



NASA Sounding Rockets Operations Contract (NSROC III) Industry Day Briefing

September 10, 2014

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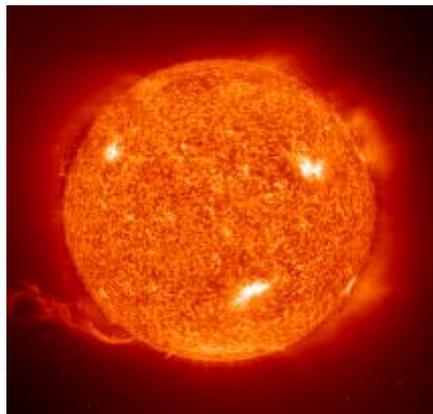
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Disclaimer



In the event of any inconsistency between data provided in these charts or today's tour and the Final RFP, the language in the Final RFP (including any amendments) will govern.



Today's Logistics



- Fire exit and restroom locations
- Please silence all cell phones
- Please sign the attendance list being circulated
- Tours of the Sounding Rockets F-10 Fabrication and Test Facility and Wallops Island Launch Site will be given following this presentation
 - Transportation will be provided
- Please do not interfere with employees performing their job
- No verbal questions – PLEASE submit in writing to CO
- This presentation will be placed in procurement library



Presentation Agenda



9:00 to 10:30 -- Building E-104, Chincoteague Room

- Overview of Sounding Rockets Program
- Technical Overview of NSROC III Contract Requirements
- Procurement Overview
- Magazine Area Overview (Virtual)
- White Sands, New Mexico Facility Overview (Virtual)

10:30 to 11:30 -- Building F-10 (Transportation Provided)

- Sounding Rockets F-10 Facility Tour

11:30 to 12:30 – Cafeteria

- Lunch

12:30 to 2:00 -- Wallops Island (Transportation Provided)

- Wallops Island Launch Site Facility Tour
- Adjourn



Overview of Sounding Rockets Program



NASA Sounding Rockets Program



PROGRAM BACKGROUND

- Program is managed by the Sounding Rockets Program Office at Wallops Flight Facility
- Missions are implemented under the NASA Sounding Rockets Operations Contract (NSROC)



PROGRAM GOALS

- Provide low-cost access to space for NASA and other research organizations
- Maintain and expand support for the NASA Science Mission Directorate
- Develop new capabilities and technologies to enable new science and engineering missions

MISSION STATEMENT

The NASA Sounding Rockets Program (NSRP) provides low-cost, sub-orbital access to space in support of space and earth sciences research and technology development sponsored by NASA and other users by providing payload development, launch vehicles, and mission Engineering Services.





Program Attributes

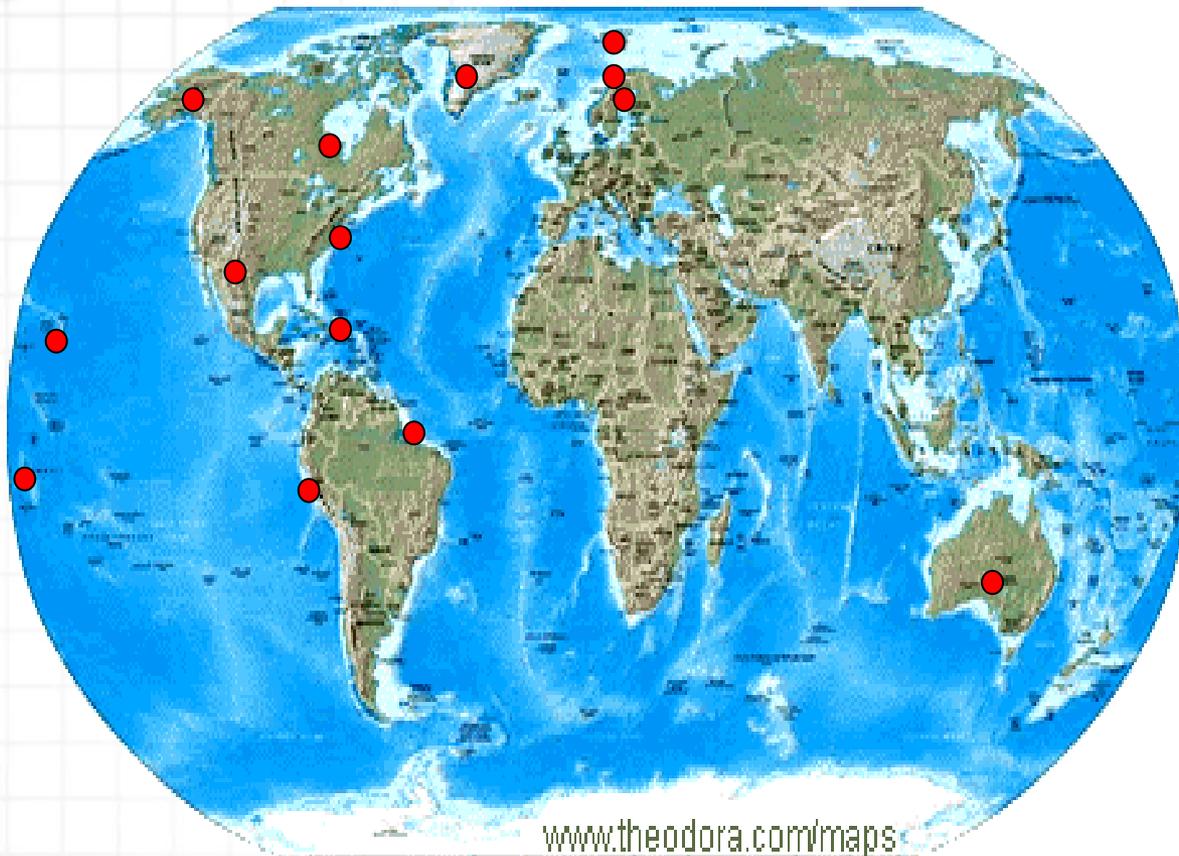


- ~17-20 flights annually
- Over 300 flights since 1999
 - 93% experiment success rate
 - 97% vehicle success rate
- Highly experienced workforce
- Low cost
- World-wide operations, mobile campaigns
- End-to-end flight project support from conceptualization to launch and recovery operations
- Program is structured to accept higher risk than typical flight project
 - 85% program success rate goal





World-Wide Operations



Norway – within the auroral oval, availability of down range observation sites, and access to unique instrumentation

Australia – observation of the southern sky and large land area to support special trajectories and recovery

Kwajalein – observation of the southern sky and large water range



Because many scientific investigations rely on in-situ measurements, launch operations must be conducted from sites around the world. This requires the support of the Wallops Mobile Range.



Program Background



- NASA Management is provided by a small Civil Service Program Office
- The NSROC contractor is responsible for the coordination and implementation of the Sounding Rockets Program's mission manifest and other tasks as assigned
- Support is provided from organizations other than NSROC
 - Ground Safety
 - Flight Safety
 - Range & Mission Management
 - Engineering
 - Financial Resources
 - Procurement
 - Logistics





Program Provided Services



- Launch Vehicles
 - Solid propellant rockets
- Payload Development
 - Conceptualization
 - Analysis
 - Design
 - Fabrication
 - Testing
 - Integration
- Mission Analysis
 - Flight Performance
 - Ground and Flight Safety
- Operations Support
 - Launch Range Services
 - Telemetry
 - Radar
 - Launchers
 - Facilities
 - Mobile Range Development
 - Launch Operations
 - Recovery Operations
 - Data Reduction and Analysis
- Technology Development
 - Enhance capability for the Program

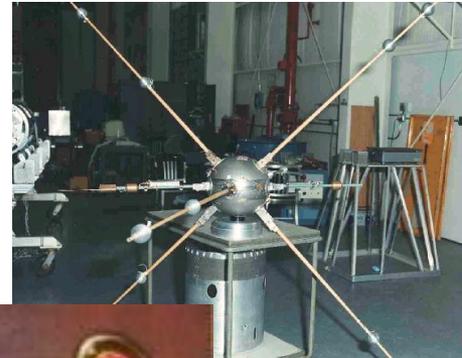




Sounding Rocket Experiments

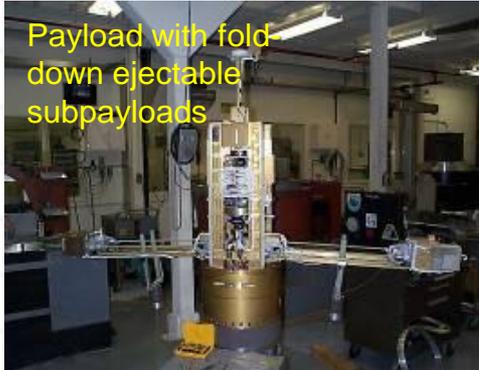


- Astronomy (UV, X-ray, Gamma-ray, Visible, etc)
 - Spectroscopy
 - Polarimetry
- Plasma Physics (Geospace sciences)
 - Particle Detectors
 - E-field Booms
 - Magnetometers
- Microgravity
- Air Sampling
- Atmospheric Entry Vehicles
- MDA Targets
- SCRAM Jets





Sounding Rocket Experiments

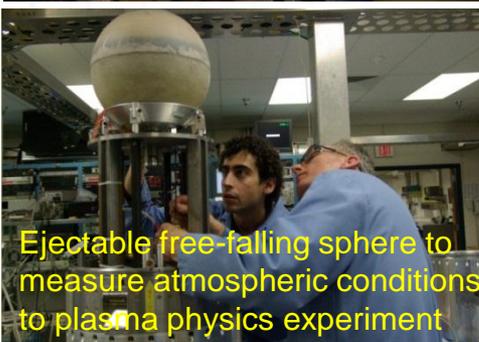


Payload with fold-down ejectable subpayloads



Scram Jet test, SR Program provided telemetry.

Scram Jet Experiment



Ejectable free-falling sphere to measure atmospheric conditions to plasma physics experiment

Plasma Physics Experiments



SR Program delivered inflatable aeroshell to Mach 10 test conditions

Inflatable Aeroshell Experiment



Telescope being prepared



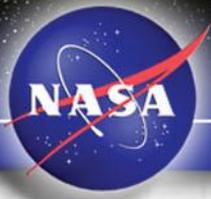
SR Program delivered hypersonic lifting wedge to test conditions and provided instrumentation



Telescope Payload



Technical Overview of NSROC III Contract Requirements



NSROC III SOW Requirements



- Statement of Work provides functional requirements for Business and Financial Management, General Program Coordination and Management, and Implementation of Individual Missions and Development and Routine Project Assignments (DRPA) Work Orders
 - General Contract Requirements
 - Provide, manage, and retain qualified personnel to support implementation of NASA's Sounding Rockets Program
 - Provide overall program coordination and project specific management for all assigned work orders
 - Provide comprehensive business and financial management capabilities
 - Provide engineering and technical support for mission work orders
 - Provide engineering and technical support for additional non-mission work orders
 - Identify, develop, and implement efficiencies and new capabilities to support the science mission



Services & Supplies Required Under NSROC-III



- Mechanical Engineering
- Instrumentation and Electrical Engineering
- Guidance, Navigation, and Control Engineering
- Software Design Engineering
- Systems Engineering
- Operation and Management of Mechanical and Electrical Fabrication Facilities
- Operation and Management of Rocket Motor and Hazardous Materials Storage Facilities
- Payload Integration and Qualification
- Launch Vehicle Preparation and Assembly
- Field Buildup and Launch Operations
- Post Flight Data Reduction & Analysis
- Overall Program Management and Coordination
- Overall Business and Financial Management
- Subcontract Management
- Acquisition of Materials and Supplies
- Individual Project Management
- Logistics and Property Management
- Operations Planning and Scheduling
- Safety (OSHA) and Quality Assurance
- Information and Document Management
- Information Technology Management
- Configuration Management
- Risk Management
- Training and Certification
- International Traffic in Arms (ITAR) Compliance



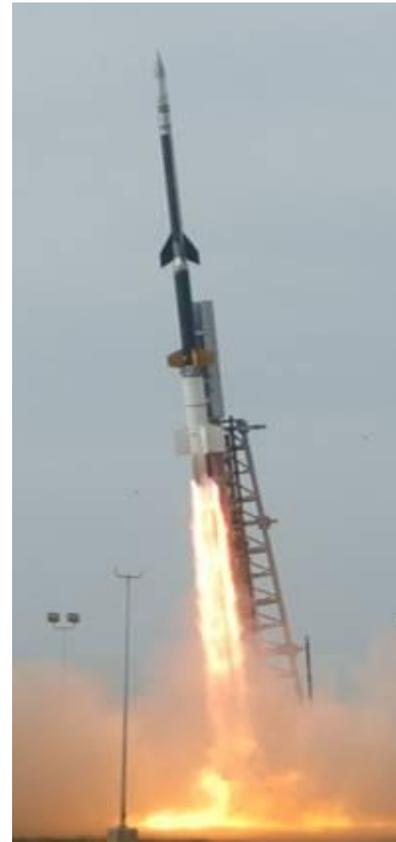
Vehicle Configurations (sample)



Terrier-Improved Orion



Black Brant IX



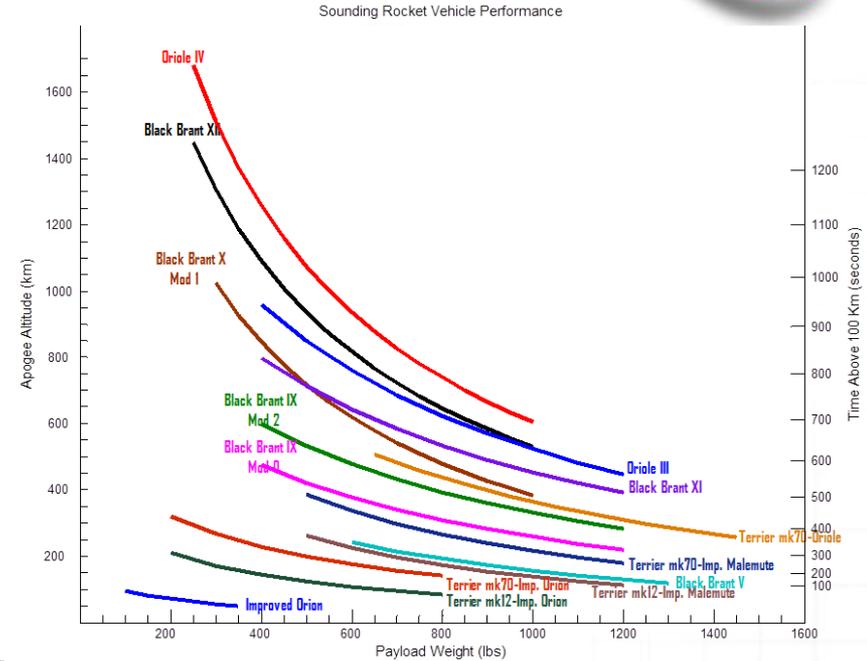
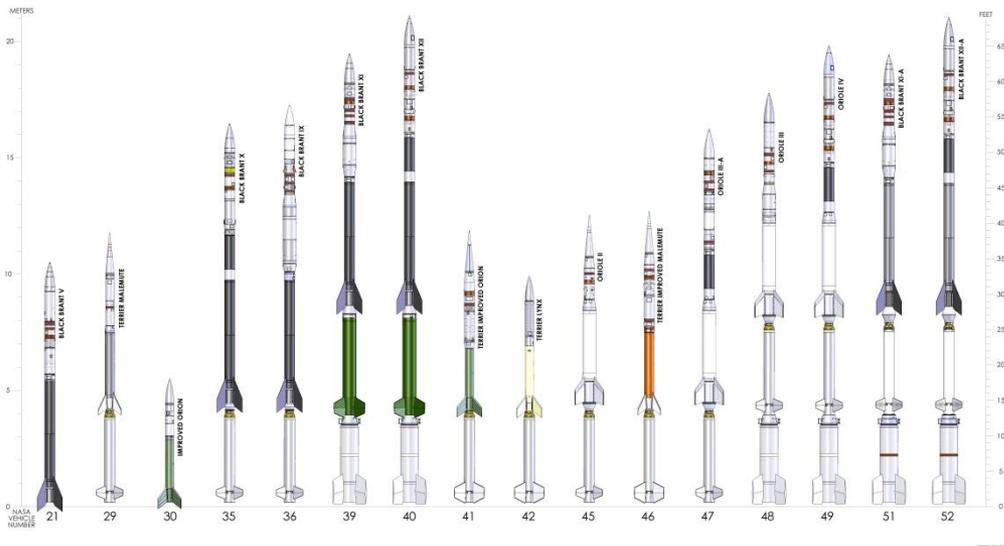
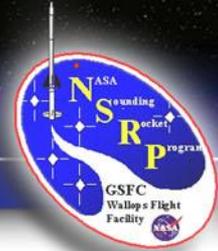
Black Brant XI



Black Brant XII



Sounding Rocket Launch Vehicles



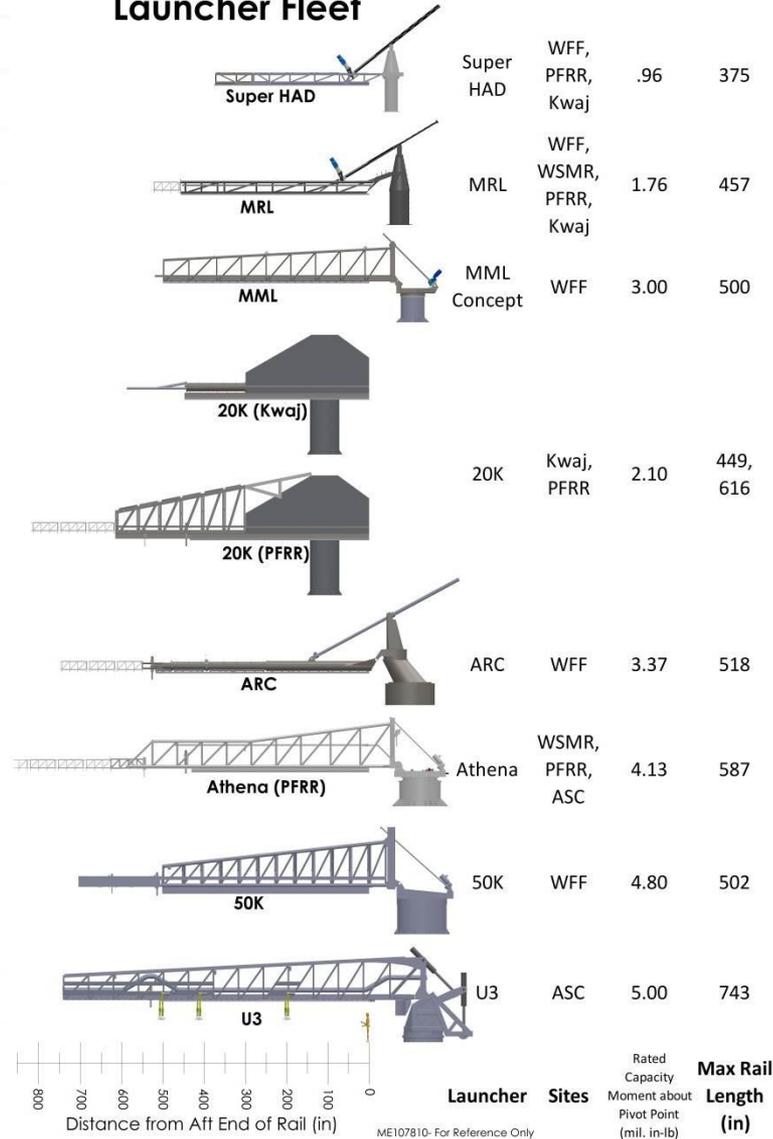
- Sounding rocket vehicles are composed of military surplus and commercially available rocket motors
- Vehicle selection is based on payload weight and scientific requirements



Sounding Rocket Launchers



NASA's Sounding Rocket Program Launcher Fleet





Typical Sounding Rocket Payload



Section	Description	Responsibility
1	Payload Support Systems	NSROC
2	Experiment	NASA, University, or other
3	Vehicle Support Systems	NSROC



NSROC Provided Launch Vehicles and Subsystems



Fully Integrated Payload

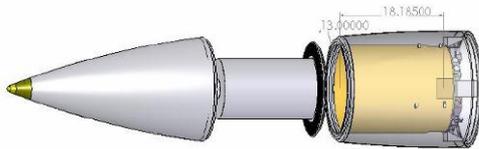
- Recovery System
- Attitude Control System
- Boost Guidance System
- Instrumentation Module
- Experiment Module
- Ignition Module

Sustainer

- Commercial motor
- Solid propellant
- Longer burn time

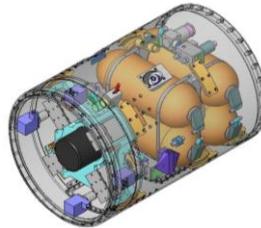
Booster

- Military surplus motor
- Solid propellant
- Short burn time



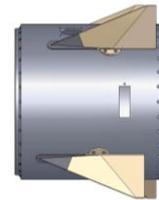
Recovery

- Forward Recovery System
- Nose Cone
- Parabay
- Fully redundant nose cone & parachute deployment system



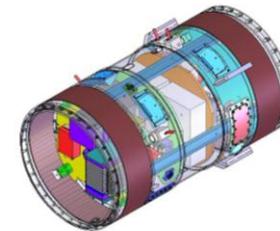
ACS

- Attitude Control System (ACS)
- Gyro
- Flight computer
- Pneumatics
- One degree pointing



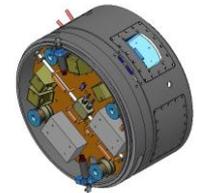
Boost Guidance

- Cold gas & canards
- Rate Gyro
- Used at WSMR
- 18 seconds of control
- 200+ flights
- 99% success rate



Instrumentation Module

- Payload Avionics
- Encoders
- Transmitters
- Antennas
- Timers
- RF Systems
- Telemetry
- Command Uplink
- Radar
- Power Systems
- Event Drivers

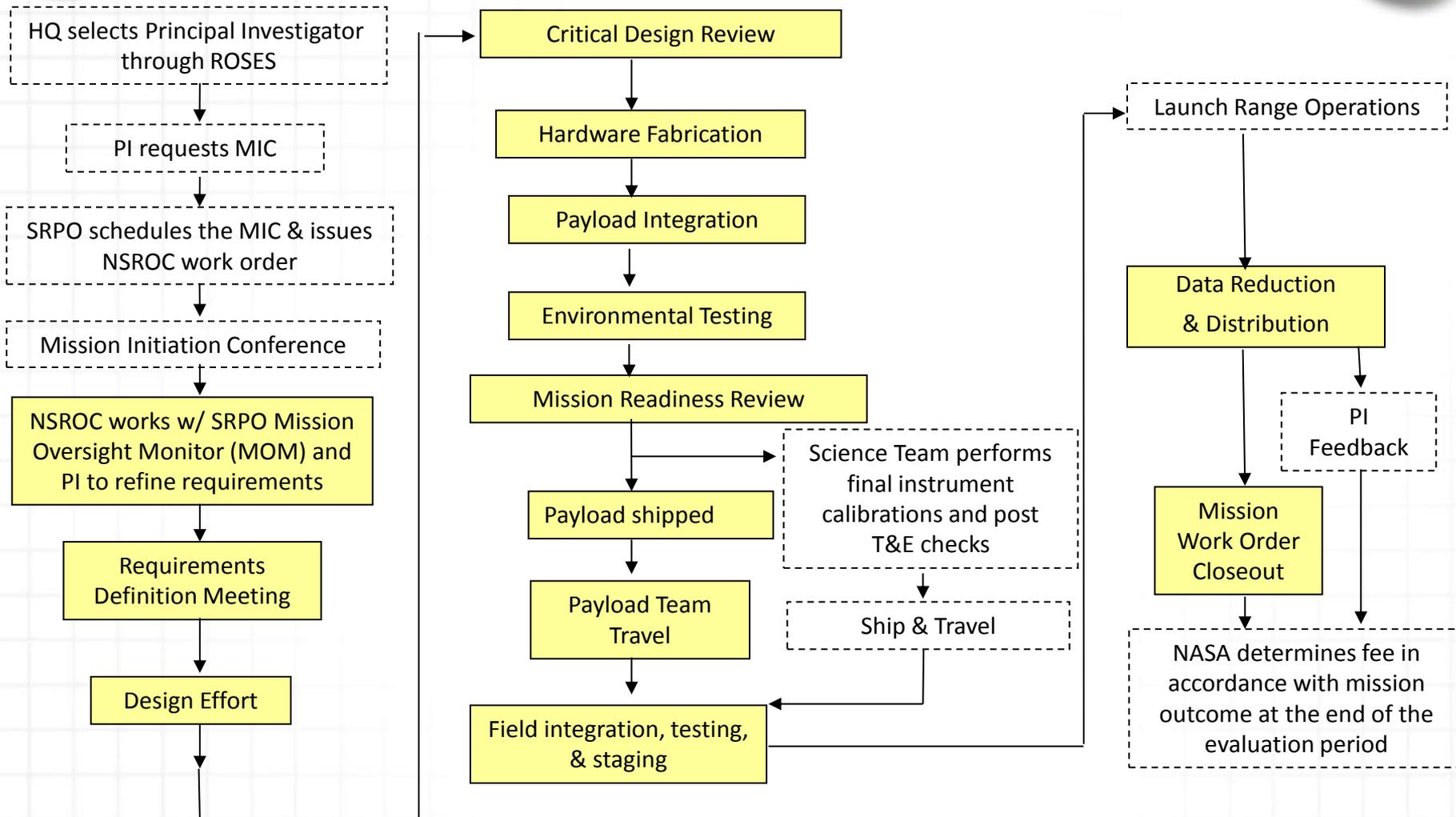


Ignition Module

- Fully redundant sustainer ignition
- Yo-Yo Despin System
- Payload Separation System
- Flight Termination System



Sounding Rocket Mission Lifecycle





Procurement Overview of DRFP NNG14490137R

Procurement Overview

Wallops Requirement



- The NASA Sounding Rocket Operations Contract III (NSROC III) serves as the mechanism for the implementation of the NASA Sounding Rocket Program (NSRP)
- The program utilizes expendable sub-orbital rockets to conduct a host of scientific missions for the study of near earth and space environments and to advance new technologies



Procurement Overview

Wallops Requirement



- Individual mission requirements have historically involved the use of single and multi-stage sub-orbital vehicles lifting payloads with weights ranging from 30 pounds to 1500 pounds or more to altitudes ranging from 80 to 2000 kilometers or more.
- The time required to conduct a specific mission from payload design and development through launch will vary substantially and may range from a few months to two years or longer. Most of these missions are conducted from established launch ranges, while some are conducted as mobile launch campaigns from ranges that have been temporarily established.



Procurement Overview

RFP Information

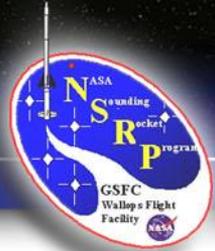


- Cost-Plus-Fixed-Fee (CPFF) Core with Technical Performance Incentives (TPIF)
 - Total Fee = 50% Fixed Fee + 50% Technical Performance Incentive Fee
- 5-Year potential Period of Performance:
 - 2-Year Base with one 2-year Option and one 1-Year Option
- Full and Open Competition
 - NAICS Code – 541330 Engineering Services



Procurement Overview

Activities to Date



- Request for Information posted 23 August 2013
- Sources Sought Synopsis posted 11 September 2013
- Draft SOW posted 08 November 2013 and 31 July 2014
- Draft RFP posted 22 August 2014
- Industry Day on 10 September 2014



Procurement Overview

Anticipated Schedule



- DRFP Questions Due 12 September 2014
- Final RFP Release (on/around) 17 October 2014
- Proposals Received 17 November 2014
- Selection July 2015
- Phase-In Award (separate PO) 01 August 2015
- Phase-In Complete 30 September 2015
- Start of Technical Performance 01 October 2015



Procurement Overview

RFP Information (continued)



- No extension to the current NSROC II Contract is planned
- Phase-In
 - A separate fixed price contract for the 60 day phase-in awarded to the contractor selected
 - Hiring, Training and Preparing for Day 1
 - Seamless Transition
 - Partnering Atmosphere



Procurement Overview

Overall Evaluation



- Source Selection Procedures
 - FAR 15.3 and NFS 1815.3
 - Award Based on Initial Offers is planned, but the Government reserves the right to hold discussions with Offerors
- Mission Suitability

Mission Suitability Factors		Points
Subfactor A	Management Approach (including Safety & Health Plan)	600
Subfactor B	Technical Approach	300
Subfactor C	Small Business Utilization	100
Total		1,000



Procurement Overview

Overall Evaluation (cont)



- Cost Factor

Proposed costs in the Cost Exhibits will be assessed to determine reasonableness and cost realism.

The total Firm Fixed-Priced Phase-in and the total contract proposed and probable costs will be presented to the Source Selection Authority.



Procurement Overview

Overall Evaluation (cont)



- Past Performance Factor

Past Performance will evaluate each Offeror's record (including the records of any significant subcontractors) for performing recent, relevant contracts.

A "recent" contract is a contract that is ongoing or completed less than 5 years prior to the issuance of this RFP.

A "relevant" contract depends on the size and content of the contract with respect to this acquisition.

For a prime contractor's contract reference(s) to be considered at least minimally "relevant", it must meet/exceed an average annual cost/fee incurred of at least \$10M.



Procurement Overview

Overall Evaluation (cont)



- Past Performance Factor, continued

A proposed significant subcontractor for this procurement is defined as any proposed subcontractor that is estimated to meet/exceed an average annual cost/fee of \$5M.

A Prime Offeror shall furnish past performance information for all of its most recent contracts (completed and ongoing) for similar efforts with a minimum average annual cost/fee incurred of \$10M that it has had within the last 5 years of the RFP release date.

The Offeror shall provide past performance information for any significant subcontractor(s) for those similar efforts within the last 5 years of the RFP release date with a minimum average annual cost/fee incurred of at least 25% of the estimated average annual dollar value of the proposed significant subcontract.



Procurement Overview

Subcontracting Goals



- The Contracting Officer's assessment of appropriate subcontracting goals for this acquisition, expressed as a percent of TOTAL CONTRACT VALUE (BASIC AND ALL OPTIONS COMBINED), is as follows:

Small Businesses (SB)	25.00%
Small Disadvantaged Business Concerns (SDB)	5.00%
Women Owned Small Business Concerns (WOSB)	3.50%
Historically Black Colleges and Universities (HBCU)	3.00%
HUBZone Small Business Concerns (HBZ)	2.00%
Veteran Owned Small Business Concerns (VOSB)	4.00%
Service-Disabled Veteran-Owned Small Business Concerns (SDVOSB)	1.00%



Procurement Overview

Relative Order of Importance of Evaluation Factors



- The Cost Factor is significantly less important than the combined importance of the Mission Suitability Factor and the Past Performance Factor
- As individual factors, the Cost Factor is less important than the Mission Suitability Factor but more important than the Past Performance Factor



Procurement Overview

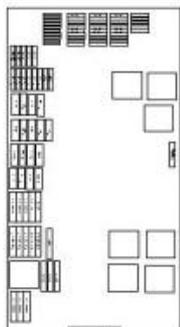
Miscellaneous



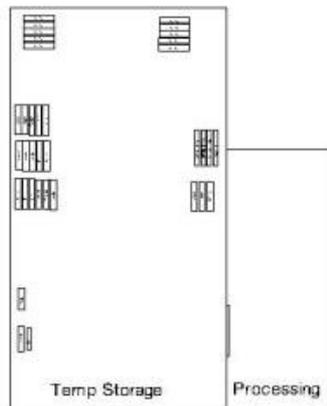
- Check Websites periodically for pertinent and most recent information
- The NSROC III eLibrary is available at:
<https://foiaelibrary.gsfc.nasa.gov>
- Until release of the Final RFP, Offerors may continue to communicate with Government personnel with the NSROC III Contracting Officer Present
- Upon release of the Final RFP, all Government personnel associated with the acquisition shall refrain from communicating with prospective Offerors and refer all inquiries to the Wallops NSROC III Contracting Officer in writing



Virtual Tour - M-Area Motor Storage Facilities



M20

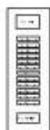


M-15



M16

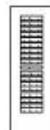
No motor storage in M-16 due to vicinity of runway



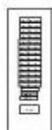
M12



M22



M14



M9



M10



M11

- M-20, M-22, and M-15 climate controlled buildings
- Five earth covered bunkers
 - Volume limited
 - No “big” motors
 - M-11 dedicated for 1.1 explosives
- Does not include V-67 on Island
 - No climate control
 - 1.1 storage
 - 7,470 ft²

*Note: Motors drawn in buildings do not represent current inventory, for reference only



Bunker Storage



- Five earth covered bunkers total
 - One dedicated to 1.1 storage
 - Four for motor storage
- Bunkers are volume limited
- Motor size limitations due to building width and door size
- No climate control





M15 Storage



- Motor processing in preparation for deployment
- Storage of processed motors prior to shipment to field
- Large motor storage
- Explosive limit restricted





M16

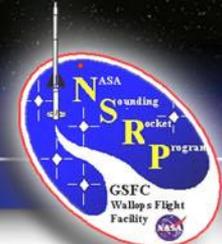


- Large storage area for vehicle hardware
- No rocket motor storage
- Small 1.4 ordnance storage
- Vehicle technician offices
- Fin setting facility



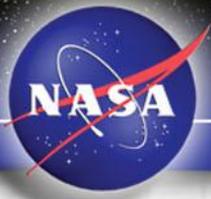


M-20 Storage



- Large motor storage facility
- Well suited for large motors
 - Large volume for big motor storage
- Explosive capacity limited





M22 Storage



- Climate Controlled
- Large motor storage
- Volume capacity limited
- Motor storage bay and smaller igniter bay

Igniter room



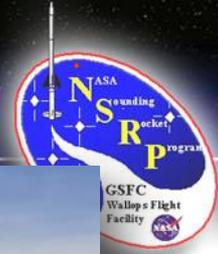


M-24 & M27 Loading Docks





Virtual Tour - Poker Flat Research Range



- SRPO has contract with University of Alaska to manage and operate the range
 - Poker has 6 permanent staff, additional temporary staff brought in to support launch ops
- University of Alaska owns the land and NASA owns most buildings
- NSROC performs maintenance on 5 launchers
 - Pad 1: MRL
 - Pad 2: MRL
 - Pad 3: AML, 20K
 - Pad 4: Athena
 - Pad 5: Super-HAD



Payload Assembly



Block House



Rocket Storage & Assembly



Telemetry





Virtual Tour - Andoya Space Center Norway

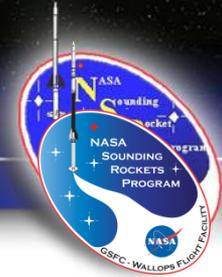


- NASA owned Athena launcher located at Andoya Space Center
- Maintained by NSROC to support NASA launches





Virtual Tour - Kwajalein Reagan Test Site



- NASA owned portable payload integration tent, stored at Kwaj
- ARMY owned, NSROC maintained 20K launcher
- NASA owned MRL launcher, NSROC maintained
- SuperHAD stored at Kwaj in box





Virtual Tour - Vehicle Assembly Building (VAB) at the White Sands Missile Range

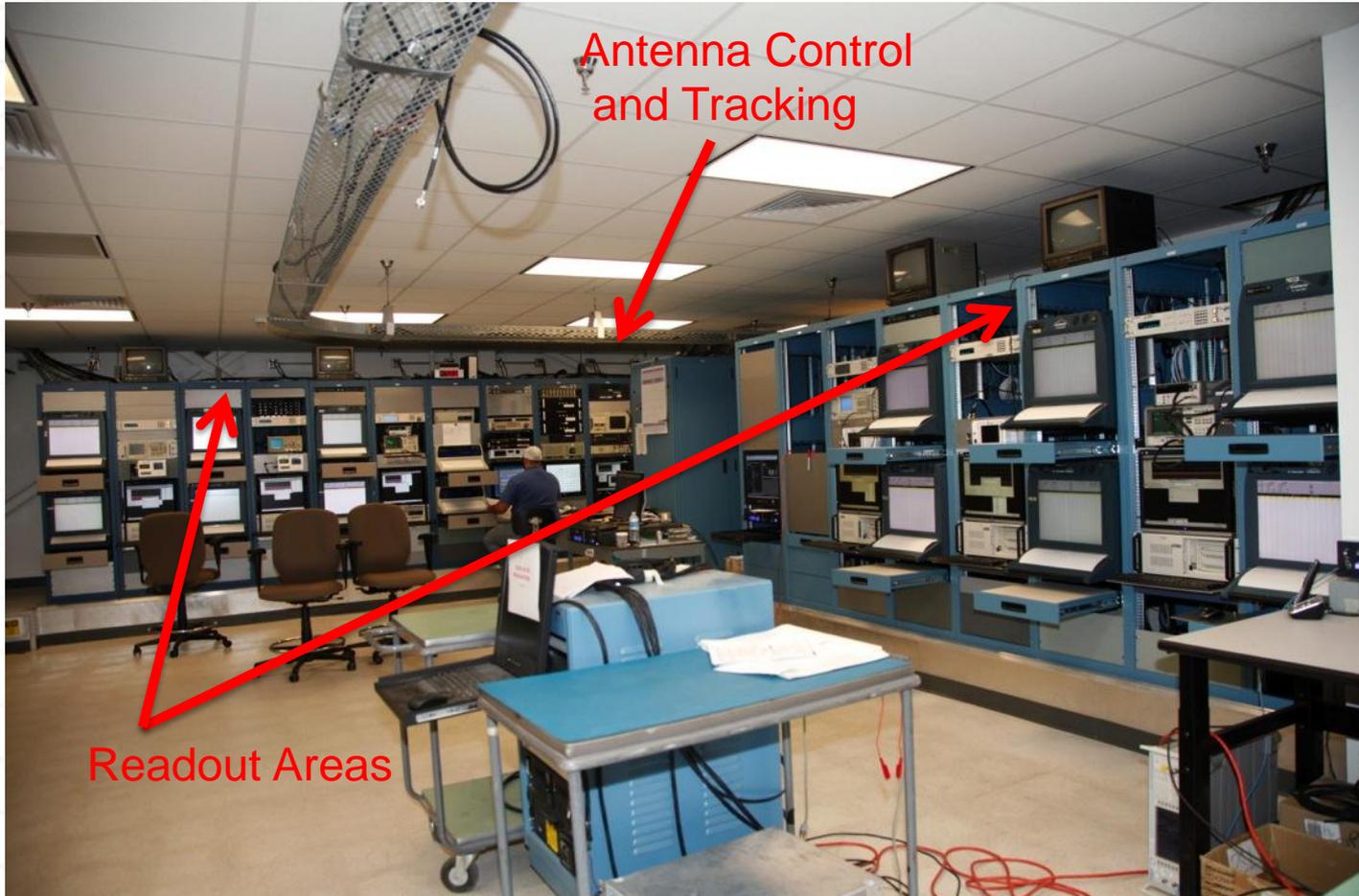


Vehicle Assembly Building (VAB) Main Entrance





Vehicle Assembly Building (VAB) Telemetry Ground Station

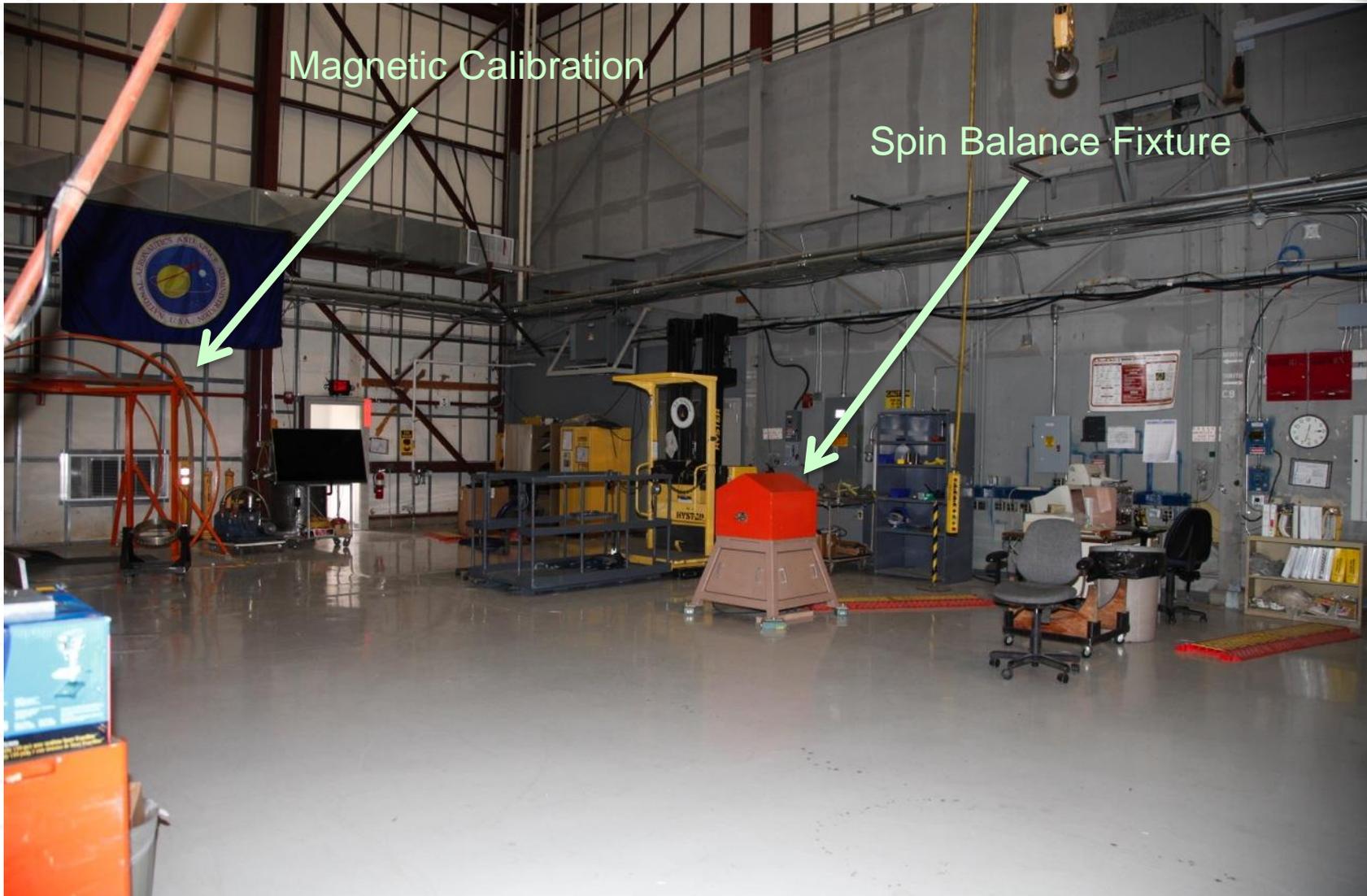


Antenna Control
and Tracking

Readout Areas

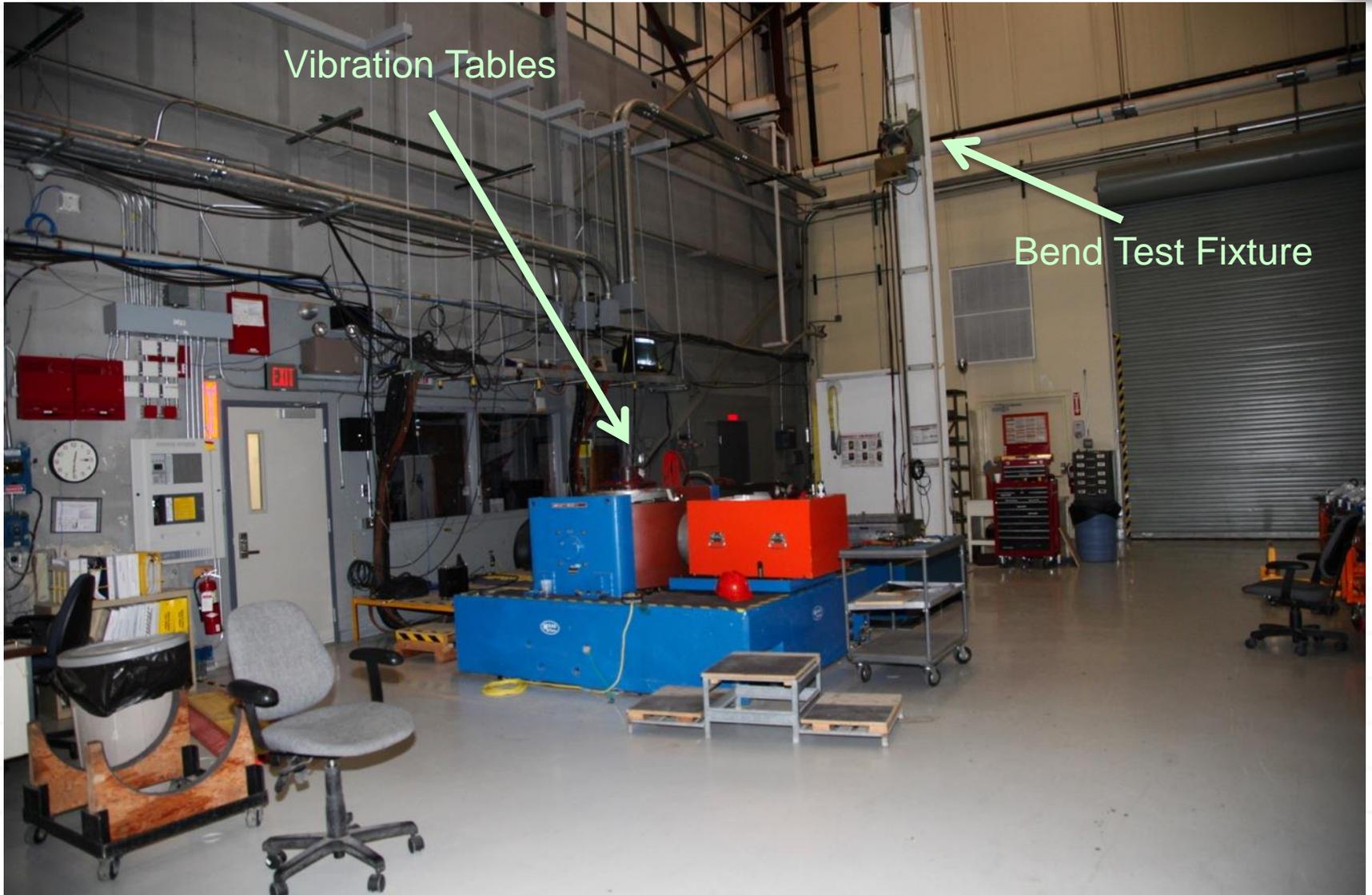


Vehicle Assembly Building (VAB) High Bay T&E Lab (Test and Evaluation)



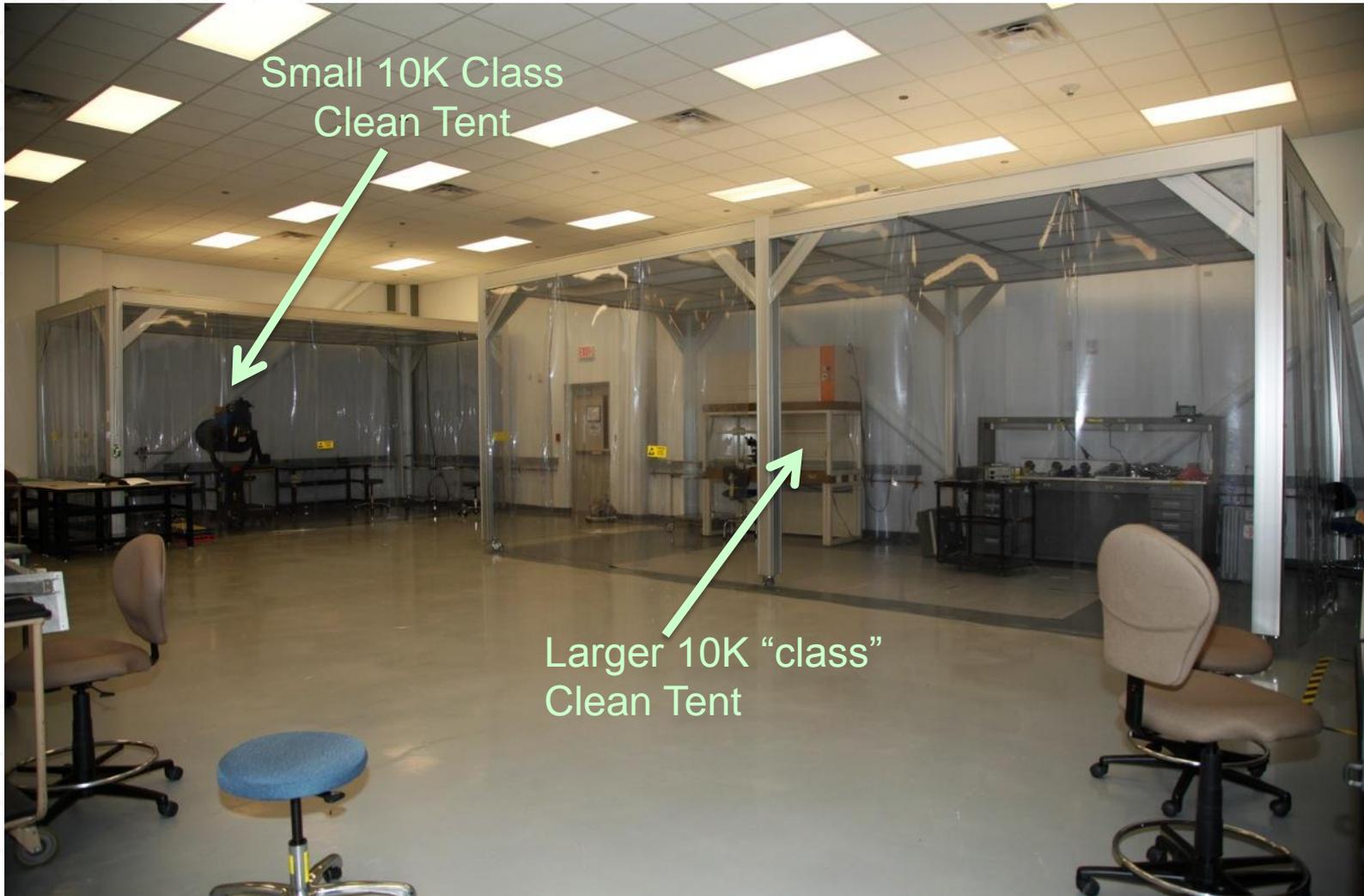


Vehicle Assembly Building (VAB) High Bay T&E Lab (Test and Evaluation)





Vehicle Assembly Building (VAB) Experiment Integration Lab (iLab)



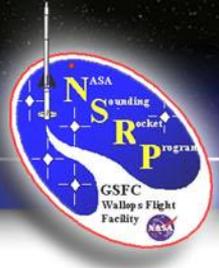


Vehicle Assembly Building (VAB) Command Uplink Room





Vehicle Assembly Building (VAB) Office Area and Conference Room



2nd Floor Office
Space



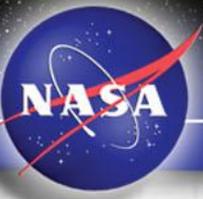
Small Conference
Room w/ViTS



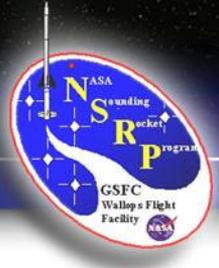


Vehicle Assembly Building (VAB) Low Bay and Dark Room





Vehicle Assembly Building (VAB) Small "Machine Shop" Area



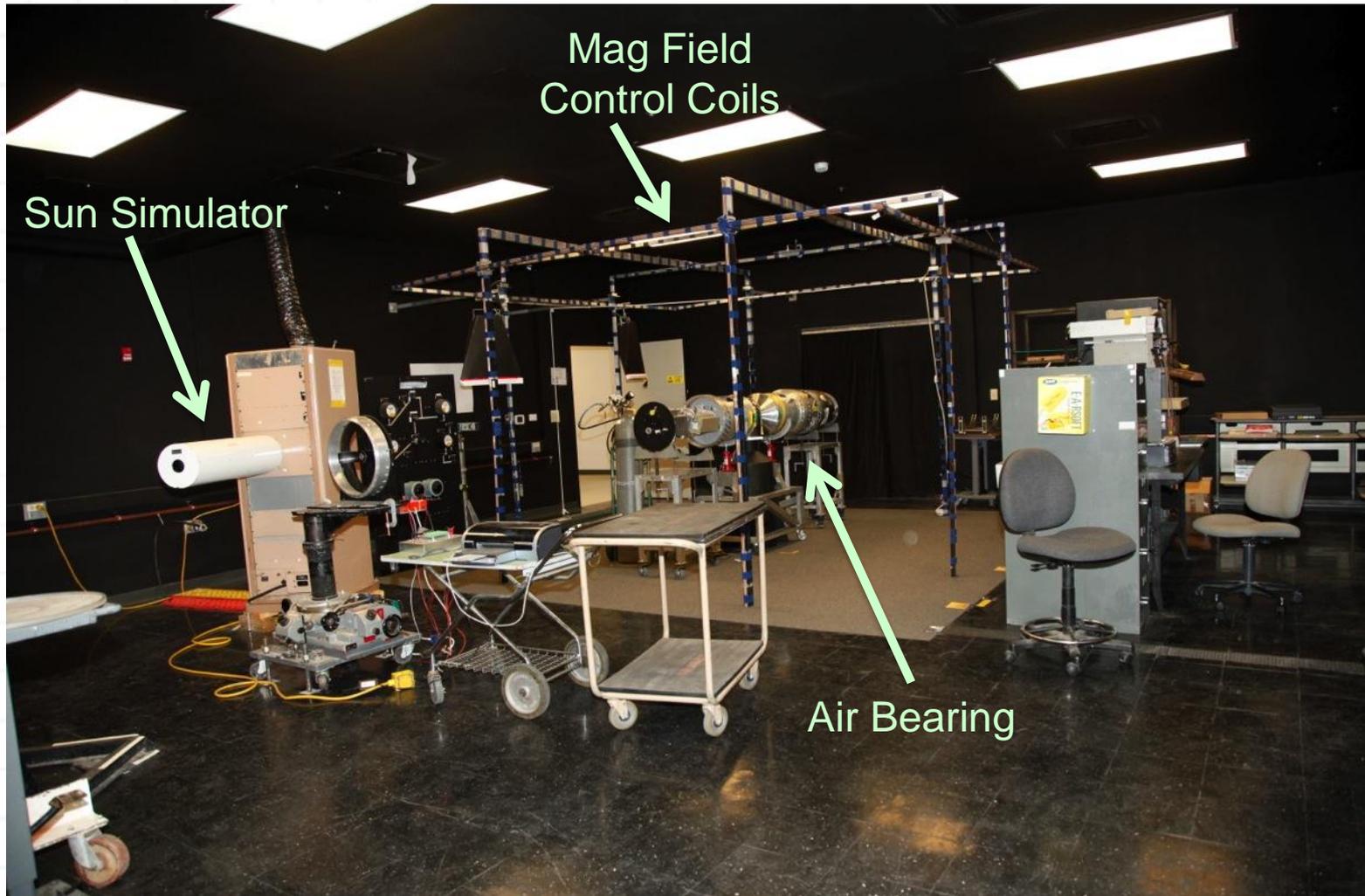


Vehicle Assembly Building (VAB) Electronic Tech Work Area



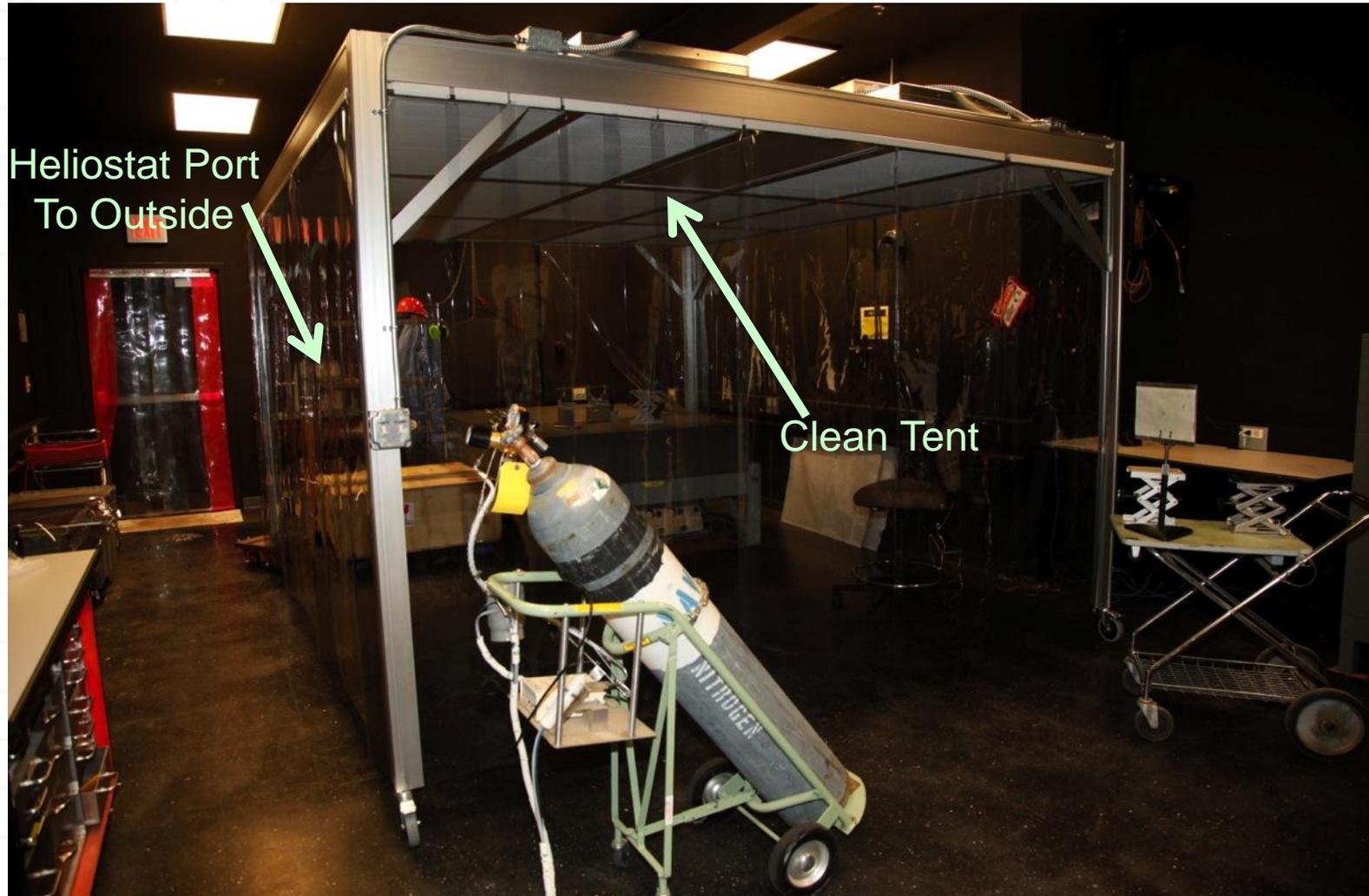


Vehicle Assembly Building (VAB) Air Bearing Lab





Vehicle Assembly Building (VAB) Solar Alignment/Calibration Lab



Heliostat Port
To Outside

Clean Tent



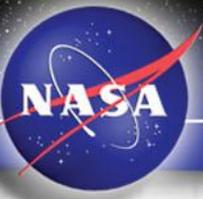
Vehicle Assembly Building (VAB) Pneumatics Lab





Vehicle Assembly Building (VAB) South Entrance/Helicopter Pad





Vehicle Assembly Building (VAB) Storage Warehouse



Conditioned and
Unconditioned
Dry Storage

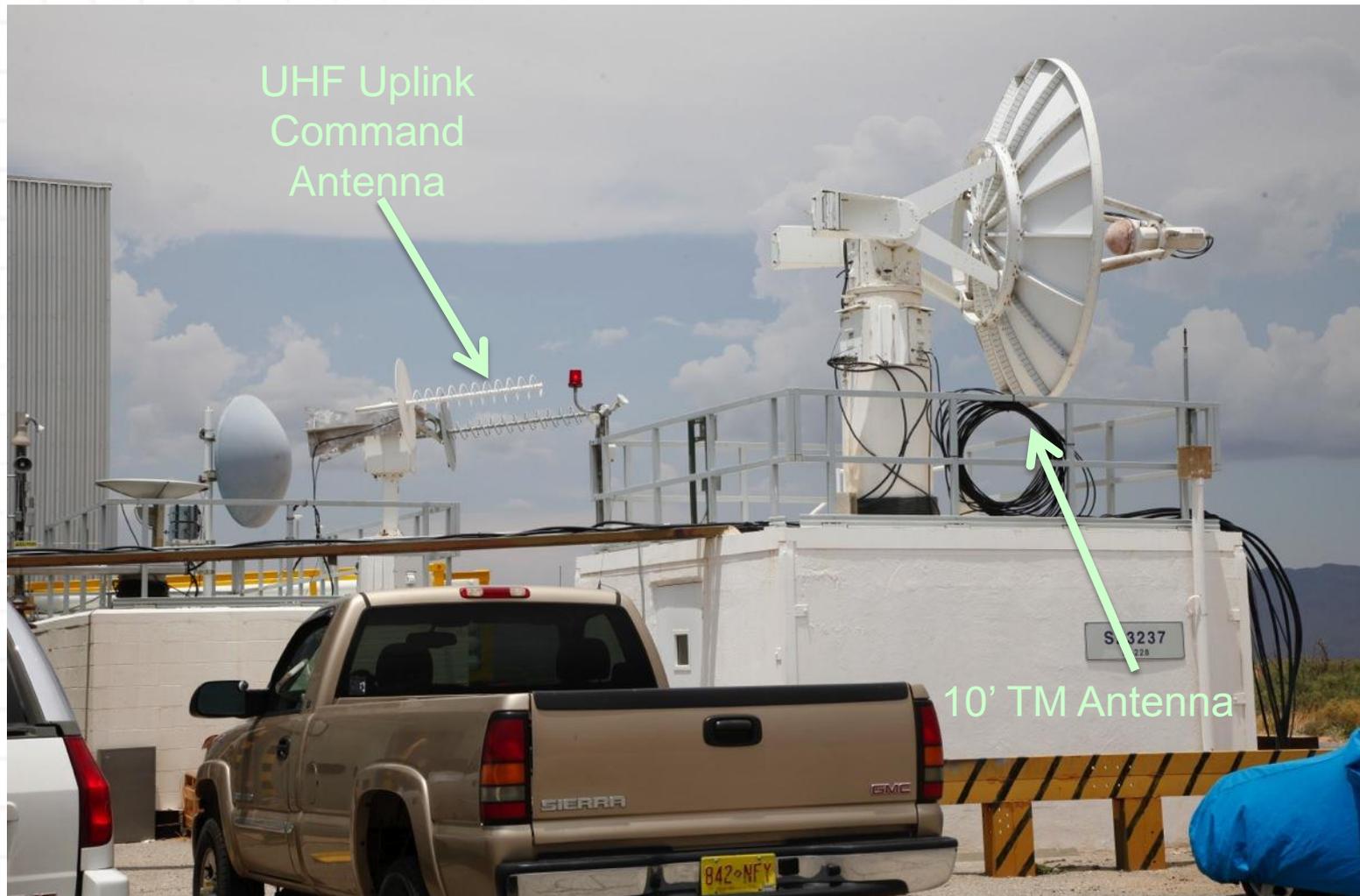


Bonded Storage
Area



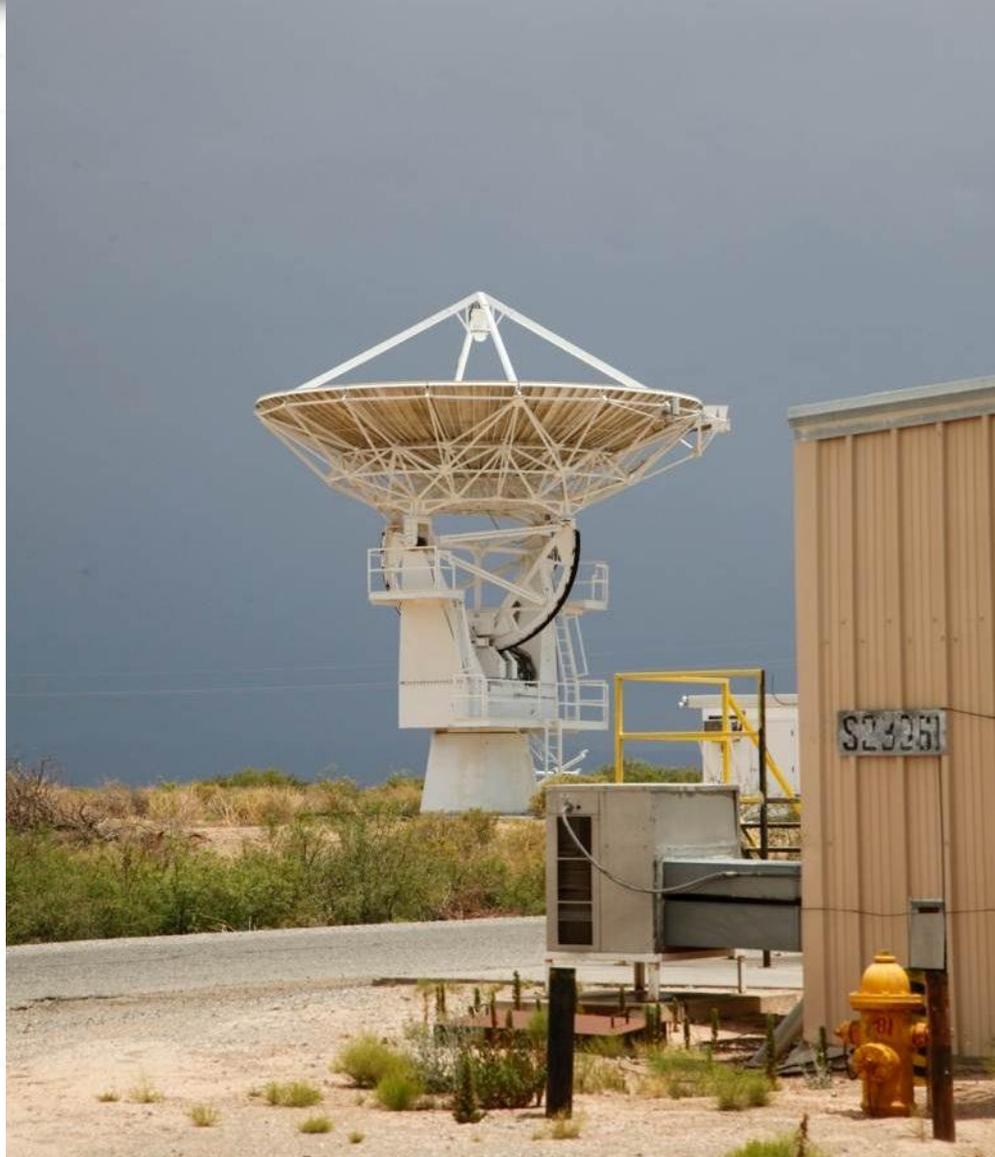


Vehicle Assembly Building (VAB) 10' TM Antenna and UHF Command Antenna





Vehicle Assembly Building (VAB) 30' Redstone TM Antenna





Vehicle Assembly Building (VAB) Athena Launcher at LC-36





Vehicle Assembly Building (VAB) MRL Launcher at LC-36





Wrap-up



- Thanks for your interest in this procurement and for coming to Industry Day!
- Any questions can be submitted today on the provided cards or later in writing to the Contracting Officer by the September 12, 2014 deadline.