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over, surface analysis showed that there was no significant formation of silicides in the Pt/PdO_x/SiC sensors.

This work was done by Gary W. Hunter and Jennifer C. Xu of **Glenn Research Center** *and Dorothy Lukco of QSS Group, Inc. Further information is contained in a TSP (see page 1).*

Inquiries concerning rights for the commercial use of this invention should be addressed to NASA Glenn Research Center, Innovative Partnerships Office, Attn: Steve Fedor, Mail Stop 4–8, 21000 Brookpark Road, Cleveland, Ohio 44135. Refer to LEW-17859-1.

Compact, Precise Inertial Rotation Sensors for Spacecraft

NASA's Jet Propulsion Laboratory, Pasadena, California

A document describes a concept for an inertial sensor for measuring the rotation of an inertially stable spacecraft around its center of gravity to within 100 microarcseconds or possibly even higher precision. Whereas a current proposal for a spacecraft-rotation sensor of this accuracy requires one spacecraft dimension on the order of ten meters, a sensor according to this proposal could fit within a package smaller than 1 meter and would have less than a tenth of the mass. According to the concept, an inertial mass and an apparatus for monitoring the mass would be placed at some known distance from the center of gravity so that any rotation of the spacecraft would cause relative motion between the mass and the spacecraft. The relative motion would be measured and, once the displacement of the mass exceeded a prescribed range, a precisely monitored restoring force would be applied to return the mass to a predetermined position. Measurements of the relative motion and restoring force would provide information on changes in the attitude of the spacecraft. A history of relative-motion and restoring-force measurements could be kept, enabling determination of the cumulative change in attitude during the observation time.

This work was done by David Rosing, Jeffrey Oseas, and Robert Korechoff of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*
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