



NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC

VOLUME 2001 ISSUE 3

MAY/JUNE 2001

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Looking Ahead

Remember, you are always welcome to attend meetings of Council, held on the first Tuesday of every month at 7:30pm in the G.S.O.

May: Ray Villard, Director of Public Relations, Space Telescope Science Institute

June: Planterarium Show: "Electric Skies" (meeting starts at 7:00pm)

July: Lee's Amateur Hour

August: TBA

Next Issue Deadline

Material for the May Nova should be submitted by Monday, July 2, 2001. Please send submissions to:

Gordon Farrell
(gfarrell@home.com)

or Bob Parry
(robpar@ballard.com)

Astronomy Day Report

by Bob Parry

Astronomy Day this year looked like it was going to be a bust with a major rain and wind storm blowing through Friday night. However, the weather forecast called for sunny periods on Saturday, and—guess what?—that is exactly what happened. The best weather was from noon 'til about three in the afternoon.

We had many scopes on display, most with solar filters. This was great to see, as the sun has been so active over the last month, having so many scopes for the public to view sunspots was great. The activity started on time at noon with our volunteers arriving and setting up the displays. My many thanks to all who helped out. Jim Birnath and Ted Stroman set up their fascinating displays in the main lobby of the Planetarium where they had large crowds for the entire day.

Down at the GSO, we had a series of talks lined up. These included Eric Fuller's talks on telescope basics and viewing the sun; Norman Song's talk about the wonders of the Universe, complete with slides; Bill Ronald's talk showing people what to look for on our nearest neighbour, the moon; and the final talk of the day was from Lee Johnson showing the constellations and what was in the sky over the next several months.

Among the many telescopes that were on display was the biggest Celestron SC; a giant 14" complete with a solar filter and computer. I am certainly glad I don't have to tote that monster around, but it is one beautiful telescope. It gives one the 2 inch itise (a paraphrase of the sailors' 2 foot itise).

There is a lovely tradition taking root at Astronomy Day which all of the volunteers want to keep alive. I am of course talking about Pomponia's wonderful cooking that she brings out for the volunteers. This year, in addition to her usual chocolate cake and caramel rice krispies squares, she added chilli and fresh baked focaccia bread. For the public, we arranged for Mr. Tube Steak to provide a concession. This was well received. Thank you to Melissa for her efforts.

As always, there is a raffle as part of Astronomy Day, and this year's prize was a pair of 7X50 Celestron Ultima binoculars. These are really excellent binos and they were won by a very excited Angela Squires. Congratulations Angela.

The weather that had held off during the day at the GSO finally started to give way to all the clouds that were visible all around us. The party started to break up around 6:30 so there was no opportunity to see any stars that night. It has been a couple of years since we had a complete noon to midnight Astronomy Day. I for one was only slightly disappointed, as this was a very long day.

At this time, I would like to thank all those that helped out.

Doug Montgomery for his help with membership, raffle sales and making the children's sun dials; Sally Baker and Joan Cossar for working the RASC table and the children's activities; Ted Stroman and Jim Birnath for their excellent displays; Eric Fuller, Norman Song, Bill Ronald and Lee Johnson for their excellent talks; Hugh

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The Accelerating Universe

by Marc Verschueren

A few weeks ago, it was announced that the Hubble space telescope had recorded the explosion of a supernova approximately 10 billion light-years away. The regular press and the internet also paid attention to this story. There were the usual references to Einstein and the accelerating of the expansion of the universe, not all of it very accurate. Let us have a look at this and put it in a proper perspective.

About ten years ago, astronomers began to think seriously about the use of supernovae of type Ia to determine distances in the universe. Such a supernova is supposed to explode when the star has a specific intrinsic brightness—the same for all of them. If we know how bright the supernova looks to us, here at our observatory on earth, we can estimate its distance. The basic principle is the same as for cepheids, except that a supernova is visible at a much greater distance than a cepheid. It turns out that the distances to these very distant supernovae are greater than what is expected on the basis of the standard theory of the expansion of the universe. The latter can be estimated from the redshift. This does indeed mean that the universe is expanding faster than predicted by Einstein's general relativity. The expansion is accelerating.

The remarkable thing is that Einstein at some time inserted indeed a term in his equation that provided for an acceleration. A press article even suggests he would have received another Nobel price for predicting the acceleration. I would like to disagree with this statement. Einstein entered this term for exactly the opposite reason. Let us look at the equation. Originally, it looked like:

$$G = aT$$

G is a mathematical quantity, called the *Einstein tensor*, which specifies the geometry of space—specifically its curvature. T is the energy density of space, and a is a constant. These are not numbers, but complex mathematical expressions (their exact form does not matter to us here). This equation leads to an expanding or contracting universe if you write it all out in detail and solve the equation under certain conditions. When Einstein realized this, he could not accept this result. At that time, more than 80 years ago, the universe was considered stable. Space was here as it had always been, and it was going to be here forever—Space did not change. Even Einstein could not accept an expanding universe. Therefore he added a term to the equation that would lead to a stable universe. The equation then looked like:

$$G = aT + \lambda g$$

In this version, λ is the so-called cosmological constant and g is again a geometrical property of space. As the universe expands, the expansion is slowed down by gravitation, so to achieve a stable universe, the extra term must counteract exactly this slowing down by gravitation. The cosmological term is indeed a form of anti-gravity—it accelerates the expansion. If you adjust the value of this term, it is possible to achieve a stable universe that does not expand nor contract—the two forces balance each other.

But then Hubble discovered that the universe does indeed expand and Einstein immediately dropped his cosmological term. He was disappointed that he had ever considered it.

The equation is more elegant without it, and he missed the opportunity of predicting the expansion of the universe. At that time it was not clear at all what could be the reason for the presence of such a term. In the equation above, T represents all the usual forms of energy, including all mass and radiation. If the universe were to be empty, a vacuum, then T would be zero. And if there were no cosmological constant, the equation would become: $G = 0$. In mathematics, this means that the universe would be flat, euclidean, like in the elementary geometry familiar to us from high school days. But if the cosmological term is present, then, even for a vacuum, G is not zero, and this means there would be expansion and curvature—even an empty universe expands. Today, physics has developed enough to allow for this kind of phenomenon. An empty space can have a form of energy, and it seems to be that this mysterious energy does indeed play a role in the large-scale properties of the universe. It is not hard to see how fundamental the consequences of this discovery are.

It is not the first time that supernovae have been observed that indicate this acceleration, but this supernova is at the greatest distance so far. Of course, it is probably best to reserve for a while a definitive conclusion. It is still possible that the supernova as a standard candle is not accurate enough, and one can invent other objections. On the other hand, the presence of the cosmological term is supported by recent measurements of the angular variation of the cosmic background radiation. There is a strong possibility that physics and cosmology are turning in a new direction. ★

President's Message

It seems like just yesterday I was complaining about the fact that Spring was taking so long to get here. Now it is already May and I still haven't been able to get out and do my Virgo galaxies. Are you in the same boat? One of the things I find about our busy life in the city is that we don't seem to get enough time to sit back and look at the stars. Maybe we will just have to make some; besides, there's always the moon....

As I mentioned at the April meeting, it is with great sadness that I inform our membership that Tony Overton passed on March 16th. Most members might not have recognized Tony, as he kept quite quiet. The executive is considering several options regarding a fitting memorial for Tony and will make our decision known in the next NOVA. If you have any suggestions, please let one of us know as we will be discussing this important matter at our June council meeting.

Another item that has come up recently is a proposed fee increase. Bob Parry and I will be attending the next General Assembly on the July long weekend. We will be voting on the issue of a fee increase at that time. I hope to get input from our membership between now and then as to your feelings. There should be a proxy form in your next mailing from National. Council has met with National's 1st Vice President, Raj Gupta, and we will be bringing you up to speed on the pros and cons of this issue.

A third item on my list of things is the new format for NOVA. You can look for our newsletter to change in the coming months. The first change won't be noticed by all, but it will definitely help out our distribution volunteers. Starting with the September NOVA, anyone with an email address will be emailed a link to the electronic form of NOVA on our club's web site. The NOVA on the web is in full colour and easily printable and recipients of the email link will not be mailed a printed version. We will have the newsletter posted in Acrobat pdf format and

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2000 Vancouver Centre Officers

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Web Site

<http://hrmacmillanspacecentre.com/fr11.htm> and follow the link to Astronomy Clubs
or <http://www.rasc.ca/vancouver>.

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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 Tuesday of every month. Guests are always welcome. In addition, the Centre has an observing site where star parties are regularly scheduled.

Membership is currently \$49.00 per year (\$25.00 for persons under 21 years of age) and can be obtained by writing to the Treasurer at the address below. 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, mailed to the address below, or uploaded to SpaceBase™ at 473-9358, 59.

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.

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1/2 Page: \$25.00 per issue
Full Page: \$40.00 per issue
Rates are for camera-ready, or electronic files. Payment, by cheque, must accompany ad material. Make cheque payable to:
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National Meeting Report for March 10, 2001

by Bob Parry

The spring meeting of the National Council was held in what I am told has been its regular location; this was the law firm of Michael Watson, our national treasurer. These offices are as opulent as any that you see on a Hollywood movie set. The only previous meeting I had been to was in Montreal in a perfectly adequate but hardly opulent room.

The meeting started out with VP's reports and the Secretary's report. These revealed that Prince George has applied for membership in the RASC and this was approved. Prince George has over 40 members. Saskatoon Centre has decided to "opt" into the RASC membership system.

Bonnie reported that changes to the mailing system have improved international delivery time. The labelling package for the members' database has been implemented and is working well. A number of copies of the RASC history, *Looking Up*, were located and purchased at a good price; this now brings the number of copies available at National to 62.

The fun and fireworks were about to start: The Treasurer's Report was next.

This started out innocuously enough with the usual stating of assets (\$381,000) and that the RASC is a \$330,000/year business. It was stated that we could expect a modest surplus this year after 2 years of large deficits. Rajiv Gupta pointed out that the surplus was mostly due to changes in accounting procedures and that the computer expenses were in the past. Over the past couple of years, we have had a rather large deficit (some \$40,000 over two years), mostly due to cost overruns on the computerized database system that was installed after the membership duties were taken back in-house from the University of Toronto. The \$4 increase in members' dues that took effect this budget year have made the costs of services come into line with our expenses. However, the biggest contribution to our bottom line has been from sale of publications. The

Observers Handbook and surprisingly high returns from the RASC Calendar have prevented the deficit from being higher. Rajiv noted that for the first time in several years the *Observers Handbook* sales declined; however due to favourable exchange rates with the \$US, we still had an increase in revenue.

The new accounting procedures that amortize the costs of large items over a number of years allowed the costs of publishing the new *Beginners Handbook* to be spread over the three year expected life of the handbook before it requires updating.

Questions were asked about the cost of maintaining the database software. It was reported that we are invoiced for maintenance, as it is required. The budget contains a value of \$500/month!!

The finance committee returned a recommendation that there be no membership increase for the coming year. This is where things began to really heat up. Rajiv made a motion during the discussion on the fee structure to increase the membership cost by \$4. This was debated vigorously without much consensus. When the vote was called, there was a tie, which was broken in favour of a fee increase by the National President Bob Garrison. We will be talking to the membership more about this in June.

Raj argued that with decreasing sales and possibly decreasing revenue from our publications, that we could be in a deficit position again soon, and that it takes approximately 2 years for revenue increases from memberships to affect the bottom line. He also pointed out that with increasing membership, National would have to hire another employee at approximately 6000 members. This issue is adamantly opposed by Vancouver Centre Council. We believe that we already have more than enough employees and that improvements in operating procedures are required before any increase in the employee count occurs.

The next issue that came up was

new to me. This involved what was being called "Decoupling." This, on the surface, seemed rather benign. What this is trying to do is to change the fee structure that currently exists in the RASC. It would involve scrapping of the 60/40 split of the membership dues. National would have their fee and the local chapters would have theirs. Presumably National would collect both fees and forward the local fee to the various clubs, but this is not certain. The other fly in this ointment is "unattached members" and how they will be dealt with.

Pomponia then cautioned that this decoupling move could, over a number of years, cause the break-up of the entire RASC. Her reasoning is that with the split there would be less reason over time for larger centres such as Vancouver, Calgary, Ottawa and Halifax to remain in the Society. Centres will have a tendency to operate independently and only be concerned with their own issues, not necessarily those of the whole organization. She has seen this happen with other organizations, where similar decoupling strategies resulted in the demise of the national organization, with several large independent centres continuing while smaller centres disbanded.

Other centres, notably Hamilton, expressed concerns over the implementation of this restructuring and its effects on local centre operations.

This idea, as it was not a motion yet, was sent to the Constitutional Committee to draw up proposed amendments to the Constitution and to report back to Council on how this will be implemented and its possible effects on the Society.

After all of this we finally got to the "Good Stuff." There has been a Special Membership Award for a while now that it was decided to wind down. There has been a relaxing of some of the requirements so that special awards can be given at the upcoming AGM in London. This will be that last year that these awards are to be given out. We

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Messier Marathon Reports

March 23rd saw the club's first Messier Marathon in many years. The events were fairly well attended and offered an encouraging start for future marathons. Below are reports from the four (er, make that three) sites for this spring's event.

Aldergrove Lake Report by Doug Montgomery

The Messier marathon held on March 24 at Aldergrove lake was not well attended but still a good night out. About ten people showed up bringing six scopes. I was pleased that four of the ten people had never been to Aldergrove lake observing before.

We had everything from a small refractor to Howard Morgan's 17.5 inch truss reflector. I got about 20 Messier objects in my 10 inch Schmidt-Cassegrain, but I think Marcellus Redmond got more than that.

The sky conditions were changing all night. Sometimes it was good and then some high cloud would pass through. Heavy cloud rolled in about 1:30 and 2:00 am, ending the night early.

Boundary Bay Report by Sean Roddick

This is the first time the area along the Boundary Bay dike was used as the site of a serious RASC star party

and judging by the turnout this year the party has been a success. Overall the turnout was fairly healthy despite the weather and we had around 12 people show up at our peak. Most people left the site by around 11 PM while myself and a few others lingered on until after 2 AM. Part of the success of the site is its good southern horizon and its proximity to those living in Vancouver who want an alternative to either Aldergrove or Cypress.

In terms of observing, we had around four or five telescopes out to hunt for Messiers. Much of the early observing was devoted to Jupiter and Saturn due to early evening cloud cover that prevented us from nailing those objects in Cetus and Pisces. The weather cleared nicely at around 8:30, so we started our hunt in Orion and Auriga where the open clusters and the Orion Nebula were all well seen. It was decided that those who had scopes search for Messiers in different parts of the sky so we could maximize the number we could see in one night. Despite the weather, we bagged 30 Messiers including binocular observations of M68 and M83 in southern Hydra. We stayed on until around 2 AM, just in time to catch Mars rising and confusing it with Antares for a little while. Due to the success of the Boundary Bay site, I am planning to have more observing sessions out there

during the summer and it is an ideal site for observing the more southerly objects both in NGC and Messier catalogues. Finally, special credit must go to Michael Jensen who observed at least 20 Messiers that night and contributed fully to a highly successful evening.

The Messier Marathon... CARO style. by Eric Fuller

Bob, Pomponia, and I went up to CARO to have some fun with the telescope. The original plan was to use the CAROBOT software to control the telescope. Due to technical difficulties, the software would not connect with the telescope... bad luck. Bob had brought his laptop up with him so we tried Earth Centered Universe instead. Bingo! We were up and running in no time. Tony had been working on the dome controller so it was still at his place. We had to improvise with a couple of wires. As it turns out, CAROBOT complains without the dome controller anyway. After doing a single star alignment, we started pointing at various things. It's easy to see why Go To telescopes are selling so well, although the 16" variety may not sell quite so well as the 3.5". We observed for a couple of hours and found about 40 objects, then downstairs into

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are looking into who from our centre might be eligible.

The 100th Anniversary of the RASC is coming up in 2003, so there was talk about what could be done to celebrate. This just happens to be the year that Vancouver Centre is applying to host the event. To this end, Vancouver Centre formally announced our intention of hosting the event. This will be voted on at the AGM, but we are the only ones bidding at this point.

Roy Bishop was named the Honorary President of the RASC in recognition of all his work and contributions

to the RASC over many years. Roy is the past publisher of the *Observers Handbook*, a duty that he did very well for 25 years.

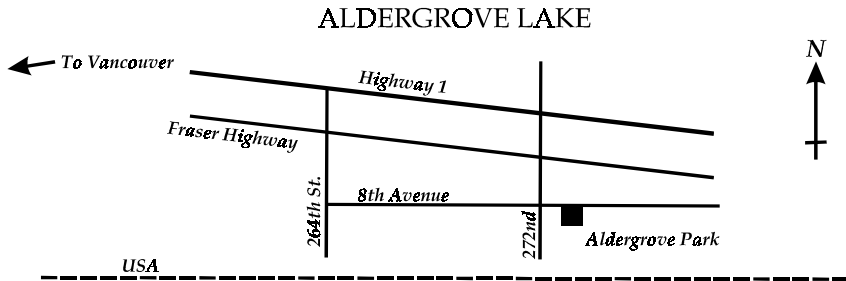
Michael Watson was nominated as Treasurer for another term.

A certificate is being developed to present to Oshawa for their creation of a Dark Sky Reserve in Ontario. This was the first such reserve to be formed in North America—possibly anywhere.

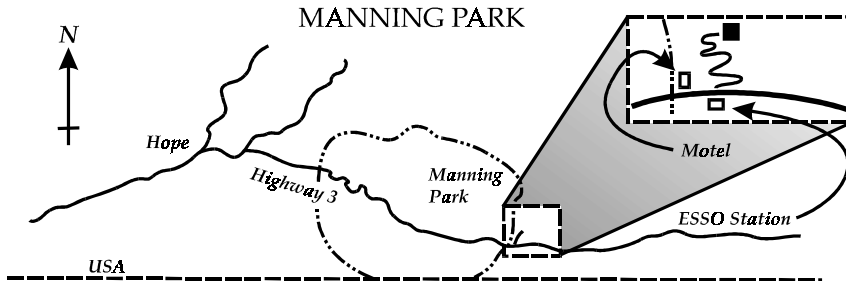
The best and only truly Astronomical event to occur involved the proposal for a new observing certificate. This is simpler and has a greater

variety of objects than the Messier and NGC Certificates that are now awarded. There will be different levels of the award—Bronze, Silver and Gold. The Gold award is for all the objects with the other awards for other stages. One stage would likely include objects that can be seen naked eye or with modest binoculars. I found this a very exciting idea and look forward to seeing the final draft. A good way to end my first National Council Meeting. *

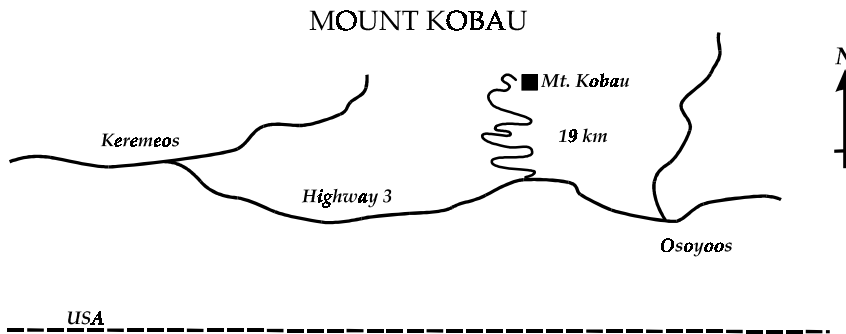
Observing Sites



Dale McNabb Observatory in Aldergrove Lake Park (RASC Vancouver Centre's regular viewing site)
Contact Mike Penndelton (888-1505) or Howard Morgan (856-9186)



Site of the annual star party organized by the RASC Vancouver Centre



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

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Gregory for taping the event; all those who brought their scopes and spent their time with the public; Sean Roddick and Angela Squires for their

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we have a link to Adobe where you can get the latest free version of Acrobat Reader. If members desire a printed copy and don't wish to print out their own, one is available at the meetings. The second change to NOVA will come in January of next year when we change to a horizontal, two pages per sheet, 8 1/2" x 14" legal size. The reason for this change has to do with the ease of folding the NOVA to insert into a standard envelope. As I am sure you can understand, our mailing crew spends a great deal of time just stuffing the newsletter into envelopes let

organizing, and promotions talent as well as helping out; and my special thanks to Pomponia for all her help in organizing this event.

On behalf of the RASC, I would

alone sealing them. This change in format will ease their workload considerably.

Don't forget the Fraser River Festival is on the June 2nd weekend. Contact Angela for further information. We would like to have a good turn out, as this is the event that we see the most members of the public at. We are planning a Public Astronomy night on June 1st, weather permitting. As usual, it will be held at the corner of Denman and Davie right near the bathhouse. Any new members should come on out as I am sure the regulars would like to show you what we do at these events.

like to thank the H.R. MacMillan Space Centre and their staff who supported this important annual event.

Next year, maybe the skies will be clear all day. ✨

The Artificial Star Party has been postponed until June when we will hold it one evening near Nat Bailey Stadium. Seamus has a million reasons why this location is quite good, so we will announce the date on the web site and at the June meeting.

"At last the sunlight faded out of the sky entirely, and a mist was on the sea, and the first stars showed in the gathering dark. Then above the mist, far out across the sea, the moon rose round and yellow and began to lay its shining path on the water." – J. R. R. Tolkien; *Roverandom*, 1925. ✨

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LIBRARY

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

RASCVC on the Internet

<http://members.home.net/rascvc/index.html>

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, \$65 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 738-7827, local 237 for information. You can also reach them on the Internet at <http://www.hmacmillanspacecentre.com/>

MEMBERSHIP HAS ITS PRIVILEGES!

New members, did you know? The Vancouver Centre has 6 telescopes available for loan free of charge! We have telescopes ranging from 3" to 10" diameter. For more information call Phil Morris, Director of Telescopes at 734-8708, or see him in the lobby of the GSO after the members meeting. The loaner period is for one month only. All telescopes are to be picked up and returned after the members meeting. No telescope will be allowed to circulate outside of these meetings!

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 the Dale McNabb Observatory in the Aldergrove Lake Park, located in Langley, on 8th Avenue, just east of 272nd Street. We are there most clear nights. Contact Mike Penndelton at 888-1505 or Howard Morgan at 856-9186.

My Second Telescope

by Gordon Farrell

I've heard it said that boat owners are often afflicted by a terrible condition known as twofootitis, an affliction characterized by an overwhelming need to own a boat a couple of feet longer than the one you have. Recent events have led me to believe that amateur astronomers suffer from a similar condition: twoinchitis. The primary symptom seems to be an overwhelming need to own a telescope with a couple more inches of aperture than the one you currently own. How do I know of such a condition? Because, dear reader, I believe I am its latest victim.

Prior to my affliction, I owned a single, modest telescope: an 80mm f/5 refractor on an equatorial mount. This is a fine scope with a wide field of view, but it left me wanting more. I wanted more light gathering power. I wanted more resolving power. I wanted a bigger scope. But how best to satisfy my growing desire?

I knew I wanted something bigger, but how much bigger? Having been struck with the milder form of the disease, two more inches would be enough to satisfy my needs. Since 80mm is approximately 3.15", I would probably be looking at a 5" scope (as amateur telescopes get bigger, metric generally gives way to imperial units of measure). The question then became what type of telescope fit my needs?

My personal needs were twofold. First, I needed something portable. Vancouver skies are far from dark, so I take my telescope to my parents' home in Qualicum Beach as often as I can, and I generally go as a foot passenger to save money on the ferry ride. Therefore, I needed something I could throw in a bag and carry onto the bus and the ferry with ease. Second, I was starting to develop an interest in astrophotography, so I needed a scope that was also adept at this task.

As far as aperture bang-for-buck is concerned, it's hard to beat a Newtonian reflector. You can get an

equatorial or Dobsonian mounted reflector up to 10" in diameter for under \$1200. A tube that big didn't fit my needs, so if I were to consider a reflector, the biggest I could handle would be a 6" f/5 scope. While such a scope would be great for observing, I had my doubts about its suitability for photography. The eyepiece of a reflector protrudes out the side of scope, near the front end of the tube. This is very convenient for observing, but may cause stability problems for photography. Having the weight of a camera in such an off-axis position could make for a lot of vibration—not good for photography. This shouldn't be a problem for a large reflector, but with my desire for something small, this ruled out a reflector.

Another option would be a refractor. Refractors are very nice for both observing and photography, but mostly come on long focal lengths, usually f/10, so can be very bulky. You can get f/5 refractors, but finding one larger than the 80mm one I currently own can be difficult, if not downright pricey. Once you get up above 4", refractor prices get very high. A compact, 4.7" refractor can cost over \$2000! A little out of my price range. There are some cheaper ones that have recently become available, but hadn't been released at the time. Besides, I was really hoping for longer focal length.

My third option was a Schmidt-Cassegrain. Because of the folded-up nature of their catadioptric design, these are very compact scopes and highly portable—a 5", f/10 model fits nicely into a small backpack. SCTs are also very popular for photography, with a wide variety of accessories readily available. And at \$1300 including an equatorial mount and clock drive, one was well within my price range. I had found the telescope I was looking for.

Now that I had my scope, it was time to test it. As luck would have it, it was clear that night, so I took my

shiny new scope out on my apartment balcony to see what I could see. Unfortunately, my balcony faces north, so there isn't a lot to see. After picking out several of the brighter stars, I thought I'd try spotting a Messier object. A quick look on my computer showed that M101 (the Pinwheel galaxy) was within my fairly narrow field of view. Given the relatively light polluted nature of my Vancouver balcony, and my still-developing navigation talents, finding a galaxy was going to be a challenge, but would tell me just what this scope was capable of. After about 30 minutes of star hopping and running back and forth between the computer and the scope, I finally found it! I clicked in the clock drive to make sure it didn't get away on me, then set about trying out some loaner eyepieces.

When I picked up my scope, the dealer was kind enough to loan my two eyepieces to try out (though I suspect an ulterior motive was at play here). The first was a \$210 35mm Celestron Ultima, and the second was a \$360 6.7mm Meade Ultra Wide. Here's where one of the problems of owning a more expensive telescope comes in: it becomes easier to justify buying more expensive accessories. Still, what harm was there in trying them out? The 35mm eyepiece gave a good, clear view—much better than the standard 25mm eyepiece that is included with the scope. After ogling M101 through this eyepiece for a while, I decided to try the 6.7mm. I know this kind of power doesn't really help on objects like this, but I was curious to see the results. Another thing that doesn't help with galaxies is a light pollution filter. I had tried mine out for the heck of it, but it really didn't make a difference.

As I turned around to get the 6.7mm eyepiece, disaster struck. My foot caught a tripod leg, and did so rather solidly. In addition to destroying 30 minutes of searching, the im-

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pact sent several items flying out of the tripod's tray, including my light pollution filter. I could hear it rolling around on my balcony, but I couldn't see it. My heart sank as the rolling sound suddenly stopped, followed a couple of seconds later by a terrible clinking sound as it hit the patio below. I scanned my downstairs neighbour's patio with my flashlight. I could see the filter, but had no idea if it had survived the fall. All I could do was slip a note under his door and hope for the best. Anyway, I wasn't much in the mood to do any more observing, so I packed it in for the night.

After another night of testing, I decided to keep the 35mm eyepiece, but return the 6.7mm one. It's not that the 6.7mm eyepiece wasn't nice (it was very nice), but I just couldn't justify the expense at the time. Also on a positive note, the ALP filter miraculously survived its plunge, sustaining only a minor nick along the edge of the ring.

A weekend trip to my parents'

home was next on the agenda for this new telescope. As I said at the beginning, portability was a prime concern for this purchase, but there was a catch. While the scope itself is very portable, the mount, tripod and clock drive aren't. I had anticipated this, and it had played an additional role in my selection of a telescope. It just so happens that the mount, etc. for my new scope were exactly the same as the ones for my old scope. Sure, I could have bought the tube alone for a little less money (but the saving were less than the cost of these items separately), but by having two identical mounts, I could leave one permanently at my parents' home. This meant I only had to take the tube with me on future trips, making it far more likely that I would bring it along on a visit. Considering my poor weather luck on such trips, this was an attractive idea.

The weather on this trip wasn't that great, either. It was pretty clear just after dark on the first night, so I managed to find Jupiter and Saturn before

the clouds began to roll in. The only other object I could find before all was lost was the moon. By zeroing in on its bright, waxing surface, I was assured that this new telescope was indeed a good investment. I managed to push the scope up to 300x magnification, and the image remained bright and clear, atmospheric turbulence notwithstanding. I even managed to snap a couple of pictures at prime focus with my camera before the clouds finally ended the evening. They stayed the rest of the weekend, so that was all for that trip.

So there you have it. I now own two telescopes, both easily portable, both suitable for photography. The smaller f/5 one is good for wide-field observation and brighter objects, and the larger f/10 scope works well for higher magnification of planets and dimmer, deep sky objects. That ought to keep my twinchitis-free for some time... I hope. ✱

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the control room to warm up. We hung Tony's RASC plaque on the wall and toasted his good name and good work. Back up into the dome for another hour or so. We found Mars and another ten objects. Overall, not a bad night. The horizon from the CARO site is not as good as other sites, but the luxury of having a warm room only a few feet away sure makes things nice. For the night, 50 objects in about 4 hours... not bad at all.

Hope Slide Report Lee Johnson

The RASCVC Messier Marathon last March 23rd had, as you know, a mixed success. Those who went to

Boundary Bay and Aldergrove Park did quite well, as did a few observers who occupied the CARO site. The spectacular blooper of the evening came courtesy of myself, who had the splendid notion of leading a hardy group of dark-sky observers to the Hope Slide parking Lot—on the way to Manning Park. The Hope Slide lot is surprisingly dark: mountains rise up on the eastern and western sides, but the views to the south and the north are almost unhindered. Even binoculars at such a site would reveal most of the Messiers. What I hadn't foreseen, however, is that the Hope Slide parking lot was still in its winter mode: full of unplowed snow and protected against visitors by concrete barricades! I had

assumed that, being a fine rest area as well as a place of historic interest, it would be maintained throughout the year. It turns out that the parking lot is not reopened until late April (usually—snowfall permitting), just as some of the prime areas in Manning itself do not get plowed out until late May or early June. Fortunately, one of our members was at the Hope airport, drove up to the Hope Slide parking lot, and telephoned back the snowy truth, thus enabling me to redirect other members to Aldergrove, etc., before we had a contingent of disappointed travellers. We are still looking for dark sites comparable to the Hope Slide, though, for future Messier Marathons. Any suggestions? ✱

Blinded by the Light

by Angela Squires

“Lack of awareness, rather than resistance, is the biggest problem in controlling light pollution”, writes David Crawford in the Observer’s Handbook. Whenever the subject of my hobby of astronomy comes up people are always interested, even the ones who at first are thinking of astrology! I mention my forays to the dark skies of Manning Park and Oregon and we’re into light pollution. Once I’ve briefly explained what light pollution is, faces light up and they tell me their pet peeves. Whether it’s a neighbour’s so called security light, a big box store’s parking lot lights, streetlights or vehicle headlights, they are all bothered by excessive glaring light from poorly designed lamps.

Like myself, the media found a receptive audience and responded accordingly. July 1999 saw wide news coverage of the formation of the Torrence Barrens Dark Sky Preserve in Ontario, followed by ‘Let there be Dark’ in the May 22, 2000 issue of *Maclean’s* magazine. The controversy over Famous Player’s Colossus searchlights in Langley attracted media attention here and across Canada. A strongly worded press release successfully directed their interest, resulting in newspaper, magazine, television and radio coverage of this issue and light pollution in general. *The Vancouver Sun, Province, Globe and Mail* and *National Post* along with local papers covered the Colossus story. *Western Living* magazine’s October 2000 lead article featured ‘Darkness Visible’ by Jennifer Williams with a superb composite photo of a starry night and sunset city skyline. I was delighted with this succinct, excellently written and edited article. ‘Bring on the Night’ by Judy Ross appeared November in Air Canada’s in-flight magazine, *En Route*, and featured eleven pages of mostly information from the IDA and photos from space showing the lights of each continent. It also included the Colossus story and quotes from our

member and Langley resident, Mike Pendleton: “People like to look up and enjoy the sky without lights criss-crossing it”...”Besides, no one has the right to use the night sky as a commodity”. In December 2000, *Vancouver Maga-*



‘Lightbucket’ — a whimsical, readymade light shield in Winthrop, WA photographed by Bruce Weertman of Dark Skies Northwest. Is the owner an astronomer perchance or was a bucket the first thing to hand in this rural community south of the Okanagan?

zine published an article by Alisa Smith followed by the *Westender* newspaper with a cover story by Tom Zillich, ‘The fight against Light’.

The true Millennium dawned and I decided to go public. Previously, for strategic reasons, I had provided information, but referred writers to others for quotes and their name in print. Alison Applebe and I had talked about her writing an article while she was still a staff reporter at the *Vancouver Courier*. By the time we got around to it, Alison had fled the horrendous bi-weekly deadlines for a freelance career,

and was able to write a comprehensive, locally focused cover story that was published by the *Courier* on Sunday, March 18th. A distinctive Randall Cosco cover photo and the Earthlights from space image by NASA complemented Alison’s excellent article. It was a serendipitous coincidence that Paul Greenhalgh and I were interviewed about light pollution and the MacDonald Dark-Sky Park in Abbotsford on the *Vicki Gabereau Show*, aired the following Thursday. This double exposure surely led to my interview on the *Rafe Mair Show* for CKNW Radio, Monday, April 9th. Rafe is personally concerned because he almost killed himself in a serious accident at 6am one day. He became disoriented by oncoming headlights and drove off the Squamish Highway on his way to work from Lion’s Bay. Rafe is interested in a follow-up interview specifically about vehicle lights so I am in the process of pestering manufacturers and transport authorities.

Where do we go from here?

Given the public concern and interest in health matters, I think the light, melatonin and cancer connection merits a comprehensive press release. This is a contentious issue because of the pharmaceutical and medical industry’s huge financial stake in treatment protocols. Money is not made but saved by prevention.

Dr Stephen Pauley of Ketchum, Idaho, is the Dark Sky List member who has informed us of much of the research about the effect of light on our bodies. Steve’s ‘signature’ to his postings can only be ignored at our peril: “Nature bats last and owns the stadium”.

Allowing for our increased ability to detect the specific causes of ill health and mortality, there is no doubt that certain diseases, for example cancer, are more prevalent today than say fifty years ago, especially amongst residents of the industrialised nations.

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Upcoming Events

Public Astronomy Day June 1, starting at 9pm

Come down to the corner of Denman and Davie and bring your scope (weather permitting, of course).

CARO Open House June 2

There will be three shuttles up to the site from the forest entrance, leaving

at 12:00, 1:30 and 3:00. There will be Timbits and fake coffee up at CARO, maybe some hot chocolate as well. We might even be able to look at some daytime objects if the sky is clear. There will be a map and direction posted on the web site later this month.

Fraser River Festival June 3, 10am to 4pm

Deas Island Park, Ladner. Details below.

Artificial Star Party Late June

Nat Bailey Stadium

Dates are still being finalized. Check the web site for firm details. ★

Fraser River Festival (FRF)

by Angela Squires

The first Sunday in June is the day some 10,000 people descend on Deas Island Park in Ladner. The largest GVRD annual event, FRF takes place from 10am to 4pm and celebrates the message, "living, working river." RASCVC are one of a few participants without a direct connection to the river that are felt to be appropriate. We are obligated to take part in two GVRD events annually in exchange for our observing site at Aldergrove Lake Park. This is a win-win arrangement for us as we get tremendous public exposure, mostly funded and promoted by the GVRD! Our exhibit is in a 20- by 30-foot tent with two open sides in a prime

position opposite the Belcarra House. Beside the tent is space for several telescopes and we especially need volunteers with sun-filter equipped scopes. Unusual optical or photographic aids such as a barn door mount, binocular mount, and anything else you've made are of great interest to the public. While the GVRD do not wish exhibitors to sell products at the festival, we may give out information on products and where they may be purchased, promote presentations and so on. Interactive activities are very popular. We will have sundial, planesphere, and astro-card making for children but if you have additional ideas suitable for kids

or adults, let me know. I need volunteers to make a display panel about the different kinds of telescopes and one about the Sun, sunspots, and auroras. We are also making a new RASC display for which we need examples of astrophotography by members. This is your chance to show off your images so contact me as soon as possible to let me know what you have that we could use. Photos of sky phenomena such as sundogs, lightning or noctilucent clouds would be suitable too. Please call me at 734-9726 to confirm your attendance on June 3rd or if you are able to make the information for an exhibit panel. ★

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Why is this so? For me the answer has to lie in the dramatic changes we have wrought upon our natural environment. While more obviously noxious pollutants come to mind at first, I believe we have underestimated the detrimental effects of artificial light. For hundreds of thousands of years, life evolved in concert with nature's circadian rhythm, the cycle of day and night dictated by the Earth-Sun geometry. The urban blight of artificial light has been with us but a moment on this time scale and has increased exponentially over the past 30 years. The laws of causality rule, whether by a process inherent to the natural world or the tool of a higher power. We exist today by the grace of mostly natural, not manmade conditions.

At the IDA annual meeting held March 9-10 in Tucson, three of the top



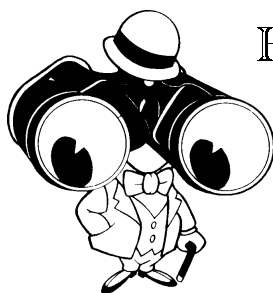
Scott Griswold's photo of a full cut-off (FCO) light fixture and a drop lens 'glare bomb' gives a good comparison of their different effects but is not the same as the human eye perceives.

researchers in the field of physiological and pathological effects of exposure to light at night on humans participated in a panel moderated by Steve Pauley. Steve's report of this will be appearing in the June IDA newsletter. In our next NOVA, I will have information from this as well as a summary of the light, melatonin and cancer research results. ★

RASC MERCHANDISE

Available for purchase after meetings:

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