Event Horizon

Volume 17, Number 9
September 2010

From The Editor

Welcome back! I hope you had a great summer. We are continuing with the early release of our monthly newsletter. As I've mentioned previously, issuing the newsletter at the beginning of the month allows us to highlight astronomical and club events for the current calendar month. Also, sticking with an all-electronic format for the Event Horizon not only saves trees and money, it allows us to showcase our members' photographs in colour as well as allow hyperlinks and other technological marvels.

Our first general meeting since the summer break will be on the THIRD Friday this month: September 17. Just so you won't feel entirely empty-handed without your paper copy of the newsletter at the meeting, we hope to have a new introductory booklet "Welcome to the Hamilton Amateur Astronomers" available. The booklet will introduce newcomers to our club and serve as a guide to members. Please take one for

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From the Chair by Steve Germann

Well, August 29, 2010 has come and gone. How many times were you asked about the 'Mars Hoax' email that's been circulating? I was asked 5 times.

It comes up again every spring, regardless of the year, and gets forwarded around.

What does it take to make a good astro-hoax? Well, it needs to have some basis in fact, such as the true case that Mars was *closer* than usual back in August 2003. Then they neglect the year, and start heaping on sensational news associated with it.

I recall an astro-hoax of my own from about 30 years ago. It was claimed that all 9 planets were going to be on the same side of the Sun on a certain date in 1980, and this would precipitate the end of the world.

Well, astro-events of all descriptions come and go and incidentally, all 9 planets (if you count Pluto, which I do) are on the same side of the Sun right now.

2012 is another astro-hoax of sorts. Since the Mayan calendar is based on the sun, moon, and seasons, there's a basis in 'fact' for calendars. The fact that it all rolls over in 2012 has been seized upon and used to justify predictions of all manner of calamity.

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From The Editor (continued)

yourself or someone you know who may be interested in joining us. Speaking of joining us, our membership year begins on November 1st and membership dues are being accepted for the upcoming year. I'm very happy to report that, once again, there will be no increase in our dues. They remain a ridiculously low $25 for individuals and $30 for families. Our membership has risen to 125 this past year, so we must be doing something right!

Clear skies!
Ann Tekatch
Editor@amateurastronomy.org

From the Chair (continued)

A good astro-hoax needs to be something worth repeating, and worth sending to friends. The prospect of seeing Mars look as big as the moon would certainly be worth taking a peek outside on the appointed day. Maybe even seeking a clear night. Especially if it's one-day-only.

Eclipse chasers have good reasons to seek clear skies, and they are well rewarded.

Not so much 'Aurora Chasers'. I was dismayed with the amount of coverage the most recent Coronal Mass Ejection was given, with prospects of a 'dazzling light show' in the sky on August 1st and 2nd. It was on the radio (680News) over and over again, with advice to drive north of the city (!). The results would have disappointed anyone who got in their car. The Aurora was barely visible, and less than 5 degrees from the horizon, and only green. Whether motion could be seen was not mentioned.

Coverage like this makes it more difficult for people to appreciate the true beauty of the night sky and the wonders therein. Instead, they wait for something 'dazzling'. Well, truth be known, astronomy is rarely dazzling. The closest you are going to get to dazzling is the Perseid meteor shower, which this year was unfortunately clouded out on the 11th, but worth a look on the 12th.

Members had a few other opportunities to look up at the Perseids, since the shower is really spread out over about 2 weeks, and I hope you all counted at least a couple of meteors over those few days in mid August.

Well, what can we do about astro-hoaxes.... besides crafting better ones? Could we have an astro-hoax contest, with the best ones posted in our April issue? Now, that would be a hoot.

When someone hopefully asks about Mars, or about 2012, what should we do? We need to patiently explain the facts as we know them and if necessary refer our friends to reliable information.

I always go to snopes.com to see what research has been done. I have found them to be even-handed in their analysis, almost to the point of generosity, but also even handed in downplaying the associated sensationalism that is usually necessary to keep the hoax propagating. They will tell you the earliest documented occurrence, whether there are any facts in question, and whether the story has morphed over time (a sure sign of embellishment).

I check snopes because I want to tell those who forwarded whatever-it-was to me, that they can check their facts too.

So, keep your eye out for the next astro-hoax; by all means forward them all to me. Add a comment if you know they're false, if you like.

And do peek at the sky near local midnight, if it's clear, to see if any Aurora can be seen. That's your best bet at something, though not dazzling, certainly worth the look skyward.

Masthead Photo Credits: Swan Nebula taken by Jim Wamsley with Canon T1i DSLR and Celestron 8" SCT. Ten exposures at ISO3200 of 30 seconds each were stacked to give the final image. Images were taken at the Binbrook Conservation Area. See Jim's article on page 3 which includes more of his astrophotographs.

The Progression of an Obsession Or How My Wife Created a Monster

by Jim Wamsley

Some of the older members have probably heard a part of this story before, but if they will bear with me for a paragraph or two, I will endeavour to get to new material.

A few years ago my wife, Celia, ordered a special gift for me from a Sears Christmas flyer. On Christmas day I opened the box and low and behold what do I find but a telescope. Now this flyer had a wonderful photo and described the scope to be a powerful astronomical instrument but in reality it was a quite expensive plastic toy with a plastic 2" objective lens and tiny plastic tripod. Now you might think this would be the end of astronomy for me, as it was impossible to see anything through this little scope, besides possibly the full moon, but quite the opposite is true. This was just the start of an obsession and possibly the best Christmas present that I have ever received.

Now for the purposes of this article, I won't go into the gory details of the second scope I purchased, suffice to say it was a cheap department store scope with the claim of 660 x magnification (ha ha) and not much better than the first scope.

Now after the disappointment of this scope I decided to be a little smarter about this new hobby of mine and I did a couple of things, firstly I took astronomy courses at Mohawk College and secondly, I joined the H.A.A.. Now this proved to be two of the smarter things I've done. By going to Mohawk I learned the basics of astronomy and met John Gauvreau, who has taught me most of what I know about astronomy and has become a great friend and observing partner. By joining the H.A.A., I have been able to expand my general astronomy knowledge due to the great speakers at meetings. But more importantly, I met many great people with the same interests as myself. Going out observing with them and looking though their scopes, helped me make an informed decision on what type of telescope I should purchase.

After much consideration, I made the decision to get a Schmidt-Cassegrain scope on a Nexstar mount. After a lot of looking and price comparing, I found one I liked while on a trip to Las Vegas. The scope I got was a used 8" Nexstar*(see photo below -left)* and even though the tube had a ding on its side, it didn't affect the optics and the price was right.

Now this is where the obsession deepens! Having a quality instrument to use is amazing. Getting out under dark skies and soaking in, and sharing the views with friends and strangers at public club events, has given me so much satisfaction it's hard to explain, it seems to be almost addictive. Now if having a quality scope is good, buying accessories for it will make the experience even better, right?

Right! The first purchase was a kit of 1 1/4" eyepieces and filters *(shown in the photo on the right)*, followed quickly by a hand held G.P.S. and heated dewshield. I'm thinking you can see the direction this is taking. My wallet suddenly begins to bleed cash. Continued on p. 4

The Progression of an Obsession Or How My Wife Created a Monster (continued)

That setup worked well for quite a while but after talking to some of the folks I was observing with, I began to think that a 2" diagonal and a couple of 2" eyepieces would bring more light to the focal point, so that was added to the inventory, and while at a star party in Cherry Springs a Pentax Zoom eye piece was added.

One of the drawbacks of a computerised telescope is that sometimes electronics just quit working; another drawback is it takes time to get a handset replaced, in my case 6 to 8 weeks. How in the world can I go without my scope for that long? Hmmm, the scope shop has that nice CG5 German equatorial mount in the showroom, and the wallet bleeds cash again. Of course when the handset comes back, I have two mounts and only one scope. Something simply has to be done about that!! What to do? What to do? I have it!! Buy another scope for the new mount. I'll not go into all the ins and outs of how it came about, but I ended up with a second 8" Schmidt-Cassegrain scope. Admittedly this one is newer and with XLT coatings, and has a little brighter view *(below)*.

I made the decision that it is a keeper, but after much soul searching, I came to the conclusion that having two almost identical scopes was not the wisest situation.

The solution came to me one day while I was visiting my favourite store "Camtech". Maybe I could make a trade. My trusty old Nextstar, and a few accessories, for a new camera. I have really wanted to get into astrophotography for some time, but the wallet had already been bled dry. After a short conversation with Steve and Roger, I parted with an old friend and came home with a new one. This is a brand new Canon T1i camera and a Sigma 70-300 mm lens.

I now embark on a whole new side of amateur astronomy, and I'm sure there will be a whole new selection of accessories to add to the inventory. I'm just very glad I have a very understanding wife.

On the following page there are samples of my first astrophotos.

The Progression of an Obsession Or How My Wife Created a Monster (continued)

Left: Lagoon Nebula (M8) - 12 exposures of 30 seconds each at ISO3200, stacked in Deep Sky Stacker.

Below: Crescent Moon - single exposure through Celestron 8" SCT.

Left: M13 - several Exposures stacked Using Deep Sky Stacker.

Right: First light for Jim's new T1i Canon DSLR and the beginning of a beautiful new obsession!Sunset over Lake Niapenco at the Binbrook Conservation Area.

June General Meeting Report by Bob Christmas

The June 18th meeting at the Hamilton Spectator auditorium was kicked off by HAA chair Steve Germann at 7:30 pm with a few miscellaneous announcements, after which he handed the floor off to Mike Jefferson, who announced that the HAA is now a member of the Society of Amateur Radio Astronomers (SARA). Mike also had with him an image of the bright star Achernar (Alpha Eridani), which he took during his trip to Australia and New Zealand earlier this year.

Next, HAA Treasurer Don Pullen made other announcements, including of other talks, the Binbrook cleanup day that month, etc.

Then, the evening's main speaker, Dr. Robert Brown, from the Department of Physics and Astronomy at the University of Western Ontario, gave his talk about U.W.O.'s Southern Ontario Meteor Network (SOMN), as well as the spectacular Grimsby Fireball that resulted in meteorite debris falling in and around Grimsby on September 25, 2009. It was witnessed all over Southern Ontario, and was even photographed from Ohio, from downtown Cleveland!

Amazing video of the fireball was captured on the SOMN's All-Sky cameras perched at various locations in Southern and Southwestern Ontario, including at the Hamilton location, at McMaster University.

Dr. Brown filled us in on some of equipment and operational processes that the SOMN employ, including the use of radar, infrasound, seismic sensors, All-Sky cameras, VLF receivers, and a multi-band radiometer, as well as how they are all networked together. The observational data gathered by such instruments can be put to such uses as calculating the orbits of incoming meteors before they become meteorites. Very interesting technology and methodologies indeed!

He told us that according to the observations and data received by the SOMN sensors and cameras, the Grimsby Meteor was a beach-ball sized chunk of rock about 50 to 100 kilograms in mass before it entered Earth's atmosphere and broke apart. Also from the observations came computer animations of the Grimsby Meteor's break-up, which were shown during his talk.

Of course, several fragments of this meteorite were found around Grimsby, including one that pierced a car windshield, and Dr. Brown said that there may be a fist-sized fragment out there still to be found!

Thanks go to Dr. Brown for his amazing presentation!

After Dr. Brown's talk, there was our usual intermission, which gave people opportunities to intermingle, chat, etc. After the break, Alex Tekatch did the usual door prize and 50/50 draws.

Then, it was HAA Observing Director John Gauvreau's turn up to bat, with his The Sky This Month talk for the summer of 2010. He talked about such things as Jupiter and Uranus when they were in the same telescopic field of view, Comet McNaught, and planetary conjunctions featuring Venus, Mars and Saturn that occurred this summer.

As he pointed out that there are numerous deep-sky objects in the Summer Milky Way, John showed pictures of the Milky Way and the Scorpius area that he took. He also showed images from HAA members Kerry-Ann Lecky-Hepburn and Andrew Bruce of summertime Deep Sky sights as M13 -- the Hercules Globular Cluster, and M27 -- the Dumbbell Nebula.

John also mentioned the variable stars R and T Corona Borealis, which, by the way, are still visible in the northwestern sky in the evenings for a while longer, as well as a good double-star called Izar, in next-door Bootes.

And finally, keeping with the night's Meteor theme, John mentioned an event that day in history when, on June 18, 1178, the monk Gervais of Canterbury saw the crescent moon apparently split in two, then saw what looked like fire and sparks. This might have been a meteoric impact on the moon. Or, more likely, it was an earthbound meteor that just so happened to be in his exact line of sight to the moon!

Do It Yourself Mounts by Harvey Garden

Harvey Garden submitted these photos of his homemade mounts to illustrate various methods of assembling inexpensive but very effective mounts. You can direct any questions to him via his email address: harvey.garden@gmail.com. - Editor.

Photos #1 & #2 show the black Bushnell reflector mounted on a pier that is fastened to the railing of our deck at our trailer at Rice Lake (extremely dark nights). Photo #3 shows a blue Sky Watcher refractor mounted on a pier which is mounted to the railing of our balcony at home. It has a 180 degree clear view to the north towards the Binbrook Conservation Area. Photo #4 is a closeup showing the bracket for that mount. Photo #5 shows the same blue Sky Watcher refractor mounted on a pier that is anchored to a concrete footing by one of our ponds at the back of our property. It has a 360 degree view. Both telescopes have had their mounts modified with home made and big box store telescope parts and will fit on all 3 piers. The pier that is anchored to a concrete footing at the back of our property is easily adapted to accept any telescope. Isn't astronomy fun?

#1


#2


#4

#3


#5

September 2010 Treasurer's Report by Don Pullen

	(Unaudited)
Cash opening Balance (1 June 2010)	$ 4445.06
Expenses	$ 257.71
Revenue	$ 518.00
Closing Balance (23 Aug 2010)	$ 4705.35

Notes:

1. Major revenue sources included: 50/50 ($43.00), Memberships ($55), Messier Marathon Donations ($325), EH Advertising revenue ($100)

2. Major expenses included: EH/Brochure printing ($77.59), International Dark Sky donation ($53.86), Clear Sky Chart donation ($53.26), BASEF book prize ($46.10), SARA membership ($26.90)

First Starfest by Ann Tekatch

The smile says it all! Kevin Salwach gets ready for an observing session under the clear, dark skies of his first Starfest. The following evening, his smile got even wider when he won a telescope during the door prize draw. Congratulations, Kevin!

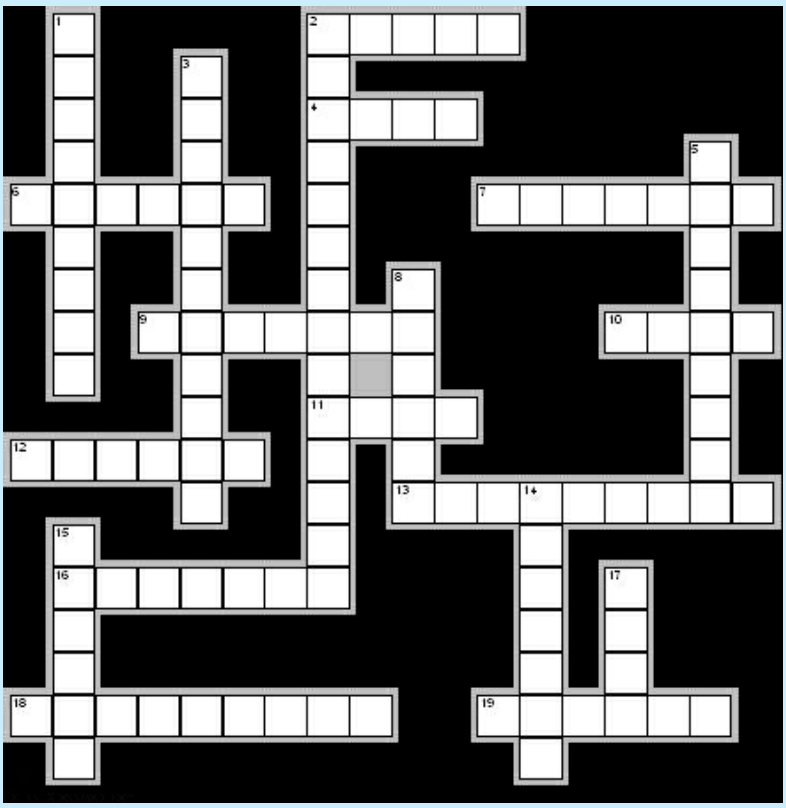
Notice to Members of Annual General Meeting: October 15, 2010

This year's AGM will be held during our general meeting at 7:30 p.m. on October 15, 2010 at the Hamilton Spectator Building.

Any member who wishes to volunteer for a position on the 2010-2011 Council, is encouraged to do so by sending an email to: membership@amateurastronomy.org. Potential candidates must meet the qualifications outlined in our Constitution and Bylaws (available on our website) and have paid their membership dues for the 2010-2011 membership year.

We encourage anyone interested in helping to volunteer for council.

Astronomy Crossword Puzzle by Mario Carr



Across

2. Made of ice and dust
4. How many moons does Mercury have?
6. Explained the redshift of galaxies
7. What are Neptune's clouds made of?
9. Discovered the moons of Jupiter in 1610
10. About one quarter Earth's diameter
11. What does a comet develop close to the sun?
12. One of the smallest moons in the solar system
13. The Earth is at the centre of this imaginary sphere
16. An autumn constellation
18. A measure of brightness
19. A cluster between Perseus and Cassiopeia

Down

1. Comet appeared March 1996
2. There are 88 of these
3. Angular distance north or south of the celestial equator
5. A fourth magnitude galaxy
8. This has 12 constellations
14. Occurs twice a year
15. What type of galaxy is the Milky Way?
17. This nebula was created by a supernova explosion in 1054 AD

(Answers on p.19)

Through The Looking Glass by Greg Emery

When I was young I dreaded September, back to school and to the drudgery of class. Invariably I would have to write a story about "What I Did on my Summer Vacation" or some similar theme. Now as I have aged, I, from time to time, write something with the same title. In the late summer of 1990 I wrote a 30 page research report for my boss (a Professor of mine who hired me for the summer). I wrote the cover page in red and blue crayon - "What I Did on my Summer Vacation" and left it on his desk. That worked out well for me - well I didn't get fired or anything like that so I will call it well. Then there is this article, which could easily be titled "What I Saw on my Summer Vacation".

My two youngest (Montgomery and Miriam) with me and my telescope. (Photo courtesy of Manitoulin Expositor, Little Current, Ontario, printed with permission)

This summer besides moving multiple times I went to the Manitoulin Star Party at Gordon's Park in Tehkummah, Ontario. This is the fifth time I have been to Gordon's Park. To explain to you what I think of the Dark Sky Preserve at Gordon's Park I will skip the superlatives and simply state that I have already booked for next year's Manitoulin Star Party!

To those who have not been before, let me give you some of the details. Gordon's Park has a section of the campgrounds devoted to people like us - astronomers! The section is referred to as the Dark Sky Preserve (RASC Dark Sky Sanctuary). There are no fires, no white lights, no car headlights, no streetlights, and no security lights from the neighbour's barn. The campsite and facilities are more what I would call rustic; the bathrooms are privies or outhouses. Water for showers is solar heated. There are no electrical connections or other utilities at the astronomy campsite. Most of this is done with intent, not from a lack of effort or resources on the part of Rita and Terry Gordon. I have noticed over the last couple of times that I have been there that the campgrounds are becoming much more ecologically conscious. This strikes a chord with me as well as with some others I spoke to. We are travelling to find dark pristine skies that have not been sullied by technology or society - why not preserve more as we go along? (Ok, yeah, I drove there in a non-HYBRID car but that conversation is for some other time.)

On a typical clear night at Gordon's the sky is amazing (I was going to say indescribable, but that would cut this column short). You can expect to see magnitude 6+ stars naked eye. The park literature says 7.5+. I have never pulled out a star chart to test this, and I will be the first to admit there are so many stars visible that I couldn't tell the difference between magnitudes 6 or 7. I could easily make out M31, NGC 869/NGC 884, M20, M7 naked eye. The rift in the

Through The Looking Glass (continued)

Milky Way was not a suggestion or subtle feature - it was a gaping void. The number of stars visible makes a vast jumble of all your pre-learned pattern recognition for constellations and asterisms. It literally took me a minute or more to find the keystone of Hercules - and I always look at that.

This was the first time I had my "new" eyepieces with me and the scope. The last time I was in Manitoulin, the eyepieces had not arrived yet. They arrived the week after I returned. The view through my 30 mm Meade 5000 UWA was phenomenal. The field width took in so many stars that it almost seemed surreal. When viewing portions of the Milky Way, there truly were too many stars to count.

For people used to observing from near or in populated places, the skies in Manitoulin are nothing short of culture shock. Over 90% of the viewing I have done has been in or around the Hamilton area. The difference between viewing from the HAA Observing Site (Binbrook Conservation Area), which is a good viewing site, and setting up in a dark site at a star party is something that should be experienced. The Milky Way casts a shadow - I am not making this up. No moon, no lights and no light pollution out in the middle of the bush, there should be no shadows, but there was ever so slight of one. The images through the eyepiece almost take on a dimensionality - they jump out of the dark background. I sometimes find that views under less than ideal conditions (moon, light pollution) are flat. The image, to me, doesn't jump out at you it just lies there in the hazy, mottled background.

You need to see the sights from a place like this. There are star parties within a day's drive/travel. Try to get to at least one of them. The view is worth the effort.

Editor's Note: If you'd like to check out a local star party, the Huronia Star Party takes place September 8 -12 at a location south of Collingwood, ON. Details can be found at: http://www.hsp-ssaa.ca/HSP_Site.html .

The Sky This Month September 2010 by John Gauvreau

September may be my favourite month for observing. Gone are the long waits until after 9 or 10pm for the sky to darken, as the late summer brings the evening so much earlier than mid summer. Gone are the hot, sultry, bug filled nights, as the cooler weather makes for very comfortable temperatures. But are the constellations of summer gone with these things? No, they are still with us in the early evening, and later are joined by many of our favourite autumn constellations. Truly, September really does have it all for the night sky observer.

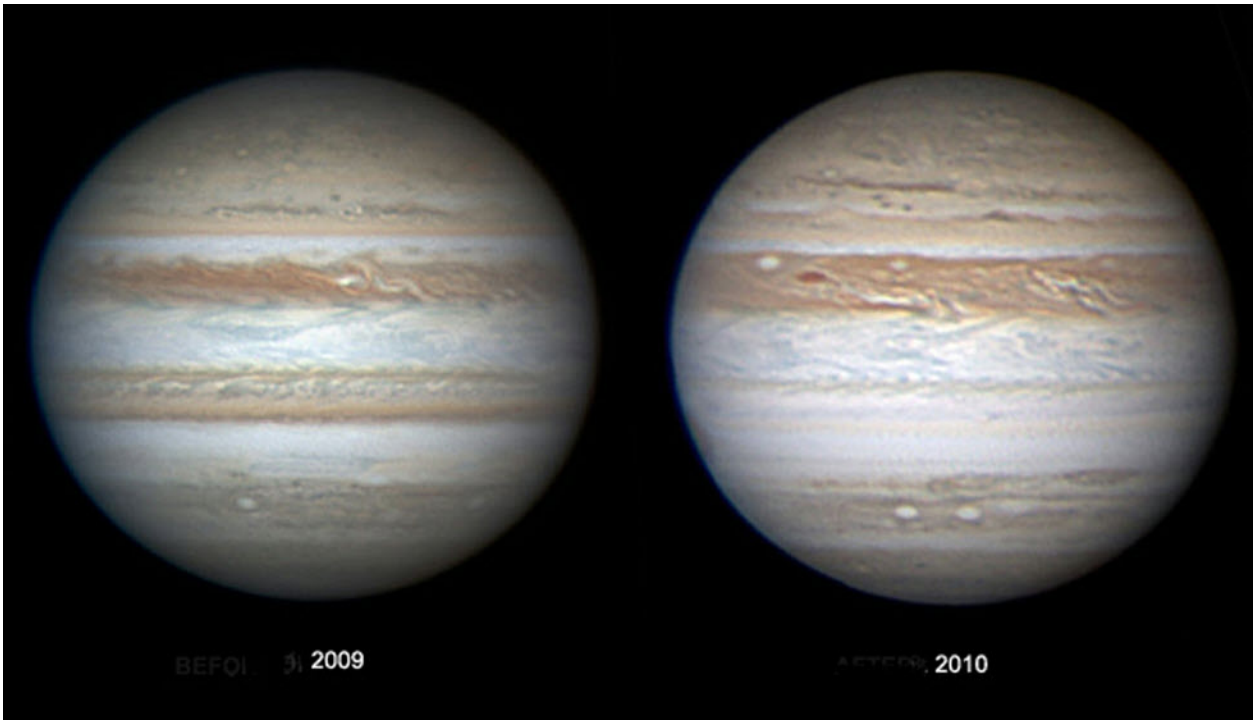
This year, the autumnal equinox falls on September 22nd (03:09 UT September 23rd), making this one of the two "equal nights" of 2010 (for that is what 'equinox' means, alluding to the two times of year, spring and fall, when the day and night are of equal length). This is also the night of the full moon, which rises at 6:38pm for those wishing to photograph, or simply celebrate the season, with this always picturesque event. This, of course, is the Harvest Moon, celebrated in song and lore. Because the path that the moon follows is inclined low to the horizon at this time of year, the moon seems to stay low in the sky, and also seems to rise at around the same time of night on succeeding evenings. For instance, on the next night, September 23rd, the moon rises only 22 minutes later. Compare that to the successive full moon rises of the spring, which can come as much as an hour and a quarter apart. Go out on a few nights around the 21st, 22nd and 23rd, and watch the full moon seem to offer up repeat performances night after night. Along with the rich harvest of fall produce, it's one of the many treats of the season.

Of course, we have said goodbye to Saturn, which after providing us with so many spectacular views this year, has now slipped below the western horizon. Venus is still up, but low in the west at dusk. It's very worthwhile to follow this planet over the next few weeks though, as we see its phase shrink to a slim crescent. As the phase shrinks, the planet's angular dimension grows (meaning it looks bigger in your

The Sky This Month September 2010 (continued)

telescope) and this balance between growing and shrinking results in Venus being at its brightest on September 23rd. (on the 22nd and 23rd, you can watch the full moon rise in the east, and turn 180 degrees to see Venus set in the west at the same time!) Enjoy the view of Venus this month, as it disappears into the west by October.

Of course, we will hardly notice the loss of Saturn and Venus, as mighty Jupiter takes their place. Over the next few months, Jupiter assumes his rightful position as King of the Sky. At opposition (rising at sunset, highest in the sky at midnight, and visible all night) on September 21st (wow, what a great week to observe!) and on the 23rd rises with the full moon. Jupiter is nearly magnitude -3, and easily the brightest thing in the sky after Venus (which is a little brighter than -4). This great brightness in in part due to Jupiter being as close as it can get to us during its 12 year orbit. This is definitely the year to watch Jupiter!



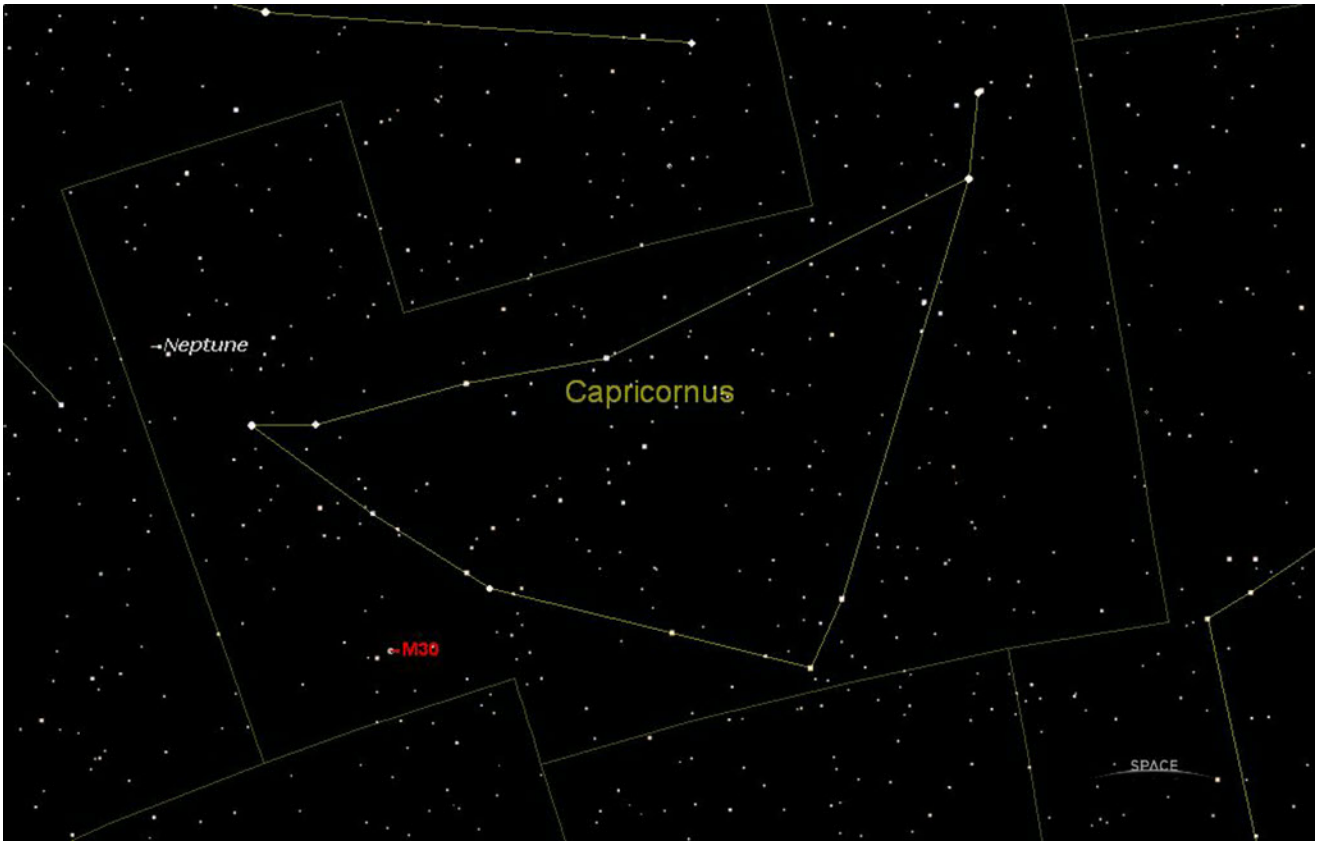
Binoculars will reveal four of its moons, the famous Galilean satellites. A telescope shows their changing position from night to night, as they dance around their parent planet. If you want to try a fun observing project, plot their position each clear night, around the same time, and see if you can calculate their orbits. I did just such an experiment some years ago, when Jupiter was also in the fall sky. The many clear nights of this time of year meant that over a period of three months I missed only a few observations due to weather. The outer planets were easy to plot, but since innermost Io orbits in only 1 3/4 days, its locations seems almost random from night to night. Galileo, making these very same observations, realized he was observing orbiting satellites in less than a week; a very impressive conclusion!

Jupiter also shows a wealth of surface detail to the telescopic observer. The various belts of cloud encourage careful and persistent observation, and will reward you with storms, wisps and rich colouring. The Great Red Spot is showing nicely right now because the South Equatorial Belt (SEB), in which it partly resides, faded to invisibility some time ago. (As seen in the photo above.) The SEB is apparently returning, and can be seen faintly in even a small scope, but the Red Spot still shows well against what is now a nearly white background. Keep an eye on this planet to monitor the progress of the SEB. Nobody knows what will happen next!

Continued on p.13

The Sky This Month September 2010 (continued)

Less than a degree away form Jupiter is the planet Uranus. It also comes to opposition at the same time as Jupiter, and Jupiter makes a convenient guide to locate this blue planet. You can easily fit both planets in a telescopic field of view at the same time, and what a wonderful opportunity to compare size, brightness and colour! Uranus is surprisingly bright at a little brighter than magnitude 6 (Can you see it with the unaided eye from a dark sky? Some club members have!) and shows a lovely and colourful disk through the telescope. Unfortunately, none of its satellites are brighter than magnitude 13, so they are for the largest scopes only.



A well known but often overlooked constellation is Capricornus. Being one of the Zodiac constellations, its name (although often misnamed as Capricorn) is known to even non-astronomers. It represents the mythological creature that is half goat and half fish (in a sky full of creatures like a dragon, a sea serpent, a centaur and a pegasus, the best they could do is half goat, half fish? Really?) As odd as that sounds, at least it is in the part of the sky that houses the other oceanic constellations, like Aquarius, Pisces, Pisces Austrinus and Cetus. But how often do we look there? Although it is not a small constellation, and although it sits right next to Sagittarius and the Milky Way, it has surprisingly few deepsky objects. There is one Messier object residing there; M30, a globular cluster. (As shown in the chart above.) Messier saw it as a fuzzy blob in 1764, but Herschel resolved it into stars about 20 years later. At magnitude 8, it is a small and unimpressive globular, but still visible through even the smallest scope or binocular. Interestingly though, many observers think that this globular look elliptical, and not round. Give it a try and tell me what you think. Also, this is one of the most difficult objects to observe during a spring Messier Marathon. Observing all the M objects in one night is a challenge for even the most experienced observer, and only possible in the spring when the sun is in a region of sky devoid of Messier objects. At that time though, M30 is closest to the sun, and so very difficult to observe. Take advantage of the fall sky to see this distant globular.

Another interesting and odd object in Capricorn is Alpha Capricorni. It is a naked-eye double star, but

The Sky This Month September 2010 (continued)

not a binary. Alpha 1 and Alpha 2 are 6 arc-minutes apart, but their close association is just an illusion. They are far apart in space, but seem close together only from our position on Earth, because they are in the same direction from here. Lastly, we find Neptune shining at magnitude 8, just off the tip of Capricornus. How does its colour compare to Uranus? Both are blue planets, but are they the same blue?

I mentioned that the summer constellations are still with us, even as the fall constellations join them. I also mentioned that the sky is darkening earlier, making it more convenient to get out and observe at a convenient time. Of course, these two items are related to each other. As the constellations sink in to the west in the evening, each month we lose a part of the sky. But since it darkens so much earlier, we can still see those constellations before they set, earlier in the evening! For instance, Arcturus sets a little after 9 in September, and a little after 8 in October. Now if it set at 8pm in September, we'd miss it because the sky is still light. But by October, the sun sets so much earlier that the sky is dark at 8pm, so we still get a lingering look at Arcturus. Enjoy both the summer and autumn skies this month. The Milky Way, the Summer Triangle as well as the Great Square of Pegasus and Andromeda are all there waiting for you. Get out and enjoy this favoured month for astronomers. And remember to share your observations, stories, pictures or drawings with us, by emailing to observing@amateurastronomy.org.

Thank You

The following email was received on July 19, 2010. - Editor

To the Hamilton Amateur Astronomers Club:

Last Saturday night Jen and I were invited by one of your members, Joe McArdle, to explore the summer night sky, to take part in a tour of the stars hosted by the Hamilton Amateur Astronomers Club. We gratefully accepted the invitation. The sky cleared nicely as we were enroute to the Binbrook Conservation Area to join the group of star watchers.

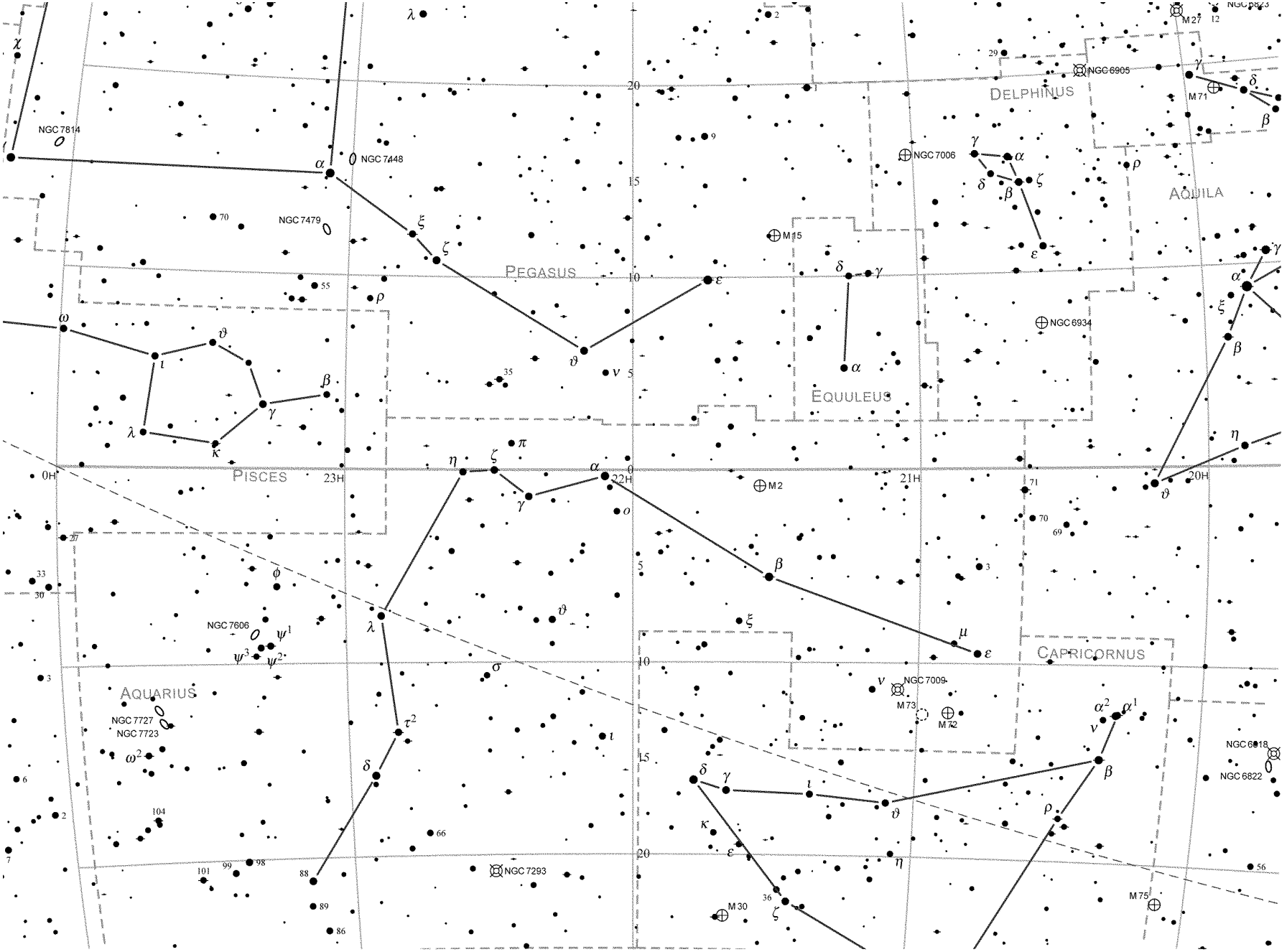
We came because we were told that John Gauvreau would be showing us around the stars. I've read a few of his "The Sky This Month" entries in the Event Horizon, so I had expectations of a very knowledgeable tour. We were not disappointed! Not only did we find the tour very informative, but, more importantly, it was expertly conducted so as to give us great detail without losing us for even a moment. We were shown how to navigate among the stars, how to recognize certain constellations. We were allowed to see through the various telescopes that had been set up to view some of the breathtaking details of individual stars. We looked at some of the stars that had been mentioned in the main tour. During the tour we began to see differences in the colours of the stars, but through the telescopes these colours became unmistakably clear, noting in particular a pair of stars which showed up as the one being red and the other being blue.

In addition to this we were able to receive some very helpful hints about using our telescope and where to find a better one. I was very interested in a book that Don Pullen showed me, NightWatch by Terence Dickinson. We were impressed watching the astronomers expertly swinging their telescopes around to various points in the sky, showing us how well they knew their subject of study. They also showed us various techniques for locating more precisely some of the things which were hard to find or were invisible to us.

Mostly, though, we met a number of great people. Not only did their expertise demonstrate a keen interest in the stars, but their rapport with us demonstrated an equally keen interest in people. As the late night crept into early morning we were all the more eager to see what other secrets the sky held, kept captive by the friendly atmosphere. We stayed longer than we had planned, and even then were reluctant to leave.

Thank you to all: Joe, Ann, Don, John, Steve, Jim, and all those who stood with us under that beautiful canopy of lights.

John and Jen Vandervliet.



Magnitude: 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0

Chart 13: *RA* 20^h *to* 0^h, *Declination* $+20^o$ *to* -20^o

Mag-7 Star Atlas Project *(version 2.0)*

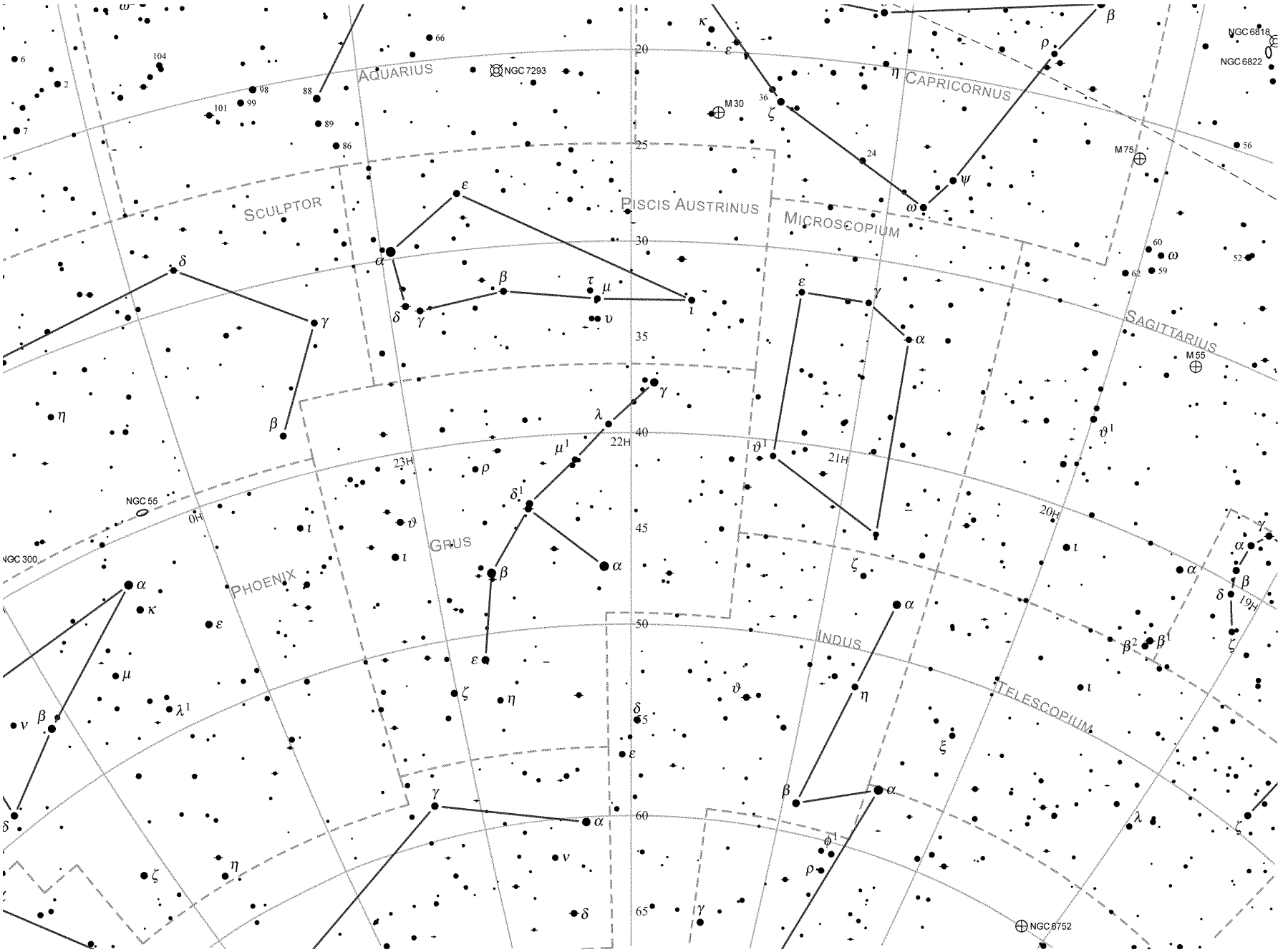


Chart 19: *RA* 20^h *to* 0^h, *Declination* -20^o *to* -65^o

Magnitude: 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0

Mag-7 Star Atlas Project *(version 2.0)*

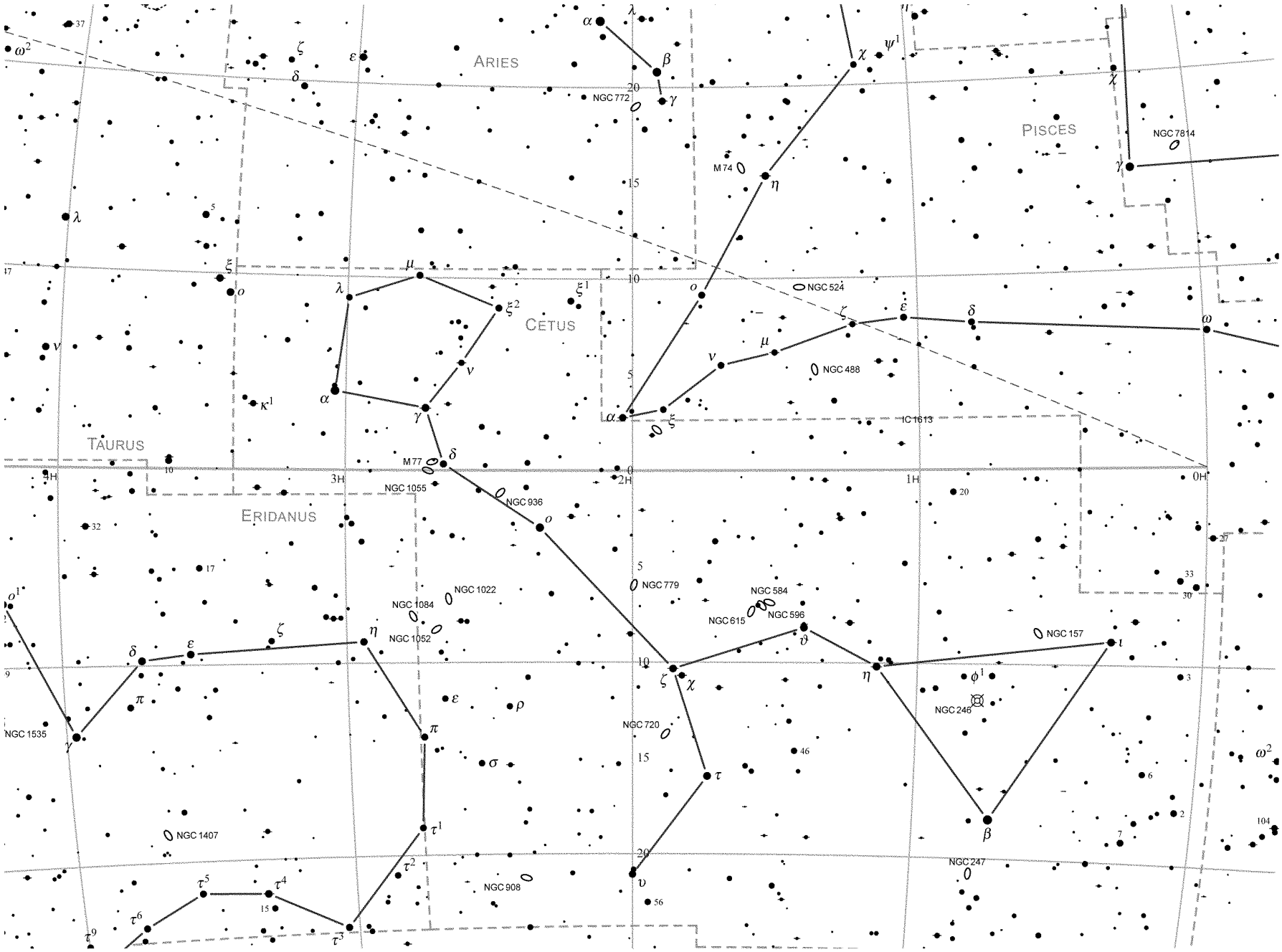


Chart 8: *RA* 0^h *to* 4^h, *Declination* $+20^o$ *to* -20^o

Magnitude: 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0

Mag-7 Star Atlas Project *(version 2.0)*

Dwarf Planet of the Month: Pallas 2 by Steve Germann

As you might expect, 2 Pallas is the second asteroid discovered. Like all of the Dwarf Planets of the Month, it has an interesting story for its discovery.

Pallas was discovered on March 28, 1802, shortly after Ceres, by Wilhelm Matthaeus Olbers. He was seeking to locate Ceres when he noticed another moving object; Pallas happened to be in the same part of the sky at the time. The first few asteroids discovered were given female names, and Pallas was a name used by the goddess Athena, who killed her friend Pallas and then took his name in mourning. The element Palladium, discovered soon after, was named in honour of Pallas.

Pallas has about 7% of the mass of all the Asteroid Belt in it. It is larger than 4 Vesta, but only 80% of the mass of Vesta, due to its lower density. It's the largest body in the solar system strong enough to not be rounded by its own gravity, and is about 550 km in diameter. Thus it would not qualify as a planet by the most recent definition of planets put forward.

Originally, Pallas' diameter was estimated to be 3380km, which is a bit larger than earth's Moon, but by careful timing in 1983, a group of 140 observers timed its occulting of a star, and its diameter was much more accurately determined to be 530-565 km. There was even some hint of a 1 km diameter moon of Pallas, but it has not been confirmed.

Hubble time was granted to the planners of the Dawn mission, to study Pallas for surface composition, as a comparison to Vesta and Ceres. If the Dawn probe is successful, it may attempt a fly-by of Pallas in 2018, but it won't have enough fuel to enter orbit around it.

The orbit of Pallas is in a near 18:7 resonance with Jupiter, and over a period of 6500 years, the orbit morphs and changes eccentricity. An interesting animated gif shows this, from the frame of reference rotating at the mean speed of Jupiter's orbit.

It can be seen that at certain times in the 6500 year cycle of resonance, Pallas approaches the sun closer than the orbit of Mars, and at other times, Pallas remains entirely outside of Mars' orbit.

By plotting the orbital parameters of all known asteroids, the astronomer Kiyotsugu Hirayama in 1917 was able to discover several groupings later known as Asteroid Families.

Pallas and other members of the Pallas Family are B-type asteroids, thought to be rich in volatile elements from the early Solar System.

Pallas can sometimes get as bright as magnitude 6.4, but more often around 8.0, putting it in range of 8x50 binoculars. In February 2014, it is predicted to shine at magnitude 6.96.

Here's a link to the finder-chart for Pallas right now... http://www.heavens-above.com/MinorPlanet.aspx?desig=2&lat=0&lng=0&loc=unspecified&alt=0&tz=cet

Pallas is 3.2 AU from here, and shining at magnitude 9.9, it's the next target on my Sequential Minor Planet Marathon, which is just beginning.

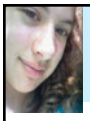
The HAA is accepting image submissions for the 2011 HAA Calendar. The images should be submitted by email to the HAA Webmaster (webmaster@amateurastronomy.org) in JPG format. Please avoid other file formats. Image files should be around 500K to 3 Meg to ensure good quality print.

Also include the imager's name and phone number, the image date, and a brief description of the image. (What object did you photograph.) Please include some information about what equipment and settings you may have used. This can include type of camera, lens, scope, magnification, exposure time, ISO settings, stacking or processing software used, etc.

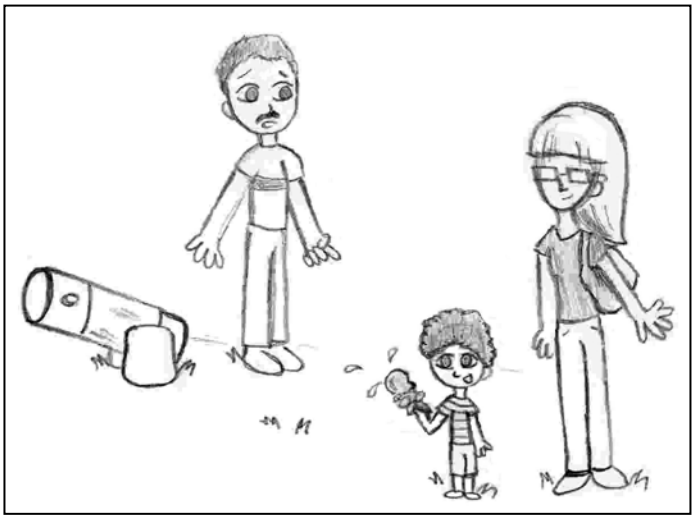
Images need not be astro-photographs but should be of an astronomical theme (ie., images of the night sky, sun, DSOs, or any astro-event/gathering such as public nights or star parties would be acceptable).

Image submissions will only be accepted from HAA members and must be original works.
Submission deadline is September 27, 2010, midnight - after which the images will be reviewed by the HAA Calendar Committee for inclusion in the 2011 calendar.

We will try to use as many of the photos we receive as we can, but we can not guarantee that every photo submitted will be included in the calendar.



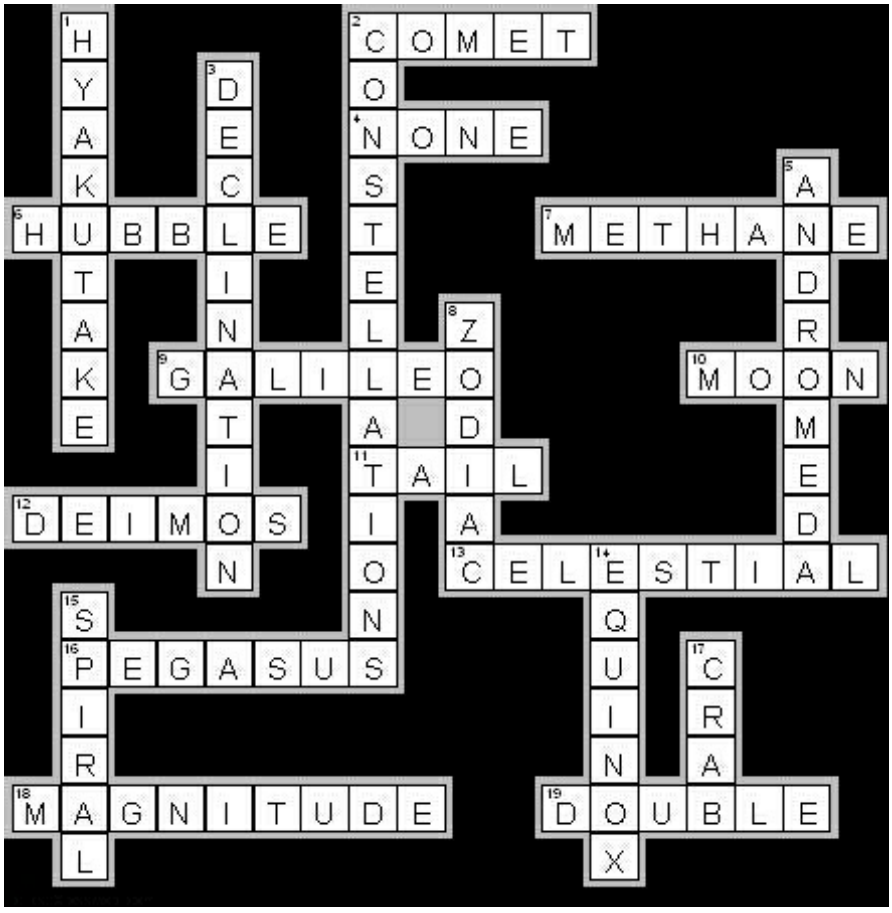
Cartoon Corner by Alexandra Tekatch



Man: “You’re welcome to look through my telescope, but please don’t touch.”
Boy: “Yeah, sure!”

Boy: “Mom, come and see!”
Man: “Why do I even try??”

Answers to Astronomy Crossword on Page 9



UPCOMING EVENTS

Sept.8-12 - Huronia Star Party, Details at: http://www.hsp-ssaa.ca/HSP_Site.html
Sept. 17 - General Meeting, Hamilton Spectator Building., 7:30 pm. Speaker is Kerry-Ann Lecky Hepburn, Topic: Adventures In Astro-photography.
Sept. 18 - Grimsby Public Night (raindate Sept. 19) - at the Gateway Niagara Information Centre. (Corner of Casablanca Blvd and South Service Rd, exit off of Niagara-bound QEW in Grimbsy (Exit 74).)
Sept. 25 - Cosmology Discussion Group meeting. RSVP to observing@amateurastronomy.org .
Sept. 27 - Photo submissions for the 2011 HAA Calendar are due. See the announcement on page 18.

2009-2010 Council

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Second Chair	Jackie Fulton
Treasurer	Don Pullen
Membership Director	Jim Wamsley
Observing Director	John Gauvreau
Event Horizon Editor	Ann Tekatch
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