Orbit

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Roger Hill, Editor

It's often been said that into each life a little rain must fall. Occasionally something comes along that deeply saddens you. So it was with a letter that was sent to me recently. It was from a former member. I read everything he had to say, and at first I was going to take the time and answer. Then I was going to reply in Orbit, but that didn't feel right, either. In fact, I had a page written , but when I re-read it, I decided that it would change nothing, nor would it alter any minds. Ultimately, it would serve no purpose, so the entire page was deleted, unsaved and is now irretrievable.

So, onto more positive things.

I did indeed take my Williams Optics 80mm ZenithStar with me on the cruise ship last month, but it saw very little use. The shiop rolled too much, and there was not a single clear night. There were a couple of evenings with some large-ish sucker holes, but by and large, the weather was not conducive to astronomy. It was impossible to get away from the lights on the ship, too. The daytime was not much better, either. It rained most mornings, and a couple of storms that went through the area roiled up the sea floor enough that the snorkeling was not the best. Visibility in Bonaire, where I took a "Discover SCUBA" trip was only around 50 or 60 feet, compared with the normal 200 feet, according to the dive master.

Still, it was my first cruise, and although I'd prefer to have been on an island, I could certainly get used to the food and the exquisite service!

The snow has started to fly, and I still have my wooden pier in place, so it looks like it will be April before it's replaced.

This months front cover image was taken by Gary Colwell from his Split Rock Observatory. Gary will soon be replacing the Infra Red rejection filter in his Canon XSi with one from Baader Planetarium that will allow him to capture Hydrogen Alpha. I had planned to put one of Andy Blanchard's recent images on the front, but it was of M31, which was also the subject of our front cover last month. Another candidate was of Nova Carina, as seen from Chile, but ultimately, it came down to the fact that I enjoyed Garys picture more! You'll find these, and other images, inside.

You'll find a quick article from Andy on remote imaging, the usual humour, and other things, besides.

I hope you enjoy it.

From the Keyboard of the President

You may not have known it, but John Williamson underwent emergency gall bladder surgery earlier this month. I'm sure I speak for the vast majority of the members of the Hamilton Centre in wishing John well as he recovers.

It had the unforeseen side effect, though of forcing the cancellation of the November Board meeting. This was indeed a shame, as my pleading in last months Orbit did not fall on deaf ears, and I had hoped to share with you some delightful news, but it won't be official until the Board has voted on it, and I'd rather not jump the gun. Gary Colwell was also not able to make it that evening, as he was in the Dominican Republic. He should have been in Cuba, but it lay in the path of a hurricane, so his tour company got him into the Dominican, instead. Anyway, despite the mostly cloudy skies (does November have any other kind around here?) at the Observatory that night, we opened up the roof of the Chilton building and looked through the big scope. We also did some astrophotography, trying our luck taking pictures of the Moon through the 16" with the cameras on our difital phones. Andy's turned out the best, so it's presented on the next page. The camera is the one on a BlackBerry Bold, the eyepiece was the 55mm Televue Plossl, and the camera was hand-held. It's unknown what the exposure was.

So, everyone out there...can you do better? Here's a bit of friendly competition for you. Take your best picture of the night sky, or an object in it, hand held, with the camera in a cell phone. I'll publish a selection in Orbit next month. The best one may even make the cover!

I'm just putting the finishing touches to the list of speakers for the first half of next year, and I can tell you that if everything works out, we'll have had the most eclectic list of speakers seen in many a year. Stay tuned...some of the topics you could see will be about giant telescopes, robotic observatories, observing with telescopes in space, advances in amateur astronomy equipment, and the International Year of Astronomy. As far as the meetings go, I'd like to put more of YOUR stuff in there, too. So, if you have a project you're working on, images you've taken, or would like some help with , then bring them out.

Even though it looks like we'll be expanding the Board a little, we could still use another able body or two (guess I couldn't help but continue the litany of pleading).

Finally, please be advised that the first Thursday of 2009 is January 1, so we'll delay our meeting for a week until January 8th, 2009.

Have a safe and happy holiday season,

Roger Hill

Humour

Bob Riddle, Director
KCMSD Planetarium
Kansas City, MO
(WASHINGTON D.C.)

The US Congress today, in an effort to rectify the current stalemate with the President over the continuing resolution has made a dramatic announcement. In an effort to reduce the NASA budget, a resolution was passed today to downsize the solar system. According to an unnamed congressional staffer, House Republicans felt there has been "too much redundancy in the solar system" and that streamlining the 4.5 billion year old planetary system is long overdue. Such action would give NASA fewer places to go and this would allow the agency to carry out its space exploration goals within the funding profile that the House proposed earlier this summer.

"Look, we have three terrestrial planets" said Congressman Rip U. Apart (R, Del.), "and only one of them really works! So why not get rid of the other two and clean up the neighborhood?" Most subcommittee members felt that while downsizing was definitely in the cards, eliminating both Mars and Venus was going too far. "We have too many international commitments to Mars." said Rush N. Hater (R, Calif.). "So I think we should keep Mars and dump Venus. Its too hot to live on, and liberal Democrats keep using it as an example of what global warming can do. So from a political and practical point of view, Venus has got to go."

Also at risk is the planet Mercury which lacks support because of its small size and poor visibility from Earth. "Who needs it?" asked Congressman Newt Onian (R, N.C.). "Have you ever seen it? I haven't. So what good is it? We just don't need useless planets. And speaking of useless planets, what about the asteroids? If you've seen one, you've seen them all. So I say we ought to get rid of the little boogers once and for all."

However, the downsizing recommendations do not stop with the terrestrial planets. The resolution also calls for a reduction in the number of gas giants which contain most of the planetary mass in the solar system. Most subcommittee members favor retaining Jupiter and Saturn, and eliminating Uranus and Neptune. "Jupiter employs the most molecules, and Saturn has those pretty little rings everyone likes." said Rep. Con Mann (R, Fla.). "On the other hand, Uranus is a bore and its rings are dirty. And Neptune, for God's sake, is just too far away. So begone with those ugly bruisers."

But the influential Wright I.M. Fornow from South Carolina has publicly announced he will fight to eliminate Saturn. Fornow is especially miffed by NASA's success thus far in keeping Cassini, the next mission to Saturn, alive which he feels is waste of taxpayers money. "If there ain't no Saturn, then there ain't no Cassini" he exclaimed. The congressman also expressed concern about sending back-to-back spacecraft bearing Italian surnames to the outer planets (The Galileo spacecraft arrives at Jupiter this December).

The subcommittee was unanimous in its views towards Pluto which they deemed a moral misfit. "Now here's a planet we can definitely do without." continued Fornow. "A few years ago, it was farthest from the sun. Now its not. Its just too confusing. And now they tell me its really two planets instead of one. What the hell is going on here?"

The resolution must now be presented to the entire House, where it is expected to pass easily since only a minority of Representatives have constituents on the affected planets. NASA Administrators have vowed to resist any further reductions to the solar system, saying that "NASA has expended considerable effort to make the planets cheaper, faster, and better. Much of this work would be wasted if the solar system were downsized."

Critics say, however, that reducing the number of planets will not produce the expected savings to taxpayers. Textbooks, they note, would have to be revised to reflect the new arrangement, and facilities would need to be constructed to remove the planets themselves. The resolution is also likely to draw strong opposition from religious fundamentalists who have long opposed the elimination of any of the biblical planets. Thus, the matter is still far from resolved.

Donald Simanek.

A Fun Project by Andy Blanchard

Last year I joined a on-line community of telescopes. The scopes are located around the world and can be used for photography or photometry-based projects. The link to the site is: http://www.global-rent-a-scope.com/

I will be writing about a project I have just completed. My goal was to figure out how to use the Global Rent A Scope (GRAS) system and produce a decent image. As some of you know I am working towards a remote set-up in Arizona and Chile. So before I got too far in my planning I thought it best to see if I would enjoy remote photography, and I do.

I choose a Tak FSQ 106 as my scope and a STL-11000M as my camera. The set-up is located in New Mexico and my target was M31. The programming process is remarkable simple. You first watch a video on how to program your project. My first few attempts went well and I decided that it was time to launch a complete routine. I took 6x300 sec luminance, 8x600 of R, G and B with no binning.

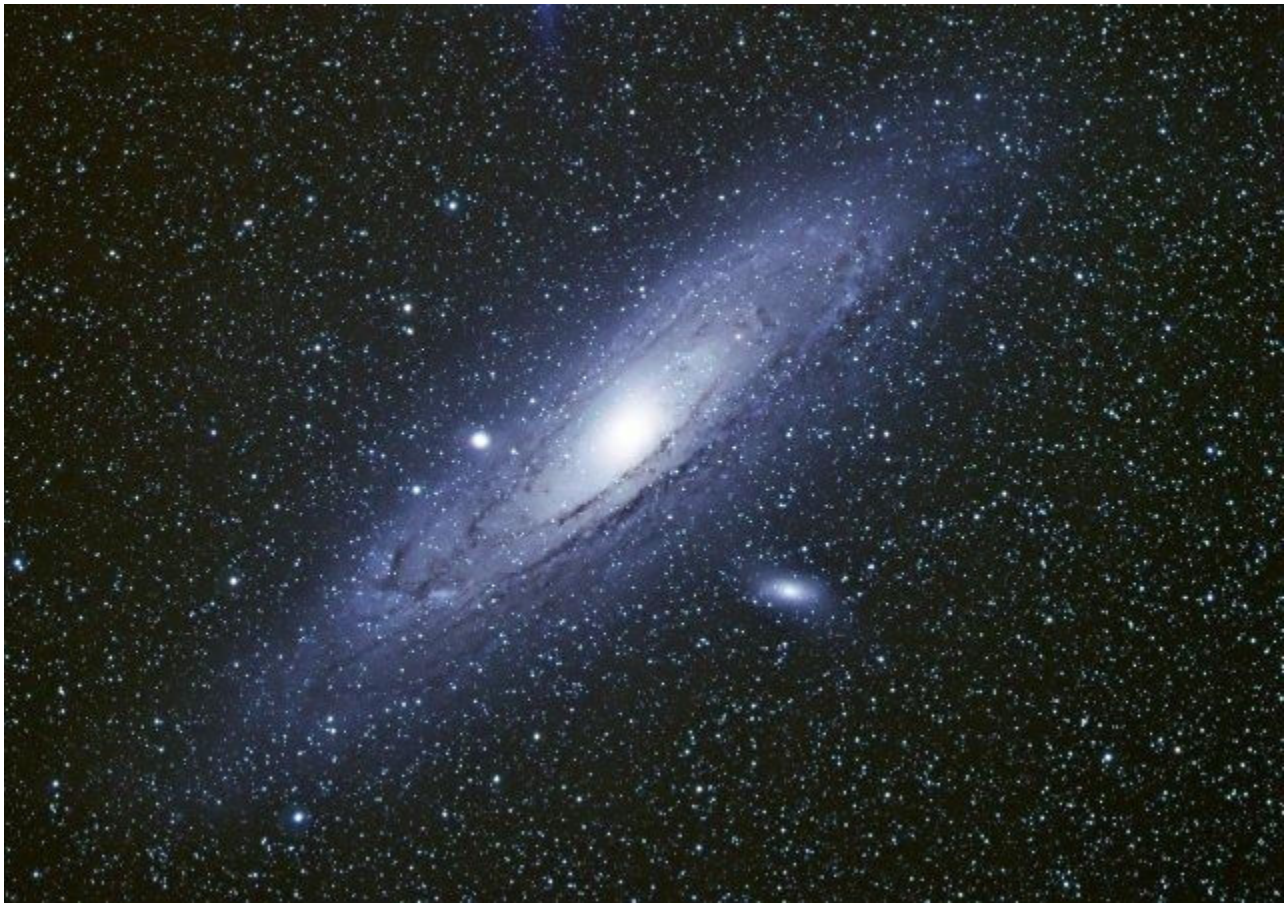
The GRAS membership has a vast amount of support with videos and processing tips that any beginner who has the time can easily climb the astrophotography mountain. The system saves the pictures to a ftp server with master flats darks and bias for download after the run is complete. The files are saved in a format that version 5 of MaximDL can bulk process. Yes I said bulk process, all you do is point the program to the right directory and what you get is a final file already calibrated aligned and stacked.

I end-processed the photo entirely in Photoshop. One of my goals this year was to master the use of this very complex piece of software. While I have a lot to learn I feel I am making progress. The picture was stretched, flattened, color balanced. Then repeatedley stretched and curve adjusted to maintain the correct balances. I am also experimenting with masks and filters to accomplish fine detail adjustments. A great website to learn how to use Photoshop from beginners to advanced techniques are the following:

http://www.rdelsol.com/Presentations.html

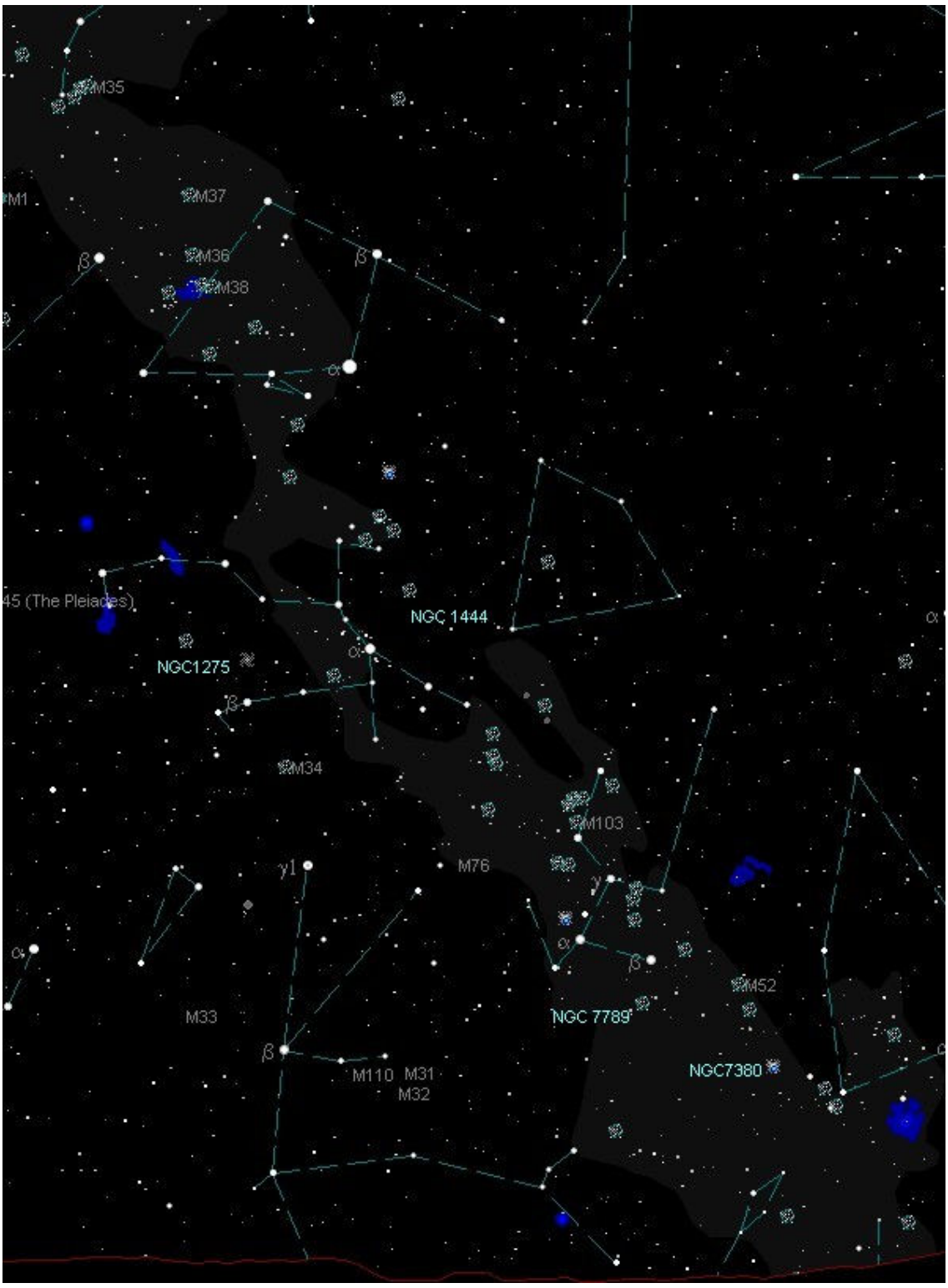
http://www.astropix.com/HTML/I_ASTROP/TOC_AP.HTM

I hope you enjoy the picture of M31 as much as I enjoyed creating it.



The Sky This Month
December 2008 By Gary Boyle, Ottawa

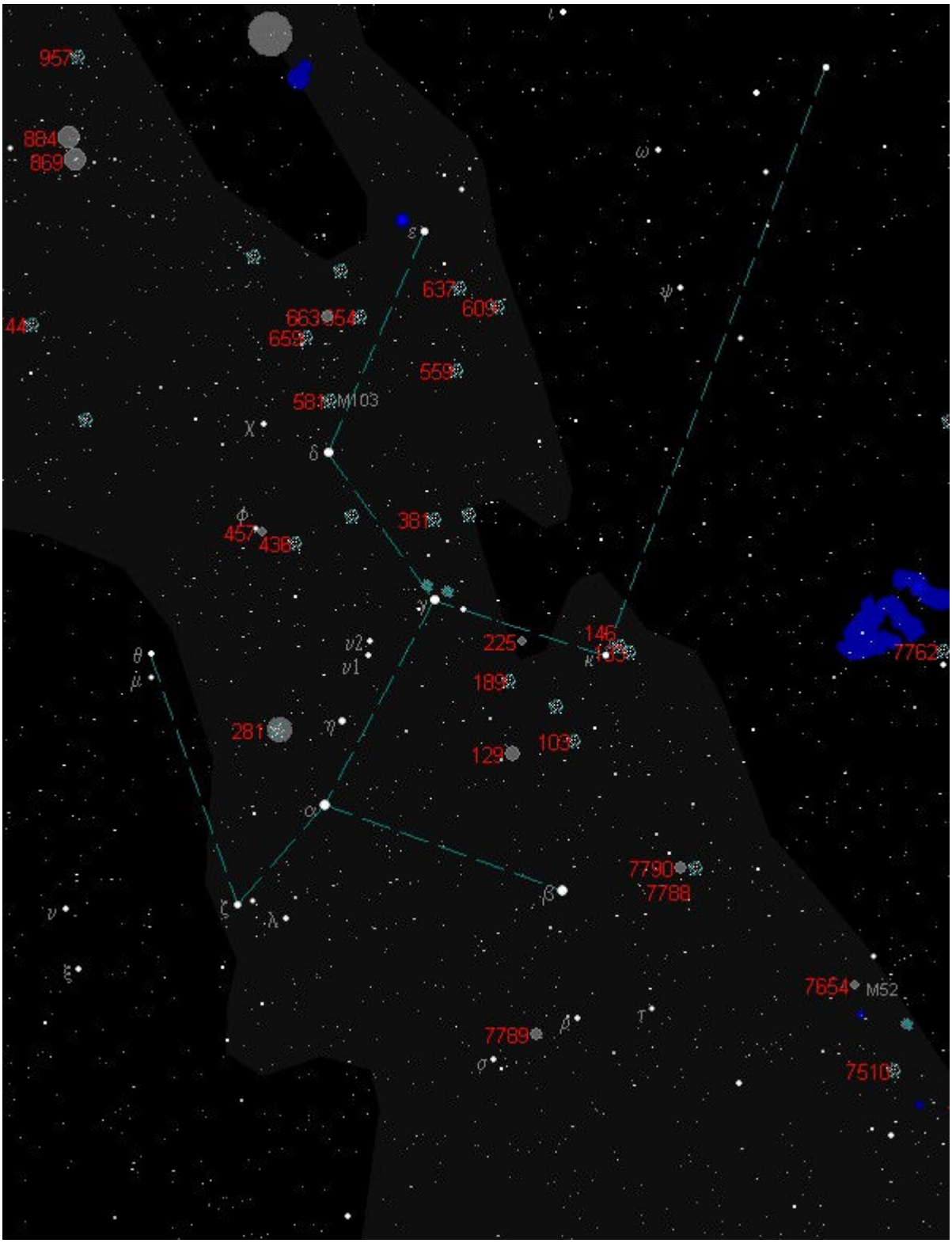
Night Of A 100 Clusters



This is the time of year when the Milky Way stretches overhead in all its glory. With Cygnus the Swan setting in the North West all the way east across the Milky Way to Orion the Hunter in the South East, the wealth of open clusters is staggering. Observing in December has its benefits.

First of all, darkness falls in late afternoon. One can easily start an observing run right after dessert, but help with the dishes first. This is in stark contrast to starting around 10:30 p.m. (or later) locally at the end of June when the Sun is highest on the ecliptic.

Next point is the weather. Although we are not yet locked into winter's icy grip, clear nights can still be tolerable. If you wait long enough later during the night, you can get your early winter observing done without have to wait for January and February. I hope we do not see another winter like last year.

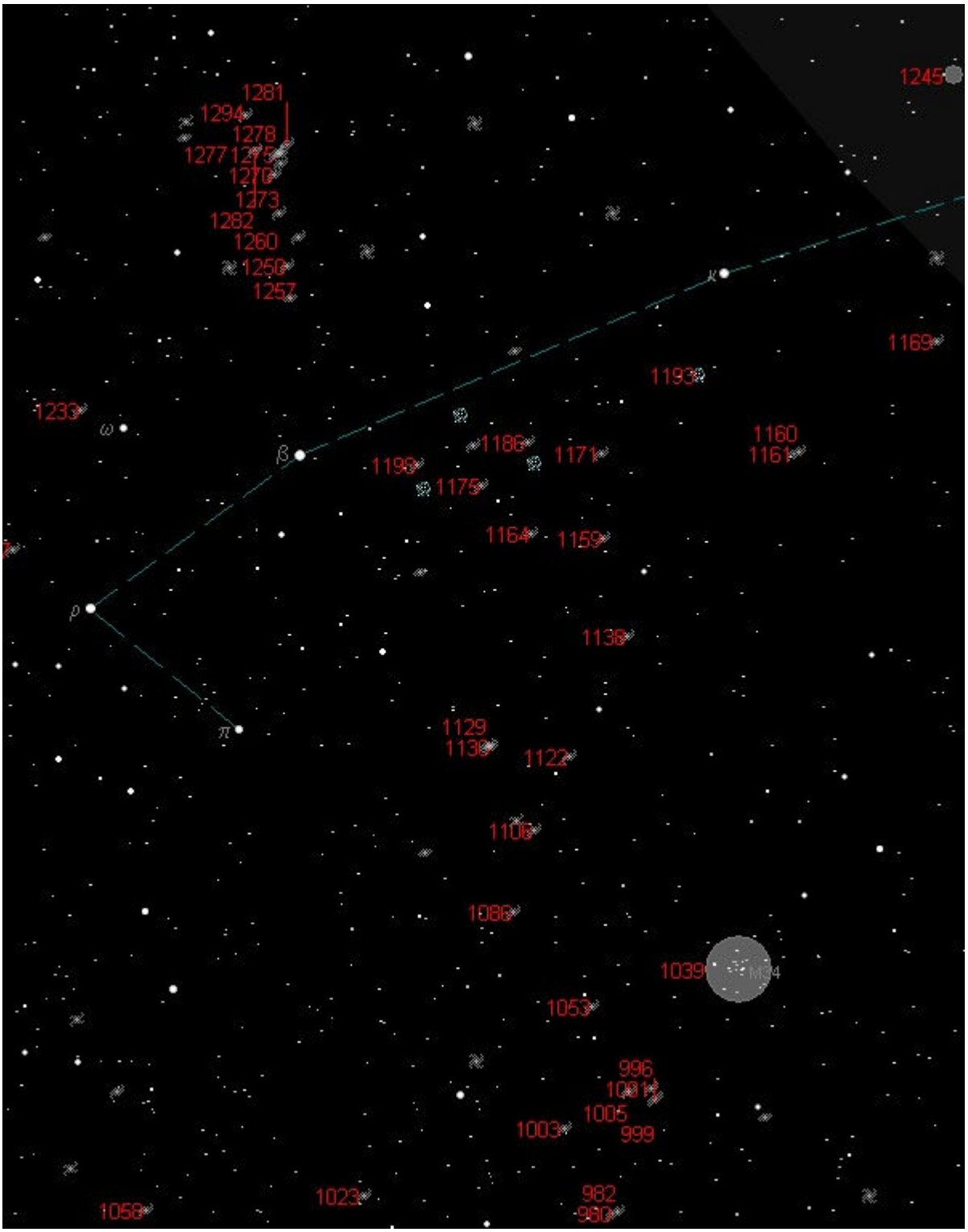


With these points in mind, we now have a chance to catch our summer time favourites such as the Ring Nebula catalogued as M57 as well as M27 – the Dumb-bell Nebula, one last time. More commonly re-ferred to as plane-tary nebulas M57 and 27 are classic examples of the subtle death of a star – the same fate that awaits our Sun in another five billion years or so.

Then we have the feathery filaments of the Veil Nebula. Opposed to the planetary nebula, the Veil Nebula is the wispy remains of a star that ex-ploded some 10,000 years ago. This supernova remnant is faint. If it weren't for the star 52 Cygni to guide the way, it would be a chal-lenge to locate.

With ample ob-serving time to scan the heavens from Cygnus to Orion, only a lawn chair and binocu-lars is all you need to nail down doz-ens of open clus-ters. Of course a telescope will show more stars, but some of these targets are larger than a telescope's field.

No matter which instrument you choose to hunt with, the famous Double Cluster in Perseus should be your first target. Consisting of NGC 869 and 884, they are located some 7,400 and 7,700 light years (ly) away. A couple of hundred light years separate the two balls of stars. I once saw this awesome cluster in a 17 inch f/4 telescope under dark skies. In a low power eyepiece, the stars were almost too bright but the over all view took on the appearance of diamonds on black velvet. Even naked eye, this 4th magnitude tar-get is fairly easy to locate under dark skies.



Located between King Cepheus and Queen Cassiopeia is a delightful blend of an open cluster NGC 7380 along with the nebulosity of Sh2-142. This object was discovered by Caroline Herschel in 1787 and is labeled as H VIII.77 in her brother's catalogue. NGC7380 apparent size is stated at 25 arc minutes. It lies 7,200 ly away and is listed as magnitude 7.3. Today's astrophotographers are doing excellent work in portraying the sky. In this case using filters bring out the true colour of hydrogen associated with NGC 7380.

Another superb and rich open cluster is NGC 7789 located in Cassiopeia. From Beta Cassiopeia aka Caph, head south west about 3 degrees and you will be rewarded by this magnitude 6.7 dense cluster of suns.

Even some open cluster can be a challenge. On that note, might I suggest NGC 1444 in the constellation Perseus? Only two stars can be seen directly. Averted vision is required to two dozen fainter stars, all within a four arc minute tiny patch of sky. Don't let the listed 6.6 magnitude fool you. It's not easy visually.

Of all the clusters at your disposal, M37 in Auriga is my favourite. Measuring three quarters the angular width of the moon, this magnitude 5.6 gem is a most. Astronomers have detected seven variables within the cluster. Three are confirmed eclipsing binaries, two are of the pulsing variety while the last two might be eclipsing but no confirmation on that. M37 is the left most cluster of a nice chain of clusters along with M38 and M36.

For you galaxy lovers, Perseus is your constellation with fifty or so examples. One such galaxy would be NGC1275, the brightest at magnitude 11.6 in a chain of about ten fainter galaxies called the Perseus cluster of galaxies. NGC1275 is only 7 million light years whereas the cluster is estimated at a quarter of a billion light years from us.

Jupiter, Venus and the thin waxing crescent with show an amazing conjunction When the sun sets on Dec 1st. Let's hope for clear skies for this great Kodak moment. Throughout the month of December, Venus brightens to magnitude -4.4 and will dominate the skies except for the Moon. By the end of 2008, Jupiter will only be seen in twilight.

But as we bid farewell to the king of the planets, we greet the king of the rings – Saturn. By the middle of the December, Saturn will rise around midnight locally. But when you swing your scope for the first time on the ringed world, you will notice the rings are not very prominent.

Fact of the matter, the rings will tilt even more than this until the night of September 4, 2009 when the rings will be edge on. Unfortunately Saturn will be a mere eleven degrees to the east of the Sun and appear low in the western horizon. At least with the rings pretty well out of the way, you can concentrate on spotting the Saturn's moons

Well you might say, there is always next time. The next plane crossing will be March 23, 2025 but again, Saturn will be ten degrees to the west of the Sun and low in the east before sunrise. The atmosphere will effect any clear seeing. At least the October 15, 2038 plane crossing, Saturn rises some two and a half hours before the Sun. A little less than 30 year to go.

Object	Type	Magnitude	Coordinates
M 38	Open cluster	6.4	RA:05h 28m Dec:+35d 50m
NGC1275	Galaxy	11.6	RA:03h 19m Dec:+41d 31m
NGC1444	Open cluster	6.6	RA:03h 49m Dec:+52d 40m
NGC188	Open cluster	8.1	RA:00h 44m Dec:+85d 20m
NGC7086	Open cluster	8.4	RA:21h 30m Dec:+51d 35m
NGC7380	Open cluster	7.2	RA:22h 47m Dec:+58d 06m
NGC7789	Open cluster	6.7	RA:23h 57m Dec:+56d 44m

Full Moon aka the Cold Moon occurs on Dec 12th at 16:37 universal time (UT). This will be the largest moon of the year and higher than normal tides are expected. Moonlight will also hamper viewing conditions for the Geminid meteor shower on the night of the13th. The IMO predicts about 120 meteors to seen per hour but will drop with moonlight. Still – bundle up and head out to a flat area and enjoy the show. Fragments from the mysterious asteroid 3200 Phaethon will strike Earth's atmosphere as only 35 km/sec and will produce a beautiful slow moving display, despite the glaring Moon.

At the time of writing this article, the Space Shuttle is wrapping up it mission at the International Space Station. The Station is still growing in size, making it easier to locate. There is however something else orbiting the Earth. Is it a bird…is it a plane…no it is the lost tool belt worth about $100,000. And congratulations to Kevin Fetter of Brockville, Ont. who was able to capture the back pack sized tool kit. Click on the 900 kb video in the linked article.

And it is that time of year when we wish for that first telescope under the Christmas tree. When it comes to making that purchase for that special someone, make your purchase at a reputable telescope dealer. These people are dedicated to the hobby and will guide you on the right path. Most dealers repair on site and some might even have used ones for sale. Stay away from the department store and camera shop specials. They might seem like a great bargain but in the long run, will probably end up in your next garage sale. If you are still not sure, ask members of your local astronomy centre or astronomy club for help in choosing the right instrument.

And lastly, winter solstice will occur on the 21st at 12:04 UT. This also marks the beginning of summer in the southern hemisphere. From here on, our nights will begin to get longer as the weeks fly by. Have a happy, healthy and safe holiday season.

Till next year, clear skies everyone.

Gary Boyle

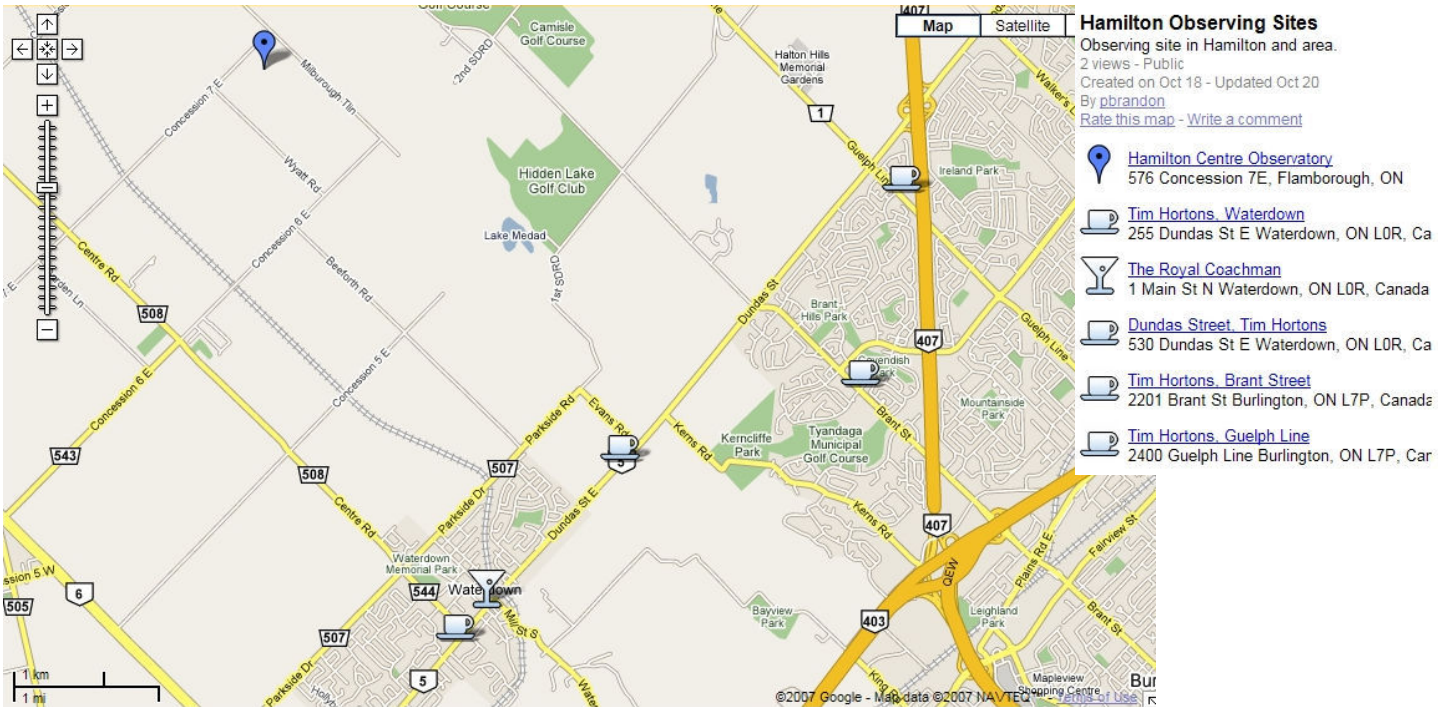
What you missed last Month

Vic Cooper of the Mississauga Centre was our guest speaker for November. I had got in touch with Randy Attwood and asked him if he had a speaker that could fill in on fairly short notice. He sent along Vic, who, he promised, gave an excellent talk.

Well, you missed a good one if you weren't there. At the end of his talk on The Astronomical Theory of ice Ages, Vic offered to answer a few questions, and almost half an hour later we had to put an end to what turned into a pretty good discussion, too! Which continued on when we went to Crabby Joes afterwards!

I was told, after the meeting, that Vic was the best speaker we had had in years. And this was from a veteran member who's been coming to meetings since we met at McMaster. Which means he was also there the night of the worst speaker we ever had.

What are you going to miss in the coming months? Nothing, I hope. If everything works out, we've got some great speakers coming, and a diverse range of topics, too! The International Year of Astronomy is looking really good to be part of the Hamilton Centre.



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Nova Carinae 2008

Steve Barnes took this image of the current nova near Eta Carinae. He had been imaging near the area the night that it flared up, but the mosaic he was taking was a frame or two away from the area. The exposure was 3 seconds, on a 20” Planewave ‘scope.