

SKYNEWS



The Great Nebulae in Orion

by

Michel Michaud

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NEXT MEETING

April 13th 7:30pm
University of Victoria
060 Elliott Bldg.

www.victoria.rasc.ca

On The Cover

The Great Nebulae in Orion photographed by Michel Michaud, Feb 11th from the VCO. Williams Optic 66 on Meade LXD55 mount, Canon EOS 20Da modified Exposure: 30 light frames of 90 seconds, ISO 800

Presidents Report

by Lauri Roche



I admit it: I am a winter astronomy wimp. I hate the cold and the wind and the snow. That's why I moved from Ottawa to the balmy West many years ago. So when, for a few nights in January and February (with the emphasis on few this year), the winter skies were clear and sparkling and

many of you jumped at the chance to dress yourselves up in long underwear, down parkas, toques and warm mittens and rush out to set up your telescopes, I sat cuddled in a blanket with a cup of cocoa and dreamed of warmer summer nights.

Now you have to know that I did feel a tinge of guilt that I was not partaking of the wonderful views of Orion and Gemini and Ursa Major. So, usually, I would throw on my heavy coat, take out my binoculars and at least spend a few icy minutes perusing the skies until it just got too cold and I would dash back in the house. As I said: a real wimp. But those few minutes looking at the Orion Nebula or the Taurus open clusters when they are crystal clear and sharp and it feels like you can see magnitudes more stars than usual is very enticing. Why can't we have these wonderful skies AND warm temperatures at the same time?

So I make myself feel somewhat better by using the winter evenings to brush up on my reading, learn my new SKY- X program and prepare for the Messier observation nights. I read the Skynews magazine we get with our RASC membership from cover to cover and look through the Astronomy and Sky and Telescope magazines that I take out of our Centre's library. The astronomy programs such as Starry Night or SKY-X are full of interesting tidbits and help you become oriented to the night sky very quickly. I hope you all have some sort of program downloaded on your computers that you can refer to any time. You can even put apps such as SkySafari on your mobile

or i-pads and play to your heart's content. Our public libraries and bookstores are filled with excellent material to read on cold rainy nights.

But nothing is better than "the real thing" so I am making a pledge to myself that real-time observing will be a priority this year. I want to get out to the Victoria Centre Observatory and help with the public at the Centre of the Universe on Saturday evenings come the spring. I want to participate in the Messier observing nights when Nelson Walker calls to say "Let's go!" and in the Messier Marathon later in March. Being part of the school star parties is very rewarding and you forget about the cool temperatures when you have excited kids and parents "oohing" and "aahing" at your telescope. And, of course, I really like going to the Plaskett viewing sessions because you can do imaging and observing from the warmth of the control room with Dave Balaam.

We are very lucky to have the opportunity to do observing so close to where we live and I hope you will think about getting out, either on your own, or with friends, or with other RASC members to observe and admire our wonderful skies. So next time it is a clear night in the coming weeks and you are out looking at the stars, think of me, in my toque and mittens doing the same thing out there, too...no wimping out... honest!

March Speaker

March 9, 2011 - The potential for planet formation in the Orion Nebula - Dr. Rita K. Mann, Plaskett Fellow / Research Associate, NRC Herzberg Institute of Astrophysics



Abstract: Circumstellar disks surrounding young stars represent the birthsites of planets. Their fundamental properties, such as mass and size, critically influence whether planets can form in them. Most disk studies to date have focused on nearby star forming regions like Taurus and rho Ophiuchus, however, stars rarely form in such isolated regions. Most stars, including our own Sun, form in massive star forming regions like the Orion Nebula, and therefore it is important to understand disk properties and evolution in such environments. In this talk, I will review our current understanding of how planets form and what

recent observations of disks are revealing about the planet formation potential in the Orion Nebula.

Bio: Rita Mann received her Honours BSc in physics and astronomy from the University of Victoria in 2004. She then moved to Honolulu where she completed her MSc and PhD in Astrophysics at the University of Hawaii. In September 2010, she began her first postdoctoral position, as a Plaskett Fellow at the NRC Herzberg Institute of Astrophysics in Victoria. Rita's main research interests lie in planet formation; in particular, she uses high-resolution, submillimeter wavelength observations of protoplanetary disks to understand their fundamental properties and evolution, and their potential to form planets.

Lunar "X" Schedule, 2011

This is a famous "optical feature" on the Moon, which appears like the letter "X" when the terminator is at a suitable position. It is a fine example of how the

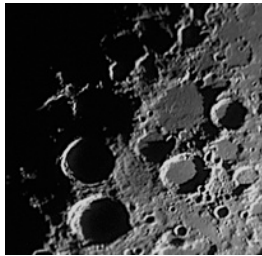


Photo Courtesy LPOD
<http://lpod.wikispaces.com/>

combination of lighting and topography can combine to produce a pattern that repeats on each lunation, but only for a short time. The illusion of the "X" is created by sunlight falling on the rims/ridges between the craters La Caille, Blanchinus, and Purbach.

| Date | Start Time UT | End Time UT |
|----------|---------------|-------------|
| March 12 | 05:24 | 08:27 |
| April 10 | 18:19 | 21:22 |
| May 10 | 05:56 | 08:59 |
| June 08 | 16:34 | 19:37 |
| July 08 | 02:45 | 05:48 |
| Aug 06 | 13:08 | 16:11 |
| Sept 05 | 00:18 | 03:21 |
| Oct 04 | 12:38 | 15:41 |
| Nov 03 | 02:16 | 05:19 |
| Dec 02 | 17:00 | 20:03 |

The "X" is observable for about 4 hours around the lunar First Quarter.

The start time is for a fully formed "X". The end time is subjective. To watch the formation from darkness subtract 2 hours from the start times below

SDO Sundog Mystery

February 11, 2011: NASA's Solar Dynamics Observatory (SDO), best known for cutting-edge images of the sun, has made a discovery right here on Earth.

"It's a new form of ice halo," says atmospheric optics expert Les Cowley of England. "We saw it for the first time at the launch of SDO--and it is teaching us new things about how shock waves interact with clouds."



How ice crystals make sundogs.

Ice halos are rings and arcs of light that appear in the sky when sunlight shines through ice crystals in the air. A familiar example is the

sundog—a rainbow-colored splash often seen to the left or right of the morning sun. Sundogs are formed by plate-shaped ice crystals drifting down from the sky like leaves fluttering from trees.*

Last year, SDO destroyed a sundog—and that's how the new halo was discovered.

SDO lifted off from Cape Canaveral on Feb. 11, 2010—one year ago today. It was a beautiful morning with only a handful of wispy cirrus clouds crisscrossing the wintry-blue sky. As the countdown timer ticked to zero, a sundog formed over the launch pad. Play the movie, below, to see what happened next—and don't

forget to turn up the volume to hear the reaction of the crowd:



A luminous column of white light follows SDO into the sky.

When the rocket penetrated the cirrus, shock waves rippled through the cloud and destroyed the alignment of the ice crystals," explains Cowley. "This extinguished the sundog."

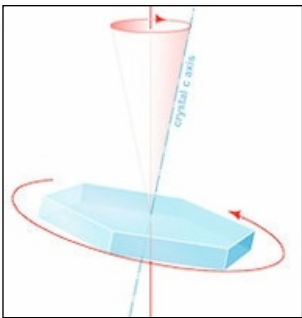
The sundog's

destruction was understood. The events that followed, however, were not.

"A luminous column of white light appeared next to the Atlas V and followed the rocket up into the sky," says Cowley. "We'd never seen anything like it." Cowley and colleague Robert Greenler set to work figuring out what the mystery-column was. Somehow, shock waves from the rocket must have scrambled the ice crystals to produce the 'rocket halo.' But how? Computer models of sunlight shining through ice crystals tilted in every possible direction failed to explain the SDO event.

Then came the epiphany: The crystals weren't randomly scrambled, Cowley and Greenler realized. On the contrary, the plate-shaped hexagons were *organized* by the shock waves as a dancing army of microscopic spinning tops.

Cowley explains their successful model: "The crystals are tilted between 8 and 12 degrees. Then they gyrate so that the main crystal axis describes a conical motion. Toy tops and gyroscopes do it. The earth does it once every 26000 years. The motion is ordered and precise."



According to Cowley and Greenler, spinning and gyrating plate-shaped crystals are responsible for the mystery halo. Credit: L. Cowley.

"We'd love to see it again and more completely," says Cowley.

"If you ever get a once-in-a-lifetime opportunity to be at a rocket launch," he advises with a laugh, "forget about the rocket! Look out instead for halos."

Author: [Dr. Tony Phillips](#) | Credit: Science@NASA

Bottom line: Blasting a rocket through a cirrus cloud can produce a surprising degree of order. "This could be the start of a new research field—halo dynamics," he adds.

The simulations show that the white column beside SDO was only a fraction of a larger oval that would have appeared if the crystals and shock waves had been more wide-ranging. A picture of the hypothetical complete halo may be found [here](#).

Membership News

Renewals

At the past meeting it was brought to my attention that some members have not been receiving a membership renewal notification from the National Office. There was a small issue at National, but it has been worked out. If you know your membership is due for renewal but haven't received an email yet, let me know and I'll pass it on. If you're unsure if your membership is due, logon to the national web page and have a look, or email me and I will look for you.

Chris Saunderson
Membership Coordinatoor

Members use Plaskett Telescope for Imaging

For the past couple of years, the Victoria Centre has been extremely fortunate in being offered imaging time on the historic 1.8m Plaskett telescope at the Dominion Astrophysical Observatory, complete with a very skilled and experienced TO (Telescope Operator) Dave Balam.



Dave is to be commended for putting up with us and our sometimes impossible requests!

The Plaskett -once the largest telescope in the world- is still used for leading-edge research, and to be able to use this classic reflector is a dream come true for many of us. Unfortunately, Mother Nature has been less obliging, and her fickle ways have caused the cancellation of several of our sessions. But each session we have held has been a terrific experience.

On behalf of the RASC-Victoria Centre, I would like to offer our sincere thanks to the HIA/NRC, the CU, and Dave Balam for their generosity in offering us time on the Plaskett telescope. We really appreciate it!

Sherry Buttnor, Vice President



Astronomy Day

In 2011 Astronomy Day is held Saturday, May 7 and gives astronomy-lovers a chance to share their passion with the astronomy-curious.



This event was started in 1973 by Doug Berger, the President of the Astronomical Association of Northern California. His intent was to set up various telescopes in busy urban locations so that passersby could enjoy views of the heavens. Since then the event has expanded and is now sponsored by a number of organizations associated with astronomy.

Astronomy Day also forms part of **Astronomy Week**, which begins on the preceding Monday.

Announcing the Messier Observers Plan

by Nelson Walker

What is it?

We will help you observe the Messier Objects. We will help you earn the RASC certificate and pin (in the total history of Victoria Centre, less than ten observers have earned this certificate).

How does it work?

Experienced observers will organize and attend regularly scheduled observing sessions devoted to observing the Messiers. Support will be provided while observing and on our website: finder charts and the best sequence of objects to be seen, plus equipment suggestions.

When does it start, and how long will it last?

The program will start the first week of March. Of course, exact dates and numbers of sessions will depend on the weather, but at least one session per month is the plan.

The program will continue so long as there is enough interest. Join any time and attend as many sessions as you are able.

How long will it take to complete the Messiers?

To earn the certificate, all 110 Messier objects must be found through one's own efforts, seen, and logged. Assuming fifteen objects can be found during a good

session devoted solely to Messier hunting, eight sessions should do the trick.

Where will the observing sessions be held?

There are three good Messier locations in the Victoria area: the VCO, Cattle Point, and the Metchosin Municipal Field. Unfortunately, no one place is ideal for all of the objects. We will select from among the three to optimize our chances of seeing the objects. Remember, you must be an Active Observer to observe at the VCO.

What do you have to do?

First, make sure you are on the Active Observer's list. Then watch our website for information about resources, including telescopes that will be available for your use.

Remember!

This is a new program, and, as such is a "work in progress." Comments and suggestions are welcome. Address them to Nelson Walker at netwalk@aol.com

Spring Sky Events for March

| | |
|-----------|--|
| Fri. 11th | Moon 1.7° S. of Pleiades |
| Sun 13th | Daylight Savings Begins Moon 1.2° S. of M35 Algol at Minimum |
| Sat 19th | Full Moon (Largest in 2011) |
| Sat 26th | Last Quarter Moon |
| Mon 28th | Asteroid Vesta 1.2° S of Moon |
| Thur 31st | Venus 6° S. of Moon |

Deep Sky for March

by Malcolm Scrimger



As the spring season starts it brings some wonderful deep sky star clusters to view with either the unaided eye or with binoculars. One of my favourites to view without any

optical aid is the Hyades Star Cluster in Taurus. Aldebaran forms the head of the cluster and is 1st Mag. and is 44 times the diameter of our Sun.

To the North East the Constellation Auriga holds three Messier objects which can be viewed in binoculars in a dark sky. M37, M36 and M38. With low power in 7x50 binoculars you can see all three in the same field. To the East of Taurus is Gemini "The Twins" as they are known. At the feet of the constellation is M35 a large star cluster but can be faint as the object is spread over an area as large as the Full Moon. It can be viewed in binoculars as well.

Of course once you have located them remember to use a telescope to view them up close.

ASTRONOMY CAFE



Fairfield Community Centre

1330 Fairfield Rd. Victoria,
7:30pm - 11pm

Call Geoff at (250) 592-2264 for directions and information.

New comers are especially encouraged.



New Observers Group

Hosted by Sid Sidhu
1642 Davies Road, Highlands. Call 250.391-0540 for information and directions.



Email Lists

Observer / CU Volunteers / Members

Contact Joe Carr to subscribe
web@victoria.rasc.ca

April Meeting

Wednesday 13th - 7:30pm - Room 060 Uvic Elliott Building

RASC Victoria Council for 2010 / 2011

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Members at Large

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