SKYNEWS

DOMINION ASTROPHYSICAL OBSERVATORY (PLASKETT)
By W. John McDonald

IN THIS ISSUE

SEPTEMBER MEETING

Weds. September 11, 2013
University of Victoria
A104, Bob Wright Bldg.
3800 Finnerty Road

September Speaker

Jason Kezwer, University of Victoria graduate student, will be speaking on **Supernovae Through the Ages** on Wednesday, September 11th.

Supernovae are violent stellar explosions that can shine as bright as an entire galaxy. Spreading heavy elements fused in the stars into the cosmos, they are essential for life on Earth to exist. Over the last two millennia ancient astronomers have observed supernovae occurring in the Milky Way as the sudden appearance of new stars in the night (and often daytime) sky. Now, well into the telescope era, we are able to locate the remains of these destructive explosions and trace back their origins. Jason will describe this journey of discovery from the very first recorded supernova to the use of supernovae for measurements of the expanding Universe. The terrestrial effects of supernovae in our galaxy, both near and distant, will be discussed. Modern day research with a focus on supernovae in distant galaxies will also be explored.

President's Report

The conversation during the two months that were our summer break was dominated by the announcement of the NRC that the Centre of the Universe was closing at the end of August, supposedly for what could be called "budgetary reasons." In response to this closure, an online petition drive was launched, followed by a paper version, all amongst numerous stories in the media. For a nice summary of what has taken place, Joe has collected some of the stories, and some images, on our website, and you are invited to look through them. Thanks to Joe and to those who attended and photographed the last few weekends that the Centre was open.

As to what can and should be done by Victoria Centre given its long history on the hill, representatives of Council have met, and have talked with local NRC staff, in an effort to determine whether our Centre has a role in the future of the Centre of the Universe, assuming that there is such a thing. At our next meeting of Council (September 11), we hope to decide for certain if we do aspire to such a role, what that role could be, and what action we should take to pursue it.

The annual RASCals/Metchosin Star Party took place this year over the Labor Day weekend. The event offered three nights of observing, mostly good, albeit with a little dew. Our speakers and workshops were well-worth attending. There were a number of enthusiastic community members in attendance (even Sunday night). Somewhat unfortunately, donations received will not be enough to cover the costs of the event. There are probably a number of reasons for this, including the number of competing activities and events (even within the club), the reliance on the donations of only "campers" with many observers leaving in the wee hours instead of spending the night, and, perhaps, a general lack of interest in astronomical observing. Anyway, to those that attend, the event is something to look forward to, if only to see what the Metchosin weather will offer up for our pleasure.

….Nelson Walker

Membership Report – September, 2013

Membership Activity

New and Returning: 2
Renewed: 11
Upcoming Expiries: 25
Total Membership: 176

New Membership option:

The Family Membership option is now in effect, replacing the cancelled Associate membership. Family Membership is:

$67 for one Regular Adult member
$30 or each additional adult member
$15 for each youth member (21 or younger)

Liaisons

HIA: None
Transport Canada: None
Plaskett: No upcoming sessions

….Sherry Buttnor

Trivia Questions

Miles Paul has offered a couple of trivia questions for us to ponder. Time to put on our thinking caps and "journey" out of the box of standard units such as light year, km/sec, etc. The answers will be in the October issue of Skynews.

1. What well known object lies at the distance of 200 terafurlongs?

2. What well know object orbits its parent object at approximately the speed of 1000 A (angstroms) / femtofortnight?

Our Telescope Winner!

We had a very successful public outreach event at the Saanich Fair for the long weekend. Thanks again to Sid Sidhu for doing all the organizing of volunteers and equipment and for the sun that shone most of the time.

For the first time we had a contest for young people ages 10 to 17 for a telescope that Sid had refurbished and mounted on a sturdy tripod. We made the kids work for it, though, as they had to write out a paragraph about why they would want the telescope, what they would do with it and how they would look after it. This was a tall order as it was asking them to get their brains thinking and their hands writing and it was still summer! It did seem to work, however, as we had over 70 entries go in the box by the time the contest was over on Monday afternoon. Sid had asked Nelson Walker and me to be the judges and what a task that was. We read over all the entries and after putting them into various piles and then whittling them down to a few favorites we haggled, debated, and finally came to a satisfying decision. It was tough, though, as we found ourselves deciding between some students who were very good writers, some who tugged at heartstrings, and others who had us giggling over inventive spelling. What was so encouraging was the excitement that was so apparent about astronomy. I have no fears about our future scientists.

And so our winner is…..*drumroll please*……..Katherine (Katie) Lee, age 13, from Sidney. Nelson and I chose her entry because it showed not only her interest in Astronomy, and her experience with telescopes, but also some knowledge of the necessity of good lighting and a dash of subtle humour besides. Katie has given us permission to post her winning entry (including her spelling) and I think you will agree that it warrants a good new telescope that she can use for many years to come.

> "I've been facinated by the stars since I was a little girl. Looking at them made me feel safe. As I've been getting older I've started looking for the constellations. Orion is my favourite. I've always wanted to go to the observatory, but lately it's rarely been open. I've been able to look through telescopes a few times and I loved seeing stars and sunspots better. Where I live there are not a lot of streetlights but between them and the cloud cover (mostly the clouds) I haven't been able to see them that often. One of the reasons I like camping is that you can see them more clearly. I would love to be able to use a telescope more frequently to learn more about the stars. I don't know much about telescopes but I would certainly enjoy learning about their use and maintenance."

After our decision was made, Sid phoned Katie and she and her mother came down to the fair to pick up her prize. Nelson and Sid spent some time with her so show her how to assemble and use the telescope. Thanks to Dorothy Paul and Alec Schmid for taking some pictures of our winner. Good Luck, Katie.

….Lauri Roche

Editor's Musings….

What a summer that was – night after night of cloudless skies, warm weather – and a three-day star-party that didn't disappoint. I couldn't camp this year; work and other schedules on the long weekend allowed me to come only for part of the evenings. A last-minute "good" forecast for early Saturday morning had me packing up the car the night before. A few hours on the cricket field !!

So - I woke at 1:30 AM on Saturday morning and was on the road before 2. At 2:15, I set up my chair, stool, star maps and "light-buckets" in the middle of the field. For the next two hours I savoured the beautiful sky with my 25 X 100 binoculars. Nobody else was awake but the owls were in conversation with each other as well as the early-rising roosters. The sky was clear and in spite of the less-than-satisfactory transparency, I wasn't disappointed. For the next two hours I had a Messier, star-cluster and galaxy quest before the dew overtook my oversize binos.

There was some low cloud in the southeast but not enough to obscure beautiful Orion as he ascended. Jupiter and a crescent moon rose in the Eastern sky as the Twins awoke – and below Jupiter, Mars made an appearance. After 4 AM and before the first break of dawn, the Hunter rose higher - then bright Sirius - sparkling in every colour above the horizon. Beautiful….

Home at the crack of dawn and back on the field on Saturday night - with Australian friends I was hosting this summer. Their life-long dream was to experience the beauty of Canada's Rockies, Vancouver Island and the celestial treasures in our Northern skies. They savoured a great stellar tour and viewed deep-sky gems through some of the larger telescopes on the field. A life-long memory for them, to say the least!

Clear Skies.

....Diane

Astrophotography Course

When we were asking Oak Bay Council to let us establish a dark sky preserve at Cattle Point I thought it would be good to do something at the Monterey Centre to highlight its value to the community and I offered to do a course. The first one was last spring and the next one starts on Sept 24. If you are interested or know anyone who might be the details and link to the registration are on our website events page at http://victoria.rasc.ca/events/

....John McDonald

The Higgs Boson – A Big Deal or Not?

This summer, I had the opportunity to visit CERN, the site of the Large Hadron Collider that straddles the Swiss, French border. It was a nostalgic trip for me as I had worked there on an experiment done with the previous collider and still have former colleagues and friends at the place. As it turned out there was a wonderful surprise waiting for me. I had contacted Austin Ball who I worked with on the design and construction of detection elements for the earlier experiment. He is now the Technical Coordinator for CMS, one of the two huge detectors that have found evidence for the Higgs Boson and he told me that he realized that our detection gear could form a useful part of the CMS and is incorporated in the detector. As a result, it is part of the detection system that did the search for the Higgs Boson. To say that I am delighted is an understatement.

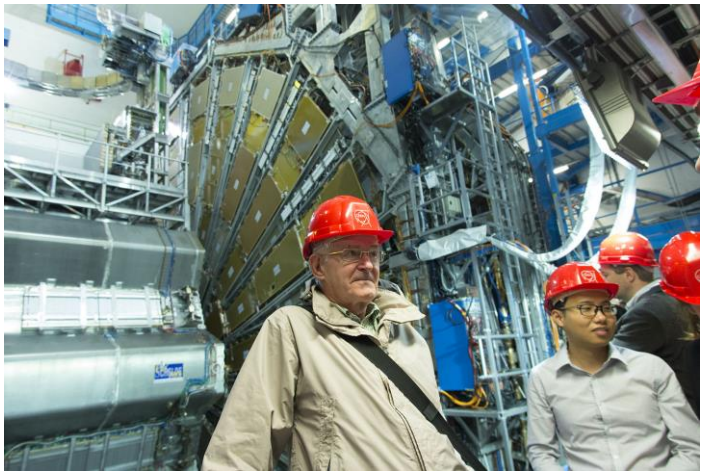
So why is the Higgs the subject of a major scientific effort? Is it just another particle to add to the collection of strange objects that only physicists get excited about? The answer is no, it is much more than that. While a lot has been learned about the particles that make up the world, the stars and galaxies as well as us there has been a glaring omission. We have had no explanation for why some particles, electrons and muons for example, have identical properties but different mass. Indeed we have a good understanding of the properties of all of the particles except why they have any mass at all.

Peter Higgs and several other theoretical physicists came up with the idea that there is a field, now called the Higgs field that could provide the answer. It is different from the other fields we know about like magnetic and electric fields in that it is the only one that is not zero in the absence of sources like magnetic poles or charges. It has the unique property that objects can move through it without resistance but do feel considerable opposition to changes in motion or accelerations. It is that opposition that we associate with the inertia that all massive objects have to changes in their state of motion.

At CERN the two large detectors, Atlas and CMS have now found definite evidence of a particle that has the right mass and appears to be associated with the Higgs field. It is called the Higgs Boson. Its importance is not so much that it is a new particle as that it is evidence for the Higgs field without which the electrons and quarks that are the stuff we, stars, galaxies and everything else we see have mass. If they did not there would be no gravity and no force of attraction to make stars, galaxies and us. Without the Higgs field everything would have long ago flown apart and the universe would be an empty wilderness.

That is a big deal.

….John McDonald



Centre of the Universe

On August 24, the superb team of the *Centre of the Universe* astronomy interpretive facility on Observatory Hill performed their final programs in the same classy manner they have been doing for years. Victoria Centre RASC members have supported public programming at DAO since 1918. It was particularly gratifying that many RASC volunteers from CU's 12 year operational history were present on the final evening with telescopes and enthusiasm, as were a number of staff members (and former CU staff members) who steadfastly supported CU activities. Due to prolonged publicity surrounding CU closure, access to Observatory Hill on the final night had to be restricted; about 500 people participated in the final programming under somewhat uncooperative skies.

Opened in June, 2001, by the President of NRC, Arthur Carty, the CU reflected a call in the *2000 Long Range Plan for Astronomy and Astrophysics in Canada* for improved attention by the professional community to widespread public interest in astronomy. From gestation through opening and then 12 years of operation, Victoria Centre members too numerous to mention offered insight, advice and much appreciated direct support, particularly for observing. The closure was part of the reaction to a major (~$1.8M) budget shortfall experienced by NRC Herzberg, which affected a number of staff in the Astronomy Technology Program and Canadian Astronomy Data Centre, as well.

In recent years, the CU staff focussed on delivering programming for students (and teachers) aligned with the grades 3-12 curriculum during the September-June period, summer camps (July) and night time programming for the public (generally June-August). The long-term staff had become widely recognized as expert, innovative informal astronomy educators who received consistently high marks for the quality, scientific content, and accessibility of their programs - incorporating wherever possible advances made in Canada. They were increasingly involved in regional, national and international astronomy outreach activities. For example, in the past four years they--and particularly Eric Chisholm, the CU's dynamic Manager--had played strong leadership roles in national Science and Technology Week, as well as in regional, national and international activities of multiple organizations involved with informal science education in Canada and abroad. Their growing impact beyond Victoria represents an additional loss arising from the closure. The CU building, with its valuable historical artefacts and exhibits, including the beautiful RASC telescope, is being carefully "mothballed" while NRC explores the possibility of an external group developing programming that makes use of the purpose-built facility. As well, NRC Herzberg staff are considering how best to address community expectations (established since 'first light' on May 6, 1918) for access to the Plaskett Telescope and Observatory Hill.

Victoria RASC members' contributions over the past 15 years of CU development and operation were deeply appreciated: along with the talented CU staff, you have left a legacy not only in Victoria and environs, but nationally and globally through the visitors with whom you interacted so passionately. As the dust settles on this emotional period, my colleagues and I look forward to many future collaborations with Victoria Centre members, including celebrating during 2014 the initiation of the Victoria Centre and of DAO construction. Personally, I wish to thank each and every member of Victoria Centre for your enthusiastic support of the CU and DAO. ***Ad astra per aspera.*** *….Jim Hesser*

Council for 2012 / 2013

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Treasurer: Bruce Lane treasurer@victoria.rasc.ca
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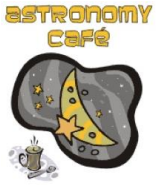
Members at Large: Bill Almond, Jim Hesser, Alex Schmid, David Lee, Li-Ann Skibo, Paul Schumacher, Matt Watson



Astronomy Cafe: Held every Monday at Fairfield Community Centre - 1330 Fairfield Rd, Victoria, at 7:30pm to10pm. Call Malcolm at **(778) 430-4136** for directions and information. Newcomers are especially encouraged.

New Observers Group: Hosted by Sid Sidhu, 1642 Davies Road, Highlands. Please call **(250) 391-0540** for information and directions.

Email Lists Observer / CU Volunteers / Members
Contact Matt Watson to subscribe. mailto:admin@victoria.rasc.ca

Next month's meeting is Wednesday, October 9th, 2013, at 7:30 PM.