

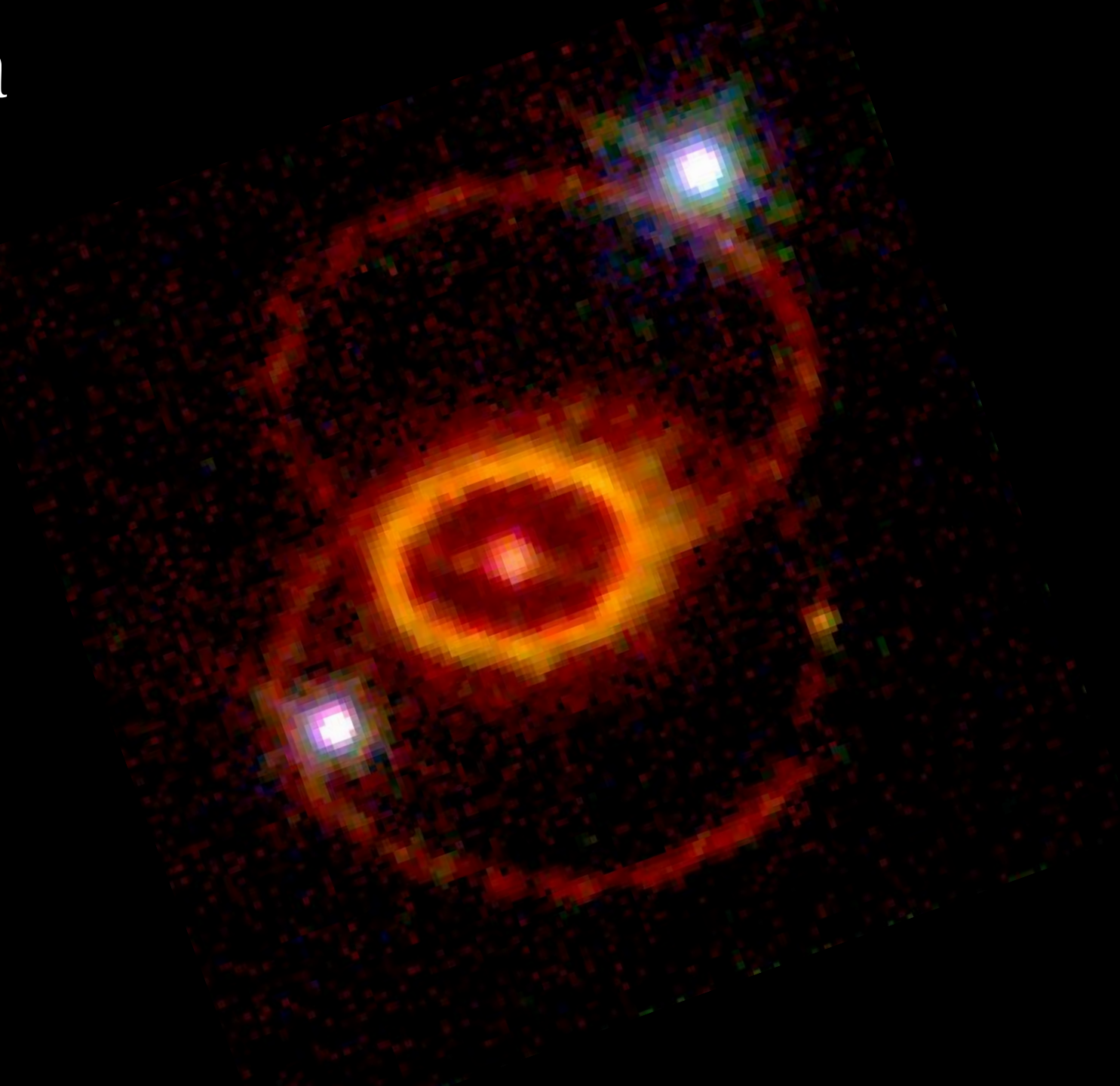
The James Webb Space Telescope:



**The first year
of discoveries.**

Timothy S. Hamilton
Shawnee State Univ.
October 2023

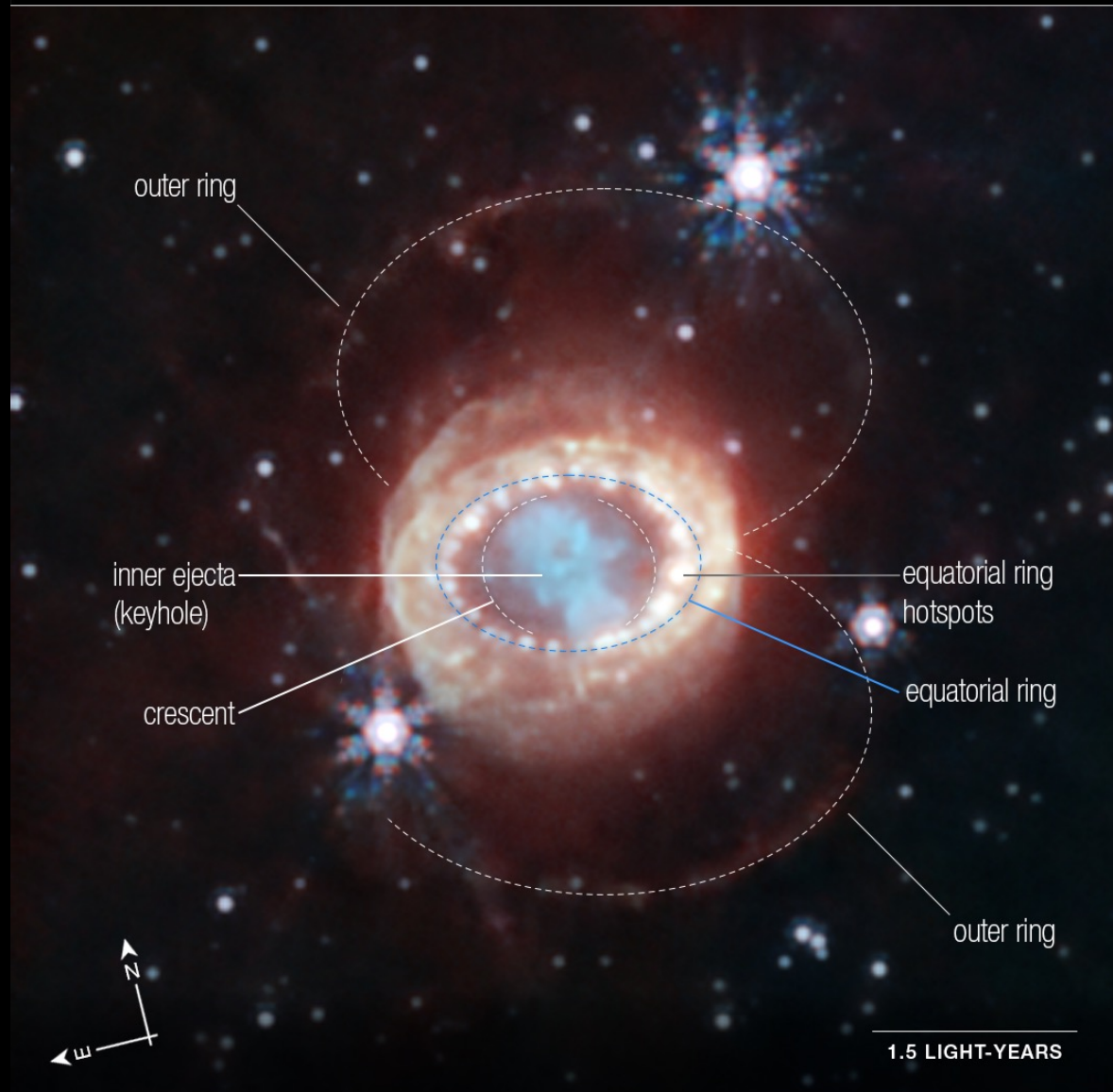
Supernova
1987A
Hubble
1994



Supernova
1987A
Webb
2023

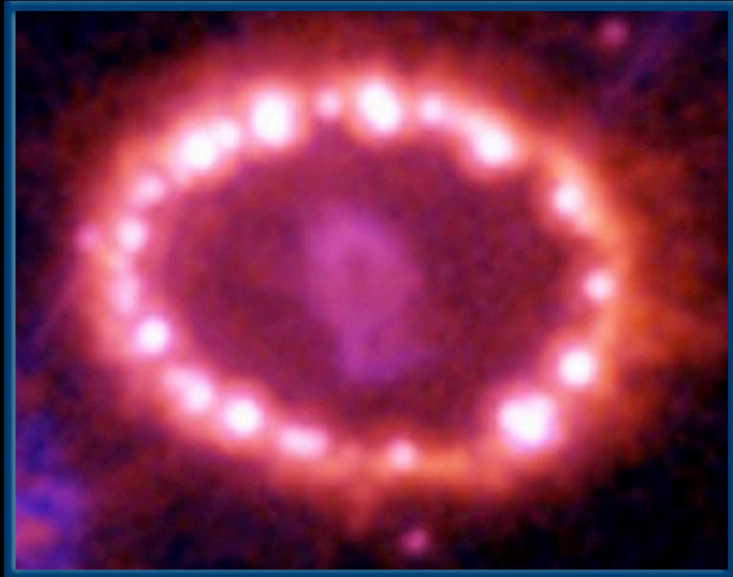


JAMES WEBB SPACE TELESCOPE
SUPERNOVA 1987A



NIRCam Filters | F150W F164N F200W F322N F405N F444W

Inner debris of the Supernova 1987A (SN 1987A) ring



Outer bipolar
outflow of
gas and
outer
ring

Inner bipolar
outflow
of debris

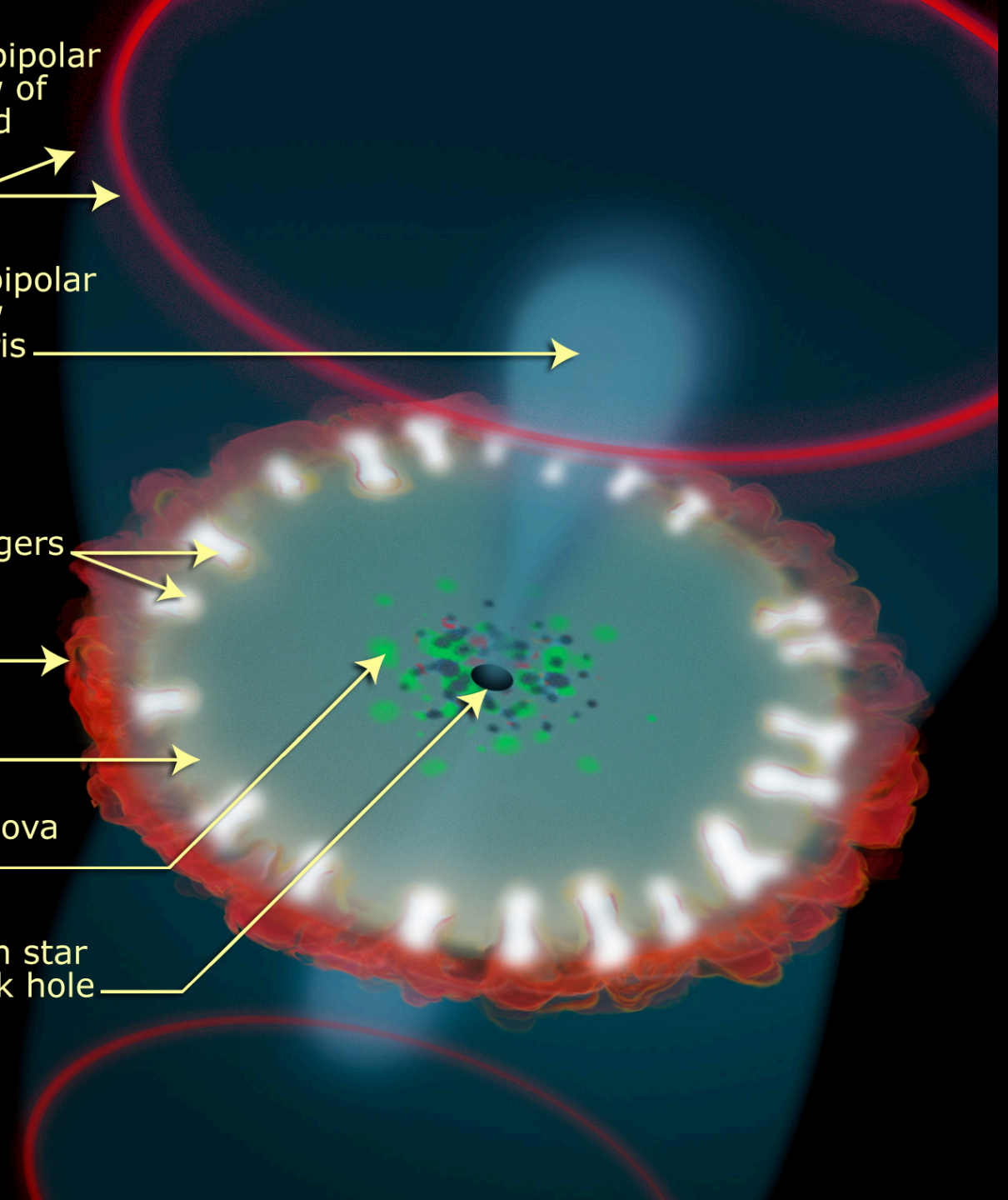
Hot fingers
of gas

Ring

Blast
wave

Supernova
debris

Hidden
neutron star
or black hole



Herbig-Haro HH 211
Webb 2023



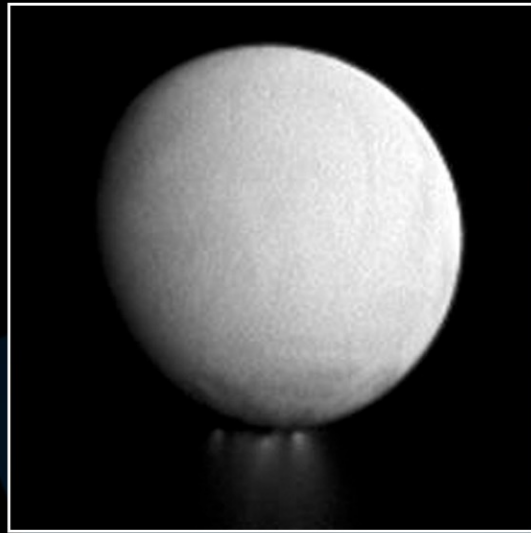


Cartwheel Galaxy
Hubble 1996

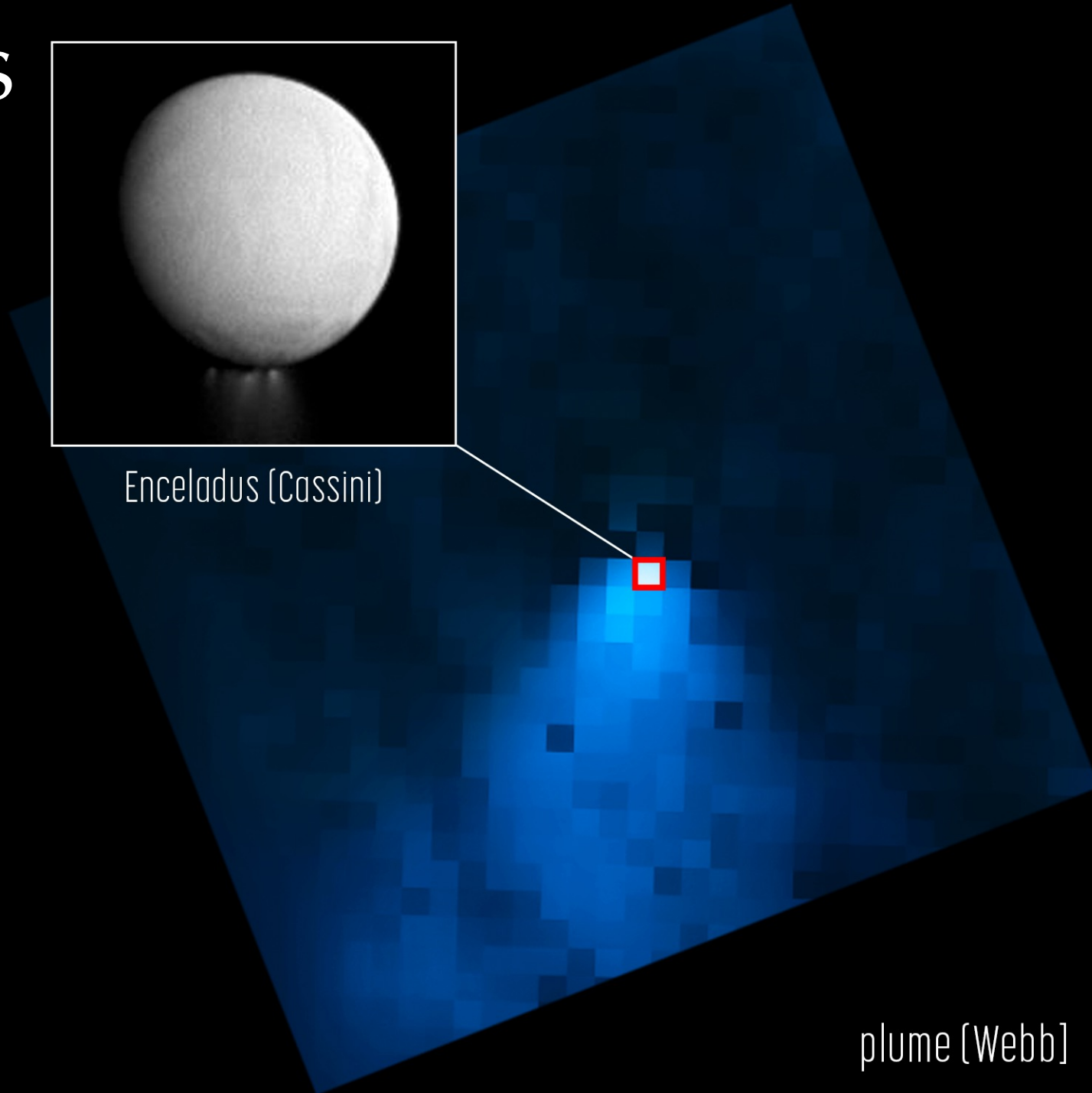


Cartwheel Galaxy
Webb 2023

Enceladus



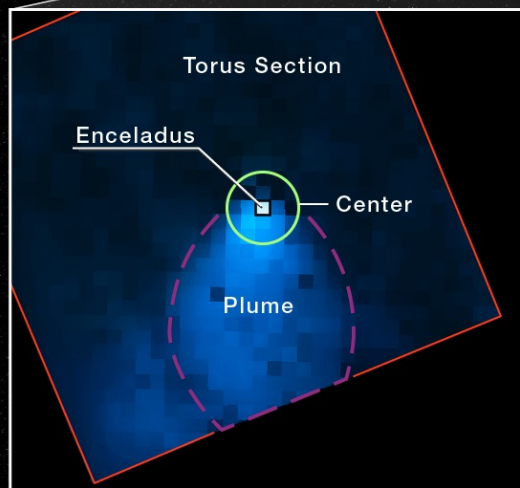
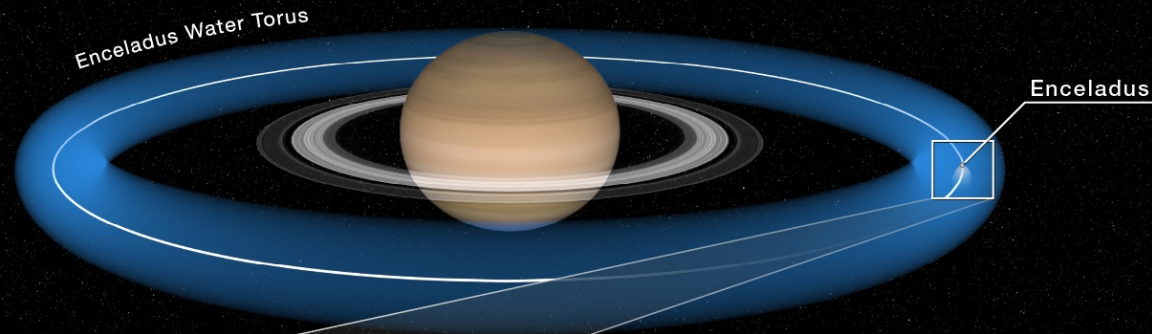
Enceladus (Cassini)



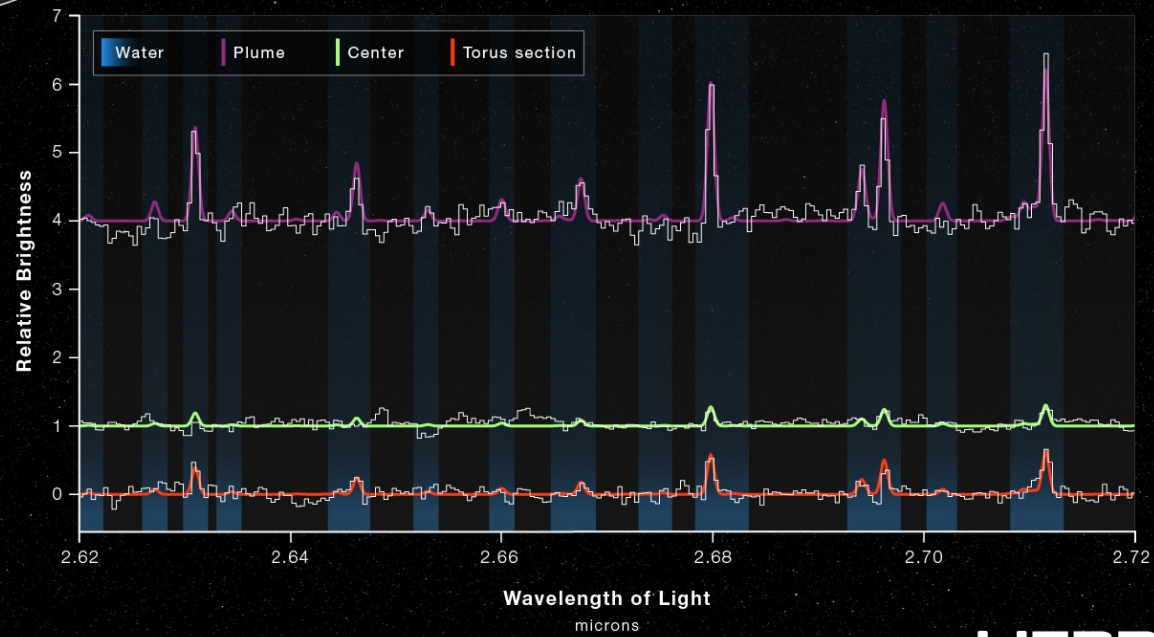
plume (Webb)

SATURN'S MOON ENCELADUS WATER EMISSION SPECTRUM

NIRSpec | IFU Spectroscopy



Plume/Torus Model and Extracts

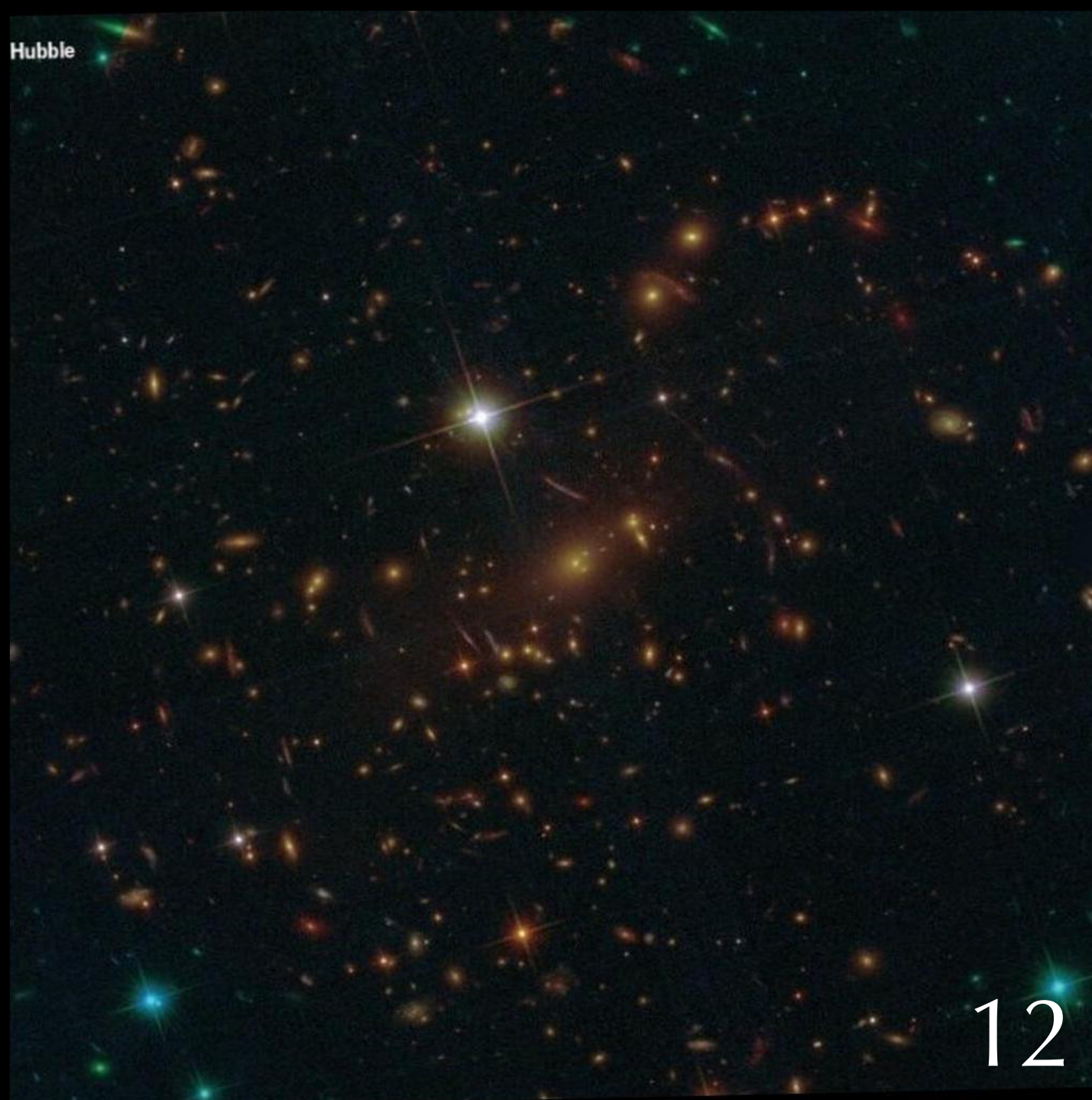


Maisie's Galaxy:

The most distant galaxy known*



Hubble:
SMACS 0723
2017



Webb:
SMACS 0723
2022

