



# NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC

VOLUME 2003 ISSUE 5

SEPTEMBER/OCTOBER 2003

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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.

**Sept 9:** Ed Hanlon on Aurora Photography.

**Oct 14:** Dr. Jaymie Matthews of the UBC Astronomy Dept. on the first scientific results from the MOST satellite.

## Next Issue Deadline

Material for the November Nova should be submitted by Monday, Nov. 3, 2003. Please send submissions to:

Gordon Farrell  
(gfarrell@shaw.ca)

## Mars Week

### Saturday, 23 August

After some great presentations by our members [see the President's Message for details] accompanied by fine snacks provided by Pomponia, we set up the scopes on the field behind the GSO. While this looks like solid ground, it is actually the roof of the Vancouver Archives, which made for some pretty shaky observing. Still, the crowds were small enough (around 1000 over the course of the night) so that there weren't so many footsteps as to make this a problem. A good night overall. – *Gordon Farrell*

Photo by Eric Fuller



### Monday & Tuesday, 25 – 26 August

The first two of the four nights of observing organized by the H.R. MacMillan Space Centre and Celestron, held at English Bay. Approximately 100 people attended on Monday and about 3000 on Tuesday.

### Wednesday, 27 August

Being *the* night of the closest approach, upon which the media had focussed all their attention, the public turned out in droves. Lineups went all the way around the Space Centre and out to Chestnut St. with the final estimates at 10-15,000 or more. Not anticipating such a huge crowd, I left my home at 9pm, expecting the normal 5-minute drive to Vanier Park. Instead, I met a traffic jam at Kits Beach that didn't let up until I finally parked my car (illegally) about 40 minutes later and trudged out, telescope in hand, to the observing site on more steady ground near the Maritime Museum. Once I had set up my 5" SCT and zeroed in on Mars, a small group of people broke off from the giant crowd and formed a line behind me. For the next 5 hours, a steady stream of people peered through my scope at the pale orange-brown disk of Mars.

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## The Time of Mars

by Marc Verschueren

What are we going to do when Mars slowly fades away, back to its position in the background? Usually I try to avoid these very popular happenings with all the newspapers writing about it—some of it even more or less right—and experts appearing on the TV news. It is all so overdone and it does not suit me. But with the close approach of Mars this was impossible. It was a very special event. From early on in July I have been watching the approaching planet in my telescope, even if I had to get up at 2 AM in the morning to do so. It was fascinating. Even if I can never see Mars as being red, and certainly not when it is as bright as it is right now. Sensitivity to colour is an individual characteristic.

I do not have any particular interest in the red planet. I suppose most people who showed up for the Mars watching events at the Space Centre never give much attention to Mars or any other astronomical object. But they come out, by the thousands, to have a look through a telescope. Some are disappointed,

or the disc is too small, or some expected to see icicles hanging around the polar cap. There are many interesting questions, and silly comments like the concern about Mars being on a collision course with the Earth. Most are impressed by the image of this far away world visible in this simple instrument, a telescope. And many never have looked through this magic window on the universe. If nothing else, that would be a good result of Mars visiting us this time around. Astronomers like it when objects come close together or form a pattern in the sky. Mars and the Moon added to the performance by coming so close together one night this summer. That was an added treat.

Of course it is not too hard to see why Mars is still such an object of popular interest. After all, Mars is close to us in the solar system, and it was, for a long time, thought that it could be inhabited. It is remarkable that in my life time it was considered realistic that there was intelligent life on Mars. When I was young, the canals were

already considered a fantasy by the experienced astronomers, but life on Mars was something else. One should not forget that fifty years ago Mars was very, very far away. Unreachably far away. We did not really know what Mars looked like. Today we feel that Mars is not that far away. After all, you can send space probes to it and it takes them only about six months to get there. I remember reading an article in the old days by the great Werner von Braun, the German rocket specialist, in which he declared that life on a planet without atmosphere was possible if beings were to be rooted into the soil to get their oxygen and water that way. This was considered serious stuff in those days. And of course we all remember the wars with the Martians. Can we imagine what our governments would do today if some radio producer came up with a caper like Orson Welles did in the thirties? All these memories make Mars special.

In the history of astronomy, Mars is very special. The distance between Mars and the earth is very

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## President's Message

This has been another busy period for the Vancouver Centre members. On July 17, some of us, including Dan Collier and me, successfully recorded the occultation of the 6.4 magnitude star SAO 100819 by the asteroid (1263) Varsavia. On July 25, Bob Parry, along with many other RASC Vancouver members, held the annual Manning Park outreach event, attended by over one hundred people. The following week at the Mt. Kobau Star Party, RASC Vancouver member Lee Johnson was one of the feature speakers.

On August 12, a successful GVRD Perseid meteor shower event, attended by about 350 people, was held at Aldergrove Lake. It was co-hosted by RASC Vancouver, led by Doug Montgomery, and the Fraser Valley Astronomers Society. That was a very busy night for us because not only was it our regular meeting, but also because earlier, Pomponia and I had to attend a meeting of the H.R.M. Space Centre 'Programming & Education Committee.' Our Centre has been invited to have a delegate sit on this committee, and the Council will appoint one in the coming year.

On Saturday, Aug. 23, we held a "Mars Day" event. The evening started with four presentations, including my "What do we know about Mars?," Jim Bernath's "The

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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 \$51.00 per year (\$26.00 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 on page 5, or uploaded to SpaceBase™ at 604-473-9358, 59.

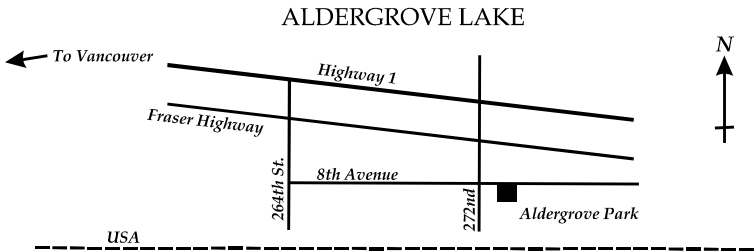
## Advertising

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.

## Commerical Rates

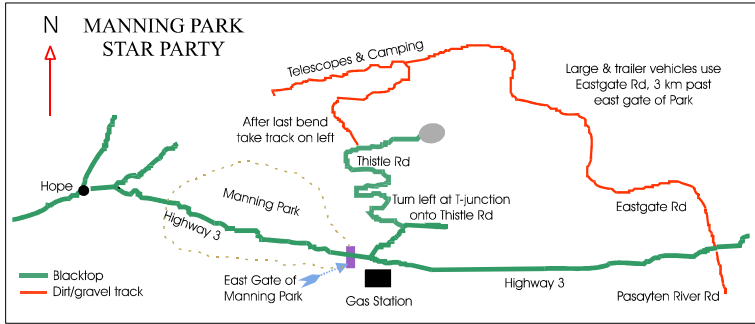
1/2 Page: \$25.00 per issue  
Full Page: \$40.00 per issue  
Rates are for camera-ready, or electronic files. Payment, by cheque, must accompany ad material. Make cheque payable to: RASC Vancouver Centre.

# Observing Sites

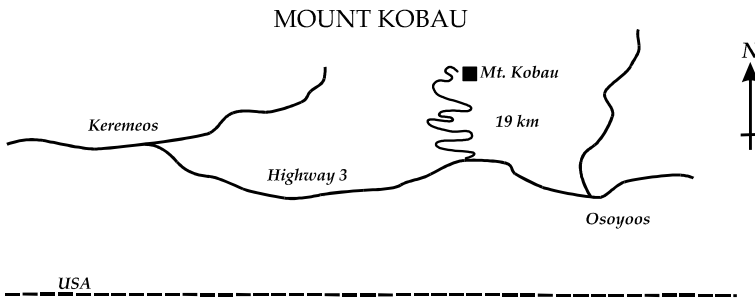


Dale McNabb Observatory in Aldergrove Lake Park (RASC Vancouver Centre's regular viewing site)

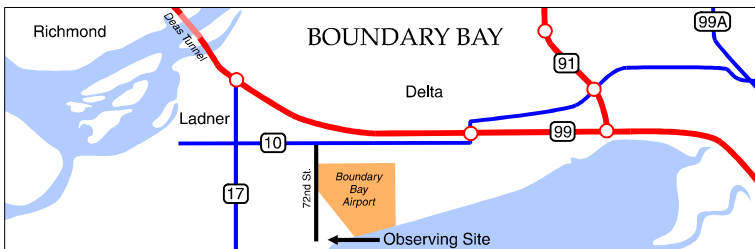
Contact Mike Penndelton (604-888-1505) or Howard Morgan (604-856-9186)



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



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

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variable—we just have seen a spectacular demonstration of that. Some oppositions are not like others. In some oppositions, the two planets come much closer than in others. This led to the discovery of the true nature of the orbits of the planets. The reason for this variability is of course the fact that Mars has a much more elliptical orbit than the Earth. I always like to go back to the work of Kepler. It was Kepler who used the measured positions of Mars at several oppositions to first get some characteristics of the orbit of the Earth and then went on to determining the orbit of Mars. This turned out to be an ellipse. The measurement available to Kepler, inherited by him from Tycho Brahe, were limited by the accuracy allowed by the instruments of the time. But Mars was so elliptical, it has such a large eccentricity that its orbit could not be approximated by a circle, like Kepler did in fact for the Earth. If Kepler had not found his laws of planetary motion, the development of celestial mechanics would certainly have been slowed down. But then again, maybe Newton would have come up with the ellipses anyway as a consequence of his theoretical musings. As it is, Newton used Kepler's work as experimental confirmation for his theories.

The last few weeks we saw a remarkable phenomenon. Mars came closer to us than it had been for thousands of years. A lot of people came to look at it with us and share in the experience. It was a celebration of the magic of our solar system. ★

## ASTROCOMPUTING

**SpaceBase™** (604-473-9358,59). Affiliated since 1992 with RASC Vancouver, our link to RASC Net, RASC Members only chat area. Future data distribution hub for CARO Project. Features include latest HST images, current world space news and astronomy programs. Provides a file uploading facility for submitting articles and imagery to Nova.

## 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.shaw.ca/rascvan/>  
or <http://www.rasc.ca/vancouver>

## 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 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 Phil Morris, Director of Telescopes in the lobby of the GSO after the members meeting. All telescopes are to be picked up and returned at the GSO. 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 2 different telescopes per year and use what is left at the end of the meeting anytime. Phil can be reached at 604-734-8708.

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 Pennedlton at 604-888-1505 or Howard Morgan at 604-856-9186.

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

## Upcoming Events

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### September

26-27 – Merritt Star Quest

### October

17-18 – Sidewalk Astronomy 2

### December

9 – AGM

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Martian Terrain,” Bob Parry’s “Mining Space” and Mike Jensen’s “The Sky Tonight.” Thanks to all the speakers for the time and effort spent on their presentations and particularly Jim for bringing out all of his samples and displays. Following the presentations, we set up about ten telescopes behind the GMS Observatory for public-viewing of Mars. The turn-out was good with perhaps a thousand people lining up for the view. Thanks also to all the volunteers who brought out telescopes and who helped with the crowds and questions.

However, that was only the beginning! From Monday to Thursday of the following week we had arranged to join with the H.R.M. Space Centre and Celestron for a “Mars Watch.” We had agreed to provide volunteers with telescopes to show Mars to the public from 9 PM until 1 AM each night. Things started slowly on the cloudy Monday night at English Bay, with only between one and two hundred trying to get glimpses of the ‘red planet.’ The next night was clear and by the time we ended it at 1 AM, several thousand had taken their turn at the eyepiece.

Wednesday night we moved over to Vanier Park. This was the night that many people thought that an enormous Mars was

suddenly going to appear above the Earth and glare down at them. It was one of the most exciting but also one of the longest nights of my life. People kept arriving! At the peak, the line-ups reached all the way back across the park to the Space Centre and right around it. 1 AM came and went and they were still there in great numbers. For most of us it went on until 3 AM, at which point my voice had almost totally disappeared. The Parks Board estimated that about ten thousand people viewed Mars that night, but that didn’t include perhaps another two thousand who viewed through some of the RASC Vancouver telescopes set up separately behind the GMSO. Those members, Bob and Pomponia, didn’t give up until 4 AM, when they had to go home and get ready to go to work.

Thursday was slightly less hectic. Fewer people came, a mere five thousand, and we had more telescopes. Even so, by 1 AM my voice had again disappeared and my legs were like blocks of cement. Overall, the attendance for the five nights probably exceeded twenty thousand. I would like to thank all of the many members who gave so much of their time to share their knowledge of Mars and to bring out their telescopes for the public to witness this wonderful event. This is by far the biggest sidewalk astronomy event in

which we have been involved. I would certainly be willing to take part in something like this again, but please let’s wait until next year. We hosted a GA just a couple of months ago! ★

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## FOR SALE

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One Celestron CG-11 telescope complete with Equatorial Mount and all accessories for offers by members. The equipment is in mint condition and never used outdoors. Interested parties please call 604-241-7070 or email [compujohn@aicompro.com](mailto:compujohn@aicompro.com) for further details ★



# Wink of the Blue Moon

by Lyn Hague

“the long arm of coincidence makes many radio connections”

– Don Marquis

It's 2:00 am on Saturday night and I'm hanging out the 9<sup>th</sup> floor balcony of the Gage Residence on the University of British Columbia campus with world-renowned comet hunter Dr. David Levy.

We are looking at Mars. I am not dreaming. There are witnesses.

To wish about spending quality time with one of the master astronomers on the planet “doing astronomy” was beyond my wildest imaginings. It is simply a miracle that I am honoured to be one of the Vancouver Volunteer Delegates hosting the Royal Astronomical Society of Canada's General Assembly and 100<sup>th</sup> Anniversary of receiving their royal designation from King Edward VII.

So here I am. For four days at the end of June, I am an amateur astronomer and delegate of the RASC, spontaneously sharing some lofty concrete with Dr. Levy.

In hindsight, it's laughable to think that I almost didn't take part in this historic celebration. I'd been a dues-paying member for years. Despite this, I'd rarely taken part in group astronomy events of any kind. As a member in absentia, I could hide my amateur astronomer status with ease. My astronomy bones were tickled with all the membership literature: newsletters, journals, magazines, national reports. Then I'd spend hours of solitary time with my Observers Handbook in the middle-of-

nowheres watching the planets and stars do their cosmic dance as the universe expanded unexpectedly and uncontrollably into the absolute unknown.

“I am the amateur of amateurs when it comes to astronomy,” I would begin so many radio broadcasts from various small stations throughout the country for 14 years, “There are some celestial adventures to behold tonight if you take a moment to get off your couch and step outside to view the magic of the universe unfolding before your very eyes, brought to you free from the cosmos,” I would anonymously suggest from behind the studio microphone in the wee hours of the morning. So many things to see during an all-night radio show.

To think I almost skipped the coolest astronomy party of the century to do a radio show. Okay, not just any radio show. It was the 7<sup>th</sup> anniversary of my debut on Vancouver's CFRO Co-op Radio (102.7 FM). Co-hosted with the station's poet emeritus, Gerry Gilbert, we celebrated the poetic astronomical history of a particular poetic celestial mystery for almost five hours with literature, poetry, vinyl and science.

Promising sunny skies and clear nights for the anniversary bid to host the 100<sup>th</sup> RASC extravaganza, Vancouver's Executive Committee devoted two years to planning an extraordinary menu of seminars, lectures, media shows, and cool technical tours at UBC's campus and destinations throughout the Lower Mainland. The brochure promised a stunning

roster of speakers and honourable guests, incredible subjects to be discussed, fabulous tours to be taken, amazing information to be shared, special events of celebration and potential opportunities for incredible conversation. The universe was promising a new moon. Such an on-going sumptuous tease in anticipation as the lazy days of June poked along. I felt like an excited kid going to space camp for the first time.

Friday, June 27<sup>th</sup>, 10:00 am (PDT), the first workshop begins with “Observing Techniques” hosted by astrophotographer and entrepreneur, Jack Newton, and David Levy. Newton opens this casual seminar with the words that set me at ease for the entire weekend, “The difference between amateur and professional astronomers is this: professionals get paid and study for years. We [amateurs] do it because we can't help it.”

The passion of, for and about astronomy is out on the table at the first bell. My passion for astronomy is legitimate enough for me to be in this company of other passionate men and women who go just nuts over the universe like I do. The enthusiasm to view the cosmos from any and all aided and unaided observing techniques begins in the heart. The desire to look in the first place is the sweet siren song of the infinite unknown. Romance with the universe and all its expected gifts, random surprises and spectacular shows usually begins at an early age in either urban or rural geographies.

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Comet-finder Levy's opening statements included that "Passion and enthusiasm for astronomy is all about searching the sky for its own sake and see what it offers you." Then, as an astronomer, you must find a way to transmit [your] excitement of the universe to others. Astronomy is passionate and personal. It's made very clear that the amateur is just as respected for their cosmic fever, dedication, discipline, and discoveries as is the professional. It's actually the master-amateur astronomers that make some of the wildest discoveries, like comets or supernovae.

How we look at things... It is this direct interaction with the cosmos that creates the romantic view of the universe that instils such passion in the hearts and minds of astronomers. How to pass that passion on...

The lament that entire generations are now lost to observational astronomy. The eye and telescope replaced by television, computer, go-to software, digitized film and animation techniques are all good observational tools, but how to get people outside again? How to educate people stuck with faces glued to TV and computer screens? Where are the 30-somethings, 20-somethings and teenagers?

Newton's wife, Alice, had some particularly interesting information about what's happened to generations of people who are raised with the physically and psychologically limiting habits of extensive electronic screen viewing, whether television, computer or

computer games. Apparently, in a few years, there will be a crisis of sorts in the air traffic controller industry as the first wave of baby-boomers begin to retire. During the testing stage before being accepted into Control School, the industry is finding that, with extensive exposure to computer games and electronic screens in general, the eye is trained to focus on a single point and therefore peripheral vision is so limited that the individuals would be ineffectual as air traffic controllers because of the inability to broadscan the sky or plane-packed radar scanner.

Prolonged and intense use/abuse of electronic visual display units and games is creating a de-evolutionary process in the human species. Peripheral vision is one of our animal-abilities in all of us that helped determine our survival as a species (William S. Boroughs said that "in order to be invisible you gotta see it before it sees you."). Now we have the technology to wipe out hundreds of thousands of years of this major survival trait in just four generations with teeveeland. Glaring enough are these test results that there might not be enough people physically capable of scanning the skies to maintain safety and security in the air.

In concluding the workshop, Newton and Levy were still shining high levels of enthusiasm. Levy said, "You can go for a swim or you can watch swimming on television."

"I was going to say the same thing about sex," Newton quipped.

No kidding.

After lunch, a full contention of delegates were shuttled to

TRIUMF (particle isolator and accelerator), the first tour of heavy equipment. Nestled comfortably on UBC's grounds in the Geography Department's forest, the facility doesn't look like it's got a Nobel Prize attached to it.

As soon as I'd heard there was a trip to the particle accelerator, my brain screamed *magnets* and I began to hum the rock song "Superconductor," wondering in my radiohead, who did the song, then vaguely remembered that I usually disliked the band from which this particular song came.

I have no idea why I get so excited about particle physics. Perhaps too many late-night black and white sci-fi flicks as a kid. Maybe my interest in all things Tesla, Marconi and utopian teleportation. When I hear of particle accelerators shutting down due to lack of funding, my heart lurches almost the same way as when I hear of despotic governments blowing up ancient colossal Buddhas. When I'd first heard that there was actually a particle accelerator in Vancouver, well!, I wondered how I was going to get myself out there. And there it was on the itinerary. A chauffeur-driven tour...

A couple of days after I committed to the TRIUMF tour, I heard "Superconductor" on the radio. Smiling for the coincidence, I listened for confirmation about the band. Sure enough, Canada's very own chart-topping hitmakers, Rush, was the band (I usually passed on all things Rush 'cuz Getty Lee's voice vibrates at such a pitch and tone [for me] that it reminds of fingernails-on-chalkboards). Except



the song “Superconductor.”

I just love when my questions are answered via coincidence. Kinda like a cosmic wink in my day. My head swims with superconductors, particle accelerators, coincidence, unification, black holes emitting radio rays. It just doesn't get much better, eh?

Given that I am *not* a particle physicist—simply a sci-fi aficionado—I can only tell you that my joy and exhilaration is just *getting* the cook's tour of the coolest heavy magnetics, machinery and equipment with such wondrous capabilities.

Supernova in a can. It's that simple.

As we remember (yeah, right), the Theory of Relativity includes that, as atoms travel faster and faster, they become heavier and heavier. So to keep in “phase” as a beam, as the atoms get heavier, they need more magnetic energy to stop collapsing. With hundreds of steel-threaded rods controlling the ion source and accelerates everything as beam enters Injection System via Injector Cage. The beam Transport System travels via magnetic creation of electrostatic “benders” so beam is focused or “steered” into a tidy little beam.

The Magnetic Field is contained in 21 feet of sealed concrete. We're standing on top of it as we eyeball the Twist Spectrometer, which is thousands of detectors crowning the chaos with a Scintillation Detector, complete with phototube for measurements. There are large, well-lit caution signs hanging from the magnetic containment facility. One of the

visiting delegates was kind enough to take a picture of me under the sign “CYCLOTRON ON.” Digital camera shows happy tourist instantly.

Everyday use to save the planet? They can bombard nuclear waste and get rid of radioactivity. They call the machine, DRAGON. Really.

Vancouver delegates Nicole and Rene van den Elzen work at TRIUMF and were our fabulous tour guides throughout the facility. They were happy to report that no stray isotopes were detected by either of the dosimeters. I was slightly bummed we didn't pick up even just one radioactive hitchhiker.

I was looking forward to listening to “Photography Techniques” with Jack Newton and Alan Dyer. I often included ‘the pretty pictures’ from the astronomy magazines and RASC enclosures in my on-going collage (the working title for the 6-plus years on the piece I've been playing with, panel by panel: “Inside Brains”).

With an artistic eye and thoughts of cosmological theories, I'd often gaze at the stunning photos looking for special relationships of form, colour, molecular texture, patterns. The pure artistry of the cosmos stamped on my psyche from these magnificent visual displays.

Photographs that are music to the eyes, stirring heart and soul to imagine beyond the image. Respecting, always, the image-maker... the knowledge, talent, and time it takes to capture these glorious celestial images, Dyer and Newton share their experiences. Choices should be made before the shoot begins: what equipment to

use, having a good mount, piggy-backing, digital vs. film. What's your focus? What you're shooting, when you shoot it, where it's happening... how you want to snap the universe determines the equipment, exposure, depth of field. How problems get bigger the longer the exposures. “Cold cameras” with dry ice reduces reciprocity with less grain in the final image. Number one hint to good pix: spend money on good mount.

Their pictures are flashing on the giant screen. How an ordinary human can grab extraordinary images of sun dogs, twilight shots, aurora, lightning, rising moons, Hale-Bopp, Taurus Supernova and yes, that's Apollo 14 venting its exhaust at 10,000 miles out. Absolute astro-candy!

Dyer states that staying on top of the new technology is easy with cash for buying the latest equipment and reading the ‘new gear’ reviews. The newest equipment is now capturing some of the old theories of physics.

“Gravitational lensing” is detected. Proof that gravity bends light. Visually, the cosmic bubble exists for all to see now. As I gaze at the image, remembering Peter Newbury's lecture last year regarding these very gravitational lenses, I've imagined that perhaps a gravitational finger is pointing at us. Just poking against the very fabric of our universe, like a finger pushing against cellophane, pressing the membrane to its limit before nova. Just beckoning those who look to keep looking further, deeper. Newton says that they can see lensing “plumes” after a hour

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from his Osoyoos observatory. Clearly, the best equipment and sound knowledge of the photographic medium can make anyone's backyard view of the universe bigger and better.

It was during the first dinner that the tone and content of incredible conversations began and set the intellectual level for the weekend. The ability to openly discuss all things astronomy was new to me. I was a secret astronomer. I confessed to my table mates during the evening's repast that, upon telling some 20-something friends that I was off to hang with the astronomers for the weekend, they'd exclaimed with sarcastic glee that I was going to be with the "geeks." How they'd all shut up after the "G" word was used when they realized that they had just called me a geek by association.

These were all "rave" kids. They produced the all-night warehouse parties notorious for so much freedom of expression. I didn't bother telling them that the guy that discovered fractals, those computer-generated images that colourfully flared and pulsated to their electronic beats, how these fractals, embraced by the ravers as much as acid was by the 60's hippies, were courtesy of someone who qualified for their "G" category. Oh well.

Murphy Night was joy as the esteemed astronomers showed off the artistic and sometimes hilarious "oops" photographs. The stories of honourable and learned men that forget really important and necessary steps when erecting telescope domes (so some of the

back-breaking precision-setting manoeuvres have to be done twice!). Rotten weather. Lost equipment found days after cash spent to replace with the new item. And, my favourite, confessions of bad math where, because of miscalculating UT, the revered astronomer is out on the wrong night for such celestial displays as eclipses, occultations, etc., thus missing the anticipated moment altogether. So lovely to know I'm not alone with bad math.

There was a wee bit'o pomp and circumstance surrounding the precision protocols for the Lieutenant-Governor of British Columbia as The Honourable Iona Campagnolo and the rest of the BIP gang were ushered into the lecture hall for the official opening ceremonies Saturday morning. I was sleepily overwhelmed by seeing my usually casual fellow astro-nuts in suits and behaving themselves with more diplomatic aplomb than I would ever have imagined. Delightfully, Her Honour had grown up in dark sky country. She shared her passion for the universe in a moving speech. Peter Broughton gave us the historic glance at how we all came to be in a club with "Royal" stamped on it. Dark Sky Awards for cities that try to keep light pollution to a minimum were handed out. Culture, happy colours and fun were provided by the Strathcona Dancers gracefully prancing through their traditional Chinese stories of peacocks, goddesses, good luck and prosperity. Surprise, surprise. Her Honour's chauffeur is an astronomy nut too and owns his own telescope. What a coincidence.

David Dodge and Pal Virag were headlining the afternoon workshop. A virgin moment for sage, often very funny, public educator Dodge with his first PowerPoint presentation as he talks about the impact of "The Internet on Astronomy: A Brief History of Communications." Dodge is the man I call when I have questions for the astronomy I'm doing on the radio. I made a point of introducing myself and thanking him in person for all the great information he's given me over the years.

Virag followed with his Travelling Astronomical Education Project by giving us his uniquely designed multi-screen projected show, "Canada in Space." Choking with joy at some of the images and involvement of Canadians in space, I'm especially fascinated by an educational satellite that looks like a disco "mirror ball" and the emotion I felt when the narration reveals that children polished the mirrors, their connection to this satellite reflection with education beams bouncing beyond the infinity. Astronaut Chris Hadfield taking his guitar into space...

After the break, the workshop continued with papers from delegates themselves. A learned gang from Alberta, delivered by Dr Hube, Department of Physics (UA), presented "A Low Cost All Sky Camera System for Meteor Studies By Amateurs." Dr. Roy Bishop revealed how the eye has low quantum efficiency, but can still outperform CCDs for catching stuff in his presentation, "Visual Temporal Integration in Astronomy."

Edmonton Centre's Bruce

McCurdy gave us the audio and visual presentation of what a meteor sounds like via his Sky Cam Science Awareness Project. The Radio Meteor Detector is an FM radio receiver, antenna, computer and software. Once the detector was built, they collected data, analyzed it and published it on the internet.

This is the radio window to the electromagnetic spectrum and reflection geometry. Now part of the public school science program, the students using the detectors can collect data for cosmic collisions, daytime fireballs, meteorites and more.

McCurdy's work with this radio detection program cleared up one of the astronomical radio mysteries from my youth. We used to play with CB radios in the 70's when we summered in dark sky country at Ontario's Lake Simcoe. At times, when communicating this way, we would detect accents that were from the American South and in the brief exchanges, find that we were listening to someone thousands of miles away, wondering how these "radio skips" occurred, usually chalking up the anomaly to weather conditions, wacky ionosphere etc. However, after seeing McCurdy's Radio Detector, we discussed that it was very possible that the CB radio beam ricocheted off of meteors entering our atmosphere. It took 25 years for a cool answer.

Late Saturday afternoon, bus loads of astronomers were dropped off at a downtown wharf to embark on a cruise ship for dinner and presentation by Levy entitled "A Starry Night: A Personal Look at the Relation Between Astronomy and

Literature." Instead of celebrating my 7<sup>th</sup> anniversary of the Blue Moon Special on the radio where we celebrated the history, the mystery, the literature, poetry, music and science (listeners called the station advising of the beautiful blue ring around the moon that night), I was looking forward to Levy's perspective.

I would celebrate my 7<sup>th</sup> anniversary of my solo overnight radio show the following weekend, which was the showcase for the radio novel I wrote about an artist working on the unification theory while surrounded by murder and mystery set in Vancouver in the mid-1990's. The crux of the protagonist's metaphysical musings is about discovering the keyhole to the unification theory via shamanic, neo-luddite methods of uncovering the universe next door by trying to mathematically measure coincidence. The "Theory of Elasticity" itself took years to evolve as I drafted a 7-book series to cover the work.

I decorated my denim utility vest with a big Blue Moon supernova tie-dye design on the back. Kinda like a cosmic bullseye... a gift to self. I told no one of my artistic motives or secret celebration. Or is that secret motives and artistic celebration?

Many guests lingered on the deck to gaze at the salt-scented scenery that perfect summer eve. Before dinner at the front of the boat, I was chatting with delegates who'd applied to NASA. We were trying to remember what the woman-statue carved on the bow of ships was named as we recalled the visual from the movie, *Titanic*.

Seconds afterward, an honourable delegate emerged from the dining room, approaching me with the question "[Would I mind] getting up on the bow of the boat and pose for a picture like the figurehead shot in the movie, *Titanic*?"

"We were just talking about that. What a coincidence," said the NASA hopeful. As I wondered how many seconds had passed to create that coinky-dink, I took a nano-second to decline the request, flattered by it and the coincidence. Uncharacteristically mum about the cosmic poke... kinda like a liminal "You Are Here" sign that can only be explained with the phrase "guess you had to be there." Simple pleasure.

After dinner, Levy begins his PowerPoint presentation with personal moments when he connected with the universe at a young age. His infatuation and passion zapped him so deeply that he's pursued his life as the refreshingly ever-curious and amazingly enthusiastic comet-hunter, writer, master astronomer. The Canadian kid scouring the skies from Arizona, setting up his telescopic net waiting for a comet to fly into it. There's a particularly moving AV-bite with Levy's mentor, Dr. Shoemaker, talking about how he almost made it as the first civilian geologist to walk on the moon. Shoemaker is getting choked on camera.

Next slide. Big glowing full moon. Levy pushes a button...

"Blue Moon... you saw me standing alone..." The song is playing on the PowerPoint radio. The Buddhists have a term for that

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sacred place that is so joyous that it is beyond nirvana, so ecstatic it is beyond description... beyond words. This state is called "suchness."

Drunk with suchness, I calculated the time by the sunset, not wanting to seem rude looking at my pocket watch from the second row. The fictional theory was a net and a coincidence just flew into it. A measurable coincidence (with the leap year variable, this coincidental event was exactly 7 years to the hour that we were broadcasting our Blue Moon Special). My heart was about to burst with laughter at the gift. Levy unknowingly delivered a sweet cosmic signpost. Without detail, I simply thanked him for his marvellous presentation adding, "I'm a writer and often write about astronomy, so thank you." He invited me to the party on the 8<sup>th</sup> floor of the Gage Residence.

At 1:00 am on Saturday night, with the Big Dipper blinking as it floated above English Bay, I found myself on the balcony with Levy and "The" Robert Dick (Ottawa Centre). Robert is reciting poetry from Alfred Noise's *The Last of the Books*. Really. The relationship regarding the various arts and astronomy continues with the question left hanging how interesting it would be to find out how many musicians are actually big astronomy buffs. Uncharacteristically quiet, I realize I'd never asked any of the musicians I'd interviewed if they knew anything about astronomy. I mentally vowed to start.

It was those crazy women from Saskatchewan that suggest I go up

to see Mars from their southeast balcony. While there, I scored a rogue meteorite and knew it was time to retreat for my beauty sleep. Actually, I had to go home and write about my magic night and totally liminal and measurable wink of the Blue Moon. The cosmic poetry was tickling me still. As I returned to the packed den full of astronomers, Levy asks me where I've been. Looking at Mars, I reply. "I want to see Mars!" he exclaims.

So there I am, taking Dr. David Levy and Wendell Shuster (Okanagen Centre) up to that 9<sup>th</sup> floor balcony. As the elevator doors begin to close, Levy sticks his hand out making the doors pop open.

"Why'd you do that?" I ask, bemused by this development.

"I just wanted to see what would happen," he replied with an impish grin.

With Mars glittering orange, there we are, two silent students at 2:00 am on Saturday night, as Levy, the master, guides us through the cosmic connection of it all, saying, "The stars are my friends. It doesn't matter how bad my day was, I just have to look up... there are my friends."

This is a different kind of suchness. There is an infinite knowing that as long as you look at the universe, be awake and aware of its wonders, find the pleasure and the passion of ancient light dancing for us as the expanding universe spins its energy and mystery, fuelling our creativity and curiosity, we are never alone. And there is nothing to say save silently surf the magic of this profound moment and wonder what kind of miracle it is that I am floating so divinely with

downtown Vancouver twinkling off in the distance.

As we head back down to the 8<sup>th</sup> floor, Levy sticks his hand out and the elevator doors pop open again. I lose it with laughter, buckled over in half just howling that Dr. David Levy did it again. I said, "I wondered if you were going to do that, but instead of asking if you were, I decided to wait and see what happened." Levy is smiling. I feel like I've just passed some sort of test.

Totally intoxicated by so many moments of pure suchness, I depart around 3:00 am, Mars winking at me through the taxi window all the way home. I know I'm not making it for the actual General Meeting. I'm too busy writing what I can remember through the continued fog of suchness that, paradoxically, leaves me more acutely aware and awake, my senses sharp for everything.

The Sunday afternoon demonstration workshops on software with Peter Ceravolo and Douglas George (Desktop Universe), then Billy Dickson and Pedro Braganca (both Starry Night) were very cool for someone that's been living as a neo-luddite for almost 10 years.

Eric Dunn, co-writer and co-host (with Ken Hewitt-White) of TV series *Cosmic Highway* and *Cosmic Odyssey* addressed the packed crowd regarding the "astro-geek" label. He then had everyone in stitches with the funny glitches astronomers face with his talk aptly titled, "Up Kitt Peak Without a Paddle: Confessions of a Rain-Soaked Astronomer" and accompanied his talk with great

PowerPoint graphics. Miraculously, Hewitt-White unexpectedly appeared to a round of applause. I approached Dunn afterward to inquire about how I could get a copy of the crazy graphic he had with spectra-coloured orbits showing 56 of Jupiter's 61 moons (hello... in school there were only 4), explaining that I would like to include it with my research as a cosmological theorist. He reminded me that I should "be rigorous to the science" and would I mind waiting about 6 more months while they finish exactifying what they've found.

Dr. Gordon Walker was the Ruth Norcott Lecture speaker. He dazzled us with "Cosmic Rainbows – the Treasures in Astronomical Spectra." Lots of PowerPoint slides of spectral-colour-finding gizmos, diagrams and equations. It took 3 days, but the math finally arrived wrapped in wondrous rainbows.

The formal dinner was lovely. Little glittering silver and blue moons and stars... cosmic confetti dusted all the tables. Awards for wonderful achievements in astronomy. Just who thought up that way-cool Messier Marathon anyway? Alan Dyer wowed us all some more with his incredible multi-media presentation with pix, tunes and animations. Dyer's true love is stalking the solar eclipses in the odd-spots of totality. He's kind enough to share these spectacular gems from his collection of cosmic safaris.

Monday morning was rainy and misty heading out to the Liquid Mirror Telescope in Maple Ridge. The mountain was marked by many an astronomer that day as we all

soaked in the supernova-hunting telescope, then the far-out mirror. Although, it was not a mirror while we were there. The mercury mirror was bottled in 25-litre wine jugs stashed in a corner. Nice! One bad move and the mercury can kill. It's that nasty. But when the mercury flattens out on this big spinning disc, the image has more clarity than any machine-polished mirror.

On the ride back to Vancouver, I napped. This means I missed a rather lively discussion between a number of honourable and learned delegates regarding the composition and mass of the moon (versus that the moon is, in fact, totally hollow—I'm not kidding). Good thing we were chauffeured to the planetarium for Bar-b-q lunch and a show under the dome. A telescope was set up so everyone could have a boo at the spots on the sun. I counted 16 for my virgin moment looking at the sun through a telescope with all the right filters. The show itself was an historic presentation about planet Earth's cosmic drift thanks to our small rotational wobble. Thanks to the Minoan ancients for first plotting the constellations thousands of years ago, we know this. If you want to know what the universe looked like back then to an astronomer without a computer, I now know the people behind the software that can show you what they saw. It predicts where we're going, too, as we surf the cosmic soup toward a collision with our galactic neighbours.

After 4 days of absorbing a semester's worth of information, the amazing conversations, coincidences and magic moments, I rode out the "high of suchness"

realizing that, for the non-astronomers out there stuck with their faces to TVs and computers, that they can't see the magic for the media.

I had no voice by midnight the last day. Talked-out, I quietly contemplated how the weekend provided a profoundly personal transformation. I decided to wear my astronomy on my sleeve. No longer hide behind the radio microphone. Be out there honestly and genuinely sharing all things astronomy and see what happens.

Albert Einstein once said that "There are only two ways to live your life. One is as though nothing is a miracle. The other is as if everything is."

The day after: July 1<sup>st</sup>, 12:28 pm (PDT), "Superconductor" is playing on Rock 101 (FM). I am dancing and laughing with the coincidence. There are tears. Exhaustion? Exaltation? More suchness brought to me free from the cosmos. The joy makes me think, "enough, enough, I get it already," before I get too addicted to the cosmic winks. Exactly one hour later, 1:28 pm (PDT), "Superconductor" is playing again on Rock 101 (FM).

What are the odds of that? The next Blue Moon is July 31, 2004 (PDT).

Funny. It's a miracle. Now I know some astronomers that like to play with numbers...

Guess you had to be there. ★



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Reactions were mixed, from awe to “that’s it?” The questions also came fast and furious: What’s that bright spot? Why isn’t it orange? Was this my own scope? How much did it cost? Why is it bouncing around (let go of the scope, please...)? Does it look better through that bigger scope right there? Will it/we be here tomorrow?

It was a good night, and my scope was only bumped off-target three times. Never would I have expected so much interest in an astronomical event, and was pleased to see such large—and well behaved—crowds. Truly an excellent event. – *Gordon Farrell*

### Thursday, 28 August

I was set up near the Planetarium on the raised grassy area between the GSO and the stairway down to *Bard on the Beach*—where we were Sunday the 24th.

As soon as I arrived about 9:30PM, with equipment in hand, people began to gather around me, asking, “Are you going to set up your telescope?” They told me they had tried the line-ups that had formed near Elsje Point (near the ‘Gate to the North-West Passage’ steel sculpture), beyond the small pond. So I began to set up. In less than 10 minutes there were about 100 people. Soon a huge crowd had gathered all around. In 20 minutes I was mobbed! I was busy... questions, more questions, readjusting the focus and cleaning smudged eyepieces. People were becoming impatient but not quite frantic. I had to tell them that I was just volunteering, that this was my

own scope... yes, this really is Mars... that’s right, the bright one... the magnification is 100X... do you see the tiny white area at the bottom?... and so on. I expected all of these questions, but I was overwhelmed by the number of people. I told the mob that they would just have to organise themselves, so I suggested they form a line-up.

A line-up was formed and then after awhile a few desperate parents suggested I make two lines: one for



Photo by Gordon Farrell

adults and one for kids, who would have to go home soon. I told him that I cannot police all these people but if *you* would like to, then go ahead. So he did that. Two lines formed and people alternated. It worked, but not well. Soon another parent acted as a traffic cop: “OK you’re next, then that little girl... keep moving along, quickly now...” As well, there was an impromptu promoter who wandered around the site like a town crier calling out loudly, “Mars! See it here tonight folks! Closest in 60,000 years! It’s the real thing! You’ll never have another chance...” I just kept going and got a lot of thanks; I’ll bet every

one of our volunteers received that. That has been the heartening part: people truly were grateful. I even got a few offers of cash but I politely refused. (At least that’s what I’m telling you. Maybe I should have accepted... we need cash for those home renovations underway, and with the price of gas these days...)

Then there were the queue-jumpers. And the drunken yahoos. More irate people. And simply more people. Lots more. They were queued in two huge arcs westward around the perimeter of the grassy area all the way back to the entrance of the GSO. Five, maybe six hundred people at any time. Wow! (Am I ever going to get home tonight? I have to work in the morning. But I couldn’t say no to people who’d waited 2½ hours. I was amazed! They had waited that long.)

They just kept coming. Hundreds, ’til well after 2 AM [estimates were about 4-5000 people in total that night – *Ed.*]. Fortunately for the late comers, Mars’ appearance improved, although it was never what I’d call ‘good seeing’. The people didn’t seem to care. They were grateful to have witnessed this unique celestial event.

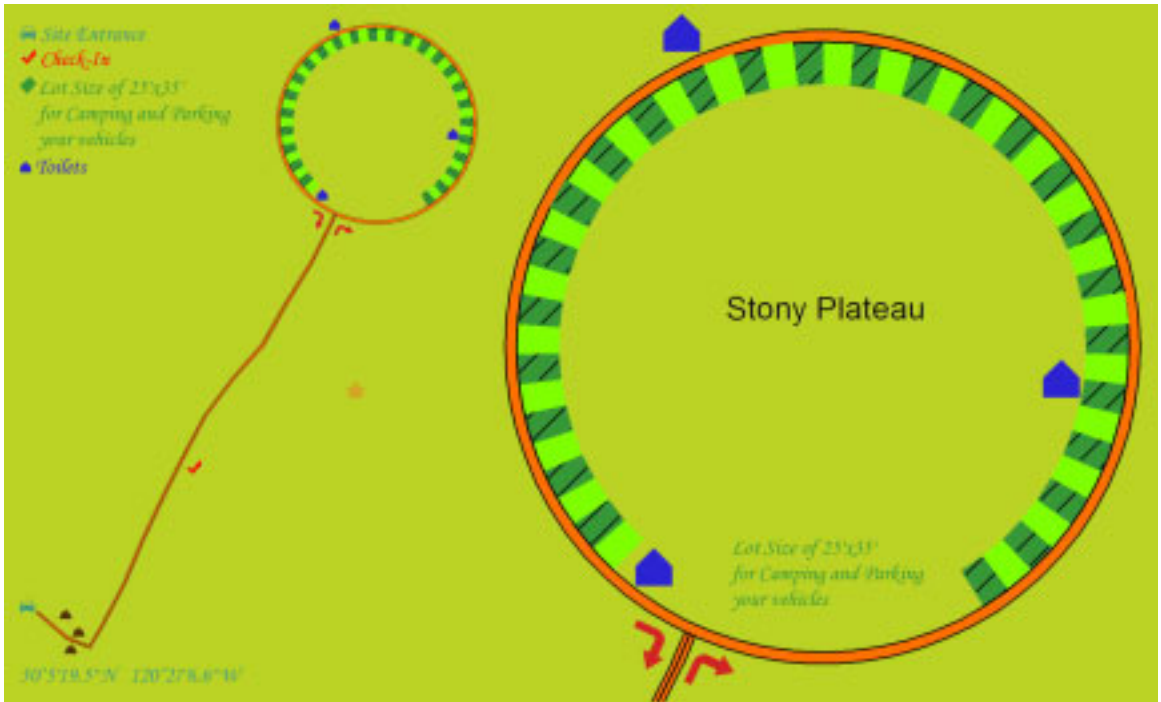
Finally, by 2:30, the last person got a look. The stragglers helped me pack up and soon I was driving home, bleary-eyed and wasted. It’s the next day now and I’m surprised I have any energy at all. The best part for me was to see those hundreds of people out under the night sky, looking up, wondering. Pity those suckers who were stuck in front of a television. – *Seamus Dunne* \*



# Merritt Star Quest



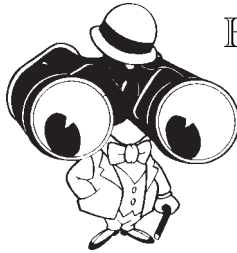
The Merritt Star Quest will run from September 26 to 28. The event is organized by the Merritt Astronomical Society and sponsored by the RASC Vancouver Centre, RASC Okanagan Centre and the FVAS. More information at <http://Merritt.DeepSkyObjects.ca>



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