



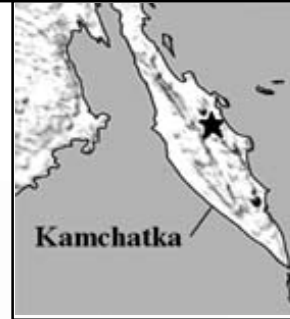
National Aeronautics and  
Space Administration

## Eruption of Klyuchevskaya Volcano in Kamchatka





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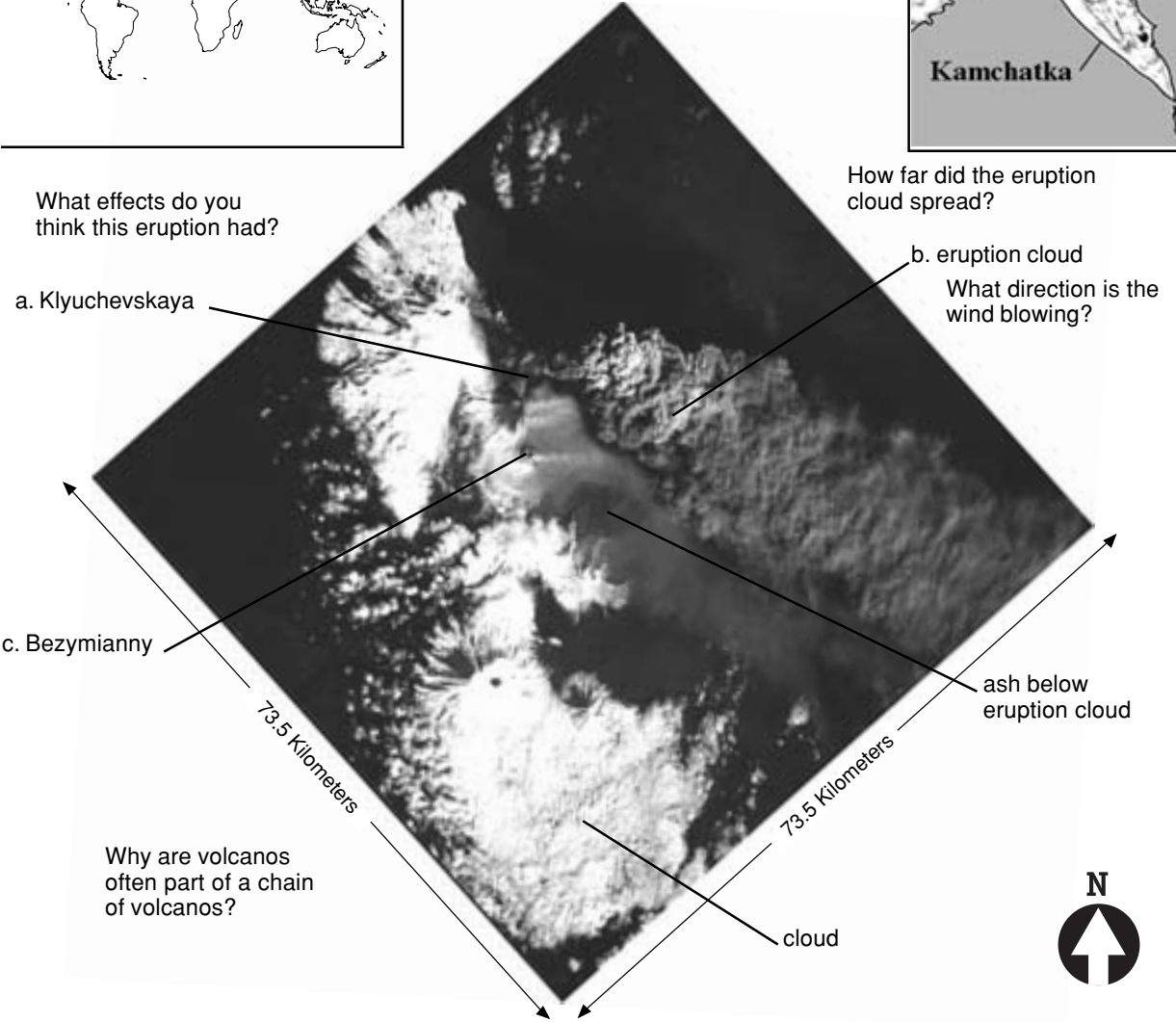


Latitude: 56°N Longitude: 160.5° E  
Date: September 30, 1994  
Type of Image: Shuttle astronaut photo  
Image ID #: STS068-214-045

Shortly after the launch of STS-68 on September 30, 1994, the crew reported thick black smoke over the Kamchatka Peninsula in northeast Russia. On the next orbital pass, the crew took this photograph of the eruption of Klyuchevskaya (a). Klyuchevskaya is Kamchatka's most active volcano, and this eruption was its largest in 40 years. The large eruption cloud (b) billowed from the summit, and deposited volcanic ash (pulverized rock) on the snow-covered region to the east. Another small steam plume was rising from Bezymianny (c), the smaller "C"-shaped volcanic summit south of Klyuchevskaya.

The Klyuchevskaya eruption cloud reached up to 60,000 feet above sea level, and the winds carried the volcanic ash as far as 640 miles southeast from the volcano. The ash cloud interfered with the heavily-traveled north Pacific air routes for 48 hours, diverting up to 70 flights per day and about 10,000 passengers. This image was used by both geologists and aviation specialists because it provided unique information about the dynamics of the eruption plume.

Additional information:  
EarthKAM images and lessons:  
<http://www.earthkam.ucsd.edu>  
JSC Earth From Space image database:  
<http://earth.jsc.nasa.gov>  
NASA Spacelink:  
<http://spacelink.nasa.gov>



What effects do you think this eruption had?

How far did the eruption cloud spread?

b. eruption cloud  
What direction is the wind blowing?

ash below eruption cloud

cloud

c. Bezymianny

Why are volcanos often part of a chain of volcanos?