Talk at Splinter Meeting

Splinter I

# The EREBOS project: Studying the influence of substellar objects on late stellar evolution

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Planets and brown dwarfs in close orbits will interact with their host stars, as soon as they evolve to become red giants. However, the outcome of those interactions is still unclear. Recently, several brown dwarfs have been discovered orbiting hot subdwarf stars in very short orbital periods of 0.065 - 0.096 d. More than 5% of those stars might have close substellar companions. This shows that such companions can significantly affect late stellar evolution and that sdB binaries are ideal objects to study this influence. Thirty-six new eclipsing sdB binary systems with cool low-mass companions with periods from 0.05 to 0.5 d were discovered based on their lightcurves by the OGLE project. We want to use this unique and homogeneously selected sample to derive the mass distribution of the companions, constrain the fraction of substellar companions and determine the minimum mass needed to strip of the red-giant envelope. We are especially interested in testing models that predict hot Jupiter planets as possible companions. Therefore, we started the EREBOS (Eclipsing Reflection Effect Binaries from the OGLE Survey), which aims at analyzing all newly discovered HW Vir systems based on a spectroscopic and photometric follow-up of all targets. For this we were granted with an ESO Large Program for ESO/VLT-FORS. Here we will introduce this new project and give the current status together with first results.