

SEISMIC DATA SET 2 (THROUGH JUNE 12)

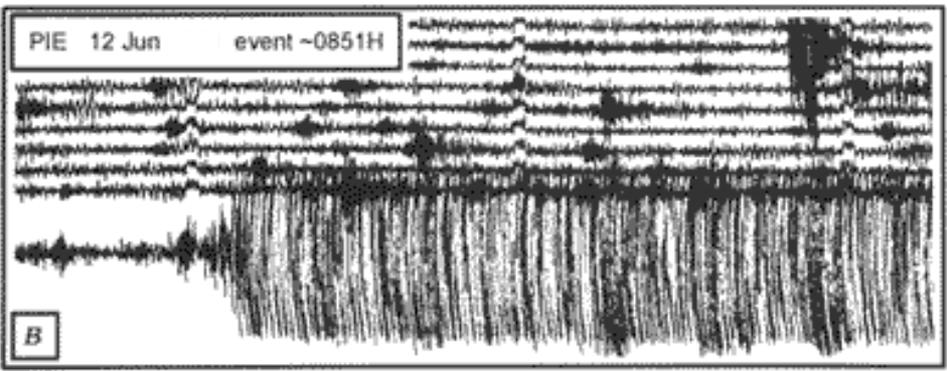
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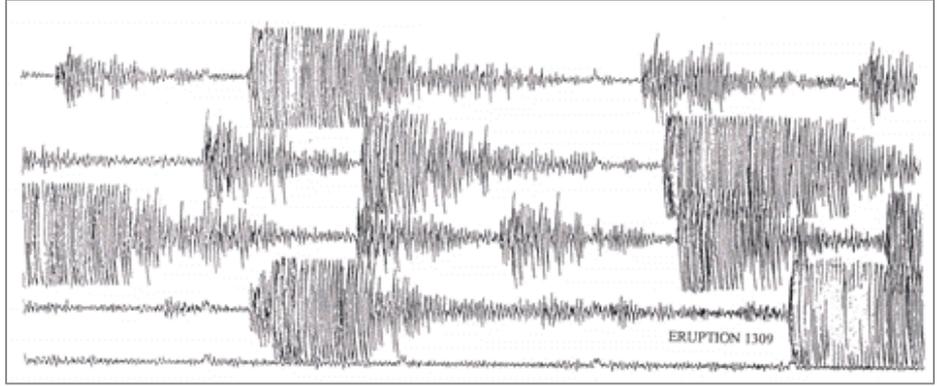
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EARTHQUAKES:

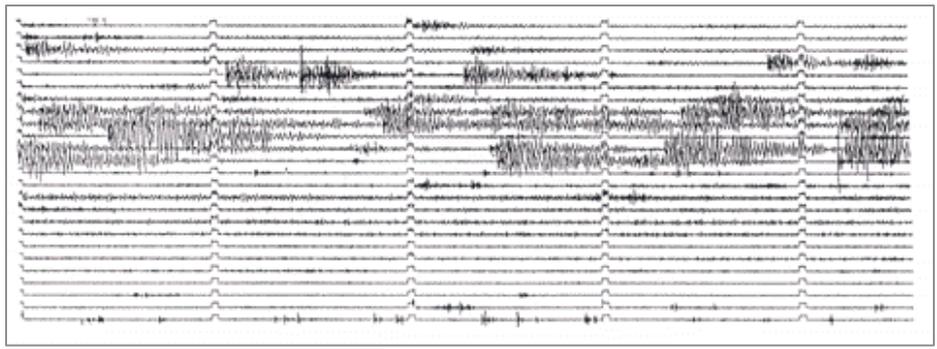
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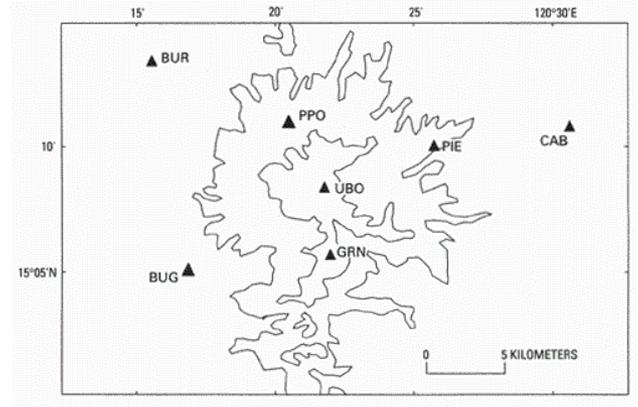
Seismograms of explosions from volcano's crater. Time marks are 60 sec apart.



Section of station CAB drum records between June 12-14, 1991. Time markers represent 1-min intervals.



Section of station CAB drum June 12 -14. Time markers represent 1-min intervals.

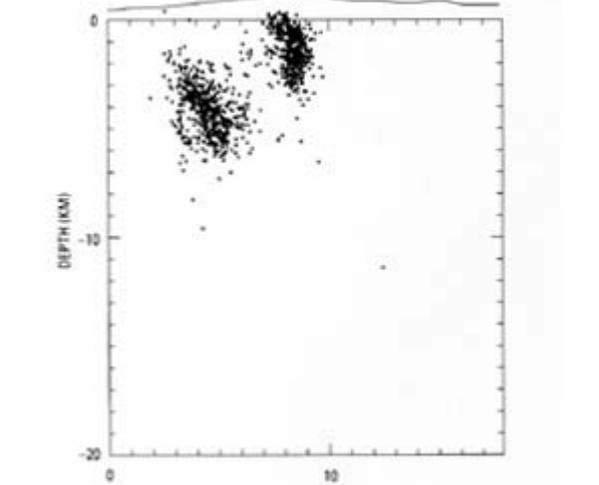
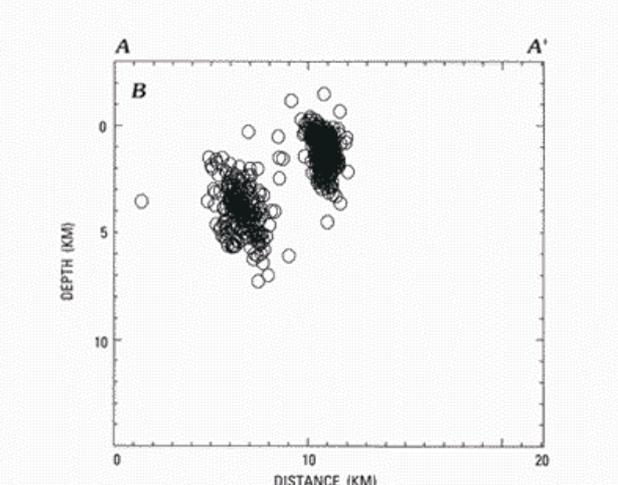
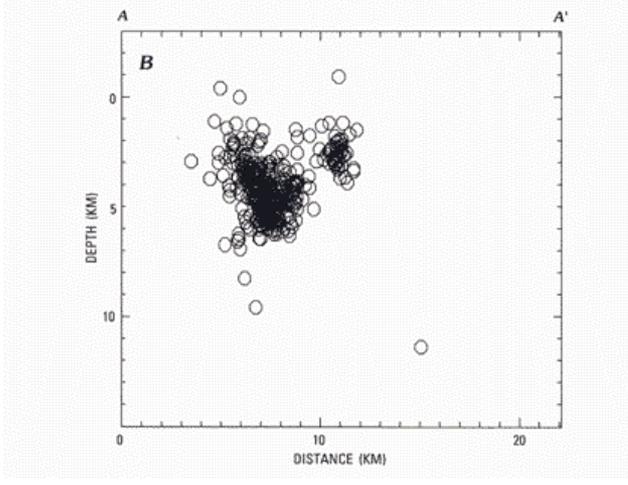
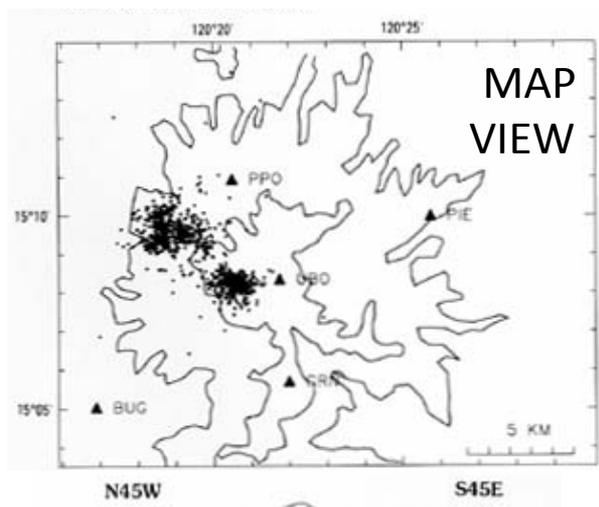
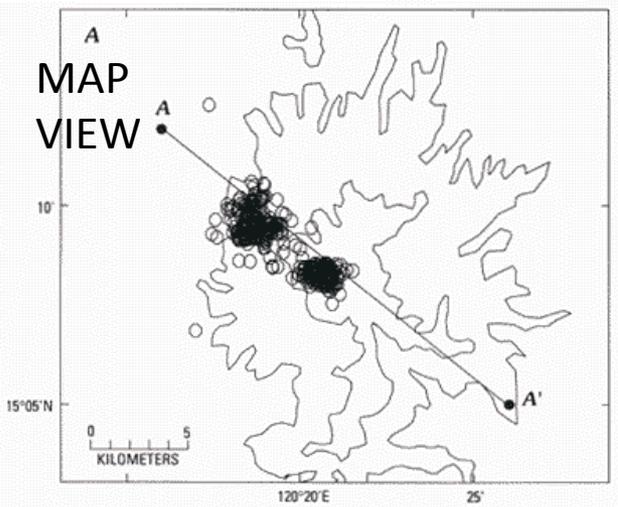
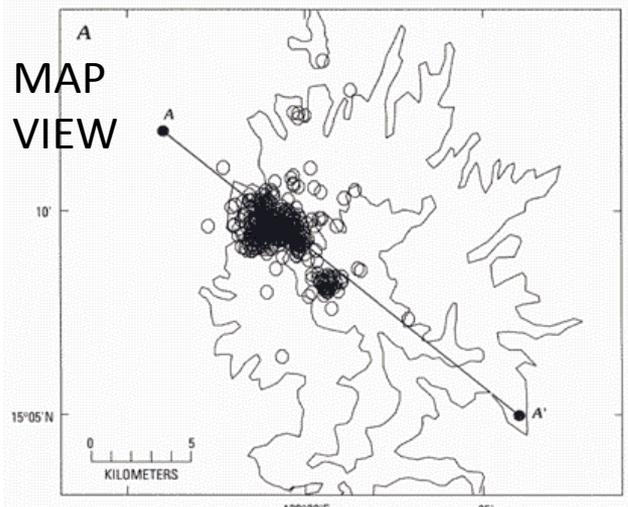


Map from Lockhart et al., 1996
Data from Harlow et al., 1996

May 6-31

June 1-7

June 8-12



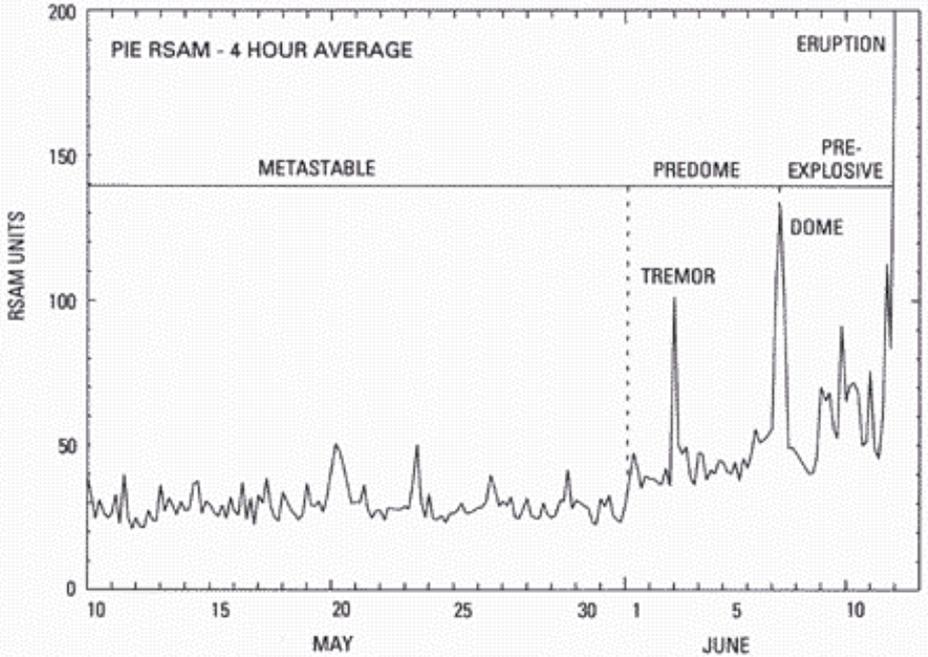
A side view of earthquake locations under the volcano (note location of line A-A' on map above)

A side view of earthquake locations under the volcano (note location of line A-A' on map above)

A side view of earthquake locations under the volcano

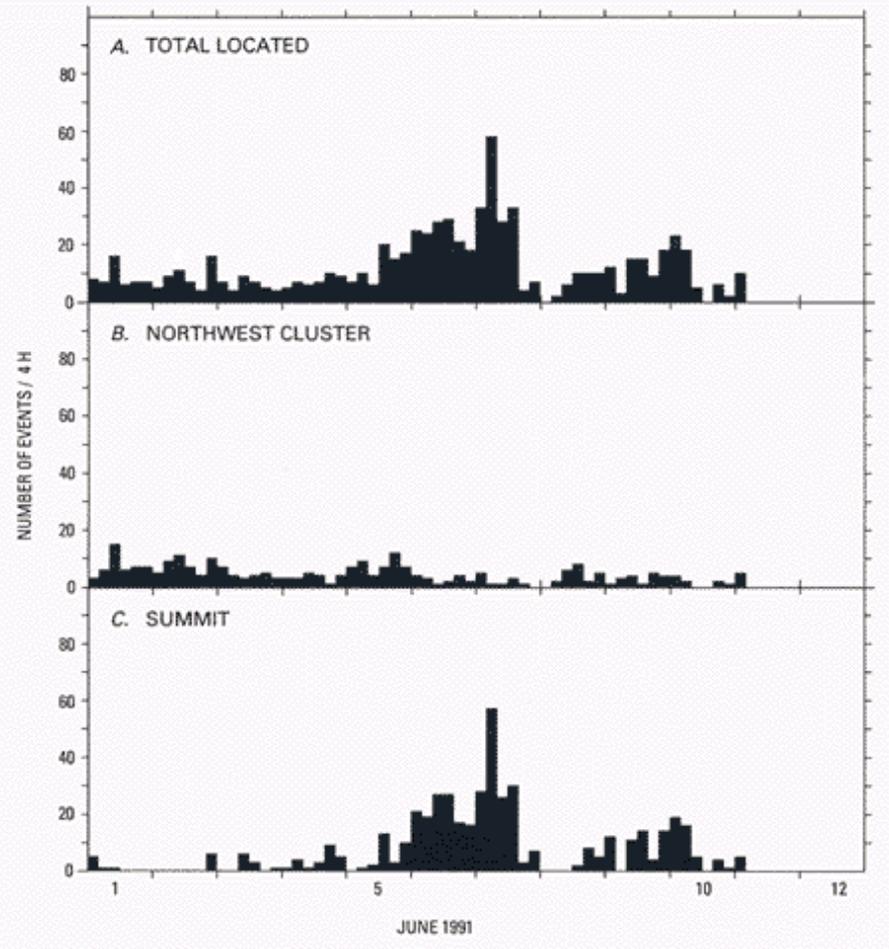
EARTHQUAKES

RSAM data: recall that RSAM (Real-time seismic amplitude measurement) represents an average of absolute seismic amplitudes for seismic stations. RSAM does not discriminate between *types* of earthquakes, but all seismic signals are averaged and recorded.



Plot the 4 hour average RSAM values from May 10-June 12, 1991

SEISMIC DATA SET 2 THROUGH JUNE 12



Number of seismic events per 4-hour intervals between **June 1 and June 12** from (A) the entire volcano network, (B) the cluster of seismic activity 5 km northwest of the summit, and from (C) beneath the summit.

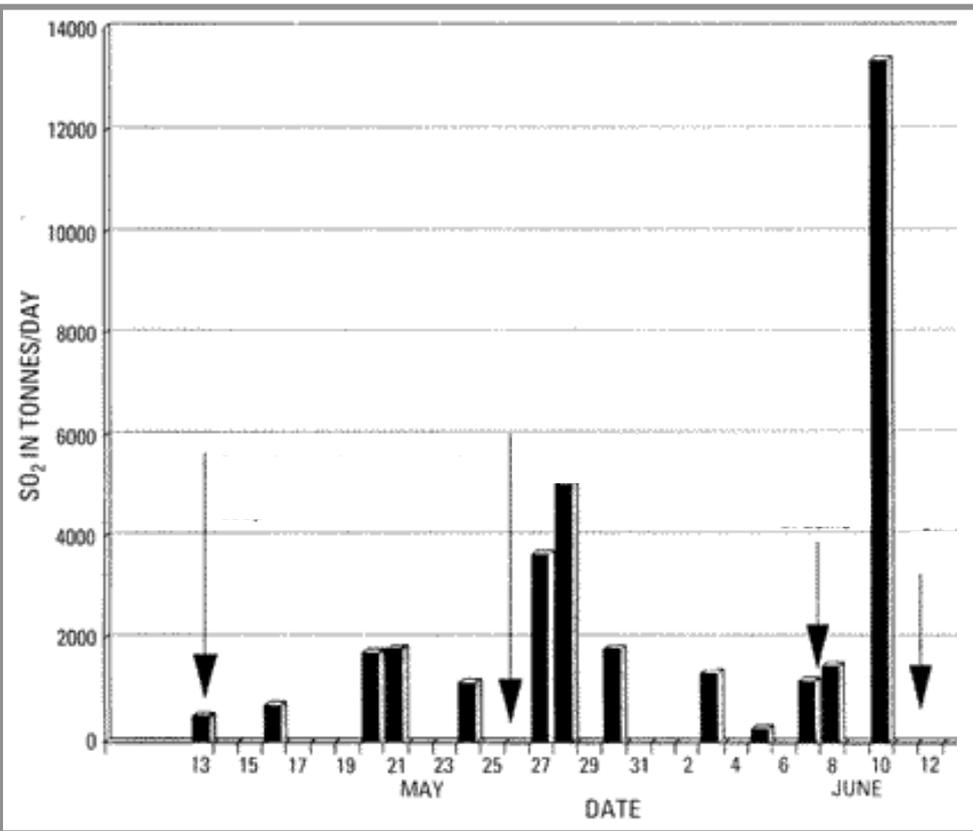
GAS AND ASH DATA SET 2 (THROUGH JUNE 12)

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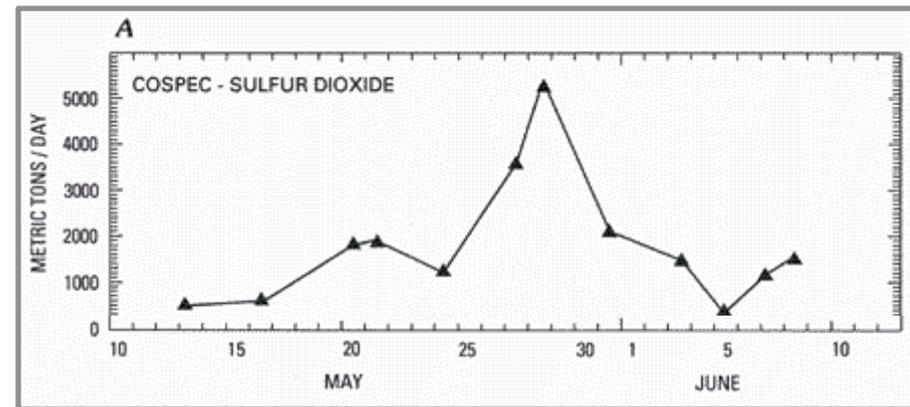
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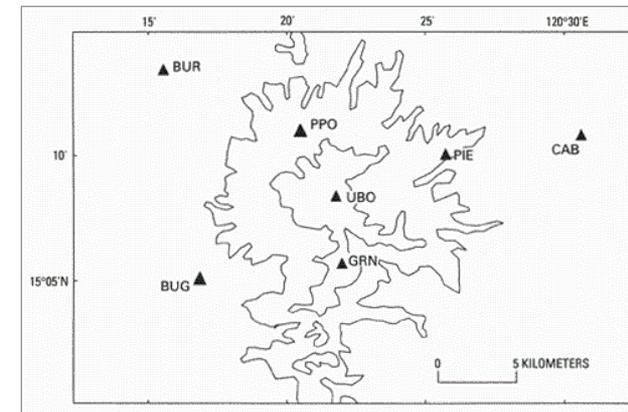
On April 2, people in the vicinity smelled hydrogen sulfide (H_2S). On April 4, 1991, a volcanology team flew over the volcano and found a chain of vigorously steaming vents across the north face of the volcano (see images attached). The team judged that the activity was of hydrothermal origin. Vents at the northeastern side were short-lived; by the time COSPEC surveys were started, only five vents nearer to the summit were actively steaming.



SO₂ emission from May 13 to June 12



Plot of SO₂ volumes from **May 10 to June 12**, estimated from COSPEC measurements

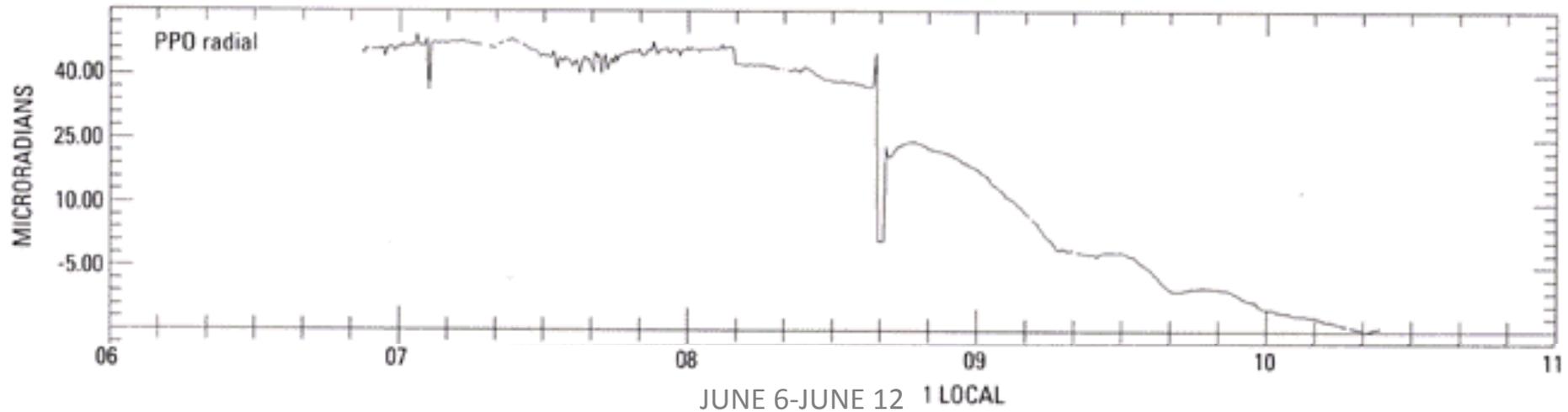


TILT DATA SET 2 (THROUGH JUNE 12)

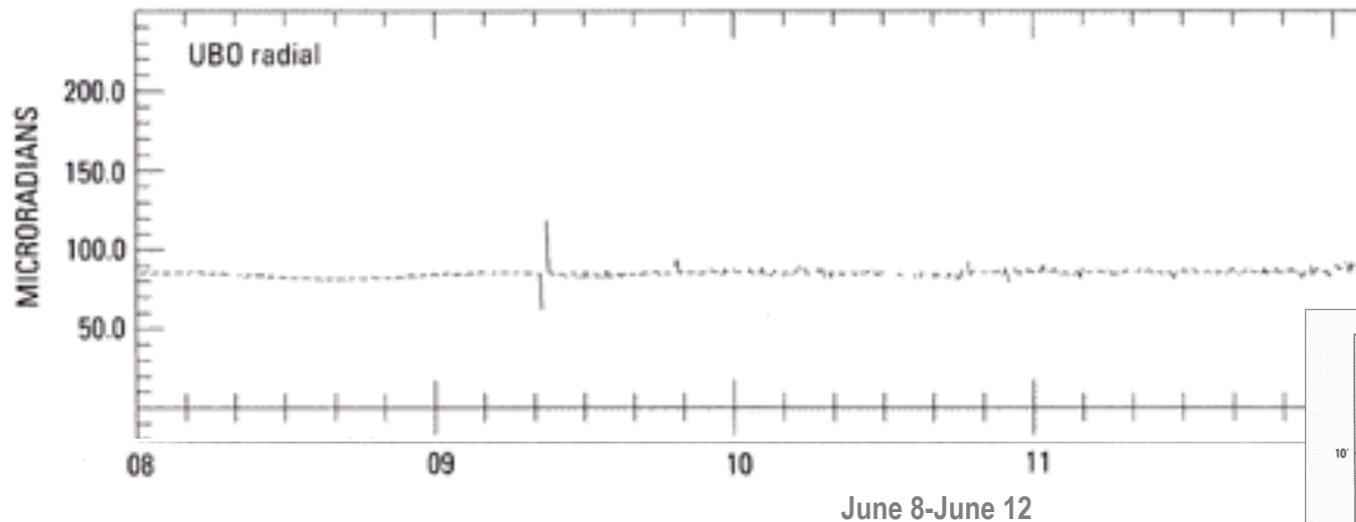
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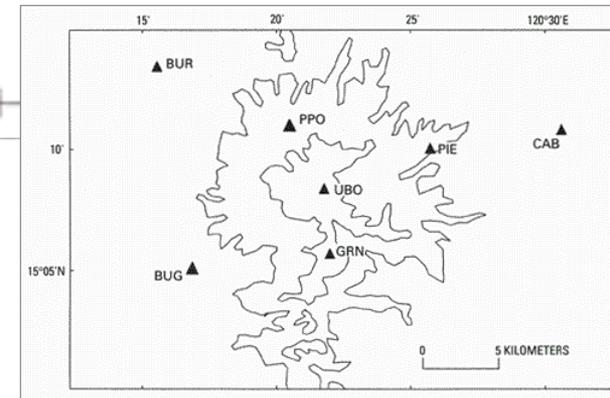
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PPO tiltmeter, north side of volcano. Tiltmeters are sensitive to even slight changes in temperature, so burial 1 to 2 m deep is necessary in order to isolate the instrument from diurnal temperature changes.



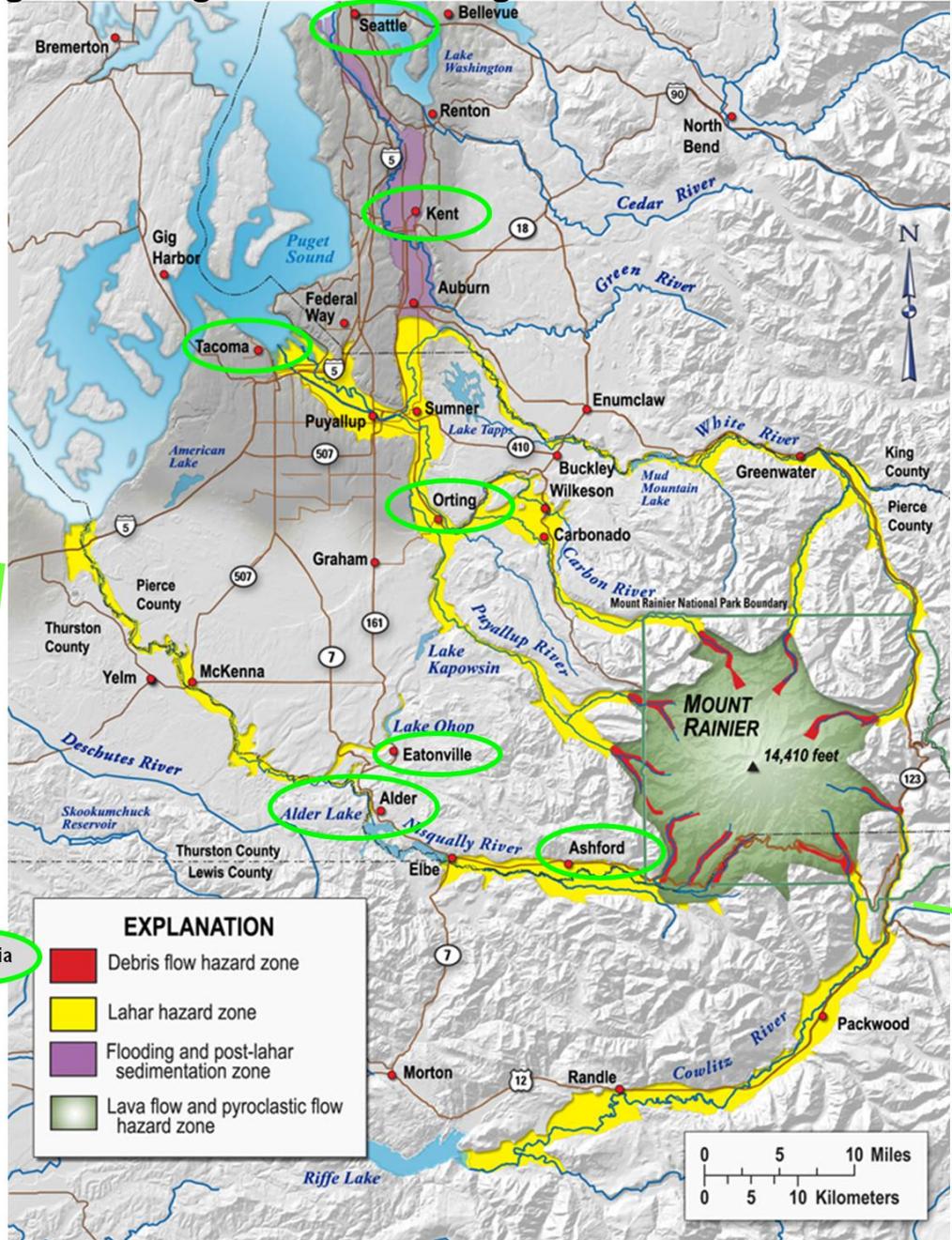
UBO tiltmeter east side of Mount Pinatubo. No signs of ground cracking or faulting were observed in the rift area or the summit region during helicopter inspections between June 7 and 12.



Living on the Edge: Unit 6: Convergent Plate Boundaries

Because of its elevation (4,392 m), relief, hydrothermal alteration, ice cap, glacier-fed radial valleys, and proximity to suburbs of the Seattle-Tacoma area, **Mount Rainier is the most threatening volcano in the Cascades**. Its next eruption could produce volcanic ash, lava flows, and *avalanches of intensely hot rock and volcanic gases, called pyroclastic flows*. Some of these events swiftly melt snow and ice and could produce torrents of meltwater that erode loose rock and become *rapidly flowing slurries of mud and boulders known as lahars*, which is the greatest risk at the volcano, rather than from an eruption itself.

http://volcanoes.usgs.gov/volcanoes/mount_rainier/mount_rainier_hazard_49.html



<http://pubs.usgs.gov/pinatubo/harlow/fig2.gif>

Centralia

Yakima

"We call it low probability, high consequence," says Steven Bailey, Pierce County, Washington's director of emergency management. "It's a low probability it's going to occur in our lifetime. But if and when it does, the consequences are going to be huge."

www.geographyalltheway.com/igcse_geography/natural_environments/plate_tectonics/igcse_volcanoes_manage.htm

Living on the Edge: Unit 6: Convergent Plate Boundaries

The USGS has established an alert level system to communicate the likelihood of increasing or decreasing volcanic activity. Keep these alert levels in mind as you look through the geologic activity data attached.

Standard Volcano Icons

Ground-based Volcano Alert Levels

Normal Advisory Watch Warning

Aviation Color Codes

Green Yellow Orange Red

————— Increasing level of concern —————>

 Unassigned (Insufficient monitoring to make assessment)

ALERT LEVEL	DESCRIPTION
NORMAL	Volcano is in typical background, non-eruptive state <i>or, if changing from a higher level:</i> The activity has ceased and volcano has returned to non-eruptive background state.
ADVISORY	Volcano is exhibiting signs of elevated unrest above known background level; <i>or, if changing from a higher level:</i> Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.
WATCH	Volcano is exhibiting heightened or escalating unrest with increased potential of eruption, timeframe uncertain, OR eruption is underway but poses limited hazards.
WARNING	Hazardous eruption is imminent, underway, or suspected.

<http://volcanoes.usgs.gov/activity/alertsystem/index.php#alertlevel>

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