

POLARIS



Royal Astronomical Society of Canada
London Centre Newsletter
November 2009

Fixing Binoculars

Patrick Whelan

I friend of mine called me last week. He had bought a pair of 25x100 binoculars off the internet (eBay?) and when they arrived they were horribly out of collimation and he had to send them back. Sure he got his money back, but he was out \$100 for shipping!

Then he bought another pair and guess what? Yup. They were way out of collimation too! That is when he called me lamenting about his purchases. So I told him we could probably fix them up.

They were 'no name' binoculars. I couldn't find a manufacturing name on them anywhere. It did have BAK4 prisms printed on them. We put them on a sturdy tripod outside and looked through them. The right eye image was way above the left one.

Collimating binoculars is not as easy as collimating a reflector telescope. Perhaps even the word 'collimating' is wrong. What I am really doing is aligning one barrel of the binoculars with the other. There are some inherent problems in aligning binoculars. Let's say the left barrel of the binoculars is okay and the right barrel is pointing up. I could align them by making the left barrel point up as well. Now they are both 'wrong' but they are aligned and would seem acceptable looking through them. But we wouldn't be getting all the light through them. By standing back from the binoculars a meter or so and looking through the binoculars backwards, you can see the small hole of the eyepieces. As you move your head around you can make the hole seem football shaped or make it round. When you can make it round the image of the circle should also be in the middle of the front lens. With his binoculars, when we were looking (backward) through the right barrel, the hole of the eyepiece was round when it was near the top of the front lens. Hmmm.

There are two screws to adjust each barrel's prisms. There is an outside screw near the eyepiece that

adjusts the view left and right. There is another screw between the barrels and further from the eyepiece that adjusts the view up and down. By adjusting the screw that moves the image up and down we were able to align the binoculars. Looking backward through the binoculars we could see the images of the eyepieces were acceptably in the middle and round so we were done.

There are lots of caveats (warnings) when attempting this. From what I have read, true collimating/aligning should be started by manipulating the front lenses. In most binoculars I have looked at, the front lenses are pretty much glued in. And if not there are no collimating screws like a refractor objective or any other apparent mechanism to adjust them. And there is also the possibility of aligning the barrels but having both barrels improperly collimated. (as I stated above) I guess one way to really check this would be to have a laser pointer (collimator) that could be put on the eyepiece and then shone through the binoculars and you could see if the laser beam exits the middle of the front objective. The optics will probably make the beam diverge but I will give it a try when I get home. Yup I was right, the beam came out as a large circle when it hit the front objective.

Whether we achieved 'actual' 'perfect' 'true' alignment and/or collimation is hard to say. But my friend now has a pair of working binoculars instead of broken binoculars and he is very happy. And it won't cost him another \$100 to send them back.

Disclaimer: I know you have the binoculars, you have the set of jeweler's screwdrivers and you have a pair of eyes to check them out... but your actual results may vary! Please be careful! And don't run with screwdrivers in your hands, you might put someone's eye out!

I now absolve myself of responsibility for anyone practicing what I have written here. Let the fixer beware!

Moon Phases



Nov 16 2009



Nov 24 2009



Dec 2 2009



Dec 9 2009

Get your woolies out!

It is becoming winter. If you like to go out in the cold with your telescope remember to bundle up!

Layering your clothing is better than wearing one real big thick layer.

Standing still in the cold while at the telescope is a sure fire way to get cold. There are all kinds of pocket warmers and foot warmers you can buy. They may be reusable or single use. I keep a hand warmer in each pocket of my coat while observing. Every time I put my hands in my pockets, they get a little warmer.

My hair is getting a little thin on top so I wear two hats.

One is a standard toque and the other is a fleece hood.

The fleece hood also serves double duty as a light shroud while at the eyepiece.

Happy observing, and stay warm!

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Find the Polaris newsletters on the internet at: 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.

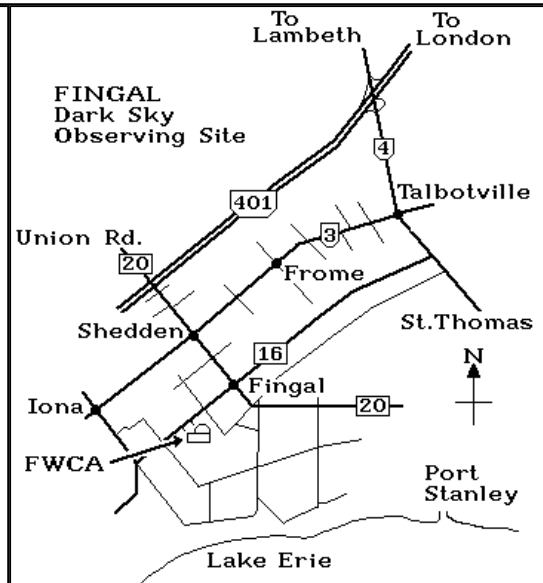
Everyone interested in astronomy is invited to attend and enjoy our guest speaker, member activity and observing reports, announcements of new discoveries and upcoming events, telescopes and telescope accessories show and tell, and other fun activities. Have a look at our future and past activities on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

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



Sky Events for October and November 2009

December 14 Geminid meteors peak
 December 18 Mercury 1.4 S of Moon
 December 18 Mercury elongation E

Mercury becomes visible in the evening twilight
Venus is a morning twilight planet but is sliding towards the Sun
Mars is in Cancer
Jupiter transits at 5:46 on the 15th
Saturn rises in the morning and is a good telescopic object



R.A.S.C. London Centre Library Books of the Month November 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 November 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 One, Andromeda—Cetus.

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



More Things in Heaven and Earth: Poets and Astronomers Read the Night Sky, by David H. Levy. c1997.

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

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.

Amica at London Retirement Community, Slide Presentation, October 15th

By Robert Duff

On Thursday, October 15th, 7:30 p.m., Dave McCarter gave a slide presentation on the "Telescope" at Amica of London Retirement Community.

Harold Tutt was also there and we talked to the people. A father and his young son, who was keenly interested in anything to do with space travel, were there, having seen the announcement on our Web page. I told them about the Cronyn Open Houses and gave them a RASC London brochure.

The slide presentation began at 7:30 p.m. and ran for an hour, followed by questions. The Amica at London Retirement Community had a 60mm Bushnell alt-azimuth refractor, and Dave showed the Amica staff lady and a few of the residents how to use it after the slide presentation. I gave them a copy of the booklet, "Become a Sidewalk Astronomer." We gave everybody that attended as many Galileo Moment cards as they wanted. We left around 9:17 p.m.

Observer's Meeting at Fingal, October 17th, 2009

By Robert Duff

There was a good turn out of London Centre members with at least 8 telescopes.

The sky was very clear and stars and the Milky Way were spectacular. Through my telescope we viewed Jupiter, Albireo, the "Double-Double" Epsilon Lyrae, the Ring Nebula (M57), the Andromeda Galaxy (M31) and Mizar and Alcor. We viewed the Double Cluster in Perseus and a double star in Capricorn. Dan Tremblay also showed us the Veil Nebula and the Dumbbell Nebula (M27) through his 10-inch Meade reflector, using a nebula filter.

We all saw a bolide at 8:25 p.m., travelling west to east. What I found interesting was not only its slowness but also its red colour and apparent lack of any debris braking off. Usually, such bolides are fast, green and have lots of pieces braking off and occasionally end in a bright explosion.

Exploring the Stars, Cronyn Observatory, October 20th —November 12th, 2009

By Robert Duff

Please note that I attended most of these Exploring the Stars events, bringing the RASC London Centre's photographic display and IYA2009 poster board and setting them up and laying out some London Centre brochures.

St. Thomas Aquinas High School, October 20th, 2009

Cloudy skies greeted 24 visitors for an evening of Exploring the Stars. Graduate student Amanda Papadimos made her digital slide presentation, "Seeing the Universe and Mars." This was followed by questions and Amanda gave them a tour of the dome.

I directed the big 25.4cm refractor towards the red lights on the communications tower in south London. Students and adults looked through the telescopes and asked questions. I explained the difference between a refractor and reflector telescope.

Amanda distributed Galileo Moment cards and I talked with the teacher, giving her and an interested student some additional GM cards and a copy of, "Become a Sidewalk Astronomer." The evening ended at 8:30 p.m.

Space Society of London (SSoL), October 21st, 2009

This was a Telescope Night at the Cronyn Observatory for members of the Space Society of London (SSoL). Graduate student Amanda Papadimos chose for her digital slide presentation, "Seeing the Universe."

Dave brought his 80mm Stellarvue refractor. He was soon explaining the telescopes to Space Society members, directing his refractor at the red lights on the communications tower in south London. We helped Harold Tutt assemble his 20.3cm Celestron C8 Schmidt-Cassegrain telescope in the lecture room and Dave explained how it worked.

There was some clear sky between the clouds later in the evening and Dave showed them Epsilon Lyrae and Albireo through his 80mm refractor. He also showed them Epsilon Lyrae through the London Centre's 25.4cm Dobsonian.

New Canadian Families, October 27th, 2009

Cloudy skies greeted 10 visitors, "New Canadian Families," from the London Cross Cultural Learner Centre. Graduate student Amanda Papadimos made her digital slide presentation on "The Solar System," which was followed by questions from the audience.

The visitors viewed the red light on the communications tower and the weather vane on the Engineering building to the south through the London Centre's 25.4cm Dobsonian.

The visitors enjoyed the views through the telescopes and asked about visits to the Cronyn when weather was more favourable. We told them about the Cronyn Observatory Open Houses. Everybody was gone by 8:00 p.m. and we closed the Observatory around 8:10 p.m.

1st Blenheim Cubs, Wednesday, October 28th, 2009

The 1st Blenheim Cubs chose Rockets, Spacecraft and other Space Junk for their Exploring the Stars presentation. Graduate student Alexander DeSouza made the digital slide presentation "Space Junk."

Since the sky was clear we observed Jupiter and the gibbous Moon. The four Galilean moons were visible, with one moon having completed a transit, its shadow visible on Jupiter's surface.

This was followed by a lecture room activity, "Rocket Races," with rockets made from cardboard drink cups propelled along a chord by air rushing from balloons.

93rd Brownies, Tuesday, November 3rd, 2009

Peter Jedicke reported that 17 youngsters and 2 adults from the 93rd Brownies enjoyed an evening of Exploring the Stars at the Cronyn Observatory. Graduate student Amanda Papadimos gave her digital slide presentation on "The Solar System." Because it was cloudy Peter aimed the big 25.4cm refractor in the dome at a red light on the TV

(Continued on page 5)

(Continued from page 4)

transmission tower in south London and showed it to the Brownies. The evening began at 6:30 p.m. and was wrapped up by 8:00 p.m.

62nd London Cubs, Wednesday, November 4th, 2009

Graduate student Alexander DeSouza hosted an evening of Exploring the Stars at the Cronyn Observatory on Wednesday, November 4th, making two digital slide presentations before 18 visitors (including 5 or 6 adults) from the 62nd London Cubs.

The two presentations they requested were "Constellations" and "The Earth & Moon." Between presentations Alexander led the group upstairs and showed them the big 25.4cm refractor in the dome, although there was no observing because of clouds and rain.

Alexander reported receiving generous feedback from everyone and the general impression was that they "had a blast." His comment on the children was that they were "highly inquisitive... a delight and very well behaved."

2nd Blenheim Brownies, November 5th, 2009

Graduate student Jackie Otaguro made her digital slide presentation, "The Earth & Moon," to the 2nd Blenheim Brownies .

Jupiter was visible for a while but clouded out before the slide presentation finished so graduate student Amanda Papadimos and I showed the visitors a red light on the communications tower in south London through the big 25.4cm refractor in the dome.

Returning downstairs to the lecture room, the Brownies did a connect-the-dot "Make Your Own Constellation" activity with crayons. Amanda and Jackie then had the children assemble "Star Finder" planispheres. One of the children was a boy from the 1st Blenheim Cubs who had

been to the Cronyn for Exploring the Stars on October 28th. So I gave 12 additional "Star Finder" planispheres to a Brownie Leader to give to the 1st Blenheim Cubs.

1st St. Mary's Scouts, November 10th, 2009

Clear skies greeted 14 visitors from the St. Mary's Scouts (10 Scouts and 4 adults), for Exploring the Stars at the Cronyn Observatory on Tuesday, November 10th, 7:00 p.m. Graduate student Amanda Papadimos made her digital slide presentation, "Life in the Universe," while Mike Roffey and I set up telescopes on the roof patio and made ready the big refractor in the dome.

The Scouts got a good view of Jupiter through the 25.4cm refractor in the dome. They also viewed Jupiter, M31, Albireo and M57 through the RASC London Centre's 25.4cm Dobsonian.. Mike Roffey showed them Jupiter, M31 and Albireo through his 80mm Sky-Watcher refractor. The Scouts were very appreciative and we closed the Observatory at 9:00 p.m.

University Heights Public School Grades 5-6 Gifted Class, Wednesday, November 11th, 2009

Some 75 students, teachers and other adults from the University Heights Public School Grade 5-6 Gifted Class crowded into the Cronyn Observatory's lecture room. Graduate student Alexander DeSouza slide presentation, "The Life and Times of Stars."

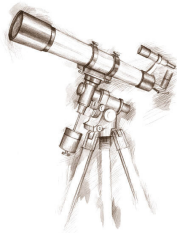
The visitors observed Jupiter through the big 25.4cm refractor in the dome. Greg Andres showed them Jupiter and M31 through his 20.3cm Sky-Watcher Dobsonian and Mike Roffey showed views of Jupiter, M31 and Albireo through his 80mm Sky-Watcher refractor. I showed visitors views of Jupiter through the London Centre's 25.4cm Dobsonian. It was a great evening and the students

(Continued on page 6)

November Pocket Sky Atlas Challenges

Frost and dew: along with cold, they are our observing companions during these longer nights. While some can stand the cold better than others, most of us can bundle up enough to grab binoculars and steal some time under the stars. If you do go out, tell someone, just in case. Dress warm and bring some food. If you go any distance make sure you have a blanket and a back-up plan.

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



Naked Eye:

Alpheratz page 74, Equuleus page 75

Small Scopes and binoculars:

M15 Page 75, M 36,37,38 page 12

Larger Scopes:

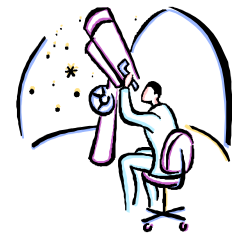
AG Pegasi, Page 75, IC 2149

Bonus objects:

NGC 7331, Page 72 NGC 1444 page 13

Happy hunting.

John Kulczycki



(Continued from page 5)

and adults were very appreciative of the event.

29th Byron Scouts, Thursday, November 12th, 2009

Graduate student Alexander DeSouza made his digital slide presentation, "Telescopes," before 27 visitors from the 29th Byron Scouts (16 Scouts and 11 adults) on Thursday, November 12th, 7:00 p.m. Clear skies allowed Alexander to show the Scouts Jupiter through the big 25.4cm refractor in the dome.

I also showed them Jupiter, M57, the Pleiades, Albireo and Epsilon Lyrae through the London Centre's 25.4cm Dobsonian. The Scouts enjoyed the evening and were gone by 8:45 p.m. We closed the Observatory around 9:00 p.m.

Galileo Nights, October 22nd—24th, 2009

By Robert Duff

Galileo Night, October 22nd—24th, @Chapters North London

Since the star night was cancelled because of cloudy skies, Thursday, October 22nd, Peter Jedicke went to the Chapters Bookstore on Fanshawe Park Road near Richmond Street and set up his Galileoscope at their astronomy book display. He was there from around 7:00 p.m. until 9:15 p.m., after closing time. In all he spoke to just 3 visitors for 3 Galileo Moments.

Since the star night was cancelled because of cloudy skies, Friday, October 23rd, Peter Jedicke and I went to the Chapters Bookstore on Fanshawe Park Road near Richmond Street. Peter set up his Galileoscope at their astronomy book display. We were there from around 8:00 p.m. until 10:00 p.m., after closing time. In all we spoke to just 5 visitors for 5 Galileo Moments.

John Kulzycki arrived at Chapters North on Saturday, October 24th, 7:00 p.m., and set up his Stellarvue 70mm refractor inside the store beside the astronomy book display. I arrived shortly thereafter and gave him about 60 Galileo Moment cards. Peter Jedicke arrived with his Galileoscope shortly after I left for Chapters South. Peter and John spoke to about 60 people and gave GM cards to all. They also handed out RASC London Centre brochures and a few copies of "How to become a Sidewalk Astronomer." Peter made a connection for a future star night. About two-dozen people took the opportunity to look through the telescopes and there were some good discussions. John had to leave at 9:00 p.m. but Peter remained until closing time and left at 10:15 p.m., for an additional 6 Galileo Moments, bringing the evening's total to 66 GMs.

Galileo Night, October 22nd and 24th, @Chapters South London

Since it was cloudy and the star night cancelled on Thursday evening, October 22nd, the staff at Chapters Bookstore on Wellington Road in south London had an astronomy book display on a table. Dave McCarter set up at the book display at 6:45 p.m. and I joined him a little before 8:00 p.m. and we talked to customers, until just before closing time at 9:00 p.m. We gave out Galileo Moment cards and several Star Finder planispheres to interested customers and staff, including a copy of "Mary Lou's New Telescope" to one

interested non-member who joined us at the table.

The sky was once again cloudy with occasional rain showers on Saturday, after delivering some Galileo Moment cards to John Kulzycki at Chapters North. I sat at the astronomy book display table until 10:00 p.m. and spoke briefly to 8 people in all, handing out 2 GM cards, and one RASC London Centre brochure.

Galileo Nights, October 22nd—24th, @Cronyn Observatory

Graduate students Amanda Papadimos and Alexander De Sousa were at the Cronyn Observatory on Thursday evening, October 22nd. Amanda reported that there were no RASC London Centre members and only 4 people. They didn't stay long because it was cloudy and the lecture room was not available.

Amanda also reported on the Cronyn Observatory Galileo Nights, October 23rd—24th, although she was not present on these two evenings.

On Friday, October 23rd, Graduate student Meghan McGill made the digital slide presentation while Konstantin handled the big refractor in the dome; however, there was no observing due to bad weather. Five people attended the evening's presentation. There were no RASC London Centre members in attendance.

On Saturday, October 24th, graduate student Draco Szathmary made the digital slide presentation and Alexander DeSouza handled the big refractor in the dome; however, due to bad weather there was no observing. Two people attended, but asked to skip the presentation, being interested only in seeing the big refractor in the dome. They were there for about 30 minutes asking questions and then left. There were no RASC London Centre members present.

Backyard Galileo Moments 2009

By Robert Duff

Dave Clark reported several backyard star nights and Galileo Moments. On Saturday, May 2nd, Dave held a star night for the St. Anne's Anglican Church Sunday School at the home of a parishioner. Children and a few of the parents looked through Dave's Celestron C8 Schmidt-Cassegrain telescope at the Sun, Moon, Saturn, the colours of stars and double stars. There were also solar system scale and planetary size games. A list of names was kept and 37 Galileo Moment cards were later distributed at Sunday School.

On Friday, August 28th, Dave Clark held a star night in his backyard for his extended family. They viewed the Moon and Jupiter through Dave's C8 Schmidt-Cassegrain. People were allowed to browse the Moon using the telescope's slow motion controls. Dave handed out 5 Galileo Moment cards.

On Halloween evening, Saturday, October 31st, Dave Clark invited trick-or-treaters to view the Moon through his C8 Schmidt-Cassegrain set up on the front lawn of his house in Byron. They viewed the moon through variable clouds with some clearing. Dave handed out 17 Galileo Moment cards.