**The University of Sydney**

**Faculty of Science**

**School of Physics**

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**MEDIA RELEASE**

**BABY PLANETS SNAPPED BY ASTRONOMERS**

University of Sydney astronomer, Professor Peter Tuthill, is one of an international team of astronomers who have captured the first image of a planet caught in the act of formation.

This first planetary ‘babysnap’ published by the team has caught a tiny fleck of light, betraying the presence of a massive body like a planet or possibly a brown dwarf, orbiting exactly on queue within the vacant gap in the disk surrounding the star *T Chamaeleontis*.

This an outstanding breakthrough in astronomy which for over 200 years has had to rely on a flawed theory by philosopher Immanuel Kant as to how planets were formed which, thanks to the team’s discovery, has now been disproved.

Professor Tuthill agrees this discovery is a major step forward in the quest to find planets in orbit around distant stars.

“Kant proposed that planets grow within a vast spinning pancake of dust - the messy remnant leftover from the formation of the sun or star in the centre. It’s kind of like the idea of a snowball accumulating more and more snow and become increasingly more massive.”

"Not only is this exciting science, but the result also represents a technical tour-de-force," adds Professor Tuthill, whose team designed the instrument, which recovered the images. "You have got to work very hard to see that faint mote of light against the overwhelming glare when the telescope is staring almost directly at a bright star like *T Chamaeleontis*."

The quest to image planetary newborns has been one of the most sought-after goals in modern astronomy, and needed the power of the giant telescopes at the European Southern Observatory's Paranal observatory in Northern Chile.

"As with biology, studying newborns teaches us a lot," says Dr Michael Ireland, also on the Sydney Institute for Astronomy team. "We get to see their initial properties before they get scrambled up and influenced by their environment,” adding, “However there is a practical reason too: a young planet is basically a searing ball of hot lava, and glows quite brightly making it much easier to detect compared to mature cool planets like those in our solar system."

"For understanding planetary formation, this marks a major milestone," says Nuria Huélamo of Spain's Centro de Astrobiología, first author of the work to be published in the journal Astronomy and Astrophysics. "This could be the first time we have been able to witness a companion digging a gap inside its protoplanetary disc”.

Summing up the significance of the work, team member, Dr Sylvestre Lacour of Paris Observatory, said, "This result has opened a whole new window on our universe, let's just hope that through it we get to see many more newborn planets twinkling in the gaps they have sculpted."

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