

## MASS Prize

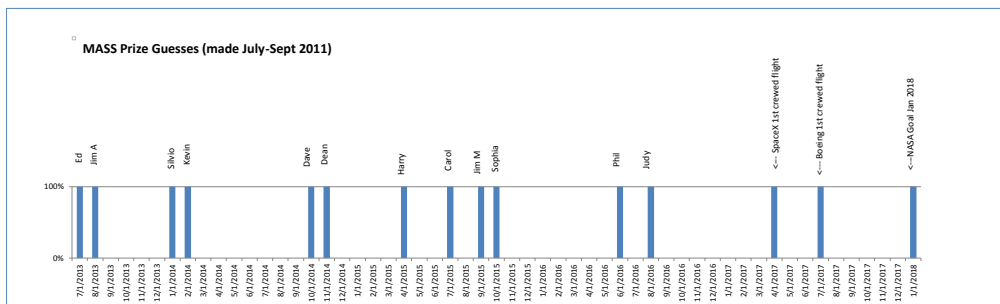
Guess Month	Year	Person	Potential Vehicles	Potential Rockets	Aug 2012 CCGap (Aug 2012 to Apr 2014)
July	2013	Ed	Orion-MPCV (NASA)	Atlas V	CST-100 Atlas V
Aug	2013	Jim A.	Dragon (SpaceX)	Delta IV heavy	Dragon Falcon 9
Jan	2014	Silvio	CST-100 (Boeing)	Falcon 9	Orion SLS
Feb	2014	Kevin	Dream Chaser (Sierra Nevada)	Liberty	Dream Chaser Atlas V
Oct	2014	Dave	New Shepard (Blue Origin)	SLS	
Nov	2014	Dean	Excalibur Almaz		
Apr	2015	Harry			
July	2015	Carol			
Sep	2015	Jim M.			
Oct	2015	Sophia			
Jun	2016	Phil			
Aug	2016	Judy			
		NASA goal			
		Boeing test flight			
		SpaceX test flight			

Potential Vehicles	Potential Rockets
Orion-MPCV (NASA)	Atlas V
Dragon (SpaceX)	Delta IV heavy
CST-100 (Boeing)	Falcon 9
Dream Chaser (Sierra Nevada)	Liberty
New Shepard (Blue Origin)	SLS
Excalibur Almaz	

Aug 2012 CCGap (Aug 2012 to Apr 2014)

Guess for when US astronauts traveling on a US vehicle retrieve the flag left by STS-135 on the ISS (7/8/2011-7/21/2011)

Prize: Dairy Queen treat of your choice



- 11/12/2015 Benjamin Reed who directs SpaceX's commercial crew program said they intend to launch test flight of Dragon by end of 2016 and they are targeting March 2017 for 1st crewed flight
- Boeing VP John Mulholland says they plan to conduct both its test flight and 1st crewed flight of Starliner in 2017
- In September 2014 final phase of NASA commercial crew program (CCCap) funded \$4.2 billion for Boeing and \$2.6 billion for SpaceX to accomplish interim milestones and 2-6 missions to ISS with a crew of 4
- 6/20/2015 NASA only gets \$900M rather than \$1.244B for CC in 2016. Congress cites delays like SpaceX CDR from Jun to Dec 2015, uncrewed flight test Mar to Nov 2016, NASA said still on schedule for Sep 2017 certification
- 1/26/2015 NASA CCGap press conference where Boeing announced pad abort Feb 2017, uncrewed test Apr 2017, crewed test Jul 2017; SpaceX pad abort Mar 2015, in-flight abort late 2015, uncrewed late 2016, crewed early 2017
- 8/1/2014 CCGap extended to March 2015; Boeing completed 18 of 20 milestones, scheduled to complete later summer Critical Design Review & Phase 2 Spacecraft Safety review, ULA ready to break ground Sept 2014 on Launch Complex 41 to CST-100
- SpaceX has completed 13 of 18 milestones, given more time from Aug 2014 in flight abort test & pad abort
- Sierra Nevada granted extension to March 2015 as well so they can complete 2nd unmanned flight test (10 of 13 complete)
- SpaceX has fallen behind on milestone 13 Integrated Critical Design Review, now splitting into 4 separate parts, A done Dragon primary structure integrity
- SpaceX planned 24 Falcon9 flight through 2013 but only flew 7; has only flown 3 times in 2014, has 12 scheduled in 2014
- has 3 CRS cargo missions but 77% into contract period but extended from 2015 to 2017 end date, of 20mt only 15% or 6,676# in orbit, 36799# left next round of CCGap expected by Sept 2014
- SpaceX milestone 11 pad abort test & milestones 13B (Ground Sys Crit Des,C (Crew Vehicle Tech Inter Meet) and D (Delta Crew Vehicle Crit Des Review) by end of 2014, milestone 14 in flight abort test will be March 2015
- 6/1/2014 Elon Musk says Dragon will fly in space in late 2015 and a crewed mission in 2016, 1 year earlier than NASA says it needs it (Dec 2017); NASA to award final Com Crew in Aug/Sep 2014; he said manned Dragon design 50% complete (\$800-518 total cost and half complete); pad abort test schedule for Q2 2014 and in flight abort test for Q3 2014
- 6/4/2014 Garrett Reisman says Dec 2016 test flight will have NASA astronaut on it; with success next flight will be USCV-1 (US Crew Vehicle) & dock to ISS on Dec 7, 2017 with 4 NASA astronauts
- 5/1/2014 Chris Ferguson of Boeing says CST-100 to fly unmanned 1st in Jan 2017 and then 2 man crew end of Summer 2017, both possible dock to ISS
- 1/23/2014 Sierra Nevada announces 1st Dream Chaser launch in Nov 2016 on Atlas V with a 2nd manned launch in 2017 whether NASA funds or not
- 12/11/2013 Spacecraft status [http://www.americaspace.com/?page\\_id=41589](http://www.americaspace.com/?page_id=41589)
- 7/2/2013 NASA goal flight to ISS in November 2017, 2 yrs later than originally planned
- Boeing, with CST-100, aims to demonstrate 7 person capsule on 3 day manned orbital test in 2016; more than third of way thru 13 2013 CCGap milestones that lead to CDR in April 2014 (19 milestones)
- July 2013 conduct test of orbital maneuvering thrusters, Aug 2013 support module propulsion CDR, Sep 2013 CDR of spacecraft primary structure, flight design hardware by end of 2013
- SpaceX pad abort test in Dec 2013, test flight to ISS with non-NASA crew in mid-2015
- integrated CDR for entire vehicle in Mar 2014, with in-flight abort test in Apr 2014
- 5/14/2013 New date because commercial crew underfunded is Nov 30, 2017, called USCV-1 (US Crew Vehicle)
- 3 companies will fly earlier with non-NASA personnel, Boeing & Sierra Nevada in 2016, SpaceX possibly in 2015
- 1/9/2013 Reisman of SpaceX says they will send test pilots to ISS at the end of 2015
- Boeing said they will launch a crewed flight in 2016
- 9/18/2012 Garrett Reisman Com Crew Proj Man SpaceX "This is all leading to a plan that gets us to a flight to the ISS with people on board by the end of 2015
- 9/10/2012 CCGap program goes from Aug 2012 to Apr 2014 (21 months)
- Boeing & SpaceX full support (\$460M & \$440M), Sierra Nevada half (\$212.5M)
- 1st crew mission guess by companies, SpaceX mid 2015, Boeing end of 2016
- not necessarily a mission to ISS to satisfy the contest