

# Students film breathtaking curvature of Earth using high-altitude weather balloon

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Credit: University of Leicester

Physics students from the University of Leicester have captured breathtaking images of the Earth's stratosphere using a high altitude weather balloon.

The unmanned balloon and sensor payload reached an altitude of 23.6km, putting it at 1.7 times the altitude ceiling of a 747 airliner.

In conditions close to a vacuum with ambient temperatures around  $-56^{\circ}\text{C}$  the students' payload filmed the cloud tops and the curvature of the Earth.

The payload then descended quickly to Earth reaching a maximum speed of over 100mph.

The launch took place in December near Tewkesbury, Gloucestershire, and the payload was recovered in Warwickshire.

As well as producing photographs and video, this flight tested electronic control systems for future pollution monitoring flights and advanced navigational systems.

It also allowed the students, assisted by amateur radio enthusiasts, to test [tracking](#) techniques which will be used again on future flights.

Student Robert Peck, from the University of Leicester Department of Physics and Astronomy, said: "We've proven the reliability of the payload electronics and tracking methods, the [payload](#) returned in perfect condition, that's a lot to say for something that's been to 23.6km and plunged back to earth at over 44.7m/s. The tracking also worked perfectly, we are indebted to the amateur radio community for helping us to set up the tracking equipment."

The flight was conducted by student members of the University of Leicester's Astronomy and Rocketry society, with Ryan Bradley-Evans as team leader of the project, Oli Thomas operating the tracking equipment, Robert Peck responsible for flight control electronics and Aleisha Hogan responsible for public relations. Several other team members also assisted with the project.

The team is planning future launches aiming to test the full sensor and

advanced navigation systems which time constraints prevented them from launching on the first flight. With the control electronics proven they consider their chances of success to be high.



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