



NCAR studies Asian plumes

Air campaign looks at climate impact of Asian pollution

By Todd Neff
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Dust is in the air. Pacific dust, swept from Mongolian and Chinese deserts.

Scientist Jeff Stith, of Boulder's National Center for Atmospheric Research, is a leader of the Pacific Dust Experiment, designed to study how massive Asian dust plumes and the accompanying pollution affect clouds, precipitation and the amount of sunlight reaching Earth.

He and project co-leader V. "Ram" Ramanathan, of the Scripps Institution of Oceanography, typed in answers to journalists' questions in an online chat Tuesday.

Ramanathan was at the NCAR building at Rocky Mountain Municipal Airport in Jefferson County. Stith was at 40,000 feet, headed to Japan from Anchorage, Alaska, in a National Science Foundation Gulfstream V jet loaded with scientific equipment.

As the jet approached Japan, Stith said, "We will descend into a region that the models suggest may contain dust and pollution at different levels."

Although it will take years to fully analyze the data, Stith and Ramanathan said the roughly \$1 million, two-month campaign is already yielding interesting insights regarding the Asian plumes.

They have found pollution layers as thin as a few hundred feet thick inside plumes the size of Alaska. They are seeing high pollution levels in the upper regions of storm clouds, and dust and black carbon — soot — at high altitudes, which Ramanathan said could enhance their absorption of sunlight and heat things up.

Ramanathan said the plumes appeared to be higher than those observed over the Indian Ocean in 1999, something he said "worries me greatly." The higher they are, the longer-lived they are and the greater their climate impact.

Different types of plume pollution have different impacts, scientists say. Sulfates cool the planet by blocking sunlight; black carbon can have a warming effect.

Asian plumes have been of scientific interest for years. Russell Schnell, director of global network operations for the National Oceanic and Atmospheric Administration's Earth System Research Laboratory in Boulder, said NOAA built a station in California about five years ago to monitor the plumes. One such plume was due to peak in Boulder today, he said.

NOAA scientist David Parrish, who led a 2002 Asian plume study, said the focus then was on plumes' effect on ozone and storms' tendency to "scrub" the pollution.

Ramanathan said the current experiment is focused more on plume-cloud interactions. Two flights,

including the one Stith rode on Tuesday, are complete; four more are scheduled through about May 25, he said.

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