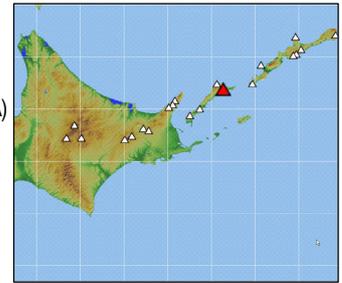


## 108. Chachadake (Kunashir Island)

Latitude: 44°21'12" N, Longitude: 146°15'08" E, Elevation: 1,822 m (Measured by JMA)



Chachadake somma and central cone, taken at Sea from Southeast on October, 1992.

Courtesy of Ishizuka, Y.

### Summary

This is an andesite and basalt ( $\text{SiO}_2$  content is between 50.8 and 59.4 wt % ) stratovolcano. There was no fumarolic activity in the past, but there has been fumarolic activity since 1973. It is also known as Tiatia.

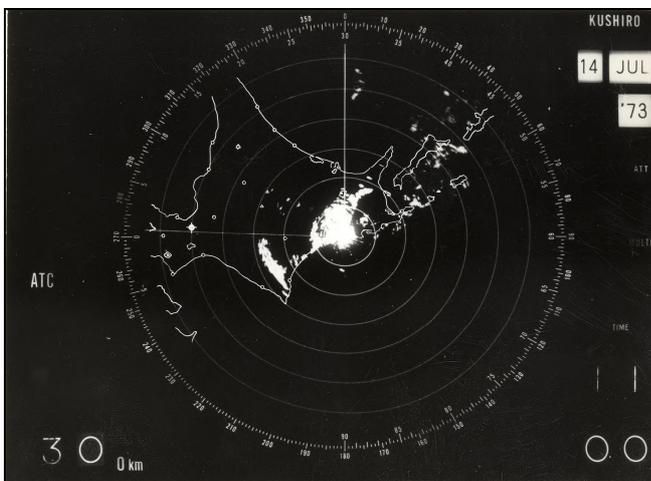
Photos



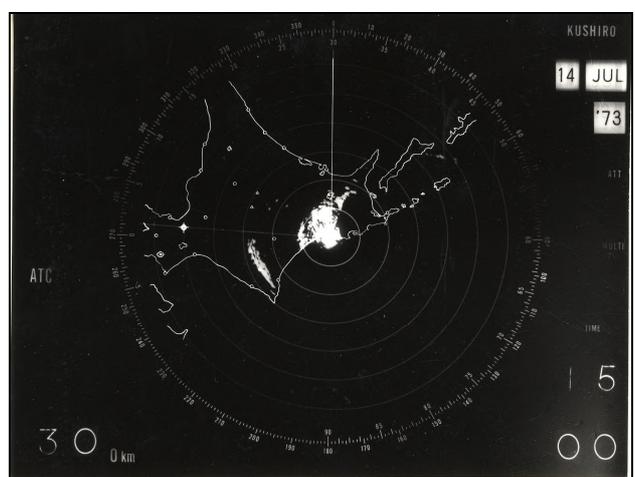
Chachadake central cone on August 1, 1999 . Courtesy of Okazaki, N.



Eruption on July 14, 1973, taken from Nemuro Weather Station to southwest (about 130km from Chachadake)



Radar image on July 14, 1973, 11:00 at Kushiro



Radar image on July 14, 1973, 15:00 at Kushiro

Topographical Map

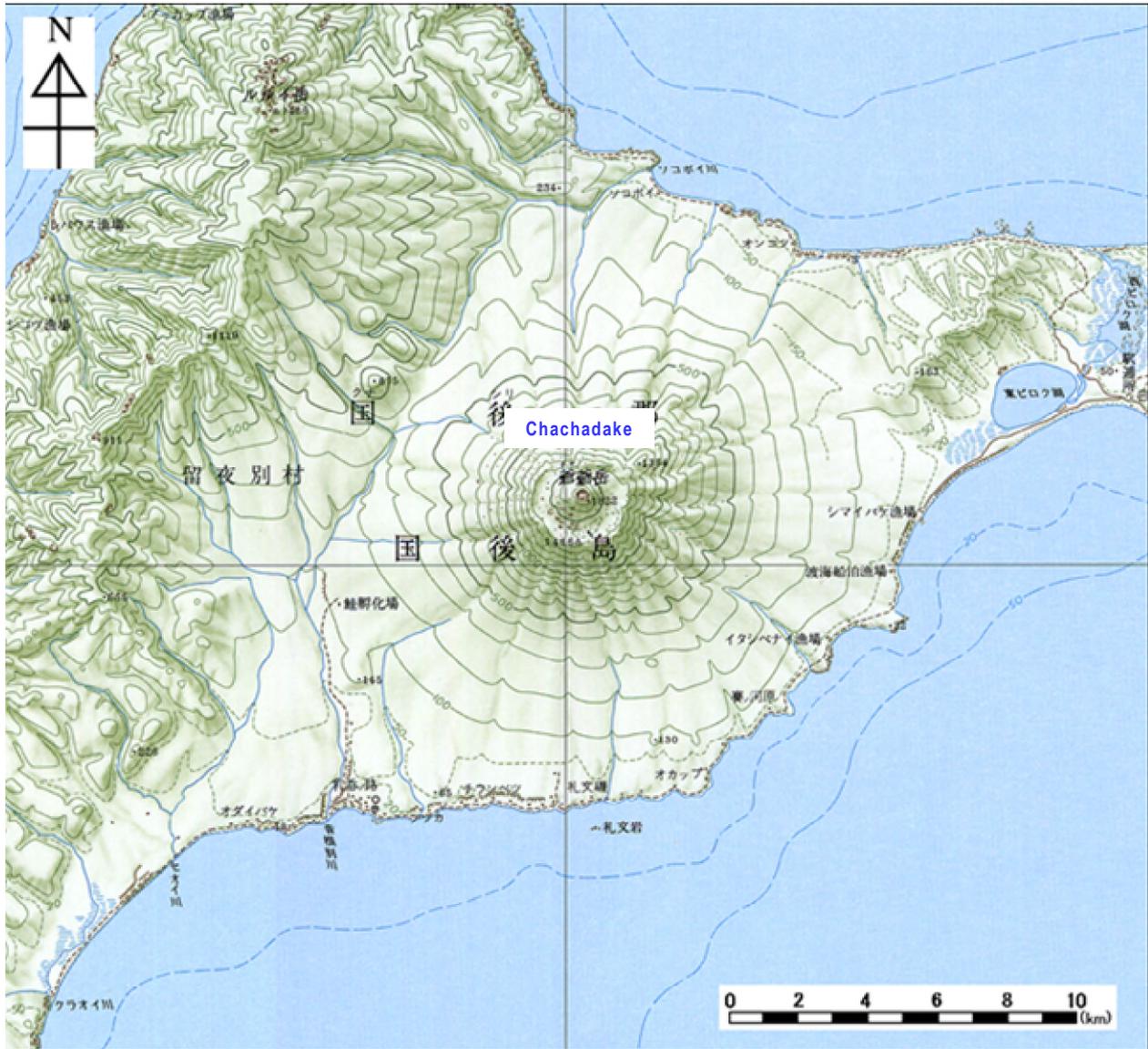


Figure 108-1 Topography of Chachadake  
1:200,000 scale regional map (Atoiyamisaki) published by the Geospatial Information Authority of Japan was used.

## Chronology of Eruptions

### ▪ Volcanic Activity in the Past 10,000 Years

There are at least 13 extremely fresh lava flows distributed at the western side of the bottom of the summit caldera, with their discharge sources at the central cone. Age measurement and analysis of their chemical composition indicates that the central cone has undergone repeated eruptions at relatively short intervals (on the order of 10 to 100 years) since over 1,000 years ago (Nakagawa et al., 2002).

### ▪ Historical Activity

Year	Phenomenon	Activity Sequence, Damages, etc.
1812 (Bunka 9)	Eruption	Lava flow.
1973 (Showa 48)	Eruption	Phreatomagmatic eruption (strombolian eruption, sub-plinian eruption): After a high level of earthquake activity, there were eruptions on the north-northwest and south-southeast flanks from July 14 to July 28, and tephra fall on the Nemuro weather station.
1974 (Showa 49)	Eruption	On January 21 the Nemuro weather station observed white smoke rising several hundred meters.
	Phreatic eruption	Tephra fall in Nemuro Hanasaki area from February 9 to February 10.
1975 (Showa 50)	Phreatic eruption	On June 14 the Nemuro weather station observed a volcanic plume approximately 3,000 m high.
1978 (Showa 53)	Phreatic eruption	On July 20 an explosion sound was heard in Rausu and Shibetsu. A gray volcanic plume was observed from Rausu to be in the sky above Chachadake.
1981 (Showa 56)	Phreatic eruption	From June 24 to June 25 the Nemuro weather station observed orange and bluish white light above Chachadake. On June 25 it observed a black volcanic plume.

## Main Eruptive Activity

### ▪ 1973 Eruption

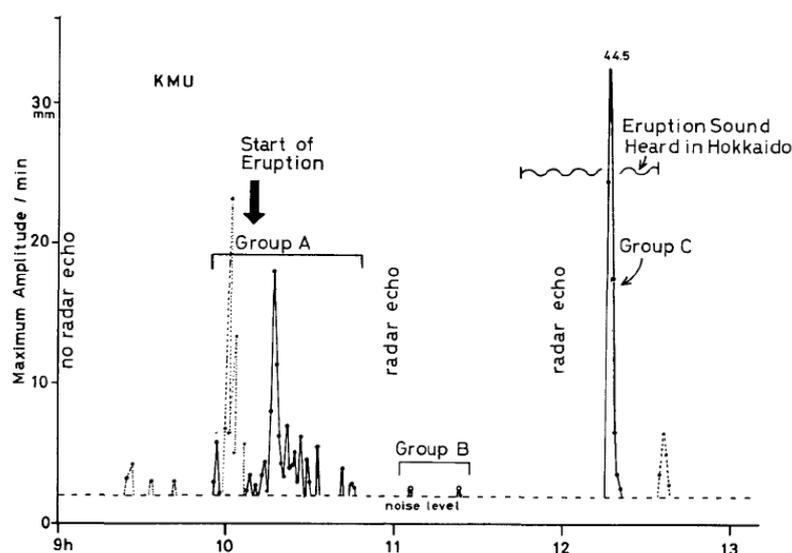


Figure 108-2 Progress of 1973 eruption (Kasahara et al., 1986)

- Earthquake record changes at KMU (Urakawa earthquake observatory) (maximum amplitude each minute)
- Solid lines indicate earthquakes near Chachadake. Dotted lines indicate other earthquakes.

## Recent Volcanic Activity

See Ruruidake Seismic Activity

## Information on Disaster Prevention

① Hazard Map

None

## Bibliography

Kasahara, M. et al. (1986): Geophys. Bull. Hokkaido Univ., 47, 33-40 (in Japanese with English abstract).

Nakagawa, M., et al. (2002): Island Arc, 11, 236-254.

(Nakagawa, M.)