



Andrew Tosh performs at HSU's music festival/northern lights



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Scientists look at effects on temperatures and rainfall

John Driscoll
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TRINIDAD — Massive dust storms in Mongolia may drastically affect rainfall on the West Coast and scientists this week have been flying far out to sea to collect data in an effort to understand how.

The sand storms hammer areas in China, Korea and Japan each year, choking residents and casting a pall over day-to-day activities. They're also getting worse, and scientists want to know how rainfall

and climate are affected when Pacific storms blow the clouds of dust east.

A major dust storm typical of this time of year continues to ride storm fronts across the Pacific Ocean.

"This is one of the larger events we've seen since we've been here," said researcher Eric Wilcox on Tuesday.

Using a plane operated by the University of Wyoming, researchers from the University of California, San Diego Scripps Institution of Oceanography are trying to tie dust storm predic-

tions made by satellites and modeling to real data. Much of what's known about global warming comes from models, and a movement is afoot to test the models, although the effort is pricey.

This week the Cloud Indirect Effects Experiment made several flights, out about 250 miles, to be sure pollutants it encountered were from Asia. It's all happening 0.5 to 2.5 miles above Earth's surface, since the particles are lofted far into the atmosphere on their five-to-seven-day journey across the Pacific.

If the predictions and the information agree, the results can be extrapolated to a larger region, Wilcox said. While this area is dominated by storms, the information is probably more vital for areas that receive scant rainfall, and could be robbed of rainfall by the dust storms' effects.

The modeling done so far suggests the particles may act to cool Earth — and especially the ocean — by increasing the reflectivity of clouds. And while some particles are needed so rain drops can form, too many

particles may suppress rain.

The researchers are also taking ground-based measurements at Trinidad Head from equipment kept there by Humboldt State University and the National Oceanic and Atmospheric Administration.

In a heavy rain Tuesday, particulates were being washed out of the atmosphere, said Scripps researcher Veerabhadran Ramanathan. Since it's not always raining, some of the pollutants will continue across the

■ See **MONGOLIAN/A10**

MONGOLIAN

FROM A1

United States and a small portion will end up at the surface.

"It's not going to rain every time there's a pollution event," Ramanathan said.

The effects of dust storms and the pollu-

tants that accompany them is one of the big questions in climate science today, Ramanathan said. But field measurements are expensive. The plane alone operates at about \$12,000 to \$15,000 per day.

The information gleaned this week will be crunched over the next six months,

Ramanathan said. One thing appears clear already, though. Dust storms affect climate more by influencing ocean temperatures than temperatures on land, he said. And since oceans drive the weather, understanding the storms is crucial, he said.

MEASURING MONGOLIA'S DUST



Kate Wiley/The Times-Standard

Above: Engineer Don Lukens of the University of Wyoming, crouches inside the Kingair plane as he adjusts the Aethalometer. The device, which collects particles on a quartz fiber filter, is used to measure soot that originates in Asia and crosses the Pacific Ocean.

Left: Lukens covers the particle measurement instruments of the Kingair plane on Wednesday at a private hanger in the Arcata-Eureka Airport.