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The MODIS global active fire data record and its continuity with past and future space-based observations

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Active fire and Fire Radiative Power (FRP) are part of the Fire Disturbance Essential Climate Variable of the Global Climate Observing System. The Moderate Resolution Imaging Spectroradiometer (MODIS) aboard the polar orbiting Terra and Aqua satellites of the NASA Earth Observing System has bands specifically designed for active fire detection and characterization. The MODIS Fires and Thermal Anomalies product has been generated systematically since late 2000. The standard product includes an active fire and cloud mask, FRP, quality assessment information and extensive metadata. Rigorous validation of the product, using coincident fire observations from higher spatial resolution sensors, has yielded data on detection limits and commission and omission error rates. The MODIS active fire data record has been processed into global spatially and temporally aggregated Climate Monitoring Grid datasets. Various metrics of the spatial and temporal dynamics of fire activity have been derived from a large scale multi-year analysis of the data. Fire observations from MODIS are a NASA contribution to the Fire Mapping and Monitoring theme of the Global Observation of Forest Cover and Landcover Dynamics program, which is promoting, among other goals, the creation of a long-term climate quality active fire data record. The active fire algorithm proposed for VIIRS (Visible Infrared Imager Radiometer Suite) on the future operational National Polar Orbiting Environmental Satellite System and the experimental NPOESS Preparatory Project platforms builds on the heritage of the MODIS product. Efforts are being made to ensure continuity between the MODIS and

VIIRS data records and to explore the potential to extend the data record into the past using heritage sensors, such as the Advanced Very High Resolution Radiometer and the Along-Track Scanning Radiometer series.