SuperTIGER

Catching heavy cosmic rays

Cosmic rays are particles from far outside the solar system traveling at up to nearly the speed of light. SuperTIGER seeks heavy atomic nuclei ranging from neon to barium.

| Cosmic ray particles | \(
|-----------------------|--
| Electrons | 1 percent |
| Hydrogen nuclei (protons) | 90 percent |
| Helium nuclei | 8 percent |
| Heavier nuclei | 1 percent |

SuperTIGER is a souped-up version of the Trans-Iron Galactic Element Recorder (TIGER) detector that flew in 1998, 2001 and 2003.

SuperTIGER launches from McMurdo Station, Antarctica, and can float for weeks. Circular winds aloft confine it to the continent.

SuperTIGER and its supporting hardware weighs 6,000 pounds (2,700 kilograms), comparable to a full-size van.

After its previous flight ended in 2013, SuperTIGER spent 2 years on the Antarctic ice. It was recovered in 2015 and prepped for more scientific adventures.

SuperTIGER reaches a maximum height of about 127,000 feet (39,000 meters).

That’s nearly four times the typical cruising altitude of commercial airliners... and above 99.5 percent of the atmosphere.

Washington Monument: 555 feet (169 meters)