Thursday, March 20, 2014 **[R731]**
POSTER SESSION: INSTRUMENT AND PAYLOAD CONCEPTS
6:00 p.m. Town Center Exhibit Area

Durda D. D. Tsang C. C. C. Stern S. A. Olkin C. B. Ennico Smith K. et al. ***POSTER LOCATION #558***
Validation of Suborbital Spaceflight Experiments Through Zero-G Flight Demonstration of Flight-Ready Hardware **[#2102]**
We present results from planetary science experiment payloads flight tested on a zero-gravity research flight.

Sollitt L. S. Barrett D. Boodee R. Rhodes C. T. Vilas F. ***POSTER LOCATION #559***
The Atsa Suborbital Observatory: Concept and Current Status **[#2236]**
A prototype suborbital telescope, the Atsa 1 Camera, has been built and fit-tested in the engineering cockpit for XCOR Aerospace's Lynx Mark I spacecraft.

Arai T. Kobayashi M. Yamada M. Matsui T. COMETSS project team ***POSTER LOCATION #560***
Meteor Observation HDTV Camera Onboard the International Space Station **[#1610]**
Chiba Institute of Technology will fly a HDTV camera dedicated to meteor observation onboard the International Space Station and operate it for two years.

Yano H. Yamagishi A. Hashimoto H. Yokobori S. Kobayashi K. et al. ***POSTER LOCATION #561***
Tanpopo Experiment for Astrobiology Exposure and Micrometeoroid Capture Onboard the ISS-JEM Exposed Facility **[#2934]**
The Tanpopo astrobiology experiment will conduct microbe and bio-orgaincs exposure and organic-bearing micrometeoroid capture on ISS for three years from 2014 to 2015.

Misra A. K. Sharma S. K. Acosta-Maeda T. E.
Gasda P. J. Lucey P. G. et al. ***POSTER LOCATION #562***
"Standoff Biofinder" for Fast, Daytime, Large Area Detection of Biological Materials Without Sample Collection **[#1498]**
We have developed an instrument "Standoff Biofinder," that can quickly (0.1 s) locate a biological material in a wide area during daytime from several meters.

Parro V. Stoker C. Davila A. F. Quinn R. ***POSTER LOCATION #563***
Signs Of LIfe Detector (SOLID): Searching for Evidence of Past Life on Mars **[#2653]**
SOLID is a mature instrument with state-of-the-art liquid extraction and lab-on-a chip immunoassay technology to detect and characterize organic C on Mars.

Yamagishi A. Demura H. Fujita K. Honda H. Imai E. et al. ***POSTER LOCATION #564***
Life Detection Microscope for In-Situ Imaging of Living Cells on Mars **[#2744]**
We develop a new instrument called Life Detection Microscope (LDM) as a possible instrument onboard Mars Rover 2020, MELOS, or other future Mars missions.

Wright I. P. Andrews D. J. Barber S. J. Sheridan S. Morgan G. H. et al. ***POSTER LOCATION #565***
Rosetta: Evaluating the Possibility of Using Ptolemy for Pre-Landing Scientific Investigations **[#1901]**
Sixty-seven P / Rosetta spacecraft be good / Then watch, sniff, and land.

Wyrick D. Y. Waite J. H. Jr. Brock T.
McGrath M. McKinnon W. B. et al. ***POSTER LOCATION #566***
Investigating the Formation, Evolution, and Habitability of the Galilean Satellites with High Performance Mass Spectrometry **[#1615]**
High-performance mass spectrometry allows for direct sampling of atomic and molecular species to determine the habitability of the Galilean moons.

Arevalo R. Jr. Brinckerhoff W. B. Pinnick V. T.
van Amerom F. H. W. Danell R. D. et al. ***POSTER LOCATION #567***
Performance of the Linear Ion Trap Mass Spectrometer for the Mars Organic Molecule Analyzer (MOMA) Investigation on the 2018 ExoMars Rover **[#2894]**
The Mars Organic Molecule Analyzer (MOMA) investigation on the 2018 ExoMars rover mission is shown to meet performance requirements and is on track for delivery.

Schmidt F. Shatalina I. Saggin B. Gac N. Kowalski M. et al. ***POSTER LOCATION #568***
Analytical Model and Spectral Correction of Vibration Effects on PFS Fourier Transform Spectrometer **[#1752]**
We proposed a new approach to correct for the microvibrations effects on Fourier Transform Spectrometer based on semi-blind deconvolution of the measurements.

Gerasimov M. V. Sapgir A. G. Zaitsev M. A.
Aseev S. A. Vinogradov I. I. et al. ***POSTER LOCATION #569***
The Martian Gas-Analytic Package for the Landing Platform Experiments of the ExoMars 2018 **[#1242]**
The paper describes the architecture of the Martian Gas Analytic Package, which is proposed for the Russian ExoMars Lander 2018.

Rodriguez-Manfredi J. A. de la Torre M. Conrad P.
Lemmon M. Martinez G. et al. ***POSTER LOCATION #570***
MEDA: An Environmental and Meteorological Package for Mars 2020 **[#2837]**
The Mars Environmental Dynamics Analyzer (MEDA) is a contributed REMS follow-on suite of sensors designed to address the Mars 2020 investigation goals.

Jones S. M. Anderson M. S. Davies A. G. Kirby J. P. Burchell M. J. et al. ***POSTER LOCATION #571***
Aerogel Dust Capture for In Situ Mass Spectroscopic Analysis **[#2104]**
Aerogel was used as the capture material of fine silica particles containing PAHs. The PAHs were then desorbed, ionized, and analyzed by mass spectroscopy.

Kobayashi M. Miyachi T. Hattori M. Okudaira O. Fujii M. et al. ***POSTER LOCATION #572***
Frequency Analysis of Dust Signal from Piezoelectric PZT Sensor **[#2027]**
We studied an objective method to analyze dust signal waveform for true/false identification when piezoelectric PZT is used as a dust-particle detector.

Johnson K. Fortier K. Nie C. Hurst L. Malaspina D. et al. ***POSTER LOCATION #573***
Development of a Dust Impact Monitor for Exploration of the Inner Heliosphere **[#1370]**
A low-power, low-mass Dust Impact Monitor is being designed to characterize the dust environment within 0.3 AU to map out the spatial distribution of dust.

Namiki N. Mizuno T. Mita M. Kawahara K. Kunimori H. et al. ***POSTER LOCATION #574***
Development of Hayabusa-2 LIDAR **[#1922]**
The Hayabusa-2 LIDAR is designed for safe navigation of the spacecraft. The altimetry data are also served for scientific studies of asteroid 1999JU3.

Poole W. D. Muller J.-P. Grindrod P. M. Gupta S. ***POSTER LOCATION #575***
Footprint Scale Surface Roughness from ICESat Pulse-Widths: Lessons Learnt for Future Planetary Laser Altimeters **[#1150]**
We show that 70-m-scale surface roughness and slope can be derived from ICESat laser altimeter backscatter shot profiles over the McMurdo Dry Valleys, Antarctica.

Lucey P. G. Sun X. Abshire J. B. Neumann G. A. ***POSTER LOCATION #576***
An Orbital Lidar Spectrometer for Lunar Polar Compositions **[#2335]**
An infrared reflectance lidar obtains multispectral data near 3 µm to map ice in the lunar polar regions. Visible fluorescence seeks organics.

Ishibashi K. Kameda S. Kurosawa K. Kobayashi M. Arai T. et al. ***POSTER LOCATION #577***
Deuterium/Hydrogen Ratio Measurements with Laser-Induced Breakdown Spectroscopy (LIBS) **[#2080]**
We examined the D/H ratio measurement of H_2O/D_2O ice with laser-induced breakdown spectroscopy (LIBS), taking future in situ measurements into account.

Clegg S. M. Wiens R. C. Maurice S. Gasnault O. Sharma S. K. et al. ***POSTER LOCATION #578***
Remote Raman and LIBS Spectroscopy for Future Mars Rover Missions **[#2463]**
Integrated Raman-LIBS spectroscopy is capable of remotely determining both the mineralogical and geochemical composition for future Mars missions.

Gasda P. J. Acosta-Maeda T. E. Lucey P. Misra A. K. Sharma S. K. et al. ***POSTER LOCATION #579***
A Compact Laser Induced Breakdown, Raman, and Fluorescence Spectroscopy Instrument for Mars Exploration **[#1546]**
A prototype compact remote LIBS, Raman, and laser-induced fluorescence spectroscopy instrument for planetary science has been produced and extensively tested.

Sobron P. Lopez-Reyes G. Sansano A. Manrique J. A. Rull F. ***POSTER LOCATION #580***
Data Fusion in Planetary LIBS + Raman Spectroscopy **[#2875]**
Data fusion in LIBS and Laser Raman Spectroscopy enables more robust detection of salts in binary mixtures than would be possible using both techniques alone.

Alerstam E. Maruyama Y. Blacksberg J. ***POSTER LOCATION #581***
High Speed Time-Resolved Raman Spectroscopy for Planetary Surface Exploration **[#2182]**
Luminescent rock / Please, tell us your story / Many fast bursts of light.

Sansano A. Navarro R. López-Reyes G. Rull F. ***POSTER LOCATION #582***
Development of the Calibration Target for Exomars' Raman Instrument (RLS) **[#2623]**
In this work we present the development of the calibration target for the Raman Spectrometer Instrument to be onboard the Exomars rover.

Sansano A. Navarro R. Sanz J. A. Manrique J. A. Medina J. et al. ***POSTER LOCATION #583***
Development of a Spectral Data Base for Exomars' Raman Instrument (RLS) **[#2803]**
In this work we present the actual status of development of a Raman spectra database to be applied by the science team of the Exomars Raman instrument.

Dreißigacker A. Köhler E. Fabel O. van Gasselt S. ***POSTER LOCATION #584***
Development of a New Planetary X-Ray Fluorescence Spectrometer and Co-Development of Standard Samples for On-Board Calibration **[#2814]**
We are developing standard samples for onboard calibration of a new planetary X-ray fluorescence spectrometer.

Kim K. J. Choi I. Lee S. R. Yi E. S. Choi H. W. ***POSTER LOCATION #585***
XRF Analysis of Stony Meteorites Using an Elemental Analyzer and a Portable XRS **[#2700]**
We investigated XRF analysis of stony meteorites for classification and quantification of stony meteorites using an elemental analyzer and a portable XRS.

Hong J. Grindlay J. Romaine S. Ramsey B. Binzel R. P. et al. ***POSTER LOCATION #586***
Miniature Lightweight X-Ray Optics (MiXO) for Solar System Exploration **[#2203]**
We introduce Miniature X-ray Optics to bring highly successful Wolter-I X-ray optics to planetary science within affordable mass, power, and cost constraints.

Li R. Ostrowski S. Li D. Paar G. Coates A. et al. ***POSTER LOCATION #587***
ESA ExoMars Rover PanCam: Pre-Launch Localization Modeling and Accuracy Assessment **[#1926]**
Exomars PanCam hardware consists of two wide-angle cameras that provide multispectral stereo images and a High-Resolution Camera providing monoscopic images.

De Angelis S. De Sanctis M. C. Ammannito E. Altieri F. Carli C. et al. ***POSTER LOCATION #588***
Analysis of Rocks Particulates by VNIR Spectroscopy with Ma_Miss Instrument Breadboard **[#1713]**
The ExoMars-2018/Ma_Miss miniaturized spectrometer will observe martian subsoil in VNIR spectral range 0.4–2.2 µm, with high spatial resolution, 120 µm.

Blaney D. L. Murchie S. L. Green R. O. Mustard J. Jeganathan M. et al. ***POSTER LOCATION #589***
MinMap: An Instrument Concept for the Mars 2020 Mission **[#2037]**
MinMap is a compact, mast-mounted imaging spectrometer that operates at visible/short-wave infrared (VSWIR) wavelengths from 500 to 2560 nm.

Ehlmann B. L. Mustard J. F. Murchie S. L.
Green R. O. Mouroulis P. et al. ***POSTER LOCATION #590***
Microimaging Spectroscopy on Mars with CIMMBA, Proposed for Mars-2020: The Caching-Supporting Infrared Microimager for Mineralogy and Biosignature Assessment **[#2824]**
Microimaging VSWIR spectroscopy coupled with microimaging would bring new petrologic capabilities to the exploration of planetary surfaces.

Altinok A. Bornstein B. Estlin T. Gaines D. Schaffer S. et al. ***POSTER LOCATION #591***
Automatic Image Analysis for Adaptive Instrument Targeting: Applications to MSL and Mars 2020 **[#2871]**
We present new applications onboard image analysis relevant to future rovers, such as an MSL extended mission or Mars 2020 rover operations.

Okada T. Fukuhara T. Tanaka S. Taguchi M. Imamura T. et al. ***POSTER LOCATION #592***
Thermal-Infrared Imaging of C-Class Asteroid 162173(1999JU3) by Hayabusa-2 **[#1201]**
Thermal imaging of C-class asteroid 162173 (1999JU3) is planned by Hayabusa-2. Its objectives, instrumentation, calibration, and operation are briefly described.

Iwata T. Kitazato K. Abe M. Arai T. Nakauchi Y. et al. ***POSTER LOCATION #593***
Results of Ground-Performance Tests for the Hayabusa-2 Near-Infrared Spectrometer (NIRS?) **[#1805]**
We report the performance of Near-Infrared Spectrometer (NIRS3) on Hayabusa-2, confirmed by ground tests using the flight mode.

Grott M. Knollenberg J. Hänschke F. Kessler E. Müller N. ***POSTER LOCATION #594***
Radiometric Calibration of The MAscot RAdiometer MARA for the Hayabusa 2 Mission **[#1324]**
Results of the radiometric calibration and verification of the MASCOT radiometer MARA are presented.

Helbert J. del Togno S. Maturilli A. Ferrari S. Grott M. et al. ***POSTER LOCATION #595***
A Novel Spectral and Radiometric Calibration Target for the TIR Imager and the MARA Instrument on the Hayabusa2 Mission **[#1317]**
At DLR we have developed a spectral and radiometric calibration target that will allow a cross calibration of the MARA and the TIR instruments on Hayabusa-2.

Schmitz N. Koncz A. Jaumann R. Hoffmann H. Jobs D. et al. ***POSTER LOCATION #596***
A Wide-Angle Camera for the Mobile Asteroid Surface Scout (MASCOT) on Hayabusa-2 **[#1927]**
MASCOT on Hayabusa-2 will carry four instruments, including a wide-angle camera. We describe science goals, instrument design, and performance of the camera.

Ho T. M. Findlay R. Ziach C. Krause C. Lange M. et al. ***POSTER LOCATION #597***
MASCOT ('Mobile Asteroid Surface Scout') — Developing a Landing Platform with Four Instruments for the Hayabusa-2 Mission **[#2601]**
MASCOT is a mobile asteroid surface scout for the Hayabusa-2 mission. It carries four scientific P/L. General design and mission scenario is described.

Jaumann R. Bibring J. P. Glassmeier K. H. Grott M. Ho T. M. et al. ***POSTER LOCATION #598***
A Mobile Asteroid Surface Scout (MASCOT) for the Hayabusa 2 Mission **[#1817]**
MASCOT will support JAXA's Hayabusa-2 mission to the asteroid 1999 JU3, will descend and land on the asteroid, and will change its position by hopping.

Simon A. A. Reuter D. C. Olkin C. Stern S. A. ***POSTER LOCATION #599***
SIRSE: A Spectral ImageR and Spectrometer for Europa **[#1034]**
SIRSE is a next generation spectral imaging instrument, based on New Horizons Ralph, with improved capability to meet Europa Clipper science objectives.

Palumbo P. Jaumann R. Cremonese G. Hoffmann H. Debei S. et al. ***POSTER LOCATION #600***
JANUS: The Visible Camera Onboard the ESA JUICE Mission to the Jovian System **[#2094]**
JANUS is the camera selected by ESA as the visible imager of the JUICE mission, focusing on the three icy Galilean satellites and the Jupiter atmosphere.

Long S. K. Beegle L. W. Sollitt L. S. ***POSTER LOCATION #601***
Laser Desorption Infrared Spectroscopy: A Proof of Concept Study for Future Icy World Exploration **[#2437]**
Using laser desorption, this investigation focuses on the minimum energy requirements of future exobiological missions for icy world explorers.

Mège D. Singh S. Nna-Mvondo D. Chevrier V. Tobie G. et al. ***POSTER LOCATION #602***
Near-Infrared Reflectance of Tholins in Methane Ice: Preliminary Results and Implications for Interpretation of New Horizons LEISA Data **[#1264]**
Pluto (Titan) tholins do not appear to be reactive in methane ice, and their NIR signature is not totally concealed by the dramatic methane absorption bands.

Keszthelyi L. Becker T. Titus T. Sides S. Gaddis L. et al. ***POSTER LOCATION #603***
Utilizing the Integrated Software for Imagers and Spectrometers (ISIS) to Support Future Missions **[#1686]**
Including ISIS support will strengthen most instrument or mission proposals.

Zhang H. Jin W. Xu W. Wang Z. Yang Y. et al. ***POSTER LOCATION #604***
A Goniometric System to Measure the Incomplete Mueller Matrices of Packed Layers **[#2872]**
We describe a laboratory goniometric system capable of measuring the polarized reflectance of particulate layers.

Anderson F. S. Whitaker T. J. Levine J. ***POSTER LOCATION #605***
Age of Martian Meteorite Zagami Obtained by Prototype In Situ Dating Spectrometer **[#1665]**
We obtained a Rb/Sr isochron age for the martian meteorite Zagami using a dating spectrometer that we developed as a prototype for in situ dating on Mars.

Cohen B. A. Swindle T. D. Roark S. E. ***POSTER LOCATION #606***
In Situ Geochronology on the Mars 2020 Rover with KArLE (Potassium-Argon Laser Experiment) **[#1140]**
KArLE will provide absolute K-Ar ages by combining LIBS and mass spectrometry measurements made on a single pit in a core sample taken by the Mars 2020 rover.

French R. A. Cohen B. A. Miller J. S. ***POSTER LOCATION #607***
Volume Measurements of Laser-Generated Pits for In Situ Geochronology Using KArLE (Potassium-Argon Laser Experiment) **[#1936]**
Determining the accuracy/precision of volume measurements of laser-generated pits to better understand the ablation process for isotope abundance calculations.

Cho Y. Miura Y. N. Sugita S. ***POSTER LOCATION #608***
Development of an In-Situ K-Ar Isochron Dating Method 2: Validation Measurements with Natural Rocks **[#1205]**
Potassium-argon isochrons have been obtained for natural rock samples using an in situ K-Ar dating method with a LIBS-QMS system.

Currie D. G. Delle Monache G. O. Dell'Agnello S. Behr B. B. ***POSTER LOCATION #609***
A Lunar Laser Ranging Retroreflector Array for the 21st Century: History, Science Status, Apollo Simulation and Future **[#1702]**
Lunar Laser Ranging has addressed the crust and interior, GR tests, and gravity. However, Apollo arrays and librations the limit the range measurement accuracy.

Noda H. Kunimori H. Araki H. ***POSTER LOCATION #610***
Lunar Laser Ranging Experiment at Koganei SLR Station **[#1638]**
We try to range the retroreflectors on the Moon by using the Satellite Laser Ranging station of NICT in Koganei, Tokyo, Japan.

Nagihara S. Zacny K. Hedlund M. Taylor P. T. ***POSTER LOCATION #611***
Development of Compact, Modular Lunar Heat Flow Probes **[#1156]**
We report our latest efforts in developing a compact, modular heat flow probe system that can be accommodated on a variety of robotic and human lunar missions.

Horikawa Y. Tanaka S. Sakatani N. Takita J. Ogawa K. ***POSTER LOCATION #612***
Development and Evaluation of Heat Flow Probe for the Precise Measurement of Lunar and Planetary Heat Flow **[#2856]**
We developed a heat flow probe prototype onboard a penetration probe (penetrator) and evaluated the uncertainty of thermal conductivity measured by the probe.

Mueller N. Kopp E. Walter I. Grott M. Knollenberg J. et al. ***POSTER LOCATION #613***
The HP³ Radiometer for the InSight Mission **[#2375]**
The HP^3 radiometer will measure Mars surface brightness temperature for one year at fixed spots near the InSight lander to help constrain planetary heatflow.

Spohn T. Grott M. Smrekar S. Krause C. Hudson T. L. et al. ***POSTER LOCATION #614***
Measuring the Martian Heat Flow Using the Heat Flow and Physical Properties Package (HP^3) **[#1916]**
The heat flow probe (HP^3) for the 2016 InSight mission to Mars is described and the measurement and operational requirements are discussed.

Hansen-Goos H. Grott M. Lichtenheld R. Krause C. Hudson T. L. et al. ***POSTER LOCATION #615***
Predicted Penetration Performance of the InSight HP^3 Mole **[#1325]**
The penetration performance of the HP^3 heat flow probe is assessed, and applications to the Moon and Mars are discussed.

Weiss B. P. Russell C. T. Anderson B. J.
Kirschvink J. L. Golombek M. P. et al. ***POSTER LOCATION #616***
Mars Compass: A Magnetometer for the Mars 2020 Rover **[#2696]**
We describe the Mars Compass investigation proposed for the Mars 2020 rover, the first mobile magnetometer on Mars.

Chi P. J. Russell C. T. Lai H. R. ***POSTER LOCATION #617***
Magnetospheric Response of Interplanetary Field Enhancement as Observed by Ground-Based Magnetometer Stations: A Case Study **[#2077]**
Ground-based magnetometer networks have detected impulsive signals due to the impact of an Interplanetary Field Enhancement (IFE) on Earth's magnetosphere.

Miller R. S. Lawrence D. J. ***POSTER LOCATION #618***
Muon Radiography as a Probe of the Interior Structure of Small Solar System Bodies **[#1134]**
We describe cosmic-ray-induced muon radiography, a new approach enabling remote determination of the density and 3D structure of small solar system bodies.

Calaway M. J. McConnell J. T. ***POSTER LOCATION #619***
ECTFE (Halar) as a New Material for Primary Sample Containment of Astromaterials **[#1095]**
ECTFE, Halar, is examined for potential use on future sample return missions as a primary containment material in gloveboxes and long-term storage vessels.

Younse P. Accord K. Aveline D. Bao X. Beegle L. et al. ***POSTER LOCATION #620***
Sample Tube Sealing and Sample Integrity Analysis for Future Sample Return Missions **[#1054]**
Sealing methods for samples in 1-cm-diameter sample tubes were designed and evaluation for sample preservation for the proposed Mars Sample Return campaign.

Chu P. Indyk S. Zacny K. James W. ***POSTER LOCATION #621***
A Comet Surface Sample Return Probe **[#1536]**
A concept for a small-scale spacecraft has been designed to impact a comet surface, obtain a sample, and ascend from the surface to deliver its sample.

Zacny K. Chu P. Paulsen G. Davis K. ***POSTER LOCATION #622***
Sample Acquisition and Caching Architectures for the Mars2020 Mission **[#1168]**
The Mars2020 mission will cache cores for future return. We have been developing caching architectures, coring drills, and unique bits for this mission.

Zacny K. Paulsen G. Yoon S. Wettergreen D. Cabrol N. ***POSTER LOCATION #623***
Life in the Atacama — The Drill and Sample Delivery System: Results from the 2013 Field Campaign **[#1174]**
Honeybee Robotics designed and built a sampling drill and a carousel for the LITA project. The system was deployed from the CMU Zoe rover in Atacama in 2013.

Glass B. Wang A. Huffman S. Zacny K. Lee P. ***POSTER LOCATION #624***
LITA Drill Tests at Haughton Crater **[#2891]**
The latest LITA drill did not demonstrate a capability of penetrating hard rock or ice-consolidated material at the Drill Hill test site.

Johansen B. W. Lee P. Naesje K. Lekens W. Sorensen P. H. et al. ***POSTER LOCATION #625***
A New Plasma Drilling Technology with Applications for Moon, Asteroid, and Mars Exploration and ISRU **[#2594]**
A new plasma drilling technology is under development that will enable deep subsurface access for science and ISRU on the Moon, asteroids, Mars, and its moons.

Barmatz M. Steinfeld D. Anderson M. Winterhalter D. ***POSTER LOCATION #626***
3D Microwave Print Head Approach for Processing Lunar and Mars Regolith **[#1137]**
We plan to develop a 3D microwave print head facility based on sintering and melting studies of lunar and Mars simulants using our microwave heating facility.

Orenstein N. P. ***POSTER LOCATION #627***
ISRU Potable Water Harvester for Astronaut Missions **[#1520]**
Induction furnace concept to release water from martian and lunar regolith without excavation. Applications include astronaut use and cosmic origin analysis.

Izenberg N. R. Papadakis S. J. Gold R. E. Kott T. M. ***POSTER LOCATION #628***
Archimedes' Engine: Buoyant Unspooling Generator for Planetary Mission Power Applications **[#1215]**
On Venus' surfaceArchimedes' Engine getspower from balloons.

Lee Y. H. Zakrajsek J. F. Bairstow B. K. ***POSTER LOCATION #629***
Mission Concept Designer's Guide to the Radioisotope Power Systems Reference Book **[#1478]**
Provides mission concept designers with the description of the Radioiosotope Power Systems Reference Book.