MEDIA RELEASE

NEWS FROM THE UNIVERSITY OF TASMANIA
DATE: THURSDAY 12 JANUARY 2012
ATTENTION: Chiefs of Staff, News Directors

Planets outnumber stars in our Galaxy

New research has found planets around stars are the rule rather than the exception – there are more planets in the Galaxy than there are stars.

An international team which includes five astronomers from the University of Tasmania had made the discovery.

The team searched for exoplanets (planets outside the Solar System) using gravitational microlensing, a little-known technique for planet-finding.

Gravitational microlensing can detect planets over a much wider range of masses and distances from their parent stars (stars that give the planets light and warmth) than other methods.

In six years of observations, the Probing Lensing Anomalies NETwork (PLANET) and the Optical Gravitational Lensing Experiment (OGLE) searches discovered three exoplanets on their own and seven more in co-operation with other survey teams.

Although the number of planets that were detected is small, statistical analysis of the microlensing process shows that this is a truly impressive haul.

To detect these planets, astronomers have either hit a jackpot despite huge odds against them, or planets are so abundant in the Galaxy that their discovery is almost inevitable.

Dr Arnaud Cassan, from the Institut d'Astrophysique de Paris, is lead author of the research paper titled *One or more bound planets per Milky Way star from microlensing observations*.

He said it was also discovered that lighter planets, such as super Earths (planets with mass 3-10 times the mass of the Earth) or those of about Neptune size, are much more common than heavier ones.

Dr Daniel Kubas, co-lead author of the paper, said we used to think Earth was at the centre of the Universe and planets were rare.

“But now it seems that there are literally billions of planets with masses similar to Earth orbiting stars in the Milky Way,” he said.

Dr John Greenhill, from the UTAS School of Maths and Physics, was the UTAS team leader on the research project.

"Our analysis shows that Earth-sized and smaller planets are even more common than suspected,” said Dr Greenhill. “It seems very likely that there are more Earth-mass planets than stars in our galaxy.”

The UTAS observations used the Mt Canopus one-metre telescope in the Meehan Ranges near Hobart. The Institut d’Astrophysique de Paris and several other institutions around the world helped make the observations.

The research paper, *One or more bound planets per Milky Way star from microlensing observations*, will appear in today’s edition of the journal *Nature*.

To interview Dr John Greenhill, please contact UTAS Communications and Media Office on (03) 6226 2691.

For an image, visit:
http://www2.iap.fr/users/cassan/stars_planet4_still2_cc.jpg
Credit: ESO/M. Kornmesser
Legend: This artists’ cartoon view gives an impression of how common planets are around the stars in the Milky Way. The planets, their orbits and their host stars are all vastly magnified compared to their real separations.

For an animated version, visit:
http://www2.iap.fr/users/cassan/stars_planet4.mp4
Credit: ESO/M. Kornmesser

About PLANT and OGLE:

PLANET is an international collaboration set up in 1995 (by Penny Sackett - formerly the Australian Chief Scientist) to search for planets using microlensing. It has telescopes in Chile, Hobart, Perth WA and South Africa.

OGLE searches for microlensing events using a very large-format camera on a 1.27 m telescope in Chile. They detect hundreds of microlensing events each year and PLANET looks for planets in perhaps a hundred of these.

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