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NASA CREATES CLOUDS OVER THE EAST COAST

Did you see strange clouds in the sky last night?

image of a TMA cloud

Image 1

Four NASA sounding rockets carrying experiments to study Earth's near-space environment, called the ionosphere, were launched from NASA's Wallops Flight Facility, Sunday night and Monday morning. The launch times were: 11:19 p.m., 1:41 a.m., 2:50 a.m., and 3:07 a.m. Three of the rockets released trimethylaluminum, (TMA) forming clouds that could be seen for hundreds of miles.

The clouds allow scientists to monitor the Earth's winds at the edge of space, said Dr. Gregory Earle from the University of Texas in Dallas, the lead researcher for the project.

image of a TMA cloud

Image 2

"Winds in the ionosphere impact space weather just as the winds on Earth impact our weather. Space weather in turn can affect satellites orbiting the Earth and communication and electrical systems on the ground," Earle said. "The clouds will act as a tracer and allow us to view the winds at various altitudes over a period of time."

"The data gathered from this project will aid in our understanding of the relationship between the winds and ionospheric activity. This research may one day lead to the ability to forecast space weather, just as forecasters do today for Earth weather. If we can forecast space weather, then we can better protect our systems in space and on Earth," Earle said.

image of a TMA cloud

Image 3

The milky white clouds formed from the release of the TMA on the first, third and fourth

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Caption for all photos: TMA CLOUDS ARE SEEN FOR MILES

These photos were taken from Wallops Islands during last night's rocket launches. NASA has used TMA for decades to study the near-space environment. This chemical burns slowly and produces visible light so that chemical tracers can be tracked visually with special camera equipment. The products of the chemical burn are aluminum oxide, carbon dioxide, and water. These chemicals pose no threat to the public during preparation on the ground or release in space. Consumers use aluminum oxides to relieve heartburn and to purify water.Credit; NASA/Wallops

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rockets. The second rocket carried only scientific instruments. The TMA was released over the Atlantic Ocean at altitudes from 56 miles (90 kilometers) to 109 miles (175 kilometers). NASA has used TMA for decades from sites worldwide to study the near-space environment. TMA burns slowly and produces visible light that can be tracked visually and with special camera equipment.

image of a TMA cloud

Image 4

The products of the reaction, when TMA is exposed to air or water, are aluminum oxide, carbon dioxide and water. Aluminum oxides are commonly used to combat heartburn and to purify drinking water. TMA posed no threat to the public during preparation on the ground or during the release in space.

image of a TMA cloud

Image 5

The project is a NASA and multi-university effort. In addition to the University of Texas, students and personnel from Clemson University and Utah State University are participating in the mission.

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