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Effect of Ultra Violet Radiation on Surface Properties: Comparison of RTV 655 and Silica–Based Aerogels MACKENZIE SINDEN-REDDING, FIROUZEH SABRI, University of Memphis — The broad spectrum of ultra violet (UV) radiation causes material property changes such as chalkiness, brittleness, color change, and ultimately complete mechanical failure. UV radiation is also known to modify the surface charge state of insulators. These effects are intensified for materials used in space exploration due to the lack of an atmosphere. In this work, we compare the radiation response and the material properties of RTV 655 (existing calibration targets material on Phoenix Mars Lander) and silica-based aerogels. The extreme light-weight and ability to color-code aerogels makes this material a candidate for the next generation of calibration targets. The radiation response of both materials will be studied using Kelvin Probe, UV-VIS spectrophotometry, and ESR techniques.

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