

Existence of exoplanet 'Fomalhaut b' called into question

26 September 2011, by Bob Yirka



An exoplanet called Fomalhaut b has been photographed in an unexpected spot — so is it even an exoplanet at all? Image credit: NASA

(PhysOrg.com) -- Fomalhaut b, thought to be the first exoplanet photographed directly, has come under increased scrutiny due to evidence of an unexpected divergence from its expected orbit. Paul Kalas, James Graham and their colleagues [identified the planet in 2008](#) while studying photographs taken by the Hubble telescope in 2004 and 2006. At that time it appeared Fomalhaut b orbited just inside a dust cloud that circles around Fomalhaut, the star at the center of that solar system. Now however, new photographs of Fomalhaut b show that it actually crosses into the dust cloud, causing Toronto astronomer Ray Jayawardhana, at a recent exoplanet conference, to suggest that Fomalhaut b may not be an exoplanet after all.

The whole story actually began back in 2005 when evidence arose from studies of the dust belt surrounding Fomalhaut, suggesting that at least one exoplanet (any planet not in our own solar system) existed in the system due to the behavior of the [dust cloud](#). After years of studying [photographs](#) from Hubble, Kalas and his team came upon Fomalhaut b, an apparent exoplanet about the size of Jupiter (and three times its mass),

orbiting some 1.72×10^{10} km from its sun. Unfortunately, more evidence regarding the exoplanet could not be had due to the malfunction of the camera onboard Hubble. It wasn't until just last year that another picture of Fomalhaut b was finally made using a different camera on Hubble. The problem was, the exoplanet appeared in a different place than astronomers expected; a problem that has various astronomers offering various explanations. Some suggest that the projected [orbit](#) was wrong, while others say that maybe it's not a planet at all, but a background star or something else altogether.

Another problem is that there are other apparent anomalies as well. It's too bright for its size example. Also, why aren't other ground-based infrared telescopes able to detect its presence? Jayawardhana says that all of this combined information or lack thereof, should be enough to have Fomalhaut b removed from the exoplanet.eu database. Kalas, in response suggests that 1RXJ1609, an [exoplanet](#) that Jayawardhana and his team are studying, should be reviewed more closely as well.

The whole argument, if that's what it is, appears to suggest that perhaps more stringent means should be established for classifying exoplanets before they are announced as such. Also maybe, those astronomers in the field who seem to be just as interested in the limelight as in making new discoveries should perhaps take a closer look at how they are coming off to those reading about their spats in the press.

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