Orbit

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Now that was one great comet!

Don't you just love the comets that come out of nowhere and are gone almost as quickly? From Hyakutake back in, what, 1995, or IRAS-Iraki-Alcock in 1983 to Holmes this year.

It's just a shame that it came during the month when the weather in southern Ontario is at it's cloudiest.

That was the astronomical highlight around here, anyway.

In other news, we all held our breath waiting for reports from Chile when Steve Barnes and Rob Bodner found themselves being shaken by a mag 7.4 earthquake. Some of the pictures they took can be found on Page 9

Colin Haig and I tried to observe an asteroid occultation. Colins instructional tale can be found on Page 7.

The latest from Carlos Felix, on Cepheus is on Page 6. On Page 5, Andy tells us about a visit to the 1st Tansley Wolf Cub Pack, and there's some astro-bloopers from the web.

This months Software looks at one of the biggest bargais in astronomical software, IRIS on Page 4.

Page 3 has a couple of pictures of Comet Holmes from Kevin Hobbs and Gary Colwell (thanks, gentlemen).

I also had a chance to visit the Chilton building and walk on our newly carpeted floor. What a great job the guys did. Between the new concrete floor, the new pier for the 16" RC, and the carpet, it's a fantastic facility.

Bring on the clear skies of Winter!

Roger Hill

The clean-up Crew!

Paul, Rick and Andy (from left to right) along with picture taker Grant did some pre-winter maintenance at the Observatory on November 17th.

The outhouse needs a new roof, and the gate was patched sufficiently to allow it to survive until the spring.

It also seems that Grant has discovered he has a TV 102 in the last few weeks. Hopefully, we'll get a chance to look through it soon (if the clouds clear up). Anytime you get a chance to have a look at the sky using one of Uncle Al Naglers objectives, do so. It's always worth it!

Comet Holmes.

Like nothing we'd ever seen before!

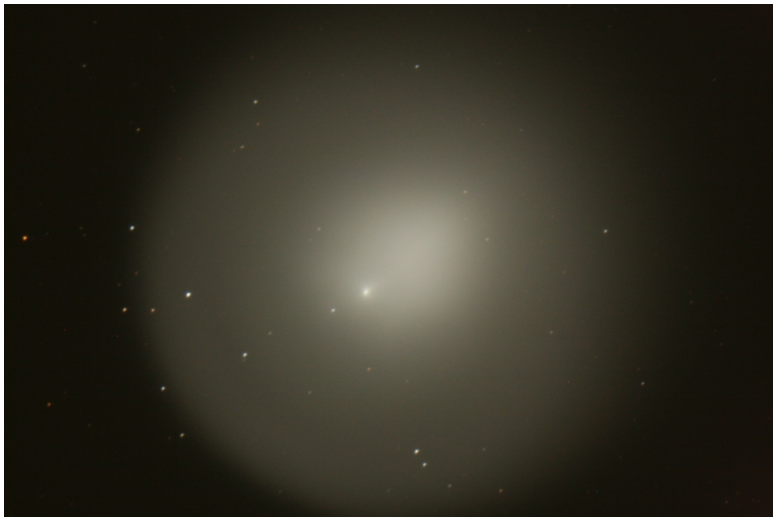
On October 24th, periodic Comet Holmes (17P) brightened dramatically — by nearly a million times — virtually overnight. For no apparent reason, the comet erupted from a very dim magnitude 17 to about magnitude 2½. Within a day its starlike nucleus had expanded into a perfectly round, bright little disk visible in binoculars and telescopes. It looked like no comet ever seen.

It grew, all through November, and when the sky allowed, we were treated to some wonderful views.

Several people sent in pictures. The one on the front cover was taken by Steve Barnes in Chile, and one of the other members of the project he's working on sent it to a Finnish astronomy magazine, where it was the front cover photograph.

This is from Gary Colwell and was taken from Split Rock Observatory, his dark sky site, near Perth.

Gary used a Canon Digital Rebel through his Megrez 110, and is a 45 second exposure at ISO1600 on November 17th



This image is by Kevin Hobbs, using a Canon 30D through his Celestron C-14, and is a 1 minute exposure from November 2nd.

Software of the Month

Which doesn't mean it's good, just noteworthy.

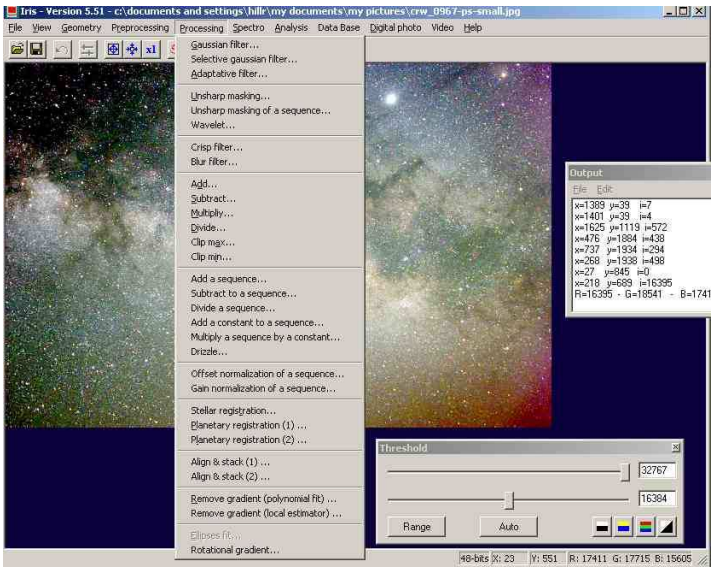
This month, a quick look at IRIS.

This is software that I can enjoy. It's free! It does have a downside, though. It is extraordinarily complex.

I must admit, though, that virtually no matter what you want to do with your digital images, IRIS is capable of it. There's a huge amount of documentation, all written by people who use it on a daily (or nightly) basis. Here's a list of tutorials:

Open and display an image file
Adjust aspect of a B&W image
Adjust aspect of a color image
Save an image file
Filtering
Stretching
Geometric transformations
Preprocessing of grey level images (1/2)
Preprocessing of grey level images (2/2)
Make B&W master frames
Align stellar images (automatic methods)
Align stellar images (manual methods)
Special alignment functions (field rotation, ...)
Stack a sequence of images
Diphering and optimal addition of a sequence of images
Preprocessing of Digital SLR camera images
Remove gradient of the sky background
DSLR roadmap (preprocessing 2)
Color / B&W conversions
Load and display a Digital SLR image
Split a CFA image
Color techniques
(L)RGB techniques
Console commands and scripts
Photometry
Astrometric reduction
Sun processing
Planetary processing
Cosmetic corrections
Atmospheric turbulence correction
Wavelet analysis and noise filtering
Deconvolution
Blinking and animation
Spectra preprocessing
Image selection
Modelisation by ellipse fitting
Polarization analysis
Defringing
Flat-field extraction from science images
Optimal subtraction
Control of an equatorial mount
Remote control of a DSLR camera
Processing of cometary images
Correct optical distortion
Produce High Dynamic Range images (HDR)

The single biggest problem with IRIS is the huge learning curve. With so many people contributing to it, both with the documentation and the interface, it very much looks like a program designed by a committee. It does not act like any other piece of software you've ever seen, and some of it's internal conventions seem bizarre.



Apart from the sheer power of the program, there are two other things about it that are truly noteworthy:

1) A zipped download is only 3.6 megabytes in size.
2) It's free.

So, bottom line, can it really be classed as great software? No. Not until one person has gone through it and cleaned it all up. Adding standard conventions (like UNDO) would be great, too.

However, there's no denying that if funds are tight, and you're looking for a program that can do it all, then IRIS is fantastic.

The Hamilton Centre goes on Tour!

Andy Blanchard

Saturday Nov 10th saw Hamilton RASC paying a visit to the 1st. Tansley Wolf Cub Pack. We received the invitation to attend their cub camp in Guelph and they asked if we could provide an astronomy night. In preparation for this activity I contacted RASC Canada and obtained the wolf cub astronomy and star requirements. I then spent a little time to create a picture show of the moon, planets, constellations and some deep sky objects. My intention was that should sky's no allow for a visual star gazing, perhaps we could have an indoor session.

Well as it turned out the night was cold and clear. The Cub leader asked that I start the program with the indoor show as the boys had been out all day and were a bit tired and cold. After about a one hour Q&A the boys could not wait to get out and have a look through my 10"RCX. I started off showing them M15, M31, the double cluster and finished off with comet Holmes. I am not sure who enjoyed the show more me or the kids.

When it was time to wrap-up at about 10:30 the ground was frozen, so much so that the legs of the tripod had become stuck to the grass. After I managed to pack everything into the truck I was invited in for hot chocolate and a hearty Tony the tiger cheer from the boys. I would have to say the night was an overwhelming success resulting in great memories for a lot of new amateur astronomers.

Each Cub Scout received the necessary requirements for their astronomy badge, one tick for each of the following stars, black, green and purple. We have many more presentations scheduled and if you would like to participate please let us know.

Astro Bloopers *culled from sci.astro.amateur and other newsgroups*

From: *Stephen Tonkin (astro at aegis1 dot demon dot co dot uk)*

There is the tale of a science teacher who decided to test the benign version of Sod's Law (the full version ends "...except when dropped for the purpose of proving the law.") and got a class of 30 pupils to toss a slice of buttered toast into the air. True to form, 29 slices landed butter-side down. The 30th landed butter-side up...on the ceiling.

I presume that there are astronomical variations on this law. I am aware of Waldeman's Laws, which I repost, and I note below that some obvious astronomical variations on some of the better-known Laws of Bloody-Mindedness of Inanimate Matter, but can anyone suggest others?

1st Law: The skies are never clear within 3 days of new moon, since there is not enough solar energy reflected off the moon to dissipate the clouds.

2nd Law: Rare astronomical events usually occur within 3 days of full moon and/or within 30 apparent degrees from the sun (gravitational interpretation of Murphy's law*).

3rd Law: When observing, the object you want to see will always be below the horizon or less than 10 degrees from the horizon with the most light pollution (since frustration is related to entropy, it must always increase).

4th Law: Supernovae, comets, and asteroids are always discovered by someone else (because no matter where you are, the sun will always set earlier somewhere else, and therefore someone else will find it first).

5th Law: 90 percent of meteors occur behind you when everyone else is facing you (so they can all say, "ooh!... You missed a good one!)

Mythology and Cosmology

By Carlos Felix

This month: CEPHEUS

Mythology

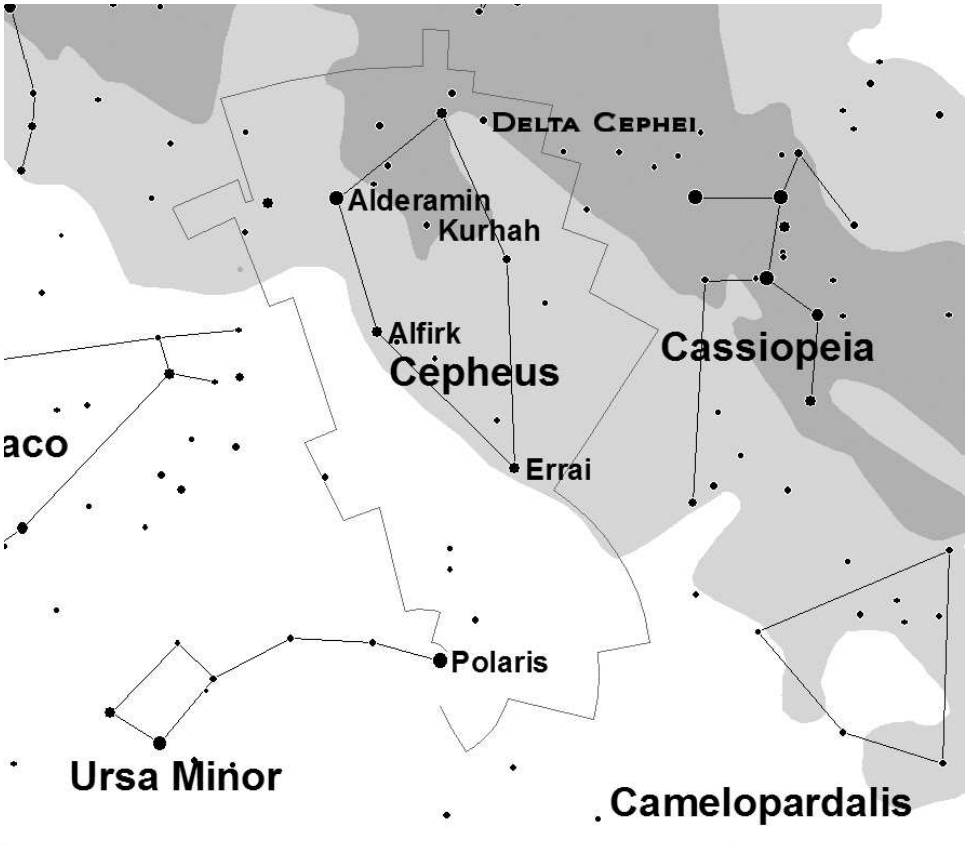
Despite the constellation Cepheus' relative dimness in the sky, its mythological prominence lies in that its story is interrelated and undivided from that of many nearby constellations. Its eminence, although not in the brightness of its stars, lies in that it is a regal constellation. Cepheus is the only king in our skies. Perhaps this is why he was placed in a preferred section of the sky, which is visible all through the year. Genealogically, he was the fourth child of Io, with whom Jupiter had an amorous encounter. And being a relative of Jupiter necessarily merits a prominent place in the sky. Mythologically, he was nominally the king of Ethiopia, although Ethiopia was not what it is today, but rather a land far south.

Cepheus' vainglorious wife, Cassiopeia had proclaimed herself to be more beautiful than all the sea-nymphs, the Nereids. This of course, incited spiteful feelings among the offended Nereids, which resemble mermaids, who understandably took umbrage at this. They, thereupon, petitioned Poseidon to revenge their slight. To appease his sea-nymphs, he sent Cetus, the whale, to continually ravish the shores of Cepheus' kingdom. The destruction of people and edifices, and the collapse of the economy with the ruin of the commercial shipping, was unendurable. Cepheus sought the advice of the oracle of Ammun who advised him that nothing could allay the sea-monster's wrath, but the sacrifice of his daughter, Andromeda.

(The remainder of the story will be more fittingly continued in a following article on the constellation, Andromeda.)

COSMOLOGY

The constellation Cepheus pictorially resembles a house. Noteworthy about the constellation is that it's stars in turn will inherit the privileged distiction of representing North. Thus the torch will pass from Polaris to Cepheus. And sailors (whose GPS at sea fail) will, in future, chart their courses and plot their locations according to Cepheus, instead of Polaris. Just as in 2007, north is descried with Polaris, in 4000 A.D., the responsibility will be supplanted by Gamma Cephei. In 6000 A.D., Beta Cephei will be the North Star. And in 8000 A.D., Alpha Cephei will indicate North. No other constellation will have so many of its family of stars assume the role of a north beacon. Also of cosmological note is that Delta Cephei is a pulsating supergiant of a star that varies in brightness in 5.4 days. And it is the prototype by which astronomers estimate distance.



Tales of an Asteroid Occultation—

At 10:24 AM 2007-11-23, Guy Nason wrote to Colin Haig and I:
Hi, Gentlemen!
Do any of you have designs on the Yrsa occultation tonight (actually01:04 EST Saturday)? (See my post to the RASCals list on Tuesday, Nov 20 at12:25pm.) The path crosses centrally over Guelph and Milton and just to the north of the Hamilton Observatory.

So far we have committed coverage at 67 km north, 30N, 27N, 8N and 1S (all in Ontario) and probably 10S and 25S (in the USA). Currently I'm aiming at ~1S (Rattlesnake Point), but I'm mobile and could go anywhere the clouds allow. If you participate, then I can fill another gap elsewhere.

I am cautiously optimistic about the weather; the Clear Sky Clock indicates clear skies in the Hamilton to Kitchener area, but lake-effect streamers are possible. Therefore, we need all the coverage we can get. Please reply soonest.

Carpe noctem!
Guy

Here follows Colins tale:

Hi Roger, Guy, Harry,
I thought I should share these fabulous photos with you.

First I had to knock the icicles off the roof to get to the door of the StarShak.

Next, the roof was frozen shut, due to ice dam at the weatherboard/top of rail section. First time that ever happened. Fortunately, I had the BIG wrench in the shed that I use to tighten the pier bolts. A few hard whacks, and no more ice problem!

Charge camcorder battery. Reset camcorder time.

BBBBBRRRRrrrrr its cold. The power wires are almost too stiff to bend.

The scope wouldn't get a GPS lock. So, go set the time manually. Oh, but then the DST hasn't got fixed. Oh and the batteries in the atomic clock are almost dead. Run in the house, replace them with lithium AAAs so they dont die in the cold. Okay, wait wait wait - radio signal detected - we have time within 1sec. Now back to the scope... set the time. Adjust the DST setting. Good!

Slew to Capella. Hmmmm... that's off, a lot. Stuff in eyepiece and diagonal. Polar align scope. (this takes a while to get it to my satisfaction)...

Right. Slew to Capella. Slew to Mirphak. Slew to SAOs in the neighbourhood. What's that thonking noise? Sounds like gear slippage. oh no...

Hmmm... lets run the scope back to capella. PC164+f3.3 reducer in - and centered first time!

Gee, the stars are distorted. Collimation time! With gloves on.. Not good. Take gloves off. Fixed it good enough. Stars back to round. Slew to Mirphak (Alpha Persei). Its nearly overhead. Tweak collimation a bit.

Focus focus focus. Mirror lock.
Slew to Betelgeuse. High precision ON.

Slew to M42.
Nair al saif? never heard of it. must be that bright one south of M42.
Enter. M42. Right on the centre of the camera field! Perfect. Now what?

More tweaking. Hmmm. Trapezium faint star not really visible. That's odd. Its mag 6.??? so should be popping on the camera.

What am I forgetting?
Have a peek at corrector. Frost!????! @#!$#@#$%^!

Dew controller not on. Dew controller not there. Where oh where dew controller???? On workbench from months ago when it blew up.

Now about midnight.

Point scope to rough area of star in question.
Fire up soldering iron. Add bypass caps. Check on oscilloscope. dew controller semi functional.
Tweak, fix, repair, solder. Check on scope. GOOD and HAPPY. Run outside.

Plug it in. Frost getting bad.

Low battery??? What?

Change from main marine battery to portapac. Low battery??? Fine. Jumper corrector heat to fixed output. Heating.

Time: 12:55.

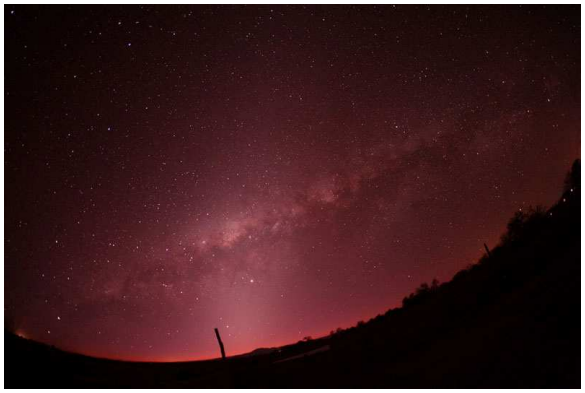
Not enough heat. Too slow. Faint sky spooge detected. Noooooooooooooooooooo!

In the News…

Steve Barnes and Rob Bodner went to Chile at the beginning of November (Steve Barnes is still there at press time). They survived the earthquake, and Steve sent back these pictures. I've been told there will be more at the January meeting, but until then, I hope these whet your appetite. Enjoy!





The top two are of Eta Carina. Middle left is the Large Magellanic Cloud. Middle right is a wide angle of the Large and Small Magellanic Clouds. Bottom left is a wide angle shot of the winter Milky Way, and bottom right shows the Zodiacal light.

Please visit our website! It is found http://www.hamiltonrasc.ca
Send an email to Mark Kaye (see the director's list below) to join the centre mailing list.
See http://www.rasc.ca/computer/rasclist.htm for the national list.

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For all the latest in events going on in the Hamilton Centre, visit the calendar at
http://www.hamiltonrasc.ca/forums/cal_lite.php?cl_m=11&cl_y=2007

December 6	General meeting at the Steam and Technology Museum
December 12	Board meeting—Contact John Williamson for details.
December 13/14	Geminid Meteors
December 14	Observing at the Observatory
December 15	Observing at the Observatory
December 18	Astrophotography group at the Observatory—See Andy Blanchard
December 24	Mars at Opposition, Full Moon
December 30	Deadline for submissions to January Orbit—See Roger Hill

From Highway 6 North of Highway 5 in Waterdown,
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 stopsign.

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