

590 Building 11 Labs

Lab Name	Location	Lab Owner	Lab Description	Equipment Examples (Reference RFP Attachment H for complete list)
Harness Assembly Lab	B11, RE106	Code 596	The Harness Assembly Lab is primarily used for the fabrication and assembly of electrical harnesses for flight hardware and ground support equipment. Harness fabrication includes: twisting, braiding and shielding wires, connectorization, soldering, grounding, pull testing and HiPot testing. The Harness Assembly Lab also builds break-out-boxes and other electronic ground support equipment. The lab has produced cables and GSE for recent missions such as LCRD, MMS, and GPM. The lab is occupied and primarily used by Civil Servant technicians.	Work benches, Soldering irons, Crimp tools, HiPot test equipment
Reaction Wheel Test Lab	B11, RE112	Code 596	The Reaction Wheel Test Lab has been historically used for assembly and testing of flight reaction wheels and electronics in support of the LRO and GPM missions. The lab is currently used for research and development activities including testing of advanced GN&C sensors and actuators and electronics cards. The lab is used by Civil Servants and contractors.	ESD benches, Power supplies, Oscilloscopes, Spectrum analyzers, Logic analyzers
Flight Electronics Lab	B11, RE114	Code 596	The Flight Electronics Lab is used for assembly and testing of flight electronics, GN&C sensors and actuators, and ground support equipment. The lab has been used recently for testing electronics cards for the Laser Communication Relay Demonstration (LCRD) Ground Modem. The lab is used by Civil Servants and contractors.	ESD benches, Power supplies, Oscilloscopes, Signal generator, Frequency standard, Sweep oscillator
Flight Electronics Lab	B11, RE120	Code 596	The Flight Electronics Lab is used for assembly and testing of flight electronics, GN&C sensors and actuators, and ground support equipment. The lab has been used recently for testing electronics cards for the Laser Communication Relay Demonstration (LCRD) Codec and Amplifier. The lab is used by Civil Servants and contractors.	ESD benches, Thermal oven chamber, Power supplies, Oscilloscopes, Logic analyzers
Electronics Assembly and Inspection Lab	B11, RE124	Code 596	The Electronic Assembly and Inspection Lab is a multi-purpose lab used for building, assembling and inspecting flight and non-flight electronics parts, cards, and boxes; GN&C sensors and actuators; and ground support equipment. The lab contains inspection equipment that enables efficient identification and correction of manufacturing process problems and/or defects. Electronics parts or cards that need modification post fabrication are reworked in this lab. The lab also contains a workstation for lead forming and winding magnetics. The lab is used by Civil Servants and contractors.	Fancort lead forming machine, 40X optical inspection station, 2D X-ray system, Reflow and rework station, Small thermal oven, Chemical analyzer
Flight Electronics Lab	B11, RE130	Code 596	The Flight Electronics Lab is used for assembly and testing of flight electronics, GN&C sensors and actuators, and ground support equipment. The lab has been used recently for assembly and testing the MMS Navigator GPS Receiver and other MMS Navigator components.	ESD Benches, Waveform generator, Spectrum analyzer
Goddard Dynamic Simulator Lab	B11, RE138	Code 596	The Goddard Dynamic Simulator Lab is used to develop GN&C dynamic simulators for critical testing of flight hardware and software for in-house missions. The Goddard Dynamic Simulators enable open and closed loop testing of flight software and GN&C hardware during spacecraft functional and comprehensive performance tests. The lab is used by Civil Servants and contractors.	Power supplies, Oscilloscopes, Logic analyzer, Signal generator

Propulsion Water Hammer Lab	B11, RS126	Code 597	The Propulsion Lab supports a variety of activities related to propulsion testing and manufacturing operations. Capabilities include: tube fabrication and bending, component cleaning, water hammer testing, and related activities. The lab includes a de-ionized cavitating water cleaning system and ultrasonic cleaners, which are used for rough cleaning tubing and components. The lab also includes a programmable pines bend machine that is used to fabricate propellant tubing for propulsion systems. The lab contains optical tables for mounting 2D versions of propulsion systems for flow and surge testing. The lab is used by Civil Servants and contractors.	Fluid loading cart, Pressure panels, Helium leak detector, Hydra set, Vacuum pump, Turbo pump, Pine tube bending machine
Truck Lot	B11, RS128	Code 597	The Truck Lot Serves as main area for shipping and receiving, chemical, gas cylinder storage, and short-term general storage. It has non-critical crane lift capabilities.	
Environmental Test Lab	B11, RS130	Code 596	The Environmental Test Lab contains multiple thermal vacuum chambers used for short term thermal vacuum cycle testing or long-term life testing. Two of three chambers are currently used for reaction wheel life testing. The third chamber is used for thermal vacuum cycle testing of flight and non-flight hardware including electronics boxes, electronics boards, and GN&C sensors and actuators. This chamber was most recently used for thermal vacuum cycle testing of the flight MMS Navigator GPS receiver boxes. The Environmental Test Lab also contains rate tables for testing and characterization of Inertial Measurement Units. The rate tables are currently being use to test and charaterize IMUs for RAVEN.	Thermal vacuum chambers, 3-axis rate table, 1-axis rate table (in thermal oven)
Vibration Test Lab	B11, RS130A	Code 596	The Vibration Test Lab contains a single axis shaker table, controller and data acquisition systems with 16 "real time" data channels. The shaker table is capable of performing sine sweep, sine vibration, random vibration and sine burst tests. The shaker table is typically used in development of flight hardware and for research and development activities. The shaker table is not certified to perform environmental testing of flight hardware.	LDS shaker table, Controller, Data Acquisition System, Fixtures
Propulsion Integration and Test Lab	B11, RS138	Code 597	The main area of the Propulsion Integration and Test Lab is equipped with a 32' x 37', class 10,000 clean tent. This area supports integration and test activities for spacecraft propulsion systems. The lab area was upgraded in 2010 to support fabrication of propulsion systems for GPM and the four MMS spacecraft. Prior to 2010 a small clean tent facility supported fabrication of the LRO propulsion system. Currently, the MMS propulsion team is using the facility to practice and refine launch site propellant loading procedures. [pressure panels] The clean room contains four swagelok orbital welding machines for integration of propellant lines and propulsion hardware. This lab space includes crane lift capabilites certified for flight critical lifts. This area also includes a small cage area for secure storage of 596 hardware on the lower level and a large cage for secure storage of 597 hardware on the upper level.	Fluid loading cart, Pressure panels, Helium leak detector,
Machine Shop/Lab	B11, RS138B	Code 596	The 590 Machine Shop/Lab contains equipment for small, in-house machining, fabrication and assembly jobs. The lab is managed and primarily used by a Civil Servant technician.	Band saw, Lathe, Drill press, CNC machine, Work benches, Hand tools Balancing machine

Mezzanine	B11, RS241	Code 596	The Mezzanine area provides office space for lab technicians. The area also houses 3D printer for prototype manufacturing.	3DSystems 3D printer
Formation Flying Test Bed	B11, RS332C	Code 596	The Formation Flying Test Bed (FFTB) provides a unique environment for the testing of algorithms associated with navigation, timing, orbit determination, and cross link communication. The facility has enabled mission-critical testing for Relative Navigation Systems (RNS), Inter-satellite Ranging and Signaling (IRAS), Global Precipitation Measurement, and the Magnetospheric Multiscale Mission (MMS) in recent years. It also facilitated testing of the software algorithms for GEONS, an extended Kalman filter for navigation. Use of the FFTB is available to other agencies (public or private) on a for-fee basis and has supported testing for Air Force and Commercial development.	Power supplies, Oscilloscopes, Logic analyzer, Network analyzer, Timing interval analyzer, Signal generator, Pulse generator, GPS receiver, GPS simulator
Propulsion Test Site*	Offsite	Code 597	The Propulsion Test site is an offsite facility used for testing propulsion components or systems that contain safety hazardous materials or parts in a safe and controlled environment. It has been used recently for ionic liquid electrolysis work, high pressure testing, and green propellant testing. This area is shared with the cryogenic group.	
Precision Cleaning Lab*	B11, RS	Code 597	The precision cleaning lab is used for etching, passivation and precision cleaning of tubing and propulsion components. It contains a fume hood for hydrofluoric acid etching of titanium and passivation for stainless steel. The lab also includes Isopropyl Alcohol flush and particle count equipment to level 100A for verifying cleanliness, and a small thermal oven for drying components post cleaning.	

*Labs will not be toured but will be described.