Unveiling the Dusty Hearts of Galaxies with JWST

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GOALS Collaboration

U et al. 2022, ApJL, 940, L5

NGC 7469

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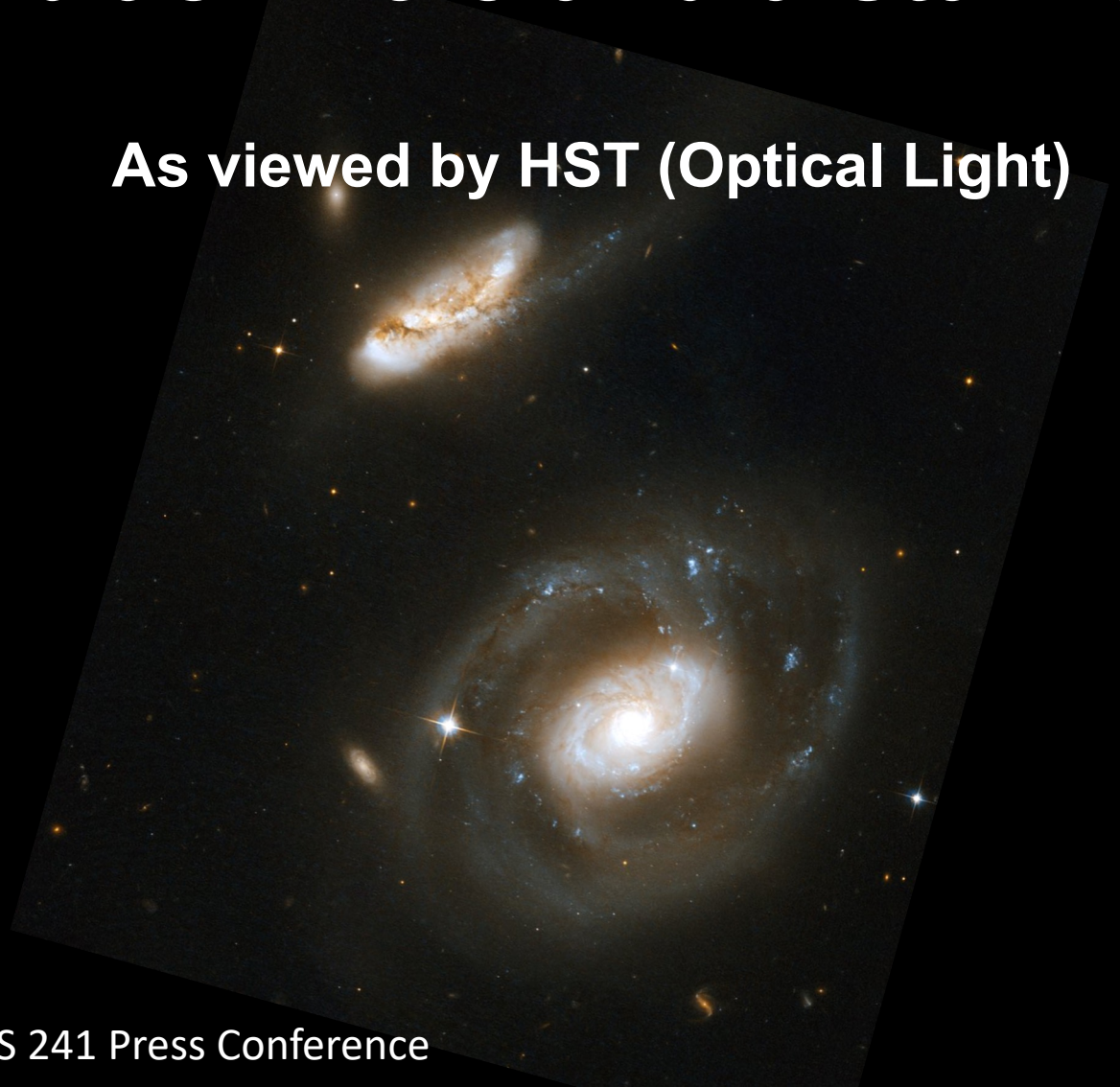
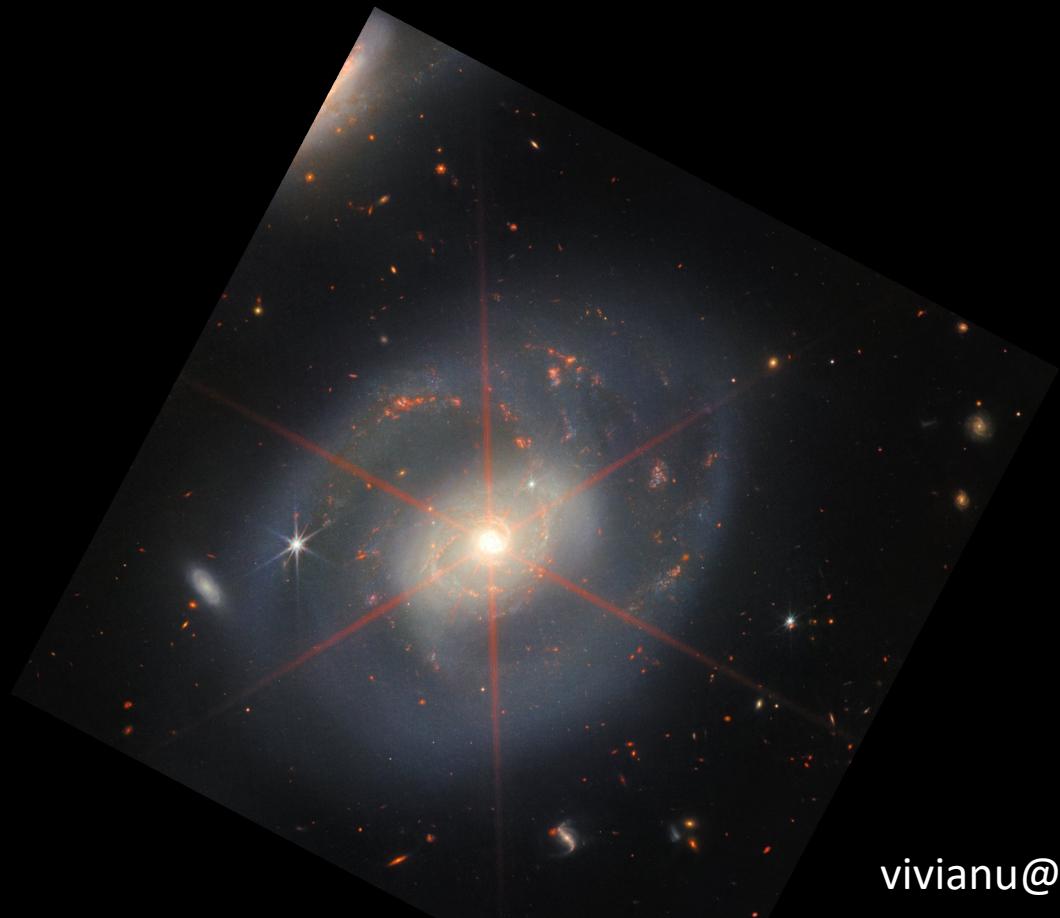
NGC 7469 harbors an active supermassive black hole and a star-forming ring at its center.

As viewed by HST (Optical Light)



As viewed by JWST (Infrared Light)



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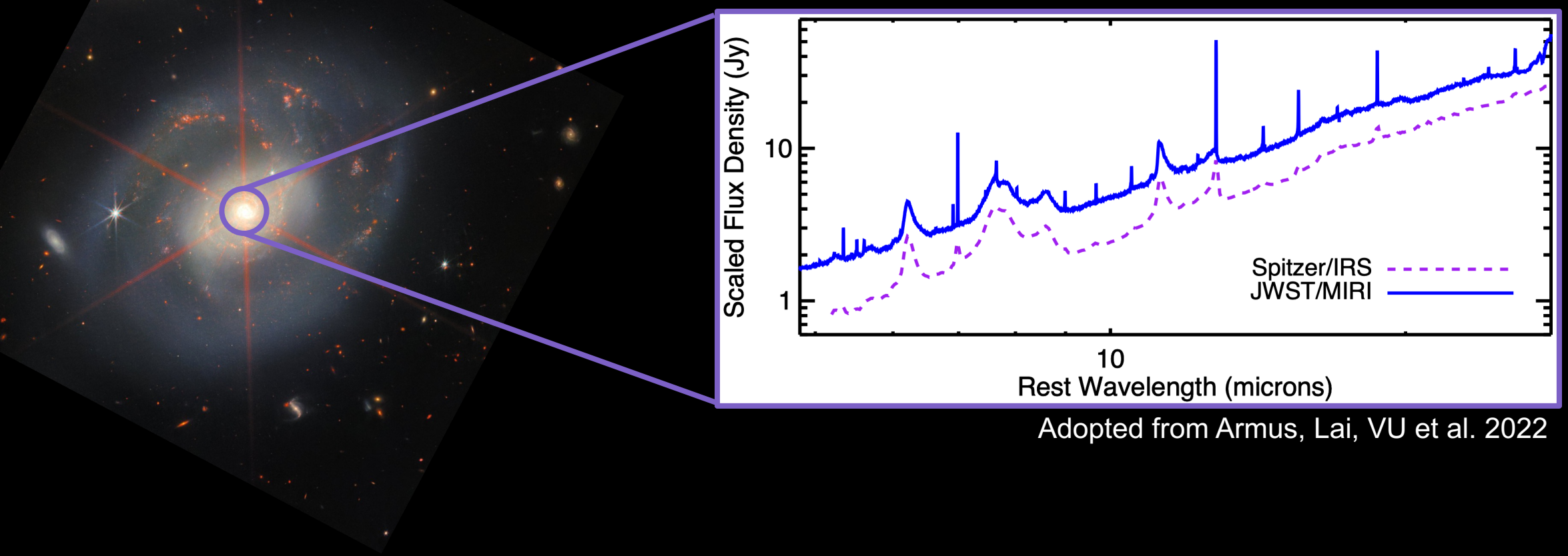

Adopted from Armus, Lai, VU et al. 2022

JWST MIRI shows us what cool gases are there…

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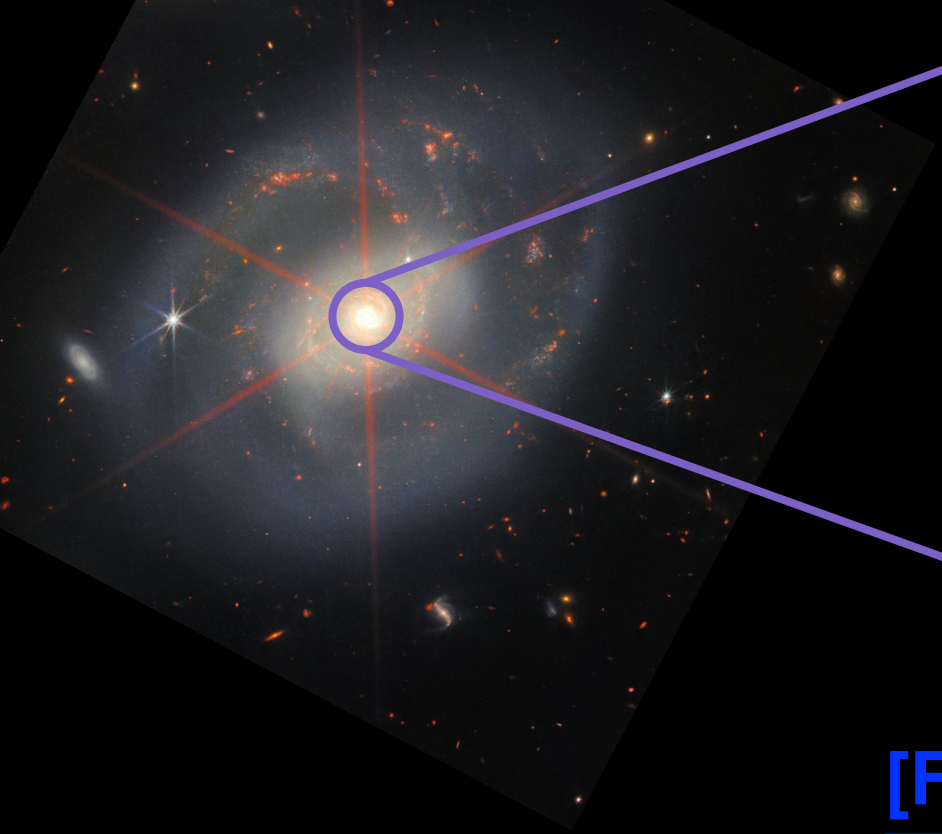
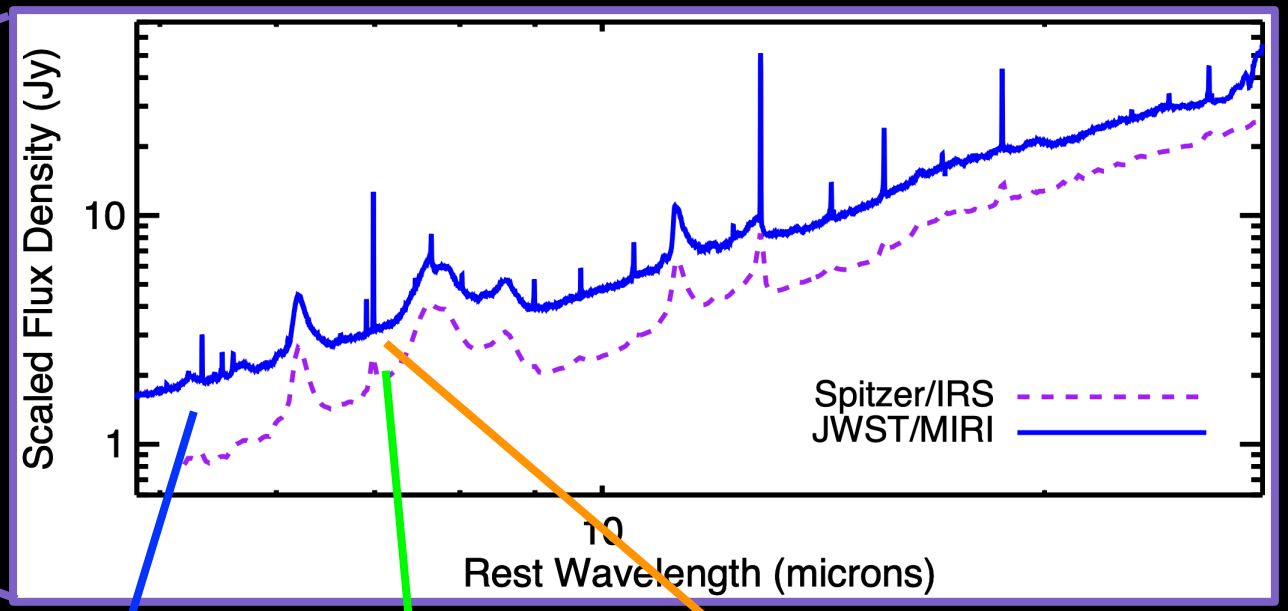
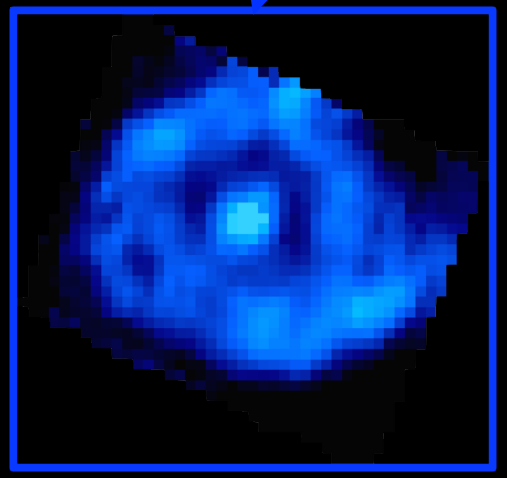


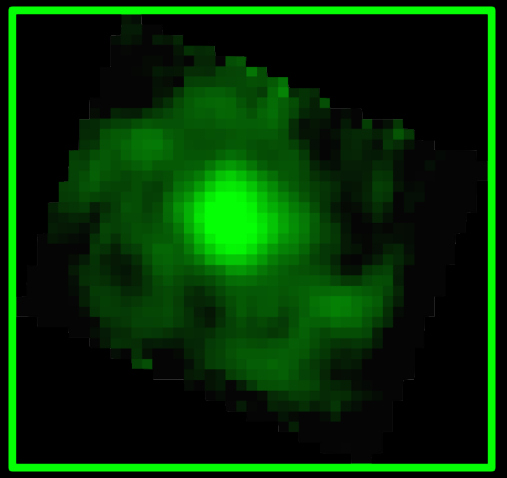


…and how these gases are distributed…

[Fe II]



H_2



[Ar II]

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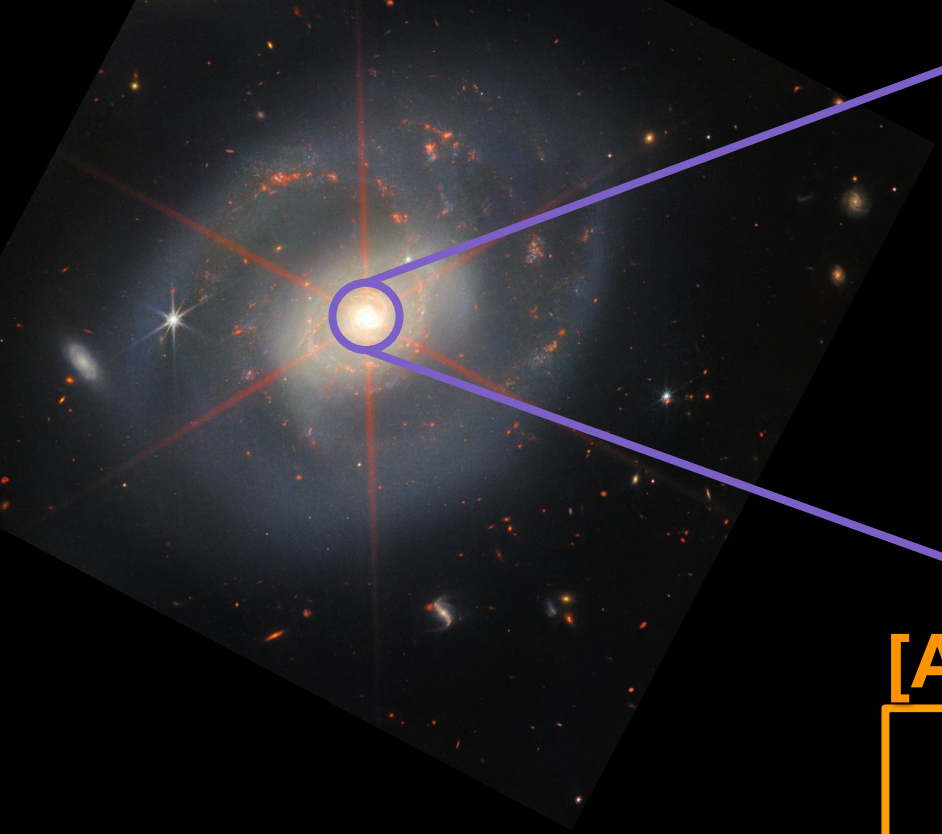

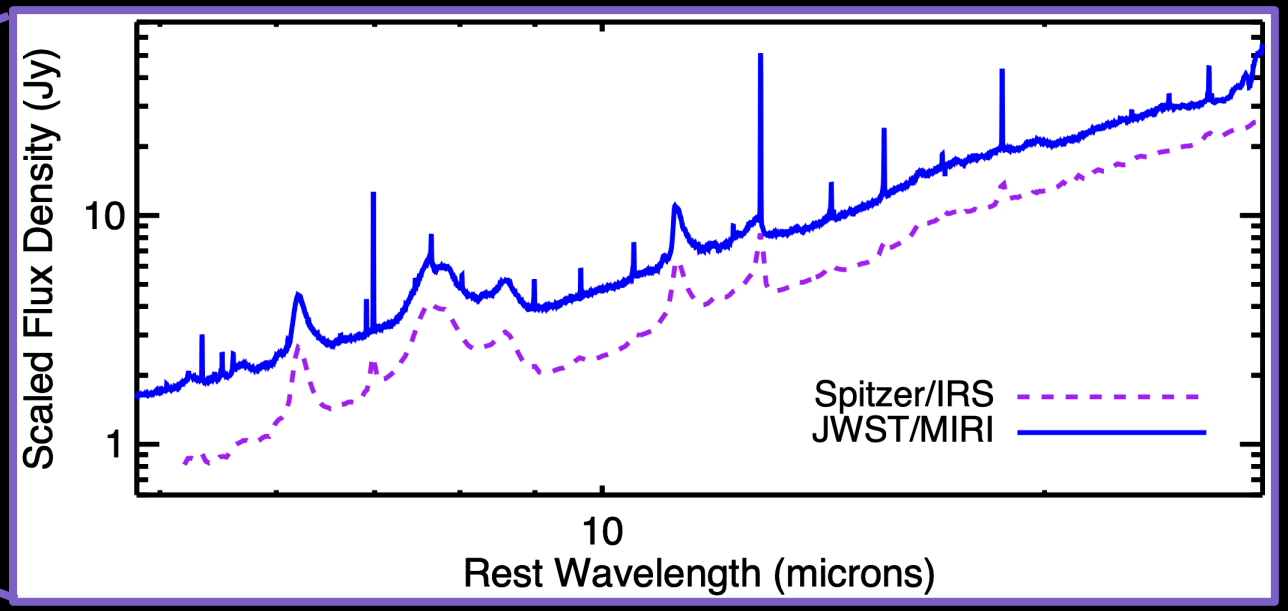

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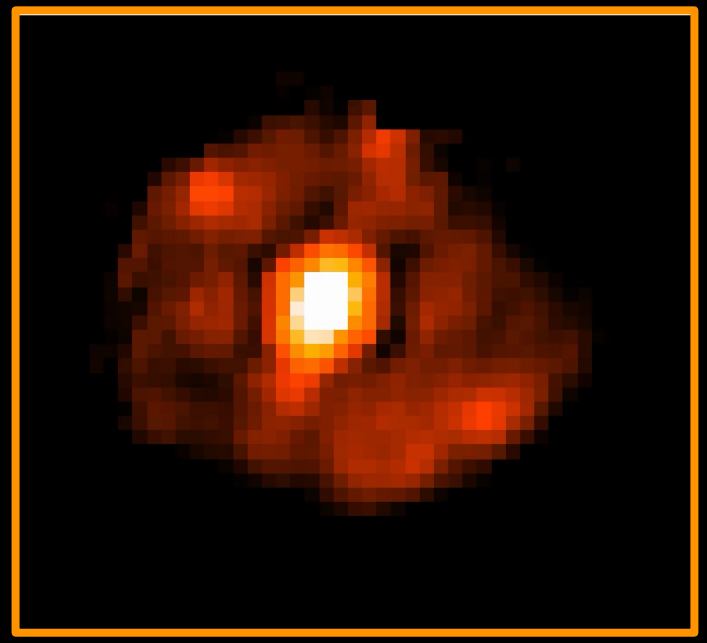

…as well as how the gases may be moving!

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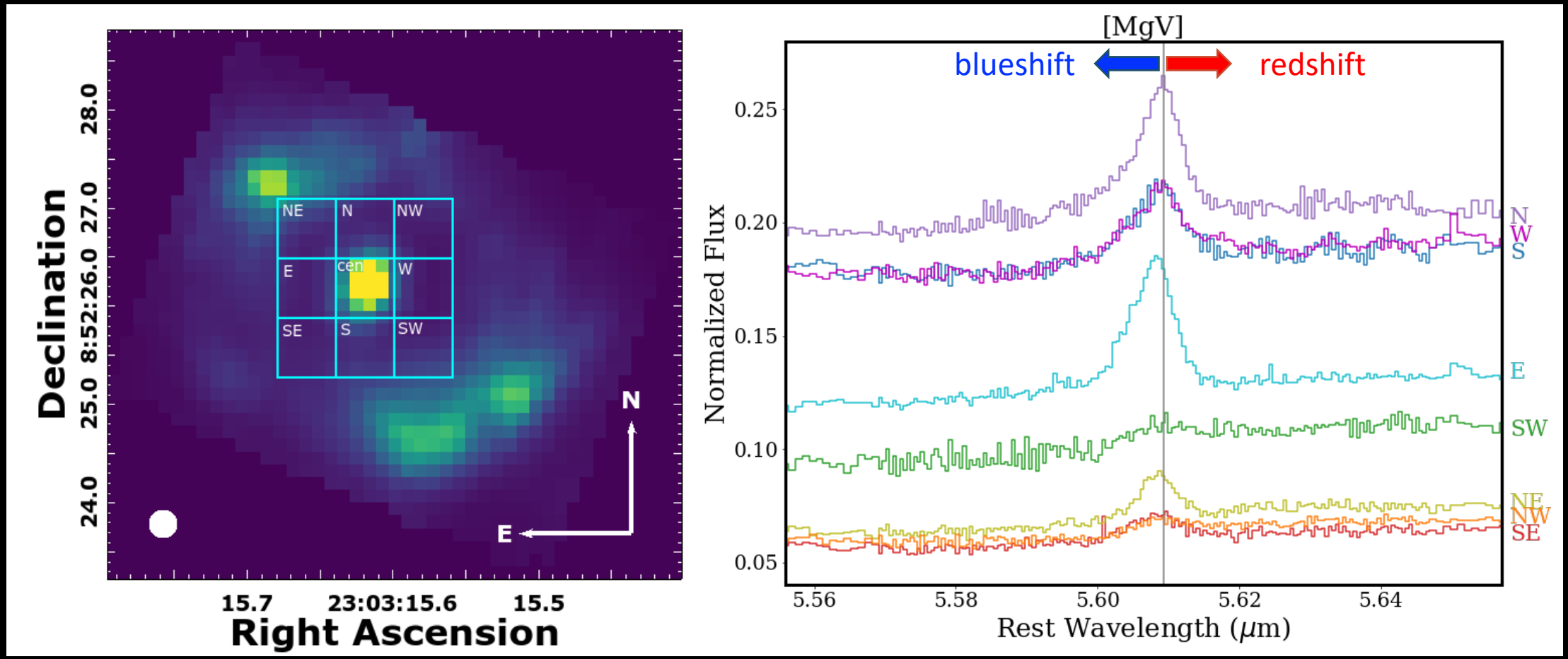

Blueshifted coronal line indicates the presence of highly-ionized winds driven by the active nucleus.

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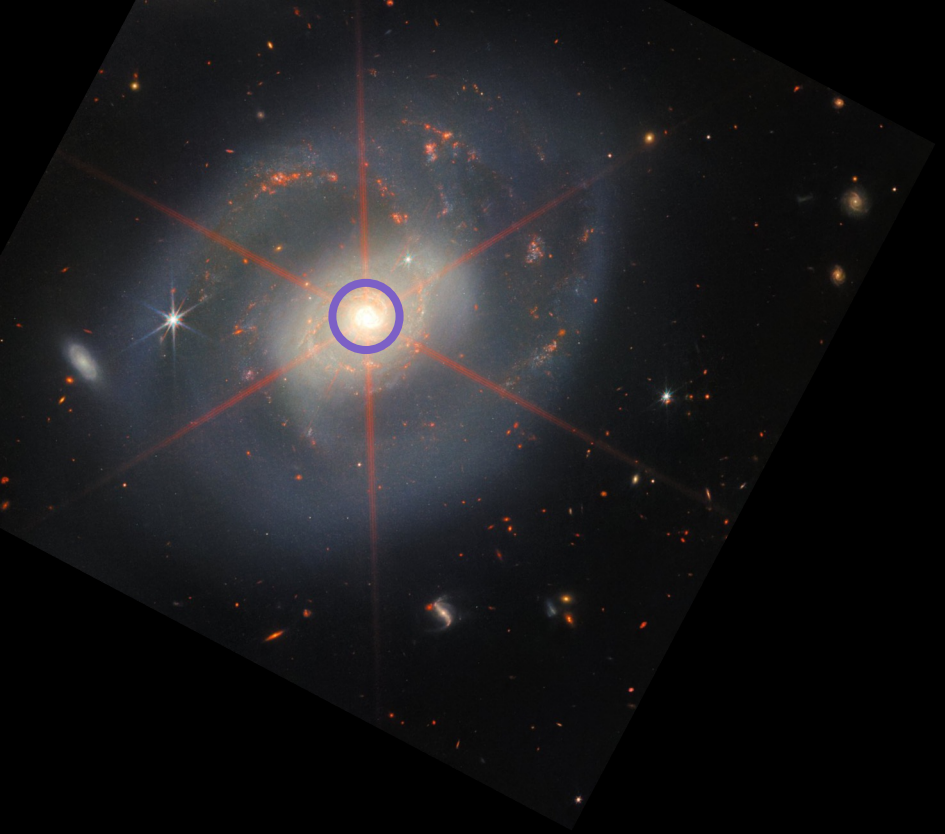

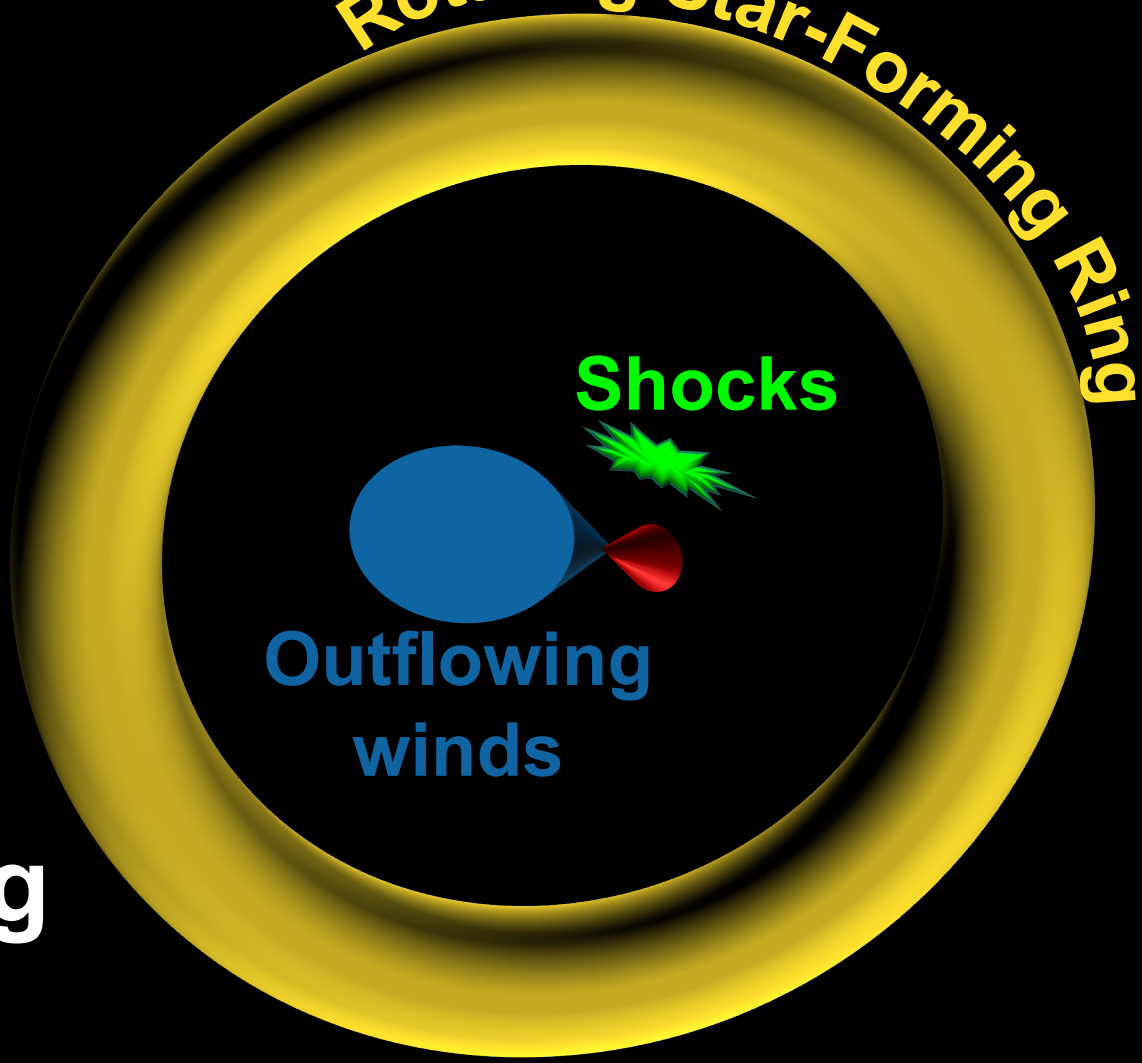

Outflowing gas is heating the surrounding medium via shocks.

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JWST is powerful in revealing the physics of the interplay between black holes and galaxies.

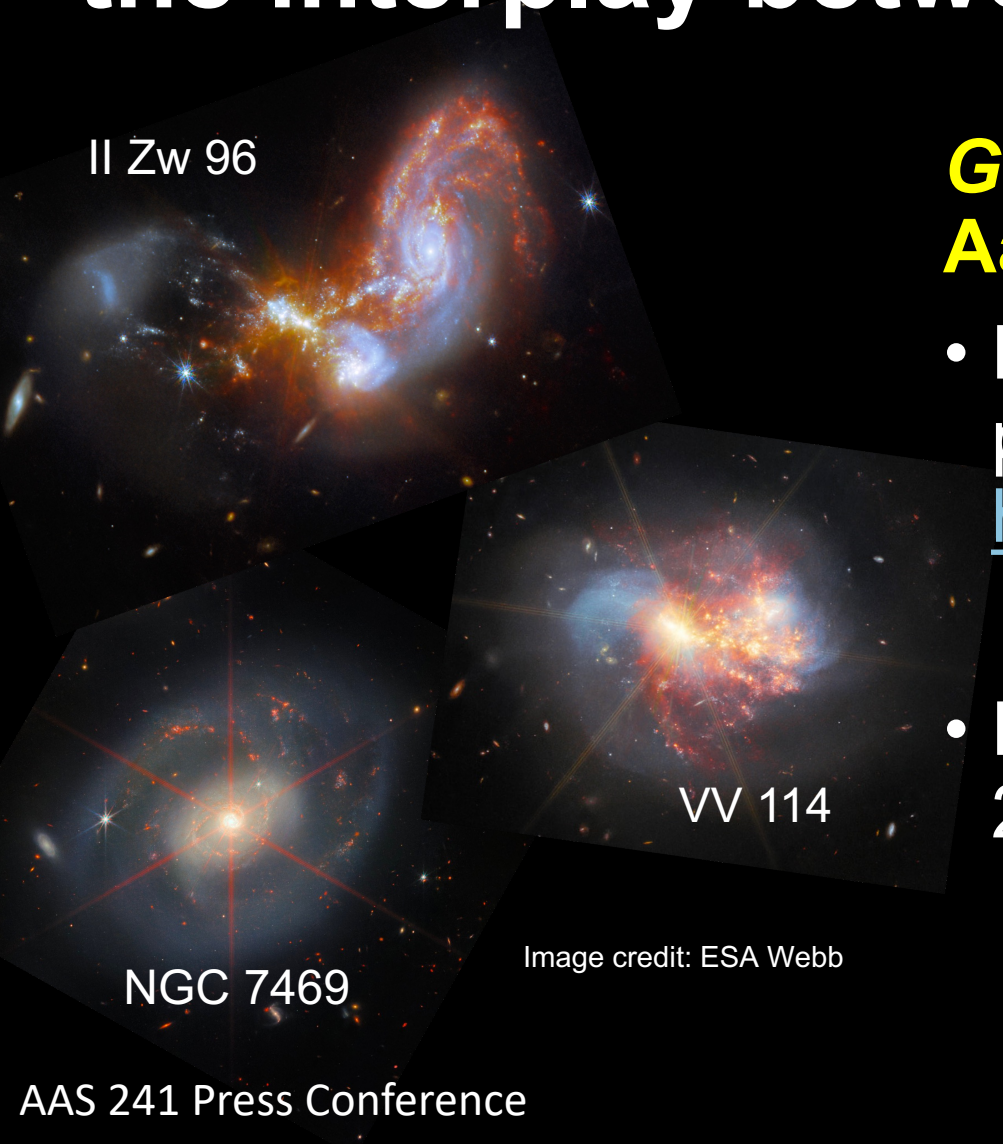

Image credit: ESA Webb

***GOALS-JWST:* ERS-1328 (PIs: Lee Armus & Aaron Evans), GO-1717 (PI: Vivian U)**

- First set of 8 papers have been accepted or published! Check out https://goals.ipac.caltech.edu/

- For more information on this paper (U et al. 2022), see the press release from UCI News:

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