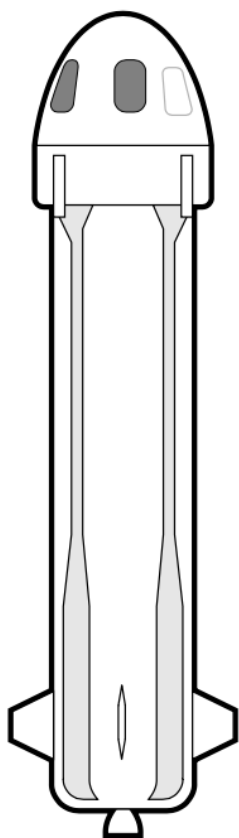


Blue Origin NEW SHEPARD

Vehicle Summary

Named after astronaut Alan Shepard, the first American in space, New Shepard is Blue Origin's fully reusable suborbital rocket system. It is designed to take astronauts and research payloads on an 11-minute journey in to space above 100 km. Near the top of its flight, the capsule separates from the booster and experiences 3 minutes of microgravity before returning to Earth. This flight profile will enable NASA TechRise students to use New Shepard as a platform to conduct microgravity experiments and technology demonstrations.

Flight Integration Details



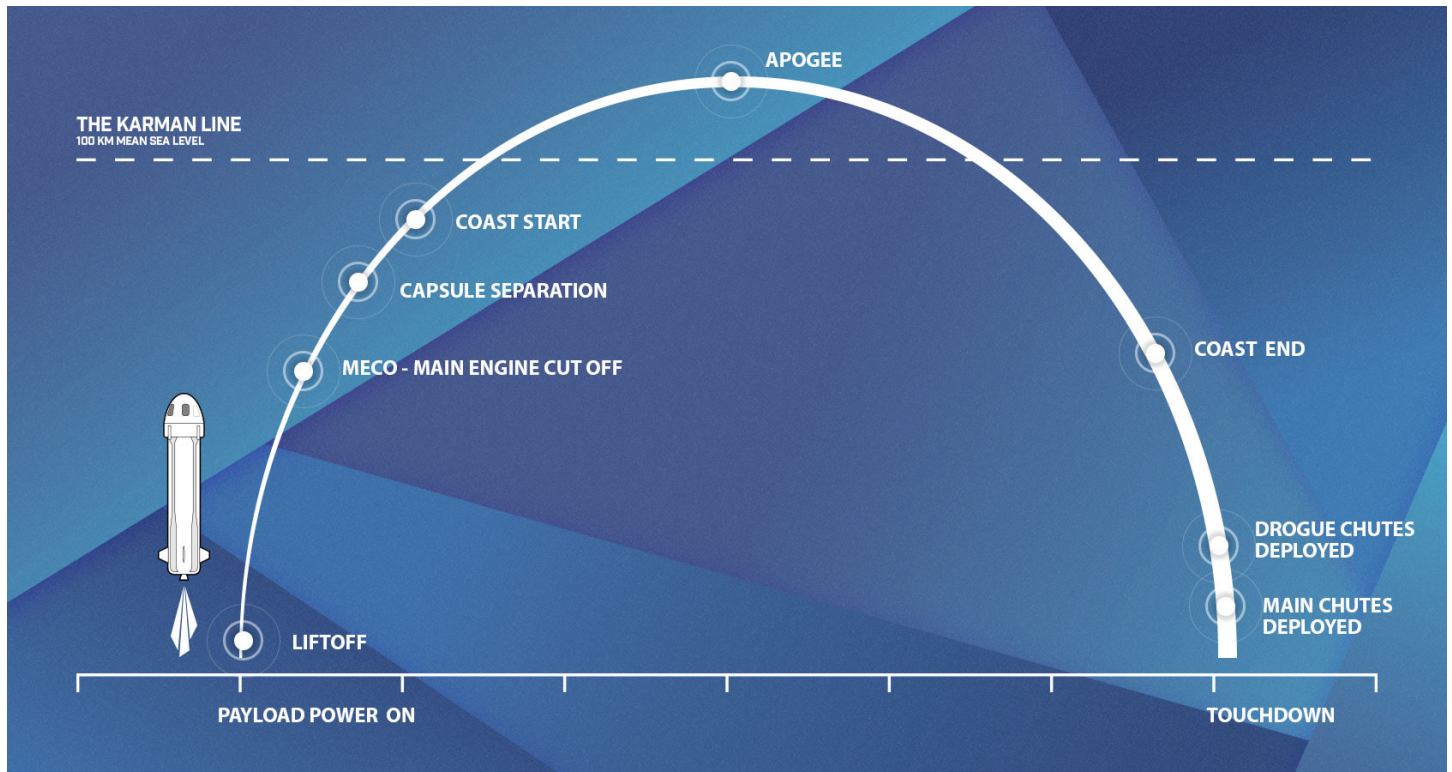
Blue Origin New Shepard

Requirements	BLUE ORIGIN + NASA TECHRISE
Maximum Size	4 in x 4 in x 8 in (10.16cm x 10.16cm x 20.32cm)
Total Maximum Weight	1.1 pounds (0.5 kilograms)
Provided Flight Box Weight	Approximately 0.3 pounds (135 grams)
Liquids	150ml non-hazardous liquid; Double containment required
Biologics	Experiments that grow or monitor living organisms are not allowed; Seeds or plant substrates (e.g., soils, artificial soils) are allowed.
Extra Batteries	No. Please rely on the vehicle power outlined below
Wireless Communications	No Bluetooth, Wi-Fi, or other RF communications
Lasers	Yes. Small Class 1 and 1M are allowed
Power & Data	
Connector	USB - Type B
Voltage	5 V
Current	900 mA
Vehicle Data	Yes, vehicle telemetry is streamed to each experiment as serial data via USB
Key Event Triggers	Yes, key events will be provided as serial data packets during flight and can be used to trigger your flight experiment; Events are described on Page 2
Environmental Conditions	
Overview	Experiment is inside a climate-controlled cabin at room temperature and pressure
Flight Location	Texas
Temperature	Climate-controlled cabin 50F to 90F (10C to 32C)
Line of Sight	No line of sight to the exterior
Pressure	10.1 to 14.2 psi (69.6 kPa to 97.9 kPa)
Acceleration	Sustained environments up to 3g on ascent, 5.5g on re-entry, and short shock loads at parachute deployment and landing
EMI	Upon request: support@futureengineers.org
Vibration	Upon request: support@futureengineers.org
Shock	Upon request: support@futureengineers.org

Blue Origin

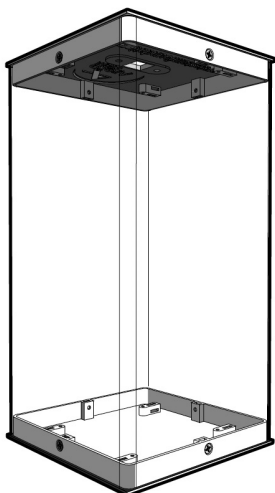
NEW SHEPARD

CAPSULE FLIGHT DETAILS, KEY EVENTS & SIMULATOR



FLIGHT BOX

Winning teams assigned to suborbital rocket flights will receive a 3D-printed Flight Box and a Technical Development Setup Guide.



FLIGHT EVENT DETAIL

Flight Event	Mission Elapsed Time (seconds)
None/Payload Power On	-300
Liftoff	7
Main Engine Cut Off (MECO)	146
Separation Commanded	162
Coast Start	177
Apogee	246
Coast End	348
Drogue Chutes Deployed	501
Main Chutes Deployed	517
Touchdown	622
Safing	700
Mission End	922

VIDEOS

