

Event Horizon



Volume 20, Number 5
March 2013

From The Editor

This month's issue of Event Horizon is once again filled with things to see and do!

John Gauvreau alerts us to some potentially great views (& photo ops!!) of Comet Pan-STARRS this month, while Joe McArdle lists the best times to watch the International Space Station pass above Hamilton.

Hopefully, we'll have lots of photos to share in next month's Event Horizon.

As a follow up to his May 2010 article, Les Webb shows us some recent modifications he's made to his backyard observatory.

I hope you enjoy this issue as much as I have putting it together!

Clear skies!

Ann Tekatch
Editor@amateurastronomy.org



Chair's Report by Jim Wamsley

March is finally here, and with it, the promise of spring and better weather to come. February's weather did not treat the H.A.A. well.

The snow storm on the 8th caused the cancellation of the club's monthly meeting. Although the meeting was cancelled, that doesn't mean that nothing happened in the H.A.A., There were still lots of activity within the organisation.

On Feb. 7th John Gauvreau and I traveled to Brantford to Assumption College School, to deliver a talk to about 50 students in the school's science club. This was in conjunction with a representative from the Bay Area Science & Engineering Fair, in an effort to encourage the students to enter a project. The H.A.A. offers a special award prize of \$200.00 at BASEF, (The James A Winger Award).

On the 10th, following a request for volunteers from the Binbrook Conservation Area, Don Pullen, John Gauvreau, my wife Celia and I helped out at the park's annual Ice Fishing Derby. Up early and out there at 6:00 am at -20 degrees, helping with traffic and parking. The Astronomy 101 class scheduled for the 9th was postponed till the 23rd. Getting up at 4:00 am after a night class, would have been too much for this old man!!
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Chair's Report (continued)

A special thank you to Ed and Kevin Salwach for opening the park on Feb. 17th for observing. I know that over the past few months, we have not opened the park as often as we would have liked, but the weather has not been particularly cooperative, and as we all know "life happens". We will endeavour to alleviate that, and get the park opened more often.

Coming up for March, we have on the 2nd our Cosmology Group meeting. Please feel free to attend; it's a fun group and very casual. March 6th will see the second group of the Astronomy101 start. March 8th is the monthly HAA meeting with Kerry-Ann Lecky Hepburn as speaker. New for this year, we will have a spring telescope clinic for the folks who got a scope for Christmas and are not sure how to use it. This will take place at the Spectator hall 7:30 Friday March 22nd. Please come out and join in whether you need help with your scope, or you want to show off your equipment and help others.

Tickets for the 20th Anniversary Banquet are now available. I have already purchased mine, and urge you to get yours early. I know the banquet is not till Nov.2nd. We will be limiting the number of tickets sold, so don't be left out. I have sent a request to the Canadian Space Agency to request Chris Hadfield come to speak to us, as well as requests to other prospective speakers, just in case we can't secure Chris. I will let you all know who the speaker will be a.s.a.p... I assure you, whoever we get, they will be exceptional.

Please remember that we have loaner scopes available for the asking to all members. I have three sitting in the rec-room waiting to be used. So call me at 905-627-4323 or e-mail at chair@amateurastronomy.org to have the use of one of these fine instruments. On a personal note, on a couple of nights, between intermittent clouds, and minor emergencies around the apartment building, I was able to put the club's 90mm refractor to use, out on my patio. I was very impressed with the crisp view of the Moon. I was able to watch Io transit across the face of Jupiter, as well as a satisfactory view of the Orion nebula. I have a new appreciation for a small aperture grab-and-go scope, as opposed to setting up my larger computerized scope.

I hope you put all the club's resources to your best advantage and I hope to see you all soon.



Treasurer's Report by Steve Germann

(unaudited)

Opening Balance	\$6761.46
Revenue:	\$ 345.00
Expenses:	\$ 138.34
Closing Balance:	\$6968.12

This month the meeting was cancelled. As a result there was no 50/50.

Our revenue was \$75 from memberships and \$180 in ticket sales for the Anniversary dinner and \$90 in calendar sales.

Our expense was \$125.98 on computer maintenance, and \$12.36 banquet ticket stock.

Masthead Photo: Jim Wamsley took this photo on February 9/13 at the Binbrook Conservation Area's Ice-Fishing Derby. He, his wife Celia, John Gauvreau and Don Pullen volunteered to help with the crowds.

Hamilton Amateur Astronomers

20th Anniversary Banquet

At

Canadian Warplane Heritage Museum
Hamilton International Airport
9280 Airport Rd., Mount Hope, ON

Celebrate our 20th anniversary in style!

Enjoy a tour of the museum, listen to an engaging speaker and dine under the wings of vintage aircraft. Tickets will be available at our general meetings or you can contact Ann Tekatch (editor@amateurastronomy.org), Brenda Frederick (moonspinner@sympatico.ca), or Steve Germann (treasurer@amateurastronomy.org) .

Saturday, November 2, 2013

Doors open at 5:00 pm

Cocktails at 6:00 pm

Buffet Dinner at 7:00 pm

Cash Bar

HAA Members & Guests

\$45.00 per person



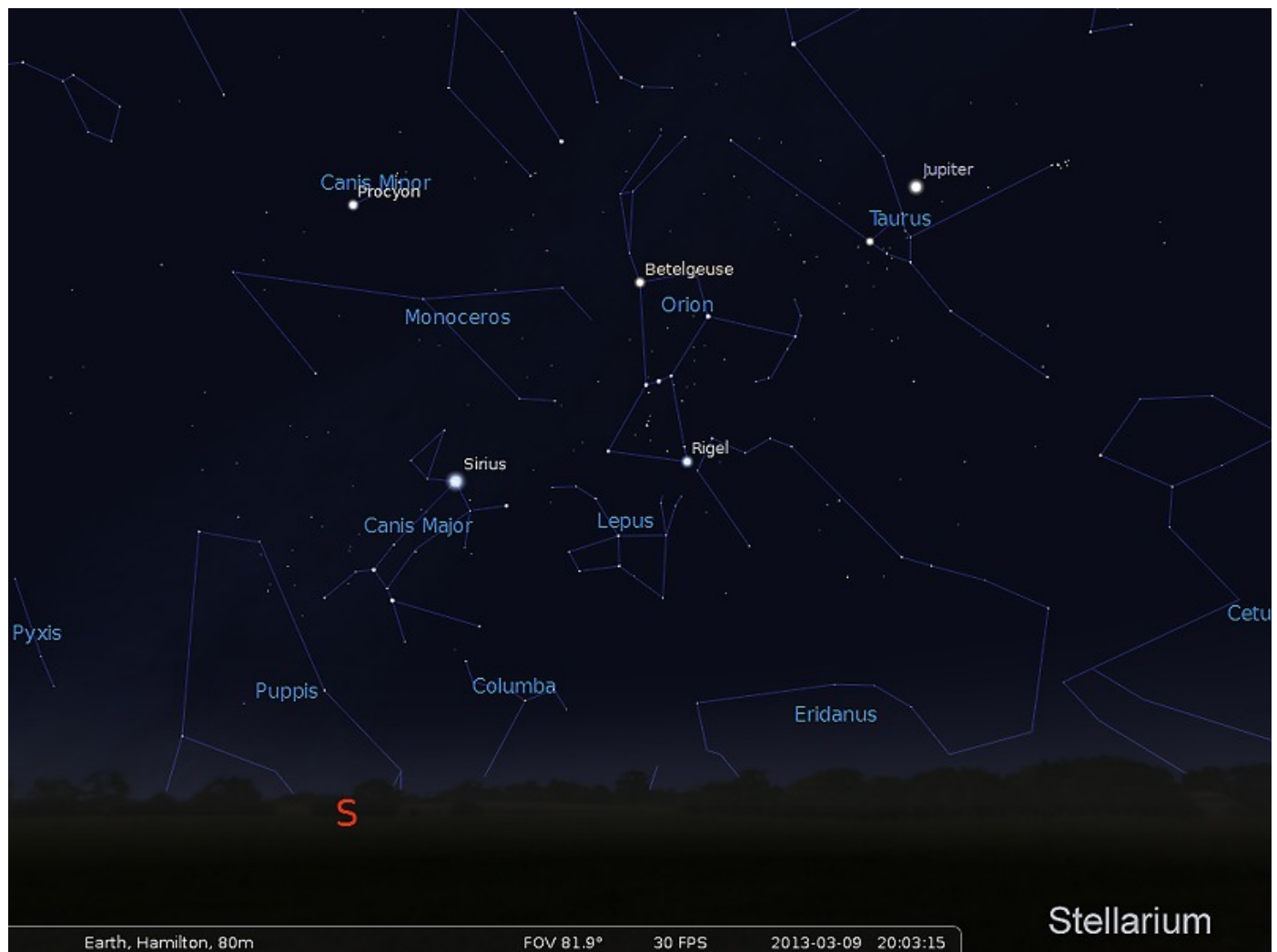
The Sky This Month: March by John Gauvreau

The Sky This Month March 2013

March 4 - Last Quarter Moon
March 5 - Comet Pan-STARRS closest approach to Earth
March 10 - Daylight Saving Time begins (move your clocks ahead)
March 10 - Comet Pan-STARRS at its brightest?
March 11 - New Moon
March 12 - Moon just to right of Comet Pan-STARRS low in west after sunset
March 15 - Comet Pan-STARRS at its best visibility
March 17 - Jupiter 1.5 degrees from Moon (between Jupiter and Aldebaran)
March 19 - First Quarter Moon
March 18 - Io transits Jupiter (8:45pm – 11pm)
March 20 - Vernal Equinox, 7:02am, Spring begins
March 26 - Europa transits Jupiter (7:45pm – 10pm)
March 27 - Full Moon
March 31 - Mercury greatest elongation west (early morning low in east)

If March comes in like a lamb and goes out like a lion, perhaps it is referring to Leo the lion, which is now rising in the east as darkness falls and heralding the arrival of spring. Of course, we will turn our attention to that leonine constellation soon enough, but for now, the great winter constellations still hold our attention as March begins. *(Continued on [page 4](#))*

The Sky This Month (continued)



Jupiter and Saturn are the only two planets visible this month, 4 other planets are in conjunction with the sun this month, and the last one, Mars, headed that way soon after. Until Mercury appears low in the east at month's end, Jupiter and Saturn are it. Of course, we should enjoy as much of Jupiter as we can as it heads into the west and this fine apparition will soon end, and Saturn's return, in the constellation Libra, rising in the east at 11pm and well placed by midnight at month's end, is always welcome. But of course, there is another solar system object that will attract our attention this month.

There has been a lot of talk about comets lately, with photos of the lovely Comet Lemmon flooding the internet, but it is visible only from the southern hemisphere. And of course everyone is buzzing about Comet ISON, due in November and raising hopes of being the best comet in many, many years. I have heard people reminiscing about Comets Hyakutake and Hale-Bopp, from 1996 and 1997 respectively, as tales are told of the best comet people have seen. Jim and I were tasking our memories the other day to come up with the name of the most unusual Comet Holmes that burst into view in 2007 and surprised everyone with a strange and spectacular appearance. Earlier that year we had enjoyed Comet MacNaught, that showed a typical comet tail, but saved its best views for those in the southern hemisphere. But maybe, just maybe, a couple of weeks from now, we will all be talking about Comet Pan-STARRS.

Pan-STARRS is named for the Panoramic Survey Telescope & Rapid Response System, an observing program operated by the University of Hawaii and aimed to look for Earth approaching objects, like comets and asteroids that might impact the Earth.

(Continued on [page 5](#))

The Sky This Month (continued)



Comet panSTARRS may look something like Comet McNaught did, seen here in 2007.

(<http://pan-starrs.ifa.hawaii.edu/public/>) This is one of the comets that was detected using this program, so it bears the program's name (just as almost all comets (Comet Halley is a notable exception) bear the name of their discoverer). Discovered in June of 2011, this is the comet's first trip into the inner solar system, so it could expel a lot of material, but nobody really knows. You and I will know how it reacts and appears when the rest of the world finds out, in the second week of March when it gets here.

It will pass by the Earth on route to the sun, with closest approach to Earth on March 5 and then closest approach to the Sun (aphelion) on March 10. That's just about the time it should start to be visible to us here in the northern hemisphere. Start looking low in the west around March 7 or 8, but take advantage of the moon's presence on the night of March 12. By March 15 the moon will be getting higher, but so will the comet, and that may be the peak observing

night. After the 15th, the moon will start to wash out the faint tail of the comet. Enjoy the comet, as it won't pass this way again, but remember that we really don't know how good it will be until it gets here, so be prepared to just enjoy Jupiter and Saturn in case the comet is a bust.

As always, feel free to send me any observing reports, photos, questions, or comments that you would like to share with your fellow members. I'm always happy to hear about your observing experiences. See you out there!

John
observing@amateurastronomy.org





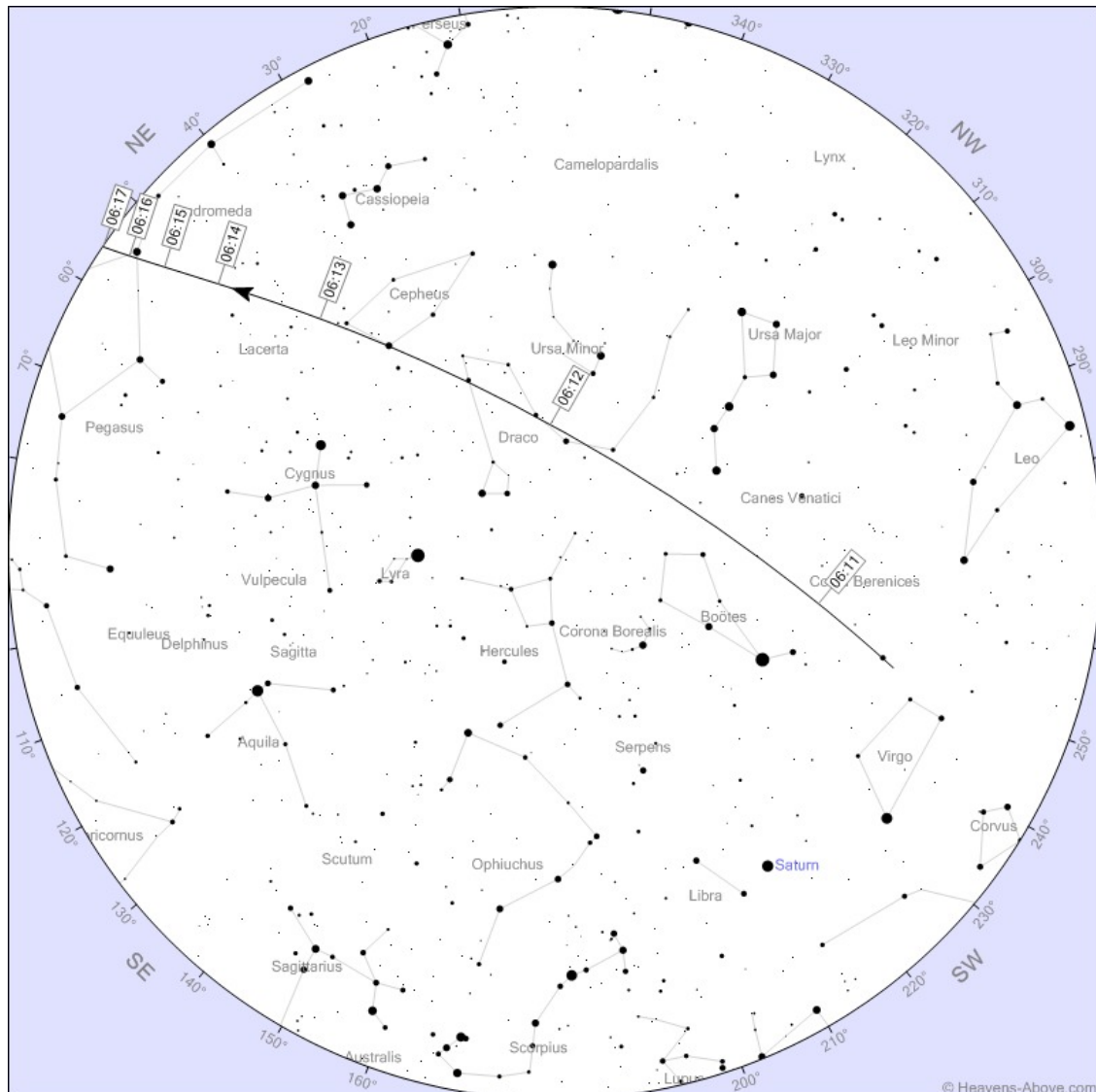
Observing the International Space Station by Joseph McArdle

So, I decided to give this whole article writing thing a try, Please bear with me as I may ramble.

Here we are at the beginning of the thirteenth year of the new Millennium, the twenty first century. Amongst all the technological achievements over the last 100 years, I guess having a permanent space station in orbit has to be high on the list. I always enjoy the thrill I get when I spot the station as it passes overhead. Catching sight of the space station is fairly easy, all you need is a watch. N.A.S.A. makes orbital information of the ISS available on their website

<http://spaceflight1.nasa.gov/realdata/sightings/> or at <http://www.heavens-above.com>

I have put together a chart for the month of March showing all visible passes by the station for the Hamilton/Binbrook area. Please note that this information is subject to adjustments as the station makes altitude changes in their orbit from time to time. If you click on the DATE for a specific fly-over you will be taken to Heavens Above website and shown a star chart showing the track of the station. Here is an example below. This is the sky track for March 18, 2013.



(Continued on [page 7](#))

Observing the International Space Station (continued)

Here is the chart. For March all the visible passes will be in the morning pre-dawn hours.

Date	Brightness	Start			Highest point			End			Pass type	Time of Day
	[Mag]	Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.		
14-Mar	-0.9	6:22:22	10°	S	6:24:49	20°	SE	6:27:17	10°	E	Visible	Morning
15-Mar	-0.4	5:32:40	10°	SSE	5:33:38	11°	SE	5:34:36	10°	ESE	Visible	Morning
16-Mar	-2.6	6:16:10	18°	SSW	6:18:17	48°	SE	6:21:26	10°	ENE	Visible	Morning
17-Mar	-1.6	5:27:00	26°	SE	5:27:00	26°	SE	5:29:43	10°	ENE	Visible	Morning
18-Mar	-3.4	6:10:27	32°	WSW	6:11:48	72°	NNW	6:15:03	10°	NE	Visible	Morning
19-Mar	-2.3	5:21:03	45°	E	5:21:03	45°	E	5:23:31	10°	ENE	Visible	Morning
19-Mar	-1.9	6:54:13	10°	WNW	6:57:02	27°	NNW	6:59:52	10°	NE	Visible	Morning
20-Mar	0.1	4:31:34	12°	ENE	4:31:34	12°	ENE	4:31:50	10°	ENE	Visible	Morning
20-Mar	-2.4	6:04:16	28°	WNW	6:05:21	36°	NNW	6:08:25	10°	NE	Visible	Morning
21-Mar	-2	5:14:42	37°	NNE	5:14:42	37°	NNE	5:16:55	10°	NE	Visible	Morning
21-Mar	-1.4	6:48:14	10°	WNW	6:50:44	20°	N	6:53:14	10°	NE	Visible	Morning
22-Mar	0.1	4:25:05	12°	ENE	4:25:05	12°	ENE	4:25:22	10°	ENE	Visible	Morning
22-Mar	-1.6	5:57:46	20°	NW	5:58:56	24°	NNW	6:01:39	10°	NE	Visible	Morning
23-Mar	-1.4	5:08:05	26°	NNE	5:08:05	26°	NNE	5:10:07	10°	NE	Visible	Morning
23-Mar	-1.1	6:42:03	10°	NW	6:44:23	18°	N	6:46:43	10°	NE	Visible	Morning
24-Mar	0.2	4:18:21	11°	NE	4:18:21	11°	NE	4:18:34	10°	NE	Visible	Morning
24-Mar	-1.2	5:51:02	15°	NW	5:52:30	19°	N	5:54:55	10°	NE	Visible	Morning
25-Mar	-1.1	5:01:16	21°	N	5:01:16	21°	N	5:03:14	10°	NE	Visible	Morning
25-Mar	-1	6:35:30	10°	NW	6:37:56	19°	N	6:40:22	10°	NE	Visible	Morning
26-Mar	0.3	4:11:28	11°	NE	4:11:28	11°	NE	4:11:35	10°	NE	Visible	Morning
26-Mar	-1	5:44:09	12°	NW	5:46:00	18°	N	5:48:20	10°	NE	Visible	Morning
27-Mar	-0.9	4:54:20	18°	N	4:54:20	18°	N	4:56:24	10°	NE	Visible	Morning
27-Mar	-1.3	6:28:37	10°	NW	6:31:20	24°	NNE	6:34:04	10°	ENE	Visible	Morning
28-Mar	0.3	4:04:32	10°	NE	4:04:32	10°	NE	4:04:35	10°	NE	Visible	Morning
28-Mar	-1	5:37:12	12°	NW	5:39:23	20°	N	5:41:53	10°	ENE	Visible	Morning
29-Mar	-0.9	4:47:25	18°	N	4:47:25	18°	N	4:49:44	10°	NE	Visible	Morning
29-Mar	-1.9	6:21:30	10°	NW	6:24:33	36°	NNE	6:27:36	10°	E	Visible	Morning
30-Mar	0.3	3:57:39	10°	NE	3:57:39	10°	NE	3:57:41	10°	NE	Visible	Morning
30-Mar	-1.4	5:30:20	13°	NW	5:32:37	26°	NNE	5:35:26	10°	ENE	Visible	Morning
31-Mar	-1	4:40:37	21°	NNE	4:40:37	21°	NNE	4:43:11	10°	ENE	Visible	Morning
31-Mar	-3.1	6:14:17	10°	NW	6:17:33	71°	NNE	6:20:47	10°	ESE	Visible	Morning



Modifications to My Observatory by Les Webb

My backyard observatory was featured in the May 2010 issue of Event Horizon. When I built it, I made a 4ft walled-in space at the back for outdoor storage. Well this space was never used. One evening when Matt Mannering and I were observing, we noticed that the table I had built into the NW corner for holding accessories, etc was making it a little cramped. I had built the doors in the wrong corners, so the built-in tables had to go on the north side. I was not going to move doors! Matt came up with the idea of building alcoves in the rear, so I could dispense with the tables. I thought this over, on how to make it more convenient. Simple, roof in the rear 4 ft, install a raised floor, cut out the back wall. This will give me a covered-in, 4ft by 10ft area, perfect for a table built along the three sides. Perfect for maps, eyepiece cases, and everything else. I even have Matt's small space heater in there! My variable red lights make good hand warmers as well.

The built-in table is tilted to the rear slightly, so things like eyepieces roll to the rear, not on the floor. Also I built a small enclosed alcove with a heating pad in it, to keep eyepieces just a bit warm. This keeps them in a safe place and keeps dew off of them. The extra convenience and space is fantastic. I must reiterate what Ann said to me twenty years ago "The best accessory for a telescope is an observatory."

I would like to acknowledge the help and input from Matt, without whose help these modifications would not have been made. Matt, you're welcome anytime! Also if any club member is thinking of building their own Sky Shed, they are welcome to see mine for any ideas.



Above: interior photos of the working space Les Webb added on to his backyard observatory.

Below: Photos taken of the working space doorways from inside the observatory.

All photos courtesy of Les Webb.





IBEX, The IBEX Ribbon, The Spatial Retention of Ions and The Scientific Process by Mike Jefferson

In 2009, astronomers discovered a giant ribbon-like structure at the boundary of the solar system and interstellar space, using the observations of the IBEX spacecraft. The card table-sized IBEX is one of NASA's small and relatively cheap research spacecrafts. It shares the spatial volume around Earth with multi other satellites and also with "THE TWINS" satellites which confirm its measurements, as it does theirs. IBEX is an acronym for "Interstellar Boundary Explorer".

The heliosphere's newly discovered ribbon structure, at the edge of our solar system, is described by The National Geographic Society website as a "...puzzling ribbon that appears across much of the heliosphere." The sun and the planets are encased in the heliosphere which is a magnetic bubble of front line defense for the solar system, against assaulting interstellar clouds and cosmic rays.

The non-luminous ribbon is a puzzle at present because it gives off many energetic, neutral atoms, moving toward the sun in quantities far greater than those of surrounding areas of the heliosphere do. To date, more than 12 theories have been put forth to explain why the ribbon's mathematical models do not match the astronomical observations of it. Some of these observations show that the ribbon is actually thicker than theory says it is! However, the IBEX science team has come up with its own explanation for its observations.

"The new theory suggests that this ribbon sits in a particular location at the heliosphere where the solar wind from the Sun crosses the galactic magnetic field. The outward bound neutral hydrogen atoms that make up this solar wind bounce off the boundary and form gyrating charged ions that create waves in the magnetic field. The resulting par-

ticles stream back inward and form the ribbon of energized neutral atoms.

"This is a perfect example of the scientific process," said David McComas, co-author on the study and the team leader for the IBEX mission,"

<http://newswatch.nationalgeographic.com/2013/02/06/scientists-begin-to-unravel-gigantic-...>
2/19/2013

The Astrophysical Journal says the "...ribbon observed by the *Interstellar Boundary Explorer (IBEX)* mission is a narrow, ~20 degree wide feature that stretches across much of the sky in the global flux of energetic neutral atoms from the outer heliosphere." Three years and a dozen theories later, it remains a puzzle, each theory contradicting IBEX observations or demonstrating internal consistency flaws. In the latest explanation, IBEX scientists N.A. Schwadron and D.J. McComas "...argue that the ribbon could be produced by a *spatial* region in the local interstellar medium where newly ionized atoms are temporarily contained through increased rates of scattering by locally generated waves in the electromagnetic fields. The particles in the ribbon are created predominantly from neutralized solar wind and neutralized pickup ions from inside the solar wind termination shock."

The Astrophysical Journal Volume 764 Number 1

It would seem that just when we think we have new cosmic discoveries explained, new data 'rears its ugly head' and confounds our best analyses of it, forcing us to delve more deeply into the problems of explanation. However, that is the way the 'scientific method' works.



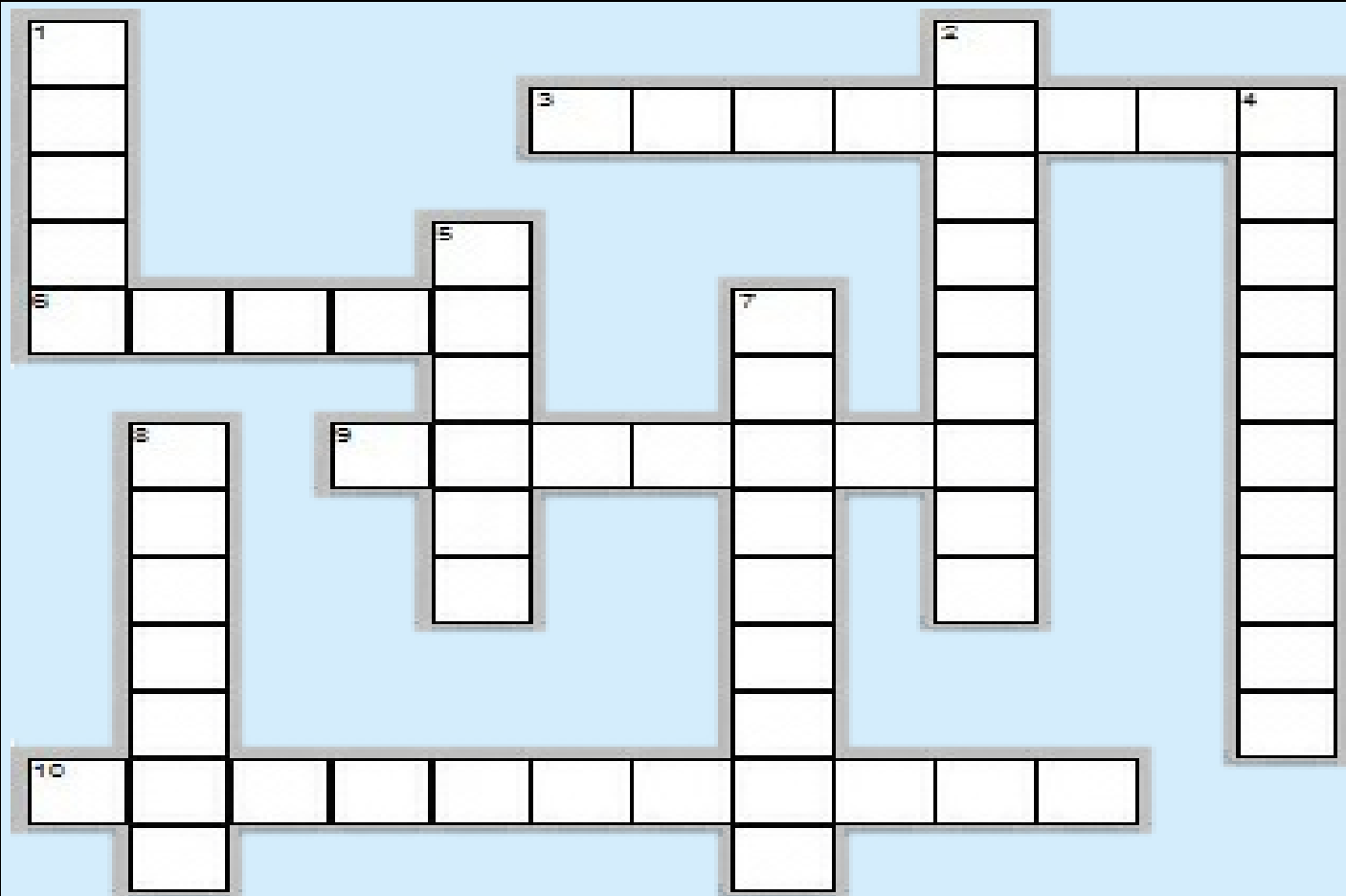
HAA Helps Hamilton

To support our community, we will be collecting non-perishable food items and cash for local food banks at our general meetings. Please bring a non-perishable food item to the meeting or a donation of cash and help us help others in these tough economic times.

If you would like to help or have any questions about this initiative, please contact Jim Wamsley at 905-627-4323.



Astronomy Crossword by Mario Carr



Across

3. On March 16 the moon will be close to the?
6. On March 27 the moon is near this star?
9. On St. Patrick's Day, the moon is below this planet?
10. On March 28 Uranus is at?

Down

1. On March 28 this planet is at superior conjunction behind the sun?
2. This month's comet
4. Asteroid 2012 DA14 came closer to the Earth than some?
5. On March 28 the moon is close to this planet?
7. What gift did Russia receive on Valentine's Day?
8. A March 20 event

Answers on page 12

The Scope Store at Camtech

Largest Selection of Telescopes, Binoculars and
Microscopes in the Golden Horseshoe

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For Sale

Astrophotography Bundle for Sale

Includes the following items:

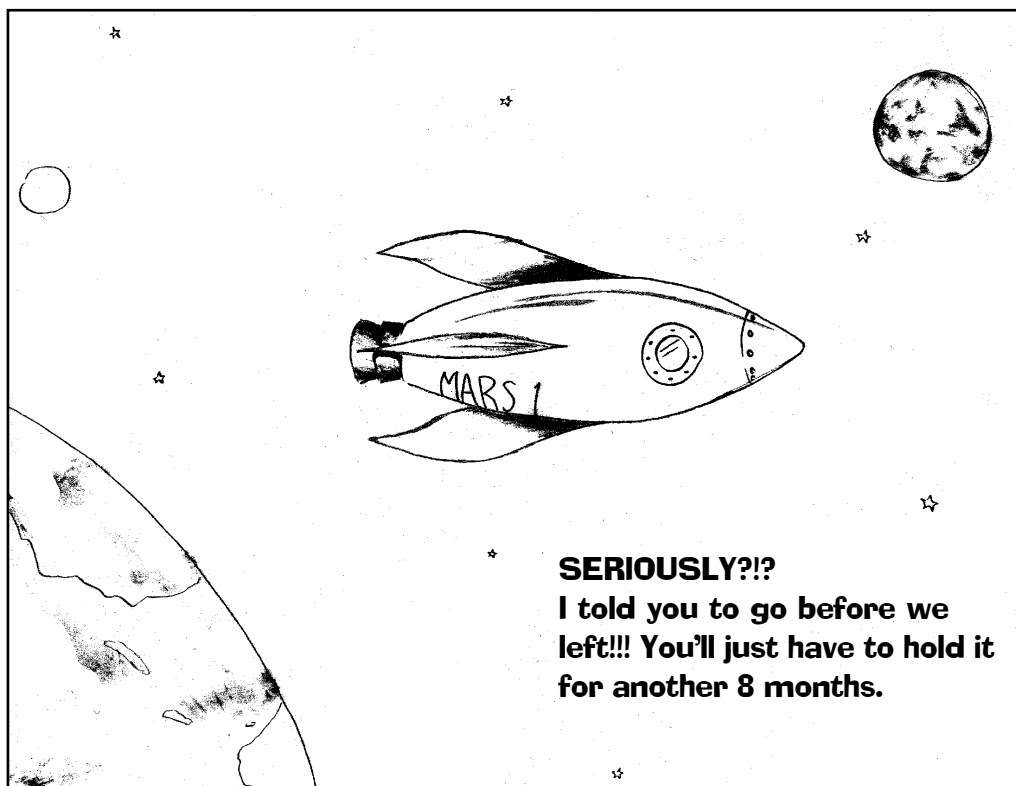
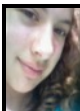
- Canon 40D body with the cables, software, manuals, battery and charger
- Sigma 17-70mm f2.8-4.5 macro + UV filter.
- Astronomik CLS clip filter (really helps to enhance Ha nebulae in dark or light polluted skies)
- AC adapter kit (needed in the field when taking long exposures)
- 1 extra camera battery
- 258mb + 1 GB CF memory cards



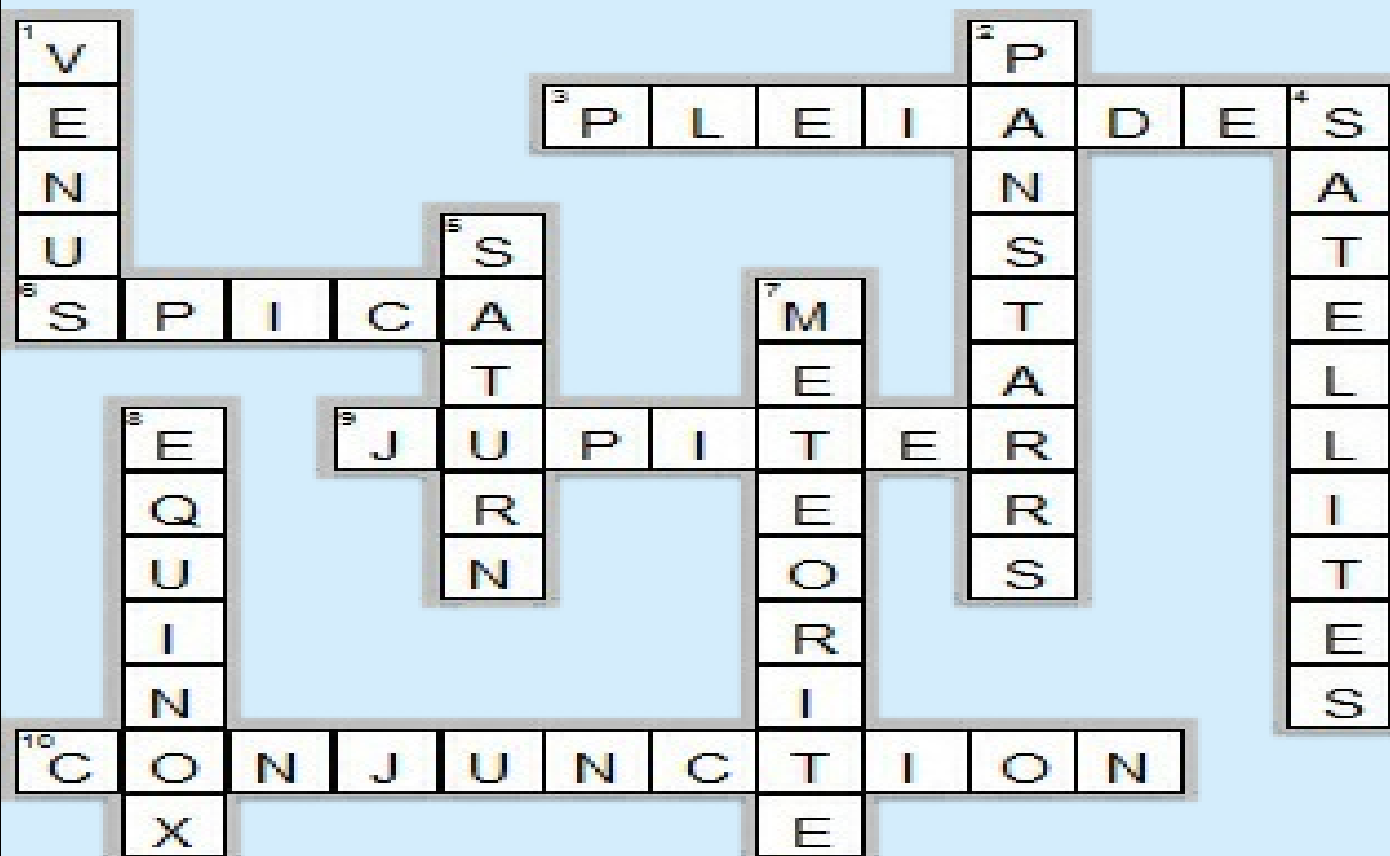
\$799 for the complete package (in original boxes)

I am selling this because I recently made the move to a full frame camera. All items are in very good to excellent condition. This package is great for those interested in daytime and astro photography. The 40D's live view focusing and camera control through the laptop has been indispensable for astro work. This camera and lens combo has helped me receive many daytime photography awards and one NASA APOD. To see some of those images visit www.weatherandsky.com

Contact Kerry-Ann at kerry@weatherandsky.com. Available for pickup in Grimsby.



Answers to Astronomy Crossword on Page 10



UPCOMING EVENTS

March 2, 2013 -7:30 pm Cosmology Discussion Group meeting in the basement common room at Centurion Apartments, 75 Main Street, Dundas. Contact Jim Wamsley for details - chair@amateurastronomy.org or 905-627-4323.

March 8, 2013 - 7:30 pm General Meeting at the Hamilton Spectator Auditorium. Kerry-Ann Lecky Hepburn will be our guest speaker.

March 22, 2013 - 7:30 pm Spring Telescope Clinic at the Hamilton Spectator Auditorium. Bring your telescope for show & tell or to get advice on how best to use it.

April 12, 2013 - 7:30 pm General Meeting at the Hamilton Spectator Auditorium.

2012-2013 Council

Chair	Jim Wamsley
Second Chair	Joe McArdle
Treasurer	Steve Germann
Membership Director	Matthew Mannering
Observing Director	John Gauvreau
Event Horizon Editor	Ann Tekatch
Recorder	Mike Jefferson
Secretary	Bob Christmas
Public Education	Mario Carr
Councillors at Large	Brenda Frederick Harvey Garden Keith Mann David Tym Leslie Webb

Observing site for the HAA provided with the generous support of the

Binbrook Conservation Area

Come observing with the HAA and see what a great location this is for stargazing, a family day or an outdoor function.

Please consider purchasing a season's pass for \$79 to help support the park.

<http://www.npca.ca/conservation-areas/binbrook/>
905-692-3228

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