M64: A "Shiner" in Space

The evocatively named Black Eye Galaxy, NGC 4826, was discovered without fanfare in 1779 by Johann Bode. The 8.5-magnitude glow was spotted independently the following year by Charles Messier, who duly entered it as the 64th object in his now-famous list of deep-sky targets. Neither observer wrote much more of the 10-by-5-arcminute "nebulous star" (Bode's comment) tucked away in the constellation Coma Berenices.

Modern astronomers regard M64 as an eye-catching Sb-type spiral just 19 million light-years away. Its colorful nickname derives from a curved dust cloud that lies northeast of the galaxy's core and stretches some 40,000 light-years across the main disk. Although this notorious "black eye" is visible in amateur telescopes, its ease of detection is debated endlessly.

By Kenneth Hewitt-White

Visually, M64 offers scant additional detail compared with other nearby galaxies. However, its subliminal beauty emerges in photographs. In his book *The Messier Objects*, Stephen James O'Meara writes:

"Its smooth, silken arms wrap gracefully around a porcelain core, whose northern rim is lined with dust. The galaxy resembles a closed human eye with a 'shiner.' The dark dust cloud looks as thick and dirty as tilled soil."

Like O'Meara, I find the finely textured spiral structure entrancing. To me, the tightly wound arms seem like waves rippling from a disturbance in a pond.

Many subtle features of M64 are evident in this CCD portrait, obtained in 1995 with the 1-meter Jacobus Kapteyn Telescope on the island of La Palma off the coast of Morocco. Amateur astronomer and astro imager Nik Szymanek obtained the raw image from the Isaac Newton Group archives, then employed *MaxIm DL* software and a routine called Digital Development Processing to extract hidden detail from the galaxy's central region.

Szymanek was drawn to the turbulent dust cloud hugging the core — possibly the result of a merger between M64 and a dust-rich neighbor. The murky remnant may not be fully incorporated into M64's disk — notice that the cloud partly obscures the galaxy's heart and therefore shrouds much of the astrophysical action inside. The discovery of two counterrotating disks of gas near the core is another posthumous sign of a galactic merger.

Fortunately, some of M64's hidden treasure is revealed here. Clumps of pink-hued emission nebulae and clusters of blue-white stars permeate the cloud's middle. At each extremity, the cloud branches into long, curving fingers. The dusty tendrils at the northwest end are punctuated with bright blue knots of starburst activity.

With his deft application of selective processing, Szymanek has presented M64 in its full glory. Perhaps this enhanced view will trigger new insights on how the Black Eye Galaxy got its cosmic shiner.

Sky & Telescope *contributing editor* Ken Hewitt-White *has been eyeing oddball galaxies for more than three decades. He observes with his 17.5-inch Dobsonian reflector at alpine sites in southern British Columbia, Canada.*

photograph by nik szymanek
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based on data from the
isaac newton group archive