Seismic Event Rates - Single-Station Triggers

suggesting that there may have been other phenomena, such as magma intrusion, involved in these earthquakes.

Number of Triggers/Day

Figure 5. Interferograms for the May 24, 2007 event.

• Two shallow oblique strike-slip M4+ earthquakes along the outermost caldera faults

• A strong swarm of shallow volcano-tectonic (VT) earthquakes beginning on June 17 (Figure 2)

• InSAR analysis and forward modeling together suggest that the May 24 M4+ earthquakes may have been accompanied by additional compression.

Seismic Event Rates - Single-Station Triggers

Seismic Event Rates - Single-Station Triggers

Earthquake Locations

Earthquake Locations

Earthquake Fault-Plane Solutions - June 1-16

We used the catalog focal mechanism (Nakata and Okubo 2008) of the SWRZ earthquake to construct a P-axis solution (Figure 8b).

Earthquake Fault-Plane Solutions - June 1-16

Earthquake Fault-Plane Solutions - June 1-16

SAR Interferometry and Forward Modeling

Interferometric Synthetic Aperture Radar (InSAR) Figure 11a, c) provides high-resolution measurements of surface deformation with centimeter-scale accuracy. Two interferograms, one ascending and one descending, were produced for periods encompassing the May 24, 2007 eruption. The deformation due to the May 24, 2007 eruption is evident in both interferograms.

Synopsis

• InSAR, SAR interferometry, and forward modeling together suggest that the May 24 M4+ earthquakes may have been accompanied by additional phenomena contributing to surface deformation.

Discussion/Future Work

• The InSAR data and focal mechanisms from the 2007 Father’s Day eruptions may provide new insights into the complex nature of these phenomena.

References and Acknowledgments


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