



O r b i t



All the Known Galactic (or nearby) Supernova in Recorded History

Name (=date)	Vpeak	Type	Remnant
SN 185	-8?	Ia?	Possibly RCW 86 (in Cen)
SN 1006	-7.5	Ia	SNR 1006 (in Lupus)
SN 1054	-6	II	Crab Nebula (in Taurus)
SN 1181	-1	?	Possibly 3C58 (in Cass)
SN 1572	-4	Ia	Tycho's Supernova Remnant
SN 1604	-2.5	Ia?	Kay's Supernova Remnant
Cas A (1680?)	+6?	IIb?	Cassiopeia A Remnant
SN 1885A	+6	?	SNR M31
SN 1987A	+3	II-P	SNR 1987A (in LMC)
SN 1993J	+10.8		SNR M81; also known as LED
SN 1994I	+10.5		SNR M82; also known as SN94

The Official Publication of The Hamilton Centre,
Royal Astronomical Society of Canada

Volume 50, Issue 4: February, 2018

Issue Number 4, February, 2017

Roger Hill, Editor

Welcome to the 50th Anniversary edition of Orbit! I was hoping to do something really special for this issue, but apart from some review of past issues, what you'll see in these pages won't differ that substantially from many of the others that I've produced.

What I have done, though, is to scan in every paper edition of Orbit that Bob Speck gave me. There are a few holes in the collection, but remarkably few, all things considered.

I had hoped to use some Optical Character Recognition on them all, so that they could be searched and indexed, but that has proven to be a step too far. For instance, consider this bit written by John Hudak in January 1976:

Observer's Group

December's Observer's night turned out to be a disaster—more or less; With the promise of clear skies, Ambrose Moore, Les Nagy, Dave Pearson and myself trekked out to the observatory site only to have it cloud over by the time we got there. However, through holes in the clouds, we did manage to glimpse the moon, Mars, Jupiter, and even a few meteors. Not a total loss I suppose.

Which turns into: Observers Group

DeceEberis Observer's night turned out to to a-disaster- more-or less; IUth the promise of clea-i; skies, Ambrose Moore, Les Nagy, Dave Pearson and - myself-trekker-87a to the observatory site only have .it-cloud over the time WE got there. Howeveri through htles in the:a-lauds, we did manage to glimpse the moon, Mars, Jupiter, and even ajeirmeteors. Not a total_ loss I ..._, • sup-pose.- _ _____ — . .

So I gave up the idea of creating text from the old pages, and just created a 300dpi greyscale image of each page so that perhaps our future AI Overlords can do a better job!

This means that the old Orbits occupy many megabytes in size, because a 300dpi jpeg is just a bigger file than a page of text. All of the Orbits that I have scanned in, from 1968 to 2000 occupy more than a gigabyte of space. I'm going to have to find out if there is enough extra storage space on the server we use for the Forum for it.

The other side-effect for me was that I got a chance to re-visit some of my personal history with the Centre. There were some things hazily remembered and others I'd completely forgotten. Things like the fact that in the January, 1975 Orbit I read that Les Powis and I broke the ground for the first observatory building—now known as the Butler Building. I do remember spending many Saturday mornings with Les Powis and others clearing out the trees, but I'd forgotten about the ground-breaking.

What also gave me pause on several occasions were the obituaries of people I'd known like Ken Chilton and Les Powis, Ian Stuart and Bill Fautley, among others. There were also observing reports and meeting minutes about friends who have now moved on, some of whom I have kept in touch with, like Ann Tekatch, Charles Baetsen and Grant Dixon. To say nothing of Les Nagy, mentioned above.

So, no matter who you are, whether your membership predates mine, like Robin Allen, Bob Speck and Peter Ashenhurst, or if you're new to the Centre, I hope you continue to enjoy Orbit for a long time to come.

Roger

What's up in the February Sky from Troy McCoy

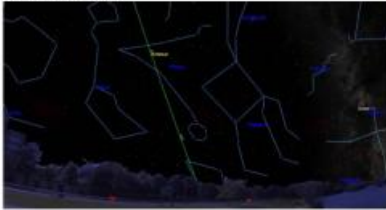
February 1 – Moon covers Regulus

- The waning gibbous moon will occult the bright star Regulus for skywatchers in Scandinavia, northern Greenland, Svalbard, northern and eastern Russia, northeastern China, NW Alaska, and most of Japan (inset). When the moon rises in early evening in the Americas, it will already have shifted along its orbit (green line) to a position about 5 degrees below the star.



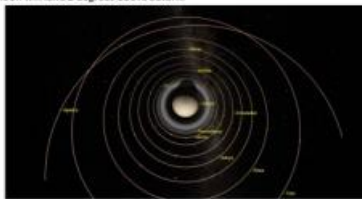
Feb 2 - 15 – Zodiacal Light

- For about half an hour after dusk during the two week period preceding the new moon on February 13, look west-southwest for a broad wedge of faint light rising from the horizon and centered on the ecliptic (green line). This is the zodiacal light - reflected sunlight from interplanetary particles of matter concentrated in the plane of the solar system.



February 11 - Saturn

- Saturn will be easily observable in the SE pre-dawn sky during February, appearing as a yellowish, visual magnitude 0.5 object among the stars of Sagittarius. The widely spaced chain of morning naked-eye planets - Saturn, then dimmer Mars to its upper right, and brighter Jupiter farther along the same trend, will nicely define the plane of our Solar System. On the morning of February 11, the old crescent moon will land 2 degrees above Saturn.



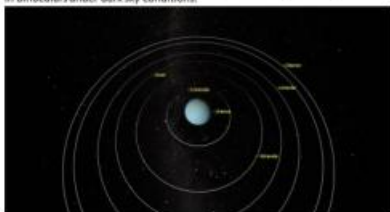
February 16 - Venus

- In early Feb, Venus is positioned very low in the western sky after sunset, difficult to discern within surrounding sky glow. Each evening through the month, our sister planet will climb higher and become easier to see. In early evening on February 16, the very young crescent moon will sit 2 degrees to the upper left of Venus. Look for the pair of objects low in the western sky for a short period after sunset.



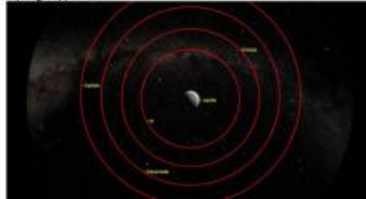
February - Uranus

- During February, blue-green Uranus will be well placed for observing in the southwestern evening sky, positioned between the two chains of faint stars that link the fishes of Pisces. By month end, the planet will be setting about 10 p.m. in your local time zone. At visual magnitude 5.8, Uranus is bright enough to observe in binoculars under dark sky conditions.



February 7, 8 - Jupiter

- Jupiter will shine in the eastern pre-dawn sky during February, moving eastward through central Libra. On the mornings of February 7 and 8, the waning last quarter moon will appear about 7 degrees above and beside Jupiter respectively. At the beginning of the month, Jupiter will rise about 2 a.m. local time zone, and then rise closer to midnight at month's end. Meanwhile, the planet will grow slightly brighter and larger in telescopes as Earth slowly draws closer to it ahead of this spring's opposition.



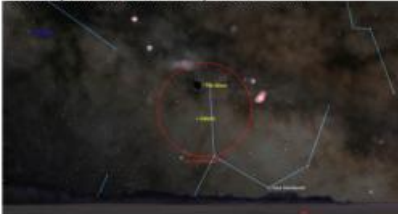
February 9 pre-dawn – Moon meets Mars and Asteroid Vesta

- Continuing east through the pre-dawn planets, on the morning of February 9, the waning crescent moon will pass 4 degrees to the upper left of reddish Mars, above the constellation of Scorpius. Look for the pairing low in the SE sky between about 3:30 and 6:30 a.m. in your local time zone. Meanwhile, the major asteroid (4) Vesta will be positioned only 1.3 degrees to the upper left of the moon.



February 11 pre-dawn – Old Moon meets Saturn

- Completing its eastward passage through the pre-dawn planets this month, on the morning of Friday, February 11, the old crescent moon will pass only 2 degrees above the yellowish planet Saturn. Look for the pair of objects low in the south-eastern sky between 5 and 6:30 a.m. in your local time zone.



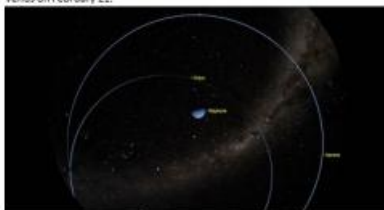
February 23 at 19:00 EST – Moon near Aldebaran

- On the evening of the 23 in the SW evening sky, the first quarter moon will be positioned a few degrees to the upper left of Aldebaran in Taurus. Hours before, skywatchers with telescopes in Bermuda, northeastern North America, Greenland, and most of Europe can see the moon's path (green line) carry it across Aldebaran in daylight.



1st week February - Neptune

- Blue-tinted Neptune spends February located about one degree east of the star Lambda Aquarii in Aquarius. With a visual magnitude of 8.0, the distant planet is only observable with telescopes during early evening for about the first week of February. After that, it rapidly descends into the western twilight, passing close to Venus on February 21.



February 7 & 8, pre-dawn – Moon hops over Jupiter

- In the eastern pre-dawn sky on Wednesday, February 7, the waning last quarter moon will sit 6 degrees to the upper right of the very bright planet Jupiter. The next morning, the moon's orbital motion will carry it to a position about 7 degrees to the planet's left.



Feb. 10 pre-dawn – Mars meets its Stellar Twin

- On the mornings surrounding February 10, the slow eastward orbital motion of the red planet Mars will carry it to a point 5 degrees above its visual twin, the red star Antares. The brightest star in the constellation of Scorpius, Antares' name means "Rival of Mars". While almost exactly the same visual color and brightness as Mars, the star is about 553 light-years farther away from Earth.



February 16 early evening – Young Moon near Venus

- In the early evening on February 16, the very young crescent moon will sit only 2 degrees to the upper left of Venus. The pair of objects will appear slightly above the western horizon for a short period after sunset.



February 23 at 3:09 a.m. EST - First Quarter Moon

- At first quarter, the relative positions of the Earth, sun, and moon cause us to see the moon half illuminated - on the western (right-hand) side. First quarter moons rise around noon and set around midnight, so they are visible starting in the afternoon hours. The term quarter moon refers not to its appearance, but the fact that our natural satellite has now completed the first quarter of its orbit around Earth since the last new moon.



February 28 - 31 - Mercury

- Mercury passes superior conjunction, on February 17, making it unobservable until the last few days of February, when it will be visible briefly after sunset, sitting very low in the western evening sky near Venus. Mercury's return kicks off a very good evening apparition for northern hemisphere observers.



Sixty Years of Observing Our Earth

By Teagan Wall



Satellites are a part of our everyday life. We use global positioning system (GPS) satellites to help us find directions. Satellite television and telephones bring us entertainment, and they connect people all over the world. Weather satellites help us create forecasts, and if there's a disaster—such as a hurricane or a large fire—they can help track what's happening. Then, communication satellites can help us warn people in harm's way.

There are many different types of satellites. Some are smaller than a shoebox, while others are bigger than a school bus. In all, there are more than 1,000 satellites orbiting Earth. With that many always around, it can be easy to take them for granted. However, we haven't always had these helpful eyes in the sky.

The United States launched its first satellite on Jan. 31, 1958. It was called Explorer 1, and it weighed in at only about 30 pounds. This little satellite carried America's first scientific instruments into space: temperature sensors, a microphone, radiation detectors and more.

Explorer 1 sent back data for four months, but remained in orbit for more than 10 years. This small, relatively simple satellite kicked off the American space age. Now, just 60 years later, we depend on satellites every day. Through these satellites, scientists have learned all sorts of things about our planet.

For example, we can now use satellites to measure the height of the land and sea with instruments called altimeters. Altimeters bounce a microwave or laser pulse off Earth and measure how long it takes to come back. Since the speed of light is known very accurately, scientists can use that measurement to calculate the height of a mountain, for example, or the changing levels of Earth's seas.

Satellites also help us to study Earth's atmosphere. The atmosphere is made up of layers of gases that surround Earth. Before satellites, we had very little information about these layers. However, with satellites' view from space, NASA scientists can study how the atmosphere's layers interact with light. This tells us which gases are in the air and how much of each gas can be found in the atmosphere. Satellites also help us learn about the clouds and small particles in the atmosphere, too.

When there's an earthquake, we can use radar in satellites to figure out how much Earth has moved during a quake. In fact, satellites allow NASA scientists to observe all kinds of changes in Earth over months, years or even decades.

Satellites have also allowed us—for the first time in civilization—to have pictures of our home planet from space. Earth is big, so to take a picture of the whole thing, you need to be far away. Apollo 17 astronauts took the first photo of the whole Earth in 1972. Today, we're able to capture new pictures of our planet many times every day.

Today, many satellites are buzzing around Earth, and each one plays an important part in how we understand our planet and live life here. These satellite explorers are possible because of what we learned from our first voyage into space with Explorer 1—and the decades of hard work and scientific advances since then.

To learn more about satellites, including where they go when they die, check out NASA Space Place: <https://spaceplace.nasa.gov/spacecraft-graveyard>

This photo shows the launch of Explorer 1 from Cape Canaveral, Fla., on Jan. 31, 1958. Explorer 1 is the small section on top of the large Jupiter-C rocket that blasted it into orbit. With the launch of Explorer 1, the United States officially entered the space age. Image credit: NASA



Heavy M.E.T.U.L. Nights, or How do we keep the members we have? by Roger Hill

There was some considered, and considerable, discussion recently among Board members, that we would really like our members to be more astronomically active. We've tried a number of things over the years, including trying to revive the Discussion Group (currently inactive), as well as the NOVA course (currently on hiatus until it's been revamped by National).

Many centres have the exact same problem, and one of the people who pioneered the NOVA program—Charles Ennis of the Sunshine Coast Centre—sent along this:

My Centre struggled with that issue too. The problem when I took over as President of the Sunshine Coast Centre in 2014 was that the club was doing such an excellent job of outreach, they'd left no time to speak of for "inreach." The people looking through the eyepieces were the public, not our members. We trimmed down the outreach to just the most productive events and scheduled more observing time at our observatory, but the turnout was poor.

So, Charles started observing...actually eyeballing objects! He started with the Explore the Universe certificate and is now working on the Messier one. He's also partway through the Finest NGC certificate. Other members are working on the Lunar list.

I thought that this was a great idea, but I also know that the Board of the Hamilton Centre is a great place to generate ideas, but that they need someone to implement them. In this case, such programs should logically fall under the purview of the Observing Director. However, our Observing Director, Ron Shields, is moving to Elliot Lake. So...taking a deep breath, and since NOVA is sidelined for a little while and therefore I have some spare time, I told the Board I'd have a go at organizing something.

Our treasurer, Bill Leggett, said that while he enjoys looking at pretty astrophotos, he is not into astrophotography and just wants to see and understand the universe.

So...having heard what Bill had to say, I proposed the following "half-baked idea":

- I'll take over doing the Observing Director duties, with the aim of doing (at least) one night a month at the observatory.
- These nights will focus on the Messier, E.T.U. and Lunar certificates (hence the Heavy M.E.T.U.L nights).
- Cloudy nights will have a 30-60 minute segment based on some of my NOVA material.

I'll generally aim towards the week after a Board meeting, but I reserve the right to move the night around to:

- a. Accommodate my work schedule
- b. Accommodate the phase of the Moon. I'd like to avoid the full moon (except once) whenever possible.
- c. Possibly avoid cloudy months like November, by having two in October. (for instance).

Since the purpose is to gather certificates, Observing logs will be required.

Telescopes will be required, and while the Centre has a few, it might be best if you brought your own. In years past, computer controlled telescopes were not permitted. The whole idea of the Messier Certificate was originally so you could learn your way around the sky, but now it is to encourage visual observing, the whole "Photons on Retinas" thing! So, you can use your telescope to find an object, but you **MUST** either write a very detailed description of the object, or sketch it. The point is **NOT** to have a quick glance and move on, but to **STUDY** the object.

The Explore the Universe and Explore the Moon certificates have their own particular demands, but again, the emphasis is on studying what you're looking at, not just a quick glance to "tick it off the list".

You can find observing forms for the Messier certificate at <http://www.rasc.ca/observing/messier-certificate>, and example of which can be found on Page 13

Information on the Explore the Universe is at <http://www.rasc.ca/explore-universe> with its lunar equivalent being at <http://rasc.ca/observing/explore-the-moon-observing-certificate>

So...come on out to the Observatory for the initial session on Thursday, February 22nd and let's get this going!

As for Heavy M.E.T.U.L., no, we won't be listening to Metallica or Judas Priest...perhaps Pink Floyd's "Astronomy Domine" might be appropriate?

ORBIT

E.A.Colquhoun, Pres.

February, 1968

G.A.Thede, V.-Pres.

Hamilton Centre-Royal Astronomical Society of Canada-Vol.1 No.1

Here it is--Vol.1 No.1 of Orbit, the quarterly publication of the Hamilton Centre of the Royal Astronomical Society of Canada. It is an inauspicious beginning, only 4 pages to start with; but, it is a beginning! It is our hope to expand and improve with every issue!

The aims of this publication are 6-fold: 1. to keep members informed of past, present and future developments in Astronomy and in the Centre. 2. to create further interest in our activities. 3. to encourage observations and scientific accomplishments by our members. 4. to provide a sounding board for the views of members. 5. to stimulate contact between the Hamilton Centre and the other Centres of the RASC and other astronomical organizations in other nations. 6. to contribute in some small way to the advance of Astronomy as a science.

It is hoped to have many regular features and departments in Orbit, such as predictions of events, news of activities and news of members etc. but the majority of the contents will have to come from you, the members. It is hoped that you will cooperate with your editorial staff when called upon to write a small bit about your telescope or about observations you have made or possibly about your favourite theory. Without your help, Orbit may have an early demise!

Our centre is really starting to be a super-active group. The future looks very bright indeed. But it will be so, only with the interest and time devoted by you, the members.

Orbit has made a good beginning. With your support, it will continue.

Editor

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FROM THE PRESIDENT

Astronomy, to the amateur, is a most fascinating hobby. The nuts and bolts of the science are interesting in themselves but the most interesting part of it all is the good company of your fellow stargazers. Your editor is inviting you to share your interests with them. So, send write-ups of your experiences into orbit (in to Orbit!)

E.A.Colquhoun, President

* * * * *

JUNIOR GROUP

In the past few years the Junior Group has been phlegmatic. This year, there has been a drastic change. The membership has doubled (in theory!) There has been much more interest in the junior meetings. The members are eager to participate in debates and it is not very difficult to get members to give speeches. There has been increased interest in Junior Night. Sacle building of rockets and satellties has been suggested and is now under consideration. In short, we are looking forward to our best year.

Les Chadwick, Jr. President

* * * * *

Telescopes: How to use them-Part I

What sort of telescope do you have? A small one? Binoculars? Or none at all? Don't despair! There is valuable work that you can do in the field of Astronomy.

Telescopes come in three kinds--refractors, reflectors and Schmidts. Their principles are identical; bring the light to a focus and either magnify or photograph the image formed.

The largest optical telescope in the world is the 200" reflector at Mt. Palomar.

We amateurs cannot hope to approach or even duplicate the work done by this magnificent instrument. However, we can do valuable work! George Alcock discovered Nova Delphini 1967 using a pair of binoculars. Ikeya and Seki have found their famous comets with telescopes smaller than those owned by many members of our Centre. So remember that no matter how small your telescope, you can make a discovery! For those with no telescope at all: how about trying to learn to recognize all of the constellations using your eye alone?

In the next issue, we shall try to give you some hints on how to use your telescope more effectively, especially in our cold climate.

* * * * *

From the February, 1978 Orbit:

EDITOR'S PAGE

As members of the Hamilton Centre you should know that there have been several changes on the Board of Directors this year. We have four new members to the Board. These are: Walter Korber, Roger Hill, Clive Gibbons and Barry Sherman. In addition we have a new secretary, Mike Holmes who replaces Peter Ashenhurst. Our new librarian is Barry Sherman. The new editor is Bob Speck, however Peter Ashenhurst will still be the printer of Orbit. Rob Allen will hold the position of president again this year, with Bob Lang as First Vice President and John Hudak as Second Vice President, at the same time still be the Director of Observations.

During the past year we have had some regular contributors to Orbit, while some members contributed on an on-off basis. I would like to take this opportunity to thank all these members and hope they will continue the good work. Now I would like to ask the other members whom we haven't heard from, to submit one article during the year. Remember, Orbit is your paper and you only get out what you are willing to put in. The NASA news will continue each month and we hope to keep you up to date on what is happening in the field of Space Research. We will also be running articles from the pages of other club papers, both in Canada and the U.S. We have already received our first article from the U.S. by Darwin Christy. Many members will remember Darwin for his talks on Micro Meteorites.

As mentioned in last month's Orbit, your membership fees are now due- \$15.00 for adult and \$9.00 for students. All payments are to be made to Les Powis, P.O. Box 84, Waterdown. I am pleased to see so many of the old members back, and we also have a few new members to welcome to the ranks. I hope all the membership, old and new will make this an active year for the Hamilton Centre.

Remember, we have many activities in the Centre, such as the Observers Group, the Discussion Group and General Meetings at MacMaster. Some of the members would still like to have an Astro Photography Section, so maybe we can work on that. Barry Sherman would like persons interested in variable star observing. Also, anyone interested in Radio Astronomy should contact Barry or John Hudak.

Twice a year the Niagra Frontier Council of Amateur Astronomers Association holds its meeting in one of the member cities and these are always informative as well as entertaining. Hamilton Centre is a member of the N.F.C.A.A.A. and therefore anyone wishing to attend may do so. I have been going to these meetings for nine years now, and have enjoyed all of them. The next meeting will be in May, and further information will appear in Orbit.

Bob Speck
Editor

12.

HOW TO OBSERVE AND PHOTOGRAPH THE OBSERVATORY STREETLIGHT

Ever since the Hamilton Centre involuntarily acquired a streetlight at the corner of the 7th Concession and Burlington Town Line, observers and astrophotographers have been cursing the noisome glare it produces.

Security conscious citizens, however, do appreciate the heart-warming island of light that pushes back all the nasties that inhabit the darkness of our observatory area. Indeed, our hyper-luminous beacon is certainly necessary for the protection and motoring safety of East Flamborough, so we should not slur it's existence or make a mockery of the good intentions it represents. NAY, we should see the bright side and exploit the possibilities of our friendly mercury-vapour neighbour! It is in this spirit of optimism that I make the following suggestions for observing and photographing our local streetlight.

As anyone knows who has seen it, our streetlight is very BRIGHT. Therefore, for naked eye observing it is recommended that sunglasses be used at all times. On slightly hazy nights, the lamp is surrounded by a diffuse nebula whose size is largely dependant on the humidity of the air and how far away you are from it. In fact, because the light is only 25 feet above the ground, it can be clearly seen on even completely overcast nights.

Binoculars add a completely new perspective to viewing. With 7 to 10 power glasses, the prominent frosted ribbing of the

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lamp's lens can be clearly seen, but remember to keep your sunglasses on.

With a telescope, no equatorial mount or drive is needed because the lamp certainly isn't going anywhere! At powers between 75 and 150, dirt specks and dried up insect carcasses can be glimpsed during moments of good seeing. Look carefully to observe the "GE" label imprinted near the base of the bulb. No amount of filtration will dim the image to a comfortable intensity, but 6 nebular filters stacked on top of each other do help reduce the glare.

Astrophotographers surely have endless opportunities to capture creative images! Fast lenses and high speed films are entirely unnecessary to record it's prodigious output. By using some ingenuity you can photograph the streetlight amongst any constellation you desire and can even shoot polar star trails rotating around it. For detailed close-ups, use a 1000mm lens at F32, ISO 25 film and 1/1000 of a second exposure.

So let's stop moaning about a problem we have no control over. Get out and have fun observing the brightest "star" in our night sky!

IN AN UPCOMING ISSUE:
"Light Pollution, Firearms and You, or How to Shoot Out a Streetlight and Make It Look Like an Accident."

Clive Gibbons

I had wanted to print the Editors comments from each of the last February issues of Orbit, from 1968 to 2008, but then I read Clive Gibbons article on the streetlight, and had to include it.

The 1980's were an amazing time to be in the Hamilton Centre. The observatory was used almost every clear night. People like Ev Rillet, who would observe with her young children. Ian Stuart and the AstroSmurfs would crack puns well into the night, Mike Devillaer produced some spectacular astrophoto's with his Dynamax 8 SCT. Mike was a big fan of Frank Zappa, and so it was said that "Boy, he could make that Dynamax hum."

I drove up to the observatory one evening from Burlington when a massive bolide went streaking through the sky. The ground lit up almost as bright as day, but with this weird electric blue light, and the shadows of the trees moved rapidly, opposite the path of the bolide in the sky...I just caught a glimpse of it through the windscreen of my car. When I got to the observatory, Mike was almost in tears...he was just a few minutes from finishing a 1 hour long exposure when the thing went across the sky.

There Comet Iras-Iraki-Alcock in 1983, moving rapidly across the sky, and everyone favourite disappointment: Halley.

At a total lunar eclipse one August evening, with the Moon being low on the southern horizon, dozens of observers lined the north side of 7th Concession as the fully eclipsed moon hung near the Milky Way as it passed through Sagittarius.

The Centre was in rude health with a large number of active members, and while cash was sometime short, it was a great time to be a member.

EDITORIAL

I find the different philosophies I find among amateur astronomers interesting.

A friend told me that he occasionally likes to view the celestial sights but finds the "repetitive part of astronomy" to be boring. I like to think of the "repetitive nature" as science: the keeping of multiple observations of phenomena over a period of time so as to attempt to discover their nature. Beyond science, I like to see that indeed the solar system and universe are dynamic systems. I enjoy observing the same object many times but if that ever becomes boring I will certainly switch to another mode of sky watching.

Another interesting comment came up at a meeting of the KW group about observing versus astro-imaging. A group was to discuss observing schedules but it was obvious from the start that some wished to do astro-imaging while others wished to conduct observing programs. The astro-imagers weren't interested in observing as such; they wished simply to produce the best possible images of the heavens, without worrying about what possible information might be gained from them. It became apparent that while the observers might go to the astro-imagers to aid them in their projects the imagers did not feel they would ever need the services of the observers. Stray meteors, comets, aircraft, satellites or surprise aurorae may ruin the pictures of some or enhance the pictures of others.

Orbit needs your input! Please send articles to me or to the centre. Articles can be of almost any nature: observing reports, stories, book and equipment reviews, poetry, photographs and sketches are all welcome.

As well, the observers list is not yet very large. If you wish to be placed on the list for observing and other informal gatherings, please let me know. *Harry Pulley*

FROM THE KEYBOARD OF THE PRESIDENT



President's Report for February 1998

Clouds. Clouds. Clouds. Trees. Trees. Fewer Trees. Fewer Clouds. Clear sky? Maybe.

Finally, we have had a clear night that lasted for a few hours. And that seems to have taken nearly a full 45 days or more. Recently, I literally was asked whether we astronomers have "cloud filters" to let us through to the night sky, and instead of snickering at the idea, I think enviously of those astronomers with radio telescopes operating in the millimeter wavelengths, getting a listen on radio sources in the celestial sphere. Meanwhile, for those of us restricted to the higher, visual wavelengths, we can hope for clear skies.

As you know, our tree trimming project has completed its first phase. The observatory is once again usable, and we now have the ecliptic back, letting us get a

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ORBIT - DECEMBER 1997

look at the moon, sun, or planets nearly any time of the year. It has been 3 years since we had lost it to the rows of trees on the east, south, and west. Thanks to the efforts of many volunteers, the task is nearly finished, with a total of less than 5% of the trees on our 5.6 acre site being cut, and most of the cleanup work has been done.

We still have a fair bit of work to do this spring, in order to fulfill our original replanting plans, and to satisfy some requests by the Town of Flamborough and Niagara Escarpment Commission. We need to complete our plans, and arrange the purchase of some more mature cedars and other trees of about 1-2 metres in height, in addition to the seedlings we intended to purchase from the Ministry of Natural Resources tree farm at St. Williams. To purchase the new, larger trees, we will need to raise some funds, or perhaps you could consider making a cash donation so that we can purchase appropriately. To follow some of the good advice we had received last spring from the conservation authority forestry staff, we will need to plant trees that are indigenous to the area, which include white cedar, yews, and various deciduous trees as well. Hopefully, we will be able to meet the goal of establishing a wind and light block, as well as planting trees that will not grow too tall.

The really good news is that nearly the whole sky is available to us, with our viewing limited to 15 degrees above the horizon clear to the zenith, in most directions. This means that finally the sky is accessible, and we can continue our education and amateur research programs. And no more carrying your scope out to the road to catch a north-running comet, or trying to catch the rising moon in the early evening! Please direct your support and energy toward getting the rest of the site into shape.

On another note, efforts are being made by your treasurer and your national representative to improve the membership service provided by University of Toronto Press. Renewals, new memberships, and mailing of publications are handled by UTP on behalf of the RASC at the national level. Please contact Les Nagy or Mark Kaye if you have a problem that may be related to UTP. This includes membership renewals, changes of address, or any other matters. We wish to hear what you want changed, and Les and Mark will endeavour to make things right.

For some lucky folks, an eclipse is headed their way later this month. Take a moment and check your Observer's Handbook for details, and then plan on doing a little viewing of your own, if you can. I've heard a few folks have booked themselves cruises and holidays for late February, to take them on the path of totality. My hat goes off to you intrepid explorers (okay, my toque actually, its still freezing cold February here!).

On another note, Scott Barrie, our curator has indicated he would like to get the annual inventory finished, and has asked that anyone who has borrowed equipment please return it to the observatory in the next week or two. This includes telescopes, eyepieces, camera gear, equipment, and any other items that you may have on loan. Also, if you have items that you wish to donate, please contact Scott or Les Nagy, for details regarding possible tax receipts for an income tax deduction.

For those of you who haven't been to the observatory in a while, please remember to sign in to the new improved log book. Also, there is a new library sign-out book. You may wish to check your shelves for Hamilton Centre books or magazines, and get those returned as well. Its also a good excuse to see your improved observing site! Best wishes, and lets start work on those cloud filters,
Colin A. Haig

ORBIT - DECEMBER 1997

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The 1990's brought a huge amount of change.

The biggest was that the H.A.A. formed, and in the aftermath, the Hamilton Centre came close to folding. There were many hot and angry words exchanged, and some friendships ended...for a while, it was a poisonous place to be.

It was a shame, because the years leading up to it were spectacular, continuing on at first with the vigour experienced in the 1990's.

There were some amazing bright spots, too, though. Colin Haig joined the Centre, Les Nagy re-joined, and it seemed that every Saturday afternoon half a dozen people or more would convene at Steve Barnes business—Sky Optics—to shoot the breeze.

The Centre built a CCD camera. A number of people started, and Colin Haig finished it. We were on the front page of the Spec when Hale-Bopp showed up,

We had over 150 people at the observatory one night when comet Hyakutake was at it's best and Bob Botts traced the tail from the head to back over 90 degrees in length.

The internet arrived, and the first web pages were created by Charles Baetsen, running on a spare machine where he worked. They were later moved to a sever in my basement, connected to the internet via a 64K SDLC line. That machine had two hard drives: a 100 meg and a 60 meg, along with 16 megs of RAM (at \$55 a megabyte for RAM), and it ran Windows NT 3.51.

The first truly computer driven amateur telescopes arrived, and there was an amazing eclipse in 1991, with just a few seconds shy of 6 minutes of totality.

Issue Number 4, February, 2008

Roger Hill, Editor

Okay, I thought 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 Earth's 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 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.

The 2000's for the Hamilton Centre, saw some infighting in the Hamilton Centre again. There was a lawsuit, vandalism, police reports and other nastiness.

There were some great things, too. A number of people arrived like Andy Blanchard, Gary Colwell and Gary Bennett.

Grant Maguire shepherded our application through the Trillium Foundation, and when he was done, the Centre had a 400mm Ritchey-Chretien made by Optical Guidance Systems on a Paramount. There were such grandiose plans that were targeted for this scope, that a committee was struck to apportion time on it.

The Centre went in with the Toronto and Mississauga Centres to hold the 2008 RASC General Assembly, as it was our 100th Anniversary.

We tried to get high-speed internet access at the Observatory, to replace the dial-up kindly provided by Les Nagy, but we could not get it to work properly.

Steve Barnes visited Chile several times, and took along some good friends, but more about that in the next issue.

January 2018 Monthly Meeting by Ed Mizzi

On Jan. 4, 2017, the Hamilton Centre met for its regular monthly meeting. Attendance was excellent, with about 50 people present, many from the general public, and everyone was looking forward to the lecture by Dr. Ian Shelton.

Ed Mizzi began the proceedings with a welcome to everyone. He displayed a slide with the agenda on it and briefly introduced the topics for the meeting. He mentioned several club activities and advantages of membership and encouraged people to get involved.

Ed introduced Bob Prociuk, Board member, whose portfolio includes vice president and memberships. Bob discussed the benefits of membership at the Hamilton Centre and the Royal Astronomical Society of Canada. He welcomed both new members and members of the public. Our newest members include Brynne Degenhardt, Thomas Jensen, Chris Newhouse, Tyler Park, John Reinsborough and Lesley Reinsborough-Degenhardt. Our total is now 114.

Then Ed Mizzi discussed outreach and also encouraged members to participate in these fun and enjoyable activities with the public. Ed mentioned the event on Dec. 15 at Stephen Lewis Secondary School in Mississauga, where Ed did a talk twice, during the day, to 2 grade nine science groups of 65 and 80 students respectively. It was a very engaging event with several great questions from the audience. Hopefully the rest of the 2017/2018 year will see similar fun events, with more members participating.

Ed Mizzi then described a program discovered by Board member Troy McCoy, called Gaia Ground based Observational Service for Asteroids (Gaia-GOSA). Members can easily get involved in assisting this program with the goal of gathering photometric light curves of a selection of asteroids. Sounds like an exciting science project.

Next, Ed gave a preview of next month's speaker, Dr. Laura Smith from McMaster University, who will talk about dark matter and dark energy. It should be very interesting.

We then took a 10 minute break to give people a chance to stretch and chat with fellow members.

After the break, Muhammad Basil Ahmad introduced the night's speaker, giving an excellent summary of the work that Dr. Shelton has been involved with and a brief introduction to his topic.

Dr. Shelton then proceeded to display his passion for astronomy by reliving the moment he witnessed SN1987A, a super nova event that occurred 30 years ago and is still being studied. It was obvious that this event had a lifelong effect on Dr. Shelton, both personally and professionally. He used several excellent slides to help describe the event and his subsequent research.

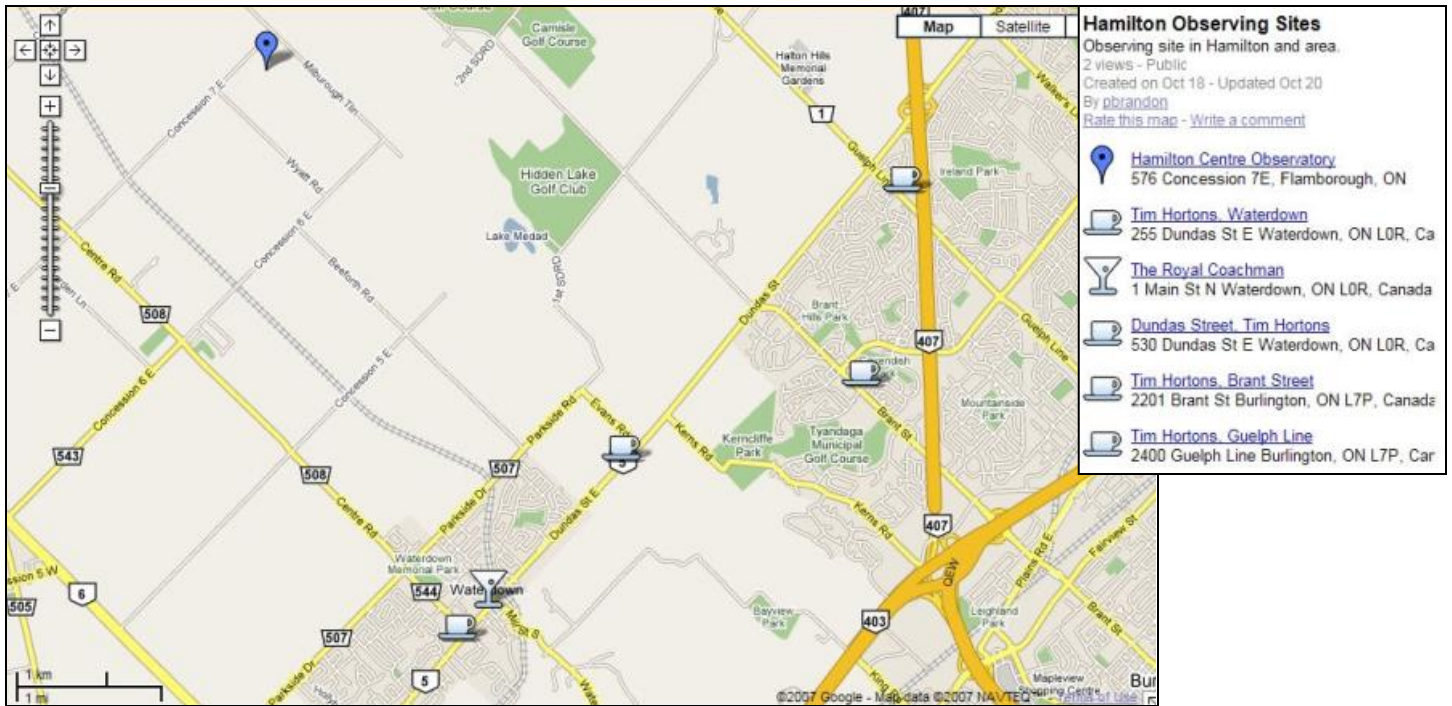
Muhammad thanked Dr. Shelton with a gift of appreciation for the time he spent both preparing and providing his findings.

Ed then adjourned the meeting but not before informing members of three upcoming meetings:

- January Board meeting, at the observatory, Jan. 11, 8 PM. All members are welcome.
- February Monthly meeting, at the Legion, Feb. 1, 8 PM. Members and the Public are welcome.
- February Board meeting, at the observatory, Feb. 8, 8 PM. All members are welcome.

Thanks to all who attended. Thanks to Abigail Hughes for taking photos of the proceedings.





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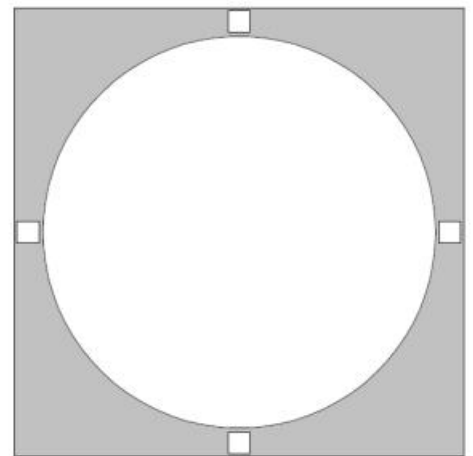
President	Ed Mizzi	Councillor	Bob Speck
Vice President	Bob Prociuk	Councillor	Andy Blanchard
Secretary	Chris Talpas	Councillor	Ron Shields
Treasurer	Bill Leggit	Councillor	Eric Golding
Past President	Gary Bennett	Councillor	Muhammad.Ahmad
Orbit Editor	Roger Hill	Councillor	Troy McCoy

This is one of the observing charts that needs to be filled in by anyone who wants to receive their Messier certificate.

Join us at the Observatory on Thursday, February 22nd, 2018 for the first of our Heavy M.E.T.U.L Nights! See page 5 to find out what they are all about!

RASC Messier Objects - M51
Whirlpool Galaxy

Messier Object	M51		
NGC	5194/5		
Constellation	Canes Venatici		
Type	Spiral Galaxy (G-SAbc)		
Magnitude	8.4		
Distance (Kilo light-years)	37000		
RA	13 29.9		
Dec	+47:12		
Size	8.0' x 7.0'		
UM I	UM II	37	
	SA	7	
Remarks	!! Whirlpool Galaxy; superb in big scope		
Time (h:mm)			
Seeing	1	2	3 4 5
Transparency	1	2	3 4 5
Observing Location			
Telescope			
Date (dd:mm:yyyy)			



Notes

PN: Planetary Nebula	RN: (diffuse) Reflection Nebula	Seeing: 1 = Best 5 = Poor	* = Number of stars in cluster
SNR: Supernova Remnant	EN: (diffuse) Emission Nebula	Transparency: 1 = Best 5 = Poor	** p = Photographic Magnitude
GC: Globular Cluster	G-: Galaxy, with Hubble type given	Time: DD:MM:YYYY	*** !! = Showpiece Object
OC: Open Cluster	E/RN: Diffuse emission and reflection Nebula	Date: Specify Time Zone or UT	http://www.rasc.ca