

Thursday, March 20, 2003
POSTER SESSION II
7:00 p.m. Fitness Center

Missions and Instruments

Van Cleve J. Meadows V. S. Stansberry J.

Solar System Observing with the Space Infrared Telescope Facility (SIRTF) [#1464]

We discuss Solar System observations which can be done by General Observers (GOs) using the Space Infrared Telescope Facility (SIRTF). We present this poster to promote a strong set of planetary proposals for the first SIRTF GO cycle.

Chien S. Davies A. G. Baker V. Castano R. Cichy B. Doggett T. Dohm J. M. Greeley R.
 Sherwood R. Williams K. K.

Autonomous Sciencecraft Experiment (ASE) Test Operations in 2003 [#1458]

The Autonomous Sciencecraft Experiment enables (1) spacecraft autonomous command and control; (2) autonomous science analysis; and (3) science-driven spacecraft operations. Two test deployments are scheduled in 2003.

Clark P. E. Rilee M. L. Curtis S. A.

Exploring with PAM: Prospecting ANTS Missions for Solar System Surveys [#1493]

ANTS (Autonomous Nano Technology Swarm of hundreds of picoclass autonomous spacecraft) have many applications. A version designed for surveying and the resource potential of the asteroid belt, called PAM (Prospecting ANTS Mission), is examined here.

Britt D. T.

The Gulliver Mission: Sample Return from the Martian Moon Deimos [#1841]

The Martian moon Deimos is essentially a repository for two kinds of samples: (1) Primitive D-type material from the outer solar system and (2) Ejecta from ancient Mars. The Gulliver Mission will collect up to 10 kg of Deimos regolith and return it to Earth.

Scheeres D. J. Asphaug E. I. Colwell J. Dissly R. Geissler P. E. McFadden L. A. Petr V. Reinert R.
 Yano H.

Asteroid Surface Science with Pods [#1444]

The Deep Interior Discovery mission will place a number of "pods" on the surface of an asteroid. These pods will characterize the surface environment on an asteroid and then be commanded to detonate a load of high explosives, excavating a crater for sub-surface observations from orbit.

Allton J. H. Bevill T. J.

A Future Moon Mission: Curatorial Statistics on Regolith Fragments Applicable to Sample Collection by Raking [#1746]

Compilations of lithologies of Apollo 17 rock, rake and 4–10mm fragments indicate that raking fragments from lunar regolith results in similar ratios of coherent crystalline rock vs regolith-derived components for all size fractions.

Chipera S. J. Bish D. L. Vaniman D. T. Sherrit S. Bar-Cohen Y. Sarrazin P. Blake D. F.

Use of an Ultrasonic/sonic Driller/corer to Obtain Sample Powder for CHEMIN, a Combined XRD/XRF Instrument [#1603]

An ultrasonic drill was used to produce powder for CHEMIN XRD/XRF analyses and was found to do an outstanding job on all materials tested. XRD patterns and particle size distributions are comparable with powders obtained from a laboratory mill.

Vaniman D. T. Trava-Airoldi V. J. Bish D. L. Chipera S. J.

Miniature CVD-Diamond Coring Drills for Robotic Sample Collection and Analysis [#1452]

Chemical vapor deposition (CVD) can be used to fabricate small diamond core drills that are relatively transparent to X-rays and to infrared radiation, allowing the drill to double as a sample holder.

Anderson R. C. Castano R. Decoste D. Mazzoni D. Dohm J.

An Automated Approach for Acquiring Onboard Rover Science [#1845]

Onboard science analysis provides an opportunity to increase mission return by selecting the data with the highest science interest for downlink.

Mitri G. Baliva A. Butera F. Mazzoni A. Pompei C. Puccini S.

Dating Sedimentary Processes and Deposits on Mars with LUMACH Instrument [#1889]

We are developing a instrument for *in situ* analysis to obtain the absolute dating of sedimentary processes and deposits on Mars using the optical stimulated luminescence technique.

Horváth A. Bérczi Sz.

Proposals for Mars Express and Nozomi Missions How to Determine the Layered Structure of Phobos [#1131]

On Viking Orbiter images of Phobos a complex system of grooves has been discovered. We suggest measurements by Mars Express and Nozomi in order to observe the suggested layered structure of Phobos.