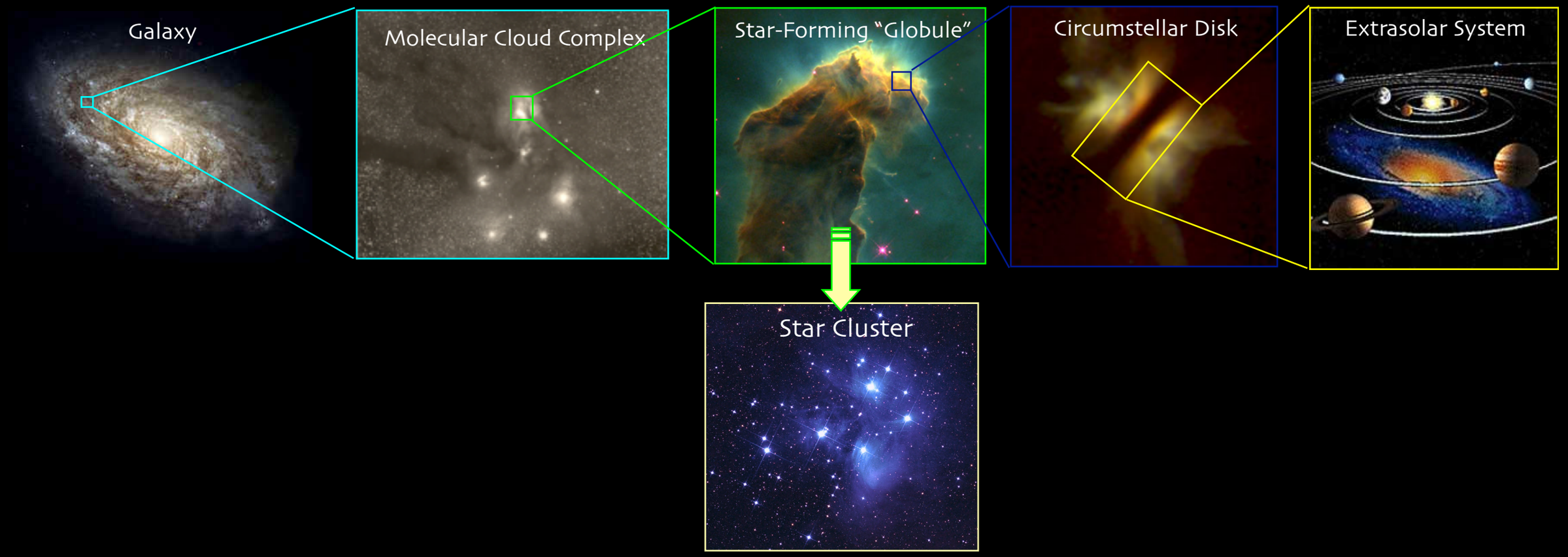
Alyssa Goodman
Robert Wheeler Willson Professor of Applied Astronomy
Harvard University

What I study, on one slide.



1984

2014

The New York Times

U.S.

WORLD | U.S. | N.Y. / REGION | BUSINESS | TECHNOLOGY | SCIENCE | HEALTH | SPORTS | OPINION

POLITICS | EDUCATION | TEXAS

DUST CLOUDS HINT PLANET FORMATION

By WALTER SULLIVAN
Published: February 5, 1984

FACEBOOK
TWITTER
GOOGLE+
EMAIL
SHARE
PRINT
REPRINTS

Astronomers have recorded dense clouds of dust around two distant stars and have concluded that they represent the strongest candidates so far for new planetary systems being formed. The observations, made with three large telescopes, were of infrared wavelengths beyond the red end of the visible light spectrum.

The new observations, announced by Cornell University, indicate that enough dust is orbiting the star HL Tau in the constellation Taurus to form a planet equal in mass to the earth. It is believed the solar system of which the earth is a part formed from a rotating, disk-shaped cloud of dust and gas, the bulk of which was drawn together by gravity to form a central star. The residue formed into planets and moons.

HL Tau is thought to be very young, as stars go, only about 100,000 years old, and its planets may therefore still be forming. The shape of the cloud around it suggests that it is in the form of a disk tilted to appear oval. Its diameter is estimated at four times the distance from the sun to the outermost planet of the solar system.

A second cloud has been recorded around the star R Mon in the constellation Monoceros. That star is four times more distant than HL Tau and its cloud is believed four times larger. It, too, is believed to be very young. Infrared Glow Observed

The observations were of the infrared glow produced in the dust by light radiating from the star. They were made by the 131-inch reflector of the Kitt Peak National Observatory in Arizona and two telescopes especially designed for infrared observations atop Mauna Kea, an extinct Hawaiian volcano. One is operated by the National Aeronautics and Space

SPACE.com

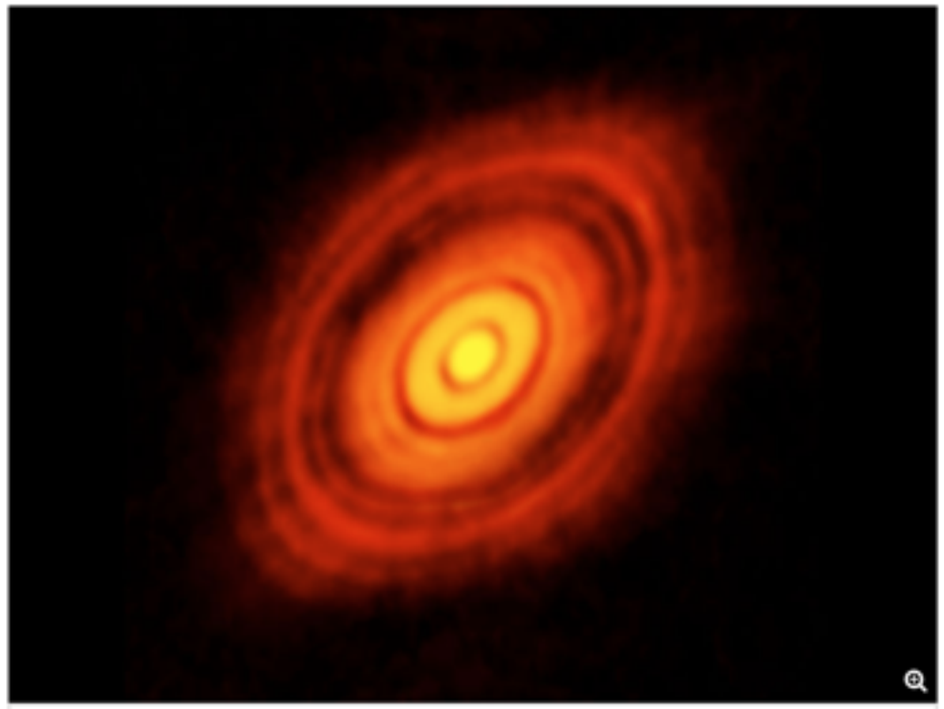
TECH SPACEFLIGHT SCIENCE & ASTRONOMY SEARCH FOR

Space.com › Science & Astronomy

Weird Gaps Are 'Footprints' of Baby Alien Worlds (Images)

By Nola Taylor Redd, Space.com Contributor | June 13, 2016 07:44am ET

20
8
1
3
1
MORE



ALMA image of the dust disk around HL Tauri.
Credit: ALMA (ESO/NAOJ/NRAO)

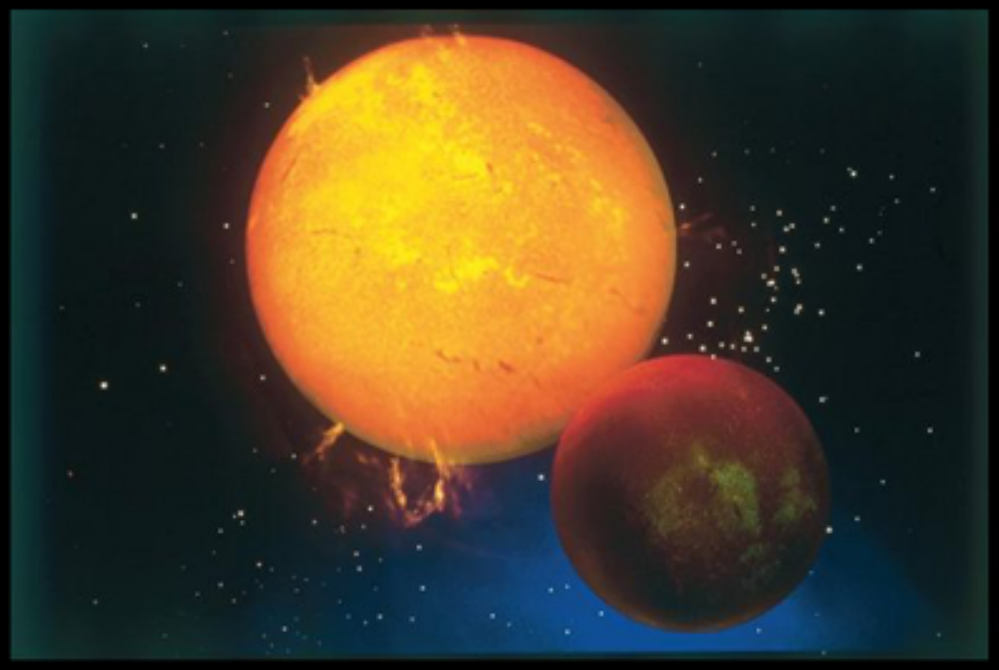
Baby alien worlds are indeed likely slicing gaps in the disk of dust and gas swirling around the young star HL Tauri — a finding that could help reshape scientists' current understanding of how planets form.

1995

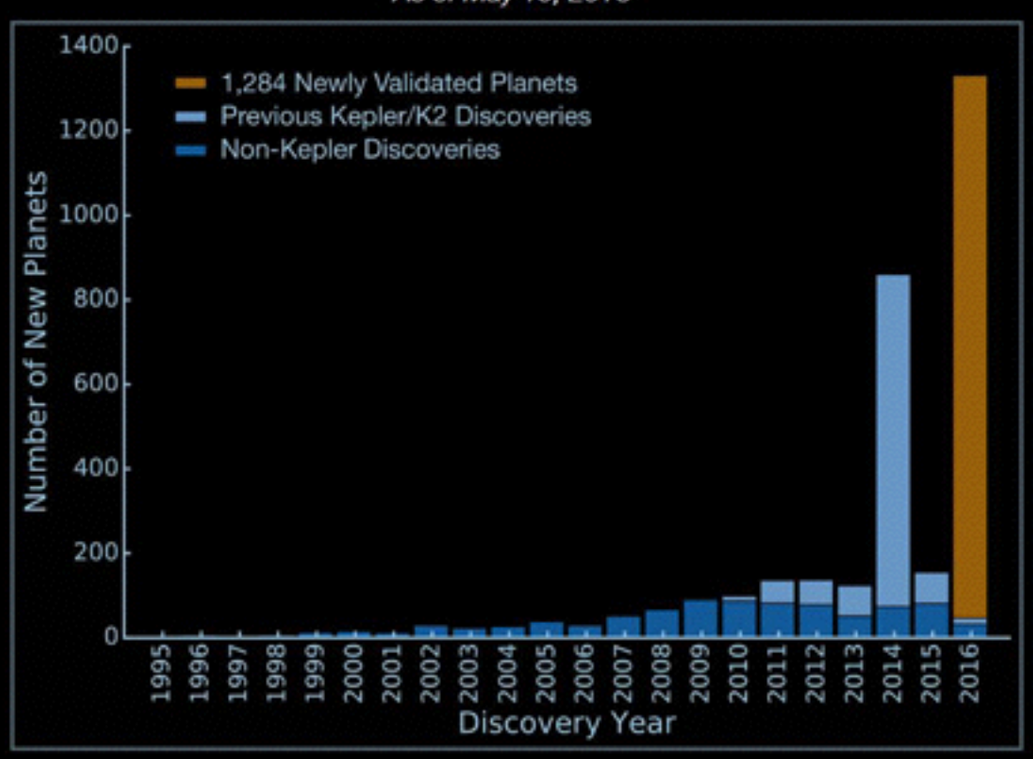
1995-now

51 Pegasi

- First exoplanet discovered (1995)
  - Surface temp of 1340 °F



Copyright © 2008 Pearson Education, Inc., publishing as Pearson Addison-Wesley



www.nytimes.com/2014/12/18/science/space/a-picture-captures-planets-waiting-to-be-born.html