

National Aeronautics and
Space Administration

John F. Kennedy Space Center, Florida
Kennedy Space Center, FL 32899



Reply to Attn of: VA-C

November 9, 2021

TO: Liam Cheney, LSP Mission Manager, NASA KSC/VA-C
FROM: Emily D'Elia, Flight Design Analyst, NASA KSC/VA-H1
SUBJECT: D3 Update Memo

The D3 CubeSat, which was previously manifested on the ELaNa 38 mission, is now manifested on the ELaNa 45 mission, which is flying on the SpX-25 mission to the International Space Station. This change in launch date (previously December 2021, now May 2022) warranted a reexamination of compliance with orbital debris requirements.

This memorandum serves as a summary of the results of the updated analysis.

The previous analysis showed that the lifetime of D3 would be 1.889 years. Using the new launch date for lifetime analysis, the lifetime is updated to 1.248 years. This difference is due to minor changes in expected orbital altitude and changes in solar flux data.

There were no significant difference in the re-entry risk or collision risk analysis results due to the mass property update, or the launch date change.

D3 is still compliant with all orbital debris requirements.

Please direct any questions regarding this memo to Emily D'Elia, NASA KSC/VA-H1

A handwritten signature in black ink, appearing to read "E. D'Elia".

Emily S. D'Elia, Flight Design Analyst

Enclosure: ELVL-2020-0045919 (Orbital Debris Assessment for The D3 CubeSat)