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SAXO+: Un significativo passo avanti nell'imaging ad alto contrasto con SPHERE al VLT

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"SAXO+ is a second-stage adaptive optics (AO) upgrade for the SPHERE instrument at the Very Large Telescope in Chile. The project aims to significantly enhance SPHERE's performance by improving raw contrast at short angular separations, enabling access to a broader sample of young, redder, and fainter planetary systems. It will also increase sensitivity in the inner separation range, where most exoplanets are expected to form.

SAXO+ will correct residual wavefront errors left by the current first-stage Extreme AO system (SAXO) by operating a second AO stage at higher frequency (up to 2.760 kHz, goal 3 kHz) and using a near-infrared pyramid wavefront sensor. A key requirement is preserving SPHERE's existing capabilities and ensuring seamless integration.

Following a successful Consolidation Review by ESO in April 2024, SAXO+ has been officially approved and is now facing the Final Design Review. First light is expected in 2027.

INAF plays a central role in SAXO+, being responsible, together with the IPAG institute of CNRS, for the design, development, and delivery of the full opto-mechanical and electrical sub-system. Integration will be carried out entirely at INAF-OAS in Bologna starting winter 2025–2026. INAF also leads procurement of a key components like the Deformable Mirror, funded by the PNRR STILES project.

Beyond SPHERE, SAXO+ is a pathfinder for the Planetary Camera and Spectrograph (PCS) of the Extremely Large Telescope (ELT), serving as a critical testbed. This presentation will provide an overview of the project's current status and challenges in design and implementation."

sessioni congresso

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