#0011

Young transiting planets

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It is still not clear whether massive gas giant planets form by direct gravitational collapse (contracting) or first by dust coagulation and slow growth of a solid core (growing), then accreting an atmosphere; or whether both paths are possible. The time-scale of planet formation is also not yet known, e.g. fast within Myr (by direct gravitational collapse) or slow in tens to hundreds of Myr (by dust coagulation). We plan to measure radii and mean densities of young planets - possible in a direct way only with the transit technique. Among all transiting planets know so far, none is younger than a few hundred Myr. We plan to continue and finish our project to search for young transit planets [1]: We found a very promising candidate in the young cluster 25 Ori, for which we now would like to finish confirmation as youngest transit planet by further follow-up observations. The expected results would enable us to give constraints for different formation scenarios (and the planet formation time-scale) and, thus, lead to a better understanding of planetary formation processes in general.

[1] Neuhäuser et al. (2011) AN 332, 547-561

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