

Astronomy News November 2008

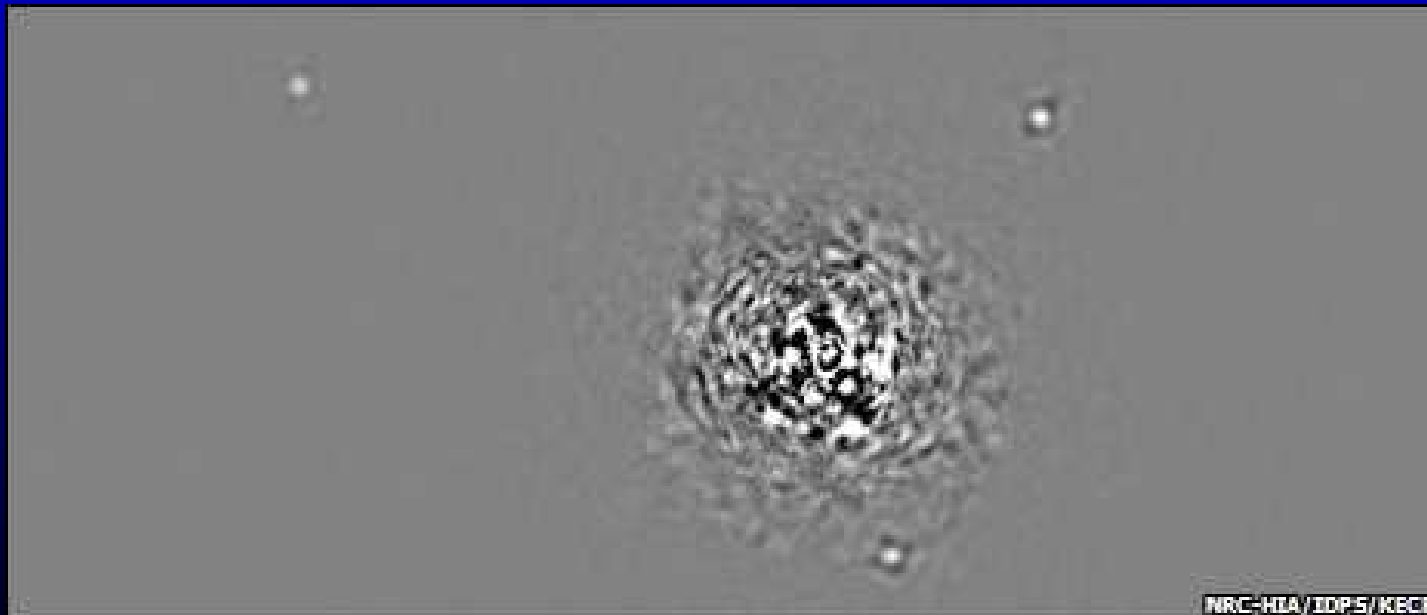
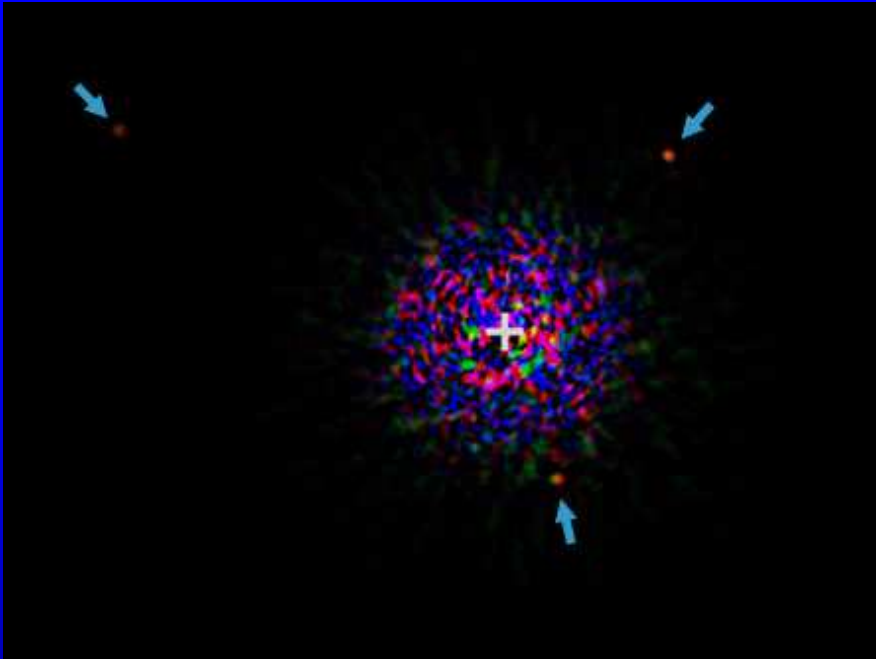
Planets observed around two stars

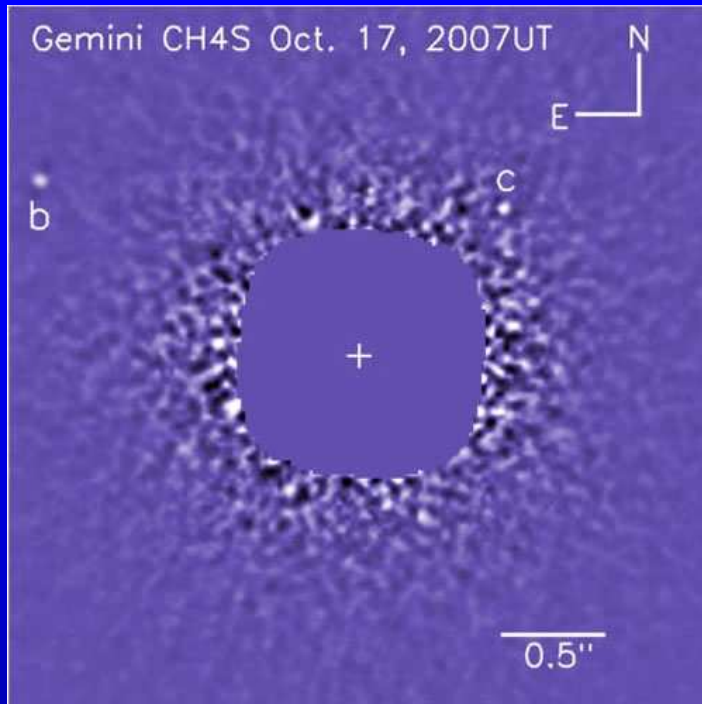
A triple planet system observed in the infrared and a single planet observed in the visible in orbit around the star Formalhaut.

3 planets orbiting HR8799

- HR 8799 has a mass about 1.5 times that of our own Sun, and lies about 130 light years from the Sun. One of the 10-meter Keck telescopes in Hawaii has captured the three planets in infrared light orbiting the star.
- Each planet contains several times the mass of Jupiter, but even the innermost planet, labelled d, has an orbital radius near the equivalent of the Sun- Neptune distance.

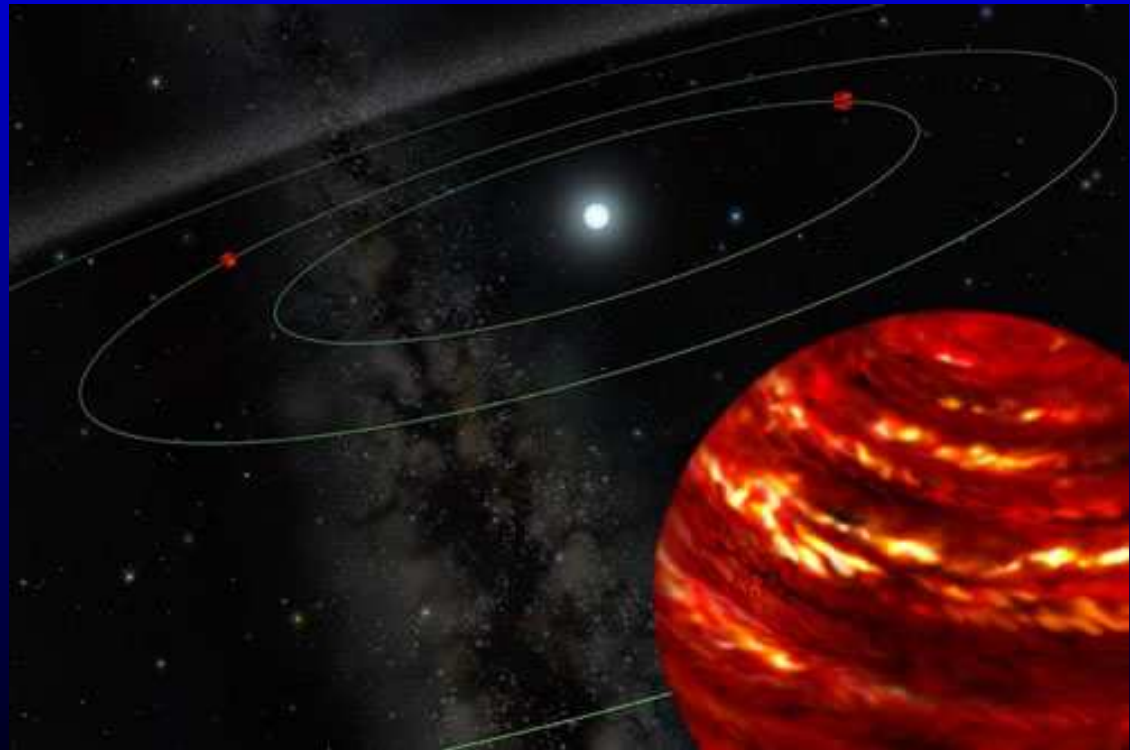
HR 8799 with three planets





Gemini North has
observed the two
outer of these planets

Artist's impression
of the triple planet
system



HR 8799

HR 8799



HR 8799



50 AU

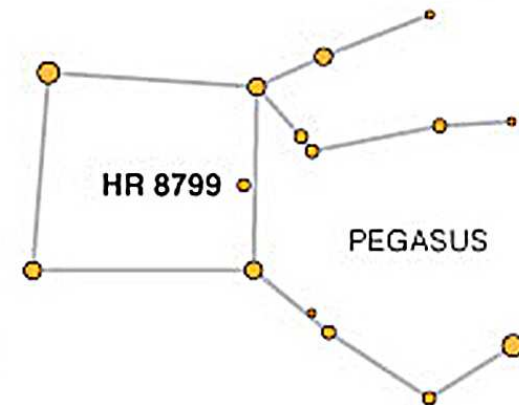
Solar System



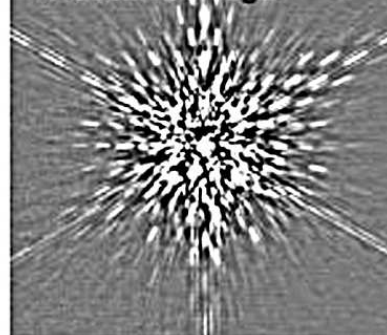
50 AU

One group used the Gemini and Keck telescopes on Mauna Kea in Hawaii to record three planets circling the star HR 8799, 130 light-years away.

The group used adaptive optics, in which the telescope mirrors are warped several times a second, and software filtering to compensate for atmospheric turbulence and glare from the star.



10-second Image



Processed image with starlight glare removed



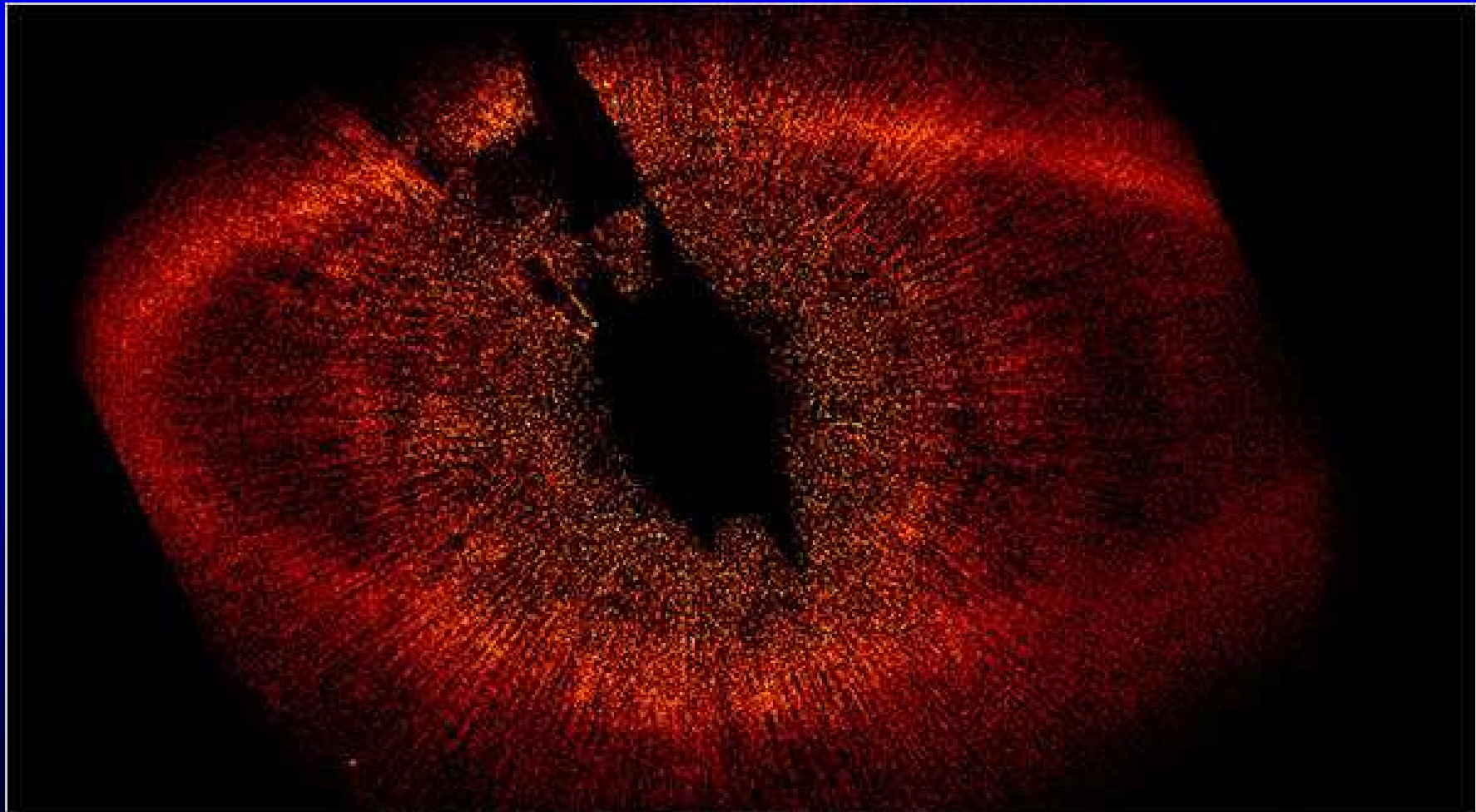
Processed images combined over 1 hour

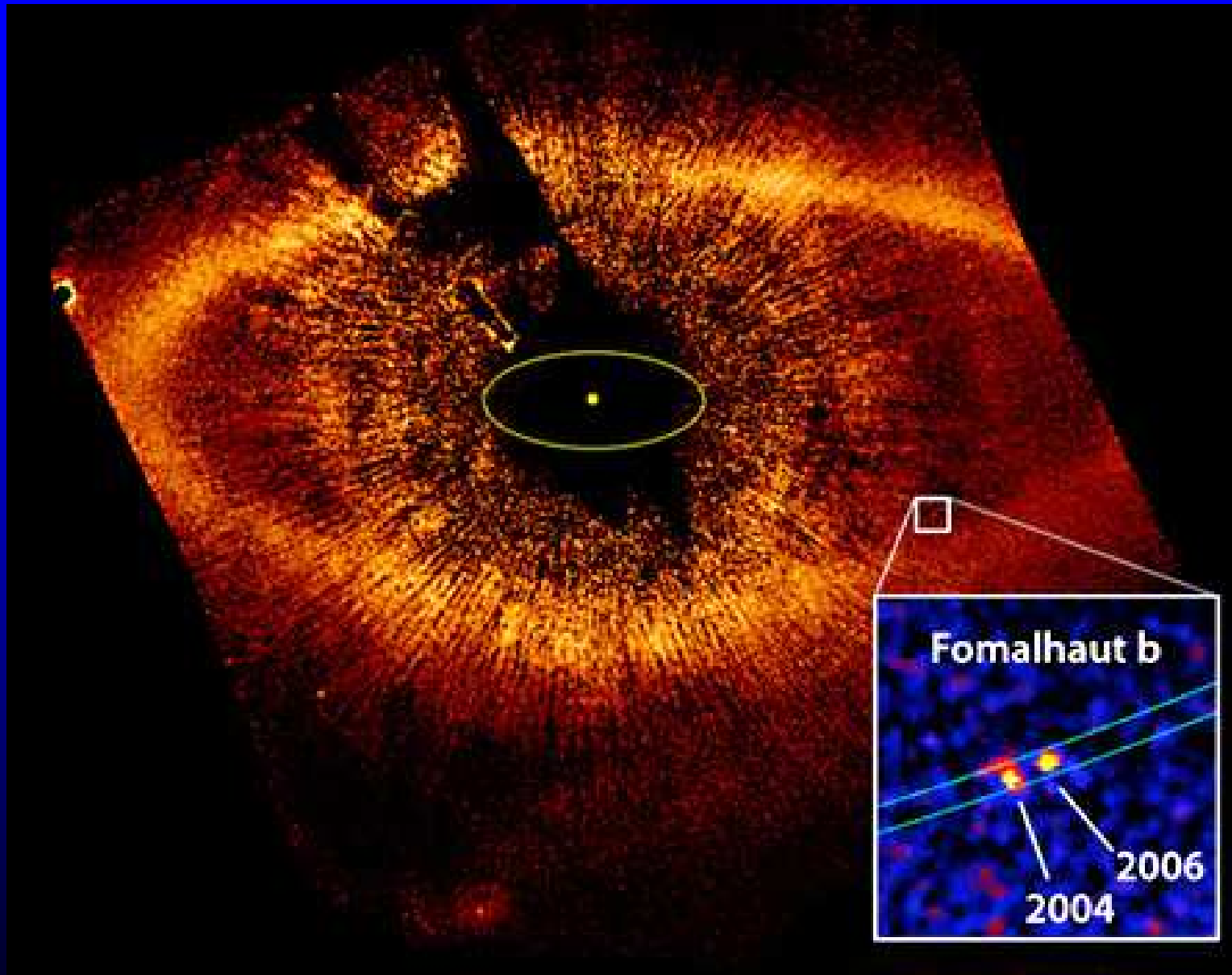


The Hubble Space Telescope has
imaged the star Formalhaut -

and has observed a planet for the first time
in visible light. The light from the star was
obscured by a disk, so forming a
coronagraph.

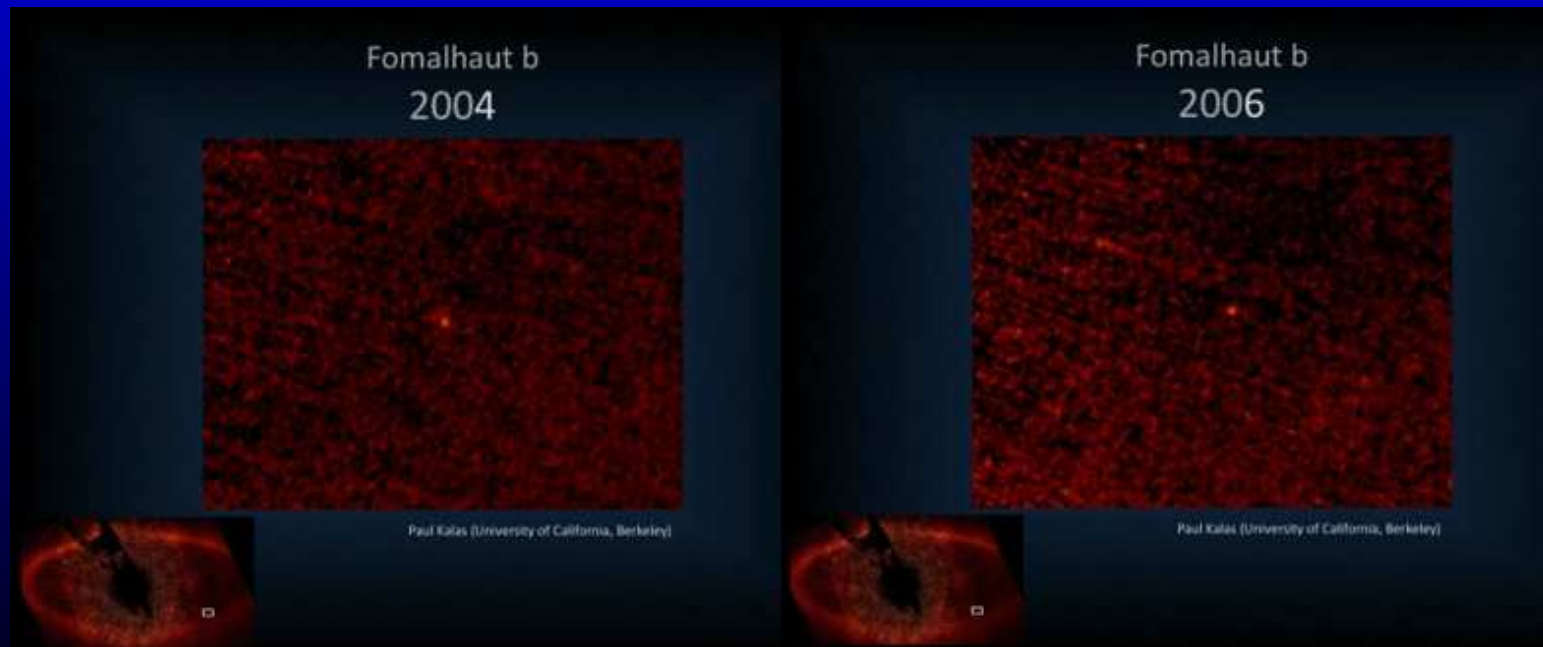
Hubble Visible Image of Formahaut





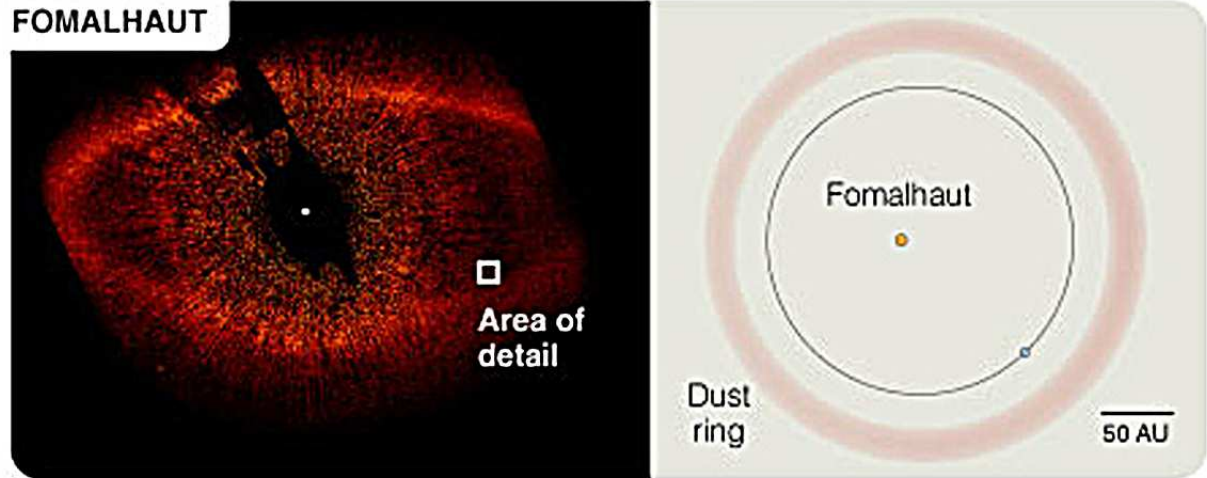
Formalhaut b

- A “dot” seen within the dust ring surrounding the star Formalhaut has moved in position over a period of two years.



- A coronagraph mask was used to block out much of the light for the star which lies at a distance of 25 light years.
- The planet is ~ 3 Jupiter masses and orbits Formalhaut at a distance of 14 Sun-Jupiter distances ~ 10.7 billion miles or 72.8 AU.

Formalhaut b



Another group used the Hubble Space Telescope to spot a planet orbiting the bright star Fomalhaut, 25 light-years away.

Using a mask called a coronagraph to block the star's direct light (above, in black), the team was able to take detailed images of Fomalhaut's huge dust ring in 2004 and again in 2006. One bright spot inside the ring had moved slightly—a massive planet.

