passive thermal coating observatory operating in low-earth orbit (patcool)

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# ABSTRACT

Long-term presence on the moon, mars, and beyond necessitates the transport of liquid oxygen (LOX). Resources are limited in space and LOX not only servers as an oxidizer for fuel, but can also be utilized in the production of breathable air for space habitats. A cryogenic thermal control coating, developed by scientists at Kennedy Space Center (KSC), is getting ready to demonstrate it has the potential to answer these challenges. Aluminum samples coated with the cryogenic thermal control coating and AZ-93 white paint will be launching to the International Space Station (ISS) and deployed on a CubeSat into a low-earth orbit. This work covers the predicted sample temperatures in a simulated space environment and a review of the Thermal Desktop model.