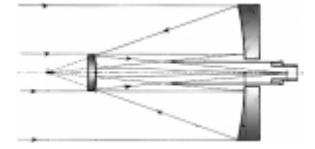


PETERBOROUGH ASTRONOMICAL ASSOCIATION

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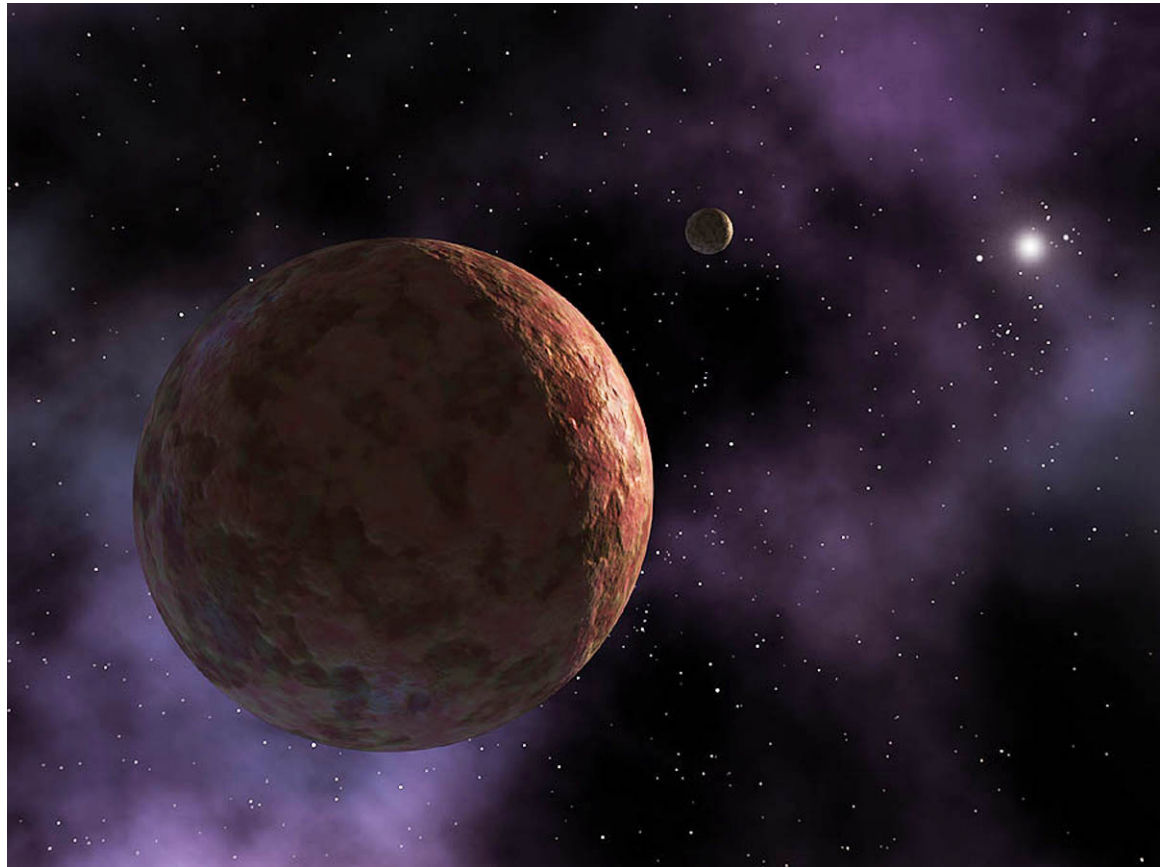
September 2009

A Planet Named Easterbunny?

You know Uranus, Neptune, and Pluto. But how about their smaller cousins Eris, Ceres, Orcus, and Makemake? How about Easterbunny?

These are all names given to relatively large “planet-like” objects recently found in the outer reaches of our solar system. Some were just temporary nicknames, others are now official and permanent. Each has

a unique story. “The names we chose are important,” says Caltech astronomer Mike Brown, who had a hand in many of the discoveries. “These objects are a part of our solar system; they’re in our neighborhood. We ‘gravitate’ to them more if they have real names, instead of technical names like 2003 UB₃₁₃.” Nearby planets such as Venus and Mars have been known since antiquity



Artist's rendering of dwarf planet MakeMake, discovered around Easter 2005. Unlikely to gain acceptance their nickname Easterbunny, the discoverers named it for the god of humanity in the mythology of Easter Island.

and were named by the ancient Romans after their gods. In modern times, though, who gets to name newly discovered dwarf planets and other important solar-system bodies? In short, whoever finds it names it. For example, a few days after Easter 2005, Brown and his colleagues discovered a bright dwarf planet orbiting in the Kuiper belt. The team's informal nickname for

this new object quickly became Easterbunny.

However, ever since its formation in 1919, the International Astronomical Union (IAU) ultimately decides whether to accept or reject the name suggested by an object's discoverers. “Easterbunny” probably wouldn't be approved.

see “Easterbunny” on page 16

Reflecting on Galileo Moments

I hope you had a good summer. There were some windows for observing, but you had to be awake to see them. The PAA sure was active over the summer, considering we did not have meetings. I would like to personally thank all those members who have helped over the summer to make our club proud to be a part of the larger astronomical community. We are small, but we are mighty when we want to be. We have added significantly to our Galileo Moments (GM) as a club and thus to the greater good of the national efforts for this year. At last count we are over 1,700 (GM's). I think this is astounding for a club of our size and considering that the year is not done yet! Will we break 2,000?

This brings me to a point that has been raised by at least one member, "Why all the focus on GM's?" The answer is simple, for two reasons, it is the IYA (that should be enough reason with all the products we have connected to it that we can give away) and GM's are a measure of success to one of goals as a club (public outreach). What better way to add to the greater good of the astronomical community and to accomplish our own goals as a club at the same time?

Have no fear, after this year is done we will go back to "normal", but not without having established some new relationships and linkages, because of what we did this year. I apologize if we have not been what everyone has wanted this year, but we have done more than I thought was possible already this year and I think it has been worth the effort. We still have an art show to look forward to this month (September 17 to October 8) at Sir Sanford Fleming College, a star party (Fall n' Stars), lots of guest speakers for our meetings and observing sessions to be had. Join in and continue to make us all proud. I am!

Rick Stankiewicz, President

So long summer, we hardly knew ya

At least mosquitoes were not that bad. Well, summer's end is near and for many it really didn't arrive what with all the rainy weekends and cloudy weeknights. When it was clear though, the sky was amazingly clear, but the dew came quickly.

So now autumn is around the corner but celestial observing is still worth it. The Summer Triangle is setting and Andromeda is prominent. Still the Milky Way is prominent and we no longer have to wait till after 10 pm for it to get dark. Fall is my favourite observing season.

Our fall IYA event will be the astronomy art show from September 17 to October 8 at Fleming College. Come meet the art-

ists at the gala opening on September 17. Don't forget, the *Fall n' Stars* star-party is September 25-27. <http://www.rascbelleville.ca/fallinstars>

Phillip Chee



**Peterborough
Astronomical
Association**

The Reflector is a publication of the Peterborough Astronomical Association (PAA). Founded in 1970, the PAA is your local group for astronomy in Peterborough and the Kawarthas.

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September's early darkness stretches stargazing season



The Andromeda Galaxy is visible to the naked eye from a dark-sky location. See if you can spot it using your star charts. Photo by Gord Simpson a Buckhorn Cottager.

As we flip the calendar page over to September, a new cast of constellations take to the night stage and welcome the backyard stargazer. The summer constellations will be making their last curtain calls, but you can still take them in thanks to the fact that it is getting dark earlier. That's also a big plus for young stargazers who must rise early for school the next day. As summer's cast of celestial characters bow out in the southwestern sky a new troop is taking the stage in the east.

The major players in autumn's starry drama are Perseus, his girlfriend Andromeda and the vain Queen, Cassiopeia. Amongst the supporting cast you'll see Pegasus the flying horse and if you wait until midnight, the Pleiades (also known as the seven sisters).

Those of you who don't already have a good star chart, I highly recommend Terence Dickinson's book *NightWatch*. It is available at Happenstance in Lakefield as well as Chapters and the other big box book outlets in Peterborough. Get it and chances are you'll never need to buy another astronomy book in your life...unless you get hooked like me. Star chart in hand, let's stroll out beneath the September sky and see what's up.

Straight overhead at 9:00 pm is the Summer Triangle. As the name says, it is only visible in the summer and the three stars form the points of a triangle. It's not a constellation, but an asterism of the three brightest stars in three separate constellations.

see "September Skies" on page 15

Stargazing at Charleston Lake

This August we camped with four of our grand-children at Charleston Lake Provincial Park. Totally unexpected we discovered that this park is a Mecca for star gazing types. It's also a pretty good family type campground.

The Park is located about 50 km east of Kingston, a drive of about 2½ hours from Peterborough. It's situated on the southern arm of the Canadian Shield with the typical rocky and hilly terrain. There is a two acre field available for star gazing, surrounded by high trees which somewhat limit your view, but the sky is really dark — the Milky Way is very visible not long after the sun sets. The field is close to one of the campgrounds and is easy to access.

To our surprise Terence Dickinson, editor of *SkyNews* and author of many astronomy books, was at the park for an "Astronomy Night". Terry has given a presentation for 24 consecutive years, which this year was attended by well over 250 people. After his talk and slide show at the Amphitheatre everyone was escorted to the viewing field where there were about 10 or 12 volunteers, mostly from RASC Kingston, with their scopes set up. They were swamped by the crowd but I don't think anything was damaged, and the viewing was excellent. There were about 15 people doing crowd control, all equipped with red lights. Owing to the popularity of this event there was a second night scheduled for later in the week.

This park is also great for family camping. The campsites are notably more spacious than the average provincial park, with many sites right on the lake. It's a nice spot for canoeing and kayaking, and there are many hiking trails, while the children's playground has real equipment — not the plastic stuff that may be really safe but is also really boring. On rainy days there is lots to do in Kingston, the

Thousand Islands, and the Rideau Canal system. The park is popular with local people, plus lots of folks from Quebec and the United States.

Information on the park can be obtained from www.ontarioparks.com and a good map from The Friends of Charleston Lake at www.friendsofcharlestonlake.ca.

See you there!

John Galle

Nutwood Observatory Profiled

Nutwood Observatory's Brian McGaffney was recently profiled in the spring issue of *Country Roads Hastings*. You can read the full magazine online: <http://countryroadshastings.ca/pastIssues/CR09-01.pdf>.

Our October 16th observing session will be hosted by Nutwood Observatory.



B33 complex. An example of the splendid conditions for astrophotography available from Nutwood Observatory near Bancroft, Ontario.

Image courtesy of Brian McGaffney.

Jumpin' Jupiter

The largest planet in our solar system is not only big, but full of surprises too. Twice this summer I was surprised at the eyepiece of my telescope. I must admit that I am not a "Jupiter Junky" or I likely would not have been surprised at all, as everything is predictable of course. I admittedly just have a look whenever I have a chance and this summer it was the closest thing to a "show stopper", since Saturn disappeared into the glare of the Sun last this spring.

For years I have faithfully noted in my observing journal the number and position of Jupiter's moons whenever I observe them, as sporadic as it is. I always find it a bit like "a roll of the dice" and I have recorded lots of interesting things over the years, but most are very predictable. For example, I expect to see the four largest moons, each about the size of our own Moon; Io, Europa, Ganymede, Callisto (the other 59 moons we know of are much smaller), but there are no guarantees and this is the interesting part. One time you look and there are all four moons on one side of the disc of Jupiter, the next time they are split two on each side, sometimes there are only three or two moons visible. This is usually because the ones you cannot see at the time are either in front or behind the bright planetary disc. This all adds to the fun and surprise each time I look.

Well imagine my surprise when on the evening of August 2nd I was at a resort to do an astronomy talk and I swing my scope over to Jupiter and I look in the eyepiece to see what looks like five moons! How could this be? One of them as it turns out is a 6th magnitude star in the constellation of Capricorn (45 Capricornis) that just happened to have been lined up on the same plane and in close

proximity as the regular moons of Jupiter that night. I was unaware that this was going to happen, but I not only got to see and record it, but I got to share it with almost 100 other people. A relatively rare chance alignment and this made for a great Galileo Moment and all those people have an Astro Card to remember it too.

Then on August 14th I was up at the BHO on the Friday evening our club camping/observing weekend (thanks to John and Deb Crossen) and Jupiter was sitting high in the southern sky on that clear evening at about 9:45 and I see only three moons. Two moons are well spread out on one side and a single moon on the other side. I assume that the fourth is just hidden by the planetary disk. Well you know what happens when you "assume"? At 11:05 I decide to have another look at Jupiter and what do I see but four moons. Not unusual you say? Well it turns out that the inner moons of Io and Europa had been occulting (covering up or passing in front of) each other, earlier in the evening when I had looked and now they were separated by a few minutes of arc, but still very close to each other still on the same side of Jupiter as before. I had never documented this before, but I now have the records to prove it. This is a very rare event for me and I was thrilled to have been lucky enough to have documented it. I did not get a photo, but Allen Friedman of Buffalo, N.Y. http://spaceweather.com/submissions/pics/a/alan-friedman-jupiter_20090807_copy_1249794785.jpg did on August 7th.

It goes to show, you just never know.

The Jolly Jupiter Jumper
(*Rick Stankiewicz, PAA*)

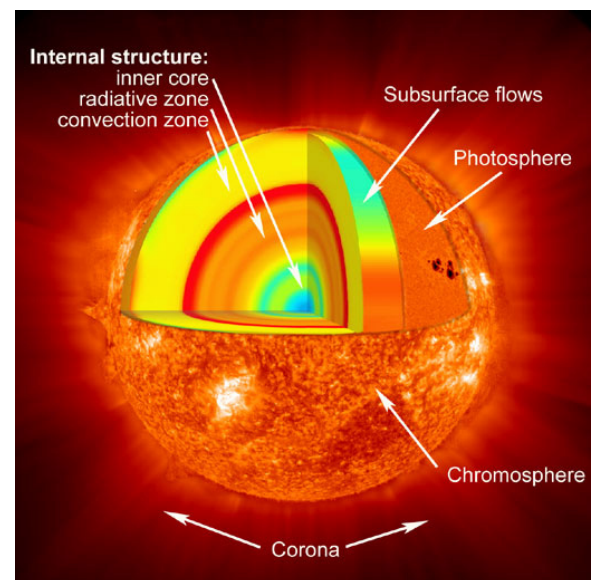
Look inside it and the Sun is really cool

Not temperature-wise, it's above 15 Million degrees C at its core. But when you can see what's taking place inside our friendly local furnace, it really is cool stuff. But let's wind the tape back for a minute.

Right now our Sun is at a phase of minimum activity. There have been scarcely any sunspots for over a year. The downside is that there aren't any solar-inspired aurora to look at on summer evenings. The upside is that we can actually see inside the Sun's placid surface and examine internal details. It's like looking into a pond and seeing the fish swim through the rocks and weeds below. This has prompted NASA to schedule the launch of a new orbiting solar observatory designed to study the mysteries of the Sun's internal workings.

Called the Solar Dynamics Observatory (SDO) the observatory will function like an ultrasound on a pregnant mother. With an ultrasound you can see the baby that lies beneath. And, in much the same manner, the Helioseismic and Magnetic Imager can sense acoustic waves moving through the sun and turn the waves into images of the Sun's interior. No matter how hot the Sun is, that's cool!

Considering the fact that the Sun is essential to our existence and continued survival, we know very little about its internal workings. For instance, we



When we understand how our Sun works we'll have a template that can also be used to understand how distant suns (stars) function.

know that every 11 years the Sun reverses its North and South Poles. But we don't know why.

We know that electrically-charged plasma moves inside the Sun creating magnetic fields and those fields also are related to the number of sunspots. These are in turn related to solar flares and dangerous Coronal Mass Ejections (CMEs). But, again, we don't understand why or how. According to Dean Presnell, a solar physicist with the Goddard Space Flight Centre, "Understanding how the dynamo works is the holy grail of stellar physics." To understand how important

Outerspace is one busy place



Apollo 17 astronauts snapped this photo of a crescent Earth as they glided over the Moon's surface aboard the command module. 2009 marks the 40th anniversary of the Apollo 11 Moon landing. Courtesy NASA.

Everyday I receive a newsletter from the National Aeronautics and Space Administration (NASA). Add to that a quick cruise through Space News.com and a couple more newsletters from the astronomy magazines and you'll quickly discover that there's a lot going on overhead. Rather than try to concentrate on one event, here's a very brief sample of what's up — really far up.

There isn't a towing service on Mars, and the rover Spirit is stuck in the sand. So the folks at Jet Propulsion Labs (JPL) are doing the next best thing. They drove a replica of Spirit into a sand box, got it stuck and are now working on control commands that may get the real Spirit unstuck on Mars. They have duplicated the Earth-bound Spirit's situation as closely as possible to that of Spirit on Mars. Hopefully, with about half the gravity pull of Earth, they'll be able to turn the Martian Spirit into a Free Spirit.

As our American cousins celebrated their 233 birthday on July 4th, the International Space Station (ISS) made a stunning display as it glided over the entire length of the U.S. It is the largest spacecraft ever built with a length of 357 feet. Now that its new solar panels are in place it is also highly reflective and shines brighter than any star or planet in the night sky. The international crew of

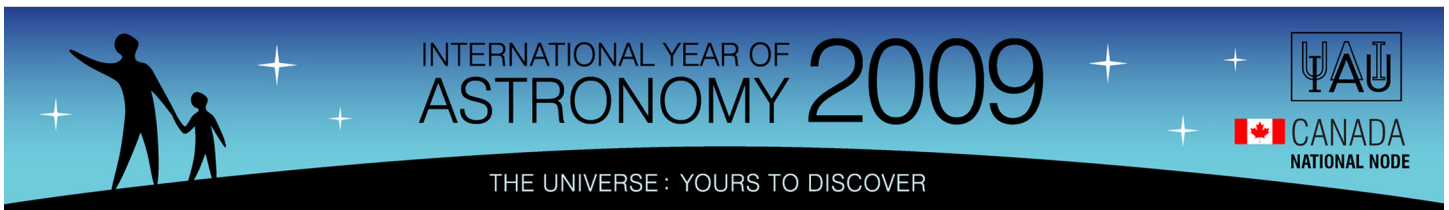
six currently consists of American, Russian, Japanese, European astronauts and Canadian Robert Thirsk. The ISS circles the Earth every 90 minutes, so give them a wave. For a schedule of satellite fly-overs visit www.heavens-above.com.

NASA's Moon satellite, Lunar Reconnaissance Orbiter (LRO) has begun taking its first high resolution photographs in a project to better map the Moon's surface. The satellite has also activated its six other exploratory experiments. The Lunar Exploration Neutron Detector will be used to find potential sources for water on the Moon. Other experiments will measure temperatures on the Moon's surface, differences in the geological make up of the surface materials and the long-term effects of radiation on the lunar rocks.

The Moon has been on a lot of minds lately. India's Chandrayaan-1 is currently orbiting the Moon to survey the lunar surface and produce a complete map of its chemical characteristics and 3-dimensional topography. On November 14, 2008, a Moon Impacting Probe separated from Chandrayaan-1 and hit the lunar South Pole, making India the fourth country to place its flag on the Moon. Other Moon Club Members include Russia, the U.S. and Japan which also has satellite orbiting dear old luna.

Meanwhile, back on Earth, the 74-inch telescope at the David Dunlap Observatory is back in business. Under an agreement with the owners of the property, the Royal Astronomical Society of Canada, Toronto Centre now operates the reflecting telescope and will begin providing public education and outreach programs. The first public viewing nights at the observatory will be held on July 18 and July 25, 2009.

John Crossen



National Parks Day

The third Saturday in July is designated National Parks Day across Canada. This year it was decided to partner with The International Year of Astronomy to celebrate this event. To that end staff at Emily Provincial Park contacted Rick Stankiewicz asking if the PAA would support this partnership with members offering a viewing/information session at their location. After some correspondence with Rick I offered to take this on as a project.

On July 2nd I went out to Emily Park and had a meeting with Paul Marshal who coordinates the education programming at Emily Provincial Park. We covered the bases regarding posters, handouts, parking, campfires and the general mundane stuff. We then went to the “amphitheatre”, the location where we would set up. It was a good meeting with the seeds planted for the event.

Saturday July 18, 2009 I arrive with my teammates at about 7:30 pm with Rick right behind us. We proceed to the amphitheatre to get set up. Shortly after other



Nicholas, Benjamin and I explain and demonstrate the SkyScout and MySky. Photo: Rick Stankiewicz.



Trish with the long line-up of people waiting to sign in and get their free IYA handouts. Photo: Rick Stankiewicz.

members arrive and “the games began”. A number of campers are already there waiting on benches, tables, chairs or standing. Two of the park staff, I believe their names are Katie and Kathleen, greet us and discuss plans for the evening. This includes their introduction of the PAA members to the campers and our address to these people. I, without hesitation, volunteer Rick to address the crowd to explain who we are and what we will attempt to accomplish this evening. I mentioned this to Rick after all was agreed upon. Rick as usual did a great job of introducing the PAA members that were present and went on to discuss what we hoped to accomplish that evening and gave a general overview of the field of astronomy.

Time passes as we get all our gear together, the telescopes set up and an area where we can get people to sign up and hand out IYA material. The crowd is starting to grow. It is not yet dark. Katie comes over to me and says “Is there anything we/you can do to entertain these people while we wait for darkness?” I thought, we



After dark, some of the people at the event. Photo Rodger Forsyth.

have a Meade MySky and a Celestron Sky-Scout why not show the people this new technology. I got set up on “the stage” explained and demonstrated the Meade MySky and after some convincing got Nicholas McCloskey to do the same for the Celestron SkyScout. Nicholas with the help of Benjamin Morgan did a great job.

Finally darkness arrived along with some sporadic clouds giving us a somewhat restricted view of the heavens. I was amazed as people looked into the eyepiece at a star, Arcturus, and did the ooh, wow thing. I suggested that this does not demonstrate the true advantage of a telescope. Looking at a star through a telescope does nothing more than make it brighter. The real beauty comes from looking at planets, nebulae, the moon, star clusters etc. Didn’t matter, these people were impressed and I guess this is what it’s all about. Some people actually hung around until close to 11:00 and saw the passing of the ISS!

The evening turned out to be a great success for the campers at Emily Provincial Park, their staff and members of the PAA. We recorded 206 signatures, a record this year for a single event, a number reported on the national IYA site. A special thank you to the members that participated.

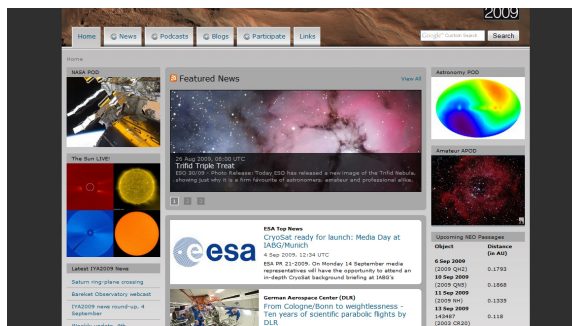
Rodger Forsyth

Galilean Nights

The success of 100 Hours of Astronomy in the spring 2009 has spurred the International Year of Astronomy executive to create a similar fall event. Called Galilean Nights, this international sidewalk astronomy weekend takes place October 22–24. This time the focus will be on Jupiter and the Galilean Moons. Day-time solar viewing will also be highlighted as well as the Moon in the evening. Mars will rise around midnight and Venus will be an early morning star. So, there are lots of celestial objects to entice the public to an observing session. At the last PAA executive meeting it was suggested an observing session be added for October 22 at Armour Hill.

Phillip Chee

Portal to the Universe



A new Web 2.0 style portal was launched last month. Portal to the Universe (PTTU) is co-sponsored by the European Southern Observatory and the European Space Agency provides a one-stop location for aggregating a variety of astronomical content from around the World Wide Web. There are links to multimedia, widgets, blogs, RSS feeds and other resources for the general public, educators and the media. The site also provides links to embed in your favourite social networking site such as Facebook and Digg. Check out: <http://www.portaltotheuniverse.org/>

PHOTO GALLERY

A Lone Perseid



The 2009 Perseid meteor shower was considered by many to be one of the best showings in recent memory. According to NASA a particularly dense patch of debris from Comet Swift-Tuttle provided the high numbers. Too bad there was too much moon light to contend with this year. This meteor was photographed on August 11 from my backyard in downtown Peterborough. The moon is behind my house.

Phillip Chee

Kids Night Out

When invited, the PAA has tried to do an astro event for the Peterborough Resource Housing Centre of Peterborough. This is a City run program for inner city kids who do not have the same resources that most of us have. Except for getting rained out last year, the PAA has been quite successful in running a small evening program two of the last three years.

Jupiter has figured prominently each time we have held this event and this year was timed nicely with the night of the Perseid Meteor Shower too. There were almost 2-dozen kids of varying ages (4 to

14) and with the adults in attendance we had 30 viewers. Even from the light polluted skies of the Kinsmen Centre on Sherbrooke Street the kids counted numerous meteors in the time we spent with them.

I would like to thank fellow members Colin Cross, Rene Bowe and Boyd Wood for assisting by each supply a telescope and their expertise in showing all in attendance Jupiter and it's moons and Colin's laser pointer is always a hit for pointing out constellations and how to find Polaris. The famous globular cluster in Hercules (M13) was a hit too. We were able to edu-



cate the kids about IYA and every child left with a glow bracelet, Jupiter Astro Card and Star Finder. Some of the younger ones even got a copy of the book Mary Lou's New Telescope.

Were these kids happy? You bet they were and to prove it I hope that you will be able to see at least some of the eleven "thank you pictures" that were given to me after the event. Do kids like "space"? I'll let you decide.

Over the Moon PAA President,
Rick Stankiewicz

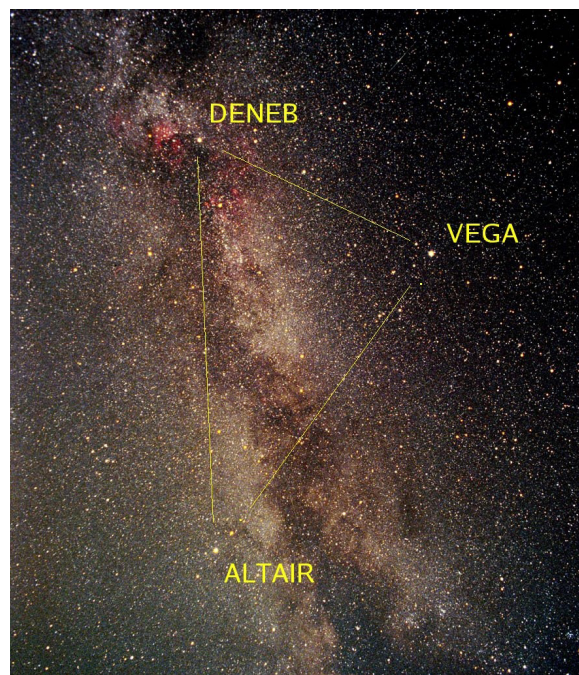
Summer Stargazing

On a warm August night the Milky Way rules the sky from the northern horizon to the southern. As it arcs across the sky it cuts through a large asterism called the Summer Triangle. Just as its name implies it is a triangle made up of three bright stars, Vega, Deneb and Altair. Add in the fact that planet Jupiter will rise at sunset on August 14th and you have some of the best nights of 2009 for stargazing. Plus the bugs are less ferocious.

The “river of milk” splashed overhead is one arm of our pinwheel shaped galaxy called the Milky Way. Our solar system is just a small speck in the opposite spiral arm. On a warm August night we are looking across the space between Earth in its galactic arm in towards the other arm. It’s like looking across the street – one that’s a few thousand light years across. One light year is equal to ten trillion kilometers, so it’s a very wide street. The other arm is made up of stars, just like our own. But they are so far away that we see them as a milky mist across the night sky.

If you follow the Milky Way to the south towards a constellation called Sagittarius (also known as the Teapot), you’ll be looking straight into the dust-hidden core of our galaxy.

The Summer Triangle will be nearly straight overhead in mid-August. It is huge, covering about $\frac{1}{4}$ of the summer sky. The brightest star will be Vega in the constellation Lyra. It will be overhead and a bit to the west. Next up is Altair to the southeast. Altair is a bright star in the constellation Aquila. The dimmest star of



The Milky Way runs through the Summer Triangle and is easy to spot. Face north and hold the photograph overhead with Altair to the south and the image will match your view overhead. A dark sky is essential for seeing the Milky Way. City residents are advised to “get out of town”.

the trio is Deneb which is the star in the tail feather of Cygnus the swan. Deneb will be in the northeast. Their positions will change slightly as the season progresses.

On August 14th Jupiter will be at opposition. For you and I this means that Jupiter will rise at sunset and set at sunrise so it will be visible all night long. Jupiter will be quite bright and have a slightly yellow tinge to it. Through a pair of 10 power binoculars you can just see the Galilean Moons (Jupiter’s four main moons) orbiting around it. They will change position from night to night and make an interesting dance to watch.

see “Summer Triangle” on page 15

Astroartography

Astronomy through art and photography



Kelly Dodge's painting *Twilight Constellation*

The Peterborough Astronomical Association is pleased to present *Astroartography: Astronomy through art and photography*. Four hundred years ago our place in the universe changed. On August 25, 1609, Italian mathematician Galileo Galilei showed off his newly-built telescope to some merchants of Venice. Soon after he pointed the telescope at the night sky and what he saw would change the world.

No longer was Earth the centre of the universe. The Moon appeared to have mountains and was like our own world. He noticed that Jupiter had smaller worlds that seemed to move about the large planet, perhaps a model for how the Earth moved around the Sun. The cloudy Milky Way was really a band of many, many stars.

This art exhibition debuting September 17, 2009 and running to October 8, 2009 will present a number of works by professional artists and members of the Peterborough Astronomical Association. Artists Kelly Dodge, David Johnston, and Christian Joore will be featured in a display of astronomy-themed artwork and astronomical photographs and art created by the following members of the Peterborough Astronomical Association: Rene Bowe, Phillip

Chee, Brian Colville, Colin Cross, John Crossen, Robert Fisher, Peter Mathias, Brian McGaffney, and Rick Stankiewicz. The photographs highlight the breadth of astronomical subject matter from wide vistas of the Milky Way to family portraits of our solar system and spectacular views of distant stellar dust clouds. We hope that this exhibition will remind people of the role astronomy has of enriching our culture, spurring our intellectual development, and connecting us to the universe.

Come out to the gala opening at Fleming College's Sutherland Campus at 599 Brealey Drive in Peterborough, Ontario on Thursday, September 17 and meet some of the artists and photographers. The opening begins at 7 pm. Please RSVP to Phillip Chee (749-5530 x1214).



THE UNIVERSE
YOURS TO DISCOVER

INTERNATIONAL YEAR OF
ASTRONOMY
2009

continued from page 6

Cool Sun

understanding our Sun works is, you have to appreciate how we are increasingly at its mercy thanks to our advancing technology.

A solar flare was responsible for the Quebec and East Coast U.S. power outage in 1992. The charged particles traveling on the solar wind from another CME knocked out Canada's Anik satellite. Air Force 1, at the time on a flight over Russia with President Reagan, was out of communications with ground bases for three hours thanks to another solar storm. And if we were hit today by a CME as strong as the one that slammed into Earth in 1849, our high-tech society would be bounced back into the Stone Age. The electrical interference would paralyze the communications industry, satellites would be knocked out, cell phones would be useless, power grids around the world would be destroyed and anyone orbiting Earth or the Moon could be fried by the radiation.

Here's hoping the scheduled November, 2009 Launch of the Solar Dynamics Observatory will quickly lead us to an understanding of the Sun and allow us to make more accurate predictions of upcoming solar storms and activity. Our sophisticated electronic technology makes it essential to know what the Sun has in store for us.

John Crossen

Moon Phases

Full Moon	12:03 PM	September 4
Last Quarter	10:16 PM	September 11
New Moon	2:44 PM	September 18
First Quarter	12:50 AM	September 26

The Sky this Month

Mercury is an evening star until the 20th when it is at opposition. Rises before dawn at the end of the month.

Venus is still a morning star but fading to mag. -3.9. Passes 0.5° north of Regulus on the 20th.

Mars is in Gemini all month.

Jupiter transits at 9:48 LMT on the 15th. On the 29th it will be 3° below the gibbous Moon and visible with the unaided eye in the daytime.

Saturn is in conjunction with the Sun on the 17th. Although the rings will be edge-on during the 4th it is unfortunately 11.4° away from the Sun.

Moon will be at perigee on the 16th (364 053 km) and apogee on the 28th (404 432 km)

Autumnal Equinox occurs 5:19 pm on the 22nd.

Zodiacal Light visible before morning twilight from the 16th for the next two weeks.

continued from page 3

September Skies

Vega (Veega) is the brightest of the three with Altair being about a magnitude dimmer and Deneb coming in third. It is a very large asterism and you will be able to see it any clear night in September. But as the month progresses it will move towards the southeast.

Early risers on September 1 can spot brilliant Venus in the east, just beneath a star cluster known as the Beehive. The cluster is beautiful in binoculars.

Telescope observers will be able to see Jupiter sans its customary four moons on the night of September 2nd. Aliens haven't abducted them – unless you're my whacky neighbour down the road. Instead the four Jovian satellites are either crossing behind or in front of the giant planet, so we won't see them at all. For first-time watchers this will be a disappointment. But veteran viewers will find it an unusual sight to remember.

Full Moon arrives on September 4th, so rent a good DVD or hit the sack early.

On September 8th, Jupiter's moon Io occults Europa from 1:35 a.m. until 3:51 a.m. If you liked that one, September 27th brings another treat as Jupiter's moon Europa occults Ganymede and Callisto joins the fun to make a tightly grouped trio.

The other prime dates are September 11th when the Last Quarter Moon rises past midnight and New Moon on September 18th when we have no Moon at all to drown out the starlight. Turning up the turbo and sprinting ahead to September 29th the Gibbous (chubby) Moon will be just three degrees above bright Jupiter.

Until we meet again by the backyard telescope, keep looking up and don't forget to pick up that star chart. It's fun to connect the dots and find the constellations.

John Crossen

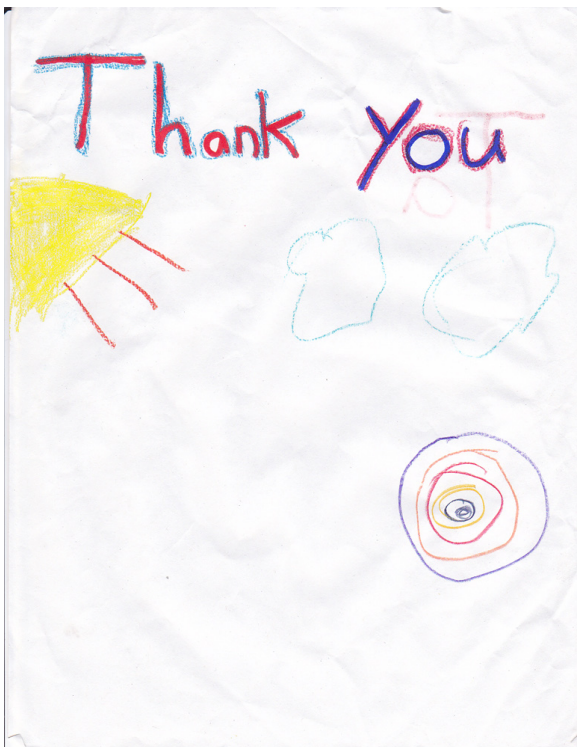
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Summer Triangle

Through a telescope they are more easily seen, though it takes a very steady atmosphere to be able to resolve them into tiny orbs. Here at the observatory that has happened twice in nine years. Obviously the Jet Stream is playing havoc with the seeing.

Binoculars are also a great way to explore the Milky Way. If you star at the spout of the Teapot (Sagittarius) and move up you'll see the Lagoon and Trifid Nebulas, a gorgeous star cloud, the globular cluster M22 and a host of other nebulae and star clusters. Now is the time to buy a star chart because the Milky Way is a virtual treasure chest of stellar splendors. Terry Dickinson's NightWatch is my recommendation. At \$39.95 it may well be the only astronomy book you ever need to buy.

John Crossen



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Easterbunny

According to IAU guidelines, comets are named after whoever discovered them—such as comet Hale-Bopp, named after its discoverers Alan Hale and Thomas Bopp. Asteroids can be named almost anything. IAU rules state that objects in the Kuiper belt should be given mythological names related to creation.

So Brown's team started brainstorming. They considered several Easter-esque names: Eostre, the pagan mythological figure that may be Easter's namesake; Manabozho, the Algonquin rabbit trickster god.

In the end, they settled on Makemake (pronounced MAH-kay MAH-kay), the creator of humanity in the mythology of Easter Island, so named because Europeans first arrived there on Easter 1722. Other names have other rationales. The dwarf planet discovered in 2005 that triggered a fierce debate over Pluto's status was named Eris, for the Greek goddess of strife and discord. Another dwarf planet with an orbit that mirrors Pluto's was dubbed Orcus, a god in Etruscan mythology that, like Pluto, ruled the underworld.

Brown says he takes "this naming business" very seriously and probably spends too much time on it. "But I enjoy it." More tales of discovery and naming may be found in Brown's blog MikeBrownsPlanets.com.

Constellations have also been named after ancient gods, human figures, and animals. Kids can start to learn their constellations by making a Star Finder for this month at spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml. There you will also find a handy explanation of why astrology has no place in science.

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Articles

Submissions for *The Reflector* must be received by the date listed below. E-mail submissions are preferred (Microsoft Word, OpenDoc, ASCII and most common graphic formats are acceptable). Typed or hand-written submissions are acceptable provided they are legible (and not too long.) Copyrighted materials will not be published without written permission from the copyright holder. Submissions may be edited for grammar, brevity, or clarity. Submissions will be published at the editor's sole discretion. Depending on the volume of submissions, some articles may be published at a later date. Please submit any articles, thoughts, or ideas to:

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**Next submission deadline:
September 26, 2009**



Meetings The Peterborough Astronomical Association meets every first Friday of most months at the **Peterborough Zoo Orientation Centre** (Next to the PUC Water Treatment Plant) at 8PM. PAA executive business will be conducted starting at 7:30PM. Members and the public are welcome to attend the earlier time.