

On the Green Front by Rogelio A. Maduro

More lies about ozone depletion

A series of deceptions and outright lies discredits NASA, and may be the end of the line for the ozone hoaxsters.

On Dec. 19, two NASA scientists gave a press conference to announce that they had finally come up with evidence that CFCs are responsible for ozone depletion. As expected, the news media ran with the story with bold headlines. As with dozens of other such press conferences in the past eight years, the scientific evidence does not support the claims made. This time around, the "scientists" and their media dogs went too far. Such an outcry has been raised in the scientific community that the ozone hoaxsters may have reached the end of the line.

Marc Schoeberl and Anne Douglass, using data gathered by the Upper Atmospheric Research Satellite (UARS), claimed to the press from Greenbelt, Maryland that hydrogen fluoride measurements in the stratosphere "proved" that the ozone depletion theory was correct. Schoeberl stated that "the detection of stratospheric fluorine gases, which are not natural, eliminates the possibility that chlorine from volcanic eruptions or some other natural source is responsible for the ozone hole." (The hydrogen fluoride in the stratosphere is supposedly a product of the chemical breakdown of CFCs in the stratosphere.) Douglass added, "Hydrogen fluoride has no natural source; it is not produced by volcanic eruptions or salt spray."

The first deception is the claim that observations of HF in the stratosphere are new. The presence of hydrogen fluoride in the stratosphere has been known for decades. The second deception was the discovery that the levels of HF in the stratosphere are

increasing. This is not news. Measurements of HF for the past 15 years have shown an increase at most measuring stations.

More serious than the deceptions were the arrogant lies. There *are* natural sources of HF and these sources put out thousands of times more fluorine than the amount of fluorine allegedly released by the hypothetical breakdown of CFCs in the stratosphere. The book *The Holes in the Ozone Scare: The Scientific Evidence That The Sky Is Not Falling* documented that volcanoes blow more than 6 million tons of fluorine into the atmosphere every year. The amount of fluorine supposedly released by CFCs is a pitiful 2,480 tons per annum (there is no observational evidence to show that CFCs are even breaking down in the stratosphere).

That volcanoes release HF is not an obscure fact. It has been known since the turn of the century, and thousands of measurements have quantified these observations. In 1986, French scientists studying the Italian volcano Mt. Etna found that the volcano was emitting 223 tons of HF per day. Mt. Erebus in Antarctica emits similar amounts of HF into the atmosphere.

Emissions of HF from volcanoes are an important issue, because HF can, potentially, kill people and livestock. Thousands of animals and hundreds of people have died in Iceland over the past century as a result of HF poisoning (fluorosis). Volcanic fumes rich in HF are toxic. HF is also toxic to vegetation. Plants accumulate the fluorine in the extremities of their leaves, which is ultimately lethal to

the plant. Animals which consume fluorine-polluted grasses eventually die. People who eat meat from these animals are also poisoned. Measurements show that HF emissions from active volcanoes can contaminate areas tens of kilometers away from the crater.

Hundreds of papers in the scientific literature document HF emissions from volcanoes and other natural sources, including evaporation of seawater. There is an excellent and easily accessible paper giving an overview of the issue, by R. Symonds, W. Rose, and M. Reed, three of the world's leading volcanologists. "Contributions of Cl- and F-bearing Gases to the Atmosphere by Volcanoes" was published in the Aug. 4, 1988 issue of *Nature*. How could Schoeberl and Douglass not know about natural sources of HF?

Since 1986, a group of inexperienced Young Turks has taken over several sections of the climate and atmospheric divisions of NASA and NOAA. Every year, the American public has been subjected to one or two press conferences at which these "scientists" claim to have found proof that CFCs are depleting the ozone layer. These press conferences, and their echo in the media, played a major role in the hasty banning of CFCs. In 1992, it was claimed that an ozone hole was just about to be formed above President Bush's summer house in Kennebunkport, Maine.

Within weeks of most of these doomsday announcements, the same scientists have had to give new press conferences, modifying their earlier statements. These retractions, if printed at all, are found in the back pages. When will the public learn? And when will the NASA leadership wake up and realize that these shenanigans will destroy the reputation of America's space agency?