mass estimate

mu =	3.986E+14	m^3/s^2				thruster:	R-40B	
r_earth =	6,378,136	m				type:	Biprop	
g_0	9.80665	m/s^2				fuel	NTO (MON-3)/MMH	
parking orbit altitude =	200	km	P =	5309.64	s 1.47 hrs	ISP =	293	s
insertion accuracty =	30	km				mass =	6.80	kg
HST altitude in 2020 =	532	km	P =	5,717	s 1.59 hrs			
reboost altitude =	616	km	P =	5,821	s 1.62 hrs			
de-orbit altitude =	120	km	P =	5,213	s 1.45 hrs			
HST mass =	12,273	kg						
HSTRV final mass =	757	kg						

(dry mass + evasive maneuver reserve + 20% fuel reserve) - iterated on 'mass estimate' tab

mission phase	initial altitude (km)	final altitude (km)	V_initial (m/s)	a (m)	V_1 (m/s)	ΔV_1 (m/s)	V_2 (m/s)	V_final (m/s)	ΔV_2 (m/s)	Total ΔV (m/s)	m_i/m_f	final mass (kg)	initial mass (kg)	prop mass (kg)	maneuver time (s)	maneuver time (hr)
de-orbit (ellipse)	616	120	7,549	6,746,136	7,409	-140				-140	1.050	757	795	38	2,757	0.77
re-boost (HT)	532	616	7,595	6,952,136	7,618	23	7,526	7,549	23	46	1.016	13,068	13,278	210	5,769	1.60
rendezvous & dock (cold gas)										25	1.036	1,005	1,041	(36)		
parking to rendezvous	170	532	7,802	6,729,136	7,906	104	7,492	7,595	103	207	1.075	1,041	1,118	78	5,494	1.53
evasive maneuver (guess - low estimate from SMAD w/o HST attached) (iteratively added to final mass)										150	1.054	1,061	1,118	57	10,619	2.95

total propellant mass for main thruster: 382 kg 3.89