Orbit

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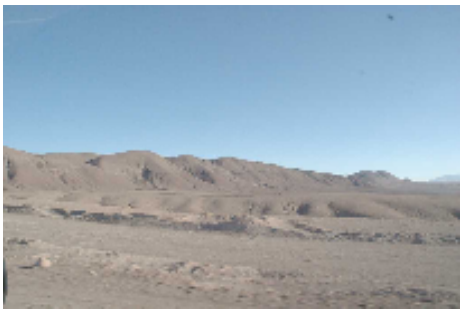
Roger Hill, Editor

I remember a number of years ago that prominent Hamilton amateurs Bill and Ann Tekatch took a trip to Chile to observe down there. The stories about what they saw left me wanting desperately to follow in their footsteps. Travelling to Texas with Les, and his tales of the Milky Way from down under in Australia left me salivating. The images that Steve Barnes and Rob Bodner brought back from the Andes added further fuel to the fire. So, the chance to travel there myself saw the realization of a long held dream.

In many ways, it's been quite a year for me, astronomically speaking. I was in Arizona last April, May found me in Texas, August in Manitoulin, September near Nirvana in eastern Ontario, but the best was saved to the last—Chile in March.

Tales from the trip will be told elsewhere in this issue, but suffice it to say, that for Steve Barnes, Kevin Hobbs, Andy Blanchard, Gordon Bulger, Derek Baker and myself, we had the astronomical trip of a lifetime. Well, maybe not for Steve, as he spent 6 weeks there in November and December, and will be traveling back there again for work purposes in early Summer, but certainly for the rest of us. And it wasn't just the nighttime that was awe-inspiring. The view of a dormant Andean volcano framed in a window, snow covered peaks 200km away, incredibly twisted rock strata in the Valley of the Moon, the sight (and taste) of Llama (pronounced Ya-Ma, by the way), the ancient streets of a town occupied for 3,000 years, the sheer blasted look of a place where even NASA probes have trouble finding life all combined to rub it in that we weren't in Canada anymore.


The astronomical oddities were important too. Facing east, and watching stars rise and head towards the left was decidedly odd. Trying to position a chair under a covered veranda in the morning where I was putting together a computer and getting the placement wrong because the shadows went the other way. The Moon, upside down and looking more like a monochrome version of Mars than the Orb I'm familiar with. Constellations upside down, and very unfamiliar. All of these I could have, should have and did predict beforehand, but the actuality was very different.

Anyway, elsewhere in this issue, you'll find a photo or two from Andy Blanchard and a stream of consciousness recollection of his trip to Chile. You'll find a report on an Eclipse expedition mounted by our predecessor organization, the Hamilton Astronomical Society from 1905 that Robin Allen sent in. Regular contributor Carlos Felix in Mythology and Cosmology visits Lepus this month, and Andy Blanchard passed along a note from the GA Committee.

I've had to cancel the trip to Manitoulin. With one thing and another, I just can't make it there in May. Of course, if anyone wants to go by themselves, I can highly recommend a trip to the Island, and certainly the Gordons will take good care of you. The skies are dark, and the people are friendly. Perhaps I'll try to set up a visit for late September. My apologies to all those who had expressed an interest.

What you've missed!

Please let me know, because I missed it too! Les Nagy and I had tentatively planned to try a webcam connection between us—me in Chile and he in Hamilton. With the massive problems I was having down there (power failures, equipment problems, network slowdowns, and the like, we were never able to set up a good test. By the time the meeting occurred, I'd managed to get my end working, and waited for Les to come on line. I placed my laptop on the crate seen Rather than subject the assembled members to endless attempts to connect (I can't hear you, can you hear me? Why is your camera working, but not mine? Say again...I couldn't make that out, etc.), the long distance meeting connection was cancelled. The following night I was able to successfully connect to a friend who had a camera and laptop in a local watering hole in Milton, and we had a nice webcam chat over Instant Messenger.

As a follow up to last months meeting and Jim Kendrick demonstrating his AstroTrac device, Andy Blanchard took one to Chile, where it proved initially difficult to set up. One of the main difficulties was power. This is a device that practically invites the owner to take it all over the world. Unfortunately, the power pack only runs on 110V.

From meetings past—November, 2006

Astronomy students say the strangest things!

These are genuine, unexpurgated snippets from introductory astronomy classes at the University of Alabama. How well can you do in trying to figure out what these people were really trying to say?

A radio telescope often sends messages to the astronomer by the use of frequencies.

The gravity of the earth while rotating receives a bulge on the sides due to the speed of the earth and in what relation the moon is to the earth. When the ocean waters become full to capacity it overflows upon the beaches. After the earth rotates the oceans can hold that water again and the beaches become dry. The two bulges are directly opposite each other on the earth due to the relation of gravity and mass of the two direct points.

During the winter months, the Earth is higher away from the Sun so we have longer days.

During lunar eclipses, the moon travels around the sun preventing light to the earth. During solar eclipses, the earth travels around the moon.

The earth's surface is closer to the moon than it is to the center of the earth.

The star starts out by being formed by gravity pushing being pushed back.

Clouds of gas and particles float throughout the atmosphere. As these processes continue the stars gain luminosity, size, distance, and energy.

Helium has no insulation, so therefore it radiates off the star and causes it to swell.

It will be several millenia before there are any significant changes in the Sun.

A main sequence star transforms into a Red Giant - the Red Giant is very hot. The Red Giant goes to the envelope magnitide and after gradual cooling, the end process is a white dwarf. A white dwarf generates no energy inside its core. This whole process can take months and sometimes years.

Mesopotamia was an area in the valley of Euphrates and Tigris river, now the region of Iraq. Much of the celestial bodies and their ways came from the people of this area. The summarians, a pre-semantic population, occupied this ancient area of land.

Some 200 years ago, X-ray astronomy was used to obtain temperatures of the atmosphere at many different altitudes.

Asteriods are minor planets that orbit the sun like a planet in the area of the solar system called the astriod belt.

This era has experienced a new aspect of science termed Radio Astronomy, "a vile new science which stemmed from radio engineering but finally became established as a powerful complementary ally to the most ancient of the sciences".

The incredible fascination with the Milky Way has become so great that poets have even written poems about it.

Most of this reasoning lies in the fact that the Milky Way is not alone. It is part of the magnificent Milky Way Galaxy which is still being studied today.

During a solar eclipse the sun tends to stay out longer and is much more damaging - it takes longer for the earth to rotate. The lunar eclipse means less sunlight and the earth rotates faster.

Since the distance from the center of the earth to its outer edge is 4000 times farther than from the earth to the moon, the gravitational pull from the moon pulls the liquid part of our earth to a slight point.

The retrograde motions of the earth give rise to the seasons, as shown here.

Radio telescopes can become blurred because of the actual radio waves in motion.

Astronomy students say the strangest things—Cont'd

"...growth of both the earth and the moon from pronto planets..."

As all the stars in the universe the Sun might have resulted from the huge cloud theory. But whatever the reason was, the Sun have been founded for at least 4.5 million years.

The Sun is one of the clearest stars to be seen on earth because it has the largest animosity.

When the possibility of life existing in other places is discussed, the plant Jupiter is left out.

In that experiment results support the theory that life once may have been present on Earth years ago.

In addition, size is very important for bacterial and fungal spores and for viruses because the distance of the organism from the star for the ratio of radiative acceleration is the same at all distances.

There is a bright side to being the first and only intelligent beings in our galaxy - we will have the chance to found the Galactic Empire!

The Hubble law for galaxy redshifts is that the Sun is the center of the universe.

A parallax are near-by stars relative to the earth's orbit (the baseline) the stellar motion is measured by a star's annual distance relative to other stars, after any effects of parallax have been rendered, and by this we can find its distance.

It is believed that neutron stars produce pulses of radio emission due to the stars absorption ability of rays in which produce this type of radio emission pulses.

When the Sun goes down, darkness illuminates the sky...

The appearance of a total solar eclipse would be very different from what we now see when we inhale this intriguing sight...

Some astronomers spent their entire lives perfecting laws that were completely useless and thus never even mentioned.

The sun provides heat for Earth as a whole, and although this may at the same time have negative effects, such as the greenhouse effect and skin cancer, it's a positive influence overall.

The effect of the gravitational force is much stronger in the ocean water than in the solid crust so the water bugles are higher.

While ultra-violent waves would allow revealing hot, excited regions, hot stars and hot gas.

The Moon's gravitational attraction is stronger on the side of the Moon which is closest to the earth and weaker on the side that we cannot see.

Even though each constellation varies in brightness and size, without the moon to light up the night sky we would not be able to examine the constellations, we probably would not even know that they existed.

Without the Moon, the fast rotating Earth would be frantic and wet.

A nasty hot/cold place that has a good life of a nasty hot/cold place that is a big rock of nothing floating around space that resembles Mars, not the earth we know today.

Uranus is very peculiar because its axis and poles are not even closely aligned.

Because of astronomy, the Greeks learned that they were not looking up to the Gods and realizing that they were looking up at the bikg dipper. If we had been here earlier, the Greeks would have known this all along.

If none of this happens and there are still stars in the Universe then they will tidally rip the planets from the sun. If this happens then astrology will no longer have a scientific basis. We will no longer have a horoscope either.

MYTHOLOGY AND COSMOLOGY

by Carlo Felix

Canis Major

Mythology

Canis Major, or Big Dog, is Orion's hunting dog, stationed at his master's feet. But apparently the dog has had a history of various mythological owners. One of them was Procris, the daughter of a king and the wife of Cephalus. Zeus had once given the dog as a wooing present to Europa, whose son, Minos, the king of Crete, thereafter passed it on to Procris. Her husband, Cephalus, with her accidental death, inherited the dog and brought it with him to Thebes. In this countryside there was a fox so quick that its destiny was that it should never be caught. The dog, however, was so swift of foot that it invariably caught whatever it pursued. Hence, the inescapable dog was matched with the uncatchable fox. As the paradox of this chase would have no resolution., Zeus put the dog, Canis Major, in the sky, without the fox.

The constellation, Canis Major, also had significance for the Egyptians. It was compared to the watchdog, Anubis. And the rising of its major star, Sirius, signaled the beginning of the season of the flooding of the Nile. Predicting of the Nile's flooding was of great importance to Egypt, for preparations such as the completion of the harvest and food storage ensured survival.

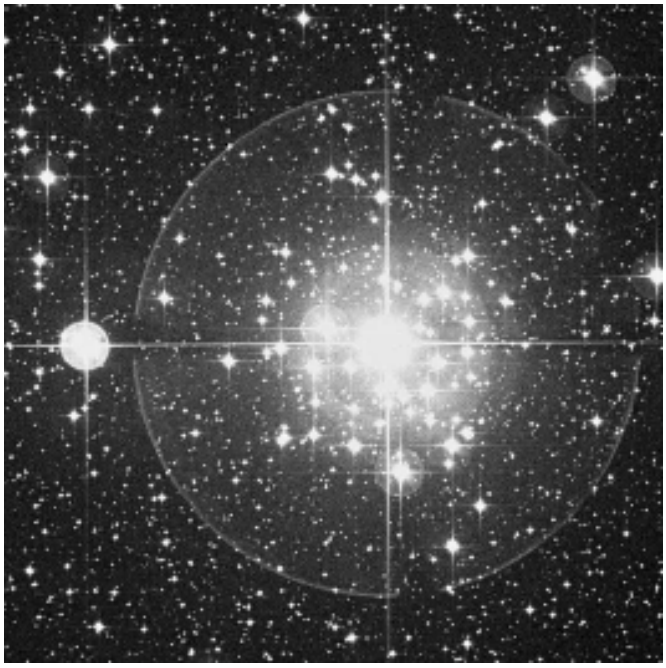
Recent legend, as it affects us, however, has it that Sirius, the Dog Star, is responsible for our "Dog Days of Summer." For as it rises at the same time as the sun, in the late summer, its brightness adds to the Sun's to create the additional and overbearing warmth of the period.

Cosmology

The constellation, Canis Major, boasts the brightest star in the sky, Sirius, at a magnitude of -1.4. This blue-white star is even brighter and larger than our sun. It lies at a comparatively short distance of only 8.6 light-years away, making it, perhaps, the second closest star to our sun. It has a companion star, Sirius B, a white dwarf, which orbits it every 50 years.

Also in the constellation of the Big Dog is M41(picture, left, with Sirius), a large open cluster, about 2,300 light-years away, yet visible through binoculars. NGC 2362 (picture, right), is a tighter cluster of stars, at the end of the dog's split tail, but at a distance of 4,800 light-years away, it can only be seen with a telescope.

Yet despite these gems, Sirius remains the brightest badge on its dog-collar.



1905 LABRADOR EXPEDITION ONLINE
by Robin Allen

Today a traveler to the North West River, Labrador would find the area remote, desolate, and short on modern comforts, even with busy Goose Bay nearby. What was such a trip like 100 years ago?

Over one hundred years ago, the Reverend D. B. Marsh of Hamilton, founder of the Hamilton Astronomical Society, which eventually became the Hamilton Centre of the R.A.S.C., and G. Parry Jenkins of Hamilton, traveled, and participated with several astronomical dignitaries of the day, on the "1905 Canadian Eclipse Expedition", to North West River Labrador, to observe and record a total eclipse of the sun, on August 30th, 1905.

Unfortunately on the appointed day, due to overcast skies the actual eclipse was not observed, from their chosen location. Regardless of this outcome several participants including Dr. Marsh had taken numerous photographs of their travels, and efforts. These images would produce a lasting record of Canadian life in the early twentieth century, and a travel log of their trip, and it's many adventures. Shortly after returning home from the Eclipse Expedition event, a souvenir photo album was produced and given to the each of the various members of the group. One of these albums is now housed at the Hamilton Public Library in the newly named, "Local History and Archive Department".

From this album 85 digital scans were made of all the contained images and they have been uploaded onto the "MyHamilton" web site, and are now available for viewing by the public.

The images in the album starts with the group onboard the steamship "SS King Edward" in Quebec City harbour, and continues down the Gulf of St. Lawrence, and into the Atlantic, with several stops at various fishing villages along the way. Even though it was August the SS King Edward encountered hundreds of icebergs along the route, before arriving at the chosen eclipse-viewing site at North West River, Labrador. There are many pictures of the encampment, and the work needed to set up the various kinds of equipment and experiments. The instruments, tents, and provisions for their stay totaled over 50 tons, which had to be brought ashore by small boats, a taxing feat no doubt. There are many interesting images of the local northern life included, such as, local people, log homes, dog sled teams, and a Sunday worship service under canvas. Unique are several pictures of the native people who inhabit the area of North West River, (the Montagnaius) dressed in their odd Victorian suit jackets and hats. Finally the album concludes with group shots of the participants, and several other social gatherings, to mark the occasion, even though their hopes of witnessing a total solar eclipse in Labrador had vanished.

The web-based collection of images produced by the library is called "Preview" and you can find it at
http://www.myhamilton.ca/myhamilton/LibraryServices/LocalHistory/
In the interest of local history the library has added over 3000 historical photographs of Hamilton and surrounding communities in this preview section, including the 1905 Eclipse Expedition images

Once at the link, click on the button that says "Preview" you now find yourself at the Hamilton public library preview page. Click on one of the opening photographs and this will bring up a rather cumbersome search engine where all available pictures are displayed in a thumbnail manner. During my last check there were 3560 records listed in loose alphabetical order. To find the eclipse images in question try entering the search word "Eclipse" in the search box. This will bring up the 85 noted records for viewing. Also try the search word "Marsh" for a couple extra relevant images for Marsh.

There are three ways to view the images, one as a thumbnail set, the second as a basic description of the selected item, and the third is larger image of the selected item. The large images still are not particularly large so it can be difficult to make out a lot of the finer details. The large images also appear to be not retouched and exhibit all the flaws of the originals including discolouration and effects of ageing.

This 103-year-old special glimpse of our past is a very worthwhile look into Canadian history.
It also shows Rev D. B. Marsh and G. Parry Jenkins at their best and a credit to Hamilton, and the Hamilton Centre of the R.A.S.C.
Best of all, these pictures are finally online for all the world to see.

Robin Allen

Photo on front cover of Orbit; Rev. D. B. Marsh & G. Parry Jenkins on board the SS King Edward at Quebec City 1905

Astronomy Night in Canada by Katrina Ince-Lum

The 2008 General Assembly of the Royal Astronomical Society of Canada will be held in Toronto at York University, Keele Campus, from June 27 to July 1, 2008.

This years General Assembly (GA) will be co-hosted by the Hamilton, Mississauga and Toronto Centres along with the Department of Physics and Astronomy at York University. These Centres would like to invite members from across the country to join them for the GA, and to help them celebrate the 100th anniversary of the Hamilton Centre, the 140th anniversary of the Toronto Centre and the 2nd anniversary of the Mississauga Centre. The GA will also serve as a launchpad and forum for the exciting events and programs that will highlight astronomy in Canada and around the world in 2009 during the **International Year of Astronomy**. The theme of this year's GA is "Astronomy Night in Canada" and the schedule will feature many entertaining mash-ups between hockey and astronomy!"

We are very fortunate to have an excellent line up for the GA. Speakers so far include:
-**Dr. Phil Plait** an internationally renowned astronomer, author, and lecturer. His numerous appearances on radio, television, podcasts, and in front of audiences have made him a celebrity in science circles, and put him in demand as an expert on astronomical matters. Dr. Plait will be giving the Helen Sawyer Hogg lecture this year, as well as talking to the Society about dealing with the public about the International Year of Astronomy.
-Dr. James Hesser Director of the Dominion Astrophysical Observatory in Victoria, BC. His research applies ground and space-based facilities, like the Canada-France-Hawaii Telescope and the Hubble Space Telescope, to questions concerning the history of how the Milky Way and other galaxies formed and have evolved, with particular emphasis on the oldest stars and on clusters of stars. He joins us at the 2008 General Assembly in his role as Canada's national representative for the International Year of Astronomy.
-**Terence Dickinson** editor of SkyNews since the magazine's first issue in 1995. He has been involved in astronomy full-time since 1967 as a writer, an editor, a teacher and a broadcaster and will celebrate his 50th anniversary as a member of the Society at the 2008 General Assembly.
-**Scott Young** the Society's National President. An accomplished science educator, Director of the Planetarium at the Manitoba Museum and speaker. Scott will be speaking at the closing banquet of the 2008 General Assembly setting forth his vision for the Society as we enter the International Year of Astronomy.

Friday is tour day at the GA. In the afternoon, we plan to visit MacDonald, Dettwiler and Associates Ltd. (**MDA**) Plan to arrive early for the General Assembly and get a firsthand look at Canada's role in space exploration. The creators of Canadarm I and II, components for the Mars Phoenix Lander and other space hardware, along with the Dextre Manipulator System launched aboard STS-123 and transferred to the International Space Station in March 2008. The Space Missions division of MDA hosts a special tour of their facilities for RASC delegates.
Later that day, will be the **Toronto Telescope Tour**. Transportation will be provided to dinner at a deli situated between two of Toronto's telescope stores, Efston Science and Kahnscope Centre. There will be time to eat (members from Montreal can critique Toronto smoked meat sandwiches!), and shop.
These tours have limited capacity, so book early.

There will be two banquets during the GA. On Sunday June 29, the Hamilton Centre will be celebrating its centenary at the Ontario Science Centre, with an early arrival planned to view the exciting new exhibit "Facing Mars". On Monday, the Toronto Centre hosts the closing banquet following the Helen Sawyer Hogg lecture.

GA's are not usually renowned for the observing, especially in an urban environment. However, the Department of Physics and Astronomy's observatory will be accessible during the evenings at the GA, weather permitting. If on vacation, there is much to do in Toronto during the summer months for members and their families. There is a TTC (Toronto Transit Commission) bus stop within short walking distance of the Vanier residence building, which provides public transportation to Downsview subway station, and to downtown Toronto and all its attractions.

There will be many opportunities to talk about how to best celebrate the International Year of Astronomy in 2009, including a panel session on Saturday morning, lead by Dr. Hesser.

After the official ceremonies have ended, plan to stay in Toronto for an extra day or two and spend Canada Day at the Toronto Centre's E.C. Carr Astronomical Observatory (CAO), one of the best amateur observatories in Canada, located on the beautiful Niagara Escarpment overlooking Georgian Bay. Come and see it for yourself.

Mark your calendars and make your plans to attend, to renew friendships, and meet members from all Centres across the country.

Registration is now open and early bird registration ends April 30. Please visit www.rasc.ca/ga2008 for more information, to register and to apply to present a paper session. Check back regularly for updates as more information becomes available.

Come and join us for the opening face-off on 2008 June 28!

Earth Hour—March 28th, 2008

Roger Hill

I don't know what it was like in my neighbourhood as I helped out with the celebrations in Caledon.

A good friend of mine is the minister of the United Church there, and she asked me if I'd bring my telescope up the Church parking lot. She'd heard that one of the things that had happened in Sydney, Australia, last year was that people who never look up got a good view of the stars for the first time.

So, I told her I'd bring the 'scope from my observatory - my 12" SCT - if it was going to be clear.

Obviously she has some pull with the powers that be, as it was indeed clear!

She told me that she'd never looked through a telescope before, and was really looking forward to it. I was astonished...in all the years of coming to my house, of all the evenings spent beside the pool in the summer, she'd never seen my telescope, let alone looked through it.

So, on the afternoon of the 28th, my 17 year old son and I took the big scope off the pier in my observatory, stuffed it into the car, tossed in a box of eyepieces and other bits and pieces, added my Williams Optics ZenithStar 80mm and a tripod, and off we went.

It took a few minutes to set up, and as the parishioners gathered, I got inundated with questions. By the time the 'scope did it's initial dance (find North, find level, move to initial star, and then a second one), quite a crowd had gathered.

There are three local newspapers in the area, and each of them was quite pleasantly surprised that there was something more interesting going on than what they first presumed. They had expected to find a group of people in a church parking lot drinking hot chocolate (the hot water urns were turned off promptly at 8pm), and looking through a standard 60mm refractor or two, all gathered together in the quiet dark. They were very pleased to find something considerably more interesting.

I keep wanting to cut down the legs of the giant field tripod to make it lower to the ground. When the telescope is pointing up, the scope has to be close to 7 feet tall, and is quite an imposing site. The photographers were very happy when I told them it was a 3000mm f/10 - they wanted to quote in their stories about how powerful it was - since the 60mm telescope that a fellow had brought out had 675x emblazoned on its side, then a behemoth like this had to be good for several thousand!

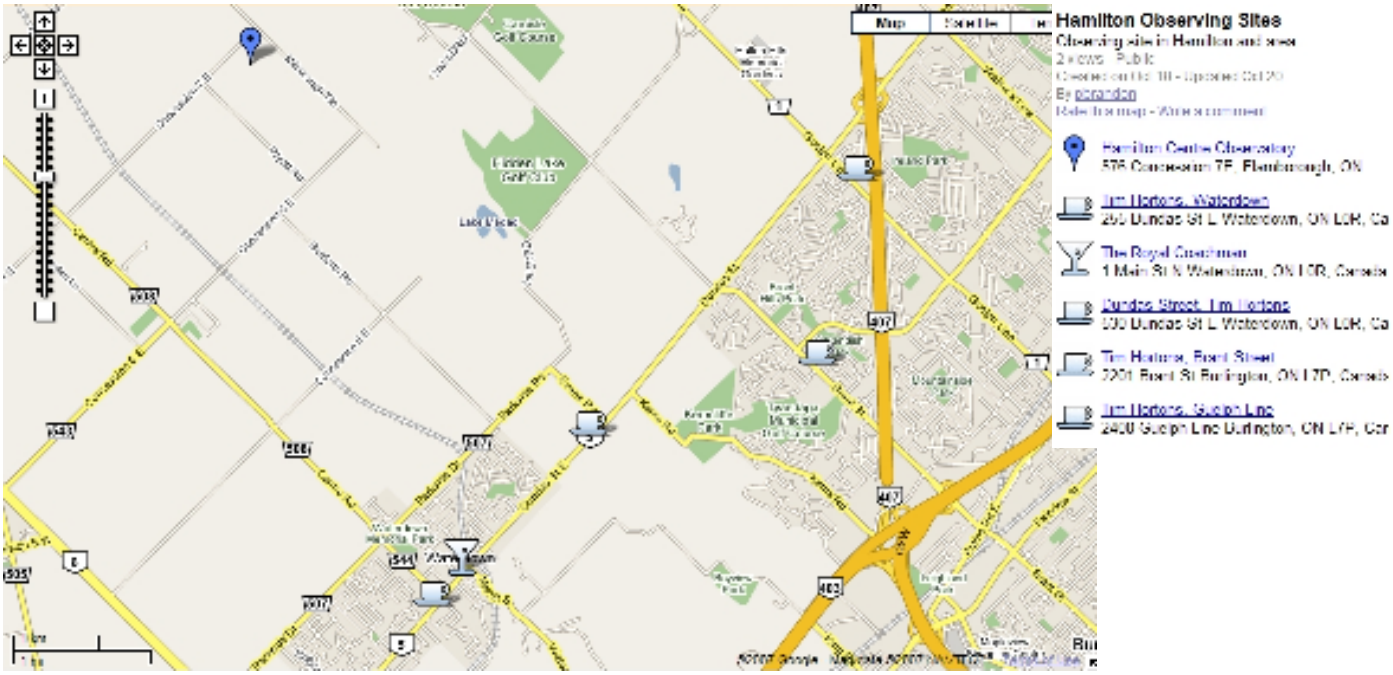
Anyway, as the sky got darker, I pointed the scope toward Saturn, which is where it stayed until the very end of the night. Anyone who does sidewalk astronomy is very well acquainted with the reaction of people when they see Saturn for the first time. There are accusations that somehow I've got a Hubble picture in there, that what they are seeing is not real. The eyepiece I used is an old 22mm Koenig, giving about 140x and is nice and easy to use. Normally, I'd use a 26mm Plossl, but that was being used in the Refractor that my son was using to show people M42, as that eyepiece has a long shielded barrel that you peer down...very good for looking at fainter objects as it nicely shields your eye. The Koenig has a nice wide field, is tolerably sharp, and is uncoated, so it'll stand being touched by the occasional person who was too far away to hear my instructions on how to look.

The green laser pointed was used to point out Saturn and Sirius, my son used it to point out where M42 was, and the only sour point of the night was when my son tripped over the power cord, and the scope had to go through its start-up dance again.

I suspect over a hundred people got their first look at Saturn and it's orange moon, along with M42's stellar nursery, and the nice pass of the ISS was a lovely added bonus. My son and I had a huge amount of fun, and it wouldn't surprise me if the Mississauga Centre gets an inquiry or two about membership. EfstoneScience in Toronto will be getting a visit from a couple of Scout Leaders looking for planispheres and green laser pointers. And a couple of people are going to be watching Saturn move against the background stars over the next little while.

I hope I get invited back next year...it was a lot of fun!

What did you do?



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Chile

Steve called me one night and asked if I would be interested in bringing along my Hyperstar. Since it had just arrived a few days before, I was to say the least pretty excited. Not only was I going to the Atacama Desert in Chile, but I would have an opportunity to use this new addition to my astrophotography equipment.

The flight was scheduled to leave at 11:55pm out of YYZ, and of course it was late. Got a good seat at the front on a bulkhead and twenty hours later we pulled into our new home. My 1st night was interesting in that we went to dinner and did a little visual observing through my Canon is binoculars. This was my 1st guided tour of the Southern sky. Omega Centauri, 47 Tucanae, The Coal Sack, and my goodness the milky way. Steve pointed out dozens of interesting DSO's but after such a long journey we called it a night, or so I thought.

It seems my temporary sleeping arrangement had me nicely tucked in between Roger, and Kevin. I'll leave that to your imaginations and let Roger and Kevin handle your questions. (each bed was against a different wall in one room—Editor)

Day two was a work day, with Kevin and I, (Kevin AKA Dr. House, and Andy the labour) wired the two Paramount's and got the 20" and 14" operational. Roger was deeply dedicated to getting the wireless internet operational with Steve and Gordon resolving the power issues. Gordon, had a personal goal of getting his pier operational and of course finding one more power adapter.

Observing on day 2 was a real treat. We started off with a visual tour with the 20", starting off with Omega Centauri. Words can't describe what the views are like in dry air and 20 inches of perfect DSO's. I had no idea, what was possible with the right equipment and location. We spent the rest of the night visually looking at everything in the 14" until I ran out of steam around 3am. Steve and Kevin did an all nighter.

Day three was my turn to plug in the Hyperstar and go to town. For those of you who do not know, the Hyperstar is 35 times faster than a F11 C14. So a 35 minute exposure takes just one minute. Are you getting the idea, it was a DSO race. On a typical night in Hamilton, I am lucky to shoot 2 or 3 DSO's. Well by 3 in the morning I had nearly 50 items. Some of which are attached here. Note to Andy listen to Steve Barnes when he tells you to label your pictures as you go. Never a problem when you have 3 objects. Try remembering nearly 75 by the end of the trip.

Day four was Kevin's turn with the 14" so I set up my Astro Trac and a 200mm F2.8. I got a lot of great shots. Two minute exposures, without trails and with and no doubt many hours of processing ahead of me.

Day five great news I would be back on the Hyperstar while Derek would piggy back the Canon F1.8. We each took a lot of shots and after Derek turned in, I managed to keep shooting until dawn. The best view was the Andes in the distance with the moon, Venus and Mercury stacked one over the other.

Last day of observing I was again on my AstroTrac, enjoying the view with my binoculars between sequences. Called in early around 2am as the power just went out. It seemed like the local wildlife was in tune with power failures as the call of some wild animal seemed to be heard in the night. We soon started calling it the "Canadian Hello". Most strange and to a certain degree missed by this writer and probably my fellow travelers.

The last night was a good old stink fest with everyone sharing in libations and oral and anal hot air. It was said that it had been many years since the old boys had laughed so hard. Old girlfriends and wives beware; the boys from Chile are back in town.

The Leo Trio

Horsehead and Flame

Some things I learned in Chile by Roger Hill

There are several lagoons that are actually a saturated salt solution. It really hurts the eyes of those who are stupid enough to try to swim in the stuff, like me. This was one of the most bizarre swimming experiences in my life: we floated upright in the water, hands above our heads, but the water came to just below our armpits.

Raul, the Bolivian helper, and general handyman, has three years of a four year Civil Engineering degree, but in Chile he makes an excellent wage: $20 a day— three times the amount he could earn in Bolivia. Raul and his wife, Soledad—the housekeeper, had two delightful children (boys, 3 and 5 years old), but they rarely smiled or laughed, until we bought a soccer ball for them, and we kicked it around for an hour. Every boy needs a ball to play with.

I have to mention Alain Maury, the proprietor of the place, who looks like Odo from Star Trek: Deep Space 9. He gives talks twice every clear night to 40 or 50 people, and hates having to drive to Calama, the major town of 150,000 people, just two hours away on the other side of a 12,000 foot high mountain range. He has a wicked sense of humour, loves his wife Alejandra, and is as knowledgeable as anyone I know about astronomy. It was he who coined the term "Canadian Hello", wondering if a certain vulgar phrase (not fit for such an august publication as this), was Canadian for "Hello". His wife loves Maple Syrup, and if you ever travel down there, take some for her, along with the Maple Cookies made by Christies.

If you ever want to see what a Telescope Graveyard looks like, visit Alain Maury during the day, and see bits and pieces of all sorts of telescopes lying around. At 5% humidity, they're not going to rust very quickly! You have to do it during the day, because you don't want to look down at night.

Can't leave out the climb up an extinct volcano called Cerro Toco, where 2/3rds of the group got a chance to see inside the groundshield of the Atacama Cosmological Telescope, and spoke to the lead researcher for the telescope, a really nice guy from Princeton called Mark Devlin. He was most concerned about our adaptation to altitude. I didn't expect to see him as an email indicated that the place would be closed, and he didn't expect to see us, as he thought we'd be by earlier in the week. At 17,030 feet above sea level, it is currently the highest permanent, ground-based telescope in the world. Of course, we'd nearly killed ourselves getting up there, when we were laughing so hard, we literally couldn't catch a breath.

Bolivia must be an awful place to live...about 90 percent of the nights they had lightning there. The border with Bolivia is only about 50 km away. So is Argentina. To get there, you have to go over a 15,000 foot high "pass". Some cars can't go that high. They won't let the rental vehicles in to either of those countries.

I can't not discuss the stars. The first night, we walked out of a restaurant and looked up. To the first glance, it looked like it was cloudy, and then we realized it was the Large Magellanic Cloud and the Milky Way we were seeing. Awesome, just, well, awesome!

The Southern Cross. There's a couple of "false crosses" in the southern skies, but only one has the Coal Sack beside it. Makes it stand out a lot more. It's used to point to the south pole, too. 4.5 times the distance of the long axis from the bright star Alpha Crucis will get you pretty close.

Polar aligning can be real tough down there. You don't know how bloody handy Polaris is until you try to polar align below the equator. Andy and Gordon were having a real tough time getting aligned properly. Fortunately, right beside where they were set up was a Takahashi. The mount had a polar bore scope, so I shone my green laser through the bore scope so they could see where to align to. Worked perfectly.

Another tip...when you travel, leave your fancy power bars at home, and just get one of the cheapest ones you can find at the local dollar store. Surge protectors don't like 220 volts, and the so called intelligent power bars have a conniption fit and flat out refuse to work when there is no ground worthy of the name. Finally, take nothing that won't work on 220Volts.

Doesn't matter what I'm actually doing. Caulking will be involved.

I have a horrible reputation for bringing cloud and rain wherever I go observing. I went to the Mexican desert for a solar eclipse, and had to observe it through some pretty major clouds. In the satellite weather pictures, there is a single cloud visible on the entire Baja Peninsula. That's where I was. Les and I went to Texas and had 1.5 good nights out of 7. When a fog bank rolled on to the upper observing field at 3am, Les started to believe I was jinxed. There's a standing joke around the Centre that if I announce an occultation then it WILL be cloudy. I'm 0 for 9 in asteroid occultations. Well, I'll have you know there was only a single cloudy night while I was there. The irresistible force of my clouds met the immovable object that is the Atacama Desert. This desert won. Which is good...it means I got to live!

One night, around 3am or so, after the Moon had set, Steve and I just looked in slack-jawed wonder at the Milky Way. There's no doubt that you're looking at an edge-on spiral. If you've never seen it like that, you've never seen it properly.

Having a geologist with you is a good idea.

You don't need a lot of Spanish. "Por Favor" and "Gracias" will take you a long way. People will generally smile as you mangle their language, as long as you're trying. However, this sometimes means that six guys all order the exact same thing.

There's a pretty good chance that one of the guys you have to room with snores. Loudly. He will feel very badly about it. Earplugs really help. Should he move out to a different room, the guy who replaces him will be worse. This is called Kevin's Law.

Never stand behind a vehicle after Steve starts it up. This is called Derek's Law.

I didn't see the impact crater, I didn't see the geysers, I didn't see the local archeological ruins or the museum. Guess I'll have to go back.