

Volcanic eruption in Iceland unlikely to have global effects, says CU-Boulder scientist

April 16 2010

The eruption of an Icelandic volcano that sent a huge plume of ash into the atmosphere and caused sweeping disruptions of air traffic over Great Britain and Scandinavia today will likely dissipate in the next several days, according to a University of Colorado at Boulder atmospheric scientist.

Professor Brian Toon, chair of CU-Boulder's atmospheric and oceanic sciences department, said the plume created by the eruption of the Eyjafjallajokull Volcano contains tiny rock particles made up of silicate and basaltic glass that can be extremely damaging to aircraft engines. Unfortunately, the plume is at about 30,000 feet -- the same altitude as jet aircraft fly -- and is directly in the flight path between New York and Europe, he said.

The destination and duration of the volcanic plume depends primarily on [weather conditions](#) like rain and winds, said Toon. The plume should get washed away by rain as it continues to drift east, and likely will have no effect on the United States, he said. Fortunately, the plume also is below the stratosphere, where volcanic gases can have global effects because of a lack of rain there prohibits the removal of volcanic material, he said.

Toon said the amount of sulfur dioxide spewed by the volcano so far poses no threat to [world climate](#) as determined by an instrument aboard NASA's Aura satellite. But he noted that an apparently larger eruption of an Icelandic volcano in 1783 -- which was written about by Benjamin Franklin -- caused some climate issues in Europe by creating smog-like

conditions in London that partially blocked out the sun and persisted through the summer months.

Toon compared the Icelandic eruption to the popping of a champagne bottle cork. When the pressure is released by breaching the rock "cork," gases bubble out, spewing tiny rock particles into the air like champagne droplets. Such rocks threaten the safety of airliners.

Toon was involved in a 2000 NASA research campaign to study Arctic ozone when a research jet passed through a similar Icelandic volcanic plume from Mount Hekla, damaging the engine turbines and subsequently requiring the replacement of the jet's engines at a cost of several million dollars. Several other similar incidents in the past several decades have also caused the failure of jet engines, but the aircraft were able to restart their engines and no crashes occurred, he said.

Provided by University of Colorado at Boulder

Citation: Volcanic eruption in Iceland unlikely to have global effects, says CU-Boulder scientist (2010, April 16) retrieved 18 April 2024 from <https://phys.org/news/2010-04-volcanic-eruption-iceland-global-effects.html>

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