

POLARIS



Newsletter of the London Centre, RASC
March, 2019

Where to go? Where to go?

While the club has a very nice dark site just outside the city at the Fingal Wildlife Management Area, sometimes it's nice to really get out from under it; it being light pollution. There are several sites in SW Ontario that make the grade, but fewer and fewer as time goes on. River Park, the home of StarFest no longer has usable skies and hasn't for many years. Miller Lake, along with other areas in the northern Bruce Peninsula have wonderful skies, but no control over campground lighting and Manitoulin is a stony, buggy, expensive mess. So what's a person to do?

If you have a passport, just across the border in the northern US is a complete GEM of an astronomy friendly park; as a matter of fact, it's an astronomy ONLY park. I'm speaking of Cherry Springs State Park in Potter County, Pennsylvania. Only 200km south and east of Buffalo, NY the skies here are as

close to pristine as you'll find within single-day striking distance of London.



The main town of Potter County is Coudersport, a pretty town nestled in the mountains of northern Pennsylvania and where Eliot Ness of the Untouchables retired to run the Coudersport Printing Company. All of the county

The park itself lies at an elevation of 700m atop the Allegheny Plateau. Its name

comes from the large stand of black cherry trees within the park grounds. It lies on Pennsylvania Rte 44 at the junction of County Rd 2002. It is pretty much equidistant from Sweden Valley (just E of Coudersport) and Galeton (along Rd 2002). The drive in either direction is very pretty as both roads wind through valleys and over ridges. To the east of the park on the way to Galeton is Lyman Run State Park where the ranger office is. The park is patrolled regularly by officers of the Department of Conservation and Natural Resources, who keep a tight lid on the park's rules.

Cherry Springs is one of the darkest areas in the northeastern United States and, in 2007, became the second International Dark Sky Park. The park itself comprises of 33 hectares atop the plateau with a camping area on the west side of Hwy 44 and a day (night) use area to the east. An airstrip used to lie east side and after closing in 2005 and part of it are now used for astronomy programs and casual observing.



The main astronomy area has room for many campers and RVs. Most of the spots are within easy reach of provided electrical power (15A max) and they don't want you plugging in your RV. I do, but the only thing I run from the power are a few LED lights, the laptop and the telescope. There are no sewer hookups but there is a free dumpstation at the park. There are well-maintained washrooms provided and several potable water standpipes. There are picnic areas on the south edge with a large 'pavilion' that is used during star parties for the talks and door prize draws. It also provides an 'escape' if one is tenting and the skies open up with rain. Strewn throughout the main astronomy area are circular concrete pads where telescopes can be setup. These are always near a power pole.

The fields themselves are turf on top of clay. During a wet year you can find water running just under the surface as the clay inhibits drainage. If you're tenting look for the 'high ground', which is only a bit higher than the low ground. There are one or two spots where even a trailer should be put. They're rather obvious from the topography.

Horizons are very good in all directions unless you get too close to the trees that surround the park. If you stay to the centre of the site there are no bad sightlines.



Two star parties are held at the site every year, the Cherry Springs Star Party in May or June and the Black Forest Star Party in Aug or Sept. The weather is usually better for BFSP and it is a bit cooler, even though the park is at 700m it can get very hot during the day. There are usually a decent set of vendors that attend including Televue many years but the swap tables are never really well populated. If you forget something you can usually find it at the vendor tent. If you go outside the star parties (the park is well populated with observers even in winter) you'll have to head for Coudersport where there is a Radio Shack or Galeton where there isn't much.



The rules for both star parties are pretty generic.

- No Pets allowed. If you bring Rover or Fluffy you'll be asked to leave
- No green lasers. If you fire one up you'll be asked to leave
- No headlights after dark UNLESS EMERGENCY
- Bag your garbage and put it in the bear proof receptacle at the gate

DCNR has their own rules which are provided at the main gate. The most important to remember is that all Pennsylvania state parks are DRY! No use of alcohol will be tolerated.

Away from the site there are some things to keep you busy during the day. Hiking, canoeing, swimming and fishing are available at Lyman Run about 10km from Cherry Springs. There is the 'world famous' ice mine in Coudersport, antiquing in the small towns in the area (all a bit of a drive). There are some walking trails with interpretive signage around the astronomy field. Bicycling isn't recommended. The park is at the top of a mountain so everything is downhill and the narrow, twisting roads host some

large trucks with little shoulder to 'escape' to.

Getting there...

From London you're on divided highway until just south of Buffalo. Hwy 401, 403 and the QEW take you to Fort Erie then I190. Once south of Buffalo you get a choice of secondary routes, 219 on the west or 400 on the east. They're about the same. I do my shopping for perishables in the US, either at Springville or Olean (depending on the route I take). My old TomTom and my new Garmin both 'know' about the park, but both will take you through 'banjo country' as I call it; narrow, winding mountain roads. This might be fun at times but when pulling a trailer can get old quickly.

More information...

<https://www.dcnr.pa.gov/StateParks/FindAPark/CherrySpringsStatePark/Pages/default.aspx>
<https://www.facebook.com/CherrySpringsStarParty/>
<http://bfsp.org/>

RASC London Centre Library

Books of the Month

As always, these “Books of the Month” are available for loan to members, to be returned at the following monthly meeting. The books for March 2019 are as follows:

The Backyard Astronomer's Guide, by Terence Dickinson & Alan Dyer. Revised Edition. 2002.

Cataclysmic Cosmic Events and How to Observe Them, by Martin Mobberley. c2009. (Astronomers' Observing Guides)

NightWatch: a Practical Guide to Viewing the Universe, by Terence Dickinson. 3rd Edition, Revised and Expanded for Use Through 2010. 1998 (2003 printing).

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If there is anything you wish to borrow from the Library, please feel free to contact me by telephone at (519) 439-7504 or by e-mail at [**rduff@sympatico.ca**](mailto:rduff@sympatico.ca)

Outreach

Cronyn Observatory Events, February 11th March 9th, 2019

By Robert Duff

Girls and Women in Astronomy Night at the Cronyn Observatory, Monday, February 11th, 2019

Cloudy skies and very cold, windy weather greeted some 88 visitors to Western University's Cronyn Observatory for the "Girls and Women in Astronomy Night," Monday, February 11th, 2019, 5:00—9:00 p.m. This special event formed part of the International Astronomical Union (IAU) Global Projects, encouraging astronomy-specific events world-wide, celebrating the theme "*Girls and Women in Astronomy*." This event was jointly hosted by the Department of Physics and Astronomy and the Centre for Planetary Science and Exploration (CPSX) at Western University. Physics and Astronomy graduate student Viraja Khatu and Cronyn Observatory Director Professor Jan Cami, together with Outreach Program Coordinator for Western's Centre for Planetary Science and Exploration (and PhD graduate) Parshati Patel, organized the event.

Activities included (1) Short Presentations by women and non-binary astronomers (5:15—6:00 p.m.), (2) the Women in Astronomy Quiz (6:00—6:30 p.m.), (3) the Ask a Woman Astronomer Panel (6:30—7:00 p.m.), (4) a Raffle and Prizes (7:00—7:15 p.m.), (5) Stargazing through the Cronyn Observatory's main 25.4 cm refractor and other telescopes (7:00—9:00 p.m.) and (6) tours of the Historical Displays of the Cronyn Observatory (7:00—9:00 p.m.).

Speakers for the Short Presentations included faculty members Dr. Els Peeters, Dr. Sarah Gallagher, Dr. Pauline Barmby and Dr. Maryam Tabeshian; and graduate students Ameek Sidhu, Megan Tannock, Chimira Andres, Jahnvi Shah and Amy Fare. The Ask a Woman Astronomer Panelists included faculty members Dr. Sarah Gallagher, Dr. Pauline Barmby and Dr. Maryam Tabeshian; alumna Dr. Sahar Rahmani; and graduate students Kelsey Doerksen and Megan Tannock. Dr. Sahar Rahmani took part in the Panel via Skype, appearing on the projection screen at the front of the lecture room.

Viraja Khatu introduced the speakers for the Short Presentations. The Ask a Woman Astronomer Panel leader was Parshati Patel. Department of Earth Sciences graduate student Leah Sacks conducted the Women in Astronomy Quiz. Graduate student Farnoush Attarzadeh presided over the welcome table, just inside the lecture room door to the left.

RASC London Centre was represented by Everett Clark, Henry Leparskas, Mohammed Mubeen, Paul Kerans and Charlene Kerans, later joined by Bob Duff (7:00 p.m.) and Dale Armstrong (8:00 p.m.). Lynn Jones was there for the presentations and panel discussions. Since the skies were cloudy, Paul and Charlene left around 7:00 p.m. after the presentations and panel discussion. Henry photographed the event with his digital single-lens reflex camera.

Graduate student Ben George operated the big 25.4cm refractor (52mm Erfle eyepiece, 84X) in the

dome showing visitors the 7-day-past-new Moon, which was occasionally glimpsed through hazy clouds. Everett set up the observatory's 8-inch (20.3cm) Schmidt-Cassegrain (26mm Plossl eyepiece, 77X) inside the dome so as to view out the door to the observation deck towards a red light on a building, and later towards a red light on the communications tower in south London. He also set up the London Centre's 25.4cm Dobsonian inside the dome, with Bob Duff later installing the 17mm Nagler eyepiece (66X). Everett later moved the 20.3cm Schmidt-Cassegrain, and Bob and Mohammed Mubeen, the 25.4cm Dobsonian, outside on to the observation deck. Bob and Mohammed supervised visitors' viewing the Moon through these 2 telescopes. The Moon appeared as a hazy, almost featureless disk through all the telescopes.

Bob gave one visitor a tour of the dome, before bringing him downstairs to see the "*Black Room*" and "*1940s Period Room*." Downstairs in the "*Black Room*" Professor Jan Cami did the "*Transit Demonstration*," with the "*Transit Demo*" model—showing how the transit detection method worked for finding extra-solar planets, and the "*Spectroscopy Demonstration*," with the visitors putting on *diffraction grating* glasses to view the spectra of 4 gas discharge lamps, including hydrogen, helium, neon and mercury.

Henry Leparskas gave one tour of the "*1940s Period Room*," a recreation of 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; and the "*1967 Period Room*," recreating the early control room of the Elginfield Observatory to celebrate the 150th anniversary of Confederation—Canada 150. The "*W. G. Colgrove Workshop Period Room*," was also open for visitors' inspection. The 3 "*Period Rooms*" were designed by RASC London Centre member Mark Tovey.

Dale Armstrong arrived around 8:00 p.m. and brought the observatory's 32mm Erfle eyepiece, which he had repaired. Dale set up his equipment and photographed the "*1967 Period Room*" after the visitors had gone.

The event was over by 9:00 p.m. and Everett, Henry and Bob waited until Dale had finished photographing the "*1967 Period Room*" before leaving around 9:30 p.m. Jan, Viraja and Parshati closed down the Cronyn Observatory after the RASC London Centre members had left. It was an excellent evening celebrating the theme of "*Girls and Women in Astronomy*."

Goderich District Collegiate Institute at the Cronyn Observatory, Friday, February 22nd, 2019

A clear sky, later becoming partly cloudy, greeted 44 visitors (41 students, 2 teachers and 1 teaching assistant) from the Goderich District Collegiate Institute Grade 9 class, to Western University's Cronyn Observatory, Friday, February 22nd, 2019, 10:00 a.m.—2:00 p.m. This daytime event was jointly hosted by the Department of Physics and Astronomy and the Centre for Planetary Science and Exploration (CPSX) at Western. The students were divided into 2 groups who alternated for 2 hour sessions between the Cronyn Observatory and CPSX, with a half-hour noon lunch break. Graduate students Jeff Vankerkhove and Hadi Papei, at the Cronyn Observatory, and Outreach CPSX Program Coordinator Parshati Patel (PhD), welcomed the 2 groups at their respective locations.

Jeff presented the digital slide presentation "*Solar Powerhouse*" to the first group of 23 visitors (21 students, 1 teacher and 1 teaching assistant) shortly after 10:00 a.m. Jeff followed this with the

“*Telescope Kits*” activity, showing several slides on how a telescope worked and the difference between a refractor and reflector telescope. Jeff and Hadi showed the students how to assemble and test small telescopes from reusable kits. The “*Solar Powerhouse*” slide presentation and “*Telescope Kits*” activity were also done with the second group of 21 visitors (20 students and 1 teacher), after they arrived around 12:20 p.m.

RASC London Centre was represented by Bob Duff, soon joined by Mohammed Mubeen, who arrived around 10:15 p.m. They set up the observatory’s Coronado 90mm H-Alpha Solar Telescope on the Sky-Watcher EQ5 mount on the observation deck. Bob installed the CEMAX 25mm eyepiece (32X) and centred the Sun in the telescope’s field of view. He then swapped in the CEMAX 12mm eyepiece (66.7X) to get a better view of the Sun. Some very tiny prominences were visible on the Sun’s edge as well as some mottling on the solar surface. Bob and Mohammed also set up the observatory’s Meade 8-inch (20.3cm) Schmidt-Cassegrain (26mm Plossl eyepiece, 77X) with the Kendrick Astro Baader film solar filter—which revealed a featureless Sun with no sunspots. Since clouds frequently obscured the Sun, they also set up the RASC London Centre’s 25.4cm Dobsonian, with Bob installing the 17mm Nagler eyepiece (66X) to view the wind turbine on the Engineering building.

Bob gave 2 telescope talks in the dome, one to each group, on the history of the observatory and technical aspects of the big 25.4cm refractor, using the 17mm Nagler eyepiece (258X) for demonstration with the first group of students and the Meade 28mm Super Wide Angle eyepiece (157X) with the second group of students. He called their attention to the Schmidt camera and Cassegrain reflector piggy-backed on the main telescope, opening and closing the shutter on the Schmidt camera to demonstrate how it worked. Bob also rotated the dome to demonstrate how it worked and explained the 2 clocks on the east wall and the difference between Standard and Sidereal Time.

Bob and Mohammed supervised as the first group of students viewed through the 3 telescopes. Mohammed brought out 4 solar eclipse glasses (supplied by Western University) from the storage room for the first and second groups of students to view the Sun. Mohammed left around 12:15 p.m., before the second group of students arrived around 12:20 p.m. Bob supervised telescope observing for the second group of students.

Solar prominences were not glimpsed, but some mottling was noticeable on the Sun’s surface, which appeared as a red disk, when viewed through the Coronado 90mm H-Alpha Solar Telescope (CEMAX 12mm eyepiece, 66.7X). The Sun appeared as white featureless disk, with no sunspots, when the students viewed it through the 20.3cm Schmidt-Cassegrain (26mm Plossl eyepiece, 77X) with the Kendrick Astro Baader film solar filter. The students viewed the wind turbine through the 25.4cm Dobsonian (17mm Nagler eyepiece, 66X) when clouds obscured the Sun.

The second group of students was gone by 2:00 p.m. It was a very interesting and enjoyable event for all the students learning about the Sun and observing through the telescopes.

Cronyn Observatory Public Night, Saturday, March 9th, 2019

Cloudy skies greeted some 61 visitors (including 40 adults and 21 children) to Western University’s Cronyn Observatory Public Night, Saturday, March 9th, 2019, 7:00—9:00 p.m. Graduate student Viraja

Khatu presented the digital slide presentation “*Speaking the Language of Colours – exploring the visible and the invisible universe*” and fielded questions.

RASC London Centre was represented by Bob Duff, who was later joined by Everett Clark who arrived around 7:30 p.m. Bob set up the observatory’s Meade 8-inch (20.3cm) Schmidt-Cassegrain (20mm Plossl eyepiece, 100X) inside the dome so as to view the TV screen in the Western Sports & Recreation Center windows, through the door to the observation deck. He also set up the RASC London Centre’s 25.4cm Dobsonian (17mm Nagler eyepiece, 66X) inside the dome for demonstration.

Graduate student Hadi Papei was telescope operator and directed the big 25.4cm refractor (Meade 28mm Super Wide Angle eyepiece, 157X) towards the lights on the communications tower in south London. Hadi supervised throughout the evening as visitors climbed the observing ladder to view through the telescope. Bob gave a brief telescope talk to some visitors in the dome at the beginning of the evening. When Everett arrived he took over supervision of visitors viewing the TV screen in the Western Sports & Recreation Center windows through the 20.3cm Schmidt-Cassegrain.

A visitor inquired about the history rooms and with keys from Viraja, Bob opened the “*1940s Period Room*” and gave several visitors a tour, explaining that it was a recreation of Dr. H. R. Kingston’s 1940 office. He demonstrated the *Sotellunium*—a mechanical eclipse demonstration model built by W. G. Colgrove—and showed them Dr. Kingston’s brass telescope and the guest book for the October 25th, 1940 official opening of the observatory. At the request of 2 other visitors, Bob also opened the “*1967 Period Room*,” recreating the early control room of the Elginfield Observatory to celebrate the 150th anniversary of Confederation—Canada 150. Bob also opened and showed visitors the “*W. G. Colgrove Workshop Period Room*.” The 3 “*Period Rooms*” were designed by RASC London Centre member Mark Tovey.

Bob gave a second brief tour of the “*1940s Period Room*” for a family of 2 adults and 2 children. He also showed them—but did not demonstrate—the “*Spectroscopy Demonstration*” in the “*Dark Room*.” The children were familiar with spectroscopy as well as the Periodic Table of Elements displayed on the wall of the “*Dark Room*.”

Bob also showed visitors the 3D replica of the Dresden Meteorite in its display case in the “*1940s Period Room*.” The last visitors were gone by around 9:00 p.m. after a very enjoyable evening learning about astronomy and viewing through telescopes despite the cloudy sky.

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