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Evil Eye: A nucleus partially blocked by dust

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Carlos Rotellar

The dark band of thick dust that partially blocks the light of its bright nucleus is what gives The Black Eye Galaxy its name.

Carlos Rotellar Photo

The Black Eye Galaxy (M64) also known as the Evil Eye Galaxy, is a flocculent spiral galaxy located 24 million light years away in the constellation Coma Benerices. It has a diameter of 52,000 light years and contains more than 100 billion stars. It was discovered by British astronomer Edward Piggott in March 1779. The dark band of thick dust that partially blocks the light of its bright nucleus is what gives this galaxy its name.

Flocculent (flaky) spiral galaxies do not have well defined spiral arms like the grand design spiral galaxies, as we saw with the Pinwheel Galaxy. They rather have a patchy spiral structure with discontinuous spiral arms.

William Herschel discovered the dark dust lines in 1789 and compared it to a black eye: “very remarkable object ... contains one lucid spot like a star with a small black arch under it, so that it gives one the idea of what is called a black eye, arising from fighting.”

This galaxy has two disks that rotated in different directions most likely as a result of an encounter with a smaller galaxy a billion years ago. The gas in the inner region rotate clock wise, while the gas in the outer region rotates in the other direction. It is this contact between the two regions that causes an intense star formation activity. These two disks are counter rotating at a speed of 670,000 miles per hour. The dark dust lanes obscuring the galaxy’s core, are most likely, material from the merging galaxy that has not yet settled into the orbital plane. It has a magnitude of 9.8 and can be spotted with a moderate size telescope.

It is moving away from earth at the incredible speed of 842,000 mph and in the center of the galaxy there is a supermassive black hole 3.5 million times the mass of our sun.