

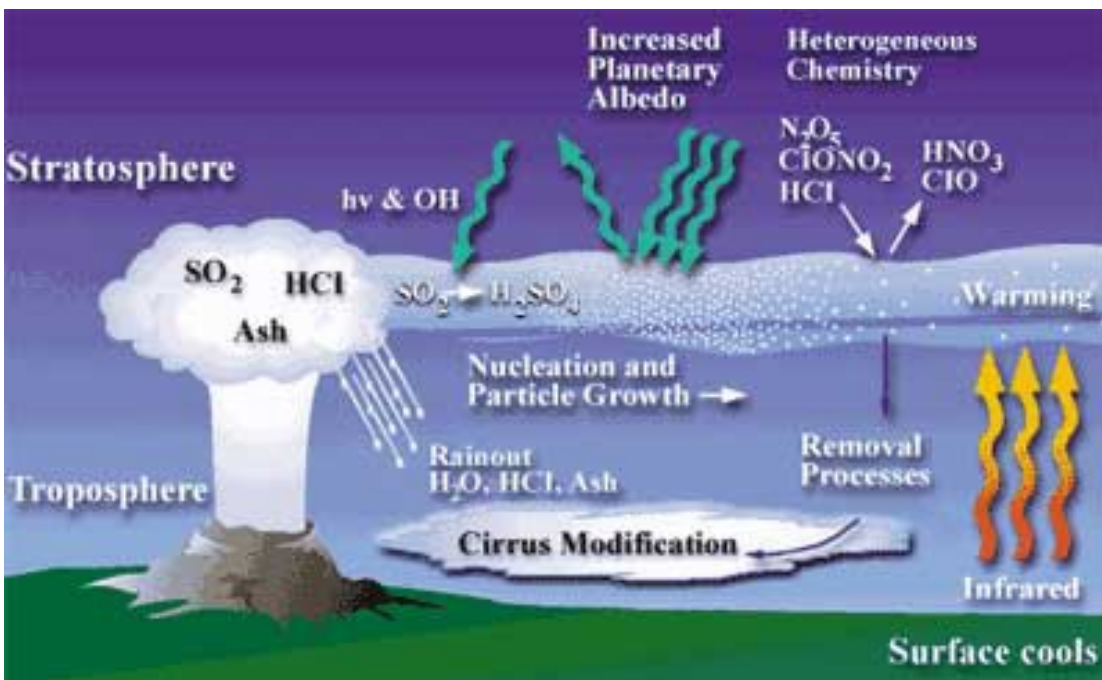
USE OF RESEARCH NASA TO DETERMINE THE VOLCANIC ACTIVITY

WORK IN SEVERAL GROUPS

work on Internet resources

based on: http://myasadata.larc.nasa.gov/lesson-plans/lesson-plans-hs-educators/?page_id=474?&passid=40

1. What is the aerosol
2. What is the impact of aerosols on solar radiation? Analyze the scheme.
http://cordis.europa.eu/result/rcn/175000_pl.html
3. What is the origin of aerosols ?
<https://www.nasa.gov/centers/langley/news/factsheets/Aerosols.html>



4. Do aerosols cool or warm the climate?

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Read about the volcano island reunion

<http://earthobservatory.nasa.gov/Features/ReunionIsland/>

<http://earthobservatory.nasa.gov/IOTD/view.php?id=37641>

5. What is the optical depth?

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<http://www.aroundtheamericas.org/log/report-from-the-on-board-scientist-aerosols-volcanoes-and-global-dimming/>

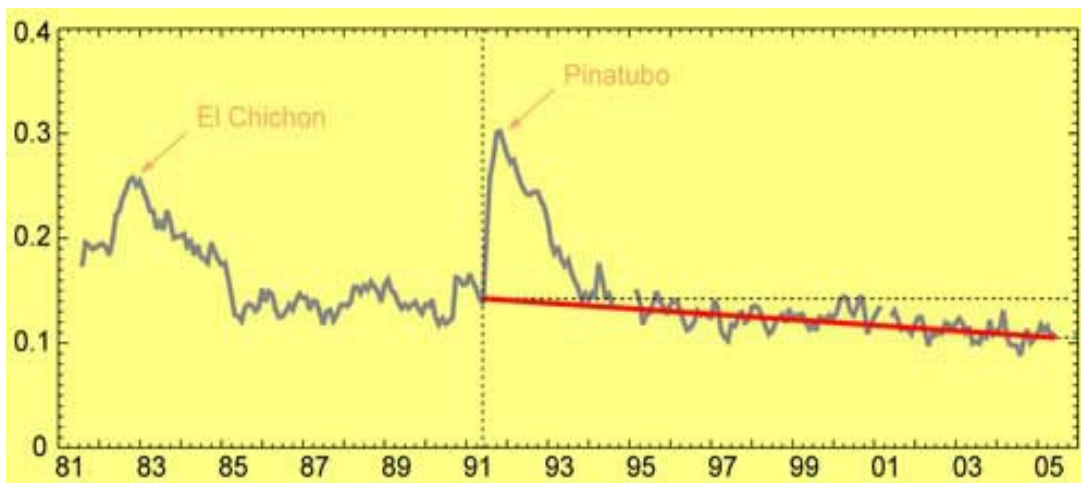


Figure 5. A graph of the total optical depth over the past thirty years. Aerosol optical depth is the measure of effectiveness of an aerosol to reduce radiation. It is defined in detail below. Over the time shown, the optical depth around the world has steadily declined (red line), especially since the 1991 eruption of Mount Pinatubo. The decline appears to have brought an end to the “global dimming” earlier in the century

6. What are the methods of research activity of the volcano?

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7. Prepare a graph in EXCEL and answer questions

Questions:

1. What process could be occurring that causes the large spike in the graph for 32E in 2001? What time of year did this occur?

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2. Which volcanic activity was greater according to your graph: the eruption on 5 July 2000 or 20 June 2001?

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3. What processes or natural events could cause the small changes in optical depth for the latitude 65E?

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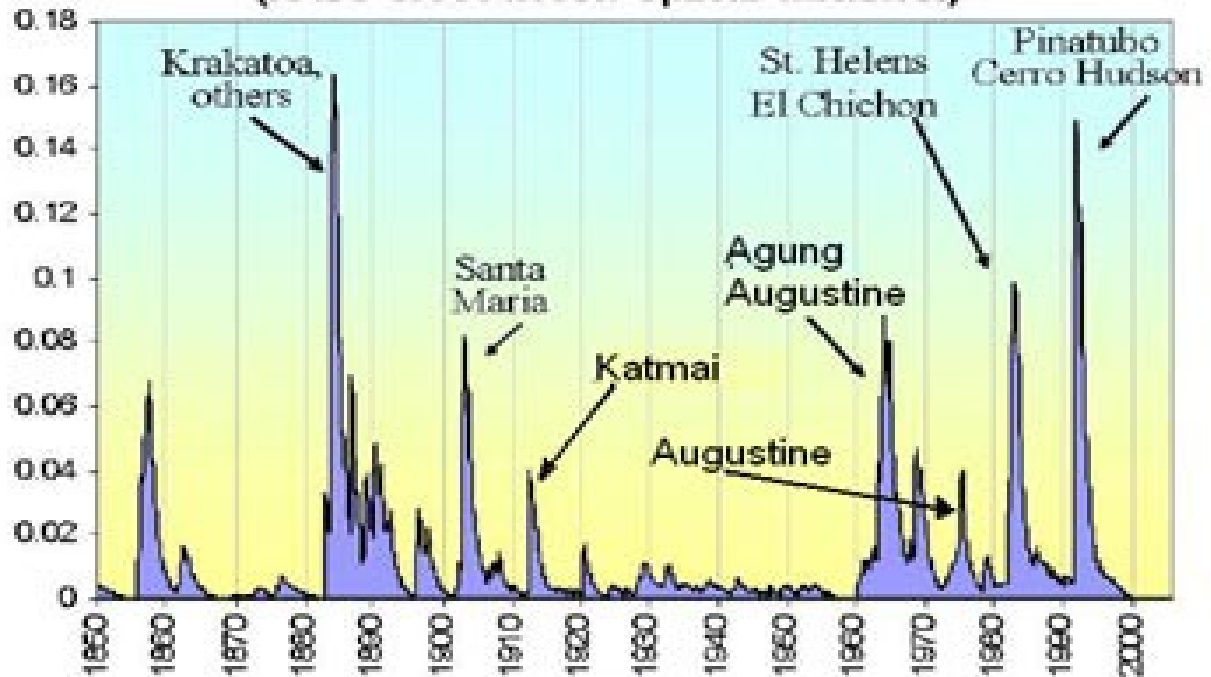
4. Which process according to your graph causes a greater fluctuation in optical depth: the volcanic activity or biomass burning?

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5. How do you think multiple biomass burnings across Africa could affect our climate in North America?

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**Stratospheric Volcanic Aerosol
(NASS GISS Aerosol Optical Thickness)**



Volcanic aerosols in the high atmosphere block solar radiation and increase cloud cover leading to widespread cooling, especially significant in summer