

THIS PRESS RELEASE IS EMBARGOED UNTIL 27 May 2009, 19.00 CEST

P R E S S R E L E A S E

Nederlandse Onderzoekschool voor Astronomie (NOVA)

Leiden, The Netherlands, 25 May 2009

Astronomers reveal the changing phases of an extrasolar planet

Astronomers from Leiden University in the Netherlands show for the first time that a planet orbiting a star other than the Sun exhibits changing phases just as is seen for our own moon. The extrasolar planet, CoRoT-1b, was discovered by the French/European satellite CoRoT, and is located at a distance of about 1600 light years in the constellation Monoceros. The results will be published in the May 28th issue of Nature.

From the observations of the CoRoT satellite the astronomers conclude that the nightside of the planet is completely dark, this while the dayside is strongly heated by the star up to about 2000 degree Celsius (3600 F). "This strong heating occurs because the distance from CoRoT-1b to the star is only 3 percent from the Earth-Sun distance", says Ignas Snellen, the leader of the research team. During the 36 hours that the planet revolves around the star, astronomers observe varying fractions of the bright dayside and dark nightside of the planet. Because the star is about 10,000 times brighter than the planet, the system is observed to become brighter and darker by about one-hundredst of a percent. "A incredibly precise measurement, for which the CoRoT-team should receive all credit", according to Snellen.

The measured effect is very much like the changing phases of objects in our own solar system, such as the Earth's moon, during the which Sun shines on the moon from different direction while it revolves around the Earth. Although in the case of our moon this is reflected sun-light, while for CoRoT-1b it is probably heat radiation. Interestingly, this year has been declared international year of astronomy by the United Nations, to celebrate that it has been exactly 400 years that Galileo Galilei studied the skies with a telescope for the first time. One of the first observations of the Italian astronomer where the changing phases of Venus to show the true configuration of our solar system. Now, exactly 400 years later, this same effect has been observed for a celestial body outside our solar system.

E N D P R E S S R E L E A S E

More information:

Dr. Ignas Snellen, Universiteit Leiden
Tel: 06-30031983
E-mail:snellen@strw.leidenuniv.nl

Drs. Ernst de Mooij, Universiteit Leiden
Tel: 071-5278492
E-mail:demooij@strw.leidenuniv.nl

Artikel: "The changing phases of extrasolar planet CoRoT-1b". Ignas A.G. Snellen, Ernst J.W. de Mooij, en Simon Albrecht (Leiden Observatory, Leiden University), Nature (www.nature.com)

