Orbit

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Issue Number 1, November, 2011
Roger Hill, Editor

The new membership year always brings changes, but this year brings more than most. For instance, whoever it was that requested less Roger at the front of the room, well, you got your wish (mine, too...it was well after my sell-by date)! The arrival of a new president frequently means the arrival of new ways of doing things, however, this year sees a much larger change. With Andy Blanchard taking the reins, there is a much greater emphasis on getting the Board and the Centre operating on a more business-like basis.

I remember being asked a couple of years ago (by Steve Barnes, if memory serves) why the Hamilton Centre, with it's small(ish) Boards doesn't operate more like the NYAA, where there is a small Executive and a larger pool of volunteers serving on committees that report to the Board.

I wasn't quite sure how such an arrangement would work, nor how to corral, cajole and convince people to be on a committee, so I blithely carried on as I had always done.

However, such an arrangement appears to be well suited to Andy, and it is very much how he is used to working. The only question was would Andy be able to persuade the necessary people to work this way in a all-volunteer organization.

The answer was provided fairly quickly, and it's a resounding "Yes"!

When Andy took the pulse of the Hamilton Centre in his questionnaire, it didn't take him long to see where the time and effort of the Board should be concentrated, and as a result, you can expect the Centre to be much more focussed on events than facilities.

It looks like the Hamilton Centre is in good hands.

Prior to the Annual General Meeting, while having supper with my wife and children, I mentioned that I thought I was coming down with the flu, and I just hoped to be able to get through the evening. I'd felt fine at noon, but starting about 2pm, I'd got progressively worse. My wife offered to drive me to the meeting, but I insisted on going by myself. By the end of the meeting I was feeling better, enough to head out for perogies and a beverage.

I felt truly awful when I got up to work in the morning, but by lunchtime, I was OK. I did the sidewalk astronomy that evening, but as I was loading up the car I started to get chills. In the car on the way home, I started sweating. Saturday was spent on the couch with a temperature of 102.5 F, but by 10pm, I was OK.

Sunday, and I had a massive pain in my leg. Both Telehealth and a walk in clinic said "Deep Vein Thrombosis". The internet says that if the clot dislodges, there's a 3% mortality rate. That is fairly sobering...a mortality that is measured with a percentage, instead of x per million.

After waiting at Milton Hospital for an hour, a large red patch appeared on my inner thigh, and a Doctor diagnosed a condition called cellulitis...which is serious enough that they put an IV shunt in my arm and gave me a bag full of industrial strength antibiotics. I was told to come back the following day (Thanksgiving Monday).

The patch is larger, hotter, and there's an egg sized hard lump in my thigh. Another bag of antibiotics is pumped into my arm, and I'm told to come back in 12 hours. At 6am on Tuesday morning, the red patch is the size of a dinner plate, stretching from the inside of my knee upwards. Another bag of antibiotics, an ultrasound was done looking for a cyst, then oral antibiotics, and when, after spending 4 hours at the hospital, the patch had grown in diameter by 40mm. Another bag was pumped in, and now it seemed that they were trying to find an antibiotic that could stop the spread of the infection. Nobody has mentioned a nasty bacteria called C. Difficile, yet, but that's the one responsible for

Flesh eating disease. I drop by my GP's office on the way home, and he sees me right away...he's been keeping tabs on what's going on in the hospital. I'm told to keep the leg elevated, and he prescribes morphine for the pain. He says that by the end of this, I may have to learn to walk again(!), but he's optimistic that the stuff that I'm now on will work. Oh, and he says it's not C. Difficile...it would have looked quite different after a couple of days (phew!).

I spent the next week on the couch. A couple of nurses dropped by every day to pour in more antibiotics and check the course of the disease. The patch starts getting smaller, and after a week, they take out the shunt, and I start on oral antibiotics, which really play havoc with my digestion, but do seem to work.

I finished off the oral antibiotics last week, and I was well enough to do the second of the four Burlington Seminars—thanks to Gary Colwell for doing the first of them for me. The skin above the lump peeled away, which alarmed me at first, but it was just that the skin there had been so hot for so long that the top layer died...just like a sunburn. It's now been three weeks since this started, and there's still a red patch on my leg, but it get's smaller every day. I did the third Burlington seminar on the 28th and I'm now back at work. So I hope this will be all over soon.

I've got the final seminar on November 4th, and I'll need some help that night. I'd like a few people to bring their telescopes out, and to assist any of the attendees with any problems they may have with their own scopes. The first part of the evening will be Telescopes 101, and the second will be to help people get more out their scopes or to give different types a look to get an idea of what a good scope can do. I'd appreciate your help.

You may have been charting the progress of our intrepid astrophotographer Gary Colwell, over the last few years. If so, you'll have seen just how good he's become. To the point that he's now got one of his images in the Astrophotographers calendar that came out with the 100th issue of SkyNews this fall. It's astonishing just how good he's become, and yet, he's a great guy to approach to help solve problems you may be having. Unlike so many people, he's never one to keep his methods secret.

Let me see...what else is going on? We had our first really nice display of Northern Lights from the current solar cycle last week. As I was working on some preliminary stuff for Orbit, and with my leg being quite sore (I'd spent a good chunk of the day on my feet) when my daughter went outside and after a few minutes came in and said that the sky was all red with streaks that moved. I followed her back outside and sure enough, there was display of northern lights going on.

I quickly sent something out to the mailing list, and got my camera out. My son had used my tripod, so it wasn't were I'd left it, and by the time I'd got everything together, the display was over. I waited outside for 15 minutes for it to start back up again, but it didn't.

The nice thing was that Mike Ducak got word quickly enough that he was able to see his first display! He's promised me pictures and a quick article, and I hope it arrives in time to put here.

Kevin Hobbs also caught the display. Colin Haig was outside in his observatory trying to get a new focuser to work, and didn't look up.

Anybody else see the display?

So...that's all for this month,

Clear skies, one and all,

Roger Hill
Orbit editor.

.Presidents Message—Andy Blanchard

I would like to start by thanking you for the support you have given me, and for trusting me with the serious responsibility of pursuing the goals of the Hamilton Centre. As I mentioned the night that I took office, I believe it is my mandate and responsibility to deliver three critical things to the membership and the community:
Astronomy, Fun and Outreach

No greater good can come from our club than to create an environment that promotes sharing in each of the above goals.

As you may have heard, our membership numbers have been slipping these past several years. To address this concern I have made it a priority, as your President, to stop this trend and create an environment that promotes higher membership numbers and more participation. Therefore, from this point forward, I would like you to look at me and our team as your "membership committee". Our goals are to achieve the above three items in a superior and outstanding manner. To do so it is my belief that members will come out and recommend friends to join our club. To be successful we must support our Board of Directors and the subcommittees they chair. Let me introduce you to your new directors:

Gary Colwell VP and Observatory Director
Gary is responsible for all aspects of the observatory from toilet paper to the 16" RC. If you want to schedule time on the 16" let Gary know, and if you plan on holding an educational night let Gary know. Gary and his committee will also be responsible for property and building maintenance. If you would like to help out Gary or be on his committee, please let us know.

Ed Mizzi Secretary and Programs Director
Ed will guide the various committee members who will be teaching a course or running a program. His committee is already working on astrophotography, solar observing and new member introductions to the club. More details and dates on these programs can be found on our Centre calendar, on the Yahoo Group site or our Facebook website.
Most recently we had a great deal of fun at our second smack-down that was hosted by Gary Colwell.

Mark Pickett Director Outreach
Mark and his committee are already off to a great start having already kicked off our clubs New Year off with a great turnout for our sidewalk astronomy at Spencer Smith Park. Mark and his committee plans of hosting many additional outreach projects. More to come from Mark and his committee as they cycle up their programs. Check the calendar and of course let us know if you would like to help out. There is no more rewarding experience than showing a person Jupiter or Saturn for the 1st time.

Gary Bennett Communications Director
Gary's team will be responsible for delivering timely information to our members, and properly notifying the media of our meetings and events. Communications in the club is about to take a dramatic leap into this Century. Gary's committee is already making many changes to the ways in which we communicate to our members and the general public. We now have a Facebook page, a Yahoo chat group, and a brand new web site. We have already had success as a result of the Communications committee's work, as a new family joined as a direct result of their efforts. Young people communicate differently today and we need to stay in touch and keep up with the times, especially where social media is concerned.

.Presidents Message (Continued)

Will Gray Treasurer Fund Raising Director

Will continues in his role as your treasurer, but he will also start to re-introduce several programs to the club, such as 50/50 draws at the meetings, auctions and profit driven programs like the DDO visits and perhaps a Banquet at the end of the year.

As you can see, we are off to a very busy start and if you want to get in on the fun, come out and see what we are doing. Better yet...join a committee and be part of the New Hamilton Centre club, amateur astronomers having fun.

In closing, I suspect you have some ideas, thoughts or suggestions of your own. Please don't hesitate to drop me a note at ablanchard@cogeco.ca

To Boldly Go Where No Beer Has Gone Before—Paul Scott Anderson

For those who aspire to be a space tourist and who also love their beer, this story is for you. A company in Sydney, Australia wants to be the first to offer specially-made brews just for space travel. If they get their wish, you may soon be able to relax in your space taxi or in an orbiting hotel and have your favourite beverage as you enjoy the view.
This is the dream of Jason Held, an American aeronautical engineer who has worked on NASA's Hubble Space Telescope and Jaron Mitchell, who owns a pub in Sydney, 4 Pines Brewery. They've come up with an original craft beer called Vostok 4 Pines Stout, named after the rocket which took the first man into space, Yuri Gagarin, in 1961.

But there are certain challenges unique to developing space beer, namely delivery to space via a rather violent rocket launch with all that shaking going on. Then, there's the effects of drinking beer on the human body in zero gravity. Both of these problems are still being tested, with a focus on finding a way to deliver the beer to orbit as a liquid, since most space drinks until now have been in powdered form (think Tang). Making a glass of beer from a powder just won't do.
They also had to increase the flavour and decrease the carbonation to make the beer suitable for zero gravity, since tastebuds on the tongue lose sensitivity in a weightless environment. Burping a highly carbonized drink would result in bubbles of liquid being regurgitated and floating around – not very appealing, but comical at the same time. So then what about the future of Coke or Pepsi in space, I wonder?

Some don't see beer or dining in general as being a high priority for space tourists though, as noted by Stephen Attenborough, director of Virgin Galactic. "Frankly, we suspect that few if any will want to spend the precious flight time worrying about food and drink," he said.
But Held sees it differently, saying, "A space hotel without a space bar without space beer. I can't see it happening."
All in all, it sounds like a good idea to me (and wine would be nice too), but after the fun, maybe wait a while before driving any space taxis!

Paul Scott Anderson is a freelance writer and blogger, focusing on space exploration, astronomy and related subjects. His blog The Meridiani Journal is a chronicle of planetary exploration. He also writes for Examiner.com (Space Exploration Examiner).

.Who says these spacecraft are unmanned?

September 2011 Ben Toyoshima

Mission Controller, Jet Propulsion Lab, Voyager, Mars Exploration Rovers, Dawn, Deep Impact, EPOXI, and many more

My name is Ben Toyoshima, and I've had the luck of Forrest Gump to get pretty good seats in the Mission Support Areas (MSA) for several NASA deep space missions. The MSA is the room where we actually "fly the spacecraft." That is, we work on the computers that are in direct communication with the spacecraft, via the giant Deep Space Network antennas here on Earth.

I am a Mission Controller, also known by network call sign "ACE." There is always an ACE on duty. Sometimes, he or she is the only Project Flight Team member in the MSA or—in the middle of the night, for example—maybe even on the whole Jet Propulsion Laboratory campus.

Deep Space 1 zipped past Asteroid Braille at a distance of only 26 kilometers (about 15 miles).

The most exciting times for an ACE are when the spacecraft is undergoing a major milestone "state change"—being launched, flying close to a target for observation (like an asteroid), being inserted into orbit (like around a planet), smashing part of itself into a something (like a comet), or landing on something (like Mars).

Those events are really important to the success of a mission, and usually all the Flight Team subsystem engineers are together in the MSA. Occasionally, an event also becomes a Big Deal with the media, dignitaries and our bosses right up to great-great-grandbosses at JPL and NASA headquarters.

But space is big, so most of the time for ACEs like me, we're just cruising. Getting to Mars, for instance, takes months. Getting to more distant planets takes years. Nonetheless, there is always routine stuff going on like calibrations, flight software upgrades, flight system maintenance, and rehearsals for the next big event. In general, only small state-changes are happening attended by only few of the subsystem engineers—no press, no dignitaries.

In those baseline cases, the ACE ensures that the ground resources that support all missions—like Deep Space Network antennas, receivers, demodulators, decoders, and transmission lines—are configured properly for the specific spacecraft being tracked, and that the data is getting into the MSA and databases OK.

One of the 70-m diameter Deep Space Network antennas that communicate with faraway spacecraft. As Earth turns, an antenna at one of three DSN locations around Earth acquires the spacecraft's signal, as the downlink is lost by the antenna rotating out of view.

The ACE makes the mouse click that sends data and instructional files to the spacecraft and then waits for the spacecraft's acknowledgement that it has received the data error free. The ACE watches for discrepancies between predicted and actual data. Through simulations and modeling, we have a pretty good idea what the spacecraft and its long-long communications link should look like and if there are discrepancies, it's the ACEs job to recognize, characterize, and triage them.

For instance the strength of the spacecraft's downlink carrier signal might be lower than expected. That might be caused by rain, or snow, or hail at the station. Or it could be because of an error in the predictions of where either the spacecraft antenna or the DSN antenna should point in order to acquire and follow the signal. Or maybe we've had a real hardware problem on-board.

The two largest state changes occur at launch when a flight system accelerates from zero to 17,000+ miles per hour and then when it transforms itself from a tightly packaged, encapsulated machine into a real spacecraft, with its communication antennas, solar panels and science instruments deployed. The complementary case is when, the spacecraft transforms from a very energetic flying body to one at rest on some extra-terrestrial body like a planet, moon, or comet. A LOT of energy is either imparted or dissipated from those machines in a very short time. That's scary. So we think a lot about all the things that can go wrong. We write contingency plans and rehearse them. We spend a lot of time and energy preparing.

So our job can be very exciting—nerve-wracking, actually, thinking about all the things that might go wrong. What if the rocket was slightly off course or a lander comes to rest upside down? After a major state change, there is a window of time during which we expect to hear from the spacecraft (called acquisition of signal, or AoS).

We rarely have AoS at the earliest possible time. So then we wait. The passing seconds and minutes feel longer and longer. And the MSA gets really quiet and tension mounts.

We knew the rover successfully shed all its speed, had touched down and was now bouncing on the surface of Mars. It did not just SPLAT! and break into a million pieces. We were bouncing on the surface of Mars really-really high, still trying to shed some of the energy the Delta rocket gave us months before during launch.

Finally, at rest, and intact enough to call home, with some telemetry we AoS'd and we were all very happy. And the real work of the mission could begin...

"Astro-Lag"

An Astronomers Jet-Lag—Gary Colwell

For so many years, research has been done on the effects of Jet Lag – the condition that exists with travelers that fly over great distances. It can be as subtle as feeling a bit tired and run down, to full blown anxiety and sleep disorders, and a total breakdown in ones ability to adjust.

Jet lag is caused by traveling at great speeds over many time zones. This unbalances the "circadian rhythms," or biological clock, which is set by the pineal gland (a tiny organ in the brain). Eye cells send light and darkness messages to this gland, which releases melatonin (a sleep-inducing hormone) in response to darkness. Thus, abrupt changes in time zones can upset melatonin production, which ultimately unbalances the body's sleep-wake cycle. These biological functions, combined with travel-related physical and emotional stress, cause jet lag

Another form of "Jet-lag" is working shifts. It can be as pronounced as travelers jet-lag, changing from morning to afternoon to midnight shifts on a rotating basis can cause similar effects. A lot of research has been done on this as well.

For both of the above, there are numerous studies, papers, remedies and advice to minimize the effects of these two sleep depriving and body tiring events. But what about astronomers?

We also can suffer the same effects after observing sessions…I call it "Astro-Lag", but I know of no research or studies that have been done on astronomers….(money making venture for someone!)….here is the conundrum…

In both jet lag and shift work, you can usually prepare in advance knowing the times when you will be traveling or changing shifts. Depending on your planning and preparation you can minimize the effects.

For astronomers it usually it is …"Oh man the sky is clear….lets go observing or better yet lets do some astrophotography!" Usually astronomy is a last minute event! (Even though we have the clear sky clock for planning purposes……it often times – due to Environment Canada forecasting – is incorrect). As far as weather goes…I remember at the old 424 Squadron weather briefing room in Trenton, there was a wall that contained a Terminal forecast, an Area forecast, a Local forecast….and a 12"x12" hole in the wall with a window and inscription "Actual Weather". So observing is usually last minute, with very little planning….

A typical scenario for me is as follows…. (Please do not try this at home!)

- Work all day Friday and notice that the sky will be clear Friday evening…..OBSERVING!!!
- Drive to cottage (3.5 – 4 hrs) to get to observatory
- Ready the equipment and plan on spending the entire night imaging (You can sleep on Saturday says I to myself!)
- Continue imaging while drinking copious amounts of coffee (and the odd power drink).
- Wired like a nuclear plant and make it through the entire night.
- Wide awake at 5:00 am, go to bed and try to go to sleep but your system is so full of wake me up stuff you find it hard to get to sleep.
- Toss and turn for a few hours before you get to sleep…..
- Brightly lit bedroom you only sleep for 4 hours…but you feel fine and get up ready to meet the day….
- Oh Oh….you find out it is going to be clear again tonight!....WOO HOO 2 nights in a row!!!!
- Try to get a short nap but you are too excited ….2 nights in a row!!!!!
- Ready the equipment, 2 pots of coffee, (skip the power drinks this time)….ready to go…yahoo!
- 10:00 pm ….What's going on???…getting drowsy (go figure!)…more coffee…gotta make it through the night…
- Image all night again and finish at 5:00 am Sunday morning
- Image all night again and finish at 5:00 am Sunday morning
- Go to bed….gotta be up at noon to drive back home….

- Get up at noon…oh man…soooooo tired…get ready….
- Drive home ….(for some reason you don't remember half of the trip)
- Get home…crash – go to bed..
- 5:30 alarm goes to get up for work…."ASTRO LAG!!!"

That was the scenario in my early days of observing / astrophotography. Pedal to the metal, damn the torpedoes….full speed ahead!... and the thing that suffered the most was ME!

I am no expert on the subject, but in the 43+ years of observing, (and because I am not 20 years old anymore) I have learned a few things.

Here are some hopefully five helpful suggestions to lessen the effects of "Astro-Lag"

Realize that the skies will always be there and that marathon astronomy is not a recommended practice. (Unless you are a paid professional astronomer!)
Ok…I don't always practice what I preach, but there is some wisdom in this. PACE YOURSELF!. One of the hardest things to do is realize that 4 clear nights in a row will create havoc for your body…(and are very, very rare!).
I know… several months ago I was up at the cottage with some fellow astronomers and we had, believe it or not, 5 clear nights in a row!... By the 3rd night we were praying for cloudy skies just to have a rest….and we didn't have to work that week! A general rule I use is:
a. If on a weekday/workday, limit myself to be home by 11:30. (This messes up summer observing as it doesn't get dark till almost 10:00 pm…but them's the breaks!)
b. If on a weekend and Friday & Saturday are clear, Make sure you can sleep in on Sunday with NO schedules to meet. If that means sleeping in till 5:00pm…do it.
If on a holiday say for a week, make sure you take the final weekend off from observing/astrophotography if your week has been busy doing astronomy.

Get Some Power Naps along the way.
This was a breakthrough for me….Instead of imaging all night long glued to my computer screen watching the PHD data screen….once I got in a few images and realized that everything was running along ticketyboo…I would take a power nap. Usually if I was taking, say 30 – 5 minute exposures, or 2.5 hrs worth, I would nap for 2 hours. You won't believe how much that helps. I sometimes in the fall/winter get in at least 2 – 2 hour naps. And at least one during the summer months.

DON'T drink too much coffee or power drinks!!!!!
This is like fuel on a fire, except the fire is burning up your sleeping time. Caffeine is a stimulant as we all know…and if you are nodding off, take a power nap….like I said, the skies are going to be around for a looooong time! Get out and run around for a bit, do jumping jacks, throw snow in yer face….(but not near the scope!).

Get some extra sleep prior to your session.
If you know that you will be doing astronomy a particular evening, try to get some sleep BEFORE you go out. Gary Bennett is great at doing this….he is the master of pre observing naps!. Obviously don't get some extra sleep while at work, (not too good for the resume), but if you can…do it. An hour or so is all you need, even if it is just lying down will help immensely.

Listen to what your body is telling you!
On several occasions, amid great clear skies, I have just had to say to myself…."Ok that is enough". One night up at my observatory, I think it was the week of clear skies, I just had to say around 1:00am…that was IT!...I am going to bed….because if I had not, the rest of the week would have been in jeopardy. It is a tough call turning your back on pristine clear dark skies, but sometimes you just have to.

Well, that is my 2 cents worth, take it for what it is….some hopefully helpful suggestions…..oh gotta go…..skies cleared up!!!!!!

Journey's End—Stuart Atkinson

Through hushed halls they stalked – it seemed, for hours -
before reaching the place crudely
circled on his map. Padding past cases crammed
with Ratted, rust-hued stones; bone
-pale blades of evaporite; trays of slate-blue berries
by the score; a brain-sized metal meteorite
"Recovered", said the sign,
"from the edge of Endurance itself!"
until, at last, the Old One stood before his Grail.

"Is that it?" sighed the young martian,
face pressed against the glass,
staring past her own reflection
at the machine inside the case.
"It's so small, it sounded bigger
in your stories, grandpa; you
made me think it was taller
than Tars Tarkas on his thoat!"

The old man simply smiled, and in
the silence of the darkened MER Museum
knelt down beside the sad-eyed girl
and told her: "Look again.
Spirit they christened her, and spirit
she had – more than many men I've known;
more than any gathering of gears and wire
had any right to have."

The girl looked closer, shielding
her Sun-starved eyes from the spotlights'
glare, wondering how the rover's
bird-frail, brittle body had not just survived
but thrived in Barsoom's brutal cold;
if even half the Old One's bedside tales were true
this rambler of rust and dust was more heroic
than Her Chieftain could ever dream to be…

Perhaps it had scaled mountains after all;
driven through dust devils' dervish dances
to gaze down upon Great Gusev's plain
and see Old Earth set with the Sun.
Maybe this fragile thing of rock-worn wheels
and dust-scratched glass had climbed boldly
onto Homeplate's old, humped back and
rested there, reflecting Phobos' frosty light..?

"I remember," croaked the Old One, "how
we sat at our computers, click-a-clicking
through the night, watching picture after picture
come to life upon our screens;
We walked with her, every bone-dry weary mile;
when she went lame, dragging her leaden wheel behind
we would have picked her off the salt-choked ground
and carried her if we could – "

But the girl could not hear; lured away
By more interesting, more glittery things in
Other rooms she'd skipped on, leaving
him alone to gaze through the glass with Nav- and
Pan-cam memories clutching at his heart;
how he'd cheered on Landing Day, clapped
as someone screamed "She's bouncing!";
wept when he read the long-dreaded "She's dead"…

You should not be seen here caged so cruelly,
thought the Old One, frail fingers
brushing 'gainst her glass imprisoning walls;
She should have seen you as I imagined you:
staring at the sunset, stood tall
beneath titanic titian skies;
dust skipping o'er and filling the tracks
of your wheels, the wind whispering your name –

"Oh come quick!" sang a sudden voice, high
and Sun-bright from a gallery off to one side.
"It's the Beagle, you know, the one that got lost!"
The Old One groaned, stood up and sighed
Forgive her, she's young, one day she'll understand
what you meant to those watching on Earth.
Then, blinking back tears, walked away from his lost
love.
Remembering.

Scratch One Off the Bucket List—Mike Ducak

Waterdown, ON, October 24, 2011

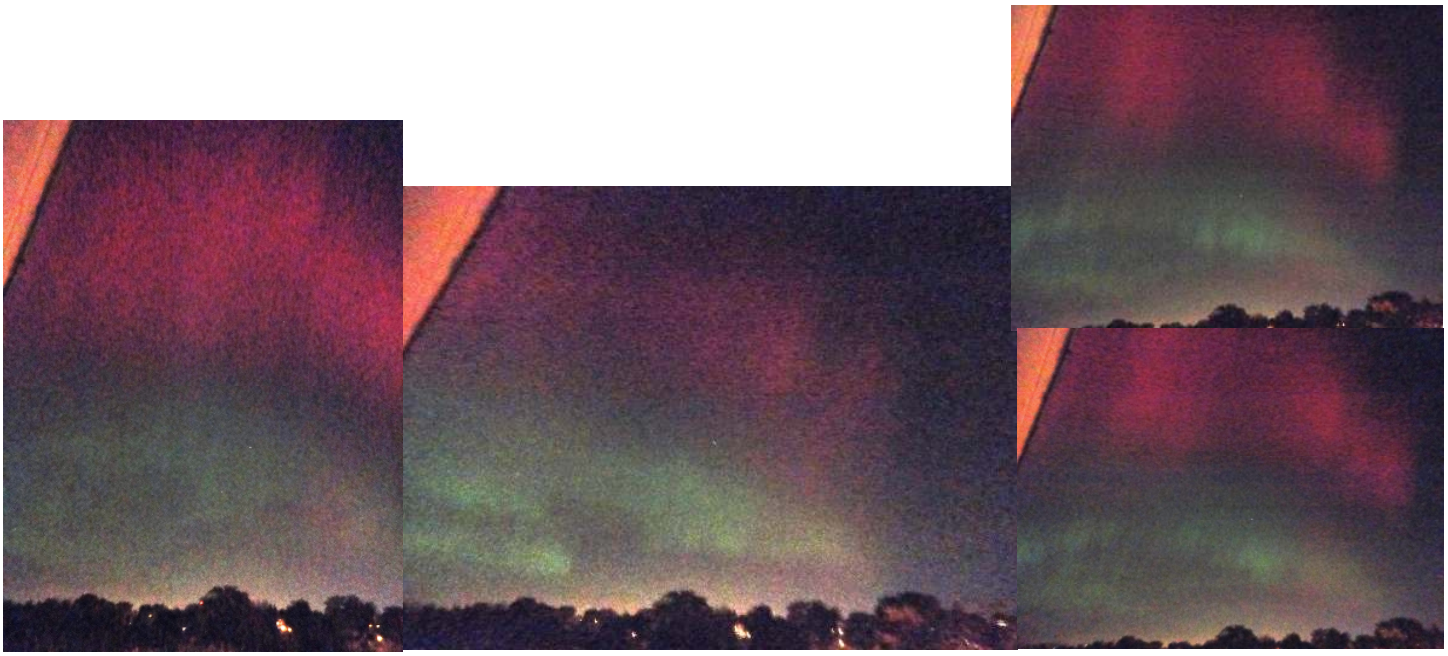
I only wanted a peek at Jupiter, and maybe a handful of binary stars while I was at it, so I went out onto my balcony where my 200mm Orion reflector sat acclimatizing to the cool autumn night. But I never even got to look through the eyepiece because when I glanced at the sky to gauge viewing conditions, my attention was stolen by an immense swath of red stretching from just above the eastern horizon up toward the celestial pole.

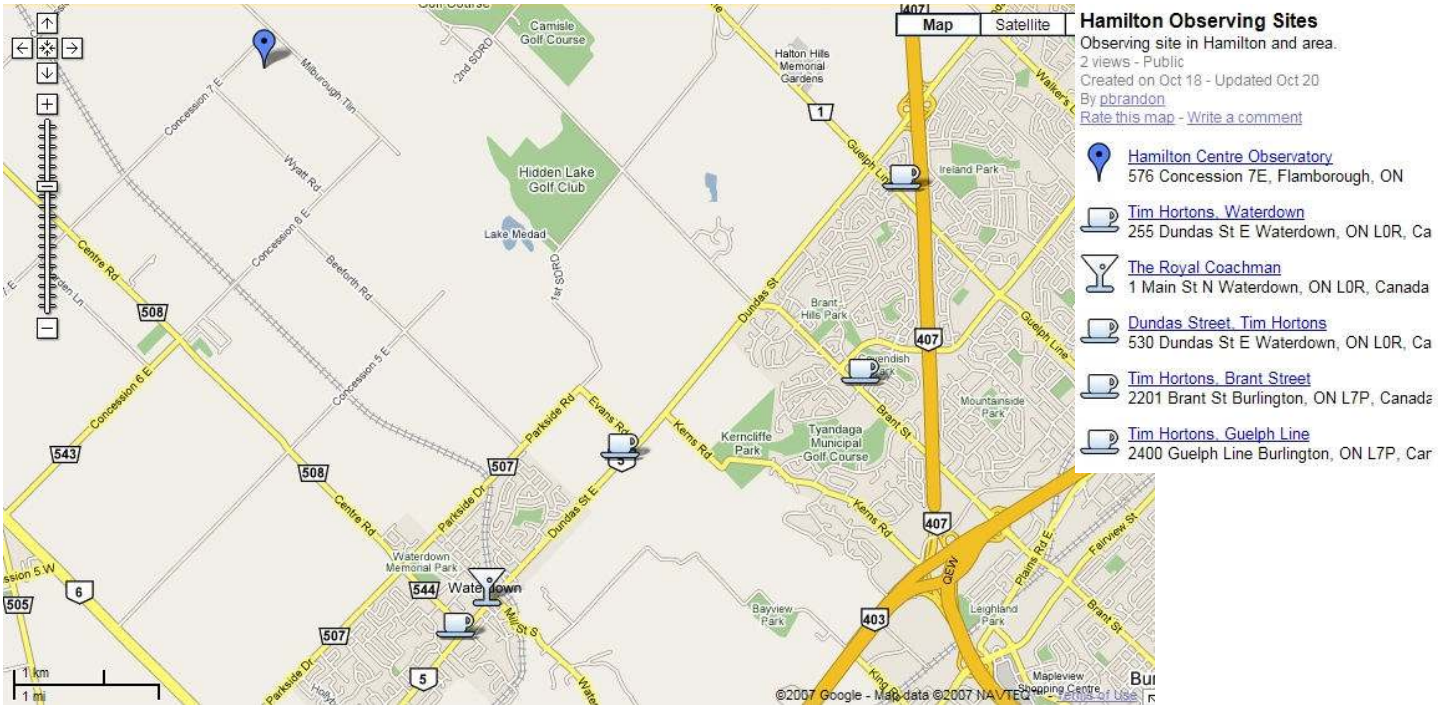
Befuddled, I squinted at the horizon, searching for some clue as to what could be causing this phenomenon. I don't know what I expected to find; evidence of a cluster of red floodlights pointing skyward, or something. But even then, there were no clouds to reflect any surface lights. Then all at once I knew what it was, and I stuck my head inside to summon my wife.

"Get out here quick! You gotta see this!"
She came out, and I pointed. "What the heck is *that*?"
"What?"
"That redness in the sky!"
Then she saw it, and something else too. "Is it normally bright like that underneath?"

Indeed, the sky below the red patch was alight with a band of luminous turquoise. I was hopping with excitement, barely able to contain myself. I'd never seen the Northern Lights, and never expected to see them from my suburban balcony, least of all in such exquisitely bright detail. Even as I tried to convince myself that it was really happening, it morphed and expanded before our eyes, without any apparent movement. That was the strangest part of all, how every thirty seconds or so it looked completely different yet never seemed to shift. My eyes perceived it as a static display, yet the greenish parts stretched and grew, and the red seemed to dart about, now more eastward, now to the north, now pooled directly overhead. In a short time the ethereal lights filled most of my view and stretched around and above the building. Most impressive were the vertical lines that kept appearing, making the light appear as a shimmering curtain, as though the glow was cascading like a waterfall from some invisible precipice out in space.

While I stood there leaning over the rail of our fifth-floor balcony and making repeated exclamations of amazement, my wife was snapping photos with our Sony Cybershot camera. The camera isn't exactly built for celestial photos but it did manage to capture some of the colour and texture of the event. But nothing could capture the ever-changing evanescence of this magical geomagnetic storm. Soon it faded to the barest traces of green-blue and then disappeared completely, and even in my memory it refuses to hold its shape, vanishing before my mind's eye.





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Front picture from David Aylsworth of Burlington. Pictures accompanying Mike Ducaks article provided by Mike Ducak.

There are no pictures taken by Gary Colwell in this issue, which alone makes it noteworthy. Not that he didn’t send any along this month...he did. You’ll just have to check the web site to see them!

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
31	1	2	3 7:30p Hamilton Centre Meeting	4 7:30p Burlington Seminars (# 4 of 4) 8p Sidewalk Astronomy	5 8p Sidewalk Astronomy - Alternate Date	6
7	8	9	10	11	12	13
14	15	16 7:30p Public Night	17 8p Board of Directors Meeting	18	19 8p David Dunlap Observatory	20
21	22	23	24 12p Astrophotography Course	25 12p Geekend	26	27
28	29	30	1 7:30p Hamilton Centre Monthly Meeting	2	3 6p Westfield Christmas Nights	4