EXPLORAÇÃO ESPACIAL

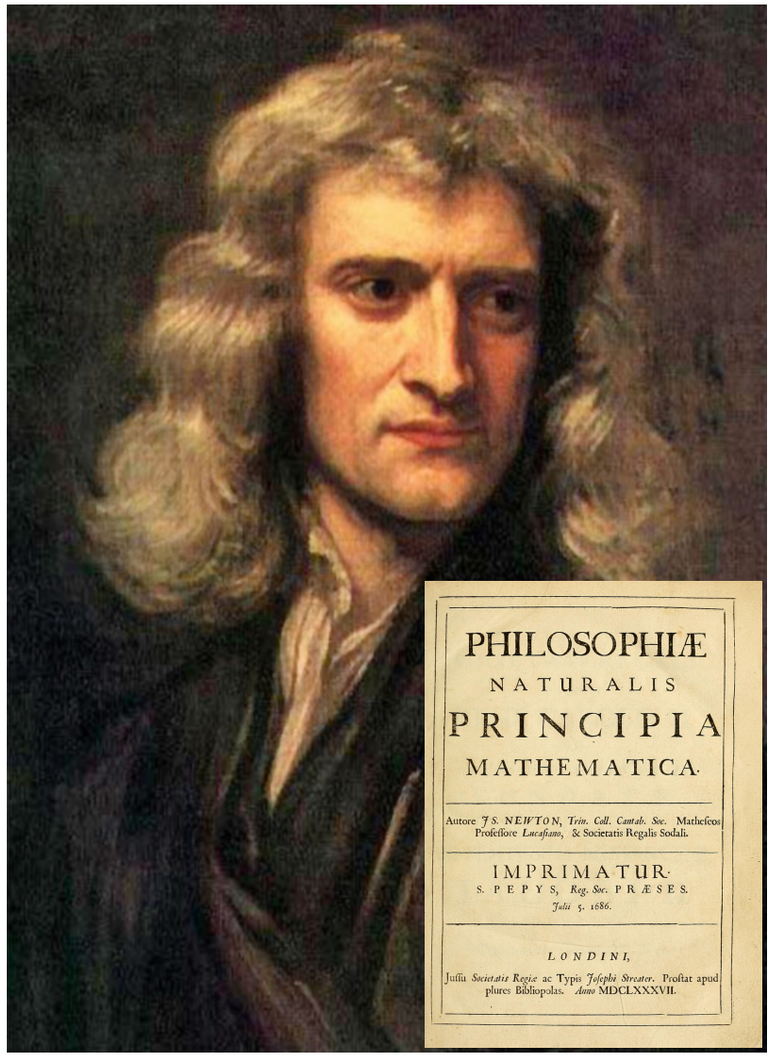
Laboratório de Criatividade e Inovação
Professora: Luísa Tavares
Aluno: Arthur Rodrigues Xavier da Silva
Matrícula: 20171106830
Turma: 1ENG32A

Como?

Galileo

telescópio

1610



Isaac Newton

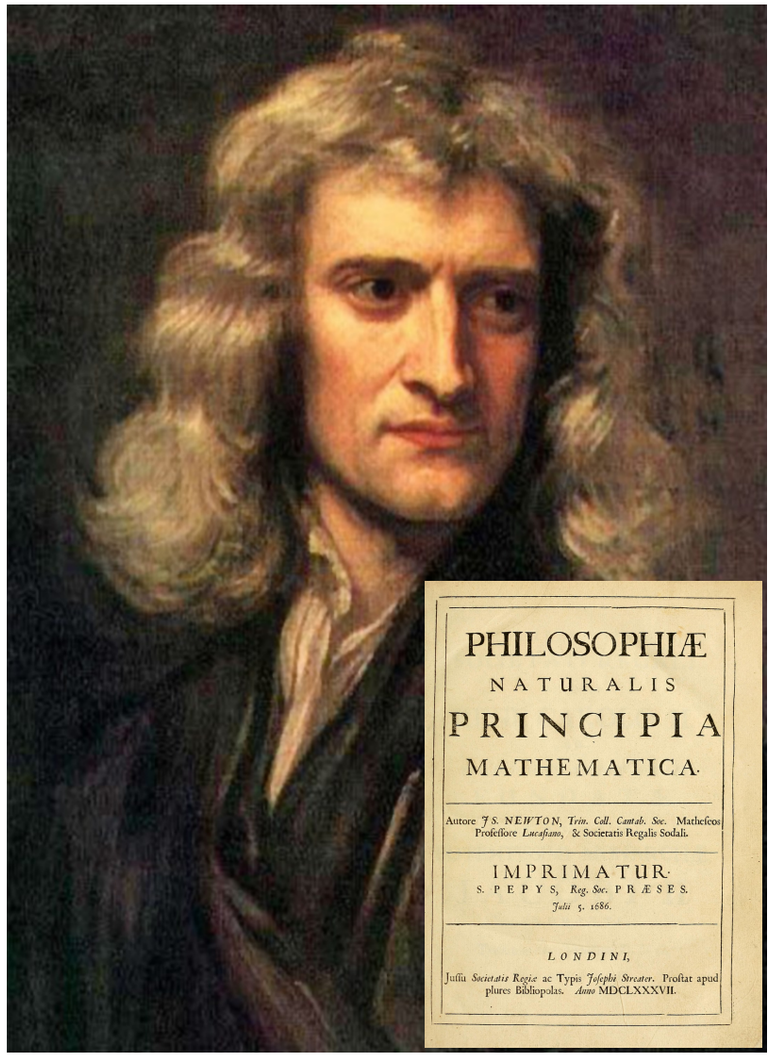
Philosophiæ Naturalis Principia Mathematica

1687

Wernher von Braun

V2

1933



PHILOSOPHIÆ
NATURALIS
PRINCIPIA
MATHEMATICA.

Autore *J. S. NEWTON, Trin. Coll. Cantab. Soc.* Matheseos Professore *Lucasiano*, & Societatis Regalis Sodali.

IMPRIMATUR.
S. PEPYS, *Reg. Soc.* PRÆSES.
Julii 5. 1686.

LONDINI,
Jussu *Societatis Regiæ* ac Typis *Josephi Streater*. Prostat apud plures Bibliopolas. *Anno* MDCLXXXVII.

Galileo
telescópio
1610
método

Isaac Newton
Philosophiæ Naturalis Principia Mathematica
1687
teoria

Wernher von Braun
V2
1933
prática

Galileo

telescópio

1610

método

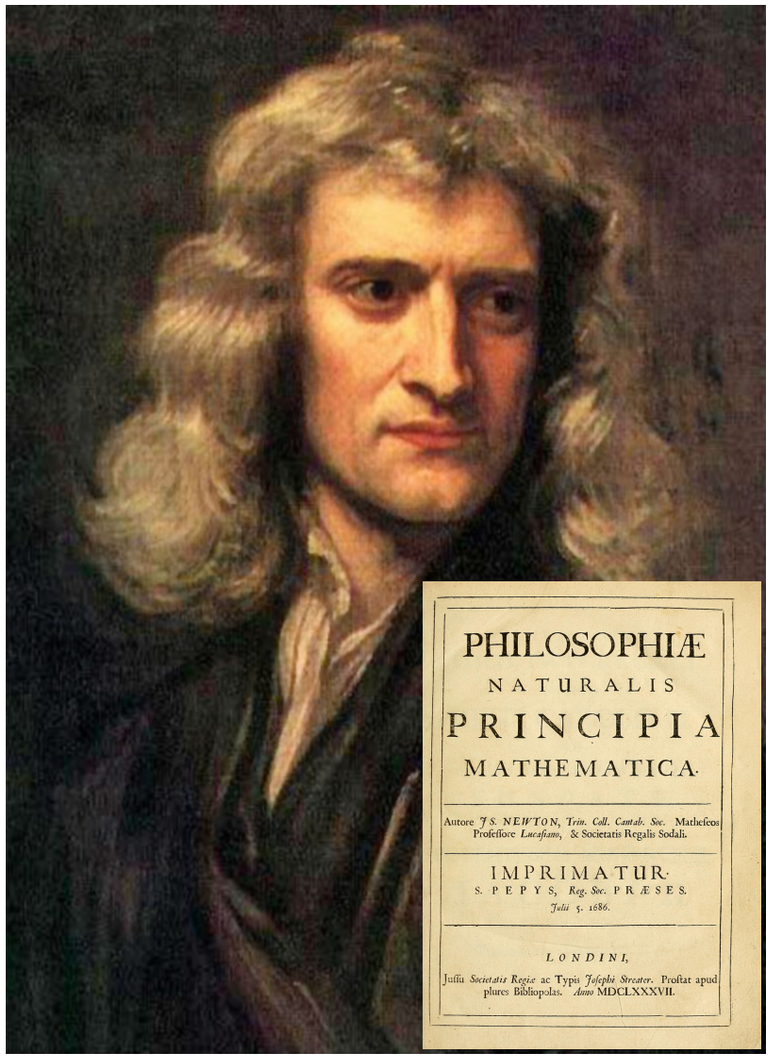
CANVAS

MIND MAP

BRAINSTORM

BENCHMARKING

DESIGN THINKING

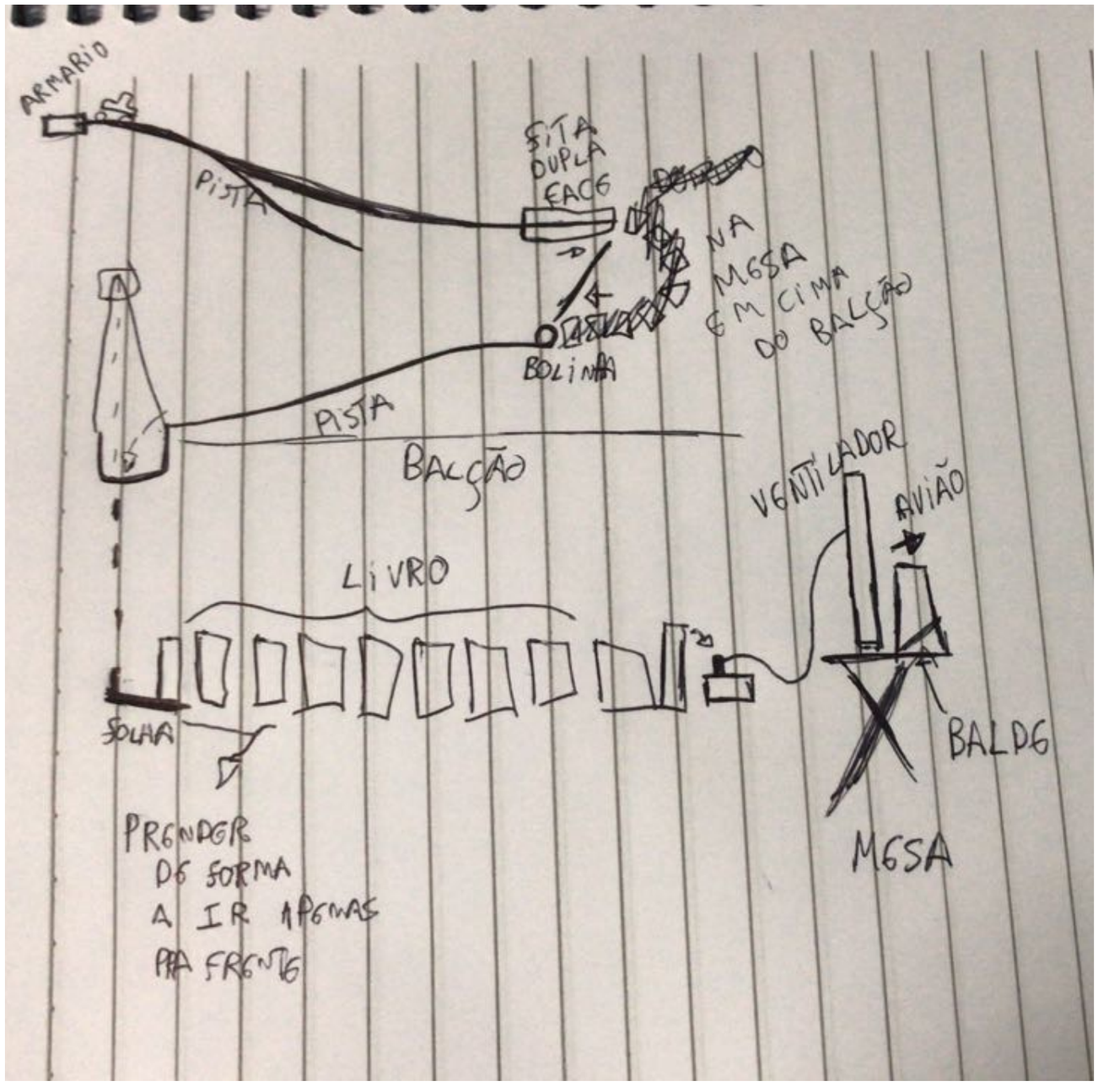


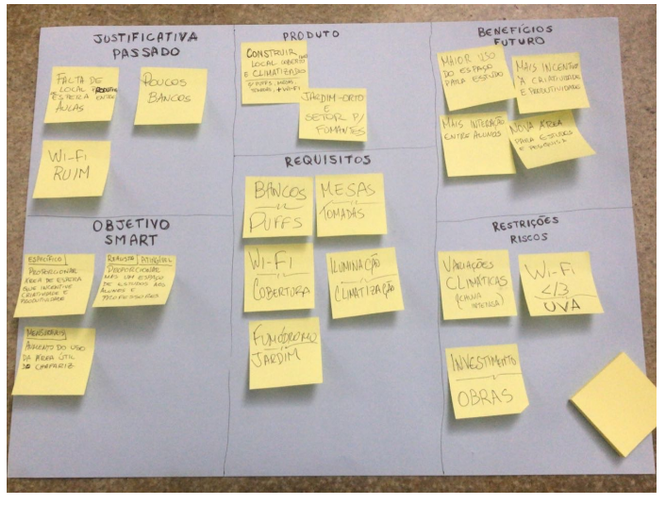
Isaac Newton

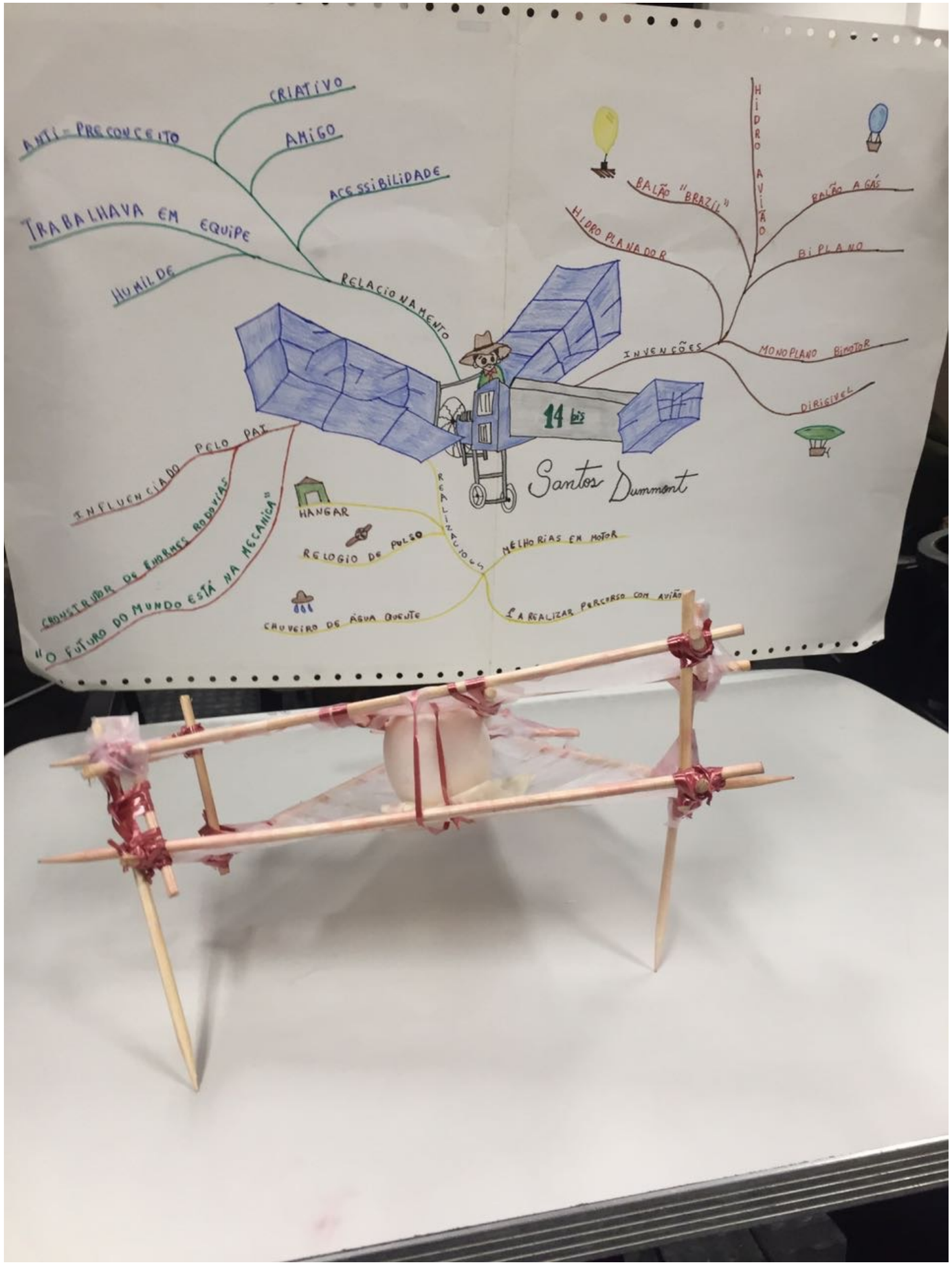
Philosophiæ Naturalis Principia Mathematica

1687

teoria







Wernher von Braun

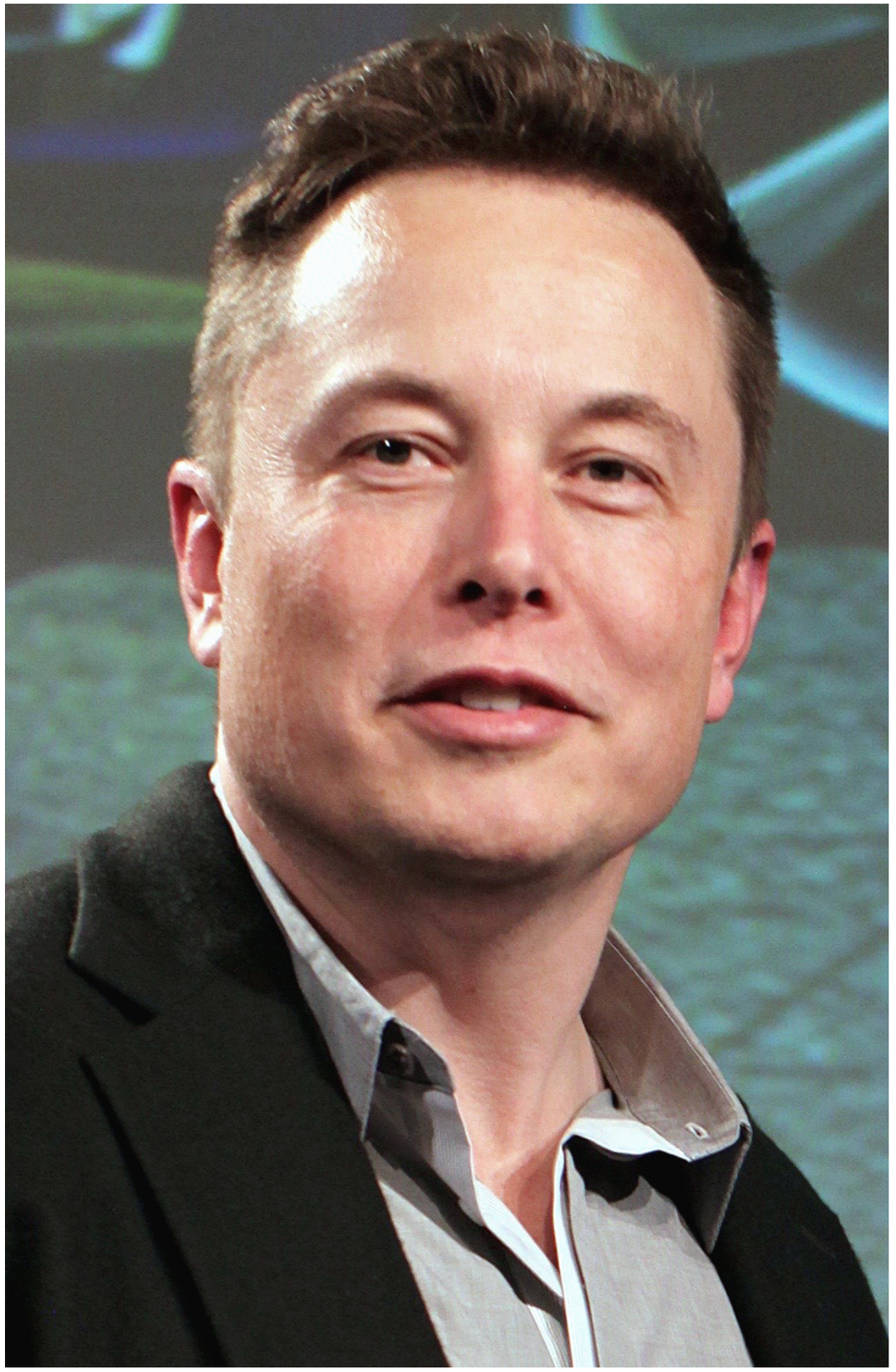
V2

1933

prática

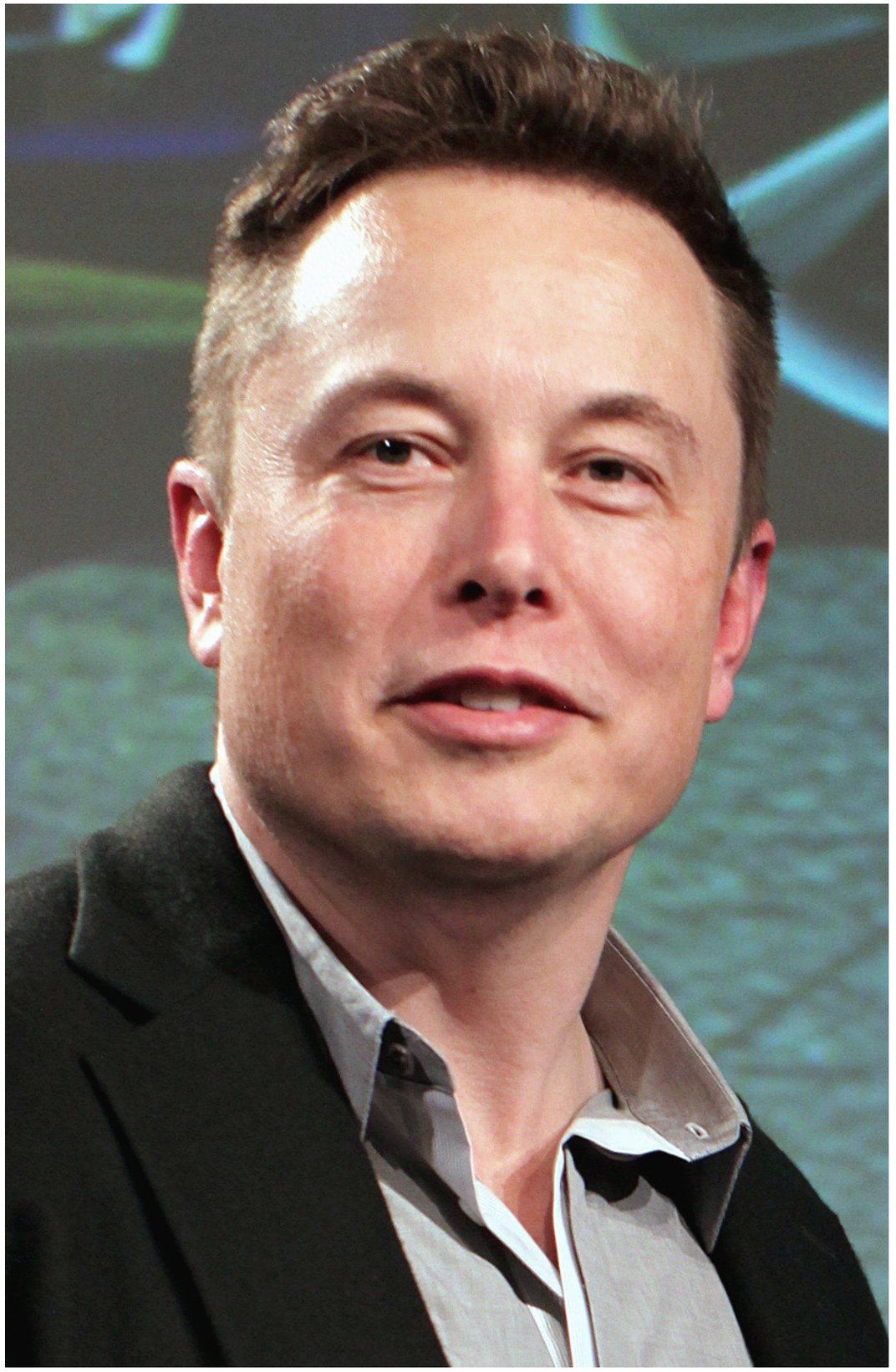
Elon Musk

Paypal
Tesla Motors
The Boring Company
SpaceX
Hyperloop
SolarCity



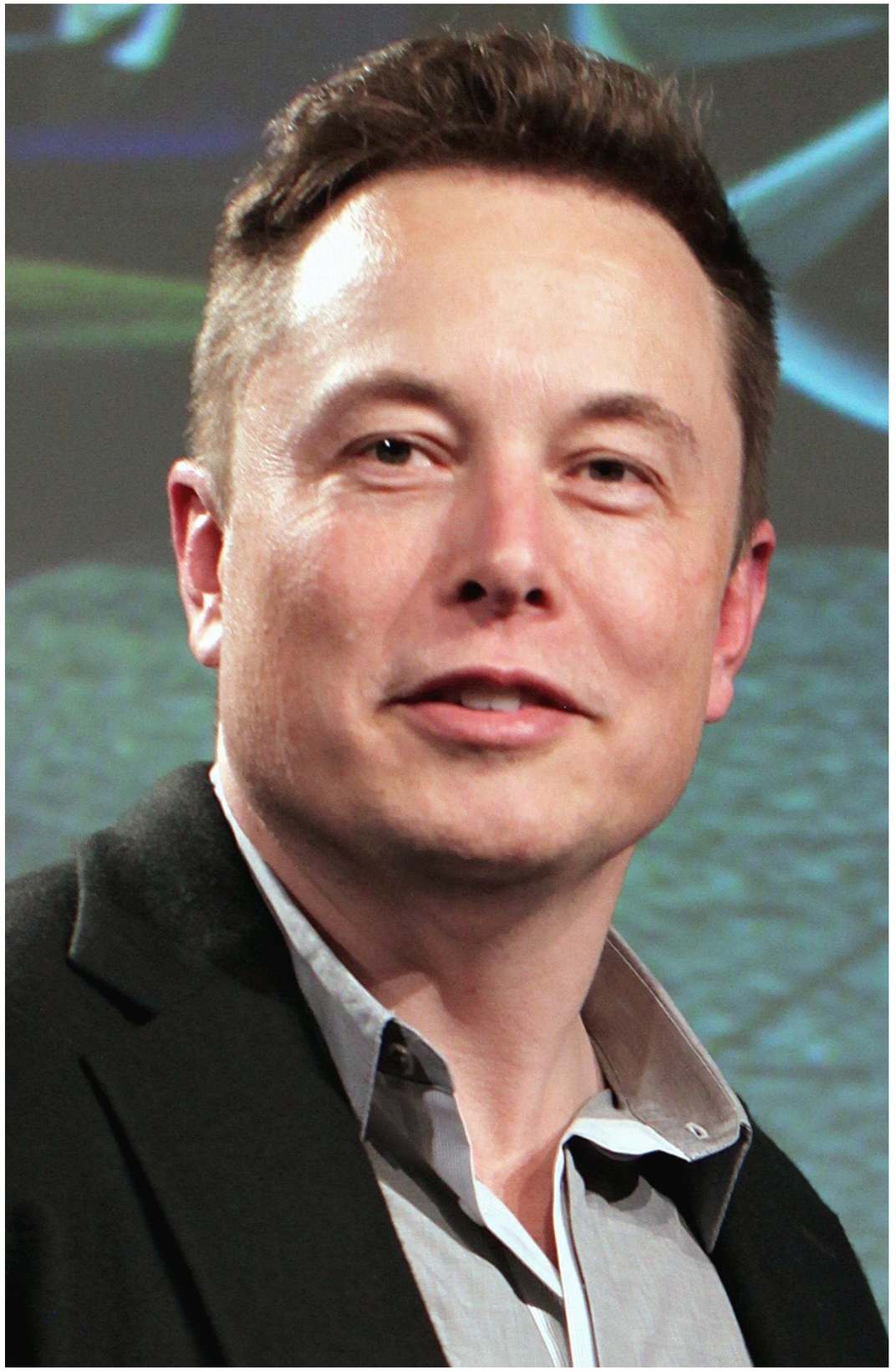
Elon Musk

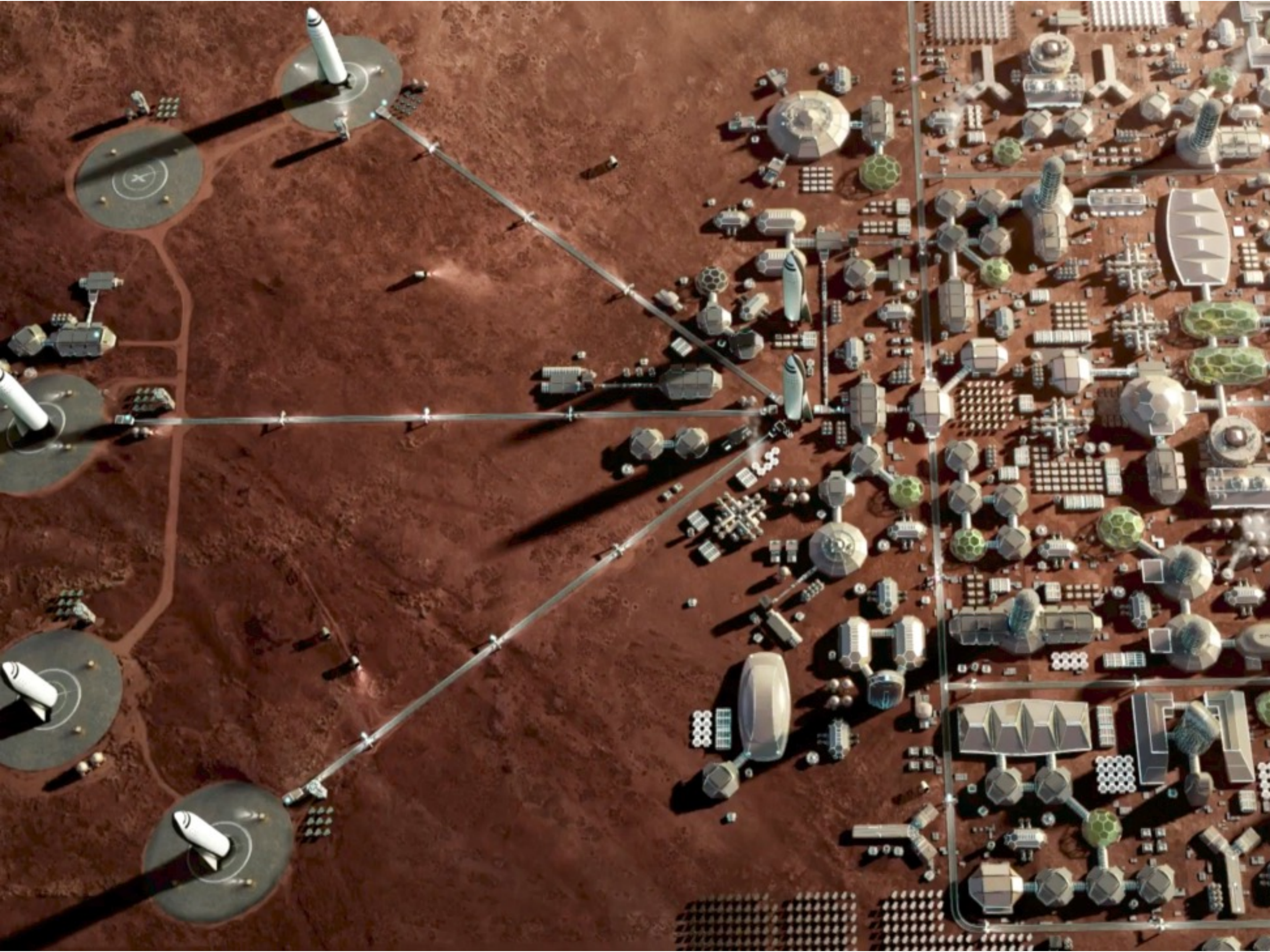
"Quando algo é importante o suficiente, faça mesmo que as chances não estejam a seu favor"



Elon Musk

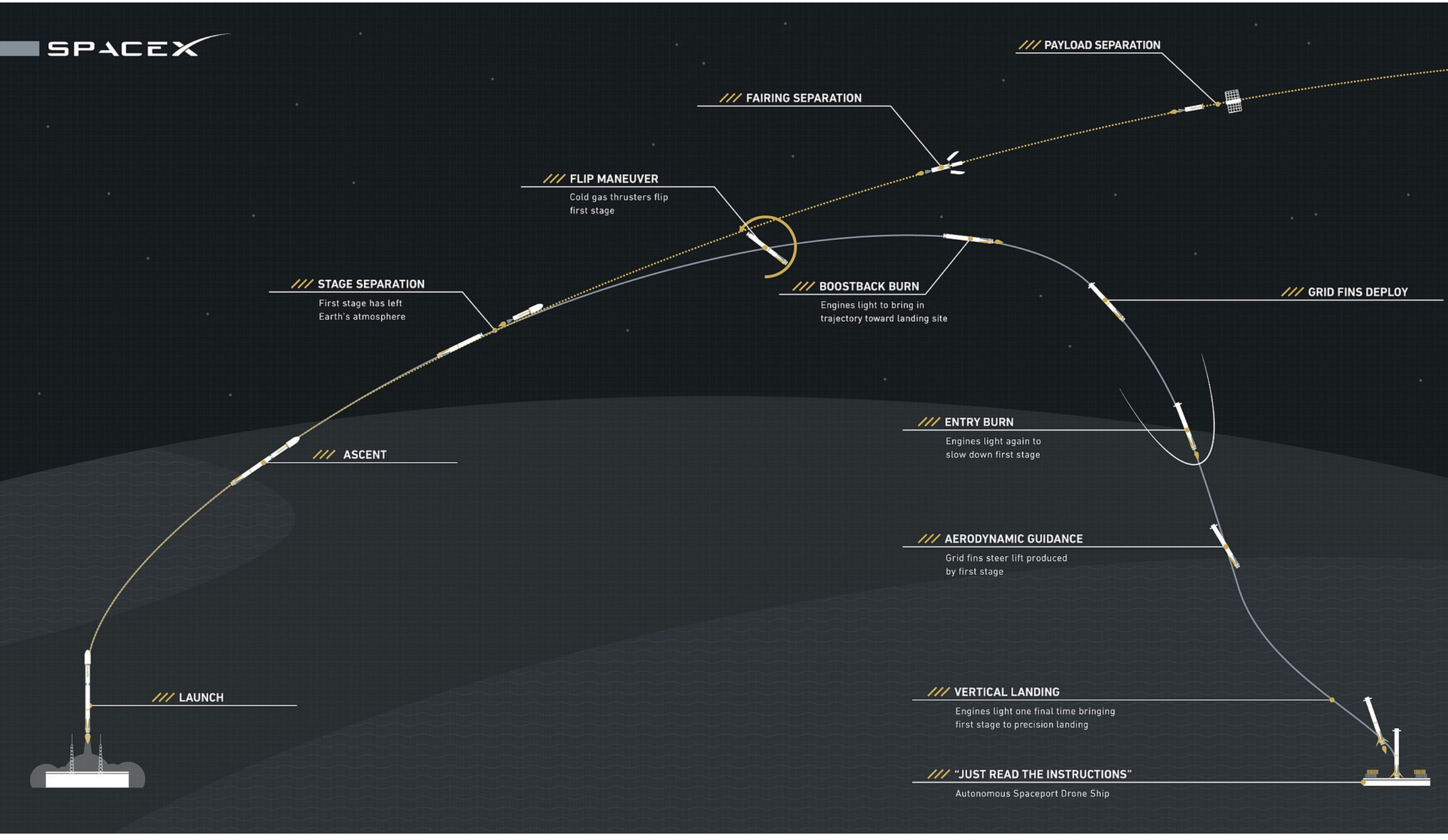
“Falhar é uma opção aqui. Se as coisas não estão falhando, você não está inovando o suficiente”

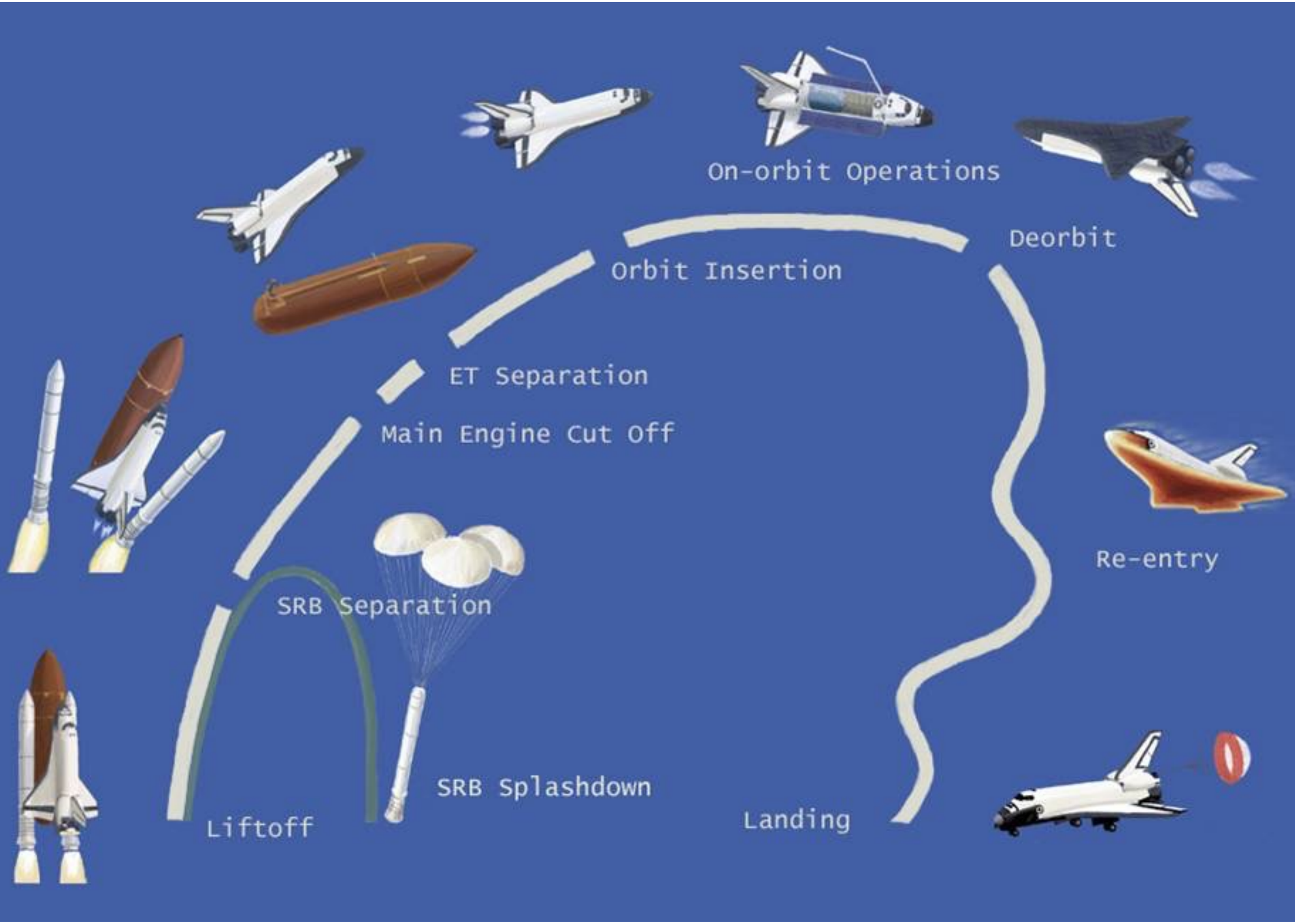




COMO?

SPACEX


PAYLOAD SEPARATION
FAIRING SEPARATION
FLIP MANEUVER
Cold gas thrusters flip first stage
STAGE SEPARATION
First stage has left Earth's atmosphere
BOOSTBACK BURN
Engines light to bring in trajectory toward landing site
GRID FINS DEPLOY
ENTRY BURN
Engines light again to slow down first stage
ASCENT
AERODYNAMIC GUIDANCE
Grid fins steer lift produced by first stage
LAUNCH
VERTICAL LANDING
Engines light one final time bringing first stage to precision landing
"JUST READ THE INSTRUCTIONS"
Autonomous Spaceport Drone Ship


On-orbit Operations
Deorbit
Orbit Insertion
ET Separation
Main Engine Cut Off
SRB Separation
Re-entry
SRB Splashdown
Liftoff
Landing

Elon Musk

“Persistência é muito importante. Você não deveria desistir a não ser que seja forçado a desistir.”

Steve Jobs

“Continue faminto,
continue tolo”