

Media



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Local astronomers help find new planet

Astronomers at Perth Observatory in Western Australia have played a crucial part in the discovery of a new planet orbiting a distant star.

Two local astronomers, Dr Andrew Williams and Ralph Martin, are involved in PLANET (Probing Lensing Anomalies NETWORK), which is one of three international observing campaigns that worked collaboratively to make the discovery (PLANET/RoboNet, OGLE, and MOA).

The three campaigns have involved 73 collaborators affiliated with 32 institutions across 12 countries – France, United Kingdom, Poland, Denmark, Germany, Austria, Chile, Australia, New Zealand, United States of America, South Africa and Japan.

Dr Andrew Williams said the Perth Observatory played an essential role in the collaboration because of its position on the globe.

"Detecting short-lived signals like the ones from this planet requires observations every hour or so, 24 hours a day, so observations from Perth fill the large time-zone gap in the Southern Hemisphere between Chile and South Africa," he said.

Perth Observatory took two-thirds of all the images during the course of the 'planetary anomaly', lasting about a day. Without the data from Perth, the mass, orbit, and even existence of the planet would be in doubt.

A technique known as gravitational microlensing was used to make the planet discovery that was reported in the prestigious international science journal, *Nature*.

"We let the gravity of a dim Sun-like star act as a giant natural telescope for us, magnifying a more distant, bright star," Dr Williams explained.

"A small 'defect' in this gravitational lens revealed the existence of a planet around the nearby star. We don't see the planet or even the star that it's orbiting, we just see the effect of the gravity."

Based on the brightness of the parent star and the orbital distance, astronomers calculate that the planet has a surface temperature of only about 50°Kelvin, or 220°C below zero.

Even so, Ralph Martin said that the planet is more Earth-like than any other planet discovered so far.

“It is about five-times as massive as the Earth with an orbital radius about three-times the Earth-Sun distance in our solar system, and orbits its parent star every 10 years,” Mr Martin said.

“Due to its low mass and low temperature it must be solid, an icy or rocky planet similar to Pluto in our solar system, rather than gaseous like Jupiter, Saturn, Uranus and Neptune.”

The discovery is expected to encourage more microlensing planet searches using current and additional facilities from the ground – or possibly with a space-based campaign in the near future.

Media Opportunity: Dr Williams and Mr Martin will be available for interviews and vision/photograph opportunities at the Perth Observatory at 10am on Wednesday, 25 January. A CD of digital images and media information packs will be available at the conference.

EDITORS NOTE: All information embargoed until 6am Thursday, January 26, 2006.

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