Proposition d’abstract

Proposition d’abstract pour la session S05 des journées de la SF2A 2024

High-angular and high-contrast VLTI observations from Y to L band with the Asgard instrumental suite

Abstract

ESO’s Very Large Telescope Interferometer (VLTI), Paranal, Chile, has a history of record-breaking discoveries in astrophysics and instrumentation. The next leap forward is its new visitor instrument: the Asgard instrumental suite. It comprises four natively collaborating instruments: HEIMDALLR, which performs fringe tracking, wavefront correction and stellar interferometry in the K band, with the same optics and simultaneously; Baldr, a Strehl optimizer using a Zernike wavefront sensor in the H band; BIFROST, a photonic combiner whose main science case is studying the formation processes and properties of stellar and planetary systems in the Y, J and H bands; and NOTT, a nulling interferometer dedicated to imaging young nearby planetary systems in the L band. The idea to make the instruments complementary arises from overlap between the different science cases across a range of spectral bands between Y and L. Asgard is to be set on the Visitor 2 table formerly used as the AMBER optical table. Its control architecture is a hybrid between custom and ESO-compliant developments which will allow Asgard to benefit from the flexibility offered to a visitor instrument while allowing for a deeper long-term integration into VLTI for an opening to the community. The suite is in its integration phase in Europe and should be shipped to Paranal in early 2025 after approval from ESO. We detail the current integration status of the project, the control software integration and the plans.