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SMALL HOMING VEHICLE FOR LUNAR SOUTH POLE FLYBY

Abstract

The lunar south pole is of special interest to scientists because of the postulated occurrence of ice in permanently shadowed areas. Small homing vehicle is released from the lunar orbiter. Then the vehicle autonomously navigates and makes orbital maneuvers, flies along the ballistic trajectory. The homing vehicle is equipped with sub-surface radar to search the underground water ice in the south pole of the Moon. The homing vehicle is composed of the structural subsystem, the data handling subsystem, the power subsystem, the propulsion subsystem, the thermal control subsystem and the GNC subsystem. The total weight of the vehicle is not greater than 100kg, of which sub-surface radar is about 30kg. The perilune of the trajectory is about 1km. The surface penetrating distance is not less than 2km. This paper introduces the flight mission. And presents the function, the composition and the main specifications of the vehicle.