Volume 15, Issue 7

September 2008

HAMILTON AMATEUR ASTRONOMERS

Event Horizon

June Meeting Report

Photo and Story Credit: Mike Spicer

Hamilton Amateur Astronomers and about a dozen guests packed the Spectator Auditorium for the meeting Friday evening, June 13th.

With a door prize of an electronic-controlled 5" telescope and mount, everyone arrived before the 7:30 pm cutoff for a free draw ticket. There were demo scopes to check out, free magazines and info at the back tables, coffee and timbits, too.

At the welcome table, people were lining up and signing in. Jim and Don were handing out our excellent June '08

From The Editor's Desk

It was a long summer consisting of mostly rainy weather that kept astronomy enthusiasts indoors at night. It was not until nearly the end of the season when we had a week of clear skies and fair weather. All summer, Jupiter was king of the skies and was often the only object worth looking at. Too bad it was so low in the sky.

Now, however, the days are getting shorter and the observing time is growing. This is perhaps the best time of the year for observing as it is still warm enough to keep hypothermia at bay, and all night observers get a good look at the winter skies.

Now, if we could just do something about the damn clouds and rain!

Tim Philp, Editor

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Fall Events

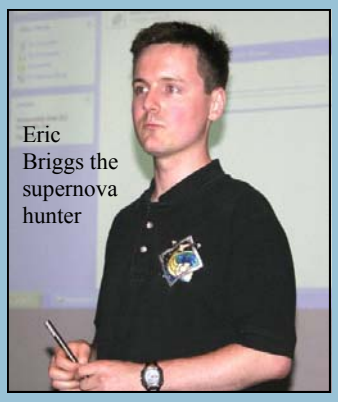
- Public Event Sat., October 4th in Brantford
- HAA 15th Anniversary Dinner October 17th @ The Mandarin Restaurant Upper James Street
- Image submissions wanted for 2009 HAA calendar. Deadline September 30th, 2008
- HAA Telescope Contest
- See www.amateurastronomy.org for details

June Meeting Roundup

By Mike Spicer (Continued from Front Page)

Event Horizon newsletter to members and guests, taking in orders for HAA logo shirts/jackets and accepting payment for HAA caps and new memberships.

Jim Wamsley tried his hand as MC for the evening, starting us off on time with announcements of the club's summer public activities - observing nights we have planned for Burlington, Binbrook and Brantford to complete the successful public nights in May at Bayfront and in Grimsby.



Eric Briggs the supernova hunter

After showing a number of images from our recent public nights, Mike Spicer presented The Sky for Early Summer with charts and images of objects to look for in the coming months. Then Ray Badgerow gave a presentation on the upcoming Total Solar Eclipse in China with a recap of his past eclipse-hunting trips and a review of his planning checklist for his August trip. Good luck, Ray!

The half-time break stretched out over coffee and active discussions while members socked away free magazines and info booklets for the upcoming Starfest star party. Jacob and Alex drew the winners for our door prize telescope and the 50/50 prize. Congratulations to Brian Chire!

Our main speakers of the evening were Ray Khan and Eric Briggs of Khanscope in Toronto. Ray showed us a number of new astro-instruments including some outstanding solar telescope equipment and the Ethos and Hyperion eyepieces. He promised to come again soon to demonstrate some of the new telescope mounts that will be available. Eric finished off the night for us with information about his supernova searches on the Puckett team - Eric will receive the 2008 Chilton Prize from the RASC for his discovery - and then he showed us images and movies from his visit to Cape Canaveral for the recent space shuttle launch.

After the meeting ended at 10 pm about two dozen members and guests dropped over to Kelseys for food, drinks and relaxing discussion.

Treasurer's Report— By Don Pullen

(Unaudited)

Cash opening Balance (1 June 2008)	**$ 3135.71**
Expenses	**$ 983.94**
Revenue	**$ 738.95**
Closing Balance (11 Sep 2008)	**$ 2890.72**

Notes:

Major expenses included: Cost of HAA Clothing ($281.59), HAA Banner ($250.00), Binbrook Park donation ($100.00), June EH printing ($86.45), Dark Sky Association donation ($52.13), Paper for Brochures and Newsletter ($44.83), Postage ($114.36), Brochure Printing ($12.58), Speakers' Meals ($42)

Major revenue sources included: HAA Clothing sales ($339.00), Memberships ($260), Postage refund ($44.63), 50/50 ($45), Coffee Fund ($50.32)

From the Chair

by Mike Spicer

Your astronomy club functions well because it has the support and enthusiasm of so many interested members. No other group of amateur astronomers in Canada can boast that more than half its members attend the meetings every month. When clouds threaten a public observing night in other cities, the event is cancelled; HAA members doggedly show up in raincoats with umbrellas, waiting for those clouds to part (and they often do!). Who are the people behind all these activities? You are, and I thank you for it.

The Council you elected late in 2007 has been very active. **Chair Mike Spicer, Secretary Darrell Maude, Treasurer Don Pullen, Membership Director Jim Wamsley, Observing Director Greg Emery, Webmaster Bob Christmas, Editor Tim Philp and councillors at large Harvey Garden, Tim Harpur, Gary Krevenky, Ann Tekatch and Gary Germann** met monthly to schedule speakers, arrange activities for the membership, publish the Event Horizon newsletter and distribute an uncounted number of flyers for members and the public. I think all of us benefitted from the selfless commitment of such energetic and thoughtful team members.

During 2008 our club's paid membership topped 100, with many members making generous donations of money, equipment and time to the club. We held and will continue to hold successful public observing nights at a variety of locations in the region and some members have started "sidewalk astronomy" evenings as well. Our meetings have been very well attended and I have heard a lot of praise for our speakers on a variety of subjects and interests.

Our newsletter, the *Event Horizon*, is hands-down by far the best publication of its kind in the entire country. Our web site is up-to-date, easy to read and contains a wealth of information for members and the public at large. People seem to meet up with HAA members at observing locations and star parties spread all over Ontario and the NE USA, and images taken by HAA members appear on calendars, web sites and in magazines too numerous to mention. I leave the Chair position and the Council with thanks to the present Council and knowing that there are others qualified and willing to carry on our work.

HAA bylaws require a new Council to be selected by the membership at our Annual General Meeting, which is held in October every year. Some members of the 2008 council are willing to stay on for another year; others are giving way to new blood. This year the GM will be held at the Spectator auditorium on October 10th, just a week before our 15th anniversary dinner. The bylaws set out a number of positions to be filled and for each position, I am pleased to say we have a volunteer for each position of 2009's Council as of this writing:

Chair:	**Steve Germann**
2nd Chair:	**Jackie Fulton**
Secretary:	**Darrell Maude**
Treasurer:	**Don Pullen**
Membership	**Jim Wamsley**
Webmaster:	**Bob Christmas**
Publicity:	**Ed Smith**
Observing	**John Gauvreau**
EH Editor	**Tim Philp**

Members in good standing at the October 10th meeting will be asked to show support for the Council "slate" by a show of hands. Of course, as Chair of the meeting I'll have to check to ensure that these prospective Councillors have each prepaid their 2009 annual memberships before they can be elected, as required by the bylaws. Our annual "election" usually takes up about 5 minutes of your meeting time. After the new Council takes power on November 1st 2008, they can appoint up to five "councillors at large" and Steve Germann advises that the following members have volunteered for those positions: **Heather Neproszel, Ann Tekatch, Brenda Frederick, Harvey Garden and Ray Badgerow.**

Report on the Huronia Star Party

By Ray Khan

There is no better way to enjoy a weekend than attending a Star Party. The Huronia Star Party (organized by the South Simcoe Amateur Astronomers) was no exception.

Warm comfortable weather and some nice dark skies, in the small township of Duntroon, ab ; out 8km outside of Collingwood, held at a facility and grounds for Cross country Skiing, the Highlands Nordic Centre.

I arrived Saturday morning to give presentation at 9:30am (gag!) on the "Best Telescope is the one you Use". Surprisingly, the talk was well attended even though it was clear the night previous. Not being a morning person, I might have missed it and slept in, however I was presenting... Amateur astronomers are real troopers! Several other presentations followed with some great presentations on CCD imaging for beginner and advanced. The Logistics Human Space flights to the ISS and beyond, and Solar X-Ray Observing (Given by HAA club member Mike Jefferson).

Afterwards, a sumptuous Steak BBQ dinner was served and then several door prizes were given away, such as a 9 Nagler eyepiece and a 70mm Equatorial refractor, won by a very delighted young man. The evenings presentation by Prof. Patrick Hall was on Quasars: Super -massive Black Holes.

Opportunities to observe in H Alpha were also available during the day.

The skies were clear, so of course after dinner we set up our telescope equipment. I was putting a new Ioptron Mini Tower GPS computerized mount and a Skywatcher 120ED APO through the paces. I had some minor technical difficulties (forgot my own rule of NEVER test new equipment at a Star Party, something is bound to go wrong!)

There was certainly a great array of telescopes, and the CCD imaging folks hunched over their laptop computers getting ready for a night of some serious imaging.

Fortunately, my buddy Gord Simpson was able to resolve my issue next morning. Thank goodness for the techie guys amongst us.

The skies did not really darken until well past Midnight, and in actual fact were really phenomenal at about 3am, when most had packed up and gone to bed! Seeing Orion rising is a sure sign of winter coming, but what a spectacular view it was, before heading to bed.

I would guesstimate that approx. 150 folks attended this Star Party. It is very casual, and laid back. The one minor criticism I would have is that there were not shower facilities available, I'm a camper, but only to a degree. However the organizers, have determined that the problem will be rectified for next year. This was a new facility for this particular star party, and so these minor bugs just need to get worked out.

All in all, a great time was had by everyone that was there, and may I suggest you mark it on your calendar for the following year.

Details at: http://www.hsp-ssaa.ca/HSP_2008_PROGRAM.html

Don't forget! The Annual Algonquin Adventure is later this month with Robert and Lillian Chapman at awesome Mew Lake, in Algonquin Park

How the HAA Spent its Summer Vacation

By Mike Spicer

In elementary school, September was always the month to recap summer adventures. Hamilton Amateur Astronomers have a lot to talk about because for our club members, it was a very busy summer. The HAA is Hamilton area's only organization of active amateur astronomers, and it shows:

There were several public observing nights this summer, all of them successful and very well attended by members and the public. Mid-July's event at the Burloak park saw the display of our new glow-in-the-dark club banner. Burloak by the lake is some distance from Hamilton but we have many club members in Burlington and Oakville (and now we have more, thanks to that event). In August the club turned out in force to show the public the Moon, Jupiter and later on, the Perseid meteor shower. On October 4th the HAA will be holding its last public night of the summer season at the Tourist Centre in Brantford, with observing in the parking lot after the presentations inside.

If the HAA website's blog is any indication, large contingents of club members have been travelling all over Ontario and deep into the NE USA in search of dark sky sites to add to our local Binbrook Conservation area and the Starfest site near Mount Forest. The Cherry Springs dark sky preserve in Pennsylvania has become especially popular with many members of the club, sparking a number of trips for star parties this summer. Read more about Starfest and the Cherry Springs excursions on the HAA website's blog. I expect that there will be a lot of excellent images vying for space in HAA's 2009 Astro-calendar.

Ray Badgerow travelled through smog, heat and humidity to get to the deserts of NW China for the total solar eclipse of August 1st and will be presenting on that at an upcoming meeting. What other observing activities have the HAA members been up to this summer? A review of the postings in the club's weblog show that Jupiter's changed equatorial belts, transits of its moons - including Callisto - and even some very close appulses were often mentioned; asteroids Cybele, Massalia, Iris, Daphne and Juno were watched; comets named Lulin and Boattini (*two* of these) were observed; variable stars R Coronae Borealis, SS Cygni and a number of novae and supernovae were checked out; the lunar terminator was studied, drawn and imaged; there was a morning lunar occultation of the Pleiades; an occultation of HIP 27979; several meteor showers were noted, including the Perseids and Delta Aquarids. The rings of Saturn are disappearing but the moons of Uranus and even Neptune could be imaged this summer, and Jupiter has enough small red spots to be a measles case!.

HAA members have braved hurricane winds, downpours, fireworks and municipal police to see carbon stars, flying saucers, lightbridge canons, a real flying saucer, a sombrero, a bubble and fireflies this summer. Kerry Hepburn's image of the sky over Binbrook in July became in turn, a Skynews Picture of the Week and a NASA Picture of the Day; Tim Harpur completed the downsizing of his astro imaging equipment by eschewing a tripod and taking hand-held time exposures with his new DSLR; new members Dave and Diane were helped by the Scope Squad at the alternate site while Ed Smith was "rescued and released from Binbrook" by Steve Germann.

What a busy summer we had! Join the Hamilton Amateur Astronomers as we progress through our 15th anniversary this fall and winter to look forward to an active 2009!

Everything I Needed to Know about Big Dobs

By Steve Germann

I set up the Great White Scope (GWS) on Wednesday evening at Starfest, and it stood on the hill proudly each night, having a chance to be used each night too, as the clouds were pretty sparse at times. During the day i just covered it with a cover, and then put a tarp over the whole thing with some bungees. It worked great. The inner cover is from some rectangular Costco steel shelving that has a zipper. It makes the GWS look a bit like a phone booth, until the tarp goes on. One of the high points was observing Boattini 2008 J1 with the GWS. It sure is dim right now. Staying up late enough to see Boattini 2007 was also one of the perks of astro-camping.

Friday was excellent, and although there was some dew to bust, it was still very nice till well past 2 AM. I conducted a sky tour for some campers from Vancouver, who were at River Place to visit seasonal campers in the park. We toured a few Messier objects, and I invited them to return later since the skies would still be clear.

Saturday was rainy all day, but then as evening came, and the keynote speaker finished his excellent talk about the LHC, the skies cleared significantly, with indications that the clear area would continue to grow. That was enough for me... I unwrapped the GWS and proceeded to seek out whatever I could find.

Several campers packed up their scopes, in anticipation of a mediocre night, so as to avoid the impending rain expected later on. Some even packed up tents and left, including a few HAA members. I figured I would pack up the GWS only when rain was imminent or the sky clouded over. I was intending to load it into the car after this observing session.

In a pinch it can be put away in under 10 minutes, so i was not worried as long as i could see stars.

It was after midnight, and the sky still had a lot of clear spaces. Attilla Danko ascended the hill and expressed his approval that a big dob was still set up and in use. He was quite knowledgeable about the weather and about the scopes. He mentioned I have a loose azimuth axis on the GWS. I explained that the Lightbridge uses ball bearings and I am still working on a way to make it slide more firmly, and stay put. The equatorial platform is partly responsible for its tendency to rotate.

I did not know he was Attilla, but I found out when I praised Attilla's 25 inch scope.

I was delighted to meet him at last, and thanked him for the excellent Clear Sky Chart for Binbrook, recently minted.

We toured a few deep sky objects with the GWS, including the swan nebula, which always looks good in the GWS, because it shows up right-way-up. Having an opportunity to talk to someone so knowledgeable was excellent, and I asked him everything about big scopes and weather that I could think of.

My first question was about seeing. I had heard that a smaller scope looks through less patches of the atmosphere, and so does not get defeated by seeing. A big scope is supposed to be useful on less nights because of that. I asked whether a big scope suffers because it samples more atmosphere than a smaller scope, and therefore if some of the advantage of a big scope is lost because of seeing.

He explained that there's actually 2 kinds of seeing. One is the conventional air turbulence in the atmosphere, and the other is caused by tube currents, primarily because the main mirror is warmer than the air. In cases where the main mirror has cooled sufficiently, a bigger scope is always better than a smaller scope, and by the same ratio, regardless of the seeing.

There is a way to distinguish between the 2 kinds of seeing problems, and to determine how much of what's not right can be attributed to tube currents. The dancing light patterns in an unfocused star tend to blow by in one direction. Anything that seems to be swirling is tube related, because it's showing indications that it is affected by the shape of the scope.

I asked about cleaning a scope. Attilla told me how he cleans his 25 inch main mirror. I was very much pleased to hear that he manages to clean it using sterile

Everything I Needed to Know about Big Dobs—Continued

By Steve Germann

cotton and ivory liquid (just a few drops) in gallons of distilled water. Keeping the mirror in the mirror cell is key, because there's more chance of damage if it's removed, and any splashes of water can be easily wiped off the frame since they are distilled water anyways.

I asked about alignment. It's always been a bit of a mystery to me why the stars I see in the GWS are not tiny points, especially at higher magnifications. He explained that if the laser deviates from alignment by more than 1 millimeter, it's time to turn some knobs, and that he always has to align and collimate his scope each time he sets it up (as do i).

I asked about storage. One of the most important things is to keep the mirror dry. This is hard to do in storage, actually, because as the air warms in the morning, moisture can condense on the scope. He combats this kind of dew a few ways. When camping, a solar cell, pointed east, lights a 25 watt light bulb under the main mirror. The heat is sufficient to keep the mirror from dewing over in storage. At home, the scope is stored in the trailer, and a 25 watt light bulb always on, keeps the mirror out of danger. I guess for my scope, a 16 watt light bulb might do.

I asked about mirror cooling times. The mirrors made by Normand Fullum, which have an open cell design, cool very quickly and are ideal for a big scope. Otherwise you need a lot of fans blowing.

Some people actually glue a fan right into the center of the mirror, to help it cool. A good way is to use a couple of fans near the bottom of the cell, blowing air across the front of the mirror from side to side. The ideal would be a system where the fan blows whenever nobody is looking and then stops when an eye is detected at the eyepiece.

I asked about ladders. Attilla's ladder is tall and it's necessary to climb pretty far. It has flat steps, which are much better than round rungs. Like my ladder, packing the ladder for transport required a little

Everything I Needed to Know about Big Dobs—Continued

By Steve Germann

engineering, to make it fit neatly (or at all).

I asked about tracking platforms. Attilla uses a set of encoders and motors to control the scope, such that it is effectively an alt-az goto scope. He told me how best to drive the axis with wires connected to motors, such that it can still be used in manual mode by disconnecting a clip that tensions the wire. It's good to be able to use the scope even when batteries are dead or computers are crashed. The encoders can keep track of the scope position whether motorized or manual. There are a few different kinds of controllers that can be used with a big Dobsonian scope. He does not use a tracking platform because it tends to tilt the scope away from the ladder, making it difficult to reach out and keep the eyepiece at a comfortable distance.

I asked about star parties. Attilla does not take a scope down to the Winter Star Party (WSP) in Florida, but just comes to look at the giants already there. That's a practical approach. The GWS hungers for light though, and I don't think i will hear the end of it if I leave it home alone when I go to the WSP.

I asked about dew busting. A 12v hair dryer can do the job, but it's not much good for drying hair. He suffered a failure of one of his power tanks at Starfest. I guess the take-home message is to have more than one power tank.

Last year was my first Starfest, and the first for the GWS too. This year coming back was better. Being prepared for dew was a comfort. Knowing the sky better made touring the dark skies more enjoyable. The people I met there have given me memories to last a lifetime. I will definitely be going back early again next year, regardless of the weather.

The Sky this Month—by Greg Emory

September marks the start of many things for us. The **autumnal equinox** is September 22. For astronomers the days between the **autumnal** and **vernal equinox** are wonderful, more night than day – an observers dream (unless you're a solar observer, I guess).

Looking at the chart in the center of this month's Event Horizon we see the sky for the 30th at 9:00 pm. We can see that the summer **Milky Way** is slightly past the meridian. The wonderful open clusters and nebulae of the **Milky Way** can still be seen. **Sagittarius** is still in good viewing position as is **Cygnus** and **Scutum**.

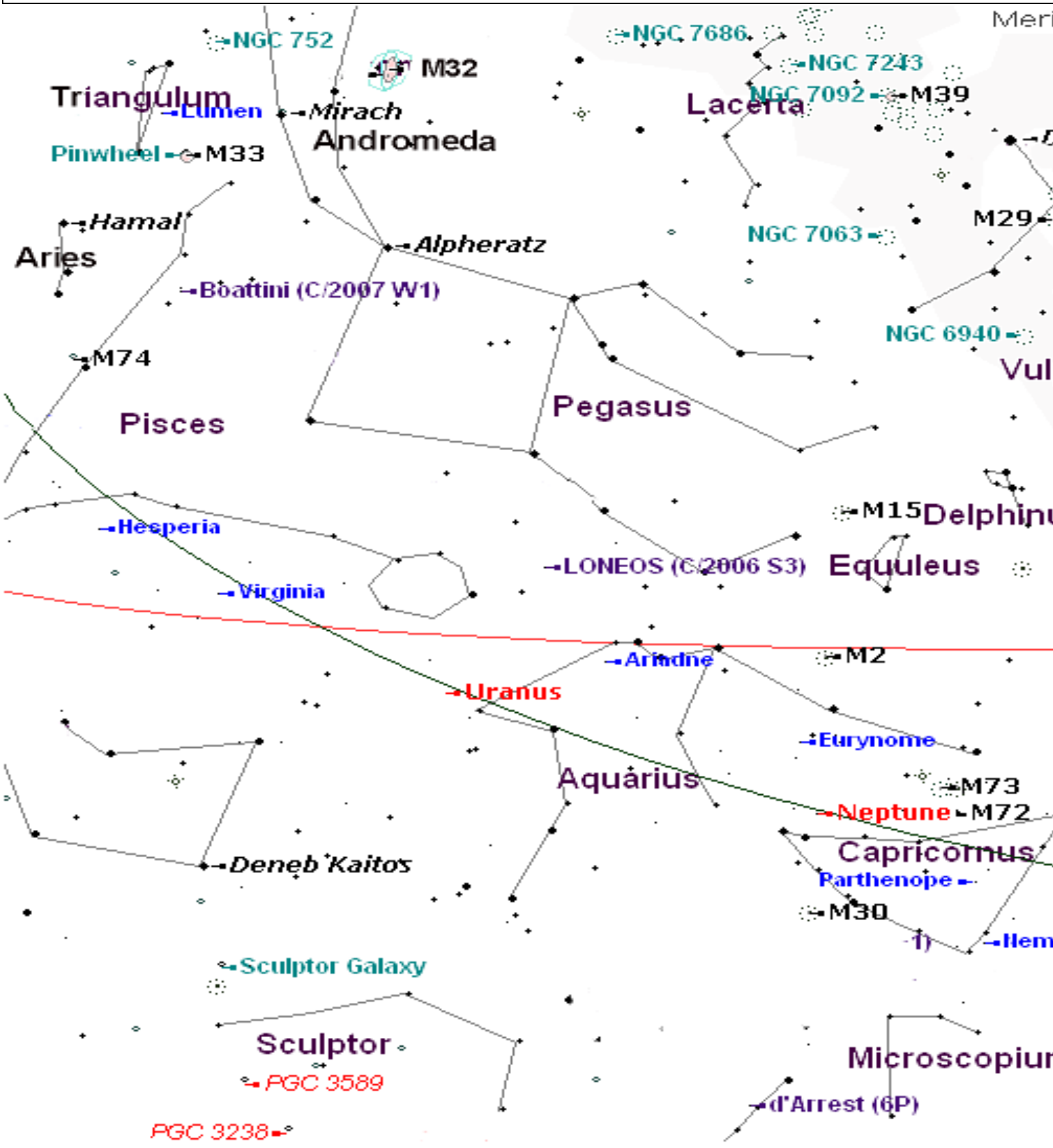
The opportunities in **Sagittarius** are seemingly limitless. Take the last chance to glimpse some of them before next spring. As a challenge don't start with the big bright objects in the northern regions of the constellation, look for/at the **globular clusters** under the bottom of the teapot. Look for **M54**, **M55** and **M69**.

Looking to the east we have a wonderful marker in the sky. The constellation **Pegasus** is anchored by a very large square that stands out noticeably in the sky. Coming from **Pegasus** we also have **Andromeda**, arching up towards **Cassiopeia**.

The only **galaxy** visible to the naked eye in the northern hemisphere is located in this area. The **Andromeda** Galaxy is visible to observers from a good observing sight. Through binoculars or a rich field telescope the **galaxy** extends several degrees. With some persistent viewing some detail beyond the central core can be seen. There are two small satellite **galaxies** near **Andromeda**. These are **M110** and **M32**. **Andromeda** is about the same size as the **Milky Way Galaxy**. As the late summer turns to fall we have many things to look forward to. In the next month or so we can look forward to seeing the **Pleiades**, **Taurus**, **Gemini**, and **Orion**. That is definitely a list to look forward to.

The planets this month are mainly **Jupiter**, **Neptune** and **Uranus**, in the respective constellations **Sagittarius**, **Capricorn** and **Aquarius**. The planets **Mars**, **Venus** and **Mercury** are in a tight grouping in the constellation **Virgo**, which is very near to the **Sun** this time of year. The four large **moons** of **Jupiter** (**Io, Callisto, Ganymede and Europa**) dance around the planet and can be seen to change from day to day (or over the course of a single observing session!)

The Sky t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Boattini (C/2007 W1)
NGC 6940
M74
Pisces
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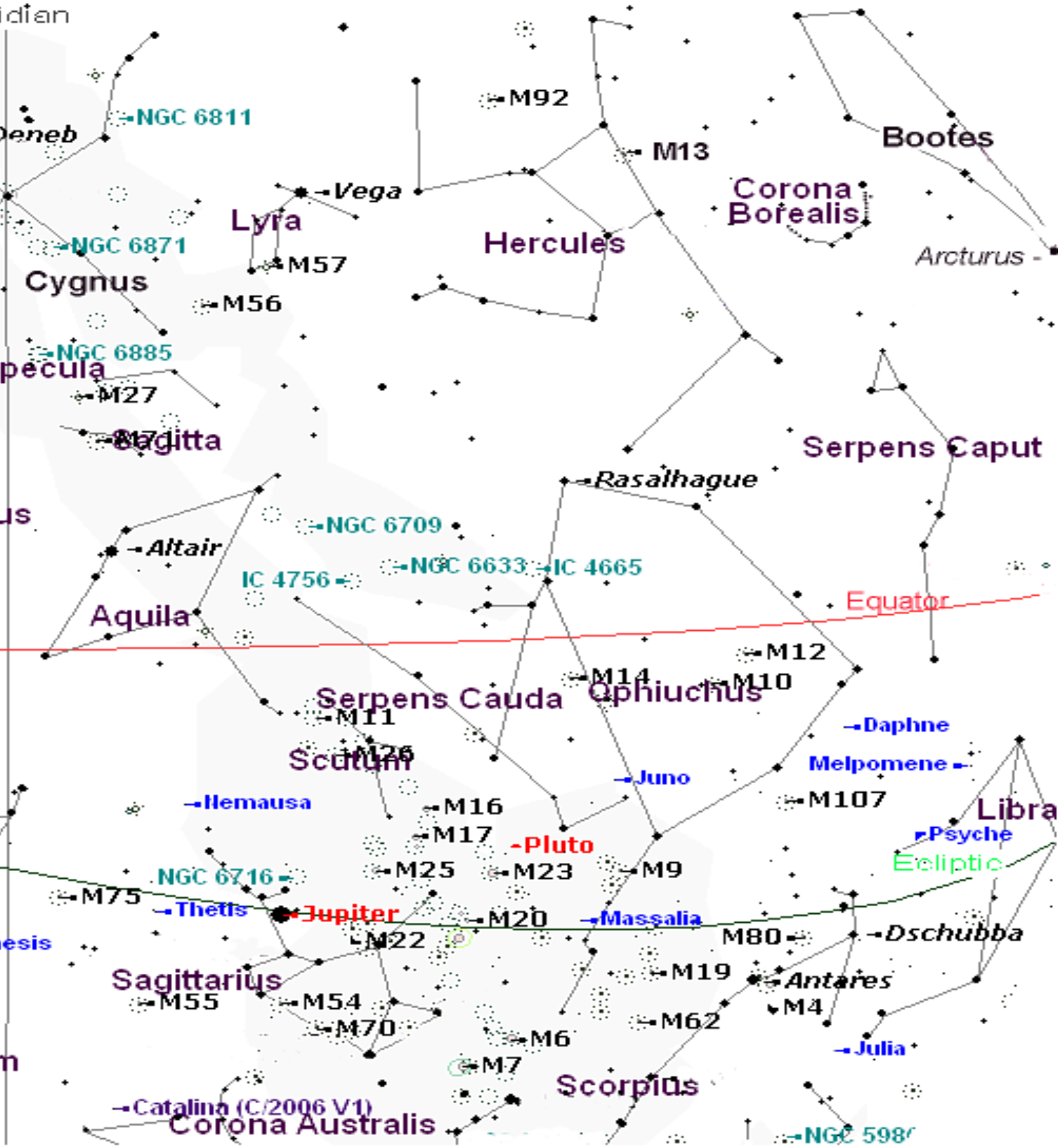
his Month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M55
M54
M4
M70
M62
M6
Julia
M7
Scorpius
Catalina (C/2006 V1)
Corona Australis
NGC 598

Through the Looking Glass

by Greg Emory

I hope that everyone had an enjoyable summer season, maybe did some observing. In early May I took a motorcycle safety course and received my M2 license. My loving wife then bought me a nice motorcycle in the end of May (a 2001 Harley-Davidson 883 XLH, for those who are interested). Since then I have been asked many questions about my bike. It struck me that these were basically the same questions I received 7 years ago when I took up Astronomy and telescope making as conjoined hobbies.

Have you ever been asked "Why are you interested in Astronomy?", "Why would you want to do that?", "Don't all of the stars and things look the same after awhile?". The last question is the easiest to answer – "No they don't, but thanks for asking!". The first question is a wonderful one. Why do we do this? What is it that each of us share in common that drives us to brave the mosquitoes, subject ourselves to cold winter nights or even simply to sacrifice the warmth and comfort of a good nights sleep? I can barely answer this question on my own behalf, let alone yours. I like the analogy of a child open presents on Christmas morning.

Every single time I set up my telescope I can feel the anticipation building. Will the skies hold? Will I see M13, the globular cluster in Hercules, like I have never seen it before? Will the nebulosity in the Pleiades be apparent tonight – or ever? Saturn's rings never really disappoint, but tonight will they be beyond my expectations or dreams? Like that child on Christmas morning, each view, every time I move the telescope another opportunity awaits. Yes I am disappointed at times, frustrated at others. The next time will be better, the next time will be the stuff of legends. Like the cold night in November 2004 that I went out with some fellow HAA members to Binbrook. In my minds eye I can still see Saturn. It was the best view I have ever of the rings and planet. I have since bought a bigger telescope and much better eyepieces, but I still have not equalled that night.

To say that the anticipation of what will be seen and the quality of the view is paramount to the question "Why are you interested in Astronomy?" is insufficient even to a emotionally repressed, knuckle dragging engineer such as myself. Part of why I do this is to share with others who have some common interest. When I started out, and went to my first HAA public night (August 11, 2001), there were many there who befriended me, took time away from their observing to answer my questions or show me something through the telescope that I had never seen before. At the time I wrote this off as these people being kind, generous souls who are willing to help strangers. This is not entirely the case, while these people are kind, generous souls, whom I now consider friends – there is an element to this that is somewhat self indulgent. Speaking for myself, given the opportunity to perform these generous acts I do so in part because it so self-rewarding. Being the one to show that new person Saturn for the first time, hearing the excitement in an adult's or child's voice when they can't believe the things they are seeing – that is the reward. Knowing that that person may someday tell the story of how they first saw The Orion Nebula, and even though they can't remember your name or anything else about you they remember the few minutes you spent with them looking at the stars.

If you are new to Astronomy, or to the HAA or both ask us questions, observe with us, come to the public viewing events. You are not disturbing us or wasting our time, this is part of why we do these things.

Pick Up Your Binoculars and Observe

by Mike Spicer

Hamilton Amateur Astronomers start up their monthly meetings every September after the summer hiatus. It's the perfect time to highlight binocular observing with the summer constellations prominent in the cooler, dryer evenings of September and the autumn constellations rising in the east. I'll be speaking on binocular observing with Ed Smith at the September 2008 monthly meeting. Ed will demonstrate his binocular setup and can answer any questions you may have.

Ask experienced amateur astronomers what equipment you need to start observing and the response is often "just a good pair of binoculars". Binoculars are a great investment for anyone interested in the night sky. Binoculars gather more light than the naked eye, so they show you fainter objects. They also magnify the view, revealing more detail and separating stars too close together for the naked eye to resolve.

In many ways binoculars are superior to telescopes for learning the night sky. They are light and very portable, the perfect "grab and go" setup. They offer an upright, wide field of view making it easier to find objects. They can reveal a surprising amount of detail on the Moon and are better than a telescope for scanning across Milky Way star fields. You can easily see the phases of Venus, the four Galilean moons of Jupiter, even a few of the brighter galaxies and nebulae. From the city, they penetrate light pollution to give you a view as good or better than a naked-eye observer can get from a dark sky site. Using both eyes eliminates a lot of the "floaters" that older telescope observers experience from matter inside their eyes. They don't need an expensive mount if you can hand-hold them steady. Oh, and a good pair of binoculars doesn't cost much.

You don't need big binoculars to observe the night sky

Photo Credit: Vixen

Binocular equipment doesn't require a lot of expense: a pair of 10 x 50 binoculars can be purchased for $50 or less. How do you know the pair you are about to buy, are "good"? Just read my *Event Horizon* article "Binoculars - What to Check Before You Buy", Vol. 14, No. 5, March 2007, pp. 12-13. You can download back issues of the EH by clicking on the "Newsletter" button on our HAA web page.

Aperture is important for night sky observing because sky images are dim compared to things you observe during the daytime. I'd recommend 50mm binoculars as a minimum (the second number in the 10 x 50 you look for, stamped on the binoculars). Apertures larger than 50mm will make the binoculars more expensive and much heavier! The first number in "10 x 50" measures the binocular magnification and 10x is likely best - remember that higher magnification will reduce your field of view and will magnify any shakiness, making it hard to hold the binoculars steady. If you use 7 x 50 binoculars, the image thrown on your eye will have a diameter of 7mm - called the "exit pupil" - and some of that light may not fit through the pupil of your eye if you are over 40 years of age. 10 x 50 binoculars create an image only 5mm high and that will fit through your pupil much more easily, making the image more magnified and brighter at the same time.

Bioculars are easy to use because they show you a lot of sky compared to a telescope's rather narrow "field of view". The field of view stamped on binoculars is expressed in the width of the view in feet, at a distance of 1,000 yards. Astronomers divide the "feet" measurement by 52.5 to get the field of view expressed in degrees. The Moon is about 1/2 degree across and that's a common field of view in the eyepiece of a telescope. 10 x 50 binocu-

Pick Up Your Binoculars and Observe

By Mike Spicer—Continued

lars show a swath of sky about 6 degrees wide! 20 x 80 binoculars have a 3 degree field of view and will require support to hold them steady - a tripod, a nearby fence, wall or tree!

Most binoculars have a central focusing knob that moves both eyepieces at once. But the right eyepiece itself can be adjusted by turning it slightly. Focus using the central knob first, looking through just the left eye to get an image in sharp focus. Then focus the right eyepiece by turning it until the image on the right is just as sharp as the left. This permits an observer to compensate for eyes that have slightly different focus - a very common eyesight problem for eyeglass-wearers!

For beginners, the Moon is a natural starting point, because it is big, bright, full of detail, shows stark black and white contrast along the terminator, and is often neither too high in the sky to be a "pain in the neck", nor too low to have the view spoiled by air pollution or blocked by terrestrial objects. As the days pass, you can watch the shadows of craters, mountains and other details change on the lunar surface, especially fascinating where the sun is rising or setting on the Moon (that line separating light from dark is called the "terminator"). When the Moon is a crescent, the eerie Earthshine is easily visible. During lunar eclipses you can watch the Earth's shadow crawl across the Moon's surface.

Binoculars permit you to watch the moons of Jupiter as they dance around the planet, and you'll see the rings of Saturn when the planet is tilted toward Earth. Mercury, Uranus and Neptune will be more easily visible to you and of course the crescent Venus can be seen, too. Thus the planets will start to appear different from the background stars. You'll see the Andromeda galaxy easily in binoculars and the Great Nebula in Orion (M42 - so, you've started observing Messier objects, eh? Find out more about them!). The constellations themselves will no longer be a few bright stars connected by faint lines like in the simple star atlases you use - even tiny constellations like Lyra, Sagitta and Corona Borealis will appear large in binoculars and be filled with faint stars! Bright stars will show their colours and you'll start observing double stars and perhaps even variable stars!

Binoculars really work to advantage on the larger star clusters with cute names like the Beehive (M44), the Pleiades (M45), the Coathanger, or the smaller M-objects that are open clusters. Run outside for 5 minutes with binoculars and sweep through Sagittarius on a summer evening or sweep across Auriga one frosty winter evening, for example. You can't do that with a telescope! Oh - you're hooked on amateur astronomy now! Soon, you'll be at star parties, looking through telescopes!

Member of the Month—Ed Smith

by Jim Wamsley

After 26 years in the Canadian Armed forces and a second career as a teacher, Ed Smith finally retired. A long time hobbyist in radio controlled air- craft, and model railroad, he was finally able to find the time to indulge his interest in astronomy.

Ed found the HAA at one of our public nights last year. He immediately was bitten by the "Astro Bug". He purchased a 12" Dob and brought it out to last year's HAA picnic. After giving this scope first light, he soon found that the scope had some major imperfections, and quickly returned it.
He then opted for a brand new 12" Orion. Ed has enjoyed this scope and has made a few modifications, thanks to his hobbyist background, to help in the transport and use of this "Big Gun".

Ed has now found that "Big Guns" are great but there is something to be said about ease of transport. He has recently purchased an 80mm Apo with a computerized Equatorial mount and is having a great time working his way through the learning curve.

Ed's hobbyist enthusiasm is still evident from the fine solar filters he has produced for himself and other club members and became evident to me on a trip to Cherry Springs PA. While passing a hobby shop on the highway, he craned his neck and flailed his arms in an effort to get me to stop, to no avail.

Ed Smith September 2008 Member of the Month

Over this past year, Ed has become a very active club member, coming out to most monthly meetings and frequently observing with the gang at Binbrook. He has recently attended several board meetings.

Ed has become a very good friend and enjoyable observing partner.
I am very happy to name him as September member of the month.

HAA 15th Anniversary Dinner!

The Mandarin Restaurant

1508 Upper James Street

Friday evening October 17th

7:30 pm

Dinner is the usual sumptuous Mandarin all-you-can-eat buffet. John Gauvreau will present a review of the HAA from its inception in 1993 to the present. Special presentations will be made to a number of honoured guests and supporters of our club. There are a number of excellent door prizes and Certificates of Merit

Tickets are $32.00 each with a cash bar.

Tickets will be available at the welcome table during our September and October HAA meetings.

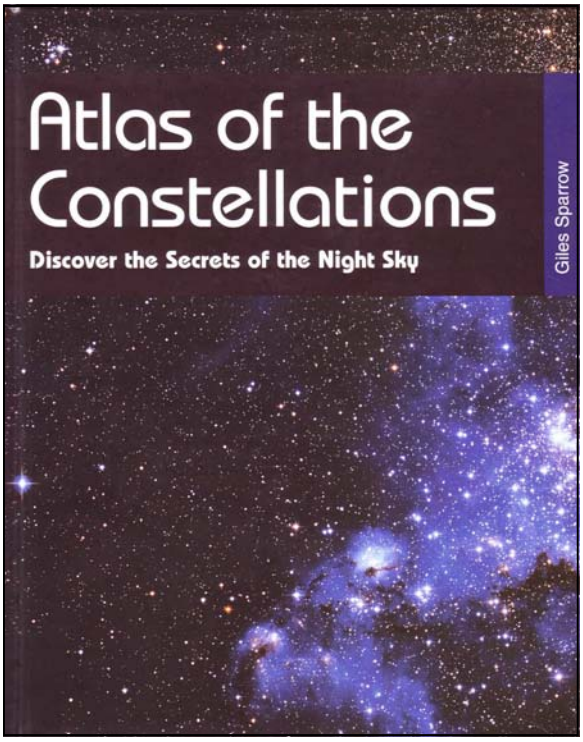
This is an opportunity for members and guests to celebrate with us, the growth and success of Hamilton's only active amateur astronomy club over the past 15 years, looking forward to the future!

HAA Telescope Contest

1. The contest is open to the public, excluding HAA members but including the children (age 9 - 16 inclusive) of HAA members.
2. The contest runs from 1 September until 9 pm Sunday evening, November 19th and the winner will be announced and the telescope awarded at the HAA meeting, December 12th.
3. Enter the contest by submitting a composition of 300 - 600 words on a subject in amateur astronomy or telling what you would do with the telescope if you won it. The entry can be emailed to: chair@amateurastronomy.org but must also be emailed to editor@amateurastronomy.org
4. To be valid, the entry must be received by both chair and editor before the closing date and must have the entrant's name, age, mailing address, telephone number and email address for contact purposes. All entries become the property of Hamilton Amateur Astronomers and may be published in the club newsletter, Event Horizon, at the editor's discretion.
5. The contest is open to members of the public of all ages who reside within the area bounded by Grimsby - Cayuga - Brantford - Cambridge - Milton - Oakville so the winner will be "one in a million".

Book Review—Discover the Secrets of the (Binocular) Night Sky

by Mike Spicer

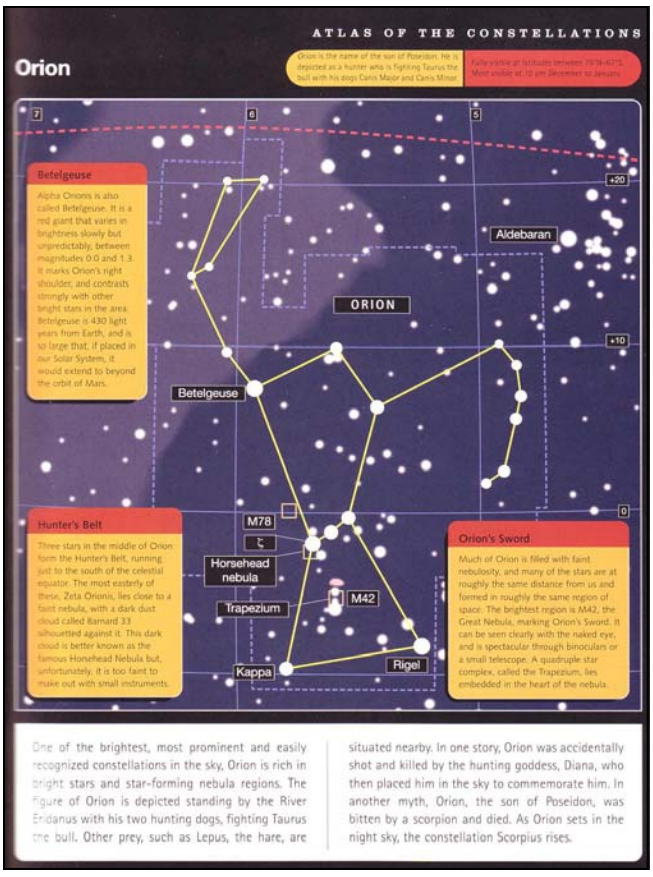


I like star atlases and have quite a collection, right up to the 3 volume Uranometria and Millennium sets. I don't use them much because my computer has Starry Night Pro to serve all my needs. Perhaps because I am a book person, the printed atlases have a special place in my world. A simple chart book that lays out a few objects of interest in each constellation has to be of interest to the amateur astronomer.

In 2007 Giles Sparrow's ***Atlas of the Constellations*** was published by Grammercy Books of Random House, New York. It is a colourful, easy to read, full-sized, plastic-coated, hard cover book, perfect for binocular observers. I highly recommend it if you are new to astronomy or if you want a list of binocular targets by constellation. I paid $15 for my copy and I have ordered a few more for interested club members, see me if you want one.

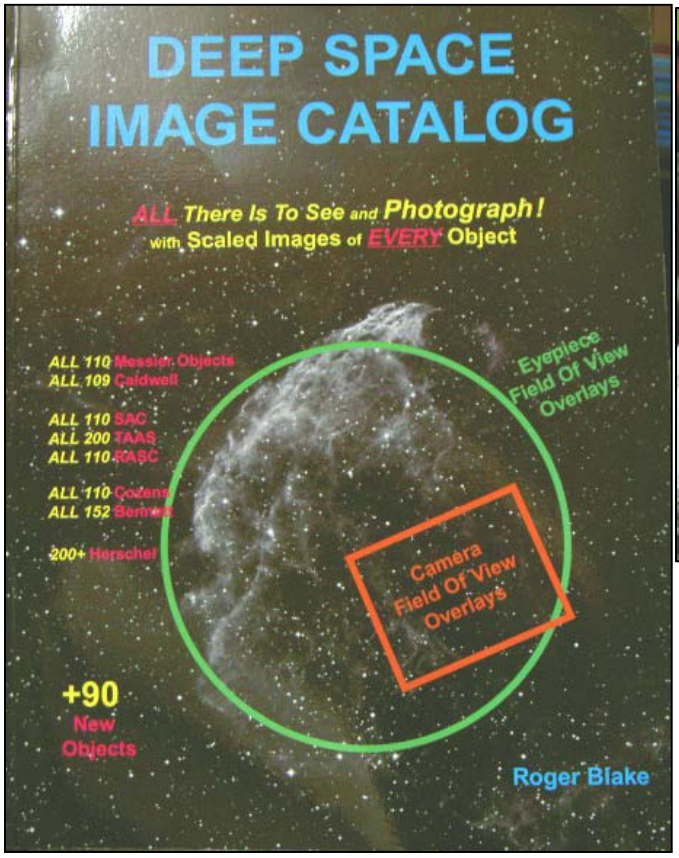
The introduction distinguishes asterisms from constellations, explains the carving of the heavens into constellations, the naming and cataloguing of stars and the operation of the celestial sphere. The scale of the heavens is explained: magnitudes of apparent brightness, temperature and colour of stars, clusters and nebulae... all in just a few concise pages.

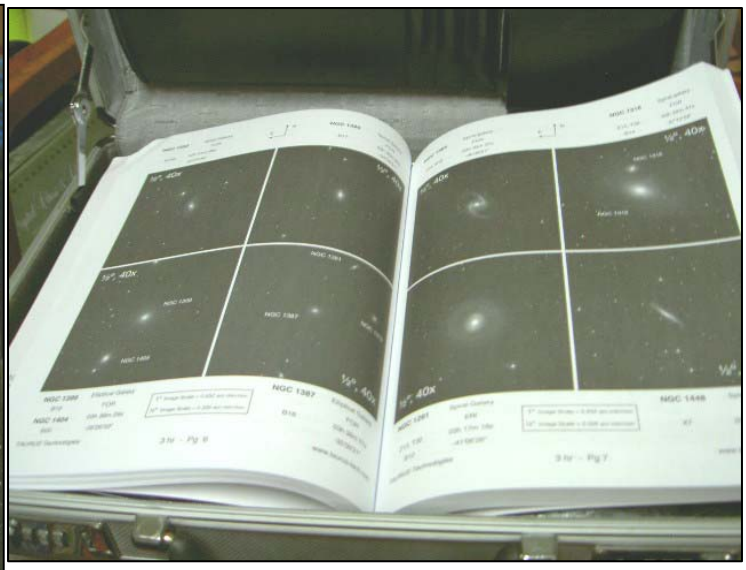
The vast majority of the book is taken up with extra-large charts of the individual constellations, one page each, explaining the origin or mythology of the constellation and identifying relatively bright stars and deep sky objects in it. At the back are six large charts of the sky centred on Ursa Major, Ursa Minor, Pegasus, Orion, the Milky Way and Octans. An alphabetical Table of Constellation information and a lengthy Index listing every object in the charts finish this bright book.



Book Review—Deep Space Image Catalog

by Ed Smith

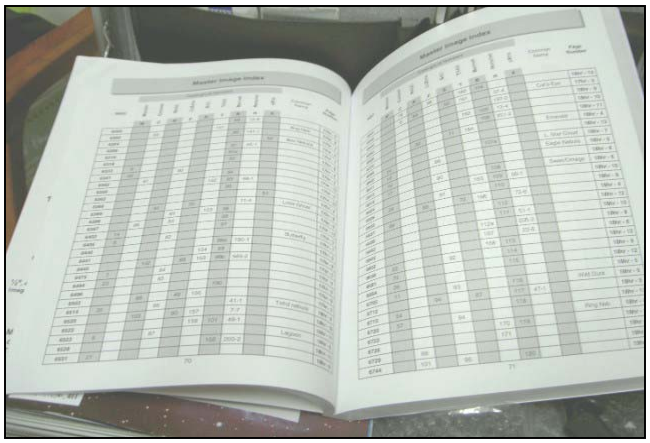




I discovered this book while attending the Cherry Springs Star Party in June of this year. The book was made available to those attending at a 15% discount by Taurus Technologies. The book's regular cost is $35.00 US plus shipping.

I have found it to be a terrific resource manual. As the title indicates, it not only contains a complete listing of all the known Deep Space objects in a cross reference format, but has photographs showing the viewing size of the objects.

These images are full size based on the magnification used as would be seen through a normal eyepiece. There is a section that indicates when and where they are visible. In addition 26 pages of star maps are included.



The observer will know what they will see through the eyepiece as well as what area will be captured when DSI or DSLR equipment is used to photograph the objects..

I feel this is a terrific resource book for those amateur astronomers who venture beyond the realm of our solar system.

I have a copy and several HAA members have a quantity on order.

For further information contact; www.taurus–tech.com or phone 1-856-769-4509

Title	**Deep Space Image Catalog**
Publisher	**Starizona**
SKU #	**0-9710924-3-5**
Format	**Softbound, laminated cover**
Number of Pages	**308**

Google for Satellites: Sensor Web 2.0

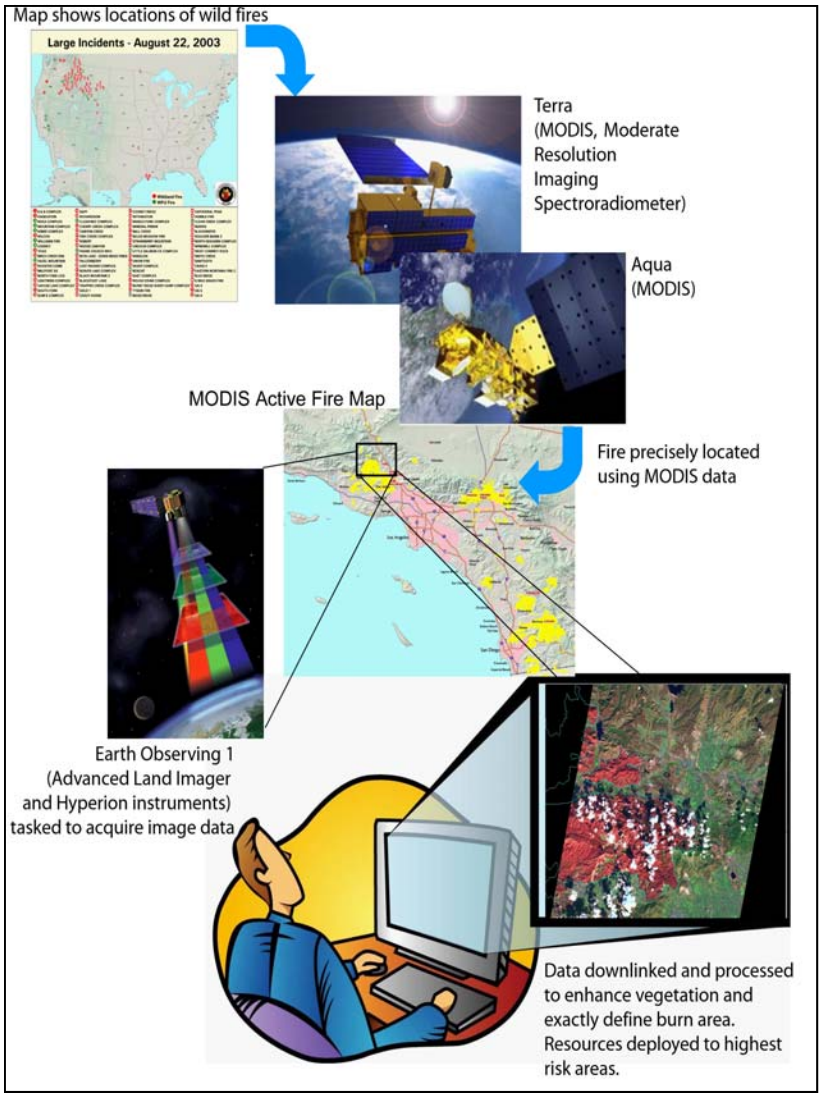
If you could see every satellite passing overhead each day, it would look like a chaotic meteor shower in slow motion. Hundreds of satellites now swarm over the Earth in a spherical shell of high technology.

Many of these satellites gaze at the planet's surface, gathering torrents of scientific data using a dizzying array of advanced sensors — an extraordinary record of our dynamic planet.

To help people tap into this resource, NASA researchers such as Daniel Mandl are developing a "Google for satellites," a web portal that would make requesting data from Earth-observing satellites almost as easy as typing a search into Google.

"You just click on it and it takes care of all the details for you across many sensors," Mandl explains. Currently, most satellites are each controlled separately from the others, each one dauntingly complex to use. But starting with NASA's Earth Observing-1 (EO-1) satellite, part of the agency's New Millennium Program, Mandl and his team are building a prototype that stitches these satellites together into a seamless, easy-to-use network called "Sensor Web 2.0."

The vision is to simply enter a location anywhere on Earth into the website's search field along with the desired information types — wildfire maps, vegetation types, floodwater salinity, oil spill extent — and software written by the team goes to work.



"Not only will it find the best sensor, but with proper access rights, you could actually trigger a satellite to take an image in the area of interest," Mandl says. Within hours, the software will send messages to satellites instructing them to gather the needed data, and then download and crunch that raw data to produce easy-to-read maps.

For example, during the recent crisis in Myanmar (Burma) caused by Cyclone Nargis, an experimental gathering of data was triggered through Sensor Web 2.0 using a variety of NASA satellites including EO-1. "One thing we might wish to map is the salinity of flood waters in order to help rescue workers plan their relief efforts," Mandl says. If the floodwater in an area was salty, aid workers would need to bring in bottled water, but if flood water was fresh, water purifiers would suffice. An early and correct decision could save lives.

Thus far, Mandl and his team have expanded Sensor Web 2.0 beyond EO-1 to include three other satellites and an unmanned aircraft. He hopes to double the number of satellites in the network every 18 months, eventually weaving the jumble of satellites circling overhead into a web of sensors with unprecedented power to observe and understand our ever-changing planet.

To learn more about the EO-1 sensor web initiatives, go to http://eo1.gsfc.nasa.gov/new/extended/sensorWeb/sensorWeb.html. Kids (and grownups) can get an idea of the resolution of EO-1's Hyperion Imager and how it can distinguish among species of trees—from space at; http://spaceplace.nasa.gov/en/kids/eo1_1.shtml .

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

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www.amateurastronomy.org

Article Submissions

The HAA welcomes your astronomy related writings for the Event Horizon newsletter. Please send your articles, big or small, to:

editor@amateurastronomy.org

The submission deadline is two weeks before each general meeting.

The Event Horizon is a publication of the Hamilton Amateur Astronomers (HAA) The HAA is an amateur astronomy club, for people of all ages and experience levels, dedicated to the promotion and enjoyment of astronomy . The cost of the subscription is included in the $25 individual or $30 family membership fee for the year. Event Horizon is published a minimum of 10 times a year.

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HAA Annual General Meeting

October 10th, 2008

7:30 PM @ The Spectator

Observing site for the HAA provided with the generous support of

Binbrook Conservation Area..

Come out observing with other members 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 $70 to help support the park.
www.conservation-niagara.on.ca/conservation_areas/binbrook/binbrook.html
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