



Summer Nights Under the Stars

By Brad Young, Astronomy Club of Tulsa



Summer is just around the corner. Time to look forward again to the best season for stargazing. For me summer means warm nights staring at distant objects in my telescope or laying in gravity chair with a slight breeze as I gaze deep into the Milky Way overhead. Later, as I pack everything away and drive back home, I pass through sleepy, silent small towns. Finally, I pull in my driveway under the dim light of dawn.

We all have our summer routine of where to go, what to look at, etc. and it often reminds us of great nights observing we had before. But summer is also a great time to try new things. The weather is warm and, although the nights are short, there's still enough to enjoy many hours under the stars. This summer, consider trying new things that you haven't looked at before, or you could revisit the well-known hits in the summer sky but look at them in a new way. In support of this, instead of putting out a list of objects to observe this summer, this is more a guide to help you develop your personal list that will bring you the most enjoyment.

If you are a beginning level astronomer, most of the objects in the sky will be new to you anyway. For you I would suggest that you try one of the Astronomical League observing programs such as the Messier list, or one of the other beginning or intermediate level programs. It's in that "sophomore" period (after you have acquired some equipment and started to learn the sky) that it is important to look at many different things to find what your particular interest may be.

These objects or ideas are described from the viewpoint of a visual astronomer (me). However, many can be adapted for imaging also, or at least lead to new ideas. As just a guide, you might consider trying to do the following in the upcoming summer observing season.

The Beginning Astronomer, or ideas for all:

The Mexicans called it very poetically the "little white sister of the many-colored rainbow."
- *The Stars in Their Courses* by Sir James Jeans

- **Observe the best part of the Milky Way.** Of course! This should go without saying, but though winter's Milky Way has many bright stars and deep sky objects, summer's portion wins hands down. Get to a dark sky (this applies to almost all the objects in this article), lean back and enjoy, even just with your eyes. If you're asking, "what's new?" then make it this – stay and look at the Milky Way in a relaxed position for five minutes. Just look at it only, no phone, no scope, no distractions.
- **Try sketching.** This applies if you don't already, and of course, is meant for visual observers. No need to stress over it, just make a record of what you saw. Add notes about the shape, brightness, etc. that support the sketch. The most rudimentary drawing may prove useful to see a supernova in a galaxy, or record the look with different filters, etc. (see item below).

One of the noticeable features of the Milky Way now to be seen is the great bifurcation, or separation into two branches. The split can be traced from Cygnus where it begins ... and halfway to the southern horizon.

- *Astronomy for Everybody* by Simon Newcomb

- Observe the heart of our galaxy. Even if you don't sketch it, follow the Milky Way, the galaxy we live in, from SW in Scorpio to the NE in Cassiopeia or thereabout. See that it has an amazing split in it, which is a dust lane, as is seen in many other spiral galaxies like our own. Since we are inside the galaxy, we see a dark lane half the visible length of the Milky Way in summer. This can also be done with very wide field imaging.
- Observe a contrasting pair of stars in their color, for example Albireo in Cygnus. You can also look at pairs that are very different in brightness and compare the view of very wide pairs at low power, and close pairs at high power. Get a feel for how multiple star systems look in different configurations. Sky & Telescope has a great article about this on p. 24 of the June 2024 issue.

*Then felt I like some watcher of the skies
When a new planet swims into his ken;*

- John Keats

Note, you may not discover a new planet. Even Keats would struggle rhyming "uncatalogued nebula".

- **Explore the Milky Way for groups and clusters of stars.** Use star charts to see if something you run across is a cataloged cluster or just an interesting asterism or grouping. Even today, amateurs are finding clusters and nebula not yet cataloged. See [WASP February 2023](#) p.23 for an article on this subject.
- **See how far south you can see stars** with just your eyes, and then with binoculars in a constellation like Scorpius. Or turn it around and find some stars very near the southern horizon and identify them. They may be in a constellation you don't normally think of like Telescopium.
- **Try two or three objects that are too small or faint** for you to see. You may not find them, or they might not be much to look at, but at least you'll have the thrill of the hunt and pushing yourself.
- **Look at the Cat's Eyes** in southeast Scorpius; these are

two bright naked eye stars. Because they are always low in the sky, they twinkle wildly.

- **Go to a star party or a public outreach event** this summer. If you've not been to one, it can be a great way to meet others in the hobby or share the sky with others.

The Intermediate Observer, or if you finish those ideas:

For the intermediate observer, there's a good chance that you already looked at a lot of the show piece objects in the summer sky such as the Lagoon Nebula (Messier 8), the North American Nebula (NGC 7000) etc. There are certainly plenty of additional objects that may be fainter or harder to find, but as with the beginning list I've tried to indicate more a type of observation than specific objects to look at:

- **Find a comet.** Comets, as unreliable as they are, are fantastic sights under the summer sky. C/2023 A3 Tsuchinshan-ATLAS is supposed to be good this late spring / early summer, and you never know when one will come around.
- **Track an asteroid.** Pallas is still visible relatively bright in early summer and there are lots of asteroids you can see with a small telescope. Ariadne, Ceres, and Herculina are all brighter than mag 10 right now.
- **See how far south you can see deep sky objects.** What is the elevation limit for deep sky objects? Just as with the beginners' list above, try searching for objects far in the south. The Milky Way drops out of sight in our southern sky in summer, and you may have heard there's no way you can see some of the objects low in the sky. What is the limit for galaxies? Nebula? Globulars? How is each affected by low elevation? Are certain weather patterns and moon phases more disturbing?

"The head of the Great Rift is often referred to as the Northern Coal Sac"
The Milky Way by Bart and Priscilla Bok

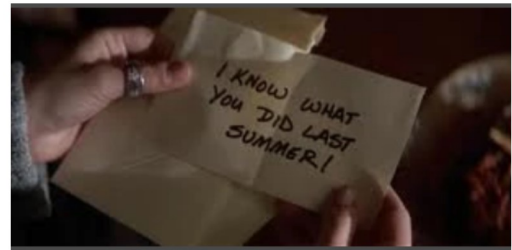
- **Try to see the dark lanes and other features in the Rift.** Again, a dark sky is crucial to this sort of object, but they are amazing to see. If you can't see anything specific, note the sudden change in density of stars at the edges of the Rift, especially in low power, wide field instruments or images.
- **Try two or three objects that are supposed to be too small or faint for you to see or image.** Be sure and use averted vision, binning, and other techniques to improve your chances, like slightly tapping the scope to make the field move just a bit. Another article in S&T June 2024, p.58 discusses the Abell Galaxy Clusters, a real challenge visually, even for big scopes.
- **Look at or image two dissimilar objects in the same field.** One example is a beautiful spiral galaxy (NGC 6946) and an open cluster (NGC 6939) in the same low power field in Cepheus. This and many other groupings like this can be found in the [Two in the View Observing Program by the Astronomical League](#).
- **Compare different versions of the same type of object.** One pair of globular clusters would be M 80 and M 5 which are both in Scorpio and near to each other. Which one is looser and can be resolved a little into stars on the edge?
- **Revisit an object with different equipment,** such as a different telescope or different power. If it's applicable, try looking at it with a filter such as a colored filter for a planet or a nebula filter or OIII filter for a deep sky object. Of course, the possibilities for imagers to tweak the imaging and processing are myriad.
- **Look at the Cat's Eyes** - if you have a small telescope, there is a little globular cluster just east of them in a line with

them and a small star.

- **Volunteer at a star party or a public outreach event** this summer. Even if you've been to many, this is an even better way to meet others in the hobby and pay forward those who first shared the sky with you.

Even very experienced observers can find new challenges:

- **See or image a type of object rarely seen.** Few of us have seen quasars, such as 3C 273 in Virgo (look early in the summer for this one) or the visual companion star to Cygnus X-1, a black hole. Dave Tosteson writes articles for Sky & Telescope that provide guidance for seeing some truly astounding things visually.
- **Stop just being visual, or an imager, or both.** Take up visual astronomy if you only image, or vice versa. Or go way out and try some radio observing, remote imaging, spectroscopy, or anything you've never tried – summer's as good a time as any for new experiences.



Let me know if this article and some of the suggestions here in help you this summer to enjoy the warm nights and learn a little more about our universe. Then if you like you can give us a short report in our September meeting just like the "What I Did Last Summer" reports we all did in grade school. And, by getting out and observing this summer and trying some new things, you may be able to carry some of that inertia over into fall and winter when the weather can be great for observing but maybe more challenging due to the conditions and circumstances.

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