The Rosette Nebula at Fresno State's Campus Observatory

By Fred Ringwald

Fresno State's Campus Observatory is convenient to students, but the city lights that surround it do not help. Nevertheless, fine images can be taken. The human eye is relatively insensitive to red light, and few artificial light sources give off much of it. Even a heavily light-polluted sky looks nearly black through a red filter. The H alpha line is a spectral line that is emitted by glowing hydrogen gas that has a wavelength of 656.3 nanometers, which is in the deep-red part of the spectrum. Since hydrogen is the most common gas in the Universe, H alpha is a superb tracer of the gas in nebulae. A narrow-band filter that passes only the light of H alpha shows images with a high-contrast and yet dreamy appearance.

This image was made through the guidescope that rides piggyback on the Campus Observatory's main telescope, a 16-inch Meade LX200. The guidescope, made by Vixen, has an aperture of 70 mm and a focal length of 400 mm. The Santa Barbara Instruments Group ST-9XE CCD camera that took this image has a square field of view that is 1.5 degrees on a side, when viewing through the guidescope. The image is a median of three 600-second autoguided exposures, through a filter by Schuler that has a passband of 9.0 nanometers, centered on the wavelength of the H alpha line.

The Rosette Nebula is a star-forming region in the constellation Monoceros, the Unicorn. At its center is a young open cluster of stars, NGC 2244. The nebula is about 100 light-years across, and is about 5000 light-years away. A full-color image from which this was taken can be seen at the Campus Observatory's gallery page, at:

`http://zimmer.csufresno.edu/~fringwal/gallery.html`