



NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC

VOLUME 2006 ISSUE 1

JANUARY/FEBRUARY 2006

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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.M.S.O.

Jan. 10: Dr. David Crampton of the Hertzberg Institute for Astrophysics discusses the Thirty Metre Telescope.

Feb. 14: Vancouver Centre member Craig Breckenridge on "Observatories I Have Known" during his work at AMEC.

Mar. 14: Dr. Paul Hickson of UBC's Astronomy Dept.: Liquid Mirror Telescopes on the Moon.

Next Issue Deadline

Material for the March Nova should be submitted by Monday, Mar. 6, 2006. Please send submissions to:

Gordon Farrell
(gfarrell@shaw.ca)

75 Years of History

by William Fearon

Yes, the Vancouver Centre of the RASC is 75 years old this year. While the anniversary date is in November, I (William Fearon-Librarian Vancouver Centre)

wish to hear from any members about anything special involving members of

the RASC Vancouver Centre and Astronomical events such as Eclipse expeditions and Astronomical discoveries. Please e-mail me at williamfearon147@hotmail.com

or write to me at William Fearon, 252 Lebleu St. Coquitlam BC, V3K 5Z3. I do not wish to take any of your remembrances by telephone as I do not know

short-hand and my writing resembles chicken scratching at best. Thank you for your coop-

eration. A selection of these memories will be printed in a special Nova issue in November. ★



Dark Sky Musings

by Chris Dolman

While sky glow is major concern of astronomers (amateur and professional), some might argue if it were only a concern of astronomers it would be a petty issue. However, sky glow and the loss of the night sky is not just a concern of astronomers as the night sky has been, and continues to be, a subtle but immensely rich contributor to our cultural history generally.

We see the influence of the cosmos all over. This month in particular we see Christian imagery with the Star of Bethlehem on top of Christmas trees. According to an almost-a-pastor friend of mine, if one were to translate the Bible from ancient Greek and Hebrew, the Three Wise Men might well be astrologers. Although you may be one of those astronomy types that busts out in hives at the mere mention of astrology, one must admit that astrology has been and continues to be a notable philosophy.

In Islam, the month begins with the first sighting of a new moon and the five daily prayers are timed with the position of the Sun. It may have been for these reasons that several Islamic astronomers took Ptolemy's model and made observations and calculations that were notably more accurate than the calculations by Ptolemy himself.

We also find cosmic influences in our day-to-day life and immersed in our language. We drive in Saturns and Mercurys. We have arguments that are of course 'as clear as night and day.' We have shower curtains and mugs with

moons and stars and planets, and we watch the lives of movie and sports stars. When we consider that the night sky has been a universal presence in the development of humanity, is it surprising that we should see so many references? No matter what the local view may be—whether it is tundra or desert or mountains, or looking out over ocean or up thru forest canopy—the one view that humans have shared is the sky, and we have for over 100,000 years. The night sky has been inspiration to poets, lovers and explorers. It has been there for those wonderful moments of ponder round camp fires. I find it fun to notice references and influences in our daily culture.

A number of years ago, I read in one of the local papers of the great angst and debate that was happening over the proposed cleaning of Michelangelo's David. The concern was that the wrong technique would degrade the marble of this irreplaceable and beautiful work of art. Fair enough! Who of us wouldn't cringe at the idea of someone going at the Mona Lisa or David with a bottle of Vim and a tattered old tee shirt? However, we fail to appreciate the ancient source of inspiration that has come from the night sky. Little by little, the night sky has been lost behind the grime of technological advancement (ok, the sentiment is a little corny but I like it anyway). It is not that we don't care about the aesthetics of our communities, because we do. We have laws that forbid littering and noise pollution and laws that preserve the view

corridors here in Vancouver. One can imagine the uproar that would take place if the air pollution were so bad that we could not see the North Shore Mountains.

It is estimated that about 90% of all the kids in the U.S. (no doubt similar in Canada) have never seen the Milky Way. It is our neighbourhood, cosmically speaking, and most haven't seen it. There is a story that after an earthquake in the California, concerned citizens called into a radio station reporting a large cracked glowing cloud over the city, and they wondered if that could have caused the quake. Of course they were seeing the Milky Way, perhaps for the first time.

Whenever I think about writing or talking to astronomers about light pollution, I feel that I am preaching to the converted. Most of you are fully aware of the problem of sky glow. Light pollution is not just an issue of inconvenience to a few, it is also an issue of loss of energy, loss of money, destruction of wildlife, and how it is hazardous to human health and safety. These are all measurable to some degree and in their own right are good and compelling reasons to be concerned about light pollution. But we should not forget about the culture and poetry of the night sky.

Interesting web sites:

www.astro.uni-bonn.de/~pbrotsche/hist_astro/ha_items_astrology.html

www.artic.edu/aic/students/sciarttech/2b.html *

President's Message

This Christmas, unlike previous years, I did not receive any new astronomy gear or related books, although I did receive two copies of the same astronomy calendar. The weather gods must have informed Santa that seeing was next to hopeless in this part of the world, so he was spared any unneeded burden. Brian Morse, our Centre Secretary and indefatigable sucker hole chaser, announced at the last council meeting that there have been five clear nights since September 26th. Perhaps we should reconstitute ourselves as the RSAC—Rain Soaked Astronomers of Canada—in deference to Eric Dunn's apt characterization of our principal avocational hazard.

Ever optimistic, Council has scheduled a full program of outdoor events for the coming year. We begin our activities this spring with a couple of dates with Charles Messier in March and April, followed by Astronomy Day in May. We are working hard to bring Dr. Carolyn Porco, Cassini Imaging Team Leader and Director of the Cassini Imaging Central Laboratory for Operations, to Vancouver to speak to both the astronomy community and the general public. That would be one of the highlights of this year. We intend to participate in several public outreach events and, of course, there are the annual Merritt and Mt. Kobau star parties. The Perseids are expected to pay us a

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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 \$58.00 per year (\$34.25 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 or mailed to the address on page 5.

Advertising

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

Commerical Rates

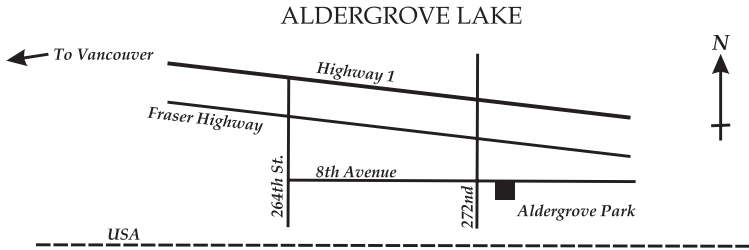
1/4 Page: \$15.00 per issue

1/2 Page: \$25.00 per issue

Full Page: \$40.00 per issue

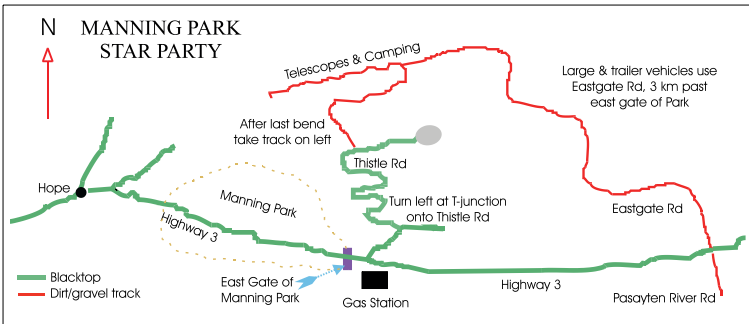
Rates are for camera-ready, or electronic files. Payment, by cheque, must accompany ad material. Make cheque payable to: RASC Vancouver Centre.

Observing Sites

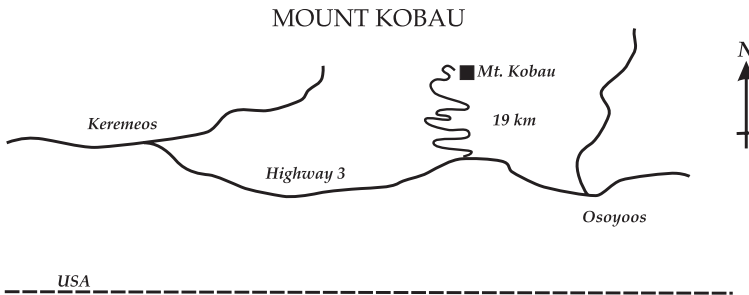


Dale McNabb Observatory in Aldergrove Lake Park (RASC Vancouver Centre's regular viewing site)

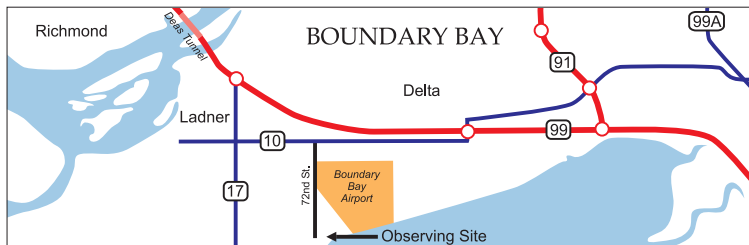
Contact Mike Penndelton (604-888-1505) or Howard Morgan (604-856-9186)



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

FOR SALE

RASC MERCHANDISE

Available for purchase after meetings:

Calendars	\$14.00
Golf Shirts	\$30.00
Sweat Shirts	\$30.00
Centenary Mugs	\$ 7.00
Beginners' Guides	\$15.00
Observers' Guides	\$20.00
Cloth Crests	\$11.00
Lapel Pins	\$ 6.00
L.E.D. Flashlights	\$22.00

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.

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.

RASC-VC on the Internet

<http://www.pcis.com/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, \$80 Family) includes a newsletter, Discounts on Space Camps, special programs and lectures, Vancouver Museum Discounts, and free admission to the Space Centre. Admission to the Space Centre includes: Astronomy shows, Motion Simulator rides, multimedia shows in GroundStation Canada, and access to the Cosmic Courtyard Exhibit Gallery. For Membership information, call Mahi Jordao at 604-738-7827, local 237 for information. You can also reach them on the Internet at <http://www.hrmacmillanspacecentre.com/>

MEMBERSHIP HAS ITS PRIVILEGES!

New members, did you know? The Vancouver Centre has 8 telescopes available for loan free of charge! We have telescopes ranging from 60mm to 10" diameter. For more information see Wayne Lyons, Director of Telescopes in the meeting room 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. Wayne can be reached at 604-467-2956.

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

The best thing you can do to gain the most from your membership is to get active! Take in the club meetings; engage other members with questions; come out to observing sessions (also known as "star parties"), and, by all means, volunteer to take part in our many public events.

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

RASC
1100 Chestnut Street
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V6J 3J9
604-738-2855

Upcoming Events

March

25 – Messier Marathon I

April

29 – Messier Marathon II

May

1-7 – International Astronomy Week

6 – Astronomy Day

18-22 – GA 2006 in Ottawa

26 – Sidewalk Astronomy (rain day May 27)

June

29 – CARO tour

August

11-12 – Perseid meteor shower

19-27 – Mt. Kobau Star Party

October

13 – Sidewalk Astronomy (rain day Oct. 14)

November

14 – 75th Anniversary of Vancouver Centre

December

12 – AGM

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visit, with their peak performance predicted for August 12th. To ensure that we know what is going on in the night sky, even if we cannot see it, Craig Breckenridge will continue the In Transit program at our monthly meetings.

Our Speaker Coordinator (Barry Shanko) has lined up excellent presentations for our first five meetings this year. Details are found elsewhere in this issue of Nova. Again we invite members to suggest speakers and topics. We want to stir your enthusiasm and generate interest for potential new members.

This year marks the 75th anniversary of the founding of the Vancouver Centre of the RASC. It is our intention to do something special to mark the occasion. We are considering an evening social

gathering at the Space Centre but again would welcome suggestions for something memorable. If any members have old photographs, stories or historical items they can contribute, they should contact William Fearon, our Librarian, or other council members.

CBC Television paid us a visit just after Christmas. The sidewalk astronomy efforts of Hassan Hassan, which received attention in our local papers last year, piqued the attention of the broadcaster. After a couple of false starts last fall, a small crew met with several of the council members and our sidewalk astronomer at the GMSO to tape a segment for the Road Show program. Footage of the half-meter scope and details of our activities, including the loaner program, were captured in the session. The crew also visited the

Space Centre. We hope to get a broadcast date so interested members can see the final result.

I'd like to welcome our new council members Wayne Lyons and Suzanna Nagy. Wayne will take over Phil Morris' responsibilities as Director of Telescopes while Suzanna will replace Dan Collier as Councillor and Membership Director. We are pleased to have them both on the team. I would also like to welcome our new general members and invite them to introduce themselves to Suzanna. She is anxious to ensure they quickly discover that they made the right choice in joining our group.

I wish you all a Happy, Healthy and Prosperous New Year and, dare I say, "Clear Skies?"

– Ron Jerome ★

From the Librarian

by William Fearon

This month I will do my report on the one observing item all members of the RASC have at their disposal, *The Observer's Handbook*. This companion to all observers is now in its 98th year of publication and is a good source of reference material, observing tips and "what is there to observe tonight?" information. The Handbook is edited by the Vancouver Centre's own Rajiv Gupta (Ph.D. Mathematics).

The Handbook is divided into sections, which are grouped into chapters of related content. Leading off is a message from the Editor, a listing of Canadian Observatories and Planetaria as well as selected others around the world. Then comes a list of recommended reading sources as well as selected internet sites worth looking at.

Next comes a chapter on the Basic Data of the universe, such as the speed of light, the mass of the Earth, and the distance to the Sun (the Astronomical Unit). Included also are physical data on the Planets of the Solar System, listings of all the *known* moons and a discussion on Orbital Motion.

Next is a chapter on Time. If you ever wanted a good discussion on the what and why of Universal Time, here it is. This section provides a good overview of how time is measured and how we use it. Also provided are methods for receiving Time Signals for precise time measurements (such as Occultation timing and Eclipses) by

shortwave radio. There is also a very brief mention of the Julian Dates for this year (a Julian Date is the number of days that have passed since January 1, 4713 BC). Next is a map of the Standard Time Zones around the World. Last is a graph showing the duration of darkness for various times of the year and the Sidereal at various times of the year as well.

The next chapter discusses Optics and Observing. It discusses telescope parameters, magnification, exit pupil (very important to know) and sky contrast. Also provided is information on binoculars and filters. It then talks about Limiting Magnitude, Light Pollution and the weather. This chapter ends with tips on Deep-Sky observing and how to keep a logbook (essential if you want to earn one of the RASC Observing Certificates.)

The next chapter is the Month-by-Month section. Here is described all the known and predicted events to be seen in the sky, listed month by month. Items that are **Boldly** highlighted are things that can be seen from Canada and are of interest. Also included are the phases of the moon and the position of Jupiter's Galilean Satellites as they orbit.

The next chapter deals with Eclipses. What eclipses are, what type of eclipses can occur and whether or not any can be seen from Canada (not until 2017, sorry). There is a discussion of the Eclipses that are to occur this year, where they can be seen and what

type of Eclipse they are. Additionally, 2006 will see another Transit of the planet Mercury across the face of the Sun in November. For Vancouver this event will start just before noon and end minutes before sunset.

Next is a section on the Moon. The handbook provides a basic map of the Moon (strictly for guidance, a proper Moon atlas is recommended); then comes a set of table for calculating moonrise and moonset for your location. This is followed by a listing of Lunar Occultations that occur in 2006. Lastly, a brief discussion of how the Moon affects tides here on Earth.

The next chapter discusses the Sun. It discusses Solar Activity such as Sunspots and Flares which affect the Solar Wind and thus affect the Earth's Magnetosphere which from time to time cause Aurorae. Also mentioned is Twilight and what a Midnight Sun is and where to see one. This chapter also has tables for calculating Sunrise and Sunset.

The next chapter provides a complete discussion of the Solar System's Planets for this year, including where to find them in the sky, how bright they will be and other details that observers need. Finder charts are provided for finding Uranus, Neptune and Pluto for those who wish to see them. Also provided are details of the visible events of Jupiter's and Saturn's moons.

Presenting the Sun

by John Nemy &
Carol Legate,
The Pacific Observatory

Egypt, one of the oldest civilizations on Earth, will be the place to see the next total solar eclipse



One of the sites to be visited by the Eclipse Tour to Egypt in 2006. The Sphinx at the Pyramids of Giza.

on March 29, 2006. As the Moon moves in front of the Sun on March 29, the lunar shadow touches down on Earth in Brazil, then travels east across the Atlantic Ocean, northern Africa, and central Asia. No part of this eclipse will be visible from North America.

The shadow, after racing over remote parts of North Africa at 2,500 kilometres per hour, crosses the northeast corner of Egypt. The eclipse will be perfectly positioned for one to enjoy this once-in-a-lifetime adventure together with the ancient history of Egypt. The last total solar eclipse for North America occurred in 1979 and the next will not happen until 2017.

Only during a total solar eclipse does the Sun's true stellar personality become visible to the

naked eye and reveal the stunning outer atmosphere of our local star. The corona, a crown of pure white light, races away from the Sun. Embedded within this crown are the fiery orange flames of the chromosphere.

On March 29th, the sky overhead will show a "black hole" where the Sun and Moon have aligned. Visible around them will be the planets of Venus, Mercury, Mars and a sprinkling of daytime stars. The surreal celestial scene from Egypt will last a generous 3 minutes and 56 seconds. Photographs cannot capture the full range of light of this spectacle but the human eye can. Seeing totality with your own eyes is the magic and lure of a solar eclipse. The only time that the Sun can be viewed safely with the naked eye is during a total eclipse, when the Moon completely covers the disk of the Sun. It is never safe to look at the Sun at any other time.

On March 26, 2006, a group of experienced and first-time eclipse chasers from across Canada will depart Toronto for Cairo, Egypt. This tour, organized by Vacations Internationale, will be led by Whistler astronomers and futurists John Nemy and Carol Legate.

This group will be joined by a historian from the University of Cairo as they tour the Great Pyramids of Giza and the Sphinx. The tour continues to the Mediterranean coastal city of Alexandria.

This 4,000-year-old centre of culture and art was the home to the Library of Alexandria which contained 500,000 volumes of literature, science and philosophy. The group will visit a rebuilt version of the ancient library.

On eclipse day, the group will travel to the border between Libya and Egypt to a secure viewing site for the noon-time total solar eclipse.

Knowing that 50 centuries of civilization have come and gone in this land sets the stage for an event that has been happening for



Image by Carol Legate

Image of the 1998 total solar eclipse from the Caribbean island of Curacao showing the Sun & the Moon & the planets Jupiter & Venus. Jupiter at top.

millennia. Although the Sun is hidden for only a few minutes during an eclipse, the emotional impact lasts a lifetime.

For more information contact The Pacific Observatory in Whistler at 604-938- 8090. Visit <http://www.nemy.com> for images and more information. ★

VLPT & World Eco-Centre for Whistler

by John Nemy
Whistler Naturalists and
Whistler Astronomy
Club

So let's think big: really, really big. Imagine a place in nature that recognizes our existence in the natural world everyday. The VLPT & World Eco-Centre is the place. This centre, comprised of two components, will be a continuous international attraction for Whistler.

The Very Large People's Telescope (VLPT) will be the world's largest visual telescope and will be located in Whistler, B.C. The VLPT will show the night sky to people like no other telescope on the planet. Starlight gathered by the telescope's massive three-metre mirror will be seen directly by the human eye. Adaptive optics will produce a view only seen by electronic cameras and professional astronomers in the past.

Adaptive optics, which is used today by all the major telescopes around the world, is a technology developed by Canada. This type of optical system is a manipulation of the telescope mirror to compensate for fluctuations in the Earth's atmosphere. Since these fluctuations degrade the clarity of our view of the stars, a visual telescope with adaptive optics will

show objects in the sky like never before. The powerful light-gathering ability of the huge segmented mirror will show the night sky in unprecedented detail, bringing people back again and again to treat their eyes to deep sky wonders. Once the VLPT is up and running it will be a self-sustaining,



Telescope being proposed for Whistler, BC would be the worlds largest visual telescope with adaptive optics. Image courtesy of the Gemini Telescope.

year-round operation. The stars are always there.

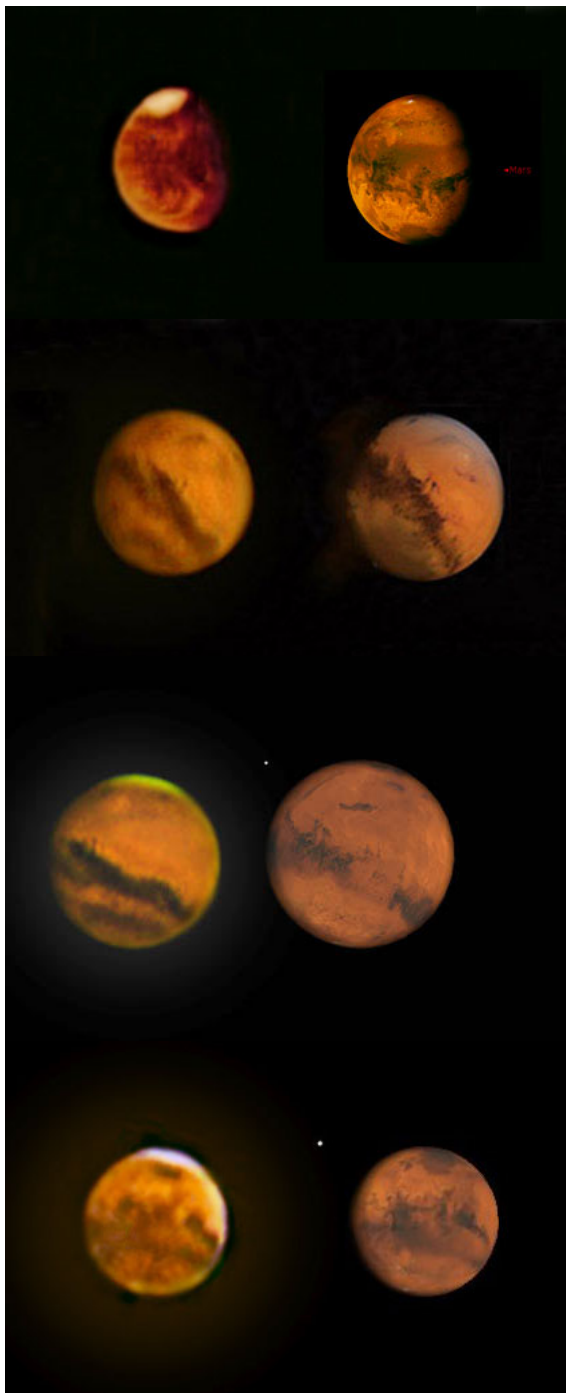
The World Eco-Centre is the facility that embraces the concept of recognizing our celestial and terrestrial worlds. The centre is a place for all people of the world to meet, learn and promote a positive outlook about our existence on planet Earth. A place where words like "humility" and "humanity" are

used with positive connotations as we try to understand and appreciate the universe and ourselves, not to mention Whistler's beautiful nature. Glaciology, volcanism, forestry, geology, cosmology and astronomy will be some of the activities people will be exposed to at the centre. The current Whistler visitor demographic and the local communities are searching for a west coast nature experience that is real and not some kind of artificial exposure to our surroundings.

Visitors to the resort today are side-tracked by what Whistler is not. What we are is a community set in stunning nature. Under all the glitz of our modern resort in the Coast Mountains, the world expects a place like Whistler to build the World Eco-Centre and people will come to experience it again and again. The VLPT & World Eco-Centre is the sustainable, world-class attraction that will benefit the community, the resort and the world. We welcome the world every day in Whistler; Whistler should be the world centre recognizing our amazing planet.

For more information contact us at The Pacific Observatory 604-938-8090; www.nemy.com ★

Members' Gallery



Mars

Brian Morse

Webcam photos (left) and similar Hubble images (right). All images taken with a Celestron C14.

Photo dates (top to bottom):

10 July, 2005 5:14am

15 Dec., 2005 8:30pm

11 Nov., 2005 10:05pm

27 Nov., 2005 8:30pm



Tycho (lower left)
Gordon Farrell

Webcam attached to Celestron G5
11 Nov., 2005

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The next chapter discusses Asteroids. This section deals with the brightest asteroids to be seen this year and has a listing of Asteroidal Occultations that can be seen from North America.

This next section deals with Meteors, Comets and Dust. A discussion on Meteors, Meteor Showers and Meteorites is provided. Tips for finding and observing Comets are provided next and lastly a section on Interplanetary Dust and the Zodiacal Light.

The next section deals with Stars, starting with the names of all 88 constellations, with listings

of the Brightest stars in the sky as well as the Nearest stars in the sky. Then come discussions on Double and Multiple stars, Variable Stars, Star Clusters, Supernova hunting and Expired Stars (White Dwarf, Neutron Stars and Black Holes.)

Next comes a chapter on Nebulae and Galaxies. This chapter starts off with a discussion on what Nebulae and Galaxies are. Then comes a discussion on the Messier Catalogue. Then comes the Messier Catalogue list itself. This is then followed by a selection of the finest objects from the NGC (New General Catalogue & Index Catalogue) that are not on

the Messier List already. Lastly a listing of difficult to observe objects for those who wish to move beyond the mundane. This is followed by a discussion on Dark Nebulae. Then come discussions on the Nearest Galaxies, Brightest Galaxies and Radio Sources.

The Handbook finishes with maps of the night sky at two-month intervals for the year as seen from Canada at 50 degrees north.

I recommend spending some time with this interesting resource as it contains a wealth of detail for all levels of observers. ★

Proud To Serve Vancouver's Astronomical Community



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