

## **Science rationale and payload for lunar landers and sample return missions**

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We present the results of a study for a lunar polar lander conducted at ESA CDF Concurrent Design Facility and follow up activities. The goal is to demonstrate lunar precise landing, survival and exploration technologies for the future, geochemical studies of the poles, and search for ice in permanent shadows. We describe the top science objectives, the associated lander and rover, and the possible payload complement now in discussion with the community. We also describe the science rationale for Lunar Sample Return missions, and give update on some ongoing concept studies performed at ESA.