

# *SpaceX Moon & Mars Rocket*

*...and material science*

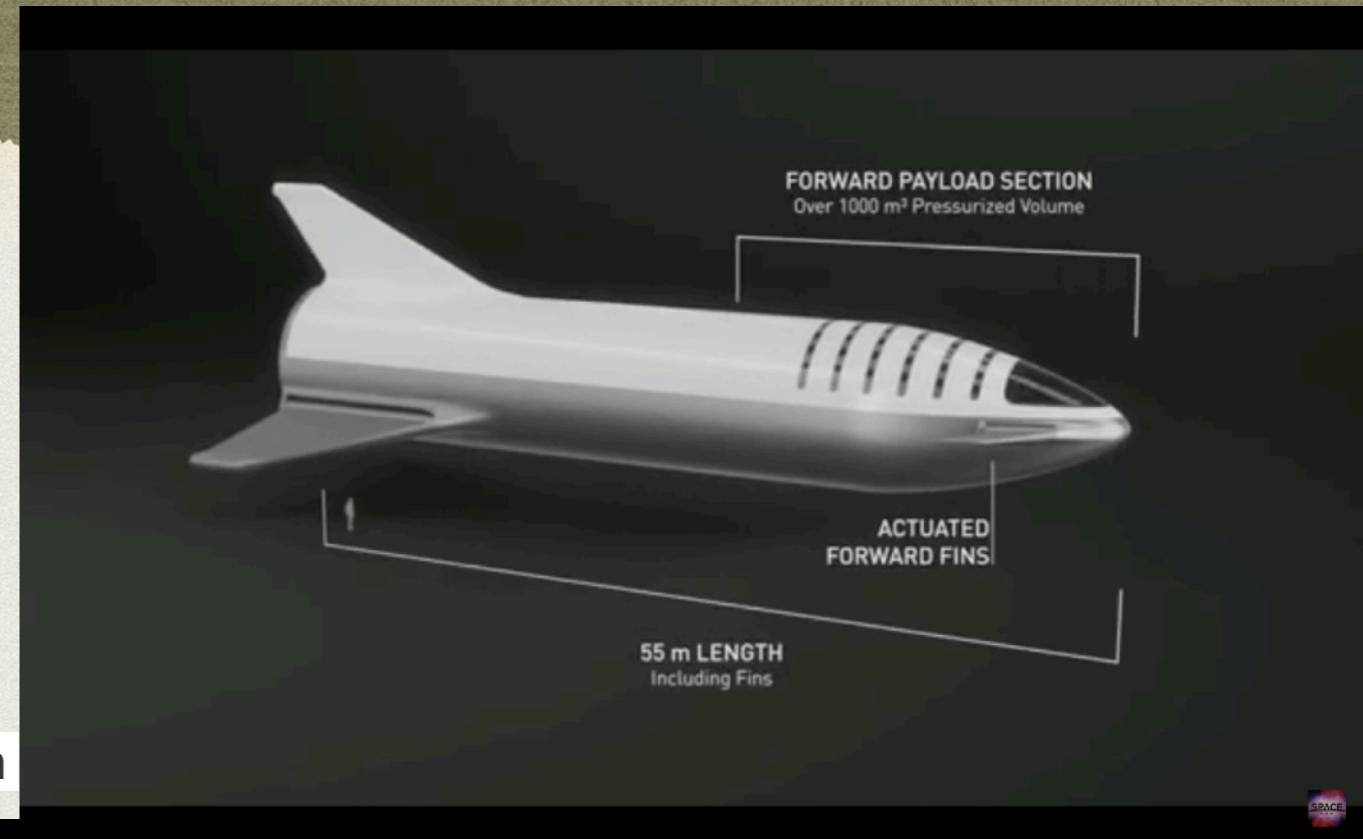
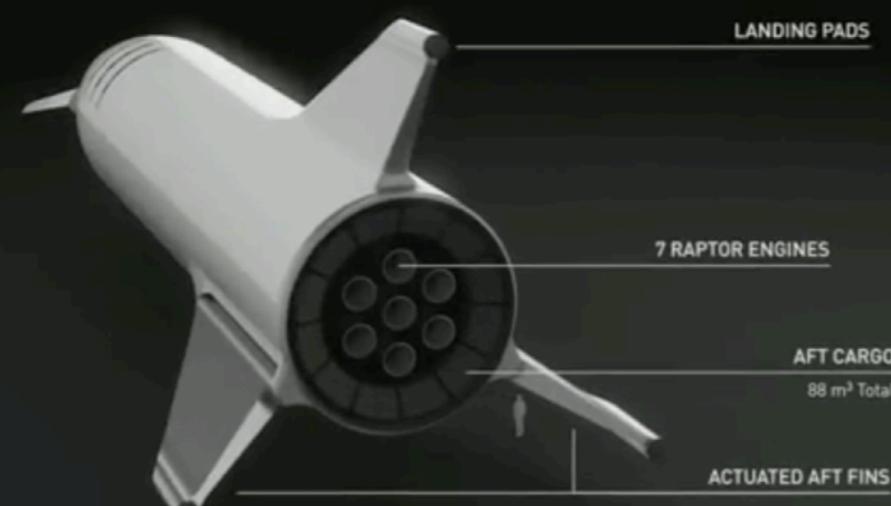


The Big Falcon Rocket (BFR)  
All photos/drawings are provided by SpaceX

# BFR FACTS

BFR is designed to be a 39-story launch system made of two parts:

- a 180-foot-tall spaceship, from tip to tail, and
  - a 230-foot-tall rocket booster
- BFR development program could cost about \$US5 billion



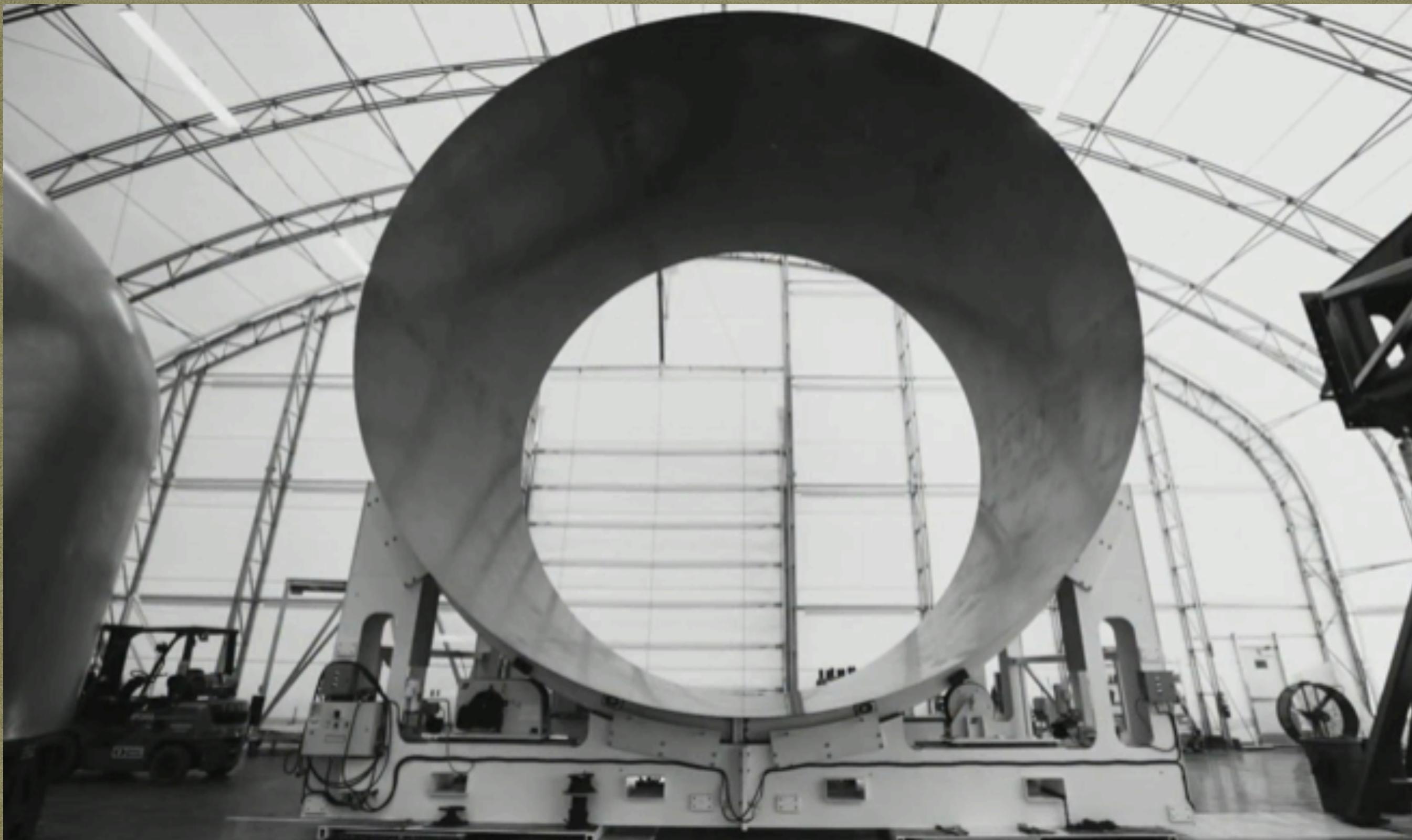
- Vision is to launch the spaceship into orbit and refuel it while it circles Earth
- Then the ship can fire up its engines, fly through space and land on Mars
- then take off again and return to Earth
- 
- It is designed to be *100% reusable*



This is the outside of the cylindrical TOOL called “the mandrel.”  
*Robots wrap layer upon layer of carbon-fibre tape around the mandrel to form a 30-foot-wide  
“barrel section” of the spaceship.*



The outside of the mandrel.



*One barrel section* that's been cured and freed of the mandrel.

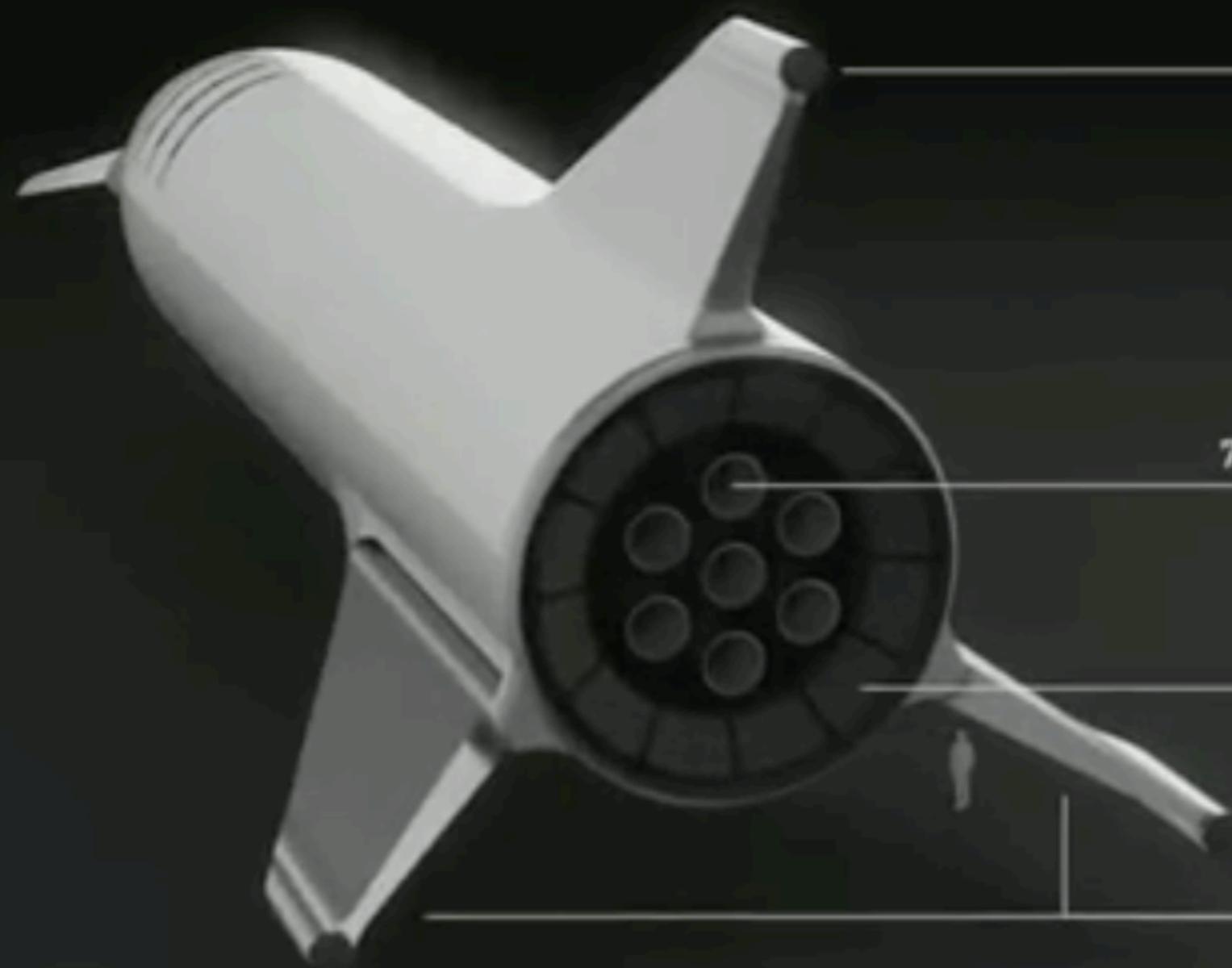
The rounded dome on the left is (supposedly) a part of a propellant tank also made of carbon-fibre composites.



Inside the *barrel section*



Elon Musk hosting the press conference Sept 17, 2018



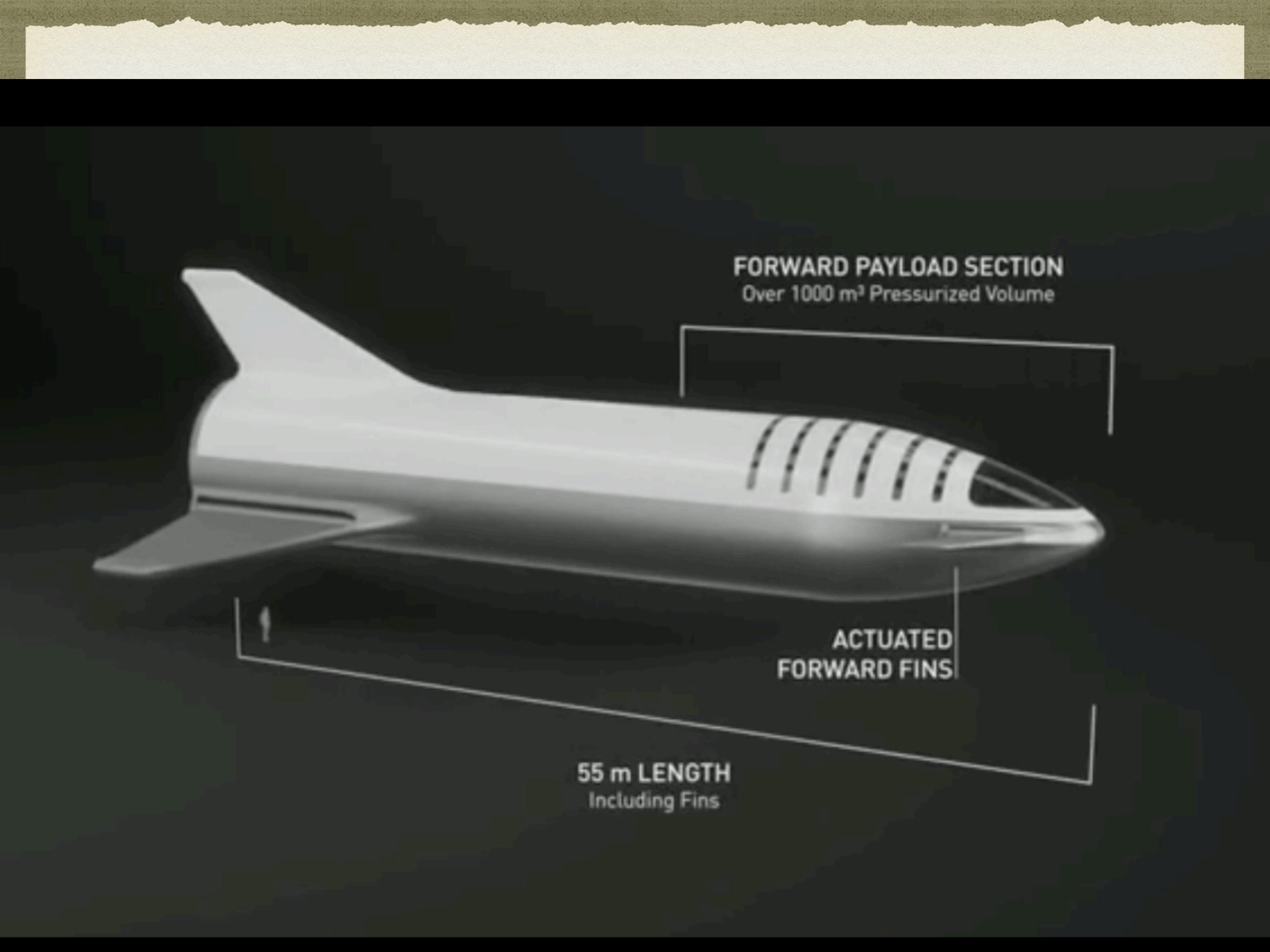
LANDING PADS

7 RAPTOR ENGINES

AFT CARGO

88 m<sup>3</sup> Total

ACTUATED AFT FINS



**FORWARD PAYLOAD SECTION**  
Over 1000 m<sup>3</sup> Pressurized Volume

ACTUATED  
FORWARD FINS

55 m LENGTH  
Including Fins

# *SpaceX Moon & Mars Rocket*

*...and material science*

Thank You!



Gary  
Oct. 4 -2018