EPSC Abstracts,
Vol. 2, EPSC2007-A-00400, 2007
European Planetary Science Congress 2007

Objectives and Tasks of Lunar Mission BW1

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Lunar Mission BW1 is the forth project of the “Stuttgart Small Satellite Program” initiated in 2002 at the Institute of Space Systems (IRS), Universitaet Stuttgart, Germany. The small Moon orbiter is a 1 m cube spacecraft of approx. 200 kg launch mass currently under development with participation of diploma/masters and Ph.D. students as well as academic and industrial partners.

Demonstrating the ability of an academic institution to participate and contribute to space exploration by designing, building and operating a complete space probe Lunar Mission BW1 will be a test bed to perform technology demonstration and other experiments beyond Earth orbit in cis-lunar space and at the Moon. The satellite is planned to be launched end of the decade as a piggyback payload from a geostationary transfer orbit (GTO) and will reach lunar orbit using its own electric propulsion systems (thermal arcjet and iMPD thrusters).

The paper will present objectives and tasks of Lunar Mission BW1 and the elements of this mission, i.e. spacecraft, ground segment, operations. It will give also an overview about the experience and heritage gained from the three other missions of the Stuttgart Small Satellite Program (Flying Laptop - technology demonstration/Earth observation, Perseus - electric propulsion test/UV astronomy, Cermit - re-entry vehicle/GNC experiment).