

# FY14 Agency Mission Planning Model (AMPM)

Aligned with FY14 Congressional Request (excludes effects of Sequester)

| CY                             | NOTIONAL   |   |   |   |  |  |  |  | OUT YEARS, TENTATIVE  |  |  |  |  |   |   |   |   |   |   |   |   |   |                             |                                |
|--------------------------------|--|---|---|---|--|--|--|--|---|--|--|--|--|---|---|---|---|---|---|---|---|---|-----------------------------|--------------------------------|
|                                | 2013   | 2014  | 2015  | 2016  | 2017   | 2018   | 2019   | 2020   | 2021  | 2022   | 2023   | 2024   | 2025   | 2026  | 2027  | 2028  | 2029  | 2030  | 2031  | 2032  | 2033  |   |                             |                                |
| STMD                           | STMD   | Masten Armadillo<br>SST (ORB)<br>SST (ORB)<br>UP Aerospace WhittingHill<br>FO (GT) - 4<br>FO (A/C) - 4<br>Virgin Galactic XCOR  | SS Nanocomposite<br>Fairing<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4  | MISSE-X DSAC<br>CPST SST (ORB)<br>GPM<br>RVF-4<br>SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4                   | LCRD GCD (SR)<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4  | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4  | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                      | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4  | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                               | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4  | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4  | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4  | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4  | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4   | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                               | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4   | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                               | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4   | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                               | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4   | TDM (ORB)<br>GCD (SR)<br>SST (ORB)<br>FO (SR) - 4<br>SST (ORB)<br>FO (GT) - 4<br>FO (A/C) - 4                               | SST (ORB)<br>FO (SR) - 4<br>FO (GT) - 4<br>FO (A/C) - 4   |                             |                                |
| Human Exploration & Operations | Human Exploration & Operations   | TDRS-L<br>← International Space Station Operations* →<br>SpaceX CRS<br>SpaceX CRS<br>SpaceX CRS<br>Orbital CRS<br>Orbital CRS<br>C. Crw Dev/Test****<br>C. Crw Dev/Test**** | TDRS-M*****<br>TDRS-N**<br>Future Cargo<br>Future Cargo<br>SpaceX CRS<br>SpaceX CRS<br>SpaceX CRS<br>Orbital CRS<br>Orbital CRS<br>C. Crw Dev/Test****<br>C. Crw Dev/Test**** | EM-1*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-2*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | TDRS-4G-1<br>EM-3*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | TDRS-4G-2<br>EM-3*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | TDRS-4G-3<br>EM-4*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | TDRS-4G-4<br>EM-5*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services | EM-6*<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>Future Cargo<br>C. Crw Services<br>C. Crw Services |                             |                                |
| Science                        | Earth Sciences   | LDCM<br>25-Air  | GPM Core OCO-2<br>SAGE-III**<br>25-Air  | SMAP<br>EVS-1*<br>25-Air  | ICESat-2<br>25-Air   | GRACE FO<br>CYGNSS<br>TEMPO<br>25-Air  | OCO-3 MoO&<br>25-Air   | EVS-2*<br>EVI-2 MoO&<br>25-Air   | SWOT<br>PACE<br>EVI-3 MoO&<br>25-Air  | L-Band SAR<br>EVI-4 MoO&<br>25-Air   | ICESat-2<br>25-Air   | ESDS<br>ASCENDS<br>EVS-3*<br>25-Air  | EVI-6 MoO&<br>25-Air   | EVS-3<br>EVI-5 MoO&<br>25-Air   | EVI-3<br>25-Air   | EVI-7 MoO&<br>25-Air  | EVS-4*<br>EVI-8 MoO&<br>25-Air  | ESDS<br>25-Air  | EVS-5<br>25-Air   | EVI-4<br>EVI-9 MoO&<br>25-Air   | EVI-10 MoO&<br>25-Air   | EVI-11 MoO&<br>25-Air   | EVI-10 MoO&<br>25-Air       |                                |
|                                | Heliophysics   | BARREL-2*<br>IRIS (Juno)<br>20-SR   | MMS<br>SET-1<br>20-SR   | Solar Orb<br>Helio MoO<br>20-SR   | SPP<br>Helio EX-1<br>20-SR   | Helio MoO<br>20-SR   | Helio EX-1<br>20-SR  | STP-5<br>Helio MoO<br>20-SR  | STP-5<br>Helio MoO<br>20-SR   | Helio SMEX<br>20-SR  | Helio MoO<br>20-SR   | STP-6<br>Helio EX-2<br>20-SR   | LWS-7<br>20-SR   | Helio MoO<br>20-SR  | STP-6<br>Helio EX-2<br>20-SR  | LWS-8<br>24-SR  | Helio SMEX<br>24-SR   | LWS-9<br>24-SR  | STP-7<br>Helio MoO<br>24-SR   | Helio EX-3<br>24-SR   | Helio EX-3<br>24-SR   | Helio EX-3<br>24-SR   | Helio EX-3<br>24-SR         | Helio MoO<br>24-SR             |
|                                | Planetary Science #  | MAVEN<br>LADEE  | Stofio<br>20-SR   | InSight<br>OSIRIS-Rex<br>20-SR  | Mars 2018#<br>20-SR  | Mars 2018#<br>20-SR  | Mars 2018#<br>20-SR  | Mars-2020<br>Disc-13%<br>20-SR   | Mars-2020<br>Disc-13%<br>20-SR  | NewFront4%<br>20-SR  | Mars-2024<br>20-SR   | Mars-2024<br>20-SR   | Mars-2024<br>20-SR   | Mars-2024<br>20-SR  | Mars-2024<br>20-SR  | Disc-14%<br>24-SR   | NewFront5%<br>24-SR   | Mars-2028<br>24-SR  | Disc-15<br>24-SR  | NewFront6%<br>24-SR   | NewFront6%<br>24-SR   | NewFront6%<br>24-SR   | NewFront6%<br>24-SR         | NewFront6%<br>24-SR            |
|                                | Astrophysics   | 40-SOF<br>18-Bal  | 55-SOF(FOC)<br>ISS-CREAM<br>18-Bal  | 80-SOF<br>ST-7<br>18-Bal  | 85-SOF<br>18-Bal   | 96-SOF<br>JWST<br>Astro EX-1<br>18-Bal   | 96-SOF<br>JWST<br>Astro EX-1<br>18-Bal   | 96-SOF<br>Euclid<br>Astro SMEX<br>18-Bal   | 96-SOF<br>Euclid<br>Astro SMEX<br>18-Bal  | 96-SOF<br>Astro MoO<br>18-Bal  | 96-SOF<br>Astro MoO<br>18-Bal  | 96-SOF<br>Astro-1<br>Astro EX-2<br>18-Bal  | 96-SOF<br>Astro-1<br>Astro EX-2<br>18-Bal  | 96-SOF<br>Astro-1<br>Astro EX-2<br>18-Bal   | 96-SOF<br>HST Disposal<br>Astro SMEX<br>18-Bal  | 96-SOF<br>HST Disposal<br>Astro SMEX<br>18-Bal  | 96-SOF<br>Astro SMEX<br>18-Bal  | 96-SOF<br>Astro-2<br>18-Bal   | 96-SOF<br>ESA-L2<br>Astro MoO<br>18-Bal   | 96-SOF<br>Astro EX-3<br>18-Bal  | 96-SOF<br>Astro-3<br>18-Bal   | 96-SOF<br>Astro-3<br>18-Bal   | 96-SOF<br>Astro-3<br>18-Bal | 96-SOF<br>Astro SMEX<br>18-Bal |
|                                | Joint Agency Satellite Div.  | TCTE<br>Jason-3   | DSCOVR<br>Jason-3   | GOES-R<br>JPSS-1<br>Freeflyer-1   | GOES-S<br>Metop-C  | GOES-S<br>Metop-C  | GOES-T<br>18-Bal   | GOES-T<br>18-Bal   | GOES-T<br>18-Bal  | GOES-T<br>18-Bal   | GOES-T<br>18-Bal   | GOES-T<br>18-Bal   | GOES-T<br>18-Bal   | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal  | GOES-T<br>18-Bal            | GOES-T<br>18-Bal               |
| Aeronautics                    | Aviation Safety<br>Airspace Systems<br>Fundamental Aeronautics<br>Integrated Systems<br>Research | Milestones on Page 2  |   |   |  |  |  |  |   | Milestones on Page 2   |  |  |  |   |   |   |   | Milestones on Page 2  |   |   |   |   |                             |                                |

Rev 4-30-13

**LEGEND**

\* Ground-based elements (includes suborbital) \*\* Option  
 \*\*\* Instrument only \*\*\*\* Content TBD \*\*\*\*\* No Launch Service  
 % Radioisotope Power Systems (RPS) planned & MoO dates are for instrument delivery to spacecraft  
 # Mars program being redefined; next may be 2018 or 2020  
 \* EM flight include SLS and MPCV vehicle only; excludes destination elements

| CY                              | 2013                      | 2014  | 2015  | 2016  | 2017   | 2018   | 2019   | 2020   | 2021  | 2022   | 2023  | 2024  | 2025  | 2026  | 2027   | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |  |  |
|---------------------------------|---------------------------|---|---|---|--|--|--|--|---|--|---|---|---|---|--|------|------|------|------|------|------|--|--|
| Aeronautics Research Milestones | Aviation Safety           | ▲ Applying data mining capabilities, develop technologies toward the design, development, and demonstration of a reasoning system that assesses the instantaneous health state of an aircraft         | ▲ Demonstrate resilient multi-functional sensor for aircraft lightning protection and composite material lightning-damage diagnosis                                   | ▲ Use compositional reasoning to verify software safety for a complete flight critical system   | ▲ Demonstrate generic transport model-based, integrated high-fidelity simulation of loss-of-control precursor conditions with validated upset models   | ▲ Demonstrate engine diagnostic systems based on expanded sensor suite to detect faults  | ▲ Demonstrate a verifiable prognostic algorithm on a flight vehicle  | ▲ Develop and evaluate guidance, control, and system technologies for loss of control prevention   | ▲ Demonstrate an experimental Lidar system capable of detecting kinetic air hazards that establishes performance capabilities for Lidar systems using practical technologies                      | ▲ Demonstrate automated discovery of precursors to aviation safety incidents through automated analysis of massive, heterogeneous data sets                                | ▲ Complete and provide methods and tools that incorporate the limitations of human performance throughout the design lifecycle of human-automation systems to increase safety and reduce validation costs | ▲ Develop unified safety assurance processes for ground-based and airborne systems that significantly reduces time and cost of testing Next Gen systems                         | ▲ Eliminate turbofan engine interruptions, failures, and damage due to flight in high ice-crystal content clouds  | ▲ Achieve acceptance of aircraft icing simulation tools for design and certification of swept wing configurations over an expanded range of icing conditions                  |  |      |      |      |      |      |      |  |  |
|                                 | Airspace Systems          | ▲ Develop conflict alert capability for terminal operations to increase throughput and safety   | ▲ Define allocation of air traffic control functions between air and ground based on human-in-the-loop simulation studies involving nominal and off-nominal scenarios | ▲ Complete integrated testing involving ground-based scheduling and flight deck based merging and spacing   | ▲ Determine trajectory accuracy and precision requirements to support NextGen concepts and technologies  | ▲ Determine gate-to-gate trajectory based operations technology and architecture requirements  | ▲ Identify improvements for National Airspace System   | ▲ Characterize system architecture requirements for RNP in the Terminal Area   | ▲ Operations yet to be achieved for NextGen in areas of RNP and TBO   | ▲ Complete analysis of capabilities still needed to further increase NextGen performance, safety and efficiency  |   |   |   |   |  |      |      |      |      |      |      |  |  |
|                                 | Fundamental Aeronautics   | ▲ Validate high-fidelity analysis tools and design methods applicable to the creation of supersonic aircraft with low sonic boom over the full extent of area exposed to boom noise during overflight | ▲ Demonstrate the noise reduction and performance benefits of active rotor control concepts for rotary wing aircraft through wind tunnel testing                      | ▲ Characterize in flight gaseous and particulate cruise emissions of alternative fuels such as hydroprocessed esters and fatty acid (HEFA) blended jet fuels and zero-sulfur jet fuel | ▲ Validate high fidelity analysis tools and design techniques applicable to the creation of low sonic boom supersonic aircraft, including all key relevant features such as inlet and nozzle flow  | ▲ Develop high-temperature materials for turbine engines that enable a 6% reduction in fuel burn for commercial aircraft, compared to current state-of-art materials | ▲ Characterize potential benefit of vehicle-integrated boundary-layer ingesting propulsion systems for a representative vehicle at TRL3                        | ▲ Demonstrate significant advances in variable speed power turbine technology and two-speed drive systems to enable fast and more efficient advanced rotorcraft configurations | ▲ Demonstrate lightweight aircraft quieting technologies and characterize the potential benefits/trades of an active flow control system that provides high lift for subsonic fixed wing aircraft | ▲ Demonstrate indoor and outdoor noise metrics, surety tools and test protocols required for the study of community response to overflight of low boom supersonic aircraft | ▲ Demonstrate advanced low-emission, fuel-flexible (LE-FF) combustor concepts for emission reduction to 80% below CAEP6 standards via flametube tests   | ▲ Demonstrate through analysis and component testing technologies that enable a 50% fuel burn reduction/50% CO2 emissions reduction over current levels for fixed-wing aircraft | ▲ Develop validated multidisciplinary analysis methods and tools that enable high-fidelity physics-based modeling and improved design of complex integrated air vehicle systems | ▲ Demonstrate through analysis and component testing technologies to enable at least 70% reduction in aircraft fuel burn over current levels for subsonic fixed wing aircraft | ▲ Demonstrate through analysis and component testing technologies to enable a 71dB cumulative noise level below Stage 4 for subsonic fixed wing aircraft |      |      |      |      |      |      |  |  |
|                                 | Integted Systems Research | ▲ Complete flight evaluations to assess the capabilities of the Live, Virtual Constructive (LVC) distributed simulation environment   | ▲ Complete flight test of the Adaptive Compliant Trailing Edge technology which contributes to weight reduction and therefore the fuel burn goal of the ERA project   | ▲ Demonstrate the Geared Turbo Fan concept through low speed ground test contributing to the goal of the ERA project to reduce fuel burn by 50% at the air craft system level         | ▲ Evaluate concepts related to UAS for separation assurance, sense and avoid, and ground control stations with communication system performance estimates through an Integrated Human in the Loop (IHITL) simulation to provide data for futher technology development | ▲ Complete the Active Flow Control enhanced vertical tail flight test supporting the ERA drag reduction challenge  | ▲ Demonstrate the Low NOx combustor in the full annular rig ground test to validate predicted reductions of Landing and Takeoff (LTO) and Cruise NOx emissions | ▲ Complete high-speed performance testing of an ultra high bypass engine integrated with a hybrid wing body (semi-span)  | ▲ Flight test of the individual UAS-NAS subproject technologies integrated in a live flight environment representing the National Airspace System   | ▲ Deliver final recommendation of hazard and risk data to stakeholders to enable rule-makers to develop classification and certification standards for UAS                 |   |   |   |   |  |      |      |      |      |      |      |  |  |

| Milestone Accomplished |                  |                         |                           |
|------------------------|------------------|-------------------------|---------------------------|
| Aviation Safety        | Airspace Systems | Fundamental Aeronautics | Integted Systems Research |
| <b>Aeronautics</b>     |                  |                         |                           |

**Mission Data Sources**

Science Mission Directorate (SMD) input 4-2-12

Human Exploration and Operations (HEOMD) input 3-26-12

Aeronautics Research Mission Directorate (ARM D) input 11-1-12

Office of Chief Technologist (OCT) input 11-14-12

**Mission Acronyms & Definitions**

|                       |  | Mission Directorate |
|-----------------------|--|---------------------|
| A/C                   | Aircraft Launch  | OCT                 |
| Astro MoO-x           | Astrophysics Mission of Opportunity (via AO) (x = mission #)   | SMD                 |
| Armadillo             | Armadillo Aerospace  | OCT                 |
| ASCENDS               | Active Sensing of CO2 Emissions over Nights, Days and Seasons, an ESD Decadal Survey mission (Medium ELV class)    | SMD                 |
| Astro-H               | SXS Instrument (Explorer Program Mission of Opportunity) [JAXA launch]   | SMD                 |
| Astro-x               | Astrophysics Decadal survey missions. (May be assigned to COR, PCOS or ExEP programs) (Medium or Intermediate)     | SMD                 |
| X-Air                 | Estimated number of Aircraft Earth Science Flights   | SMD                 |
| X-Bal                 | Estimated number of Scientific Balloon Flights   | SMD                 |
| BARREL-2              | Balloon Array for RBSP Relativistic Electron Losses (Two balloon campaigns of 20 flights each)                     | SMD                 |
| CAEP#                 | International Civil Aviation Organization (sixth meeting)  | ARM D               |
| CLARREO               | Climate Absolute Radiance and Refractivity Observatory (Small)   | SMD                 |
| C Crw                 | Commercial Crew  | HEOMD               |
| Comm Crew             | Commercial Crew  | HEOMD               |
| CO2                   | Carbon Dioxide   | ARM D               |
| CPST                  | Cryogenic Propulsion Storage & Transfer  | OCT                 |
| CRS                   | Commercial Resupply Services   | HEOMD               |
| CYGNSS                |  | SMD                 |
| D                     | Demonstration  | HEOMD               |
| dB                    | decibels   | ARM D               |
| DESDynI               | Deformation, Ecosystem Structure and Dynamics of Ice (Medium)  | SMD                 |
| Disc-xx               | Discovery Mission (xx- mission #) (Intermediate)   | SMD                 |
| DSAC                  | Deep Space Atomic Clock  | OCT                 |
| DSCOVER               | Deep Space Climate ObservatoRy (DoD launch)  | SMD                 |
| ERA                   | Environmentally Responsible Aviation   | ARM D               |
| ESDS-x                | Earth Science Decadal Survey Mission (x- mission # following ICESat-2, SMAP, ASCENDS & SWOT) (Medium)              | SMD                 |
| Euclid                |  | SMD                 |
| EVS-x                 | Earth science Venture class suborbital mission #x (Small)  | SMD                 |
| EVI-x                 | Earth Science Venture Instrument Mission of Opportunity #x   | SMD                 |
| EVM-x                 | Earth Science Venture class small mission #x   | SMD                 |
| EX-xx                 | Explorer mission (Small)   | SMD                 |
| FO                    | Flight Opportunities #= number of flights per year   | OCT                 |
| Freeflyer-1           |  | SMD                 |
| GCD                   | Game Changing Development  | OCT                 |
| GOES-R                | New series of Geostationary Operational Environmental Satellites (intermediate)                                    | SMD                 |
| GOES-S-T-U            |  | SMD                 |
| GPIM                  | Green Propellant Infusion Mission  | OCT                 |
| GPM Core              | Global Precipitation Mission Core [JAXA HIIA launch]   | SMD                 |
| GRACE FO              | Gravity Recovery and Climate Experiment Follow-On (Foreign launch)   | SMD                 |
| GRAIL                 | Gravity Recovery and Interior Laboratory   | SMD                 |
| GT                    | Ground Vehicle Take-Off/Land   | OCT                 |
| Hello EX-x            | Heliophysics Division Explorer (x-mission#) (Small)  | SMD                 |
| HIAD                  | Hypersonic Inflatable Aerodynamic Decelerator  | OCT                 |
| HST Disposal          |  | SMD                 |
| HST-Deorbit           | Hubble Space Telescope Deorbit (Medium?)   | SMD                 |
| ICESat 2              | Follow-on to ICESat mission to measure Earth's ice levels, an ESD Decadal Survey mission (DoD launch or Medium)    | SMD                 |
| InSight               |  | SMD                 |
| IRIS                  |  | SMD                 |
| IRVE-x                | Inflatable Re-entry Vehicle Experiment (x-mission #)   | OCT                 |
| Jason-3               | Follow on to OSTM/Jason-2, but fully reimbursable from NOAA (Medium)   | SMD                 |
| JPSS-X                | Joint Polar Satellite System (x-mission#) (Medium)   | SMD                 |
| JUNO                  | Jupiter Near-polar Orbiter (New Frontiers #2)  | SMD                 |
| JWST                  | James Webb Space Telescope [ESA Ariane 5 launch]   | SMD                 |
| KDP                   | Key Decision Point   | ARM D               |
| LADEE                 | Lunar Atmosphere Dust Environment Explorer   | SMD                 |
| LANDSAT-x             | LANDSAT - (x-mission #)  | SMD                 |
| L-Band SAR            |  | SMD                 |
| LCRD                  | Laser Communication Relay Demonstration  | OCT                 |
| LDCM                  | Landsat Data Continuity Mission, partnered with USGS   | SMD                 |
| LWIS-x                | Living With a Star (x- mission #)  | SMD                 |
| Mars-xx               | Mars Mission - 20xx where 20xx is launch year (May be an orbiter, lander or rover) (Intermediate)                  | SMD                 |
| Masten                | Masten Space Systems   | OCT                 |
| MAVEN                 | Mars Atmosphere and Volatile Evolution mission (Mars Scout 2)  | SMD                 |
| MEDLI                 | Mars Science Laboratory Entry Descent Landing Instrument   | OCT                 |
| Metop-C               |  | SMD                 |
| MISSE-X               | Materials International Space Station Experiment   | OCT                 |
| MMS                   | Magnetospheric Multi-Scale mission   | SMD                 |
| Mo&                   |  | SMD                 |
| MoO                   | Mission of Opportunity (From mission AO or SALMON AO)  | SMD                 |
| MSL                   | Mars Science Laboratory  | SMD                 |
| Nanocomposite Fairing | A newly designed rocket with a payload fairing made from nanocomposites.   | OCT                 |
| NAS                   | National Airspace System   | ARM D               |
| NewFront-x            | New Frontiers flight (x- mission #)  | SMD                 |
| NextGen               | Next Generation Air Transportation System  | ARM D               |
| NPP                   | NPOESS Preparatory Project   | SMD                 |
| NuStar                | Nuclear Spectroscopic Telescope Array  | SMD                 |
| OCO-2                 | Replacement mission for the Orbiting Carbon Observatory, lost on launch in 2009 (Small or Medium)                  | SMD                 |
| OCO-3                 |  | SMD                 |
| ORB                   | To Orbit   | OCT                 |
| OSIRIS-Rex            |  | SMD                 |
| PACE                  | Pre-Aerosol, Clouds, and Ocean Ecosystem (Medium)  | SMD                 |
| PhoneSat              | Phone Satellite  | OCT                 |
| PMoO-x                | Planetary Mission of Opportunity-x (as yet unselected and unnamed) (May be Discovery, New Frontiers or Mars Scout) | SMD                 |
| RBSP                  | Radiation Belt Storm Probes  | SMD                 |
| RNP                   | Required Navigation Performance  | ARM D               |
| SAGE-III              | Stratospheric Aerosol and Gas Experiment, Instrument to fly on ISS   | SMD                 |
| SALMON                | Stand ALone Mission of Opportunity   | SMD                 |
| SARSAT                | Search and Rescue Satellite  | SMD                 |
| SET-x                 | Space Experiments Testbeds (x-mission #)   | SMD                 |
| SMAP                  | Soil Moisture Active-Passive, an ESD Decadal Survey mission  | SMD                 |
| SMEX-xx               | SMall-class Explorer (xx- mission #)   | SMD                 |
| SOFIA                 | Stratospheric Observatory For Infrared Astronomy [Aircraft first science flight]                                   | SMD                 |
| SOFIA LOC             | LOC = Limited Operational Capability   | SMD                 |
| SOFIA FOC             | FOC = Full Operational Capability  | SMD                 |
| X-SOF                 | Estimated number of SOFIA aircraft science flights per year  | SMD                 |
| Solar Orb             | Solar Orbiter Collaboration (Intermediate)   | SMD                 |
| SPP                   | Solar Probe Plus mission (Intermediate)  | SMD                 |
| SR                    | Sounding Rockets   | OCT                 |
| X-SR                  | Estimated number of non-reimbursable sounding rocket launches  | SMD                 |
| SS                    | Solar Sail   | OCT                 |
| SST                   | Small Spacecraft Technology (launch or vehicle method)   | OCT                 |
| ST-7                  | Space Technology Mission #7 (US subsystem for ESA's LISA pathfinder)   | SMD                 |
| Strofi                | PMoO - Mass spectrometer studying Mercury's exosphere on ESA's Bepi Colombo mission                                | SMD                 |
| STP-x                 | Solar Terrestrial Probe mission (x- mission #)   | SMD                 |
| SWOT                  | Surface Water Ocean Topography, an ESD Decadal Survey mission (Medium)   | SMD                 |
| TBO                   | Trajectory Based Operations  | ARM D               |
| TCTE                  |  | SMD                 |
| TDM                   | Technology Demonstration Missions (launch or vehicle method)   | OCT                 |
| TDRS-X                | Tracking and Data Relay Satellite (X = next in series)   | HEOMD               |
| TRL                   | Technical Readiness Level  | ARM D               |
| TSIS                  | Total and Spectral solar Irradiance Sensors  | SMD                 |
| UAS                   | Unmanned Aircraft Systems  | ARM D               |