

**2023 HELIOPHYSICS DYNAMIC ANNOUNCEMENT OF OPPORTUNITY (AO)  
LAUNCH SERVICES PROGRAM INFORMATION SUMMARY  
8 March 2023**

**AO-Provided Primary Launch Services Ground Rules/Policy**

This document provides additional information for the AO-provided primary launch services. This launch service will be provided by NASA and procured and managed by the NASA/Launch Services Program (LSP) using government contracts.

*As a note: PI-provided access to space is not an option under this AO. NASA will provide DYNAMIC's access to space as GFE, utilizing Rideshare on Government Primary launches or the Launch Services Program (LSP) Venture-Class Acquisition of Dedicated and Rideshare (VADR) Launch Services. This document describes a subset of the VADR options or relevance to completing Appendix J.18 Flexibility to Launch Configuration called for in the AO.*

Under the provisions of the NASA contract, the launch service includes the launch vehicle (LV) accommodation and associated standard services, non-standard services (mission specific options), LV provided engineering and analysis, mission specific LV hardware/software development, payload-processing accommodations, and manages the launch campaign/countdown. LSP provides technical management of the launch service, technical insight into the LV production/test (commensurate with a Class D mission), coordinates and approves mission-specific integration activities.

At the appropriate time following mission selection, LSP, using the recently established Venture-Class Acquisition of Dedicated and Rideshare (VADR) contracting mechanism, may competitively select a launch service provider and award a launch service contract for the mission based on customer requirements. The contract will be awarded to the Contractor that provides the best value in launch services to meet the Government's requirements based on technical capability/risk, reasonableness of proposed price, and past performance when applicable.

All NASA-procured launch services are to be consistent with NASA Policy Directive (NPD) 8610.7D, *NASA Launch Services Risk Mitigation Policy*. Commercial launch services acquired by NASA will be managed in accordance with NPD 8610.23C, Attachment C: *Class D Mission Launch Vehicle Modified Technical Oversight*, and NPD 8610.24C, *Launch Services Program (LSP) Pre-Launch Readiness Reviews* (or NASA participation in launch service provider's commercial readiness process). These NPD's can be accessed through the NASA Online Directives Information System (NODIS) Library:URLs:

<https://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=7D>  
<https://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=23C>  
<https://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=8610&s=24C>

## **Launch Vehicle Information/Configuration/Performance**

For a NASA/LSP-provided launch service through VADR, Attachment 1 Figure 1 depicts the constraining payload fairing static envelope that would ensure compatibility across the range of potential launch vehicles currently expected to be available under the baseline launch service.

## **Launch Service Costs**

The AO provided launch services covered by the Heliophysics Solar Terrestrial Probes (STP) Program include:

- the launch vehicle, engineering, analysis, and minimum performance standards and services provided by the NASA contract in place at the time of LV selection;
- mission integration;
- launch site payload processing;
- FAA licensed launch approval;
- Orbital Parameter Message (OPM) for payload separation; and
- nominal allocation for non-standard/mission specific launch vehicle modifications/services – items typically necessary to customize the basic vehicle hardware to meet spacecraft driven requirements. See Attachment 2 for items included for the 2023 Heliophysics DYNAMIC AO under the VADR contract.

The Heliophysics LV budget set aside for 2023 Heliophysics DYNAMIC does not include funding for PI/payload caused launch delays.

## **NASA LSP Point of Contact for Additional Information**

Additional information including performance quotes, mission integration inquiries, and costs for non-standard services may be obtained from the point of contact below. Otherwise questions must be directed as indicated in the Technical and Scientific Inquiries section of the AO.

**Rex Engelhardt**  
**Mission Manager**  
**NASA Launch Services Program**  
**Code VA-C**  
**Kennedy Space Center, FL 32899**  
**Phone: 321-867-5150**  
**Email: rex.a.engelhardt@nasa.gov**

# Attachment 1

## Launch Service Characteristics/Capabilities

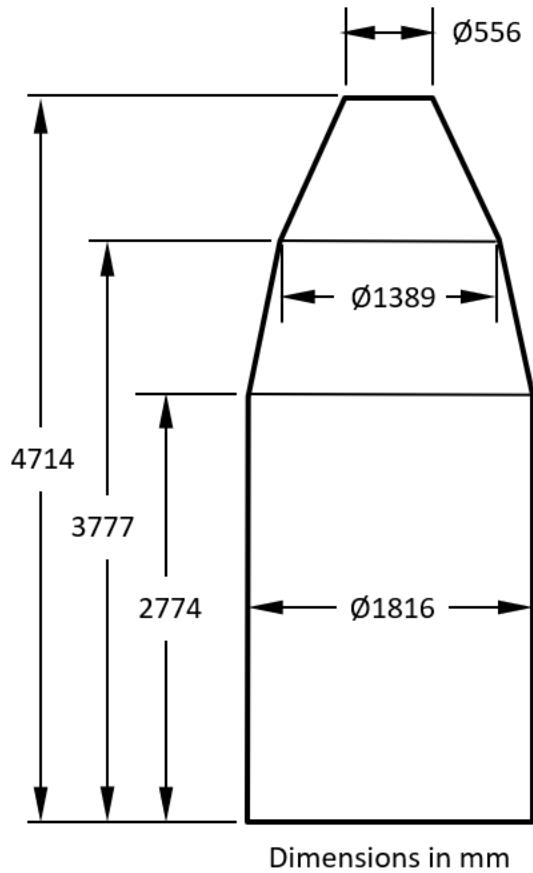
### **Performance Information:**

Performance capabilities to a range of orbit altitudes/inclinations are various from the multitude of launch service providers on the VADR contract. DYNAMIC proposals are not expected to discuss any launch performance parameters for a dedicated launch situation.

### **Payload Fairing Envelope:**

Figure 1 below shows the constraining static payload fairing envelope that will enable compatibility with all potential launch vehicle configurations projected to meet the needs of the DYNAMIC mission.

**Figure 1 Static Fairing Envelope (mm)**



- Figure has been reduced by 1.5" vertically to account for a typical payload isolation system. If the Spacecraft is providing its own isolation system, 1.5 inches may be added to overall height shown.

## **Attachment 2**

### **NASA-LSP Standard Launch Services**

This list provides an overview of the standard services that the spacecraft customer will receive with a NASA/LSP-Provided VADR Launch Service.

#### **Integrated Services:**

- LSP Contractor Engineering support
- LSP support to Spacecraft-chaired Payload Safety Working Group (PSWG)

#### **VADR Launch Standard Service:**

- Launch vehicle that meets customer's performance needs
- Payload processing facility (ISO 14644-1 Class 8 PPF) and non-fueling related support
- Standard LV-provided Payload Separation System
- Standard Payload Adapter
- Hardware that accurately simulates the mechanical interfaces and dynamic characteristics of the payload separation system, to be used by the payload project during shock and vibration testing
- Single-Spacecraft Collision/Contamination Avoidance Maneuver (CCAM) capability if needed
- Mission Specific Reviews
- Contractor-led Readiness Reviews
- Risk Identification
- Launch Vehicle insight and approval per NPD 8610.23C; Attachment C
- Mission integration management & engineering support
- Launch campaign management
- Orbital Parameter Message (OPM) for payload separation

#### **Nominal Non-Standard/Mission Specific Services included for DYNAMIC 2023**

- Mission Specific payload isolation system
- T-0 GN2 or pure air Purge
- Spacecraft Spin/De-spin capability for separation (if required)
- Class 10K integration environment (if required)
- Spacecraft fueling operations at the PPF

The following list provides examples of non-standard/mission specific services that are not included in this AO's NASA-provided launch service, and whose cost would need to be included as part of the Principal Investigator Managed Mission Cost (non-standard/mission specific services are not limited to this list).

- Custom Payload Adapters
- Auxiliary Propulsion for target orbit achievement
- Deployable Telemetry Tracking Assets for multiple spacecraft missions
- Post separation communication resource availability and coordination
- LV mods/analyses for non-separating interface with multiple SC deployments
- Spacecraft Fuel
- Test Payload Adapter