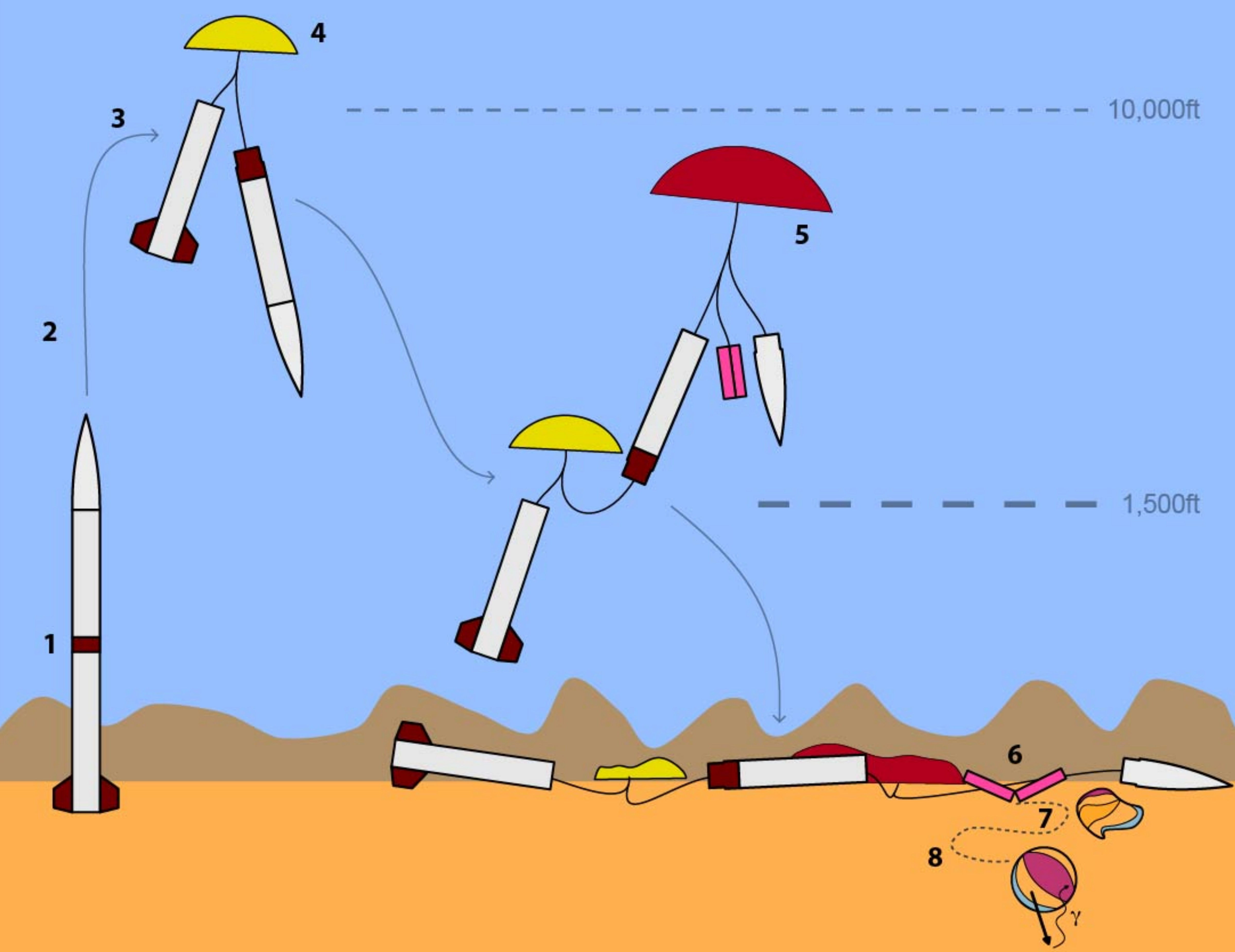EXPERIMENTAL SOUNDING ROCKET ASSOCIATION
ESRA

IREC 2017

CONCEPT OF OPERATIONS

10,000ft

1,500ft

1 – Launch
2 – Ascent
3 – Apogee

4 – Drogue parachute deploys at apogee
5 – Main parachute deploys at 1500ft
6 – Raziel lands gently on the ground, shortly after payload sabot deploys

7 – Beach ball inflates
8 – XRF sensor analyzes soil for heavy metals
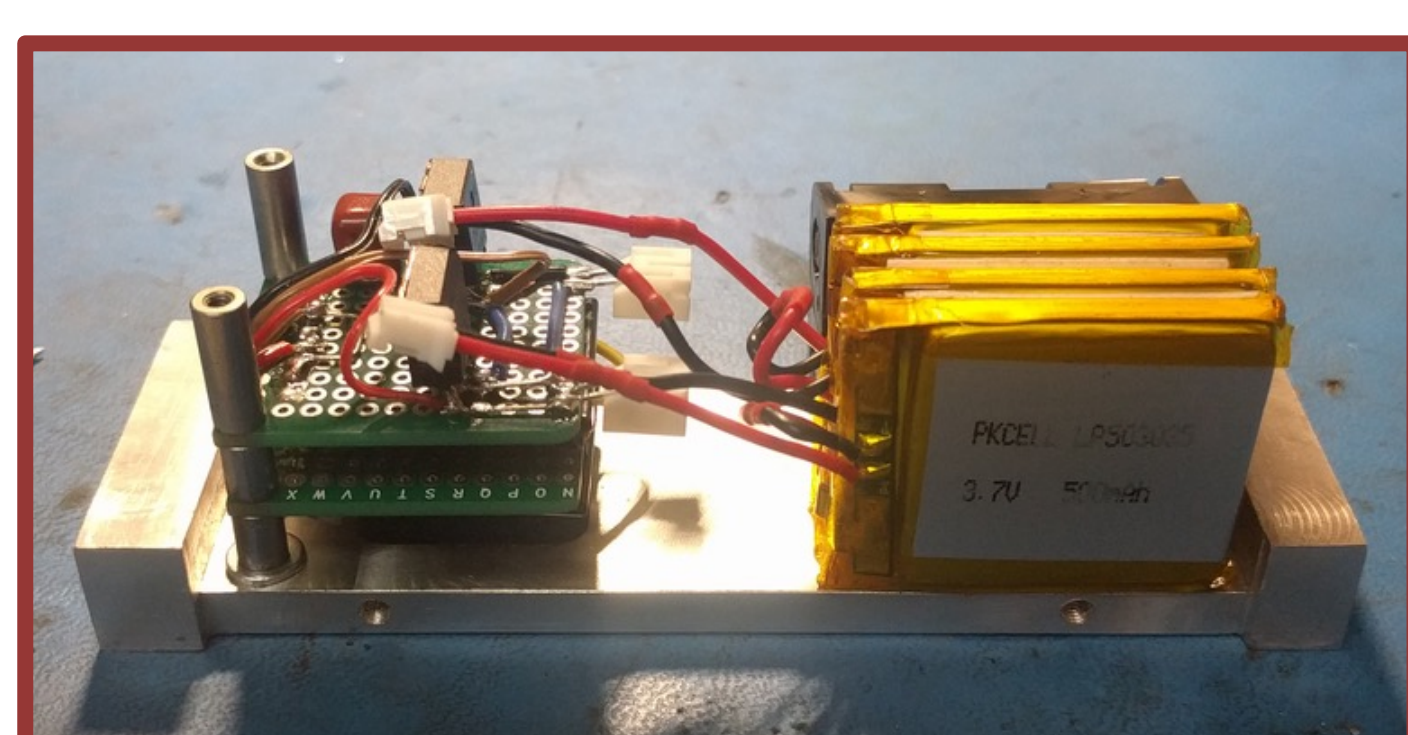
PROTOTYPING & TESTING

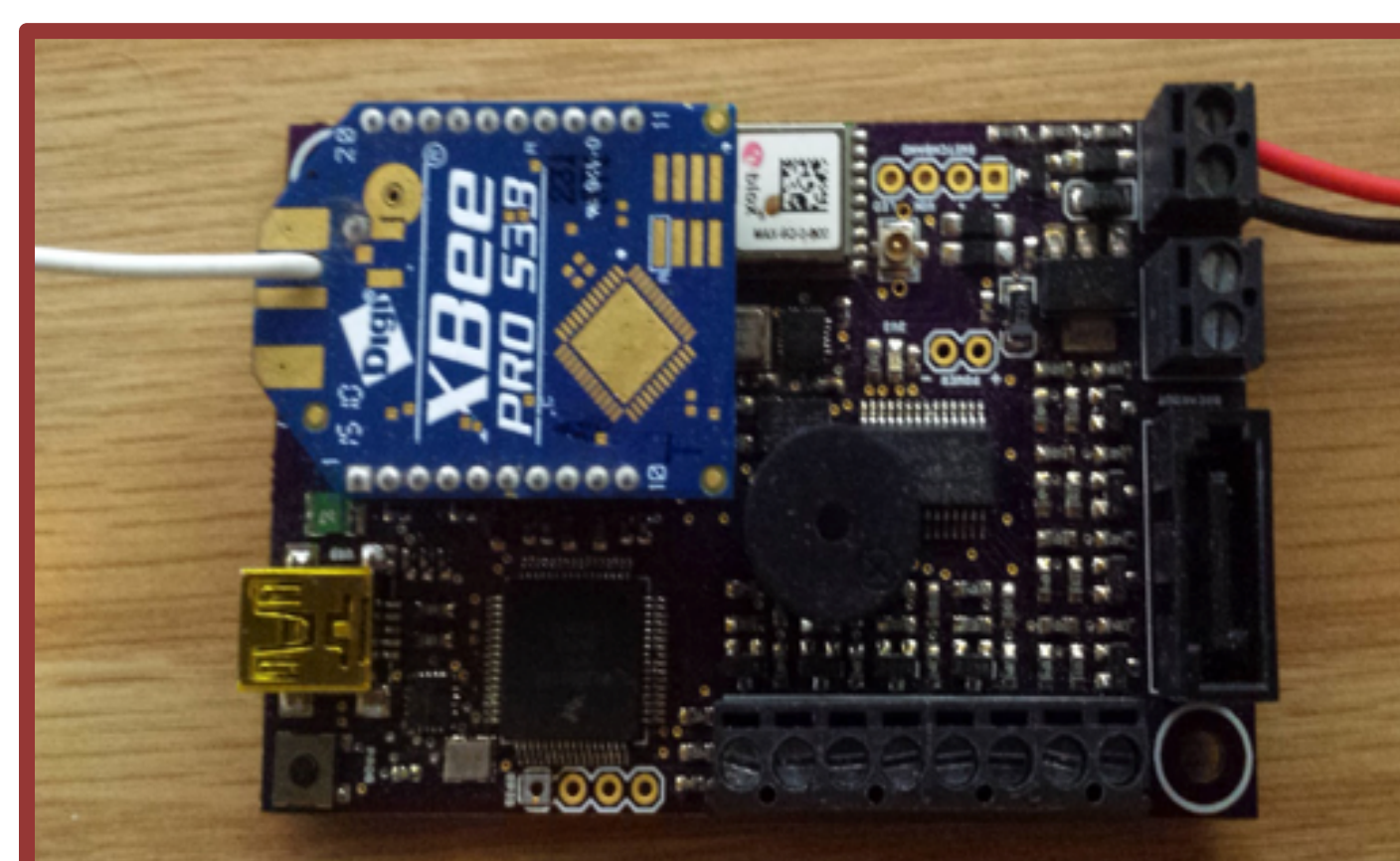Fig 1: XRF sensor prototype

Fig 2: Custom designed Pyxida avionics board

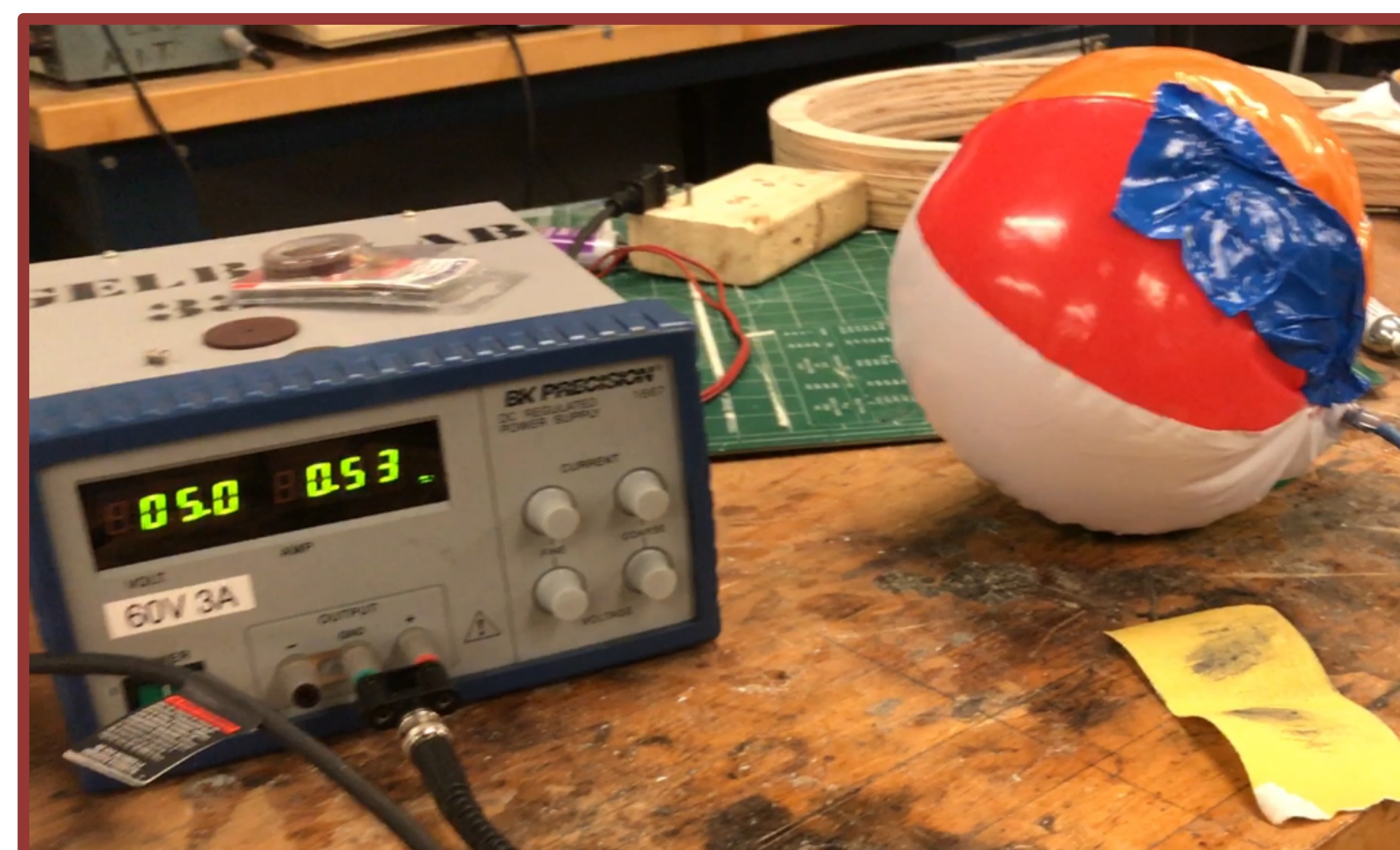Fig 3 (left): Raziel taking off during our test flight.

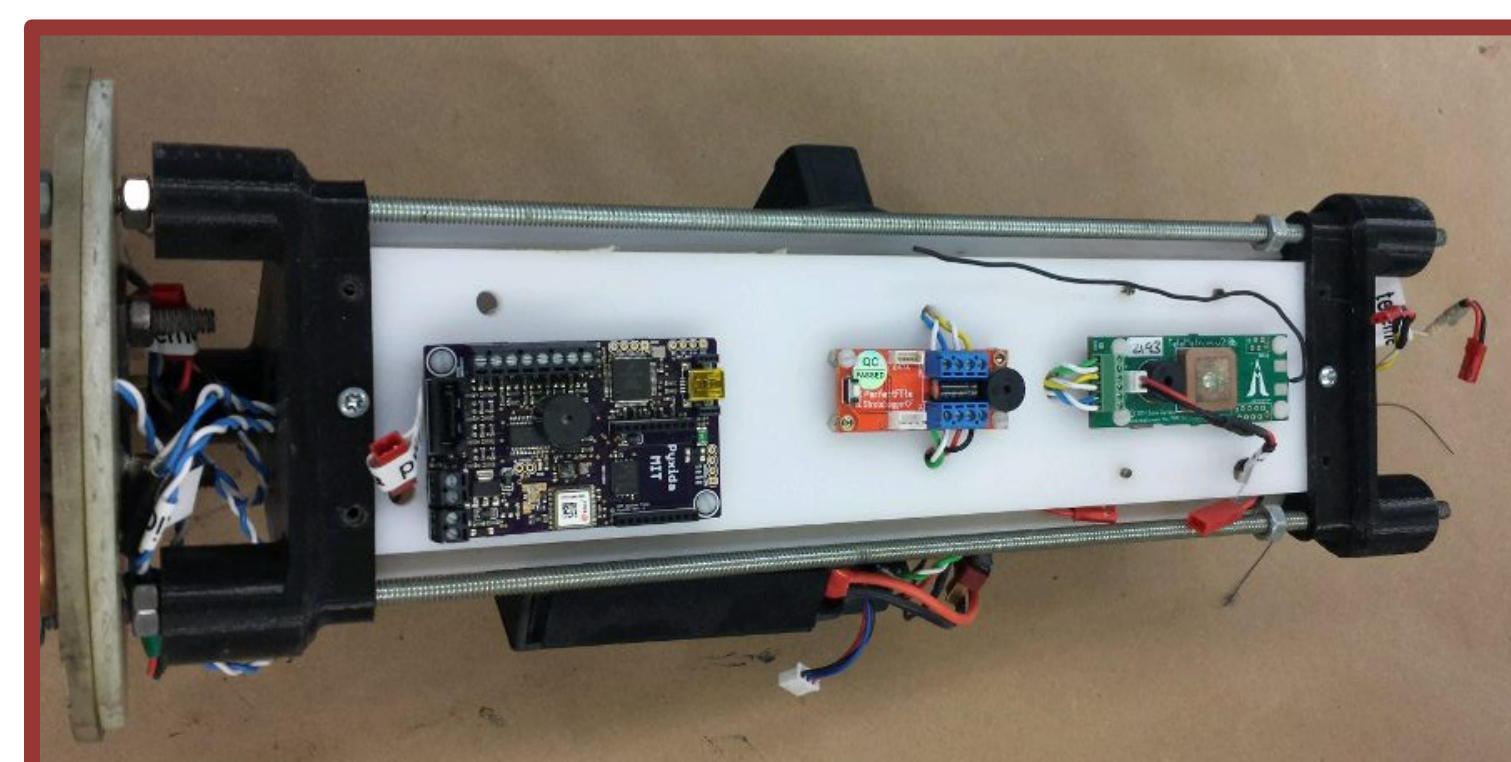Fig 4: Test driving the automatic inflation of the beach ball

Fig 5: Preliminary packaging of main avionics bay

Fig 6: Testing the deployment of one of our custom designed parachutes

Fig 7: Crush testing tubes

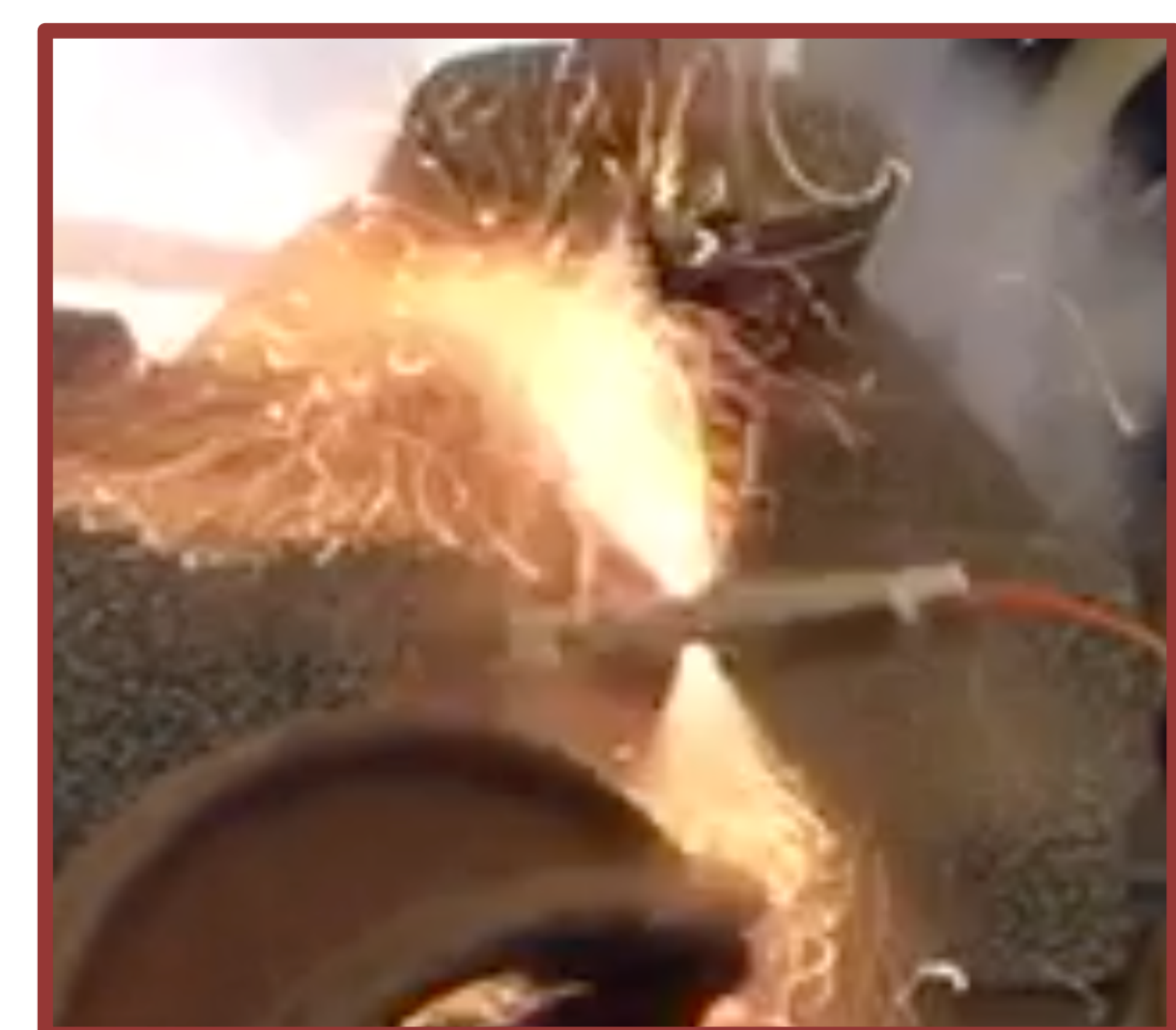Fig 8 (left): Detail of CO_2 mechanism

Fig 9: Testing the pyrotechnic rope cutters

Fig 10 (bottom): Laying out the different sections of the rocket along with all recovery components during the final assembly process before IREC.

ACKNOWLEDGEMENTS

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