

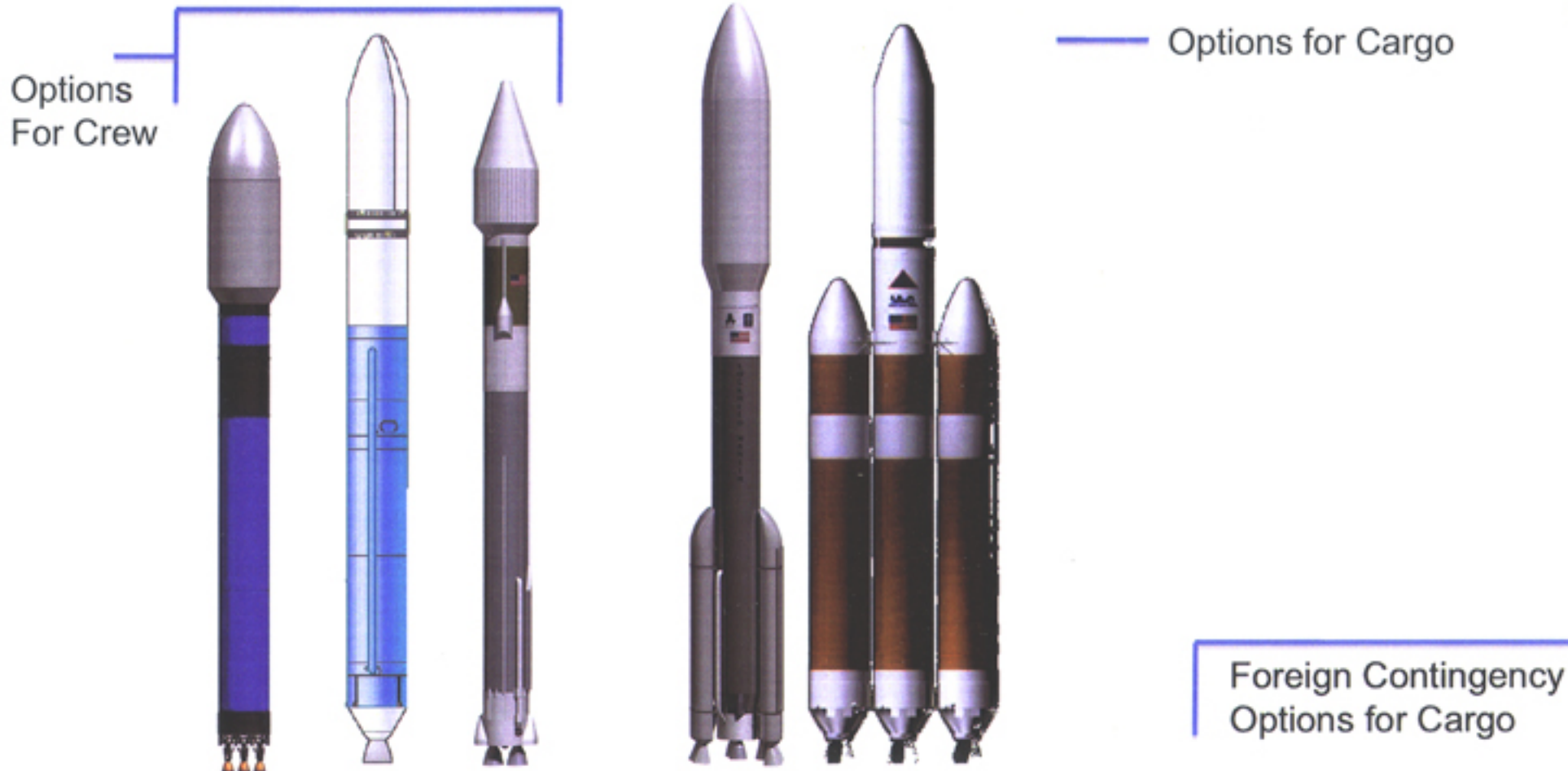


EELV Capacity Analysis

July 13th, 2010
Washington D.C.

Existing Commercial Vehicle Performance

From Company Estimates without extraordinary mission unique options



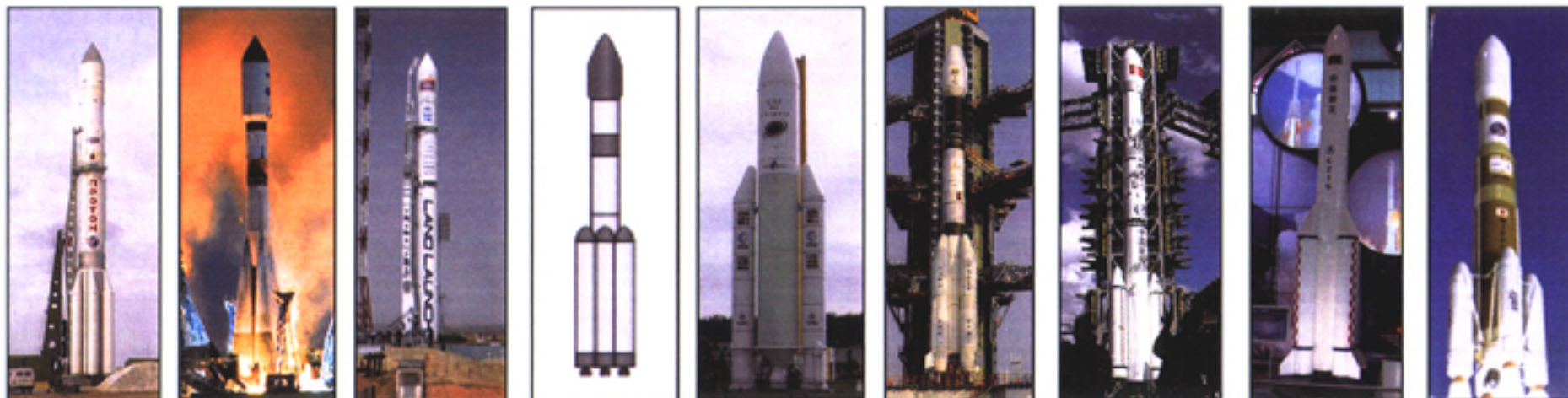
Vehicle	Falcon 9 Block 2	Delta 4040	Atlas V 401		Atlas V 552/1	Delta IV Heavy		H-IIA 2024	Proton	Sea Launch	Ariane V
600 Km @ 28.5	9.5MT	8.5MT	9 MT		18.5MT	23MT		Not Readily Available			
GTO	4.5MT	4MT	4.5MT		8.5MT	12.5MT		4.5MT	5.5MT	6MT	10MT



International Partners Have Lots of Capacity

Pr, C M C P, C A, C P M P, C H, C

	Proton M	Soyuz-2-1 b/Fregat	Zenit-2/3	Angara A5	Ariane 5	GSLV III	Long March CZ-2F/3C	Long March CZ-504	H-IIA/B
Country	Russia	Russia	Russia	Russia	Europe	India	China	China	Japan
First Flight	1965	1966	1985/2008	2013	1996	2012	1999/2008	2014	2001/2009
# of flights	~335	~1750	~70	---	52	---	7/5	---	18/1
Fairing diam (m)	4.1	4.1	3.9/4.1	4.1	5.4/5.4	5.0	4.2/4.2	5.0	4.07/5.1
LEO (mT)	21.6	8.5	13.9	24.5	19.3	10.0	8.4	25.0	16.5



M - Currently carries a manned capsule

P - Plans to carry a manned capsule

A - Used to launch the ATV

H - Used to launch the HTV

Pr - Used to launch the Progress

C - Capable of carrying DRM 4 elements



D. Dorney