Astronomers Catch Unprecedented Features at Brink of Active Black Hole

International teams of astronomers monitoring a supermassive black hole in the heart of a distant galaxy have detected features never seen before using data from NASA missions — including Goddard's Swift and NICER telescopes — and other facilities.

The source is 1ES 1927+654, a galaxy located about 270 million light-years away in the constellation Draco. It harbors a central black hole with a mass equivalent to about 1.4 million Suns.

The novel features include the launch of a plasma jet moving at nearly one-third the speed of light and unusual, rapid X-ray fluctuations likely arising from near the very edge of the black hole. These fluctuations may be caused by an orbiting mass, potentially a white dwarf.

Read the paper and the article.

Caption: In this artist's concept, matter is stripped from a white dwarf orbiting within the innermost accretion disk surrounding 1ES 1927+654's supermassive black hole. Credit: NASA/Aurore Simonnet, Sonoma State University