

### Editorial

This month promises to be a great one for astronomy. It all starts with a transit of Mercury on May 7th and it only gets better from there.

On May 7, a **transit of Mercury** will occur. It will reach maximum at 7:52 UT (3:52 AM EDT). In this part of the world, the last part of the transit will be visible after sunrise and will end at 10:27 UT (6:27 AM EDT).

This year, Astronomy Day will occur on Saturday **May 10th**. This would be a good time for the club to put on an Astronomy Day event. Last year we held an observing session at Armour Hill, which was a great success. If you would like to help with this year's event, please let me or Dave Duffus know. We will be discussing what we will do at the May 2nd meeting.

The month, the moon will be putting on a show, with a total lunar eclipse on the night of **May 15-16**. This is the first total lunar eclipse visible from eastern North America since January 2000. The moon will enter the umbra at 2:02 UT (10:02 PM EDT) and will be at greatest eclipse at 3:40 UT (11:40 PM EDT). The umbral phase will end at 5:17 UT (1:17 AM EDT).

This is also a good month for general observing. The weather is usually much better and the bugs are not yet out. So get out there and observe the heavens!

Clear Skies,

Charles W. Baetsen  
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### Tom Kovac to Speak on May 16<sup>th</sup>

Most of you are familiar with the Haliburton Forest Centre. But did you know that they have an observatory there, too. It's quite an impressive set up and we have penciled in its resident astronomer, Tom Kovac

to tell us all about the centre. In addition to the observatory, the 59,000-acre nature preserve also features a forest canopy walk, hiking, biking, and more – including a restaurant. Check out [www.haliburtonforest.com](http://www.haliburtonforest.com) for a sneak preview. If there is any change in the date, we'll let you know via email and phone.



The Haliburton Forest Observatory is large and well equipped. The huge roof rolls back to reveal three computer controlled SCTs which are used for group sky tours. The large table in front of the observatory is an all-sky, all-season sky chart.

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## Meet PAA Member: Charles Baetsen

They say that imprinting causes baby ducks to think that the first creatures they see are their parents. The same could apply to Charles Baetsen – but with a twist. Charles was only two at the time, but he distinctly remembers the Apollo 11 lunar landing. And ever since (with a brief hiatus during his teenage years), Charles has been a devoted astronomy buff.

Charles' early memories also include the time he asked his aunt for a book on the astronauts. Instead, she got him a book on astronomy. Disappointed at first, Charles soon was flipping through the pages soaking up all the astro-info he could.

His interest in astronomy was boosted again when his cousin Mary sent him a photograph of the Andromeda Galaxy. She had taken the black and white photograph at university. Before sending it to Charles she wrote on the back, *"This is a photograph of a galaxy called Andromeda. See what you can find out about it. This is one of the galaxies we studied at university - Mary."*

Inspired by the photograph, Charles continued checking out astronomy books each time the bookmobile visited. And he diligently scanned the skies searching for the Andromeda galaxy with his parent's 7x50 binoculars. Eventually he found the faint fuzzy and has never looked back. In fact, he now has his Messier certificate from the RASC. But we're jumping ahead – about 20 years ahead.

In 1978 his parents bought Charles a \$20 refractor from Canadian Tire. Despite a shaky mount, the optics of the 50 mm peashooter weren't bad. With it Charles leapt into deep space, observing M42 and (of course) the rings of Saturn.

But Charles wasn't the only Baetsen to be bitten by the astro-bug. His mom purchased a 3" reflector from Edmund Scientific. Talk about aperture envy! At any rate, they put it to good use with lots



Charles in his observatory near Orono.

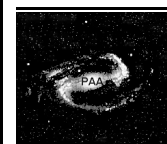
of observing from the dark skies of Cape Breton, until the early 80's when girls and parties took over.

By 1991, Charles was well over of his teenage euphoria and joined the Hamilton Centre of the RASC. The following year he joined the Centre's Board as Maintenance Director, which gave him a key to the Centre's observatory. This presented him with many opportunities to view the night sky through decent sized scopes (when he wasn't mowing the observatory lawn or fixing something). By 1993 he had earned his Messier certificate.

Charles was one of the founding members of the Hamilton Amateur Astronomers, new group that sprung up in the Hamilton area in 1993. It was here that he got his first stab at writing articles for the club's newsletter. For many years he was very active in this group until he moved away in the

pursuit of darker skies.

In 1998, Charles moved to Peterborough



**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.

### Website

[www.geocities.com/paa\\_ca](http://www.geocities.com/paa_ca)

### Email

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### Club Mailing Address

c/o Dave Duffus  
7 Riverview Hts.  
Peterborough, ON, Canada K9J1A9

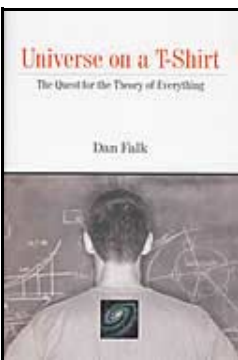
and joined the PAA. In 2001 he pumped fresh ink into the veins of the club's old newsletter and the first issue of *The Reflector* was born in November of that year. Charles remains the Editor of *The Reflector*. And, to his credit, the newsletter has received critical acclaim from everyone who has read it – including Terry Dickinson!

Charles, his wife Patricia, and their three children recently moved into a new home in Orono, just south of Peterborough. As you would expect, one of the first things to pop up in the back yard was an observatory. Under its dome lurks an 8-inch Meade SCT. Along with deep sky observing, astrophotography and an interest in classic TV sci-fi series, Charles also likes to tinker with computers and ham radio.

If you're a new member and haven't met Charles yet, be sure to introduce yourself to him. He's always keen to meet new people and lend a hand whenever asked.

John Crossen  
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## Book Review



**Universe on a T-Shirt**  
by Dan Falk,  
2002.  
Published by  
Viking Canada  
(\$34.00 Cdn)

"I'm with Stupid+", "Where's the Beef?" "Runs with Scissors", what could be the next thing people wear on their T-shirts? Well, if author Dan Falk has his say to explain what has been coined as the "Theory of Everything", then it may be something like Schrodinger's Equation;

$$\left( \frac{-h^2}{2m} \frac{\partial^2}{\partial x^2} + \frac{1}{2} kx^2 \right) \Psi = E\Psi$$

Universe on a T-Shirt is a book written for the layperson, however, some of the topics he covers require a basic understanding of physics (a university course you may have taken, or just reading Stephen Hawking's "A Brief History of Time", would be a great help). One thing this book brings out is that this Universe is a strange, strange place. The universe does not stay in the lines when it colours!

*Now my own suspicion is that the Universe is not only queerer than we suppose, but queerer than we can suppose.*

*J. B. S. Haldane (1892–1964), British scientist.*

The book begins by taking us through the history of what becomes modern physics. It starts with the Greeks and their *four element theory* and progresses to Copernicus, Galileo, Kepler and Newton.

Each of these men's great accomplishments are outlined, Copernicus' Sun centered universe, and Kepler with his laws of describing how the planets moved. With the advent of the telescope Galileo made many observations to prove Copernicus' heliocentric model and Newton described the force of gravity which were governing these planets. James Maxwell brought together electricity and magnetism under one unified description which set the stage for Einstein's Theory of Relativity. Quantum theory was beginning to take shape with great minds like Planck, De Broglie, Heisenberg, Weinberg and Schrödinger blurring the line between particle and wave. But it gets even weirder with the advent of Edward Witten and his String Theory which basically states that matter is composed of mind-numbingly small one dimensional loops of string. The next evolution of quantum theory has gone

*The answer to the Great Question...of Life, the Universe, and Everything...is Forty-two. –Douglas Adams, Author of "The Hitch Hiker's Guide to the Galaxy"*

into the realm of philosophy and religion. So what is the Theory of Everything? It would be a theory of physics that explains the Standard Model of particle physics. This day may be soon at hand.

This was a good book and really gave a good accounting of the history and people involved with probing the deepest secrets of the atom. I am in awe of the absolute genius of people like Newton, Schrödinger, and Einstein who not only were able to figure out the equations of quantum physics but also could even **conceive** of these things.

What would I put on a T-shirt? I feel that understanding the universe is not as important as appreciating it, so I think it would be a picture instead of an equation. Maybe a picture of our galaxy, this would let us know how insignificant and yet how special we are. This is a fitting paradox for a strange, strange universe. What would you put on your T-shirt?

Will Juodvalkis  
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## Dark Skies?

On March 30th this year, at around 9:30 p.m., I was out in my backyard to take some pictures of the current Jupiter - M44 conjunction. This was actually the closest positioning I was able to record of this event. The April 4th closest encounter turned out to be a cloudy washout in this part of the country. I also decided to try to take a few pictures of some constellations while I was at it. I tried Corvus, which was low on the southern horizon and I could detect a faint bit of skyglow, but the pictures I got back say it all.

Attached, is a set of comparative shots taken from the same location (15 minutes south of Peterborough), looking in a southerly direction. For both shots I used a Canon Ftb SLR and Fuji 800 ASA Superia X-TX film. Each is a 3 minute exposure. They are taken 8 minutes apart. The only difference is in the lenses used. The image of Corvus was



**Top—A picture of Jupiter in Cancer.  
Bottom—Light pollution in the south**

taken with a 50 mm Canon lens and M44 was with a 135 mm Canon lens. Both were set at the same opening of  $f/3.5$  and were being “piggy backed” on my Meade ETX telescope.

Note the nice dark background of the M44 shot looking high in the southwestern sky verses the southerly horizon shot of Corvus. I did not set out to illustrate this situation, but it has worked out rather nicely to illustrate the point. The skyglow seen in the lower portion of this composite is actually from Cobourg (pop. 15,450), which is 32 km to the south of my location and on the other side of Rice Lake. This is not a big population centre, yet look at the effect it can have.

Just another example of the insidious job that light pollution is doing on our environment, not to mention our enjoyment of the night sky and our astronomical pursuits.

Rick Stankiewicz  
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## The Sky This Month

### MERCURY:

Mercury is not visible this month except on May 7, when a **transit of Mercury** will occur in the morning hours.

### VENUS:

Venus is now low in the morning sky. Try and catch it if you wake up before the sun.

### MARS:

Mars will be visible this month in the early morning hours (it rises at about 2 am).

### JUPITER:

Jupiter will be in Cancer and appears as the brightest object visible in the evening sky. It starts its forward motion again on April 3rd.

### SATURN:

Saturn will be visible near the Taurus-Gemini boundary, not far away from the Crab Nebula (M1). The rings are well oriented for viewing the Cassini Division. This is the last opportunity to see it this season.

### URANUS & NEPTUNE:

Uranus and Neptune are not visible this month

### PLUTO:

Pluto will be visible in the early morning hours this month. It is located in Ophiuchus and is best seen in the summer months. You will need to a finder chart like those published in *Sky & Telescope* or the *RASC Observer's Handbook* to find Pluto.

### METEOR SHOWERS:

There is one major shower this month:

Eta Aquarids                      April 21-May 12

There are also several minor meteor showers this month. For details on these see [http://comets.amsmeteors.org/meteors/april\\_radiants.html](http://comets.amsmeteors.org/meteors/april_radiants.html)

## Off the Beaten Path

Last month we sought out some decent looking galaxies. This month, I thought we would see what else is overlooked in the spring skies.

NGC 3242 – Ghost of Jupiter. Located in Hydra, This really looks like Jupiter! The term “planetary” in planetary nebula, likely was inspired from this object.



**NGC 3242-The Ghost of Jupiter**

NGC 4361 – This is small, bright planetary nebula, with a 13<sup>th</sup> magnitude central star. Located in the center of Corvus's trapezoidal shape, this is one of the brightest planetary nebulae in the sky.

NGC 4038/9 – Also known as the “Antennae” or “Ringtail Galaxy”. This pair of interacting galaxies is located in Corvus near the star SAO 157042 and looks quite interesting in a large scope. Both names accurately describe its shape.

NGC 5466 – One of the few objects visible in Bootes. This is a loose globular cluster that looks more like a rich open cluster. It is 9<sup>th</sup> magnitude and is best viewed in a 10-inch or larger scope.



NGC 5466 in Bootes

NGC 6543 – The Cat’s Eye Nebula. Located in Draco, this planetary nebula is quite a treat, even if you do not own a Hubble Space Telescope. It appears as a vivid blue disk of magnitude 8.

So on the next clear night, be adventurous and go off the beaten track. Enjoy the new scenery.

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## Buckhorn Observatory’s 2003 Season has a Hazy Beginning

**B**uckhorn Observatory officially began the 2003 season of public observing Friday night, April 25<sup>th</sup>. Prime targets for the night were Jupiter and Saturn. And it was a fortuitous choice of bright targets because the evening was extremely hazy. At magnitude  $-1.5$  Jupiter burned through the haze quite nicely while Saturn was a bit more difficult to find. Nonetheless, we were able to deliver as advertised – and a lot more because the night cleared beautifully by 11:00.

Among our Friday night visitors were

Errol Lewars and his wife Ann. Errol is a new PAA member and just getting his sky bearings. Taking turns at the eyepiece, we had a slightly wobbly, view of Jupiter. However, the atmosphere was steady enough that we could easily observe one of Jupiter’s moons as it slipped behind the giant planet. Saturn’s rings were clearly there, though the divisions were pretty well obliterated by the atmospheric turbulence. So are they rings or wings?

Switching from the scope to binoculars we watched Jupiter and M44 in the same field of view. Next, we swung around to pick out Coma Berenices. At this point the sky had cleared enough to outline a few constellations with the laser pointer. It also became clear enough to do some serious Messier spotting.

Galaxies M65 and M66 were first up and quite prominent in the same field of view. Encouraged by this, we moved closer to the horizon and were rewarded with a nice look at The Sombrero Galaxy - M04.

Hercules was well up now, so we shared our first look at the magnificent globular cluster, M13. While marveling at it, we also tried to imagine what it would be like to live on a planet orbiting a star in a cluster like that. Our nightcap came in the form of galaxies M81 and M82, both of which were quite bright against the now black sky.

As is often the case with astronomy, we



**The Buckhorn Observatory is open to PAA members year ‘round. Just call 657-7718 to let John or Debbi Crossen know you’re coming. No scope? No problem! The observatory can set up a spare for you to use.**

wound up doing something we hadn’t started out to do. Adding a little deep sky to what was to be a night devoted to planetary observing was an unexpected pleasure. After all, a good sky is a terrible thing to waste.

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## Astronomy in Philately

**Y**ou may not realize this, but 1992 was the International Space Year. During this year Australia issued a set of three commemorative stamps to reflect this theme. As you can see from the picture included with this article, they produced some nice stamp images.

The three images released showed the Helix Nebula, The Pleiades and a Spiral Galaxy.



An Australian stamp commemorating International Space Year—1992

The Pleiades is what is shown here. At this time of year, this beautiful open cluster of stars signals the arrival of spring as it bids us a good evening and quickly slips into the western horizon after sunset. It is known more as a fall and winter asterism that forms part of the constellation Taurus. It is recognizable on its own as the Seven Sisters or as the Japanese call it, “Subaru”, which means, “coming together”. This group of stars is the closest of its kind to earth at only 370 light-years away. It contains about 3,000 stars and is 13 light-years across. Charles Messier labeled it as M45 in his

famous list of comet-like objects.

This stamp shows the beautiful clusters core stars. Taken with a time exposure, it shows the blue reflection nebulosity that is not visible in the eyepiece of a telescope. Just the central stars are evident in this close-up. These make up one of the most recognizable objects in the night sky. The Anglo-Australian Observatory took the image used on the stamp.

Have a good look at this stamp because it the best view you will get of Pleiades until next fall, when it rises before Orion in the eastern horizon after nightfall.

Your Astronomical Philatelist  
Rick Stankiewicz  
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## Amazing Space

### Water World in Orion.

You may be familiar with the Orion Nebula as a star forming region. But would you believe it's a great source of water? Astronomers estimate that enough water is produced in the nebula to replenish all of the oceans on Earth every twenty minutes. Any one for a bottle of imported water?

### Ready for an Inner Space Fact?

There are more e-coli bacteria in your stomach at any given moment than there have been human beings on Earth. No wonder your tummy is grumbling.

### The Longest Journey.

Since our solar system formed 5 billion years ago, it has orbited the nucleus of our galaxy about a dozen times. Considering the fact that our galaxy is a disk about 100,000 light years across and we're nearly two thirds of the way out from the centre, that's quite a journey. On the same galactic scale, the distance traveled since humans first walked Earth's surface will only be equal to one click of the second hand of your kitchen clock. Makes a body feel kind of young doesn't it?



### Listening to the Radio from your Favourite Star.

Radio waves travel at the speed of light. That's just under 300,000 kilometers per second. At that speed, it would take an hour and a half for a radio broadcast from Earth to each the planet Saturn. Considering the fact that we've been broadcasting for nearly a hundred years, here's what listeners in different parts of our galaxy would now be receiving from Earth. The farther out the broadcast reaches, the further back in time it goes.

- At a distance of 4.1 light years from Earth, radio listeners orbiting our second nearest star, Alpha Centauri, will be hearing Britney Spears' early hits.
- Rap music would be the latest thing for listeners near Procyon.
- Hip cats and kittens on a planet spinning about the star Rasalegethi in Ophiuchus would be rockin' to Elvis's version of Hound Dog.
- And youthful listeners in the vicinity of Mizar in the big dipper would be dancing the Charleston Rag at



the local speak easy.

- What about anyone tuned in from Polaris, our North Star? At a distance of 430 light years, they'll have to wait another 300 years or so just to catch Marconi's first broadcast.
- By the way, television signals travel at the same speed as radio waves. So, space travelers in the vicinity of Arcturus will still be laughing at the madcap antics of Ricky and Lucy.

*Author's note: Many of the above facts were gleaned from "Life Beyond Earth", a film by Timothy Ferris. It's available through the PAA Library.*

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## DIY Digital Camera Adapter

About a year ago, I purchased a digital camera to do some "terrestrial" photography thinking that it would be impossible to use for astrophotography since it didn't have removable lenses. Since that time some manufacturers have come out with adapters to attach the camera to an eyepiece via the threaded ring on the camera lens. This works fine if your camera has a threaded "non movable"



The Finished Product



**The adapter with camera and lens installed.**

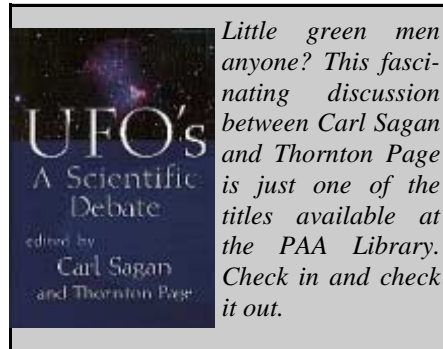
lens, but if it doesn't, this option is not going to work. After thinking about the problem a bit, I came upon an idea – why not use the camera's tripod mounting hole to attach the camera to the eyepiece. Figure 1 is what I had in mind. I used the 1/4-20 screw hole to mount an adapter that clamps onto any 1 1/4" eyepiece.

This project will take a couple of hours to make, but it is well worth it. It will also save you about a \$100-150 for a commercial digital camera adapter. Construction of the adapter is rather straightforward, however there are some tricks I have used here and there. In order to "bore" the two holes through the length of the clamp for the carriage bolts, you need drill press and a handy drill jig (see <http://www.right-tool.com/d3cenjig.html>) that you can buy (or make as I did). This simple jig will auto-centre the drill holes exactly 1/2 way between the width of the wood.

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## Here Comes the Space Bookmobile

We had hoped to be able to store the club's library in the Zoo Orientation Centre. However, it appears that we'll have to put that plan aside for a couple of months. As an interim step, we'll be truckin' a load of books to each of the meetings this summer. While we can't bring the entire library, we'll do our best to load up with a representative cross section of what's available. Also



*Little green men anyone? This fascinating discussion between Carl Sagan and Thornton Page is just one of the titles available at the PAA Library. Check in and check it out.*

included will be some videos and DVDs.

PAA Members are invited to check out (literally) any of the offerings and enjoy them for the two-week period between meetings. Guenther Hilpert is the club librarian, so do your check-in/check-out with him.

If you'd like to order a book up from the list supplied to members in February, contact John Crossen at [johncstargazer@aol.com](mailto:johncstargazer@aol.com). If you've lost your list, we've printed an updated version in this issue of The Reflector. It



*Canadian telescope builder Peter Ceravollo and a team of RASC amateurs put together this one-of-a-kind video which has been critically acclaimed by professional astronomers as well as amateurs around the world. Join the team and see what they did, and how they did it. Sky & Telescope Associate Editor Dennis di Cicco had one word for it – "Wow."*

also will be posted on the club's web site in the near future.

By the way, if you have any old space books or video tapes gathering dust, they'll find a warm welcome in the PAA Library. Hopefully by this coming Fall we'll be able to have the

entire collection housed in a permanently at the Orientation Centre.

John Crossen  
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## Current PAA Library Contents

Here's what you'll currently find on the cyber shelves of the Peterborough Astronomical Association's library. New additions will be coming in the future and we'll keep you posted. In the mean time we invite you to check out something for a cloudy night.

### General Reference

- A Photographic Tour Of The Universe - Vanin
- Cosmos – Carl Sagan
- Colours Of The Galaxies - Malin
- Demon Haunted World - Sagan
- Exploration of the Universe – George O. Abell
- Extraterrestrials - Dickinson & Schaller
- From The Big Bang To Planet X – Dickinson
- Glossary of Astronomy and Astrophysics – Hopkins & Chandrasekhar
- Into Outer Space – Owen
- New Concise Atlas of the Universe – Patrick Moore
- Nightwatch – Dickinson (1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> editions)
- Space Places - Ressmyer
- StarWare – Harrington
- The London Planetarium – H.C. King
- The Messier Album – Mallus & Kreimer
- The Handy Space Answer Book - Englebert & Dupius
- The Night Sky Observer's Guide#1 - Kepple & Sanner
- The Night Sky Observer's Guide #2 -

- Kepple & Sanner
- The Pale Blue Dot - Sagan
- The New Solar System - Beatty, Petersen, Chaikin
- The Pictorial Atlas Of The Universe - Krisciunas & Yenne
- The Universe And Beyond - Dickinson (2 copies)
- Through The Eyes Of Hubble - Naeye
- Touching The Earth - Bondar
- UFO's - A Scientific Debate - Sagan & Page

## Solar System

- The Hunt For Life On Mars - Goldsmith
- Solar Astronomy Handbook - Beck, Hilbrecht, Reinsch, Volker
- Destination Mars - Caidin, Barbree, Wright
- Beginner Guides
- Exploring The Night Sky With Binoculars - Chandler
- The Backyard Astronomer's Guide - Dickinson
- The Beginners Observing Guide - Enright
- The Stargazer's Bible - Kals

## Astrophotography

- A Manual Of Advanced Celestial Photography - Wallis & Provin
- Astrophotography II - Martinez
- Astrophotography - Gordon
- Photography With Your Telescope - Edmund Scientific
- Wide-field Astrophotography - Reeves

## Astro-History

- Galileo's Daughter - Sobel
- Star Hunters - Mammana
- Seeing And Believing - Panek
- Footprints On The Moon - Barbour
- The Race - Schefter
- Lost Moon - Lovell & Kluger
- Moon Shot - Shepard, Slayton,

- Armstrong, Barbree & Benedict
- Looking Up - History Of The RASC - Broughton

## How To Books

- Design Engineer's Guide to AC Synchronous Motors
- How To Build Your Own Telescope - Berry
- How To Build Your Own Observatory - Telescope Making Magazine

## Video Tapes & DVDs

- Cosmos - Sagan - 10 video series
- The Greatest Show In Space - NASA The Solar Empire - TLC - video
- Mars Volume 1 - Columbia River - video
- The Infinity Series #1 The Solar System - Omnipoint Productions - video
- The Infinity Series #2 Deep Space - Omnipoint Productions - video
- Life Beyond Earth - DVD - PBS
- Mysteries of Deep Space - 3 video series
- Stephen Hawking's Universe - 3 DVD series
- Astronomy - 2 video college level non-credit teaching series
- Comet Odessey - Peter Cerevolo, Cyanogen Productions

## Magazines

- Sky & Telescope - assorted recent back issues - 2000 to 2001

## Miscellaneous

- Celestial Planisphere - 1000 piece jigsaw puzzle
- Maps
- Sky Atlas 2000.0 - W. Tirion (Field Edition)
- Sky Atlas 2000.0 - W. Tirion (Desk Edition)

## Guidelines for Borrowing PAA Library Materials

Materials may be requested in advance of an upcoming meeting by contacting PAA librarian, **Guenther Hilpert** at: [ghilpert@ptbo.igs.net](mailto:ghilpert@ptbo.igs.net)

All materials must be signed out from the club librarian or his/her representative.

Borrowers are responsible for the return of all materials in good condition.

Lost or severely damaged books and materials must be replaced within four weeks at the borrower's expense.

As a courtesy to other members who may also wish to borrow a book or other materials, we ask that you return them two weeks from the time borrowed. Thus, if you borrow materials at one meeting, they should be returned at the following meeting. If you can't do this, please ask a fellow member to return them for you.

Please limit your amount of borrowed materials to that which you can reasonably read or view within a two week period.

Since you are responsible for all materials, we suggest that you not lend them to other friends or associates.

If you have an exception to one of the guidelines, please discuss it with the librarian prior to borrowing your materials.

## Jupiter Has Six New Moons!

Earlier in April there was a press release that there have been another six more moons added to Jupiter's satellite list. This brings the current total to 58! Jupiter has more moons than any other planet in our solar system. Galileo discovered the four largest moons in 1610. Of those, Ganymede is the largest at 5,250 km. in diameter. By

comparison, of the newly discovered moons, some are perhaps as tiny as 1.5 km. across and orbiting Jupiter at a distance of tens of millions of kilometers. Ganymede orbits the giant planet at a distance of one million kilometers.

These new satellites were found as part of an ongoing search using the world's two largest digital cameras at the Subaru and C-F-H telescopes on Hawaii's Mauna Kea. These moons are following a retrograde orbit around Jupiter. This means they are orbiting in the opposite direction to Jupiter's rotation. This apparently suggests the moons may have been captured by Jupiter's gravitational force, perhaps not long after the planet it's self was formed? The team who found these moons are the same ones that discovered 18 other moons this year and expect to find more in the future.

You have to wonder if there is ever an end to the discoveries that are to be made in our own solar system, let alone the rest of the universe.

Rick Stankiewicz  
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## The Event Horizon

**Holleford Tour to be rescheduled.** With only three solid commitments for the Holleford Impact Site tour, we decided to reschedule for a weekend in June or July. Leo Enright of the Kingston Chapter of the RASC has volunteered to be our tour guide. Leo is an expert on the site – now a family farm. The impact was made by a rather large meteorite impact about 500,000 years ago. It is 2.4 kilometers across and now consists of a shallow, sediment-filled depression. We will discuss scheduling a tour at our next meeting in May.

**Astronomy Day is May 10<sup>th</sup>.** At the moment there is nothing planned for the day. However, the club has pulled together for an observing session in the past. Let's talk about doing a public observing session on Armour Hill – weather permitting, of course.

**Total Lunar Eclipse May 15<sup>th</sup>.** Here's another chance to get the public involved in our favourite hobby. Club president, Dave Duffus mentioned getting a session together at the end of our last meeting. Perhaps we can finalize the details at the May 2<sup>nd</sup> meeting.

A lunar eclipse is a great opportunity to do a little low-power observing – and check out Charles' new giant binoculars. Those interested in doing a little travel, can join John Crossen at Buckhorn Observatory where he and Debbi will be hosting a gathering for local residents.

**June Astronomy Display in Buckhorn.** The Buckhorn/Cavendish Libraries have given John & Debbi Crossen permission to set up an astronomy display on their premises during the month of June. This is the beginning of the cottage season, and the population of Buckhorn skyrockets. As part of the display, the PAA will be represented with photographs, copies of the latest newsletter and membership forms. John and Deb will also be doing a little sidewalk (yes we have one in Buckhorn) astronomy with solar filters for a daytime observing session and an evening session. Tentatively the weekends of June 7<sup>th</sup> (first quarter Moon) and June 21 (Last quarter Moon) are penciled in. Any members wishing to lug-a-scope-along are welcome to join in the fun. John & Deb will be most happy to share their digs for anyone who wishes to sleep over. As always, the weather may change the dates. Stay tuned.

## Classifieds

### For Sale: Tektites

Have your very own Tektite at a very reasonable price! Tektites are glassy pieces of rock that are formed when meteorites or asteroids impact earth. Earthen material is fused together and ejected into space to fall back as, "Tektites". This may be the closest to a



space object that you can own? These specimens come from China. For sale, are four nice sized and shaped specimens of the unusual varieties that Tektites are found in. Each one is unique. They are available for \$6.00 each. Each specimen comes with a sheet that tells the story of Tektites.

### For Sale: Meteorites



Own a piece of space! For sale are several nice little pieces of iron meteorite shrapnel from the famous Odessa impact site in Texas. I acquired some extra pieces recently from a source in Texas. Each of these meteorites is about the size of a dime (see picture for scale).

The Odessa Crater is a multiple impact site and the second largest in the United States. Its original mass is estimated at 1000 tons. The impact is dated to between 25,000 and 50,000 years ago. These specimens are classed as IA/B type iron meteorites. If you are interested, they are \$5.00 each, while supplies last!

Contact Rick Stankiewicz  
Phone (705) 295-6158  
E-mail: stankiewiczr@nexicom.net,

*Only while supplies last!*

## ARTICLES

**S**ubmissions for *The Reflector* must be received by the date listed below. E-mail or "sneaker-net" (i.e., floppy disk) submissions are preferred (Microsoft Word, ASCII and most graphics 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 this address:

Charles Baetsen  
4094 Squair Rd  
Orono, ON  
L0B 1M0

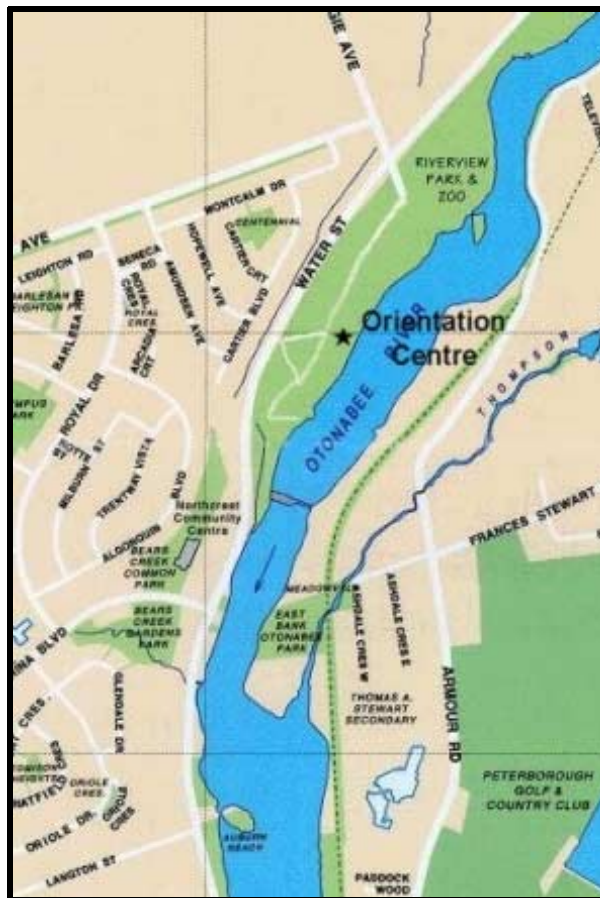
or via e-mail at:  
va3ngc@rac.ca

**NEXT ISSUE'S  
DEADLINE IS  
June 9th, 2003**



## MEETINGS

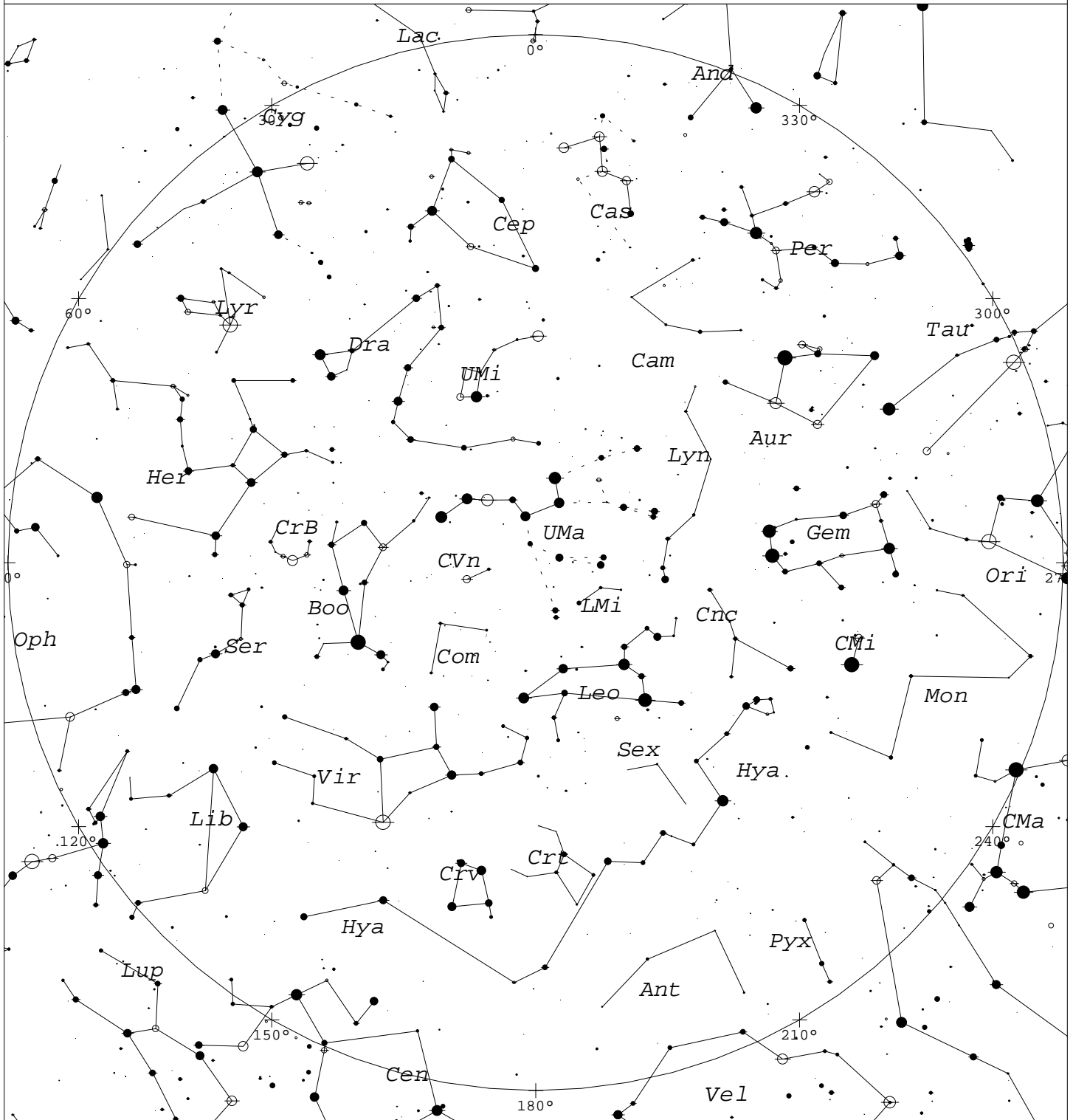
The Peterborough Astronomical Association meets every second Friday at the Peterborough **Zoo Orientation Centre** (Next to the PUC Water Treatment Plant) at **7:30 pm**.



## 1 CALENDAR OF EVENTS 1

May 1, 2003	New Moon (●)
May 4, 2003	General Meeting — Topic to be announced.
May 9, 2003	First Quarter (☾)
May 15, 2003	Full Moon (☉) — Total Lunar Eclipse of the Moon
May 16, 2003	General Meeting — Tom Kovac of the Haliburton Observatory
May 22, 2003	Last Quarter (☾)
May 30, 2003	General Meeting — Topic to be announced.
June 13, 2003	General Meeting — John Hicks—Solar Observing

# May Skies



STARS		SYMBOLS	
● <1	• 3.5	● Multiple star	⬜ Dark nebula
● 1.5	• 4	○ Variable star	⊕ Globular cluster
● 2	• 4.5	☄ Comet	⊗ Open cluster
● 2.5	• >5	☉ Galaxy	○ Planetary nebula
• 3		□ Bright nebula	⊞ Quasar
			△ Radio source
			× X-ray source
			○ Other object

Local Time: 21:00:00 1-May-2002  
 Location: 43° 39' 0" N 75° 0' 0" W

UTC: 02:00:00 2-May-2002  
 RA: 11h39m16s Dec: +43° 38' Field: 182.0°

Sidereal Time: 11:39:16  
 Julian Day: 2452396.5833