

POLARIS



Royal Astronomical Society of Canada London Centre Newsletter April 2015

19th Century Star Gazing for Yuri Gagarin Night "Yuri's Night" at Eldon House By Bob Duff

This event celebrated Cosmonaut Yuri Gagarin, the first man in space, who orbited the Earth in a Soviet Vostok spacecraft on April 12th, 1961. It was also a celebration of 180 years since Eldon House was built in 1834 by Master John Harris, Royal Navy, who surveyed the Great Lakes following the War of 1812.

RASC London Centre members Mark Tovey and Tricia Colvin made history come alive, dressed in period costume as Captain John Harris and Amelia Harris. Event organizer and historian Mark Tovey began the evening around 8:00 p.m. with a slide presentation in the Eldon House Interpretive Centre. There were 52 visitors who registered (\$15.00) for the evening.

John Harris' recently discovered mariner's telescope was on display, along with his compass and reproductions of the maps he and his fellow hydrographers were involved with. Occultation timings of Jupiter's Galilean moons helped establish local longitude. John Harris also made a request to the government in Toronto for a permanent astronomical observatory to be built in Upper Canada. Astronomers and planetary scientists from Western University's Department of Physics and Astronomy and Centre for Planetary Science and Exploration (CPSX) were there, providing a meteorite display and answering questions.

As the sky darkened guests were invited to view through 3 period telescopes including a working replica of Galileo's (1609) telescope, made by RASC London Centre's Dave McCarter; a replica spy glass similar to the one used by John Harris; and a late 19th / early 20th century brass refractor from Western University's Physics and Astronomy Department. There were also modern telescopes available for observation.

The sky was generally clear with some hazy clouds. There were 8 RASC London Centre members who brought telescopes. Tricia Colvin and Mark Tovey set up the Cronyn Observatory's 8-inch Meade Schmidt-Cassegrain as well as the London Centre's 25.4cm Dobsonian. They also set up Mark's 8-inch Celestron Schmidt-Cassegrain and graduate student Emily McCullough worked on setting it up with a Celestron NexImage 5 Solar System Imager, laptop computer and large computer screen to display the view through the telescope. Emily did succeed in displaying live images of Jupiter on the laptop for the visitors.

I arrived around 7:00 p.m. and set up my 25.4cm Dobsonian telescope. Western University faculty members

present included Phil McCausland, and Paul Wiegert. Western's Physics and Astronomy Department computer resources person Henry Leparskas was also there with a camera, taking pictures.

London Centre members Peter Jedicke and Steve Gauthier arrived with Western University's antique brass refractor. Joe O'Neil videoed the site in the early evening with a drone and set up his 80mm Stellarvue refractor. Roman Dubinski set up his Sky-Watcher 127mm Maksutov on a Vixen alt-azimuth mount. Patrick Whelan set up his compact ball-shaped Bushnell Voyager 4.5-inch reflector telescope on a folding table provided by Eldon House as well as his 40mm Tasco refractor from the 1960's. Following Mark's presentation in the Interpretive Centre, people came out on the west lawn of Eldon House to view through the telescopes. I showed them Venus in the early evening western sky. Venus appeared slightly gibbous at half-phase in my telescope. I soon redirected the telescope towards Jupiter which remained the showpiece of the evening. People lined up to view Jupiter through the telescope. There were 3 Galilean moons visible. The Great Red Spot was visible on Jupiter's surface, much to everybody's delight. The moon Io emerged from eclipse by Jupiter's shadow around 9:12 p.m. just as John Harris would have observed for calculating local longitude.

Visitors also viewed Jupiter through the Cronyn Observatory's 8-inch (20.3cm) Meade Schmidt-Cassegrain, operated by Tricia Colvin, and the London Centre's 25.4cm Dobsonian, operated by Peter Jedicke.

Visitors were deeply impressed by Mark's presentation, the historic artefacts and the display of meteorites. They greatly enjoyed the opportunity to view Jupiter through the replica of Galileo's telescope set up on a stand and supervised by graduate student Tony Martinez, appropriately dressed as Galileo and with a newly grown beard for the occasion! They most especially enjoyed the views of Jupiter through modern telescopes.

Emily McCullough gave a sky tour with a laser pointer and explained calculating longitude to a small group of people towards the end of the evening. Paul Wiegert spoke about latitude and Emily believed they came within one degree of accuracy to the true latitude and longitude of London using their observations from April 12th. The visitors were gone by around 10:30 p.m. after a very enjoyable and interesting evening of astronomy and local history.

Moon Phases



April 4 2015



April 12 2015



April 18 2015



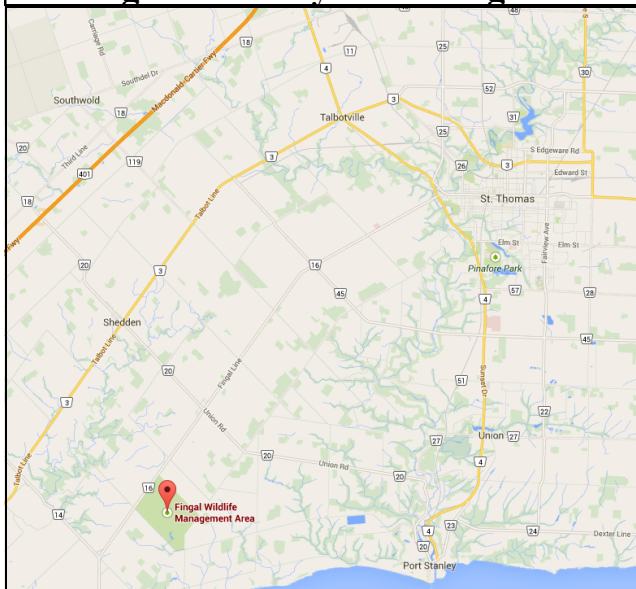
April 25 2015

April

Our guest speaker for April is Keith Jarvie, Ph.D. from Mississauga Centre RASC. His talk is titled "Chandrasekhar's Limit".

The talk examines (at the level of an amateur enthusiast with minimal math skills) the interplay between the birth of quantum mechanics, and its application to understanding the life cycles of the stars'.

Fingal Dark Sky Observing Site



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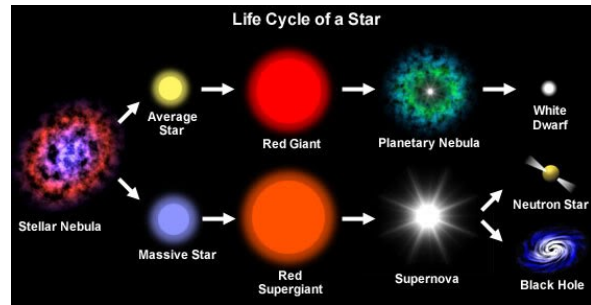
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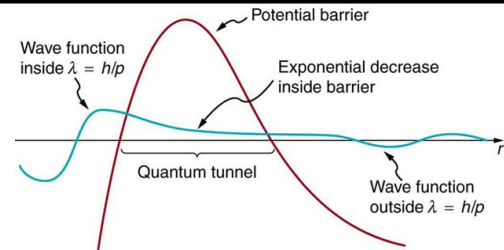
London RASC Forums: <http://forums.rasclondon.ca/>

Sky Events for Late April and Early May

April 21 Aldebaran 0.9° S of Moon
 April 22 Lyrid meteors peak
 April 23 Mercury 1.4° N of Mars
 April 26 Juno 0.1° N of Moon
 May 7 Mercury greatest elongation E
 May 15 Uranus 0.2° N of Moon



Mercury hidden for most of April
 Venus well placed high in the western evening sky
 Mars vanishes into the solar glare at the end of the month
 Jupiter well placed in the mid evening sky in Cancer
 Saturn in Scorpius rising in late evening
 Uranus not visible
 Neptune in the eastern dawn sky in Aquarius



R.A.S.C. London Centre Library Books of the Month April 2015 By Robert Duff

As always, these “Books of the Month” are available for loan to members, to be returned at the following monthly meeting. The books for April 2015 are as follows:

Universe on a T-shirt: the Quest for the Theory of Everything, by Dan Falk. c2002.

In Search of Time: Journeys Along a Curious Dimension, by Dan Falk. c2008.

The Science of Shakespeare: A New look at the Playwright’s Universe, by Dan Falk. c2014

For a complete listing of our library collection please go to the Main Menu on the left side of the RASC London Centre Web site main page and click on Club Library: <http://www.rasclondon.ca/index.php/library-and-rentals>

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

Space Day at Western By Rob McNeil

On Monday April 13, a crowd of 100 or more was on hand in the Physics & Astronomy building at Western University for its inaugural Space Day, and to witness the unveiling of a plaque commemorating London native John H. Chapman's pivotal role in launching Canada's first satellite. Alouette's launch in 1962 crowned Canada as the world's third space-faring nation - an impressive achievement!

After some historical perspective and opening remarks by Western faculty leaders and the London Library, the plaque that will be mounted in the atrium was unveiled. Keynote speaker American Mike Vergalla of Moon Express, a leading Google Lunar X Prize contestant, then gave a very informative summary of their efforts so far, as well as future plans to place a private space telescope on the Lunar southern pole (ILOX) and to later return lunar samples for sale to private collectors in 2020. Mike also promoted a website www.openexplorer.com, a platform to connect people with various schemes to explore the Earth.

Five graduate students then gave short presentations on their ventures: Bianca D'Aoust - Mapping complex Mars craters, Patrick Hill - Analysis of Lunar meteorites, Matt Cross - Rover hazardous terrain avoidance, Ian Pritchard - Automating Lunar crater detection & analysis, & Emily McCullough - LIDAR laser studies in the Canadian high arctic, after which all retired to the atrium for discussion of CPSX poster displays & snacks.

April 2015

Exploring the Stars, March 24th—April 9th, 2015
By Robert Duff

Exploring the Stars, 59th London Cubs and Scouts, March 24th, 2015

Clear skies greeted 30 visitors (21 children and 9 adults) from the 59th London Cubs and Scouts for Exploring the Stars at Western University's Cronyn Observatory, Tuesday, March 24th, 2015, 6:30 p.m. Graduate student Parshati Patel made the digital slide presentation "Cubs and Scouts Astronomy Badge" and fielded questions. She followed this with the activity "Constellations," distributing 21 "Star Finder" planispheres and showing them how to assemble and use them, using the slide "Reading a Star Finder."

Early in the evening and before making her side presentation Parshati directed the big 25.4cm refractor (32mm Erfle eyepiece) in the dome towards the 3-days-prior-to-first quarter crescent Moon. RASC London Centre was represented by Tricia Colvin, Mark Tovey and Bob Duff. Mark set up the London Centre's 25.4cm Dobsonian on the east side of the roof patio outside the dome early in the evening. Tricia and Mark also set up the Observatory's 8-inch (20.3cm) Meade 2080/LX3 Schmidt-Cassegrain on the roof patio's west side.

When everybody arrived upstairs in the dome Bob gave a talk about the Cronyn Observatory being in its 75th year, having been completed in 1940, and some technical aspects of the big 25.4cm refractor. Bob also explained the Standard and Sidereal Time clocks on the east wall. Parshati supervised as the visitors viewed the Moon through the big 25.4cm refractor, which made a pleasing sight through the 32mm Erfle eyepiece (137X). Parshati also gave out one "Moon Gazers' Guide" card. Tricia located Jupiter with the 25.4cm Dobsonian (17mm Nagler eyepiece, 66X) in the still nearly daylight sky around 6:36 p.m. She showed the visitors Jupiter and later the Orion Nebula (M42) as the sky darkened. Bob located Jupiter in the 8-inch (20.3cm) Schmidt-Cassegrain, replacing the 20mm Plossl eyepiece (100X) to give the visitors a better view with the 12.5mm Ortho eyepiece (160X). Mark later redirected the Schmidt-Cassegrain towards Venus giving visitors a splendid view with 20mm Plossl eyepiece (100X).

Towards the end of the evening Bob redirected the big 25.4cm refractor (32mm Erfle eyepiece) in the dome towards Jupiter and Parshati supervised as visitors viewed the giant planet with its 4 Galilean moons visible. The visitors were gone by around 8:35 p.m. after a very successful and enjoyable evening of astronomy.

Exploring the Stars, 2nd London Scout Troop, March 25th,

Clear but increasingly hazy skies greeted 15 visitors (10 youth and 5 adults) from the 2nd London Scout Troop for Exploring the Stars at Western University's Cronyn Observatory, Wednesday, March 25th, 2015, 7:00 p.m. Graduate student Dilini Subasinghe made the digital slide presentation "The Scout / Guide Astronomy Badge" and fielded questions. Dilini followed this with the "Constellations" activity, distributing 15 "Star Finder" plani-

spheres and showing the Scouts how to assemble and use them. She showed several PowerPoint constellation slides as well as the slide "Reading a Star Finder."

RASC London Centre was represented by Bob Duff and Tricia Colvin. Bob directed the big 25.4cm refractor (32mm Erfle eyepiece, 137X) in the dome towards the 2-day-prior-to-first quarter crescent Moon. Tricia set up the London Centre's 25.4cm Dobsonian on the roof patio outside the dome and located Jupiter in the 17mm Nagler eyepiece (66X) field of view.

Everybody was upstairs in the dome by 8:00 p.m. and Bob gave a talk about the history of the Cronyn Observatory and technical aspects of the big 25.4cm refractor. Bob also explained the Standard and Sidereal Time clocks on the east wall. Dilini and Bob showed the Scouts the Moon through the big 25.4cm refractor (137X). Tricia showed them Jupiter, Venus and the Moon through the 25.4cm Dobsonian (17mm Nagler eyepiece, 66X). Increasingly hazy skies made observing difficult, with Jupiter and Venus nearly invisible to the unaided eye and lunar craters difficult to distinguish in the telescopes' field of view. The visitors were gone from the dome by around 8:36 p.m. after expressing their thanks for a very enjoyable evening of astronomy despite the hazy skies.

Exploring the Stars, St. Thomas Aquinas Catholic Secondary School, March 26th, 2015

Cloudy skies greeted 7 visitors (3 students and 4 adults, including the teacher) from the St. Thomas Aquinas Catholic Secondary School Grade-9 class for Exploring the Stars at the Cronyn Observatory, Thursday, March 26th, 2015, 7:00 p.m. Graduate student Parshati Patel made 2 digital slide presentations, beginning with "Extra Solar Planets" and following this with "Life in the Universe." She answered some interesting questions.

RASC London Centre was represented by Tricia Colvin, Mark Tovey and Bob Duff. Bob made ready the big 25.4cm refractor in the dome and Tricia set up the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece) just inside the door to the roof patio. Bob and Tricia also set up the Observatory's 8-inch (20.3cm) Meade 2080/LX3 Schmidt-Cassegrain (26mm Plossl eyepiece, 77X) inside the dome and Bob directed it to view out the door towards the red and white flashing lights on the communications tower in south London. When everybody arrived upstairs in the dome Bob gave a talk about the history of the Cronyn Observatory and technical aspects of the big 25.4cm refractor, using the 32mm Erfle eyepiece (137X) for demonstration. Bob also explained the Standard and Sidereal Time clocks on the east wall. Bob invited the visitors to observe the lights on the communications tower through the Schmidt-Cassegrain and Tricia showed them the wind turbine on the Engineering building through the 25.4cm Dobsonian (17mm Nagler eyepiece, 66X), which was now set up outside on the roof patio. The visitors were gone by around 9:00 p.m. after expressing their thanks for an interesting and enjoyable evening of astronomy despite the cloudy sky.

April 2015

Exploring the Stars, Wilfrid Jury Public School, March 31st

Mostly clear skies with a few clouds greeted 15 visitors (including 10 Grade 7-8 students and 5 adults) from Wilfrid Jury Public School for Exploring the Stars at Western University's Cronyn Observatory, Tuesday, March 31st, 2015, 6:00 p.m. Graduate student Parshati Patel made the digital slide presentation "Our Solar System" and fielded questions. Parshati followed this with the activity "Constellations," distributing 10 "Star Finder" planispheres and showing the students how to assemble and use them. She showed several slides of constellation as well as the slide "Reading a Star Finder."

RASC London Centre was represented by Bob Duff, Mark Tovey and Tricia Colvin. Mark arrived early and set up the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece) and the Observatory's 8-inch (20.3cm) Meade 2080/LX3 Schmidt-Cassegrain (12.5mm Ortho eyepiece, 160X) on the roof patio outside the dome. Mark also made ready the big 25.4cm refractor in the dome. When everybody arrived upstairs in the dome, Bob gave a talk about the history of the Cronyn Observatory and technical aspects of the big 25.4cm refractor. Bob also explained the Standard and Sidereal Time clocks on the east wall. Parshati and Bob then directed the big 25.4cm refractor towards the 4-day-past-first quarter gibbous Moon, which made a splendid sight in the 28mm Meade Super Wide Angle eyepiece (157X). Parshati supervised as the visitors climbed a few steps of the observing ladder to view the Moon through the big 25.4cm refractor.

On the roof patio outside the dome Tricia showed the visitors Jupiter, the Moon and the star Betelgeuse in the 25.4cm Dobsonian (17mm Nagler eyepiece, 66X). Mark operated the 8-inch (20.3cm) Schmidt-Cassegrain and showed them the Moon, using the 12.5mm Ortho eyepiece (160X), and then Venus, swapping in the 26mm Plossl eyepiece (77X) and then returning to the 12.5mm Ortho eyepiece (160X). The visitors were gone by around 8:25 p.m. after expressing their thanks for an enjoyable and informative evening of astronomy.

Exploring the Stars, Talbot Street Church GEMS, April 2nd,

Cloudy skies with rain showers greeted 8 visitors (5 girls and 3 adults) from the Talbot Street Church GEMS for Exploring the Stars at the Cronyn Observatory, Thursday, April 2nd, 2015, 7:15 p.m. Graduate student Parshati Patel made the digital slide presentation "Our Solar System" and fielded questions. Parshati followed this with the activity "Kitchen Comet," making a comet from dry ice and other materials on a table set up at the front of the lecture room.

RASC London Centre was represented by Tricia Colvin, later joined by Mark Tovey. Rainy weather ruled out opening the dome and Tricia set up the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece) inside the dome so as to view out the door and showed the visitors the compressed gas canister with gauges visible in the window of the nearby Engineering building to the south. Tricia and Mark gave a joint talk to them with Mark speaking on the history of the Cronyn Observatory and Tricia on

the technical aspects of the big 25.4cm refractor in the dome. The visitors were gone by around 8:45 p.m. after an enjoyable evening of astronomy despite the cloudy, rainy weather.

Exploring the Stars, 3rd St. Thomas Brownies, April 7th,

Cloudy skies greeted 28 visitors (13 children and 15 adults) from the 3rd St. Thomas Brownies for Exploring the Stars at Western University's Cronyn Observatory, Tuesday, April 7th, 2015, 6:30 p.m. Graduate student Parshati Patel made the digital slide presentation "The Scout / Guide Astronomy Badge," (designed especially for Brownies). Parshati followed this with the activity "Telescope Kits," with the Brownies assembling small telescopes from reusable kits and viewing a slide to focus them.

Bringing the group upstairs into the dome, Parshati took the Brownies outside on the roof patio to view and focus better with the small telescopes they had assembled on terrestrial objects such as trees and buildings. Since it was cloudy, the dome was opened and closed for demonstration but the big 25.4cm refractor was not used.

RASC London Centre was represented by Tricia Colvin and Mark Tovey. Tricia set up the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece) inside the dome so as to view out the door and showed the visitors the wind turbine on the Engineering building and the lights on the communications tower in south London. Tricia and Mark gave a joint talk to them with Mark speaking on the history of the Cronyn Observatory and Tricia on the big 25.4cm refractor in the dome. Mark and Tricia put away the 25.4cm Dobsonian at the end of the evening. The visitors were gone by 8:00 p.m. after an enjoyable evening of astronomy, despite the cloudy weather.

Exploring the Stars, London District Catholic School Board Elementary Enrichment Opportunities Program, April 8th,

Cloudy skies greeted 38 visitors (21 children and 17 adults) from the London District Catholic School Board Elementary Enrichment Opportunities Program for Exploring the Stars at Western University's Cronyn Observatory, Wednesday, April 8th, 2015, 7:00 p.m. Graduate student Shannon Hicks made the digital slide presentation "The Earth Moon System" and fielded questions. Shannon followed this with the activity "Kitchen Comet," inviting everybody to the table set up at the front of the lecture room where she made a comet from dry ice and other materials.

RASC London Centre was represented by Mark Tovey, Tricia Colvin and Bob Duff. When everybody arrived upstairs in the dome Shannon invited Bob to give a talk on the history of the Cronyn Observatory and technical aspects of the big 25.4cm refractor. Bob also explained the Standard and Sidereal Time clocks on the east wall. Shannon opened the dome and Bob rotated it towards the south. However, the communications tower in south London was obscured by haze and Shannon could not locate it in the big 25.4cm refractor (32mm Erfle eyepiece, 137X).

April 2015

Tricia operated the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece), which was set up inside the dome so as to view out the door and showed visitors the wind turbine on the Engineering building and the compressed gas canister with gauges visible in a window of the Engineering building. The visitors were gone by 8:50 p.m. after an enjoyable evening learning about astronomy, despite the cloudy sky.

Exploring the Stars, Wilfrid Jury Public School, April 9th, 2015

Cloudy skies and misty weather greeted 10 visitors (including 5 Grade 7-8 students and 5 adults) from Wilfrid Jury Public School for Exploring the Stars at Western University's Cronyn Observatory, Thursday, April 9, 2015, 6:00 p.m. Graduate student Parshati Patel made the digital slide presentation "Life in the Universe" and fielded questions. Parshati followed this with the activity "Kitchen Comet," making a comet from dry ice and other materials on a table set up at the front of the lecture room.

RASC London Centre was represented by Tricia Colvin and Mark Tovey. Damp misty weather ruled out opening the dome. The London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece), was set up inside the dome so as to view out the door to show visitors the wind turbine on the Engineering building. However, the 25.4cm Dobsonian was completely fogged up due to the humidity so that nothing could be seen. Parshati brought out the telescope kits used in the activity "Telescope Kits" so that the visitors could view terrestrial objects through small telescopes from the roof patio and did not have to go home without looking through a telescope. The visitors were gone by 7:45 p.m. after an enjoyable evening learning about astronomy, despite the cloudy, misty weather.

RASC London Centre Star Nights & Public Outreach, March—April 2015

By Robert Duff

Star Night, Space Society of London (SSoL) @Fingal Observatory, March 24th, 2015

Report by Peter Jedicke, Edited and Revised with Additions by Robert Duff

Clear skies with increasingly hazy clouds later in the evening greeted 30 members and friends from the Space Society of London (SSoL) who car-pooled from their meeting point outside Western University's Cronyn Observatory to Fingal Wildlife Management Area. RASC London Centre member Peter Jedicke was on hand to coordinate the departure from the Cronyn.

RASC London Centre member Pete Raine went ahead and prepared the London Centre's Warm-Up Room (WUR) and the Observatory buildings OBS1 and OBS2. The guests arrived around 8:10 p.m. Pete made the 12-inch (30.5cm) Astro-Tech Ritchie-Chretien in OBS1 available for cameras to take pictures, although few SSoL members had cameras with them. Peter Jedicke helped

visitors with the 14-inch (35.5cm) Celestron C14 Schmidt-Cassegrain in OBS2, where they observed Venus, the Orion Nebula (M42), Jupiter, the double-star Nu1 Canis Majoris, M51, the double-star Gamma Leonis (Algieba) and the 3-day-prior-to-first quarter crescent Moon. Peter used a 40mm eyepiece (98X) or a 20mm Nagler eyepiece (195.5X) as appropriate and the telescope worked beautifully.

There were also 5 other RASC London Centre volunteers out on the pad, including Rob McNeil, with his Williams Optics 72mm refractor; Norm McCall, with his Explore Scientific 152mm Makutov-Newtonian Comet Hunter; Mike Roffey, with his 15cm Celestron NexStar 6SE Schmidt-Cassegrain on a Vixen Porta II Mount; John Brown, with his 20.3cm Dobsonian; and Gary Shelley with his 8-inch (20.3cm) Meade Schmidt-Cassegrain.

The students visited these telescopes, enjoyed the ambience of the WUR and shared the snacks they had brought with them. There were many expressions gratitude and, overall, this was a fairly knowledgeable group, more motivated than the general public. Mike Roffey reported showing 3 or 4 visitors Comet C/2014 Q2 Lovejoy in Cassiopeia in his 15cm Celestron NexStar 6SE Schmidt-Cassegrain.

The evening was almost completely clear, with increasingly hazy clouds after a while. The -2 Celsius temperature was not as cold as many nights this winter but it still nipped at fingers and toes and every exposed nose. Peter reported hearing coyotes. By around 10:30 p.m. all the guests had left and the RASC London Centre members closed up the buildings and packed their own gear.