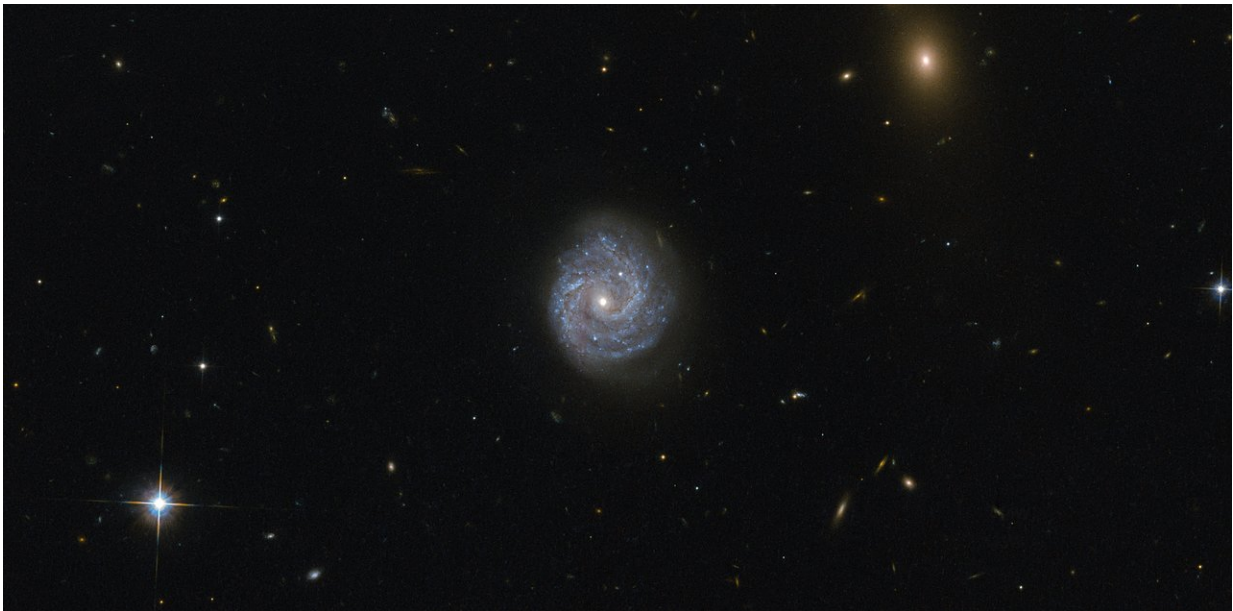


Hubble gazes into a black hole of puzzling lightness

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The beautiful spiral galaxy visible in the center of the image is known as RX J1140.1+0307, a galaxy in the Virgo constellation imaged by the NASA/ESA Hubble Space Telescope. Credit: ESA/Hubble & NASA, Acknowledgement: Judy Schmidt

The beautiful spiral galaxy visible in the center of the image is known as RX J1140.1+0307, a galaxy in the Virgo constellation imaged by the NASA/ESA Hubble Space Telescope, and it presents an interesting puzzle. At first glance, this galaxy appears to be a normal spiral galaxy, much like the Milky Way, but first appearances can be deceptive!

The Milky Way galaxy, like most large galaxies, has a [supermassive black hole](#) at its center, but some galaxies are centered on lighter, intermediate-mass [black holes](#). RX J1140.1+0307 is such a galaxy—in fact, it is centered on one of the lowest black hole masses known in any luminous galactic core.

What puzzles scientists about this particular galaxy is that the calculations don't add up. With such a relatively low mass for the central black hole, models for the emission from the object cannot explain the observed spectrum.

There must be other mechanisms at play in the interactions between the inner and outer parts of the accretion disk surrounding the black hole.
European Space Agency

Provided by NASA's Goddard Space Flight Center

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