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Launch Vehicles: Current & Future Use

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EVOLVING THE SLS VEHICLE

- **Core Stage**
- **Universal Stage Adapter**
- **Launch Vehicle Stage Adapter**
- **Launch Abort System**
- **Orion**
- **Interim Cryogenic Propulsion Stage**

**SLS Block 1**
- 70t

**SLS Block 1B Crew**
- 105t

**SLS Block 1B Cargo**
- 105t

**SLS Block 2 Cargo**
- 130t

- **AdvancedBoosters**
- **RS-25 Engines**
- **Cargo Fairing**
- **Exploration Upper Stage**
- **Interstage**
SLS Payload Accommodations

• 3 KEY GAME CHANGERS
  – VOLUME
  – MASS
  – ENERGY

<table>
<thead>
<tr>
<th>Description</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>5m fairing w/ science payload</td>
<td>250m³</td>
</tr>
<tr>
<td>Science Missions</td>
<td>400m³</td>
</tr>
<tr>
<td>Orion with short-duration hab module</td>
<td>400m³</td>
</tr>
<tr>
<td>8m fairing with large aperture telescope</td>
<td>1200m³</td>
</tr>
<tr>
<td>10m fairing w/notional Mars payload</td>
<td>1800m³</td>
</tr>
</tbody>
</table>

total mission volume = ~ 250m³ + 400m³ + 400m³ + 1200m³ + 1800m³
INTRODUCTION
CORE STAGE TESTING
CORE STAGE MANUFACTURING
SOLID ROCKET BOOSTER
INTERIM CRYOGENIC PROPULSION STAGE
STAGE ADAPTER WELDING
A NATIONAL EFFORT

Working with over 800 Contractors in 43 States

2015 Data

NASA Facilities
NASA Centers
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