

Finding the Needles in the Haystacks: high-fidelity models of extrasolar systems

What is the science question? Can a future high-contrast instrument identify an Earth-like planet among a "Haystack" of confusion sources (interplanetary dust, background galaxies and stars)?

What were your findings?

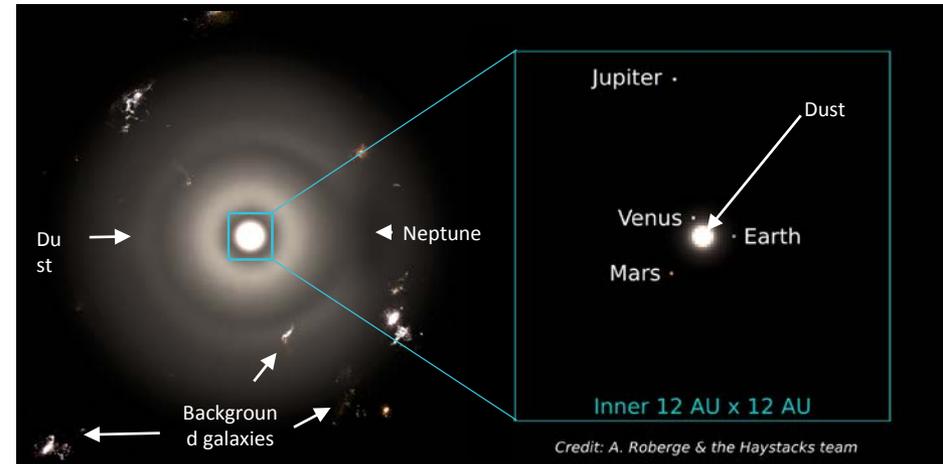
- We constructed complete spectra of all the solar system planets based on observations and models
- We carefully constructed models of the interplanetary dust present in the solar system
- We carefully constructed models of background galaxies and stars

What was the impact?

- This is a tool for instrument designers to set performance requirements, check how sensitive their instruments are, and learn how to model a real observation.
- These models are being used to aid the design of future exoplanet mission concepts like the Large UV/Optical/Infrared Surveyor (LUVOIR).

Why does it matter to non-scientists? These models will help enable future space telescopes to observe planetary systems and detect signs of life on extrasolar planets.

What would our solar system look like seen from far away?



What would a future telescope like LUVOIR see?

