

To: The Executive Net -- C778 Community Conference
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PROVOCATIONS -- #9
The Amazing and Portentous Summer of 1783

The summer of the year 1783 was an amazing and portentous one, and full of horrible phenomena; for besides the alarming meteors and tremendous thunder-storms that affrighted and distressed the different counties of this kingdom, the peculiar haze, or smokey fog, that prevailed for many weeks in this island, and in every part of Europe, and even beyond its limits, was a most extraordinary appearance, unlike anything known within the memory of man....The sun, at noon, looked as blank as a clouded moon, and shed a rust-coloured ferruginous light on the ground, and floors of rooms; but was particularly lurid and blood-coloured at rising and setting....The country people began to look with a superstitious awe at the red, louring aspect of the sun; and indeed there was reason for the most enlightened people to be apprehensive. (Diary of Vicar White of Selborne, England)

Benjamin Franklin correctly identified the cause of the strange hazes and dry fog as ejecta from the huge volcanic eruption of Laki, Iceland, which began on 8 June 1783. Probably the main cause was sulfur dioxide gas thrown into the stratosphere over the next eight months of continuing eruptions. In the resulting famine half to two thirds of Iceland's livestock died, the pastures withered, and a fourth of the population perished. The weather effects spread throughout the Northern Hemisphere.

Laki was small compared, however, to the Mount Tambora eruption of 10-11 April 1815 on the island of Sumbawa in Indonesia. 88,000 people on this island and its neighbor died from the catastrophic eruption and its ashfall. The explosion was heard to a distance of over 1500 miles. Pitch darkness extended for two days to a distance of nearly 400 miles. The same ruddy sun, orange sunsets, and dry fogs of Laki were seen for more than a year in London, New York and throughout the Northern Hemisphere. The year of 1816 became known in Europe and North America as "the year without a summer" because of the hemispheric cooling that most climatologists attribute to the volcano. The overall effects of this volcano exceed those of any known eruption in the last 10,000 years.

Far the best studied of the great volcanoes is the recent blast of El Chichon in Mexico on 28 March and 4 April of 1982. All sorts of modern instruments were brought to bear such as laser scanners, aircraft samplers, satellite ultraviolet and infrared detectors. Our own laboratory made profiling flights from the Southern Hemisphere to the Arctic Circle. Because of this, coupled with climatological analyses of past volcanoes, we are confident that the biggest ones produce coolings up to nearly a degree Celsius that last for periods up to two or three years. This is a very large amount in terms of climate impact; it means perhaps the shortening of the growing season for corn by two to three weeks.

What is less well known is that El Chichon has also blown its top at intervals from 350 to 600 years, as revealed by archeological digs near El Chichon. Some evidence suggests that cold episodes around 1300 A.D. are the product of El Chichon vulcanism, and also "frost events" recorded in Europe around 623 A.D. Clearly volcanoes can lower the world's temperature if they throw enough matter, especially sulfur dioxide gas, into the stratosphere. Their outbursts, however, remain totally unpredictable save for a few hours before blast off.
