

ical, or nearly hemispherical, and as a result the aspect ratio (sample depth relative to sample radius) is essentially fixed. This fixed sample aspect ratio may be considered a drawback of the Rock Baller method, as samples with a higher aspect ratio (more depth, less width) may be considered more scientifically valuable because such samples would allow for a broader inspection of the ge-

ological record. This aspect ratio issue can be ameliorated if the Rock Baller is paired with a device similar to the Rock Abrasion Tool (RAT) used on the Mars Exploration Rovers. The RAT could be used to first grind into the surface of the parent rock, after which the Rock Baller would extract a sample from a depth inside the rock that would not have been possible without first using the RAT.

Other potential applications for this technology include medical applications such as the removal of tissue samples or tumors from the body, particularly during endoscopic, laparoscopic, or thoracoscopic surgeries.

This work was done by Louis R. Giersch and Paul G. Backes of Caltech for NASA's Jet Propulsion Laboratory. Further information is contained in a TSP (see page 1). NPO-46293

Cryogenic Feedthrough Test Rig

Stennis Space Center, Mississippi

The cryogenic feedthrough test rig (CFTR) allows testing of instrumentation feedthroughs at liquid oxygen and liquid hydrogen temperature and pressure extremes (dangerous process fluid) without actually exposing the feedthrough to a combustible or explosive process fluid. In addition, the helium used (inert gas), with cryogenic heat exchangers, exposes

the feedthrough to that environment that allows definitive leak rates of feedthrough by typical industry-standard helium mass spectrometers.

This work was done by Antony Skaff and Daniel Schieb of Sierra Lobo, Inc. for Stennis Space Center.

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