

# POLARIS



Royal Astronomical Society of Canada  
London Centre Newsletter  
July 2009

## Star Hopping Patrick Whelan

I own a Meade 10" Schmidt Newtonian on a LXSD75 mount. It is a motorized/computerized mount that has GOTO built-in. Most of the time though, I just use it as a motorized mount and use my amateur astronomer skills to point it at what I want. If you know the constellations and can use a finder it isn't too hard to do. (use a planisphere!) You can usually find your way around using the stars that you can see by eye to point the telescope where you want. But when you are in the city there usually aren't many stars to guide you. You can use the GOTO function in times like this or you can use star hopping.

Star hopping is the process of finding a bright object and pointing your telescope at it and then using an eyepiece with a known 'field of view' (FOV) to 'hop' from spot to spot. This article is all about star hopping in the summer Southern skies with all of the deep sky objects it contains.

The type of telescope mount you use determines how you star hop. If you have an equatorially mounted telescope (like mine) then you need charts with RA and DEC lines on them. If you have an ALT-AZ mount then you will need charts for the time and day you are observing. You can't use charts with RA and DEC lines with a Dobsonian very well since you might have the charts for 10pm and you are observing at 1am and the sky has rotated around and your 'up and down and left and right' have shifted around. A computer running planetarium software is great since it can show you the sky as it changes. If you have charts with altitude and azimuth lines (or even a computer program) it doesn't help so much with an equatorially mounted telescope since it does not move up and down and left and right in regards to the horizon. For the purposes of this article I am using planetarium software with RA and DEC lines.

The other bit of info or gear you need is a FOV indicator for the eyepiece you are using. The software I am

using lets me put in the FOV of my eyepieces for the telescopes I own. For almost all of the star hopping assume I am using my 22mm Panoptic in my 10" telescope. It has a FOV of 1 degree.

I started the night pointing my telescope at Antares. It is a very bright star in the Southern sky and it is easy to find. It is in the constellation Scorpius. There is a globular cluster just to the right of it in the sky. The software shows me the FOV superimposed on the sky and it is just a little more than one FOV (or one degree) away in RA only. So I use my hand control paddle to move the scope in RA only about one field of view to the right and voila! There is M4, the Cat's Eye! The night I am observing it is almost right behind a power line and even after it moves it is still quite dim to see. (If I was using a Dobsonian it would have been to the right and also down. Quite a different move.) Next I find M80. It is one hop to the right in RA and two hops up in DEC. It is rather dim in the city sky as well but I found it!

Next I want to find M6 and M7 which are quite low on the horizon. Actually there are just about skimming my neighbour's roof. My starting point there is the star called Shaula in Scorpius. It is the end of the hook shape of Scorpius. Two hops in RA to the left and two hops in DEC up and I find M7, Ptolemy's Cluster. It is an open cluster and quite bright. I am not going into details with all my observing of the night, just the star hopping. This particular night I am using a number of my eyepieces (16mm Nagler, 7.2mm 10mm and 13.4 mm Speers Walers and maybe my 9mm Orthoscopic with and without my Orion Skyglow filter and my OIII filter for nebulas) (yeah okay...I have to tell you the Skyglow filter works quite nice on clusters since it darkens the sky but not the stars..) Now where was I? Right. So from M7 I go two hops to the right in RA and two hops up in DEC and I find M6 the Butterfly cluster. Not quite as bright as M7 but nice and

*(Continued on page 4)*

## Moon Phases



July 22 2009



July 28 2009



August 6 2009



August 13 2009

### Starfest: A Celebration of Astronomy

This is an annual tradition for many people including myself. If you haven't been to a LARGE star party you need to go to Starfest.

It is hosted by the North York Astronomical Association (NYAA) and it is held at River Place Park RR 3, Ayton, Ontario, Canada, Phone:519-665-2228

#### How to find River Place Park:

They are located 8½ miles north of Mount Forest and 1½ miles west of highway #6 on Normanby Township road concession 12.

<http://www.nyaa.ca/index.php?page=sf09/sf.home09>

**Longitude 80° 50' 27" west**

**Latitude 44° 04' 28" north**

**Elevation 400 meters**

## London Centre Executive

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Find the Polaris newsletters on the internet at: [www.patusratus.ca/Polaris](http://www.patusratus.ca/Polaris)

## LONDON RASC MONTHLY MEETINGS

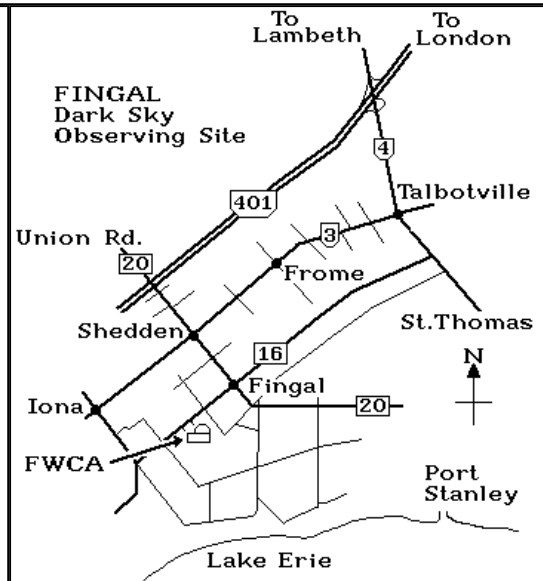
The London RASC group meets at Fanshawe college in London Ontario, September through July on the third Friday of the month at 19:00. They meet in room B1073.

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

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

[www.rasc.ca/London](http://www.rasc.ca/London)

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



## Sky Events for July, August and September 2009

July 18 Moon 0.5° N of Pleiades (M45)	September 3 Double shadow transit on Jupiter
July 21 Total solar eclipse	September 10 Moon 0.3° N of Pleiades (M45)
July 31 Antares 0.5° S of Moon	September 13 Mars 1.1° S of Moon
August 2 Mercury 0.6° N of Regulus	September 16 Zodiacal light
August 5 Penumbral lunar eclipse	September 16 Venus 3° N of Moon
August 12 Perseid meteor shower peak	September 17 Uranus at opposition
August 12 Double shadow transit on Jupiter	August 19 Double shadow transit on Jupiter
August 14 Moon 0.5° N of Pleiades (M45)	August 24 Mercury greatest elongation E
August 14 Jupiter at opposition	August 27 Double shadow transit on Jupiter
August 17 Venus 1.7° S of Moon	August 27 Antares 0.6° S of Moon
August 17 Neptune at opposition	September 2 Venus 1.5° S of Beehive (M44)
August 18 Vesta 0.4° S of Moon	September 3 Jupiter without Galilean satellites
August 19 Double shadow transit on Jupiter	September 3 Double shadow transit on Jupiter
August 24 Mercury greatest elongation E	September 10 Moon 0.3° N of Pleiades (M45)
August 27 Double shadow transit on Jupiter	September 13 Mars 1.1° S of Moon
August 27 Antares 0.6° S of Moon	September 16 Zodiacal light
September 2 Venus 1.5° S of Beehive (M44)	September 16 Venus 3° N of Moon
<b>September 3 Jupiter without Galilean satellites</b> (they are all hidden in front or behind Jupiter)	September 17 Uranus at opposition

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

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

The books for July 2009 are as follows:

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

Volume Two, Chamaeleon—Orion.

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

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

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



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

## Sky and Telescope Subscriptions

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

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easy to find using star hopping!

Now I point my telescope to the star at the top of the tea pot asterism (Sagittarius) which is Kaus Borealis. In the same field of view I can see M28, a globular cluster. It is faint but observable. Two star hops to the left in RA points me at M22 the Sagittarius Cluster. The skies are not very dark and I can't make out the top star in Sagittarius which is Mu Sagittarii. So I start at Kaus Borealis again and go four hops to the right in RA and two hops up in DEC to find M8 the Lagoon Nebula. It is very pretty and I spend a bit of time there. One hop in DEC brings me to M20 the Trifid Nebula and in the same field of view is M21, an open cluster. Another very pretty spot and I try all combinations of eyepieces and filters.

From the Trifid I star hop three hops up in DEC and one hop to the right in RA and I find the open cluster M23. From there I go four hops to the left in RA and two hops up in DEC and find M17. I like the name Swan Nebula for this object since that is what I think it looks like. I observe it for a long time. Two hops up in DEC brings me to the Eagle Nebula M17. The nebula wasn't very noticeable but the star cluster is very nice.

At this point it is getting rather chilly and I can hear

that the railway crossing bells have been going for a long time. I go get a sweatshirt. I am ready to pack it all in but wait! What is that in the Southwest sky? Boy it sure is bright. Oh boy. Jupiter is rising. It isn't above the trees much but I point my scope at it anyway. The bands are very visible as are the moons. The seeing isn't great but I love viewing Jupiter. A quick reference to the computer tells me that Neptune is less than a degree away and exactly straight up in DEC! With my 7.2mm Speers Waler eyepiece Neptune is just at the edge of the field of view with Jupiter at the other edge. That really points out which dot is Neptune! I find Neptune easily using star hopping even though it really is only a fraction of a star hop. But knowing how far away it was in terms of field of view, and what direction, was indispensable! Consulting the software I am certain I am viewing Neptune but it is kind of obvious anyway. It isn't a point like a star, it has some size. Not much size but a little. And it is a cool blue colour as well.

It is getting late and I am getting tired. I pack it all in and call it a night. What a great night of observing and what a wonderful bunch of objects I found in light polluted skies using the time honoured technique called star hopping.

Clear skies and happy hopping!

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### **Cronyn Observatory Saturday Evening Summer Open House, May 2nd—August 29th, 2009**

**By Robert Duff**

#### **Cronyn Observatory Open House, Saturday, June 20th**

Dr. Peter Brown made a digital slide presentation to 33 visitors, which later increased to 45 people during the talk. Dr. Shantanu Basu arrived later and took a seat in the audience. Estimates of the number of visitors ranged as much as 60—80.

Dr. Margaret Campbell Brown showed visitors Saturn through the 25.4cm refractor in the dome, using the 32mm Erfle eyepiece to obtain a magnification of 137X. On the patio Adam Priestap-Suttis, with his father Dave Suttis, showed visitors views through his 20.3cm Dobsonian telescope of Saturn and later the orange and blue double star Albireo. I showed people Saturn through the RASC London Centre's 25.4cm Dobsonian using the Observatory's 17mm Nagler (67X) and 6mm Orthoscopic (190.5X) eyepieces. The best view of Saturn using the 25.4cm Dobsonian was at 190.5X, using the 6mm Orthoscopic eyepiece. I also directed the 25.4cm Dobsonian at the Ring Nebula (M57) for a nice view at 67X, using the 17mm Nagler eyepiece. Dave McCarter and Peter Jedicke joined us on the patio. We closed the Observatory at around 11:00 p.m. after what was a very successful evening of public stargazing.

#### **Cronyn Observatory Open House, Saturday, June 27th**

A cloudy hazy sky greeted visitors at the Cronyn Observatory on, June 27th, as graduate student Ryan Marciniak made the first of two digital slide presentations, "Extra Solar Planets: More Jupiter's than We Need." The initial group of 10 visitors eventually totalled 15 adults and children.

Graduate student Konstantin Fedotov was also there and Peter Jedicke and I assisted by making ready the 25.4cm refractor in the dome and setting up the London Centre's 25.4cm Dobsonian on the observatory's roof patio.

We began by showing people views of the communications tower in south London through the big refractor, using the 32mm Erfle eyepiece (137X). As twilight deepened, hazy clouds thinned out towards the west sufficiently for us to show the thick crescent Moon through the Dobsonian, using the 17mm Nagler eyepiece (67X), and the big refractor, using the 32mm Erfle eyepiece (137X). We later showed people Saturn through both telescopes, although clouds occasionally obscured the view.

People took Galileo moment cards, which I had laid out on the table in front of the RASC London Centre's photographic display and IYA 2009 poster boards.

#### **Cronyn Observatory Open House, Saturday, July 4th**

Clear skies with a few clouds predominated for the Cronyn Observatory Open House on Saturday, July 4th. When I arrived around 8:00 p.m., Steve Imrie was setting up his 20.3cm Dobsonian telescope on the front lawn of the Cronyn and Adam Priestap-Suttis and his father David were setting up their 20.3 cm Dobsonian and the RASC London Centre's 25.4cm Dobsonian on the Observatory's roof patio.

I set up the RASC London Centre's photographic display and IYA 2009 poster board on the table in the lecture room and laid out Galileo Moment cards and London Centre brochures for people to take.

Graduate student Nicole Wityk made a digital slide presentation, "Blowing Bubbles: Not Just for Kids," before a group of 13 visitors, which increased to about 30 by the end

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(Continued from page 4)

of the evening. Graduate student Jeff Bailey operated the big 25.4cm refractor in the dome.

Other RASC London Centre members soon arrived, including, John and Bram Bontje, with their home-built 20.3cm Dobsonian; Mike Roffey, with his 127mm Sky-Watcher Go-To Maksutov; and John Kuleycki, with his 90mm Orion refractor. They all set up their telescopes on the front lawn. Greg Andres and his son Abram took over the London Centre's 25.4cm Dobsonian on the roof patio.

I helped Jeff Bailey get the big refractor in the dome ready, talked with visitors, looked through telescopes on the front lawn and later took over the London Centre's 25.4cm Dobsonian from Greg and Abram. Dave McCarter also arrived bringing a Galileoscope on a camera tripod.

The gibbous Moon, three days prior to full, was the principal object of interest, with increasingly better views as it rose above the hazy clouds in the southeast. Saturn was also a pleasing object in all telescopes. The big refractor in the dome was used with the 32mm Erfle eyepiece (137X) to observe the Moon, Saturn and the orange and blue double star Albireo. The London Centre's Dobsonian worked well with the 17mm Nagler eyepiece (67X) and visitors were shown the Moon, M13, M57 and Mizar and Alcor. The other telescopes brought by members also gave splendid views of the Moon and Saturn.

The Observatory was closed down around 11:00 p.m. after what was one of the most successful nights so far this summer. In all we had 6 amateur telescopes plus the Galileoscope that Dave McCarter brought for demonstration. Many thanks go to the graduate students and RASC London Centre members for an enjoyable and informative evening of exploring the skies.

#### **Cronyn Observatory Open House, Saturday, July 11th**

Peter Jedicke, in his e-mail (July 12th), reported that there were about 30 visitors to the Cronyn Observatory on Saturday, July 11th. Graduate students Jacqueline Otaguro and Emily McCullough were assisted by RASC London Centre members Mike Roffey, who brought his 30.5cm Dobsonian telescope, and Peter Jedicke, who brought his new 50mm Galileoscope on a camera tripod. Saturn, the globular cluster M13 and the orange and blue double star Albireo were the evening's highlights under clear skies.

#### **Star Night, Camp Sylvan, Wednesday, June 17th By Robert Duff**

On Wednesday, June 17th, Dave McCarter gave his Constellation slide show to a group of 36 grade six students from Seaforth Public School, as he reported on the "[General] Announcements and London Centre News" page of our RASC London Centre Web site. Dave reported that there were "loads of intelligent questions" but that observing was ruled out because of clouds and rain. The students assembled "Star Finder" planspheres and received Galileo Moment cards.

#### **Star Night, Springwater Campground, June 27th By Robert Duff**

Steve Imrie reported arriving at the Springwater Campground, Saturday, June 27th, before 8:00 p.m., and meeting the Friends of Springwater campers. He began showing them the thick crescent Moon through his 20.3cm Dobsonian and was soon joined by Dave McCarter, who brought his 25.4cm Dobsonian. Clouds rolled in, then parted, and Steve and Dave were able to show the people the Moon, Saturn, the globular cluster M13, the double stars Mizar and Alcor and Cor Caroli and the Ring Nebula (M57). They distributed Galileo Moment cards and Dave reported that there were 37 campers, mostly children. They left the campground around 11:40 p.m. This report is based on e-mails from Dave McCarter (June 28th and 29th) and Steve Imrie (June 30th).

#### **Star Night, Dalewood Conservation Area, July 11th By Robert Duff**

Mostly clear skies and a light wind made for a memorable star night at the Dalewood Conservation Area Campground on Saturday, July 11th. Steve Imrie was already there when I arrived around 8:15 p.m. Steve mentioned two International Space Station (ISS) passes, one at 9:35 p.m. and the second at 11:11 p.m.

Steve and I set up our 20.3cm Dobsonian telescopes after 9:00 p.m. and watched the first ISS pass with a few campers, mostly children, and park personnel. As twilight gave way to darkness we showed visitors Saturn. Dave McCarter arrived around 9:50 p.m. and set up his 25.4cm Dobsonian telescope.

Through my telescope, children and adults viewed Saturn, the Ring Nebula (M57), the globular cluster M13 in Hercules, the globular cluster M4 near Antares, the stars Mizar and Alcor and the "Double-Double" star system Epsilon Lyrae.

Dave McCarter, in his e-mail (July 12th) included M27 and the double star Cor Caroli in the list of objects we observed. After setting up his telescope he was quickly surrounded by children asking for Galileo Moment cards. He answered questions on black holes, the Big Bang, stellar death, time travel, faster than light-speed travel and where elements such as carbon, oxygen and iron come from. He gave a constellation tour with his green laser pointer. Dave described tracking the ISS during its pass at 11:11 p.m., which was low and well to the north. He followed it with his finderscope while some guests looked through the main eyepiece at the distinct shape of the space station. We were not able to see the [Russian Progress] supply ship that Dave thought should be following the ISS.

One of the camp supervisors distributed the Galileo Moment cards and she advised us at the end of the evening that there were 43 adults and children at the star night. In addition, Dave McCarter reported 12 adults in his second e-mail (July 12th); so in all there appears to have been 55 people. It was an enjoyable and much appreciated star night for the campers and the camp supervisor who had organized the event gave us a thank you card signed by many of the children who had taken part.

## July Pocket Sky Atlas Challenges

John Kulczycki

With half the year gone, we have to look forward 6 months of reunions with our old celestial friends. July is a good time to pull out the lawn chairs and do a little sit down binocular work. Hey, it's Astronomy-to-Go, instead of Go-To Astronomy!

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

**Naked Eye:**

Rasalgethi and Rasalhague page 54. Two stars apparently close in the sky but are very different.

**Small Scopes and binoculars:**

Marfik and Sabik Page 56

**Larger Scopes:**

NGC 5962 Page 55

**Bonus objects:**

Yed Prior and Yed Posterior Page 56

NGC 6543 Page 51

And remember: Bug spray and optics don't mix!

Happy Hunting!

## Amazing Nova 2

Miroslav

Dear friends of astronomy

Nova And 2007 (September). = V455 And

The brightening of this nova was actually predicted and so out of curiosity I decided to observe. After preparing my charts I also realized the position of V455 And is perfect for almost all-night observation.

One of those more exciting visual projects.....

A little squares in attached picture represents my observations of this fast nova.

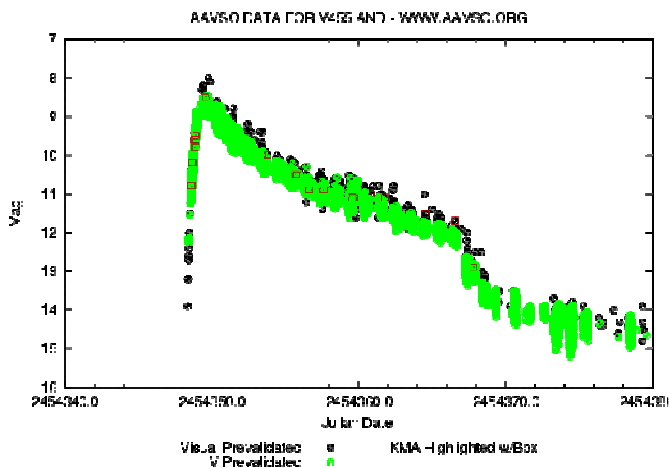
Green line represents ccd folks, and black circles visual observations.

More then 100 observers from around the world reported their observations to AAVSO, including 4 Canadians.....

First night I reported six observations September 4-5 from 10pm local time to 4h30m am next morning, when nova brightened from 10.8 m visual to 9.5m

Next night single observation of magnitude 8.5 represents maximum.

best wishes      miroslav



Editor's note: I am not sure if the graph will turn out very good in shades of grey. I am hoping for the best.