

ORBIT

The Official Publication of the Hamilton Centre

RASC Hamilton Centre

July/August/September
2004

Volume 37, Issue 7
ISSN 1191-2774

Message from the President

Welcome back from summer. While the weather this past summer wasn't the best I did manage to get some observing done (between the clouds). We had a great BBQ at the observatory in July with some great food (thanks again to Mark Kaye who did a wonderful job as usual on the barbee). We had a couple of summer meetings at the Paletta Lakefront Park in Burlington. Also we had a good contingent of Hamilton Centre members at Starfest this year. The weather finally co-operated on the Saturday night and we had a great night of observing (and photography for those like me so afflicted).

The new telescope will be ready for delivery late this month and there is still work to do on the dome. We will need to organize a work party (or 2) to complete some of this work and I'd ask that you sign up to help if you can (or contact any of the board members). The CCD camera has been ordered and should arrive sometime next month. This promises to be an exciting time for the club in the coming year.

Summer Picnic Success

Hamilton Centre members turned out in good numbers for the July 10th, 2004 picnic. Many members brought their families and friends out for a sunny afternoon at the Observatory. This year, many younger folks were treated to a video of the solar system with the theatre big screen projector and awesome surround sound. Many members brought their partners and children, making for a good turnout. At the peak, 30 or 40 people were munching on hot cooked

The By-law committee has met several time this summer and have proposed some revisions to the centre By-laws that will need to be voted on at the October meeting. Please have a look at the proposed changes and let us know what you think. Next month (October) is our Annual General meeting where we will elect a new board. Please consider joining the board and helping make this centre the best it can be. Clear Skies,
Steve Barnes

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The Centre BBQ was a big success with family & friends in attendance for one of the fairest weather days this summer.

BBQ goodies, salads and more. Desert was plentiful, and eyes were as big as the plates to put it on. A few of the members brought their telescopes and solar viewing filters. Several members showed off their equipment, walked some of the newer astronomers through setup and alignment during the day, and then treated them to spectacular views of the sun. A few small sunspots were evident, and the newer Baader

Summer Picnic Success (continued)

solar filter material appeared to be widely used, with many scopes sporting a home-made filter holder.



Smiling faces and lots of discussion in the food line—just one more hotdog for you ?

bottle. Burgers and sausages were consumed by the dozen, and Mark's secret all-natural recipe made them the best tasting ever. A few of the little ones could be seen with milk mustaches, mustard fingers, and chocolate just about everywhere else, except inside their tummies!

Later in the afternoon, after the Chef has his own meal, the BBQ

The food line continued well into the afternoon, with Mark Kaye and a band of merry members dishing it up and trying to get every last drop out of the ketchup

was shut down, and a lot of laughter ensued.

Several friends of the Centre donated goods for a little raffle. There were about a half dozen

winners, including Shelley, Klaas, Grant, Bert, and others. The best prize was The Sky software, donated by Sky Optics, and was won by Vera Maguire.

Many thanks to all who helped out, and those who attended! Let's start planning for next year!



Chef Mark Kaye at his BBQ operation station

Board Shorts—June

June 2004

This is a short precis of the June 17 Board Meeting, started at 8:00pm at Leslie V. Powis Observatory, designed to communicate board happenings.. Attendees were: Steve Barnes, Grant Maguire, John Williamson, Rob Bodner, Scott Barrie, Colin Haig, Roger Hill, Mark Kaye, Gary Colwell, and absent was Les Nagy. Guests were: Mike Spicer.

The minutes for the May 13th meeting were accepted with a couple of minor corrections.

Past President Mark reported that planning for the BBQ is proceeding well. Colin Haig may take the National Rep duties for the 2004 G.A. in St. Johns. Recorder Roger Hill had no report this month. Treasurer John Williamson reported that we had incurred a small loss of \$61.52 as a result of the Banquet. He also discussed that the insurance is now due and is \$1082 for the upcoming year. A suggestion was made to increase the value of the building from \$50,000 to \$75,000. This will cost about \$100. In future, if cheques were made out to RASC instead of RASC Hamilton Centre, we can reduce the waiting time for a membership to take effect. The places in our literature where this is noted will need to be changed In a discussion about me m-

bership renewals, it was thought that the 1st Vice President should contact associate members whose membership has lapsed.

Effective this meeting Colin and Grant are swapping jobs. Colin will do Orbit, and Grant the Secretaries job. Job titles will remain the as they are. With respect to Orbit, we did a mailing of Orbit. Collated the Survey so far, and Colin may be able to publish the results in the May Orbit, but will do something for the May meeting.

Maintenance Director Rob Bodnar will update the work list of what is done, and what still needs to be done. A new gate, and the roof are now the highest priorities.

Webmaster Scott Barrie said the June orbit is now available for download.

Orbit Editor Colin Haig (Acting) indicated the May and June issues are done, but some mailings still need to be completed. Email addresses have been made more 'email safe'. Some of the May meeting questions have been answered, and the "Board Shorts" section need to be done for later Board meetings.

Observing Director Gary Colwell noted that two events for beginners observing are in the planning stages one at Mt. Forest

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Board Shorts (continued)

(Continued from page 2)

and one at Gary's place. Public Observing nights with a theme or some other new ideas are being tossed around. Summer meeting nights at Palleta Mansion in Burlington are planned.

President Steve Barnes stated that the new scope is due to arrive either the last week of August or 1st week of September.

Under Old Business the Gate Wire rope and a combination lock will be installed. The lock should be waterproof, with a combination that can be changed. This will be coordinated with Steve and will be done at a work party. On the subject of the Hamilton Centre Annual Banquet, discussion around a golf course would be a better venue, or some place with a lower cost per person.

Trillium Foundation Procurement

Motion 2004-06-17-B

That we issue a Purchase Order for the SBIG STL-11000M CCD Camera to Perceptor. Moved by Mark Kaye and seconded by Scott Barrie. The motion carried.

The By-Law committee consists of Colin and Steve. Some changes are required. Mike Spicer and Keith McColl are also interested. A date will be set for the committee to meet and it will be published so interested parties can attend.

Dome shutter mods should be done soon as we are running out of weekends prior to the new scope arriving. June 26th or 27th is set for the work party. Colin will check in some books he has for a good design.

For the Picnic, Roger will bring another barbecue. The food has been purchased. Things are well in hand. Donations were requested for an auction.

The telescope use committee Will meet June 24th. Colin volun-

teered to chair.

Discussion ensued regarding membership survey results.

[Results were published in *Orbit*—Ed.]

Kudos were offered to Colin for the hard work done.

Under New Business, the

Privacy Issue was discussed, and Motion 2004-06-17-C that the Hamilton Centre adopt the National Office privacy policy was moved by Grant Maguire and seconded by Gary Colwell. Grant will try to write a précis of the policy for Orbit. Some work will also have to be done

around keeping the information in the logbook private, but still useful.

Steve noted that National has a privacy officer who should be contacted.

Grant offered to do so.

Gary will do up a brochure and a flyer for Sidewalk Astronomy nights.

A motion, 2004-06-17-D, that Mike Spicer purchase 4 8"x6" diameter steel

posts for use as piers at a cost of \$10 each was moved by Scott and seconded by Colin, and it carried. Next Board meeting.

The final Motion 2004-06-17-E to adjourn was moved by Roger Hill and seconded by Scott Barrie.



Vera Maguire displays the winning ticket that for The Sky software.

Board Shorts—July

This short summary of the board minutes is to share with you some of the recent activities of the Board Meeting Thursday, July 15th, 2004 at the L. V. Powis Observatory. Attendees included President Steve Barnes, 1st Vice President Les Nagy, Webmaster Scott Barrie, Recorder Roger Hill, Treasurer John



Even the little dippers were out at the picnic!

Williams on, Past President Mark Kaye, Secretary Colin Haig, Maintenance Director Rob Bodner. Absent (with apologies) Orbit Editor Grant Maguire, Observing Director Gary Colwell. Guests: Mike Spicer. The meeting was called to order at 809 pm. The minutes for the June 17th, 2004 meeting were accepted. Reports of Officers followed. Mark reported that the RASC would be raising its rates by \$6. The BBQ was a great success, despite complaints about the mosquitoes. Les said he would try to contact the City of Hamil-

ton to see if anything can be done. John reported that we raised \$160 at the BBQ. Colin reported Meade has promised a 40mm Wide Angle eyepiece as a donation. Dennis Gray sent us a note regarding doing something with the anniversary of the blackout.

We may organize something at Bayfront Park. Colin thought we could probably sell something in the order of 20 2005 calendars. Colin may contact the Hamilton Board of education to see if they are interested in the Beginners Observers Guide, and Sky-Ways. Rob said that the lawn mower is not running well, and won-



Prize Winners and Gary "Frisbee" Colwell

Board Shorts (continued)

dered if it can be tuned? Les offered to check it out. Grant found drawing of the dome, and Rob will make up a CAD-CAM drawing. Les and Rob will come up with a mod to the shutter. The lock for the front gate will be done soon. Rob will approach Home Depot to see if we can get a discount, as we are a charity. He will see about using a membrane system for the roof. Colin, acting editor, indicated more articles for Orbit are required. Les reported that the security computers are up and running. The main computer is running XP Pro (thanks to Colin). The others are a mish-mash of parts from Roger and Les.

In order to address a Privacy Issue, a lock box with a slot that will take 3x5 index cards will be set up by the front door for observations, and Library sign out. Tril-

lium Foundation Procurement The CCD Camera has been ordered from Perceptor. It will take 90 days to deliver. By-Law committee will meet Monday, July 26th. 8pm Observatory. Dome shutter should be done soon as we are running out of weekends prior to the new scope arriving. June 26th or 27th is set for the work party. Gary will do up a brochure and a flyer for Sidewalk Astronomy nights. Telescope use committee will possibly be able to meet at 7pm at Paletta Park in Burlington on August 5th, prior to the next summer meeting. The piers were purchased. There was some discussion around having a movie night at the Observatory, possibly prior to the Perseid Meteor shower on August 12th. The meeting adjourned.

Loaner Scope

Thinking of buying your first telescope but wondering what kind to get? Try a beginner's night at the observatory, or ask Mike Spicer about his "loaner" 5 inch telescope, which is easy to set up and very easy to use. Mike is offering newer members of our club one of these telescopes to try out for a month or so.

Contact him at:

Mike Spicer

DeBeneEsse2001 (at) AOL (dot) com

Bylaw Vote

The membership will be presented with amendments to the Centre's Bylaw Number One at the October Annual Meeting. You will be asked to vote in favour of adopting the new bylaws. Changes include floating membership year, discipline, responsibilities of the board, and other matters. See the web site or contact a board member for details.

Board Shorts—August

The following outlines the recent August 12th board meeting at the Observatory. Attendees Steve Barnes, John Williamson, Les Nagy, Colin Haig; Delayed Grant Maguire; Regrets Scott Barrie, Gary Colwell, Roger Hill, Mark Kaye; Observer Mike Spicer. The meeting was called to order at 8:37pm.

1. Previous Minutes were unavailable due to the Recorder's absence.

2. Directors Reports

a) Treasurer

The proceeds from the GIC were placed in the US\$ account. The balance as of June 30 is US\$33296.72. We have been notified that Sky Optics requires the balance of payment on the telescope. Perceptor acknowledged our deposit on order of the CCD camera.

b) Secretary Grant

Numerous inquiries by phone have been answered. Grant attended an event in Hamilton and stopped by the Bruce trail association, and discussed the Niagara

Escarpment Commission. The NEC role and responsibility has changed. We should follow up regarding the trees on the north side of the property.

c) Les

Computer work is ongoing. The main computer is fixed. Security cameras will be reinstalled. The design on the dome slot opening mechanism is still being worked on by Les and Rob. The tree removal project to address the 7 trees on the North side above the dome will commence after written permission is received from the necessary bodies.

d) Secretary Colin

We received an invitation by the National Research Council to propose an observing project for 1hr of time on Gemini or CFHT telescopes on Mauna Kea. Deadline for our proposal is Sept 30/2004.

National notified us they are applying for a PromoScience grant to aid in education of youth and their teachers, including a French version of SKYways. National also

indicated it wishes to be notified about any grant applications to prevent inadvertent disqualifications.

e) President report

The bylaw committee has met twice, and is making progress and will have a proposal for amendments ready for the september meeting for subsequent approval at the october meeting. The changes for the most part concern the membership changes, including the floating membership year, discipline policy, and other items that reflect current matters.

Old Business

a) Telescope Use Committee

The CCD Camera is expected by late October. The telescope is expected in mid September. The shipping method has to be determined.

An informal meeting of 12 members discussed this at Paletta site. Numerous aspects of the use were discussed. A

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Board Shorts— August (continued)

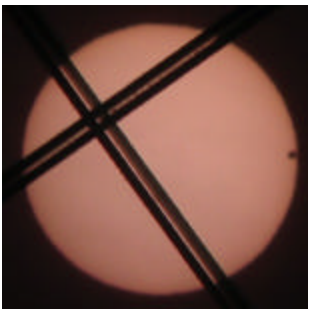
number of recommendations were made. The September meeting should have a presentation from the committee.
New Business

- a) Maintenance - The dome is leaking in the corners.
- b) USB upgrade - The Software Bisque Paramount ME now has an optional improved set of electronics which are more modern, and available as an upgrade for about \$US795. The board discussed this via email, and agreed to approve the expenditure of this amount, and get the state-of-the-art improved mount. Steve Barnes abstained.
- c) Sidewalk astronomy is going to be a problem at the Spencer Smith park due to construction next year. Beach Strip near Hutches in Hamilton would make sense as an option. We may need to arrange for the permit.
- d) National Awards.

The nomination deadline is end of December this year. There are some potential service award nominees. We need to solicit input through Orbit and email.
e) Center Awards.
Several names were discussed for the Faultley award, and one person was selected, and the trophy will be engraved with the previous winner and the new winner. Candidates for the literary award should be solicited.

- f) Telescope Naming
Discussion ensued regarding naming the telescope.
- g) Imaging Processing Computer
Les will investigate a reliable, good performance computer for image processing with a DVD Writer for storage of images.

Meeting adjourned at 9:43pm. Went outside to look for Perseid meteors.



Vernus Transit through 6x30 finder-scope in Milton, ON—CH



Vernus Transit in Hydrogen Alpha, possible only in this century—SB

Keeping in Touch

President	Steve Barnes	Sbarnes(at)worldchat.com
Past President	Mark Kaye	Mark.kaye(at)sympatico.ca
VP, Public Education	Les Nagy	Lnagy(at)thelightages.com
Treasurer	John Williamson	John.williamson (at)sympatico.ca
Recorder	Roger Hill	Roger.hill(at)sympatico.ca
Secretary / Orbit	Grant Maguire	Maguires(at)lara.on.ca
Orbit Editor / Secretary	Colin Haig	astronomer(at)cogeco.ca
Observing Director	Gary Colwell	G1colwell(at)rogers.com
Web Master	Scott Barrie	scottbarrie(at)homeroom.ca
Librarian	Rob Bodner	Robbodner(at)sympatico.ca

Cook, Canada, and the Venus Transit

From inauspicious beginnings as an apprentice shopkeeper in the English sea-coast town of Snaith, James Cook went on to become one of the greatest navigators of his era. He is remembered for many things; for charting much of the coast of what is now eastern Canada; for focusing British attention on the wealth of the Canadian northwest; and for being the first European to set foot on the islands now known as Hawaii.

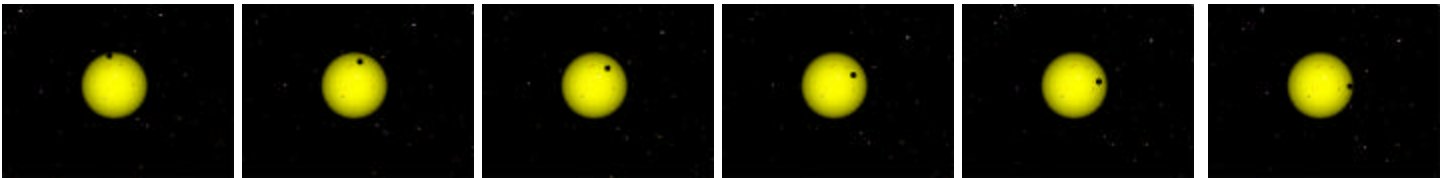
What is less well known about Cook, and something that has been ignored by most school textbooks, is that the motivation

tery (to me at least), but by projecting the image of the sun onto a graduated sheet of paper and plotting the planet's course, Horrocks became the first person in history to record a transit of Venus.

One of the rarest planetary alignments, there have been only 7 such events since Galileo first turned his telescope skyward. Predicting them was not even possible before 1627 when Johannes Kepler published the Rudolphine Tables which detailed the motions of the known planets, and from which Kepler determined that the events occurred approximately

two years, at the age of 22, leaving us to wonder what other discoveries he might have made during what promised to be a distinguished scientific career.

It would be Edmund Halley who saw the significance of Horrocks's work and took the process to the next step. According to Kepler's 3rd law, knowing the separation between two planets or between a planet and the Sun is enough to calculate all the other distances in the solar system. Halley realized that by comparing the elapsed times of the transit of Venus from two sites having the greatest possi-



Simulation of Venus Transit—Churchill

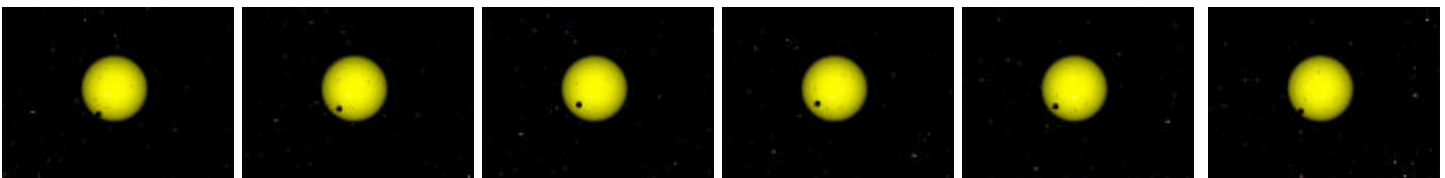
behind one of his most important voyages was neither imperialism, nor commercialism it was science.

Our history books, and many of our science books, too, for that matter, are equally guilty of ignoring the scientific

every 120 years.

Unfortunately Kepler died in 1630, a year before the next anticipated transit. But he would have missed it anyway. His prediction was not entirely accurate. He anticipated that it would occur on the 6-7 of December when it was high across

ble difference in latitude, the variation in the observed transit times could be used to calculate the solar parallax. An accurate value for the solar parallax could be used to establish the distance from the earth to the sun and, by extension, the absolute scale of the solar system.



Simulation of Venus Transit—Tahiti

accomplishment of another British youth that took place some 130 years before Cook was making a name for himself. And, indirectly, his work led to Cook's historic voyage.

20 year old Jeremiah Horrocks accurately predicted that at 3:00 PM on December 4, 1639 (November 24 by the Julian calendar) the tiny disk of Venus would begin a journey across the face of the sun. How he determined that remains a my s-

Europe. In fact, the end of the transit was visible from Central Europe. Nevertheless, there were no known observations.

Horrocks determined that there was another crucial inaccuracy in Kepler's work. By his calculations the transits occurred not singly, as Kepler suggested, but in pairs, 8 years apart. And, it was that realization that led to his 1639 observation.

Sadly, Horrocks would be dead within

Although Halley died in 1742, the scientific community mobilized to observe the transit in 1761. In fact, there were a total of 120 observers at 62 sites. There were problems, however. The Seven Years War was in full swing. Travel problems meant that some of the groups were not able to observe from the locations of choice, and many groups encountered bad weather. All in all, the results were disappointing. Those that did record observations met with a large margin of

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Cook, Canada, and the Venus Transit

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error due to a poor knowledge of the latitude of the observing sites and a phenomena known as the black drop effect.

In addition, observations of the 1761 transit led astronomers to believe that Venus had an atmosphere, a fact that would ultimately limit the accuracy of any observations.

Nevertheless, experience gained from the 1761 transit was used to improve methods for the impending 1769 event. It was observed by no fewer than 151 professional observing teams which were sent to such far flung locations as Fort Chur-

chill on Hudsons Bay and Vardö, a small island in northern Scandanavia. It was also determined that the newly discovered island of Tahiti would be an ideal location due to its southern latitude and its distance from Europe. That expedition was entrusted to Charles Green and an unknown lieutenant by the name of James Cook.

While an absolute value for the parallax was not determined, the scientists did dramatically narrow the margin of error and determined that the parallax lies between 8.43° and 8.80° - a dramatic improvement over the values obtained 8 years earlier.

The last millennium would produce only two more transits, one in 1874 and another in 1882. There would be none throughout the twentieth century. And, up until this year, no one currently alive had witnessed Venus passing across the sun's disk.

But on June 8th, thousands of astronomers, both amateur and professional were glued to their telescopes to watch this most rare of astronomical events, surely making it the most observed event of its kind in history.

- Scott Barrie

Nomination Form

Join the Board! Get Involved! Get your nomination in to the Secretary before the October Annual Meeting!

I, _____, being a member in good standing of the Hamilton Centre of the Royal Astronomical Society of Canada, do hereby nominate

_____ for election (or appointment) to the Board of Directors of the Hamilton Centre of Royal Astronomical Society of Canada, above election to be carried out at the annual meeting.

Nominator Signature: _____

Date: _____

I, _____, being a member in good standing of the Hamilton Centre of the Royal Astronomical Society of Canada, and being at least 18 years of age, do hereby accept my nomination for election (or appointment) to the Board of Directors of the Hamilton Centre of the Royal Astronomical Society of Canada.

Nominee Signature: _____

Date: _____

Associate Members can only stand for appointment to the board in order to full remaining position after the election at the annual meeting.



RASC Hamilton Centre

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We're on the Web!
www.rasc.ca/hamilton

● For the Advancement of
Astronomy and Allied Sciences

October 2004

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Schedule of Events

Regular Meetings are on the First Thursday of the Month at the Hamilton Steam Museum

October 7—General Meeting and Annual Meeting

November 4—General Meeting—
Speaker TBA

Board Meetings are normally scheduled for the Second Thursday at the Observatory. All members are welcome to come and observe the proceedings.

October 14 —Board Meeting tentatively scheduled for 8pm at the Observatory