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Panel Session IV - Launch Vehicle Options for Exploration

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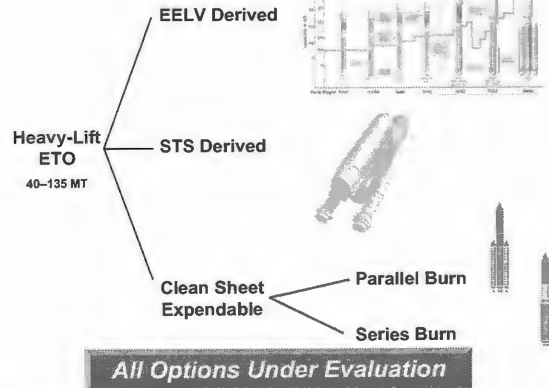
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Launch Vehicle Options for Exploration

Mr. Michael Gass
VP, Space Transportation
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Space Systems Company



Heavy Lift Options



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Evolution Philosophy

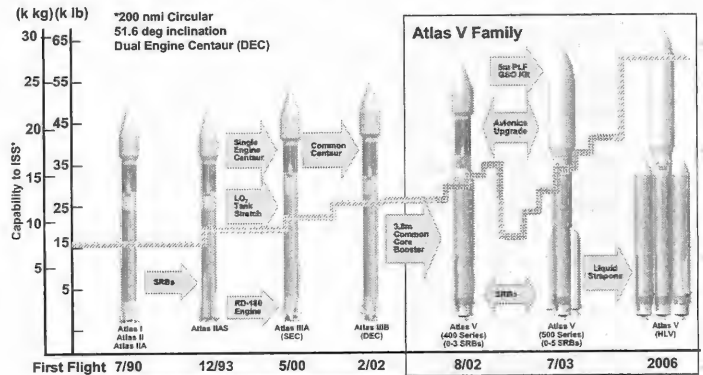
- Maximize Mission Success, Affordability and Performance
 - Introduce Improvements One Step at a Time-Spiral Development
 - Ensure Improved Flying Product at Each Step
- Maintain Common Fleet and Processes for All Customers
 - NASA, AF, NRO, Commercial
 - Human Spaceflight
- Benefits of Evolution Philosophy
 - Grow Capability As Needs Mature-Lowest Risk & Incremental Cost
 - High Demonstrated Reliability
 - Shared Infrastructure Reduces Cost

Evolutionary LV Development Strategy Proven

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Atlas Evolution

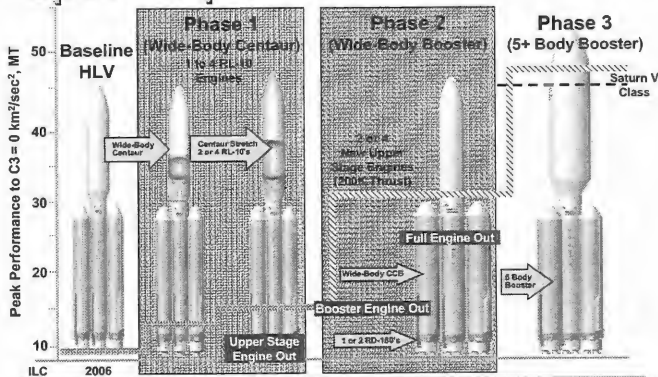


Low Risk Evolutionary Development

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Atlas Evolution for Space Exploration



Evolutionary Strategy Enables Flexible Architecture

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System-Level Human Rating

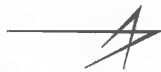


System Level Approach Meets Space Exploration Needs

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Summary



- **Focus on 100% Mission Success**
- **Mission Architecture Sets Direction for Future Space Transportation Capability**
- **Integrating Safety, Affordability and Performance Is Critical to Enable Renewed Vision of Discovery**

*Nation's Vision Provides Unique Opportunity for
NASA, DOD and Industry Partnership*

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