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## The ASTER Volcano Archive (AVA): Twenty years of global monitoring of active volcanoes

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Orbital remote sensing is the only tool allowing global, systematic monitoring of all 1500+ active volcanoes (based on the Smithsonian Holocene catalog). A specialized archive has been developed at the Jet Propulsion Laboratory: the ASTER Volcano Archive (AVA). AVA is comprised of over 200,000 ASTER frames spanning 20 years of the NASA's Terra platform mission. The ASTER Volcano Archive (AVA: <http://ava.jpl.nasa.gov>) is the world's largest (at 100+Tb), and the only high spatial resolution (15-30-90m/pixel), multi-spectral (VNIR-SWIR-TIR), downloadable (kml enabled) dedicated archive of volcano imagery. The system is designed to facilitate parameter-based data mining, and for the implementation of archive-wide data analysis algorithms. Results include thermal anomaly detection and mapping, the temporal variability of individual volcanic emissions, as well as the detection of SO<sub>2</sub> plumes from both explosive eruptions and from passive emissions. A major expansion of the archive was implemented with the ingest of the full 1972-present Landsat dataset. In addition, the archive includes NASA Earth Observing-1 (EO-1) multispectral and hyperspectral imagery (10-30 m/pixel) of a subset of the Holocene catalog volcanoes obtained between 2004 and 2017. The newest version of AVA has been ported to the Amazon Web Services cloud and managed by the Jet Propulsion Laboratory's Hybrid Science Data System (HySDS). This migration provides all of the previous capabilities, providing a stable, fast platform for rapid access to data. The system is updated with new data daily, with a latency of a few days following data acquisition. Currently we are developing a new user interface to facilitate easy, fast and efficient access to the archive. This work was performed at the Jet Propulsion Laboratory, California Institute of Technology under contract to NASA. © 2020 Caltech.