

POLARIS



Royal Astronomical Society of Canada
London Centre Newsletter
December 2009

Winter Solstice Patrick Whelan

Winter solstice! Bring it on! That means the shortest day of the year is at hand. It also means the days will start to get longer. That is the good part.

On the winter solstice the sun is the lowest in the sky for people in the Northern Hemisphere. This year it occurs on December 21 at 5:47PM. This is the beginning of winter.

We have seasons because the Earth's axis is tilted in respect to its orbital path around the sun. The tilt is 23.5 degrees. In the winter the north pole is tilted away from the sun. In June the north pole is tilted toward the sun.

This creates days that are shorter in the winter and the Sun appears lower in the sky. Since the sun's radiation strikes the Earth at a shallower angle, it is spread over a bigger area. This is what makes it colder in the winter and warmer in the summer. Some people will tell you that the seasons are caused by the Earth being closer to

the sun in the summer and farther in the winter. Not only is this wrong, but the opposite is true. Earth is closer to the sun in winter than in the summer. But this effect is nowhere near big enough to counteract the effect of Earth's tilt.

The solstice has its roots in Latin. Sol means sun and stitium means stop. Put together they refer to the fact that the sun has stopped travelling southward in the sky and it will now start to travel northward.

After the solstice the sun will start to climb higher in the sky. Unfortunately there is a delay between this and the Earth getting warmer, so the coldest days of the year are still to come.

Of course after the winter solstice comes the new year. We have had a great 2009. I wish everyone a happy ending to 2009 and a fantastic beginning to 2010.



Moon Phases



December 16 2009



December 24 2009



December 31 2009



January 7 2009

Meteor Showers of 2010

Quadrantids Dec 18 to Jan 13 (full moon)

Lyrids April 21-22 (1st quarter moon)

Eta Aquarids May 5-6 (3rd quarter moon)

Lyrids June 14-16 (sliver moon)

Delta Aquarids July 28-29 (full moon)

Capricornids July 29-30 (full moon)

Perseids Aug 12-13 (new moon)

Draconids Oct 8-9 (new moon)

Orionids Oct 21-22 (full moon)

Leonids Nov 17-18 (full moon)

Geminids Dec 13-14 (1st quarter)

(The Perseids should be great with a New Moon!)

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Find the Polaris newsletters on the internet at: www.patusratus.ca/Polaris

LONDON RASC MONTHLY MEETINGS

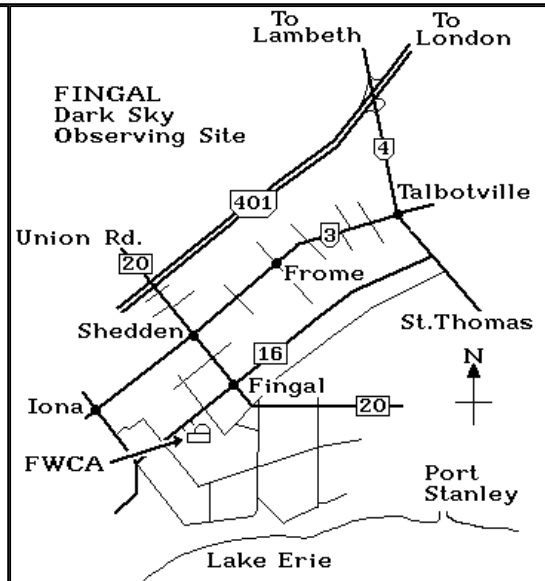
The London RASC group meets at Fanshawe college in London Ontario, September through July on the third Friday of the month at 19:00. They meet in room B1073.

Everyone interested in astronomy is invited to attend and enjoy our guest speaker, member activity and observing reports, announcements of new discoveries and upcoming events, telescopes and telescope accessories show and tell, and other fun activities. Have a look at our future and past activities on our website to see what we are doing.

Parking is free on Friday evenings, and there is plenty of room in the east parking lot off Oxford St. and parking spaces on the south side of B building. Enter the college by B building doors near Oxford Street, just west of the bus stop. College signs at key hallway locations will help you find us. The London RASC webpage can be found at:

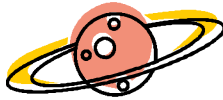
www.rasc.ca/London

They have a preferred observing site at Fingal Wildlife Management area.



Sky Events for December 2009 and January 2010

December 18 Mercury greatest elongation E
 December 18 Mercury 1.4° S of Moon
 December 20 Jupiter 0.6° S of Neptune
 December 21 Double shadow transit on Jupiter
 December 21 **Solstice**
 December 31 Blue Moon
 January 1 Large Tides
 January 3 Quadrantids meteors peak
 January 11 Antares 1.1° S of Moon
 January 15 Annular solar eclipse



If there are two full moons in a month, the second one is called a Blue Moon
Mercury is an evening 'star'
Venus is very close to the Sun
Mars is in Leo
Jupiter transits near sunset
Saturn rises 40 minutes after sunset. View those rings!

R.A.S.C. London Centre Library Books of the Month December 2009 By Robert Duff

In order to make our library collection available to members, I bring three books to our general monthly meetings. These "Books of the Month" are available for loan, to be returned at the following monthly meeting.

The books for December 2009 are as follows:

Burnham's Celestial Handbook: an Observer's Guide to the Universe Beyond the Solar System, by Robert Burnham. Revised and Enlarged Edition. c1978.

Volume Two, Chamaeleon—Orion.

Kepler's Witch: an Astronomer's Discovery of Cosmic Order Amid Religious War, Political Intrigue, and the Heresy Trial of His Mother, by James A. Connor. c2004.



A Portfolio of Lunar Drawings, by Harold Hill. 1991. (Practical astronomy handbooks, 1)

For a complete listing of our library collection please see our RASC London Centre Web site at: <http://www.astro.uwo.ca/~rasc/>

If there is a particular book or video you wish to borrow, please feel free to contact me by telephone at (519) 439-7504 or by e-mail at rduff@sympatico.ca

Sky and Telescope Subscriptions

Sky & Telescope subscriptions are available at a discounted rate through the London Centre. The cost is \$39.95USD instead of the normal \$49.95USD subscription rate. Please see Bill Gardner for details.

Star Night, Lucan Beavers & Cubs, November 17th

By Robert Duff

There were 25 Beavers, Cubs and Scouts along with 5 adults. Dave made a digital slide presentation and they all received Star Finder planispheres. They viewed Jupiter through John Rousom's 25.4cm Dobsonian, and Albireo, the Pleiades and M31 through Dave's telescope.

Exploring the Stars, Cronyn Observatory, November 18th—December 10th

By Robert Duff

Please note that I attended all these Exploring the Stars events, bringing the RASC London Centre's photographic display and IYA2009 poster board and setting them up and laying out some London Centre brochures.

1st Kintore Scouting, November 18th

Clear skies with some clouds greeted 28 visitors from the 1st Kintore Scouts (including 9 Cubs and 4 Scouts) for Exploring the Stars at the Cronyn Observatory, Wednesday, November 18th. Graduate student Alexander DeSouza had made his digital slide presentation, "Constellations," and was already in the dome showing them Jupiter through the big 25.4cm refractor, when I arrived. They had a great time looking at Jupiter through the big scope in the dome. I also showed them Jupiter, Albireo and the Pleiades in the RASC London Centre's 25.4cm Dobsonian.

Ilderton Sparks, Brownies and Cubs, November 19th

Graduate student Ryan Marciniak made his digital slide presentation "Earth & Moon" before some 90—100 visitors from the Ilderton Sparks, Brownies and Cubs, including 45—50 children, Thursday, November 19th, beginning 6:30 p.m. Since the lecture room was already crowded on my arrival, I set up the RASC London Centre's photographic display and IYA2009 poster board on the table in the dome. It was cloudy with some chance of rain and so Ryan simply showed them the big 25.4cm refractor, without opening the dome, and I showed them the London Centre's 25.4cm Dobsonian.

61st London Cubs, November 24th

Cloudy skies greeted 28 visitors (including 21 children and 7 adults) for Exploring the Stars at the Cronyn Observatory on November 24th, 6:30 p.m. Graduate student Amanda Papadimos made her digital slide presentation, "Constellations," and this was followed by questions. The Cubs viewed a red light on the communications tower in south London through the big 25.4cm refractor in the dome. They also viewed the weather vane with its propeller wind speed indicator on the roof of the Engineering building through the 25.4cm Dobsonian, set up on the roof patio.

UWO Registrar's Office, November 25th

Cloudy skies greeted 7 visitors (including 2 children) from the University of Western Ontario Registrar's Office to the Cronyn Observatory for an evening of Exploring the Stars, Wednesday, November 25th. Graduate student Alexander DeSouza made his digital slide presentation, "Misconceptions," concerning astrology and other misconceptions about astronomy. We also went upstairs and Alexander showed people the big 25.4cm refractor, but did not open the dome because of the chance of rain.

49th London Brownies, November 26th

The weather was cloudy with some occasional light rain on Thursday, November 26th, when 22 visitors from the 49th London Brownies, including 13 children and 9 adults, arrived at the Cronyn Observatory for an evening of Exploring the Stars. Graduate student Ryan Marciniak made his digital slide presentation, "Constellations" and this was followed by a star tour using "Starry Night" sky charting software.

Upstairs in the dome, Ryan showed them the big 25cm refractor while I showed them the RASC London Centre's 25.4cm Dobsonian. Returning downstairs Ryan made another digital slide presentation on "Mars" and finished off the evening by awarding a copy of the book, "Mary Lou's New Telescope," to a Brownie for answering a question.

Exploring the Stars Open House, November 28th

Clear skies made for a promising Exploring the Stars Open House evening at the Cronyn Observatory, Saturday, November 28th, 7:00 p.m. Graduate student Amanda Papadimos made her digital slide presentation "Planets, Planets ... Planets?" before a group of 47 visitors. Graduate student Ryan Marciniak already had the big 25.4cm refractor in the dome tracking on the Moon with the 52mm Erfle eyepiece (84X). RASC London Centre members present included Greg Andres, Dave McCarter, Richard Gibbens and myself.

Greg Andres set up his 20.3cm Sky-Watcher Dobsonian beside the London Centre's 25.4cm Dobsonian on the Observatory's roof patio. Greg showed people M31, Jupiter, the Moon and the Pleiades in his telescope. Dave McCarter, and I showed visitors Jupiter, the Moon, M31, Albireo and other sky objects through the two Dobsonian. Pleasing views of Jupiter were obtained in the 25.4cm Dobsonian using the Observatory's 17mm Nagler eyepiece (67X). I swapped in my 7mm Nagler (163.3X) for even better views of Jupiter and the Moon and later added my 2X Meade Barlow lens for views of the Moon at 326.6X. Dave later directed the telescope towards other objects, including Albireo, the Pleiades (M45), the Double Cluster, Betelgeuse, Aldebaran, the Trapezium and the small arc of nebulosity around the Orion Nebula (M42).

I had a couple of discussions with visitors answering questions about Moon's craters, the cosmic distance scale in astronomical units and light years and cosmology. It was a very interesting and enjoyable evening for all concerned and we closed the Observatory around 9:00 p.m.

19th Chatham Scouts, December 1st

Clear skies greeted 22 visitors from the 19th Chatham Scouts (17 youth and 5 adults) when they arrived around 7:00 p.m. for an evening of Exploring the Stars at the Cronyn Observatory, Tuesday, December 1st. Amanda Papadimos made her digital slide presentation, "Constellations," and this was followed by some questions. Amanda showed them Jupiter through the big 25.4cm refractor in the dome, using the Meade 28mm Super Wide Angle eyepiece (156X). On the Observatory roof patio I showed them The Moon and Jupiter through the London Centre's

(Continued on page 5)

(Continued from page 4)

25.4cm Dobsonian telescope, using the 17mm Nagler (67X) and 6mm Orthoscopic (190.5X) eyepieces. The Scouts and their leaders were impressed. The group assembled Star Finder planispheres in the lecture room before going home.

70th London Brownies, December 2nd

Alexander DeSouza made his digital slide presentation, "The Earth & Moon," before a group of 22 visitors from the 70th Brownies, including 13 children and 9 adults, on Wednesday, December 2nd, 6:30 p.m. Also included was the activity, "The Earth, Moon & Sun," using small inflated models of the Earth and Moon with the slide projector light for the Sun. Alexander gave them a tour of the big telescope in the dome and this was followed by a constellation tour with "Starry Night" sky charting software.

2nd London Cubs, December 3rd

Generally cloudy skies greeted the 2nd London Cubs for an evening of Exploring the Stars at the Cronyn Observatory, Thursday, December 3rd, 6:30 p.m. Graduate student Ryan Marciniak made his digital slide presentation, "The Earth & Moon," before the group of 16 visitors, including 11 children and 5 adults. He also used the small, inflated models of the Earth and Moon for demonstrations. Ryan showed them the big 25.4cm refractor in the dome. I set up the London Centre's 25.4cm Dobsonian on the Observatory's roof patio, giving several Cubs views of the Moon through clouds in the east before redirecting the telescope to the weather vane on the roof of the Engineering building.

Ryan finished the night down in the lecture room with a presentation of "Starry Night" sky charting software and give away a copy of "Mary Lou's New Telescope," to a Cub for a well answered question naming the planets.

Space Society of London (SSoL), December 8th

Despite cloudy weather, there were 10 visitors from the Space Society of London (SSoL) at the Cronyn Observatory on Tuesday evening 7:00—9:00 p.m. to celebrate the holiday season with a few hot drinks, munchies and cookies.

Amanda Papadimos showed them views of a red light on the communications tower in south London through the 25.4cm refractor in the dome, using the 32mm Erfle eyepiece (137X). I showed them views of the weather vane on the roof of the Engineering building through the 25.4cm Dobsonian telescope, using the 17mm Nagler eyepiece (67X). Returning to the lecture room downstairs Amanda showed them her digital slide presentation, "A Tour of Our Neighbourhood," which was about the planets, moons and different families of asteroids, comets and icy and Kuiper Belt objects roaming the Solar System.

1st Dorchester Beavers, December 9th

Clouds and some cold precipitation greeted 31 visitors from the 1st Dorchester Beavers, including 17 children and 14 adults, for an evening of Exploring the Stars at the Cronyn Observatory, Wednesday, December 9th, 6:30 p.m. Graduate student Alexander DeSouza made the digital slide presentation "Our Solar System" and this was followed by questions. I set up the RASC London Centre photo display and IYA2009 poster board. Alexander showed the group the big 25.4cm refractor in the dome but there was no observing due to the weather. The Beavers were gone by 8:00 p.m. after an enjoyable and informative evening.

101st London Scouts/Cubs/Beavers, December 10th

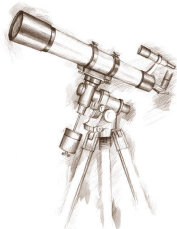
Clear sky with a few clouds and cold temperatures greeted 34 visitors from the 101st London Scouts/Cubs/Beavers, including 23 young people and 11 adults, for Exploring the Stars at the Cronyn Observatory, Thursday, December 10th, 6:30 p.m. Graduate student Ryan Marciniak made the digital slide presentation, "The Earth & Moon," and this was followed by questions.

I made ready the 25.4cm refractor in the dome, placing the 32mm Erfle eyepiece (137X) in the telescope's diagonal, and showed people Jupiter with its four Galilean moons, two on either side of the planet. It was a very enjoyable evening and everybody was gone by around 8:00 p.m.

December Pocket Sky Atlas Challenges

The Hunter is well placed in the night sky this month. Any observing session will usually start or end with a look at M42, and why not? Any observing instrument, from the naked eye, to the largest telescope will yield some level of detail on these cold crisp nights. So for those brave enough to venture away from the fireside, drink it in and imagine just what might be going on there now.

I've indexed the object to its star chart page.



Naked Eye:

Aldebaran page 15; Capella page 12; M45 page 15

Small Scopes and binoculars:

R Leporis (Hind's Crimson Star) page 16; Markab page 74

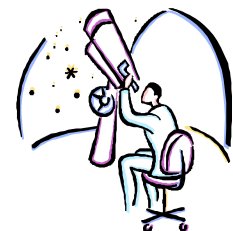
Larger Scopes:

NGC 988 page 6; NGC 1360 page 17

Bonus objects:

NGC 2204, Page 16; NGC 7606 page 76

Happy hunting.
John Kulczykcki



MOON PHASE CALENDAR FOR 2010

