



Platforms Supported by NASA Wallops Flight Facility

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Sounding Rockets (Overview)

- Sounding rockets are suborbital launch vehicles used for scientific experiments and technological development. They serve as a valuable opportunity to collect data in space environments before their return back to Earth.



Purpose

- Used for atmospheric and space physics research
- Provide a more cost-effective ways to test new spaceflight technology before mission incorporation
- Help in studying the space environment involving magnetic fields, cosmic rays, and effects of microgravity

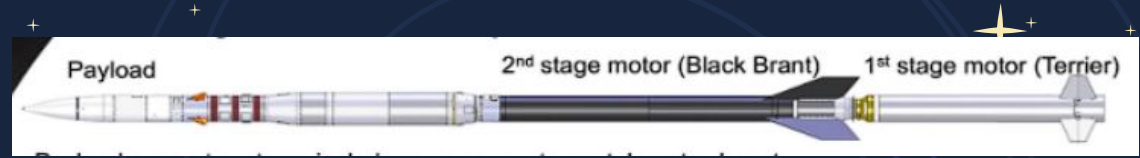
Wallops Function

- Builds, launches, and tracks sounding rockets
- Provides launch services for both government and commercial clients
- Assists with mission planning and payload integration



Technology

- ◆ Utilizes solid-propellant rocket motors
- ◆ Equipped with scientific payloads that consist of instrumentation like telescopes/spectrometers, magnetometers, and image sensors in experiment section of the rocket
 - Other sections include recovery system for returning back to earth and altitude control systems to keep the payload aligned to its target
- ◆ Data collection on high-altitude atmospheric conditions and space environment interaction, furthering our knowledge and advancement



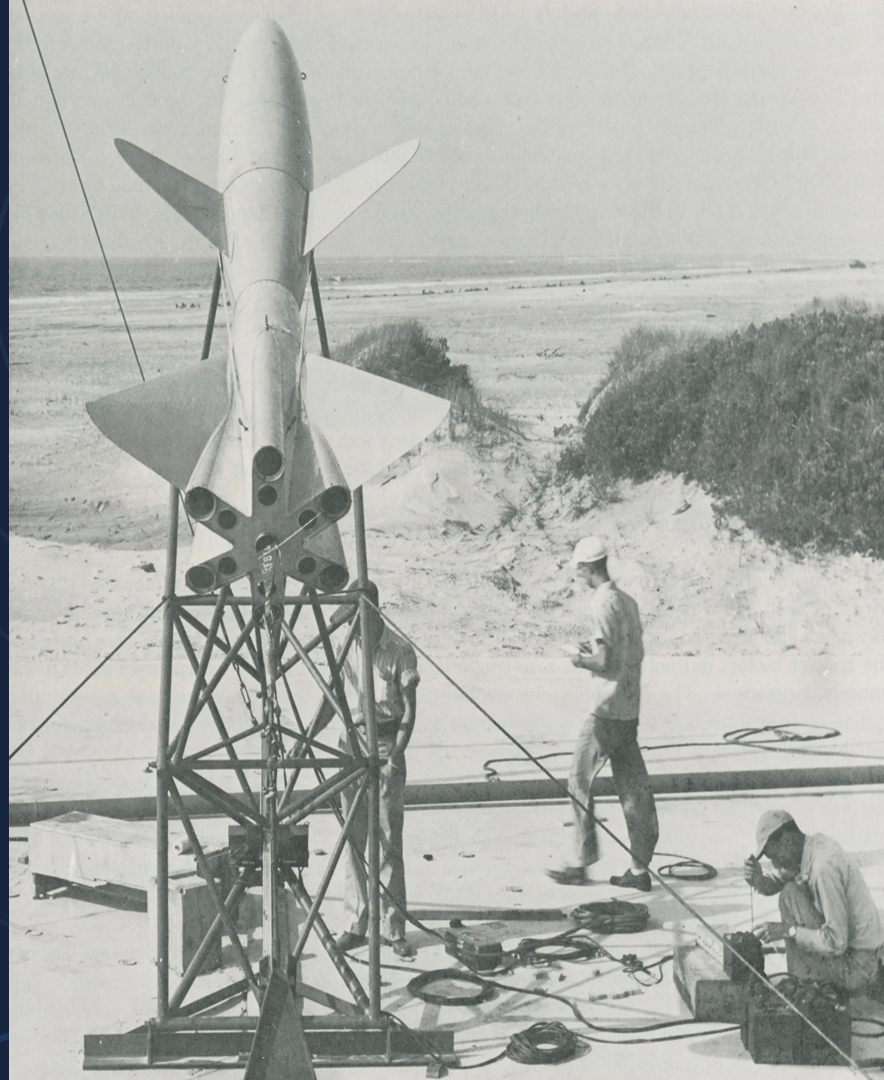
Launch

- ◆ Primarily launched from Wallops Flight Facility
- ◆ Can be launched from remote sites worldwide, including both temporary and permanent launch ranges in places like New Mexico and Australia



Fun⁺ Facts

- ✦ The first NASA launch at Wallops in 1945 was a sounding rocket experiment
- ✦ Some sounding rockets reach altitudes up to 1500 km



Scientific Balloons (Overview)



- Scientific balloons are high-altitude balloons used to carry instruments for research in astronomy, atmospheric science, and space physics

Purpose

- Conducts low-cost, high altitude research by carrying scientific instrumentation
- Provides a platform to study atmospheric and space phenomena
- Test new space technologies in near-space conditions



Wallops Function

- Designs, builds, and launches scientific balloons
- Monitors and tracks scientific balloon flights
- Recovers payloads after mission completion



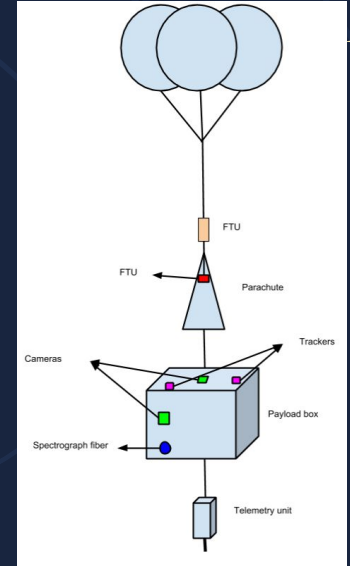
Technology

- ◆ Large balloons made up of polyethylene film that can expand up to more than 400 feet in diameter
- ◆ Carries payloads of scientific instrumentation like telescopes, particle detectors, and atmospheric sensors
- ◆ Collects data on atmospheric chemistry, climate, change, and space radiation, providing greater data and insights into atmospheric trends



Launch

- ◆ Launched from Wallops Flight Facility and other locations worldwide
- ◆ Other common launch sites include Antarctica and New Zealand





Fun Facts

- ◆ Scientific balloons can stay aloft for weeks
- ◆ Some balloons carry payloads weighing over 8000 pounds

References

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