



Event Horizon

Volume 21, Number 1
November 2013



From The Editor

I've been asked to be your new Event Horizon Editor, and I look forward to this challenge. I, as is every member of our club, am very proud to have such a high-quality newsletter, and I intend to maintain this high standard. I would like to thank my immediate predecessor, Ann Tekatch, on the wonderful job she did as EH Editor, and kudos also to Tim Philp and Anthony Tekatch for their hard work during their respective tenures as Editor of this publication, which would not be what it is today if it weren't for all these people.

The current format of the EH we have had over the past 4 years will stay for now, with only minor cosmetic changes.

(Continued on [page 2](#))



Chair's Report by Jim Wamsley

In the November Chair report, the chairman traditionally thanks the council from the past year, and announces the new. Before I get in to that, I want to say that it has been an honor and a privilege to be the chair of the H.A.A. this past year, and I am looking forward to my second year in this post. I have had the good fortune to meet many more of the club members, as well as the opportunity to get to know, and build a relationship, with many professional astronomers, who have been speakers for us this past year.

(Continued on [page 2](#))

IN THIS ISSUE:

- The Sky This Month
- Treasurer's Report
- The 2014 HAA Celestial Events Calendar
- October Meeting Summary
- 2012-2013 Financial Statements
- Upcoming McCallion Planetarium Shows
- Cartoon Corner
- Upcoming Events
- Contact Information

See our HAA 20th Anniversary Banquet report and pictures on Pages 8 thru 10!

HAMILTON
AMATEUR
ASTRONOMERS

**CELEBRATING 20 YEARS OF FUN AND
EDUCATION THROUGH ASTRONOMY**
1993-2013

Chair's Report (continued)

This year, we are not only starting a new year, but on November 2nd we celebrate the club's formation 20 years ago to the day. I will write more about the anniversary banquet later. The new council for the anniversary year looks similar to last year's council, with changes of jobs for some key council members. First of all, John Gauvreau, our long time Observing Director and past Chair, has been up front for the last 5 years. He deserves a break from preparing talks, and writing a sky this month article every month. John will step down as Observing Director, and become Second Chair, my backup and right hand man. A second person on council will be taking a much deserved break. Ann Tekatch, our Event Horizon Editor for the last 5 years, will step down and become one of our councillors at large. Thanks Ann. Your service to the club has been incredible. I know your successor, Bob, has very large boots to fill. Even though Ann will not be doing the huge job of Editor, she has already taken on a large project for the club. I'm not sure how much of a break she will be getting. Bob Christmas, previously the club's Secretary, will now be filling those very large boots, and I know Bob will do an equally great job of E.H. Editor. Joe McArdle has been Second Chair this past year, and will be moving to the equally important position of Secretary. Joe will also continue as our I.T. guy, keeping things running at meetings, thanks Joe. The daunting job of Observing Director will be taken on by Matthew Mannering; Matthew has been looking after the duties of Membership Director and greeting you as you arrive at meetings. I know that Matthew's knowledge of the night sky, and his pleasant demeanour, will serve

him well in this post. Leslie Webb will be moving from a councillor at large position to take over as Membership Director. Steve Germann has been doing such a great job of Treasurer, we have him chained to the post, and I for one have no intention of letting him go. Thanks Steve for all the hard work. Lastly, the post of Public Education and Publicity Director will be staying in the very capable hands of Mario Carr. Mario has been doing an outstanding job for the last couple of years, and the club is lucky to have him. As you can see, the faces of the councillors are the same. Some of us have just changed hats. I want to thank everyone on council; it's been a lot of fun serving with you this year.

Councillors at large for the next year, will be appointed at the next council meeting, Nov.14. If you think you would like to serve on council, please contact me at chair@amateurastronomy.org or call me at 905-627-4323. It's a fun way to expand your astro experience.

From The Editor (continued)

As it has always been, this is *your* newsletter for *your* club. Bearing that in mind, I invite you to *please* send articles, images, sketches and other astronomy-themed material to me at 'editor "at" amateurastronomy.org'. I would be delighted to include them in the Event Horizon.

Enjoy!

Bob Christmas, Editor



HAA Helps Hamilton

To support our community, we will be collecting non-perishable food items and cash for local food banks at our general meetings. Please bring a non-perishable food item to the meeting or a donation of cash and help us help others in these tough economic times.

If you would like to help or have any questions about this initiative, please contact Jim Wamsley at 905-627-4323.

Masthead Photo: This month's image is of emission nebulae M17 (Swan or Omega Nebula) and M16 (Eagle Nebula) in Sagittarius and Serpens respectively, by Bob Christmas. This image is a composite of six 2-minute exposures at ISO 800 for 12 minutes total. Bob used a Canon 40D and a Tamron 300mm f/2.8 telephoto lens, tracked on a Super Polaris EQ mount. North is to the right.



The Sky This Month for November 2013 by Matthew Mannering

Welcome to the Sky This Month. *The first thing you need to know is that the Fall time change occurs on Sunday the 3rd at 2am. Before you go to bed Saturday night be sure to move your clocks back one hour.*

Comet ISON

This month marks the plunge of **Comet ISON** towards the sun. As we come into November ISON should be around magnitude 9.0 and will be visible in almost any pair of Binoculars. So set your alarm for an early start to the day and get out and see this visitor from the outer reaches of our solar system.

ISON will reach its closest point to the sun (perihelion) on November 28th. It will only be about 1.1 million kilometers above the Sun's surface. At this point, it will either break up into smaller pieces, disintegrate entirely or survive the encounter intact. The hope is that it will survive and give us a fantastic show through December and into January. In the few days preceding and following closest approach, the comet will be too close to the Sun to view safely! So, if you can drag yourself out of bed in early November ISON will be visible with binoculars in the pre-dawn. Look low in the eastern sky, below Mars in the constellation of Virgo. On the 17th-18th it will pass within one degree of Spica, the brightest star in Virgo. If you're lucky, you might also catch a glimpse of **Mercury** and **Comet Encke** directly below, close to the horizon.



Easy Targets

This is the time of year when the summer and fall constellations share the sky over a period of hours. At the start of the month, Hercules is low in the northwest and should be setting at about 10:30. The **summer triangle** is still high in the evening sky but by 1:30 has been replaced by Cassiopeia, Perseus, Auriga, Gemini and Taurus. **Jupiter** is in Gemini at the moment and outshines everything around it. If you haven't identified them before, the small constellations Triangulum and Aries are an easy catch. Start your search by finding the Great Square of Pegasus about 2/3 of the way to the zenith in the southeast. Now follow the curve of Andromeda towards Perseus. If you want you can take a short side trip to see the **Andromeda galaxy** (The Great Nebula in Andromeda) and then it's back to business.

(Continued on [page 4](#))

The Sky This Month (continued)

About mid way along the arc of Andromeda look below it and there you will see Triangulum. Look below that to find Aries.



There's one galaxy between Triangulum and Andromeda that should be easy to find in binoculars and that is **M33 (The Triangulum Galaxy)**. However, in reality, the surface brightness of the galaxy is very low and therefore M33 is very dim. I have only seen hints of it even at a dark site. Others have had far more success.

M34 is a nice cluster mid way between Almaak and Algol (in Perseus). Use binoculars to pin down its position and then any scope will give a good view of it.

Both Aries and Andromeda have pretty double stars that are definitely worth a look. I have marked Mesarthim(mag. 4.5 and 4.6, separation 7"arc) with the crosshairs in the above diagram. This double consists of two very similar white stars. Almaak is easily identified in Andromeda (mag. 2.3 and 5.0, separation 9.5" arc). These stars are a beautiful orange and blue in colour. Any small scope will be able separate these doubles. Don't be afraid to try higher magnifications.

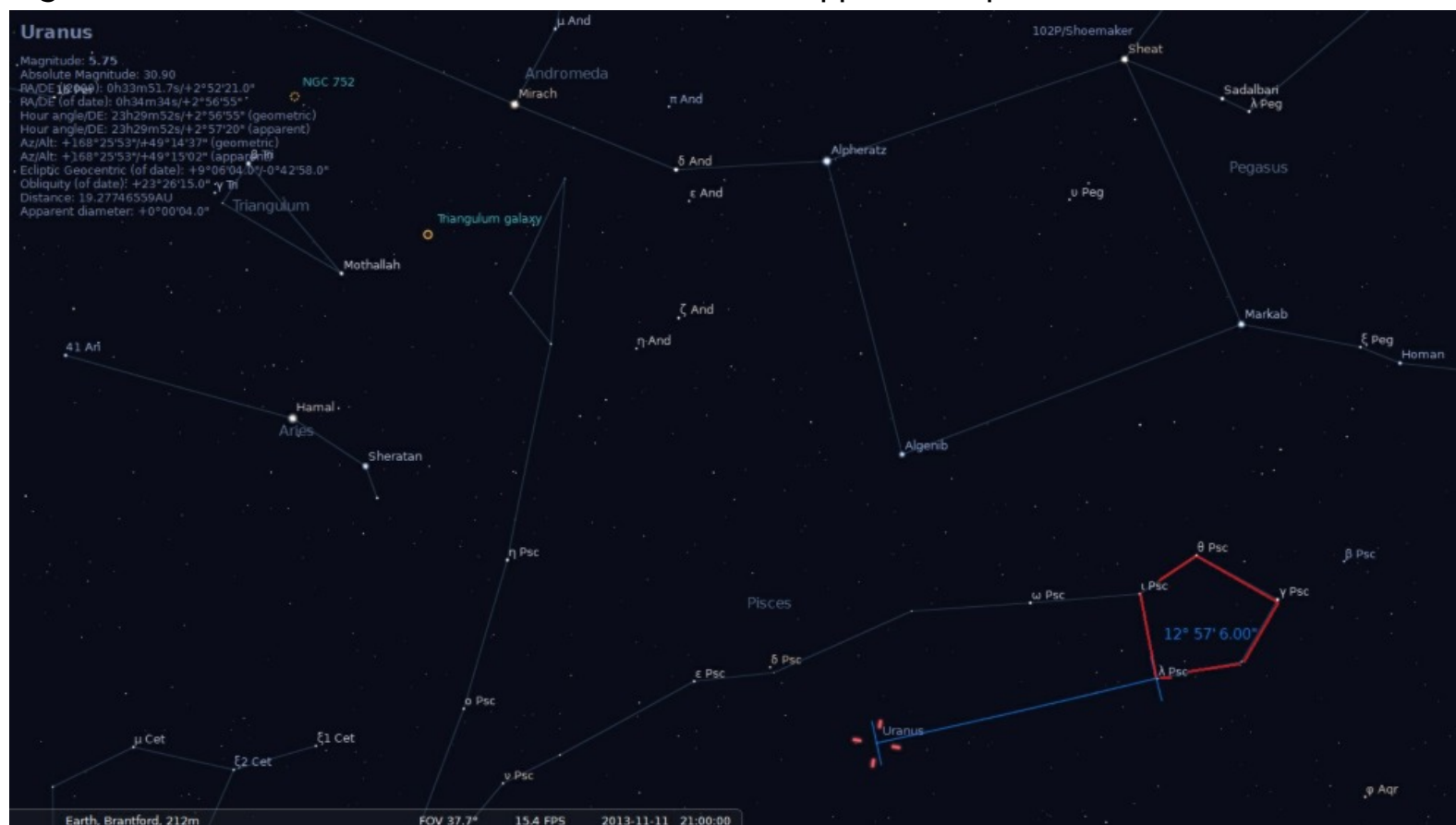
The Planets:

- *Mercury* is at its best in the second half of the month low in the east just around dawn.
- *Venus* is low in the south west in the dusk sky all month.
- *Mars* rises around 2am(after the time change) low in the east.
- *Jupiter* rises in the east at 10pm at the beginning of the month and 8pm by month's end.
- *Saturn* is too close to the sun at the beginning of the month but should be visible in the east near dawn by month's end.

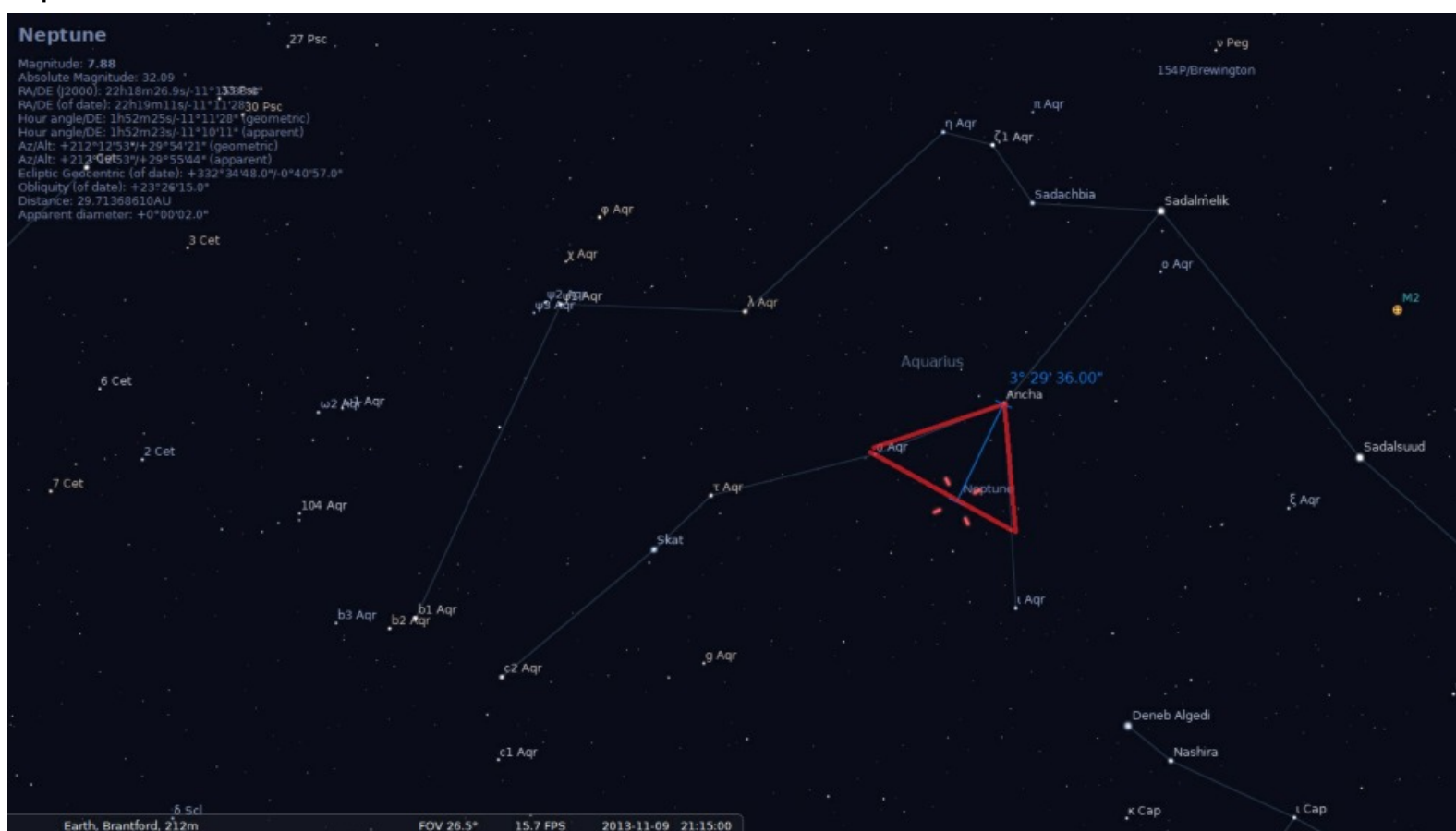
This is still prime time for finding *Uranus* and *Neptune*. Uranus, with a diameter of 4" of arc, resolves into a disk in most telescopes. At magnitude 5.75, Uranus is theoretically visible (Continued on [page 5](#))

The Sky This Month (continued)

to the naked eye from a dark site. To find it, look for the five sided asterism below Pegasus. This is the head of one of the fish in Pisces. Follow a line east from the two stars in the base of the head for about 13 degrees or about 2 1/2 binocular fields. Uranus will appear as a pale blue disk.



Neptune is in Aquarius and at magnitude 7.9 is definitely not naked eye visible. Look for the triangle of stars in Aquarius as shown in the chart. Bisect the base of the triangle to find it. Even though Neptune has a disk of approximately 2" of arc, it is very difficult to resolve. Instead expect to see what looks like a deep blue star.



(Continued on [page 6](#))

The Sky This Month (continued)

Other Events:

-November 3rd: New moon. Solar Eclipse at sunrise. Only 10% of the sun's disk will be covered by the moon as the sun clears the horizon at 6:58am. This absolutely requires solar glasses or a scope set up for solar viewing. **DO NOT look directly at the sun without protection for your eyes.**

-November 17th: Full Moon. Leonid meteor shower peaks.

-November 24th: Comets ISON and Encke are 1.5deg. apart very low in the dawn sky.

Good luck seeing the comet. Hopefully I'll see you out under the stars!



Treasurer's Report by Steve Germann

Treasurer's Report, October 2013 (unaudited)

Opening Balance	\$5603.94
Revenue	\$2637.00
Expenditures	\$3123.82
 Closing Balance	 \$5117.12

Revenue consisted of Banquet ticket sales, \$1260, 50/50 \$37, Memberships \$1340.

Expenditures consisted of Banquet food payment, \$802.07, Calendar payment \$2118.75 and Donations to Binbrook, the IDA and the Clear Sky Chart, \$203.

Please see Pages 11 thru 14 for year end financial statements - Editor

The HAA 2014 Celestial Events Calendar



is now for sale!

Prices: \$15 each, or two for \$25.

We will have calendars available to purchase at the 20th Anniversary banquet on Saturday, November 2 and also at our Telescope Clinic on Friday, November 8. They will also be available at any of our regular meetings and events.

These are excellent calendars with some wonderful photos taken by your fellow club members. They make terrific Christmas gifts and are perfect for the home or office.



October Meeting Summary by Bob Christmas

HAA Chair Jim Wamsley welcomed all attendees to the October meeting, which was our Annual General Meeting, an audience that included lots of first-time attendees, as well as several students from Cathedral High School here in Hamilton who formed their school astronomy club.

Jim then reminded everyone of our 20th Anniversary Banquet, and thanked everyone who donated for area food banks.

He also had various announcements about the HAA 2014 Celestial Events Calendar, which is now for sale, the November lineup for the McCallion Planetarium at McMaster University, the Telescope Clinic on November 8, as well as upcoming astrophotography clinics and cosmology discussions.

Then, outgoing HAA observing director John Gauvreau presented his extended talk about “The State of the Universe”. He began by asking who was out observing during the previous month, which always elicits lots of observing stories.

John went on to remind us that there was a transit of the shadows of 3 of Jupiter’s moons across the planet’s disk early the next morning, and he showed several cool images, including one of Lake Ontario taken by the MODIS satellite showing the swishes and swirls of algal blooms in our Great Lake, and a couple from the SOHO satellite showing the destruction of a sun-grazing comet.

John also gave us the sad news that astronaut Scott Carpenter, one of the original Mercury 7 astronauts, had passed away.

He then synopsized recent space events such as the recent launching of the Cassiope satellite to observe Earth’s ionosphere, recent aurorae, a newly rediscovered moon around Neptune, and images from the Mars Curiosity rover of a solar eclipse, during which the moon Phobos covered the disk of the Sun!

John also gave a historical outline of the development of theories and knowledge of the universe, from Henrietta Leavitt’s discovery of Cepheid Variables, to Edwin Hubble’s discovery of galaxy redshift, to the Big Bang theory.

He also expressed hope that Comet ISON will put on a real show in early December. He concluded his talk by showing Vincent Van Gogh’s famous Starry Starry Night painting refashioned as a collage of Hubble Space Telescope images.

After John, it was Kevin Salwach’s turn on the floor for another presentation of “This Day In Astronomy”. He mentioned several historical events that happened on this day, including the launching of America’s first satellite, Pioneer I, in 1958, the launching of Apollo 7 in 1968, and Kathryn Sullivan becoming the first woman spacewalker in 1984. Another great presentation from Kevin!

After our halftime break and the 50/50 draw by Alex Tekatch and Matthew Mannering, HAA Treasurer Steve Germann gave his annual Financial Report for 2013.

Jim Wamsley then thanked the outgoing 2012-2013 HAA Council, as well as to the numerous volunteers who helped out at various HAA events throughout the previous 12 months. Jim then presented the proposed HAA Council slate for the 2013-2014 year and opened the floor to nominations. Councillor-at-large David Tym then officiated the presentation of the new Council, which was declared acclaimed. Our new 2013-2014 Council is listed on Page 17 below. The Councillors-at-large will be appointed later this month by the new Council.



On The 20th Anniversary Banquet by Jim Wamsley



Bob McDonald speaks at the banquet. Photo by Ann Tekatch.

WOW WHAT A PARTY! I can't speak for everyone, but I think the 20th Anniversary Banquet was a total success.

For me, the party started early. At 9:00am, my phone rang, and at the other end was our special guest speaker, Bob McDonald, calling from the Victoria BC. Airport, saying "hi Jim, it's Bob, my flight has been cancelled." It took the next words to restart my heart, "don't worry. I have tickets with Air Canada that will get me there in time to make the banquet." My wife Celia and I later picked up Bob and his lovely wife Sharon at Pearson Airport in Toronto, and drove to the Super8 motel close to the W.P.H.M. to give them a chance to freshen up and change clothes, and then a cab to the banquet.

When we entered the building, I overheard Bob exclaim "wow they have a CF100", just the first of many great airplanes Bob and Sharon were able to enjoy, along with all of the rest of the attendees. By the end of cocktail hour, Joe McArdle had the computer loaded with all the necessary Power Point presentations, and Matthew Mannering and his wife Janice, distributed the door prize tickets. I was then able to get the show on the road, and announce dinner was ready. We all enjoyed the roast chicken dinner provided by the War Plane Heritage Museum's catering staff.

(Continued on [page 9](#))

On the 20th Anniversary Banquet (continued)

After dessert and coffee, we launched in to a lineup of speakers that entertained and enlightened us all, starting with John Gauvreau's rendition of "An Astronomical Christmas" poem, as a reason to purchase Your H.A.A. 2014 calendar. Next up was Kevin Salwach, with a great mini talk entitled "What is an Amateur Astronomer". Matthew Mannering then gave us a short lesson in "Celestial Navigation", and the search for longitude. Saving the best for last, Bob McDonald delivered his key note talk, "what would vacations in space look like". Bob's talk was not only funny and entertaining, with fantasy vacations, he also covered the current factual options for vacationing in space. All the speakers were great, and I would like to express my thanks and appreciation to all of them, for making the night the great success it was.

All these great talks where interspersed with the awarding of some amazing door prizes. Again, I have many people to thank. First of all I want to thank Alex Tekatch for being my beautiful assistant. I also have a very special thank you to go out to Kevin Salwach for his donation of an astro book, a copy of Sky News, and a H.A.A. calendar as a door prize package, Leslie Webb for his donation of a brand new 5mm Celestron XCEL-LX Eyepiece. Camtech, the scope store, provided a very nice backpack-style camera bag, K.W. Telescope very generously gave us a 6" Sky Watcher DOB Telescope, and Unihedron supplied us with a Sky Quality Meter. Thanks for these corporate donations. They really helped make the H.A.A.'s 20th Anniversary a memorable event.

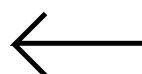
After the talks were delivered and the door prizes won, the crowd had the run of the museum for the night. I know many took advantage of this, both at the start and the end of the night.

I hope to see you all at the scope clinic Friday night November 8, and we can reminisce about the fun night we had.



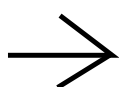
Photo by Steve Germann.

More Scenes From The 20th Anniversary Banquet



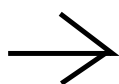
John Gauvreau talks about the 2014 HAA Calendar.
Photo by Steve Germann.

The banquet attendees sitting down to dinner.
Photo by Ann Tekatch.



Some of the HAA's founders,
Back: Bill Tekatch, Ann Tekatch,
Doug Welch.
Front: Charles Baetsen, Patricia
Baetsen
Photo by Alex Tekatch.

HAA Chair Jim Wamsley awards
the Sky Watcher Dobsonian
Telescope.
Photo by Steve Germann.





2012-2013 Financial Statements by Steve Germann

The Club had a good year, once again, and is in a strong financial position going forward. Our accounts increased by \$925 thanks to this year's activities.

Regarding some of the major expenses...

Our insurance enables our outreach and education activities, and is a very good value for our club. Our rent paid for our meeting room at the Hamilton Spectator is also very good value.

Special thanks to the Calendar Team and especially John Gauvreau for a banner year.

Although we will make a small loss from the Banquet, this will be considered in our 2014 budget and reported with those financials.

A tiny accounting error was spotted from last year's report and is noted on Page 13 below. It only affected the numbers by a few dollars but was irksome until found and corrected.

I thank all the members who support the club via their membership and donations.

I thank all of the people who work on the clubs leadership team, who help ensure that the clubs funds are well spent.

I applaud all those who donate food to the food bank when they attend our meetings. It's warmly appreciated by all of us and by the food bank too.

Revenue

HAA 2013 Revenue (Net)	31-Oct 2013	31-Oct 2012
Membership	\$3,170.00	\$2,947.00
Calendars	\$1,302.41	\$915.00
Cash Donations	\$285.25	\$90.60
50/50 Draw	\$462.50	\$508.00
Planetarium Trip	\$0.00	-\$110.00
Donations in Kind	\$900.00	\$300.00
Intangible Donations	\$100.00	\$0.00

Total Revenue	\$5,220.16	\$4,350.60
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Food Bank Estimate	\$2,000.00	
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Depreciation Table	31-Oct 2013	31-Oct 2012
Opening Balance	\$2,699.65	\$1,739.00
Depreciation Full Year	\$539.93	\$347.80
Donated Equipment	\$900.00	\$300.00

(Continued on [page 12](#))

2012-2013 Financial Statements (continued)

Depreciation Table (cont'd)	31-Oct 2013	31-Oct 2012
Additions	\$890.88	\$1,153.83
Sales	\$75.00	\$0.00
Net	\$1,715.88	\$1,453.83
Depreciation Part Year	\$171.59	\$145.38
 Total Depreciation	 \$711.52	 \$493.18
 Closing Balance	 \$3,704.01	 \$2,699.65

CASH FLOW

Income	31-Oct 2013	31-Oct 2012
Memberships	\$3,170.00	\$2,947.00
HAA Calendars	\$3,425.00	\$2,610.00
RASC Handbooks	\$0.00	\$0.00
Clothing Sales	\$0.00	\$705.00
50/50	\$462.50	\$464.00
Coffee Fund	\$0.00	\$0.00
Advertising Revenue	\$0.00	\$0.00
Donations	\$285.25	\$390.60
Messier Marathon	\$0.00	\$0.00
Miscellaneous	\$0.00	\$0.00
Prepaid Postage	\$0.00	\$0.00
 Total	 \$7,342.75	 \$7,116.60

Expenses	31-Oct 2013	31-Oct 2012
Insurance	\$911.52	\$739.80
EH Newsletter	\$0.00	\$0.00
Brochures	\$452.00	\$911.46
HAA Calendars	\$2,122.59	\$1,695.00
RASC Handbooks	\$0.00	\$0.00
Clothing Sales	\$0.00	\$670.76
Donations Outgoing	\$403.00	\$346.10
Depreciation Expense	\$711.52	\$493.18

(Continued on [page 13](#))

2012-2013 Financial Statements (continued)

Expenses (cont'd)	31-Oct 2013	31-Oct 2012	
PO Box Rental	\$158.20	\$158.20	**
Speakers Allowance	\$122.69	\$159.66	
Office Supplies	\$0.00	\$59.03	
Postage	\$0.00	\$0.00	
Bank Charges	\$0.00	\$0.00	
IYA Events	\$0.00	\$0.00	
Kids Outreach Kit	\$0.00	\$0.00	
Hall Rental	\$1,130.00	\$1,130.00	
Prepaid Hall Rental	\$941.67	\$941.67	*
Miscellaneous	\$180.00	\$110.00	
Equipment Repairs	\$225.98	\$0.00	
Total	\$6,417.50	\$6,473.19	
Surplus/Deficit	\$925.25	\$643.41	

* not counted in total expenses for the year

** technically this should have been \$153 in 2012

<u>ASSETS</u>	31-Oct 2013	31-Oct 2012
Bank	\$5117.12	\$6649.07
Cash	\$0.00	\$0.00
Inventory	\$0.00	\$0.00
Prepaid PO Box Rental	\$169.50	\$158.20
Prepaid Mailing Expense	\$0.00	\$0.00
Prepaid Liability Insurance	\$0.00	\$0.00
Prepaid Hall Rental	\$941.67	\$941.67
Accounts Receivable	\$0.00	\$0.00
Prepaid Banquet Expenses	\$4067.79	\$0.00
Prepaid Calendars	\$2118.75	
Total Current Assets	\$12414.83	\$7748.94
Fixed Assets		
Equipment	\$3704.01	\$2699.65
Total Fixed Assets	\$3704.01	\$2699.65
Total Assets	\$16118.84	\$10448.59

(Continued on [page 14](#))

2012-2013 Financial Statements (continued)

Liabilities	31-Oct 2013	31-Oct 2012
Deferred Membership Revenue	\$1995.00	\$1435.00
Banquet Tickets sold	\$3285.00	\$0.00
Accounts Payable	\$0.00	\$0.00
Prepaid Calendars	\$2118.75	
Total Liabilities	\$5280.00	\$1435.00
Equity		
Opening Balance	\$9013.59	\$7367.10
Donated Equipment (Book Value)	\$900.00	\$1003.08
Current Year	\$925.25	\$643.41
Closing Balance	\$10838.84	\$9013.59
Total Liabilities and Equity	\$16118.84	\$10448.59



SkyStopper Equatorial Platform

The SkyStopper equatorial platform, custom made for your telescope and latitude, can be yours in just a week, for only \$649 plus shipping. (Local pickup save \$25 and all the shipping)

Features:

- handles high power eyepieces without drift
- patent pending dual direction guide capability guides in any part of the sky, not just the meridian
- do guided astrophotography and manual fine centering with your Dob
- effortless tracking through the zenith
- compatible with push-to digital setting circles
- compatible with goto Dobs that can stop their clock drive
- runs on 12v accessory power from your tank
- star, sun, moon, half-solar, and tuned rates
- easy to assemble, adjust and maintain
- adjustable bubble level allows quick setup at a variety of sites
- made in Canada, ships from Canada
- quick release magnetic linkage
- infra red remote control with audio acknowledgement
- pushbutton override possible instead of remote
- extra long levelling feet for range of latitudes
- high weight capacity and stability
- typically 90 minutes run time
- quick rewind or re-center
- low power
- dimmable led display



<http://www.skystopper.ca/> or email smrg@cogeco.ca



William J. McCallion Planetarium

McMASTER UNIVERSITY, HAMILTON, ONTARIO

- Public shows every Wednesday (7:00pm)
 - Public transit available directly to McMaster campus
 - Tickets \$5 per person; private group bookings \$100
 - Different shows every week
 - Upcoming shows include:
 - **Nov 6: Introductory Astronomy for Kids (1st Wed of every month)**
 - **Nov 13: Extreme Weather in Space and on Alien Worlds**
 - **Nov 20: Meet the Neighbours**
 - **Nov 27: The Sun and its Long-Lost Siblings**
 - For more details, visit www.physics.mcmaster.ca/planetarium
-



The Scope Store at Camtech

**Largest Selection of Telescopes, Binoculars and
Microscopes in the Golden Horseshoe**

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UPCOMING EVENTS

November 8, 2013 - 7:30 pm – *Fall Telescope Clinic* at the Hamilton Spectator Auditorium. Many types of telescopes will be on display, and experts will be on hand to answer questions. You can also bring your own telescope and get tips and pointers about its use. Whether you have a telescope, are thinking of getting one, looking for advice on a unique Christmas gift, or just want to learn more about exploring our amazing universe.

December 13, 2013 - 7:30 pm – *General Meeting* at the Hamilton Spectator Auditorium. Our main speaker will be Tim Philp. Kevin Salwach and Matthew Mannering will update us on This Day in Astronomy History and the Sky This Month.

2013-2014 Council

Chair	Jim Wamsley
Second Chair	John Gauvreau
Treasurer	Steve Germann
Membership Director	Leslie Webb
Observing Director	Matthew Mannering
Event Horizon Editor	Bob Christmas
Recorder	Mike Jefferson
Secretary	Joe McArdle
Public Education	Mario Carr
Councillors at Large	To be confirmed by the new council

Observing site for the HAA provided with the generous support of the

Binbrook Conservation Area

Come observing with the HAA and see what a great location this is for stargazing, a family day or an outdoor function.

Please consider purchasing a season's pass for \$79 to help support the park.

<http://www.npca.ca/conservation-areas/binbrook/>
905-692-3228

Domain and webhosting for the Hamilton Amateur Astronomers generously supplied by
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Business hosting, email and network security.
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