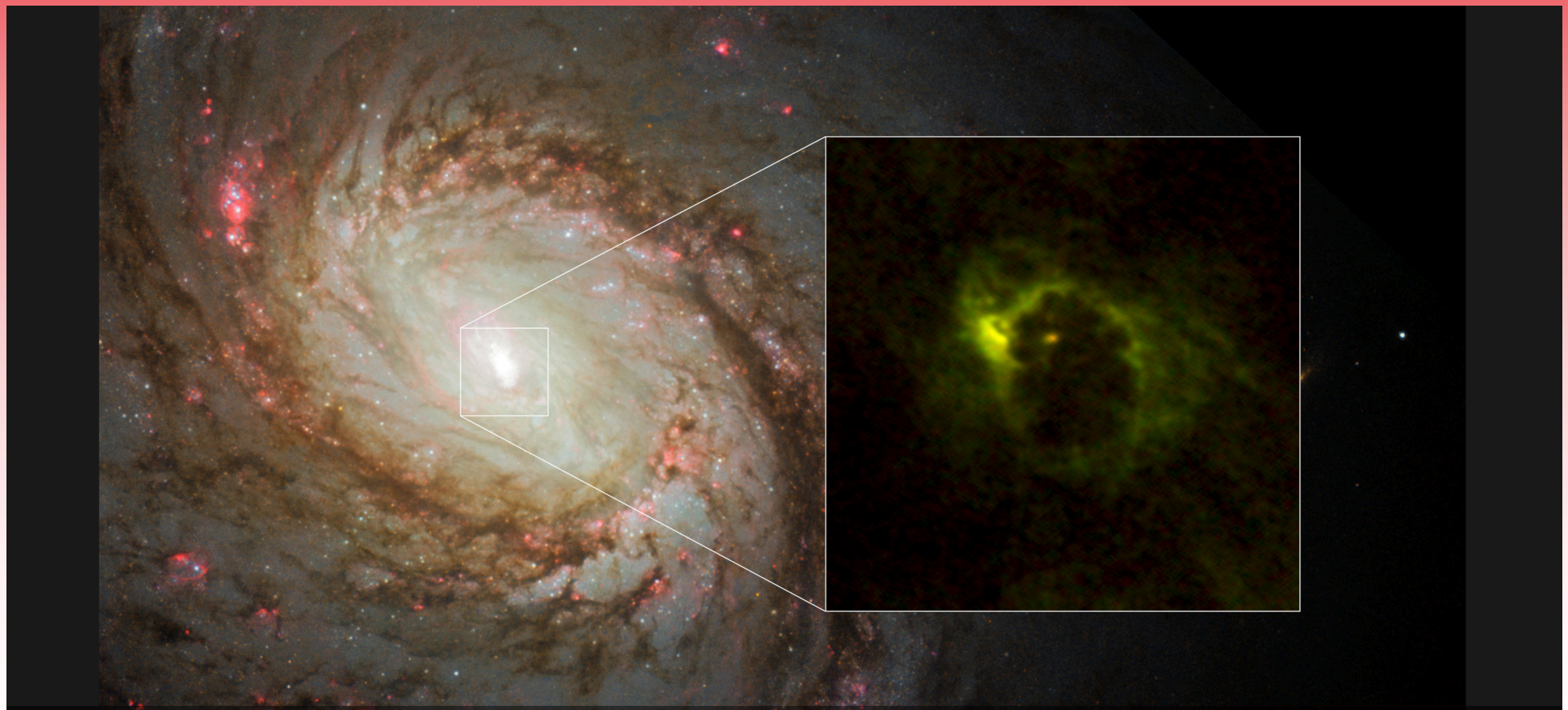
Observation of a Black Hole

Physics 090

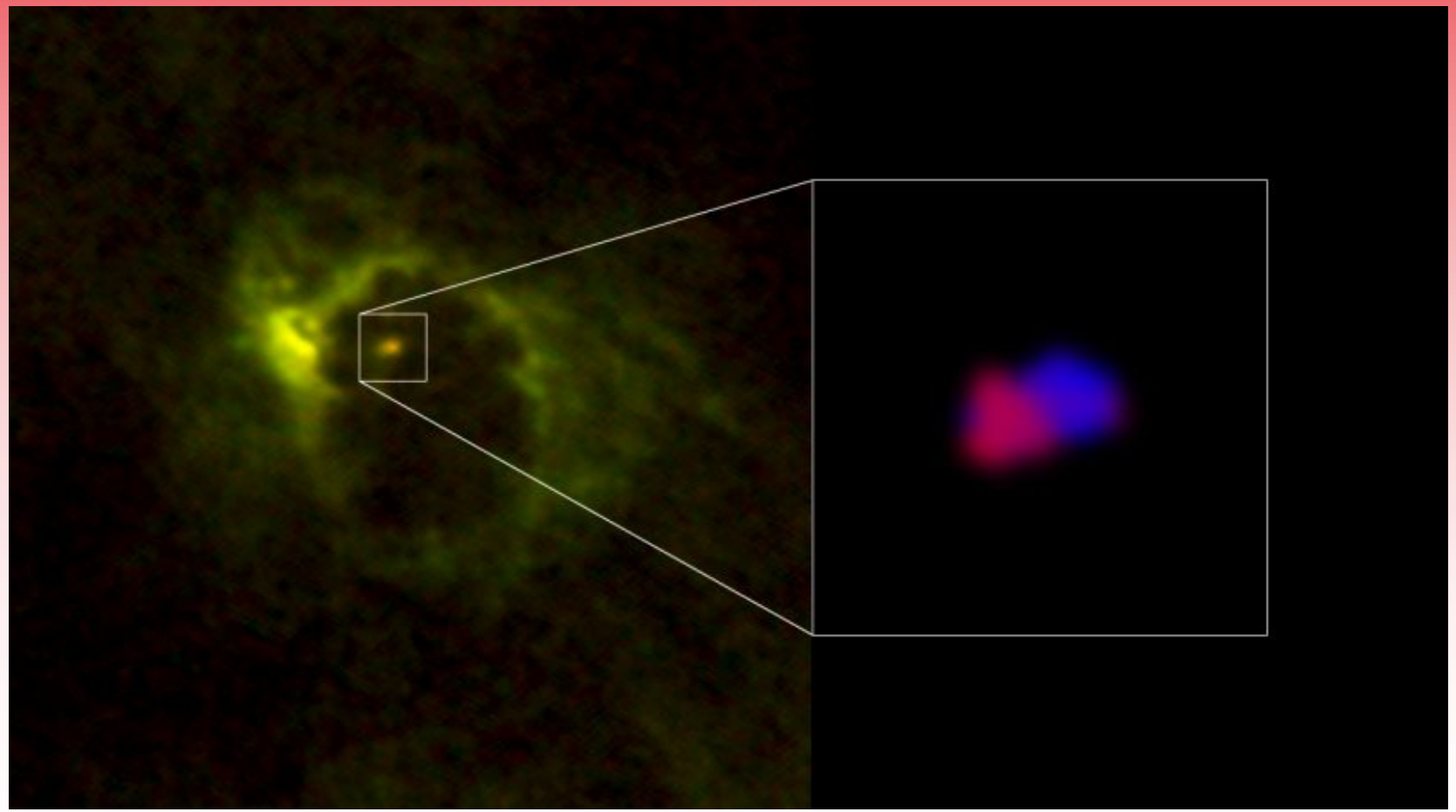
2020-04-29

SAINT MARY'S COLLEGE of CALIFORNIA



The central region of the spiral galaxy M77. The NASA/ESA Hubble Space Telescope imaged the distribution of stars. ALMA revealed the distribution of gas in the very center of the galaxy. ALMA imaged a horseshoe-like structure with a radius of 700 light-years and a central compact component with a radius of 20 light-years. The latter is the gaseous torus around the AGN. Red indicates emission from formyl ions (HCO^+) and green indicates hydrogen cyanide emission. Credit: ALMA (ESO/NAOJ/NRAO), Imanishi et al., NASA/ESA Hubble Space Telescope and A. van der Hoeven

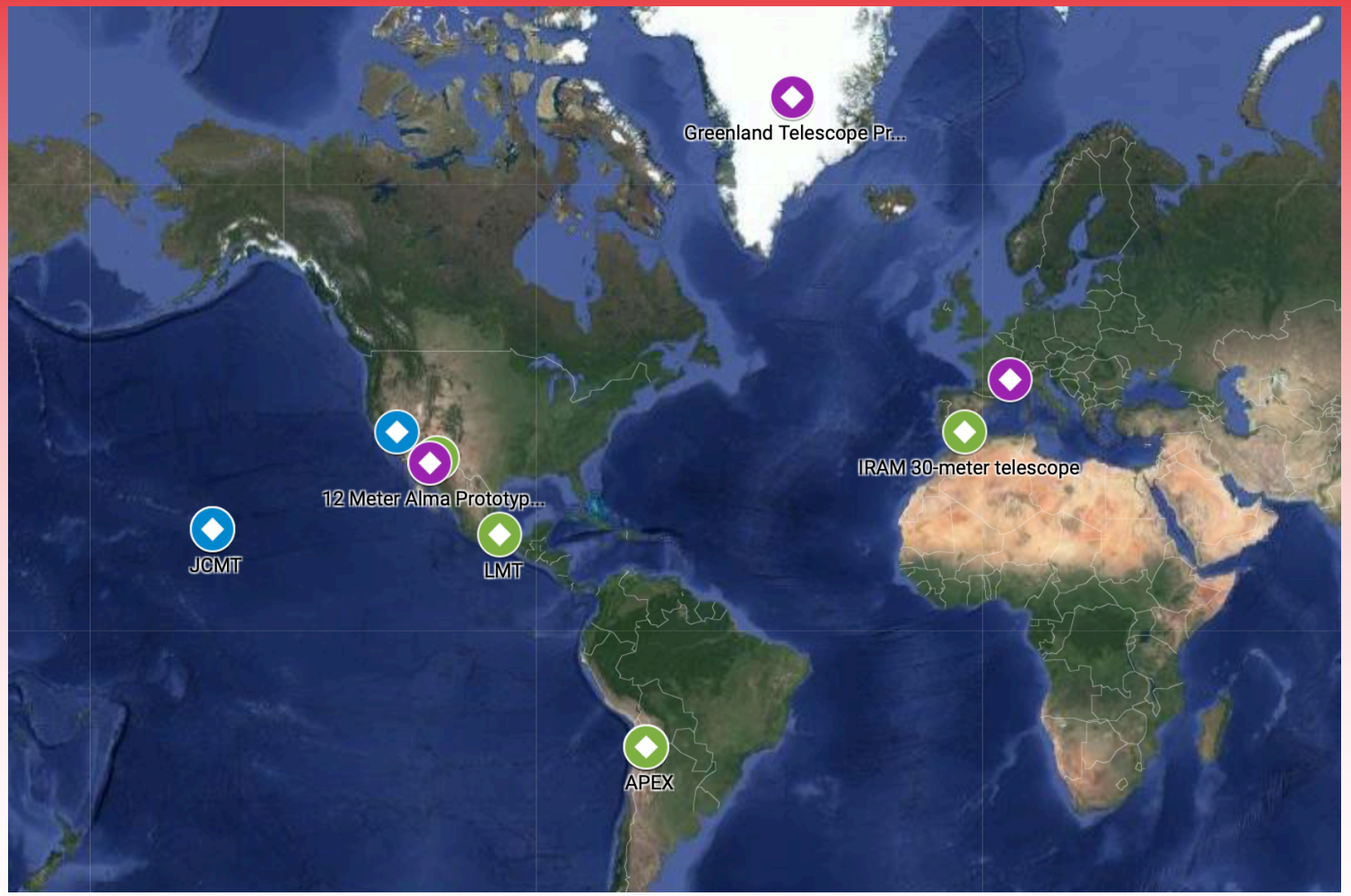
Hubble Space Telescope Image of M77 and Core



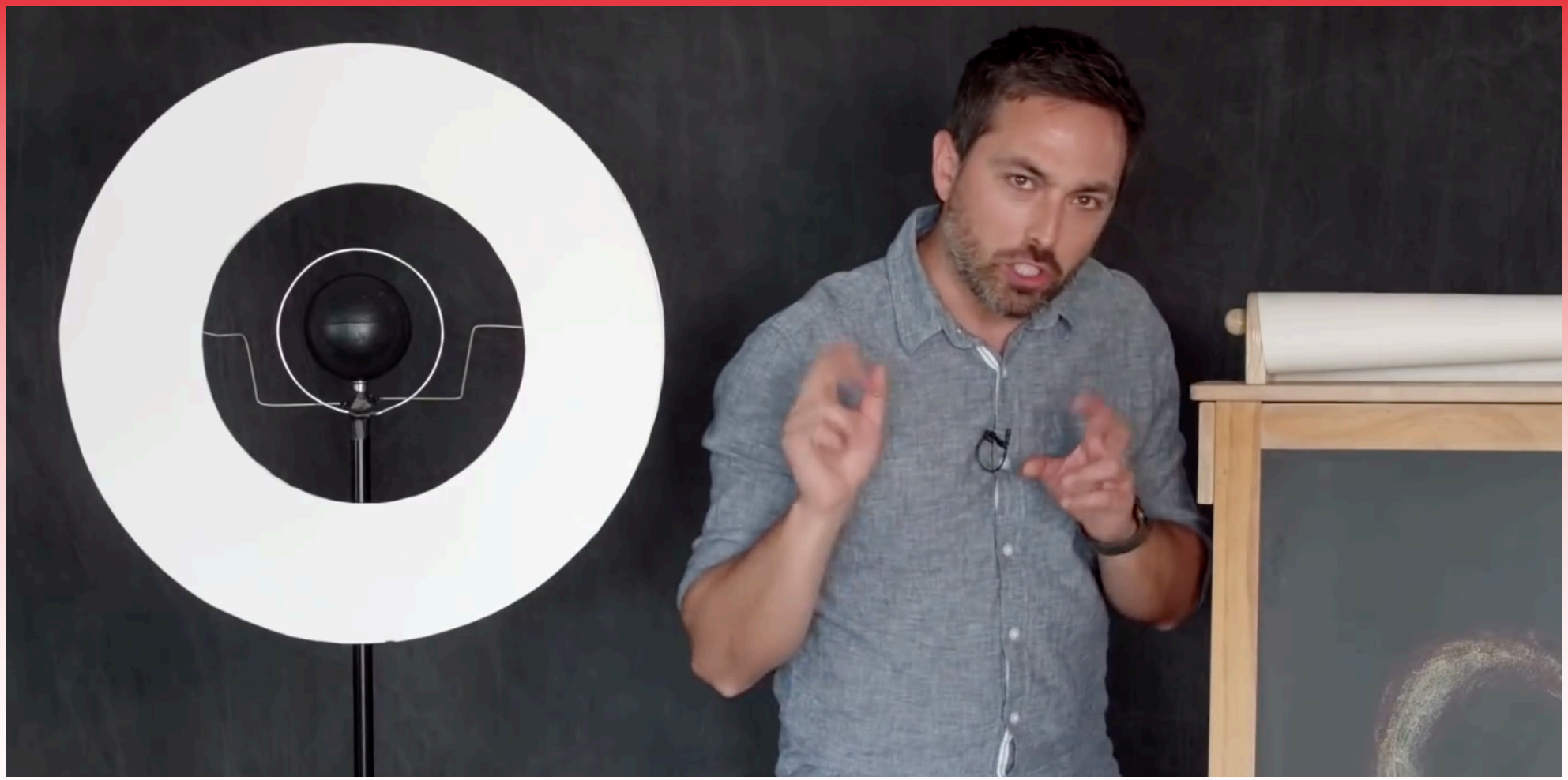
Hubble Space Telescope Image
Core, Accretion Disk

Event Horizon "Telescope" Image of Messier 87 Core

Image Released April 10, 2019—after
2 years(!) of data processing

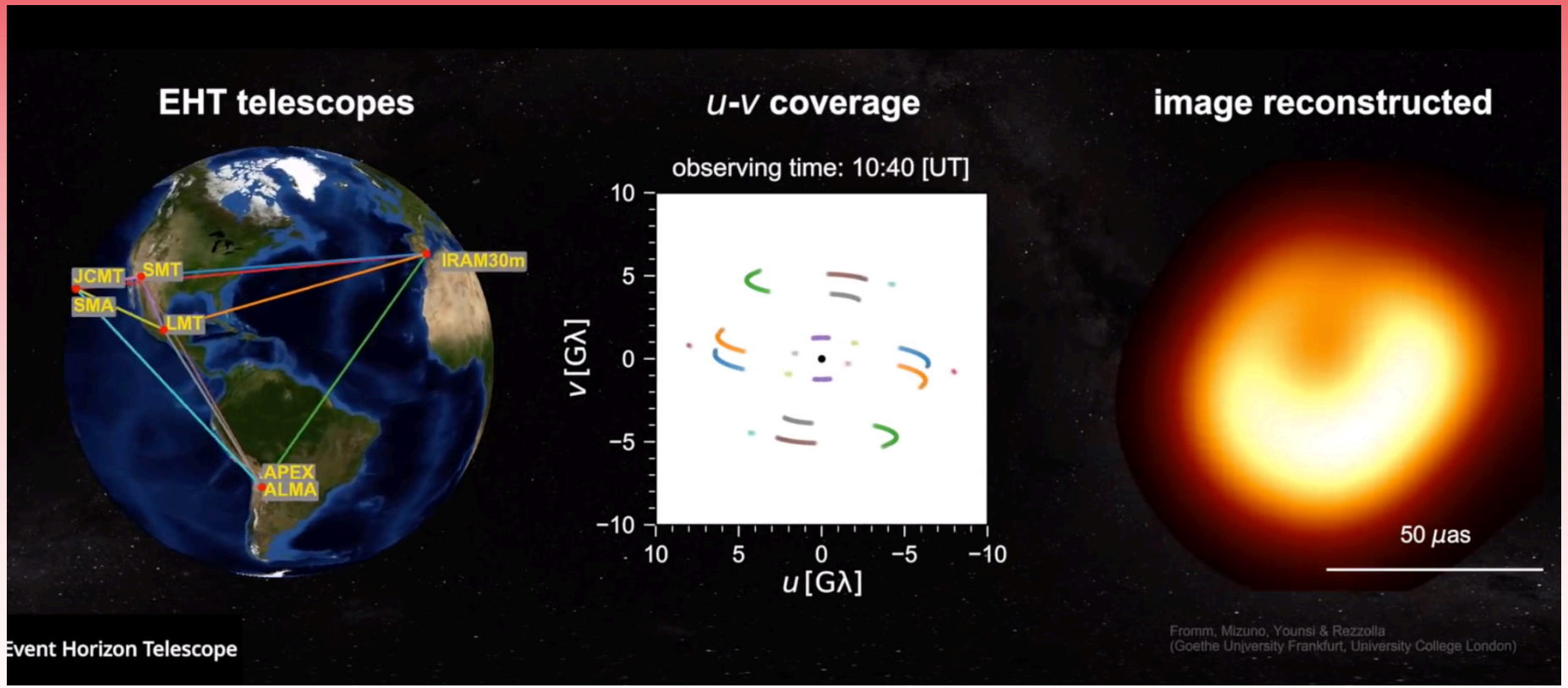


Event Horizon Telescope Array



Veritasium Video 1 (Theory)

https://youtu.be/zUyH3XhpLTo



Veritasium Video 2 (Results)

https://youtu.be/S_GVbuddri8