```
06 25 2020; 14:58:46PM DAS Application Started06 25 2020; 14:58:46PM
      Opened Project C:\Users\jrw29289\Desktop\DAS 2.0\project\Slingshot\
06 25 2020; 14:58:53PM Opened Project C:\Users\jrw29289\Desktop\DAS
2.0\project\Slingshot\
06 25 2020; 14:59:06PM Processing Requirement 4.3-1:     Return Status :
Not Run

====================
No Project Data Available
====================

=============== End of Requirement 4.3-1 ===============
06 25 2020; 14:59:07PM Processing Requirement 4.3-2: Return Status :
Passed
====================
No Project Data Available
====================

=============== End of Requirement 4.3-2 ===============
06 25 2020; 14:59:11PM Requirement 4.4-3:  Compliant
=============== End of Requirement 4.4-3 ===============
06 25 2020; 14:59:15PM Processing Requirement 4.5-1:     Return Status :
Passed
==============
Run Data
==============

**INPUT**

      Space Structure Name = Slingshot
      Space Structure Type = Payload
      Perigee Altitude = 500.000000 (km)
      Apogee Altitude = 500.000000 (km)
      Inclination = 45.000000 (deg)
      RAAN = 0.000000 (deg)
      Argument of Perigee = 0.000000 (deg)
      Mean Anomaly = 0.000000 (deg)
      Final Area-To-Mass Ratio = 0.003192 (m^2/kg)
      Start Year = 2021.000000 (yr)      Initial Mass = 19.294000 (kg)
      Final Mass = 19.294000 (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

==========

========== End of Requirement 4.5-1 ==========
06 25 2020; 14:59:35PM Requirement 4.5-2: Compliant06 25 2020;
14:59:36PM Processing Requirement 4.6 Return Status : Passed
==========
Project Data
==========

INPUT

Space Structure Name = Slingshot
Space Structure Type = Payload

Perigee Altitude = 500.000000 (km)
Apogee Altitude = 500.000000 (km)
Inclination = 45.000000 (deg)
RAAN = 0.000000 (deg)
Argument of Perigee = 0.000000 (deg)
Mean Anomaly = 0.000000 (deg)
Area-To-Mass Ratio = 0.003192 (m^2/kg)
Start Year = 2021.000000 (yr)
Initial Mass = 19.294000 (kg) Final Mass = 19.294000 (kg)
Duration = 1.000000 (yr)
Station Kept = False
Abandoned = True
PMD Perigee Altitude = 488.443705 (km) PMD Apogee Altitude =
499.210792 (km) PMD Inclination = 44.996217 (deg) PMD RAAN = 177.530663
(deg)
PMD Argument of Perigee = 155.127888 (deg)
PMD Mean Anomaly = 0.000000 (deg)

OUTPUT

Suggested Perigee Altitude = 488.443705 (km)
Suggested Apogee Altitude = 499.210792 (km)
Returned Error Message = Passes LEO reentry orbit criteria.

Released Year = 2031 (yr) Requirement = 61
Compliance Status = Pass

==========

========== End of Requirement 4.6 ==========
06 25 2020; 14:59:39PM *********Processing Requirement 4.7-1
Return Status : Passed
**********INPUT****
Item Number = 1

name = Slingshot
quantity = 1
parent = 0

```
materialID = 8
type = Box
Aero Mass = 19.294001
Thermal Mass = 19.294001
Diameter/Width = 0.226000
Length = 0.366000
Height = 0.211000

name = Structure
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 1.355000
Thermal Mass = 1.355000
Diameter/Width = 0.226000
Length = 0.366000
Height = 0.211000

name = Electronics Module
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 3.832000
Thermal Mass = 2.764000
Diameter/Width = 0.108000
Length = 0.234000
Height = 0.100000

name = Reaction Wheel
quantity = 3
parent = 3
materialID = 59
type = Box
Aero Mass = 0.229000
Thermal Mass = 0.229000
Diameter/Width = 0.055000
Length = 0.055000
Height = 0.023000

name = Torque Rod
quantity = 3
parent = 3
materialID = 19
type = Cylinder
Aero Mass = 0.127000
Thermal Mass = 0.127000
Diameter/Width = 0.018000
Length = 0.062000

name = Ext. Battery Pack
quantity = 2
parent = 1
```

```
materialID = 8
type = Box
Aero Mass = 0.305000
Thermal Mass = 0.305000
Diameter/Width = 0.078000
Length = 0.079000
Height = 0.033000

name = +X Panel Assembly 1
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 2.402600
Thermal Mass = 0.000000
Diameter/Width = 0.199000
Length = 0.254000
Height = 0.100000

name = +X Panel 1
quantity = 1
parent = 7
materialID = 8
type = Box
Aero Mass = 0.601000
Thermal Mass = 0.601000
Diameter/Width = 0.199000
Length = 0.254000
Height = 0.005000

name = Star Tracker (Nadir
quantity = 1
parent = 7
materialID = 8
type = Cylinder
Aero Mass = 0.068000
Thermal Mass = 0.068000
Diameter/Width = 0.032000
Length = 0.059000

name = TT&C Antenna (Nadir)
quantity = 1
parent = 7
materialID = 40
type = Box
Aero Mass = 0.085000
Thermal Mass = 0.085000
Diameter/Width = 0.076000
Length = 0.076000
Height = 0.007000

name = T.spoon
quantity = 1
parent = 7
```

```
materialID = 8
type = Box
Aero Mass = 0.667000
Thermal Mass = 0.000000
Diameter/Width = 0.091000
Length = 0.116000
Height = 0.060000

name = T.spoon Structure
quantity = 1
parent = 11
materialID = 8
type = Box
Aero Mass = 0.154000
Thermal Mass = 0.154000
Diameter/Width = 0.091000
Length = 0.116000
Height = 0.060000

name = Copper Straps
quantity = 3
parent = 11
materialID = 19
type = Box
Aero Mass = 0.071000
Thermal Mass = 0.071000
Diameter/Width = 0.035000
Length = 0.048000
Height = 0.005000

name = PCB (T.spoon)
quantity = 3
parent = 11
materialID = 23
type = Box
Aero Mass = 0.100000
Thermal Mass = 0.100000
Diameter/Width = 0.090000
Length = 0.090000
Height = 0.007000

name = SDR + ACETaTE
quantity = 1
parent = 7
materialID = 8
type = Box
Aero Mass = 0.981600
Thermal Mass = 0.000000
Diameter/Width = 0.094000
Length = 0.108000
Height = 0.041000

name = SDR Structure
quantity = 1
```

parent = 15
materialID = 8
type = Box
Aero Mass = 0.143000
Thermal Mass = 0.143000
Diameter/Width = 0.094000
Length = 0.108000
Height = 0.041000

name = PCB (SDR)
quantity = 1
parent = 15
materialID = 23
type = Box
Aero Mass = 0.040000
Thermal Mass = 0.040000
Diameter/Width = 0.040000
Length = 0.065000
Height = 0.010000

name = NanoDock Module
quantity = 1
parent = 15
materialID = 8
type = Box
Aero Mass = 0.076000
Thermal Mass = 0.076000
Diameter/Width = 0.090000
Length = 0.096000
Height = 0.014000

name = NanoMind Module
quantity = 1
parent = 15
materialID = 8
type = Box
Aero Mass = 0.077000
Thermal Mass = 0.077000
Diameter/Width = 0.040000
Length = 0.065000
Height = 0.014900

name = TR-600 Module
quantity = 2
parent = 15
materialID = 8
type = Box
Aero Mass = 0.065300
Thermal Mass = 0.065300
Diameter/Width = 0.040000
Length = 0.065000
Height = 0.014800

name = PCB (C-Band)

quantity = 1
parent = 15
materialID = 23
type = Box
Aero Mass = 0.160000
Thermal Mass = 0.160000
Diameter/Width = 0.076000
Length = 0.089000
Height = 0.030000

name = C-Band Structure
quantity = 1
parent = 15
materialID = 8
type = Box
Aero Mass = 0.355000
Thermal Mass = 0.355000
Diameter/Width = 0.084000
Length = 0.099000
Height = 0.039000

name = +X Panel Assembly 2
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.720000
Thermal Mass = 0.000000
Diameter/Width = 0.086000
Length = 0.091000
Height = 0.058000

name = ExoRomper
quantity = 1
parent = 23
materialID = 8
type = Box
Aero Mass = 0.720000
Thermal Mass = 0.109000
Diameter/Width = 0.086000
Length = 0.091000
Height = 0.058000

name = ExoRomper Structure
quantity = 1
parent = 24
materialID = 8
type = Box
Aero Mass = 0.545000
Thermal Mass = 0.545000
Diameter/Width = 0.086000
Length = 0.091000
Height = 0.058000

name = Visible Camera and Lens
quantity = 1
parent = 24
materialID = 8
type = Box
Aero Mass = 0.046000
Thermal Mass = 0.046000
Diameter/Width = 0.044000
Length = 0.046000
Height = 0.040000

name = Lepton 3.5 Thermal Camera and Lens
quantity = 1
parent = 24
materialID = 8
type = Box
Aero Mass = 0.008000
Thermal Mass = 0.008000
Diameter/Width = 0.022000
Length = 0.030000
Height = 0.010000

name = O615 Motor Power Assembly
quantity = 2
parent = 24
materialID = 59
type = Cylinder
Aero Mass = 0.006000
Thermal Mass = 0.006000
Diameter/Width = 0.006000
Length = 0.030000

name = -X Panel Assembly 1
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 1.303962
Thermal Mass = 0.000000
Diameter/Width = 0.119000
Length = 0.254000
Height = 0.100000

name = -X Panel 1
quantity = 1
parent = 29
materialID = 8
type = Box
Aero Mass = 0.636000
Thermal Mass = 0.636000
Diameter/Width = 0.199000
Length = 0.254000
Height = 0.005000

```
name = Star Tracker (Zenith)
quantity = 1
parent = 29
materialID = 8
type = Cylinder
Aero Mass = 0.068000
Thermal Mass = 0.068000
Diameter/Width = 0.028000
Length = 0.059000

name = TT&C Antenna (Zenith)
quantity = 1
parent = 29
materialID = 40
type = Box
Aero Mass = 0.085000
Thermal Mass = 0.085000
Diameter/Width = 0.076000
Length = 0.076000
Height = 0.007000

name = Hyper
quantity = 1
parent = 29
materialID = 8
type = Box
Aero Mass = 0.514962
Thermal Mass = 0.000000
Diameter/Width = 0.050000
Length = 0.081000
Height = 0.043200

name = Tank
quantity = 1
parent = 33
materialID = 8
type = Box
Aero Mass = 0.363000
Thermal Mass = 0.363000
Diameter/Width = 0.050000
Length = 0.081000
Height = 0.043200

name = Valve
quantity = 2
parent = 33
materialID = 8
type = Cylinder
Aero Mass = 0.037000
Thermal Mass = 0.037000
Diameter/Width = 0.022000
Length = 0.042000

name = Nozzle Stand
```

quantity = 1
parent = 33
materialID = 66
type = Cylinder
Aero Mass = 0.004000
Thermal Mass = 0.004000
Diameter/Width = 0.021000
Length = 0.023000

name = Nozzle Cap
quantity = 1
parent = 33
materialID = 59
type = Cylinder
Aero Mass = 0.005000
Thermal Mass = 0.005000
Diameter/Width = 0.016000
Length = 0.008000

name = Pressure Sensor
quantity = 2
parent = 33
materialID = 59
type = Cylinder
Aero Mass = 0.010000
Thermal Mass = 0.010000
Diameter/Width = 0.015800
Length = 0.017100

name = Ceramic Tube
quantity = 1
parent = 33
materialID = 1
type = Cylinder
Aero Mass = 0.000162
Thermal Mass = 0.000162
Diameter/Width = 0.002286
Length = 0.019100

name = Mounting Bracket
quantity = 1
parent = 33
materialID = -1
type = Box
Aero Mass = 0.031740
Thermal Mass = 0.031740
Diameter/Width = 0.056300
Length = 0.062800
Height = 0.038100

name = Hyper PCB
quantity = 1
parent = 33
materialID = 23

type = Box
Aero Mass = 0.017060
Thermal Mass = 0.017060
Diameter/Width = 0.042900
Length = 0.059700
Height = 0.005000

name = Coral Reef
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.113000
Thermal Mass = 0.000000
Diameter/Width = 0.040000
Length = 0.048000
Height = 0.005110

name = Coral Reef Structure
quantity = 1
parent = 42
materialID = 8
type = Box
Aero Mass = 0.013000
Thermal Mass = 0.013000
Diameter/Width = 0.048000
Length = 0.048000
Height = 0.005110

name = Coral Reef PCB
quantity = 1
parent = 42
materialID = 23
type = Box
Aero Mass = 0.100000
Thermal Mass = 0.100000
Diameter/Width = 0.090000
Length = 0.090000
Height = 0.007000

name = Laser Comm Transmitter
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.373000
Thermal Mass = 0.000000
Diameter/Width = 0.082000
Length = 0.127000
Height = 0.018000

name = Laser Comm Structure
quantity = 1
parent = 45

```
materialID = 8
type = Box
Aero Mass = 0.350000
Thermal Mass = 0.350000
Diameter/Width = 0.082000
Length = 0.127000
Height = 0.018000

name = Laser Comm PCB
quantity = 1
parent = 45
materialID = 23
type = Box
Aero Mass = 0.023000
Thermal Mass = 0.023000
Diameter/Width = 0.082000
Length = 0.127000
Height = 0.018000

name = Spoon Handle
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.808000
Thermal Mass = 0.000000
Diameter/Width = 0.083000
Length = 0.094000
Height = 0.017000

name = Spoon Handle Structure
quantity = 8
parent = 48
materialID = 8
type = Box
Aero Mass = 0.042000
Thermal Mass = 0.042000
Diameter/Width = 0.083000
Length = 0.094000
Height = 0.017000

name = Spoon Handle PCB
quantity = 8
parent = 48
materialID = 23
type = Box
Aero Mass = 0.059000
Thermal Mass = 0.059000
Diameter/Width = 0.080000
Length = 0.080000
Height = 0.007000

name = -X Panel Assembly 2
quantity = 1
```

```
parent = 1
materialID = 8
type = Box
Aero Mass = 0.361000
Thermal Mass = 0.000000
Diameter/Width = 0.101000
Length = 0.105000
Height = 0.015000

name = -X Panel 2
quantity = 1
parent = 51
materialID = 8
type = Box
Aero Mass = 0.103000
Thermal Mass = 0.103000
Diameter/Width = 0.101000
Length = 0.105000
Height = 0.015000

name = Diplexer
quantity = 1
parent = 51
materialID = 8
type = Box
Aero Mass = 0.258000
Thermal Mass = 0.258000
Diameter/Width = 0.077000
Length = 0.080000
Height = 0.024000

name = +Y Panel Assembly
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 1.785000
Thermal Mass = 0.000000
Diameter/Width = 0.210000
Length = 0.329000
Height = 0.008000

name = +Y Panel
quantity = 1
parent = 54
materialID = 8
type = Box
Aero Mass = 1.290000
Thermal Mass = 1.290000
Diameter/Width = 0.210000
Length = 0.329000
Height = 0.008000

name = Vertigo
```

quantity = 1
parent = 54
materialID = 8
type = Box
Aero Mass = 0.495000
Thermal Mass = 0.000000
Diameter/Width = 0.083000
Length = 0.094000
Height = 0.073000

name = Vertigo Structure
quantity = 1
parent = 56
materialID = 8
type = Box
Aero Mass = 0.202000
Thermal Mass = 0.202000
Diameter/Width = 0.083000
Length = 0.094000
Height = 0.073000

name = Vertigo Reaction Wheel
quantity = 3
parent = 56
materialID = 59
type = Cylinder
Aero Mass = 0.071000
Thermal Mass = 0.071000
Diameter/Width = 0.026000
Length = 0.018000

name = Vertigo Motor
quantity = 3
parent = 56
materialID = 59
type = Cylinder
Aero Mass = 0.020000
Thermal Mass = 0.020000
Diameter/Width = 0.015000
Length = 0.052300

name = Vertigo ESPON IMU
quantity = 2
parent = 56
materialID = 59
type = Box
Aero Mass = 0.010000
Thermal Mass = 0.010000
Diameter/Width = 0.024000
Length = 0.024000
Height = 0.010000

name = Eclipse-RR
quantity = 1

```
parent = 1
materialID = 8
type = Box
Aero Mass = 2.991000
Thermal Mass = 0.000000
Diameter/Width = 0.098000
Length = 0.192000
Height = 0.098000

name = Eclipse Structure
quantity = 1
parent = 61
materialID = 8
type = Box
Aero Mass = 2.800000
Thermal Mass = 2.800000
Diameter/Width = 0.098000
Length = 0.192000
Height = 0.098000

name = Eclipse PCB 1
quantity = 1
parent = 61
materialID = 23
type = Box
Aero Mass = 0.040000
Thermal Mass = 0.040000
Diameter/Width = 0.088000
Length = 0.337000
Height = 0.010000

name = Eclipse PCB 2
quantity = 2
parent = 61
materialID = 23
type = Box
Aero Mass = 0.030000
Thermal Mass = 0.030000
Diameter/Width = 0.092000
Length = 0.092000
Height = 0.010000

name = Eclipse Mirror
quantity = 1
parent = 61
materialID = 8
type = Box
Aero Mass = 0.091000
Thermal Mass = 0.091000
Diameter/Width = 0.041000
Length = 0.092000
Height = 0.010000

name = -Y Panel
```

quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.489000
Thermal Mass = 0.489000
Diameter/Width = 0.203000
Length = 0.254000
Height = 0.008000

name = +Z Panel Assembly
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.373000
Thermal Mass = 0.000000
Diameter/Width = 0.193000
Length = 0.210000
Height = 0.014000

name = +Z Panel
quantity = 1
parent = 67
materialID = 8
type = Box
Aero Mass = 0.373000
Thermal Mass = 0.174000
Diameter/Width = 0.193000
Length = 0.210000
Height = 0.014000

name = ANT2000-S Antenna
quantity = 1
parent = 68
materialID = 23
type = Box
Aero Mass = 0.110000
Thermal Mass = 0.110000
Diameter/Width = 0.082600
Length = 0.100500
Height = 0.020100

name = NTE Payload
quantity = 1
parent = 68
materialID = 40
type = Box
Aero Mass = 0.054000
Thermal Mass = 0.054000
Diameter/Width = 0.082000
Length = 0.082000
Height = 0.005000

```
name = C-band Patch Antenna
quantity = 1
parent = 68
materialID = 40
type = Box
Aero Mass = 0.005000
Thermal Mass = 0.005000
Diameter/Width = 0.022000
Length = 0.023000
Height = 0.010000

name = Context Camera
quantity = 1
parent = 68
materialID = 8
type = Cylinder
Aero Mass = 0.030000
Thermal Mass = 0.030000
Diameter/Width = 0.025000
Length = 0.035000

name = -Z Panel Assembly
quantity = 1
parent = 1
materialID = 8
type = Box
Aero Mass = 0.606000
Thermal Mass = 0.000000
Diameter/Width = 0.105000
Length = 0.220000
Height = 0.005000

name = -Z Panel
quantity = 1
parent = 73
materialID = 8
type = Box
Aero Mass = 0.256000
Thermal Mass = 0.256000
Diameter/Width = 0.105000
Length = 0.220000
Height = 0.005000

name = Blinker
quantity = 1
parent = 73
materialID = 8
type = Box
Aero Mass = 0.350000
Thermal Mass = 0.024000
Diameter/Width = 0.092000
Length = 0.099000
Height = 0.028000
```

```
name = Blinker Structure
quantity = 1
parent = 75
materialID = 8
type = Box
Aero Mass = 0.066000
Thermal Mass = 0.066000
Diameter/Width = 0.092000
Length = 0.099000
Height = 0.028000

name = Blinker Avionics
quantity = 1
parent = 75
materialID = 23
type = Box
Aero Mass = 0.190000
Thermal Mass = 0.190000
Diameter/Width = 0.092000
Length = 0.100000
Height = 0.028000

name = Blinker Antenna
quantity = 1
parent = 75
materialID = 40
type = Box
Aero Mass = 0.030000
Thermal Mass = 0.030000
Diameter/Width = 0.041000
Length = 0.041000
Height = 0.010000

name = Blinker Battery
quantity = 1
parent = 75
materialID = 59
type = Cylinder
Aero Mass = 0.040000
Thermal Mass = 0.040000
Diameter/Width = 0.014000
Length = 0.065000

name = Solar Array
quantity = 2
parent = 1
materialID = 27
type = Box
Aero Mass = 0.510000
Thermal Mass = 0.510000
Diameter/Width = 0.213000
Length = 0.715000
Height = 0.002500
```

```
**************OUTPUT****
Item Number = 1

name = Slingshot
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Structure
Demise Altitude = 75.735550
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Electronics Module
Demise Altitude = 68.979324
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Reaction Wheel
Demise Altitude = 0.000000
Debris Casualty Area = 1.253166
Impact Kinetic Energy = 214.309219
************************************
name = Torque Rod
Demise Altitude = 64.555905
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Ext. Battery Pack
Demise Altitude = 72.810464
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +X Panel Assembly 1
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +X Panel 1
Demise Altitude = 74.568808
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Star Tracker (Nadir
Demise Altitude = 75.450996
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = TT&C Antenna (Nadir)
Demise Altitude = 75.200425
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = T.spoon
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = T.spoon Structure
Demise Altitude = 76.558441
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Copper Straps
Demise Altitude = 74.857699
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = PCB (T.spoon)
Demise Altitude = 76.608433
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = SDR + ACETaTE
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = SDR Structure
Demise Altitude = 76.323176
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = PCB (SDR)
Demise Altitude = 76.931894
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = NanoDock Module
Demise Altitude = 76.656316
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = NanoMind Module
Demise Altitude = 75.358816
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = TR-600 Module
Demise Altitude = 75.736660
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = PCB (C-Band)
Demise Altitude = 76.216621
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = C-Band Structure
Demise Altitude = 73.452019
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +X Panel Assembly 2
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = ExoRomper
Demise Altitude = 76.845308
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = ExoRomper Structure
Demise Altitude = 70.545285
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Visible Camera and Lens
Demise Altitude = 75.459902
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Lepton 3.5 Thermal Camera and Lens
Demise Altitude = 76.015675
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = O615 Motor Power Assembly
Demise Altitude = 74.868504
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -X Panel Assembly 1
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -X Panel 1
Demise Altitude = 74.369793
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Star Tracker (Zenith)
Demise Altitude = 75.189636
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = TT&C Antenna (Zenith)
Demise Altitude = 75.200425
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Hyper
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Tank
Demise Altitude = 72.321082
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Valve
Demise Altitude = 75.563269
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Nozzle Stand
Demise Altitude = 0.000000
Debris Casualty Area = 0.386856
Impact Kinetic Energy = 0.307301
```

```
************************************
name = Nozzle Cap
Demise Altitude = 76.266277
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Pressure Sensor
Demise Altitude = 75.433988
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Ceramic Tube
Demise Altitude = 0.000000
Debris Casualty Area = 0.367973
Impact Kinetic Energy = 0.006533

************************************
name = Mounting Bracket
Demise Altitude = 77.899238
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Hyper PCB
Demise Altitude = 77.455418
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Coral Reef
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Coral Reef Structure
Demise Altitude = 77.294011
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Coral Reef PCB
Demise Altitude = 76.608433
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Laser Comm Transmitter
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = Laser Comm Structure
Demise Altitude = 73.479152
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Laser Comm PCB
Demise Altitude = 77.789340
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Spoon Handle
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Spoon Handle Structure
Demise Altitude = 77.249715
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Spoon Handle PCB
Demise Altitude = 77.021472
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -X Panel Assembly 2
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -X Panel 2
Demise Altitude = 76.415551
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Diplexer
Demise Altitude = 73.131574
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +Y Panel Assembly
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = +Y Panel
Demise Altitude = 72.478011
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Vertigo
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Vertigo Structure
Demise Altitude = 75.909504
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Vertigo Reaction Wheel
Demise Altitude = 69.690003
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Vertigo Motor
Demise Altitude = 75.143285
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Vertigo ESPON IMU
Demise Altitude = 0.000000
Debris Casualty Area = 0.769294
Impact Kinetic Energy = 2.136120
************************************
name = Eclipse-RR
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Eclipse Structure
Demise Altitude = 66.809448
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Eclipse PCB 1
Demise Altitude = 77.813699
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = Eclipse PCB 2
Demise Altitude = 77.608379
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Eclipse Mirror
Demise Altitude = 75.433011
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -Y Panel
Demise Altitude = 75.295847
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +Z Panel Assembly
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = +Z Panel
Demise Altitude = 77.037676
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = ANT2000-S Antenna
Demise Altitude = 75.506949
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = NTE Payload
Demise Altitude = 74.310777
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = C-band Patch Antenna
Demise Altitude = 76.021441
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Context Camera
Demise Altitude = 74.440925
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000
```

```
************************************
name = -Z Panel Assembly
Demise Altitude = 77.996801
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = -Z Panel
Demise Altitude = 75.780558
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Blinker
Demise Altitude = 77.695918
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Blinker Structure
Demise Altitude = 76.730715
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Blinker Avionics
Demise Altitude = 75.844613
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Blinker Antenna
Demise Altitude = 75.583925
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Blinker Battery
Demise Altitude = 73.409347
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************
name = Solar Array
Demise Altitude = 77.769504
Debris Casualty Area = 0.000000
Impact Kinetic Energy = 0.000000

************************************

=============== End of Requirement 4.7-1 ===============
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