



## Simulation of stellar binary systems: improving the detection of transits in CoRoT lightcurves.

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### Abstract

CoRoT is the first space mission dedicated to astroseismology and the search for extrasolar planets. Employing the transit method for the search of extrasolar planets CoRoT detected hundreds of promising candidates which need to be examined by follow-up ground observations. Twenty-one planets have been confirmed from Corot observations. Other phenomena, however, may mimic a planetary transit. It is therefore important to identify these phenomena early in order to use the resources for follow-up observation efficiently.

More than 50% of all stars are binary systems. A part of these systems are eclipsing binary systems with lightcurves showing transit events. In some cases it is difficult to distinguish between lightcurves from extrasolar planets and eclipsing binary.

The Rhenish Institute for Environmental Research, department of planetary research, at the University of Cologne is part of the CoRoT detection group and developed the software package EXOTRANS, a fully automated pipeline for the detection of transits in Corot lightcurves. To improve the detection, the software package has been extended for the early identification of eclipsing binary systems. An identified eclipsing binary system will not enter the preliminary candidate list. The procedure for the early identification of binary systems will be discussed.