

MODIS imagery of the 2002 eruption of Nyamuragira volcano

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The July/August 2002 eruption of Nyamuragira volcano in the Democratic Republic of the Congo was observed in thermal satellite imagery (1 km pixel size) from NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) instrument aboard the Terra satellite. Using the automated MODIS Thermal Alert system at the University of Hawaii Manoa, image pixels containing volcanic activity were detected and analyzed in order to characterize the eruption. These data are displayed within 24-72 hours of image reception on <http://modis.higp.hawaii.edu/cgi-bin/modis/modis.cgi>.

Initial activity was detected on July 25th, at 20:40 UTC, with a large (57 pixels) thermal anomaly on the south and north flank of the volcano. The anomaly grew in size, with an image on July 27th showing a large anomaly on the north flank and a subordinate anomaly on the south flank. On all subsequent days the anomaly was limited to the north flank. The anomaly reached a maximum size of 78 pixels on August 1st, at which point it extended approximately 12-15 pixels (or around 12-15 km) along its longest dimension. After this point the size and intensity of the anomaly rapidly diminished - detected anomalies after mid-August were no more than 6 pixels in size. The last detected anomaly at Nyamuragira in 2002 was on October 1st.

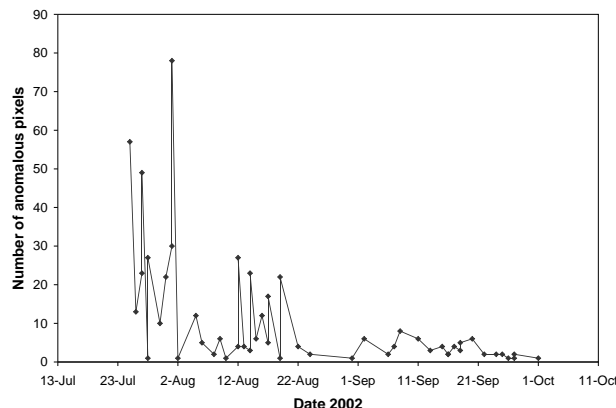
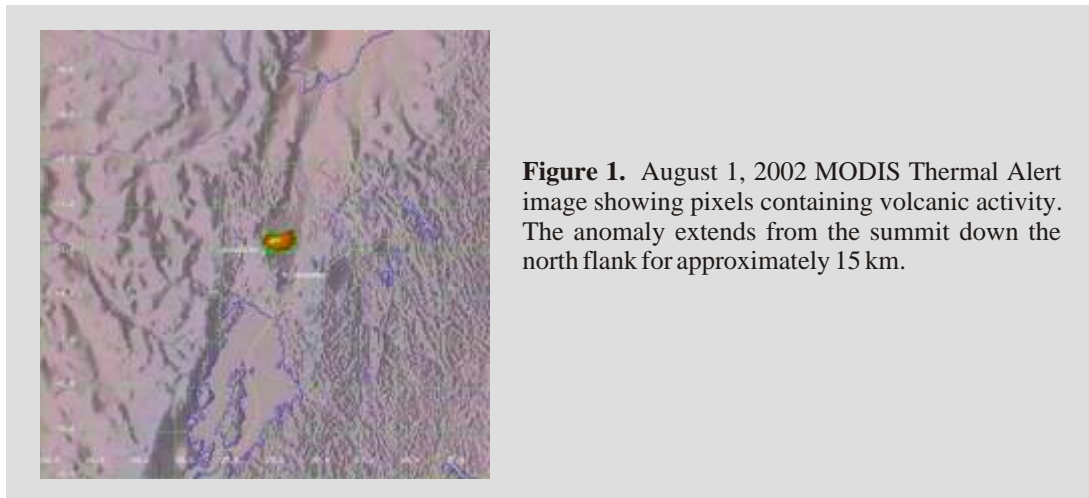


Figure 2. Number of anomalous pixels at Nyamuragira.

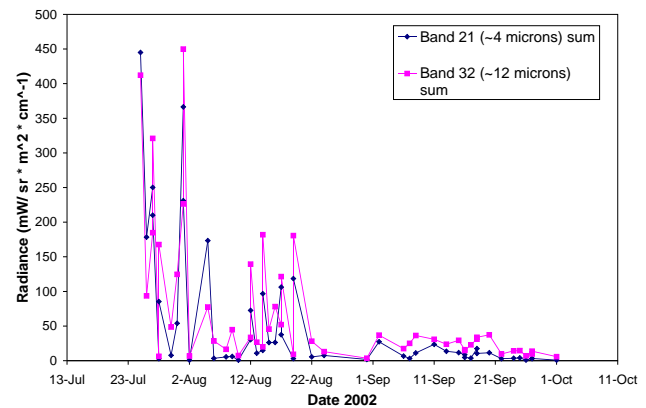


Figure 3. Sum of shortwave (Band 21) radiance as well as the sum of longwave (Band 32) radiance for all anomalous pixels in each image.