

# Facilities for Sensing Mt. Tokachi Abnormalities

A variety of equipment is installed around Mt. Tokachi to detect signs of eruption. When magma nears the earth's surface, the volcano swells, raising the earth slightly and altering the mountain slopes. There may be an increase in earthquakes too small to feel and earth tremors. These all signal an impending Mt. Tokachi eruption. We also use seismographs and infrasound meters (sound pressure meters) to monitor when volcanic eruptions (and explosions) occur, to quickly detect it if they grow more intense and to send notification to the base of the mountain in less time.

## Clinometers

Clinometers check for slight swelling in mountains through precise measurement of expanding and contracting ground that changes its slope.

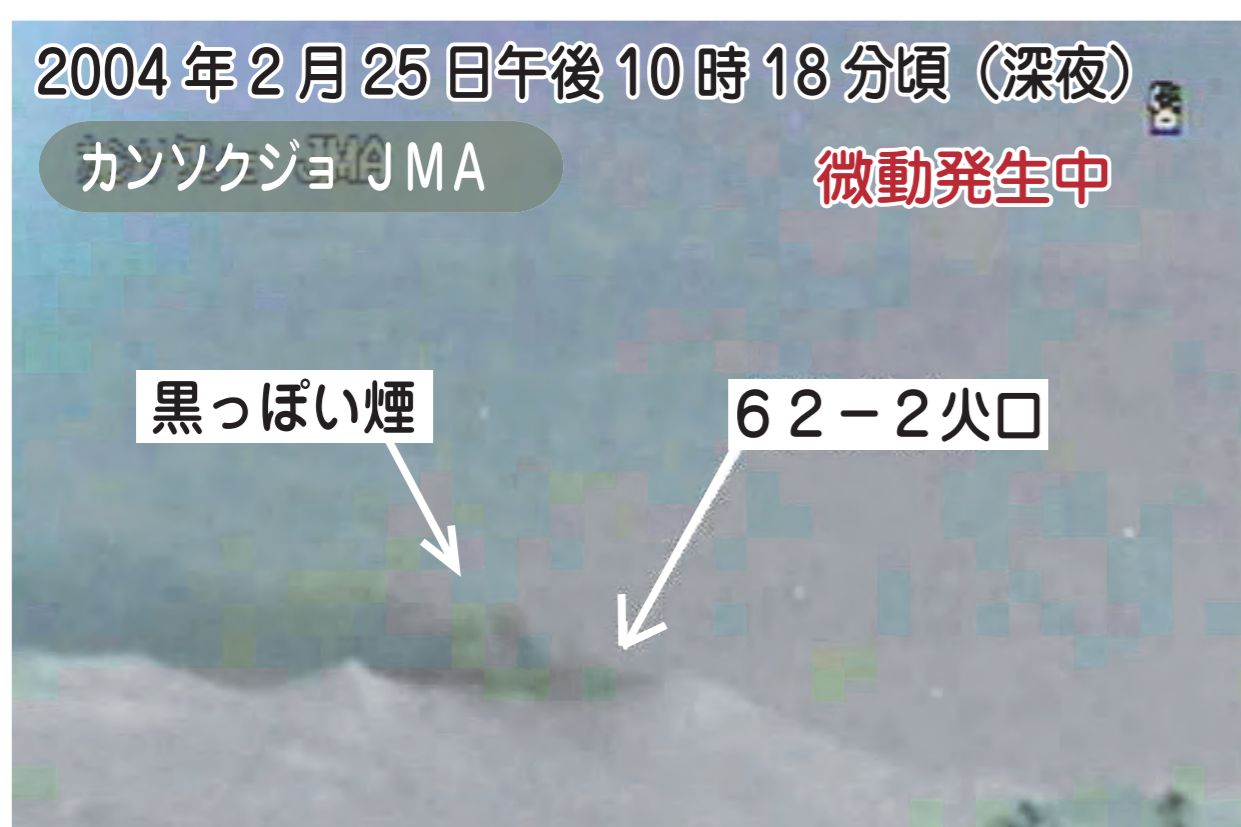


Photo: Japan Meteorological Agency Volcanic Activity Report

## Global Positioning Systems

These sensors monitor the expansion and contraction of mountains invisible to the human eye. Distance is measured via satellites.



GPS

## Seismometers

Seismometer detection is vital to gaining a deep understanding of the condition of Mt. Tokachi. These catch even earthquakes with vibrations that are too small to feel and continuous vibration (tremors) that indicates underground magma, volcanic gas and hot water activity. Seismometers can also detect vibration from mud flow.

### Satellite



### Seismic activity as recorded by seismometers

Time ----->

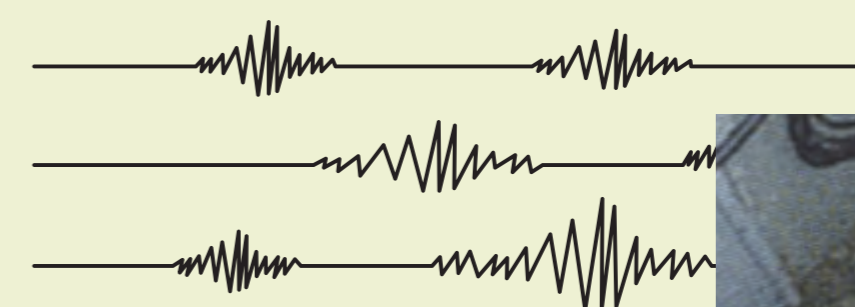
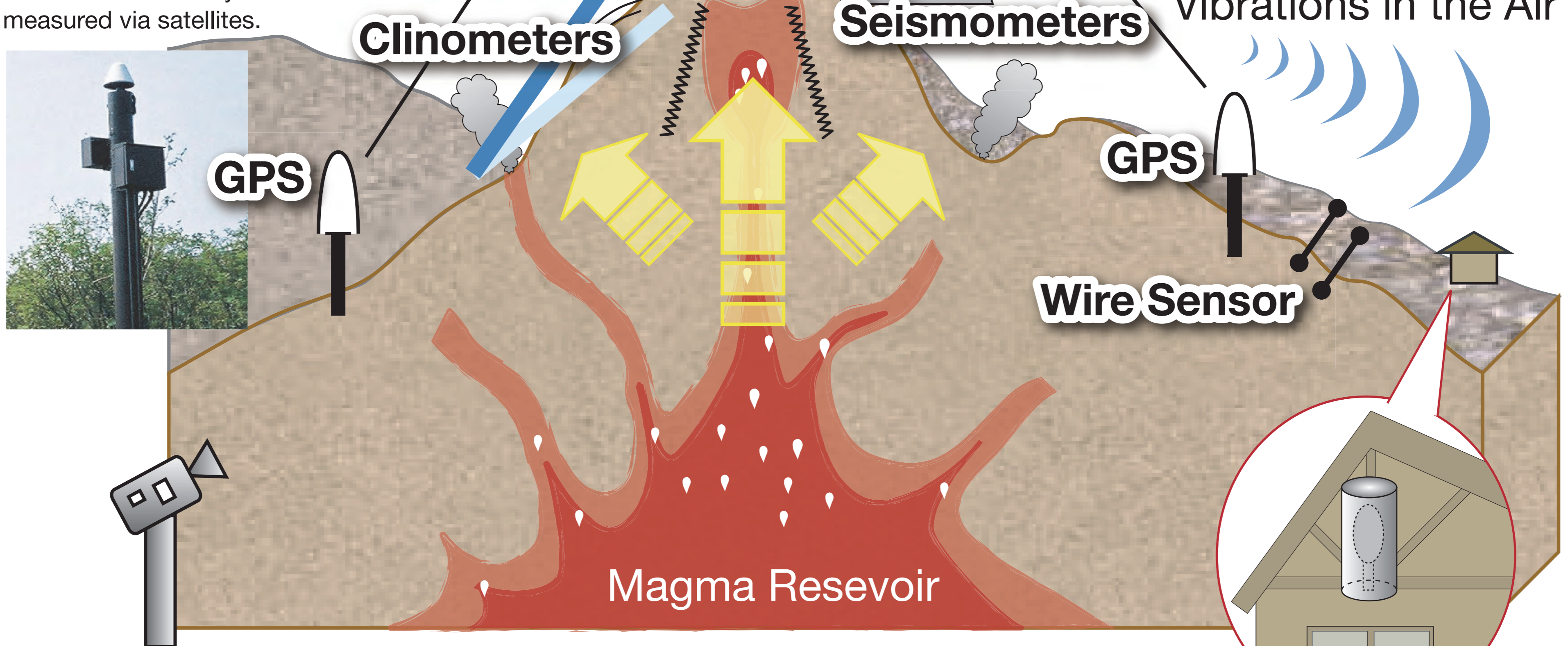


Photo courtesy of Asahikawa Local Meteorological Office



## Surveillance Camera



These cameras constantly monitor Mt. Tokachi for fumes and mudflows. Highly sensitive cameras are utilized for this so that monitoring is continuously conducted at the same level, whether it's day and night.



Rain gauge

Snow Depth Gauges

The towers are also equipped with gauges to measure precipitation and snow depth.

## Wire Sensor

Wires with a weak current are run across swamps. When mud flows, it snaps the wires, which immediately sends notification to the base of the mountain.



## Infrasound Meters

Infrasound meters detect vibrations in the air caused by eruptions. At night or in bad weather when the crater of the volcano isn't visible, these meters help to quickly inform us that an eruption has occurred.



Meters are kept in casing.