

10 26 2017; 09:32:08AM DAS Application Started  
10 26 2017; 09:32:12AM Project Data Saved To File  
10 26 2017; 09:32:13AM Opened Project H:\AeroCubes\AC7\Updated  
Run\DAS2.02 run\  
10 26 2017; 09:32:21AM Mission Editor Changes Applied  
10 26 2017; 09:32:26AM Processing Requirement 4.3-1: Return Status :  
Not Run

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No Project Data Available  
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End of Requirement 4.3-1 =====  
10 26 2017; 09:32:28AM Processing Requirement 4.3-2: Return Status :  
Passed

=====  
No Project Data Available  
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End of Requirement 4.3-2 =====  
10 26 2017; 09:32:29AM Requirement 4.4-3: Compliant

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End of Requirement 4.4-3 =====  
10 26 2017; 09:32:33AM Processing Requirement 4.5-1: Return Status :  
Passed

=====  
Run Data  
=====

\*\*INPUT\*\*

Space Structure Name = AeroCube7 complete  
Space Structure Type = Payload  
Perigee Altitude = 500.000000 (km)  
Apogee Altitude = 500.000000 (km)  
Inclination = 51.600000 (deg)  
RAAN = 0.000000 (deg)  
Argument of Perigee = 0.000000 (deg)  
Mean Anomaly = 0.000000 (deg)  
Final Area-To-Mass Ratio = 0.004340 (m<sup>2</sup>/kg)  
Start Year = 2017.000000 (yr)  
Initial Mass = 2.300000 (kg)  
Final Mass = 2.300000 (kg)  
Duration = 1.000000 (yr)  
Station-Kept = False  
Abandoned = True  
PMD Perigee Altitude = -1.000000 (km)  
PMD Apogee Altitude = -1.000000 (km)  
PMD Inclination = 0.000000 (deg)  
PMD RAAN = 0.000000 (deg)  
PMD Argument of Perigee = 0.000000 (deg)  
PMD Mean Anomaly = 0.000000 (deg)

\*\*OUTPUT\*\*

Collision Probability = 0.000000  
Returned Error Message: Normal Processing  
Date Range Error Message: Normal Date Range  
Status = Pass

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===== End of Requirement 4.5-1 =====  
10 26 2017; 09:32:34AM Requirement 4.5-2: Compliant  
10 26 2017; 09:32:35AM Processing Requirement 4.6 Return Status :  
Passed

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Project Data

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\*\*INPUT\*\*

Space Structure Name = AeroCube7 complete  
Space Structure Type = Payload

Perigee Altitude = 500.000000 (km)  
Apogee Altitude = 500.000000 (km)  
Inclination = 51.600000 (deg)  
RAAN = 0.000000 (deg)  
Argument of Perigee = 0.000000 (deg)  
Mean Anomaly = 0.000000 (deg)  
Area-To-Mass Ratio = 0.004340 (m<sup>2</sup>/kg)  
Start Year = 2017.000000 (yr)  
Initial Mass = 2.300000 (kg)  
Final Mass = 2.300000 (kg)  
Duration = 1.000000 (yr)  
Station Kept = False  
Abandoned = True  
PMD Perigee Altitude = 487.478733 (km)  
PMD Apogee Altitude = 509.921413 (km)  
PMD Inclination = 51.600284 (deg)  
PMD RAAN = 62.384617 (deg)  
PMD Argument of Perigee = 110.818212 (deg)  
PMD Mean Anomaly = 0.000000 (deg)

\*\*OUTPUT\*\*

Suggested Perigee Altitude = 487.478733 (km)  
Suggested Apogee Altitude = 509.921413 (km)  
Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2025 (yr)  
Requirement = 61  
Compliance Status = Pass

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===== End of Requirement 4.6 =====

10 26 2017; 09:32:38AM \*\*\*\*\*Processing Requirement 4.7-1  
Return Status : Passed

\*\*\*\*\*INPUT\*\*\*\*

Item Number = 1

name = AeroCube7 complete  
quantity = 1  
parent = 0  
materialID = 8  
type = Box  
Aero Mass = 2.300000  
Thermal Mass = 2.300000  
Diameter/Width = 0.100000  
Length = 0.150000  
Height = 0.100000

name = Wing Assembly  
quantity = 2  
parent = 1  
materialID = 8  
type = Box  
Aero Mass = 0.055000  
Thermal Mass = 0.055000  
Diameter/Width = 0.079000  
Length = 0.150000  
Height = 0.025000

name = Anti-Nadir Lid Assembly  
quantity = 1  
parent = 1  
materialID = 8  
type = Box  
Aero Mass = 0.058300  
Thermal Mass = 0.058300  
Diameter/Width = 0.103000  
Length = 0.108000  
Height = 0.002000

name = Camera Lens (Xenoplan/Schenider)  
quantity = 1  
parent = 1  
materialID = 9  
type = Cylinder  
Aero Mass = 0.087200  
Thermal Mass = 0.087200  
Diameter/Width = 0.032000  
Length = 0.039000

name = Rate Gyro Assembly  
quantity = 1

parent = 1  
materialID = 8  
type = Box  
Aero Mass = 0.095000  
Thermal Mass = 0.095000  
Diameter/Width = 0.048000  
Length = 0.060000  
Height = 0.025000

name = Nadir Lid Assembly  
quantity = 1  
parent = 1  
materialID = 8  
type = Flat Plate  
Aero Mass = 0.187000  
Thermal Mass = 0.187000  
Diameter/Width = 0.102000  
Length = 0.108000

name = Laser Comm Plate  
quantity = 1  
parent = 1  
materialID = 8  
type = Box  
Aero Mass = 0.220700  
Thermal Mass = 0.220700  
Diameter/Width = 0.102000  
Length = 0.103000  
Height = 0.019000

name = Laser Isolator  
quantity = 1  
parent = 1  
materialID = -1  
type = Cylinder  
Aero Mass = 0.227000  
Thermal Mass = 0.227000  
Diameter/Width = 0.027000  
Length = 0.072000

name = Body Assembly  
quantity = 1  
parent = 1  
materialID = 8  
type = Box  
Aero Mass = 0.450000  
Thermal Mass = 0.450000  
Diameter/Width = 0.113000  
Length = 0.160000  
Height = 0.106000

name = Electronics Module with Batteries  
quantity = 1  
parent = 1

materialID = 23  
type = Box  
Aero Mass = 0.514000  
Thermal Mass = 0.514000  
Diameter/Width = 0.080000  
Length = 0.080000  
Height = 0.070000

name = AC7 Propulsion Unit  
quantity = 1  
parent = 1  
materialID = 76  
type = Box  
Aero Mass = 0.131000  
Thermal Mass = 0.131000  
Diameter/Width = 0.057150  
Length = 0.088900  
Height = 0.044950

\*\*\*\*\*OUTPUT\*\*\*\*

Item Number = 1

name = AeroCube7 complete  
Demise Altitude = 77.998699  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Wing Assembly  
Demise Altitude = 77.252691  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Anti-Nadir Lid Assembly  
Demise Altitude = 76.719035  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Camera Lens (Xenoplan/Schenider)  
Demise Altitude = 72.800660  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Rate Gyro Assembly  
Demise Altitude = 74.621754  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Nadir Lid Assembly  
Demise Altitude = 73.940949

Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Laser Comm Plate  
Demise Altitude = 73.951222  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Laser Isolator  
Demise Altitude = 70.805894  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = Body Assembly  
Demise Altitude = 75.159910  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

\*\*\*\*\*

name = Electronics Module with Batteries  
Demise Altitude = 72.955605  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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name = AC7 Propulsion Unit  
Demise Altitude = 77.521129  
Debris Casualty Area = 0.000000  
Impact Kinetic Energy = 0.000000

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===== End of Requirement 4.7-1 =====  
10 26 2017; 09:32:47AM Science and Engineering - Orbit Lifetime/Dwell  
Time

\*\*INPUT\*\*

Start Year = 2017.900000 (yr)  
Perigee Altitude = 500.000000 (km)  
Apogee Altitude = 500.000000 (km)  
Inclination = 51.600000 (deg)  
RAAN = 0.000000 (deg)  
Argument of Perigee = 0.000000 (deg)  
Area-To-Mass Ratio = 0.004340 (m<sup>2</sup>/kg)

\*\*OUTPUT\*\*

Orbital Lifetime from Startyr = 7.452430 (yr)  
Time Spent in LEO during Lifetime = 7.452430 (yr)  
Last year of Propagation = 2025 (yr)

Returned Error Message: Object reentered  
10 26 2017; 09:32:57AM Project Data Saved To File