Table 2 – Overview of File Content

Group Name	Description	Cross-references
(top-level, unnamed)	Top-level group, containing file attributes.	Table 3 and Table 4 (file attributes)
Aerosol_Parameter_Average	Contains parameter averages on 0.5° × 0.5° latitude-longitude grid.	Table 5 (dimensions) Table 6 (fields)
Source_file	Contains a list of input products used.	Table 7
Time_of_Observations_Aerosol_Parameter_Average	Lists observation times represented within each 0.5° × 0.5° latitude-longitude grid cell.	Table 8
HDFEOS_INFORMATION	Contains ECS Inventory Metadata, used by the DAAC, for ingesting, cataloging, and searching data products.	

Table 3 – NetCDF Climate and Forecast (CF) Standard File Attributes

Attribute Name	Value
title	MISR Level 3 Component Global Aerosol Product
institution	MISR Level 3 Component Global Aerosol Products are produced by the MISR Science Team using processing and storage facilities of the NASA Langley Research Center DAAC.
source	Aerosol retrievals are obtained from the MISR Level 2 Aerosol Products.
history	*<date>* : Initial production using software version *<version tag>,* built *<build date>*, by *<user id>*. See also Software_version_information and Input_files.
references	Data Product Specifications and Algorithm Theoretical Basis Documents are available from the Langley Atmospheric Science Data Center at https://eosweb.larc.nasa.gov/project/misr/misr_table.
Conventions	CF-1.6

Table 4 – File Attributes

Attribute Name	Definition	Data Type	Units	Valid Range
Local_granule_id	Name of this file	String	n/a	
Local_version_id	Software version identifier	String	n/a	
PGE_version	Version of the PGE used to generate this file	String	n/a	
Range_beginning_time Range_ending_time	Time range covered by this product	String	UTC	ISO 8601 format, e.g. 2004-06-30T21:17:11.711120Z
Software_version_information	Software version information	String	n/a	
Software_version_tag	Tag identifying software version	String	n/a	
Software_build_date	Date and time of software build	String	n/a	ISO 8601 format, e.g. 2017-03-07T00:07:01Z
Runtime_environment_information	Information about PGE runtime environment	String	n/a	
Input_files	List of input files used in data processing	String	n/a	

Table 5 – Aerosol_Parameter_Average Dimensions

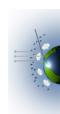| Dimension Name	Description	Data Type	Units	Valid Range
Longitude	Longitude at the center of each grid cell	64-bit float	degrees east	-180 to 180
Latitude	Latitude at the center of each grid cell	64-bit float	degrees north	-90 to 90
Band	Spectral band	string	n/a	0: blue 446 nm 1: green 558 nm 2: red 672 nm 3: nir 867 nm
Optical_Depth_Range	Range of aerosol optical depth (AOD) at 550 nm in each bin. Fields with this dimension are binned according the 550 nm AOD reported in the Level 2 *Aerosol_ Optical_Depth* field.	string	n/a	0: all 1: less than 0.05 2: 0.05 to 0.15 3: 0.15 to 0.25 4: 0.25 to 0.4 5: 0.4 to 0.6 6: 0.6 to 0.8 7: 0.8 to 1.0 8: greater than 1.0
Coefficient	Spectral AOD scaling coefficient. Spectral AOD scaling coefficients are parameters of a second order polynomial fit to the spectral AODs such that $AOD(\lambda) = c_1 \lambda^2 + c_2 \lambda + c_3$, where λ is the wavelength in μm.	string	n/a	0: c1 1: c2 2: c3
Algorithm_Type	Indicates which type of Level 2 aerosol retrieval algorithm was performed	string	n/a	0: no retrieval 1: water 2: land
Retrieval_Success_Type	Indicates whether a Level 2 aerosol retrieval was successful	string	n/a	0: success 1: fail

Table 6 – Aerosol_Parameter_Average Fields

Field Name Parameter Description	Dimensions	Data Type	Units	Flag Values
Absorbing_Optical_Depth Average of AOD × (1-SSA), reported at 550 nm, where SSA is retrieved single scattering albedo at 550 nm	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Absorbing_Optical_Depth_Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Absorbing_Optical_Depth_Standard_ Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Aerosol_Optical_Depth Average of AOD at 550 nm	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Aerosol_Optical_Depth_Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Aerosol_Optical_Depth_Standard_ Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Small_Mode_Aerosol_Optical_Depth Average AOD fraction at 550 nm due to small mode aerosols (particle radius < 0.35 μm)	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Small_Mode_Aerosol_Optical_Depth_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Small_Mode_Aerosol_Optical_Depth_ Standard_Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Medium_Mode_Aerosol_Optical_Depth Average AOD fraction at 550 nm due to medium mode aerosols (particle radius 0.35 – 0.7 μm)	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Medium_Mode_Aerosol_Optical_Depth_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Medium_Mode_Aerosol_Optical_Depth_ Standard_Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill

Table 6 – Aerosol_Parameter_Average Fields

Large_Mode_Aerosol_Optical_Depth Average AOD fraction at 550 nm due to large mode aerosols (particle radius > 0.7 μm)	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Large_Mode_Aerosol_Optical_Depth_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Large_Mode_Aerosol_Optical_Depth_ Standard_Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Nonspherical_Aerosol_Optical_Depth Average AOD fraction at 550 nm due to nonspherical aerosols	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Nonspherical_Aerosol_Optical_Depth_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit integer	count	0 = Fill
Nonspherical_Aerosol_Optical_Depth_ Standard_Deviation Standard deviation of samples included in average	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Spectral_AOD_Scaling_Coefficient Parameters of a second order polynomial fit to the averaged spectral AODs such that $AOD(\lambda) = c_1 \lambda^2 + c_2 \lambda + c_3$ where λ is the wavelength in μm	Latitude, Longitude, Optical Depth Range, Coefficient	32-bit float	n/a	-9999.0 = Fill
Spectral_AOD_Scaling_Coefficient_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range, Coefficient	32-bit integer	count	0 = Fill
Angstrom_Exponent_550_860 Ångström exponent calculated using the averaged AODs at 550 and 860 nm	Latitude, Longitude, Optical Depth Range	32-bit float	n/a	-9999.0 = Fill
Aerosol_Optical_Depth_Per_Band AOD in each of the 4 MISR spectral bands calculated using the averaged Spectral_AOD_Scaling_ Coefficient	Latitude, Longitude, Optical Depth Range, Band	32-bit float	n/a	-9999.0 = Fill
Aerosol_Optical_Depth_Per_Band_ Count Number of samples included in average	Latitude, Longitude, Optical Depth Range, Band	32-bit integer	count	0 = Fill
Absorbing_Aerosol_Optical_Depth_Per Band Average of AOD × (1-SSA), reported per MISR spectral band, where SSA is the average single scattering albedo per band	Latitude, Longitude, Optical Depth Range, Band	32-bit float	n/a	-9999.0 = Fill

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Table 6 – Aerosol_Parameter_Average Fields

Absorbing_Aerosol_Optical_Depth_Per_Band_Count Number of samples included in average	Latitude, Longitude, Optical Depth Range, Band	32-bit integer	count	0 = Fill
Algorithm_Type_Count Count of occurrences for each algorithm type	Latitude, Longitude, Algorithm Type, Retrieval Success Type	32-bit integer	count	0 = Fill
Average_Fill_Flag Indicates geographical extent of MISR blocks processed	Latitude, Longitude	8-bit integer	n/a	0 = not processed 1 = processed

Table 7 – Source_file Contents

Field Name Parameter Description	**Dimensions**	**Data Type**	**Units**	**Valid Range**
Index Common dimension shared by all fields in this group	Index	32-bit integer	n/a	positive integer
Orbit_Number Terra orbit number	Index	32-bit integer	n/a	1 to 999999
Path_Number Path number of the Space Oblique Mercator (SOM) projection for this Terra orbit	Index	32-bit integer	n/a	1 to 233
Local_Granule_Id Name of input product	Index	string	n/a	e.g. MISR_AM1_CGAS_P030_O091953_F15_0018.nc
Local_Version_Id Version information from input product	Index	string	n/a	e.g. MISR_EXEC_VERSION: V6.0.7 MISR_EXEC_NAME: pge11c_main

Table 8 – Time_of_Observations_Aerosol_Parameter_Average Contents

Field Name Parameter Description	Dimensions	Data Type	Units	Valid Range
Index Common dimension shared by all fields in this group	Index	32-bit integer	n/a	positive integer
Latitude_index 0-based index of grid cell on latitude axis	Index	32-bit integer	n/a	0 to 359
Longitude_index 0-based index of grid cell on longitude axis	Index	32-bit integer	n/a	0 to 719
Orbit_number Terra orbit number	Index	32-bit integer	n/a	1 to 999999
Path_number Path number of the SOM projection for this Terra orbit	Index	32-bit integer	n/a	1 to 233
Year Average acquisition time (UTC) of observations contributing to this grid cell	Index	32-bit integer	n/a	4-digit year
Month Average acquisition time (UTC) of observations contributing to this grid cell	Index	32-bit integer	n/a	1 to 12
Day Average acquisition time (UTC) of observations contributing to this grid cell	Index	32-bit integer	n/a	1 to 31
Hour Average acquisition time (UTC) of observations contributing to this grid cell	Index	32-bit integer	n/a	0 to 23
Minute Average acquisition time (UTC) of observations contributing to this grid cell	Index	32-bit integer	n/a	0 to 59

3 Appendix

3.1 ACRONYM LIST

AOD.....................Aerosol Optical Depth
CF ....Climate and Forecast
CGAS...................Component Global Aerosol
DAAC..................Distributed Active Archive Center
ECS......................EOSDIS Core System
EOS......................Earth Observing System
EOSDIS ....Earth Observing System Data and Information System
ESDT ....Earth Science Data Type
GSFC ....Goddard Space Flight Center
HDF ....Hierarchical Data Format
HDF-EOS ....Hierarchical Data Format for EOS
ISO.......................International Organization for Standardization
JPL ....Jet Propulsion Laboratory
LaRC....................Langley Research Center
MISR...................Multi-angle Imaging SpectroRadiometer
NASA ....National Aeronautics and Space Administration
NetCDF................Network Common Data Format
PGE......................Product Generation Executable
RCCT...................Radiometric Camera-by-camera Cloud mask Threshold
SCF ....Science Computing Facility
SDP......................Science Data Processing
SOM.....................Space-Oblique Mercator
SSA ....Single Scattering Albedo
TASC ....Terrestrial Atmosphere and Surface Climatology
UTC ....Coordinated Universal Time