



## Comparison of Spacecraft Contamination Models with Well-Defined Flight Experiment

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 282 pages. Dimensions: 9.7in. x 7.4in. x 0.6in. The report presents analyzed surface areas on particular experiment trays from the Long Duration Exposure Facility (LDEF) for silicone-based molecular contamination. The trays for examination were part of the Ultra-Heavy Cosmic Ray Experiment (UHCRE). These particular trays were chosen because each tray was identical to the others in construction, and the materials on each tray were well known, documented, and characterized. In particular, a known specific source of silicone contamination was present on each tray. Only the exposure conditions varied from tray to tray. The results of post-flight analyses of surfaces of three trays were compared with the predictions of the three different spacecraft molecular contamination models. Phase one tasks included: 1) documenting the detailed geometry of the hardware; 2) determining essential properties of the anodized aluminum, Velcro(Tm), silverized Teflon(Tm), silicone gaskets, and DC6-1104(Tm) silicone adhesive materials used to make the trays, tray covers, and thermal control blankets; 3) selecting and removing areas from each tray; and 4) beginning surface analysis of the selected tray walls. Phase two tasks included: 1) completion of surface analysis measurements of the selected tray surface,...



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