

# NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC | VOLUME 2011 ISSUE 4 | JULY/AUGUST 2011

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## Looking Ahead

Remember, you are always welcome to attend meetings of Council, held on the first Thursday of every month at 7:30pm in the Ray Whittick Lounge.

**Jul. 14:** What's Up? Bob Parry presents "Robots of the Solar System."

**Aug. 11:** What's Up? TBA.

**Sept. 8:** David Halliday, President, Dynamic Structures.

## Next Issue Deadline

Material for the September Nova should be submitted by Monday, Aug. 29, 2011. Please send submissions to: novaeditor.rascvancouver@gmail.com

Title image: Jason Rickerby

## A Long Time Spent, Waiting to Capture the Horsehead

by Howard Trottier

When I was in my first period of deep immersion in all things astronomical, from my last grade of elementary school, through my high school years in 1970s-vintage Montréal, I collected astronomical postcards from the Dow Planetarium, located near the city's downtown core. Each postcard was adorned with a reproduction of a photograph of a celestial object taken at a big observatory. After each visit to the Dow, I would head home by Métro and bus, all the while admiring my newest postcard. I collected images from every category, favouring portraits from deep space. I taped the postcards all over my bedroom wall, so as to immerse myself in their

imagery.

The continuing presence of those pictures in my room, and in my imagination, encouraged me to hunt for those celestial marvels that I might see in my own telescope, and to dream about what it might be like to actually be in and a part of those vistas from deepest space. No object was more mysterious and intoxicating to me than the Horsehead Nebula. I cannot remember which observatory that particular rendition came from, but the desire to "experience" the Horsehead first-hand never waned.

Flash forward into marriage and parenthood (and through other, lesser highlights, not all of the latter welcome, to be sure), to last December. It was

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## The Horsehead Nebula

Howard Trottier

Telescope: PlaneWave CDK17 with focal reducer at about f/4.5.

Camera: SBIG STL-4020M.

Exposures: 60 mins luminance

unbinned; R, G, B and Halpha 30 minutes each with 2x2 binning.

Image capture: MaxIm DL, FocusMax, and TheSky6.

Image processing: CCDWare, CCDSharp, MaxIm DL, and Photoshop CS5.

Notes: Frame size about 26' on a side, unbinned pixel size about 0.78". The Ha was blended with both the R and L frames to get a "natural" color with added depth in the emission nebula.

## President's Message

Summer is a unique season at RASC Vancouver, at least as measured by the number of our members to be found close to home, and at our July and August public meetings.

Many of our members heed the clarion call of the celestial treasures of summer, with the Milky Way tracing a glorious arc through the zenith as the skies darken, and take advantage of summer vacation time to get under dark skies far from city lights. Some feel an almost instinctive draw to the Mount Kobau Star Party (this year's 28<sup>th</sup> edition running from dusk July 30 until dawn August 7), and the Merritt Star Quest (running August 27 to September 3).

Not that our Council and member volunteers let up on public engagement during the summer. This summer, RASC Vancouver will be participating at the New Westminster Grimston Park "Summerfest" on July 16; at the Metro Parks Deas Island Regional Park "Starry Night" on August 13; and at Metro Parks "All Night Stargazing"

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## 2011 Vancouver Centre Officers

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## About RASC

The Vancouver Centre, RASC meets at 7:30 PM in the auditorium of the H.R. MacMillan Space Centre at 1100 Chestnut St., Vancouver, on the second Thursday of every month. 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 on page 5.

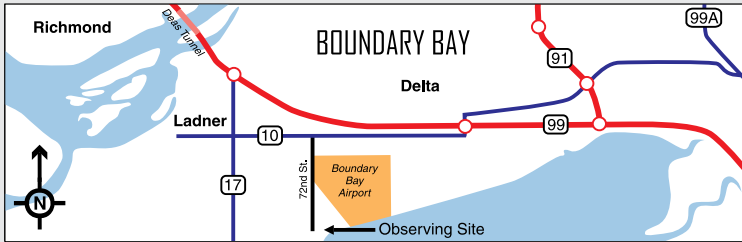
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Nova encourages free use of its classified ads for members with items for sale or swap. Notify the editor if you wish your ad to run in more than one issue.

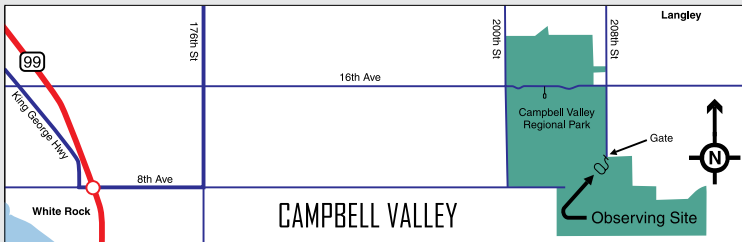
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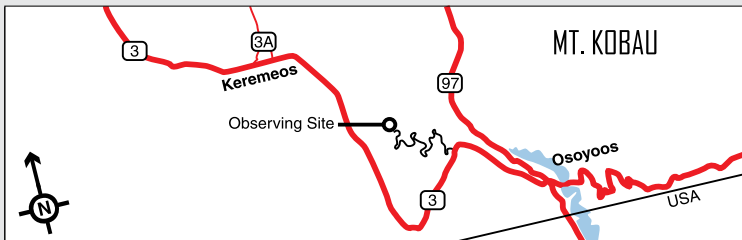
# OBSERVING SITES



Site of the regular Saturday night star party. On the dike at the foot of 72nd St.



Our alternate observing site. Contact Bruce MacDonald (604-882-3820) to see if this site is in use.



Site of the annual Mt. Kobau Star Party organized by the Mount Kobau Astronomical Society

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at Aldergrove Lake Regional Park on August 19. Details on all these events will be posted on our Meetup social networking site [www.meetup.com/astronomy-131](http://www.meetup.com/astronomy-131). Your Council has also been keeping itself very busy with July and August council meetings chock full of important business, including some items

of long-term importance for our Centre (a full report on that is coming this fall!).

But the general summer interlude seems like a good time to update our membership and our public readership on “What’s Up?” lately with RASC-Vancouver, including for those of us who may read this NOVA from afar.

First, if you have been

reading NOVA in printed form, for any length of time, and have picked up this edition in hardcopy, then you will immediately ask yourself, how did the outer pages of NOVA end up in colour?

This development owes to our newest sponsor, Canadian Telescopes! Not only did Canadian Telescopes come

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forward with an offer to cover the full print cost for this and the remaining editions of NOVA 2011, but insisted as well that we quite literally add some colour to our digest. Your Council was only too happy to comply!

Canadian Telescopes has also generously come forward with two other methods of sponsorship. One is to offer a \$20 gift certificate for any new member of RASC Vancouver (see our website <http://rasc-vancouver.com> for details). The other is to donate a telescope as a monthly door prize at RASC Vancouver's newest public outreach offering, literally called "What's Up?" (young people up to and including high-school graduation age in attendance are eligible for the door prize).

"What's Up?" is a 20-minute segment that we have been offering since February, in association with our monthly public lecture at the Space Centre, on the second Thursday of each month. "What's Up?" begins at 7:00PM, just ahead of the 7:30PM lecture, and is tailored

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## LIBRARY

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

## RASC-VC on the Internet

<http://rasc-vancouver.com> or  
<http://www.rasc.ca/vancouver>

Details of upcoming meetings and events can be found at our Meetup group at:

<http://astronomy.meetup.com/131/>

## H.R. MACMILLAN SPACE CENTRE

The H.R. MacMillan Space Centre Society is a non-profit organization operating the H.R. MacMillan Space Centre and the Gordon M. Southam Observatory. Annual membership (\$30 individual; \$80 family) includes newsletter, discounts on Space Camps, birthday parties, lectures, Museum of Vancouver admission, plus free admission to the Space Centre. Admission includes: multi-media Planetarium productions, interactive demonstrations and hands-on exhibits. For membership, contact Gayle Seaman 604-738-7827 (ext 221) or [star@spacecentre.ca](mailto:star@spacecentre.ca)

<http://www.spacecentre.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 in the meeting room of the GMSO after the members meeting. All telescopes are to be picked up and returned at the GMSO. 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 active! 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.

Observing takes place at Boundary Bay on the dike at the south end of 72nd St. in Delta (see map on p. 4). We are there most clear Friday/Saturday nights. Contact Jason Rickerby at 604-502-8158.

**RASC**  
**1100 Chestnut Street**  
**Vancouver, B.C.**  
**V6J 3J9**  
**604-738-2855**

## July

July 30 - Aug. 7 – Mt. Kobau Star Party

## August

13 – Urban Star Quest @ Deas Island Park (Metro Parks event)  
Aug. 27 - Sept. 3 – Merritt Star Quest

## October

22 – Paul Sykes Lecture at SFU (details TBA)

## December

8 – AGM

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to newcomers to astronomy, especially young ones (though more experienced astronomy fans might well find something of interest too!). “What’s Up?” is meant to cover a variety of introductory topics, including what to look for in the night sky, all about telescopes and other astronomy gear, and non-technical introductions to cool topics and breaking news in astronomy and space science.

“What’s Up?” has been successful in bringing many newcomers to our meetings, notably many young families with kids from tots to teens. Attendance at some of these segments has topped one hundred!

At the inaugural “What’s Up?” in February, I got our audience (young and old!) to use a hands-on, do-it yourself expanding universe, to come up with answers to three “deep” questions about the

cosmos. Since then, we’ve taken a look back at “Tales from Four Apollo Missions” in March (also by Yours Truly); we were treated to a warmly personal segment in April, “Navigating the Night Sky,” thanks to Treasurer Wayne Lyons; in May, we participated with our Webmaster Harvey Dueck in awe-inspiring visualizations of why, for the universe and its contents, “Size Matters;” and in June we heard an impassioned plea by AOMO co-Chair Leigh Cummings for young people to help all of us to explain “Ten Solar System Mysteries.”

Indeed, the ultimate message of Leigh’s “What’s Up?” segment is the ultimate reason behind our efforts to attract young people to RASC Vancouver events, including with programs such as “What’s Up?” Of course, young people represent the future of RASC Vancouver, as with all regional centres

and the RASC nationally, and only by expanding and deepening our commitment to public outreach, particularly to young families, can we ensure the continued vitality of our treasured Centre. But the loftier goal towards which we aspire when, as RASC Vancouver volunteers, we engage the public, is to inspire the next generation of scientists, and to enhance public understanding of science.

Owing in part to the summer interlude taken by many of our members, your Council has decided to turn our July and August public meetings at the Space Centre over entirely to the “What’s Up?” program. Instead of the usual public lecture, we’ll devote the full hour from 7:30PM-8:30PM to the “What’s Up?” On July 14, Bob Parry, well known to our members as a past President and Director of Telescopes,

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The tiny constellation Vulpecula the fox is home to two of the most popular objects in the summer and autumn sky. One is Messier 27, the famous “Dumbbell” nebula, a bright, complex planetary. It’s always a hit at star parties. The other is an asterism known to many of us (because of the strikingly familiar pattern its principal stars make, especially in binoculars) as “the Coat Hanger.” On many atlases, the Coat Hanger, also called Brocchi’s Cluster, is labelled CR 399, which identifies it as the 399<sup>th</sup> entry in the Collinder catalogue.

But who is—or was—Collinder? Why did he create a catalogue? And how does it differ from the better known Messier (M) and New General Catalogues (NGC)? Therein lies a minor mystery to which I’d given little attention until this past summer, when I read an article by Thomas Watson posted on the popular “Cloudy Nights” astronomy website ([www.cloudynights.com](http://www.cloudynights.com)). Like many of us, Watson had encountered several “CR” star atlas designations during his explorations. Unlike us, however, he decided to find out everything he could about

the mysterious “Collinder.”

It turns the catalogue’s author was Per Arne Collinder, a Swedish astronomy student. He prepared the catalogue as part of his 1931 doctoral thesis, *“On structural properties of open (star) clusters and their spatial distribution.”* It seems, however, that having completed his Ph.D. requirements, Dr. Collinder decided not to pursue a career in astronomy but, instead, became an authority on navigation. His seminal work, although often cited in subsequent astronomical literature, soon drifted into obscurity and eventually disappeared from library shelves.

After an intensive international search, Mr. Watson was at last able to obtain an original copy of Collinder’s thesis from the University of Arizona. He then took on the challenge of updating the Collinder catalogue—in particular, ensuring that the Right Ascension and Declination of all the entries are now in Epoch 2000. This corresponds to the coordinates used in current star atlases.

We city observers are

challenged by the fainter nebulae and galaxies in the Messier and NGC. Star clusters, however, are more forgiving with respect to light pollution. So, they are among our favourite deep sky objects. I printed a copy of the Collinder catalogue from the Cloudy Nights website, and have begun working my way through the hundreds of northern star clusters listed in it. Some of the objects also have NGC, Index Catalogue (IC), Herschel and Caldwell designations. But so what? Collinder’s is the only one devoted exclusively to star clusters, many of which can be seen easily in binoculars and small telescopes.

Now, about the title of this piece: Coriander is a spice. But you knew that. Colander is a bowl with tiny holes in it for draining moisture from washed vegetables. You probably knew that, too. Now you know who Collinder was, and what he did for deep-sky observers. ✨

*David A. Rodger is the Founding Director (1967-80) of Vancouver’s HR MacMillan Planetarium. He has been an active amateur astronomer since 1956.*

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my family's first winter at our "Cabin in the Sky," our new vacation home in the South Okanagan region of British Columbia. We had the last two weeks of the month and the first few days of the New Year to take in the beauty of the rural winter.

But I found it hard to pull myself away from thoughts of the Horsehead. This is a very difficult object to see at all when eyeballing through even a large telescope, but by this time I was fully into my second period of deep immersion in astronomy, and taking my own deep sky images is obsession #1. In fact, this obsession is what led my family to make such a complete rearrangement of our lifestyles (a story in itself), that our rural getaway, our piece of big-sky country, now defines all four of us, including our gentle-soul of a dog, Suzie.

My new astronomical gear is an ensemble intended first and foremost for deep-sky imaging, and is at the ready in a roll-off roof observatory. By certain providences, this is wish fulfillment at its

fullest. The equipment was fully calibrated and a joy to operate after a thrilling spring and summer working my way up its learning curve. Our skies are deep and dark, and were remarkably dry that December, despite the four feet of snow that already lay on the ground. So this winter vacation would be the culmination of my long wait. All I wanted was one night. OK, maybe two.

Months beforehand, my wife Loula and I had bought tickets to a New Year's Eve party that would be held in the nearest village, an annual event for locals, mostly cattle farmers, from around our sparsely populated rural neighbourhood. We were looking forward to the opportunity to get to know more of our very welcoming neighbours. I had insisted that my mother-in law Georgia (who would be visiting from Montréal) would come with us to the party, despite her insistence that we have that evening to ourselves. So we had bought four tickets, just in case our teenager of a son, Alexandre, would give in too. Suzie would wait for us at the

Cabin.

December 31 arrived as the first clear day of our entire vacation. The Clear Sky Chart called for good skies for the whole night. Cloud was to return New Year's Day.

What a fix.

As the hours passed under those deep blue skies, Loula allowed a remarkable indulgence to take shape.

Thus did I spend New Year's Eve pursuing the Horsehead, my family in the house while, at some considerable distance and out of earshot, I worked in the heavily insulated warm room of the observatory. On the inside of my tiny room, tucked in the northwest corner of the observatory, a small heater generated comfort while having essentially no impact on the conditions outside. For hours my telescope faithfully followed the Horsehead, so close to the warm room that I could hear the clicking of the autoguider relays through the door, the temperature outside holding at  $-18^{\circ}\text{C}$ . From the first moment in the observatory, I was intent on every aspect of the telescope

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It has been a while since I wrote for the *Nova*. I have been frustrated with the weather in Vancouver—moreover I have been busy with my courses. The weather “Gods” have not been kind to this amateur astronomer. My nights are spent on my laptop researching for papers, studying and finally staring at my telescope. Before the spring semester started, I went to the AOMO on January 9th. The weather was around  $-6$  degrees. I walked into the observatory with Mark Eburne, Leigh and David Sam. The skies were so dark that I was able to see Ursa Major clearly, even the double stars Mizar and Alcor. The first thing I wanted to observe was the gorgeous Orion Nebula (M42). Using my 12” Dobsonian I also saw M45 (Pleiades Cluster), M31 (Andromeda Galaxy), M33 (Triangulum Galaxy) and M110 (Elliptical Galaxy).

After that night, I was not able to go and observe the night sky for some time. The weather did not help and I got busy with my courses. As the semester ended, I was looking forward to clear skies and hunting more Messier Objects in the night sky.

As days passed, the usual Vancouver weather continued: Rain. I actually thought I was back in Northern India because it rains quite a lot there. However, on May 22nd, I woke up and saw the clear blue sky. I called Leigh and he had already asked me about visiting the AOMO. I was frustrated by my courses and work, and I knew that only an observing night would clear my mind; I was excited. We reached the observatory around 9:30pm and I set up my equipment (12” Dob). I started by looking at the “planet with ears.” It is truly a Wonder of The Universe. I

could see those majestic rings and the moons right next to it.

As it got darker, I decided to start my Messier Hunt. Leigh helped me with his maps (I left mine at home) and so it began. The first object I looked at is the Ring Nebula (M57). I had Leigh confirm it for me. As the night progressed, I was able to look at the Cigar Galaxy (M82) and Bode’s Galaxy (M81).

The night had to come to an end because the Moon was up and it was just hard to find certain objects.

On days like these, I am glad I’m not at a bar with my friends or watching a movie. The clear night sky has so many wonders that I am always willing to sacrifice my night so I can hunt these wonders. This is why I love Astronomy—I can forget everything in my life and just focus on the night sky. ✨

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will take our audience on a tour with “Robots of the Solar System.” For the August 11 meeting, we are working with some young people to

take over the “What’s Up?” presentation itself (details to appear on Meetup).

So here’s to clear summer skies, and more time under the stars, with membership and

the public! ✨

Howard Trottier  
President, RASC-Van  
Professor of Physics, SFU

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operation and image capture, especially a meridian flip that seemed to go on forever in the bitter cold while I worried about the gears and motors.

I downloaded a series of 10-minute frames, in luminance, red, green, blue, and Hydrogen-alpha filters. Each frame brought another powerful rush. I stood behind the telescope while it tracked, staring up the tube at Alnitak, fusing those frames from the warm room into that

awesome scene in the cold.

And so it happened that I did not look at the time until just before 2AM. What?! I had missed midnight with my family on New Years’ Eve.

I ran down and into the house. Everyone was asleep, including my night-owl son. The sparkling wine was in the fridge, unopened. Suzie looked up at me from her basket. Another fix. And another remarkable indulgence, affirmed the next morning.

It would take a few more weeks to complete the experience. Finally, far from our rural getaway, and after working the raw frames to extract every bit of it that I could, I reached the end of a long time spent, waiting to capture the Horsehead. ✨

Howard Trottier  
President, RASC Vancouver Centre  
Professor of Physics, SFU  
Vancouver and the South Okanagan, BC





**NGC 7000**  
Mark Eburne

FSQ106 and Canon DSLR

5x10-minute subs processed with flats and darks in MaximDL and Photoshop

Taken at the AOMO site

A composite image of Michelangelo's famous fresco 'The Creation of Adam'. The central figure, Adam, is shown in a reclining position, reaching out towards the right. The figure on the right, God, is also reaching out. The hands of both figures are positioned as if they are holding a pair of black binoculars together. The background of the fresco is visible, showing a landscape with hills and a cloudy sky.

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