Volume 15, Issue 6

June 2008





Event Horizon

Saturday May 10th was International Astronomy Day and in Hamilton, amateur astronomers gathered near Hutches on the Lakeshore for solar observing from 2 - 4 pm, followed by an evening of public observing at Bayfront Park starting at 8 pm.

The crescent Moon, almost overhead at 8 pm before the Sun had set, grew brighter and more golden

September. Have a GREAT SUMMER!

(Continued on page 2)

Tim Philp, Editor

way?



Summer Observing Events Burloak Waterfront Park Saturday, July 12th 20:00hrs—23:00 hrs Binbrook Conservation Area Tuesday, August 12th 20:00hrs—23:00hrs Brantford Visitor and Tourism Centre Saturday September 6th 19:00hrs—22:00hrs

Astronomy Day Success!

Photo and Story Credit: Mike Spicer



Golly gosh darn, but it is HOT out-

side! I guess that is what I get for

complaining about the cold all last

winter. Of course, the Astronomy

Gods are cruel indeed. When it is comfort-

able to observe, we get the fewest hours of

darkness. When it is bitter cold, we get many

hours each day of prime observing time.

Who designed this crummy universe any-

Welcome to the June/Summer edition of the

Event Horizon. It is an extra large edition be-

cause we will not be meeting again until

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May Meeting Roundup

By Mike Spicer (Continued from Front Page)

as the evening progressed. More telescopes were set up in

but more often were just touring the park in the excellent

warm weather. They often stayed to look through several telescopes and to

club

the park than on any other occasion in our club's history, and think more members were present than ever before too.

Guests who dropped by continuously during the evening may have heard the advance radio and print advertising arranged by Steve Germann and Don,



The Mannerings set up the new 4.5" telescope they had won as a door prize at the HAA meeting the night before, as promised; why, even Mike Jefferson set up one of his Questar maksutovs to show the Moon and Saturn.

examine our new

brochures



Treasurer's Report— By Don Pullen

(Unaudited)		
Cash opening Balance (1 May 2008)	\$ 3,098.03	
Expenses	\$ 487.82	
Revenue	\$ 525.50	
Closing Balance (31 May 2008)	\$ 3,135.71	
Notes:		
Major expenses included: HAA Hats (\$334.71), Newsletter print- ing (May \$103.11), Clear Sky Chart annual donation (\$50.00).		
Major rovonuo sourcos includod: HAA Hat sales (\$345.00)		

es included: HAA hat sales (\$343.00), iviaj Messier Marathon (\$125.00), 50/50 Draw (May \$55.50).



Suddenly, it's summer after a short, wet cool spring. Hot air from south of the border (presidential campaigning, y'know) puts us into nights of sticky 30C air with poor seeing. But it's shirtsleeves weather!

Saturn and Mars are still visible after dusk in t he west! This will be your last chance to see the rings of Saturn - after it emerges from the solar glare late this fall, the rings will be almost edge-on.

June is a great observmonth...galaxies ing abound in the sky after dark, and for those who stay up late or rise early, the milky way holds a celestial plethora of gems. Jupiter is quite spectacular. I was out looking at Jupiter at 4 am the other day. An 80mm spotting scope at 80x showed a lot of detail poor seeing.

The Jovian disk now sports three red spots and the equatorial belts have once again separated as the planet's equatorial zone has brightened up. Even binoculars will show the Jovian moons. I am sure our club observing director Greg Emery will provide summertime transit and eclipse information for Jupiter's moons.

Hamilton Amateur Astronomers like to observe from Binbrook Conservation Area, or its alternate site off Tyndale Road just 10 minutes S of the city. Members go often and try to post a few hours before they leave, in case you want to join them. Check the "observing" button on our web site about 6 pm for a notice that someone is going out observing on any specific night. Our members love to have visitors and you don't need to bring a telescope, binoculars will give you some breathtaking views of the sky.

Astronomy Day kicks off the summer outreach season for HAA. This year we had a fantastic turnout of members and guests at serving group. You can read their observing and imaging exploits using the "Reports" button on the web site, of course.

A large group travelled to Cherry Springs Dark Sky Park in Pennsylvania at the end of May and this issue of EH has more pictures and articles from that successful trip.

Our next monthly meeting at the Spectator building in Hamilton

won't be until Friday evening September 12th. You are invited to join us then for a recap of the summer's activities, a description of what can be seen in the fall sky, and presentations on space or the latest innovations in amateur or professional equipment.

Come on out to one of our monthly meetings - we give away door prizes to those who arrive before 7:30 pm. You can swap stories and equipment with our members. We have a

lot of fun and invite you to become part of our active club!

Meanwhile, do get out to enjoy the summertime weather and the wonderful sights in the summertime sky. There's information in the pages of this free newsletter that can assist you, and contact information if you'd like to know more. Our web site is open to those with internet access.

Please feel free to observe with our members whenever we get together. We would love to show you celestial sights through our telescopes!



on the disk despite the Our May meeting at The Spectator drew the usual crowd

telescopes in Bayfront Park in Hamilton in the evening, following daytime solar observing along the lakeshore near Hutch's.

We followed that with a great night of public observing at Murray Park in Grimsby. You can read more about these events on other pages of this month's Event Horizon. More public nights are planned for July, August and September.

Our club is actively involved in bringing astronomy to the public and we really appreciate the camaraderie of our member volunteers. We have a very active ob-



Mars Phoenix Lander successfully touched down on the Red Planet May 25 at 7:53 pm EDT. No software glitches to spoil the party this time. Instead, amazing images taken by the HiRise camera on the orbiting spacecraft Mars Reconnaissance Orbiter (MRO) show Mars Phoenix Lander (MPL) with parachute aloft quickly de-

scending through the thin Martian atmosphere with а huge crater in the background. What is interesting about these images is that NASA/JPL took them in the event that something went wrong with the landing, the scientists could point to the photos and say "Damned Chute didn't Open" or

"MPL flew off course into damned 6 mile wide crater", but using much more politically/scientifically correct language of course.

The infamous Martian jinx is not affecting MPL in any way this time. As of Sol 9, the number of Martian days since MPL landed on Mars, all the working parts of the spacecraft are performing as hoped, including all the cameras, the robotic arm, TEGA (Thermal & Evolved Gas Analyzer), MECA (Microscopy, Electrochemistry & Conductivity Analyzer) and the Weather Station, built by the Canadian Space Agency. The weather station sports a tiny Red Maple Leaf. Maybe that's why the jinx is off for the time being, a Canadian



Maple Leaf is so much more, well, peaceful and welcoming, compared to the symbols flown on previous failed missions by a superpower (USA) and a former superpower (USSR) to the Red Planet.

Hey, did you know that the Canadian Space Agency built the weather station for \$ 37 million? I heard one local morning radio deejay (a female one, for shame) cackle and complain about the money spent on this. Like, what is the Canadian government wasting the taxpayer's money on? Well, it seems, the narrow-minded concern of a media dingbat. I doubt she can wrap her brain around the difficulties of launching a delicate instrument out of the clutches of earth's gravity, traveling over 400 million miles in

space and then making a pinpoint landing onto the surface of another world. I bet she has blonde highlights-oops... I have blonde highlights, never mind.

I think it is cool (and it is very cool on Mars indeed) that on Sol 9 I can see on the MPL website that it is a sunny day Martian arctic in the (comparable in latitude to the North-West territories near the Arctic ocean on Earth), with a high of -25° Celsius (I observed last winter during similar temperatures) and a low of - 82° Celsius (Antarctic night on the high plateau during a

storm kind of cold), pressure 8 millibars. The weather station includes a powerful LIDAR that can detect wind and dust patterns in the atmosphere. Apparently there are diurnal (daily) patterns to the wind on Mars, starting with the wind coming out of the south in the morning.

And what about this mission's true objective, to find water, even if it is in its frozen form,



ice? Simply stated, water is essential for life.

An image taken of the ground directly underneath the lander seems to indicate that the spacecraft's descent thrusters blew a hole in the surface

dust and uncovered what looks like ice ("smooth light coloured substrate" to the unbelievers). Ice, and they didn't even have to dig for it! And speaking of "digging" it, the robotic arm has scooped some surface material, which

has mysterious light coloured specks in it. Maybe it is ice. Maybe it is salt. I prefer ice to salt; a recently published study claims Mars may be too salty to support life. But an image taken of the "dirt" by an onboard microscope may be pointing to salt. But it is early days yet, and this is at least a three-month long mission.

It is really important for the robotic arm to be able to dig several centimeters beneath the surface of Mars because the surface is sterile due to a lack of any Martian ozone layer like in Earth's atmosphere. So cosmic rays can go to town, so to speak, and well, any DNA on the surface is not going to last for long. But the surface layer of material may provide some shelter from this cosmic onslaught, plus add ice or recently melted ice and well, who knows what may lurking underneath?

And that is what is tantalizing about Mars: so earth-like in some respects and alien in



others.

Doing science in the Martian arctic comes at a price - approximately \$ 400 million dollars for the Mars Phoenix Lander mission. But compare that to the estimated cost of sending humans to the Red Planet. Fragile, hard to keep alive in the vacuum of space, humans. \$ 400 million would probably not even pay for one of the boosters needed to launch the supplies and material needed for human exploration of Mars into space, and it would take several boosters for the entire mission to be completed. And humans would be in space for over two years in order to complete the mission. That would take an enormous toll on their physical as well as mental well-being.

What if you had a serious problem affecting the environment of the spacecraft that humans journey to Mars in or on Mars itself? What if this problem negatively affected the production of clean air or water? If the problem could not be fixed within days

> the humans could be dead. On the other hand, a serious problem actually did affect one of the Mars Exploration Rovers (MERs) that caused its batteries to drop down to a dangerously low level. The scientists on Earth put the rovers into a "hibernation mode" for

several days until they fixed the software glitch that was causing the problem in the first place. They fixed the software, took the rovers out of hibernation mode. and "Spirit" and "Opportunity" went on to do some incredible exploration of the Red Planet. They are still going today. You can't put humans into hibernation mode for 3 weeks. They need to breathe, drink water and They would have eat food. ended up dead Martian explorers, that's for sure.

If the machines (think of Cassini, Galileo, Messenger, Soho, Chandra, New Horizons, Voyager, Hubble, Mars Exploration Rovers-love Spirit and Opportunity, Mars Phoenix Lander, just to name a few) designed by humans keep succeeding at exploration, it begs the question...

Why send humans at all?

15 Years of the HAA-A Personal Perspective



By Mike Jefferson

Hamilton area astronomy had had a very noble beginning from many years before - 1901 to be exact when Reverend Doctor Daniel Brandon Marsh and The Hamilton Scientific Association – now The Hamilton Association for the Advancement of Literature, Science and Art – created an astronomical section due to the strong interests in local astronomical pursuits. It was termed The Hamilton Astronomical Society and we like to think of HAA as the heir to that great tradition!

Fortuitously, in the early 1990's, a professional astronomer, Dr. Doug Welch, came to the Department of Physics at McMaster University from Ottawa, ON and has since made his mark in the professional community by being involved in a number of high-profile projects around the globe.

He 'grew' into his career by having been involved in amateur astronomy in the Ottawa area since childhood. So, although young, he really was of the 'old school' way of setting out on his life's work. He did not sidestep into it from a computer or statistical background or other related field. He came up to it 'from the bootstraps' so to speak.

At about the time that Doug began his tenure at McMaster, he, Margaret Walton, Ann and Bill Tekatch, Stewart Attlesey, Patti and Charles Baetsen, Grant Dixon, Jim Winger and others decided that it was time to move amateur astronomy into the last years of the twentieth and the first years of the twenty-first centuries.

Jim Winger had been involved in amateur astronomy from soon after the end of the Second World War and was a 40+ years 'veteran' when the HAA formed in 1993. He always felt that the HAA was the best 'shot in the arm' that the activity ever received in the Hamilton Region.

He jumped 'on board' with the new club right away! Grant Dixon had been one of the best and most influential of our public educators ever. The high cost of club membership, which was higher than it needed to be was a barrier to club membership. And so the Hamilton Amateur Astronomers was born.

The HAA's newsletter was to be called Event Horizon and was begun immediately. Doug and the other founding membership wrote in the first Event Horizon;

"Our philosophy is that it should not cost the moon and the stars to belong to an astronomy club. We feel that a low entrance membership fee (primarily to support printing and distribution of the newsletter) is all that is required. Other fees or contributions are at your discretion. We believe that young members are the lifeblood of any group and therefore we intend to make sure that such members can always afford membership."

Since that time, 15 years in the past, HAA membership fees have increased by 10 whole 'loonies'! This amounts to the paltry sum of \$0.67 per annum! Therefore, it did away with any necessity for large annual fee increases and put any minor raises toward the operations of the club and improvements to its 'public image'.

So, what has the HAA done in the last 1¹/₂ decades in the Hamilton-Wentworth region?

It regularly attracts 50-60 members and general public to its monthly meetings – an unheard of record since amateur astronomy really got going in Hamilton in the 1970's. Membership fees have been kept more than reasonable over 15 years of operation. Presenters at the monthly meetings are announced well in advance of the meetings, so there is direction and purpose – it is a club that does not 'make itself up as it goes along'! Regular reports, up-to-date and accurate financial information and the superlative "The Sky This Month" are almost GIVENS – so it is a club that can be counted on!

The website has been and is brilliantly managed, organized and timely – fully functional – and is totally professional!

The newsletter, Event Horizon, has been the 'image' of the club since its inception. It is a highly competent and professionally accomplished publication which meets the needs of membership of all levels of expertise and it is even available from the internet - in colour and with updates, no less! And, it is there

for you, every month. The HAA announces and carries out regular public education programmes in our area. It even goes farther afield to do programmes at distant camps for kids with physical difficulties.

It is also part of a global radio-xray, solar telescope network run by Stanford University Solar Centre in California. To date we have logged 3 million observations for that professional body and we are also mentoring other like stations, in the network, which may be experiencing technical problems.

This is what HAA does for you! To paraphrase John F. Kennedy, ask now what you can do for it. Get involved – at any level, any amount, any contribution. All membership should be able to count at least one thing that it did/does for HAA! If you cannot, it is time for some soul-searching and some action on your part.

HAA is the best astronomical society on the globe. Be grateful, proud and glad that you are a part of it!

HAA Members Win Photography Awards

On May 12, 2008, Kerry Lecky-Hepburn and Tim Harpur were acknowledged for their outstanding strides in photography. Their names are engraved along side other talented photographers who have achieved excellence in photography over the Hamil-



ton Camera Club's 125-year history.

Kerry and Tim H. received numerous honors in both the Junior and Intermediate levels. Tim Harpur won the coveted "Bonze Box" in a tri-club competition against entries from area Master-level photographers.

Each of their photographs were submitted for competition by category or clinic on a monthly basis. These photographs were then critiqued by independent professional judges. Their astrophotography, as well as their traditional photographs, were submitted, receiving positive comment.

These awards represent overall achievement in the field of photography.

Tim H and Kerry must also be congratulated for raising

awareness of astrophotography in the Hamilton Camera Club and elsewhere. They are always eager to share tips of their craft with others. We are thankful for that.

In March, both Kerry and Tim H 's traditional and astrophotographs were held in exhibition at the Burlington Art Center among other gifted photographers.

Congratulations! Well done!



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To get the most from a star party it's best to be flexible with arrival and departure

dates so as to catch the clearest nights. Such was the case for this year's CSSP in Pennsylvania so Gail and I bugged out of work early, Thursday afternoon, and headed for the border.

Steve and Kerry had gone down on Wednesday, for the same reason, and were joined the next afternoon by Ann, Jackie, John, Ed, and Jim. They'd all set-up near the agreedupon spot but by the time we got there, Thursday evening, the little enclave had been surrounded by many others who had also been watching the Clear Sky Chart.

Rather than encroach on a pair of very impressive truss-

tube dobs, we elected to join some friends from the Our Dark Skies forum who had lots of space about fifty yards from the HAA site. Then the real scramble began as we only had an hour of daylight left to unpack two hours worth of stuff – and have supper.

As I rushed around in the fading light I could hear people announce the appearance of Arcturus, Saturn, Vega, and so on. There was no time for neatness, and once the tent was up and airbed inflated the rest of the stuff was practically tossed inside. I grabbed an extension cord, quickly plugged into the power outlet, and got a large fan cooling down our 12" dob.

I couldn't find the red plastic

NEWSLETTER TITLE

A Pennsylvania Party (Continued) By Glenn Muller

bag I use to cover our tent light but the shower cap that covers the end of our scope was purple enough close wrapped that around the lens then Gail and I hustled into our Arctic wear. It was forecast to be chilly, and we could feel the temperature drop, but luckily there was no In fact. there wind. would be no wind, no dew, no bugs, and no clouds for the entire

night. Combine those factors with extremely dark skies and you have the making of an unbelievable night of observing.

So, how dark were the skies? So dark that I could not see the crosshairs on my finder scope. So dark that Al Nagler said he never needed a higher power eyepiece for better contrast because the background at any power was already black.

For Gail and I, there was the double treat of great skies and a new 12" scope. Most memorable for me was being able to see mottled regions in the spiral arms of M51 and our galaxy-hop across the Virgo Cluster,

from Epsilon Virginis to Beta Leonis, catching some exquisite edge-on galaxies along the way. Oh, and also the fabulous views

of M5 and M16 through the 25" Obsession beside us.

I gave two talks at the event; one on Friday evening for which a section of the pavilion was filled with an impressive display of HAA hoodies, and one on Saturday afternoon through which I had to compete with a mini thunderstorm. However, that topic was titled "Forces Of Nature" so the few well-timed thunderclaps only added to the fun.

Though visible during the day with HAA hats, Maple Leaf pins, and national flag, the Canadian contingent was even easier to find at night – all one had to do was hone in on the laughter

which, apparently, could be h e a r d across the astronomy field.

With an uncertain forecast for the rest of the weekend we decided not to stay for

Saturday night but, before leaving, we bought a small meteorite and made a contribution to the Cherry Springs Dark Sky

> Association – an organization that deserves all the support it can get.

The drive home was every bit as scenic as the drive there with only a two minute breeze through Customs, each way. I'm certain that Gail and I weren't the only ones who arrived back home feeling tired yet energized by the whole thing. It was a memorable trip and one that we can't

wait to repeat – maybe in the Fall.

EVENT HORIZON

The Sky this Month-by Greg Emory

The summer weather has finally arrived, along with the mosquitoes. The **Solstice** is roughly one week away – soon the daylight hours will be getting less and less. The sky in the summer months can be rewarding, or over-whelming – take your pick. The summer **Milky Way** runs from **Cassiopeia**, through **Cygnus** and on into **Scutum** and **Sagittarius**.

The centerfold of this month's Event Horizon is for 1 am on June 14. I chose this rather late time, so this chart will also be correct at 11:00 pm in mid – July and 9:00 pm in mid-August. Before getting lost in the summer **Milky Way**, look to the right side of the star map. The galaxy buffet in **Coma Berenices** and **Virgo** is slipping away. The **Coma Berenices**, **Canes Venatici** offer many galaxies which are still well above the horizon after dark.

Dominating the center of the chart are the **Ophiuchus** and **Serpens** grouping. The are numerous globular clusters. Four **Messier** objects in **Ophiuchus** are **globular clusters**, **M10**, **M12**, **M14** and **M107**. These **clusters** are less stunning than some of the more famous **globulars**, but are nice just the same.

The **Milky Way** from a dark location is a wide white swath cutting across the night sky. Open **cluster** dominate the views, with **nebulae** thrown in here and there to break the monotony. Starting in the north between **Lacerta** and **Cygnus** is **M39**. The **open cluster M29** is easily found near the heart of the swan in **Cygnus** (just southeast of the central star **Sadr**). Continuing south along the **Milky Way** we also encounter the **clusters M56** and **M71**. Before we travel too far south we have The **Pelican Nebula** and the **North American Nebula** in the northern part of **Cygnus** and the **Veil Nebula** by the lower wing tip of the swan. In the constellation **Lyra** to the west of **Cygnus** is the striking planetary **M57**, the **Ring Nebula**. On a good night of viewing this is a beautiful object. It is also one of these objects where averted vision is important. Certain features become more prominent when looking to the side of the ring, as opposed to directly at it. Rounding out the nebula tour is **M27** in **Vulpecula**. **M27** is the **Dumbbell Nebula**. I have looked at the **Dumbbell Nebula**, seen amateur and professional photographs of the object – I don't see a dumbbell. I guess that maybe explains the results of my last Rorschach Test.

A well known **double star** is in **Cygnus**, the Southern most star, **Albireo**, is a **double star**. The two stars form a striking pair, one being bluish, the other topaz in colour. This contrast in colour makes the **double star** an excellent sight. Continuing down the **Milky Way** we come to the constellation **Aquilla**, which I personally use as a starting point to find my favourite **open cluster** (unless it is the winter then the **Pleiades** are my favourite) **M11**, the **Wild Duck Cluster**. This is a beautiful **open cluster**, fairly tightly packed, with an overall magnitude of about 5.8.

I have only highlighted the big, bright objects in the sky. The **Milky Way** has **open clusters**, **dust**, and **nebulosity** strewn about like flotsam and jetsam. One thing I enjoy about this time of year is just slowly panning my scope up and down the **Milky Way**, looking for nothing in particular. You will not be disappointed, there is always something new to see.

The **Scutum** and **Sagittarius** regions mark the center of our **galaxy**. The view into the heart of the **galaxy** provides us with so many objects that entire evenings can be devoted to these two constellations alone.

As a challenge to those of you who have the chance to observe this month, I leave you with the following:

Object Type	Beginner	Non-Beginner
Globular Cluster	M92 (Hercules)	NGC 6342 (Ophiuchus)
Nebula	M57 (Lyra)	North American (Cygnus)
Open Cluster	M11 (Scutum)	Coat Hanger (Cygnus)
Galaxy	M104 (Virgo)	PGC 49014 (Ursa Major)
WildCard	Albireo	

The summer months offer many chances to observe, in fewer hours of darkness! A large number of star parties occur in the summer months. These parties are a wonderful chance for meeting new people, picking up tips on observing or viewing under beautiful skies. Various people like various star parties and local. I personally like Manitoulin Star Party, others like Starfest. My endorsement of Manitoulin Star Party admittedly somewhat is skewed - the only star parties I have been to are on Manitoulin Island. I was new to astronomy, never been (I don't count camping spending half the night in the backvard before I ran inside crying as a true camping experience), never been to a star party - so I packed up the car and went to Manitoulin, which I had never been to before. The skies were beautiful. The star party was just my speed, small (25 or so telescopes with 40 people) with a good mix of experience. I learned a great deal at that first star party, some of which I still fondly recall whenever I see a full moon. I met a man that night who captivated all by recounting tales and myths of native North American tribes relating to the moon, the planets and the Milky Way. These tales are still replayed

in the back of my mind from time to time.

When traveling with your scope to a cottage or star party or observing site care must always be taken in setting it up for use. Actually every time you move, touch or think of doing so, your scope may need some TLC. Besides the dust, dirt and cobwebs that can seem to accumulate in minutes, there may also be some mechanical work to do.

Traveling, setting up camp, scope putting your and equipment together is an investment in time and energy. Guard your investment by ensuring your scope performs to the best of it's potential. For a Newtonian this includes collimation of the optics (lining the mirrors up properly), checking the mount and bearing surfaces. For refractors the mount, tube rings can be inspected. For the various Cassegrain derivatives, collimation and the mount need to be checked. But the telescope is the main piece of equipment at the star party, right? I have never forgotten my telescope or met someone at a star party who has forgotten their scope. But I have gotten out in the middle of the bush (I was 2 days early for the star party and the only person at the camp site) looking for dark red nail polish. Try going into the local town/village all dirty like you just spent the last two days in the bush (which you did) and asking if they have dark red nail polish.

A small and incomplete list of the extras that make or break the observing would include: extra batteries for your flashlight, for your finder if it takes batteries. actually while you're at it bring extra flash-An assortment of lights. tools. Your not going to be excavating for a foundation, so the heavy tools can stay Assorted screwdrivhome. ers, pliers, a utility knife, duct tape and Velcro tape. I've seen the roll of duct tape come out (no it wasn't me). I personally have lent/given people Velcro tape (good temporary fix to secure something when a screw breaks or is dropped in the grass) or the battery for a red dot finder. Extra clothes are a pain to pack and carry, but are so worth it when a storm brews up and the temperature drops to less than 10 C.

I hope that you get to a star party during the summer, especially if you are new to astronomy. The expertise, camaraderie and variety of equipment and set-ups make it a fantastic experience.

Observing and Imaging Movement

by Mike Spicer

Amateur astronomers like to observe and image events. As youngsters we all noticed the phases of the Moon and now we can watch the sun rise over mountains on the lunar terminator in our telescopes. Ray Badgerow has become a world-wide traveler in his quest to observe every total eclipse of the sun (he's going to China this summer). The club was in almost riotmode taking pictures of the many bright comets that appeared in the past - 3 years. Jupiter's moons provide entertainment every year with their transits and eclipses, and in a few more months we may be able to

see Titan transit the disk of Saturn.

The sky is filled with asteroids of various sizes and shapes. About one-quarter of them have smaller asteroid "moons". Moving through space, asteroids sometimes get in the way of background our view of stars. These "asteroid occultations" do not happen often. They occur quickly because most asteroids are small and move quickly. The star dims noticeably or disappears, especially if the asteroid is very small and invisible to your telescope. These "asteroid occultations" are easy to observe if you know what star is about to be occulted. You

don't need fancy equipment to observe an asteroid occultation. A telescope of 80mm aperture is good for most occultations. You'll need a mount that tracks the star and keeps it at least in the field of view for a minute or so. Imaging an occultation is much easier than imaging a star cluster, nebula or planet because you do not need perfect alignment. In fact. poor alignment is better: the star will move slowly across your image and you'll notice when the line it makes has dimmed and then brightened. On August 10th the large asteroid Pallas will occult a star in Eridanus about an hour before dawn. Here is a

and duration of the occultation event.

Pallas is a rather large asteroid and the occultation path across the Earth is over 300 miles wide. Most asteroids are much smaller, with a correspondingly narrow path (the light from the star is casting a shadow of the than the star it occults so you won't have any trouble watching the asteroid move very slowly across the field of view. However, the "magnitude drop" during the eclipse is only 1/5 magnitude because the star is faint. The most exciting occultascientific project that has not been carried out too often. Observers can also detect small asteroid moons - do you get to name the moon if you discover it? It's all part of the fun of amateur astronomy.

Born under the clear dark skies of Saskatchewan. Jim Wamsley grew up with a sense of adventure and wonder at the stars he could see

above. While not pursuing it much in his that vouth. intrique never left him.

intervening In the years, Jim grew up and held various positions including а number years with the Canadian Military and did a tour of duty with Canapeacekeeping dian troops in the Sinai Desert.

Now semi-retired, he manages an apartment building in Dundas with his lovely and supportive wife Celia. He frequently makes available the building's common room for HAA council meetings and other social gatherings for the club.

A couple of years ago, omy was re-ignited by

the infectious enthusiasm of John Gauvreau's night school astronomy course at Mohawk College. This is also where he found out about the HAA. It was around that time that he picked up his 8" Celestron SCT on a trip to Las Vegas under the pretense he was there for the gambling! Since

then, his equipment has been put to good use since Jim is a regular at Binbrook, the alternate site and most of our public events. He recently had to

his interest in astron- Jim Wamsley June 2008 Member of the Month

replace his mount but was quickly back "in business" and is often delighting the crowds with views in his great scope.

He is a great supporter of the club and is always actively helping out. Jim is currently our Membership director and has often filled in the vacant role of publicity. Whenever we need people to help out with anything, Jim is the first in line. He even generously

> supplies the coffee at our meetings to help raise funds for the club.

> When he's out at his on the Grand trailer River, Jim will make the long trek back into town to be there for the club, whether it's a club meeting, public event or a casual observing night. And he's always there to greet people at every meeting with a friendly smile and a hearty greeting.

> During our winter sorties to Binbrook, he thoughtfully modified his van to provide shelter from the wind and sets up a propane heater to allow us to warm our frozen fingers. Along with plenty of hot chocolate. coffee. and great cookies from his mother Betty, he has been instrumental in allowing grateful observers to stay out for several

more hours in the bitter cold during this past winter.

He is a great asset to the club, a very affable fellow and a good friend. For his generosity, support and enthusiasm, I'm pleased to select Jim Wamsley as the Member of the Month for June.

World Wide Telescope and the Future of Astronomy by Mike Jefferson

This came to mind over a period of time covering the recent year of our club's operation. I find it to be very timely and important in an astrowav. nomical although it does have ramifications for other areas of scientific inquiry as well.

My attention was drawn to an item which came off the CBC webpage. It is

called the "World Wide Telescope (WWT): a new view of the night sky". It is a very comprehensive collection of pictures and activities about what we do concerning the exploration of the universe. The "Microsoft imaging project will change how people see the heavens when the website launches in coming weeks". I have no doubt that it will. Sputnik and Explorer changed our view of space when I was young.

Any new technological development affects the way in which we view nature - sometimes not always for the best. Food processing and water purification have undergone massive revolutions over the last 50 - 75 years and vet, many youngsters have no idea where each of life's basic necessities originates; food comes from Fortino's and water comes from the tap - obviously! This is scary.

We are 'credentialing' a dumbeddown future where questioning will be a no-no and where people will follow the 'correct' routes to success. I have no concerns

when it comes to technology that enriches an already comprehended experience. But, when that technology becomes the 'experience', I'm afraid.

The real dark- night-sky is an experience. It is a reverential communication with the Nature that put us here in the first place. Something as simple as just looking, maybe with the accompaniment of a star chart, conveys a sense of awe, wonder and the massiveness of the cosmos!

This real experience allows us to connect the Nature at our feet with the stars overhead and we become the 'conductor' between the two. A binocular view reveals some of the detail and universal structure that would otherwise escape our 1-power vision. Polaraligning a telescope is a lesson about the working of the real planet Earth! The telescopesetup is a model of the Earth, its tilt, its rotation and its revolution. We spent two delightful nights in

Bay Front Park, Hamilton and Murray Street Park, Grimsby, over the last month. We edu-

WWT will qo. Like food from Fortino's and water from the tap, the universe will come from the internet! WWT has its plus sides. Many kids have no place to go to see the sky any longer, so badly light-polluted are our urban and suburban situations.

delighted

un-

computer

They are a generation disconnected from the Nature that brought them into being in the first place. Some will show up at our star parties, usually in the accompaniment of curious parents, but we are attracting fewer of them as the years pass. It is more than likely impossible to get any astronomical projects at science fairs anymore - we award that project that is most closely related to our passion. instead! And more often than not, it will be from an engineering or an applied field. How sad!

No, I'm not against WWT and it will certainly be better than ignorance for many youngsters. But it will not replace the real experience of the night sky - the looking, searching, appreciating, sharing, the not-for-profit research and, yes, the frustrations which have and will continue to annov those of us who really love Nature in all of her splendour.

Hamilton Amateur Astronomers and at least a dozen quests packed the Spectator auditorium for our monthly meeting on Friday, May 9th. The back tables were laden with displays, magazine giveaways, items for sale or trade, Timbits and excellent brewed coffee (thanks Jim). Our club newsletter, Event Horizon, was available at the Greeting Table manned by Don and Jim. Members sized up the new HAA-logo on caps, Tshirts and warm jackets and many items were snapped up as they signed in for the meeting.

The room was quite full by 7:30, perhaps because no one wanted to be so late as to be denied a door prize ticket. The door prize was a 4.5" reflecting telescope complete with electronic controlled mount, aluminum tripod and eyepieces - a recent donation to the club. Members and guests also snapped up \$110 in tickets for the night's 50/50 draw.

Club Treasurer Don Pullen called the meeting to order at 7:30 and gave a number of announcements once members had been seated. In particu-

lar he drew attention to our Astronomy Day preparations for Saturday May 10th and our other public observing events scheduled for the summer (see page 3 of the May EH for this information).

Mike Spicer filled in for Professor Greg Emery this month, giving an almost breathlessly fast Sky this Month presentation in PowerPoint (check TOOLS on this website for the talk in PDF format). Mike Jefferson then mentioned an article on Supernova Light Echoing in the July '08 Sky & Telescope by past-HAA member Dr. Doug Welch of McMaster University. Mike also spoke on the LOFAR radio telescope's ongoing success such that we have been asked to mentor the Brazil site which has been experiencing erratic results. Way to go, Mike!

After a very busy break, Don recalled us for the draws, both of which were won by the same lucky lady! She asked us to draw again for the telescope and new members, the Mannerings, won the scope! After the meeting they met with Mike Spicer who explained its workings and they promised to bring it out to Astronomy Day at the Bayfront Park.

The main speaker of the evening was Glenn Muller with a very entertaining "who done it" unraveling the intertwined lives and works of a number of 17th century scientific noteworthies. There was a lot of concentration during the talk, and a lot of laughter as the presentation wound things up at 9:15 pm, before we adjourned for the evening to Kelseys on Main Street for drinks and a late dinner.

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EVENT HORIZON

Often when we think about astronomy, we think about deep sky objects, we think about galaxies and nebulae - all dim objects that require good telescopic equipment with which to observe them. We often neglect an object that is right in front of our faces night after night - the moon.

Our moon is our closest neighbour in space and it has dramatically influenced our planet. Everything from regulating the life cycles of marine life to slowing the rotation of our planet to give us the length of our day. It causes the tides and has been a source of illumination for our planet for more than a billion years.

Most astronomers who view deep sky objects hate the moon. Its glow completelv washes out the sky and makes observational astronomy very difficult - unless you want to look at the It is at the terminator where you get the best views of the moon as another large body similar to the Earth. You can see mountains, craters, rills, and large flat lava flows that festoon the surface and lay bare the ancient history of that pock-marked globe. The best thing about lunar observing

of the moon, and each day, that object will have a different aspect to it as the lighting conditions change on the surface due to the moon revolving around the Earth.

Interestingly, you can see many things that are not really there if you don't keep control of your imagination.

> Our brains are excellent in picking out patterns from chaos and sometimes our imagination gets away from our control.

> You may remember the controversial 'face' on Mars. This was a rock formation that resembled a face in the available photos that we had of the area. There was a lot of nonsense printed about that rock formation and even a Hollywood movie used it as the basis for a rather cheezy plot.

> Unfortunately for the believers in alien civilizations, when highresolution photos were made of the area, it became clear that it was just a pile of rocks, not a face at all. The moon too can present interesting patterns near the termina-

Of course, the full moon is not the best time to observe the moon because the lighting is very harsh and fine details are obscured by the flat overhead light from the sun. The most interesting place to look at the moon is at the terminator. The terminator is the boundary between light and dark on the moon's surface where shadows and light battle for supremacy.

moon. On full moon nights, I generally give up and just look at the moon.

sive equipment to see quite a bit of the moon's surface. A simple pair of binoculars will give you magnificent views of the lunar landscape. The moon is also about the only thing that you can use a cheap department-store telescope to see. It is a large enough target that you don't need expensive equipment to observe.

Photo Credit: Therese Emberly (afocal moon)

be easily found and provides enough detail to hold your interest.

Each night when you view the moon, you can see something different. In fact, you can observe the same area

tor that sometimes resemble familiar objects. You can see straight lines formed by canyon walls, meandering 'river' like structures that look like they were carved by running water, and craters of all shapes and sizes.

The moon is an interesting object to look at and you can spend hours and not see the same thing twice. As well, familiar objects can look vastly different in only a few days as the lighting changes move shadows across the surface. Get out and have a look at our nearest neighbour.

The Space Place—Stellar Compass for Space Explorers by Patrick L. Barry

We all know that ozone in the stratosphere blocks harmful ultraviolet sunlight, and perhaps some people know that ozone at the Earth's surface is itself harmful, damaging people's

lungs and contributing to smog.

But did you know that ozone also acts as a potent greenhouse gas? At middle altitudes between the ground and the stratosphere, ozone captures heat much as carbon dioxide does.

In fact, pound for pound, about 3000 ozone is times stronger as а greenhouse gas than CO2. So even though there's much less ozone at middle altitudes than CO2, it still packs a considerable punch. Ozone traps up to one-third as much heat as the better known culprit in climate change.

Scientists now have an unprecedented view of this mid-altitude ozone thanks to an instrument aboard NASA's Aura satellite called the Tropospheric Emission Spectrometer—"TES" for short.

Most satellites can measure only the total amount of ozone in a vertical column of air. They can't distinguish between helpful ozone in the stratosphere, harmful ozone at the ground, and heat-trapping ozone in between. By looking sideways toward Earth's

horizon, a few satellites have managed to probe the vertical

distribution of ozone, but only to the bottom of the stratosphere. Unlike the others, TES can measure the distribution of ozone all the way down to the heattrapping middle altitudes. "We

Ozone behaves differently at different altitudes in the atmosphere. High in the stratosphere and at mid-troposphere it has positive effects on life at the surface. At the top of the troposphere ozone is a greenhouse gas and at the surface it makes smog.

see vertical information in ozone that nobody else has measured before from space," says Annmarie Eldering, Deputy Principal Investigator for TES.

The global perspective offered by an orbiting satellite is especially important for ozone. Ozone is highly reactive. It is constantly being created and destroyed by photochemical reactions in the atmosphere and by lightning. So its concentration varies from region to region, from season to season, and as the wind blows. Data from TES show that ozone's heat-trapping effect is

> greatest in the spring, when intensifying sunlight and warming temperatures fuel the reactions that generate ozone.

Most of ozone's contribution to the greenhouse effect occurs within 45 degrees latitude from the equator. Increasing industrialization, particularly in developing world. the could lead to an increase mid-altitude in ozone. Eldering says. Cars and coal-fired power plants release air pollutants that later react to produce more ozone.

"There's concern that overall background levels are slowly increasing over time," Eldering says. TES will continue to monitor these trends, she says, keeping a careful eye on ozone, the greenhouse gas.

Learn more about TES and the science of ozone at tes.jpl.nasa.gov/. Kids

can get a great introduction to good ozone and bad ozone at spaceplace.nasa.gov/en/kids/ tes/gases.

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

First Light is a phrase that holds a special meaning for astronomers everywhere. I believe, however; it is an individual's *personal* intellectual

'first liaht' that holds the power and magic of astronomy. The first glimpse through a telescope can be a life altering experience for some. It was that way with

me one Astronomy Day, two years ago.

It was the Thursday before this Astronomy Day. I had the occasion to be with a friend walking through a parking lot toward our cars. I looked up to see a beautiful slim cres-

cent moon. I drew attention to the moon, wondering out loud if anyone would be observing this night. My friend was a recent immigrant from war

moment for me." I

just smiled and

nothin' yet!"

torn Zimbabwe. She "Thank you! This has said she had been a very spiritual heard there are " these things you replied "You ain't seen can use to look at these kind o f

> things", but she had never seen one. I told her to say right there and went over to my car trunk. Returning with binoculars. I held them up to focus and demonstrate how they worked and explaining what she would see: the

ashen moon, the terminator...

Then I handed them over to her. She struggled a bit with the focus and aim. When she froze and her eyes widened I knew she had the moon in her field of view.

She stood there looking for the longest time.

Finally, turning, she softly said "Thank you! This has been a very spiritual moment for me." I just smiled and replied "You ain't seen nothin' vet!"

So as this Astronomy Day comes to pass let us never take for granted our own personal 'first light' and remember what a wonderful gift it is to give another.

A Star Atlas for Use at the Scope A Review by Mike Spicer

A new pocket-sized star atlas published by the people that bring you Sky & Telescope magazine may be

just the thing you need for use at the telescope.

The Pocket Star Atlas (Sky Pub., 006) has 80 spiral-bound charts 6" x 9" covering the entire sky at a scale of 4.6mm per degree. There are four close-up charts showing the Pleiades (7.4mm per degree), the Sword of Orion (3.8mm per degree), the entire Virgo galaxy cluster and the Large Magellanic Cloud (but at 1mm per degree, not very close-up). The chart paper is thick, the binding IS durable, the atlas opens up flat for table use and the cover is waterrepellant.

The charts look so similar, I thought Sky had cut up the largeformat charts from Skv Atlas 2000.0 bv Wil Tirion. This pocket version uses the same symbols and rich colours. It charts over 30,000 stars to below magnitude 7.5 – great for binocular and finderscope use. Double and variable stars are marked, as are globular clusters to magnitude 10.5 and galaxies to magnitude 11.5. Planetary nebulae to magnitude 11.5

> a r e charted. Emission and dark

nebulae are included; supernova remnants too.

If you like following observing "lists", this atlas charts all of the Messier and Caldwell objects, most NGC objects and the entire Herschel 400 as well as 55 carbon stars with their ruddy hue. One thing that struck me about this atlas is that most constellations fit neatly on one 6 x 9" page for easy reference.

Convenience of use is easier thanks to a General Index, a

Sky & Telescope's

page listing the Caldwell objects and another listing the Messier Objects, cross-referenced with the chart page for each object. A key map of the sky on the inside back cover helps you find what chart to use.

I heartily recommend that you have a look at the Pocket Sky Atlas. I will bring mine to the next few HAA monthly meetings for you to see it. The atlas is available at Efston Science, Kendrick Astro Instruments and Khanscope in Toronto for \$30 plus tax and shipping. I have a few copies too - for \$25, no tax.

This originally appeared in the October 2006 issue of the Event Horizon. Mike Spicer will have copies of this recommended handbook for sale at the meeting for \$25.00—Editor

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www.amateurastronomy.org

Special Notice

Anyone with Internet access can download the latest newsletter (and any previous ones) from the club's website:

www.amateurastronomy.org. Having the newsletter available online also allows us to publish it

in full colour. If you do not have Internet access, you will still be able to pick up a

paper copy at each meeting. Copies of the newsletter will also be available to any newcomers at our meetings. If you do not have Internet access, and cannot attend the meetings, please call Ann Tekatch at 905-575-5433 and she will place you on the

special mailing list.

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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Next Regular Meeting

September 12th, 2008

7:30 PM @ The Spectator

(Tentative—Check Website)

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.

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