Orbit

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Roger Hill, Editor

Okay, I though that December was an astronomical wasteland, but January was worse. I had hoped to observe the passage of asteroid TU24 when it went whizzing by in late January, but clouds interfered.

I certainly hope that the cloud deck we've been living under vanishes for a few hours on the evening of February 20th, when the Moon will go into the Earths Shadow for less than an hour. I've observed many Lunar eclipses since the first one I remember in April, 1968, some more spectacular than others. There was one in November, 1993 near the Pleiades that was beautiful to watch. Another one in August 1989 was spectacular as the Moon went a lovely shade of red in the Milky Way near Sagittarius.

I may be at the Observatory that evening. If I am, I'll just bring my Williams Optics 80mm and tripod mount it. The nice thing about it is that it's nice and portable. If the night is very cold, which it very might well be, then it won't take much to toss it into the back of the van and leave once the partial phase is done. Then again, I'm very tempted to just leave it on top of my 12" SCT in lunar drive rate and take a picture every 30 seconds or so to make a nice movie using my Canon 10D. I just haven't decided yet.

Send me your pictures after the event, and I'll put the best one on the front cover of Orbit.

Last month, I broached the idea of going to Manitoulin Island for some observing the first weekend of May. I'm happy to report that Gordon's Park on the Island will be happy to take us. If you want to go, contact them in April, and meet us there. At the moment, we have over half a dozen confirmed people, and another ten or so who are very interested.

There's also a group of people heading down to Chile in March. Those of you who saw Steve Barnes photos at the January meeting will have some idea as to why. There are only of a handful of truly great observing sites in the World. In North America we have Arizona, Hawaii and Texas (and I'm fortunate to have been to two of them), but the best skies on the planet just may be Chile. Hopefully some more magnificent pictures will come back.

This month in Orbit, we have the return of MYTHOLOGY AND COSMOLOGY by Carlo Felix. This month features Andromeda. We have an article from Gary Colwell on his most memorable astronomical event. Rick Cudmore sends along a report on the trials and tribulations of installing a 2-speed Crayford focuser. Les Nagy has promised me something but as I write this, I haven't received it yet.

Finally, Colin Haig took the picture to the left of the Moon and Mars, similar to the one that Scott Barrie took last month. Colin used a Williams Optics 66mm at prime focus and 1/350th of a second with his Pentax K10D

In other news, there was a brief flurry of excitement when a proposal to move the Trillium Scope to Chile came about. I'm not sure if we've heard the last about this or not, but an email I received a few minutes ago indicates that the proposal has been withdrawn.

The front page image is from Chile, and shows the Zodiacal light and the Milky Way using a fish-eye lens. If you've never seen the Zodiacal Light, this might give you an idea of how large it is. It is often mistaken for the very beginning or end of twilight.

What you've missed!

In January, Stave Barnes showed some incredible images from

Chile. He and Rob Bodner have been down there working on a project to hunt for extra-solar planets. During that, he took time out to take a lot of pictures, some of which he showed. Others, he said, haven't been processed enough to do them justice.

Steve may not have been happy with them, and they may not have been up to his exacting standards, but most of us would be ecstatic to take such images. The picture below is from a time-lapse movie he put together of the south polar region. The two Magellanic Clouds are quite evident. I, for one, can't wait to see more.

Between Wonder and Amazement

My most memorable observation by Gary Colwell

I cannot remember the date....it was sometime in the spring of 1995....and I was LOST!....I had just left a meeting I had with a business associate in Hagerstown Maryland....about an hour or so out of Washington DC and I was on my way back to Toronto. The time was about 11:30 PM. I remember I got on the Interstate and missed a connecting exit....so I figured I would just take the next exit and backtrack to get on course....little did I know the next exit was almost 30 miles away!. No KM in the U.S!.) ..and it was pitch black out...I should have asked for directions....but being a guy.....I didn't....(Now I know why Moses wandered in the Wilderness for 40 years...he never asked for directions!)

Well, after about an hour or so of muttering under my breath and even more hopelessly lost, I decided to pull off to the side of the road and take a moment to get myself together...the next event was probably the most memorable and awesome moment of my astronomical life. I pulled the van over and stepped outside...I was nestled in the heart of the Appalachian Mountains....it was about 3:30 in the morning...it was chilly out...and I was felling pretty dumb at that moment....then I happened to gaze skyward to see if I could get my bearings. Up until this point I had been so pre-occupied with trying to find my way home before sunrise, I could think of nothing else....but what I saw made my knees weak and I experienced one of those ethereal moments that happen but a few times in life.

I looked up to see if I could find a familiar Constellation or star…..and…..there above me was comet Hyakutake....I was breathless.....It was at the zenith...and its glorious tail stretched almost to the western horizon....it was brilliant....it was like a celestial pointer that showed the direction toward home. I don't remember how long I gazed at it…I do remember the sore neck I had the rest of the drive home though….

To begin to describe how incredible the moment was would be impossible…unless you have had a similar experience. I soon forgot how lost I was….all I could now think about was how beautiful the moment was….and how stupid I was for not having a good camera with me….(I just had one of those cheap disposable cameras)…but the picture that was etched in my mind that morning has been cast indelibly forever.

Silently I stood motionless in the darkness, and other than the odd passing vehicle, I was alone…it was just me and the comet….I had never seen such a wondrous sight….and the most disappointing thing of all… no one to enjoy it with…The skies were peppered with stars, but they seemed to fade into oblivion in behind the comet. It was so bright you could see detail in the tail…and I swore I could hear it crackling in the night as it stood motionless in the cosmos…(actually the sound was my radiator crackling as it cooled down…..). I think I watched it for almost an hour…but who was keeping time? I wanted it to last forever…but alas, I had to get on my way. I climbed back into my van and pulled onto the road once again… and at every opportunity, stuck my head out the open window to catch another glimpse.

To this day I have never tried to find out where exactly I stopped that morning….all I know is that it was somewhere between wonder and amazement….and I eventually found my way home…

You Know You Are A Redneck Astronomer If…

Culled from newsgroups...Original Source Unknown

(1) The most important part of your instrumentation is the pickup truck.

(2) You have a Tasco refractor up on blocks in the front yard.

(3) Your observing site would be perfect if it weren't for the alligators.

(4) You carry a shotgun to deal with skunks, raccoons, and streetlights.

(5) The board with holes on the side of the DOB mount fit beer cans (the eyepieces already have a little box they came in -duh!).

(6) A cup holder by the eyepiece has a partial beer to balance different eyepieces. (Amazing how many need replacing as they get too light.)

(7) You will fight that SOB trying to find WWV when it was already on a perfectly good country station.

(8) You tell all the guys at the star party about that neat dang drinking fountain next to the toilet in them big fancy hotels.

(9) The counterweight on your Dob doubles as a spit can.

(10) You've used lard to slick those declination bearings.

(11) Others at the star party complain about the smoke when you barbecue spam.

(12) You start to giggle when you tell your buddies that you have a 16-incher.

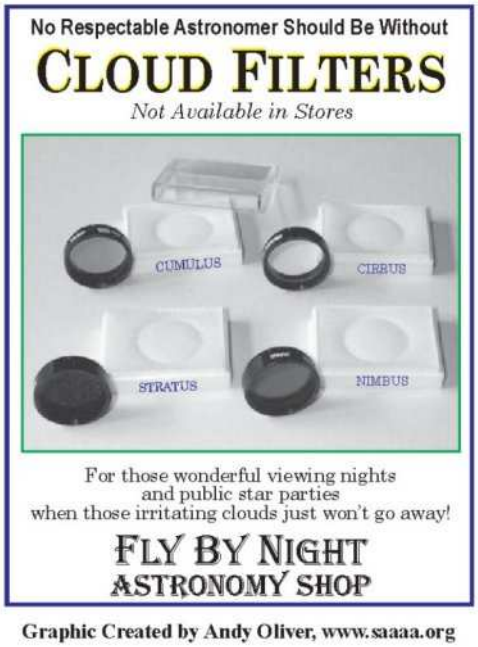
(13) You ever wonder what your granny's truss has to do with building a telescope.

(14) You've ever tried to use your granny's truss to build a telescope.

(15) You nostalgically refer to Canis Major as Old Duke.

(16) You look at pictures of the Flame Nebula (or the Rosette) to get in the mood.

(17) You lie and tell your buddies the next morning that your red eyes are from drinking and partying rather than stargazing.



From: *John Oliver (oliver@pine.circa.ufl.edu)*

January 1985 ... installing SPOT (South Pole Optical Telescope) in its shelter at the South Pole ... On the roof assembling the "periscope" optical head ... removed some screws ... where to put them?

Roof is covered in thin blown snow ... Yes of course ... between my lips ... Whoops ... -its -32C :(... ... ... sorry for the pause, it was about 5 minutes before I was able to dump enough heat into those little screws to unfreeze my lips.

(Boy was I glad it wasn't those carriage bolts :)

MYTHOLOGY AND COSMOOLOGY

by Carlo Felix

Andromeda

Mythology
Andromeda is one of the constellations belonging to the Perseus epic myth. (Others include Cepheus, Perseus, Cassiopeia, and Cetus). Also, Andromeda is one of three female figures represented on our vaulted sky. The other two are Virgo and Cassiopeia. It may be said that they represent the three ages of womanhood: Virgo representing innocence and Cassiopeia representing maturity and pride. Andromeda, then, is womanhood in her prime. In ancient times, the constellation was depicted as a woman in the nude, but the advance of less permissive ages have had her clad with veils and flowing garments. She is located on the opposite side of the ecliptic of Virgo, the virgin, but beside her mother, Cassiopeia.

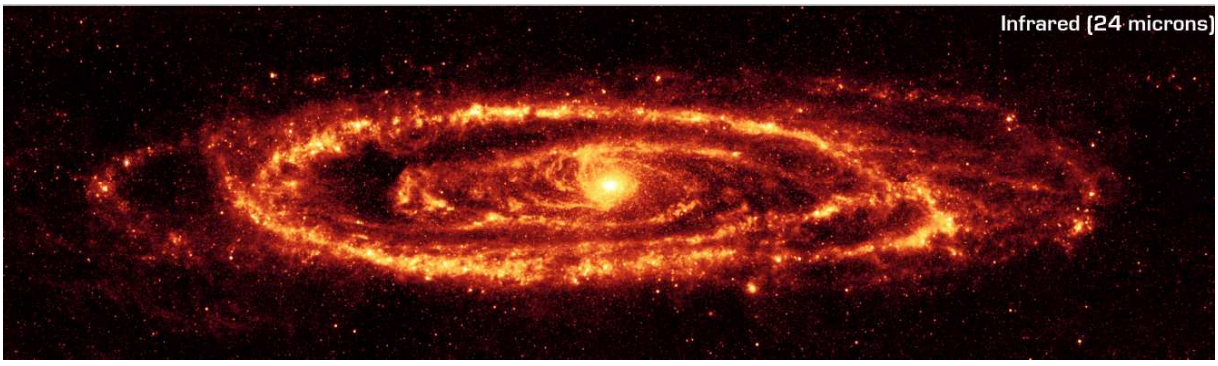
Mythology tells us that Andromeda was offered as a sacrifice to appease a sea monster, which had been ravaging the coastal areas of the kingdom of her father—Cepheus. This sacrifice was purported to atone for her mother's offending vanity. Andromeda, in the myth, is chained to a rock and awaits devouring by the sea monster. Her rescuer, Perseus, nearly overlooks her in passing because to him she appears as if she were a marble statue. It is only the ruffling of her hair by the wind and the sight of tears coursing down her resigned cheeks that denoted her humanity. This impels him to stop and question her about her predicament, whereupon he heroically enfranchises her.

Cosmology
Curiously, Alpha Andromedae, or the brightest star in the constellation, called either Sirrah or Alpheratz, is shared by both Perseus and Andromeda. In the third century B.C. it was called the Common Star in acknowledgement that it belonged to two constellations. Also, interestingly the woman-constellation's waist is marked by the star Beta Andromedae, of which its name is Mirach, a word corrupted from the Arabic meaning "the girdle" or "loin cloth."

Most remarkable, belonging to the constellation is the Andromeda galaxy, M31. It has the celebrated distinction of being the farthest object visible to the naked eye. At a distance of 2.5 million light years away, it is a spiral galaxy, comprising of some hundred billion suns. It is the biggest galaxy in our Local Group, and our nearest major neighbour in space.

According to Sir Martin Rees, the current Astronomer Royal, our own Local Group consisting of the Milky Way, the Andromeda Galaxy and thirty-four other, many of them smaller, galaxies, is a few million light years across.

Gravity is pulling the Andromeda Galaxy (M31) towards us at 100 kilometres per second. And in about 5 billion years, the scheduled time at about which our Sun's life is to come to an end, our two disc galaxies may crash together. But stellar collision is unlikely due to great spaces. A merging is a greater likelihood where stellar bodies will exert their gravitational influence on one another creating a new shape of galaxy - an elliptical one, of which there are many examples in space. These are not spiral in space, but its stars appear to be swarming around random orbits feeling the gravitational pull of all its neighbouring stars. Notwithstanding, the wonder of M31 continues to have a great attraction for us, for its splendid array is frequently the target of focus for many of our telescopes. As such it continues to hold a compelling fascination for us.



Spitzer Space Telescope image.

Astronomy Picture of the Day from October 20th, 2005

INSTALLING A NEW WILLIAM OPTICS 2 SPEED FOCUSER by Rick Cudmore

My Focuser has black knobs.

Diagonal with threaded piece on right

Push nose piece with threads on the left.

Can barely see the notch on the right inside of the threads

I had decided to choose a William Optics 2 speed focuser and ordered one online for Christmas 2007 which would compliment my dielectric diagonal of the same brand. I had reviewed two other focusers, the Moonlight and Starlight Instruments Feather Touch focusers, but chose the W.O. mainly for price and delivery from a Canadian dealer, especially now that the dollar is around par.

The focuser arrived before Christmas and I installed it on the end of my Celestron Advanced Series 8" SCT, my scope is at the observatory, which makes me go out and observe. The problems began when the diagonal would not attach to the focuser, as I thought incorrectly, the end of the diagonal would screw onto the focuser. Nope, no matter what I tried, it wouldn't as can been seen from the pictures.

I called the dealer, Island Eyepiece (3 hours behind) on Sunday, hoping someone might be in the store, and luckily, Brian happened to pick up the phone. I explained my dilemma and he realized that I needed a push nose piece in order make the two parts connect. So, how come William Optics didn't mention this in their web site, as we guessed you are supposed to know this as there were no instructions in any of the boxes? You are saying boxes? You only ordered one item, but it gets better (interesting) read on. The push nose piece is item DIG2-TA but on the WO site you have to click the WOnline tab as you cannot find the item listed in the first screen under products.

The push nose piece arrived after New Years, and so back out to the observatory with parts in hand and guess what, it still doesn't connect. Different combinations result in the same thing, two separate items. Enough, I now have taken the 2-speed focuser, diagonal and push nose with me back home where I call Brian again, this time on a Saturday.

After hearing my problem, Brian grabbed a new WO diagonal off the shelf and after looking at the parts realizes we have to disassemble the threaded piece attached on the diagonal which would normally screw onto the OTA. This piece has two notches inside which allow it to unscrew from the diagonal. Brian suggested I use a piece of broken hacksaw blade which worked very well as it needed a little extra force but was enough to get it started and then easily unscrewed. I covered the mirror with a lint free cloth before starting. Once the threaded piece was removed, the push nose piece threaded onto the diagonal and then the whole unit fitted into the 2-speed focuser once the 2" adapter is removed.
Can barely see the notch on the right inside of the threads

I went back to the observatory later that afternoon and fitted the whole assembly to the OTA without any problem. The focuser feels smooth and the assembly looks compact. I re-balanced the scope due to the extra weight and called it a day.

Brian of Island Eyepiece offered great customer service and I would deal with him again. I like William Optics products, but they need to include instructions and/or links to a technical page for 'what if'. And to top it all off, I still haven't had a chance to observe, thanks to our cloudy weather and cold temperatures.

I hope this epic tale assists others if they plan on making a modification to their set up.

Jack Newton's Sky Village in Portal Arizona

By Andy Blanchard

Andria and I as many of you already know spent ten days in Arizona to observe under some of North America's darkest skies.(not) We arrived on Jan 3rd after a side trip to Vegas to spend New Years Eve with Pamela Anderson and a small group of business partners to celebrate a birthday and New Years Eve together. We rented an SUV in Vegas and left the next morning and got as far as the Grand Canyon. The skies of course happened to be the best of the trip. Believing that I had more clear sky's in my future I decided not to unpack the truck and set-up the scope.

For Christmas my kids bought me a Gamin GPS unit and we programmed it to take us through eastern Arizona and New Mexico as we had already traveled the road to Phoenix and Tucson. What a great decision as we climbed high into the mountains and got treated to some of the most spectacular views we have ever seen. Our next stop was about 200 miles from our destination in Wilcox Arizona, a small town in the middle of nowhere USA. They offered us a free room if we agreed to swim in their outdoor pool. Since it was about 30 degrees out I opted to pay the $29 for the room. The next morning we arrived in Portal around lunch time. The house was about 1800 sq/ft, and richly decorated in a NA Indian / Mexican decor. A beautiful patio with a winding runway to the telescope pad about 60 feet from the house. On each side of the runway the owner installed small glow in the dark reflectors to guide astronomers to and from the house in the dark. To set the seen at night it is so dark all you can see are the reflectors, let alone your feet or for that matter your hands in front of you. In the dark there are coyotes howling and lots of rustling of animals running around the house and area. Big time creepy, but there never seem to get any closer than 10 or 15 feet away.

For those of you who do not know Portal and the surrounding area are part of a dark preserves. No lights after twilight. I set-up the scope and patently waited on the patio getting a pretty good burn (60-70) anxiously anticipating a clear sky. After all it is clear 358 days a year. Unfortunately it would be four more days before the stars would be viewable. Andria and I decided to explore the area. We drove into the Coronado Park a range of mountains about 6 miles away from our new home. We managed to drive up to 8700 feet and again the vistas are beyond description. What is completely obvious is that this part of the world is Astronomy central. As far as one could see (about 180 miles) there are amateur observatories everywhere. In the dessert by the hundreds are observatories, and for those wealthy lucky souls dozens of mountain top domes in every direction.

Gene Turner is the developer of Sky Village and it was not long before he paid us a visit and took us on a tour of some of the observatories. One dome was located at 6500 feet and housed a 24"RC with complete high speed remote operation. He explained that the owner was selling the observatory scope and we could get it for a cheap $4.5M. (yea right) For those of you wondering what does it cost to have property in Portal it is surprisingly inexpensive. The local real estate office had parcels of 4 acre lots for as little as $30k. Of course if you want a mountain top expect to pay about $160k. But then there's the cost of the road to the top $700k, services, buildings and the scope.

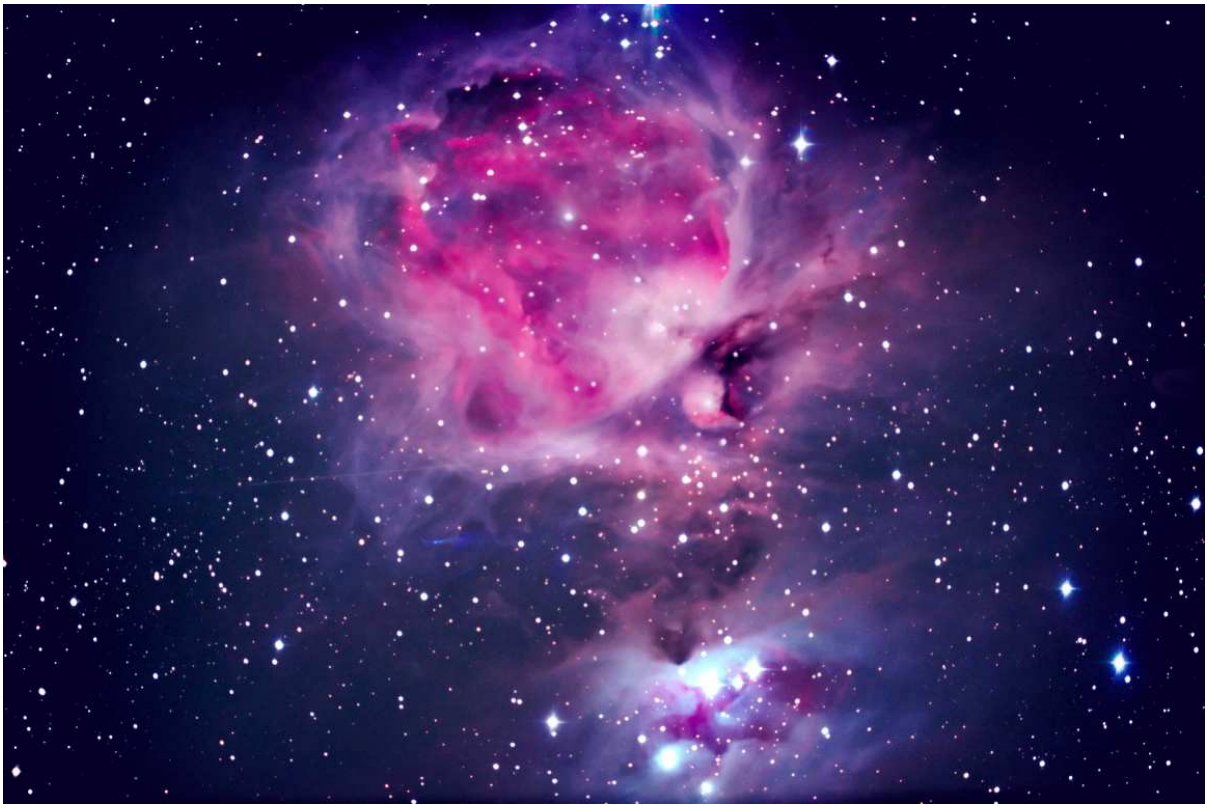
One night out of know nowhere a gust of wind came up and toppled my laptop to the ground. That I thought was the end to my astrophotography for this trip as the laptop received a critical blow. I tried to look on the brighter side as visual observing here must be second to none. Here's hoping for clear sky's.

Jack and Alice Newton the founder of Sky Village http://www.jacknewton.com/ paid us a visit the first day. Knowing he is probably the worlds most accomplished Astrophotographer I hinted I would like a tour of his place. To my surprise he was as excited about having a visitor as I was about going to his place. Jack has two observatories and about 20 scopes. Too many to list but some of the highlights are the new 20" Max. He is a beta test for Meade so he gets to play with it for free. Many 14" and 16" scopes which are remotely operated for different projects. Also a 7" APO, that is as at least 5 feet long. One project he is part of is a super nova search which he flickers every morning for about 1 ½ hours. He found one while I was there, he now has 27 discovered Nova's to his credit. Jack is living the astronomy dream, and he knows it.

One night while at Jack's he offered (at a cost) to allow me to take photo's using his equipment and then he would provide me with 4 hours of instruction on how he digitally develops photo's. Jack suggested we use a C14 Hyperstar at F1.8 as the seeing was poor, really poor. The actual goto's and photo time took less than one hour for us to complete enough data to produce lights with enough information complete two outstanding pictures of M42 and the Rosette that I have attached to this article.

We sat in is warm room the whole time, except during the photo run, when he took me to the other observatory and we looked at the Flame Nebula and M42 with the 20”. I could not believe the color and detail that 20” can bring to the table, I can only imagine what would be possible on a good night. I hope you enjoy the pictures as much as I did creating them. As it turned out we only had about 4 days of mediocre seeing and if it was not for Jack I would have been very disappointed.

We will go again if for no other reason then to spend time with our new friends and with a little luck get some better skies.



Website: http://www.hamiltonrasc.ca/

Observatory Phone: (905) 689-0266

E-Mails:

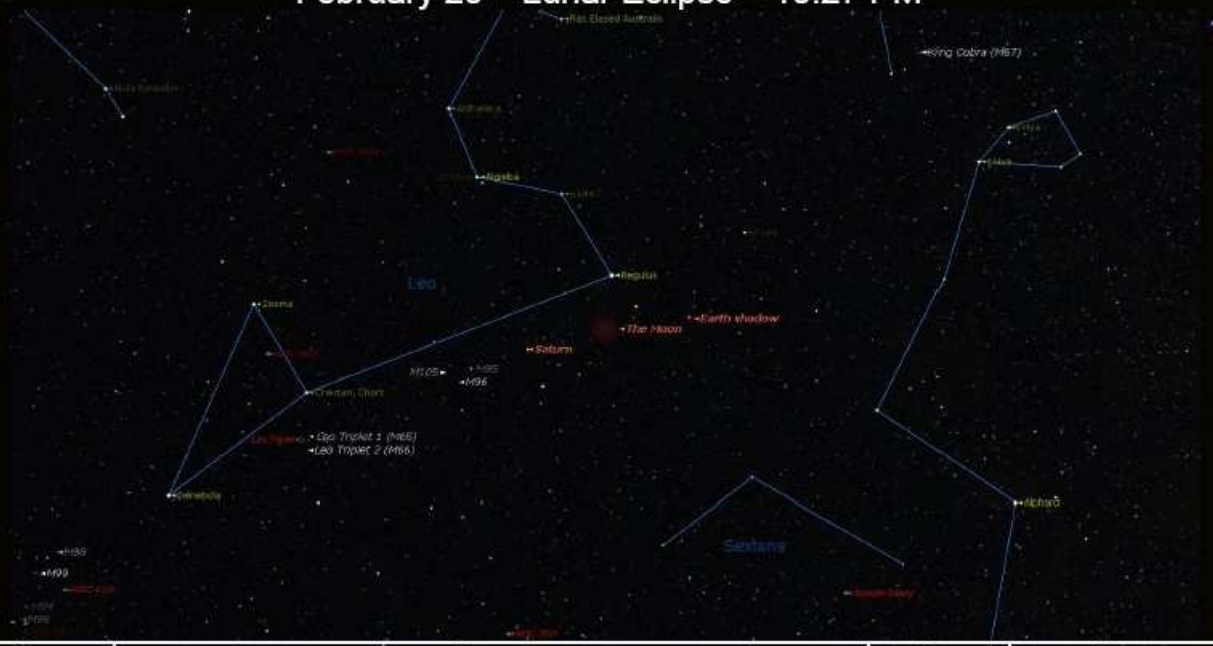
General Inquiries:	hamiltonrasc@hamiltonrasc.ca
President:	president@hamiltonrasc.ca
Secretary:	secretary@hamiltonrasc.ca
Treasurer:	treasurer@hamiltonrasc.ca
Orbit Editor:	orbit@hamiltonrasc.ca
Web master:	webmaster@hamiltonrasc.ca

Location: 576 Concession 7 East, Flamborough ON

Mailing Address:
Hamilton Centre, RASC
Box 1223 Waterdown, Ontario
L0R 2H0

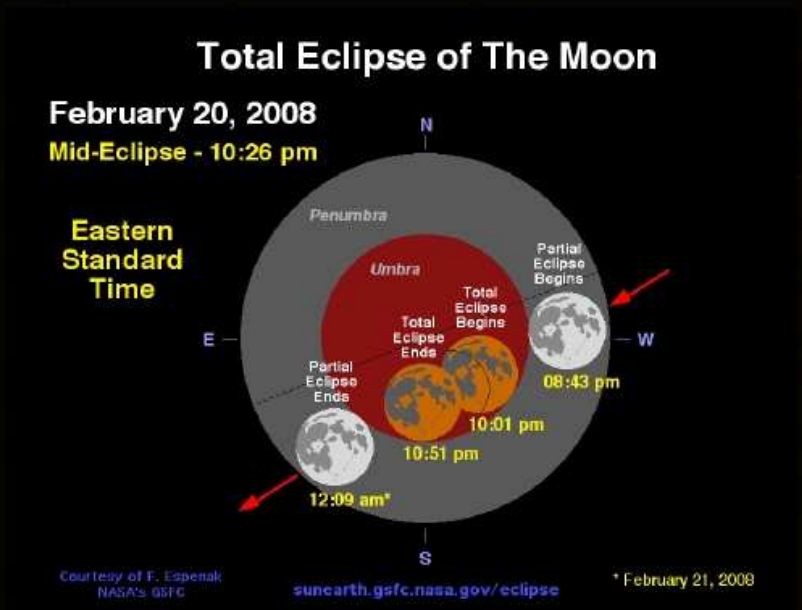
Large Magellanic Cloud. Photo by Steve Barnes from San Pedro de Atacama, Chile.

February 20 – Lunar Eclipse – 10:27 PM



Date	Events	Sun		Moon		
		Rise	Set	Rise	Set	Phase
Wednesday February 20	**Eclipse of Moon 22:27** Eclipse type: Umbral Moon enters umbra: Feb 20 20:45(local time) Moon enters totality:Feb 20 22:02(local time) Middle of eclipse: Feb 20 22:27(local time) Moon leaves totality: Feb 20 22:52(local time) Moon leaves umbra: Feb 21 00:09(local time)	07:14	17:58	17:42	07:01	1.00

February 20 – Lunar Eclipse – 10:27 PM



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February 14 – Pleiades and the Moon – 7:30 PM

Date	Events	Sun		Moon		
		Rise	Set	Rise	Set	Phase
Thursday February 14	**Pleiades 0.3°S of The Moon 07:11** Invisible from current location (below the horizon). Nicely placed late the previous night (Feb 13) or soon after dusk this evening In constellation Taurus Pleiades magnitude 1.20	07:23	17:50	10:53	02:02	0.60

February 24 – Saturn at Opposition – 4:34 AM

Date	Events	Sun		Moon		
		Rise	Set	Rise	Set	Phase
Sunday February 24	**Saturn at opposition 04:34** Saturn in constellation Leo Magnitude 0.09	07:07	18:04	22:11	08:20	0.89