

EDITOR: ROB McCORMICK
745-4641 ext. 244
fax 743-4581
life@peterboroughexaminer.com

LIVING

Summer stargazing tips

Although the summer sky lacks the brilliance of the stars and constellations of spring, there are still many interesting night sky features to see right now. Not only is the Milky Way at its most impressive, but August also brings us the Perseid meteor shower and great looks at the Andromeda Galaxy. Stargazing is all the more enjoyable in summer because of the generally favourable weather and the fact that people usually have more leisure time.



OUR CHANGING SEASONS
Drew Monkman

The guidelines for satisfying summer stargazing are simple.

Don't worry about not having a telescope. The brighter constellations can be seen quite easily with the naked eye. You may,

however, wish to have a pair of binoculars for gazing at objects such as the Milky Way. Any size will do, as long as you know how to focus them properly.

Be sure to bring along an all-sky star chart. If you do not have a good guide book to the night sky, you can print off a chart by going to www.skyandtelescope.com. All you need to do is enter your postal code, time zone, date and viewing time. The chart can then be printed off as a pdf file. It's best if each viewer has his or her own copy.

Everyone should also have a flashlight. The flashlight should be dimmed down either with a layer of red tissue paper over the glass or with a coating of dark red nail polish. The red colouring will help your eyes to remain properly attuned to the darkness. You may even wish to buy an inexpensive penlight for this purpose.

Try to get as far away as possible from light interference. Generally speaking, the further north or east you go in Peterborough County, the darker the skies.

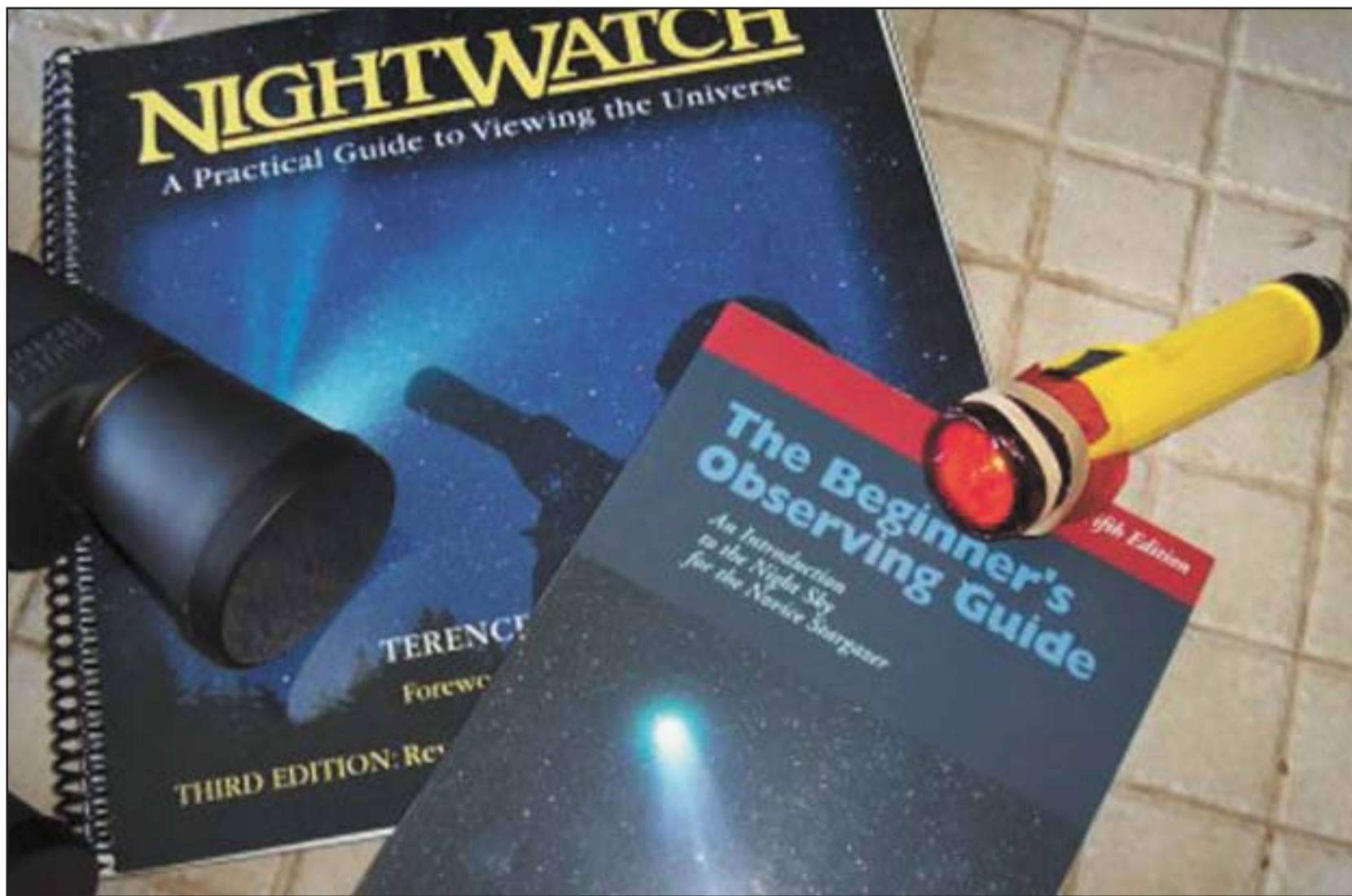
If at all possible, try to avoid the period covering four days before and after the full moon. The moon washes out many of the dimmer stars. The full moon this month is Aug. 9.

Be sure to take advantage of nights with low humidity. You can gauge the humidity by looking at the Milky Way. If the Milky Way is extra clear, you have a great night for star-gazing.

Rather than standing and bending your neck, you will be much more comfortable sitting on a lawn chair or, better still, lying on your back with your head propped up with a pillow or life jacket. A recliner chair is ideal. This position will help you to avoid a bad case of "astronomer's neck" the next morning.

One of the main features of the summer sky is the Summer Triangle. To find it, use the sky chart along with the Big Dipper as your guides. All summer long, the Big Dipper is suspended high in the northwest. The two stars that form the end of the Dipper's bowl closest to the handle point almost directly to Vega, the brightest star of the Triangle. The other two stars in the Triangle are Deneb and Altair. Deneb marks the tail of Cygnus, the Swan, an easily-recognizable constellation. The central stars of Cygnus are also known as the Northern Cross, a shape they closely resemble. Altair forms the head of Aquila, the Eagle, which looks like a giant bird soaring across the heavens on outspread wings and almost on a collision course with Cygnus. Although Vega is located in a rather small, unremarkable constellation (Lyra), it is the brightest star of the Summer Triangle and the second brightest star in the summer sky. Only Arcturus, which is now about halfway up in the western sky, is brighter. Arcturus can be found by extending the arc of the Big Dipper's handle about one handle-length.

Pegasus, the signature constellation of fall, is also of considerable interest. On August evenings, it is visible in the eastern



John Crossen, special to The Examiner

Some suggested equipment for summer stargazing (above). At left is the constellation Cygnus.



Robert Fisher, special to The Examiner

sky. In Greek mythology, Pegasus was a winged horse born from seafoam. However, it takes a lot of imagination to actually "see" a horse here. Most people, however, are familiar with Pegasus's asterism, the Great Square. Using the square as a guide, you can then locate the Andromeda constellation and, with a bit of searching, the Andromeda Galaxy. This is the most distant object the human eye can see without the aid of binoculars. Personally, however, I prefer to view it through binoculars.

The Andromeda Galaxy appears as a faint oval of fuzzy light. Like our own Milky Way, it is a spiral galaxy containing hundreds of billions of stars and is our closest galactic neighbour. What is even more amazing, the light that allows us to see it left the galaxy two million years ago. Andromeda reminds us that, when we look into the night sky, we are looking into a gigantic time machine and seeing astronomical events that often took place eons ago.

The evening of Aug. 11 through the pre-

dawn hours of Aug. 12 brings us a special August treat. This date usually marks the peak of the annual Perseid meteor shower. However, viewing can also be good for a few nights before and after. Meteor watching is always best when there is little or no moon effect. This year, unfortunately, the full moon is on Aug. 9, so the sky will be somewhat washed out. Even so, a single observer should still be able to see at least a dozen meteors per hour. The shooting stars originate in the Perseus constellation, low in the northeastern sky just below Cassiopeia. Viewing is usually best in the pre-dawn hours.

A meteor shower occurs when the Earth passes through a stream of debris left behind by a comet. In the case of the Perseids, the meteors originate from debris left by the comet Swift-Tuttle that was last seen in 1992. Most of the debris consists of particles the size of grains of sand which burn up and emit light as they speed through our atmosphere. No Perseid meteor has ever

been known to actually hit the Earth as a meteorite.

Meteor showers are best viewed from a dark location as far away from city lights as possible. If you watch from a suburban backyard, you are likely to see less than 15 per cent of the meteors visible from a dark site. Perseus climbs higher and higher in the sky and is nearly overhead by dawn. At that point, the meteors streak down in all directions toward the horizon. The Perseid shower makes for a great group activity or "star party" because people can look in different directions and thereby cover the whole sky. Group totals of as many as 150 meteors per hour are possible.

Finally, take a few minutes to enjoy the Milky Way. It is the most beautiful feature of the summer sky and should not be missed. Shaped like a spiral wheel, the Milky Way is our home galaxy. Our solar system is located on one of the spiral arms about two-thirds or 25,000 light years out from the centre. The Milky Way is brightest in the area of the constellation Sagittarius, near the southern horizon. This is because the centre of the galaxy is actually located behind the stars of Sagittarius. There are also dazzling parts of the Milky Way in Cygnus and in Perseus.

To best appreciate the Milky Way, try to choose a clear, moonless night when the temperature gets down to at least 15 C. Warm, humid nights tend to produce a lot of haze, and the mosquitoes often become a major irritant. There is no need to have a telescope. A pair of binoculars will transform the gauzy "river of milk" seen by the naked eye into thousands and thousands of individual stars.

Drew Monkman is a Peterborough teacher and author of *Nature's Year in the Kawarthas*. He can be reached at dmonkman1@copeco.ca.