

skynews



on the cover

Horsehead Nebula, B33

by Guy Walton

January 20, 2008, Dominion Astrophysical Observatory, Victoria, BC

Telescope: Sky Watcher Equinox 80 ED refractor

Mount: Sky Watcher EQ6 autoguide with Orion SSAG camera and PHD.

Camera: Orion SSPro, 6 megapixel

Exposures: seven - 10 minute lights, 2 dark frames and 10 flat frames acquired with MaximDLE and processed with Images Plus, Photo Shop and Noise Ninja.

this month

Chemical Composition of Galaxies

by Dr. Thomas Puzia

February 11th, 2009, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic

Bio: Dr. Puzia is the Plaskett Fellow at the HIA. He received his Ph.D in 2003 in Astronomy and Astrophysics, at the Ludwig-Maximilians University, Munich, on Extragalactic Globular Cluster Systems.

His areas of research are:

Extragalactic Globular Cluster Systems – Since the assembly of globular cluster systems is influenced by galaxy formation processes, globular cluster systems provide important information on the star formation and chemical evolution histories of their host galaxies. My recent projects aim at determining ages and chemical compositions of globular clusters in massive elliptical, lenticular, and spiral galaxies, using photometric



and spectroscopic diagnostics. The work is currently being extended to globular cluster systems in dwarf galaxies.

Globular Cluster Formation – One of my main interests is to understand whether globular clusters in different galaxies show similar fundamental plane relations. This is directly connected to the question of whether the mode of globular cluster formation is universal. To obtain fundamental plane parameters, I am using high-spatial resolution imaging obtained with the Hubble Space Telescope and high-resolution spectroscopy taken with 8–10m class ground-based telescopes.

Stellar Population Models – Population synthesis models are powerful tools to understand distant stellar populations and, thereby, the formation and evolution of galaxies. My primary goals are to test such models by observing resolved simple stellar populations, i.e., Local Group globular clusters and to develop superior diagnostics that lead to more reliable predictions of their fundamental parameters. In particular, we are testing the predictions with massive intermediate-age globular clusters in M31, which are not found in the cluster system of our Galaxy.

contact us on-line

Web Site www.victoria.rasc.ca
New Members newmembers@victoria.rasc.ca
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observers group

RASC Victoria Centre and the NRC have signed a License to Use Land Agreement which gives members of Victoria Centre expanded access to NRC property on Observatory Hill.

If you are a member in good standing of Victoria Centre RASC, consider yourself an “active observer”, and wish to take advantage of this opportunity, please send an email to the 1st or 2nd Vice President. More information on this program see: <http://victoria.rasc.ca>

Upcoming events

Feb 1-28th - Bay Centre, Downtown Victoria - **From Earth to The Universe (FETU) exhibit**. Exhibits and video displays of beautiful astronomy themed photos can be viewed on high definition screens all month long. Ask the Astronomer booth and demonstration of telescopes at selected times.

February 8 - 2:30pm - Bob Wright Building, UVic. **IYA Free public lecture, Mars Exploration**, by Alain Berinstain, from the Canadian Space Agency.

Mar 1-31, 2009 - Victoria International Airport - **From Earth to The Universe (FETU) exhibits** at the Victoria Airport.

Mar 16-28 - Cattle Point in Oak Bay on selected nights (dates to be determined closer to the event). **GLOBE at Night**.

Mar 28, 2009 - Alex Goolden Hall, 907 Pandora Avenue -**Early Music Society of the Islands presents Lucidarium** - “pure energy on period instruments” recreates performances of the itinerant professional musicians of the Italian Renaissance - the same time period as when Galileo pointed his telescope skyward for the first time. There will be opportunities for night sky viewing after the performance, weather permitting.

March 11 - 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture** - Dr. Justin Albert, Assistant Professor, Dep’t of Astronomy and Physics, UVic

April 8 - 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture -Gravitational Lensing** - Mr. Karoun Thanjavar, Graduate Student, Dept. of Astronomy and Physics, UVic

April 28 - May 2 - RBCM - **100 Hours Side Walk Astronomy Marathon**

May 2, 10 am - 4 pm - Centre of the Universe - **Astronomy Day**

May 13 - 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture - Active Galactic Nucleii** - Ms Emily Down, Visiting Astronomer, NRC HIA

address change? information incorrect

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Severe Space Weather
by Dr. Tony Phillips

Did you know a solar flare can make your toilet stop working?

That's the surprising conclusion of a NASA-funded study by the National Academy of Sciences entitled Severe Space Weather Events—Understanding Societal and Economic Impacts. In the 132-page report, experts detailed what might happen to our modern, high-tech society in the event of a “super solar flare” followed by an extreme geomagnetic storm. They found that almost nothing is immune from space weather—not even the water in your bathroom.

The problem begins with the electric power grid. Ground currents induced during an extreme geomagnetic storm can melt the copper windings of huge, multi-ton transformers at the heart of power distribution systems. Because modern power grids are interconnected, a cascade of failures could sweep across the country, rapidly cutting power to tens or even hundreds of millions of people. According to the report, this loss of electricity would have a ripple effect with “water distribution affected within several hours; perishable foods and medications lost in 12-24 hours; loss of heating/air conditioning, sewage disposal, phone service, fuel re-supply and so on.”

“The concept of interdependency,” the report notes, “is evident in the unavailability of water due to long-term outage of electric power—and the inability to restart an electric generator without water on site.” It takes a very strong geomagnetic storm to cause problems on this scale—the type of storm that comes along only every century or so. A point of reference is the “Carrington Event” of August-September 1859, named after British amateur astronomer Richard Carrington who witnessed the instigating solar flare with his unaided eye while he was projecting an image of the Sun on a white screen. Geomagnetic storms triggered by the flare electrified telegraph lines, shocking technicians and setting their telegraph papers on fire; Northern Lights spread as far south as Cuba and Hawaii; auroras over the Rocky Mountains were so bright, the glow woke campers who began preparing breakfast because they thought it was morning!

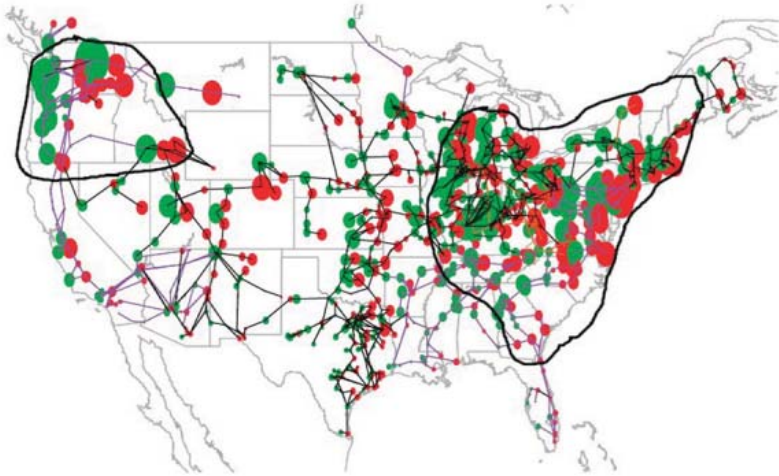
“A contemporary repetition of the Carrington Event would cause ... extensive social and economic disruptions,” the report warns. Widespread failures could include telecommunications, GPS navigation,

banking and finance, and transportation. The total economic impact in the first year alone could reach \$2 trillion (some 20 times greater than the costs of Hurricane Katrina).

The report concluded with a call for infrastructure designed to better withstand geomagnetic disturbances and improvements in space weather forecasting. Indeed, no one knows when the next super solar storm will erupt. It could be 100 years away or just 100 days. It's something to think about ... the next time you flush.

One of the jobs of the Geostationary Operational Environmental Satellites (GOES) and the Polar-orbiting Operational Environmental Satellites (POES) operated by NOAA is to keep an eye on space weather and provide early warning of solar events that could cause trouble for Earth.

You can keep an eye on space weather yourself at the National Weather Service's Space Weather Prediction Center, www.swpc.noaa.gov. And for young people, space weather is explained and illustrated simply and clearly at the SciJinks Weather Laboratory, scijinks.gov/weather/howwhy/spaceweather.



On this power-grid map of the United States, the black-circled areas are regions especially vulnerable to collapse during an extreme geomagnetic storm. Inside those boundaries are more than 130 million people. Credit: National Academy of Sciences report on severe space weather.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

*President's Message***February 2009**

IYA is off to a good start in Victoria after successful launches at the Malls on January 10 and the CU on the 17th. I understand we gave over 450 people a Galileo experience at the malls and there were more than 200 at the CU event. The comments I heard from visitors at Mayfair and the CU were quite positive. It was a good reminder that people really are interested in the sky. The best feedback of all is that we have attracted some new members. This augurs well for the potential growth of our Centre during the year. A big thank you to all of the RASC volunteers who pitched in to make both events work so well.



By the time you read this we will have had another event at the Hobby Show and the Bay Centre and Airport displays will be starting up soon. I have seen video displays that Gary Sedun and Eric Chisholm at HIA and CU are organizing for the Bay Centre and was impressed. Our Centre will also be featured. Joe Carr has put together some great material from our members for inclusion in the displays (see <http://vimeo.com/2989504>).

With more events on the way, the challenge will be to keep the momentum. If you have not yet volunteered please contact Sherry Buttner and let her know that you are interested in being part of the IYA team. It is fun and even if you don't have a lot of time to spare your help will be appreciated. I know that those who have already been involved had a good time sharing their love of astronomy.

Another opportunity to enjoy yourself during IYA showed up on my e-mail today. HIA and Uvic have joined together to form the Times Colonist 10K Team "International Year of Astronomy". They are asking us to join them for the run/walk on Sunday April 26th and I encourage you to do so. It is a great way to reach out to young people and have fun doing it. Early Bird registration is \$30 at <http://www.eventsonline.ca/events/tc10k/>

John

IYA

The Victoria Centre had a good start with the January 10th launch of IYA celebrations. The aim of hosting IYA activities at the Malls was to take astronomy to the people where they are. We were very fortunate to receive the IYA related handouts just in time for the mall displays. A very successful event indeed, thanks to so many volunteers. We also co-hosted a family fun and successful event at the CU. Many visitors commented that they found out about the CU event while visiting one of the mall displays. Thanks to our volunteers, we have been able to rekindle a curiosity about astronomy and space in the minds of many.

We were invited by the Westshore Town Centre to participate in the Hobby Show which was held from January 30 to February 1st. Thanks to all the volunteers for their contribution to make this event such a success.

The next major event for the Victoria Centre, is the FETTU at the Bay Centre. FETTU is one of the cornerstone projects of IYA. The exhibit will feature breathtaking space images taken by international and Canadian astronomers, both professional and amateur, displayed on HD monitors.

A few days ago, I received very good news. The Butchart Gardens (TBG) will join us in celebrating IYA by providing a venue to host night sky viewing sessions one day a week from June 15 to September 15. I think it is a great venture for us associating the TBG.

Check out page 4 for IYA events through May. For for a complete list and regular updates visit <http://victoria.rasc.ca/>.

Volunteers are mandatory to make these events a success. IYA provides us a life-time opportunity to be proud of our hobby. The more we share it with the public, the more we receive in response. The main point to remember is having fun. To volunteer in any of the above activities, I encourage you to call/email, IYA volunteer coordinator Sherry Buttner (250) 474- 0554 (vp2@victoria.rasc.ca) or me at (250) 391-0450 (sid-sidhu@shaw.ca).

Objective is to provide more than 20,000 CRD citizens the opportunity to experience a Galileo Moment of Discovery.
How are you doing? **1189** (as of 09-02-01)

*Astrophotography***Charles Banville**

Comet Kushida 144P, January 20, from the DAO.

Comet Kushida is presently in the constellation of the Taurus.

Optics: Borg 77EDII at f/4.3 on HEQ5

Camera: Canon 20Da

Exposures: 15 light frames of 60 sec, ISO 800.

Process: Calibrated with 10 dark frames and 10 flat frames in ImagesPlus. Combined using Min-Max Excluded. Colour balance in Photoshop.

**John McDonald****Horsehead and Flame Nebulae**

January 7, from my backyard.

This is my third and most successful attempt to capture the Horsehead and Flame region of the sky and its subtle nebulosity. The Horsehead B33 lies within the red nebula IC434. NGC 2023 and IC435 can be seen below it. The Flame Nebulae NGC2024 is under the very bright star Alnitak, the left-most star of the belt of Orion.



Equipment - 105mm f7 refractor, modified Canon 350D camera and HEQ5 mount.

Exposure: 96 light and 32 dark frames, 1 min each at ISO 1600 with 40 flat frames for calibration.

Processing in Images Plus and Photoshop.

**Guy Walton****Rosette Nebula, NGC2237**

January 17, DAO

Telescope: Sky Watcher Equinox 120mm ED refractor

Mount: Sky Watcher EQ6 auto guided with Orion Auto Guide camera and PHD.

Camera: Orion SS Pro, 6.1 megapixel

Exposure: 6 - 10 minute subframes and 2 - 10 minute dark frames acquired with Maxim DLE and processed with Images Plus 3.50a, PhotoShop and Noise Ninja.

IYA Activities



Lauri and her table full of stuff at Tillicum Mall



Pamela, John and Joe at the Mayfair Mall



Malcolm and Chris kick-off IYA at the Hotel Grand Pacific



Sid helping a young astronomer build a planesphere at the CU - IYA kick-off event

RASC victoria council

*this month
monday nights*

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Astronomy Cafe

Fairfield Community Centre,
1330 Fairfield, Victoria
7:30-11pm

Call John at 250.480.0928 for directions and information. New comers are especially welcome. Come and enjoy!

**ASTRONOMY
CAFÉ**



second wednesday of the month

Monthly Meeting

7:30 PM, Elliott Lecture Theatre,
Rm 060, UVic.

as sky and interest dictate

New Observers Group

Hosted by Sid Sidhu.
1642 Davies Road, Highlands.
Call 391-0540 for information and directions.

by email

**Observer/CU Volunteers/
Members email lists**

Contact Joe Carr to subscribe to these email lists for important, timely, member-related news.