NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NPOESS)

NPOESS Common Data Format Control Book - External Volume IV - Part I – IPs, ARPs, and Geolocation Data
D34862-04-01 Rev C
CDRL No. A014

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NPOESS Common Data Format Control Book – External Volume IV – Part I – IPs, ARPs, and Geolocation Data

D34862-04-01 Revision C
CDRL A014

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Revision	Document Date	Revision/Change Description	Pages Affected
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A	09/10/2007	Incorporation of the following DCOs and ECRs: ECR 617A provides the Revision A of this document. The following ECRs/DCOs are included in this revision: ECR 479A, DCO A1 D34862-04-01 CDFCB-X Vol. IV Part I ECR 525E – Aerosol EDR ECR 530C, Two-sensor EDRs DCO A2 D34862-04-01 CDFCB-X Vol. IV Part I ECR 532 – UML Updates DCO A3 D34862-04-01 CDFCB-X Vol. IV Part 1 ECR 569A – Active Fires ARP DCO A4 D34862-04-01 CDFCB-X Vol. IV Part I ECR 576C – Cloud Data Products DCO A5 D34862-04-01 CDFCB-X Vol. IV Part I ECR 610A – CrIS IR Ozone IP and VIIRS TC SDR GEOs ECR 617A CIDP CDFCB-X Vol. III and Vol. IV This revision also incorporates the following: Product Profile consistency updates	All

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C	01/23/2009	ECR 898B provides Rev C of this document. No DCOs have been incorporated into this revision.	All

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1.0 INTRODUCTION

1.1 Document Purpose and Scope

Volume IV of the Common Data Format Control Book – External (CDFCB-X) contains the specifications for the format of Environmental Data Records (EDRs), Intermediate Products (IP), and Application Related Products (ARP). This specification includes the format of the Hierarchical Data Format, Release 5 (HDF5) files as well as the product definitions. These formats are available to external users of the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

For an overview of the CDFCB-X and the list of reference documents, see the CDFCB-X Volume I - Overview, D34862-01.

1.2 Document Overview

For ease of reading, understanding, and use of this document, this volume has been separated into four parts. Each part is distinct in that it does not duplicate information. This is done because all of the parts together make up the content of the CDFCB-X Volume IV– IP/ARP/EDRs as a whole; no parts are intended to be standalone.

The parts of this volume are organized in the following manner:

Part I: IP/ARP/Geolocation – Provides the overview of the volume, the document's purpose, and scope. This part also provides the generalized layout of the IPs, ARPs, and the Geolocation data, and describes the data format definitions for the IPs, the ARPs, and Geolocation general information.

Part II: Imagery, Atmospheric, and Cloud EDRs – Provides the data format definitions for the Imagery, Atmospheric, and Cloud EDRs.

Part III: Land and Ocean/Water EDRs – Provides the data format definitions for the Land and Ocean/Water EDRs.

Part IV: Earth Radiation Budget and Space EDRs – Provides the data format definitions for the Space and Earth Radiation Budget Sensor (ERBS) EDRs.

The sections of this volume are organized in the following manner:

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Notes:

Fill Value information is documented in the CDFCB-X Volume I, D34862-01, Section 1.2, Document Overview.

The Product Profiles list the product data in the order that the information is stored within each data product.

Section 1.0: Introduction – Provides a brief overview of the document's purpose and scope. This section also includes the generalized representation of the IP, ARP, and EDR structures delivered by NPOESS.

Section 2.0: Intermediate Product Records – Provides IP details by product. This section only includes IPs that are deliverable NPOESS Data Products. Details of the IPs include granule information and HDF5 details.

Section 3.0: Application Related Product (ARP) – Provides ARP details by product. This section only includes ARPs that are deliverable NPOESS Data Products. Details of the ARPs include granule information and HDF5 details.

Section 4.0: Geolocation Data – Provides general information pertaining to the geolocation data provided with the NPOESS Data Products. For those products where the geolocation is specific to the product, the details of the data are included with the data product's definition.

Section 5.0: Environmental Data Records – Provides EDR details by product. This section is in the same order as provided in the System Specification. Details of the EDRs include granule information and HDF5 specifics.

Appendix A: Data Mnemonic to Interface Mapping – Provides a mapping from the NPOESS Data Product Data Mnemonics to their corresponding Logical Interfaces.

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1.2.1 Intermediate Products and Environmental Data Records HDF5 Details – Statically Sized

Figure 1.2.1-1, Generalized UML Diagram for statically sized HDF5 IP/ARP/EDR Files, depicts the HDF5 IP/ARP/EDR organization as a Unified Modeling Language (UML) class diagram. Each HDF5 IP/ARP/EDR file contains an HDF5 Root Group, '/', a Data Products Group, Product Groups (Collection Short Name), an optional Geolocation Group (depending upon packaging option, see the CDFCB-X Volume I, D34862-01, for a description of the geolocation packaging), and an All Data Group (dataset arrays). The Product Groups and Geolocation Group both contain datasets – an Aggregation Dataset (Collection Short Name_Agg) and Granule Datasets (Collection Short Name_Gran_n) – where n indicates the nth granule in a temporal aggregation of granules (1 .. n). A granule is a general term used to describe the minimum quanta of data collected per processing period, generally on the order of seconds. For the definition and organization of the metadata attributes contained in the HDF5 files, see the CDFCB-X Volume V – Metadata, D34862-05. Attributes that are specific to a particular IP/ARP/EDR are listed with the specific IP/ARP/EDR's data format definition. For the generalized formats and packaging options for the Geolocation data, see the CDFCB-X Volume I – Overview, D34862-01.

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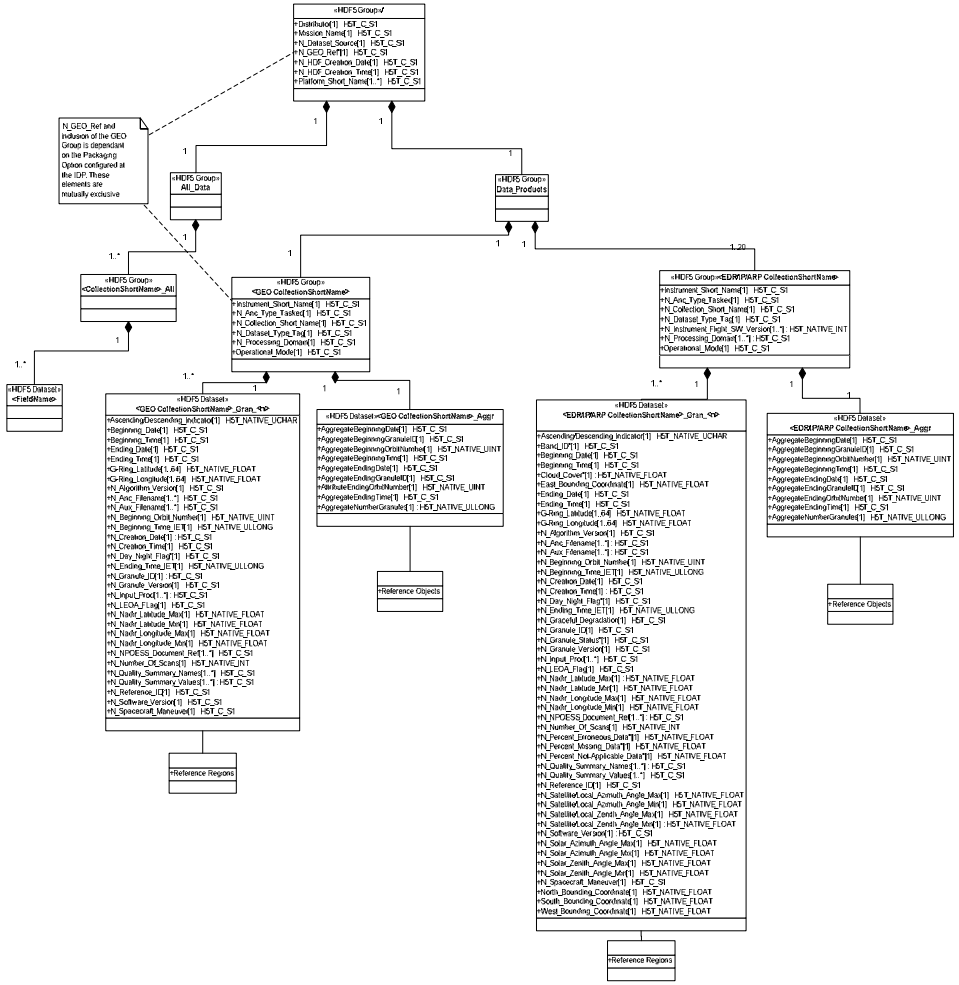

Figure 1.2.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files

1.2.2 Intermediate Products, Application Related Products and Environmental Data Records HDF5 Details – Dynamically Sized

Figure 1.2.2-1, Generalized UML Diagram for dynamically sized HDF5 IP/ARP/EDR Files, depicts the HDF5 IP/ARP/EDR organization as a Unified Modeling Language (UML) class diagram for products that contain dynamically sized fields. Dynamically sized means that a field's length will vary from granule to granule. The organization of the HDF5 file is identical to the statically sized HDF5 file with the exception of the aggregation and corresponding All_Data group.

For statically sized products, the object ID stored in the aggregation array points to a Dataset_Array under the All_Data group. This Dataset_Array is a single HDF5 dataset for each field. This single HDF5 dataset contains all the data for all granules in the file for a given field.

However, for dynamically sized products, the object ID stored in the aggregation array points to an HDF5 group instead. This HDF5 group contains one or more datasets – a separate dataset for each granule for a given field. The dataset is named "Dataset_Array_Gran_n".

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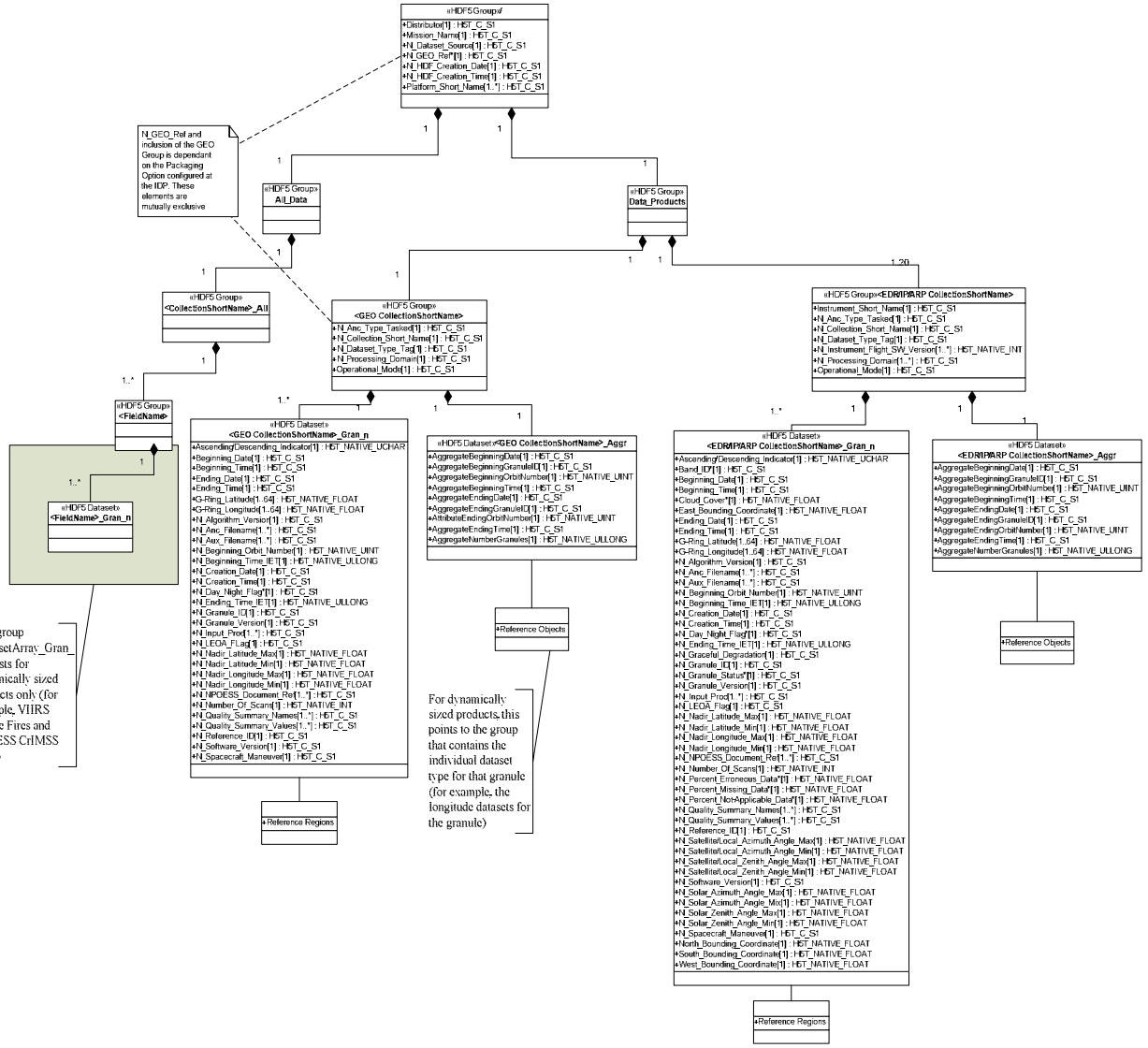

Figure 1.2.2-1, Generalized UML Diagram for dynamically sized HDF5 IP/EDR Files

2.0 INTERMEDIATE PRODUCTS

IPs are defined as a data subset or retrieval by-product that is required within another primary data product's generation sequence or is used as an input to secondary processing or analysis. The IPs defined here are packaged and delivered to the end-user. Other IPs are generated during the creation of EDRs but are not delivered and are thus not documented here.

The NPP satellite will satisfy the IPs listed in Table 2.0-1, NPP Intermediate Products.

Table 2.0-1, NPP Intermediate Products

NPP EDR Name	CrIS/CrIMSS	OMPS	VIIRS
Cloud Mask			X
Quarterly Surface Type			X
Nadir Profile		X	
Infra-Red Ozone (Retrieved with CrIS Radiances and some ATMS inputs)	X		

The NPOESS satellites will satisfy the IPs listed in Table 2.0-2, NPOESS Intermediate Products

Table 2.0-2, NPOESS Intermediate Products

NPOESS EDR Name	CrIS/CrIMSS	OMPS	VIIRS
Cloud Mask			X
Quarterly Surface Type			X
Nadir Profile		X	
Infra-Red Ozone	X		

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2.1 Cloud Mask Intermediate Product

Data Mnemonic	IMPE-CMIP-C0030 (Official) IMPE-CMIP-C0031 (Substitute)
Description/ Purpose	The VIIRS Cloud Mask (VCM) technique incorporates a number of cloud detection tests that determine whether a cloud obstructs a cell. If a cloud is detected, the VCM indicates whether its phase is water, ice, or mixed. Additionally, the VCM specifies whether aerosols, fire, or shadows are detected within the cell field of view (FOV). A spatial uniformity test is also performed on the scene. Availability Conditions: Day Night Clear Cloudy Land Ocean Sensors: VIIRS Effectivity: NPP and NPOESS
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.0 for details.
File Size	Estimated Granule Size: 14.07 MiB This granule size includes Cloud Mask IP related fields only and is based on a VIIRS granule size consisting of 48 scans. Metadata attributes are not included. Additional size added by HDF5 packaging is also not included.
File Format Type	HDF5

Data Content and Data Format	The Cloud Mask IP contains cloud mask data for each pixel, scan, and granule regardless if the scan and/or granule is composed of all ocean or no ocean data. For each pixel, scan, and/or granule, the Cloud Mask IP contains: • Cloud mask flags for all pixels • Scan All Ocean data for each scan • Scan No Ocean data for each scan • Granule All Ocean data for the entire granule • Granule No Ocean data for the entire granule Since this is a global data mask, there are no fill values necessary. All of the cloud mask data defaults to zero until assigned by the algorithm. See Section 2.1.1, Cloud Mask IP Data Content Summary See Section 2.1.2, Cloud Mask IP Product Profile See Section 2.1.3, Cloud Mask IP Details See Section 2.1.4, Cloud Mask IP Metadata Details See Section 2.1.5, Cloud Mask IP Geolocation Details

2.1.1 Cloud Mask IP Data Content Summary

Table 2.1.1-1, Cloud Mask IP Data Content Summary

Name	Description	Data Type	Aggregate Dimensions	Granule Dimensions	Units
QF1_VIIRSCMIP	Cloud Mask IP Quality Flags	8-bit unsigned char	[N*768, 3200]	[768, 3200]	unitless
QF2_VIIRSCMIP		8-bit unsigned char	[N*768, 3200]	[768, 3200]	unitless
QF3_VIIRSCMIP		8-bit unsigned char	[N*768, 3200]	768, 3200]	unitless
QF4_VIIRSCMIP		8-bit unsigned char	[N*768, 3200]	[768, 3200]	unitless
QF5_VIIRSCMIP		8-bit unsigned char	[N*768, 3200]	[768, 3200]	unitless

Name	Description	Data Type	Aggregate Dimensions	Granule Dimensions	Units
QF6_VIIRSCMIP		8-bit unsigned char	[N*768, 3200]	[768, 3200]	unitless
ScanAllOcean	Scan All Ocean Flag - one value per scan per M-Band detector	8-bit unsigned char	[N*768]	[768]	unitless
ScanNoOcean	Scan No Ocean Flag - one value per scan per M-Band detector	8-bit unsigned char	[N*768]	[768]	unitless
GranuleAllOcean	Granule All Ocean Flag	8-bit unsigned char	[N]	[1]	unitless
GranuleNoOcean	Granule No Ocean Flag	8-bit unsigned char	[N]	[1]	unitless

2.1.2 Cloud Mask IP Product Profile

Table 2.1.2-1, Cloud Mask IP Product Profile

Name	Data Size	Dimensions

QF1_VIIRSCMIP — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Cloud Mask Quality Pixel (# cloud test performed)/(# possible cloud tests)	0			unitless	No		2 bit(s)	Name / Value	Name / Value: Poor (No cloud tests performed) 0; Low (0 < cloud tests performed < 50%) 1; Medium (50% <= cloud tests performed < 100%) 2; High (100% = cloud tests performed) 3
Cloud Detection and Confidence Pixel	2			unitless	No		2 bit(s)	Name / Value	Name / Value: Confidently Clear 0; Probably Clear 1; Probably Cloudy 2; Confidently Cloudy 3
Day/Night Pixel (Day = Solar Zen Angle <= 85 deg)	4			unitless	No		1 bit(s)	Name / Value	Name / Value: Night 0; Day 1
Snow/Ice Surface Pixel	5			unitless	No		1 bit(s)	Name / Value	Name / Value: No Snow/Ice 0; Snow/Ice 1
Sun Glint Pixel	6			unitless	No		2 bit(s)	Name / Value	Name / Value: None 0; Geometry Based 1; Wind Speed Based 2; Geometry and Wind Based 3

QF2_VIIRSCMIP — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values (Name / Value)	Legend Entries (Name / Value)
Land/Water Background Pixel	0			unitless	No		3 bit(s)		Land and Desert 0 Land No Desert 1 Inland Water 2 Sea Water 3 Coastal 5
Shadow Detected Pixel	3			unitless	No		1 bit(s)		No 0 Yes 1
Non Cloud Obstruction (Heavy Aerosol)	4			unitless	No		1 bit(s)		No 0 Yes 1
Fire Detected (Cloud Mask)	5			unitless	No		1 bit(s)		No 0 Yes 1
Cirrus (Solar RM9)	6			unitless	No		1 bit(s)		No Cloud 0 Cloud 1
Cirrus IR (BTM15-BTM16)	7			unitless	No		1 bit(s)		No Cloud 0 Cloud 1

QF3_VIIRSCMIP — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
IR Threshold Cloud Test (BTM15) Pixel	0			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
High Cloud (BTM12-BTM16) Test Pixel	1			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
IR Temperature Difference Test (BTM14-BTM15 and BTM15-BTM16 Pixel)	2			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
Temperature Difference Test (BTM15-BTM12) Pixel	3			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
Temperature Difference Test (BTM12-BTM13) Pixel	4			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
Visible Reflectance Test (RM5) Pixel	5			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
Visible Reflectance Test (RM7) Pixel; Also Visible Reflectance Test (RM1)	6			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1
Visible Ratio Test (RM7/RM5) Pixel	7			unitless	No		1 bit(s)	Name / Value	Name / Value: No Cloud / 0; Cloud / 1

QF4_VIIRSCMIP 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Adjacent Pixel Cloud Confidence Pixel (Most extreme value is provided here of any of the 8 adjacent pixels. Confidently Cloudy is most extreme, followed by Probably Cloudy, Probably Clear, and Confidently Clear.)	0			unitless	No		2 bit(s)	Name / Value	Name / Value: Confidently Clear 0; Probably Clear 1; Probably Cloudy 2; Confidently Cloudy 3
Conifer Boreal Forest (Pixel is identified as Conifer Boreal Forest)	2			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Spatial Uniformity Test (Pixel passed the Spatial Uniformity Test)	3			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Dust Candidate (Indicates potential dust contaminated pixel)	4			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Smoke Candidate (Indicates potential smoke contaminated pixel)	5			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Dust or Volcanic Ash is present	6			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Spare	7			unitless	No		1 bit(s)	Name / Value	Name / Value

QF5_VIIRSCMIP 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Spare	0			unitless	No		8 bit(s)	Name / Value	Name / Value

QF6_VIIRSCMIP — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768
CrossTrack	No	No	3200	3200

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Cloud Phase	0			unitless	No		3 bit(s)	Name / Value	Name / Value: Not Executed 0; Clear 1; Partly Cloudy (Probably Clear OR Probably Cloudy) 2; Water Cloud 3; Supercooled Water/Mixed Phase 4; Opaque Ice Cloud 5; Cirrus Cloud 6; Cloud Overlap 7
Thin Cirrus Present	3			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Ephemeral Water Detected	4			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Spare	5			unitless	No		3 bit(s)	Name / Value	Name / Value

ScanAllOcean — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scan All Ocean Flag - one value per scan per M-Band detector	0			unitless	No		unsigned 8-bit char	**Name**	**Value**	**Name**	**Value**
								NA_UINT8_FILL	255	Scan for this M-Band detector does not contain all ocean pixels (some land pixels in scan)	0
								MISS_UINT8_FILL	254		
								ONBOARD_PT_UINT8_FILL	253		
								ONGROUND_PT_UINT8_FILL	252		
								ERR_UINT8_FILL	251		
										Scan for this M-Band detector contains all ocean pixels	1

ScanNoOcean — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	768	768

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scan No Ocean Flag - one value per scan per M-Band detector	0			unitless	No		unsigned 8-bit char	**Name**	**Value**	**Name**	**Value**
								NA_UINT8_FILL	255	Scan for this M-Band detector contains at least one ocean pixel	0
								MISS_UINT8_FILL	254		
								ONBOARD_PT_UINT8_FILL	253		
								ONGROUND_PT_UINT8_FILL	252		
								ERR_UINT8_FILL	251		
										Scan for this M-Band detector contains no ocean pixels	1

GranuleAllOcean — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Granule All Ocean Flag	0			unitless	No		unsigned 8-bit char	Name	Value	Name	Value
								NA_UINT8_FILL	255	Granule does not contain all ocean pixels (some land pixels in granule)	0
								MISS_UINT8_FILL	254		
								ONBOARD_PT_UINT8_FILL	253		
								ONGROUND_PT_UINT8_FILL	252		
								ERR_UINT8_FILL	251		
										Granule contains all ocean pixels	1

GranuleNoOcean — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Granule No Ocean Flag	0			unitless	No		unsigned 8-bit char	Name	Value	Name	Value
								NA_UINT8_FILL	255	Granule contains at least one ocean pixel	0
								MISS_UINT8_FILL	254		
								ONBOARD_PT_UINT8_FILL	253		
								ONGROUND_PT_UINT8_FILL	252		
								ERR_UINT8_FILL	251		
										Granule contains no ocean pixels	1

2.1.3 Cloud Mask IP HDF5 Details

Figure 2.1.3-1, Cloud Mask IP UML Diagram, provides the details on the content and datatypes of the Cloud Mask IP. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to the CDFCB-X, Volume IV, Part 1, Figure 1.2.1-1, Generalized UML Diagram for HDF5 IP/ARP/EDR Files, for a complete UML rendering of this product.

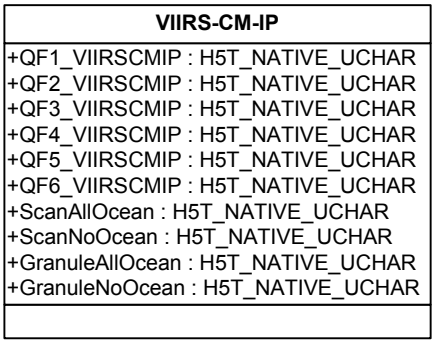

Figure 2.1.3-1, Cloud Mask IP UML Diagram

2.1.4 Cloud Mask IP HDF5 Metadata Details

The HDF5 metadata elements associated with the Cloud Mask IP are listed in the CDFCB-X Volume V, D34862-05, Section 4.3, HDF5 (Metadata) Hierarchy. The Cloud Mask IP metadata includes all common metadata at the root, product, aggregation, and granule level.

There are no granule level Quality Flags defined as metadata elements in the Cloud Mask IP. (The two granule level flags, GranuleAllOcean and GranuleNoOcean are written as HDF5 datasets for this product). Therefore, there are no entries in the N_Quality_Summary_Name/Value metadata attributes for this product.

2.1.5 Cloud Mask IP Geolocation Details

Cloud Mask IP is produced on the VIIRS Moderate Resolution Geolocation (non-Terrain Corrected). See the CDFCB-X, Volume III, D34862-03, Section 2.16.5, VIIRS SDR Moderate Resolution Geolocation, for details.

D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
PDMO

2.2 Quarterly Surface Type Intermediate Product

Data Mnemonic	IMPE-QSIP-C0030 (Official)
Description/ Purpose	The Quarterly Surface Type (QST) IP is created from the previous twelve monthly surface type data points (from the Surface Reflectance/Brightness Temperature/Vegetation Index (SR-BT-VI) Gridded IP.) The QST IP contains a global 1 km grid of Quarterly Surface Types and is updated every three months. Availability Conditions: Day Night Clear Cloudy Land Ocean Sensors: VIIRS Effectivity: NPP and NPOESS
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.0 for details.
File Size	Estimated File Size: 2.6 GiB Metadata attributes are not included. Additional size added by HDF5 packaging is also not included.
File Format Type	HDF5
Production Frequency	Once per calendar quarter

Data Content and Data Format	For each Tile Cell, the Quarterly Surface Type IP contains: • International Geosphere-Biosphere Programme (IGBP) Surface Type Classification • Associated Confidence for the Classification • Quality Flag The confidence value is provided in percent ranging from 0 – 100. The value of 254 in this field indicates that the surface type is defined by the NIMA Vector Map (VMap) Level 0. See Section 2.2.1, Quarterly Surface Type Data Content Summary See Section 2.2.2, Quarterly Surface Type Product Profile See Section 2.2.3, Quarterly Surface Type HDF5 Details See Section 2.2.4, Quarterly Surface Type Metadata Details See Section 2.2.5, Quarterly Surface Type Geolocation Details

2.2.1 Quarterly Surface Type Data Content Summary

Table 2.2.1-1, VIIRS Quarterly Surface Type IP Data Content Summary

Name	Description	Data Type	Field Dimension	Units
SurfaceType	International Geosphere-Biosphere Programme (IGBP) Surface Type Classification	unsigned 8-bit char	[300,600,5184]	unitless
Confidence	Confidence associated with IGBP Surface Type Classification. Values 0 – 100 = percent confidence. 254 = Surface Type defined by NIMA Vector Map (VMap) Level 0	unsigned 8-bit char	[300,600,5184]	percent
QF1_QSTIP	Quality Flag	unsigned 8-bit char	[300,600,5184]	unitless

2.2.2 Quarterly Surface Type Product Profile

Table 2.2.2-1, VIIRS Quarterly Surface Type IP Product Profile

Fields

Name	Data Size	Dimensions

SurfaceType — 1byte

Name	Dynamic	Min Array Size	Max Array Size
cellRows	No	300	300
cellCols	No	600	600
TileID	No	5184	5184

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
International Geosphere-Biosphere Programme (IGBP) Surface Type Classification	0	0	31	unitless	No		unsigned 8-bit char	Name: NA_UINT8_FILL, Value: 255	Name / Value: Evergreen Needleleaf Forests / 1; Evergreen Broadleaf Forests / 2; Deciduous Needleleaf Forests / 3; Deciduous Broadleaf Forests / 4; Mixed Forests / 5; Closed Shrublands / 6; Open Shrublands / 7; Woody Savannas / 8; Savannas / 9; Grasslands / 10; Permanent Wetlands / 11; Croplands / 12; Urban and Built-up / 13; Cropland/Natural Vegetation Mosaics / 14; Snow and Ice / 15; Barren or sparsely vegetated / 16; Water Bodies / 17; Fill / 31

Confidence — 1byte

Name	Dynamic	Min Array Size	Max Array Size
cellRows	No	300	300

		cellCols	No	600	600							
		TileID	No	5184	5184							
		Datum										
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**
		Confidence associated with IGBP Surface Type Classification. Values 0 – 100 = percent confidence. 254 = Surface Type defined by NIMA Vector Map (VMap) Level 0	0	0	254	percent	No		unsigned 8-bit integer	**Name** / NA_UINT8_FILL	**Value** / 255	**Name** **Value**

Table 2.2.2-2, VIIRS Quarterly Surface Type IP Product Profile – Quality Flags

Fields												
Name	**Data Size**	**Dimensions**										
QF1_QSTIP	1byte	**Name**	**Dynamic**	**Min Array Size**	**Max Array Size**							
		cellRows	No	300	300							
		cellCols	No	600	600							
		TileID	No	5184	5184							
		Datum										
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**
		Number of 8 greenest months that are NOT good observations. A value of less than 7 indicates the actual number of months. A value of 7 indicates 7 months or more.	0			unitless	No		3 bit(s)	**Name** **Value**		**Name** **Value**
		Number of the 4 warmest months that are NOT good observations. A value of less than 3 indicates the actual number. A value of 3 indicates 3 months or more.	3			unitless	No		2 bit(s)	**Name** **Value**		**Name** **Value**
		The Classification has changed from previous QST type for this tile cell	4			unitless	No		1 bit(s)	**Name** **Value**		**Name** **Value** False 0 True 1
		Spare	5			unitless	No		2 bit(s)	**Name** **Value**		**Name** **Value**

2.2.3 VIIRS Quarterly Surface Type HDF5 Details

Quarterly-ST-IP
+SurfaceType : H5T_NATIVE_UCHAR +Confidence : H5T_NATIVE_UCHAR +QF1_QSTIP : H5T_NATIVE_UCHAR

2.2.4 VIIRS Quarterly Surface Type HDF5 Metadata Detail

The HDF5 metadata elements associated with the QST IP are listed in the CDFCB-X Volume V, D34862-05, Section 4.3, HDF5 (Metadata) Hierarchy. The QST IP metadata includes all common metadata at the root, product, aggregation, and tile/granule level.

There are no granule level Quality Flags defined as metadata elements in the QST IP. Therefore, there are no entries in the N_Quality_Summary_Name/Value metadata attributes for this product.

2.2.5 VIIRS Quarterly Surface Type Geolocation Details

The QST Gridded IP is represented as an Earth grid of 1km^2 cells, 72 row tiles consisting of 300 cells (72 x 300 = 21,600 total row cells) and 72 column tiles consisting of 600 cells (72 x 600 = 43,200 total column cells), determined by a Sinusoidal projection. The Sinusoidal projection is referred to as an equal-area projection (i.e. the quadrilaterals formed by meridians and parallels have an area on the map proportional to their area on the globe). There are a total of 72 x 72 = 5184 tiles on the sinusoidal projection. This includes both Earth intersecting and non-Earth intersecting tiles.

The delivered gridding and granulation software and documentation (OADs) provides details regarding grid to gran, gran to grid, and grid to Lat/Lon processes.

2.3 Nadir Ozone Profile Intermediate Product

Data Mnemonic	IMPE-NAOP-C0030 (Official) IMPE-NAOP-C0031 (Substitute)
Description/ Purpose	EDFCB4-TBD-9512 The Nadir Ozone Profile Intermediate Product reports profiles derived from total column ozone measurements. The profiles are reported in two forms: 1. Standard pressure layers(used for SBUV/2) which, except for the lowest and highest layers, are roughly 5km in height 2. Ozone mixing ratios at 19 pressure levels Availability Conditions: EDFCB4-TBD-9513 Sensors: OMPS Effectivity: NPP and NPOESS
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.0 for details.
File Size	Estimated Granule Size: EDFCB4-TBD-9514
File Format Type	HDF5
Production Frequency	EDFCB4-TBD-9515
Data Content and Data Format	For each pixel, the Nadir Ozone Profile IP contains: EDFCB4-TBD-9516 The output data product consists of EDFCB4-TBD-9517 See Section 2.3.1, Nadir Ozone Profile Data Content Summary See Section 2.3.2, Nadir Ozone Profile Product Profile See Section 2.3.3, Nadir Ozone Profile HDF5 Details See Section 2.3.4, Nadir Ozone Profile Metadata Details See Section 2.3.5, Nadir Ozone Profile Geolocation Details

2.3.1 Nadir Ozone Profile Data Content Summary

Table 2.3.1-1, Nadir Ozone Profile Granule Data Content Summary

EDFCB4-TBD-9518

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
RecordNumber	Data Record Number	32-bit integer	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
SequenceNumber	Logical sequence number (n+1) for nth data record	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
Orbit	Orbit Number	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
YearDay	Day and Year at start of scan (yyyyddd)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
IntegrationPeriod	Integration period (GMT seconds)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	seconds
LatitudeSubSat	Subsatellite Latitude at beginning of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
LongitudeSubSat	Subsatellite Longitude at beginning of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
Latitude_Ozone	Subsatellite Latitude at beginning of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
Longitude_Ozone	Subsatellite Longitude at beginning of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
SolarZenithAngle	Average solar zenith angle for total ozone wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
NormalizedRadiance_380nm	Normalized radiance value for 380 nm wavelength	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
NormalizedRadiance_340nm_331nm_318nm_312nm	Total column sensor N values for the 340, 331, 318, and 312 nm channels	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
A-PairTotalO3	Total ozone	32-bit	EDFCB4-	EDFCB4-	milli-atm-

	amount derived from the A-pair of wavelengths	floating point	TBD-9518	TBD-9518	cm (DU)
A-PairSensitivity	A pair sensitivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	(N-Value)/DU
A-PairReflectivity	A pair average reflectivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
A-PairWeight	A pair weight (weighting factor in TOZ calc)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
B-PairTotalO3	Total ozone amount derived from the B-pair of wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
B-PairSensitivity	B pair sensitivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	(N-Value)/DU
B-PairReflectivity	B pair average reflectivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
B-PairWeight	B pair weight (weighting factor in TOZ calc)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
ColumnAmountO3	Best estimate total ozone	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
C-PairTotalO3	Total ozone amount derived from the C-pair of wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
BestReflectivity	Best Reflectivity from retrieval	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
C-PairSensitivity	C pair sensitivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	(N-Value)/DU
ErrorFlag	Error flag - indicates error in retrieval	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
SnowIceCode	Snow/Ice Code	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
TerrainPressure	Terrain (ground) pressure	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless

D-PairTotalO3	Total ozone amount derived from the D-pair of wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
SO2index	Sulfur Dioxide Index	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	DU
BPrime-PairTotalO3	Total ozone amount derived from the B Prime Pair of wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
LatitudeAvg	Average latitude for the OMPS ozone output on the SBUV2 profile layers	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
LongitudeAvg	Average longitude for the OMPS ozone output on the SBUV2 profile layers.	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
SolarZenithAngleAvg	Average solar zenith angle for profile	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	degrees
N_Values_Interpolated ToSBUVphot	N values interpolated from the radiances from the 145 wavelengths of the NP sensor to the SBUV/2 wavelengths (for SBUV/2 were the photometer values)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
N_Values_Interpolated ToSBUVmon	N values interpolated from the radiances from the 145 wavelengths of the NP sensor to the SBUV/2 profiling wavelengths	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
FirstGuessO3Profile	First guess profile for layers	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
FirstGuessTotalO3	Total ozone for first guess	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)

QValues	Q-Value corrected for multiple scattering and surface reflectivity (listed in order from shorter to longer wavelengths … 255.5 to 317.5 nm)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
InitialResiduals	Initial residues of Q-Values	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
QValuesCorrectionsLonger	Correction to Q-Values (pressure levels) for the five longer wavelength channels due to Multiple Scattering and Reflectivity (MSR); Listed from shorter to longer wavelength	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
ReflectivitiesLonger	Monochromator reflectivities for the five longer wavelengths; Listed from shorter to longer wavelength (297.5nm to 317.5nm)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
MultipleScatteringMix	Multiple scattering mixing fraction – The mixing fraction which parameterizes contributions of lower and higher latitude profiles in determination of MSR radiance from lookup tables	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
FinalQValueResidues	Final residues of Q-Values (percent) derived using obtained from final solution profile; Listed from shorter to longer wavelength (255.5nm to 317.5nm)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
FinalO3Profile	Solution profile	32-bit	EDFCB4-	EDFCB4-	milli-atm-

	individual ozone amounts (matm-cm) in 12 SBUV layers (SBUV layer 1 first)	floating point	TBD-9518	TBD-9518	cm (DU)
FinalO3Profile_Std	Standard deviations for solution profile individual ozone amounts (%) in 12 SBUV layers	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	Percent
TotalO3SolutionProfile	Total ozone for solution profile (above 1 atm)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	milli-atm-cm (DU)
TotalO3ErrorCode	Total ozone error code (0 = no error)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
CParameter	C parameter for c-sigma calculation. Represents the ratio of atmospheric scale height to the ozone scale height in C-Sigma validity check; Sigma should range from 0.3 to 0.8 or an error code is assigned.	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
SigmaParameter	Sigma parameter for c-sigma calculation. Represents the ratio of atmospheric scale height to the ozone scale height in C-Sigma validity check; Sigma should range from 0.3 to 0.8 or an error code is assigned.	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
O3MixingRatio	Volume mixing ratio (from spline interpolation) of ozone at 19 pressure levels in order of increasing atmospheric pressure (0.3 mb	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	ppmv

	to 100 mb)				
FirstGuessO3_Std	Standard deviations of first guess (a priori) profile individual ozone amounts (%) in 12 layers (SBUV layer 1 first)	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	Percent
QValues_Std	Standard deviations for Q-values corrected for multiple scattering and reflectivity (255.5 nm through 317.5 nm) in %	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	Percent
Iterations	Number of iterations for profile solution	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
VolcanoContaminationIdx	Volcano Contamination Index (VCI): Can be used to whether the derived profiles below 5 mb are incorrect because of scattering by aerosols. VCI are in units of the climatological standard deviation of the tropospheric ozone value for a given latitude.	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless
D-PairSensitivity	D pair sensitivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	(N-Value)/DU
BPrime-PairSensitivity	B Prime pair sensitivity	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	(N-Value)/DU
SolarZenithAngleStart	Solar zenith angle at start of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518
SolarZenithAngleEnd	Solar zenith angle at end of scan	32-bit floating point	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518

2.3.2 Nadir Ozone Profile Product Profile

Fields

Name	Data Size	Dimensions
RecordNumber	4byte(s)	Name: EDFCB4-TBD-9518; Granule Boundary: ; Dynamic: ; Min Array Size: ; Max Array Size:

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Data Record Number	0	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless	No		32-bit integer	Name	Value	Name	Value
								NA_INT32_FILL	-999		
								MISS_INT32_FILL	-998		
								ERR_INT32_FILL	-995		
								ELINT_INT32_FILL	-994		
								VDNE_INT32_FILL	-993		

Name	Data Size	Dimensions
SequenceNumber	4byte(s)	Name: EDFCB4-TBD-9518; Granule Boundary: ; Dynamic: ; Min Array Size: ; Max Array Size:

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Logical sequence number (n+1) for nth data record	0	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless			32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-998.9		
								ERR_FLOAT32_FILL	-995.9		
								ELINT_FLOAT32_FILL	-994.9		
								VDNE_FLOAT32_FILL	-993.9		

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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
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<tr><td>LatitudeSubSat</td><td>4byte(s)</td><td>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
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<tr><td>Subsatellite Longitude at beginning of scan</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>degrees</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>SolarZenithAngle</td><td>4byte(s)</td><td>
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<tr><td>Average solar zenith angle for total ozone wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>degrees</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>Normalized radiance value for 380 nm wavelength</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>NormalizedRadiance_340nm_331nm_318nm_312nm</td><td>4byte(s)</td><td>
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<tr><td>Total column sensor N values for the 340, 331, 318, and 312 nm channels</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
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<tr><td>Total ozone amount derived from the A-pair of wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
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<tr><td>A-PairSensitivity</td><td>4byte(s)</td><td>
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<tr><td>A pair average reflectivity</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>A-PairWeight</td><td>4byte(s)</td><td>
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<tr><td>A pair weight (weighting factor in TOZ calc)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
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<table>
<tr><td>B-PairReflectivity</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>B pair average reflectivity</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
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<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><td>B-PairWeight</td><td>4byte(s)</td><td>
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<tr><td>B pair weight (weighting factor in TOZ calc)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
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Datum
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<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Best estimate total ozone</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
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<tr><td>C-PairTotalO3</td><td>4byte(s)</td><td>
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<tr><td>Total ozone amount derived from the C-pair of wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>C-PairSensitivity</td><td>4byte(s)</td><td>
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ErrorFlag — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
EDFCB4-TBD-9518				

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Error flag - indicates error in retrieval	0			unitless	No		unsigned 8-bit char			Good Retrieval	0
										Residual too large	1
										SO2 index too large	2
										Triplet inconsistency	3
										Ozone value out of range	4

SnowIceCode — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
EDFCB4-TBD-9518				

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Snow/Ice Code	0			unitless	No		32-bit floating point	Name	Value	Name	Value

TerrainPressure — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
EDFCB4-TBD-9518				

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Terrain (ground) pressure	0			unitless	No		32-bit floating point	Name	Value	Name	Value

<table>
<tr><td>D-PairTotalO3</td><td>4byte(s)</td><td>
<table>
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<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Total ozone amount derived from the D-pair of wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>SO2index</td><td>4byte(s)</td><td>
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<tr><td>Sulfur Dioxide Index</td><td>0</td><td></td><td></td><td>DU</td><td>No</td><td></td><td>32-bit floating point</td><td>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
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<table>
<tr><td>BPrime-PairTotalO3</td><td>4byte(s)</td><td>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Total ozone amount derived from the B Prime Pair of wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>LatitudeAvg</td><td>4byte(s)</td><td>
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<tr><td>Average latitude for the OMPS ozone output on the SBUV2 profile layers</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>degrees</td><td>No</td><td></td><td>32-bit floating point</td><td>
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Datum
<table>
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<tr><td>Average longitude for the OMPS ozone output on the SBUV2 profile layers.</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>degrees</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>SolarZenithAngleAvg</td><td>4byte(s)</td><td>
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<tr><td>N values interpolated from the radiances from the 145 wavelengths of the NP sensor to the SBUV/2 wavelengths (for SBUV/2 were the photometer values)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>N values interpolated from the radiances from the 145 wavelengths of the NP sensor to the SBUV/2 profiling wavelengths</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
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<tr><td>FirstGuessO3Profile</td><td>4byte(s)</td><td>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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<table>
<tr><th colspan="10">Datum</th></tr>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>First guess profile for layers</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>FirstGuessTotalO3</td><td>4byte(s)</td><td>
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<tr><td>Total ozone for first guess</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<table>
<tr><td>QValues</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
</table>
<table>
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<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Q-Value corrected for multiple scattering and surface reflectivity (listed in order from shorter to longer wavelengths … 255.5 to 317.5 nm)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
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<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>InitialResiduals</td><td>4byte(s)</td><td>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
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<tr><th colspan="10">Datum</th></tr>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Initial residues of Q-Values</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-999.4</td></tr>
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<table>
<tr><td>QValuesCorrectionsLonger</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Correction to Q-Values (pressure levels) for the five longer wavelength channels due to Multiple Scattering and Reflectivity (MSR); Listed from shorter to longer wavelength</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
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<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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</td></tr>
<tr><td>ReflectivitiesLonger</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Monochromator reflectivities for the five longer wavelengths; Listed from shorter to longer wavelength (297.5nm to 317.5nm)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
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<table>
<tr><td>MultipleScatteringMix</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Multiple scattering mixing fraction – The mixing fraction which parameterizes contributions of lower and higher latitude profiles in determination of MSR radiance from lookup tables</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
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<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>FinalQValueResidues</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Final residues of Q-Values (percent) derived using obtained from final solution profile; Listed from shorter to longer wavelength (255.5nm to 317.5nm)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Solution profile individual ozone amounts (matm-cm) in 12 SBUV layers (SBUV layer 1 first)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
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<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>FinalO3Profile_Std</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Standard deviations for solution profile individual ozone amounts (%) in 12 SBUV layers</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>Percent</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<table>
<tr><td>TotalO3SolutionProfile</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Total ozone for solution profile (above 1 atm)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>milli-atm-cm (DU)</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>TotalO3ErrorCode</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Total ozone error code (0 = no error)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<table>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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<tr><th colspan="10">Datum</th></tr>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr>
<td>C parameter for c-sigma calculation. Represents the ratio of atmospheric scale height to the ozone scale height in C-Sigma validity check; Sigma should range from 0.3 to 0.8 or an error code is assigned.</td>
<td>0</td>
<td>EDFCB4-TBD-9518</td>
<td>EDFCB4-TBD-9518</td>
<td>EDFCB4-TBD-9518</td>
<td>No</td>
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<td>32-bit floating point</td>
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<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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SigmaParameter — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
EDFCB4-TBD-9518				

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Sigma parameter for c-sigma calculation. Represents the ratio of atmospheric scale height to the ozone scale height in C-Sigma validity check; Sigma should range from 0.3 to 0.8 or an error code is assigned.	0	EDFCB4-TBD-9518	EDFCB4-TBD-9518	EDFCB4-TBD-9518	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-998.9		
								ERR_FLOAT32_FILL	-995.9		
								ELINT_FLOAT32_FILL	-994.9		
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Volume mixing ratio (from spline interpolation) of ozone at 19 pressure levels in order of increasing atmospheric pressure (0.3 mb to 100 mb)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>ppmv</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>FirstGuessO3_Std</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Standard deviations of first guess (a priori) profile individual ozone amounts (%) in 12 layers (SBUV layer 1 first)</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>Percent</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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<table>
<tr><th>Name</th><th>Value</th></tr>
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</table>

D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
PDMO

<table>
<tr><td>QValues_Std</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Standard deviations for Q-values corrected for multiple scattering and reflectivity (255.5 nm through 317.5 nm) in %</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>Percent</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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</table>
</td></tr>
<tr><td>Iterations</td><td>4byte(s)</td><td>
<table>
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Datum
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<tr><td>Number of iterations for profile solution</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
PDMO

VolcanoContaminationIdx | 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
EDFCB4-TBD-9518				

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Volcano Contamination Index (VCI): Can be used to whether the derived profiles below 5 mb are incorrect because of scattering by aerosols. VCI are in units of the climatological standard deviation of the tropospheric ozone value for a given latitude.	0	EDFCB4-TBD-9518	EDFCB4-TBD-9518	unitless	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-998.9		
								ERR_FLOAT32_FILL	-995.9		
								ELINT_FLOAT32_FILL	-994.9		
								VDNE_FLOAT32_FILL	-993.9		

D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
PDMO

<table>
<tr><td>D-PairSensitivity</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>D pair sensitivity</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>(N-Value)/DU</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>BPrime-PairSensitivity</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>B Prime pair sensitivity</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>(N-Value)/DU</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
</table>
</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<table>
<tr><td>SolarZenithAngleStart</td><td>4byte(s)</td><td>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
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Datum
<table>
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<tr><td>Solar zenith angle at start of scan</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>SolarZenithAngleEnd</td><td>4byte(s)</td><td>
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<tr><td>EDFCB4-TBD-9518</td><td></td><td></td><td></td><td></td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Solar zenith angle at end of scan</td><td>0</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>EDFCB4-TBD-9518</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998.9</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995.9</td></tr>
<tr><td>ELINT_FLOAT32_FILL</td><td>-994.9</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993.9</td></tr>
</table>
</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
</table>

2.3.3 Nadir Ozone Profile HDF5 Details

The information provided in this section consists of the detailed datasets described in Section 1.2.1, Intermediate Products, Application Products, and Environmental Data Records HDF5 Details.

EDFCB4-TBD-9520

2.3.4 Nadir Ozone Profile Metadata Details

EDFCB4-TBD-9520

Due to NPOESS Data Product Profile rendering updates, this section has been deleted in order to reduce inconsistencies in the data format definition representation. This section will be updated in a follow-on OMPS Document Change Order (DCO), this effort is being tracked via the above TBD.

2.3.5 Nadir Ozone Profile Geolocation Details

EDFCB4-TBD-9523

D34862-04-01, C. PDMO Released: 2009-08-25 (VERIFY REVISION STATUS)
PDMO

2.4 CrIS IR Ozone

Data Mnemonic	IMPE-IROZ-C0030 (Official) IMPE-IROZ-C0031 (Substitute)
Description/ Purpose	CrIS IR Ozone is retrieved within the CrIMSS algorithm, but only CrIS Infrared radiances are used in the forward model to obtain ozone. ATMS microwave radiances are not used. However, some parameters retrieved from the first stage microwave retrieval (ATMS) are used when available within the ozone retrieval. Therefore, the ATMS retrieval related fields are included as part of this product. For this format, the CrIMSS algorithm retrieves 1, 4, or 9 times per field of regard (FOR) to yield a minimum of 120 retrievals and a maximum of 1080 retrievals per granule (4 scans x 30 retrievals per scan up to 4 scans x 270 retrievals per scan). For State 1 (NPP only). CrIMSS retrieves once per field of regard (FOR) to yield a total of 120 retrievals per granule (4 scans x 30 retrievals per scan). The CrIS IR Ozone IP is reported on 101 levels as an average mixing ratio (ppmv) within a given vertical cell (layer). Each level is representative of the center of each layer. Availability Conditions: Day Night Clear Cloudy Land Ocean Sensors: CrIS Effectivity: NPP and NPOESS
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.0 for details.
File Size	Estimated Data Granule Sizes: Granule size is variable, dependent on the number of retrievals in the granule: Min: 53.84 KiB

	Max: 477.59 KiB This granule size includes CrIS IR Ozone related fields and quality flags only. Geolocation and metadata attributes are not included. Additional size added by HDF5 packaging is also not included.
File Format Type	HDF5
Production Frequency	As per request
Data Content and Data Format	See Section 2.4.1, CrIS IR Ozone Data Content Summary See Section 2.4.2, CrIS IR Ozone Product Profile See Section 2.4.3, CrIS IR Ozone HDF5 Details See Section 2.4.4, CrIS IR Ozone Metadata Details See Section 2.4.5, CrIS IR Ozone Geolocation Details

2.4.1 CrIS IR Ozone Data Content Summary

Table 2.4.1-1, CrIS IR Ozone Data Content Summary

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
NumRetrievals	Number of retrievals for this granule	signed 32-bit integer	Statically Sized Granule: [N] Dynamically Sized Granule: See Note 1	[1]	unitless
FORnum	Field of Regard Number (1-120)	signed 32-bit integer	Statically Sized Granule: [N*120] Dynamically Sized Granule: See Note 1	[120]	unitless
O3	Retrieved Ozone Profile	32-bit floating point	Statically Sized Granule: [N* numRetrievals, 101] Dynamically Sized Granule: See Note 1	[numRetrievals, 101]	ppmv

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
PressureLevels_O3	Pressure levels for O3 retrieval	32-bit floating point	Statically Sized Granule: [N*101] Dynamically Sized Granule: See Note 1	[101]	hPa
SurfacePressure	Surface Pressure	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	hPa
SkinTemperature	Surface Temperature	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	K
LandFraction	Land Fraction	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
Iterations	Number of iterations before convergence	signed 32-bit integer	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	Iterations
ChiSquareIR+MW	Chi Square value from joint IR-microwave radiance matching retrieval	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
ChiSquareMW1	Chi Sq value from microwave radiance matching - stage1	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
ChiSquareMW2	Chi Square value from microwave radiance matching retrieval - stage2	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
IR_NoiseAmplification	IR Noise Amplification Factors	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
ProfileDiff	The RMS difference between the seven lowest levels of the first (MW) and second (IR) stage retrievals.	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
OzoneSpectralSignature	(Indicates quality of retrieved ozone profile IP) Difference between ozone absorption radiance and the background radiance. This is a quality flag that indicates the strength of the IR ozone signal in the CrIS spectrum.	32-bit floating point	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	mW/(m^2 sr cm^-1)
QF1_CrISIRO3	Granule Level Quality Flags	8-bit unsigned char	Statically Sized Granule: [N] Dynamically Sized Granule: See Note 1	[1]	unitless
QF2_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N] Dynamically Sized Granule: See Note 1	[1]	unitless
QF3_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N] Dynamically Sized Granule: See Note 1	[1]	unitless

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
QF4_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N] Dynamically Sized Granule: See Note 1	[1]	unitless
QF5_CrISIRO3	Retrieval Level Quality Flags	8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF6_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF7_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF8_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF9_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
QF10_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF11_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless
QF12_CrISIRO3		8-bit unsigned char	Statically Sized Granule: [N* numRetrievals] Dynamically Sized Granule: See Note 1	[numRetrievals]	unitless

[1] States 2 and 3 contain dynamically sized granules that are dependent on the number of retrievals. For this dynamically sized product, the aggregation is a set of object IDs that dereference to the corresponding group of the same name (rather than the corresponding dataset) under All_Data in the HDF5 file. The aggregation for a particular field is the set of all datasets under All_Data for that field (rather than a single dataset array as is the case for statically sized products).The Aggregation dimension is dependent on how users assemble the granules for each field into a data structure when reading from the HDF5 file. See CDFCB-X, Vol IV, Part 1, Section 1.2.2, Intermediate Products, Application Related Products and Environmental Records HDF5 Details – Dynamically Sized, for details regarding the HDF5 structure of dynamically sized products.

2.4.2 CrIS IR Ozone Product Profile

Table 2.4.2-1, CrIS IR Ozone Product Profile

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<tr><th>Name</th><th>Data Size</th><th>Dimensions</th></tr>
<tr><td>NumRetrievals</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>Granule</td><td>Yes</td><td>No</td><td>1</td><td>1</td></tr>
</table>
<table>
<tr><th colspan="10">Datum</th></tr>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Number of retrievals for this granule</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit integer</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_INT32_FILL</td><td>-999</td></tr>
<tr><td>MISS_INT32_FILL</td><td>-998</td></tr>
<tr><td>ERR_INT32_FILL</td><td>-995</td></tr>
<tr><td>VDNE_INT32_FILL</td><td>-993</td></tr>
</table>
</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>FORnum</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
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<table>
<tr><th colspan="10">Datum</th></tr>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Field of Regard Number (1-120). Note that FOR 1-30 = scan 1, FOR 31-60 = scan 2, FOR 61-90 = scan 3, FOR 91-120 = scan 5</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit integer</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-998</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-995</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-993</td></tr>
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</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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</td></tr>
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</td></tr>
</table>

O3 — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080
Level	No	No	101	101

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Retrieved Ozone Profile	0			ppmv	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

PressureLevels_O3 — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Levels	Yes	No	101	101

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Pressure levels for the ozone retrieval	0			hPa	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

SurfacePressure — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Surface Pressure (Secondary Output)	0			hPa	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

SkinTemperature — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Temperature at the terrain surface	0			kelvin	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

LandFraction — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Land Fraction	0			unitless	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

Iterations — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Number of iterations before convergence	0			iterations	No		signed 32-bit integer	Name	Value	Name	Value
								NA_INT32_FILL	-999		
								MISS_INT32_FILL	-998		
								ERR_INT32_FILL	-995		
								VDNE_INT32_FILL	-993		

<table>
<tr><td>ChiSquareIR+MW</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>Retrieval</td><td>Yes</td><td>Yes</td><td>120</td><td>1080</td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Chi Square value from joint IR-microwave radiance matching retrieval</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
</table>
</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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</td></tr>
</table>
</td></tr>
<tr><td>ChiSquareMW1</td><td>4byte(s)</td><td>
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<tr><td>Retrieval</td><td>Yes</td><td>Yes</td><td>120</td><td>1080</td></tr>
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Datum
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<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Chi Square value from microwave radiance matching - stage1</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
</table>
</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>ChiSquareMW2</td><td>4byte(s)</td><td>
<table>
<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>Retrieval</td><td>Yes</td><td>Yes</td><td>120</td><td>1080</td></tr>
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<tr><td>Chi Square value from microwave radiance matching retrieval - stage2</td><td>0</td><td></td><td></td><td>unitless</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
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IR_NoiseAmplification — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
IR Noise Amplification Factors	0			unitless	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

ProfileDiff — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Profile differences between MW & IR	0			unitless	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

OzoneSpectralSignature — 4 byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
(Indicates quality of retrieved ozone profile IP) Difference between ozone absorption radiance and the background radiance. This is a quality flag that indicates the strength of the IR ozone signal in the CrIS spectrum.	0			mW/(m^2 sr cm^-1)	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

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Table 2.4.2-2, CrIS IR Ozone Product Profile – Quality Flags

Name	Data Size	Dimensions

QF1_CrISIRO3 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
CrIS Detector 1 Failed - LWIR	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 2 Failed – LWIR	1			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 3 Failed	2			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 4 Failed	3			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 5 Failed	4			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 6 Failed	5			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 7 Failed	6			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 8 Failed	7			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1

QF2_CrISIRO3 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
CrIS Detector 9 Failed - LWIR	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 1 Failed - MWIR	1			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 2 Failed – MWIR	2			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 3 Failed – MWIR	3			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 4 Failed – MWIR	4			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 5 Failed - MWIR	5			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 6 Failed – MWIR	6			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 7 Failed - MWIR	7			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1

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QF3_CrISIRO3	1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
CrIS Detector 8 Failed - MWIR	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 9 Failed - MWIR	0			unitless	No		1 bit(s) [2]	Name Value	Name Value False 0 True 1
CrIS Detector 1 Failed - SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 2 Failed – SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 3 Failed – SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 4 Failed – SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 5 Failed – SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
CrIS Detector 6 Failed - SWIR	9			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1

QF4_CrISIRO3 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
CrIS Detector 7 Failed - SWIR	0			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
CrIS Detector 8 Failed - SWIR	1			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
CrIS Detector 9 Failed - SWIR	2			unitless	No		1 bit(s)	Name / Value	Name / Value: False 0; True 1
Apodization Flag	3			unitless	No		2 bit(s)	Name / Value	Name / Value: No Apodization Applied 0; Hamming 1; Blackmann 2
Spare	5			unitless	No		3 bit(s)	Name / Value	Name / Value

QF5_CrISIRO3	1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Combined IR+MW retrieval converged	0			unitless	No		1 bit(s)	Name: Value:	Name: False, Value: 0 Name: True, Value: 1
MW only retrieval converged	1			unitless	No		1 bit(s)	Name: Value:	Name: False, Value: 0 Name: True, Value: 1
Overall Retrieval Quality	2			unitless	No		2 bit(s)	Name: Value:	Name: No retrieval, Value: 0 Name: Poor (non-converged), Value: 1 Name: Low (IR or MW), Value: 2 Name: High (IR + MW), Value: 3
Difference between MW+IR temperature profile minus MW only temperature profile exceeds threshold	4			unitless	No		1 bit(s)	Name: Value:	Name: False, Value: 0 Name: True, Value: 1
Spare	5			unitless	No		3 bit(s)	Name: Value:	Name: Value:

QF6_CrISIRO3	1byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Clear/Cloudy	0			unitless	No		1 bit(s)	Name: Value:	Name: Clear, Value: 0 Name: Cloudy, Value: 1
Rain Present	1			unitless	No		1 bit(s)	Name: Value:	Name: False, Value: 0 Name: True, Value: 1
Retrieval Cell Size (Number of FOVs used for this retrieval)	2			unitless	No		2 bit(s)	Name: Value:	Name: 9 FOVs used, Value: 0 Name: 4 FOVs used, Value: 1 Name: 1 FOV used, Value: 2
Retrieval Type	4			unitless	No		1 bit(s)	Name: Value:	Name: MW only, Value: 0 Name: (IR + MW) or IR only, Value: 1
One or more temperature values is out of range	5			unitless	No		1 bit(s)	Name: Value:	Name: False, Value: 0 Name: True, Value: 1
Coast Flag	6			unitless	No		2 bit(s)	Name: Value:	Name: Ocean, Value: 0 Name: Land, Value: 1 Name: Coast, Value: 2

QF7_CrISIRO3	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**						
		Retrieval	Yes	Yes	120	1080						
		Datum										
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**	**Legend Entries**	
		Sun Glint present in retrieval	0			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel - 1	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel – 2	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel – 3	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel – 4	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel – 5	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel – 6	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1
		ATMS SDR Quality – Channel not used due to poor quality - Channel - 7	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
											False	0
											True	1

QF8_CrISIRO3 | 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
ATMS SDR Quality – Channel not used due to poor quality - Channel - 8	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 9	1			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel – 10	2			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel – 11	3			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 12	4			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 13	5			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 14	6			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 15	7			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1

QF9_CrISIRO3 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
ATMS SDR Quality – Channel not used due to poor quality - Channel - 16	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 17	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 18	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 19	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 20	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 21	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS SDR Quality – Channel not used due to poor quality - Channel - 22	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
ATMS data is Not available	7			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1

QF10_CrISIRO3 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Retrieval	Yes	Yes	120	1080

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Spare	0			unitless	No		8 bit(s)	Name Value	Name Value

QF11_CrISIRO3	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**								
		Retrieval	Yes	Yes	120	1080								
		Datum												
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Non-LTE	0			unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**	
												False	0	
												True	1	
		Day/Night Flag	1			unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**	
												Day only	0	
												Night only	1	
		Spare	2			unitless	No		6 bit(s)	**Name**	**Value**	**Name**	**Value**	
QF12_CrISIRO3	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**								
		Retrieval	Yes	Yes	120	1080								
		Datum												
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		CrIS Input SDR Quality (Percent of CrIS channels not used due to poor quality)	0			percent	No		8 bit(s)	**Name**	**Value**	**Name**	**Value**	

2.4.3 CrIS IR Ozone HDF5 Details

Figure 2.4.3-1, CrIS IR Ozone UML Diagram, provides details on the contents and data types of the CrIS IR Ozone product. This UML provides details at the product level detail only. In addition to this UML, refer to the CDFCB-X, Volume IV, Part 1, Figure 1.2.1-1, Generalized UML Diagram for HDF5 IP/ARP/EDR Files, for a complete UML rendering of this product.

The CrIS IR Ozone product within the HDF5 file can be found within the Data_Product group with the group name of CrIS-IR-OZ-Prof-IP. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

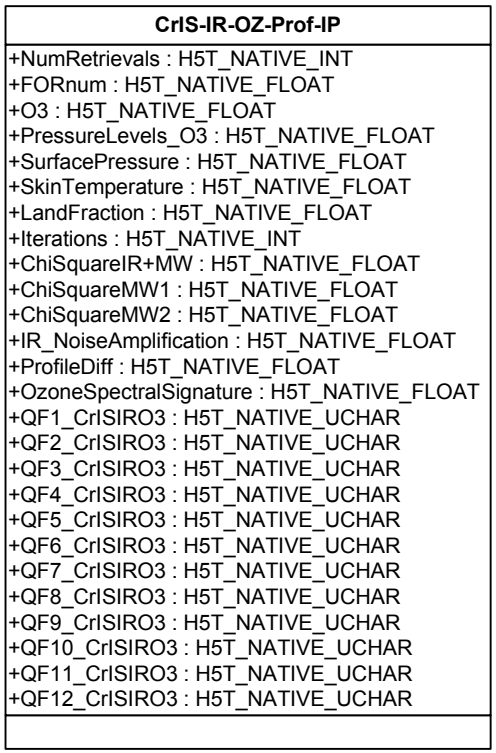

Figure 2.4.3-1, CrIS IR Ozone HDF5 UML Diagram

2.4.4 CrIS IR Ozone HDF5 Metadata Details

The HDF5 metadata elements associated with the CrIS IR Ozone are listed in the CDFCB-X Volume V, D34862-05. The CrIS IR Ozone metadata includes all of the common metadata at the root, product, aggregation, and granule levels.

In addition to the common metadata items for this product, Table 2.4.4-1, CrIS IR Ozone N_Quality_Summary_Name/N_Quality_Summary_Value Granule Level Metadata Values, provides the following items as

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name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the CrIS IR Ozone.

Table 2.4.4-1, CrIS IR Ozone N_Quality_Summary_Name/N_Quality_Summary_Value Granule Level Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Notes**
CrIS IR Ozone Retrieval Quality	0 – 100	Percent of retrievals within granule with high quality of retrieval	
CrIS Input Data Quality	0 – 100	Percent of CrIS SDR input retrievals with high quality	
ATMS Input Data Quality	0 – 100	Percent of ATMS SDR input retrievals with high quality	

2.4.5 CrIS IR Ozone Geolocation Data Content Summary

The CrIS IR Ozone IP is retrieved within the CrIMSS EDR algorithm. See the CDFCB-X, Volume IV, Part 2, Imagery, Atmospheric and Cloud EDRs, Sections 2.4.5 through 2.4.8 for CrIMSS EDR Geolocation details.

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3.0 APPLICATION RELATED PRODUCTS

An ARP is defined as an NPOESS deliverable data product which is created for use in the support of an EDR. An ARP is a subcategory of an EDR that is used in the application of another EDR.

3.1 Active Fires

Data Mnemonic	ARPE-VRAF-C0030(Official) ARPE-VRAF-C0031 (Substitute)
Description/ Purpose	Active surface fires are natural or anthropogenic fires. The Active Fires ARP provides: Geolocation of the pixels in which active fires are detected A mapping of pixels back to the moderate resolution SDR row/column Quality Flags The products for this application are desired during both day and night time for clear-sky conditions and within clear areas under conditions of broken clouds. The units for the Active Fires ARP are: Degrees latitude and longitude for geolocation Availability Conditions: Day Night Clear Land Sensors: VIIRS Effectivity: NPP and NPOESS This ARP is dynamically sized and depends on the number of pixels in a granule that are identified as fire pixels. The maximum number of pixels in a granule is 768 rows x 3200 cols = 2,457,600. For Active Fire EDRs, if there are no fires identified in a granule, a Null Pointer (reference or pointer to Reference Region 0) is provided in the HDF5 file. This is done in order to still provide the relevant metadata for that granule.
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.4 for details.

File Size	Estimated Granule Size: Maximum size = 46.9 MiBs This granule size includes Active Fires ARP related fields only. Note that only those pixels in the granule identified as containing an Active Fire are included in the product. This size estimate is a "worst case" scenario where every pixel in the granule contains an Active Fire. Metadata attributes are not included. Additional size added by HDF5 packaging is also not included.
File Format Type	HDF5
Production Frequency	As per request
Data Content and Data Format	For each pixel, the Active Fires ARP contains: Active fire Latitude Active fire Longitude SDR row of active fire SDR column of active fire Quality Flags See Section 3.1.1, Active Fires ARP Data Content Summary See Section 3.1.2, Active Fires ARP Product Profile See Section 3.1.3, Active Fires HDF5 Details See Section 3.1.4, Active Fires Metadata Details See Section 3.1.5, Active Fires Geolocation Details

3.1.1 VIIRS Active Fires Data Content Summary

Table 3.1.1-1, VIIRS Active Fires Data Content Summary

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
Latitude	Latitude of Fire Pixel	32-bit floating point	See Note 1	[NumFirePixels]	degrees
Longitude	Longitude of Fire Pixel	32-bit floating point	See Note 1	[NumFirePixels]	degrees
RowIndex	Index number of the SDR row this fire pixel originated from	32-bit signed integer	See Note 1	[NumFirePixels]	unitless

ColIndex	Index number of the SDR column this fire pixel originated from	32-bit signed integer	See Note 1	[NumFirePixels]	unitless
QF1_VIIRSAFARP	Quality Flags (pixel level)	unsigned char	See Note 1	[NumFirePixels]	unitless
QF2_VIIRSAFARP		unsigned char	See Note 1	[NumFirePixels]	unitless
QF3_VIIRSAFARP		unsigned char	See Note 1	[NumFirePixels]	unitless
QF4_VIIRSAFARP		unsigned char	See Note 1	[NumFirePixels]	unitless

1 The Active Fires ARP contains dynamically sized granules that are dependent on the number of retrievals. For this dynamically sized product, the aggregation is a set of object IDs that dereference to the corresponding group of the same name (rather than the corresponding dataset) under All_Data in the HDF5 file. The aggregation for a particular field is the set of all datasets under All_Data for that field (rather than a single dataset array as is the case for statically sized products).The Aggregation dimension is dependent on how users assemble the granules for each field into a data structure when reading from the HDF5 file. See CDFCB-X, Vol IV, Part 1, Section 1.2.2, Intermediate Products, Application Related Products and Environmental Records HDF5 Details – Dynamically Sized, for details regarding the HDF5 structure of dynamically sized products

3.1.2 VIIRS Active Fires Product Profile

Table 3.1.2-1, VIIRS Active Fires Product Profile

Fields

Name	Data Size	Field Offset	Dimensions
Latitude	4bytes	0	**Name** / **Attribute Name** / **Granule Boundary** / **Dynamic** / **Min Array Size** / **Max Array Size**: Fire Pixel Latitude / / Yes / Yes / 0 / 2457600 **Datum** **Description** / **Datum Offset** / **Unscaled Valid Range Min** / **Unscaled Valid Range Max** / **Measurement Units** / **Scaled** / **Scale Factor Name** / **Data Type** / **Fill Values** (**Name** **Value**) / **Legend Entries** (**Name** **Value**) Latitude of Fire Pixel / 0 / -90 / 90 / degrees / No / / 32-bit floating point / / / /
Longitude	4bytes	0	**Name** / **Attribute Name** / **Granule Boundary** / **Dynamic** / **Min Array Size** / **Max Array Size**: Fire Pixel Longitude / / Yes / Yes / 0 / 2457600 **Datum** **Description** / **Datum Offset** / **Unscaled Valid Range Min** / **Unscaled Valid Range Max** / **Measurement Units** / **Scaled** / **Scale Factor Name** / **Data Type** / **Fill Values** (**Name** **Value**) / **Legend Entries** (**Name** **Value**) Longitude of Fire Pixel / 0 / -180 / 180 / degrees / No / / 32-bit floating point / / / /
RowIndex	4bytes	0	**Name** / **Attribute Name** / **Granule Boundary** / **Dynamic** / **Min Array Size** / **Max Array Size**: SDR Row Index / / Yes / Yes / 0 / 2457600 **Datum** **Description** / **Datum Offset** / **Unscaled Valid Range Min** / **Unscaled Valid Range Max** / **Measurement Units** / **Scaled** / **Scale Factor Name** / **Data Type** / **Fill Values** (**Name** **Value**) / **Legend Entries** (**Name** **Value**) Index number of the SDR row this fire pixel originated from / 0 / 0 / 255 / unitless / No / / 32-bit signed integer / / / /
ColIndex	4bytes	0	**Name** / **Attribute Name** / **Granule Boundary** / **Dynamic** / **Min Array Size** / **Max Array Size**: SDR Col Index / / Yes / Yes / 0 / 2457600 **Datum** **Description** / **Datum Offset** / **Unscaled Valid Range Min** / **Unscaled Valid Range Max** / **Measurement Units** / **Scaled** / **Scale Factor Name** / **Data Type** / **Fill Values** (**Name** **Value**) / **Legend Entries** (**Name** **Value**) Index number of the SDR column this fire pixel originated from / 0 / 0 / 3199 / unitless / No / / 32-bit signed integer / / / /

Table 3.1.2-2, VIIRS Active Fires Product Profile – Quality Flags

Fields

Name	Data Size	Field Offset	Dimensions
QF1_VIIRSAFARP	1byte	0	

Name	Attribute Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Quality Flag 1		Yes	Yes	0	2457600

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Adjacent Cloud Flag	0			unitless	No		1 bit(s)	Name: Value:	Name: No Cloud in adjacent pixel; Value: 0 Name: Cloud in adjacent pixel; Value: 1
Adjacent Water Flag	1			unitless	No		1 bit(s)	Name: Value:	Name: No water in adjacent pixel; Value: 0 Name: Water in adjacent pixel; Value: 1
Search Size Window (Indicates the number of pixels used in the search window)	2	1	10	unitless	No		4 bit(s)	Name: Value:	Name: Value:
Sun Glint	6			unitless	No		1 bit(s)	Name: Value:	Name: No sun glint; Value: 0 Name: Sun Glint; Value: 1
Sun Glint Override (Likely false alarms caused by sun glint contaminated background pixels)	7			unitless	No		1 bit(s)	Name: Value:	Name: No; Value: 0 Name: Yes; Value: 1

Name	Data Size	Field Offset	Dimensions
QF2_VIIRSAFARP	1byte	0	

Name	Attribute Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Quality Flag 2		Yes	Yes	0	2457600

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries

			Fire Test 1 Valid (Indicates whether Test 1 gave a valid result)	0			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Fire Test 2 Valid (Indicates whether Test 2 gave a valid result)	1			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Fire Test 3 Valid (Indicates whether Test 3 gave a valid result)	2			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Fire Test 4 Valid (Indicates whether Test 4 gave a valid result)	3			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Fire Test 5 Valid (Indicates whether Test 5 gave a valid result)	4			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Fire Test 6 Valid (Indicates whether Test 6 gave a valid result)	5			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Results not valid	0
													Results valid	1
			Input Data Quality (AF not retrieved due to bad SDR data in horizontal cell)	6			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Good SDR Data	0
													Bad SDR Data	1
			Day/Night (Night = SZA > 85 degrees)	7			unitless	No		1 bit(s)	**Name** / **Value**		**Name**	**Value**
													Night	0
													Day	1
QF3_VIIRSAFARP	1byte	0	**Name**	**Attribute Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**							
			Quality Flag 3		Yes	Yes	0	2457600							
			Datum												
			Description		**Datum**	**Unscaled**	**Unscaled**	**Measurement**	**Scaled**	**Scale**	**Data**	**Fill Values**		**Legend**	

				Offset	**Valid Range Min**	**Valid Range Max**	**Units**		**Factor Name**	**Type**		**Entries**	
			False Alarm Override (likely false alarms due to excessive rejection of legitimate background pixels)	0			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
												No	0
												Yes	1
			Water Contamination Override (likely false alarms caused by water contaminated background pixels)	1			unitless	No		1 bit(s)	**Name** **Value**	**Name**	**Value**
												No	0
												Yes	1
			Spare	2			unitless	No		6 bit(s)	**Name** **Value**	**Name**	**Value**

QF4_VIIRSAFARP	1byte	0	**Name**	**Attribute Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**					
			Quality Flag 4		Yes	Yes	0	2457600					
			Datum										
			Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**	**Legend Entries**	
			Fire Detection Confidence (Pixel level fire confidence in percent for each of the fire pixels)	0	0	100	unitless	No		unsigned 8-bit char	**Name** **Value**	**Name**	**Value**

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3.1.3 VIIRS Active Fires HDF5 Details

Figure 3.1.3-1 provides detail on the content and datatypes of the Active Fires ARP. This UML diagram provides detail at the product level only. In addition to this UML diagram, refer to the CDFCB-X, Volume IV, Part 1, Figure 1.2.2-1, Generalized UML Diagram for dynamically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

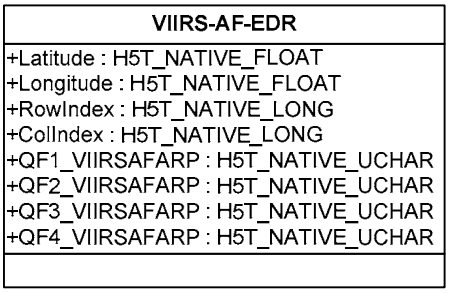

Figure 3.1.3-1, VIIRS Active Fires ARP UML Model

3.1.4 VIIRS Active Fires ARP HDF5 Metadata Details

The HDF5 metadata elements associated with the Active Fires ARP are listed in the CDFCB-X Volume V, Section 4.3, HDF5 (Metadata) Hierarchy. The Active Fires ARP metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 3.1.4-1, VIIRS Active Fires N_Quality_Summary_Name/N_Quality_Summary_Value Granule Level Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS Active Fires ARPs.

Table 3.1.4-1, VIIRS Active Fires N_Quality_Summary_Name/N_Quality_Summary_Value Granule Level Metadata Values

N_Quality_Summary_Name	N_Quality_Summary_Value	Description of Value	Notes
Summary – Active Fire Product Quality	0 – 100	Percent of Fire Pixels that have 'high' quality	Note that any pixel identified as an active fire pixel will be designated as having 'low', 'medium', or 'high' quality

3.1.5 VIIRS Active Fires Geolocation Details

The VIIRS Active Fires ARP is a sparse array that includes the latitude and longitude of any pixel identified as containing an active fire. Therefore, no geolocation is defined for this product. However, the fields "RowIndex" and "ColIndex" correspond to the VIIRS Moderate Resolution SDR Geolocation.

4.0 IP/ARP/EDR GEOLOCATION DETAILS BY SENSOR

The following sections provide the geolocation details for IPs, ARPs, and EDRs. Each section is broken down by sensor and includes geolocation details for those products which share the information. For products that utilize very specific geolocation data, see the individual products' descriptions. For an overview of the structure of geolocation data, see the CDFCB-X Volume I – Overview, D34862-01.

4.1 DELETED

4.2 DELETED

4.3 DELETED

4.4 DELETED

4.5 DELETED

4.6 OMPS Geolocation Data

OMPS TC EDR and NP IP geolocations are the OMPS TC SDR and OMPS NP SDR geolocations. Data formats are documented in the CDFCB-X, Volume III:

- OMPS Nadir Profile SDR Geoloaction: See the CDFCB-X, Vol III, Sections 2.9.1.5 – 2.9.1.8
- OMPS Total Column SDR Geolocation: See the CDFCB-X, Vol III, Sections 2.10.1.5 – 2.10.1.8

4.7 DELETED

4.8 DELETED

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4.9 VIIRS Geolocation Data

The VIIRS geolocation data varies, not only by resolution class, but also by data product grid size.

A summary of VIIRS geolocation is provided in Table 4.9-1, VIIRS EDR Geolocation Summary. This table presents VIIRS geolocations grouped by geolocation type and size rather than by EDR product.

Table 4.9-1, VIIRS EDR Geolocation Summary

VIIRS Geolocation Type	Approximate Size
Imagery Resolution TC	375 m pixel
I-Band Imagery	400 m pixel (GTM)
Moderation Resolution SDR and Moderation Resolution TC	750 m pixel
NCC and M-Band Imagery	800 m pixel (GTM)
Cloud Aggregated	6 km x 6 km cell
Aerosol	6 pixel x 6 pixel cell (M-Band)
Net Heat Flux	12 km x 12 km cell

4.9.1 VIIRS I-Band Imagery Geolocation (GTM)

The VIIRS I-Band Imagery Geolocation is mapped from the imagery resolution SDR geolocation, non-terrain corrected and is described in the CDFCB-X, Volume IV, Part 2, Section 5.1.1.5, VIIRS I-Band Imagery Geolocation Details.

4.9.2 VIIRS M-Band Imagery Geolocation (GTM)

The VIIRS M-Band Imagery Geolocation is mapped from the moderate resolution SDR geolocation, non-terrain corrected and is described in the CDFCB-X, Volume IV, Part 2, Section 5.1.2.5, VIIRS M-Band Imagery Geolocation Details.

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4.9.3 VIIRS NCC Imagery Geolocation (GTM)

The VIIRS NCC Imagery Geolocation is mapped from the DNB SDR ellipsoidal geolocation, non-terrain corrected and is described in the CDFCB-X, Volume IV, Part 2, Section 5.1.3.5, VIIRS NCC Imagery Geolocation Details.

4.9.4 VIIRS Aerosol Geolocation

The VIIRS Aerosol Geolocation is documented in the CDFCB-X, Volume IV, Part 2, Imagery, Atmospheric and Cloud EDRs, Sections 5.2.2.2.5 – 5.2.2.2.8.

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4.9.5 VIIRS Moderate Resolution Geolocation – Terrain Corrected

Data Mnemonic	None
Description/ Purpose	The VIIRS Moderate Resolution SDR Geolocation parameters are corrected for terrain height and provided with applicable EDRs. The parameters are defined identically to their SDR counterpart but are adjusted to account for line of sight intersection with the digital elevation model as opposed to the ellipsoid.
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.4 for details.
File Size	Estimated granule size: 77.35 MiB not including metadata or HDF5 overhead.
File Format Type	HDF5
Data Content and Data Format	The VIIRS Moderate Resolution Geolocation – Terrain Corrected contains: Time Fields Geolocation Angular Fields Height and Satellite Range Spacecraft Position, Velocity, and Attitude Spacecraft Solar Zenith and Azimuth Angles Geolocation Quality Flags The format for this geolocation is identical to the (non-terrain corrected) format. See the format for the VIIRS M-Band SDR Geolocation, CDFCB-X, Vol III, sections 2.16.5 – 2.16.8 for details. The Collection Short Names do, however, differ. The terrain corrected short name is: VIIRS-MOD-GEO-TC

4.9.6 VIIRS Imagery Resolution Geolocation – Terrain Corrected

Data Mnemonic	None
Description/ Purpose	The VIIRS Imagery Resolution SDR Geolocation parameters are corrected for terrain height and provided with applicable EDRs The parameters are defined identically to their SDR counterpart but are adjusted to account for line of sight intersection with the digital elevation model as opposed to the ellipsoid Corrected.
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.4 for details.
File Size	Estimated granule size: 309.38 MiB not including metadata or HDF5 overhead.
File Format Type	HDF5
Data Content and Data Format	For each aggregated cell, the VIIRS Imagery Resolution Geolocation – Terrain Corrected contains: Time Fields Geolocation Angular Fields Height and Satellite Range Spacecraft Position, Velocity, and Attitude Spacecraft Solar Zenith and Azimuth Angles Geolocation Quality Flags The format for this geolocation is identical to the (non-terrain corrected) format. See the format for the VIIRS M-Band SDR Geolocation, CDFCB-X, Vol III, sections 2.17.5 – 2.17.8 for details. The Collection Short Names do, however, differ. The terrain corrected short name is: VIIRS-IMG-GEO-TC

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4.9.7 VIIRS Cloud Aggregated Geolocation

Data Mnemonic	None
Description/ Purpose	The VIIRS Moderate Resolution SDR geolocation (non terrain corrected) pixel positions are aggregated to produce the Cloud Aggregated (6 km x 6 km) geolocation. The geolocation indicates the location of a cell where the cloud resides, not the average cloud position.
File-Naming Construct	See the CDFCB-X Volume I, D34862-01, Section 3.4 for details.
File Size	Estimated granule size: 1.17 MiB not including metadata or HDF5 overhead.
File Format Type	HDF5
Data Content and Data Format	For each aggregated cell, the VIIRS Cloud Aggregated Geolocation contains: Time Fields Geolocation Angular Fields Spacecraft Position, Velocity, and Attitude Spacecraft Solar Zenith and Azimuth Angles Geolocation Quality Flags See Section 4.9.7.1, VIIRS Cloud Aggregated Geolocation Data Content Summary See Section 4.9.7.2, VIIRS Cloud Aggregated Geolocation Product Profiles See Section 4.9.7.3, VIIRS Cloud Aggregated Geolocation HDF5 Details See Section 4.9.7.4, VIIRS Cloud Aggregated Geolocation HDF5 Metadata Details

4.9.7.1 VIIRS Cloud Aggregated Geolocation Data Content Summary

Table 4.9.7.1-1, VIIRS Cloud Aggregated Geolocation Data Content Summary

Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
StartTime	Starting Time of each scan in IET (1/1/1958)	64-bit integer	[N*48]	[48]	microsecond
MidTime	Mid-Time of each scan in IET (1/1/1958)	64-bit integer	[N*48]	[48]	microsecond
Latitude	Latitude of each cell (positive North)	32-bit floating point	[N*96, 508]	[96, 508]	degree
Longitude	Longitude of each cell (positive East)	32-bit floating point	[N*96, 508]	[96, 508]	degree
SolarZenithAngle	Zenith angle of sun at each cell position	32-bit floating point	[N*96, 508]	[96, 508]	degree
SolarAzimuthAngle	Azimuth angle of sun (measured clockwise positive from North) at each cell position	32-bit floating point	[N*96, 508]	[96, 508]	degree
SatelliteZenithAngle	Zenith angle to Satellite at each cell position	32-bit floating point	[N*96, 508]	[96, 508]	degree
SatelliteAzimuthAngle	Azimuth angle (measured clockwise positive from North) to Satellite at each cell position	32-bit floating point	[N*96, 508]	[96, 508]	degree
SCPosition	Spacecraft position in ECR Coordinates (X, Y, Z) at the mid-time of scan	32-bit floating point	[N*48, 3]	[48, 3]	meter

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Name	Description	Data Type	Aggregate Dimension	Granule Dimension	Units
SCVelocity	Spacecraft velocity in ECR Coordinates (dx/dt, dy/dt, dz/dt) at the mid-time of scan	32-bit floating point	[N*48, 3]	[48, 3]	m/s
SCAttitude	Spacecraft attitude with respect to Geodetic Reference Frame Coordinates (roll, pitch, yaw) at the midtime of scan	32-bit floating point	[N*48, 3]	[48, 3]	arcsecond **EDFCB4-TBR-10496**
SCSolarZenithAngle	The angle from the normal vector of the Solar Diffuser surface (z-axis of the solar diffuser frame) to the solar vector	32-bit floating point	[N*48]	[48]	degree
SCSolarAzimuthAngle	The angle from the Solar Diffuser reference frame x-axis to the projection of the solar vector onto the solar diffuser surface (x-y plane), measured counterclockwise (observer looking toward the SD surface)	32-bit floating point	[N*48]	[48]	degree
QF1_SCAN_VIIRSCLDAGGGEO	Scan Level Geolocation Quality Flags	unsigned 8-bit char	[N*48]	[48]	unitless
QF2_VIIRSCLDAGGGEO	Cell Level Geolocation Quality Flags	unsigned 8-bit char	[N*96, 508]	[96, 508]	unitless

4.9.7.2 VIIRS Cloud Aggregated Geolocation Product Profile

Table 4.9.7.2-1, VIIRS Cloud Aggregated Geolocation Product Profile

Fields

Name	Data Size	Dimensions
StartTime	8bytes	**Name**: Scan; **Granule Boundary**: Yes; **Dynamic**: No; **Min Array Size**: 48; **Max Array Size**: 48 **Datum**: Starting Time of each scan in IET (1/1/1958); **Datum Offset**: 0; **Unscaled Valid Range Min**: ; **Unscaled Valid Range Max**: ; **Measurement Units**: microsecond; **Scaled**: No; **Scale Factor Name**: ; **Data Type**: 64-bit integer **Fill Values**: NA_INT64_FILL -999; MISS_INT64_FILL -998; ERR_INT64_FILL -995; VDNE_INT64_FILL -993 **Legend Entries**:
MidTime	8bytes	**Name**: Scan; **Granule Boundary**: Yes; **Dynamic**: No; **Min Array Size**: 48; **Max Array Size**: 48 **Datum**: Mid-Time of each scan in IET (1/1/1958); **Datum Offset**: 0; **Unscaled Valid Range Min**: ; **Unscaled Valid Range Max**: ; **Measurement Units**: microsecond; **Scaled**: No; **Scale Factor Name**: ; **Data Type**: 64-bit integer **Fill Values**: NA_INT64_FILL -999; MISS_INT64_FILL -998; ERR_INT64_FILL -995; VDNE_INT64_FILL -993 **Legend Entries**:

Latitude — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Latitude of each cell (positive North)	0	-90	90	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

Longitude — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Longitude of each cell (positive East)	0	-180	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarZenithAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle of sun at each cell position	0	0	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

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SolarAzimuthAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Azimuth angle of sun (measured clockwise positive from North) at each cell position	0	-180	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteZenithAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle to Satellite at each cell position	0	0	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteAzimuthAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Azimuth angle (measured clockwise positive from North) to Satellite at each cell position	0	-180	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELINT_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

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<tr><td>SCPosition</td><td>4bytes</td><td>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>Scan</td><td>Yes</td><td>No</td><td>48</td><td>48</td></tr>
<tr><td>ECRCoordinate</td><td>No</td><td>No</td><td>3</td><td>3</td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Spacecraft position in ECR Coordinates (X, Y, Z) at the mid-time of scan</td><td>0</td><td></td><td></td><td>meter</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><th>Name</th><th>Granule Boundary</th><th>Dynamic</th><th>Min Array Size</th><th>Max Array Size</th></tr>
<tr><td>Scan</td><td>Yes</td><td>No</td><td>48</td><td>48</td></tr>
<tr><td>ECRCoordinate</td><td>No</td><td>No</td><td>3</td><td>3</td></tr>
</table>
Datum
<table>
<tr><th>Description</th><th>Datum Offset</th><th>Unscaled Valid Range Min</th><th>Unscaled Valid Range Max</th><th>Measurement Units</th><th>Scaled</th><th>Scale Factor Name</th><th>Data Type</th><th>Fill Values</th><th>Legend Entries</th></tr>
<tr><td>Spacecraft velocity in ECR Coordinates (dx/dt, dy/dt, dz/dt) at the mid-time of scan</td><td>0</td><td></td><td></td><td>m/s</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
<tr><td>NA_FLOAT32_FILL</td><td>-999.9</td></tr>
<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
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<tr><th>Name</th><th>Value</th></tr>
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<tr><td>Scan</td><td>Yes</td><td>No</td><td>48</td><td>48</td></tr>
<tr><td>GRFCoordinate</td><td>No</td><td>No</td><td>3</td><td>3</td></tr>
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Datum
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<tr><td>Spacecraft attitude with respect to Geodetic Reference Frame Coordinates (roll, pitch, yaw) at the midtime of scan</td><td>0</td><td></td><td></td><td>arcsecond
EDFCB4-TBR-10496</td><td>No</td><td></td><td>32-bit floating point</td><td>
<table>
<tr><th>Name</th><th>Value</th></tr>
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<tr><td>MISS_FLOAT32_FILL</td><td>-999.8</td></tr>
<tr><td>ERR_FLOAT32_FILL</td><td>-999.5</td></tr>
<tr><td>VDNE_FLOAT32_FILL</td><td>-999.3</td></tr>
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SCSolarZenithAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Scan	Yes	No	48	48

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
The angle from the normal vector of the Solar Diffuser surface (z-axis of the solar diffuser frame) to the solar vector	0	0	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

SCSolarAzimuthAngle — 4bytes

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Scan	Yes	No	48	48

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
The angle from the Solar Diffuser reference frame x-axis to the projection of the solar vector onto the solar diffuser surface (x-y plane), measured counterclockwise (observer looking toward the SD surface)	0	-180	180	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

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Table 4.9.7.2-2, VIIRS Cloud Aggregated Geolocation – Quality Flags

Fields

Name	Data Size	Dimensions

QF1_SCAN_VIIRSCLDAGGGEO — 1byte

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Scan	Yes	No	48	48

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Attitude and Ephemeris Availability Status	0			unitless	No		2 bit(s)	Name / Value	Name / Value: Nominal - E&A data available / 0; Missing Data <= Small Gap / 1; Small Gap < Missing Data < Granule Boundary / 2; Missing Data >= Granule Boundary / 3
HAM Impulse Flag (Indicates whether the number of encoder pulse values per delta time is as expected (Good Data) or not (Bad Data))	2			unitless	No		1 bit(s)	Name / Value	Name / Value: Good Data / 0; Bad Data / 1
Within South Atlantic Anomaly	3			unitless	No		1 bit(s)	Name / Value	Name / Value: False / 0; True / 1
Solar Eclipse during Earth view scan	4			unitless	No		1 bit(s)	Name / Value	Name / Value: False / 0; True / 1
Spare	5			unitless	No		3 bit(s)	Name / Value	Name / Value

QF2_VIIRSCLDAGGGEO — 1byte

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	96	96
CrossTrack	No	No	508	508

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Invalid Input Data (Indicates that any of the Spacecraft Ephemeris or Attitude Data is Invalid)	0			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
Bad Pointing (Indicates that the sensor LOS does not intersect the geoid, is near the limb, has invalid sensor angles, or other similar condition.)	1			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
Bad Terrain (Indicates that the algorithm could not obtain a valid terrain value.)	2			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
Invalid Solar Angles	3			unitless	No		1 bit(s)	Name Value	Name Value False 0 True 1
Spare	4			unitless	No		4 bit(s)	Name Value	Name Value

4.9.7.3 VIIRS Cloud Aggregated Geolocation HDF5 Details

Figure 4.9.7.3-1, VIIRS Cloud Aggregated Geolocation UML Diagram, provides details on the content and datatypes of the Cloud Aggregated Geolocation. This UML diagram provides details at the product level only. In addition to this UML diagram, refer to the CDFCB-X, Volume IV, Part 1, Figure 1.2.1-1, Generalized UML Diagram for HDF5 IP/ARP/EDR Files, for a complete UML rendering of this product.

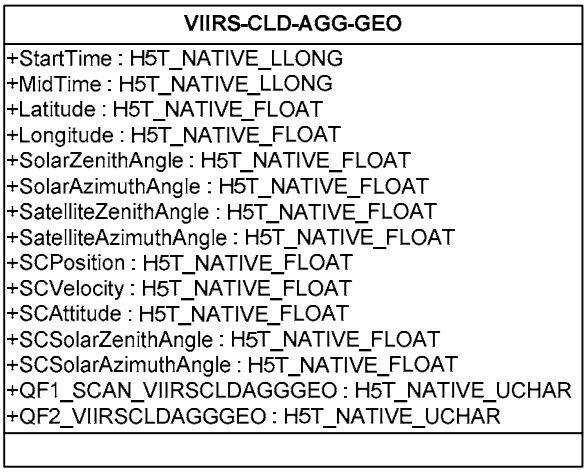

Figure 4.9.7.3-1, VIIRS Cloud Aggregated Geolocation UML Diagram

4.9.7.4 VIIRS Cloud Aggregated Geolocation HDF5 Metadata Details

The HDF5 metadata elements associated with the VIIRS Cloud Aggregated Geolocation are listed in the CDFCB-X Volume V, D34862-05, Section 4.3, HDF5 (Metadata) Hierarchy. The Cloud Aggregated Geolocation metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for the VIIRS Cloud Aggregated Geolocation, the following items are included as name/value pairs under the granule level metadata attribute “N_Quality_Summary”:

Table 4.9.7.4-1, VIIRS Cloud Aggregated Geolocation N_Quality_Summary Granule Level Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Notes**
Percent Missing Data	0 – 100%	Percent of missing pixels in granule	
Percent Out-of-bounds	0 – 100%	Percent of pixels identified as out-of-bounds in granule	
Automatic Quality Flag	0	Retrieval Successful	
	1	Retrieval not Successful (one or more geolocation subroutines failed)	

4.9.8 VIIRS Net Heat Flux Geolocation

See the CDFCB-X, Volume IV, Part 3, Sections 5.5.4.5 to 5.5.4.8 for Net Heat Flux Geolocation details.

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APPENDIX A: DATA MNEMONIC TO INTERFACE MAPPING

Table A-1, Data Mnemonic to Interface Mapping

Description	Data Mnemonic	File Type	Document	Interface Mnemonic
Active Fires ARP - Official	ARPE-VRAF-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Active Fires ARP - Substitute	ARPE-VRAF-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Mask IP - Official	IMPE-CMIP-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Mask IP - Substitute	IMPE-CMIP-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Infra-Red Ozone IP - Official	IMPE-IROZ-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Infra-Red Ozone IP - Substitute	IMPE-IROZ-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Nadir Ozone Profile IP - Official	IMPE-NAOP-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Nadir Ozone Profile IP - Substitute	IMPE-NAOP-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Quarterly Surface Type IP - Official	IMPE-QSIP-C0030	HDF5		
			D37032: NPOESS Integrated Support Facility ICD	T_AU_DP-L00110
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0110
VIIRS Aerosol Optical Thickness EDR - Official	EDRE-AOTH-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
VIIRS Aerosol Optical Thickness EDR - Substitute	EDRE-AOTH-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
VIIRS Aerosol Particle Size Parameter EDR - Official	EDRE-APSP-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS Aerosol Particle Size Parameter EDR - Substitute	EDRE-APSP-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
CrIMSS EDR - Official	EDRE-AVMP-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
CrIMSS EDR - Substitute	EDRE-AVMP-C1031	HDF5		

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
VIIRS Cloud Base Height EDR - Official	EDRE-CLBH-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS Cloud Base Height EDR - Substitute	EDRE-CLBH-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
VIIRS I-Band Imagery EDR - Official	EDRE-IMAG-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS NCC Imagery EDR - Official	EDRE-IMAG-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Ozone Total Column EDR - Official	EDRE-OMTC-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Ozone Total Column EDR - Substitute	EDRE-OMTC-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
VIIRS Sea Ice Characterization EDR - Official	EDRE-SICH-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS Sea Ice Characterization EDR - Substitute	EDRE-SICH-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Cover/Layers EDR - Official	EDRE-VCCL-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
Cloud Cover/Layers EDR - Substitute	EDRE-VCCL-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Effective Particle Size EDR - Official	EDRE-VCEP-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Effective Particle Size EDR - Substitute	EDRE-VCEP-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Optical Thickness EDR - Official	EDRE-VCOT-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Optical Thickness EDR - Substitute	EDRE-VCOT-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Top Height EDR - Official	EDRE-VCTH-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Top Height EDR - Substitute	EDRE-VCTH-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Top Pressure EDR - Official	EDRE-VCTP-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Top Pressure EDR - Substitute	EDRE-VCTP-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Cloud Top Temperature EDR - Official	EDRE-VCTT-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Cloud Top Temperature EDR - Substitute	EDRE-VCTT-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
VIIRS Moderate Band Imagery EDR - Official	EDRE-VMOD-C0030			
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Suspended Matter EDR - Official	EDRE-VRSM-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Suspended Matter EDR - Substitute	EDRE-VRSM-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
VIIRS Ice Surface Temperature EDR - Official	EDRE-ICST-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS Ice Surface Temperature EDR - Substitute	EDRE-ICST-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
VIIRS Snow Cover/Depth EDR - Official	EDRE-SNCD-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS Snow Cover/Depth EDR - Substitute	EDRE-SNCD-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
VIIRS SST EDR - Official	EDRE-SSTE-C1030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
VIIRS SST EDR - Substitute	EDRE-SSTE-C1031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Land Surface Temperature EDR - Official	EDRE-VLST-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
Land Surface Temperature EDR - Substitute	EDRE-VLST-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Net Heat Flux EDR - Official	EDRE-VNHF-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Net Heat Flux EDR - Substitute	EDRE-VNHF-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Ocean Color/Chlorophyll EDR - Official	EDRE-VROC-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Ocean Color/Chlorophyll EDR - Substitute	EDRE-VROC-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Vegetation Index EDR - Official	EDRE-VRVI-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Vegetation Index EDR - Substitute	EDRE-VRVI-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
Surface Type EDR - Official	EDRE-VSTV-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030

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Description	Data Mnemonic	File Type	Document	Interface Mnemonic
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Surface Type EDR - Substitute	EDRE-VSTV-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Surface Albedo EDR - Official	EDRE-VRSA-C0030	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_AD-LN0030
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030
			D34645: NPOESS to SDS ICD	X_NP_SD-L00030
			D34651: NPOESS Field Terminal ICD	X_FD_FM-LB5200
			D41068: NPOESS IDPS to NSIPS ICD	T_DP_CV-L00030
Surface Albedo EDR - Substitute	EDRE-VRSA-C0031	HDF5		
			D31413: NPOESS to NOAA ICD	X_NP_CN-LN0030
			D34466: NPOESS to DOD ICD	X_NP_CN-LC0030

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