

## Something Completely Different



by Geoff Gaherty  
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I've now been an amateur astronomer, off and on, for nearly 52 years. I was very keen as a teenager but, as happens with many young people, my interest faded when I reached my early twenties and didn't really revive until 1997. It's remained really strong since then, and I've managed to keep it that way by avoiding most of the things that turned me off astronomy in the '60s (such as RASC politics) and by rejuvenating my interest from time to time by taking on new and different projects that keep my interest forever young and alive.

### Asteroids

I've always been a fan of planetary observing. A few years ago, I faced a spring when there would be no planets in the sky for several months, so I decided to do something I'd never done before: observe a number of asteroids.

Our *Observer's Handbook* has a wealth of information on just about any area of observation. We publish a set of ephemerides of bright asteroids every year. These include all asteroids that will be brighter than magnitude 10.0 at some point during the year. The ephemerides are given only for the season when their magnitude is above magnitude 10.0, and it's a simple matter to spot the dates when they are brightest, which normally are those closest to opposition. It's easy then, to put together a list of dates of opposition, which gives you a list of priorities for a given night.

In the bad old days, it was necessary to plot these ephemeris positions in a star atlas manually, which, while an interesting exercise to do once or twice, becomes tedious when faced with a long list of asteroids. Fortunately, most modern planetarium programs include the orbital elements for current bright asteroids, so most of the observing charts can be generated automatically. It's interesting to see the asteroids' paths against the background stars. Most asteroids in the main belt behave much like planets, but some, notably Ceres, have orbital paths that take them far from the ecliptic. Some are moving quite rapidly when closest to the Earth, making for interesting observing, as you can actually see the asteroid move in real time. The year I undertook this project, Pallas passed south to north along the eastern edge of the open cluster

M47 in Puppis, making for a memorable night of watching an asteroid move against a bright pattern of stars (2000 February 28/29).

These observations of asteroids, while challenging and enjoyable in themselves, were also good preparation for my more recent attempts to observe near-Earth asteroids. One of my first discoveries was that asteroid positions are often somewhat off from predictions, because these small bodies are easily influenced by the gravity of the larger objects in the Solar System.

### Double Stars

For many years, most of my observing was done from my backyard, six blocks away from the Yonge and Eglinton intersection in Toronto. This pretty much precluded observation of deep-sky objects, except perhaps once a month when I traveled to a dark-sky site. In order to keep my starhopping skills active, I undertook to observe all the stars on the Astronomical League's Double Star Club list ([www.astroleague.org/al/obsclubs/dblstar/dblstar1.html](http://www.astroleague.org/al/obsclubs/dblstar/dblstar1.html)). This is a fine list of 100 double stars spread all over the northern sky, which includes most of the best doubles. It includes pairs in challenging constellations like Lacerta and Draco, unfamiliar to most city dwellers. Some are wide enough to be visible in binoculars, most are visible in a small telescope, and a few are major challenges, notably Porrima (Gamma Virginis). This binary star was quite easy at the time the list was first established, but became a major challenge in the last few years because of its narrowing separation. Fortunately, it is now widening again, and soon should be an easy target.

### Daytime observing

One day it struck me that I was only getting half the use of my telescope that I might be, because I was using it only at night. It is frequently possible to observe the Moon in daylight. I'm amazed at how many people are not even aware that the Moon can be seen in the daytime sky, despite the fact that it's there roughly half the time. A red filter will help kill the scattered

light from the sky, and give you a view almost as good as at night, perhaps even better because the Moon's glare will be dampened by the daylight sky.

The Sun is usually an interesting target, though it requires some special equipment. My preferred way of taming the Sun's overpowering radiation is to use a Baader Solar Film filter over the aperture of the telescope. This material is better optically than glass. I own several Baader filters manufactured by Kendrick, which come with nice powder-coated aluminum frames and three nylon thumbscrews to lock them in place on the telescope, an important safety feature. I prefer an aperture filter to the alternative methods, since all dangerous radiation is blocked before it *enters* the telescope. There are many horror stories of meltdowns and fires from people who have ignored this advice.

However, I'd hold off buying a solar filter for a while, because the Sun is being abnormally slow about getting its new activity cycle going. As I write this (in early April), the Sun has been without a spot for over 24 days, so wait until the sunspot cycle really begins.

I found that I liked solar observing so much that I purchased a Coronado Personal Solar Telescope (PST). This has kept my interest in the Sun alive, since, even though sunspots have dropped to zero, there are still flares and prominences visible on the Sun in hydrogen-alpha light. There's almost always something happening on the Sun in hydrogen alpha, so the PST is well worth its purchase price to me.

My favourite daytime observing target is the planet Venus. The main trick is finding it. I used to do this using old-fashioned setting circles, starting at the Sun and then offsetting by the difference in coordinates between the Sun and Venus. Now that I have a GOTO telescope, I'm able to use its "Solar System Align" to set up on the Sun, and then use its GOTO to find Venus. This must be done with great care, and with the lens cap securely fitted over the main telescope. If you lack setting circles or GOTO, you can catch occasional views of Venus when it is close to conjunction with the Moon — check your *Observer's Handbook!* Using GOTO, I was able to observe Venus five out of six days in a row in the last week in March, as it moved to within 9 degrees of the Sun on March 25. At that point, my luck ran out and the clouds rolled in — better luck next time!

Recently I added a new daytime target when I successfully picked up Jupiter as a pale yellow disk against a deep-blue sky. I used the same technique as for locating Venus.

These are just a few of the ways that I have enhanced and increased my viewing experiences over the years. I hope this will inspire you to try something similar. ●

*Geoff Gaherty was the recipient of the Society's Chant Medal for 2008. Despite cold in the winter and mosquitoes in the summer, he still manages to pursue a variety of observations, particularly of Jupiter and variable stars. Besides this column, he writes regularly for the Starry Night Times and the Orion Sky Times.*

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## A Moment With...

# Danielle Cormier



by Phil Mozel  
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"That's one small step for a man, one giant leap for mankind." Uttered by astronaut Neil Armstrong as he stepped onto the Moon, these are the most famous words spoken during the space program. "Failure is not an option!" might be a close second. This was the comment made by Flight Director Gene Kranz during the *Apollo 13* mission. It highlights the important fact that, without ground support, nobody flies in space. This was true during the missions to the Moon and it is true now with operations involving the *Space Shuttle* and *International Space Station*. With its own space program, and hardware constantly in orbit, Canada requires its own people, its own flight controllers, on the ground. One of these is Danielle Cormier.



Danielle Cormier

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