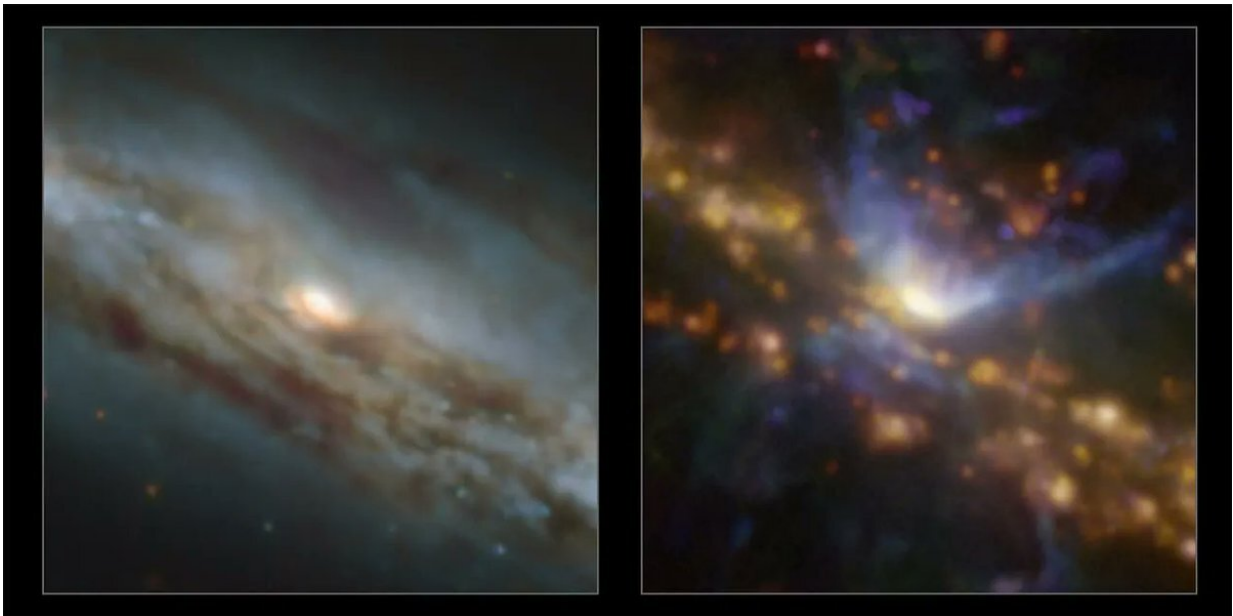


New photos show a black hole blasting out powerful winds

February 21 2022, by Andy Tomaswick



An image of NGC 7582, on the left showing it in traditional light, while on the right is a detailed view of the massive wind coming from the galaxy's central black hole. Credit: ESO / Juneau et al

Pictures of galaxies never cease to amaze, and astronomers are consistently coming up with new ones that provide a different viewpoint on the universe and maybe some exciting science along with it. A recent picture of the galaxy NGC 7582, taken with the Very Large Telescope (VLT), shows an active supermassive black hole at the galaxy's core.

However, something appears to be redirecting its "wind" away from the rest of the spiral galaxy.

Black holes are notorious for gobbling up matter and, as a byproduct, producing massive streams of energy that can obliterate their surroundings. A study from Stéphanie Juneau of NOIRLab showed that in NGC 7582 at least, those energy streams are being redirected away from the rest of the galaxy by a "wind."

That isn't a "wind" in a traditional sense, but one that can be seen in a particular wavelength of light. Utilizing the Multi Unit Spectroscopic Explorer (MUSE) of VLT, Dr. Juneau and her colleagues looked at the ionized particles that were present in the galaxy. The color-corrected image shows oxygen (blue), nitrogen (green), and hydrogen (red), respectively. The ionized [heavier elements](#) can be seen in a cone shape around the [supermassive black hole](#) at NGC 7582's center, depicting the expected energy flow nicely. By contrast, the red coloration of the image shows where the star-forming regions of the galaxy are. Conveniently, the wind seems isolated from those delicate regions, allowing stars to form unmolested.

No matter what might be protecting those star-forming systems, the image that shows it is astounding. And it happens to have some novel science behind it too.

More information: Stéphanie Juneau et al, The Black Hole-Galaxy Connection: Interplay between Feedback, Obscuration, and Host Galaxy Substructure. arXiv:2112.08380v2 [astro-ph.GA], arxiv.org/abs/2112.08380

Provided by Universe Today

Citation: New photos show a black hole blasting out powerful winds (2022, February 21)
retrieved 25 April 2024 from

<https://phys.org/news/2022-02-photos-black-hole-blasting-powerful.html>

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