

# NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC  
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## Sagittarius

by Bill Burnyeat

Sagittarius is the bowman who is horsey to boot. He crouches in the south each summer, taking aim but never loosing an arrow at the west-fleeing Scorpion.

This zodiac sign is very rich in stars, pairs, nebula and clusters. Orion may be better recognized with brilliant, patterned stars but the bowman is no slouch, even though lacking first-magnitude leaders. Both Orion and Sagittarius have 11 entries in the bright stars section of the RASC Observer's

Handbook. If stars were athletically inclined, each constellation might

field a complete soccer team.

The bowman is at a disadvantage with low stature in the sky. He seems to walk on starry legs just above the

our wasteful obsessions, effacing the subtle effects of the Milky Way on view here. More than just the sky firmament is wiped away

by cityscapes, according to nature writer Terry Tempest Williams:

*"I wonder about silence. Also about darkness. I love the idea that city lights are a 'conspiracy' against higher thoughts. If we can no longer see the stars, then where can our thoughts travel to? So, I think there is much to preserve—not just landscape,*

*but the qualities that are inherent*  
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**JULY 11**

Members' Night. Nick Seiflow from Vancouver Telescope presents the latest astronomy products.  
Room AQ 3149

**SFU**

**SFU**

**NO MEETING IN AUGUST**

**SEPTEMBER 12**

Alan McConnachie from UVic: "Big puzzles with small galaxies: galaxy formation and the problems with the tiniest galaxies." Location TBA

**TBA**

## Members' Gallery



**M13 (left) and  
M57 (Ring Nebula)**  
by Scott McGillvray

This was my first successful night of astrophotography, so I went after the easy targets. They're taken on Saturday the 6th from my parents' driveway in Kelowna. I used Howard's Meade DS1 camera on my Celestron CG6 Schmidt Cassegran with an EQ-Goto mount.

After about 5 failed attempts with my Nikon DSLR, I can't believe how easy it is to capture and process images on the Meade DS1. I'm going CCD from now on. ★



# President's Message

Well this is what we have all been waiting for... No, no—the clear skies, not this little message from me.

I can honestly say I am writing this on my iPad out under the clear skies as my camera collects photons from NGC6888 and, unfortunately, a lot of light pollution from around the Lower Mainland. Light pollution, well

that's a whole other article—next time. The important thing is the summer clear skies have come again and the triangle is where it should be—as it always is.

The RASC Vancouver Centre is busy as usual with lots of summertime viewing sessions going on as planned. Make sure you stay in touch with Scott on Twitter and on Meetup so you

can be in the know with what is going on. Did you know we have over 1,000 meet up members and over 100 Twitter followers? Also, if you are one of the 200+ RASC members, make sure you take the opportunity to use the loaner scope program. Currently, we have several scopes loaned out and a few more that are ready to

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by Mark Eburne

## About RASC

The RASC Vancouver Centre meets at 7:30 PM on the second Thursday of every month at various locations in Metro Vancouver (see page 1 for meeting locations and page 4 for maps). Guests are always welcome. In addition, the Centre has an observing site where star parties are regularly scheduled.

Membership is currently \$73.00 per year (\$41.00 for persons under 21 years of age) and can be obtained by writing to

the Treasurer at the address on page 5. Annual membership includes the invaluable Observer's Handbook, six issues of the RASC Journal, and, of course, access to all of the club events and projects.

For more information regarding the Centre and its activities, please contact our P.R. Director.

NOVA, the newsletter of the Vancouver Centre, RASC, is published on odd-numbered months. Opinions expressed

herein are not necessarily those of the Vancouver Centre.

Material on any aspect of astronomy should be e-mailed to the editor or mailed to the address below.

Remember, you are always welcome to attend meetings of Council, held on the first Thursday of every month at 7:30pm in room P8445.2 of the Physics wing of the Shrum Science Centre at SFU. Please contact a council member for directions.

## 2013 Vancouver Centre Officers

<b>President</b>	Mark Eburne president@rasc-vancouver.com
<b>Vice-President/Events</b>	Suzanne Nagy vp@rasc-vancouver.com
<b>Secretary/Telescopes/P. R./Observing</b>	Scott McGillivray secretary@rasc-vancouver.com
<b>Treasurer</b>	Ciara Morgan-Fier & Steve Coleopy treasurer@rasc-vancouver.com
<b>National Rep.</b>	Doug Montgomery national@rasc-vancouver.com

<b>Librarian</b>	William Fearon library@rasc-vancouver.com
<b>Past President/P. R.</b>	Howard Trottier publicrelations@rasc-vancouver.com
<b>Membership</b>	Rohit Grover membership@rasc-vancouver.com
<b>LPA Chair</b>	Jim Ronback lpa@rasc-vancouver.com
<b>Education</b>	Bill Burnyeat education@rasc-vancouver.com
<b>AOMO Chair/Merchandise</b>	Leigh Cummings merchandise@rasc-vancouver.com

<b>Webmaster</b>	Harvey Dueck webmaster@rasc-vancouver.com
<b>NOVA Editor</b>	Gordon Farrell novaeditor@rasc-vancouver.com
<b>Speakers</b>	Barry Shanko speakers@rasc-vancouver.com
<b>Councillor</b>	Kenneth Lui kenlui121@hotmail.com
<b>Honourary President</b>	Dr. John Macdonald
<b>Trustees</b>	Ron Jerome Pomponia Martinez J. Karl Miller

## Library

The centre has a large library of books, magazines and old NOVAs for your enjoyment. Please take advantage of this club service and visit often to check out the new purchases. Suggestions for future library acquisitions are appreciated.

## On the Internet

<http://rasc-vancouver.com> or  
<http://www.rasc.ca/vancouver>  
<http://astronomy.meetup.com/131/>  
<http://www.facebook.com/RASC.Van>

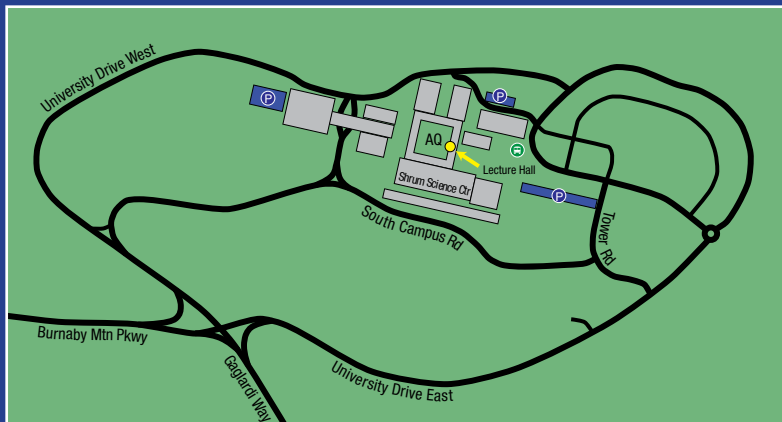


@RASCvancouver

## Mailing Address

RASC Vancouver Centre  
PO Box 19115  
2302 West 4th Ave.  
Vancouver, B.C.  
V6K 4R8

# Maps to Meeting Sites



## SFU

Our July meeting is in room AQ 3149, on the 3rd (main) level of the Academic Quadrangle, across from the cafeteria (indicated by the arrow on the map at left).

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go. Check out the website and reserve one today, as there is no cost to the program.

As always, there are lots of upcoming events planned over the summer months, starting with our July members' meeting. Members' meetings are designed

to showcase RASC members and their passion for astronomy by demonstrating what they are doing and how they do it. We have a real wealth of talented people within our membership and it is always entertaining and educational to be involved in these events.

and, as always, are weather permitting. Please remember to check Meetup, Twitter and the RASC website for more details. A big thanks to all the volunteers who give their time to make these events happen.

On the business side of RASC, the 2013 AGM is now complete and a new era has begun. For the last three years, the RASC Society and each centre has been working hard to create a new set of by-laws, policies, operational manuals and governing structure all to be compliant with the new federal legislation governing non-profit organizations like ourselves. There is still a lot of work to do but at this point, we all can say a big thank you to the governing society members for the commitment and dedication to get us here today. Both Leigh and Doug attended this year's conference in Thunder Bay, Ontario and can provide more

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On Saturday, July 27, there will be Solar Viewing at Campbell Valley Nature House; August 10th is the annual Perseids; and, of course, August 17th is the Deas Island Starry Nights event. Each of these events are co-hosted with RASC Vancouver

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details of the new structure we are now governed by. You can also visit the website for further details.

The Mount Kobou Star Party is coming up fast, as is the Merritt Star Quest. Both of these events

are a great way to enjoy the night sky with fellow astronomers. Hope you can take in some time at one or both of these events. There are also a lot of other star parties around the province hosted by one of the other four RASC centres—Victoria, Sunshine Coast, Prince

George and the Okanagan. If you are travelling this summer, check out the other centres and maybe you can join in their fun.

Clear Skies everyone and see you under the summer triangle.

★

## For Sale



Complete set CELESTRON CG-11" Schmidt-Cassegrain Telescope 2800mm F/10 Starbright Coatings (made in USA), for sale by RASC member.

First-hand factory purchase, optical lenses, main reflector, other optical 100% new and in mint condition. Never used outdoors never transported. Perfect RA & DEC tracking motors. (No GPS star-finding). Incl. LED 2-inch polar axis finder-scope, 30mm 1-1/4" eyepiece, Nikon-R adaptor, 2-inch 8x50 finder-scope, equatorial mount, Celestron electronic control drive, Losmandy tripod, tripod head, original hand storage case, foot-locker deluxe carrying trunk and instruction manual. Selling price does not incl packing and shipping.

Give-away price : \$2,800

Buyer must perform an inspection and pay by cash. Please note no warranty, no refund, no return and no exchange.

Two unopened Vixen eyepieces (Japan) optional and to be sold half price (LV10mm 50-degrees, LV15mm 50-degrees)

Photos and parts of the CG-11 may be emailed to you. Full details can be sent to you by email.

Contact: James Ho  
(Richmond, BC, V7E 4C2, Canada)  
Phone: 604-716-1261  
E-mail: [computerjohn@shaw.ca](mailto:computerjohn@shaw.ca)

## Membership has its Privileges!

New members, did you know? The Vancouver Centre has 8 telescopes available for loan free of charge! We have telescopes ranging from 60mm to 10" diameter. For more information see the Director of Telescopes after the members meeting. The loaner period is for one month, to be returned after the next meeting. Telescopes are not allowed to circulate outside of these meetings. You

can now reserve two different telescopes per year and use what is left at the end of the meeting anytime.

Your greatest opportunity as a member of the RASC is to take advantage of the company of other enthusiasts to increase your knowledge, enjoyment and skill in astronomy.

The best thing you can do to gain the most from your membership is to get ac-

tive! Take in the club meetings; engage other members with questions; come out to observing sessions (also known as "star parties"), and, by all means, volunteer to take part in our many public events.

For the usual observing sites and times, visit our website at <http://rasc-vancouver.com/observing-sites/> or contact the Observing Chair at [observing.rascvancouver@gmail.com](mailto:observing.rascvancouver@gmail.com).

# Upcoming Events

## July

27 – Solar observing at Campbell Valley Nature House

## August

3 - 11 – Mt. Kobau Star Party  
10 – Perseid Meteor Shower at Aldergrove Lake from 8pm (admission \$2)  
17 – Deas Island Starry Night

## October

5 – Paul Sykes Lecture

## December

12 – AGM

## September

Aug. 31 - Sept. 7 – Merritt Star Quest

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*in landscape, in wild places: silence, darkness."*

The loss of the night sky and Milky Way and the imposition of views utterly barren in fuel for the imagination is achieved by interrupting natural sight lines to the sky. The divorce between the natural and artificial world is already well underway merely by the sky becoming remote and strange; at some point it begins to seem natural to live within what is essentially a machine inhabited by motor vehicles, plastic, high voltage cables and decorated with roadside litter.

So I headed out, on the trail of Sagittarius, seeking silence, views and darkness.

The bowman is a Centaur, half horse and half human, one of the compound or dual constellations like Capricorn and Pisces. The origin of the Centaur may have been the confusion facing pre-classical peoples at the novelty of mounted riders. The first to use horses for riding were a Middle Eastern Bronze Age people called the Hurrians, and in school I used to remember this by the mnemonic: the Hurrians rode because they were in a hurry. We know from the early

accounts of the Cortes expedition to Mexico that the Aztecs were terrified of mounted cavalry which they mistook for one creature: a formidable fighting beast.

As for the Milky Way, it is ironic that, just as its nature is pieced together at the great observatories, it recedes from view by the same technological advances that made possible a plumbing of its depths.

Due south of here is a small lake garlanded with rushes. Red-winged black birds sit on the tips of dry stocks and address comments, on topics known only to themselves, to the Class Aves assembled in audience. It's an eight hour drive from Vancouver—just about right. After dinner and a short evening, clouds everywhere in this a dry land, so, one last drink, and out the window the star of day retreats north west into a rippling surf of darkness, and it was to bed and that was the end of it.

Hours later, I had to get up to visit the bathroom. From years in a planetarium and outdoors in pitch dark I have adopted the habit of never using a light to navigate by. So, I headed off without turning on any lights. It was black in the house. I moved by a large sliding glass door that connected to a back yard patio.

I stopped and looked out. My eyes were completely dark adapted. The forest behind the lake was on fire and a huge cloud of pale smoke was rising above the spindly aspens and firs. Transfixed, I stood and looked; the smoke seemed mottled with small bits of dark debris, glowing and suspended in the thick air carried aloft by the heat. Yet it was a cool heat, and the scene untroubled, like in a painting. The smoke was frozen in position. A non-moving yet seemingly flowing broad band of greys, black, whitish, pale and unnameable intermediate hues all at the same time. I stood and looked out in absolute silence; I could hear the blood flowing through my ears. It was the Milky Way. I watched for perhaps five minutes. Then, an urge to see closer came over me. Grabbing a pair of small binoculars, I slid open the heavy glass door and padded out into the open. The binoculars were all I took with me, for I was naked. Yet this lonely setting made this irrelevant, for no one was about in the house and the yard, a good three acres, was as empty as a crater on the Moon. Both silence and dark were achieved. I stood under the stars of Sagittarius and drank in the Milky Way. In

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the binoculars, I could see whitish vague dots where star clusters made a discolouration against the grey. The Milky Way seemed luminous within a kind of darkish brightness and it seemed to suggest motion but caught like a diver framed in an instant as they jump into a pool. There were so many condensations that I lost track of where a named object was and where an unnamed wide expanse of stars, collected into fuzz, stood out and gave the impression of depth or solidity. On top of this effect, the Milky Way gathered its dusty fold and seemed all of itself to be both a band and a vast orb and the very spherical structure of its contents was suggested by its fluid but inexact outline.

I remembered that a more powerful pair of binoculars rested in a leather case in the house. Moving to the glass door, I grabbed the handle and gave it a shove. It didn't move. I shoved again; the door was stuck. I was now stranded outside with nothing on but the strap of a Bushnell binocular. Looking again at the Milky Way, I reflected that the size of the object of my view outclassed the whole Solar System by the difference between the size of a penny (representing the diameter of Neptune's orbit) and the distance from Vancouver to Hope B.C. (about 150 kilometres). If the whole system of the Sun and

whirling planets could be laid out on a modest penny then, on that scale, how large would I be? By moving along this mental horizon, I hid by the conceit that I might be infinitesimally tiny.

So, while I stood outside and looked at the Milky Way, it occurred to me that what is needed is a different way of looking, a kind of unique tool for a unique subject; a method of looking with

little angles, discrete subjects, and we no longer find it natural to gaze at whole stretches of the sky.

In early times, the Milky Way was a path, road, river or god stretched through the heavens but these perceptions don't resonate with modern experiences. I asked myself, is there a different vocabulary, a sort of calculus of perception that would allow an approach to the phenomenon and what would this vocabulary look like?

As I watched, I remembered the travel writers or describers of outdoor scenery in the 19<sup>th</sup> Century and before. I thought of William Gilpin, the clergyman with a random path and a plan of attack as he describes the countryside. Gilpin (1724-1804) was an innovator of what is called the picturesque and tried to found a science of scenery based on rules of composition suggested by painting. The picturesque, according to Gilpin, was the effect of seeing the beautiful and the sublime. These categories are not socially construed, as seems natural today, but are instinctual and non-rational. We do not look at something,

Gilpin says, and rationally assign it the category of beauty. Instead, this came naturally, as a property of human instincts and the inherent qualities of the world. Both Edmund Burke and Immanuel Kant wrestled with this topic and Gilpin,

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William Gilpin (1724 - 1804)

a global sense of the properties of the subject. The great bulk of the galaxy spread out in a milky globe is not taken as an object of observation. We take little pieces of it, disassemble it, and label the parts as the M-objects or NGC subjects. Our classification system focuses on

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as a clergyman, probably had ample time to study these writings.

Gilpin's best known work, *Observations on the River Wye and several parts of Wales* (1782), is a fully-developed statement of his views on views.

In 1770, Gilpin took a boating tour along the Wye, a river forming one of the boundaries between Wales and England.

*"The beauty of these scenes arises chiefly from two circumstances; the lofty banks of the river, and its mazy course: both which are accurately observed by the poet, when he describes the Wye as echoing through its winding bounds. It could not well echo, unless its banks were both lofty and winding.*

*"From these two circumstances, the views it exhibits are of the most beautiful kind of perspective, free from the formality of lines.*

*"The most perfect river-views, thus circumstanced, are composed of four grand parts: the area, which is the river itself; the two side-screens, which are the opposite banks, and lead the perspective; and the frontscreen, which points out the winding of the river. If the Wye ran, like a Dutch canal, between parallel banks, there could be no front-screen: the two side-screens, in that situation, would lengthen to a point.*

*If a road were under the circumstance of a river winding like the Wye, the effect would be the same. But this is rarely the case. The road pursues the irregularity of the country. It climbs the hill, and sinks into the valley; and this irregularity gives each view it exhibits a different character."*

Thus, according to Gilpin, the

*both the side-screens may be lofty, and the front either high or low.*

*"These simple variations admit still farther Variety from becoming complex. One of the sides may be compounded of various parts, while the other remains simple; or both may be compounded, and the front simple; or the front alone may be compounded.*

*"The ground, of which the banks of the Wye consist, (and which hath thus far been considered only in its general effect) affords every variety which ground is capable of receiving; from the steepest precipice to the flattest meadow. This variety appears in the line formed by the summits of the banks; in the swellings and*

*excavations of their declivities; and in their indentations at the bottom, as they unite with the water.*

*"In many places also the ground is broken; which adds new sources of variety.*

*"The colour too of the broken soil is a great source of variety; the yellow or the red oker, the ashy grey, the black earth, or the marly blue: and the intermixtures of these with each other, and with patches of verdure, blooming heath, and other vegetable tints, still increase that variety*

*"The next great ornament on the banks of the Wye are its woods. In this country are many works carried on by*

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Gilpin's view of the Wye

Coquihalla freeway, straight and rational, is uninteresting but the Fraser Canyon highway is varied and attractive since it fits into a natural valley formation. This is a common perception of drivers but remains unsaid because the Coquihalla saves time and money. Any other consideration, we are encouraged to think, is overly subtle.

Gilpin:

*"The views on the Wye, though composed only of these simple parts, are yet exceedingly varied. They are varied, first, by the contrast of the screens: sometimes one of the side-screens is elevated, sometimes the other, and sometimes the front; or*

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*fire; and the woods being maintained for their use, are periodically cut down. As the larger trees are generally left, a kind of alternacy takes place: what is this year a thicket, may the next be an open grove.*

*"One circumstance attending this alternacy is pleasing. Many of the furnaces on the banks of the river consume charcoal which is manufactured on the spot; and the smoke issuing from the sides of the hills, and spreading its thin veil over a part of them, beautifully breaks their lines, and unites them with the sky.*

*"The rocks, which are continually starting through the woods, produce another ornament on the banks of the Wye. The rock, as all other objects, though more than all, receives its chief beauty from contrast. Some objects are beautiful in themselves. The eye is pleased with the tuftings of a tree: it is amused with pursuing the eddying stream; or it rests with delight on the broken arches of a Gothic ruin. Such objects, independent of composition, are beautiful in themselves. But the rock, bleak, naked, and unadorned, seems scarcely to deserve a place among them. Tint it with mosses and lichens of various hues, and you give it a degree of beauty. Different kinds of rocks have different degrees of beauty."*

Using the same descriptive strategies, we see the Milky Way anew. It has a front screen, the visible contours of the galaxy and its maximum extent is here in the Sagittarius region. Its sides are the comparatively vacant and dark regions just beyond its cloudy reach.

This is seen by watching the Milky Way in the absence of stars. In a planetarium it's possible to view the Milky Way alone and switch off the individual stars. One can practise this on a home computer with a planetarium program. (If you are using Stellarium, centre Sagittarius and press the "s" key to remove all stars. Don't panic. Press it a second time to get the stars back)

The Milky Way has its boundaries and is enclosed between its sidescreens, to use the Gilpin term. This gives it the property of the sublime. Why? It's simply because the Milky Way suggests an object standing in front of the dark limitless beyond and yet, at the same time, the galaxy's own great distance seems to contradict this statement. The Milky Way is closer to us than galaxy clusters and quasars far, far behind it but as a visual object it can't tell us this story and it appears both the foreground and the incalculable background to the limitless range of space it contains. It is this ambiguity, which we encounter in such experiences as the Moon illusion, where the Moon or Sun appears oddly enlarged. The Milky Way does not look like a flat panel projected from the celestial sphere, instead it almost undercuts the celestial sphere by suggesting differing distances implied in different densities of its white and dark and differing shapes in its turns and its "mazy" patterns. This gives it the inexplicable loveliness that suggests properties mysteriously while the rational mind is stilled by the impossibility of a firm summary and commitment to what is actually

being seen.

Now, let's switch on the stars. This region is sprinkled with a good number of stars that make interesting areas like the milk dipper with a pointy lid. Large aggregates of both naked-eye and telescopic stars confront the watcher. These serve as the "tints of lichens and mosses" that adorn rocks, which are plain by themselves. Also, the stars of the constellation increase the wonder and beauty because once more they are in a position of ambiguity as to their status as foreground or more distant than the Milky Way itself. Also, the stars seen against the Milky Way suggest some hidden relationship between these things that transcends mere information. The stars of the milk dipper are from about 80 to 200 light years away, while delta Sagittarius is a bit further at 300 light years. So, the stars of the zodiac sign are closer than the light of the galaxy. Yet this is irrelevant considering the Milky Way as an object of appreciation. It only appears we know more by having access to a catalogue of distances.

This is the naked-eye appearance, and filtered through our newly-acquired Gilpinish set of qualities of the picturesque. Is it possible to extend this system to the telescopic images?

M8 is the Lagoon nebulae, situated right in the midst of the busy but immobile heart of the Milky Way. Its swirls and dusty knots, looking like smoke amid a cloud of faint stars, never fail to draw in the eye seeking more. In

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some ways, what has already been said of the Milky Way applies to the Lagoon Nebula. It is a cloud with stars, and part of its charm is that it recapitulates, in small, the very theme of its locale. It's like a small lagoon, isolated but within the weighty ocean flow, and all the watery concerns show themselves in a relaxed and gentle manner while unknown depths and surges vast and unknowable travel by in a vast parade. This is the impression when lifting the head and looking from the field of view into the Milky Way; it seems that some offspring of the Lagoon is duplicated out of

sight here and there and in limitless profusion, and, perhaps, waters some palm-tree-laden shores.

M20 is the Trifid nebulae, a favourite object for sky watchers in the Sagittarius neighbourhood. The name, coined by John Herschel, comes due to the resemblance of the dark patterns which appear to divide the object like the three-fold petals of certain flowers. Wispy and indistinct, and, perhaps unseen when the moon is near, the Trifid benefits from a dark sky. It's one of the most picturesque of the nebulae since, by mimicking a flower—a connection that cannot possibly be sustained by cause and effect—it charms and suggests mysterious and unknown agencies at work mocking

the certainties of our knowledge. The nebula is very faintly bluish to larger amateur telescopes and the tints form a wonderful contrast with the pale whites and monochromatic views which the eye, poor at colour vision, takes in over adjacent fields of view.

Gilpin suggests that nature is not infallible in its arranging artistically the objects at its disposal and that is why the painter often “improves”



Comparing a sketch and photograph of the Lagoon Nebula (M8)

the view by adding a ruined castle to a hill or an extra tree at just the right spot in the picture. Some such modification has been carried out in the case of M20, but unconsciously. Drawings of the Trifid have tended to show a star near its middle as poised directly in the centre of the axis of the flower petals. Photographs show the same star slightly and inartistically off centre. The conclusion of 19<sup>th</sup> Century observers was that the Trifid was in motion and the star offset by the wafting of the surrounding gas. We know this cannot be the case on the short time scale suggested. The real effect is the tendency of the sketch artist to centre the star and make a more pleasing composition;

a tendency, if Gilpin is correct, inherent in human nature. The camera tells a different story and thus the discrepancy.

M22 is a glorious, large globular cluster—one of the richest in the sky. Visible as a pale dot in finders and binoculars, it sits astride the rolling, billowing froth of the Milky Way. In telescopes, the cluster is a slightly oval disk formed from uncounted stars. The field is so compacted that it looks as if some unknown constellations had their stars cut loose and they rolled across the sky finding a hole just here where they became clogged, all attempting to pass through at

the same time.

The beauty of this cluster is augmented by its contrasts: the stars are of differing brightness. They parade not only in a bulk but little strings or rows of stars are within, making the eye follow them back and forth and then giving pause since it then occurs quite quickly to the watcher that the meaning of the strings is unknown, their objective reality or subjective impression and the choice one makes in assigning the sight to one or the other possibility gives pause and points to the utter unknown and magical nature of the object in view.

The sublime is reinforced by the shape of the cluster, which suggests

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## Adventures in Astronomy: Magic Circles – Aligned to the Stars? by David A. Rodger

### Part 2

Last issue, I told you how a team from Vancouver's HR MacMillan Planetarium was at the Moose Mountain Medicine Wheel in southeastern Saskatchewan for the 1978 summer solstice. Our intention was to photograph the moment of sunrise, when the sun would be in perfect alignment with a major line in the stone circle. To our surprise, we found it was impossible to see the sun when it first rose. And yet, we were standing on the viewing spot identified by Jack Eddy (University of Colorado) in his January 1977 *National*

*Geographic* magazine article. It was clear that, had Dr. Eddy visited the site on the solstice, he would have had the same experience.

Our next stop was the Big Horn Medicine Wheel on a snow-swept plateau east of the town of Lovell, Wyoming. Most of Dr. Eddy's research had centred on this structure. We had made no plans to see the sunrise there, or to do anything but take photographs of the structure. So, after an hour or two in the afternoon wandering around the fenced structure, we

began our trip home.

Once we were home in Vancouver, we thought, "Now what?" We'd planned to showcase the rising solstice sun at Moose Mountain in our new Planetarium show. Yet, our storyline was in ruins. Then things took a strange twist.



Big Horn Medicine Wheel viewed from the ground

Whenever we planned new shows, we usually invited UBC astronomer Michael Ovenden to sit in on our meetings. Not only did we appreciate his remarkable imagination and insights, but as a professional scientist (which none of us were) he helped ensure that our shows were accurate. When we showed him the photos and diagrams of the two medicine wheels, and outlined Dr. Eddy's thesis about their being astronomical observatories, he suddenly sat up and exclaimed, "The geometry of the medicine wheels is

very suggestive of some stone circles in England and Scotland."

He later produced a book by his friend, the Scottish archaeologist and surveyor Alexander Thom, who had carefully mapped and surveyed dozens of prehistoric stone circles in Britain. Dr. Ovenden drew our

attention to the peculiar shape of the Big Horn Medicine Wheel. It isn't a true circle. It has a flat side, he noted, which must have been deliberate. After all, nothing is easier to plot than a circle. Then he showed us the outline of a stone structure

in southwest England. It had exactly the same geometry as Big Horn, including the flattened side. Flattened stone circles, wrote Thom, were quite common in the UK. Then came the clincher.

Dr. Ovenden pointed to the egg-shaped layout of the stones surrounding the central cairn of the Moose Mountain Medicine Wheel. Next he turned to a sketch in Thom's book. It showed a stone structure in Scotland called "Borrowston Rig." To our amazement, it had exactly the

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same geometry as Moose Mountain. Like Big Horn, this medicine wheel would have been “right at home” on a British hilltop.

Led by Dr. Ovenden, we followed a remarkable trail. At Moose Mountain, there are five outlying rocky cairns and one central cairn. Big Horn has six and one. Each stone circle, in fact, provides several dozen possible alignments.

You can pick and choose any one you like, as Eddy and others had done, and ignore the others. The bottom line is you can make a case for just about any alignment you fancy. Just stand at one of the cairns and look at any other. Jack Eddy’s conclusions were open to serious questions.

Dr. Ovenden and I wrote a paper and submitted it to a major American scientific journal. It was quickly rejected. Why? It turns out our paper was peer-reviewed by Dr. Eddy and other scientists who had either written books on the supposed astronomical significance of the medicine wheels or who subscribed to Eddy’s theory. For me, it illustrated how the peer-review process can sometimes fail, especially when you come up against

vested interests and pet theories. Dr. Ovenden merely shrugged and got on with his life.

Meanwhile, we had a show to

sunrise and confirm the solstice-alignment. We used our photos to illustrate what we discovered. The show ended with Dr. Ovenden

suggesting a possible pre-Columbian contact by stone-circle builders on both sides of the Atlantic. That was one explanation for the similarity of the geometry.

That October of 1978, the University of Calgary Archaeology Department



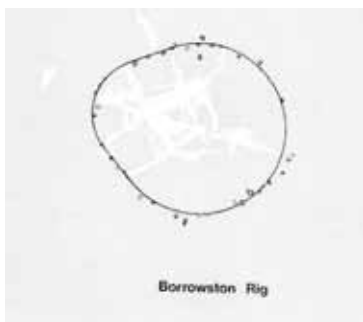
Dr. Michael Ovenden of UBC meeting with the Planetarium crew

prepare. And what a show it turned out to be! The first half dealt with the hypothesis of ancient observatories, such as Stonehenge and Chichen Itza. Then we presented Jack Eddy’s case for the medicine wheels. We described our medicine wheel visits, our plans to photograph the solstice

invited Dr. Ovenden and me to present our findings at a timely two-day conference entitled “Megaliths and Medicine Wheels.” And guess who chaired our session? Dr. Jack Eddy! To this day, I remember him shaking his head in disbelief as we presented our observations. He wouldn’t yield easily, and I don’t think he ever did. Nor have many others. You can still find books by authors who clearly never visited the Moose Mountain Medicine Wheel on the summer solstice, claiming that you can see the sunrise that morning by sighting along the Jack Eddy alignment. They are “believers.” But I know what we saw, and what we didn’t see—and I have the photos and witnesses to prove it!

A couple of months later, I was

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Borrowston Rig, a stone structure in Scotland similar to the Moose Mountain and Big Bear medicine wheels

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looking out my Planetarium office window on a crisp, clear December afternoon. It was the winter solstice and the Sun was just setting in the southwest behind a Kitsilano apartment building. I thought of Stonehenge and the medicine wheels and wondered to myself, “Was that building erected there to enable me to mark the solstice setting point?” Of course it wasn’t—but it worked nonetheless. I couldn’t help thinking that advocates of astronomical alignments in prehistoric stone structures might be just as mistaken. Just because two objects align to a point on the horizon that we consider significant, doesn’t mean they were intended to do so.

We will likely never know why prehistoric people built those structures, because they’ve left us



The central cairn of the Moose Mountain medicine wheel

no key to their intentions, and no amount of wishful thinking can change that. Without that confirming evidence, we can only speculate. ★

*David A. Rodger was the first Director of the HR MacMillan Planetarium in Vancouver, and served in that position from 1967 through 1980.*

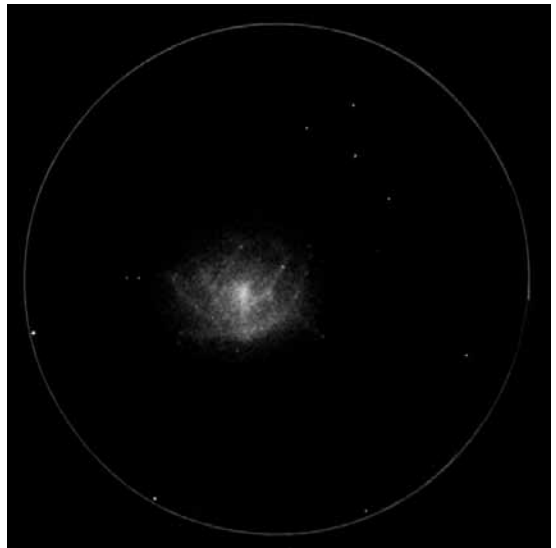
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a ball or a globe; a shape—when seen on a dandelion stock, holding its furry seeds, or sitting in silt as a river-washed stone—excites our interest, for who knows what reason. Its uncanny recognition, here on a vast scale—35,000 copies of our solar system could be placed side by side across M22’s middle—draws us to similarities in nature’s operation, within which, apparently, mere size counts for nothing.

Enough interest? There’s more. The brighter stars of the cluster appear pale pink or slightly yellowish. These are subtle hues, barely differing from off-white. In the precious gem industry, they recognize faint tints such as Light

Rose and Topaz. These reds and gold yellows are just about what is seen. The cluster looks like a sample tray at Tiffany’s tipped over and fallen into a heap. Isn’t it natural to wonder how the night sky would look to residents within?

I stood thinking about all these things under the stars of Sagittarius until the housekeeper came and opened



Sketch of M22

the glass door for me. ★

## Sally Baker (January 3, 1921 – May 3, 2013)

by Ron Jerome

It is with sadness that we record the passing of one of the longest standing members of the RASC–Vancouver Centre. Sally Baker joined the society in January, 1962 and was an active member for the better part of 51 years. She was a regular at monthly meetings and rarely missed a General Assembly. These activities gave her a chance to participate in both the camaraderie and the business of the organization and to visit a variety of Centres across the country. Her travels were not limited to Canada. She became interested in eclipses and, according to her eldest son Ken, “...guided by the maps of projected ‘paths of totality,’ she witnessed solar eclipses in Mexico, Brazil, the Philippines, Turkey and Zambia.” Apparently her absolute favourite experience was the 2000 eclipse safari in Southern Africa, roughing it in the front seat of an old Land Rover and drifting in a dug-out canoe on the Zambezi River among the water lilies and hippos. (Astronomy is not all about the night sky.)

Sally was born in Oxshott in 1921, then a small village to the south of London, England. Her first travel adventure was a school prize trip to visit Paris. In quick



succession, she experienced the Great Depression and the Second World War. She met her future Canadian husband (Charles), a soldier billeted in London during that latter period. At the end of the conflict, a young family landed at Pier 21 in Halifax (1946) and Sally spent her first Canadian winter in Saskatchewan. As the wife of a military man, she saw Ottawa, Fredericton, Kingston, Quebec City, and Camp Borden.

Her husband managed to obtain his last posting in Vancouver. Before he was able to settle into retirement, however, Charles passed away. Sally sought out friends and tour groups to experience new cultures and places as she continued to pursue her love of travel. She found that she could combine her adventurous spirit with a lifelong interest in astronomy. The Vancouver Centre offered an opportunity for both and, in turn, the Centre benefitted from her commitment. She was a friend, a travelling companion and her tenure with the Society made her a fine trustee. She will be missed by the Centre.

(Ken Baker generously shared his mother’s experiences to help us to pay tribute to Sally.) ★



Sally at the 2010 Gene Cernan talk (top) and the 2005 GA in Kelowna

# Solar Observing in Stanley Park

June 30, 2013 by Scott McGillvray



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