

# High-altitude balloon

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(Redirected from High altitude balloon)

**High-altitude balloons** are unmanned balloons, usually filled with helium or hydrogen that are released into the stratosphere, generally reaching between 60,000 to 120,000 feet (18 to 37 km). In 2002, a balloon named BU60-1 reached 53.0 km (173,900 ft).<sup>[1]</sup>

The most common type of high altitude balloons are weather balloons. Other purposes include use as a platform for experiments in the upper atmosphere. Modern balloons generally contain electronic equipment such as radio transmitters, cameras, or satellite navigation systems, such as GPS receivers.

These balloons are launched into what is termed "near space"—the area of Earth's atmosphere where there is very little air, but where the remaining amount generates far too much drag for satellites to remain in orbit.

A seasonal vortex in Antarctica allows balloons to be recovered very close to their launch site, making it a popular location for balloon-based research.

Due to the low cost of GPS and communications equipment, high altitude ballooning is an emerging hobby.<sup>[2][3]</sup>

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## History

### The first hydrogen balloon

In France during 1783, the first public experiment with hydrogen-filled balloons involved Jacques Charles, a French professor of Physics and the Robert brothers, renowned constructors of physics instruments. Charles provided large quantities of hydrogen, which had only been produced in small quantities previously, by mixing 540 kg of iron and 270 kg of sulfuric acid. The balloon called Charlière took 5 days to fill and was launched



The BLAST high altitude balloon just before launch on June 12, 2005



An example image from a hobby high altitude balloon launched by the Make Stuff Club from Kalamazoo College

from Champ de Mars in Paris where 300,000 people gathered to watch the spectacle. The balloon was launched and rose through the clouds. The expansion of the gas caused the balloon to tear and descended 45 minutes later 20 km away from Paris.<sup>[4]</sup>

## See also

- High-altitude airship
- Weather balloon
- Research balloon
- Flight endurance record
- Flight altitude record
- Manned balloon altitude records
- Columbia Scientific Balloon Facility
- Amateur Radio High Altitude Balloon Records



Picture taken at approximately 100,000 ft (30,000 m) above Oregon using a 1,500 gram weather balloon.

## References

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- ↑ "DIY balloon sent up 30km" (<http://www.boingboing.net/2007/10/26/diy-balloon-sent-up.html>) Boing Boing dated 26 October 2007. Recovered on 8 June 2008
- ↑ McDermott, Vincent. "Space race for DIYers" (<http://vincentmcdermott.com/2011/08/08/space-race-for-diyers/>) National Post dated 30 April 2011. Recovered on 28 December 2011
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Categories: Balloons (aircraft)

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