

FROM THE PRESIDENT

"After putting up with bad weather for months, we seem to getting little breaks in the clouds now to actually use the new telescope. It is nice to see new people and some old regulars showing up.

We had a good January for the most part as we have seem to have drawn some new attention from the public with our newspaper article and a very successful "Get to know your new telescope" public night. About 20 people showed up with all kinds of varied telescopes, from the smallest of table top refractors to 15cm Dobsonian reflectors. Thanks to the help of our members, these people have a new appreciation for the night sky and our hobby. This is the good that we can do as a club. It is really very little work and it is very rewarding to get others interested and see astronomy through new eyes again.

Our new telescope has been working fine except for one problem that seems to plague all of the telescopes shipped to Canada from the USA. Grease! Grease that is unsuitable for cold climates. Once we re-grease the gears we should have as perfect a

telescope as we are likely to ever have.

On a sad note, we have lost a member to ill health. Clyde Edward Sears has passed on and our feelings go out to the family.

I am still hoping to hear from members on their thoughts regarding new projects, the use of the Marsh telescope, and replacing the roof over the new telescope. There are many new activities being planned for public education, and for fund raising. As astronomy is as much a social hobby as it is anything else, it would be a great time to find one of these activities to get involved with.

As always I can be reached at [president\(at\)hamiltonrasc.ca](mailto:president(at)hamiltonrasc.ca), or by phone 905-388-1011

Les Nagy
President, Hamilton Centre"

INSIDE THIS ISSUE

1	<i>From the President</i>
2	<i>From the Editor</i>
3	<i>Canon Digital Rebel</i>
4	<i>Test Your Knowledge</i>
5	<i>Observing Opportunities</i>
7	<i>Board Minutes</i>



Comet Macholtz
Photo by Steve Barnes

FROM THE EDITOR

Being new to the job of Editor, I'd like to extend my thanks to all of you who submitted an article for this edition of the Orbit Newsletter. Editorials from previous editors leaves me with big shoes to fill. I most likely won't be like any editor you're accustomed to. My plan is to allow you readers to fill your mind with events that have happened over the past month or so and dwell on what you will be observing in the future month or so. All this information is found throughout the newsletter through it's contributors (who I hope you all will be). Experienced or Novice, you should always share your ideas, plans, observing sessions, achievements, building efforts and whatever you feel of interest. It's your newsletter, so make it the best you can.

Instead I would like to re-introduce my favourite subject. Those of you who know me, know of my love of

the romanticism of the night sky. The lore behind the constellations and how they were named, their history and grandeur make up a very important facet of this hobby. It is often overlooked. Each month I would like to introduce some passages from Burnham's Celestial Handbook and other sources. Although Burnham's have not been updated for many years, the vast majority of the information in them is still current and useful. If you do not have this three volume set, I strongly recommend you should have it in your library.

Here is my favourite passage which instills in me the very essence of the meaning of the beauty of the stars. **Robert Burnham writes:**
"Considered as a collector of rare and precious things, the amateur astronomer has a great advantage over amateurs in all other fields. Only a few of the world's mineralogists could hope to own such a specimen as the Hope Diamond... In contrast, the amateur astronomer has access at all times to the original objects of his study; the master works of the heavens belong to him as much as to the great Observatories of the world. And there is no privilege like that of being allowed to stand in the presence of the original".

Ev Rilett, Editor



A member of the RASC & Hamilton Centre for 16 years, I've enjoyed countless benefits this club has to offer. Sharing ideas & learning new concepts and then being able to pass that along to new members has always been one of my most important focuses. A hobby which inspires the natural sciences to flourish in many directions.

SCHEDULE OF EVENTS

*Hamilton Steam Museum
hosts our General Meeting on
the 1st Thursday of each
month*

FEBRUARY

*10 - Board Meeting - 8:00 pm
at the Observatory*

19 - Variable Star Workshop

MARCH

*03 - General Meeting -
Speaker & Topic - TO BE
ANNOUNCED*

*10 - Board Meeting - 8:00 pm
at the Observatory*

*12 - Workshop - Steve Barnes
on Astrophotography - tripod
& piggy back*

*Observing Nights - 2nd & 4th
Fridays at the Observatory*

PUBLIC EDUCATION

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

If you are interested in helping out on these special nights, please contact me at the number listed below. It is wonderful to see the look on a child's face the first time they look through a telescope. Also, if you know of a group that may be interested in an evening under the stars, please call me for details and a booking. Clear Skies!

Patricia Marsh, Public Education Director, Hamilton Centre, RASC
905-573-8808 [gassmann\(at\)mountaincable\(dot\)net](mailto:gassmann(at)mountaincable(dot)net)

EOS DIGITAL REBEL

CANON DIGITAL REBEL

It has been quite awhile since my last orbit article, so I figured that it was time to contribute something again. For me, the main attraction of any hobby has always been the opportunity to learn something new. I think that there is no better way to learn about something than by taking it apart! It is even better if you can get the thing back together and working again.



I purchased a Canon Digital Rebel about six months ago and began taking pictures. I have never been much of a photographer, but I found that this hardware actually made me want to take pictures. This camera has generated a tremendous amount of enthusiasm and notoriety, especially amongst astrophotographers. It has proven to be an excellent, cost effective way to produce good quality astrophotos.

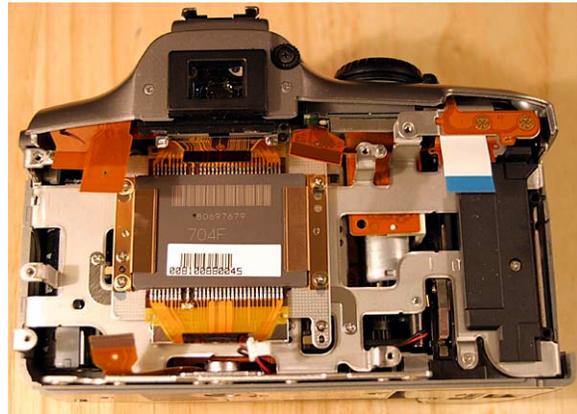
The first modification that I performed was a firmware update. Some genius hacker from Russia named Wasia actually figured out how to "turn on" extra features hidden inside the Digital Rebel that Canon had intentionally suppressed to create a large feature delta between it and the 10D.

The next logical step was to remove the IR filter covering the CMOS Sensor to improve the camera's sensitivity in the red region including Hydrogen-

Alpha. There are many variations on this theme including replacing the standard filter with filters featuring different bandpass characteristics. The downside is that with the filter removed, the camera wouldn't autofocus correctly and would require custom white balance. I decided that I liked the camera too much for everyday use and so I just couldn't bring myself to do this modification.

In preparation for the Winter Star Party, I began to get my hardware in order and ready to hit the road. I had just finished modifications to my C14 along with improvements to my scope mounting cradle to allow my TV101 and Pronto to flank either side of the C14. The plan is to use the Pronto with the STV to autoguide the Paramount ME, leaving the TV101 for wide field imaging and the C14 for narrow field imaging. It occurred to me that it would be wasteful to have two nice scopes pointing at heavenly targets with only imager. It was obviously time to buy another imager. I considered many of the cameras available, but I felt that the ones designed for astrophotography are simply too expensive at this time. I feel that prices on cameras will drastically drop and greatly improve at an incredible rate. The cost effective solution for me was to simply buy another Digital Rebel that could be completely modified and dedicated to astrophotography, especially since I already owned a few lenses, a pile of batteries, and other accessories.

A few days later I purchased a very reasonably priced used digital rebel. A few hours after that, the camera's firmware was reflashed to turn on the extra features and the IR filter was removed. I won't detail the procedure here as it can be readily found on the internet.



Preliminary comparisons at the Hobbobservatory earlier this year between a stock Digital Rebel and a Hutech modified Digital Rebel (Steve Barnes had Terrence Dickinson's camera to review) seemed to indicate that the modified camera required only a little over half of the exposure time to create a comparable image. I am hoping that the exposure times for the modified camera on the f11 C14 will be matched to the stock camera with the f5.4 TV101.

Continued on page 4

One frustrating aspect of the modified digital rebel is getting the initial focus close. The problem is that the viewfinder diopter adjust does not have enough range to compensate for the modification. My solution is to focus the camera using DSLR Focus, then adjust the camera's viewfinder diopter in combination with Angle Finder C's diopter adjust until the viewfinder image is in good focus. After that, it is easy to get focus close since viewfinder's focus has been offset to match the modification.

Now all I need is some warm weather, clear skies, and a lot of time to improve my image capturing and processing techniques.

For more information, simply scan the web and you'll be amazed at the wealth of information available and excellent examples of what people have accomplished with the Digital Rebel.

By Kevin Hobbs

[LIST SERVERS](#)

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

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

[TEST YOUR KNOWLEDGE](#)

In keeping with comet Macholtz presently in the sky, I'll start with these questions.

- Halley's Comet last came back in 1986. What were the dates of its last two previous returns.
- Name the brilliant comet of 1858, usually said to be the most beautiful ever seen.
- Who discovered a – Faye's Comet, b – Encke's Comet, c – D'Arrest's Comet

Check next month for the answers.

(all questions taken from Patrick Moore's Astronomy Quiz Book)

[LOANER EQUIPMENT](#)

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" telescope which is easy to set up and very easy to use. Mike is offering newer members of the club one of these scopes to try out for a month or so. Mike also has an electronic eyepiece for video astronomy.

Contact him at Mike Spicer – 905-388-0602

[DeBeneEsse2001\(at\)AOL\(dot\)com](mailto:DeBeneEsse2001(at)AOL(dot)com)

[HAMILTON CENTRE YARD SALE](#)

In an effort to raise funds for the Centre and for general upkeep of the Leslie V. Powis Observatory, we would like to hold a Yard Sale in the spring.

Any member who wouldn't mind allowing us to use their front lawn or garage for this **Sale**, please contact Patricia Marsh at 905-573-8808 or at [gassmann\(at\)mountaincable\(dot\)net](mailto:gassmann(at)mountaincable(dot)net) for more details.

All members are encouraged to set aside articles they find during spring cleaning that they no longer need. These articles may be dropped off on the day of the sale, and if you like, please feel free to remain and enjoy the day with us. It's a great opportunity for old and new members to meet and chat about astronomy.

There will be telescopes set up, if clear, for everyone to view the sun.

OBSERVING OPPORTUNITIES

New Moon is always a good time to search for "faint fuzzies" and new moon this month will fall on Feb 8th. If you haven't seen Comet Machholz this would be a good opportunity. Currently the comet is about magnitude 5 and fading. To find the comet on the evening of Feb 8, locate the Constellation Cassiopeia, draw an imaginary line through the two end stars (Ruchbah and Segin) and go about 8 degrees further along the imaginary line. With binoculars you should have a large, fuzzy out of focus "star" in your field of view - that's Machholz. During the month the comet will be sailing past Cassiopeia, past the top of Cepheus making its way towards Polaris.

Hint: when searching for faint fuzzies, don't forget to let your eyes become dark adapted.

Another great observing target is Saturn, as it is well above the horizon. On a night of steady seeing, can you see the shadow of the rings on the planet, or the elusive (for my eyes) Crepe ring. How many of Saturns' moons can you see? The February issue of Sky and Telescope (page 68) has a great little chart to help identify the moons.

While you're observing Saturn, why not move your telescope up a little and observe the two bright stars in Gemini. Pollux (the lower star) and Castor (the upper star) are both part of multiple star systems. How many companions can you see ?

On the evening of February 15, a first quarter moon will be just to the right of the Pleiades. A great opportunity for a photo using a tripod mounted camera.

Elusive Mercury will become prominent in March. On March 11, at about 6:30 PM sharp eyes will see Mercury (about 12 degrees about the

YOUR BOARD OF DIRECTORS

President - Les Nagy - 905 388 1011 – [president\(at\)hamiltonrasc\(dot\)ca](mailto:president(at)hamiltonrasc(dot)ca)
Past President – Steve Barnes – 905 631 9944
Vice President – Colin Haig – 416 729 7073 – [astronomer\(at\)cogeco\(dot\)ca](mailto:astronomer(at)cogeco(dot)ca)
Treasurer – John Williamson – [John.Williamson\(at\)sympatico\(dot\)ca](mailto:John.Williamson(at)sympatico(dot)ca)
Secretary – Victor Grimble -
Recorder – Roger Hill – 905 878 5185 – [Roger.Hill\(at\)simpatico\(dot\)ca](mailto:Roger.Hill(at)simpatico(dot)ca)
Observing Director – Ken Lemke – [cfs\(at\)worldchat\(dot\)com](mailto:cfs(at)worldchat(dot)com)
Orbit Editor – Ev Rilett – 905 319 8864 – [erilett\(at\)cogeco\(dot\)ca](mailto:erilett(at)cogeco(dot)ca)
Curator – Mark Kaye – 416 885 6134 – [Mark.Kaye\(at\)impatico\(dot\)ca](mailto:Mark.Kaye(at)impatico(dot)ca)
Public Education – Patricia Marsh – [gassmann\(at\)mountaincable\(dot\)net](mailto:gassmann(at)mountaincable(dot)net)
Michael Spicer – 905 388 0602 - [DeBeneEsse2001\(at\)yahoo\(dot\)com](mailto:DeBeneEsse2001(at)yahoo(dot)com)
Observatory – 905 689 0266

MONTHLY SWAP MEET

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

THE HAMILTON CENTRE OBSERVATORY:

From Highway 6 North of Hamilton.

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

From Mississauga or Milton.

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

horizon) just to the right of a very thin waxing crescent Moon.

Jupiter rises about 11 PM at the beginning of February and takes until about 2:30 PM to get 30 degrees above the horizon. Jupiter will rise two hours earlier by the end of February. With Jupiter, I enjoy observing the rapidly changing positions of its' four major moons. To help identify the moons, all the major astronomy magazines have charts showing the moons positions.

On February 19, a waxing gibbous moon will be sitting about 7 degrees above Saturn.

About 5 hours after sunset on February 26, Jupiter will be about 4 degrees from a waning gibbous moon and for early risers, Jupiter will be about 2 degrees above the moon about 1 hour before

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Observing Opportunities con't

sunrise on February 27.

On February 19, a waxing gibbous moon will be sitting about 7 degrees above Saturn.

About 5 hours after sunset on February 26, Jupiter will be about 4 degrees from a waning gibbous moon and for early risers, Jupiter will be about 2 degrees above the moon about 1 hour before sunrise on February 27.

Full Moon occurs on February 23 and this is a great time to observe dust lanes radiating from craters such as Copernicus and Tyco. If you take the time, you'll see other less famous craters with dust lanes (rays) dotting the lunar landscape.

To round out this months' observing opportunities, I'll share two of my favourites for when you want an "observing fix" but don't want to set up your telescope on a cold snowy evening. Both of these targets are best when the moon is not nearby and you have good transparency.

My all time favourite is the Alpha Persei Cluster - to see it, just look at Mirfak -- the bright Alpha star in the Constellation Perseus. With your binoculars you will see a large, rich, open cluster. Look for colour in the stars.

Another binocular favourite is to slowly scan Orion's belt and get lost in the sea of stars. This is how I "discovered" Sigma Orionis which is about 1 degree below

Alnitak (the left star in Orion's belt). It looked "different" in binoculars and when I did examine the "star" with my telescope, it turned out to be a multiple star system with five members.

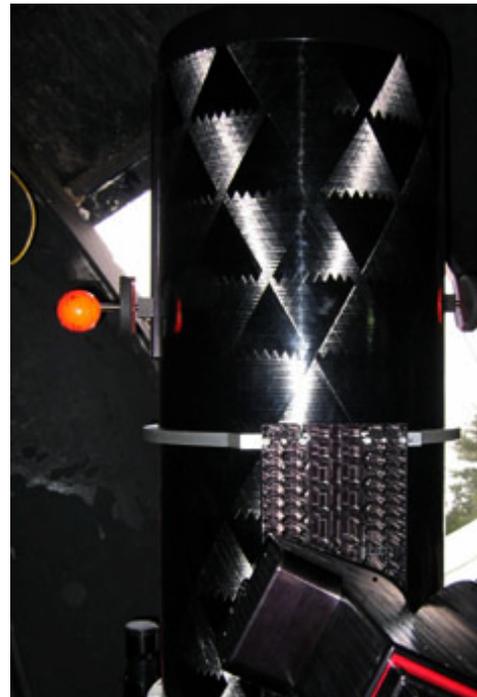
Finally, if you have a favourite object or



[The Apple of
Centre's Eye -
The
"TRILLIUM
TELESCOPE"](#)

Newly installed at the observatory for members exclusive use. Feel free to enjoy this tremendous equipment. See Steve Barnes for training and time scheduling.

Photos by Colin Haig



have made a personal discovery, why not share it by submitting an article for Orbit or making a presentation at a Centre meeting.

Enjoy the Night Sky
Ken Lemke

Hamilton Centre, Royal Astronomical Society of Canada

Board Meeting Minutes

Thursday, December 16th, 2004 at the L. V. Powis Observatory, Flamborough, Ontario.

Board Members present:

Les Nagy **President**
Colin Haig **Vice President**
Roger Hil **Recorder**
John Williamson **Treasurer**
Mark Kaye **Curator**
Mike Spicer **Secretary, National Representative, Orbit Editor**
Ev Rilett **Observing Director**
Steve Barnes **Councilor at Large**
Ken Lemke **Councilor at large**
Board Members **Absent (with apologies):**
Gary Colwell **Maintenance Director**
Victor Grimble **Public Education**

Guests:

Patricia Marsh and Peter Jedicke.

The meeting was called to order at 8:04 pm.

Motion 2004-12-16-A: That the minutes of the November 10th, 2004 Board meeting be accepted, with the following amendment: *Only 1 issue of Orbit was not received (December 2003) by the National Library of Canada.*

The motion carried.

Motion 2004-12-16-B: That the minutes of the December 1st, 2004 Board meeting be accepted.

The motion carried.

Motion 2004-12-16-C: That Steve Barnes be confirmed as interim telescope scheduler.

The motion carried.

Directors Reports:

Recorder: Roger Hill had nothing to report. It was requested that the Recorder write a monthly "Board Shorts" column for Orbit.

Telescope Scheduler: Steve reported that a "Train the Trainers session was done on Sunday, December 12. There are 20 name sign up sheet for training. No project sheets, or projects have been turned in or proposed.

Curator - Mark reported that the lock on the gate was removed by person or persons unknown.. It only lasted for a week. The problem with the lock on the outhouse has been fixed.

Observing Director: Ev reported that the previous weekend had been a good one. Some new members came out for Ken Lemkes talk. Steve Barnes is scheduled for the January event, with Mike Jefferson in February

Vice President: Colin reported that the missing Orbit was mailed out to National Library of Canada. The membership was requested to provide ideas for fund raising.. A question was raised about whether the By-Laws need to be filed in Ottawa, but this is only a requirement for Federally incorporated organizations, not Provincial ones, like the Hamilton Centre. Since there has been no change to the goals of the Hamilton Centre, there is no need to forward a copy of our by-laws to the Province. All By-law processes have been followed, and they are in force.

Secretary: Mike reported that we have new members. The consensus reached by the Board during some discussion was that a letter be sent to the new members. It was suggested that the Bright Star Atlas (Willmann-Bell) be included in the package.

Several phone calls have been received, including one person who wants to come December 17th. Those interested in becoming members will be sent letters of invitation to join. Copies of the letter of extension for reporting to the Trillium foundation were passed around.

Letters of complain were received against Steve Barnes and Les Nagy. Les stated that he was in a conflict of interest, and Colin took the chair.

The first letter of complaint was from Ray Badgerow against Steve Barnes, and the second was by Mike Spicer against Les Nagy. Both Mr. Nagy and Mr. Barnes considered themselves informed of the complaint. Time will be set aside at the next Board meeting to discuss the letters of complaint.

Motion 2004-12-16-D: That the complaint from Mr. Badgerow complaint was not valid as he may or may not be a member of the Centre.

Motion 2004-12-16-E: That discussion be tabled until it can be ascertained what we are dealing with as regards the complaint of Mr. Badgerow. The motion carried.

Councilor at Large: Ken Lemke: Ken reported a turn out of 8 people for the beginner's night. He will also look into getting a lock box for donations for the Centre, and he will continue to make a donation box for Public meetings. He put in 8 hours for the Trillium Foundation project.

Treasurer: John reported that the last raffle at the December meeting raised 79.

President:

Les reported that:

- 1) Trees are still an issue, and he is waiting for the City to respond. As soon as the Holiday Season is over, he will follow up.
- 2) Letter of complaint from Mark Kaye about Mike Spicer. Time will be set aside at the next Board meeting regarding this.
- 3) Still waiting for Trillium time reports from members.
- 4) There have been other vandalism events. Fingerprints, etc. have been taken.

New members:

Motion 2004-12-16-F: That Patricia Marsh be accepted as an associate member and Carlos Felix as an ordinary member.

The motion carried.

Old Business:

Letters of complaint:

Motion 2004-12-16-G: That no further action be taken at this time and that the complainants be informed.

A secret ballot was requested, and Peter Jedicke acted as scrutineer. The motion carried.

Motion 2004-12-16-H: That the ballots be destroyed. The motion carried.

Banquet: Discussion took place regarding the use of a private caterer and a hall like a Polish or Church hall. The date will be Saturday, May 14, 2005. Mr. John Nemy of the Vancouver Centre has been contacted regarding his availability as a speaker. Randy Attwood of the Mississauga Astronomical Society has expressed an interest in doing a joint banquet. The Mississauga Astronomical Society will be contacted when there is more information.

Spectator review: The article by Hamilton Spectator reporter Mary Nolan in the December 10th, 2004 issue was very favourable, and included a couple of good pictures.

Motion 2004-12-16-I: That a copy of the article be plaque-mounted and hung in the Observatory. The motion carried. As a result of the really good article, a number of people called the Centre's phone line requesting information on joining.

Desert Storm Cover: The price is more than \$50 US, but there have been donations made by the attendees of the December 10th Telescope Use Committee attendees. \$85 was raised, which will more than cover the difference. Steve Barnes reported that the cover has been ordered.

Brochure: Steve Barnes got a quote of \$569 for 1,000 4-colour copies. Colin Haig got a quote as well, but could not match the price of Steve's supplier. Gary is re-designing a brochure.

Dome Committee report: An email was received stating that the dome was not adequate to the needs of the Observatory, and recommends a roll-off roof. Copies of the report will be given to the recorder. The report was accepted.

Trillium Details: Ken Lemke will contact Grant Maguire regarding the current location of all Trillium files.

A "cash flow" projection was requested, based on membership, etc. John stated that it will be provided tomorrow by email. Training on the new telescope will be scheduled as soon as possible.

Telescope Use Committee: The report of the Telescope Use Committee was accepted. Board members are to review it prior to the next Board meeting, for discussion around implanting its recommendations.

New Business:

National Representative status: National RASC bylaws require that a National Representative be chosen at a meeting of the Centre, by popular vote of the membership.

Motion 2004-12-16-J: That an election for National Representative be performed at the February General meeting. The motion carried.

Motion 2004-12-16-K: That Mike Spicer be removed from the position of Secretary. A secret ballot was requested, and Peter Jedicke acted as scrutineer. The motion carried.

Motion 2004-12-16-L: That the ballots be destroyed. The motion carried.

Motion 2004-12-16-M: That Mike Spicer be removed from the position of Orbit Editor. A secret ballot was requested, and Peter Jedicke acted as scrutineer. The motion carried.

Motion 2004-12-16-N: That the ballots be destroyed. The motion carried.

Motion 2004-12-16-O: That Ev Rilett be appointed Orbit Editor. The motion carried.

Motion 2004-12-16-P: That Patricia Marsh be appointed to the Board. The motion carried.

Motion 2004-12-16-Q: That Ev Rilett's resignation as Observing Director be accepted and that Ken Lemke be appointed Observing Director. The motion carried.

Motion 2004-12-16-R: That Steve Barnes be interim Secretary. The motion carried.

Motion 2004-12-16-S: That all the Secretaries files be turned over to the President prior to the next Board meeting. The motion carried.

Motion 2004-12-16-T: That all items such as the Post Office box key be turned over to the President prior to the next Board meeting. The motion carried.

Auditor requirements: The consensus was that we should have an auditor.

Motion 2004-12-16-U: That a volunteer, independent, auditor be sought. The motion carried.

Next Observing events.

A public night should be scheduled soon to view Comet Macholz. January 14th will be set aside as "Learn how to use your new telescope" night. Radio station CHML and the Hamilton Spectator newspaper are to be notified.

Fund Raising: Patricia will look into various types of events that can be used to raise funds.

Next Board meeting

January 13th, 2005, at the Leslie V. Powis Observatory.

Motion 2004-12-16-V: That the meeting be adjourned. The motion carried.



Aurora Photos by Colin Haig