

POLARIS



Royal Astronomical Society of Canada London Centre Newsletter April 2011

My ATM Project Matt Neima

In May of last year, thanks to a tip from John Kuleczycki on our RASC email list, I got a free 10" Newtonian telescope that was posted on astrobuysell.com. It was as about 6 foot tall, heavy and awkward, and barely fit into my car.

First light Patrick Whelan showed me how to collimate it. We tried it out on Saturn with an improvised DOB mount. It gave a nice view of Saturn but it needed to be made more portable, a mount, to shed some weight, and to lose some sharp edges.

I considered building a classic truss tube DOB. So, I read through the Kriege and Barry book. At the same time I was pouring over Gary Seronik's ATM articles on his web site, particularly a series of articles (<http://www.garyseronik.com/> - 'Telescope Making Diary') on a hybrid portable DOB project of his. What I liked about this design is that it was simpler to build and to assemble/disassemble. While I didn't build my telescope like Gary's, this was the inspiration for how the telescope would work.

In the end I went with a simple split tube design. It has some weak points where it will fail eventually, but since I built it, I'll know how to fix it.

The optical tube is made from 12" sonotube. I cut two lengths roughly 32" each, one for the top and one for the bottom. I glued a 5" section of sonotube inside the top tube leaving about 2" extending outside to use as a flange to join the top and bottom tubes. Each of the tubes has a wooden ring glued at their ends.

Before attaching the rings I taped them together and drilled 3 holes through them on a drill press. One of the rings has three 1/4" nuts epoxied into the holes. The top tube fits inside the bottom tube via it's flange, and I thread 3 knobs through the 2 wooden rings to attach the two tubes (this is where the telescope is weakest).

I glued extra pieces of sonotube inside the tubes for a double wall where I attached things to the telescope, like the

primary and the spider. NOTE - if you build a sonotube telescope, Dave McCarter and Mike Hanes have built very strong optical tubes by fitting one sonotube inside another (for a given 'nominal' size the sonotubes vary, larger and smaller; they are usually found in lumber stores nested inside each other) and filling the gap with spray foam insulation.

The rest is classic 'circus canon' telescope, but there are some things worth noting:

I had a lot of help from fellow RASC members!

Taping two rings together and drilling holes didn't work, they don't line up properly. Now not only are the rings the weak point, they're ugly! Good thing I'll be using this telescope in the dark.

Richard 'Gretschman' Henderson told me about a sale at 1800Destiny.com for a curved vane spider at a nice price.

My secondary mirror came from Joe O'Neil, it is 1.3", the original was 2.5". I used the Newt program to convince myself this would work, it works fine.

I found a cool trick on the internet for finding the focal length of your primary mirror. Tape a blank piece of paper to a piece of cardboard. Prop your mirror up at the end of a hall. From about 2X the estimated focal length of the mirror hold a flashlight beside the paper and aim it at the mirror (NOTE the filament, and not the front, of the flashlight should be on the same plane as the paper). Move the paper/flashlight closer or farther from the mirror until you get the image of the flashlight on the paper - it will look very much like a photographic image. Measure the distance from the paper to the mirror, divide this number in half and you will get your focal length. When I did this I arrived at 55.5", this is what is written on the side of my primary so I'm confident this works.

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Moon Phases



April 11 2011



April 18 2011



April 25 2011



May 3 2011

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For now I'm using a commercially made DOB mount and the plastic bearings that came with it. This mount doesn't work well but gets the job done.

First light for this telescope was Wednesday April 13 at 10 p.m. I aimed the scope at Saturn just like the first time I used this mirror. Again the telescope gave a nice view of Saturn, but this time without it's original shortcomings. Over the next few weeks I will paint it, and make a better mount for it.

The telescope was 'completed' just in time for this issue of the Polaris.

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LONDON RASC MONTHLY MEETINGS

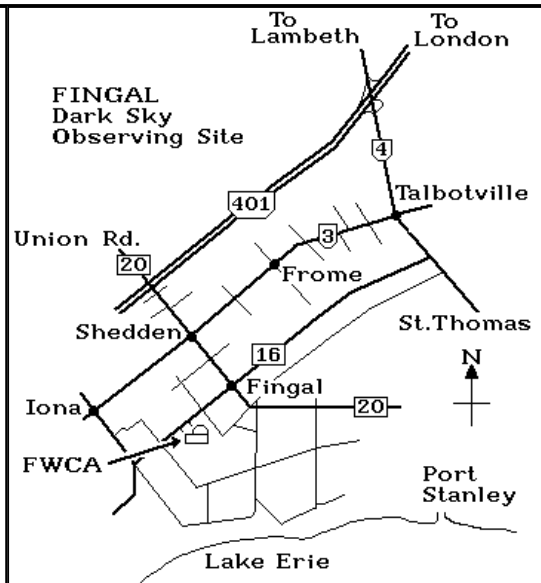
The London RASC group meets at Fanshawe College in London Ontario, September through July on the third Friday of the month at 19:00. We meet in room B1073.

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

Our dark sky observing site is at the **Fingal Wildlife Management Area**.



Sky Events for late April and early May 2011

April 19 Mars 0.8 N of Mars
 April 22 Venus 0.9 S of Uranus
 May 1 Mars 0.4 N of Jupiter
 May 7 Moon 1.7 S of M35
 May 7 Mercury greatest elongation W (27)
 May 8 Mercury and Venus 1.4 apart
 May 10 Mercury 2.0 S of Jupiter
 May 11 Venus 0.6 S of Jupiter
 May 18 Double shadow transit on Jupiter
 May 18 Double shadow transit on Jupiter
 May 18 Mercury and Venus 1.4 apart
 May 20 Mercury 2.0 S of Mars



Mercury is in inferior conjunction
Venus is brilliant in the eastern morning sky
Mars is visible in the dawn sky
Jupiter in conjunction with the Sun on the 6th
Saturn is visible most of the night
Uranus reappears in the dawn sky
Neptune in the eastern morning sky

R.A.S.C. London Centre Library Books of the Month April 2011 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 2011 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 Three, Pavo—Vulpecula.

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.

Relativity: the Special and the General Theory, by Albert Einstein. Authorized translation by Robert W. Lawson. Introduced by Roger Penrose. London: The Folio Society, 2004.

For a complete listing of our library collection please see our RASC London Centre Library Web page at: http://www.astro.uwo.ca/~rasc/newrasc_library.html

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



Star Nights & Other Events

By Robert Duff

Cronyn Observatory Open House, Saturday, March 26, 2011

Graduate student Robin Wing began his digital slide presentation on the Solar System a little after 7:00 p.m. before a group of 20 visitors at the Cronyn Observatory Open House, Saturday, March 26th. More people soon arrived so that there were 50 or more visitors by the end of the evening.

RASC London Centre was well represented by Dave McCarter, Adam Priestap-Suttis and his mother Cheryl, Paul and Charlene Kerans, Mike Roffey, Patrick Whelan and Bob Duff.

Bob gave a brief talk about the big 25.4cm refractor in the dome, answered questions and directed the telescope so people could view the communications tower in south London. As twilight deepened Bob directed the telescope towards Sirius and then the Orion Nebula (M42), with the 32mm Erfle eyepiece giving a nice view at 137X.

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People also viewed celestial objects through Adam's 20.3cm Sky-Watcher set up on the Observatory roof patio alongside the London Centre's 25.4cm Dobsonian, operated by Dave and later Patrick. Saturn rose in mid-evening making a pleasing sight in the 25.4cm Dobsonian.

Mike set up his 30.5cm Sky-Watcher Truss-Tube Dobsonian along with Paul and Charlene, who set up their 30.5cm Meade Lightbridge Truss-Tube Dobsonian on the walkway in front of the Observatory. They viewed, amongst other things, the galaxies M81 and M82. In all it was an excellent evening with RASC London Centre members setting up 4 amateur telescopes.

Many thanks go to Robin and everybody from the RASC London Centre for a great evening of astronomy under cold clear skies!

Exploring the Stars, Cronyn Observatory, March 22nd—April 7th, 2011

By Robert Duff

Four RASC London Centre members assisted at 7 out of 9 Exploring the Stars events, taking place Tuesday, Wednesday and Thursday evenings, March 22nd—April 7th. These were Paul and Charlene Kerans, Dave McCarter and Bob Duff, operating the big 25.4cm refractor in the dome and the London Centre's 25.4cm Dobsonian. Graduate students Alexander DeSouza, Emily McCullough and Robin Wing made slide presentations and did activities with the groups. Visiting groups included the 23rd London Brownies (March 22nd), 20th London Beaver (March 23rd), Space Society of London (SSoL) (March 24th and 31st), 5th London Girl Guides (March 29th), St. Thomas Aquinas Secondary School Grade-9 (March 30th), UWO Lab School Kindergarten (April 5th), 74th London Cubs (April 6th) and Jeanne Sauve Public School Grades 5-8, (April 7th). In all there were some 227 visitors at these 9 Exploring the Stars events.

Exploring the Stars, 68th London Cubs March 22nd, 2011

Cloudy skies greeted some 25 visitors (20 children and 5 adults) from the 23rd London Brownies to the Cronyn Observatory for Exploring the Stars, Tuesday, March 22nd, 6:30 p.m. Graduate student Alexander DeSouza started the evening with the activity, "Solar System Walk," a 20-minute sidewalk tour of the solar system to Mars. (Jupiter involved crossing the street and this was ruled out for children.) This was followed by the slide presentation, "Brownie Exploration Space Badge." Alexander gave them a tour of the big 25.4cm refractor in the dome and answered questions. Overcast skies ruled out observing. Returning to the lecture room Alexander had the children do some additional activities involving a constellation name word search and the children were invited to come up with their own constellation and story behind it.

Exploring the Stars, 20th London Beaver Group, March 23rd, 2011

Cold cloudy weather greeted the 20th London Beavers (22 children and 16 adults) at the Cronyn Observatory for Exploring the Stars, Wednesday, March 23rd, 6:30 p.m. Graduate student Robin Wing made the digital slide presentation, "Girl Guides Astronomy Badge," which was most interesting to the group. Bringing the group upstairs into the dome, Robin showed them the lights on the communications tower in south London through this big telescope, using the 32mm Erfle eyepiece (137X). RASC London centre member Bob Duff showed them the weathervane on the roof of the Engineering Building through the 25.4cm Dobsonian, using the 17mm Nagler eyepiece (67X). Everybody was gone by 8:00 p.m. after a most enjoyable and interesting evening, despite the cloudy sky.

Exploring the Stars, Space Society of London (SSoL),
March 24th, 2011

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April 2011 Pocket Sky Atlas Challenges

It beckons.

Many months' cold and snow have dulled out enthusiasm for the night sky, but now the excuses don't seem so valid. Now, warmer spring breezes push us back to places of wonder in the night sky. Prepare your equipment, find your charts and guides, get ready to taste the night again.

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

Between April 16th and 25th, peaking on the 21st, 22nd is the Lyrids Meteor Shower. Look near Vega, page 63, toward the border of the Constellations Lyra and Hercules low in the east, north east.

Naked Eye:

Regulus, Algieba, Adhafera and Rasalas, Page 35

Small Scopes and binoculars:

Tania Australis and Tania Borealis, page 33; Alphecca page 53

Larger Scopes:

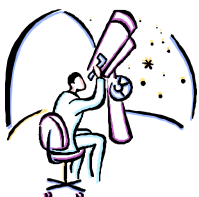
NGC 6207 page 52; NGC 4144 and NGC 4203, Page 43.

Bonus objects:

NGC 188 Page 41 ; IC 2574 Page 31.

Happy hunting.

John Kulczycki



Graduate student Emily McCullough made her digital slide presentation "Constellations and Navigation" before members of the Space Society of London (SSoL) at the Cronyn Observatory for Exploring the Stars, Thursday, March 25th, 7:00 p.m. Dave McCarter and Bob Duff represented the RASC London Centre.

Clouds gave way to clear skies and Emily directed the big 25.4cm refractor (32mm Erfle eyepiece, 137X) in the dome towards the Orion Nebula (M42). She also showed them the middle star in Orion's Belt, Alnilam (Epsilon Orionis), Mizar and Alcor and Saturn. Using the RASC London Centre's 25.4cm Dobsonian (17mm Nagler eyepiece, 67X), Dave McCarter showed them M42, the open cluster M37, the Double Cluster in Perseus and Saturn as it rose above the eastern horizon. Despite the cold weather, observing continued on until 10:00 p.m. In all there were 8 visitors, including 7 who attended the slide talk and one person who arrived later.

Exploring the Stars, 5th London Girl Guides, March 29th, 2011

Cold clear weather greeted 36 visitors (21 children and 15 adults) from the 5th London Girl Guides to the Cronyn Observatory for Exploring the Stars, Tuesday, March 29th, 6:30 p.m. Graduate student Alexander DeSouza and RASC London Centre member Bob Duff showed them views of the Sun, low in the western sky, through the new Meade / Coronado 90mm solar telescope set up on the walkway in front of the Cronyn.

After this, Alexander made the digital slide presentation "Girl Guides Astronomy Badge" in the lecture room. As twilight deepened Alexander showed the Guides Sirius, the Orion Nebula (M42) and Saturn through the 25.4cm Dobsonian, using the 17mm Nagler eyepiece (67X). Bob showed them Sirius, Betelgeuse, the double star Castor, and Saturn through the 25.4cm refractor in the dome, using the 32mm Erfle eyepiece (137X). They left the observatory at 9:10 p.m. after a very interesting and enjoyable evening.

Exploring the Stars, St. Thomas Aquinas Secondary School, March 30th, 2011

Cloudy weather greeted 10 visitors (8 Grade-9 students and 2 adults) from St. Thomas Aquinas Secondary School to the Cronyn Observatory for Exploring the Stars, Wednesday, March 30th. Graduate student Robin Wing made the digital slide presentation "Big Bang" and answered questions. This was followed by a tour and viewing the communications tower in south London through the big 25.4cm refractor, using the 32mm Erfle

eyepiece (137X). RASC London Centre member Bob Duff showed them views of the weather vane on the roof of the Engineering building through the 25.4cm Dobsonian, using the 17mm Nagler eyepiece (67X). Returning to the lecture room Robin made a second digital slide presentation on the "Solar System." The students left around 8:30 p.m. after an interesting and enjoyable evening about astronomy.

Exploring the Stars, Space Society of London (SSoL), March 31st, 2011

Graduate student Emily McCullough made her digital slide presentation on "Mars" before 8 members of the Space Society of London (SSoL) at the Cronyn Observatory for Exploring the Stars, Thursday, March 31st, 7:30 p.m. (Another member arrived towards the end of the evening, bringing the total to 9 visitors.) Bob Duff represented the RASC London Centre, setting up the photographic display with brochures.

Emily distributed 3-D glasses to everybody and then showed them three-dimensional images of Mars taken by surface rovers and orbiting spacecraft. The 3-D glasses dramatically exaggerated the depth of some images. She asked the group questions concerning the nature and relative ages of different portions of the terrain shown in the images.

Since it was cloudy, Emily gave them a tour of the big 25.4cm refractor in the dome and Bob explained the London Centre's 25.4cm Dobsonian. Returning to the lecture room Emily showed the group the new Meade / Coronado 90mm solar telescope, recently acquired for Exploring the Stars, as well as the Meade 20.3cm Schmidt-Cassegrain, acquired sometime earlier, explaining how they worked. The group left around 9:30 p.m. after an enjoyable and informative evening.

Exploring the Stars, 74th London Cubs, April 6th, 2011

Graduate student Robin Wing made the digital slide presentation, "Girl Guide Astronomy Badge," before a group of 33 visitors (20 children and 13 adults) at the Cronyn Observatory for Exploring the Stars, Wednesday, April 6th, 6:30 p.m. Since it was cloud with some rain the dome remained closed and RASC London Centre member Bob Duff gave the visitors a tour of the big 25.4cm refractor and demonstrated the 25.4cm Dobsonian. Robin demonstrated how the dome could be rotated with the motor drive. Robin then took the group back downstairs for his second digital slide presentation, "Telescopes." Bob had a brief discussion with one of the leaders and two London Centre brochures were

taken. Also, one “Become a Sidewalk Astronomer” booklet also appeared to have been taken. The group left around 8:06 p.m. after an interesting and enjoyable evening about astronomy and telescopes.

**Exploring the Stars, Jeanne Sauve Public School,
April 7th, 2011**

Alexander DeSouza made the digital slide presentation, “Girl Guides Astronomy Badge,” before 49 visitors (26 students and 23 adults) from Jeanne Sauve Public School, Grades 5—8, at the Cronyn Observatory for Exploring the Stars, Thursday, April 7th, 7:30 p.m. He also incorporated the activity “Kitchen Comet,” which involved making a comet with dry ice. They were a nice sized group, according to Alexander, engaged and inquisitive.

Dave McCarter and Paul and Charlene Kerans represented the RASC London Centre. After speaking about the big 25.4cm refractor in the dome, Alexander turned the observing over to Dave. Paul and Charlene Kerans operated the London Centre’s 25.4cm Dobsonian on the roof patio. Dave reported that the seeing was very steady and they looked at the Moon, but Saturn was not visible due to the hazy sky. Eventually they were able to see Capella. The evening ended around 9:00 p.m.