

SHARK-VIS: the new high-contrast optical imager for the LBT

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SHARK-VIS, the forthcoming high-angular-resolution and high-contrast optical (400-900 nm) imager for the LBT, is an INAF PI-instrument (PI Fernando Pedichini) designed and built by the ADONI group of the INAF-Osservatorio Astronomico di Roma. Its first light is foreseen around mid 2020. SHARK-VIS and its near-infrared counterpart SHARK-NIR will take full advantage of the new LBT extreme-AO facility SOUL and will be able to work in synergy also with LBTI/LMIRCAM: this combination will turn LBT into a unique high-resolution facility with continuous wavelength coverage from 0.4 to 3.5 μm .

SHARK-VIS will provide LBT with unprecedented high-contrast imaging capabilities in the visible band, by acquiring diffraction-limited images with angular resolutions down to 15 mas. This will be possible thanks to several technical solutions aimed at optimizing the PSF stability and to the *fast cadence* approach, based on the use of a high-frame-rate low-noise camera and the employ of specific custom algorithms.

We will provide a summary of all the relevant instrument characteristics and will present the observation modes currently available, which are coronagraphic broad- & narrow-band imaging and narrow-band spectral differential imaging. To do this, we will use some realistic setup and observation examples, based on the main scientific programs for the instrument, which include identification of accreting planets in star-forming regions, morphology of jets and disks around young stars, characterization of minor bodies of the solar system, and investigation of the central regions of bright AGNs.

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