

# Peterborough Astronomical Association

## Novice Astronomy Class

### Beginner Advice

Resist the temptation to buy a telescope. Far too often an uninformed purchase can result in frustration and wasted money. A lifelong fascination with astronomy starts by learning the night sky, exploring with binoculars and joining your local astronomy club.

Learning the night sky begins with an understanding of the constellations. The essential print resource, *Nightwatch*, listed below, will be instrumental in your education. Knowing the location of constellations and their season of best visibility will give you the confidence to locate interesting objects that you can view in a good pair of binoculars.

Most households already have a pair of binoculars tucked away somewhere. If so, this is a purchase that need not be undertaken. If not, a good pair of 10 x 50 binoculars can be had for a modest investment. Binoculars in this size represent an instrument that is relatively lightweight, gives a bright image and 10 times magnification. That is what the number 10 refers to in this example. The number 50 indicates the size of the front lenses – 50 mm. Also resist the temptation to purchase binoculars larger than 10 x 50. They are more costly, heavy and best left for a future acquisition if desired. Similarly, avoid purchasing image stabilized binoculars. There are excellent examples on the market, but are an extravagant purchase for someone getting started in astronomy.

Joining your local astronomy club will put you in contact with like minded people, give you a forum for asking questions and learn from the experience of others. When you are ready to move beyond using binoculars, borrowing telescopes owned by the Club will allow you to transition to telescopic observations without investing any money of your own. Membership will also allow you to participate in outreach events organized by the Club. As a beginner, assisting at a public event is an excellent opportunity to learn. Everyone benefits and the Club is better able to achieve its goal of bringing the wonders of the night sky to curious minds.

### Visual Observing Tips

- Using binoculars: tuck elbows; lay down; use tripod; look at object, then raise binoculars
- Use the finder: mini telescope, red dot, Telrad
- Use a diagonal for comfortable viewing - beneficial for finder scope too
- Eyepieces: use low power initially: easier to locate objects and focus;
- Choose eyepieces that have comfortable eye relief
- A quality barlow doubles your eyepiece magnification range

- Use of filters: neutral density (for Moon), light pollution (UHC), colour filters (for increased contrast on planets), nebula & line filters
- Sit when possible – the more comfortable you are, the more you see
- Gently tap telescope to see dim objects – eyes sensitive to movement
- Averted vision – not looking directly at an object, rods more sensitive to low light
- Maintain night vision: use red light, use red light mode on apps, lower brightness
- Locate the ecliptic plane – locate planets, constellations
- Use constellation pointers to locate objects in the night sky
- Create an observing list or use star charts (SkyNews insert) /databases
- Sketch or make notes of your observations – helps you to see more detail
- Apps are great for confirming observations or ensuring you take a closer look to see something you may have missed

## Essential Print Resources

- *Nightwatch* by Terence Dickinson ISBN: 0-920656-91-9
- *The Backyard Astronomer's Guide* by Terence Dickinson & Alan Dyer ISBN: 978-1-55407-334-3

## Useful Print Resources

- *The Beginner's Observing Guide* by Leo Enright ISBN: 0-9695804-2-8
- *Observer's Handbook* by The Royal Astronomical Society of Canada (published yearly)
- *SkyNews* bimonthly (every two months) Canadian astronomy magazine

## Useful Phone, Tablet & Computer Applications

### Phone/Tablet Apps

- Sky Safari - planetarium and telescope mount control
- Moon (phase, location distance)
- ICSC (Clear Sky Clock) – predicted cloud cover, transparency, seeing, etc.
- SkyWeek (Sky & Telescope) – significant astronomical events a week at a time
- Solar Walk (planet data and information)
- Star Tracker HD (live sky view) – searchable database: solar system, deep sky, constellations and stars (dynamic pointer)
- SkyView Lite (live sky view) – searchable database: solar system, stars, constellations, bright satellites, nebula, galaxies, Messier objects (dynamic pointer)
- Star Rover (live sky view) -searchable database: constellations, solar system and Messier objects (no dynamic pointer)

### Computer Planetarium Programs

- Stellarium Free download (stellarium.org)
- Starry Night Pro \$149.95 USD