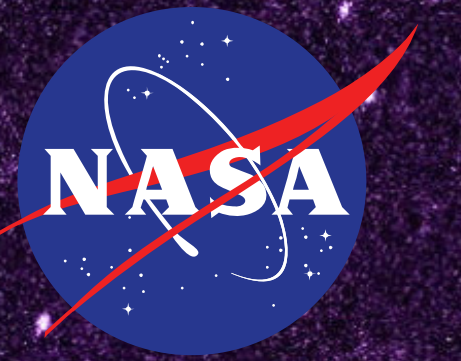
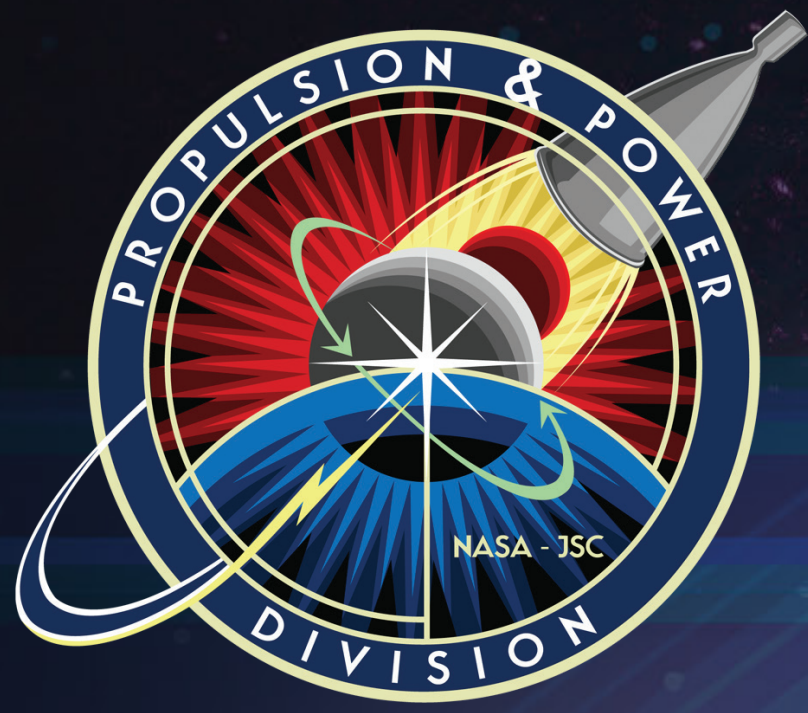




TESTING BATTERY AND POWER SYSTEMS AT THE ENERGY SYSTEMS TEST AREA

LYNDON B. JOHNSON SPACE CENTER • HOUSTON, TEXAS

OVERVIEW

The team in the Propulsion and Power Division Power Systems Branch develops battery and power system hardware for human spaceflight. They also perform acceptance, qualification, and safety testing on the hardware at Johnson Space Center's Energy Systems Test Area (ESTA).

ESTA has a comprehensive suite of test equipment and state-of-the-art facilities to do everything from cell analysis and testing to battery certification for flight applications.

Types of testing

- ✦ Charge/discharge and overcharge/over-discharge cycles
- ✦ Vibration, thermal cycling, and thermal vacuum environmental conditions
- ✦ External short circuit simulation
- ✦ Verification of passive propagation resistance and sidewall ruptures

Examples of power systems and batteries tested at ESTA

- ✦ Power Supply Assembly-2
- ✦ Exploration Extravehicular Mobility Units (EMU), aka space suits
- ✦ Astronaut portable life support systems
- ✦ Volatiles Investigating Polar Exploration Rover (VIPER) batteries
- ✦ Spacecraft battery configurations
- ✦ Potable water dispenser for the International Space Station
- ✦ Personal locator beacons
- ✦ Laptop batteries

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