ORION’S FIRST TEST FLIGHT: EFT-1
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Rocky Mountain AIAA Chairman 2015-16
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Launch Abort System
Crew Module
Service Module
Spacecraft Adapter
Spacecraft Adapter
Jettison Panels
EXPLORATION FLIGHT TEST ONE

OVERVIEW

TWO ORBITS
20,000 MPH ENTRY
3,671 MILE APOGEE
28.6 DEGREE INCLINATION

LAUNCH CONFIGURATION

LAUNCH ABORT SYSTEM (LAS)
ORION CREW MODULE (CM)
UPPER STAGE
DELTA IV HEAVY ROCKET

Upper Stage Disposal
Orion Translation Burn
LANDING & RECOVERY
LAUNCH SLC-37B
Launch Vehicle/Upper Stage Separation
Launch Abort System (LAS) Jettison
Upper Stage Engine Burns

Orion/Upper Stage Separation
**SEPARATION EVENTS**

17 Events
Start 6 minutes after launch
Continue throughout the flight

**HEAT SHIELD**

1.6 inches thick
Mass erodes by 20% during reentry

**RADIATION**

Vehicle travels 15 times farther than ISS
Flight passes through Van Allen radiation belts

**PARACHUTES**

Vehicle must slow down from 20,000 MPH to 20 MPH
11 Parachutes total, 8 for crew module
Deployment starts at 300 MPH
BEYOND EARTH ORBIT CREW SAFETY COMPLEXITY

MINUTES TO EARTH

5 TO 11 DAYS TO EARTH
LEO 7,800 lb
BEO 18,965 lb

ADVANCED CARBON DIOXIDE REMOVAL SYSTEM
BEO 210 Liters
LEO 40 Liters

DRINKING WATER
BEO 210 Liters
LEO 40 Liters

FOOD
BEO 14.8 FT³
LEO 2.8 FT³

OXYGEN
BEO 190 L
LEO 36 L

CARBON DIOXIDE
FILTER
BEO 42
LEO 8

REENTRY SPEED
BEO 11.2 KM / SEC
LEO 7.8 KM / SEC

RADIATION DOS
BEO
ISS
SHEILDING

ORION IS BUILT FOR GOING BEYOND EARTH ORBIT
ORION CONTINUES INTERNATIONAL PARTNERSHIPS
FIRST STEP TO MARS

#JOURNEYTOMARS