

Abstract: Sub-percent mass determination of bright binaries with CHARA/SPICA

Gravitational interaction in binary systems provide the most direct and precise measurements on stellar masses, especially when eclipses or astrometry alleviate the high dependence on orbital inclination. The capabilities of the new CHARA/SPICA interferometer, operating in the visible region (R-band), used simultaneously with the infrared CHARA/MIRC-X (H-band) and MYSTIC (K-band), enable high-precision astrometry at the sub-milliarcsecond level. We aim to determine stellar masses of bright binaries across the HR diagram with sub-percent precision using joint modelling of interferometric observables with radial velocities and, where available, light-curves. We present the successful application of this method to the bright eclipsing binary β Aurigae (HD 40183), composed of slightly evolved A-type stars, and achieving precision in mass determination of $\sim 0.4\%$.