

COPENHAGEN SUBORBITALS

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The Manned Spica Mission

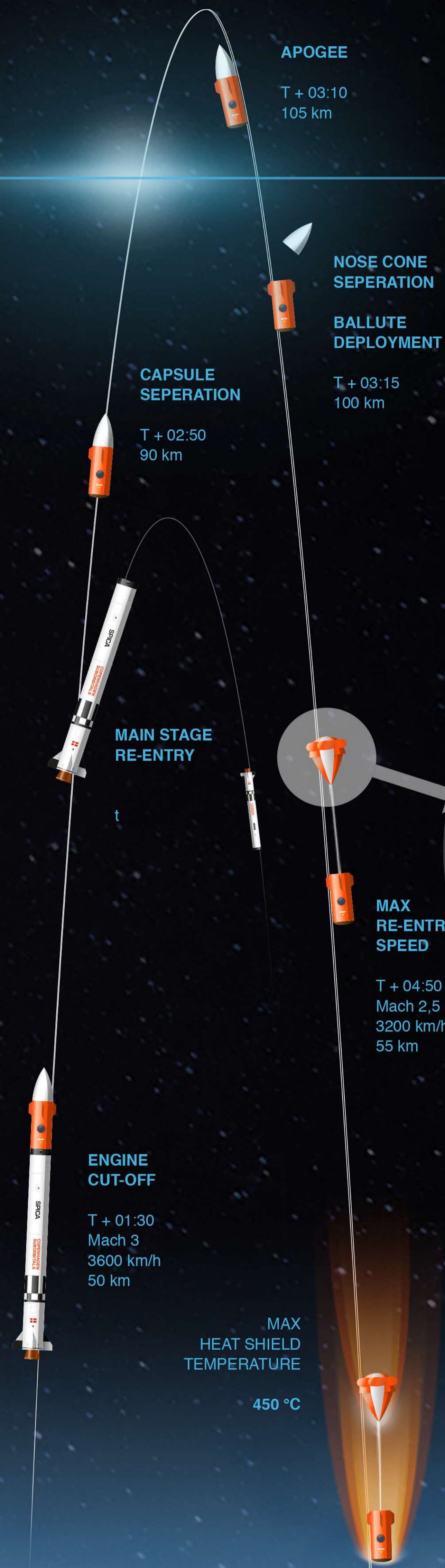
100 % crowd funded

100 km: Space

The Kármán line

We will fly a single astronaut to space in this capsule on the Spica rocket. Fuelled by liquid oxygen and ethanol, its BPM100 engine generates a thrust of 10 metric tons, enough to propel the capsule over the Kármán line at 100 km.

Guidance:	IMU based CSDuino platform
Control:	Gimbal vectoring
Engine:	BPM100
Fuel:	Ethanol
Oxidiser:	Liquid oxygen
Re-entry device:	Ballute
Recovery device:	Parachute
Diameter:	95 cm
Height with capsule:	14 m
Gross lift-off weight:	4000 kg



A ballute is a hybrid of a BALLoon and parachUTE (BALL-UTE). On deployment, air is let in through intakes and trapped in the body, expanding it like a balloon. Now forming a teardrop-shape, its drag both stabilizes and brakes the rocket when falling back to earth. On the Nexø rockets it also functions as the drogue chute, pulling the main parachute out at an altitude of 3,5 km.

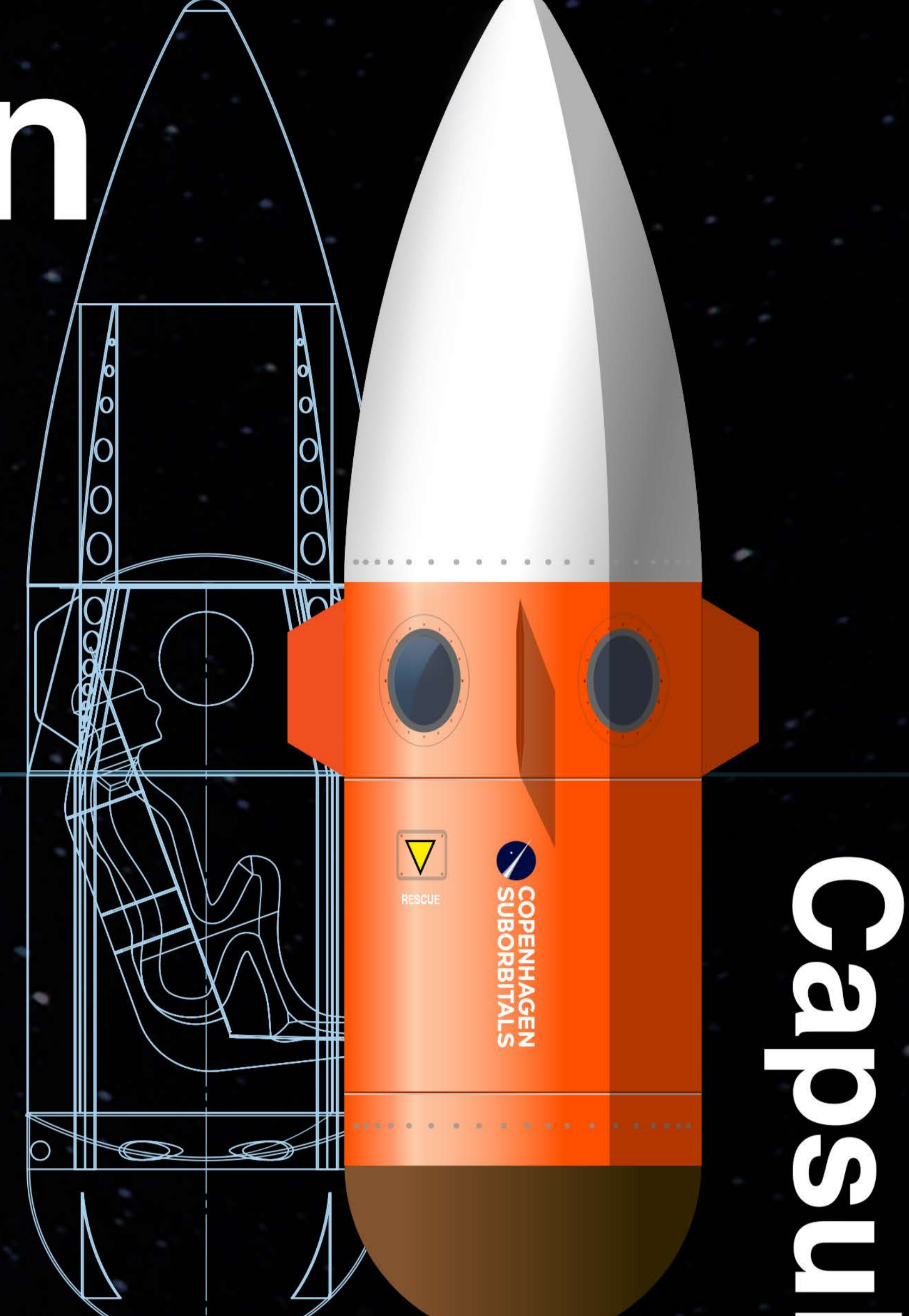
Lift-off

At T 0 the rocket engine will roar to life, lifting Spica away from Mobile Launch Platform Sputnik on a plume of fire and smoke. The automatic guidance system now controls the rocket and its flight.



Landing

At T + 17.10 the capsule gently lands in the Baltic Sea under it's parachutes, approximately 20 km from the launch platform. Thanks to its GPS transmitter, the capsule is located by search aircraft, and both capsule and astronaut are recovered by the support ships.



Capsule Rocket

