

# The Galaxies of Serpens Caput

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Except for the relative minority of amateur astronomers who conduct systematic scientific research with their telescopes, most of us are very much tourists in our approach to the universe. We set up our instruments when our busy schedules permit and are very much at the mercies of the fickle nature of the weather in these parts. Our time at the telescope is precious and we try not to waste too much of it in fruitless pursuit of unattainable objects. So we often stick to the tried and true, best exemplified by the entries on the Messier list.

One of the reasons why I started writing this column seven years ago was my intention was to draw attention to interesting sights in the universe that would otherwise not be well-known. In travel guides for tourists here on Earth, breathtaking scenery is often referred to as a scenic vista, hence the name of this series of articles.

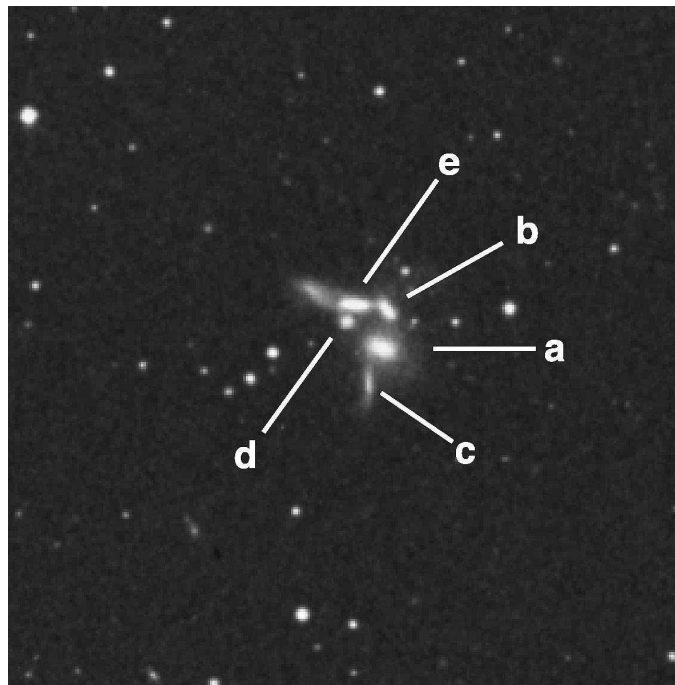
I especially like to feature constellations that are sometimes overlooked as well. One of them is the subject of this month's column, Serpens Caput.

This moderately bright zigzag of stars, wedged between Virgo in the west and Ophiuchus to the east, is the home of the brilliant globular cluster M5; there are a number of rather bright galaxies in the vicinity as well. Unfortunately, after a spring spent viewing the galaxies of Leo, Virgo, and Ursa Major, some amateurs have had their fill of this class of object, which may explain why this region is sometimes neglected.

Located on a line joining beta and delta Serpentis, NGC 5970 is one of the brightest galaxies this region has to offer. Located about eight arcminutes southwest of a magnitude +8 field star, this spiral galaxy is oriented due east/west and features a very bright and small core embedded in a bright bar oriented along the major axis. In my 15-inch reflector, this bar appears quite mottled, and one's attention is drawn to a brighter condensation immediately east of the core. The outer envelope appears poorly defined, evidence of the outer spiral structure of the galaxy.

At magnitude +12.5, NGC 5984 is one full magnitude fainter than the preceding galaxy. An edge-on system oriented southeast/northwest, the galaxy is moderately well defined and very slightly brighter to the middle, though no bright core is visible.

Three degrees north-northeast of the brilliant globular M5, the observer comes to NGC 5921. Deceptively listed at magnitude +11.4, this delicate barred-spiral galaxy is a tough catch in a small telescope; only the round brilliant core will be easily visible in a field of faint stars.



An ~8-arcminute Digitized Sky Survey<sup>1</sup> field of Seyfert's Sextet, a faint group of galaxies in Serpens Caput.

My 15-inch telescope brings out the faint, oval outer envelope oriented north/south.

Located just south of a line connecting an optical triple in the west and a bright, equal pair of stars in the east, NGC 5936 is a bright, well-defined circular glow with a thin, fainter outer envelope. Although no core is visible, the central region of this galaxy is quite granular in texture.

Easily visible even at 48×, NGC 5962 is a bright galaxy, elongated west-northwest/east-southeast. The outer edges of this broadly-concentrated galaxy fade slowly into the sky background and the central region is bright and fairly well-

<sup>1</sup>The Digitized Sky Surveys were produced at the Space Telescope Science Institute under U.S. Government grant NAG W-2166. The images of these surveys are based on photographic data obtained using the Oschin Schmidt Telescope on Palomar Mountain and the UK Schmidt Telescope. The plates were processed into the present compressed digital form with the permission of these institutions.

defined, brightening quickly to the core.

The preceding five galaxies are plotted on the first edition of *SkyAtlas 2000.0*, but you will need the brand-new edition of this great atlas to locate the sixth galaxy in this article.

Located immediately southwest from kappa Serpentis, NGC 5996 is about magnitude +12.8 and may pose a challenge for 8-inch and smaller telescopes. In my 15-inch reflector, this was a round, moderately-bright galaxy, gradually brighter to the middle. No core was visible and the edges were diffuse. Unfortunately, none of the delicate structure evidenced in photos or CCD images is visible at the eyepiece, though if you have access to a telescope larger than 15 inches, you might want to see if you can make out some of this intriguing little galaxy's barred-spiral structure.

Because of the large number of bright stars in the region, star hopping to any of these galaxies is a relatively straightforward affair and a pleasant way to seek out interesting fare on warm June evenings.

A few of the fainter galaxies are not necessarily out of reach of 8-inch class telescopes and can be hunted down often with success. I urge everyone to at least attempt to track down Seyfert's Sextet, an odd specimen in the extragalactic zoo.

The brightest of the fainter galaxies in Serpens Caput is NGC 6012, a prominent, though ill-defined galaxy oriented north-northwest/south-southeast. Oval in shape, the edges fade uncertainly into the sky background. The central region is only a little brighter to the middle and slightly elongated along the galaxy's major axis.

There is a nice image of this galaxy in the *Deep Space CCD Atlas: North*, which shows the galaxy as a classic "theta-shaped" barred spiral with a faint outer ring. Also of note is a bright, unequal pair of stars just beyond the outer envelope of the galaxy, located just slightly north of east.

A little fainter is NGC 6004, though 8-inch apertures should show it easily. It is quite round in appearance and brighter to the middle with surprisingly well-defined extremities.

At magnitude 13.0, NGC 6008 is a somewhat more difficult object to track down. Even in my 15-inch reflector I found it rather faint and diffuse, best seen at a magnification of 146 $\times$ . The core appeared quite condensed, but only a little brighter than the extremities and only the central region of this barred spiral galaxy was visible.

A faint pair, likely beyond the grasp of telescopes smaller than about 12-inch aperture, is NGC 6018 and NGC 6021. They can both be seen in a high-power field of my 15-inch reflector, oriented along a north/south line. NGC 6021 is the brighter of the two and appears a little more concentrated to the center. The galaxies are superimposed over the field of the much fainter galaxy cluster Abell 2147.

The last group of objects under consideration this month is by far the most exotic. Seyfert's Sextet is that class of object known as a compact galaxy group, and like many of the objects of its class, there is some question about whether all members are related. The photo on the previous page shows five distinct objects (labeled *a* through *e*) and a sixth

fainter plume of material seemingly connected to galaxy *e*. Deep photographs show luminous material connecting the individual galaxies, and indeed five of the six objects have similar redshifts, in the range of 4000 to 4500 km s<sup>-1</sup> in recession. The sixth object, labeled *d* in the photo, has a redshift in excess of 19,000 km s<sup>-1</sup>. A chance alignment, or perhaps a galaxy that is being ejected from the group as a whole? More study will be needed to ascertain the nature of this group.

On a typical night at Sutton, Quebec, my 15-inch reflector was easily able to find a blur of light indicating the group's location at 146 $\times$ . Higher magnification made the blur a little fainter but aided resolution. The galaxy labeled *e* was easiest to see, visible as a brighter bar of light that may have also included the galaxy labeled *b*. I was also able to pick up the galaxy labeled *a* as a very faint patch of light intermittently visible southwest from the bar. The other members of the group, including the high-redshift galaxy, were beyond the grasp of my reflector on this occasion.

It is always interesting to go off the beaten track from time to time when out observing. On nights when you are alone and can concentrate on the task at hand, a relatively unknown constellation like Serpens Caput is a fascinating region to explore. ●

*Mark Bratton, who is a member of the Webb Society, has never met a deep-sky object he did not like. He is one of the authors of Night Sky: An Explore Your World Handbook.*