TESS, Machine Learning
Discover Mysterious Dusty Object

Scientists found a dust-emitting object orbiting one star in a binary called TIC 400799224. The dust blocks up to 75% of the star's light and may come from a crumbling asteroid or planet.

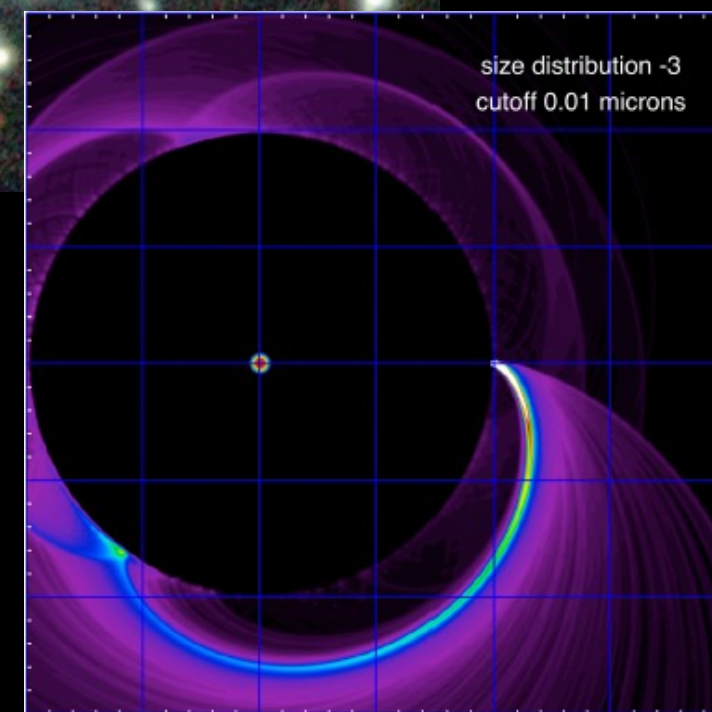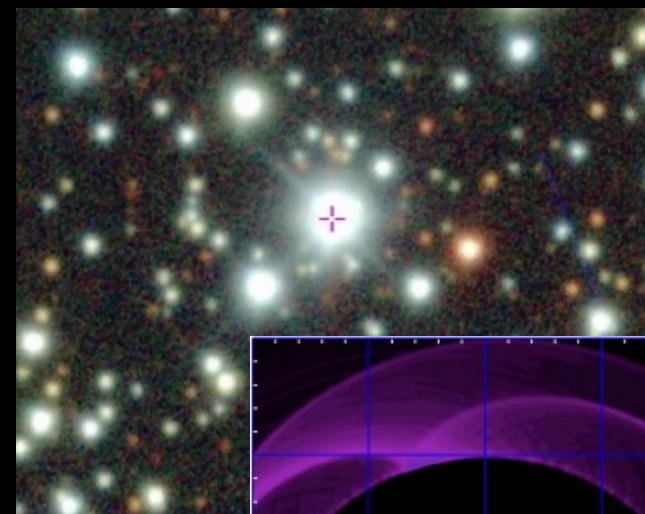They made the discovery using machine learning, a method where software autonomously recognizes patterns.

The team, led by Goddard data scientist Brian Powell (660) and Veselin Kostov (665) made use of the NASA High-End Computing Program through the NASA Center for Climate Simulation at Goddard.

This pioneering work opens up many new possible applications of machine learning that other missions, including the Roman Space Telescope team, are investigating.

Other examples of this team's work:

https://exoplanets.nasa.gov/news/1672/discovery-alert-first-six-star-system-where-all-six-stars-undergo-eclipses/

https://www.nasa.gov/feature/goddard/2021/nasa-summer-intern-combines-data-science-and-astronomy-with-stellar-results

size distribution -3
cutoff 0.01 microns

TIC 400799224 in an image from the Cerro Tololo Observatory in Chile.
Below: One model of the dust tail for the hypothesized orbiting object.