IOP Institute of Physics

University of BRISTOL

UKSEDS
UK STUDENTS FOR THE EXPLORATION AND DEVELOPMENT OF SPACE

PHOENIX
SPECIALIST PRODUCTS

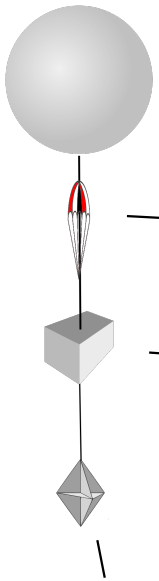
SPIRIT CIRCUITS
Service beyond expectation

High-altitude balloon launch

Mission profile

Advances in digital photography and microcontroller technology have made it more easy than ever for citizen scientists to launch payloads into near-space, capture high quality footage, and recover it quickly. Our goal is to take video and still footage from an altitude of at least 30 km.

Balloon setup



Helium balloon
Lifts 1 kg to around 33 km altitude

Parachute
Used for a safe and gentle landing

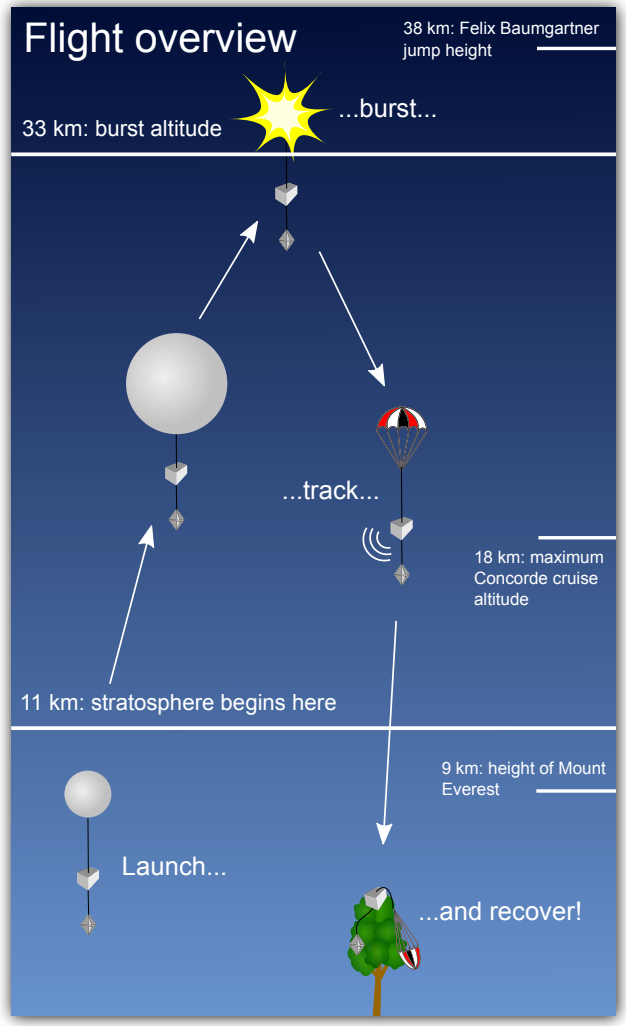
Payload
Contains a GPS receiver, along with a radio transmitter and GSM modem for communicating the location of the balloon and other data

Radar reflector
Allows pilots to detect the balloon and avoid it

Equipment on board

Go-Pro HD video camera, point-and-shoot digital camera with intervalometer, barometer, inertial measurement unit, radio transmitter, GPS receiver, GSM modem and mbed flight computer

Flight overview



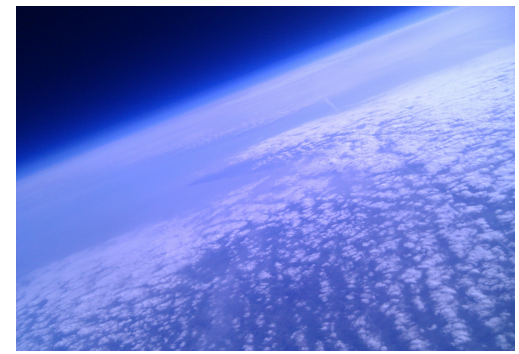


Photo courtesy of Cambridge University Space Flight

Flight checklist

- ☑ Constructed payload and radar reflector
- ☑ Tested sensors and radio/GSM/GPS
- ☑ Found launch site and gained permission from the Civil Aviation Authority
- ☑ Acquired balloon and helium
- ☑ Set date: 7th/8th June (weather permitting)
- ☐ Launched!

Launch location: Defford

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