Zooming in the delta Velorum system using VLTI/AMBER

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Even close and bright stars can be surprising. Delta Velorum, a second magnitude star, has been discovered to be an eclipsing binary only in 2000. It is also one of the main sequence A type star with the highest infrared excess, which was originally attributed to a large debris disk. Recent studies have shown that the excess is probably due to an interaction between the stellar radiation and the Inter Stellar Medium. Our current interest is to determine the masses of the stars of the delta velorume system with high precision: the 2 components of the eclipsing binary, and a third physical companion, less than one arcsecond away. For this, we combine astrometric measurements of the wide component (VLT/NACO) and interferometric imaging of the eclipsing binary (VLTI/AMBER) to determine the physical orbits. We find evidence that the members of the eclipsing pair are also fast rotators, and we might resolve the gravity deformation of the photospheres with our AMBER data. Such a pair would be an invaluable source of information to study the fast rotation of stars.