

# Charged Aerosol Release Experiment

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The **Charged Aerosol Release Experiment** also known as **CARE**, is a project run by NASA which will use a rocket to release of dust in the upper atmosphere to form a dusty plasma in space.<sup>[1]</sup> NASA plans to trigger cloud formation around the rocket's exhaust particles.<sup>[2]</sup> The clouds thus generated are intended to simulate naturally occurring phenomena called noctilucent clouds, which are the highest clouds in the atmosphere. The CARE experiment is intended to create an artificial dust layer at the boundary of space in a controlled sense, in order to "allow scientists to study different aspects of it, the turbulence generated on the inside, the distribution of dust particles and such."<sup>[3]</sup>

The dust cloud is generated using the Nihka motor dust generator. The dust cloud is composed of aluminum oxide, carbon monoxide, hydrogen chloride, water, and nitrogen, as well as smaller amounts of carbon dioxide, hydrogen, monatomic chlorine, and monatomic hydrogen.<sup>[4]</sup>

According to NASA, SHIMMER will track the CARE dust cloud for days or even months. The SHIMMER instrument has previously viewed natural noctilucent clouds for the past two years. The CARE will be the first space viewing of an artificial noctilucent cloud.<sup>[5]</sup>

The rocket was set to launch between 7:30 and 7:57 EDT on Tuesday Sept. 14, 2009 from NASA's Wallops Flight Facility near Chincoteague, Virginia.

## See also

- Noctilucent cloud
- polar mesospheric clouds

## References

- ↑ "The Charged Aerosol Release Experiment (CARE) Program" (<http://adsabs.harvard.edu/abs/2008cosp...37..261B>) . Astrophysics Data System. 37th COSPAR Scientific Assembly. Held 13-20 July 2008, in Montréal, Canada., p.261. <http://adsabs.harvard.edu/abs/2008cosp...37..261B>. Retrieved 2009-09-16.
- ↑ "NASA's Charged Aerosol Release Experiment (CARE), Plans To 'Make Clouds' Tonight . ." (<http://www.weaselzippers.net/blog/2009/09/nasas-charged-aerosol-release-experiment-care-plans-to-make-clouds-tonight-.html>) . weaselzippers.net. September 15, 2009. <http://www.weaselzippers.net/blog/2009/09/nasas-charged-aerosol-release-experiment-care-plans-to-make-clouds-tonight-.html>. Retrieved 2009-09-16.
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- ↑ Bernhart, Paul (updated May 19 2009). "Update on CARE" (<http://wpdp.colorado.edu/Files/Presentations/BERNHARDT.pdf>) . <http://wpdp.colorado.edu/Files/Presentations/BERNHARDT.pdf>.
- ↑ "Night Time Artificial Cloud Study Using NASA Sounding Rocket" (<http://www.nasa.gov/centers/wallops/CARE.html>) . NASA. <http://www.nasa.gov/centers/wallops/CARE.html>. Retrieved 2009-09-16.

## External links

- Night Time Artificial Cloud Study Using NASA Sounding Rocket (<http://www.nasa.gov/centers/wallops/CARE.html>) , NASA
- An Update on theCharged Aerosol Release ExperimentCARE (<http://wpdp.colorado.edu/Files/Presentations/BERNHARDT.pdf>)

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Categories: Cloud types

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