



Data User Guide

GPM Ground Validation Aerosol and Water Vapor Lidar Quicklooks GCPEX

Introduction

The GPM Ground Validation Aerosol and Water Vapor Lidar Quicklooks GCPEX was gathered during the GPM Cold-season Precipitation Experiment (GCPEX) which occurred in Ontario, Canada during the winter season (Jan 15- Feb 26) of 2011-2012. The dataset includes quicklook images displaying backscatter for aerosol and water vapor. The data files are available in jpg format.

Citation

Strawbridge, Kevin B. and David Hudak. 2015. GPM Ground Validation Aerosol and Water Vapor Lidar Quicklooks GCPEX [indicate subset used]. Dataset available online [ftp://gpm.nsstc.nasa.gov/gpm_validation/gcpex/LIDAR/] from the NASA EOSDIS Global Hydrology Resource Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A. doi: <http://dx.doi.org/GPMGV/GCPEX/LIDAR/DATA101>

Keywords:

Lidar, GPM, GCPEX, Environment Canada, aerosol, water vapor, backscatter, quicklook image

Campaign

The GPM Cold-season Precipitation Experiment (GCPEX) occurred in Ontario, Canada during the winter season (Jan 15- Feb 26) of 2011-2012. GCPEX addressed shortcomings in GPM snowfall retrieval algorithm by collecting microphysical properties, associated remote sensing observations, and coordinated model simulations of precipitating snow. These data sets were collected toward achieving the overarching goal of GCPEX which is to characterize the ability of multi-frequency

active and passive microwave sensors to detect and estimate falling snow. Additional information can be found at <http://gpm.nsstc.nasa.gov/gcpex/>.

Instrument Description

Aerosol and Water Vapor Quicklook LIDAR imagery is available for January -March 2012 timeframe of the GPM Ground Validation GCPEX campaign which took place in Canada. The Semi-Autonomous Tropospheric Aerosol Lidar (Daily Aerosol Lidar Backscatter Ratio 1064nm plots at 4km and 12km altitude ranges) measures the backscattered light from an NdYAG pulsed laser. System is configured to run semi-autonomously and shuts down automatically for the duration of rain events. The Tropospheric Water Vapor Lidar (Water Vapor Mixing Ratio Plots up to 9.5km) emits 355nm light using an NdYag pulsed laser. The 355 nm Raman shifted backscatter light from nitrogen and water vapor are measured and used to calculate a vertically resolved profile of Water Vapor Mixing ratios.

Investigators

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File Naming Convention Aerosol:

gcpex_lidar_aerosol_YYYY_MM_DD_<ALTRANGE>_#km_CARE.jpg
Example: gcpex_lidar_aerosol_2012_02_27_1064_4km_CARE.jpg

Water Vapor:

gcpex_lidar_water_vapor_YYYY_MM_DD_9500m_CARE.jpg
Example: gcpex_lidar_water_vapor_2012_02_09_9500m_CARE.jpg

Where,

YYYY_MM_DD = Year, Month, Day

<ALTRANGE> = altitude range (1064)

##km = either 4 or 12 km - for aerosol

9500m = <ALTRANGE> - for water vapor

CARE- site of data collection

jpg = jpeg image

Data Format Description

The GPM Ground Validation Aerosol and Water Vapor Lidar Quicklooks GCPEX is available in jpg images.

References

Skofronick-Jackson, G., W. Petersen, D. Hudak, and M. Schwaller. 2011. GPM Cold-season Precipitation Experiment (GCPEX). Retrieved from http://pmm.nasa.gov/sites/default/files/document_files/GCPEX_science_plan_CURRENT.pdf

Contact Information

To order these data or for further information, please contact:

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User Services

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