

# NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC | VOLUME 2009 ISSUE 6 | NOVEMBER/DECEMBER 2009



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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 GMSO.

**Nov. 12:** Ingrid Stairs of UBC: A Brand New (in every way) Millisecond Pulsar.

**Dec. 10:** AGM & member talk.

**Jan. 14:** TBA

**Feb. 11: CANCELLED DUE TO OLYMPICS. ALTERNATE EVENT TBA.**

## Next Issue Deadline

Material for the January Nova should be submitted by Monday, Jan. 4, 2010. Please send submissions to:

Gordon Farrell (gfarrell@shaw.ca)

Title image: Jason Rickerby

## Asteroid Repellant (patent pending)

by Dan Collier

People of Earth, your attention please. We have discovered Asteroid Repellant. It has been tested on dozens of asteroids, many exceeding 100 kilometres in diameter, at distances exceeding three astronomical units. The costs of production and deployment are very modest. A small team of amateurs can nudge a quadrillion-ton asteroid by half its diameter in a single night.

The definitive test was performed on Sept. 22. Its subject was the 100-km asteroid Ekard, number 694 in the all-time list. This ordinary asteroid was discovered exactly 100 years ago by the prolific Joel Metcalf. It was named for Drake University, where students were given the exercise of calculating the orbits of newly discovered minor planets. Since asteroid 620 had already been dubbed "Drakonia," the title of the Des Moines, Iowa institution was reversed to coin the name for 694.

Ekard was just over 1 AU from Earth when it approached the star TYC 0506-00521-1, a 10th-magnitude red star near Altair. Phil Morris and Dan Collier have ob-

served more than 30 occultations from their base in Vancouver but have recorded only three "D/R"s, as they are known in the trade. The hunger for a D/R summoned the ambition to go into the field to observe directly under a predicted track. Ekard and the Tycho star satisfied the requirements. The orbit of Ekard being known with considerable exactitude, the chances of a D/R were very good if the observation were made in the vicinity of Hope, BC.

So it was to be to Hope that Collier and Morris would journey that night.

Asteroid Repellant has side effects. Chief of these are telescope failures, poor memory, an attraction for dew, and vehicle reliability. Dew being anticipated, Collier had improvised a dewshield from Bristol board and a lady's undergarment but forgot to load it in the car. A second telescope was brought along but had to be excused from proceedings when its "go-to" controller failed in a manner never previously experienced.

As for the vehicle, Murphy intervened. A serious vibration de-

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With many summertime activities to choose from, and the late evening twilight to hamper observing, the Canadian contingent of the International Year of Astronomy has kept going strong in its goal of getting one million Canadians to observe through a telescope.

On July 12th, the Vancouver Symphony Orchestra held “Symphony in the Park” at Deer Lake Park in Burnaby. The concert was well attended and Angela, Karl, Leigh, Ron, Suzanna and I set up telescopes for the crowd to look through at their leisure. The skies did not permit us to get any observing in but there were many people interested in the telescopes and our astronomy program.

July 17th saw Ron and I at the Silk Purse Arts centre in West Vancouver. At an informal meeting with nineteen interested people from the North Shore, we discussed the use of the Silk Purse for small local meetings and Sidewalk Astronomy observing at the local park. The North Shore group is willing to make use of the facility on a monthly basis. From what I have picked up on our Meetup Group website, it looks like they have gotten off to a good start.

Unfortunately, I cannot make all the events planned for IYA 2009. The NRC’s Herzberg Institute of Astrophysics held an event at the Richmond Public Library on July 29th.

I missed the GVRD Perseid meteor shower watch at Aldergrove Lake Regional Park on Saturday,

August 8th as I was rafting on the Thompson River. Although not officially an IYA event, it was an opportunity for me to share some of what I know with a few strangers to the night sky. I will fill in more details of this adventure in a future article when I have the time to give a bit more justice to it.

I did return to attend the GVRD’s Perseid meteor shower watch on August 11th. The weather that night was not the greatest but we found a few sucker holes to look through and get some telescope observing in. Although I did not sit down and do a proper meteor count, I was really amazed at the number of meteors I did see radiating out from Perseus. A very rough estimate would be about 25 to 40 per hour. There were a number of people that took advantage of the GVRD’s offer to allow camping at the park for the evening, just observing with an unaided eye and watching for the brief trail of a meteor darting through the night sky. I found myself returning to Maple Ridge around 4:00 am on Wednesday morning.

Wherever you live, the highlight of the summer season is a Star Party and the chance to meet with fellow amateur astronomers. In British Columbia, we are fortunate to have many to choose from. Once again I attended the Mount Kobau Star Party to reaffirm old friendships and make new ones.

The day before the party began this year, there was four inches of snow witnessed at the top of the

mountain and with the extreme forest fire conditions there was a good possibility the event would be cancelled. As I approached Richter Pass on an overcast Sunday afternoon, I had to make the decision to head up the mountain or spend an evening in Osoyoos before heading up to the summit. My decision was rewarded with one of the views I enjoy the most, visually observing our Milky Way galaxy from horizon to horizon with an unaided eye.

Each time I head out observing, I revisit many familiar targets and try to pick out a few new ones. This year my new subject was IC 5146, the Cocoon Nebula. I was able to locate the field with the use of the book *Binocular Highlights* by Gary Seronik. This faint emission/reflection nebula is at the end of the dark nebula Barnard 168 in Cygnus. I repeatedly attempted to locate the nebulae with no success. I was convinced I was observing the correct star field. The difficulty in observing the Cocoon is the fact there is a bright star at its centre. My eye automatically focused in on the field. In order to detect this deep sky object, it was necessary to gaze at the field of stars and use averted vision to make the nebulae jump to life.

Cloud and smoke in the sky made observing conditions less than ideal this year and I had to fall back on an observing technique I learned a few years ago. Set the alarm clock and ketch an hour of

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## President's Message

The International Year of Astronomy has been a tremendous success. A variety of unique events and collaborations in pursuit of an ambitious goal has been rewarded through the perseverance and dedication of all the major astronomical organizations across Canada, amateur and professional alike. Jim Hesser, from the National Research Council in Victoria, acted as liaison for all the groups as well as being Canada's representative among the 130+ countries involved in similar activities around the world. Much credit goes to Jim and the support and encouragement he and his group provided to all the participants.

The overarching goal for Canada was to have one million members of the public experience a "Galileo Moment." Broadly defined, that meant each would participate in some event with an astronomical theme. Ideally, as many as possible would actually look at the night sky through binoculars or a telescope and see one or more of the things that Galileo Galilei encountered some 400 years ago for the first time—details of the moon's surface, the phases of Venus, Jupiter and its four largest moons or the Pleiades. All the participating groups have been carefully tracking attendance at their events over the year and, at the end of October, Jim announced that we had reached the one million mark. It is my privilege to thank the many volunteers from

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## 2009 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 \$70.00 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.

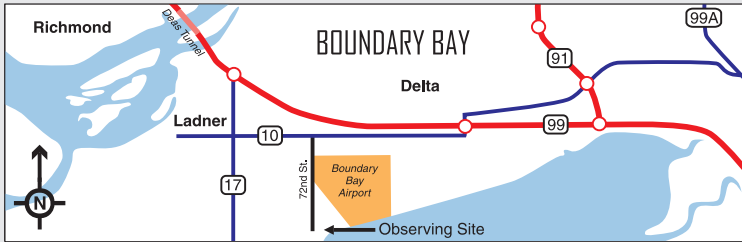
## Advertising

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.

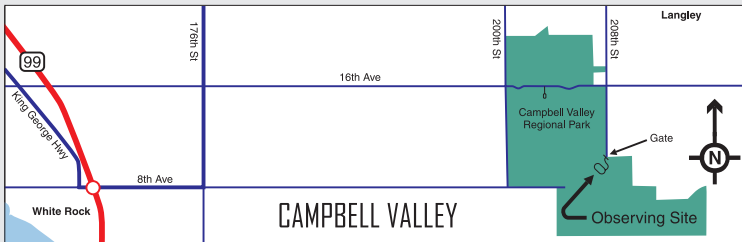
## Commerical Rates

1/4 Page: \$15.00 per issue  
1/2 Page: \$25.00 per issue  
Full Page: \$40.00 per issue  
Rates are for electronic or camera-ready files. Payment, by cheque, must accompany ad material. Make cheque payable to:  
RASC Vancouver Centre.

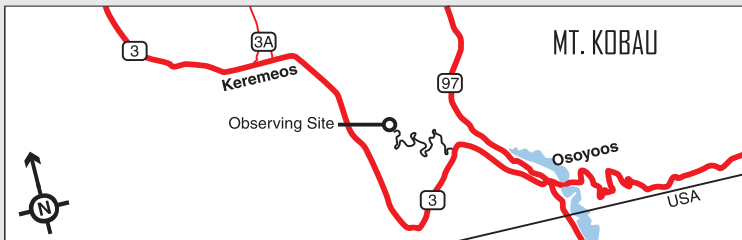
# OBSERVING SITES



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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our Centre who have given unstintingly of their time on numerous occasions over the last ten months, frequently several times a month, to help make this happen.

IYA is not over but, while there are several more events before yearend, the pace of activity is slowing. Hopefully the personal satisfaction of a job very well done will help compensate for some of the feelings of “burnout” registered by a few members. RASC National has been very supportive

in helping supply materials for public distribution, something we hope will continue. Vancouver Telescope helped provide some inexpensive introductory telescopes that could be given to educational groups as well as families and youngsters new to the hobby we enjoy so much. Both Simon Fraser University and BCIT were busy with outreach activities which will continue into the New Year and we will assist them where we can.

Our National President—Dave Lane—visited Vancouver last

month and discussed his current astronomical interest, the study of variable stars. This is a potential activity for our observatory in Maple Ridge, and Dave offered to share his expertise. The AOMO has become a busier place, thanks to the efforts of our Maple Ridge members, with much of their current efforts devoted to astrophotography.

It is with regret that I note the recent passing of one of our Maple Ridge members—Jim Martin.

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Wayne Lyons described him as “one of those quiet people that was always around to help out with whatever was needed.” Jim was interested in observing the night skies and sharing his telescopes with others. That is one of the things we do best. We understand there will be a celebration of life ceremony held at the Maple Ridge Funeral Chapel (11969 – 216th Street, Maple Ridge) on Saturday, November 14<sup>th</sup> from 2:00 pm until 4:00 pm.

As an ongoing reminder to members, there will be **NOT** be a meeting at the Space Centre in February 2010 because of the Olympic activity in Vancouver. We are endeavouring to arrange an alternative event and will keep you posted. Please pass this notice on to other members.

I will be taking some time away from RASC activities in the first part of the New Year. My wife insists on it. We are going to spend time in Nicaragua and Ecuador, enjoying a change of climate and a different vantage point for the night sky. I will take a telescope, however, and, hopefully, share some “Galileo Moments” with a whole new audience.

– Ron Jerome  
Acting President

## LIBRARY

The centre has a large library of books, magazines and old NOVA's 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/> 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 Pacific Space Centre Society is a non-profit organization which operates the H.R. MacMillan Space Centre and Gordon M. Southam Observatory. Annual Membership (\$30 Individual, \$80 Family) includes a newsletter, discounts on Space Camps, special programs and lectures, Vancouver Museum discounts, and free admission to the Space Centre. Admission to the Space Centre includes: Astronomy shows, Motion Simulator rides, multimedia shows in GroundStation Canada, and access to the Cosmic Courtyard Exhibit Gallery. For Membership information, call Mahi Jordao at 604-738-7827, local 237 for information. You can also reach them on the Internet at <http://www.hrmacmillanspacecentre.com/>

## 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 Bob Parry, 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. Bob can be reached at 604-215-8844.

Your greatest opportunity as a member of the R.A.S.C. 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**

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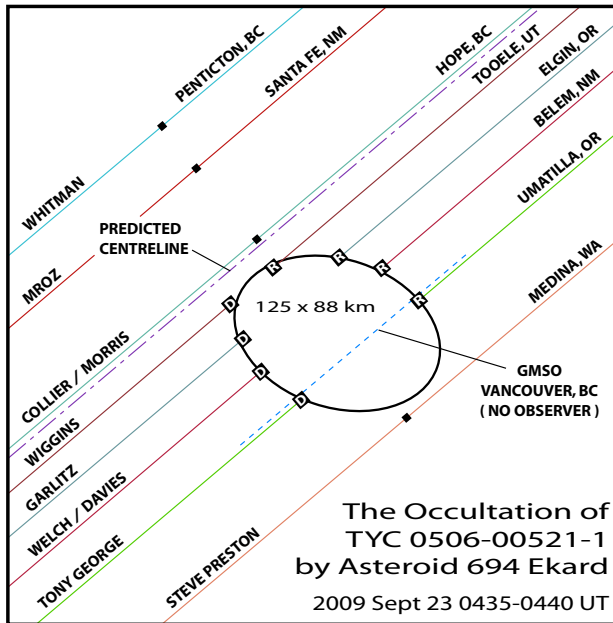
veloped after Chilliwack. An elderly tire had popped its tread under the stress of the equipment in the trunk. Fortunately it remained inflated, and only two hours were lost while it was changed.

More of the time cushion was consumed by discussions with homeowners near Hope. The team had hoped to borrow 120 volts to power the setup. The locals, while cordial, ultimately refused. It was decided to move to the backup site at Hope Golf Course. Approached cold, the manager agreed without delay to allow full use of the clubhouse AC. Then it was back to town for the scheduled meal period at an Internet cafe. No last-minute bulletins had been posted on the IOTA web sites.

Back at the golf course, team members unloaded the equipment. They polar aligned the primary telescope and installed the CCTV camera at the eyepiece. The Halley-era Schmidt-Cass and its simple quartz-crystal clock drive worked well. A bright star located 11m45s due west of the target was identified on the monitor. The telescope drive was switched off for that period, placing the

Tycho target star in the field. A wire was unrolled and clipped to a nearby garbage skip to serve as the antenna for the shortwave radio, which was tuned to the WWVH time station in Hawaii. With five minutes to spare, the VTR was placed in “record” to capture the

Because Team Vancouver was at the best possible position, Ekard altered course to avoid them. The target star remained steady on-screen. No D/R. Yet again, Collier and Morris had failed to record a positive result for a sure-fire asteroidal occultation.



It was obvious that Ekard had missed Hope by at least half its diameter. And because Ekard turned out to be potato-shaped with its longest axis oriented cross-track, it had gone aside even farther than usual to nix the D/R.

But the repellant effect was a blessing for Science. It moved Ekard directly into the clutches of the other observers, most of whom were west of the track. Four saw a D/R; see figure. The asteroid could have passed

events. Now it was all up to Ekard and the star.

Steve Preston computed the prediction for the event on behalf of the IOTA and promised a positive D/R for any observer near the centre of the predicted track. He himself was observing from Seattle. In all, eight observing teams had deployed along the track in BC, Washington, Oregon, Utah and New Mexico.

Asteroid Repellant worked!

east but it was obvious that Ekard would go west because Vancouver itself is in that direction. Ekard passed almost directly over Vancouver and Southam Observatory, where Collier and Morris usually observe. Had they stayed home, they would have been successful. ✨

Reference:

[www.asteroidoccultation.com/observations/Results](http://www.asteroidoccultation.com/observations/Results)

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sleep. Many times on the top of the mountain observing conditions are the best just before dawn.

Thursday evening began with rapidly changing observing conditions. One minute there would be a cover of cloud and the next it would be all clear. Mother Nature treated us to a display that was much more impressive than the Vancouver Celebration of light. The horizon became increasingly illuminated by distant flashes of light. My wife was pretty hesitant about our situation at the top of a mountain and very dry conditions in the surrounding area but I was a bit reassured the storm was a fair distance away as there was no whisper of any thunder to accompany the lightning.

At midnight I set my alarm for 1:30 am and went for an hour of sleep. After a check outside to see that observing conditions had not

improved much, I reset the alarm for 2:30 and returned to bed. It was just 45 minutes later that I finally learned to appreciate Go-To telescopes. I was awoken by the horrendous noise of a nearby CGE scope frantically slewing across the night sky in search of its programmed target. I instantly realized that observing conditions had improved. Celestron truly does make a great alarm clock. I believe that morning produced the best observing conditions for the week.

After closing ceremonies on Saturday evening, observing conditions were once again intermittent. Mark Eburne and James Black had come to the mountain to find clear, dark skies and do some astrophotography. Unfortunately, there was just enough wind to make imaging impossible. Mark came over to make use of our 16" Dobsonian scope. After picking out a few of the deep sky Messier

objects, he located the small open cluster NGC 6802 at the eastern end of the Coat Hanger in Vulpecula. I was impressed by how well he has learned to find a few deep sky objects through his experience with his Go-To telescope.

The following night, my wife and I were camping down in Osoyoos to begin a week of relaxation in the Okanagan sunshine. The sky was clear and there were many stars shining in the night sky. We could see Mount Kobau and the Milky Way just visible at the zenith but it did not reach out to the horizons as it did on top of the mountain.

To this date, 669,881 Canadians have experienced a Galileo Moment in 2009.

Special thanks to all of our members who have contributed in some way to make this possible. ★

## AOMO Report

by Wayne Lyons

The summer has come and gone and I'm still wondering where all the time has gone. With the good weather in July we were getting up to the observatory fairly regularly but much time was spent training and checking out the equipment rather than getting images. Then, when August rolled around, I found myself away a good deal of the month and productivity has slowed down.

With the MaxPoint program, we do have the ability to check

performances of the telescope and our imaging system. It will be important to use this tool to bring our observatory up to its maximum capabilities.

While there is still much more that can and should be done at the observatory, I am looking for more input from our membership on the direction and goals that we can achieve with this facility. My personal interest is to see an increase use for public outreach and education. There will be an

AOMO Committee Meeting held at the GMSO on Thursday, September 24 for all RASC Vancouver Centre members interested in our observatory. The agenda for the evening will be as follows:

- Select Committee core members
- Goals of observatory
- Budget – 2010

I look forward to meeting with you and hope we will continue to do so. ★

Proud To Serve Vancouver's Astronomical Community



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