32nd IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Spacecraft for Deep-Space Exploration (8)

Author: Mr. Steve Eckersley
Surrey Satellite Technology Ltd (SSTL), United Kingdom

Dr. Nicolò Bernardini
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Mr. Jonathan Friend
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Mr. Gavin Johnston
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Ms. Abigail Harvey
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Mr. Steven Knox
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Mr. Alex da Silva Curiel
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Mr. Ben Hooper
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Prof. Martin Sweeting
Surrey Satellite Technology Ltd (SSTL), United Kingdom
Dr. Neil Bowles
University of Oxford, United Kingdom
Dr. Eloy de Lera Acedo
University of Cambridge, United Kingdom
Prof. David Bacon
United Kingdom
Dr. Will Grainger
RAL Space, United Kingdom

SMALL SATELLITES FOR LUNAR OPTICAL AND THERMAL IMAGING.

Abstract

The Lunar InfraRed Imaging System (LIRIS) is a small satellite mission concept selected for evaluation for the ESA Open Space Innovation Platform call for "Small Missions for Exploration – Destination the Moon". Using proven infrared imaging techniques in low lunar orbit, the LIRIS short/mid wave infrared multispectral imager will produce images that improve on spatial resolution of existing data sets by more than an order of magnitude. This will be supplemented by the complimentary thermal context provided by the Lunar Thermal Mapper, to provide actionable science data for lunar volatile mapping, human activity monitoring and to support upcoming In Situ Resource Utilisation missions.

Building on the LIRIS mission concept, this paper provides additional ideas for small lunar observation spacecraft including high resolution optical imaging for asset tracking, search and rescue, infrastructure monitoring and mapping in support of the broader international lunar exploration plans.