Target: Airless body surfaces

Science:
- Ascertain the content, origin and evolution of the solar system and the potential for life;
- Determine why asteroids are cohesively bound to prevent rotational break-up
- Determine composition of the asteroids, including the presence of any organic compounds.

Objectives:
- Model and validate performance of the penetrator against hard rock;
- Optimize performance of the Sample Return Canister (SRC);
- Design and test a recovery system of the SRC back onto the spacecraft;
- Design and specify the spacecraft receptacle for the SRC;
- Complete a preliminary design for the system relevant for potential future spacecraft missions

Key Milestones:
- Penetrator Flight Test with SRC Ejection Test A, June '18 TRL 2, Test B Nov '18, Test C June '19 (TRL 4);
- Optimization of Penetrator & SRC Nov.'19 TRL4 – July 20 TRL5;
- Design Recovery System, July '18 (TRL1); Test July '19 (TRL 3) Optimize July '20 (TRL5);
- Spacecraft Receptacle July 19 (TRL 1) ; Optimize July 20 TRL4);
- Preliminary Design, May '20 (TRL4).