



5...4...3...2...1...

SPACE LAUNCH SYSTEM

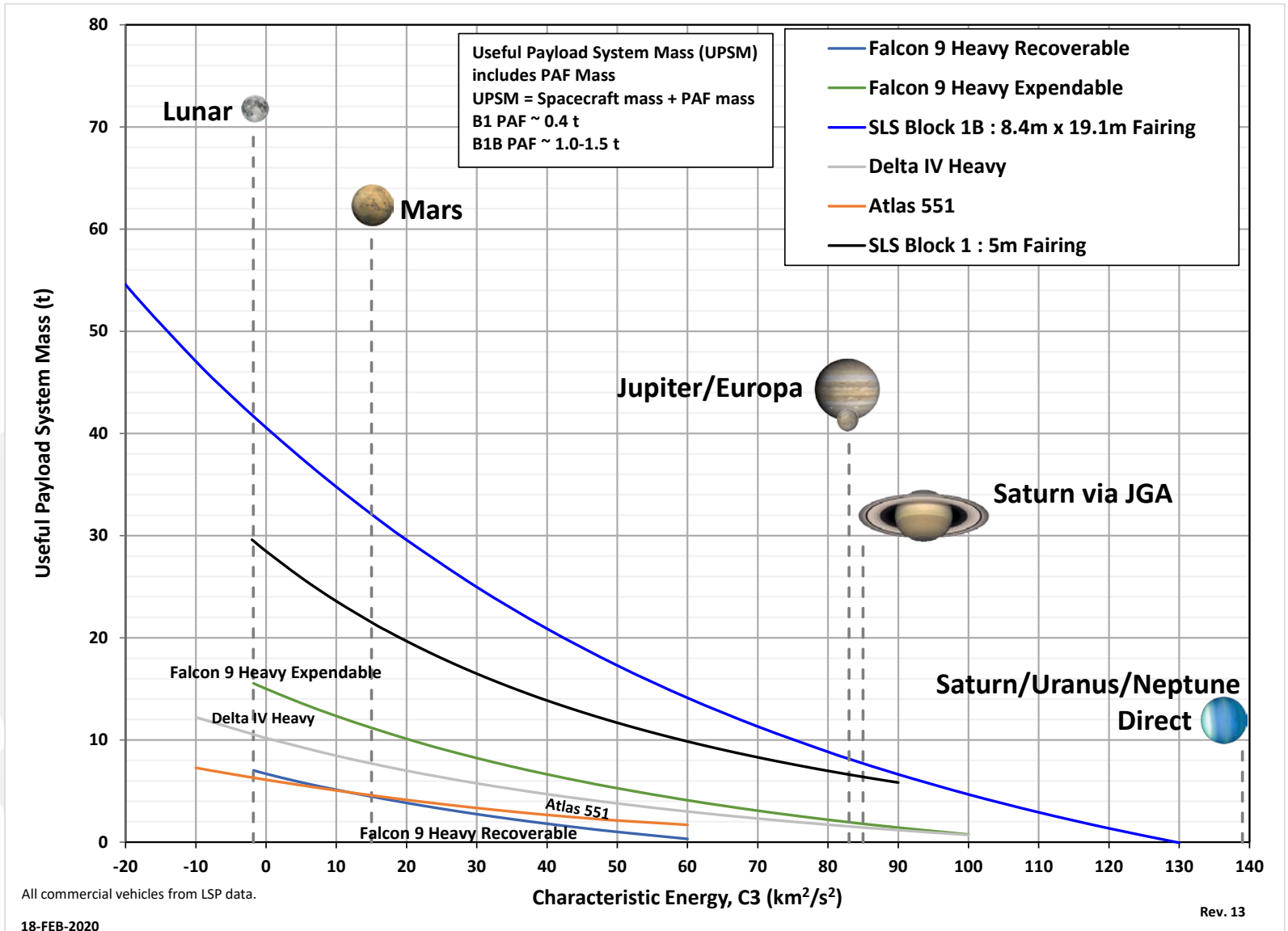
February 2020

SLS B1 and B1B Cargo Performance for Europa Clipper

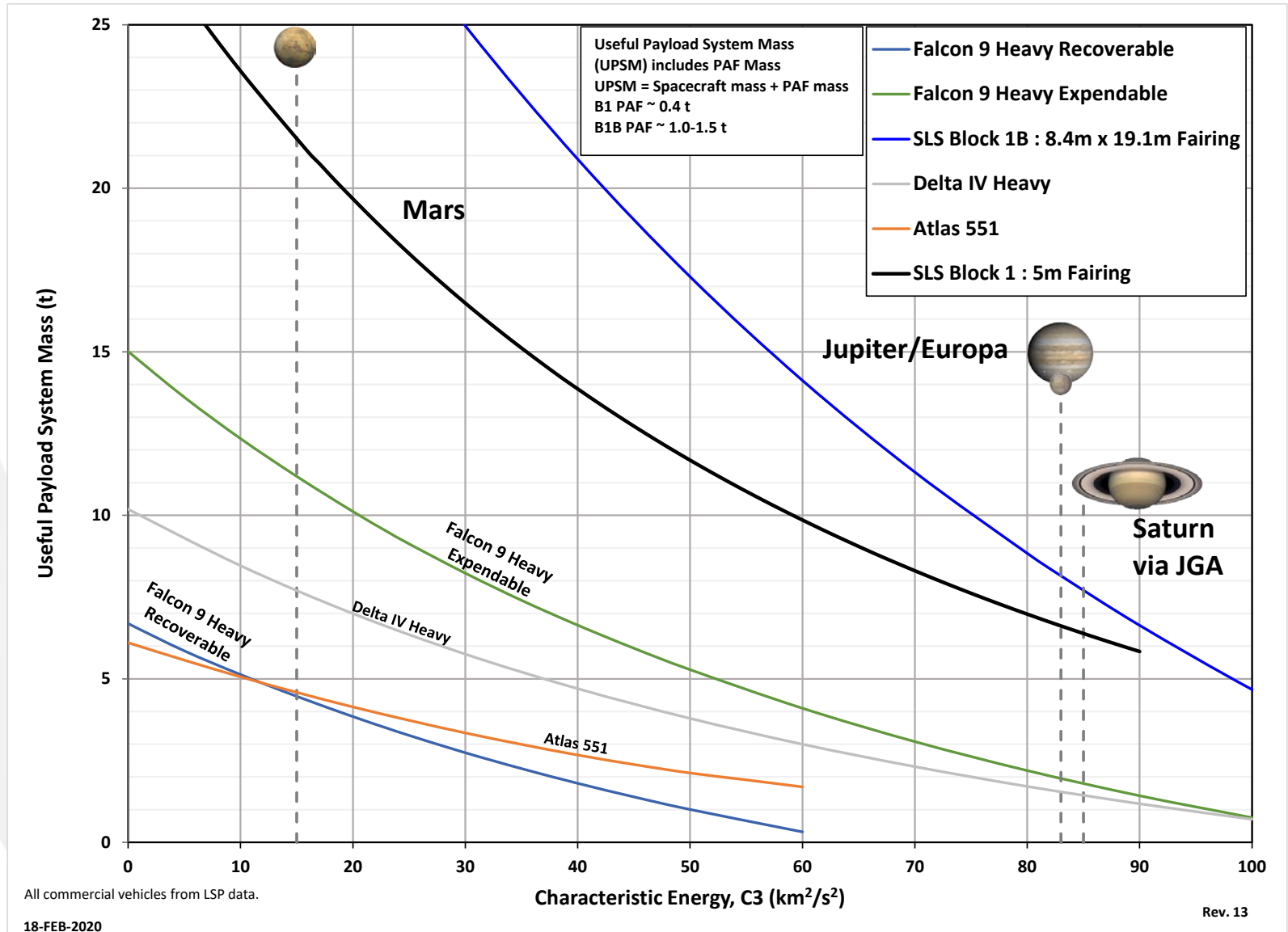
Barney Holt, ED04
Rob Stough, XP50



C3 Performance Comparison



C3 Performance Comparison



C3 Performance Data

Block 1

C3	Usable Payload System Mass (t)	C3	Usable Payload System Mass (t)	C3	Usable Payload System Mass (t)	C3	Usable Payload System Mass (t)
90	5.84	65	9.05	40	13.86	10	23.58
89	5.94	64	9.20	39	14.10	5	25.89
88	6.05	63	9.36	38	14.35	0	28.47
87	6.16	62	9.52	37	14.60	-0.99	29.02
86	6.27	61	9.69	36	14.85	-2	29.60
85	6.39	60	9.86	35	15.11		
84	6.50	59	10.02	34	15.38		
83	6.62	58	10.20	33	15.65		
82	6.74	57	10.37	32	15.92		
81	6.86	56	10.55	31	16.20		
80	6.98	55	10.73	30	16.49		
79	7.10	54	10.92	29	16.78		
78	7.23	53	11.10	28	17.08		
77	7.35	52	11.29	27	17.38		
76	7.48	51	11.49	26	17.69		
75	7.62	50	11.68	25	18.00		
74	7.75	49	11.89	24	18.32		
73	7.88	48	12.09	23	18.65		
72	8.02	47	12.30	22	18.99		
71	8.16	46	12.51	21	19.33		
70	8.30	45	12.73	20	19.68		
69	8.45	44	12.95	19	20.03		
68	8.59	43	13.17	18	20.39		
67	8.74	42	13.40	17	20.76		
66	8.89	41	13.63	16	21.12		

Block 1B

C3	Usable PL System Mass (t)
-40	73.62
-30	63.31
-20	54.56
-10	47.06
-5	43.71
-1.8	41.68
-0.99	41.18
-0.7	41.00
-0.5	40.88
0	40.57
5	37.60
10	34.77
15	32.10
20	29.58
30	24.96
40	20.89
50	17.29
60	14.12
70	11.32
80	8.84
83	8.15
90	6.63
100	4.67
110	2.92
120	1.35
130	-0.06
140	-1.33
140.64	-1.40