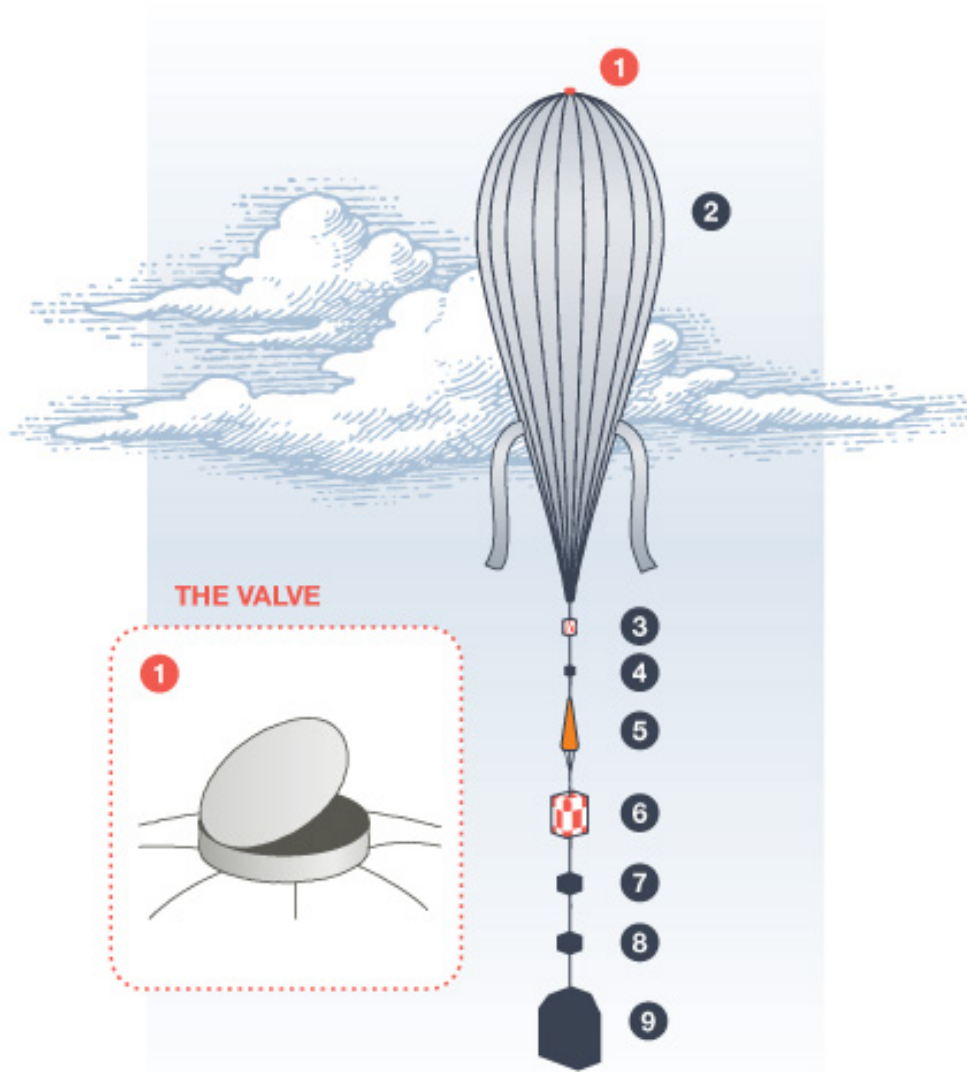
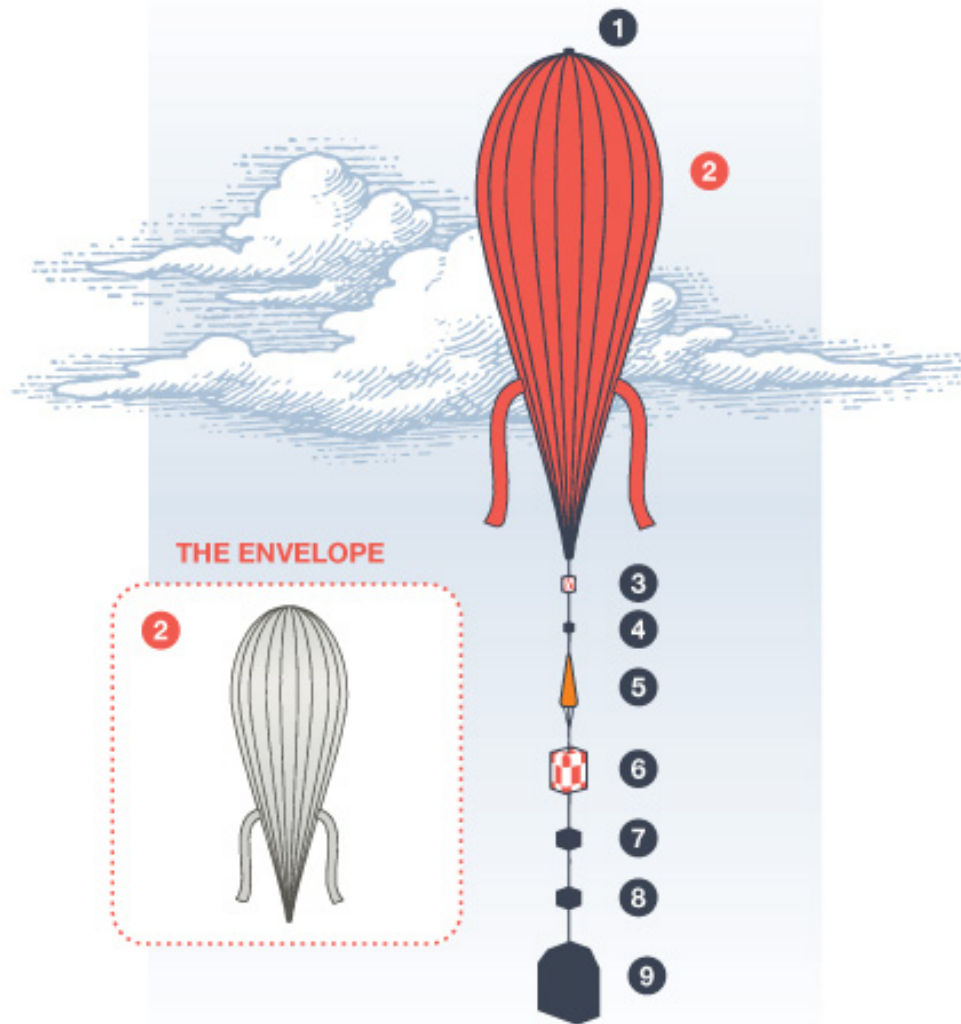


# Anatomy of a Stratospheric Balloon



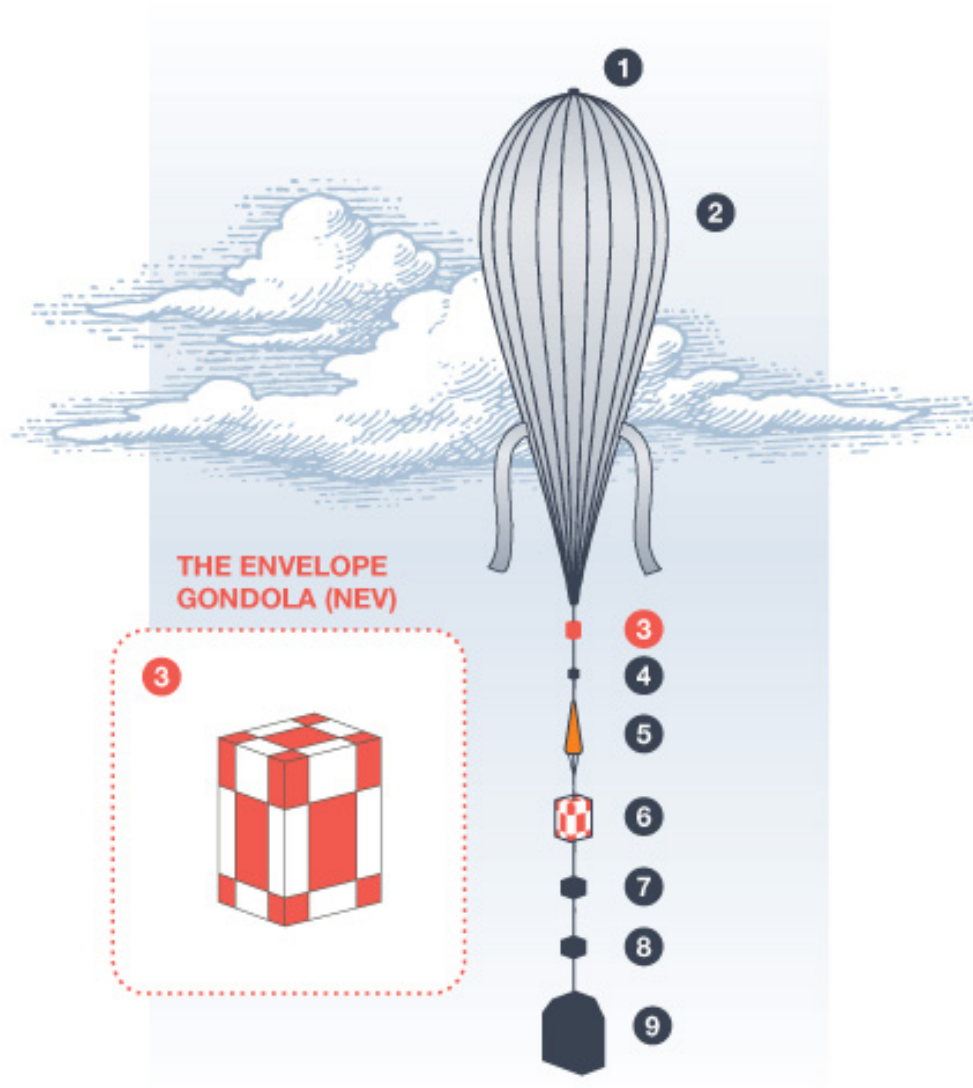
**The valve:** Located at the top of the envelope, it is used to control the altitude.

(Credit: Canadian Space Agency)



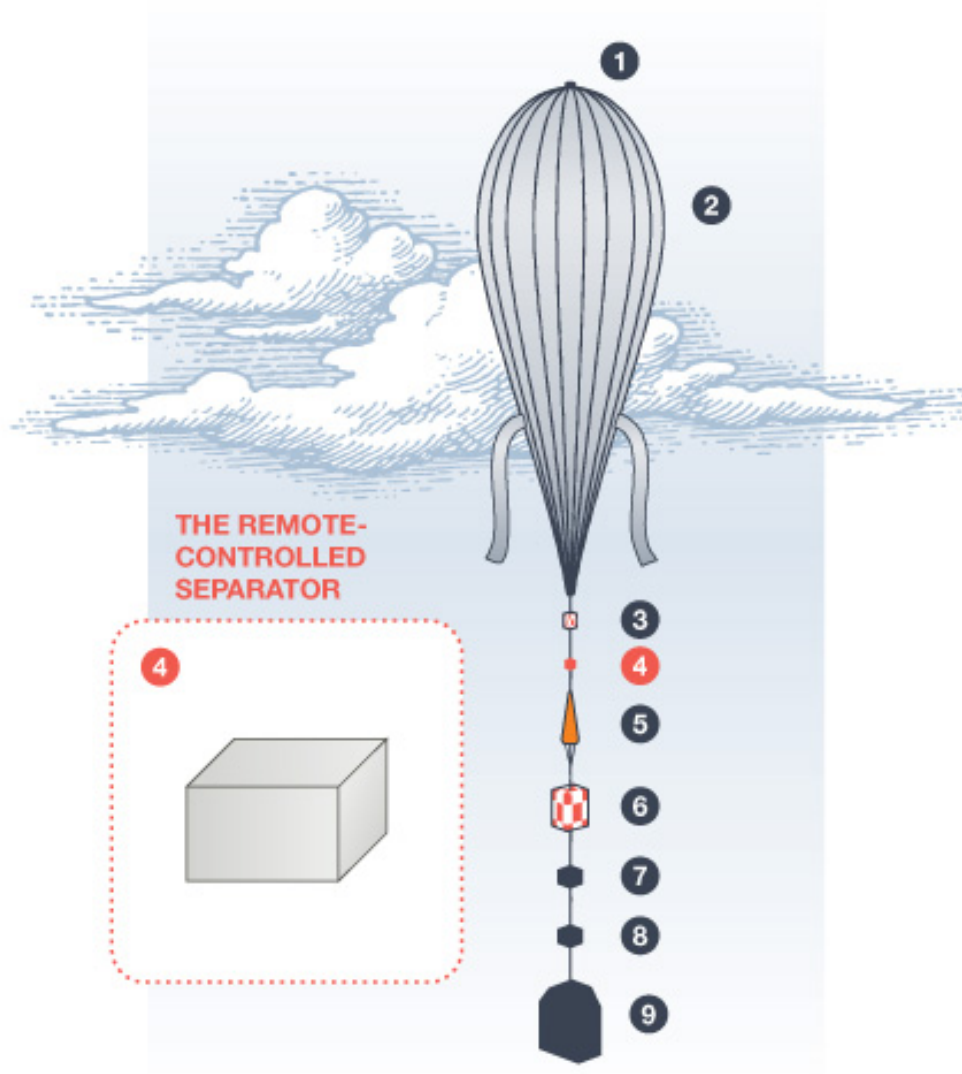
**The envelope:** At its ceiling altitude, the diameter of the envelope can be as wide as 120 meters (394 feet) for an estimated volume of 800,000 cubic meters (28,250,000 cu. ft.)

(Credit: Canadian Space Agency)



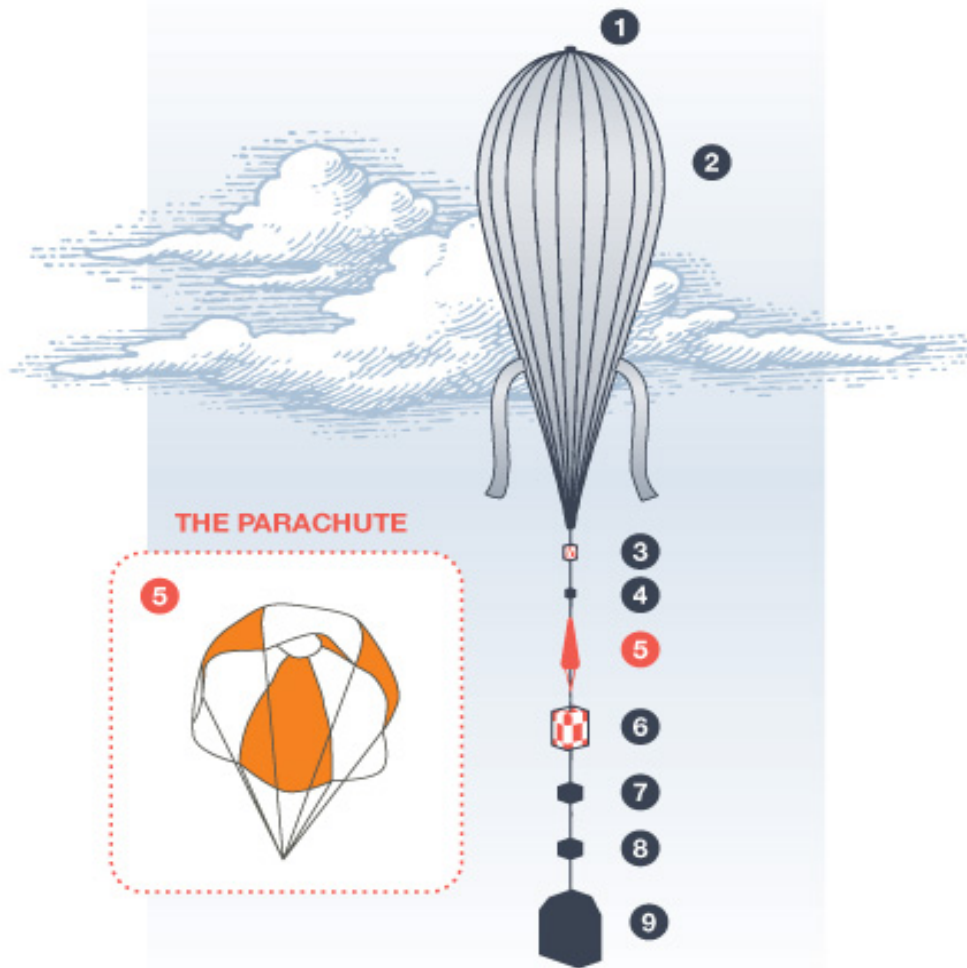
**The envelope gondola (NEV):** It contains a transponder, a GPS receiver and a beacon light. These items, required by air regulations, are used to locate the envelope at all times on its flight path, during ascent and descent.

(Credit: Canadian Space Agency)



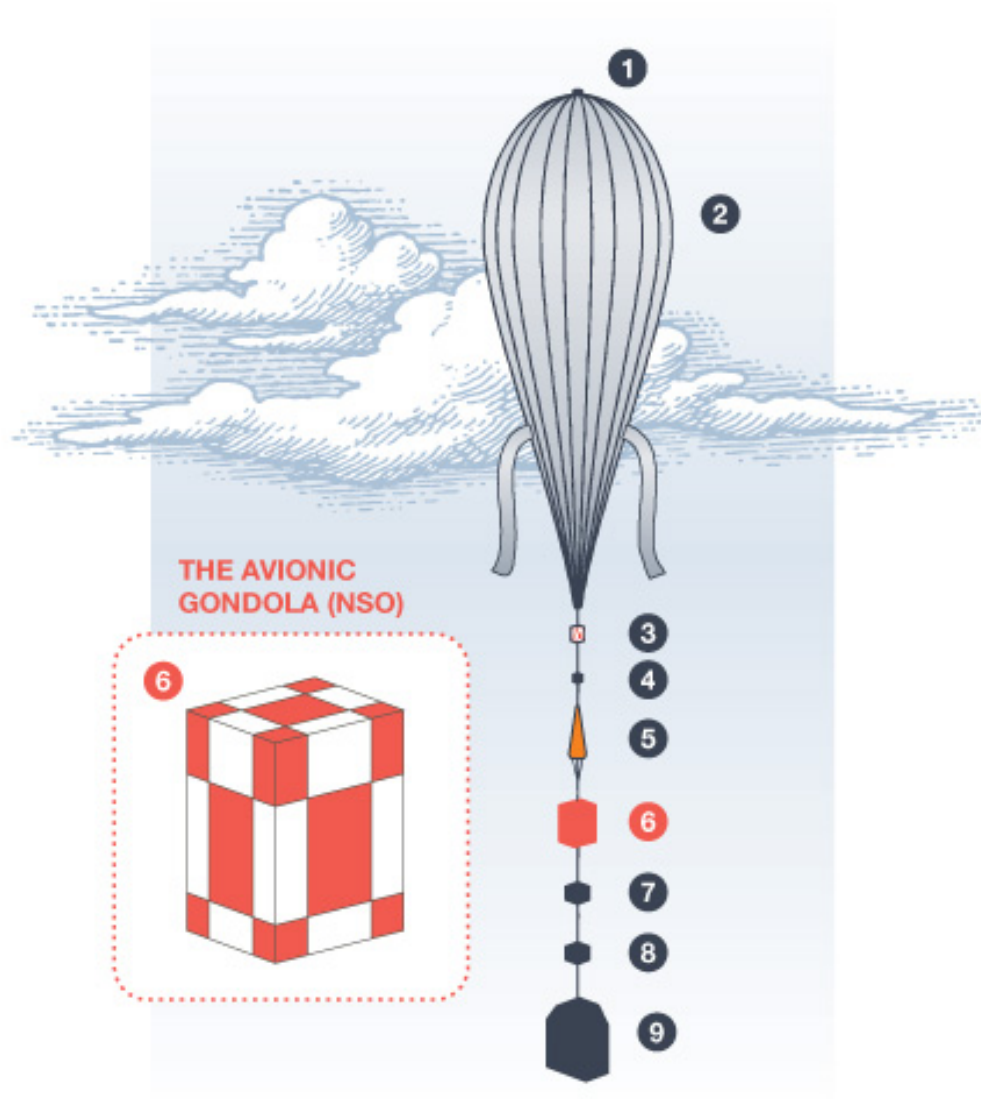
**The remote-controlled separator:** Commanded from the ground by the controller, it allows for the separation between the balloon and flight chain.

(Credit: Canadian Space Agency)



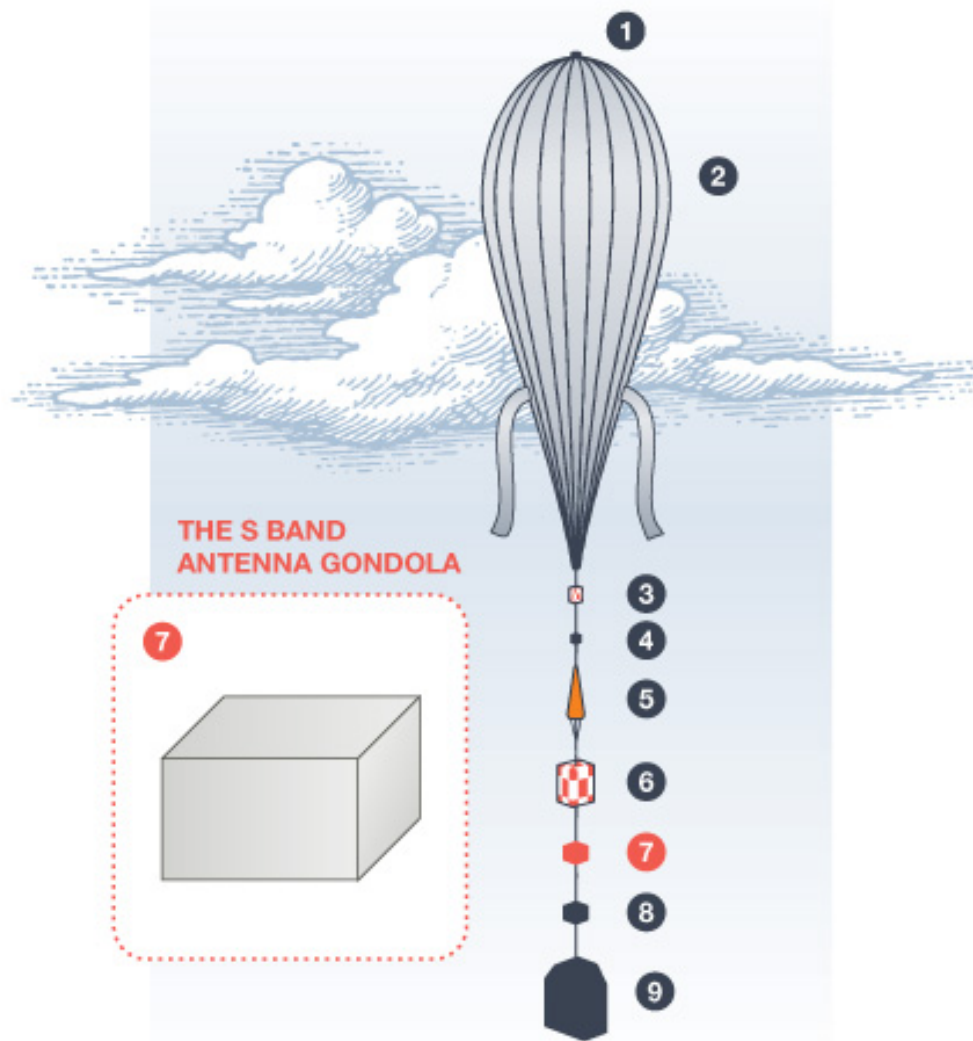
**The parachute:** With a length of 27 m (88.5 feet) when under tension in the flight chain, is used to bring the flight chain elements slowly down to the ground and thus avoiding breaking the flight hardware. Upon opening the parachute, the scientific gondola can undergo forces up to 10 g, i.e. ten (10) times Earth's gravitational acceleration.

(Credit: Canadian Space Agency)



**The avionic gondola (NSO):** At the heart of the flight chain, it receives and transmits data between the flight segment and the ground segment and controls the balloon in flight. Also included in the NSO are the flight avionics such as the flight computers, the transponder and the ballast.

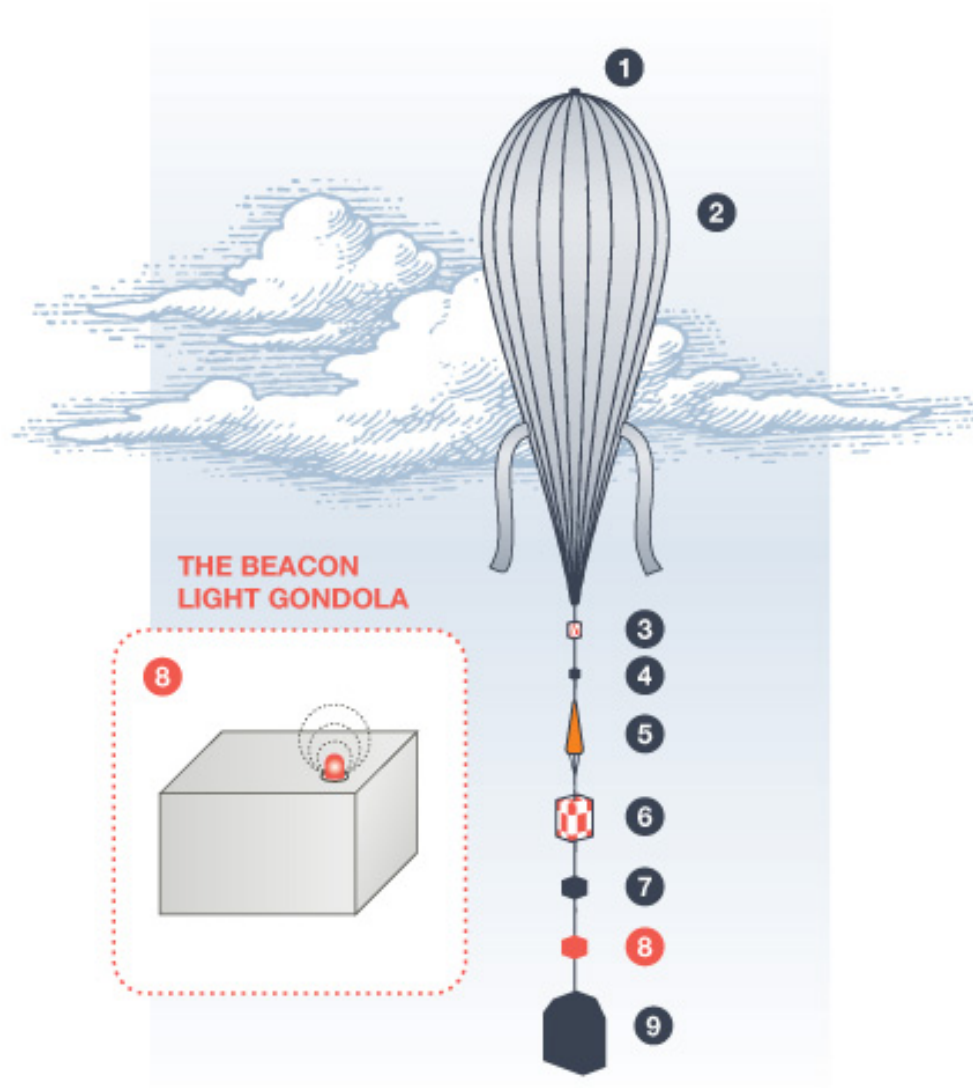
(Credit: Canadian Space Agency)



**The S band antenna gondola:** It is the radio link between the avionics gondola and the ground.

(Credit: Canadian Space Agency)

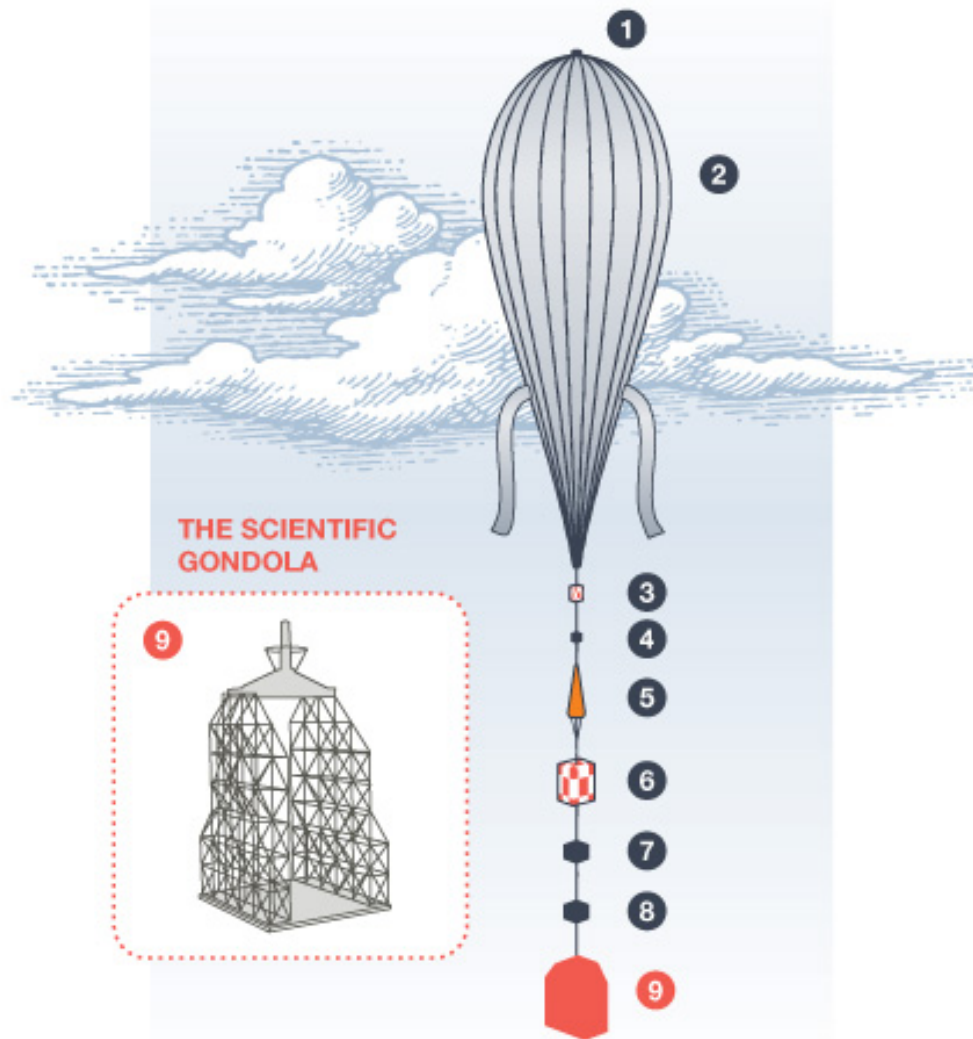




**The beacon light gondola:** It controls the beacon light to ensure that the balloon remains visible during night flights.

(Credit: Canadian Space Agency)





**THE SCIENTIFIC GONDOLA**

**The scientific gondola:** Can weigh up to 1,100 kg (2,425 lbs) and consists of, among other things, an on-board computer, a power and heat control system, a motor and an attitude control as well as one or several scientific instruments.

(Credit: Canadian Space Agency)