunar observing would be if this were not the case! ★

youtube.com/watch?v=69XoawPsVog&feature=related

Ken Chilton Prize Awarded for 2010

RASC Awards Committee

CHILTON PRIZE CITATION for Brian Battersby, Ted Dunphy, Paul Gray, **Kim Hay**, Marc Keelan-Bishop, Don Kelly, Rémi Lacasse, Lise Lacasse, Dave Lane, Damien Lemay, Ron Macnaughton, Chris Weadick, and Jennifer West:

International Year of Astronomy (IYA) presented a unique opportunity for the RASC to step up its education and public outreach activities across Canada. The National Council approved significant funding and challenged our members to be creative in proposing IYA-related projects.

This award recognizes those members who participated in a significant way to develop, implement, and distribute the highly successful educational materials that were given away to the public at events held during IYA and beyond.

Mary Lou's New Telescope Children's Book

This book tells the story of a young girl who is fascinated by the night sky. As she learns more about the stars and planets, she receives her own telescope for her birthday. She quickly discovers, however, that lights in the city interfere with her observing. She visits her grandparent's farm and sees the sky from a dark-sky perspective. With her parents' support, she meets with their city's engineering department. She is able to convince the city's lighting engineer to try full cut-off lights in her residential area.

Ted Dunphy conceived the original concept and story. Don Kelly further developed and authored the book and worked closely with the illustrator to complete the book. Paul Gray did the graphic design work for the book in both languages. 24,000 copies of this book were printed and distributed free in both English and French.

Star Finder

Ron Macnaughton conceived the Star Finder project and led its development. He authored most of the text on the Star Finder itself and the companion website star-finder.ca (pictured at right). Ron made the Star Finder much more than just a planisphere by including carefully written concise text on many astronomical topics. The cartography and graphic design of the star wheel and holder (front sides) was done by Chris Weadick and Dave Lane. The graphic design and original illustrations on the back sides and the "kid-friendly" companion website was done by Marc Keelan-Bishop. 265,000 Star Finders have been printed in both English and French.

Astronomy Trading Cards

Jennifer West conceived, wrote the text, chose the images, and beautifully designed seven types of educational trading cards covering most popular objects and object types. These became known as 'Galileo Moment' cards, as they were handed out in great numbers at IYA events. 100,000 of each type of bilingual card were printed.

Sidewalk Astronomer Booklet

Brian Battersby conceived, authored, and designed the Sidewalk Astronomer Booklet. It provides the reader with basic astronomy information and challenges them to make observations. 24,000 booklets were printed.

Rémi Lacasse (with assistance from his wife Lise) and Damien Lemay translated all of the bilingual materials into French so that they could be used in all of Canada. They also handled promotion and distribution activities in the province of Québec.

As chair of the Education Committee and a member of the IYA

Executive Committee for Canada, **Kim Hay** supported the development of all the materials in many ways, but in particular she handled much of the promotion and distribution logistics throughout IYA. ★

Observing Reports May & June 2010

Various Members

Saturday, May 8

Kevin Fetter *praised the utility of goto scopes on the RASCals list*: Having a goto scope is so nice. When I am sat observing, knowing where I am pointed is so nice. The other night, I came across a unid satellite, that is one that didn't show up in the orbital data file I was using, including the US military ones being tracked. So I was able to follow it across the sky while a program was recording where the mount was pointed at different times as I followed the sat. Later I was able to measure positions of this mystery object, so a orbit could be computed for it.

I also like software, that came with *The Sky 6 Pro*, which allows me to point the mount at different areas of the sky during the night. So by using this software, the mount will track a retired geo sat, keeping it in the field of view of the video system. I simply start the video recorder, and go to work. Then later when I come home, I can find out when the geo sat flashes brightly—no more wasted clear nights, if I am at work that night.

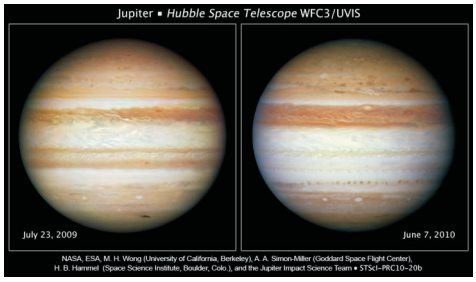
Wed/Thu, May 12/13

Kevin F: Tonight, the undocked progress spacecraft that will stay in orbit until July will pass by, followed a short time later by the ISS. I observed the progress passing by, it was easy to see on the TV:

kfetter.com/satvideo/2010/may/36361.wmv

Kevin Kell: We captured the ISS pass on the all-sky camera last night but did not see any evidence of a detached object...could have been too dim.

Around this time it was reported that Jupiter's South Equatorial Belt (SEB) had gone missing! This should add some excitement to this year's Jupiter observing season. Is the Great Red Spot more prominent because of this? Be sure to get out and have a look! Will the SEB stage a comeback this summer? Stay tuned! (By the way, this hasn't happened since the early 1970s.)



Thursday, June 3

The next Jupiter surprise came from ***Anthony Wesley*** *of Australia and* ***Christopher Go*** *of the Philippines with their video footage of yet another Jupiter impact. Wow!*

astro.christone.net/jupiter/jupiterimpact.wmv

Thanks to automation, planets can now be continuously imaged by amateurs to catch things like this. Professional astronomers are now rethinking their ideas on the frequency of these events, so these observations are definitely having an impact! *Also, since this object impacted south of the SEB, it is a clear case of* hitting below the belt!

Sun/Mon June 6/7

Ken Kingdon: This morning just after 2 a.m. EDT, I easily saw Comet 2009/R1 (McNaught). It is magnitude 7 currently.

Its round coma was very bright, and I spotted a nice long tail using an 82mm refractor. It could also be found with 8x32 binos, although larger binos will show it much better. My observing was from my front yard facing a blazing streetlight 8m away...so if you observe from a rural site, this comet will be great!

For the next two weeks, it will significantly brighten by two magnitudes as it moves westward and low (altitude 10°) across our northern horizon. Then, just after it gets near Capella on June 21st, it will very quickly dive southward out of sight as it makes its fast perihelion passage around the Sun. Two weeks is not long!

I believe that it will be the best comet we will see during 2010. Hope you get a look.

Tue/Wed, June 8/9

Walter MacDonald: There is a nice Mars-Regulus conjunction out there this evening! They are very close in magnitude but very different in colour—a nice contrast.

Hank Bartlett *observes*: I don't want to make too much of this, but as astronomers we find it so easy to spot these occurrences and see them as something different in a night sky that so many others see as unchanging—with the exception of the Moon. Makes one feel a little special.

Mark Kaye *remarks*: No worry about that, Hank. We have always thought you were a little special...☺

Hank *replies*: Just like you to jump in there from the void and support a fellow astronomer! tHANKs!

After a great hockey game, Di's dog decided she could hold it no longer and she (the dog) and I went outside. Although there was a light mist falling I looked north and northwest (the darkest visible parts of the sky from my location) and was surprised to see the cloud "glowing." I checked spaceweather.ca at the time and it read "unsettled" for subauroral. I surmise and you may too from the

image above that we were getting whacked in the NW!

Mon/Tue, June 14/15

Walter: Tonight marks the 30th anniversary of my first session with my C8! Once again, Saturn (rings closed) and Mars are low in the west at dusk, with Venus replacing Jupiter this time around. How well I remember seeing Saturn with no rings in 1980 and being quite disappointed! Now I think how lucky I was to see that!

I set my alarm for 2 a.m. with the intention to get up and poke around Sagittarius, but I was so tired I slept right through it. Oh well, still plenty of summer left to do that.

So here I go, into just my 2nd Saturnian year of telescopic observing. Happy birthday C8—and many more!

Thu/Fri, June 17/18

Kim Hay: Last night I checked the *Starry Night Pro* 3.12 version for the comet to take a look. The early evening comet would be difficult to see from our house, so I opted for the early morning viewing.

Deciding the best time to view would be around 3:00 a.m. However, upon waking up at two other times, and finally at 3:30 a.m. I took the 17x80 binoculars outside and panned the NW/N/NE horizons.

Of course it is still a tough area to see anything, due to large trees and houses, but the only cloud bank in the sky was in this vicinity. The morning is so calm and peaceful. No wind, temperatures around 10C—very comfortable.

So while there, I took a look at Jupiter, Sagittarius, rho Cas, still the same brightness at 4.9 I just stood and looked at the sky, it has been a long time, and it was time to get reacquainted.

I panned the skies for 30 minutes and could find nothing. It was a no-go for the comet; perhaps again tonight and tomorrow morning.

It is amazing how bright it is by 4:00 a.m. This ended the search for the comet, but enjoying the sky just the same.

Susan Gagnon: I was out at 2:30 and was also unlucky. The area of the sky was very easy to get at but the level of humidity and a light glow in that direction prevented spotting it. It was a nice morning to be out though.

Ken: Try to say "sulky skulker" fast, three times in a row. If you think that's hard to say, just try to see it! This comet is just that...it skulks low along the NE horizon, and sulks amidst clouds that keep it concealed.

Clouds have prevented seeing this nicely tailed comet since June 7th, when I used a 3-inch refractor. At long last, the forecast of excellent skies for early morning Friday, June 18th encouraged me to visit a dark-sky site with my 12.5-inch reflector to get a grand view. I chose a site near Adolphustown, only 30 minutes west from my light polluted backyard in the city. Because it's orchard country, and there are nil lights anywhere looking southward over Lake Ontario; it's indeed very dark there.

I got permission last March, but this was my first visit to this site. As I parked my car at 1am EDT Friday, I jumped out for my first really good look at the summer Milky Way. Ohmygawd, a stunningly bright patchwork along The Great Rift greeted me, and there were nil mosquitoes in this well-drained apple orchard!

I had an hour to wait for the comet, so I searched for a dark nebula, which is also a good check on the sky quality of an observing site. I had the perfect test-target, Barnard 92 in M24, the Small Sagittarius Star Cloud. I enjoyed "Messier-hopping" from M16, M17, to M18, and found dark B92 close by—what a great route to kick things off with. Finding B92 confirmed that this nearby observing site is excellent.

On July 4th, 5th, and 6th the dark nebula B92 will provide the essential black background to confidently see Pluto crossing this black void in a part of Pluto's orbit where a zillion stars now make finding Pluto extremely difficult. The last good year to confidently see Pluto was 2003, before it began to transit the Milky Way, from which it will not emerge until 2017...so July 4–6th is a golden opportunity for an easy sighting. That's if the sky is clear and not light polluted! I recommend that you test your observing site ASAP for finding B92, and plan accordingly in advance. I know where I'll be on those few July nights.

Having time to observe some more, I noticed the cluster NGC 6603 near B92, and it was very nice (at home it is poor). Kepple & Sanner rate it 4 out of 5 stars, which is quite impressive from a dark site. You can see this crowded cluster with Pluto on June 18th moving toward the narrow B93, then eventually tracking to the larger, darker B92 in the top-left corner as shown in this recent animation: pictorobservatory.ca/Pluto1-L.swf

At 2 a.m., I selected 3 eyepieces for beside my observing chair, and leisurely aimed for that sulker comet. Not there. Grabbed an even wider eyepiece. Not found. I searched until 2:40 a.m., could not find it, and began to sweat. Through the eyepiece, the sky was starless along the NNE horizon. I then realized that, despite an encouraging forecast, there must be clouds in the distant NNE, and sadly knew that any observer in the Kingston vicinity or further east, had no chance of sighting the sulker. Despite my being far westward from those

Continues on page 9...

clouds, I had plenty of reasons to remain pessimistic, since it was now 3:05 a.m., and first light would arrive in just five minutes. I hoped that this sulker comet would rise above the far-distant cloud line, and at 3:09 a.m., I finally saw it. WHEW...that was close!

What a COMET! At magnitude 5.7, it was very brilliant white, and even the tail was so brilliant I could not look through it. I changed to higher power and followed the tail out, then quickly changed to an eyepiece with a Swan Band Comet Filter, which defined the outer filaments of an ion-tail that extended for about 1½°. It was now 3:20 a.m. and twilight was a fact. But no problem...that comet was so bright I could see it to beyond 4:10 a.m. That's ONE HOUR INTO TWILIGHT! I even could see the Milky Way until 3:55 a.m., and it was better in twilight than my backyard is in total darkness! Until light pollution is greatly reduced, it's a lot nicer to travel a short 40 km to a truly dark site, a rare location in an era of large metropolitan cities.

During the twilight hour, the clouds in the NNE became visually apparent, and when I got home 30 minutes later, I estimated that the cloud line was somewhere between Joyceville and Gananoque—close enough to block the view from the vicinity of Kingston.

The dawn ride home had such beautiful scenes to start the day. An anchored sailboat with sails furled on a glassy-smooth lake with Loons calling in the distance; a slow-motion "fog cataract" draining down a rock-cut; trees and cows standing in field with fog a metre deep yet nothing else was visible in this surreal scene. A dawn drive is a rare treat to start the day, and it made a fine inauguration for my new observing site.

Hank: Thank you Ken, this was an e-mail I have been anticipating all month! I knew that you would come through with an excellent observation and report. Kudos to you for your persistence!

Sun/Mon, June 20/21

Kim: Well, I tried again this morning, it was low in the NE, along with cloud and transparency that was not good 3/10, no wind, 17C temp.

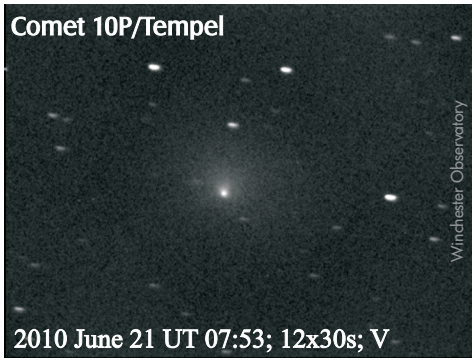
Up at 3:00 a.m., Capella finally broke through the cloud. From the map printed out last night , I used the 18 x 70's and 10 x 50's to get a view. The comet was just a small white dot. I could see no tail, but the skies were not the greatest. This comet was only 1° from Capella, so it could not get any easier to spot. It was 1° to the west, at an 11:30 position. We used Starry Night version 3.12 with updated elements.

This comet has been eluding us all week. On Thrusday, up too late, it was too bright to see, Friday, cloud, Saturday a.m., fog, cloud again on Sunday a.m.

Walter: My plan was to sleep in the evening and then image Pluto and a few other things, plus image and bag The Comet visually as well. Insomnia changed that plan, so I got up and watched an hour of DVD and an hour of YouTube. Periodic checks of the sky revealed a lot of cloud floating around, but by 2 a.m. it had cleared out.

So I grabbed the 7x50 binocs and found a couple spots on the street where I could see Capella, but I could not see the comet because of interference from street lights. So I walked to the edge of town, just past the last street light and managed to see The Comet! It was more of a detection than an observation given the poor transparency near that part of the horizon. It was just shy of 3 a.m. and The Comet was only 8° up. I was still happy though, since there was lots of cloud hugging the southern horizon.

Returning to the house, I fired up the dome and imaged another bright (and much better placed) comet in our skies: Comet 10P/ Tempel, which is at magnitude 8.4 in Aquarius (according to ECU), less than 15° from Jupiter.



Finally, with twilight well advanced, I tried to image C/2009 R1. The comet was at 14° altitude and the scope tube was right at the bottom of the dome slot (I had to override the horizon limits to get there!). Unfortunately it was also behind a tree, so no joy. Perhaps someone in KC with lower horizons can get an image?

Mon/Tue, June 21/22

Kim: Thanks for the note on the Tempel comet, I hope you have better luck than I in the clear sky department.

Up at 3:15 am with binoculars and new map in hand, I stepped out to very poor transparency 1/10. Jupiter was hardly visiable, Capella a wash-out. But the choir of bullfrogs in the neighbours back pond was wonderful. A slight breeze and 14C, a nice morning.

Another wash out for C/2009 R1 and Temple P1. Well go grab another hour of sleep before the work alarm goes off.

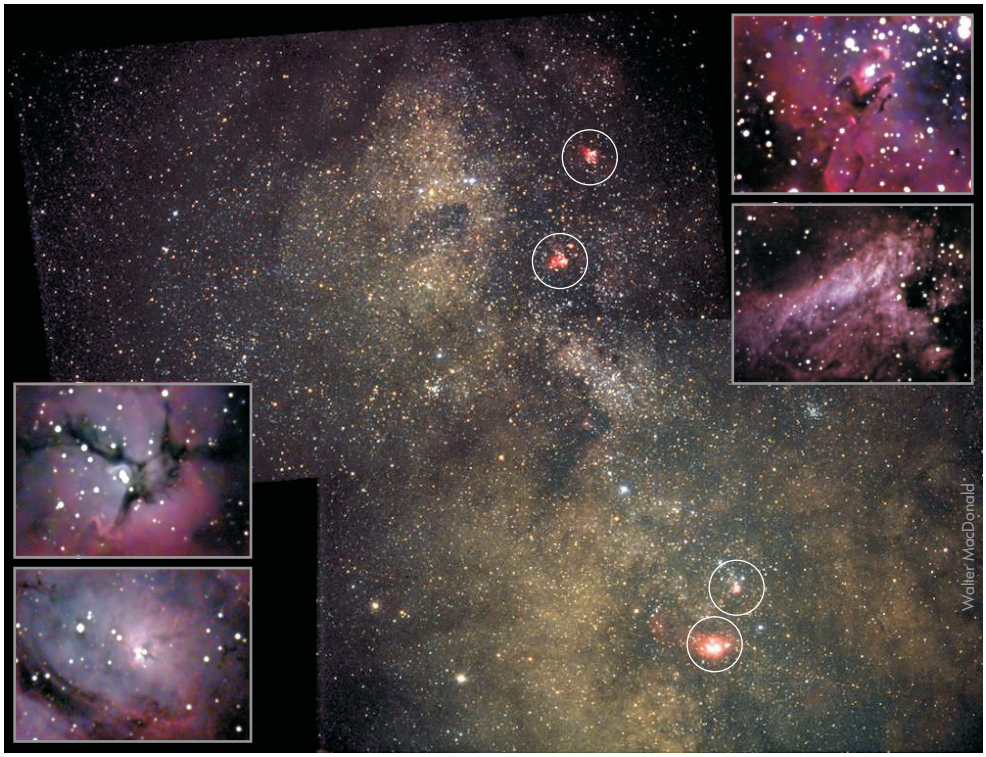
Walter: It was not to be. CSC changed yesterday afternoon from perfect all night to crappy after 1 a.m. I got up at 1:30 but there was thin

cloud over most of the sky. Murphy strikes again!

Wednesday, June 23

Walter: A very exciting terrestrial event occurred today at 13:41:41: a magnitude 5.0 earthquake! The epicentre was 56 km NNE of Ottawa at a depth of 16.4 km according to the USGS. It started out gently enough and then quickly ramped up to quite an intensity. It lasted for more than a minute. There seemed to be a fair bit of bass rumbling with this one which I have never experienced before. As usual it takes a few seconds to rule out other more local causes before you realize that it is, in fact, an earthquake

This is the third earthquake I have felt in Winchester since 2002. Hopefully it has not affected the polar alignment of my rooftop pier! ★



The best thing about summer is the Milky Way!

Many Comets Originally Formed in Other Solar Systems

Press Release

MANY OF THE MOST WELL KNOWN COMETS IN HISTORY, including Halley, Hale-Bopp and McNaught, may have been born in orbit around other stars and not the Sun, according to a new study by Queen's University astronomy professor Martin Duncan and an international team of astronomers.

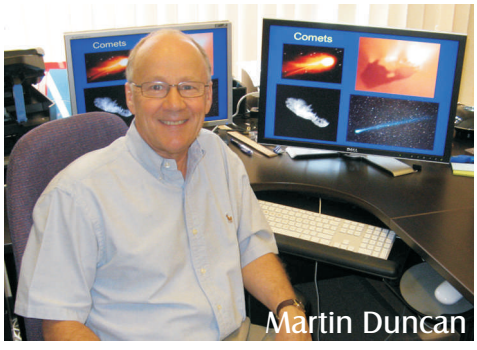
"Anyone who has seen a long tail comet in the night sky may be looking at material from another star," says Professor Duncan.

The researchers used computer simulations to show that the Sun may have captured small icy bodies from its sibling stars while it was in its birth star cluster, and this created a reservoir for observed comets.

Although the Sun currently has no companion stars, it is believed to have formed in a cluster containing hundreds of closely packed stars that were embedded in a dense cloud of gas. During this time, each star formed a large number of small icy bodies (comets) in a disk from which planets formed. Most of these comets were gravitationally slung out of these prenatal planetary systems by the newly forming giant planets, becoming tiny, free-floating members of the cluster.

The Sun's cluster came to an end when its gas was blown out by the hottest young stars. The researchers' computer models show that the Sun then gravitationally captured a large cloud of comets as the cluster dispersed.

"The process of capture is surprisingly efficient and leads to the exciting possibility that the cloud contains a potpourri which samples material from a large number of stellar siblings of the Sun," says Professor Duncan.



Martin Duncan

Evidence for the team's scenario comes from the roughly spherical cloud of comets (called the Oort cloud) which surrounds the Sun. Exactly how the Oort cloud was created has been a mystery for more than 60 years.

"We have a new model of how the Oort cloud formed. We're not the first to suggest this could happen but we are the first to show it in a detailed computer simulation," adds Professor Duncan.

The research team also included Hal Levison and David Kaufmann (both of Southwest Research Institute in Boulder, CO) and Ramon Brasser (Observatoire de la Cote d'Azur, France). Their findings, "Capture of the Sun's Oort Cloud from Stars in its Birth Cluster" was published today in the online journal *Science Express*. ★

...Relay for Life

...continued from page 3

had never looked through a telescope. Some that were blown away by seeing Saturn, though it's so far away. Some that kept coming back and bringing someone new every time. There were over 700 people there on Friday, many teams walking for their teams to fight cancer. People had their heads shaved and hair cut for wigs for cancer patients. One lad had very long hair for over three years and donated the hair to cancer, he raised over $600.

At first many did not know why we were there. "We are here for you," I said, and we were thanked many times for coming, that this was such a great idea.

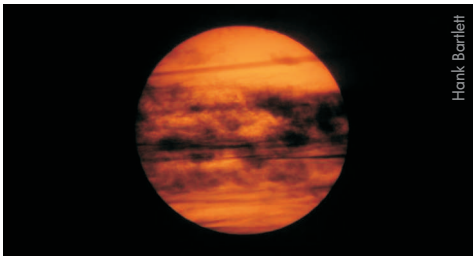
The clouds got thick and heavy and we packed up around 11:00 p.m. By the time the vehicles were loaded at 11:20, the rain started, and it continued all night.

Napanee is a smaller venue, but it felt closer to home, mainly because we do a lot of our business there, and it is in the community we live in, its people we know, and are touched by.

I think we will definitely do this again next year, we had a great time with the public, and talking to people we knew, and some we just met.

If you ever have the chance to help out, or volunteer for the Relay for Life in the future, either at Kingston or Napanee, I guarantee that you will feel compelled to keep helping, it is a great cause for such a dreaded disease, that many of us are touched by in some way.★

Report by Kim Hay, on behalf of the Relay for Life Entertainment Crew.



Donation to KC Library

Kevin Kell

I HAVE PICKED UP A DONATION of books and magazines from **David Best**, who approached me at an event last year, and just re-contacted me in early June. The books include:

- *The Pan Book of Astronomy* (1964) by James Muirden; Pan Piper Press
- *Astrophotography for the Amateur* (1985) by Michael Covington; Cambridge University Press
- *How to use an Astronomical Telescope* (1985) by James Muirden; Linden Press
- *Astronomy: A Physical Perspective* (1987) Marc L. Kutner; Harper and Row
- *Darkness at Night: A riddle of the Universe* (1987) by Edward Harrison; Harvard University Press
- *Introductory Astronomy & Astrophysics*, 2nd Ed (1987) by Zeilik and Gaustad; Smith-Saunders College Publishing.
- *The Moon*, Patrick Moore; published by the Royal Astronomical Society, 1982 reprint.
- *Fact Finder* space diary, Kenneth Gatland; Crescent Books, 1989.
- *Universe Guide to Stars and Planets* Ian Ridpath and Wil Tirion; published by Universe Books, 1985.
- *Fundamentals of Optics*, Jenkins and White; 3rd edition; McGraw Hill, 1957.
- *The Galaxy and the Solar System*, Roman Smoluchowski, John Bahcall and Mildred Matthews; University of Arizona Press, 1986.
- *Quasars, Redshifts and Controversies*, Halton Arp; Interstellar Media 1987.
- *The Sun*, Iain Nicolson, published by the Royal Astronomical Society 1982.
- *Jupiter*, Garry Hunt and Patrick Moore; published by the Royal Astronomical Society, 1982.

All in all, very good additions to our library. And now, some 'others:'

- *The Fourth Dimension: Sacred Geometry, Alchemy, and Mathematics*, Rudolh Steiner; Anthroposophic Press, 2001, softcover.
- *Applied Engineering Mechanics*, 2nd edition, Jensen & Chenoweth; Mcgraw Hill, 1960.
- *Calculus with Analytic Geometry*, Edwin Purcell; Appleton Century Crofts, 1965.
- *Mathematics for Technical Students*, Part 3, Geary, Lowry and Hayden; Longmans Green and Co, 1958.
- *A New Analytic Geometry*, Durrant and Kingston; Macmillan Canada, 1941.
- Mathematical and Physical Tables, 18th edition, Clark; Oliver and Boyd, 1939, softcover.

There are also a couple of magazines:

- Astronomy collectors edition *Cosmos: Before There Was Light,* December 2006.

Thank you for your donation!★