

# POLARIS



## Royal Astronomical Society of Canada London Centre Newsletter June 2016

### Literary Astronomical Theory

Bridget Whelan

In grade twelve English, Bridget had an assignment to come up with a new and novel way to analyze literary works. Her father is an avid amateur astronomer. Perhaps this influenced her decision to create her Astronomical Theory. With this theory she invented, she analyzes Hamlet as well as Romeo and Juliet.

#### Objective and Origin

Since the beginning of time, humanity has turned its eye to the vastness of the universe; it is understandable, therefore, that humanity would craft works of art in its image. Astronomical theory views a text's literary landscape as a solar system of characters. The theory's main objective is to examine how power structures and the role of authority in a text influence the narrative. The theory seeks to prove that the driving force behind each narrative is the opposition to established authority.

#### Major Tenets

- All characters represent an astronomical object
- All characters have orbits and trajectories
- All power structures in a text can be visually represented as a solar system diagram
- The distinction between an average and massive star
- The distinction between inferior and superior planets

#### Key Terms

- Solar System: a grouping of characters
- Star: an authority figure whose actions affect surrounding characters
- Planet: a character affected by a star
- Average Star: a stable authority figure, long-term
- Red Giant: life peak of an average star, towards success/downfall
- Planetary Nebula: legacy of an average star
- Massive Star: an unstable authority figure, short-term
- Red Super Giant: life peak of a massive star, towards success/failure
- Super Nova: legacy of a massive star
- Rogue Planet: a character not connected to a star in the text
- Dwarf Planet: minor characters, one-dimensional
- Inferior Planet: a character easily affected by a star
- Superior Planet: a character not easily affected by a star
- Orbit: a character's every-day activities
- Trajectory: an action of a character

- Black Hole: an entity who feeds upon/weakens a star's power/influence
- Asteroid Belt: the distinct separation between inferior and superior planets
- Moon: A minor character who exists solely for a major character

#### Hamlet

The central authority figure in the text is King Claudius. He is represented as a massive star because he is in power for a short amount of time and his reign is unstable, which is highlighted by Prince Hamlet's plots against him.

The interior planets are Polonius, Laertes, Rosencrantz, Guildenstern, and Queen Gertrude. The Queen is placed as the outer orbit for the inferior planets because, while she is still heavily influenced by Claudius' actions, she is not completely loyal to him. After Hamlet informs her that he is not really mad but merely acting the part, she lies to Claudius saying Hamlet is as "mad as the sea and wind when both contend" (4.1.7). This line displays a slight admission of disloyalty. On the other hand, the other inferior planets are completely loyal to Claudius and make no move against him. (This is true, except for when Laertes attacks Claudius in act 4 scene 7; however, since Claudius manages to manipulate Laertes back into his control, this instance has not been considered in regards to his astronomical placement.) Ophelia and Horatio are depicted as superior planets because they are more influenced by Hamlet than by Claudius. Ophelia's descent into madness is primarily caused by the romantic frustrations she has with Hamlet, illustrated in her song about a maiden who is tricked into losing her virginity with a false promise of marriage (4.5.63-71). Likewise, Horatio is loyal to Hamlet throughout the play and acts as his confidant. His loyalty reaches an apex when he offers to commit suicide to join Hamlet in death (5.2.373-375). Nowhere in the play does Horatio demonstrate this level of loyalty to Claudius.

Hamlet is depicted as a black hole in the astronomical diagram because his main motivation in the text is to enact revenge on Claudius and thereby weaken his reign as King. The black hole stretches from the star to the outermost superior planet because through Hamlet's vengeful quest, he negatively affects all the characters that surround him.

*(Continued on page 4)*

## Moon Phases



June 12 2016



June 20 2016



June 27 2016



July 4 2016

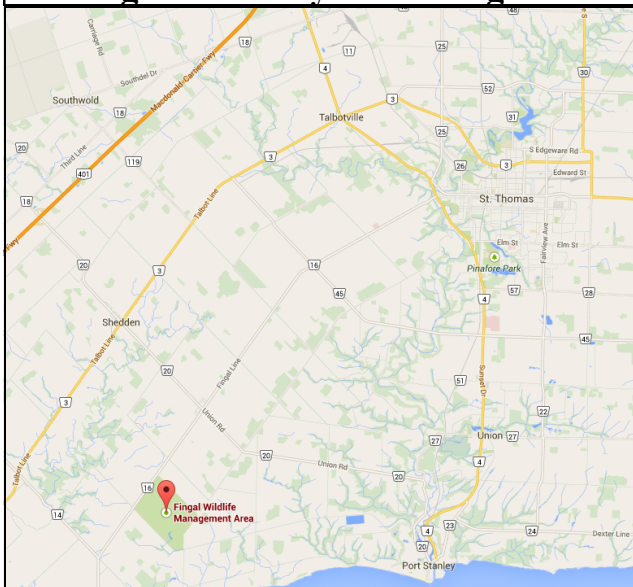
### June Meeting

Our Guest of Honour will be  
Ed Stokan  
with a talk titled  
'Observing Small Meteoroids'

### 2016 GA and AstroCATS

A huge shout out to the two co-chairs of the  
amazing 2016 London GA:  
David Clark  
Peter Jedicke  
As well as to the chair of AstroCATS:  
Andy Blanchard

### Fingal Dark Sky Observing Site



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## Sky Events for Late June and early July

June 22 Solstice  
 June 26 Neptune 1.2 S of Moon  
 July 4 Aldebaran 0.4 S of Moon  
 July 8 Regulus 1.8 N of Moon  
 July 9 Jupiter 0.9 N of Moon



Mercury well placed in the morning sky  
 Venus too close to the Sun to see  
 Mars in Libra, visible most of the night  
 Jupiter in the western evening sky in Leo  
 Saturn visible most of the night in Ophiucus  
 Uranus in the eastern morning sky in Pisces  
 Neptune rises after midnight in Aquarius



### R.A.S.C. London Centre Library Books of the Month June 2016 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 June 2016 are as follows:

Foundations of Astronomy, by Michael A. Seeds. – 7th Edition, c2003.

365 Starry Nights: an Introduction to Astronomy for Every Night of the Year, text and illustrations by Chet Raymo. c1982.

Uncovering the Secrets of the Red Planet: Mars, by Paul Raeburn. Foreword and Commentary by Matt Golombek. – Washington, D.C.: National Geographic Society, c1998. + 2 pairs 3-D glasses enclosed in back cover.

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/joomla34/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](mailto:rduff@sympatico.ca)

#### **Cronyn Observatory Public Nights & Special Events, May 7th—June 4th, 2016 By Robert Duff**

#### **Cronyn Observatory Public Night, Saturday, May 7th, 2016**

Cloudy, later clearing, skies greeted 57 visitors (43 adults and 14 children) to Western University’s Cronyn Observatory Summer Public Night, Saturday, May 7th, 2015, 8:30 p.m. Professor Jan Cami made 2 presentations of his digital slide presentation “The Transit of Mercury of May 9, 2016,” with

the second presentation at 10:00—10:30 p.m. This was in anticipation of the “Mercury Transit” special event at the Cronyn Observatory, Monday, May 9th, 2016.

Downstairs in the “Black Room” Professor Els Peeters used the “Transit Demo” model of an extra-solar planetary system on a turntable with an electrically lighted “sun” in the middle to explain how we viewed the transit of Mercury across the Sun from Earth. She also used it to explain how the transit detection method worked for finding extra-solar planets. A photodiode was clamped to a laboratory stand and linked to a laptop computer, which displayed the dipping light curve as model

planets of various sizes revolved around and in front of the lighted model sun. It was a very impressive demonstration of the transit detection method for finding extra-solar planets. Undergraduate student William Hyland helped in the “Period Room” where historical artefacts were on display.

Upstairs in the dome, graduate student Dilini Subasinghe showed visitors the communications tower in south London through the big 25.4cm refractor (32mm Erfle eyepiece, 137X). The sky cleared around 9:00 p.m. and Dilini swapped in the 28mm Meade Super Wide Angle eyepiece (157X) to show visitors Jupiter through the 25.4cm refractor.

RASC London Centre was represented by Everett Clark, Paul Kerans, Dale Armstrong, Peter Jedicke and Steve Gauthier, along with Heather MacIsaac, a previously unattached RASC member who recently joined the London Centre. London Centre member Richard Gibbens was also there and listened to the slide lecture. On the roof patio outside the dome Steve showed visitors Jupiter and the globular cluster M13 through the London Centre’s 25.4cm Dobsonian (17mm Nagler eyepiece, 66X). Heather set up her Celestron Go-To 90mm Maksutov (25mm Plossl eyepiece, 50X) to also show visitors Jupiter and M13. Peter and Paul helped supervise and talked with the visitors. There were 5 “Moon Gazers’ Guide” cards distributed to interested visitors.

It was a very enjoyable evening for all concerned with the downstairs “Transit Demo” and the “Period Room” a particular hit with visitors. The observatory was closed down around 11:00 p.m.

### **Transit of Mercury at the Cronyn Observatory, May 9th, 2016**

Clear skies, with some hazy clouds later, greeted some 400 visitors to Western University’s Cronyn Observatory for the Transit of Mercury, Monday, May 9th, 2016. Events and activities began at 7:00 a.m., with Mercury beginning its transit at 7:12 a.m. and ending at 2:42 p.m. EDT. School groups, including 165 children and 57 adults, arrived between 9:00 a.m. and 11:00 a.m., with public viewing 7:00 a.m.—2:00 p.m.

There was a live stream of the event from the Coca Cola Space Science Center, Columbus State University, Georgia, in the observatory lecture room with a laptop computer and projector with the caption on the screen “Live – Mercury Transit Hydrogen-Alpha 656nm.” There were special half-hour presentations—Astro Talks—given in the Engineering building (SEB 1200) next to the Cronyn between 9:30 a.m. and 12:30 p.m. by Professors Sarah Gallagher, “The Wonderful Thing about Transits”; and Chris Smeenk, “Why Mercury Made Einstein’s Heart Flutter”; with Catherine Neish making her presentation “Icy Hot Mercury” twice. Next to the Engineering classroom people from the Rotman Institute of Philosophy, including Deborah Fox, Craig Fox and Jamie Shaw, conducted demonstrations of space-time warping.

Other activities included a “Tour of the Solar System” with half-hour walking tours conducted by undergraduate students William Hyland, 9:00—11:00 a.m., and Ian Mulholland, 11:00 a.m.—1:30 p.m. Visitors were greeted at the Welcome Table set up on the concrete walkway in front of the Cronyn Observatory by graduate student Dilini Subasinghe and Professor Aaron Sigut, 7:00—9:00

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Hamlet is ultimately about a character that rebels against the established authority in the text and though his opposition, his revenge affects all of the other characters.

#### **Romeo and Juliet**

The astronomical diagram contains two stars because there are two central authority figures in the text: Lord/Lady Capulet and Lord/Lady Montague. These stars are depicted as average stars because they have been in a position of power for a long time and are stable in their position of power.

Tybalt is the innermost inferior planet because of his zeal in defending the Capulet name. He demonstrates this zeal in act 1 scene 1, where the audience is first introduced to him, where he declares “turn thee... look upon thy death,” as an attempt to goad Mercutio into a fight (1.1.57).

Paris and Mercutio are displayed as rogue planets because they are kinsmen of the Prince and are not directly tied to the Capulet or Montague households; however, since Paris intends to marry Juliet and Mercutio is good friends with Romeo and Benvolio, Paris’s orbit is placed around the Capulet solar system and Mercutio’s orbit is placed around the Montague solar system. Friar Lawrence is another rogue planet—because his star would be the Church—and his orbit encompasses both Romeo’s and Juliet’s because he is a central figure in their struggle against their fami-

lies.

Romeo and Juliet’s orbits overlap because once they met in act 1 scene 5, they purposefully aligned their trajectories so they were in near constant contact in the rest of the play and spent the majority of their time together.

Overall, the play centers on Romeo and Juliet’s romantic union and their opposition to the central authority figures in the text: their families.

#### **Connections to Feminist and Marxist Theories**

Astronomical theory is not the only literary theory that analyzes power structures in a text. Rather, Feminist and Marxist theory also follows the same principle. Feminist theory analyses the power dynamic between the two sexes through the Feminist concept of the patriarchy. The theory identifies the presence of patriarchal beliefs in a text and assesses how the sexes are portrayed based on these beliefs. The Marxist theory also analyzes a power dynamic; however, this dynamic is between the proletariats and the bourgeois. The theory advocates for the eventual defeat of the bourgeois and the creation of a unified, working class.

Although Astronomical theory is similar to Feminist and Marxist theory, it has a key difference. While Feminist theory proves how the sexes are not viewed equally in society and Marxist theory proves how the proletariats will overthrow the bourgeois, Astronomical theory proves how the driving force behind each narrative is the opposition to established authority.

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a.m.; Kendra Kellogg and Laura Lenkic and Dr. Alyssa Gilbert (who also served as Solar System Tour backup) from 9:00—11:00 p.m.; and graduate students Shannon Hicks and Collin Knight and Dr. Shailesh Nene. They handed out some 350 eclipse glasses, along with crossword puzzles, information cards on the CPSX Space Camp and the “Cronyn Observatory presents ... Mercury in Transit across the Sun, Monday, May 9, 2016” information sheets.

Downstairs in the “Black Room” visitors were shown the “Transit Demo” model of an extra-solar planetary system on a turntable with an electrically lighted “sun” in the middle to explain how we viewed the transit of Mercury across the Sun from Earth. Graduate student Tony Martinez took the first shift at 7:00—9:00 a.m., followed by Professor Els Peeters, 9:00—11:00 a.m., and then graduate students Laura Lenkic, 11:00 a.m.—12:30 p.m., and Maryam Tabeshian, 12:30—2:00 p.m. They also used the “Transit Demo” model to explain how the transit detection method worked for finding extra-solar planets. A photodiode was clamped to a laboratory stand and linked to a laptop computer, which displayed the dipping light curve as model planets of various sizes revolved around and in front of the lighted model sun. It was a very impressive demonstration of the transit detection method for finding extra-solar planets. Graduate student Parshati Patel conducted the “Mercury Mapping” activity, 11:00 a.m.—12:00 noon.

Next to the “Black Room” was the “Period Room” with displays including Dr. H. R. Kingston’s brass refractor telescope and the Sotellunium—a mechanical eclipse demonstration model—built by W. G. Colgrove. (The “Period Room” recreated H. R. Kingston’s office, based on a photograph from 1940, and was designed by RASC London Centre member Mark Tovey for the Cronyn Observatory’s 75th Anniversary, celebrated October 24th / 25th, 2015.)

Upstairs in the dome the big 25.4cm refractor was fitted with the Herschel wedge, 52mm Erfle eyepiece (84X) and projection screen and directed towards the Sun. Faculty members and graduate student took turns talking to the visitors and explaining what they were seeing, including Sebastian Bruzzone and post-doctoral fellow David Stock, 7:00—9:00 a.m.; graduate student Shannon Hicks and Professor Emeritus John Landstreet, 9:00—11:00 a.m.; Kendra Kellogg and Professor John de Bruyn, 11:00 a.m.—1:00 p.m., and Laura Lenkic and undergraduate Nathalie Thibert, 1:00—2:00 p.m.

RASC London Centre members present included Everett Clark, Dave Clark, Paul Kerans, Peter Jedicke, Steve Gauthier, Mike Costa, Dale Armstrong, Heather MacIsaac and Bob Duff. London Centre member Roman Dubinski visited from work on campus, bringing 3 guests from Poland to view the Mercury transit through the telescopes, and Richard Gibbens was also there.

On the roof patio outside the dome, RASC London Centre member Allan Leparskas set up his Canon 7D digital camera with a 400mm lens and home-made Mylar solar filter on a Sky-Watcher mount taking pictures of the Sun every 6 minutes. Heather

MacIsaac showed visitors the transit of Mercury across the Sun through her Celestron Go-To 90mm Maksutov (32mm Plossl eyepiece, 39X) with Mylar solar film secured with rubber bands over the aperture. Everett Clark set up the Cronyn Observatory’s 8-inch (20.3cm) Meade 2080/LX3 Schmidt-Cassegrain (26mm Plossl eyepiece 77X) with the Kendrick Astro Baader film solar filter.

On the concrete walkway on the south side of the Cronyn Observatory RASC London Centre members set up their telescopes including Steve Gauthier, with his 8-inch (20.3cm) Newtonian reflector on a Celestron Losmandy G11 mount and glass solar filter; Dave Clark with his Celestron Super C8 (20.3cm) Schmidt-Cassegrain and glass solar filter; Paul Kerans with his 80mm Sky-Watcher refractor on a Sky-Watcher EQ6 Equatorial mount and glass solar filter; Mike Costa with his iOptron Solar 60 refractor; Dale Armstrong with his Vernonscope 80mm refractor and solar filter; and Peter Jedicke with the Sunspotter (provided by Fanshawe College).

Professor Jan Cami showed visitors the transit of Mercury across the Sun through the Observatory’s 90mm Coronado H-Alpha Solar Telescope set up on the Sky-Watcher EQ5 mount, using the 25mm (32X) and 12mm (66.7X) eyepieces. The 90mm Coronado was set up beside portable shelter with a large TV screen, which was not used because there was no signal. However, Paul Kerans, with his 80mm Sky-Watcher refractor and glass solar filter, obtained an image on a 24-inch flat screen TV with his MallinCam Micro-Ex CCD camera. Paul also showed people the transit through his 80mm Sky-Watcher refractor with his 21mm (28.6X) and 13mm (46X) Ethos eyepieces.

These are just some of the activities that went on during the Mercury Transit of May 9, 2016, at the Cronyn Observatory. Physics and Astronomy Department staff and RASC member Henry Leparskas was there taking pictures with his camera. The event ended with the egress of Mercury from the face of the Sun at 2:41 p.m. EDT.

### **Cronyn Observatory Public Night, Saturday, May 14th, 2016**

Cloudy skies with rain showers greeted some 30 visitors to Western University’s Cronyn Observatory Summer Public Night, Saturday, May 14th, 2016, 8:30 p.m. Professor Els Peeters made 2 presentations of her digital slide presentation “Carbon and Our Cosmic Roots,” with the second presentation to just 2 people.

Professor Jan Cami gave tours of the observatory including the downstairs “Black Room,” with the “Transit Demo” model set up, and the “Period Room,” with displays including Dr. H. R. Kingston’s brass refractor telescope and the Sotellunium—a mechanical eclipse demonstration model—built by W. G. Colgrove. (The “Period Room” recreated H. R. Kingston’s office, based on a photograph from 1940, and was designed by RASC London Centre member Mark Tovey for the Cronyn Observatory’s 75th Anniversary, celebrated October 24th / 25th, 2015.)

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Professor Stan Metchev gave 4 demonstrations of the “Transit Demo” model to small groups of visitors in the “Black Room” and explained how the transit detection method worked for finding extra-solar planets. A photodiode was clamped to a laboratory stand and linked to a laptop computer, which displayed the dipping light curve as model planets of various sizes revolved around and in front of the lighted model “sun” representing the distant star. It was a very impressive demonstration of the transit detection method for finding extra-solar planets.

RASC London Centre was represented by Everett Clark, Dale Armstrong, Steve Gauthier, Peter Jedicke, Tricia Colvin, Heather MacIsaac and Bob Duff. London Centre member Richard Gibbens was also there and listened to the slide lecture. Upstairs in the dome Everett installed the 32mm Erfle eyepiece (137X) in the big 25.4cm refractor and directed the telescope upwards towards the south for demonstration but did not open the dome because of rain showers. Undergraduate student William Hyland supervised the visitors. Everett also set up the London Centre’s 25.4cm Dobsonian (17mm Nagler eyepiece, 66X) just inside the dome door to the roof patio and directed it so as to show visitors the wind turbine on the Engineering building. Heather set up her Celestron Go-To 90mm Maksutov (32mm Plossl eyepiece, 39X) inside the dome, directing it through the door to show visitors the lights on the communications tower in south London.

Dale gave a telescope talk. Peter, Steve, Tricia and Bob talked to visitors. The visitors were gone by around 11:00 p.m. after an enjoyable evening learning about astronomy, despite the cloudy rainy weather.

#### **Cronyn Observatory Public Night, Saturday, May 21st, 2016**

Cloudy, later partly clearing hazy skies greeted some 42 visitors to Western University’s Cronyn Observatory Summer Public Night, Saturday, May 21st, 2016, 8:30 p.m. Professor Paul Wiegert presented the digital slide presentation “Constellations” before some 33 visitors. There were 9 additional people who went directly upstairs into the dome for a total of 42 visitors for the evening.

This was the weekend of the RASC General Assembly, May 19th—23rd, 2016, and AstroCATS telescopes display being held at Fanshawe College. RASC London Centre was represented at the Cronyn Observatory by Patrick Whelan, Mark Tovey, Tricia Colvin, Heather MacIsaac and Bob Duff, who was there between 9:15 and 10:15 p.m.

Professor Jan Cami gave tours of the observatory including the downstairs “Black Room,” with the “Transit Demo” model set up, and the “Period Room,” with displays including Dr. H. R. Kingston’s brass refractor telescope and the Sotellunium—a mechanical eclipse demonstration model—built by W. G. Colgrove. (The “Period Room” recreated H. R. Kingston’s office, based on a photograph from 1940, and was designed by RASC London Centre member Mark Tovey for the Cronyn Observatory’s 75th Anniversary, celebrated October 24th / 25th, 2015.) Mark and Tricia were in the “Period Room” and Mark was dressed in his Dr. H. R.

Kingston attire and seated at Kingston’s desk as Jan gave his tour. Bob Duff took pictures of the “Transit Demo” in the “Black Room” and spoke with Mark and Tricia in the “Period Room.”

Graduate student Neven Vulic was telescope operator in the dome and, with Bob’s assistance, soon swapped in the 32mm Erfle eyepiece (137X) in place of the 52mm Erfle eyepiece (84X) to give visitors a better view of Jupiter. Undergraduate student William Hyland was also present. Professor Jan Cami installed the 18mm Radian eyepiece (244X) with the 1.25-inch adapter. This made it easier for him to switch between the 18mm Radian and the 1.25-inch diameter eyepiece of the iOptron cell phone adapter to take pictures with visitors’ cell phone cameras through the 25.4cm refractor.

On the roof patio outside the dome Patrick Whelan operated the London Centre’s 25.4cm Dobsonian (18mm Radian eyepiece, 62X) and showed visitors Jupiter, appearing intermittently between clouds, as well as Mars and the full Moon. The Moon showed little detail being low in the eastern sky and behind clouds. Heather MacIsaac showed visitors Jupiter through her Celestron Go-To 90mm Maksutov telescope (17mm Plossl eyepiece, 73.5X). The Cronyn Observatory closed down around 10:30 p.m. after an interesting and enjoyable evening of astronomy.

#### **Cronyn Observatory Public Night, Saturday, May 28th, 2016**

Mostly cloudy, later partly clearing skies, greeted some 120 visitors to Western University’s Cronyn Observatory Summer Public Night, Saturday, May 28th, 2016, 8:30 p.m. Postdoctoral fellow Andrew Pon made some 5 presentations of his digital slide presentation “Top 10 Bizarre Tales of Astronomy.” RASC London Centre member Bob Duff counted 57 visitors in the lecture room at the beginning of the first slide presentation and Peter Jedicke counted 69 visitors by 8:55 p.m. Professor Jan Cami estimated 100 people; this estimate increasing to 120 visitors by the end of the evening.

There were 10 RASC London Centre members assisting in the in the observatory and with amateur telescopes, including Everett Clark, Paul Kerans, Bob Duff, Peter Jedicke, Steve Gauthier, Heather MacIsaac, Dale Armstrong, Steve Imrie, Tricia Colvin and Mark Tovey. London Centre member Richard Gibbens was also there and listened to the slide lecture. Professor Jan Cami gave 3 tours of the observatory downstairs “Black Room,” with the “Transit Demo” model set up, and the “Period Room,” with displays including Dr. H. R. Kingston’s brass refractor telescope and the Sotellunium—a mechanical eclipse demonstration model—built by W. G. Colgrove. Mark and Tricia were in the “Period Room” to welcome the visitors.

Graduate student Maryam Tabeshian was telescope operator for the big 25.4cm refractor in the dome and was assisted by RASC London Centre members Dale Armstrong and Everett Clark. Dale directed the 25.4cm refractor (32mm Erfle eyepiece, 137X) towards the lights on the communications tower in south London. Dale also placed the observatory’s Meade 8-inch (20.3cm)

Schmidt-Cassegrain on the table and, opening the window, showed visitors the red light on a tower above a campus building to the north. With deepening twilight Maryam and Everett directed the 25.4cm refractor towards Mars, briefly swapping in the 28mm Meade Super Wide Angle eyepiece (157X), before seeing conditions persuaded them to swap back in the 32mm Erfle (137X). However, seeing conditions improved and visitors later viewed Saturn in the 25.4cm refractor with the 28mm Meade SWA eyepiece (157X).

On the roof patio outside the dome, Steve Gauthier showed visitors Mars and Jupiter with the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece, 66X). Steve Imrie helped Steve Gauthier with the 25.4cm Dobsonian and supervising visitors. Paul Kerans set up the observatory's Orion AstroView 6 (15cm) Newtonian reflector on the Sky-Watcher EQ5 mount to show visitors Mars and Jupiter, swapping in the 26mm Tele Vue Plossl eyepiece (29X) in place of the 10mm Plossl (75X) for a better view. Heather MacIsaac showed visitors Mars and Jupiter through her Celestron Go-To 90mm Maksutov telescope (17mm Plossl eyepiece, 73.5X). Everett Clark assisted one family with their 50mm alt-azimuth mounted refractor early in the evening. Peter Jedicke called everybody's attention to an ISS pass traveling from west to northeast, between 10:56—11:03 p.m., reaching an altitude of 42 degrees above the north northwest horizon.

Physics and Astronomy's computer resource person Henry Leparskas volunteered in the "Black Room" and "Period Room." Also present were graduate student Dilini Subasinghe, who left early, and undergraduate student William Hyland. The Cronyn Observatory closed down with the last visitors leaving around 11:15 p.m., after an interesting and enjoyable evening of astronomy.

### **Ontario Association of College & University Housing Officers 2016 Spring Conference, Cronyn Observatory Tours, May 30, 2016**

Clear skies with some clouds greeted 2 groups totaling 40 visitors from the OACUHO 2016 Spring Conference to Western University's Cronyn Observatory, Monday, May 30th, 2016, arriving 9:30 p.m. and 10:30 p.m., respectively. The visitors were from the Ontario Association of College and University Housing Officers 2016 Spring Conference, being held May 30th—June 2nd, 2016 at Western University. There were 18 visitors in each group and 4 later arrivals after the second group for a total of 40 visitors from the conference.

RASC London Centre member Peter Jedicke reported an additional 12 people, not associated with the conference, viewed through London Centre member Paul Kerans' 22-inch (56cm) Obsession Truss-Tube Dobsonian set up on the concrete brick walkway on the south side of the Cronyn Observatory. This brings the total to 52 visitors for astronomy public outreach.

Cronyn Observatory Director Professor Jan Cami made a brief slide presentation "Astronomy at the Hume Cronyn Memorial Observatory" to the first group of 18 visitors, which included Co-

lumbia University faculty member and former Astronomy Department Chair David Helfand, who also served as President of Quest University Canada, 2007—2015, and President of the American Astronomical Society, 2012—2014.

This was followed by a tour downstairs of the "Black Room," with the "Transit Demo" model set up, and the "Period Room," recreating Dr. H. R. Kingston's 1940 office with his brass refractor and the Sotellunium—a mechanical eclipse demonstration model built by W. G. Colgrove—on display. RASC London Centre member Mark Tovey who designed the "Period Room," based on a 1940 photograph for the Cronyn Observatory's 75th Anniversary, celebrated October 24th / 25th, 2016, was there along with Tricia Colvin to greet the visitors. Jan gave a brief talk and some of the visitors signed the guest book! The visitors were then brought upstairs into the dome where Jan gave another brief talk and invited them to view through the big 25.4cm refractor and amateur telescopes. Both groups of visitors received the slide presentation and tour, arriving in the dome at 9:50 p.m. and 11:00 p.m., respectively.

There were 8 RASC London Centre members assisting in the observatory and with amateur telescopes, including Everett Clark, Heather MacIsaac, Bob Duff, Paul Kerans, Steve Gauthier, Peter Jedicke, Tricia Colvin and Mark Tovey. Physics and Astronomy staff member Henry Leparskas was first to arrive, opening the dome for cooling, setting up the vintage 1940 radio "donation box" (which ultimately wasn't needed) and helping set up the "Period Room" and lecture room. Peter Jedicke called everybody's attention to an ISS pass travelling from west to northeast, between 9:11—9:17 p.m., reaching an altitude of 62 degrees above the southeast horizon.

Considerable attention was directed towards Mars, which was at opposition on May 22nd and its closest approach to Earth on May 30th, showing an 18.6 arc second disk. Jan directed the big 25.4cm refractor towards Jupiter and, with Bob Duff's assistance, swapped in the 18mm Radian (244X) eyepiece in place of the 32mm Erfle (137X) for a better view. Steve Gauthier's 15mm Panoptic (292X) and 9mm Nagler (487X) gave impressive views of Mars in the 25.4cm refractor with and without his No. 21 orange filter. Everett Clark ran the 25.4cm refractor for most of the evening.

Jupiter a made splendid sights in the London Centre's 25.4cm Dobsonian through Bob's 7mm Nagler (159X). Steve showed visitors Jupiter, Mars, Saturn and M57 through the 25.4cm Dobsonian, using his 9mm Nagler (124X) and 15mm (74X) Panoptic eyepieces, with and without his No. 21 orange filter on Mars and Jupiter. Steve also used his Orion Shorty 2X Barlow lens with the 9mm Nagler (248X) to view Jupiter and Mars in the 25.4cm Dobsonian. Tricia showed visitors Jupiter and Mars through the observatory's Meade 8-inch (20.3cm) Schmidt-Cassegrain (12.5mm Ortho eyepiece, 160X) before joining Mark downstairs in the "Period Room," with undergraduate student William Hyland taking over the Schmidt-Cassegrain to show people Jupiter, Mars and Saturn, as cloud cover shifted. Heather MacIsaac showed

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visitors Jupiter and Mars through her Celestron Go-To 90mm Maksutov telescope (17mm Plossl eyepiece, 73.5X).

On the walkway on the south side of the observatory Paul Kerans showed the visitors Jupiter, Mars, Saturn, M13 and M57, through his 22-inch (56cm) Obsession Truss-Tube Dobsonian with his 21mm (128X) and 13mm (207X) Ethos eyepieces.

Observing continued with the big 25.4cm refractor in the dome with impressive views of Mars using Steve's 15mm Panoptic (292X) and 9mm Nagler (487X) before the observatory was closed down around 12:35 a.m. We were very fortunate to have such a clear night for the Mars closest approach to Earth on May 30th, 2016.

#### **Cronyn Observatory Public Night, Saturday, June 4th, 2016**

Cloudy skies with some light rain greeted 28 visitors to Western University's Cronyn Observatory Summer Public Night, Saturday, June 4th, 2016, 8:30 p.m. Earth Sciences graduate student Jeff Berger made his digital slide presentation "Exploring Mars with Curiosity" before 24 visitors (19 adults and 5 children). There were 4 later arrivals in the evening for a total of 28 visitors.

RASC London Centre was represented by Everett Clark, Tricia Colvin, Bob Duff and Dale Armstrong, with Mark Tovey arriving 10:25 p.m. A visiting graduate student was telescope operator for the big 25.4cm refractor in the dome, which remained closed because of the rain. Dale gave the telescope talk. Everett placed the observatory's Meade 8-inch (20.3cm) Schmidt-Cassegrain (12.5mm Ortho eyepiece, 160X) on the table and opened the window so that visitors could view the red light on a tower above a campus building to the north.

Since it was raining Everett set up the London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece, 66X) and the observatory's Orion AstroView 6 (15cm) Newtonian reflector inside the dome so as to view out the door to the roof patio. Visitors were invited to view the edge of the Engineering building roof through the 25.4cm Dobsonian and the lights on the communications tower in south London through the 15cm Newtonian reflector.

Visitors toured the observatory downstairs "Black Room" and "Period Room" with Physics and Astronomy staff member Henry Leparskas, and were welcomed by undergraduate student William Hyland and London Centre member Tricia Colvin. They were given a demonstration of the "Transit Demo" model—showing how the transit detection method worked for finding extra-solar planets—in the "Black Room" and given a tour of the historic "Period Room."

The visitors were mostly gone by around 10:45 p.m. with the observatory being closed down at 11:00 p.m. after an interesting and enjoyable evening learning about astronomy, despite the cloudy rainy weather.

#### **RASC London Centre Star Night, April 2016**

**By Robert Duff**

#### **Star Night, Matthews Hall School, Thursday, April 14th, 2016**

Clear skies greeted some 60 or more enthusiastic children and parents for the Star Night at Matthews Hall School in London, Thursday, April 14th, 2016, 8:00 p.m. The Star Night involved the whole school from JK to Grade-8 and outdoor lighting was turned off for better viewing through telescopes.

There were 10 RASC London Centre members who set up 9 telescopes on the north end of the school's grassy soccer field, including Norman McCall, with his Explore Scientific 152mm Maksutov-Newtonian Comet Hunter and his 10-inch (25.4cm) Meade DS-10 Newtonian reflector (operated by a friend); Steve Gauthier, with his 8-inch (20.3cm) Newtonian reflector on a Celestron Losmandy G11 mount; Gaetan Godin with his home-built 20.3cm Newtonian reflector on a Sky-Watcher NEQ6 PRO SynScan mount; Paul Kerans with his 22-inch (56cm) Obsession Truss-Tube Dobsonian; Charlene Kerans with her 9.25-inch (23.5cm) Celestron Schmidt-Cassegrain on a Sky-Watcher EQ6 mount; Everett Clark with his 11.4cm Tasco Newtonian reflector on a Super Polaris mount; Rob McNeil with his Williams Optics Megrez 72mm refractor; and Bob Duff with his Meade Starfinder 8 (20.3cm) Newtonian reflector on its Dobsonian mount. Peter Jedicke and Chris Sandelli were also there, assisting with observing and answer questions.

Early in the evening Steve Gauthier directed his 8-inch (20.3cm) Newtonian reflector, with a 22mm Panoptic eyepiece (55X) and white-light solar filter installed, towards the nearly setting Sun, revealing a large sunspot. As the sky darkened, Steve removed the solar filter from his telescope to show people other celestial objects. Children and parents lined up to view the one-day-past-first quarter Moon through Bob Duff's 8-inch (20.3cm) Dobsonian, with the Meade MA25mm eyepiece (49X). Bob soon swapped in his 7mm Nagler eyepiece (174.3X) for better views of the Moon, Jupiter, the Orion Nebula (M42) and the red giant star Betelgeuse, through his 8-inch (20.3cm) Dobsonian.

Norm McCall showed people Jupiter and the Orion Nebula (M42) through his 152mm Maksutov-Newtonian and his colleague showed them the Moon and Jupiter through the Meade DS-10 Newtonian reflector. Paul and Charlene Kerans showed people the Moon, Jupiter and M42 in their 22-inch (56cm) Truss-Tube Dobsonian and 9.25-inch (23.5cm) Celestron Schmidt-Cassegrain telescopes, respectively.

Gaetan Godin showed people the Moon and Jupiter through his 20.3cm Newtonian reflector. Gaetan also used his green laser pointer to call people's attention to the planet Mercury near the northwestern horizon, although he did not show them Mercury through his telescope because it was intermittently obscured by tree branches. However, Everett Clark showed people Mercury—



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well as the Moon and Jupiter—through his 11.4cm Tasco Newtonian reflector.

Rob McNeil showed people Moon and Jupiter through his 72mm refractor and called everybody's attention to the International Space Station (ISS) pass, travelling from northwest to east, 8:42—8:48 p.m. There was also a bright Iridium flare visible in the north later in the evening—an Iridium satellite with its large solar panels reflecting the Sun from high above the Earth.

Peter Jedicke counted 58 children and adults midway through the evening with several later arrivals bringing the number to perhaps 60 or more people. The children and parents were mostly gone by around 10:00 p.m. and RASC London Centre members packed up their telescopes after a very successful and much appreciated stargazing evening at Matthews Hall School.