EXOPLANETS – frontiers of modern planetology

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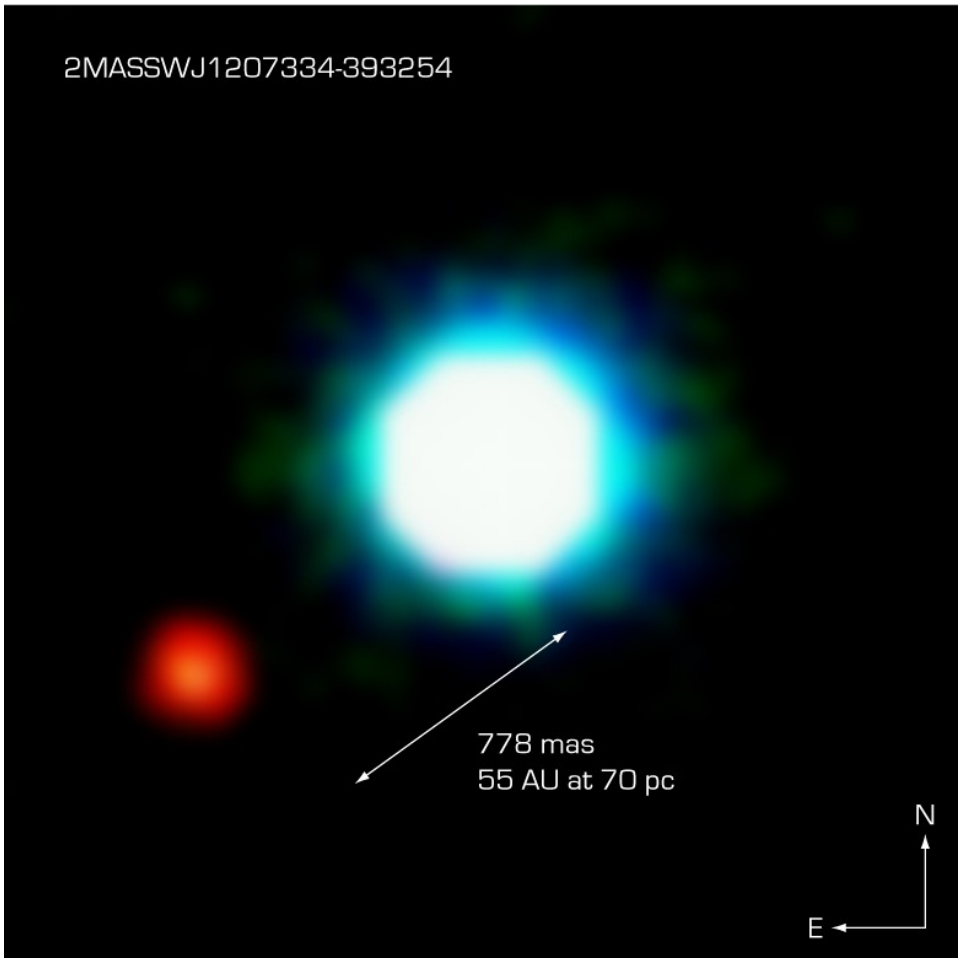
Constantly growing amount of discovered exoplanets and accumulation of data regarding their physical and orbital characteristics provides a broad material for the study of general principles and major trends of planetary evolution. This turns the whole field of "exoplanetology" from a vague speculative subject into a practical science, aimed at characterization and understanding of the variety of discovered extraterrestrial worlds. A number of actual questions regarding the evolutionary paths of planetary systems and influencing key factors is nowadays under continuous tackling. Among these questions a prominent position belongs to the problem of stellar – planetary interactions, including consideration of influences of stellar radiation and plasma flows on planetary environments. The following issues will be addressed in the lecture:

- Planet definition. What are the planets?
- Exoplanet search methods.
- Some intriguing features of exoplanets orbital distribution.



Planetary mass object 2M 1027b, $\approx 3 - 10\ \mathrm{M_{Jupiter}}$,
orbiting brown dwarf in Centaurus (VLT, infrared imaging, Sep. 2004)