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Young transiting planets

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The transit method is the only method to determine the radius of a planet and inclination of the orbit directly. Radial velocity follow up can give the true mass. To search for so far not known transiting exoplanets younger than 10 Myr, the YETI network (Young Exoplanet Transit Initiative) was established, consisting of 0.4 to 2m sized ground based telescopes, located at different longitudes all over the world. So it is possible to observe continuously for 24h a day without gaps in the light curves and therefor not missing a transit.

The targets are young clusters, which provide a large number of young stars with similar properties. The cluster is observed with YETI in three runs per year with length of one to two weeks each and over three years. The first target was Trumpler 37 with an age of 4 Myr. The monitoring started 2009. We reach a precision better than 30 milli-mag for 5500 out of the 17,000 field stars. Data processing of 55,000 images from 12 telescopes is still in progress, but we found already 2 transiting candidates, for which follow up is partly done.

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