Development of Satellite hot spot monitoring system of active volcanoes: a prototype NOAA AVHRR-based system

Takayuki Kaneko[1], Atsushi Yasuda[2], Mikio Takagi[3], Tatsuro Ishimaru[3], Martin Wooster[4]

[1] Volc. Res. C., ERI, Univ. Tokyo, [2] Earthq. Res. Inst., Univ. Tokyo, [3] Industrial Sci and Tech, Sci Univ Tokyo, [4] Dept. Geog.,King's Col. London, Univ. London

http://vrsserv.eri.u-tokyo.ac.jp/REALVOLC/

   We describe a prototype near real-time hot spot monitoring system for active volcanoes in Japan and adjacent geographic regions in Asia. The system uses daily nighttime infrared imagery from the AVHRR sensor mounted onboard the NOAA series of polar orbiting satellites, AVHRR data being down-linked to Tokyo one or more times every night. The results and analyses of the AVHRR observations, essentially thermal images and time-series radiance trends of each volcano targeted, are automatically uploaded on the Web. Currently this occurs within some hours of the satellite overpass, though this could be quickened in future. In this way it is planned that volcanologists and other interested parties might use the AVHRR data as a broad check on the surface thermal state of the volcanoes they are studying and may apply their own interpretations to any identified heating or cooling trend. The web site for the prototype AVHRR based system is accessible at the URL: [http://vrsserv.eri.u-tokyo.ac.jp/REALVOLC/] and we envisage future expansion from the five Japanese volcanoes currently targeted. Ultimately, in addition to further Japanese volcanoes, the system will be expanded to include those in the northern Philippines, the Kuril Islands and the Kamchatka peninsula, along with volcanoes in Western Indonesia using data transferred from the Thailand AVHRR receiving station.