National Aeronautics and Space Administration

Black Eye Galaxy

A collision of two galaxies 17 million light-years away may have created Messier 64 (M64), a spiral galaxy with a spectacular dark band of absorbing dust in front of its bright nucleus. This unusually dark appearance gave rise to its nicknames of “Black Eye” or “Evil Eye” galaxy.

At first glance, M64 appears to be a fairly normal pinwheel-shaped spiral galaxy with its stars rotating in the same direction, clockwise as seen in this Hubble image. However, the gas in the outer regions of M64 rotates in the opposite direction from the gas and stars in the inner regions. Active formation of new stars is occurring in the shear region where the oppositely rotating gases collide, are compressed, and contract. Particularly noticeable are young, hot, blue stars along with pink clouds of glowing hydrogen gas that fluoresce when exposed to ultraviolet light from the newly formed stars.

Astronomers think the oppositely rotating gas arose when M64 absorbed a satellite galaxy, perhaps more than 1 billion years ago.

Hubble Space Telescope – Wide Field Camera 3
NASA, ESA, J. Lee, and the PHANGS-HST Team;
Acknowledgement: Judy Schmidt