KAGUYA (SELENE) Product Format Description

- Lunar Imager/Spectrometer
(LISM (TC/MI/SP)) /
SPICE Kernel-

Version 1.3

Change Log

Ver.	Date	Change	Remarks
1.0	09/11/1	The first edition	
1.1	09/11/6	(Revision only in Japanese version (no change in English	
		version))	
1.2	09/11/19	<appendix-2>p.6(Table 2.1-2)</appendix-2>	
		"Strip Division Number" of the Catalog Information File	
		was deleted.	
1.3	10/2/16	<appendix-1>p.App3-1</appendix-1>	
		Appendix3 "Details of SP Ancillary Information" addition.	

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Appendix-2: LISM DTM / Ortho Product Format Description	

 ${\bf Appendix \hbox{-} 3: SPICE \ Kernel \ Format \ Description}$

1. Introduction

1.1 Purpose

This document describes the format*2 used for the catalog and product files for the Lunar Imager/Spectrometer *1(LISM) that was board KAGUYA (SELENE), the format used for the SPICE kernel*3. These files provided by Japan Aerospace Exploration Agency (JAXA).

In addition, the following three high-performance optical instruments (TC, MI, SP) are on LISM.

- Terrain Camera (TC)
- Multi band Imager (MI)
- Spectral Profiler (SP)
- *1: Refer to the following "Project Homepage of KAGUYA" and "Image Gallery of KAGUYA" used for the LISM mission.
 - ✓ Project Homepage for KAGUYA http://www.kaguya.jaxa.jp/en/equipment/tc_e.htm
 - ✓ Image Gallery for KAGUYA

TC:

http://wms.selene.darts.isas.jaxa.jp/selene_viewer/en/observation_mission/tc/

MI:

http://wms.selene.darts.isas.jaxa.jp/selene_viewer/en/observation_mission/mi/

 $\underline{\text{http://wms.selene.darts.isas.jaxa.jp/selene viewer/en/observation mission/sp/}}$

1.2 The composition of this format description

Table 1-1 shows the composition of this format description.

Table 1-1 the composition of this format description

No.	INDEX	Title	Description content			
		Table 2-1 LALT Products List	The name of the product, the object form, and the composition of the product are described as a product list illustrated by this description.			
1	This Document Chaptar 2	Table 2-1 Product Description	Concerning each product shown in the No1 product list, the content included in data and the description of the observation method are illustrated.			
		Table 2-3 LISM/SPICE Product Reference of Format Description	The reference of format description of each product is described. The format descriptions of each product are described in the description of Appendix 1, 2, 3.			
3	Appendix-1: LISM RGC Product Format Description					
4	Appendix-2: LISM DTM / Ortho Product Format Description					
5	Appendix-3: SPICE Kernel Format Description					

^{*2:} The data format used for SELENE is based on the PDS (Planetary Data System) by NASA. However, the data format is not fully compliant with the PDS format.

^{*3 :} SPICE karnel refers to data which store satellite auxiliary information (time, location, attitude and observation range etc).

2. LISM Products

The list of LISM/SPICE products, which this document describes, is shown in Table 2-1. The description for each product is shown in Table 2-2.

In addition, the reference of format description of each product is shown in Table 2-4.

Table 2-1 LISM/SPICE Products Lists

	Level	Product Name	Product ID	Data Type	Product Format*1
		TC_Morning_MAP	TC_Morning_MAP	MAP	A
		TC_Evening_MAP	TC_Evening_MAP	MAP	A
		DTM_TCOrtho	DTM_TCOrtho	IMAGE	D
		MI-VIS_Level2B2	MI-VIS_Level2B2	IMAGE	D
		MI-NIR_Level2B2	MI-NIR_Level2B2	IMAGE	D
	Standard	MI-VIS_Level2C2	MI-VIS_Level2C2	IMAGE	D
		MI-NIR_Level2C2	MI-NIR_Level2C2	IMAGE	D
		SP_Level2B1	SP_Level2B1	TBD	A
		SP_Level2B2	SP_Level2B2	TBD	A
LISM		SP_Level2C	SP_Level2C	TBD	A
LIS		SP_Level2D	SP_Level2D	TBD	A
		TCOrtho_MAP	TCOrtho_MAP	MAP	Δ.
		DTM_MAP	DTM_MAP	MAP	A
		MI_MAP	MI_MAP	MAP	A
		DTM_TCOrtho_S	DTM_TCOrtho_S	IMAGE	A
	Higher Level	TCOrtho_MAP_S	TCOrtho_MAP_S	MAP	A
		DTM_MAP_S	DTM_MAP_S	MAP	A
	TCOrtho_MSC		TCOrtho_MSC	IMAGE	A
		DTM_MSC	DTM_MSC	IMAGE	A
		Others	Others	Depends on	the products
		Spacecraft trajectory	SPK	SPK	D
f - 1	Standard	Orientation of spacecraft	CK	CK	D
SPICE		Spacecraft clock coefficients	SCLK	SCLK	D
<i>3</i> 2	Higher	Long period spacecraft clock coefficients	LONG_SCLK	SCLK	D
	Level	RISE Spacecraft trajectory	RISE_SPK	SPK	D
_		:Map product			

[:]Map product *1 Product Format : A - Attached, D - Detached

Table 2-2 (1/2) LISM/SPICE Product Description

	Product Name	Product ID	Product Descriptions
	TC_Morning_MAP	TC_Morning_MAP	TC map projected product mosaicking appropriate TC_s/w_Level2A data taken in solar azimuth condition of east: Each pixel has reflectance value for (incidence, emission, phase angles) of (30°, 0°, 30°). Though the source data of this product are registered to L2DB in Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function.
	TC_Evening_MAP	TC_Evening_MAP	TC map-projected product mosaicking appropriate TC_s/w_Level2A data taken in solar azimuth condition of west: Each pixel has reflectance value for (incidence, emission, phase angles) of (30°, 0°, 30°). Though the source data of this product are registered to L2DB in Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function.
	DTM_TCOrtho	DTM_TCOrtho	This product contains scene data files of Digital Terrain Model (DTM), TC ortho, and qualification flag, created from TC_w_Level2A data: Map projection type of DTM and TC ortho is Simple Cylindrical for latitude of < 60° and Polar Stereo for latitude of > 60°. Each pixel of TC ortho has radiance value.
	MI-VIS_Level2B2	MI-VIS_Level2B2	MI-VIS 5 band images in nominal observation mode. After radiometric correction, conversion to radiance, rubber seating of non-base images to the base images, scene cutting as same observation area and cube generation. Data values are shown in radiance.
1	MI-NIR_Level2B2	MI-NIR_Level2B2	MI-NIR 4 band images in nominal observation mode. After radiometric correction, conversion to radiance, rubber seating of non-base images to the base images, scene cutting as same observation area and cube generation. Data values are shown in radiance.
LISM	MI-VIS_Level2C2	MI-VIS_Level2C2	MI-VIS 5 band images in nominal observation mode. After photometric correction, conversion to reflectance and attachment of systematic geometric correction data (latitude and longitude derived by geometric correction). Data values are shown in radiance.
	MI-NIR_Level2C2	MI-NIR_Level2C2	MI-NIR 4 band images in nominal observation mode. After photometric correction, conversion to reflectance and attachment of systematic geometric correction data (latitude and longitude derived by geometric correction). Data values are shown in radiance.
	SP_Level2B1	SP_Level2B1	A SP_Level2B1 product is made of multiple SP_Level 2A products in the same revolution.Radiometric calibration and conversion to diffuce spectral reflectance are also applied.
	SP_Level2B2	SP_Level2B2	A SP_Level2B2 product is extracted from a SP_Level2B1 product based on a TC/MI level 2A product acquired at the same time as SP. A browse image of TC/MI level 2A product used in the extraction process is also attached to this product.
	SP_Level2C	SP_Level2C	A SP_Level2C product is generated from a SP_Level2B2 product by applying spatial correlation analysis with the attached TC/MI image to determine the location of SP observation point in the image as well as photomeric correction and reflectance conversion algorithms.

Table 2-3 (1/2) LISM/SPICE Product Description

	Product Name	Product ID	Product Descriptions			
	SP_Level2D	SP_Level2D	A SP_Level2D product is generated from SP_Level2C product by applying various spectral data analysis algoeithms including spectral unmixing based on Modified Gaussian Model(MGM).			
	TCOrtho_MAP	TCOrtho_MAP	Map-projected product mosaicking appropriate TC ortho data in plural DTM TCOrtho products: Though the source data of this product are registered to L2DB in Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function. Each pixel of TC ortho has radiance value.			
	DTM_MAP	DTM_MAP	Map-projected product mosaicking appropriate Digital Terrain Model (DTM) data in plural DTM TCOrtho products: Though the source data of this product are registered to L2DB in Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function. Each pixel of TC ortho has radiance value.			
	MI_MAP	MI_MAP	Mosaic data after 9 band cube generation and map projection (simple cylindrical). For mosaicing image matching are applied to overlapping area of the original images.			
	DTM_TCOrtho_S	DTM_TCOrtho_S	Especially created DTM_TCOrtho product by LISM science members for their personal studies: This product contains scene data files of Digital Terrain Model (DTM), TC ortho, and qualification flag, created from TC_w_Level2A data. Map projection type is Simple Cylindrical or Polar Stereo.			
LISM	TCOrtho_MAP_S	TCOrtho_MAP_S	Especially created TCOrtho_MAP product by LISM science members for their personal studies: Though the source data of this product are registered to L2DB in Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function.			
	DTM_MAP_S	DTM_MAP_S	Especially created DTM_MAP product by LISM science members for their personal studies. Though the source data of this product are registered to L2DB in a projection type of Simple Cylindrical, users can choose a map projection type from several ones using L2DB's function.			
	TCOrtho_MSC	TCOrtho_MSC	Especially created TC ortho mosaicked data from DTM/TC Ortho products by LISM science members for their personal studies: The source DTM/Ortho data, resolution, coefficients for radiometric calibration and geometric correction and so on of this product may be different from those of TCOrtho_MAP(_S) product.			
	DTM_MSC	DTM_MSC	Especially created DTM mosaicked data from DTM/TC Ortho products by LISM science members for their personal studies: The source DTM/Ortho data, resolution, coefficients for radiometric calibration and geometric correction and so on of this product may be different from those of DTM_MAP(_S) product.			
	Others	Others	Especially created product using particular calibration/correction parameters or created by LISM science members for their personal studies. Each product corresponding to the Product ID which is shown below. TC_Morning_MAP,TC_Evening_MAP,DTM_TCOrtho,MI-VIS_Level2B2,MI-NIR_Level2B2,MI-VIS_Level2C2, MI-VIS_Level2C3,MI-VIS_Level2C4,MI-NIR_Level2C2,MI-NIR_Level2C3, MI-NIR_Level2C4,SP_Level2B1,SP_Level2B2,SP_Level2D,MI_MAP			
	Spacecraft trajectory	SPK	SPICE karnel containing satellite ephemerides			
	Orientation of spacecraft	CK	SPICE karnel containing orientation of satellite relative to a specified reference frame			
SPICE	Spacecraft clock coefficients	SCLK	SPICE karnel containing spacecraft Clock Coefficients - Used for SCLK <> ET time conversions			
$_{ m SI}$	Long period spacecraft clock coefficients	LONG_SCLK	SPICE kernel containing spacecraft Clock Coefficients, converted from original SCLK for long time coverage. - Used for SCLK <> ET time conversions			
	RISE Spacecraft trajectory	RISE_SPK	SPICE kernel containing ephemeris of Main Orbiter using the estimated lunar gravity model			
	·M					

:Map product

Table 2-4 (1/4) LISM/SPICE Product Format Description Reference

	Product Name	Product ID		Reference		
			Composition of the Data Set		Page.2 Page.3	Section 2.1 Figure 2.1-1
		TC_Morning_MA P TC_Evening_MA P	Rules used for File naming		Page.4	List 2.1-1
			Catalog Information File		Page.5 Page.6	Section 2.1.1 List 2.1-24
			Thumbnail File		Page.7	Section 2.1.2 List 2.1-5
	TC_Morning_MAP TC_Evening_MAP		PDS Product File		Page.8 Page.9 Page.10 Page.11,12 Page.13 Page.14	Section 2.1.3 Figure 2.1-2 Figure 2.1-3 Section 2.1.3 (1) List 2.1-6 Section 2.1.3 (2) List 2.1-7 Section 2.1.3 (3) List 2.1-8
			Low Resolution Data File		Page.15	Section 2.1.4 List 2.1-9
			Composition of the Data Set		Page.16,17 Page.17 Page.18	Section 2.2 List 2.2-1 Figure 2.2-1
			Rules used for File naming		Page.19	List 2.1-8 Section 2.1.4 List 2.1-9 Section 2.2 List 2.2-1
	MI-VIS_Level2B2	MI-VIS_Level2B	Catalog Information File	Appendix-1 LISM RGC Product Format Description -	Page.21 Page.22	List2.2-4
LSIM			Thumbnail File		Page.24	
I	MI-NIR_Level2B2	MI-NIR_Level2B	PDS Label		Page.25 Page.26,27	Section 2.2.3
			PDS Product File		Page.29 Page.39 Page.30 Page.31,32 Page.38	Section 2.2.4 Figure 2.2-3 Figure 2.2-4 Section 2.2.4 (1) List 2.2-12 Section 2.2.4 (3)
			Composition of the Data Set		Page.16,17 Page.17 Page.18	Section 2.2 List 2.2-1 Figure 2.2-1
			Rules used for File naming		Page.19	List 2.2-2
			Catalog Information File		Page.22	Section 2.2.1 List2.2-4 List 2.2-5,6
	MI-VIS_Level2C2	MI-VIS_Level2C 2	Thumbnail File		Page.24	Section 2.2.2 List 2.2-10
	ATTAND A LOGO		PDS Label		Page.25 Page.26,27	Section 2.2.3 List 2.2-11
	MI-NIR_Level2C2	MI-NIR_Level2C 2	PDS Product File		Page.28 Page.29 Page.30 Page.33,34 Page.37 Page.38	Section 2.2.4 Figure 2.2-3 Figure 2.2-4 Section 2.2.4 (1) List 2.2-13 Section 2.2.4 (2) List 2.2-15 Section 2.2.4 (3) List 2.2-16

:Map product

Table 2-3 (2/4) LISM/SPICE Product Format Description Reference

	Product Name	Product ID		Reference		
			Composition of the Data Set		Page.16,17 Page.17 Page.18	Section 2.2 List 2.2-1 Figure 2.2-2
			Rules used for File naming		Page.20	List 2.2-3
			Catalog Information File		Page.21 Page.22 Page.23	Section 2.2.1 List2.2-7 List 2.2-8,9
	MI_MAP	MI_MAP	Thumbnail File		Page.24	Section 2.2.2 List 2.2-10
			PDS Product File		Page.28 Page.29 Page.30 Page.35,36 Page.37 Page.38	Section 2.2.4 Figure 2.2-3 Figure 2.2-4 Section 2.2.4 (1) List 2.2-14 Section 2.2.4 (2) List 2.2-15 Section 2.2.4 (3) List 2.2-16
			Low Resolution Data File		Page.39	Section 2.2.5 List 2.2-17
			Composition of the Data Set		Page.40 Page.41	Section 2.3 Figure 2.3-1
	SP_Level2B1	SP_Level2B1	Rules used for File naming	Appendix-1 LISM RGC Product Format Description -	Page.42	List 2.3-1
			Catalog Information File		Page.44 Page.45 Page.46	Section 2.3.1 List 2.3-3 List 2.3-4
LISM			PDS Product File		Page.48 Page.49 Page.50 Page.51~55 Page.56 Page.57~60 Page.61	Section 2.3.3 (2)
			Composition of the Data Set		Page.40 Page.41	Section 2.3 Figure 2.3-2
			Rules used for File naming		Page.43	List 2.3-2
			Catalog Information File		Page.44 Page.45 Page.46	Section 2.3.1 List 2.3-3 List 2.3-4
	SP_Level2B2	SP_Level2B2	Thumbnail File		Page.47 Appendix1	Section 2.3.2 List 2.3-5
	SP_Level2C SP_Level2D	SP_Level2C SP_Level2D	PDS Product File		Page.49 Page.50 Page.51~55 Page.56 Page.57~60 Page.61	Section 2.3.3 Figure 2.3-3 Figure 2.3-4 Section 2.3.3 (1) List 2.3-6 Section 2.3.3 (2) List 2.3-7 Section 2.3.3 (3) List 2.3-8
			Original Resolution JPEG Image File		Page.62	Section 2.3.4 List 2.3-9
	Others :Map product	Others	*1			

*1: "Other" is the flowing products

TC_Morning_MAP, TC_Evening_MAP, DTM_TCOrtho, MI-VIS_Level2B2, MI-NIR_Level2B2, MI-VIS_Level2C2,

MI-VIS_Level2C3, MI-VIS_Level2C4, MI-NIR_Level2C2, MI-NIR_Level2C3, MI-NIR_Level2C4, SP_Level2B1,

SP_Level2B2, SP_Level2C, SP_Level2D, MI_MAP

Table 2-3 (3/4) LISM/SPICE Product Format Description Reference

	Product Name	Product ID		Reference		
			Composition of the Data Set		Page.2 Page.2 Page.3	Section 2.1 Fig 2.1-1 Fig 2.1-2
			Rules used for File naming		Page.4	Table 2.1-1
			Catalog Information File		Page.5 page.5,6 Page.7	Section 2.1.1 Table 2.1-2 Table 2.1-3,4
	DTM_TCOrtho	DTM_TCOrtho	Thumbnail File		Page.8	Section 2.1.2 Table 2.1-5
	DTM_TCOrtho_S	DTM_TCOrtho_ S	PDSLabel (L2DB)		Page.9	Section 2.1.3 Fig 2.1-3 Table 2.1-6
			tar Object File		Page.10 Page.11~14 Page.15,16 Page.17~20 Page.21	Table 2.1-8 Table 2.1.9 Section 2.1.4 (2) Table 2.1-10
			Composition of the Data Set		Page.22	Section 2.2 Fig 2.2-1 Fig 2.2-2
	DTM_MAP	DTM_MAP DTM_MAP_S	Rules used for File naming	Appendix-2 LISM DTM / Ortho Product Format Description -	Page.23	Table 2.2-1
M	DTM_MAP_S		Catalog Information File		Page.24 Page.24,25 Page.25	Section 2.2.1 Table 2.2-2 Table 2.2-3 Table 2.2-4
LISM			Thumbnail File		Page.26	Section 2.2.2 Table 2.2-5
	DTM_MSC	DTM_MSC	PDS Product File		Page.27 Page.27 Page.28~30 Page.31	Section 2.2.3 Fig 2.2-3 Fig 2.2-4 Section 2.2.3 (1) Table 2.2-6 Section 2.2.3 (2) Table 2.2-7
			Low Resolution Data File		Page.31	Section 2.2.4 Fig 2.2-5
	TCOrtho_MAP	TCOrtho_MAP	Composition of the Data Set		Page.32	Section 2.3 Fig 2.3-1 Fig 2.3-2
			Rules used for File naming		Page.33	Table 2.3-1
	TCOrtho_MAP_S	TCOrtho_MAP_S	Catalog Information File		Page.34 Page.34,35 Page.35	Section 2.3.1 Table 2.3-2 Table 2.3-3 Table 2.3-4
			Thumbnail File		Page.36	Section 2.3.2 Table 2.3-5
	$TCOrtho_MSC$	TCOrtho_MSC	PDS Product File		Page.37 Page.37 Page.38~40 Page.41	Section 2.3.3 Fig 2.3-3 Fig 2.3-4 Section 2.3.3 (1) Table 2.3-6 Section 2.3.3(2) Table 2.3-7
	:Map product		Low Resolution Data File		Page.41	Section 2.3.4

Map product

Table 2-3 (4/4) LISM/SPICE Product Format Description Reference

	Product Name	Product ID		Reference		
	Spacecraft clock coefficients	SCLK	Composition of the Data Set		Page.1	Capter 2 Figure 2-1 Table 2-1
SPICE	(Long period spacecraft clock coefficients) Spacecraft trajectory	(LONG_SCLK) SPK (RISE_SPK)	Rules used for File naming	Appendix-3 SPICE Kernel	Page.2 Page.3	Table 2-2,3 Table 2-4
	(RISE Spacecraft trajectory)		Catalog Information File	Format Description	Page.4	Section 2.1 Table 2-5
	Orientation of spacecraft	CK	PDS Label	-	Page.5	Section 2.2 Table 2-6
			SPICE Kernel		Page.6	Section 2.3 Table 2-7

KAGUYA (SELENE) Product Format Description

- LISM (TC/MI/SP) /SPICE Kernel-

Appendix-1

LISM RGC Product Format Description

Version 1.1

February 16, 2010

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	2.1.3	TC PDS product file	8
	2.1.4	TC low resolution data file	15
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	2.3.1	SP catalog information file	44
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Appendix1 "Rotation/reverse of the thumbnail image"

Appendix2 "Details of the invalid pixel"

Appendix3 "Details of SP Ancillary Information"

Change Log

Ver.	Date	Change	Remarks
1.0	09/11/1	The first edition	
1.1	10/2/16	P67-68	
		Appendix3 "Details of SP Ancillary Information" addition	

1. The general

1.1 Purpose

This document describes the formats of the Radiometric calibration and Geometric correction (RGC) Data Set. These files provided by Japan Aerospace Exploration Agency (JAXA).

1.2 Reference books

- (1) Planetary Data System Standards Reference Version 3.5
- (2) Digital compression and coding of continuous-tone still images (ISO/IEC 10918-1)
- (3) Documentation of LISM level 2A product file format (RCX-05007)
- (4) Functions for creating LISM SP level 2 product (RCX-03006)

2. RGC data set

The composition of RGC data set varies by detector, band, process level or geometric correction option. After the following page, the details of each data set are shown.

2.1 TC

RGC data set of TC is broken into the following 9 process levels and geometric correction options.

- ·L2B0 data
- ·L2C1 data
- ·L2C3 data
- ·L2C4 data
- ·L3C1 data
- ·L3C3 data
- ·L3C4 data
- ·MAP data
- ·MSC data

Among above, in L2B0~L3C4 data, first 3 characters show process level and the last fourth character shows geometric correction option. MAP data, being data registered in L2DB as a map product, are created by mosaicking several L3C, MAP and MSC data (mosaic processing). MSC data, being mosaic data but not a map product, are created by mosaicking several L3C, MAP and MSC data.

RGC data set of TC is created by tar-archiving the following files.

- ·Catalog information file
- ·PDS product file
- ·PDS label
- ·Thumbnail file
- ·Low resolution file

The PDS product file of MAP data is not gzip-compressed and along with the catalog information file, the thumbnail file, and the low resolution file, those 4 files are tar-archived.

In the Figure 2.1-1, the composition of TC RGC data set of TC MAP data set is shown.

The file nomenclature rule of MAP is described in the List 2.1-1 below.

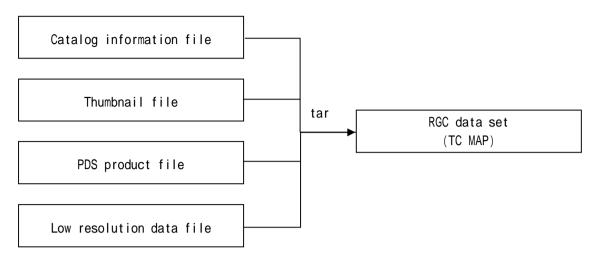


Figure 2.1-1 Composition of TC RGC data set (MAP data set)

List 2.1-1 File nomenclature rule of TC (MAP)

No.	Starting position	Length (byte)	Set value	
1	1	2	Sensor type	
			TC:fixation	
2	3	1	Underscore	
			_:fixation	
3	4	3	Process type	
			MOR:morning MAP	
4	7	1	EVE:evening MAP Underscore	
4	/	1	_:fixation	
5	8	2	Registered version in L2DB or individualized data set ID	
	o o	~	nn:2-digit number(registered version in L2DB)	
			number and alphabet of big or small letters	
			(individualized data set ID)	
6	10	1	Underscore	
			_:fixation	
7	11	1	Discrimination of north or south hemisphere on north edge in	
			the mosaic area	
			N:North hemisphere S:South hemisphere	
8	12	2	Latitude of north edge in the mosaic area (deg)	
0	12	2	nn:2-digit, only integer part	
			round the first decimal place nn=00~90	
9	14	4	Longitude of west edge in the mosaic area (deg)	
			Ennn:E shows east longitude, nnn:3-digit, only integer part,	
			round the first decimal place nnn=000~360	
10	18	1	Discrimination of north or south hemisphere on south edge in	
			the mosaic area	
			N:North hemisphere	
11	19	2	S:South hemisphere Latitude of south edge in the mosaic area (deg)	
11	19	۵	nn:2-digit, only integer part	
			round the first decimal place nn=00~90	
12	21	4	Longitude of east edge in the mosaic area (deg)	
			Ennn:E shows east longitude, nnn:3-digitl, only integer	
			part, round the first decimal place nnn=000~360	
13	25	2	Map projection	
			SC:Simple cylindrical projection	
			MR:Mercator projection	
			ML:Mollweide projection	
			SN:Sinusoidal projection	
			LM:Lambert conformal conic projection(1standard parallel) OR:Orthographic projection	
			ST:Stereographic projection (including Polar stereo	
			projection)	
14	27 (other	4	Extension	
	than divided		.img:RGC PDS product file(non-gzip compression)	
	mosaic)		.jpg:thumbnail file	
			.ctg:catalog information file	
	<u> </u>		.sl2:RGC data set	
	Total	30:other th	nan non-MAP divided mosaic	

2.1.1 TC catalog information file

Catalog information file is the information file attached to explain the general of RGC PDS product and is used to search for the product from L2DB subsystem.

The details of items in the catalog information file are shown in the list of List $2.1-2\sim$ List 2.1-4. In comment information, multiple items described in the list of details of items in the catalog information file are recorded in the comma-deliminated "keyword=value" form.

And on each item of the catalog information, value is basis of zero suppression in the absence of mentioning of particular reference.

List 2.1-2 Details of items in catalog information file (TC MAP)

Data file size Data file size Data file size Data file size Data file format Data file size Data file format	Item name	Keyword	Format of set value	Set contents
Data file format Data file format Thumbnail file name Thumbnail file name Thumbnail file size Thumbnail file size Thumbnail file format Thumbnail file size Thumbnail file format Thumbnail file size Thumbnail file size Thumbnail file format Thumbnail file size Thumbnail file size	Data file name	DataFileName	AAAAAAAA (up to 31-digit)	RGC PDS product name
Thumbnail file name Thumbnail file Name Thumbnail file size Thumbnail file size Thumbnail file size Thumbnail file size Thumbnail file format Thumbnail file size Thumbnail file s	Data file size	DataFileSize	NNNNNNNNNNN (up to 12-digit)	RGC PDS product file size
Thumbnail file size	Data file format	DataFileFormat	AAAAAAAA (up to 16-digit)	RGC PDS product file format
Thumbnail file format	Thumbnail file name	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name
Instrument name	Thumbnail file size	ThumbnailFileSize	NNNNNNNNNNNN (up to 12-digit)	Thumbnail file size
Processing level ProcessingLevel AAAAAAAA (up to 16-digit) Processing level TC_Morning_MAP Product identification ProductID AAAAAAAA (up to 30-digit) TC_Evening_MAP Others Product version ProductVersion AAAAAAAA (up to 16-digit) nn:L2DB registered version Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in tooth the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public) Upper left latitude of this scene UpperLeftLatitude SNN.NNNNNN [-90, 90] Upper right latitude of this UpperRightLatitude SNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [-90, 90] Upper right latitude of this Scene UpperRightLongitude NNN.NNNNNN [-90, 90] Upper right latitude of this Scene UpperRightLongitude NNN.NNNNNN [-90, 90] Upper right latitude of this Scene UpperRightLongitude NNN.NNNNNN [-90, 90]	Thumbnail file format	ThumbnailFileFormat	AAAA (up to 4-digit)	JPEG format
Product identification ProductID AAAAAAAA (up to 30-digit) Others Product version Product Version AAAAAAAA (up to 16-digit) ACCESS Level ACCESS	Instrument name	InstrumentName	AAAAAAAA (up to 16-digit)	LISM
Product identification ProductID AAAAAAAA (up to 30-digit) TC_Evening_MAP Others Product version Product version ProductVersion AAAAAAAA (up to 16-digit) ACCESSLEVEI ACCESSLE	Processing level	ProcessingLevel	AAAAAAAA (up to 16-digit)	Processing level
Access level AccessLevel AccessLevel AccessLevel AccessLevel AccessLevel AccessLevel AccessLevel N Composition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public) Upper left latitude of this scene UpperLeftLatitude SNN.NNNNNN [-90, 90] Upper right latitude of this UpperRightLatitude SNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [-90, 90] Upper left latitude of this Scene LowerLeftLatitude SNN.NNNNNN [-90, 90]			,	TC_Evening_MAP Others
Access level AccessLevel AccessLevel AccessLevel AccessLevel AccessLevel N 2:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public) Upper left latitude of this scene UpperLeftLatitude SNN.NNNNN I-90, 901 Upper right latitude of this UpperRightLatitude SNN.NNNNN I-90, 901 Upper right longitude of this UpperRightLatitude SNN.NNNNN I-90, 901 Upper right longitude of this UpperRightLongitude NNN.NNNNN I-90, 901 Upper right longitude of this UpperRightLongitude NNN.NNNNN I-90, 901 Upper left latitude of this Scene UpperRightLongitude NNN.NNNNN I-90, 901 Upper I-90, 901 Upper left latitude of this UpperRightLongitude NNN.NNNNN I-90, 901 Upper I-90, 901 U	Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn: L2DB registered version
Upper left longitude of this UpperLeftLongitude NNN.NNNNNN [0, 360) Upper right latitude of this UpperRightLatitude SNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [0, 360) Lower left latitude of this scene LowerLeftLatitude SNN.NNNNNN [1-90, 90]				0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public)
Upper right latitude of this UpperRightLatitude SNN.NNNNNN [-90, 90] Upper right longitude of this UpperRightLongitude NNN.NNNNNN [0, 360) Lower left latitude of this scene LowerLeftLatitude SNN.NNNNNN [-90, 90]	Upper left latitude of this scene			
Upper right longitude of this UpperRightLongitude NNN.NNNNNN [0, 360) Lower left latitude of this scene LowerLeftLatitude SNN.NNNNNN [-90, 90]				
Lower left latitude of this scene LowerLeftLatitude SNN.NNNNNN [-90, 90]	Upper right latitude of this			
	Upper right longitude of this			
	Lower left latitude of this scene	LowerLeftLatitude	SNN.NNNNNN	[-90, 90]
Lower left longitude of this LowerLeftLongitude NNN.NNNNNN [0, 360)	Lower left longitude of this	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of this LowerRightLatitude SNN.NNNNNN [-90, 90]		LowerRightLatitude	SNN . NNNNNN	[-90, 90]
Lower right longitude of this LowerRightLongitude NNN.NNNNNN [0, 360)	Lower right longitude of this		NNN . NNNNNN	[0, 360]
	Center latitude of this scene			
	Center longitude of this scene			
	Comment information			
	Free keyword		, 25 70 1000	

List 2.1-3 Details of free keyword items in catalog information file (TC MAP)

Item name	Keyword	Type	Format of set value	Set contents
Number of saturated pixels	SaturatedPixels	Integral value	NNNNNNN	Number of saturated pixels among invalid pixels
Maximum DN in this scene	SceneMaximumDN	Integral value		Image evaluation: maximum value of pixels in this scene
Average DN in this scene	SceneAve rageDN	Real value		Image evaluation: average value of pixels in this scene
Standard deviation DN in this scene	SceneStdevDN	Real value		Image evaluation: standard deviation value of pixels in this scene
Mode DN in this scene	SceneModeDN	Integral value		Image evaluation: scene mode of pixels in this scene
Shadowed area percentage between D5 and D6	ShadowedAreaPercentage	Integral value	NNN	Shadowed area percentage of pixels

List 2.1-4 Details of comment information in catalog information file (TC MAP)

Item name	Keyword	Format of set value	Set content
Product creation time	ProductCreationTime=%s	AAA(20 characters)	Product creation time
Source L2A data file name	SourceLeve12AFi1eName="%s"		All source L2A data file names used for creating this PDS product.When the number of CommentInfo is over 4000, the value is shortened into "%s "
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name

2.1.2 TC thumbnail file

Thumbnail file is the reduced image of image data object included in RGC data set, and is the JPEG format image.

And on the details of JPEG, refer to the reference book (2).

Depending on the moving direction of the spacecraft and ascending/descending of the orbit, a thumbnail image is rotated/reversed in such a way that upper part of it can be just about north direction and right of it can be just about east direction. Involving (a) pole(s), it is not rotated/reversed. On the details of a thumbnail image's rotation/reverse, refer to Appendix1.

The specifications of thumbnail file are described in the List 2.1-5

List 2.1-5 Specifications of thumbnail file

Number of	Number of vertical	File size	Format
horizontal pixels	pixels		
512 or less	512 or less	100kb or less	8bitJPEG

When the size of image data object is smaller than the aforesaid size; the size of thumbnail file is the same as one of the image data object.

2.1.3 TC PDS product file

RGC PDS product file of TC is the PDS file in attached format, and is composed of PDS label segment (header segment), geometric information object, and image data object. PDS label is recorded in text format, and geometric information object and image data object are recorded in binary format.

The composition of TC RGC PDS product file is shown in the Figure 2.1-2 and the format of TC RGC PDS product file is shown in the Figure 2.1-3.

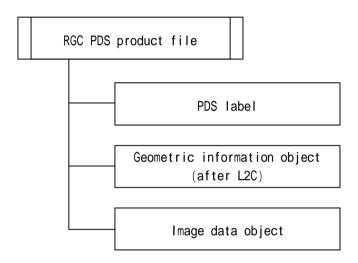


Figure 2.1-2 Composition of TC RGC PDS product file

PDS label	·Prerequisite ite	Prerequisite items for PDS header			
	Version identification				
	· Area specifying	object position	n		
	Pointer to all objects				
	Product	·File attribute			
	information	e.g. file name, creating date, update date			
		·Product att	ribute		
		e.g. softwar	e name used for creating product,		
		producer id	entification, source data file name		
		Scene	·Common to each instrument		
		attribute e.g. start time of the scene,			
		stop time of the scene,			
		observation mode name ·Variation by each instrument e.g. observation parameters,			
			status		
	·Description are	a of geometric	data object format		
	(altitude: for N	MAP)			
	e.g. thinning in	terval of geom	etric data, number of data points		
	in vertical and	horizontal dire	ection, bit length		
	·Description are	a of image dat	a object format		
	e.g. number of v	vertical and ho	orizontal pixels of the scene, bit		
	length	length			
·Geometric data objec	t(altitude: for MAl	P)			
Binary two dimension	nal array data				
·Image data object					
Binary two dimension	nal array data				

Figure 2.1-3 Format of TC RGC PDS product file

(1)PDS label

The details of PDS label of TC RGC PDS product file are shown in the list of List 2.1-6.

And on the case that the set value of PDS label is numeric value, if it does not fulfill maximum digit number, it is left-aligned by zero suppression in the absence of mentioning of particular reference.

On the details of the invalid pixel, refer to Appendix2.

List 2.1-6(1/2) Details of PDS label (TC MAP)

	Region	Item name	Description format	Item explanation	value
Prerequisite items for P		PDS version identification File record type		PDS version identification File record type (prerequisite for L2DB registration)	"PDS3"
		File name (L2DB regulation)		File name (prerequisite for L2DB)(uniquely decidable file name, involving extension(.img)	***.img
		Product identification (PDS practice) Data file format		Product identification (uniquely decidable file name, not involving extension)	***(no extension)
Area specifying object p	position	identification Starting position of	DATA_FORMAT = "%s" ^GEOMETRIC_DATA_ALTITUDE = %d	Data file format identification (prerequisite for L2DB registration) Starting position of geometric data (altitude)(in	"PDS"
		geometric data (altitude) Starting position of image	<pre><bytes> ^IMAGE = %d <bytes></bytes></bytes></pre>	Byte) This keyword may be omitted. Starting position of image object(in Byte)	
Product information	File attribute	object Software name Software version	SOFTWARE_NAME = "%s" SOFTWARE VERSION = "%s"	 Software name used for creating PDS product Software version used for creating PDS product	"RGC_TC_MI"
		Process version identification	PROCESS_VERSION_ID = "%s"	Process version identification (prerequisite for L2DB registration)	"MAP", "MSC
		Product creation time Program start time	PRODUCT_CREATION_TIME = %s PROGRAM_START_TIME = %s	Product creation time(UTC) Program start time (UTC)	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product attribute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB registration)	"LISM" "TC_Morning_MAP", "TC_Evening_MAP",
				The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"Others"
		Product version identification	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB (prerequisite for L2DB registration)	"00 " ~ "99 "
		Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of registration in L2DB.	"Y" or "N"
		Source data file name(L2A)	LEVEL2A_FILE_NAME = ({"%s", "%s"})	Source data file names used for creating this PDS product. This keyword may be omitted.	***.img
		SPICE metakernel file name	SPICE_METAKERNEL_FILE_NAME = ("%s","%s",)	SPICE metakernel file names used for creating PDS product. This keyword may be omitted.	
	Scene Common to each instrument attribute	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE"
		Spacecraft name Data set identification	SPACECRAFT NAME = "%s" DATA SET ID = "%s" INSTRUMENT_NAME = "%s"	Spacecraft name Data set identification in which included this scene. Instrument name(full name) (prerequisite for L2DB	"SELENE-M"
		Instrument name Instrument identification	INSTRUMENT_IVAME = %s INSTRUMENT_ID = "%s"	registration) Instrument identification	"Terrain Camera"
		Observation target name	TARGET NAME = "%s"	Observation target name of this strip	"MOON"(default)
		Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation mode identification	"NORMAL":normal "SUPPORT":support "NORMAL&SUPPORT":normal and support image mosaic
		Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g.TC:scan mode, TC1/2relative mounting angle,	in TC MAP/MSC
				element number of used detector, focal length, F value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of	
Description area of geom	metric data (altitude) object format	Sensor description 2	SENSOR_DESCRIPTION2 = "%s" OBJECT = GEOMETRIC DATA ALTITUDE	exposure mode. Bit number of AD converter) Alternative sensor description This keyword may be omitted.	
bescription area or geom	metric data (artitude) object format	Thinnig start pixel position	BINNING_START_PIXEL_POSITION = (%d, %d)	Start pixel position for thinnig in this scene	(1,1)
		Thinnig interval Number of lines	BINNING_INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this	
		Number of line's samples	LINE_SAMPLES = %d	scene. Number of pixels along the horizontal axis of this scene.	
		Sample type Sample bits	SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	Sample type Sample bit length	" IEEE_REAL" 32
		Uni t	UNIT = "%s" END_OBJECT =	Unit of sample value	"km"
Description area of imag	ge data object format	Number of bands	GEOMETRIC DATA ALTITUDE OBJECT = IMAGE BANDS = %d	Number of bands	1
		Band storage type Number of lines of an image	BAND_STORAGE_TYPE = "%s" LINES = %d	Storage type of bands Number of pixels along the vertical axis of this	"BAND SEQUENTIAL"
		Number of line's samples of	LINE_SAMPLES = %d	scene. Number of pixels along the horizontal axis of this	
		an image Sample type Sample bits	SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d	scene. Sample type Sample bit length	"MSB_INTEGER"
		Image value type	IMAGE_VALUE_TYPE = "%s"	Image value type	"DN"[ND], "RADIANCE"[W/m2/micron/sr], "REFLECTANCE"[
		Uni t	UNIT = "%s"	Unit of sample value	ND] "ND", "W/m**2/micron/sr",
		Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value	"ND"
		Offset	OFFSET = %8.5e	into physical quantity (first order coefficient) Conversion coefficient used for converting DN value into physical quantity (constant term)	
		Minimum for statistical image evaluation, D1	MIN_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
		Maximum for statistical	MAX_FOR_STATISTICAL_EVALUATION	scaled and offset. Maximum DN value of output range for statistical	
		image evaluation, D2 Maximum DN	= (%d,%d,) SCENE_MAXIMUM_DN = (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset. In this scene, maximum DN value in the target group	When the number of
		max main on	OOLIN_MINON_UN = (NU, NU,)	excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	samples for image quality assessment is 0, the value is set -1.
				and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
		Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	When the number of samples for image quality assessment is 0, the value is set -1.
		Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is oreater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard	When the number of samples for image quality assessment is 0, the
				b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1	value is set -1.
		Standard deviation DN	SCENE_STDEV_DN = (%.1f,%.1f,)	e.pixel whose DN value is oreater than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1	When the number of samples for image quality assessment is 0, the value is set -1.
		Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	e. Dixel whose DN value is greater than threshold D2 In this scene, mode DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and	When the number of samples for image quality assessment is 0, the value is set -1.
<u> </u>				d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	

List 2.1-6 (2/2) Details of PDS label (TC MAP)

Region Description area of image data object format	Shadowed area minimum D5	Description format SHADOWED_AREA_MINIMUM = (%d,%d,)	Item explanation Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and offset.	value
	Shadowed area maximum D6	SHADOWED_AREA_MAXIMUM = (%d,%d,)	Maximum DN value of output range for shadow discrimination, indicated as integral value scaled and offset.	
	Shadowed area percentage between D5 and D6	SHADOWED_AREA_PERCENTAGE = (%d,%d,)	Shadowed area percentage(round down after the decimal point).In this scene, pixel percentage whose DN value is between threshold D5 and threshold D6: a.dummy pixel filled onboard a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image	When the number of samples for image quality assessment is 0, the value is set -1.
	Invalid type	INVALID_TYPE = ("%s", "%s",)	evaluation Invalid pixel type Registered in L2DB : three types of "saturation", "negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Invalid value	INVALID_VALUE = (%d, %d,)	corrected error Invalid pixel value Registered in L2DB : three types of "saturation", "negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Invalid pixels	INVALID_PIXELS = ((%d,%d,),(%d,%d,),)	corrected error Invalid pixels Registered in L2DB : three types of "saturation", "negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Value provided pixels out of bounds pixels before resampling Number of pixels out of	OUT_OF_IMAGE_BOUNDS_VALUE = %d	corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before	
	bounds pixels before Stretched flag	(%d,%d,) STRETCHED_FLAG = %s END OBJECT = IMAGE	resampling Flag to indicate whether a data has been streched to be easily viewable for external output.	"FALSE"
scription area of map projection	Map projection type Coordinate system type Coordinate system name	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Map projection type Fixed coordinate system of celestial body Original point is mass center of celestial body, latitude is positive in northhemisphere and longitude	"BODY-FIXED ROTATING" "PLANETOCENTIC"
	A axis radius	A_AXIS_RADIUS = %8.1f <km></km>	is positive in east longitude. Lunar radius in a axis	1737.4 <km></km>
	B axis radius C axis radius First standard parallel	B_AXIS_RADIUS = %8.1f <km> C_AXIS_RADIUS = %8.1f <km> FIRST_STANDARD_PARALLEL = %f</km></km>	Lunar radius in b axis Lunar radius in c axis the point of tangency between the sphere of the planet	1737.4 <km> 1737.4 <km> "N/A"except that map</km></km>
	Second standard parallel	<pre><deg> SECOND_STANDARD_PARALLEL = %f</deg></pre>	and the cone of the projection. the intersection lines between the sphere of the	projection is LCC "N/A"except that map
	Positive longitude direction	<pre><deg> POSITIVE_LONGITUDE_DIRECTION = "%s"</deg></pre>	planet and the cone of the projection. Positive direction of longitude	projection is LCC "EAST"
	Center latitude Center longitude	CENTER_LATITUDE = %11.8f <deg> CENTER_LONGITUDE = %12.8f <deg></deg></deg>		
	Reference latitude	REFERENCE_LATITUDE = %11.8f <deg></deg>	map projection the new zero latitude in a rotated spherical coordinate system that was used in a given map_projection_type.	"N/A"
	Reference longitude	REFERENCE_LONGITUDE = %12.8f <deg></deg>	the zero longitude in a rotated spherical coordinate system that was used in a given map_projection_type.	"N/A"
	Line first pixel Line last pixel	LINE_FIRST_PIXEL = %d LINE_LAST_PIXEL = %d	Line number of upper end of this scene Line number of lower end of this scene	1
	Sample first pixel Sample last pixel Map projection rotation	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_PROJECTION_ROTATION = %f	Sample number of left end of this scene Sample number of right end of this scene Rotation angle to map projection coordinate system of	0.0
	Map resolution	MAP RESOLUTION - %f	this scene Map resolution <pixel deg=""></pixel>	0.0
	Map scale Maximum latitude Minimum latitude	MAP_SCALE = %f <km pixel=""> MANIMUM_LATITUDE = %11.8f<deg> MINIMUM_LATITUDE = %11.8f<deg></deg></deg></km>	Map scale <km pixel=""> Center latitude of northernmost pixel. Center latitude of southernmost pixel.</km>	
	Easternmost longitude	EASTERNMOST_LONGITUDE = %11.81 <deg> %12.8f<deg></deg></deg>	Center langitude of southernmost pixel.	
	Westernmost longitude	WESTERNMOST_LONGITUDE = %12.8f <deg></deg>	Center longitude of westernmost pixels.	
	The line offset value from the map projection origin The sample offset value from the map projection	LINE_PROJECTION_OFFSET = %f <pixel> SAMPLE_PROJECTION_OFFSET = %f<pixel></pixel></pixel>	The vertical offset value from the map projection origin (line and sample 1,1)[pixel]. The horizontal offset value from the map projection origin (line and sample 1,1)[pixel].	
scription area of process parameter		END_OBJECT = IMAGE_MAP_PROJECTION OBJECT = PROCESSING_PARAMETERS		
	Dark current correction coefficient file name Flat field correction coefficient file name Coefficient file name of	DARK_FILE_NAME = ({"%s"."%s"}) FLAT_FILE_NAME = ({"%s"."%s"}.("%s"."%s"}) EFFIC_FILE_NAME =	Dark current correction coefficient file name ("N/A" when not corrected). This keyword may be omitted. Flat field correction coefficient file name ("N/A" when not corrected). This keyword may be omitted. Coefficient file name of temperature dependency	
	temperature dependency correction of transmittance efficiency File name of non-linearity	({"%s", "%s"}, {"%s", "%s"},) NONLIN_FILE_NAME =	correction of transmittance efficiency ("N/A" when not corrected). This keyword may be omitted. File name of non-linearity correction coefficient	
	correction coefficient Radiance conversion	({"%s", "%s"}, {"%s", "%s"},) RAD_CNV_COEF =	("N/A" when not corrected). This keyword may be omitted. Radiance conversion coefficient:indicate all value	
	Reflectance conversion coefficient	((%f,%f,%f,···),(%f,%f,%f,···),	every band [W/m2/micron/sr] ("N/A" when not converted). This keyword may be omitted. Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted)	
	Photometric standard geometry	STANDARD_GEOMETRY = (%.1f,%.1f,%.1f)	Standard values of incidence angle, and emission angle and phase angle for photometric correction.	, , ,
	Photometric correction identification	PHOTO_CORR_ID = "%s"	Photometric correction formula type	"USGS", "BROWN", "LISM ORIGINAL", "N/A"
	Photometric correction coefficient	PHOTO_CORR_COEF = ((%e, %e, %e, *), (%e, %e, %e,),	Coefficient of photometric correction formula ("N/A" when not corrected)	, N/A
	Resampling method	RESAMPLING_METHOD = {"%s","%s",}	Interpolation method of resampling	"Nearest Neighbor", "Bi-Linear",
	Geometric data matching original TC-Ortho data mosaic file name	TCO_MOSAIC_FILE_NAME = ("%s","%s",)	Source TC ortho data file name used for providing geometric data. This keyword may be omitted.	"Cubic Convolution" ***.img
	Geometric data matching original DTM data mosaic file name Overlap selection	DTM_MOSAIC_FILE_NAME = ("%s","%s",) OVERLAP_SELECTION_ID = "%s"	Source DTM data file name used for providing geometric data. This keyword may be omitted. Method for processing overlap.	***.dtm
	Overlap selection identification Matching mosaic on creating map	MATCHING_MOSAIC = "%s"	Matching method	N/A, CORRELATION1, CORRELATION2, SSDA1,SSDA2,
	Dead pixel discrimination	L2A_DEAD_PIXEL_THRESHOLD =	Maximum pixel value to judge as dead pixel on L2A	SSDA3,SSDA4
	threshold L2A saturation threshold	(%d, %d,) L2A_SATURATION_THRESHOLD = (%d, %d,)	image Minimum threshold value to judge as saturation on L2A image	
	Dark current corrected valid minimum threshold	DARK_VALID_MINIMUM = (%d,%d,)	Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value).	
		RADIANCE_SATURATION_THRESHOLD =	("N/A" when not corrected) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted)	
	Reflectance conversion saturation threshold	REF_SATURATION_THRESHOLD = %f <nd></nd>	Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as physical quantity (real value). ("N/A" when not converted)	
		END_OBJECT = PROCESSING_PARAMETERS END		

(2)Geometric data object

Map is altitude geometric data object. The geometric data is format of binary two dimensional array data. The specifications of geometric data object are shown in the List 2.1-7

List 2.1-7 Specifications of binary two dimensional array data on geometric data object

Data type	Unit	Definition
Altitude	km	Distance from lunar radius sphere

Level	Number of bits	Туре	Byte order
MAP	32	Real number	big endian

L2A data compressed / not compressed	Swath	Observation pattern	L2A valid pixels	Number of geometric data points in a line when being thinned
Compressed	Full	Monoscopic /	4096	586
		stereoscopic		
	Nominal	Monoscopic /	3496	500
		stereoscopic		
	Half	Monoscopic /	1744	250
		stereoscopic		
Not	Full	Monoscopic	3208	459
compressed		Stereoscopic	1600	229
Stere		Monoscopic	3208	459
		Stereoscopic	1600	229
		Monoscopic	1752	251
		Stereoscopic	1600	229

^{*} On MAP, the number of pixels in a line differs by images.

(3)Image data object

Image data object of TC is the format of binary two dimensional array data. On MAP, the number of pixels in a line differs by images.

The specifications of TC image data object are shown in the List 2.1-8

List 2.1-8 Specifications of binary two dimensional array data on image data object

Process level	Data type	Unit	Remarks column
MAP	Reflectance *	ND	Integer value of image data is the value scaled and offset.

^{*} In processing to create parameters for data calibration, there are the cases of difference in data type.

Number of bits	16	
Туре	Integral number	
Byte order	big endian	

L2A data compressed / not compressed	Swath	Observation pattern	Number of pixels in a line (L2B, L2C)
Compressed	Full	Monoscopic/stereoscopic	4096
	Nominal	Monoscopic/stereoscopic	3496
	Half	Monoscopic/stereoscopic	1744
Not compressed	Full	Monoscopic	3208
		Stereoscopic	1600
	Nominal	Monoscopic	3208
		Stereoscopic	1600
	Half	Monoscopic	1752
		Stereoscopic	1600

2.1.4 TC low resolution data file

Low resolution data file is the image file in binary two dimensional array data format created for MAP data set, not having the header, and is created by thinning image data object of MAP PDS produce file.

Because this data file is the one used for the internal process of L2DB system, even if you send the request of getting data to L2DB system and obtain RGC data set, it is not included in L2DB product obtained.

The specifications of low resolution data file are shown in the List 2.1-9.

List 2.1-9 Specification of low resolution data file

Data type	Reflectance [ND]: Integer value of pixel number is the value scaled	
	and offset. (Pixel value of image data object of PDS product file is	
	used as is.)	
Resolution	128 [pixel/deg]	
Area of image data	Same as MAP PDS product file image data object	
Number of bits	16	
Type	Integral number	
Byte order	big endian	

2.2 MI

RGC data set of MI is broken into the following 11 process levels and geometric correction options.

- ·L2B0data
- ·L2B2data
- ·L2C1data
- ·L2C2data
- ·L2C3data
- ·L2C4data
- ·L2C5data
- ·L3C2data
- ·L3C4data
- ·L3C4data
- ·L3C5data
- · MAP data
- ·MSC data

Among above, in L2B0~L3C5 data, first 3 characters show process level and the last fourth character shows geometric correction option. MAP data, being data registered in L2DB as a MAP product, are created by mosaicking several L3C, MAP and MSC data (mosaic processing). MSC data, being mosaic data but not a map product, are created by mosaicking several L3C, MAP and MSC data.

RGC data set of MI is created by tar-archiving the following files.

- · Catalog information file
- ·PDS product file
- ·tar object file
- · PDS label
- ·Low resolution data file

In MI, MI-VIS has 5 bands and MI-NIR has 4 bands, and so total 5 bands of MI-VIS, total 4 bands of MI-NIR, or total 9 bands of MI are made one data set.

And depending on the process level and geometric correction option, some cases are that the images of respective bands of MI-VIS or MI-NIR are recorded in separate PDS product files, and the other cases are that total 5 bands of MI-VIS, total 4 bands of MI-NIR, or total 9 bands of MI are recorded together in one PDS product file in BSQ format (these cases are called "cubed").

Among these, the PDS product files of L2B2, L2C2 but MAP data which are cubed are gzip-compressed and the PDS label specifying their contents is created in detached format. Then along with the catalog information file and the thumbnail file, those 4 files are tar-archived.

The PDS product files of MAP data are cubed, but not gzip-compressed and along with the catalog information file, the thumbnail file, and the low resolution data file, those 4 files are tar-archived.

In the List 2.2-1, on MI it shows whether to be cubed and tar-gzipped by respective process levels and geometric correction options.

List 2.2-1 Process level, geometric correction option, cubed and tar-gzipped on MI

Process level, geometric correction option	Cubed	Tar-gzipped	
	MI-VIS 5 bands cubed		
L2B2, L2C2, MAP	MI-NIR 4 bands cubed	Without being tar-gzipped	
	MI total 9 bands cubed		

In the Figure 2.2-1, the composition of MI RGC data set but MAP data set among cubed MI RGC data set is shown. In the Figure 2.2-2, the composition of RGC data set of MI MAP data is shown.

On aforesaid each file, the file nomenclature rules of L2B and L2C are described in the List 2.2-2, and ones of MAP is described in the List 2.2-3, and the details of each file are described below.

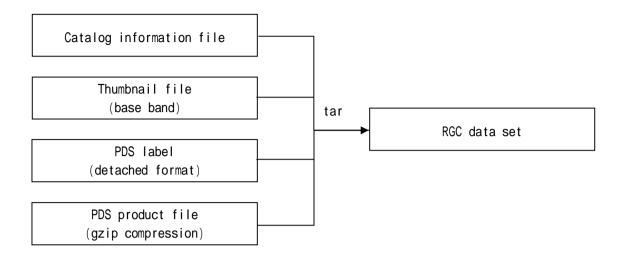


Figure 2.2-1 Composition of cubed MI RGC data set (L2B2, L2C2,)

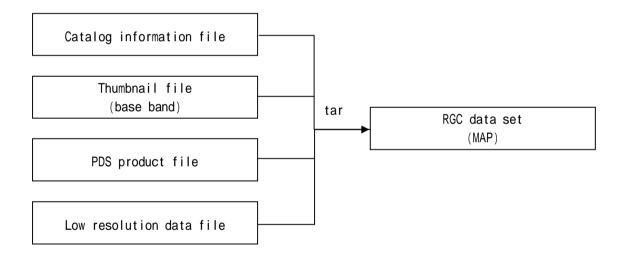


Figure 2.2-2 Composition of cubed MI RGC data set (MAP)

List 2.2-2 File nomenclature rule of MI (L2B, L2C)

No.	Starting position	Length(byte)	Set value	
1	1	3	Sensor type MV1~MV5:MI-VIS1~5 MN1~MN4:MI-NIR1~4 MIA:MI total 9 bands MVA:MI-VIS total 5 bands MNA:MI-NIR total 4 bands	
2	4	1	Underscore _:fixation	
3	5	3	Process level / geometric correction option 2B2:2B2(level 2B· geometric correction option2) 2C2:2C2(level 2C· geometric correction option2)	
4	8	1	Underscore _: fixation	
5	9	2	Registered version in L2DB or individualized data set ID nn:2-digit number(registered version in L2DB) number and alphabet of big or small letters (individualized data set ID)	
6	11	1	Underscore :fixation	
7	12	5	Lunar revolution number nnnnn:5-digit number	
8	17	1	Discrimination of north or south hemisphere on latitude of the scene center N:North hemisphere S:South hemisphere	
9	18	3	Latitude of the scene center(deg) nnn:3-digit number, round the second decimal place to one decimal place, but omit the decimal point nnn=000~900	
10	21	5	Longitude of the scene center(deg) Ennnn:E shows east longitude nnnn:4-digit number, round the second decimal place to one decimal place, but omit the decimal point nnnn=0000~3600	
11	26	2	Map projection (only for L3C) SC:Simple cylindrical projection MR:Mercator projection ML:Mollweide projection SN:Sinusoidal projection LM:Lambert conformal conic projection (1standard parallel) OR:Orthographic projection ST:Stereographic projection(including Polar stereo projection)	
12	26 (L2B,L2C)	4	Extension .igz:RGC PDS product file(gzip compression) .jpg:thumbnail file .ctg:catalog information file .sl2:RGC data set	
	Total	29:L2B, L2C		

List 2.2-3 File nomenclature rule of MI (MAP)

No.	Starting	Length			
	position	(byte)	Set value		
1	1	2	Sensor type MI:MI total 9 bands cubed MV:MI-VIS 5 bands cubed MN:MI-NIR 4 bands cubed		
2	3	1	Underscore _: fixation		
3	4	3	Process type MAP:MAP		
4	7	1	Underscore _:fixation		
5	8	2	Registered version in L2DB or individualized data set ID nn:2-digit number(registered version in L2DB) number and alphabet of big or small letters (individualized data set ID)		
6	10	1	Underscore _: fixation		
7	11	1	Discrimination of north or south hemisphere on north edge in the mosaic area N:North hemisphere S:South hemisphere		
8	12	2	Latitude of north edge in the mosaic area (deg) nn:2-digit, only integer part round the first decimal place nn=00~90		
9	14	4	Longitude of west edge in the mosaic area (deg) Ennn:E shows east longitude, nnn:3-digit, only integer part, round the first decimal place nnn=000~360		
10	18	1	Discrimination of north or south hemisphere on south edge in the mosaic area N:North hemisphere S:South hemisphere		
11	19	2	Latitude of south edge in the mosaic area (deg) nn:2-digit, only integer part, round the first decimal place nn=00~90		
12	21	4	Longitude of east edge in the mosaic area (deg) Ennn:E shows east longitude, nnn:3-digit, only integer part, round the first decimal place nnn=000~360		
13	25	2	Map projection (only for L3C) SC:Simple cylindrical projection MR:Mercator projection ML:Mollweide projection SN:Sinusoidal projection LM:Lambert conformal conic projection(1standard parallel) OR:Orthographic projection ST:Stereographic projection(including Polar stereo projection)		
14	27 (other than divided mosaic)	4 30:other	Extension .img:RGC PDS product file(non-gzip compression) .jpg:thumbnail file .ctg:catalog information file .low:low resolution data file .sl2:RGC data set		

2.2.1 MI catalog information file

Catalog information file is the information file attached to explain the general of RGC PDS product and is used to search for the product from L2DB subsystem.

The details of items in the catalog information file are shown in the list of List 2.2-4~List 2.2-9.In comment information, multiple items described in the list of details of items in catalog information file are recorded in the comma-deliminated "keyword=value" form.

And on each item of catalog information, value is basis of zero suppression in the absence of mentioning of particular reference.

List 2.2-4 Details of items in catalog information file (MI L2B, L2C)

Item name	Keyword	Format of set value	Set contents
Data file name	DataFileName	AAAAAAAA (up to 31-digit)	RGC PDS product name
Data file size	DataFileSize	NNNNNNNNNNNN (up to 12-digit)	RGC PDS product file size
Data file format	DataFileFormat	AAAAAAAA (up to 16-digit)	RGC PDS product file format
Thumbnail file name	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name
Thumbnail file size	ThumbnailFileSize	NNNNNNNNNNN (up to 12-digit)	Thumbnail file size
Thumbnail file format	ThumbnailFileFormat	AAAA (up to 4-digit)	JPEG format
Instrument name Processing level	InstrumentName ProcessingLevel	AAAAAAAA (up to 16-digit) AAAAAAAA (up to 16-digit)	LISM Processing level
Product identification	Product ID	AAAAAAAA (up to 30-digit)	MI-VIS_Leve12B2, MI-NIR_Leve12B2 MI_Leve12B2 MI_Leve12C2, MI-NIR_Leve12C2 MI_Leve12C2 MI_Leve12C3, MI-NIR_Leve12C3 MI_Leve12C3 MI_Leve12C3, MI-NIR_Leve12C4 MI-VIS_Leve12C4, MI-NIR_Leve12C4 MI_VIS_Leve12C5, MI-NIR_Leve12C5 MI_Leve12C5 Others
Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn: L2DB registered version
Access level	AccessLeve I	N	Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public)
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	Start date and time of this scene (same contents as "start time (UT)"of PDS label)
End date and time of data	EndDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	Stop date and time of this scene (same contents as "stop time (UT)" of PDS label)
Lunar revolution number	RevoNumber	NNNNNNNNN (up to 10-digit)	Lunar revolution number provided by LISM
Strip number	StripNumber	NNNNNNNNNN (up to 10-digit)	Strip number
Scene number Location flag	SceneNumber LocationFlag	NNNNNNNNN (up to 10-digit) A	Scene number Direction of spacecraft orbit at the Start time of this scene A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles
Upper left latitude of this scene	UpperLeftLatitude	SNN. NNNNNN	[-90, 90]
Upper left longitude of this scene	UpperLeftLongitude	NNN. NNNNNN	[0, 360)
Upper right latitude of this scene	UpperRightLatitude	SNN. NNNNNN NNN. NNNNNN	[-90, 90] [0, 360)
Upper right longitude of this scene Lower left latitude of this scene	UpperRightLongitude LowerLeftLatitude	NNN. NNNNNN SNN. NNNNNN	[0, 360) [-90, 90]
Lower left longitude of this scene	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of this scene	LowerRightLatitude	SNN. NNNNNN	[-90. 90]
Lower right longitude of this scene	LowerRightLongitude	NNN. NNNNNN	[0, 360)
Center latitude of this scene	SceneCenterLatitude	SNN. NNNNNN	[-90, 90]
Center longitude of this scene	SceneCenterLongitude	NNN. NNNNNN	[0, 360)
Comment information	Comment Info	AAAAAAAA (up to 4000-	Refer to the list 2.2-6
Free keyword	FreeKeyword		Refer to the list 2.2-5

List 2.2-5 Details of free keyword items in catalog information file (MI L2B, L2C)

Item name	Keyword	Type	Format of set value	Set contents
Incidence angle of the scene	IncidenceAngle	Real value	SNNN.NNN	Incidence angle of the scene center(lunar
center				spherical approximation)[degree]
Emission angle of the scene	EmissionAngle	Real value	SNNN.NNN	Emission angle of the scene center(lunar
center				spherical approximation)[degree]
Phase angle of the scene	PhaseAng Le	Real value	SNNN.NNN	Phase angle of the scene center[degree]
Solar azimuth angle of the	SolarAzimuthAngle	Real value	SNNN.NNN	Solar azimuth angle of the scene center[degree]
scene center				
Approximate spacecraft altitude	SpacecraftAltitude	Real value	SNNN.NNN	Spacecraft altitude of the first line("distance
				between spacecraft and lunar gravitational center"
				minus average lunar radius)
Focal plane temperature	FocalPlaneTemperature	Real value	SNNN.NN	Focal plane temperature of the first line
Number of saturated pixels	SaturatedPixels	Integral value	NNNNNN	Number of saturated pixels among invalid pixels
Maximum DN in this scene	SceneMax i mumDN	Integral value	NNNNNN	Image evaluation: maximum value of pixels in this
		eg. aa.a.		scene
Average DN in this scene	SceneAve rageDN	Real value	SNNN.NNN	Image evaluation: average value of pixels in this
-				scene
Standard deviation DN in this	SceneStdevDN	Real value	SNNN.NNN	Image evaluation: standard deviation value of
scene				pixels in this scene
Mode DN in this scene	SceneModeDN	torono to other	NNNNNN	Image evaluation: scene mode of pixels in this
		Integral value		scene
Shadowed area percentage	ShadowedAreaPercentage	1.4	NNN	Shadowed area percentage of pixels
between D5 and D6	1	Integral value		

List 2.2-6 Details of comment information in catalog information file (MI L2B, L2C)

Item name	Keyword	Format of set value	Set content	ì
Product creation time	ProductCreationTime=%s	AAA(20 characters)	Product creation time	ı
Source L2A data file name	SourceLeve12AFi1eName="%s"	AAAAAA	All source L2A data file names used for	.
			creating this PDS product.	В
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name	
	ExposureModeID = "%s"		Exposure mode identification	ı
Upper left daytime flag of the	UpperLeftDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the first column	i
start line			and the first line	i
Upper right daytime flag of	UpperRightDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the last column	i
the start line			and the first line	
Lower left daytime flag of the	LowerLeftDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the first column	i
stop line			and the last line	
	LowerRightDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the last column	i
the stop line			and the last line	
Roll cant	RollCant="%s"		YES: roll cant	i
			NO:nadir looking	
Band number of base band	BaseBand="%s"		Base band identification (for L2B2,L2C2)	C

List 2.2-7 Details of items in catalog information file (MI MAP)

Item name	Keyword	Format of set value	Set contents
Data file name	DataFileName	AAAAAAAA (up to 31-digit)	RGC PDS product name
Data file size	DataFileSize	NNNNNNNNNNNN (up to 12-digit)	RGC PDS product file size
Data file format	DataFileFormat	AAAAAAAA (up to 16-digit)	RGC PDS product file format
Thumbnail file name	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name
Thumbnail file size	ThumbnailFileSize	NNNNNNNNNNNN (up to 12-digit)	Thumbnail file size
Thumbnail file format	ThumbnailFileFormat	AAAA (up to 4-digit)	JPEG format
Instrument name	InstrumentName	AAAAAAAA (up to 16-digit)	LISM
Processing level	ProcessingLevel	AAAAAAAA (up to 16-digit)	Processing level
Product identification	ProductID	AAAAAAAA (up to 30-digit)	MI_MAP, MI-VIS_MAP, MI-NIR_MAP Others
Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn:L2DB registered version
Access level	AccessLevel	N	Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public)
Upper left latitude of this scene	UpperLeftLatitude	SNN . NNNNNN	[-90, 90]
Upper left longitude of this	UpperLeftLongitude	NNN . NNNNNN	[0, 360)
Upper right latitude of this	UpperRightLatitude	SNN . NNNNNN	[-90, 90]
Upper right longitude of this	UpperRightLongitude	NNN . NNNNNN	[0, 360)
Lower left latitude of this scene	LowerLeftLatitude	SNN . NNNNNN	[-90, 90]
Lower left longitude of this	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of this	LowerRightLatitude	SNN . NNNNNN	[-90, 90]
Lower right longitude of this	LowerRightLongitude	NNN . NNNNNN	[0, 360)
Center latitude of this scene	SceneCenterLatitude	SNN . NNNNNN	[-90, 90]
Center longitude of this scene	SceneCenterLongitude	NNN . NNNNNN	[0, 360)
Comment information	Comment Info	AAAAAA (up to 4000-digit)	Refer to the list 2.2-12
Free keyword	FreeKeyword		Refer to the list 2.2-11

List 2.2-8 Details of free keyword items in catalog information file (MI MAP)

Item name	Keyword	Type	Format of set value	Set contents
Number of saturated pixels	SaturatedPixels	Integral value	NNNNNN	Number of saturated pixels among invalid pixels
Maximum DN in this scene	SceneMax i mumDN	Integral value	NNNNNN	Image evaluation: maximum value of pixels in this scene
Average DN in this scene	SceneAve rageDN	Real value		Image evaluation: average value of pixels in this scene
Standard deviation DN in this scene	SceneStdevDN	Real value		Image evaluation: standard deviation value of pixels in this scene
Mode DN in this scene	SceneModeDN	Integral value		Image evaluation: scene mode of pixels in this scene
Shadowed area percentage	ShadowedAreaPercentage	Integral value	NNN	Shadowed area percentage of pixels

List 2.2-9 Details of comment information in catalog information file (MI MAP)

Item name	Kevword	Format of set value	Set content
Product creation time	ProductCreationTime=%s	AAA(20 characters)	Product creation time
Source L2A data file name	SourceLeve12AFi1eName="%s"		All source L2A data file names used for creating this PDS product.When the number of CommentInfo is over 4000, the value is shortened into "%s"
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name

2.2.2 MI thumbnail file

Thumbnail file is the reduced image of image data object included in RGC data set, and is the JPEG format image. In MI, among MI-VIS 5 bands and/or MI-NIR 4 bands included in the data set, data of one band are selected as the base band and only thumbnail of the base band is included in the data set.

And on the details of JPEG, refer to the reference books (2).

Depending on the moving direction of the spacecraft and ascending/descending of the orbit, a thumbnail image is rotated/reversed in such a way that upper part of it can be just about north direction and right of it can be just about east direction. Involving (a) pole(s), it is not rotated/reversed. On the details of a thumbnail image's rotation/reverse, refer to Appendix1.

The specifications of thumbnail are described in the List 2.2-10.

List 2.2-10 Specifications of thumbnail file

Number of	Number of vertical	File size	Format
horizontal pixels	pixels		
512 or less	512 or less	100kb or less	8bitJPEG

When the size of image data object is smaller than the aforesaid size, the size of thumbnail file is the same as one of the image data object.

2.2.3 MI PDS label

Among RGC PDS product files of MI, the PDS product files of L2B2, L2C2 but MAP data set which are cubed, are created by gzip-compressing.

The details of PDS label in detached format are shown in the list of List 2.2-11

And on the case that the set value of PDS label is numeric value, if it does not fulfill maximum digit number, it is left-aligned by zero suppression in the absence of mentioning of particular reference.

List 2.2-11(1/2) Details of PDS label (MI L2B2, L2C2 detached (cubed))

Droroguiaita itauri (Region	Item name	Description format	Item explanation	value
Prerequisite items for PDS	S header	PDS version identification File record type File name (L2DB regulation)	PDS_VERSION_ID = "%s" RECORD TYPE = "%s" FILE NAME = "%s"	PDS version identification File record type(prerequisite for L2DB registration) File name(prerequisite for L2DB)(uniquely decidable	"PDS3" "UNDEFINED" ***.tgz、***.igz
		Product identification (PDS	PRODUCT_ID = "%s"	File name (prerequisite for LZDB) (uniquely decidable file name, involving extension. File name(unique decidable file name, not involving	***(no extension)
		practice) Data file format	DATA_FORMAT = "%s"	extension) Data file format identification (prerequisite for L2DB	,
rea specifying object pos	sition	identification Archive file name	^ARCHIVE FILE = "%s"	registration) File name TGZ or GZIP-compressed	***.tgz、***.igz
		Archive type Archive file name	OBJECT = ARCHIVE FILE ARCHIVE_TYPE = "%s" FILE NAME = "%s"	Archive type Archive file name	"GZIP", "TAR_GZIP" ***.tqz、***.iqz
		Archive file size Number of archived files	FILE_NAME = %s FILE_SIZE = %d <bytes> ARCHIVED FILES = %d</bytes>	Archive file size Number of archived files	. tgz,
		Name of archived files	ARCHIVED_FILES_NAME = {"%s", "%s", "%s"}	Name of archived files	***.img
		Required storage bytes	REQUIRED_STORAGE_BYTES = %d <bytes></bytes>	Total file size of archived file	
oduct information	File attribute	Software name	END OBJECT = ARCHIVE FILE SOFTWARE NAME = "%s"	Software name used for creating PDS product	"RGC TC MI"
		Software version Process version identification	SOFTWARE VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software version used for creating PDS product Process version identification (prerequisite for L2DB registration)	n.n.n "L2B", "L2C"
		Product creation time Program start time	PRODUCT CREATION TIME = %s PROGRAM START TIME = %s	Product creation time(UTC) Program start time (UTC)	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product attribute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB registration) The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"LISM" "MI-VIS_Leve 12B2", "MI-NIR_Leve12B2", "MI_Leve12B2", "MI-VIS_Leve12C2", "MI-NIR_Leve12C2", "MI_US_Leve12C2",
		Product version	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB (prerequisite for	"Others" "00 " ~ "99 "
		identification Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	L2DB registration) It's be set whether it was created as product for registration, regardless of success and failure of registration in L2DB.	"Y" or "N"
		Source data file name(L2A)	LEVEL2A_FILE_NAME ={"%s",	Source data file names used for creating this PDS product	***.img
		Source data file name	LEVEL2B_FILE_NAME = { "%s",	Source data file names used for creating this PDS product (for L2C2)	***.img
	Scene attribute Common to each instrument	SPICE metakernel file name Mission name	SPICE_METAKERNEL_FILE_NAME = "%s" MISSION NAME = "%s"	SPICE metakernel file names used for creating PDS product Mission name	"SELENE"
	accordance of the same of the	Spacecraft name Data set identification	SPACECRAFT NAME = "%s" DATA_SET_ID = "%s"	MISSION name Spacecraft name Data set identification in which included this scene.	"SELENE-M"
		Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB registration)	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared" When 9 bands are cubed:"Multiband Imager"
		Instrument identification Mission phase name	INSTRUMENT ID = "%s" MISSION PHASE NAME = "%s"	Instrument identification Mission phase name	"MI-VIS", "MI-NIR", "MI" (e.g.Nominal/Option)
		Revolution number Strip sequence number	REVOLUTION NUMBER = %d STRIP SEQUENCE NUMBER = %d	Revolution number in which included this scene Strip sequence number while in revolution	
		Scene sequence number Upper left daytime flag of	SCENE SEQUENCE NUMBER = %d UPPER_LEFT_DAYTIME_FLAG =	Scene sequence number while in strip Daytime flag of the pixel on the first column and the	Day: illuminated
		the first line Upper right daytime flag of the first line	"%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	first line by the system geometric data Daytime flag of the pixel on the last column and the first line by the system geometric data	Night: not illuminated Day: illuminated Night: not illuminated
		Lower left daytime flag of the last line	LOWER_LEFT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the first column and the last line by the system geometric data	Day: illuminated Night: not illuminated
		Lower right daytime flag of the last line	LOWER_RIGHT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the last column and the last line by the system geometric data	Day: illuminated Night: not illuminated
		Observation target name Observation mode identification	TARGET NAME = "%s" OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode identification	"MOON"(default) "NORMAL":normal "SUPPORT":support "NORMAL&SUPPORT":normal and support image mosaic in TC MAP/MSC
		Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g. TC: scan mode, TC1/2relative mounting angle, element number of used detector, focal length, F value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of exposure mode, Bit number of AD converter)	Illiage illusarte III To mar/mou
		Sensor description 2 Sensor status	N:%s", "SP:%s"}	Alternative sensor description ON/OFF of five respective power supplies(TC1,TC2,MI-VIS,MI-NIR,SP) on the scene center	"ON", "OFF"
		Exposure mode identification Exposure duration of the line	EXPOSURE MODE ID = "%s" LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Exposure mode identification Exposure duration of the line. Default value uniquely decidable to the respective exposure mode.	"LONG", "MIDDLE", "SHORT" "6.5": LONG "3.25": MIDDLE
		Spacecraft clock start count	SPACECRAFT_CLOCK_START_COUNT	Observation time of the first line of this scene (TI)	"1.625":SHORT
		(TI) Spacecraft clock stop count	= %15.4f <sec></sec>	Observation time of the last line of this scene (TI)	
		(TI) Corrected spacecraft clock		Corrected observation time of the first line of this	
		Start count (TI) Corrected spacecraft clock	T = %17.6f <sec> CORRECTED_SC_CLOCK_STOP_COUNT</sec>	scene (TI) Corrected observation time of the last line of this	
		Start time (UT)	= %17.6f <sec> START_TIME = %s</sec>	scene (TI) Observation time of the first line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
		Stop time (UT)	STOP_TIME = %s	Observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssz"
		Corrected start time (UT)	CORRECTED_START_TIME = %s	Corrected observation time of the first line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.ssssssZ"
		Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	Corrected observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
		Sampling interval in the line Corrected sampling interval	LINE_SAMPLING_INTERVAL = %10.6f <msec> CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec></msec>	Designed value of sampling interval Corrected sampling interval with dividing the corrected interval time between first line and last line of strip into the number of lines.	
		Upper left latitude of this scene	UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude of pixel on upper left corner of this scene by the system geometric data. Center latitude of the pixel on the first column and the first line snn.nnnnnn	[-90.000000, 90.000000]
		Upper left longitude of this scene	UPPER_LEFT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on upper left corner of this scene by the system geometric data. Center longitude of the pixel on the first column and the first line nnn.nnnnnn	[0.000000, 360.000000)
		Upper right latitude of this scene	UPPER_RIGHT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on upper right corner of this scene by the system geometric data. Center latitude of the pixel on the last column and the first line snn.nnnnn	[-90.00000, 90.000000]
		scene	<deg></deg>	Longitude of pixel on upper right corner of this scene by the system geometric data. Center longitude of the pixel on the last column and the first line nnn.nnnnn	,
		Lower left latitude of this scene	LOWER_LEFT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower left corner of this scene by the system geometric data. Center latitude of the pixel on the first column and the last line snn.nnnnn	[-90.00000, 90.000000]
		Lower left longitude of this scene	LOWER_LEFT_LONGITUDE= %10.6f <deg></deg>	by the system geometric data. Center longitude of the pixel on the first column and the last line nnn.nnnnn	
		scene	<deg></deg>	Latitude of pixel on lower right corner of this scene by the system geometric data. Center latitude of the pixel on the last column and the last line snn.nnnnn	[-90.00000, 90.000000]
		Lower right longitude of this scene	LOWER_RIGHT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on lower right corner of this scene by the system geometric data. Center latitude of the pixel on the last column and the last line nnn.nnnnn	[0.000000, 360.000000)

List 2.2-11(2/2) Details of PDS label (MI L2B2, L2C2 detached (cubed))

Scene at it ribus between to each instrument. Useful in large and it is described to be signed to each instrument. I was in it is described to be signed to death of the signed to deat		Region	Item name	Description format	Item explanation	value
Scene center last itude SCENE_CENTER_LATITUDE = data lated of the scene center by the system generatic (1-90-000000, 90-0000000) Any Committee of the scene center by the system generatic (1-90-000000, 90-0000000) Incidence angle of the scene center by the system generatic plants of the scene center by the syste	Product information Sco		Location flag	LOCATION_FLAG = "%s"	Information of spacecraft location Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the current satellite position, and zero degree as passing through the ascending node) at the both observation times of the first line and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceed half of the rotation period. D:Both are in the descending side ([90 degrees, 270 degrees]) and do not exceed half of the rotation period. N:Between the two, 90 degrees is included and 270 degrees is not. S:Between the two, 90 degrees is included and 90 degrees is not. W:Between the two, 90 degrees and 270 degrees are both included. Discrimination of nadir looking or roll cant	A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles YES: roll cant
Sene center longitude SERE_EDITEC STATE Compliance State Sta				SCENE_CENTER_LATITUDE =	observation Latitude of the scene center by the system geometric	NO: nadir looking
Incidence angle of the scene Incidence angle of the scene center by the system (0.000, 180.000)			Scene center longitude	SCENE_CENTÉR_LONGITUDE = %10.6f <deg></deg>	Longitude of the scene center by the system geometric	
conter Phase angle of the scene Conter State I			center	INCIDENCE_ANGLE = %7.3f <deg></deg>	geometric data (lunar spherical approximation)	
Center Solar azimuth angle of the solar azimuth angle of the sonar center Solar azimuth angle of the sonar (center	-	geometric data (lunar spherical approximation)	
Scene center Olstance between moon and sun 1900N SND ISTANCE = %d -dense Focal plane temperature			center		geometric data	<u> </u>
Focal plane temperature S6, d'edigo Telescope temperature S6, d'edigo Telescope temperature S6, d'edigo Telescope temperature S6, d'edigo Telescope temperature S6, d'edigo Telescope temperature of the first line S6, d'edigo S6, d'edigo S6, d'edigo S6, d'edigo Telescope temperature of the first line S6, d'edigo S6, d'edigo S6, d'edigo S6, d'edigo Telescope temperature of the first line S6, d'edigo S6, d'ed			scene center	<deq></deq>	geometric data	[0.000, 360.000)
Satellite moving direction First sampled line position First sampled line position First detector element Dosition Radius of lunar shape (a axis) nnnn, nnn (indicate Radius of lunar shape (b axis) Radius of lunar shape (c axis) Ra			Focal plane temperature	FOCAL_PLANE_TEMPERATURE = %6.2f <deqc></deqc>	Focal plane temperature of the first line	
First sampled line position FIRST_SAMPLED_LINE_POSITION = "IPFERUOST "IPPERUOST "INS some:LEFT" In this scene:LEFT In this scene:LEFT				<degc></degc>	, ,	
First detector element Dosition ON = "%s" First detector element Dosition ON = "%s" Radius of lunar shape (a axis) nnnn.nnn (indicate Radius of lunar shape (b Radius of lunar shape (c) Radius of lunar radius in axis, nnnn.nnn (indicate down to meter				"%s"	Moving direction of satellite	-1 : lead of -x plane
Dosition ON = "%s" in this scene; LEFT				"%s"	Direction of the first detector element (the direction	
Axis nnnn.nnn			position	ON = "%s"	in this scene:LEFT)	
Radius of lunar shape (c axis, RADIUS = %.3f < km> befect pixel position (=element number) (%d,%d,), (%d,,			axis) nnnn.nnn (indicate Radius of lunar shape (b		meter order) Lunar radius in b axis. nnnn.nnn (indicate down to	
Defect pixel position (element number) Defect pixel position (element number) Defect pixel position (element number) Defect pixel position ((%0,%d,),(%d,d,),(%d,d,d,),(%d,d,d,),(%d,d,d,d,),(%d,d,d,d,d,d,d,d,d,d,d,d,d,d,d,d,d,d,d			Radius of lunar shape (c	C_AXIS_RADIUS = %.3f <km></km>	Lunar radius in c axis. nnnn.nnn (indicate down to	
Variaton by each instrument Filter name Filter_NAME = Names of MI filters "MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MV2", "MN3", "MN4", "MV5" "MN1", "MN2", "MN3", "MN4", "MV5" "MN1", "MN2", "MN3", "MN4" "MN5", "MN4", "MN5", "M			Defect pixel position		The position of defect element (=element number) dealt as disregarded for image evaluation, as it has proved not to be available because of its defect (black or	MI-NIR:1~320/(in 320 elements)
Bandwidth BANDWIDTH = (%.1f,%.1f) cnm> Base band of MI BASE_BAND = "%s" Base band identification of MI Approximate spacecraft altitude SPACECRAFT_ALTITUDE = %8.3f altitude SPACECRAFT_GROUND_SPEED = Spacecraft ground speed SPACECRAFT_GROUND_SPEED = Spacecraft ground speed of the first line Spacecraft ground speed SPACECRAFT_GROUND_SPEED = Spacecraft ground speed of the first line		Variaton by each instrument	Filter name	("%s", "%s", "%s")		"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
Base band of MI BASE_BAND = "%s" Base band identification of MI "MV1", "MV2", "MV3", "MV4", "MV5" Approximate spacecraft altitude SPACECRAFT_ALTITUDE = %8.3f structure of the first line("distance between spacecraft and lunar gravitational center" minus average lunar radius) Spacecraft ground speed SPACECRAFT_GROUND_SPEED = Spacecraft ground speed of the first line				(%.1f, \(\vec{\pi}\).1f, \(\vec{\pi}\).1f) <nm></nm>	, , , , , , , , , , , , , , , , , , ,	
Approximate spacecraft altitude Approximate spacecraft altitude Approximate spacecraft spacecraft space				<nm></nm>	,	"MV1", "MV2", "MV3", "MV4", "MV5"
Spacecraft ground speed SPACECRAFT_GROUND_SPEED = Spacecraft ground speed of the first line					between spacecraft and lunar gravitational center"	"MN1", "MN2", "MN3", "MN4"
END			Spacecraft ground speed	%6.3f <km sec=""></km>		

2.2.4 MI PDS product file

RGC PDS product file of MI is the PDS file in attached format, and is composed of PDS label segment (header segment), geometric information object (after L2C), and image data object. PDS label is recorded in text format and geometric information object and image data object are recorded in binary format.

The composition of MI RGC PDS product file is shown in the Figure 2.2-3 and the format of MI RGC PDS product file is shown in the Figure 2.2-4.

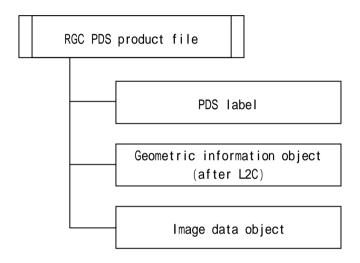


Figure 2.2-3 Composition of Mi RGC PDS product file

PDS label	. Proroguisito itor	as for DDS hooder			
PDS label	· Prerequisite items for PDS header Version identification				
	· Area specifying object position Pointer to all objects				
	Product ·File attribute				
	information		reating data undata data		
	IIIIOIIIIatioii	• Product attribut	reating date, update date		
			name used for creating product,		
		_	cation, source data file name		
		Scene attribute	·Common to each instrument		
		Scene attribute	e.g. start time of the scene,		
			stop time of the scene,		
			observation mode name		
			·Variation by each instrument		
			e.g. observation parameters,		
			status		
	· Description area of geometric data object format				
	(latitude longitude: L2C, altitude: MAP)				
	e.g. thinning interval of geometric data, number of data points in				
	vertical and horizontal direction, bit length				
		of image data obje			
	_	· ·	tal pixels of the scene, bit length		
·Geometric data ol			, ,		
Binary two dimer					
	oject(longitude: L2C				
Binary two dimer					
	oject(altitude: MAP)			
	nsional array data				
·Image data object					
Binary two dimer	nsional array data				
- When 5 bands	of MI-VIS are cubed	d: recorded in BSQ	format in order of 1,2,3,4,5 band		
- When 4 bands	of MI-NIR are cube	d: recorded in BSQ	format in order of 1,2,3,4 band		
- When total 9 ba	ands of MI are cube	ed: recorded in BSQ	format in order of 1,2,3,4,5		
on MI-VIS bar	nds, and 1,2,3,4 on I	MI-NIR bands.			

Figure 2.2-4 Format of MI RGC PDS product file

(1)PDS label

The details of PDS label of MI RGC PDS product file are shown in the list of List $2.2\text{-}12\sim\text{List}\ 2.2\text{-}14$

And on the case that the set value of PDS label is numeric value, if it does not fulfill maximum digit number, it is left-aligned by zero suppression in the absence of mentioning of particular reference.

On the details of the invalid pixel, refer to Appendix2.

List 2.2-12(1/2) Details of PDS label (MI L2B2)

Product information Product information Product attribute Product research research research treat contemplants for LOSS registration (COSP registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (COSP registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "3" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contemplants for LOSS registration (PS) 8000 Type "4" File research treat contem		Region		Item name	Description format	Item explanation	value
The control of the co	rerequisite items for PDS	S header		PDS version identification File record type	PDS_VERSION_ID = "%s" RECORD TYPE = "%s"	PDS version identification File record type (prerequisite for L2DB registration)	"PDS3" "UNDEFINED"
March Marc					_	file name, involving extension(.img)	-
Martin M				practice)		not involving extension)	
A STATE Company Comp	rea specifying object pos	sition		identification		registration)	100
The content of the	roduct information F	ile attribute	1	object Software name	SOFTWARE NAME = "%s"	Software name used for creating PDS product	
The control of the				Process version		Process version identification (prerequisite for L2DB	
March Marc				Product creation time		Product creation time(UTC)	
March Company Compan	P	roduct attrib	ute	Producer identification	PRODUCER_ID = "%s"	Data producer identification	"LISM"
Part						registration) The name in product list should be used. As of data	"MI-NIR_Level2B2",
The control of the co					PRODUCT_VERSION_ID = "%s"	not registered in L2DB, it's be described "Others". Product version registered for L2DB (prerequisite for	"Others"
The content of the				Whether to be registered	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for	"Y" or "N"
Column C					LEVELON CHIE NAME (SWAT TWAT	registration in L2DB.	*** :
The content of the					"%s"}	product	- Ting
### STATE OF THE PROPERTY OF T	S	cene	Common to each instrument			product	" SEL ENE "
Miles of the Company of the Compan			odililor to dadi mottalion	Spacecraft name	SPACECRAFT NAME = "%s"		
March Marc				Data set identification Instrument name	DATA SET ID = "%s" INSTRUMENT_NAME = "%s"	Data set identification in which included this scene. Instrument name(full name) (prerequisite for L2DB	
Million of the common						,	MIN:"Multiband Imager Near Infrared" When 9 bands are cubed:"Multiband Image
Control and contro				Mission phase name	MISSION_PHASE_NAME = "%s"	Mission phase name	
Section of the property of the				Strip sequence number	STRIP_SEQUENCE_NUMBER = %d	Strip sequence number while in revolution	
### Command and Co				the first line	UPPER_LEFT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the first column and the first line by the system geometric data	Night: not illuminated
The control of the co				the first line		first line by the system geometric data	Night: not illuminated
March 1 Marc				the last line		last line by the system geometric data	Night: not illuminated
Record of the Color 1982				the last line		last line by the system geometric data	Night: not illuminated
Compared and process				Observation mode			"NORMAL":normal "SUPPORT":support
March Contemporary							"NORMAL&SUPPORT":normal and support image
### PARTY COLUMN 1997 1997 1997 1997 1997 1997 1997 199				Sensor description	SENSOR_DESCRIPTION = "%s"	(e.g.TC:scan mode, TC1/2relative mounting angle, element number of used detector, focal length, F value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode,	
Security Company Com						exposure mode. Bit number of AD converter) Alternative sensor description	
Control of the contro					DETECTOR_STATUS = {"TC1:%s","TC2:%s","MV:%s","MN:%s",	ON/OFF of five respective power supplies(TC1,TC2,MI-	"ON","0FF"
Total				Exposure mode	"SP:%s"} EXPOSURE MODE ID = "%s"	Exposure mode identification	
Biomerant is closed to provide a control of the con							"3.25":MIDDLE
Comment of process of the control				Spacecraft clock start	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Observation time of the first line of this scene (TI)	1.020 .01001
Control of processors can be a control of the contr				Spacecraft clock stop count (TI)	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec>		
Contracted quantitatives of the first time of this section of the first time of first time of the first time of the first time of the first time of first time of the first time of first time of the first time of first time o				Corrected spacecraft clock start count (TI)	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	scene (TI)	
SING THE PROPERTY OF THE PROPE				Corrected spacecraft clock stop count (TI)	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec></sec>	Corrected observation time of the last line of this scene (TI)	II.
Contract start the [15] 2004[12] 2014 [11] 4 S				Start time (UT)		(six decimal places)	****
Contracted stage long (10) Control 2019 (10 to 16) Control 2019 (10 to 16) Control 2019 (10 to 16) Control 2019 (10 to 16) C				,	_	(six decimal places)	
The second contract of the con				, ,		scene (UT) (six decimal places)	****
The first last year of this general colors of the service of the s				Sampling interval in the	LINE SAMPLING INTERVAL = %10.6f	Designed value of sampling interval	
linger left lest land of this pRPU_LIPS_LIPS_CHINGS = Vo.64 does per left and only of this some per left length left linger left legislation of this some per left length left linger left legislation of the left length left linger left length left linger left legislation of the left length left linger left left left left left left length left linger left left left left left left left left				Corrected sampling interval	%10.6f <msec></msec>	corrected interval time between first line and last	
poper first longitude of pressure of the same of the section of th					UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude of pixel on upper left corner of this scene	[-90.000000, 90.000000]
this score Type 1 (1) file list listed of list listed of lists (1) file list lists of lists (1) file lists (1)						pixel on the first column and the first line	
Oper right longitude of the Section of the Section of the Section of the First line on Amount of the Section of				this scene	•	by the system geometric data. Center longitude of the pixel on the first column and the first line nnn.nnnnn Latitude of pixel on upper right corner of this scene	
Comer (eff liatitude of this LODE, LEFT_LATITUDE, 10.0 eff edge, personal to clear content of this some looks of the list colors and the liast line some more of this some looks of the list colors and the liast line some more of this some looks of the list colors and the liast line some more of this some looks of the list colors and the liast line some looks, 30.00000) by the system generate class. Center linguistic of the photosome looks of the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic of the photosome looks of the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic of the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic of the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic of the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic or this some looks, 30.000000 by the system generate class. Center linguistic or the list colors and the liast line some looks, 30.000000 by the system generate class. Center linguistic or this some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.000000 by the system generate class colors and the liast line some looks, 30.00000 by the system generate class colors and the liast line some looks, 30.00000 by the system generate line line line line line line line lin				Upper right longitude of	UPPER_RIGHT_LONGITUDE= %10.6f <deg></deg>	pixel on the last column and the first line snn.nnnnnn Longitude of pixel on upper right corner of this scene	[0.000000, 360.000000)
Lower legit light legitude of DIEE_LEFT_LOGITUDE = 10.81 -degar on the last little on the last little on the last little of price on lacer legitude of this scene on the last little of price on the last little of the last little				Lower left latitude of this	LOWER_LEFT_LATITUDE= %10.6f <deg></deg>	pixel on the last column and the first line nnn.nnnnnn Latitude of pixel on lower left corner of this scene by the system geometric data. Center latitude of the	[-90.000000, 90.000000]
this some Description Des				Lower left longitude of	LOWER LEFT LONGITUDE #40 04 -do-		[0,00000, 360,00000)
Cover right latitude of this soon in the soon of this soon in the soon of this soon in this soon					= %10.01 <deg></deg>	by the system geometric data. Center longitude of the	(
District of the last column and the last line son-morno Location flag Location					LOWER_RIGHT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower right corner of this scene	[-90.000000, 90.000000]
this some Coation Flag				this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line snn.nnnnn	
Coast ion flag Coas					LOWER_RIGHT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on lower right corner of this scene	[0.000000, 360.000000)
Explanation or cirteria for determining 11 is determined in the basis of the satellite in the contract of the satellite position, and zero degree as passing through the sacending node and the current statellite position, and zero degrees as passing through the sacending node) at the both focarrent in the sacending node) at the both focarrent in the satellite of the same limited in the satellite of the contraction of the c				triis scene			
Content absention of the scene content by the system geometric flowing and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and content and part of the scene content by the system geometric flowing and part of the scene content and part of the scene conte				Location flag	LOCATION_FLAG = "%s"	Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the	D: descending N: involving north pole S: involving south pole
Total tion per iod. Disch are in the descending side (190 degrees, 270 degrees) and do not exceed half of the rotation Note that the period of the control						through the ascending node) at the both observation times of the first line and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0])	
degrees is not. Sibet ween that two, 270 degrees are both included. Roll can't Roll_CANT = "%s" Roll_CANT = "%s" Roll_CANT = "%s" Discrimination of nadir looking or roll can't No. nadir looking Discrimination of nadir looking or roll can't No. nadir looking Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric John Control Latitude of the scene center by the system genetric latitude and the system genetric lat						rotation period. D:Both are in the descending side ((90 degrees, 270 degrees)) and do not exceed half of the rotation period.	
Roll cant ROLL_CNIT = "%s" Discrimination of radir looking or roll cant Discrimination Discrimination of radir looking or roll cant Discrimination Discrimination Discrimination of radir looking or roll cant Discrimination Discriminat						degrees is not. S:Between the two, 270 degrees is included and 90 degrees is not. W:Between the two, 90 degrees and 270 degrees are both	
Seene center latitude Scene center longitude Scene center longitude Scene center longitude Incidence angle of the scene center low the system geometric data Incidence angle of the scene Scene center of the scene center low the system geometric data Incidence angle of the scene Scene center Ensistion angle of the scene SMISSION_MSGLE = \$7.3f cdegs Please angle of the scene SMISSION_MSGLE = \$7.3f cdegs Scene center Please angle of the scene SMISSION_MSGLE = \$7.3f cdegs Scene center Solar azimuth angle of the scene Solar azimuth angle of the scene Solar azimuth angle of the scene center by the system Solar azimuth angle of the scene Solar azimuth angle of the scene center Focal plane temperature Telescope temperature Telescope temperature Satellite moving direction as STELLITE_MOVIN_DIRECTION = "%s" First sampled line position STELLITE_MOVIN_DIRECTION = "%s" First detector element SOSI Ion SATELLITE_MOVIN_DIRECTION = "%s" First detector element Solar azimuth angle of the scene center by the system Occometric data STELLITE_MOVIN_DIRECTION = "%s" First detector element STELLITE_MOVIN_DIRECTION = "%s" First detector element STELLITE_MOVIN_DIRECTION = "%s" First detector element SOSI Ion SATELLITE_MOVIN_DIRECTION = "%s" FIRST_SAMPLED LINE POSITION = "%s" FIRST_SAMPLED LINE POSITION = STELLITE_MOVIN_DIRECTION = "%s" FIRST_SAMPLED LINE POSITION = STELLITE_MOVIN_DIRECTION = STELLITE_MO				Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant	
Incidence angle of the scene center Incidence angle of the scene Incidence angle angle angle angle angle of the scene Incidence angle of the scene Incidence angle an				Scene center latitude	SCENE_CENTER_LATITUDE = %10.6f		[-90.000000, 90.000000]
Incidence angle of the scene center by the system concenter. Emission angle of the scene center by the system operating data (Lunar suberical approximation) Emission angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operating data (Lunar suberical approximation) Phase angle of the scene center by the system operation of				Scene center longitude	<dea></dea>	data	[0.000000, 360.000000)
center Phase angle of the scene center Solar azimuth angle of the scene center by the system center Solar azimuth angle of the scene center Focal plane temperature of the first line Satellite moving direction Satellite moving direction First sampled line position Sakis) Radius of lunar shape (a axis) nnn.nnn (indicate down to matic order) Radius of lunar shape (b BAXIS_RADIUS = %.3f -km> Lunar radius in a axis. nnnn.nnn (indicate down to meter order) Radius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CAXIS_RADIUS = %.3f -km> Lunar radius in c axis. nnnn.nnn (indicate down to meter order) Badius of lunar shape (c CENTER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER_NAME = ("%s", "%s", "%s") Badius of lunar shape (c SETER_FILTER				scene center	-	Incidence angle of the scene center by the system geometric data (lunar spherical approximation)	
center Solar azimuth angle of the SOLAR_AZIMITH_ANGLE = %6.2f Focal plane temperature Filescope temperature of the first line First sampled line position Filescope temperature of the first line First sampled line position Filescope temperature of the first line First detector element Filescope temperature of the first line First detector element Filescope temperature of the first line First detector element Filescope temperature of the first line First detector element Filescope temperature of the first line First detector element Filescope temperature of the first detector element (the direction in the first detector element (the first direction in the fir				center	=	geometric data (lunar spherical approximation)	,
scene center FOCAL PLANE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line TELESCOPE TEMPERATURE = %6.2f Telescope temperature of the first line Telescope temperature of the first detector element (the direction of the first detector element (the dire		ļ		center		geometric data	, , , , , , , , , , , , , , , , , , ,
Telescope temperature of the first line SateIllite moving direction SateIllite moving direction First sampled line position First detector element position Radius of lunar shape (a axis) nnn.nnn (indicate down to m) Radius of lunar shape (b axis) Radius of lunar shape (b axis) Radius of lunar shape (b axis) Radius of lunar shape (c axis) Radius in a axis. nnn.nnn (indicate down to meter order) Rad				scene center Focal plane temperature	FOCAL PLANE TEMPERATURE = %6.2f	geometric data Focal plane temperature of the first line	
First sampled line position FIRST SAMPLED LINE POSITION = "%s" "UPPERMOST First detector element (the direction "LEFET" First detector element (the direction "LEFET" In this sone:LEFT Radius of lunar shape (a axis) nnm.nm (indicate down to m) Radius of lunar shape (b axis) Radius of lunar shape (b axis) Radius of lunar shape (c axis) Radius of lunar radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down to meter order) Radius in a axis, nnnn.nnn (indicate down t				Telescope temperature	TELESCOPE TEMPERATURE = %6.2f	Telescope temperature of the first line	
Dosition A_AXIS_RADIUS = %.3f < km>					FIRST SAMPLED LINE POSITION = "%s"	Discotion of the first date of	"UPPERMOST
axis) nnnn.nnn (indicate down to meter order) Radius of lunar shape (b axis) Radius of lunar shape (c axis) Defect pixel position (=element number) (=element number) Variaton by each instrument Filter name FILTER_NAME = ("%s", "%s", "%s") Radius of lunar shape (c axis) DEFECT_PIXEL_POSITION = (%d,%d,),) Names of MI filters Variaton by each instrument Filter wavelength Center filter wavelength Radius of lunar shape (c axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn (indicate down to neter order) Lunar radius in b axis, nnnn.nnn				position	"%s"	in this scene:LEFT)	LEF1
Radius of lunar shape (b axis) Radius of lunar shape (c axis) Radius of lunar shape (c axis) Defect pixel position (=element number) (=element number) Variaton by each instrument Center filter wavelength Radius of lunar shape (c axis) Defect pixel position (=element number) (=element numb				axis) nnnn.nnn (indicate down to m)		meter order)	
Radius of lunar shape (c axis) Defect pixel position (=element number) Defect pixel position (=element number) Wariaton by each instrument Center filter wavelength Center filter wavelength Defect, PixeL_Position = ("%s,", %s,", %s,") Center filter wavelength Defect, PixeL_Position = ("%s,", %s,", %s,") Defect, PixeL_Position = ("%s,", %s,", %s,") Defect, PixeL_Position = ("%s,", %s,", %s,") Names of MI filters Center filter wavelength Center wavelength of the filter (noninal value) Bandwidth Bandwidth Bandwidth Bandwidth Bandwidth Bandwidth Bandwidth(full-width at half-saxinum, posinal value)				Radius of lunar shape (b axis)		meter order)	
(=element number)), (%d,%d,) as disregarded for image evaluation, as it has proved MI-NIR:1-320/(in 320 elements) not to be available because of its defect (black or white) at launching of the process. Variaton by each instrument Filter name FILTER_NAME = ("%s", "%s", "%s") Names of MI filters "MM1", "MV2", "MW3", "MW4", "MW5" Center filter wavelength (CENTER_FILTER_NAMELENGTH = ("%s", "%s", "%s") Sand widthfull-width at half-maximum, nominal value) RAMDINGTH = (% 1.1 % 1.1 % 1.1) cmp Sand widthfull-width at half-maximum, nominal value)				Radius of lunar shape (c axis)		Lunar radius in c axis. nnnn.nnn (indicate down to meter order)	W Was a gentle acc
White) at launching of the process. Variaton by each instrument FILTER_NAME = ("%s", "%s", "%s") Names of MI filters "MM1", "MV2", "MV3", "MV4", "MV5" "MM1", "MV2", "MN3", "MN4", "MV5" Center filter wavelength CENTER_FILTER_NAVELENGTH = ("%s", "%s"), onno RANJIGHT = ("%s", "%s"), st. f. s. f. f. s					uereci_MixeL_PUSITION = ((%d,%d,),(%d,%d,),)	as disregarded for image evaluation, as it has proved not to be available because of its defect (black or	พ.เ-vเจ.1 ~ 962/(in 962 elements) MI-NIR:1 ~ 320/(in 320 elements)
Center filter wavelength CENTER_FILTER_WAVELENGTH = Center wavelength of the filter(nominal value) (8.11,8.11,8.11) < nm> Bandwidth BANDWITH = (8.11,8.11) < nm> Band width(full-width at half-maximum, nominal value)		ļ	Variaton by each instrument	Filter name	FILTER_NAME = ("%s","%s","%s")	white) at launching of the process.	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1" "MN2" "MN2" "MN4"
BANDWIDTH = (%.1f.%.1f.%.1f) <pre>cpm> Band width(full-width at half-maximum, nominal value)</pre>				-	(%,1f,%,1f,%,1f) <nm></nm>		mv1 , miv2', "MN3", "MN4"
Inner mark the second s				Bandwidth Base band of MI	BANDWIDTH = (%.1f,%.1f,%.1f) <nm></nm>	Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5"
Approximate spacecraft Approximate spacecraft Approximate spacecraft Approximate spacecraft Approximate spacecraft Approximate spacecraft BPACECRAFT_ALTITUDE = %8.3f <km></km>					SPACECRAFT_ALTITUDE = %8.3f <km></km>		I"MN1". "MN2". "MN3". "MN4"
Spacecraft ground speed Spacecraft ground speed of the first line dkm/sec-					SPACECRAFT_GROUND SPEED = %6.3f	minus average lunar radius)	

List 2.2-12 (2/2) Details of PDS label (MI L2B2)

	1	2 (2/2) Details of PDS	· · · · · · · · · · · · · · · · · · ·	
Region Description area of image data object format	Item name	Description format OBJECT = IMAGE	Item explanation	value
	Number of nominal lines	NOMINAL_LINE_NUMBER = %d	Number of nominal lines in this scene(not including overlap lines)	
	Number of nominal overlap	NOMINAL_OVERLAP_LINE_NUMBER = %d	Number of nominal overlap lines in this scene	
	Number of overlap lines of back data	OVERLAP_LINE_NUMBER = %d	Number of real overlap lines (back part of data) If number of line is less than the number of nominal	
	Number of bands	BANDS = %d	lines in this scene, it's described 0. Number of bands	4,5,9
	Band storage type Number of lines of an image	BAND_STORAGE_TYPE = "%s" LINES = %d	Storage type of bands Number of pixels along the vertical axis of this	"BAND SEQUENTIAL"
	Number of line's samples of an image	LINE_SAMPLES = %d	scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track involving dummy elements on L2A(corresponding to the onboard dummy	
			element), or value detached dummy elements filled	
	Sample type Sample bits Image value type	SAMPLE TYPE = "%s" SAMPLE BITS = %2d IMAGE_VALUE_TYPE = "%s"	Sample type Sample bit length Image value type	"MSB_INTEGER" 16 "DN"[ND],"RADIANCE"[W/m2/micron/sr],"REFLI CTANCE"[ND]
	Uni t	UNIT = "%s"	Unit of sample value	"ND", "W/m**2/micron/sr"
	Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value into physical quantity (first order coefficient)	
	Offset	OFFSET = %8.5e	Conversion coefficient used for converting DN value into physical quantity (constant term)	
	Minimum for statistical image evaluation, D1	MIN_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
	Maximum for statistical		scaled and offset. Maximum DN value of output range for statistical	
	image evaluation, D2	= (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset.	
	Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	In this scene, maximum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	When the number of samples for image quality assessment is 0, the value is set -1.
	Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is creater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image	When the number of samples for image quality assessment is 0, the value is set -1.
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image	When the number of samples for image quality assessment is 0, the value is set -1.
	Standard deviation DN	SCENE_STDEV_DN = (%.1f,%.1f,)	evaluation and	When the number of samples for image quality assessment is 0, the value is set -1.
	Mode DN in this scene		and d.pixel whose DN value is less than threshold D1 e.nixel whose DN value is greater than threshold D2 In this scene, mode DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and	When the number of samples for image quality assessment is 0, the value is set -1.
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Shadowed area minimum D5		Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area maximum D6	•	Maximum DN value of output range for shadow	
	Shadowed area maximum bo)	discrimination, indicated as integral value scaled and offset.	
	Shadowed area percentage between D5 and D6	SHADOWED_AREA_PERCENTAGE = (%d,%d,)	Shadowed area percentage(round down after the decimal point). In this scene, pixel percentage whose DN value is between threshold D5 and threshold D6: a.dummy pixel filled onboard b.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	When the number of samples for image quality assessment is 0, the value is set1.
	Invalid type	INVALID_TYPE = ("%s", "%s",)	Invalid pixel type Registered in L2DB : three types of "saturation", "negative value after calibration" and "others"	
	Invalid value	INVALID_VALUE = (%d, %d,)	Not registered in L2DB: list of all calibrated and corrected error Invalid pixel value Registered in L2DB: three types of "saturation", "negative value after calibration" and "others"	
	Invalid pixels	INVALID_PIXELS = ((%d,%d,),(%d,%d,),)	negative value after calibration and others Not registered in L2DB: list of all calibrated and corrected error Invalid pixels Registered in L2DB: three types of "saturation",	
	Value provided pixels out	OUT_OF_IMAGE_BOUNDS_VALUE = %d	"negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing	
	of bounds pixels before resampling		before resampling	
	Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS =	Numer of pixel originally not existing before resampling	
Description area of process parameter		END OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS		
	Dark current correction coefficient file name	DARK_FILE_NAME = {"%s", "%s"}	Dark current correction coefficient file name ("N/A" when not corrected)	
	Frame transfer correction formula coefficient file	FT_FILE_NAME = "%s"	Frame transfer correction formula coefficient file name ("N/A" when not corrected)	
	Flat field correction coefficient file name	FLAT_FILE_NAME = {"%s", "%s"}	Flat field correction coefficient file name ("N/A" when not corrected)	
	Coefficient file name of temperature dependency	EFFIC_FILE_NAME = {"%s", "%s"}	Coefficient file name of temperature dependency correction of transmittance efficiency ("N/A" when not	
	correction of transmittance efficiency		corrected)	
	File name of non-linearity correction coefficient		File name of non-linearity correction coefficient ("N/A" when not corrected)	
	Radiance conversion coefficient Resampling method	RAD_CNV_COEF = (%f,%f,%f,) <w m**2="" micron="" sr=""> RESAMPLING_METHOD = {"%s","%s", }</w>	Radiance conversion coefficient:indicate all value every band [W/m2/micron/sr] ("N/A" when not converted) Interpolation method of resampling	"Nearest Neighbor", "Bi-Linear",
	Dead pixel discrimination	L2A_DEAD_PIXEL_THRESHOLD = (%d,	Maximum pixel value to judge as dead pixel on L2A	"Cubic Convolution"
	threshold L2A saturation threshold	%d)	image Minimum threshold value to judge as saturation on L2A	
	Dark current corrected	%d,)	image Minimum threshold to discriminate its validity as if	
	valid minimum threshold Frame transfer corrected	, , , ,	it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it	
	valid minimum threshold	II_VALID_MINIMUM = /0U	is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when	
	Radiance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD = %f	Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity	
		END OBJECT = PROCESSING PARAMETERS	(real value). ("N/A" when not converted)	
		END OBJECT = PROCESSING PARAMETERS		

List 2.2-13(1/2) Details of PDS label (MI L2C2)

Region		Item name	Description format	Item explanation	value	
rerequisite items for	PDS header		PDS version identification File record type	RECORD TYPE = "%s"	PDS version identification File record type (prerequisite for L2DB registration)	"PDS3" "UNDEFINED"
			File name (L2DB regulation) Product identification (PDS	FILE_NAME = "%s" PRODUCT_ID = "%s"	File name (prerequisite for L2DB)(uniquely decidable file name, involving extension(.img) Product identification (uniquely decidable file name,	***.img ***(no extension)
			practice) Data file format	DATA_FORMAT = "%s"	not involving extension) Data file format identification (prerequisite for L2DB	"PDS"
rea specifying object	ying object position		identification Starting position of	^GEOMETRIC_DATA_LATITUDE = %d	registration) Starting position of geometric data (latitude)(in	
		Starting position of	<pre><bytes> ^GEOMETRIC_DATA_LONGITUDE = %d <bytes></bytes></bytes></pre>	Byte) Starting position of geometric data (longitude)(in		
			geometric data (longitude) Starting position of image object	^ IMAGE = %d <bytes></bytes>	Byte) Starting position of image object(in Byte)	
oduct information	File attribut	е	Software name Software version	SOFTWARE NAME = "%s" SOFTWARE VERSION = "%s"	Software name used for creating PDS product Software version used for creating PDS product	"RGC TC MI"
			Process version identification	PROCESS_VERSION_ID = "%s"	Process version identification (prerequisite for L2DB registration)	n.n.n "L2C"
			Product creation time Program start time	PRODUCT CREATION TIME = %s PROGRAM START TIME = %s	Product creation time(UTC) Program start time (UTC)	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product attri	bute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB registration)	"LISM" "MI-VIS_Level2C2", "MI-NIR Level2C2".
					The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"MI_Level2C2", "Others"
			Product version identification	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB (prerequisite for L2DB registration)	"00 " ~ " 99 "
			Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of	"Y" or "N"
			Source data file name(L2A)	LEVEL2A_FILE_NAME ={"%s", "%s",	registration in L2DB. Source data file names used for creating this PDS	***.img
			Source data file name	"%s"} LEVEL2B_FILE_NAWE = {"%s", "%s",	product Source data file names used for creating this PDS	***.img
			SPICE metakernel file name	"%s"} SPICE_METAKERNEL_FILE_NAME = "%s"	SPICE metakernel file names used for creating PDS	
	Scene	Common to each instrument	Mission name	MISSION_NAME = "%s"	product Mission name	"SELENE"
	attribute		Spacecraft name Data set identification	SPACECRAFT NAME = "%s" DATA SET ID = "%s"	Spacecraft name Data set identification in which included this scene.	"SELENE-M"
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB registration)	MIV: "Multiband Imager Visible" MIN: "Multiband Imager Near Infrared"
				INSTRUMENT_ID = "%s"	Instrument identification	When 9 bands are cubed: "Multiband Imager "MI-VIS", "MI-NIR"
			Mission phase name Revolution number	MISSION PHASE NAME = "%s" REVOLUTION NUMBER = %d	Mission phase name Revolution number in which included this scene	(e.g.Nominal/Option)
			Strip sequence number Scene sequence number	STRIP SEQUENCE NUMBER = %d SCENE SEQUENCE NUMBER = %d	Strip sequence number while in revolution Scene sequence number while in strip	No. of the state of
			Upper left daytime flag of the first line	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the first column and the first line by the system geometric data Daytime flag of the pixel on the last column and the	Day: illuminated Night: not illuminated Day: illuminated
			the first line Lower left daytime flag of	LOWER LEFT DAYTIME_FLAG = "%s"	first line by the system geometric data Daytime flag of the pixel on the first column and the	Night: not illuminated Day: illuminated
	1		the last line Lower right daytime flag of	LOWER_RIGHT_DAYTIME_FLAG = "%s"	last line by the system geometric data Daytime flag of the pixel on the last column and the	Night: not illuminated Day: illuminated
	1		the last line Observation target name	TARGET NAME = "%s"	last line by the system geometric data Observation target name of this strip	Night: not illuminated "MOON"(default)
			Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation mode identification	"NORMAL":normal "SUPPORT":support
	1			CENCOD DECODINETON	Sensor deagri-ti	"NORMAL&SUPPORT":normal and support image mosaic in TC MAP/MSC
			Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g.TC:scan mode, TC1/2relative mounting angle,	
					element number of used detector, focal length, F value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode.	
					wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of exposure mode. Bit number of AD converter)	
			Sensor description 2 Sensor status	SENSOR DESCRIPTION2 = "%s" DETECTOR_STATUS =	Alternative sensor description ON/OFF of five respective power supplies(TC1,TC2,MI-	"ON", "OFF"
	1			{"TC1:%s","TC2:%s","MV:%s","MN:%s", "SP:%s"}	, VIS,MI-NIR,SP) on the scene center	
			Exposure mode Exposure duration of the	EXPOSURE MODE ID = "%s" LINE_EXPOSURE_DURATION = %10.6f	Exposure mode identification Exposure duration of the line. Default value uniquely	"LONG", "MIDDLE", "SHORT" "6.5"; LONG
			line Spacecraft clock start	<msgc></msgc>	decidable to the respective exposure mode.	"3.25":MIDDLE "1.625":SHORT
			count (TI) Spacecraft clock stop count	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec> SPACECRAFT_CLOCK_STOP_COUNT =</sec>	Observation time of the first line of this scene (TI) Observation time of the last line of this scene (TI)	
			(TI) Corrected spacecraft clock	%15.4f <sec> CORRECTED_SC_CLOCK_START_COUNT =</sec>	Corrected observation time of the first line of this	
			start count (TI) Corrected spacecraft clock	%17.6f <sec> CORRECTED_SC_CLOCK_STOP_COUNT =</sec>	scene (TI) Corrected observation time of the last line of this	
			Stop count (TI) Start time (UT)	%17.6f <sec> START_TIME = %s</sec>	scene (TI) Observation time of the first line of this scene (UT)	"yyyy-mm-ddThh:mm:ss.sssssZ"
			Stop time (UT)	STOP_TIME = %s	(six decimal places) Observation time of the last line of this scene (UT)	"yyyy-mm-ddThh:mm:ss.sssssz"
			Corrected start time (UT)	CORRECTED_START_TIME = %s	(six decimal places) Corrected observation time of the first line of this	"yyyy-mm-ddThh:mm:ss.sssssZ"
			Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	scene (UT) (six decimal places) Corrected observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
			Sampling interval in the Corrected sampling interval	LINE SAMPLING INTERVAL = %10.6f CORRECTED_SAMPLING_INTERVAL =	Designed value of sampling interval Corrected sampling interval with dividing the	
				%10.6f <msec></msec>	corrected interval time between first line and last line of strip into the number of lines.	
			Upper left latitude of this scene	UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude of pixel on upper left corner of this scene by the system geometric data. Center latitude of the	[-90.000000, 90.000000]
					pixel on the first column and the first line snn.nnnnnn	
			Upper left longitude of this scene	UPPER_LEFT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on upper left corner of this scene by the system geometric data. Center longitude of the	[0.000000, 360.000000)
					pixel on the first column and the first line nnn.nnnnnn	
			Upper right latitude of this scene	UPPER_RIGHT_LATITUDE= %10.6f <deg></deg>	by the system geometric data. Center latitude of the	[-90.000000, 90.000000]
					pixel on the last column and the first line snn.nnnnnn	
			Upper right longitude of this scene	UPPER_RIGHT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on upper right corner of this scene by the system geometric data. Center longitude of the	[0.000000, 360.000000)
			Lawar left latitude of this	LOWER_LEFT_LATITUDE= %10.6f <deg></deg>	pixel on the last column and the first line nnn.nnnnnn Latitude of pixel on lower left corner of this scene	[-90.000000, 90.000000]
			scene	LUWER_LEFI_DATITUDE= %10.6f <deg></deg>	by the system geometric data. Center latitude of the pixel on the first column and the last line snn.nnnnnn	[-90.000000, 90.000000]
			Lower left longitude of	LOWER_LEFT_LONGITUDE= %10.6f <deg></deg>		[0.00000, 360.00000)
			this scene	EUREN_EER I_EUROTTOBE= #10.01 Gauge	by the system geometric data. Center longitude of the pixel on the first column and the last line nnn.nnnnn	[0.00000]
			Lower right latitude of	LOWER_RIGHT_LATITUDE= %10.6f <deg></deg>		[-90.000000, 90.000000]
			this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line snn.nnnnn	,,
			Lower right longitude of	LOWER_RIGHT_LONGITUDE= %10.6f <deg></deg>	> Longitude of pixel on lower right corner of this scene	[0.000000, 360.000000)
			this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line nnn.nnnnn	
			Location flag	LOCATION_FLAG = "%s"	Information of spacecraft location	A : ascending
					Explanation on criteria for determining It is determined on the basis of the satellite	D: descending N: involving north pole
					argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the current satellite position, and zero degree as passing	S: involving south pole W: involving both poles
					through the ascending node) at the both observation times of the first line and the last line of the	
					scene. A:Both are in the ascending side (>270 degrees or [0])	
					degree, 90 degrees])and do not exceed half of the rotation period.	
					D:Both are in the descending side ((90 degrees, 270 degrees]) and do not exceed half of the rotation	
					period. N:Between the two, 90 degrees is included and 270	
					degrees is not. S:Between the two, 270 degrees is included and 90 degrees is not.	
					degrees is not. W:Between the two, 90 degrees and 270 degrees are both included.	
			Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant	YES : roll cant
			Scene center latitude	SCENE_CENTER_LATITUDE = %10.6f <deg></deg>	observation Latitude of the scene center by the system geometric data	NO: nadir looking [-90.000000, 90.000000]
			Scene center longitude	<pre>scene_center_longitude = %10.6f <deq></deq></pre>	Longitude of the scene center by the system geometric data	[0.000000, 360.000000)
	1		Incidence angle of the scene center	INCIDENCE_ANGLE = %7.3f <deg></deg>	Incidence angle of the scene center by the system geometric data (lunar spherical approximation)	[0.000, 180.000)
			Emission angle of the scene center	EMISSION_ANGLE = %7.3f <deg></deg>	Geometric data (tunar spherical approximation) geometric data (lunar spherical approximation)	[0.000, 180.000)
			Phase angle of the scene center	PHASE_ANGLE = %7.3f <deg></deg>	Phase angle of the scene center by the system geometric data	[0.000, 180.000)
		Solar azimuth angle of the scene center	SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg>	Solar azimuth angle of the scene center by the system geometric data	[0.000, 360.000)	
		Distance between moon and Focal plane temperature	MOON SUN DISTANCE = %d <km> FOCAL PLANE TEMPERATURE = %6.2f</km>	Distance between moon and sun Focal plane temperature of the first line		
		Telescope temperature Satellite moving direction	TELESCOPE TEMPERATURE = %6.2f SATELLITE_MOVING_DIRECTION = "%s"	Telescope temperature of the first line Moving direction of satellite	+1 : lead of +x plane -1 : lead of -x plane	
			First sampled line position First detector element	FIRST_SAMPLED_LINE_POSITION = "%s" FIRST_DETECTOR_ELEMENT_POSITION =	Direction of the first detector element (the direction	-1 : lead of -x plane "UPPERMOST "LEFT"
			position Radius of lunar shape (a	"%s" A_AXIS_RADIUS = %.3f <km></km>	in this scene:LEFT) Lunar radius in a axis. nnnn.nnn (indicate down to	
			axis) nnnn.nnn (indicate down to m)		meter order)	
			Radius of lunar shape (b axis)	B_AXIS_RADIUS = %.3f <km></km>	Lunar radius in b axis. nnnn.nnn (indicate down to meter order)	
			Radius of lunar shape (c axis)	C_AXIS_RADIUS = %.3f <km></km>	Lunar radius in c axis. nnnn.nnn (indicate down to meter order)	
			Defect pixel position (=element number)	DEFECT_PIXEL_POSITION = ((%d,%d,),(%d,%d,),)	The position of defect element (=element number) dealt as disregarded for image evaluation, as it has proved	MI-VIS:1~962/(in 962 elements) MI-NIR:1~320/(in 320 elements)
		Variator by a 1			not to be available because of its defect (black or white) at launching of the process.	
		Variaton by each instrument	t Filter name	FILTER_NAME = ("%s","%s","%s")	Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
		variation by each instrument			Contac unuslandth of the filter/period unlus)	
		variation by each histrument	Center filter wavelength	CENTER_FILTER_WAVELENGTH = (%.1f.%.1f.%.1f) <nm></nm>	Center wavelength of the filter(nominal value)	
		variation by each instrument	Center filter wavelength Bandwidth Base band of MI		Band width(full-width at half-maximum, nominal value) Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5"
		variation by each histrument	Bandwidth	(%.1f.%.1f.%.1f) <nm> BANDWIDTH = (%.1f.%.1f.%.1f) <nm></nm></nm>	Band width(full-width at half-maximum, nominal value)	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"

List 2.2-13(2/2) Details of PDS label (MI L2C2)

Pogion	I tom namo	Description format	Itam evaluation	I value
Region Description area of geometric data (latitude) object format	Item name	Description format OBJECT = GEOMETRIC_DATA_LATITUDE BINNING_START_PIXEL_POSITION =	Item explanation Start pixel position for thinning in this scene	value
	Thinnig start pixel position Thinnig interval	BINNING_START_PIXEL_POSITION = (%d,%d) BINNING_INTERVAL = %d	Start pixel position for thinnig in this scene	(1,1)
	Thinnig interval Number of lines	BINNING INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this	
	Number of line's samples	LINE_SAMPLES = %d	scene(direction of along track) Number of pixels along the horizontal axis of this	
			scene(direction of cross track · value detached dummy elements filled onboard)	
	Sample type Sample bits	SAMPLE TYPE = "%s" SAMPLE BITS = %d	Sample type Sample bit length	"IEEE REAL"
	Unit	UNIT = "%s" END_OBJECT =	Unit of sample value	"deg"
Description area of geometric data (longitude) object format	This is about alvel	GEOMETRIC DATA LATITUDE OBJECT = GEOMETRIC DATA_LONGITUDE	Chart givel and the fee things in this	(4.4)
	Thinnig start pixel position	(%d,%d)	Start pixel position for thinnig in this scene	(1,1)
	Thinnig interval Number of lines	BINNING_INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this	
	Number of line's samples	LINE_SAMPLES = %d	scene(direction of along track) Number of pixels along the horizontal axis of this	
		0.11015 77/05 ## #	scene(direction of cross track · value detached dummy elements filled onboard)	
	Sample type Sample bits	SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	Sample type Sample bit length	"IEEE_REAL"
	Unit	UNIT = "%s" END_OBJECT =	Unit of sample value	"deg"
Description area of image data object format	Number of nominal lines	GEOMETRIC DATA LONGITUDE OBJECT = IMAGE NOMINAL_LINE_NUMBER = %d	Number of anniant lines in this area (ast including	
	Number of nominal lines	NOMINAL_LINE_NUMBER = %d NOMINAL_OVERLAP_LINE_NUMBER =	Number of nominal lines in this scene(not including overlap lines) Number of nominal overlap lines in this scene	
	lines Number of overlap lines of	%d OVERLAP_LINE_NUMBER = %d	Number of real overlap lines (back part of data)	
	back data	OVEREAF_EINE_NOMBER = %d	If number of line is less than the number of nominal lines in this scene, it's described 0.	
	Number of bands Band storage type	BANDS = %d BAND STORAGE TYPE = "%s"	Number of bands Storage type of bands	4,5,9 "BAND SEQUENTIAL"
	Number of lines of an image	LINES = %d	Number of pixels along the vertical axis of this scene(direction of along track)	DAND SEQUENTIAL
	Number of line's samples of an image	LINE_SAMPLES = %d	Number of pixels along track) Scene(direction of cross track involving dummy	
	an image		elements on L2A(corresponding to the onboard dummy element), or value detached dummy elements filled	
	0	OANDLE TYPE III-II	onboard)	HMOD INTEGER
	Sample type Sample bits	SAMPLE TYPE = "%s" SAMPLE BITS = %2d IMAGE VALUE TYPE = "%e"	Sample type Sample bit length	"MSB_INTEGER" 16 "DN"[ND] "PADIANCE"[W/m2/micron/sr] "REFL
	Image value type	IMAGE_VALUE_TYPE = "%s"	Image value type	"DN"[ND], "RADIANCE"[W/m2/micron/sr], "REFL CTANCE"[ND]
	Unit	UNIT = "%s"	Unit of sample value	"ND", "W/m**2/micron/sr", "ND"
	Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value into physical quantity (first order coefficient)	
	Offset	OFFSET = %8.5e	Conversion coefficient used for converting DN value into physical quantity (constant term)	
	Minimum for statistical image evaluation, D1	MIN_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value could add office.	
	Maximum for statistical	MAX_FOR_STATISTICAL_EVALUATION		
	image evaluation, D2	= (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset.	When the surf
	Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	In this scene, maximum DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group	
	Minimum DN	SCENE_MINIMUM_DN = (%d, %d,)	excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e pixel whose DN value is greater than threshold D2	
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	In this scene, average DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Standard deviation DN	SCENE_STDEV_DN = (%.1f,%.1f,)	In this scene, standard deviation DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, mode DN value in the target group	
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Shadowed area minimum D5	SHADOWED_AREA_MINIMUM = (%d,%d,)	Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area maximum D6	SHADOWED_AREA_MAXIMUM = (%d,%d,	offset. Maximum DN value of output range for shadow	
	1,000)	discrimination, indicated as integral value scaled and offset.	
	Shadowed area percentage between D5 and D6	SHADOWED_AREA_PERCENTAGE = (%d,%d,)	Shadowed area percentage(round down after the decimal point). In this scene, pixel percentage whose DN value	When the number of samples for image quality assessment is 0, the value is set
		,	is between threshold D5 and threshold D6: a.dummy pixel filled onboard	-1.
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	
			the L2A process system c.pixel of element number disregarded from image	
			evaluation	
	Invalid type	INVALID_TYPE = ("%s", "%s",)	Invalid pixel type Registered in L2DB : three types of "saturation",	
			"negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Invalid value	INVALID_VALUE = (%d, %d,)	corrected error Invalid pixel value	
		,,,	Registered in L2DB : three types of "saturation", "negative value after calibration" and "others"	
			Not registered in L2DB : list of all calibrated and corrected error	
	Discontinue to the land	INVALID_PIXELS = ((%d,%d,	Invalid pixels Registered in L2DB : three types of "saturation",	
	Invalid pixels),(%d,%d,),)		î .
	Invalid pixels		"negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Value provided pixels out),(%d,%d,),)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing	
	Value provided pixels out of bounds pixels before resampling), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling	
	Value provided pixels out of bounds pixels before), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing	
escription area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling	
Description area of process parameter	Value provided pixels out of bounds pixels before resampling Number of pixels out of), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END OBJECT = IMAGE	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not	
escription area of process parameter	Value provided pixels out of bounds pixels before resampling Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard), (%d, %d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (.%d, %d,) END OBJECT = IMAGE OBJECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_OW_CODEF = (.%f, %f, %f, "c.") >= 1/(W/m**2/micron/sr) > STANDARD_GEOMETRY =	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle	(30.0, 0.0, 30.0)
escription area of process parameter	Value provided pixels out of bounds pixels before resampling Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction), (%d, %d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d, %d,) END_OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS REF_OUV_OUEF = (%f, %1, %1, ***) < 1/(W/m***2/micron/sr) > (%f, %1, ***) < 1/(W/m***2/micron/sr)	Not registered in L208: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted)	"USGS",
escription area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before. Reflectance conversion coefficient. Photometric standard geometry. Photometric correction identification.), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (.%d,%d,) END OBJECT = IMAGE OBJECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_ONV_OUEF = (.%f,%f,%r,~v)=vf(/W/m**2/micron/sr) STANDARD_GEOMETRY = (%,11,%,11) PHOTO_CORR_ID = "%s"	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type	· ·
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient), (%d, %d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d, %d,) END OBJECT = IMAGE BOUSECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_OW_OUEF = (%, 1%, 1%, "->+1/W/m**2/micron/sr) STANDARD_GEOMETRY = (%, 1%, %, 14%, ", 4, 11) PHOTO_CORR_ID = "%s" PHOTO_CORR_COEF = (%%, %e, %e,),)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected)	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OBJECT = IMAGE OBJECT = IMAGE OBJECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_OW_OUEF = (%,1%,%f,*') > +// (W/m**2/micron/sr) STANDARD_GEOMETRY = (%,1%,%1,1%,11,%,11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = (%,0,0,0,0,0,0,0) L2A_DEAD_PIXEL_THRESHOLD = (%d, %d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry. Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold), (%d, %d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d, %d,) END_OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS REF_OW_OOFF = (%, 1, %, 1, %, ->++/(Wm**2/micron/sr) STANDARD_GEOMETRY = (%, 1, %, 1, 1, %, 11, %, 11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e, %e, *e, *e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d, %d,) L2A_SATURATION_THRESHOLD = (%d, %d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image. Minimum threshold value to judge as saturation on L2A image.	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold), (%d, %d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d, %d,) END_OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS REF_OW_OOFF = (%, 1, %, 1, %, ->++/(Wm**2/micron/sr) STANDARD_GEOMETRY = (%, 1, %, 1, 1, %, 11, %, 11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e, %e, *e, *e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d, %d,) L2A_SATURATION_THRESHOLD = (%d, %d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction.	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before. Reflectance conversion coefficient. Photometric standard geometry. Photometric correction identification. Photometric correction coefficient. Dead pixel discrimination threshold. L2A saturation threshold. Dark current corrected valid minimum threshold.), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OBJECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_ON_COSEF = (%,1%,%f,%r)>=/1/(W/m**2/micron/sr) > STANDARD_GEOMETRY = (%,11,%,11,%,11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = (%d,%d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value).	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry. Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold L2A saturation threshold Dark current corrected), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS REF_OW_OOFF = (%,1,%,1,%,) //> STANDARD_GEOMETRY = (%,1,%,1,1,%,11,%,11) PHOTO_CORR_ID = "%s" PHOTO_CORR_COEF = ((%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) L2A_SATURATION_THRESHOLD = (%d,%d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold odiscriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction.	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before. Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold L2A saturation threshold Dark current corrected valid minimum threshold Frame transfer corrected valid minimum threshold), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_GBLECT = IMAGE OBJECT = PROCESSING_PARAMETERS REF_OW_COEF = (%1,%f,%f,-v)=Vf(W/m**2/micron/sr) STANDARD_GEOMETRY = (%.11,%,11,%,11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = %d	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if its negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted)	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold L2A saturation threshold Dark current corrected valid minimum threshold Frame transfer corrected), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OBJECT = IMAGE OBJECT = PROCESSING PARAMETERS REF_ON_COSEF = (%,1%,%f,%r)>=/1/(W/m**2/micron/sr) > STANDARD_GEOMETRY = (%,11,%,11,%,11) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = (%d,%d,)	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image It's indicated as physical quantity (real value). L'N/A" when not corrected) Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). L'N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after trame transfer correction. Indicate physical quantity (real value). L'N/A" when not corrected) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before expected by the pixels out of bounds pixels before. Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction identification Dead pixel discrimination threshold L2A saturation threshold Dark current corrected valid minimum threshold Frame transfer corrected valid minimum threshold Rediance conversion Rediance conversion), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OB_ECT = IMAGE OB_ECT = PROCESSINO_PARAMETERS REF_OW_ODEF = (%1,%f,%t,)<1/(W/m**2/micron/sr) STANDARD_GEOMETRY = ((%.1f,%f,%t,) (mathroad) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = (%d,%d,) FT_VALID_MINIMUM = %d RADIANCE_SATURATION_THRESHOLD = %f REF_SATURATION_THRESHOLD = %f</td <td>Not registered in L2DB: list of all calibrated and corrected error. Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Minimum threshold value to judge as dead pixel on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to validity if it is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation</td> <td>"USGS", "BROWN",</td>	Not registered in L2DB: list of all calibrated and corrected error. Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Minimum threshold value to judge as dead pixel on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to validity if it is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling Number of pixels out of bounds pixels before Reflectance conversion coefficient Photometric standard geometry Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold L2A saturation threshold Dark current corrected valid minimum threshold Frame transfer corrected valid minimum threshold Radiance conversion saturation threshold), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (.%d,%d,) END OBJECT = IMAGE OBJECT = IMAGE OBJECT = IMAGE OBJECT = TAMAGE OBJECT = (%d,%d,) PHOTO_CORR_COEF = (%d,%d,) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = %d FT_VALID_MINIMUM = %d RADIANCE_SATURATION_THRESHOLD = %f	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected) Minimum threshold value to judge as dead pixel on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be radiance convertions acturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as physical quantity (real value). ("N/A" when not physical quantity (real value). ("N/A" when not physical quantity (real value). ("N/A" when not after converting reflectance. It's indicated as physical quantity (real value). ("N/A" when not	"USGS", "BROWN",
Description area of process parameter	Value provided pixels out of bounds pixels before resampling. Number of pixels out of bounds pixels before Dounds pixels before Reflectance conversion coefficient Photometric standard geometry. Photometric correction identification Photometric correction coefficient Dead pixel discrimination threshold L2A saturation threshold Dark current corrected valid minimum threshold Frame transfer corrected valid minimum threshold Rediance conversion saturation threshold Reflectance conversion saturation threshold), (%d,%d,),) OUT_OF_IMAGE_BOUNDS_VALUE = %d OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END_OB_ECT = IMAGE OB_ECT = PROCESSINO_PARAMETERS REF_OW_ODEF = (%1,%f,%t,)<1/(W/m**2/micron/sr) STANDARD_GEOMETRY = ((%.1f,%f,%t,) (mathroad) PHOTO_CORR_ID = *%s* PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,%e,),) L2A_DEAD_PIXEL_THRESHOLD = (%d,%d,) DARK_VALID_MINIMUM = (%d,%d,) FT_VALID_MINIMUM = %d RADIANCE_SATURATION_THRESHOLD = %f REF_SATURATION_THRESHOLD = %f</td <td>Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected). Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after farme transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as</td> <td>"USGS", "BROWN",</td>	Not registered in L2DB: list of all calibrated and corrected error Value provided to the pixel originally not existing before resampling Numer of pixel originally not existing before resampling Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type Coefficient of photometric correction formula ("N/A" when not corrected). Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A image Minimum threshold to discriminate its validity as if it is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after farme transfer correction. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as	"USGS", "BROWN",

List 2.2-14(1/2) Details of PDS label (MI MAP)

	Region r PDS header		Item name PDS version identification	Description format PDS VERSION ID = "%s"	Item explanation PDS version identification	"PDS3"
	PDS Header		File record type	RECORD TYPE = "%s" FILE NAME = "%s"	File record type (prerequisite for L2DB registration) File name (prerequisite for L2DB) (uniquely decidable	"UNDEFINED" ***.img
			Product identification (PDS	_	file name. involving extension(.img) Product identification (uniquely decidable file name,	***(no extension)
			practice) Data file format	DATA_FORMAT = "%s"	not involving extension) Data file format identification (prerequisite for L2DB	"PDS"
ea specifying object	t position		identification Starting position of geometric data (altitude)	^GEOMETRIC_DATA_ALTITUDE = %d <bytes></bytes>	registration) Starting position of geometric data (altitude)(in Byte). This keyword may be omitted.	
			Starting position of image object	^IMAGE = %d <bytes></bytes>	Starting position of image object(in Byte)	
oduct information	File attribu	е	Software name Software version	SOFTWARE NAME = "%s" SOFTWARE VERSION = "%s"	Software name used for creating PDS product Software version used for creating PDS product	"RGC TC MI" n.n.n
			Process version identification	PROCESS_VERSION_ID = "%s"	Process version identification (prerequisite for L2DB registration)	"MAP", "MSC"
	David and a state		Product creation time Program start time	PRODUCT CREATION TIME = %s PROGRAM START TIME = %s	Product creation time(UTC) Program start time (UTC)	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product attr	bute	Producer identification Product set identification	PRODUCER ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB registration)	"LISM" "MI_MAP", "MI-VIS MAP".
					The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"MI-NIR_MAP", "Others"
			Product version identification	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB (prerequisite for L2DB registration)	"00 " ~ " 99 "
			Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of	"Y" or "N"
			Source data file name(L2A)	LEVEL2A_FILE_NAME = ({"%s",	registration in L2DB. Source data file names used for creating this PDS	***.img
			SPICE metakernel file name	"%s"}.{"%s". "%s"}) SPICE_METAKERNEL_FILE_NAME =	product. This keyword may be omitted. SPICE metakernel file names used for creating PDS	
	Scene	Common to each instrument	Mission name	("%s" "%s") MISSION_NAME = "%s"	product. This keyword may be omitted. Mission name	"SELENE"
	attribute		Spacecraft name Data set identification	SPACECRAFT NAME = "%s" DATA SET ID = "%s"	Spacecraft name Data set identification in which included this scene.	"SELENE-M"
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB registration)	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared"
			Instrument identification	INSTRUMENT ID = "%s"	Instrument identification	When 9 bands are cubed: "Multiband Image "MI-VIS", "MI-NIR", "MI"
			Observation target name Observation mode	TARGET_NAME = "%s" OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode identification	"MOON" (default) "NORMAL":normal
			identification			"SUPPORT":support "NORMAL&SUPPORT":normal and support imag
			Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description.	mosaic in TC MAP/MSC
					(e.g.TC:scan mode, TC1/2relative mounting angle, element number of used detector, focal length, F value, IFOV, field of view angle, range of	
					value, IFOV, field of View angle, range of wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of	
			Sensor description 2	SENSOR DESCRIPTION2 = "%s"	exposure mode. Bit number of AD converter) Alternative sensor description	
		Variaton by each instrument	Filter name	FILTER_NAME = ("%s","%s","%s")	Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
			Center filter wavelength	CENTER_FILTER_WAVELENGTH = (%.1f.%.1f,%.1f) <nm></nm>	Center wavelength of the filter(nominal value)	
			Bandwidth Base band of MI	BANDWIDTH = (%.1f,%.1f,%.1f) <nm> BASE_BAND = "%s"</nm>	Band width(full-width at half-maximum, nominal value) Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5"
scription area of ge	eometric data (a	Ititude) object format	Thinnig start pixel	OBJECT = GEOMETRIC DATA ALTITUDE BINNING_START_PIXEL_POSITION =	This keyword may be omitted. Start pixel position for thinnig in this scene	"MN1". "MN2". "MN3". "MN4" (1,1)
			position Thinnig interval	(%d,%d) BINNING INTERVAL = %d	Thinnig interval	(1,1)
			Number of lines	LINES = %d	Number of pixels along the vertical axis of this scene.	
			Number of line's samples	LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this scene.	
			Sample type Sample bits	SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	Sample type Sample bit length	"IEEE_REAL" 32
nonlint! · · · ·	ann det de	format	Unit	UNIT = "%s" END OBJECT =	Unit of sample value	"km"
escription area of image	nage data object	rormat	Number of bands	OBJECT = IMAGE BANDS = %d BAND STORAGE TYPE = "%e"	Number of bands	4,5,9
			Band storage type Number of lines of an image	BAND_STORAGE_TYPE = "%s" LINES = %d	Storage type of bands Number of pixels along the vertical axis of this scene.	"BAND SEQUENTIAL"
			Number of line's samples of an image	LINE_SAMPLES = %d	Scene. Number of pixels along the horizontal axis of this scene.	
			Sample type Sample bits	SAMPLE TYPE = "%s" SAMPLE BITS = %2d	Sample type Sample bit length	"MSB_INTEGER" 16
			Image value type	IMAGE_VALUE_TYPE = "%s"	Image value type	"DN"[ND], "RADIANCE"[W/m2/micron/sr], "REF
			Unit Scaling factor	UNIT = "%s" SCALING_FACTOR = %8.5e	Unit of sample value Conversion coefficient used for converting DN value	"ND", "W/m**2/micron/sr", "ND"
			Offset	OFFSET = %8.5e	into physical quantity (first order coefficient) Conversion coefficient used for converting DN value	
			Minimum for statistical image evaluation, D1	MIN_FOR_STATISTICAL_EVALUATION	into physical quantity (constant term) Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
			Maximum for statistical	= (%d,%d,) MAX_FOR_STATISTICAL_EVALUATION	scaled and offset.	
			image evaluation, D2	= (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset.	
			Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	In this scene, maximum DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is so
					a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
					the L2A process system c.pixel of element number disregarded from image	
				1		
					evaluation and	
			Minimum DV	COEME HIMINER SHE ("	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	When the suctor of
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following:	
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image	quality assessment is 0, the value is s
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and	quality assessment is 0, the value is s
			Minimum DN	SCENE_MINIMUM_DN = (%d, %d,) SCENE_AVERAGE_DN = (%.1f,%.1f,	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	quality assessment is 0, the value is s
					and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard	quality assessment is 0, the value is s -1. When the number of samples for image
				SCENE_AVERAGE_DN = (%.1f,%.1f,	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system	quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s
				SCENE_AVERAGE_DN = (%.1f,%.1f,	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is a greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s
				SCENE_AVERAGE_DN = (%.1f,%.1f,	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 d.pixel whose DN value is less than threshold D1	quality assessment is 0, the value is s-1. When the number of samples for image quality assessment is 0, the value is s-
				SCENE_AVERAGE_DN = (%.1f,%.1f,	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is nreater than threshold D1 e.pixel whose DN value is nreater than threshold D1 le.pixel whose DN value is nreater than threshold D1 le.pixel whose DN value is nreater than threshold D2 In this scene, standard deviation DN value in the	quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1. When the number of samples for image
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard	quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1. When the number of samples for image
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is a greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled onboard b.dummy pixel filled onboard b.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system	quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 lor his scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation	quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the value is since the number of samples for image quality assessment is 0, the value is since the val
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 la.pixel whose DN value is less than threshold D1 la.pixel whose DN value is less than threshold D1 la.pixel whose DN value is less than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1	quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the number of samples for image quality assessment is 0, the value is since the value is since the number of samples for image quality assessment is 0, the value is since the val
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is a reater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN value is neater than threshold D1 e.pixel whose DN	quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s -1. When the number of samples for image quality assessment is 0, the value is s -1.
			Average DN Standard deviation DN	SCENE_AVERAGE_DN = (%.1f,%.1f,) SCENE_STDEV_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is a greater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel vhose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D1	quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1.
			Average DN Standard deviation DN	SCENE_AVERAGE_DN = (%.1f,%.1f,) SCENE_STDEV_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is areater than threshold D2 lin this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D2 In this scene, mode DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the L2A process system	quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1.
			Average DN Standard deviation DN	SCENE_AVERAGE_DN = (%.1f,%.1f,) SCENE_STDEV_DN = (%.1f,%.1f,)	and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is a creater than threshold D2 In this scene, average DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this scene, standard deviation DN value in the target group excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D1 e.pixel whose DN value is less than threshold D2 In this scene, mode DN value in the target group excluded the following: a.dummy pixel filled on board b.dummy pixel filled on the failure of restoration in	quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1. When the number of samples for image quality assessment is 0, the value is so -1.

List 2.2-14(2/2) Details of PDS label (MI MAP)

Region	Item name	Description format	Item explanation	value
Description area of image data object format	Shadowed area minimum D5	SHADOWED_AREA_MINIMUM = (%d,%d,)	Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area maximum D6	SHADOWED_AREA_MAXIMUM = (%d,%d,	Maximum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area percentage between D5 and D6	SHADOWED_AREA_PERCENTAGE = (%d,%d,)	Shadowed area percentage(round down after the decimal	When the number of samples for image quality assessment is 0, the value is set
		(, ,,	is between threshold D5 and threshold D6: a.dummy pixel filled onboard	-1.
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	
			the L2A process system	
	La all'I de sa	INDIAL ID TVDE (IIV.II IIV.II)	c.pixel of element number disregarded from image evaluation	
	Invalid type	INVALID_TYPE = ("%s", "%s",)	Registered in L2DB : three types of "saturation",	
			"negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Invalid value	INVALID_VALUE = (%d, %d,)	corrected error Invalid pixel value	
			Registered in L2DB : three types of "saturation", "negative value after calibration" and "others"	
			Not registered in L2DB: list of all calibrated and corrected error	
	Invalid pixels	INVALID_PIXELS = ((%d,%d,),(%d,%d,),)	Invalid pixels Registered in L2DB : three types of "saturation",	
		, (,, ,,	"negative value after calibration" and "others" Not registered in L2DB: list of all calibrated and	
	Value provided pixels out	OUT OF IMAGE BOUNDS VALUE - %d	corrected error Value provided to the pixel originally not existing	
	of bounds pixels before resampling	551_51_1mitst_5551155_171252 = %d	before resampling	
	Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,)	Numer of pixel originally not existing before resampling	
	Stretched flag	STRETCHED_FLAG = %s	Flag to indicate whether a data has been streched to	"FALSE"
Description and of the residential		END OBJECT = IMAGE	be easily viewable for external output.	
Description area of map projection	Map projection type	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Map projection type	
	Coordinate system type Coordinate system name	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Fixed coordinate system of celestial body Original point is mass center of celestial body,	"BODY-FIXED ROTATING" "PLANETOCENTIC"
			latitude is positive in northhemisphere and longitude is positive in east longitude.	
	A axis radius B axis radius	A_AXIS_RADIUS = %8.1f <km> B AXIS RADIUS = %8.1f <km></km></km>	Lunar radius in a axis Lunar radius in b axis	1737.4 <km> 1737.4 <km></km></km>
	C axis radius First standard parallel	C_AXIS_RADIUS = %8.1f <km> FIRST_STANDARD_PARALLEL = %f</km>	Lunar radius in c axis the point of tangency between the sphere of the planet	1737.4 <km> "N/A"except that map projection is LCC</km>
	Second standard parallel	<pre><deg> SECOND_STANDARD_PARALLEL = %f</deg></pre>	and the cone of the projection. the intersection lines between the sphere of the	"N/A"except that map projection is LCC
	Positive longitude	<deg> POSITIVE_LONGITUDE_DIRECTION =</deg>	planet and the cone of the projection. Positive direction of longitude	"EAST"
	direction Center latitude	"%s" CENTER_LATITUDE = %11.8f <deg></deg>	Latitude being original point of coordinate system in	
	Center longitude	CENTER_LONGITUDE = %12.8f <deg></deg>	map projection Longitude being original point of coordinate system in	
	Reference latitude	REFERENCE_LATITUDE =	map projection the new zero latitude in a rotated spherical	"N/A"
	Reference longitude	%11.8f <deg> REFERENCE LONGITUDE =</deg>	the lew zero ratified in a rotated spherical coordinate that was used in a given the zero longitude in a rotated spherical coordinate	"N/A"
	Line first pixel	%12.8f <deg> LINE_FIRST_PIXEL = %d</deg>	Line number of upper end of this scene	1
	Line last pixel	LINE_LAST_PIXEL = %d	Line number of lower end of this scene	
	Sample first pixel Sample last pixel	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d	Sample number of left end of this scene Sample number of right end of this scene	
	Map projection rotation	MAP_PROJECTION_ROTATION = %f	Rotation angle to map projection coordinate system of this scene	0.0
	Map resolution Map scale	MAP_RESOLUTION = %f MAP_SCALE = %f <km pixel=""></km>	Map resolution <pixel deg=""> Map scale <km pixel=""></km></pixel>	
	Maximum latitude Minimum latitude	MINIMUM_LATITUDE = %11.8f <deg></deg>	Center latitude of northernmost pixel. Center latitude of southernmost pixel.	
	Easternmost longitude	EASTERNMOST_LONGITUDE = %12.8f <deg></deg>	Center longitude of easternmost pixel.	
	Westernmost longitude	WESTERNMOST_LONGITUDE = %12.8f <deg></deg>	Center longitude of westernmost pixel.	
	The line offset value from the map projection origin	LINE_PROJECTION_OFFSET = %f <pixel></pixel>	The vertical offset value from the map projection origin (line and sample 1.1)[pixel].	
	The sample offset value from the map projection	SAMPLE_PROJECTION_OFFSET = %f <pixel></pixel>	The horizontal offset value from the map projection origin (line and sample 1.1)[pixel].	
Description area of process parameter	,	END OBJECT = IMAGE MAP PROJECTION OBJECT = PROCESSING_PARAMETERS		
	Dark current correction coefficient file name	DARK_FILE_NAME = {"%s", "%s"}	Dark current correction coefficient file name ("N/A" when not corrected). This keyword may be omitted.	
	Frame transfer correction formula coefficient file	FT_FILE_NAME = "%s"	Frame transfer correction formula coefficient file name ("N/A" when not corrected). This keyword may be	
	name Flat field correction	FLAT_FILE_NAME = {"%s", "%s"}	omitted. Flat field correction coefficient file name ("N/A"	
	coefficient file name Coefficient file name of	EFFIC_FILE_NAME = { "%s", "%s"}	when not corrected). This keyword may be omitted. Coefficient file name of temperature dependency	
	temperature dependency	LITTO_TILL_WANL = { %5 , %5 }	correction of transmittance efficiency ("N/A" when not	
	correction of transmittance efficiency	MONITIN ELLE MALE CRACE HAS TO	corrected). This keyword may be omitted.	
	File name of non-linearity correction coefficient	NUNLIN_FILE_NAME = { "%S", "%S"}	File name of non-linearity correction coefficient ("N/A" when not corrected). This keyword may be	
	Radiance conversion	RAD_CNV_COEF =	omitted. Radiance conversion coefficient:indicate all value	
	coefficient	(%f,%f,%f,) <w m**2="" micron="" sr=""></w>	every band [W/m2/micron/sr] ("N/A" when not converted) . This keyword may be omitted.	
	Reflectance conversion coefficient	REF_CNV_COEF = (%f,%f,%f,···)<1/(W/m**2/micron/sr)	Coefficient for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not	
	Photometric standard	> STANDARD_GEOMETRY =	converted)	(30.0, 0.0, 30.0)
	geometry Photometric correction	(%.1f,%.1f,%.1f) PHOTO_CORR_ID = "%s"	and phase angle for photometric correction. Photometric correction formula type	"USGS".
	identification			"BROWN", "LISM ORIGINAL", "N/A"
	Photometric correction coefficient	PHOTO_CORR_COEF = ((%e,%e,%e,*e,),)	Coefficient of photometric correction formula ("N/A" when not corrected)	E. OIII ONTOTINE , III/A
	Resampling method		Interpolation method of resampling	"Nearest Neighbor", "Bi-Linear",
	Geometrie data matetina	TOO MOSALO ELLE MAME HAL-H	Source TC ortho data file new word for resulting	"Cubic Convolution"
	Geometric data matching original TC-Ortho data	TCO_MOSAIC_FILE_NAME = "%s"	Source TC ortho data file name used for providing geometric data. This keyword may be omitted.	***.img
	mosaic file name Geometric data matching	DTM_MOSAIC_FILE_NAME = "%s"	Source DTM data file name used for providing geometric	***.dtm
	original DTM data mosaic	OVEDLAD OF FOTION IS	data. This keyword may be omitted.	
	Overlap selection identification	OVERLAP_SELECTION_ID = "%s"	Method for processing overlap.	N/A CORRELATIONA CORRELATIONO
	Matching mosaic on creating	MATCHING_MOSAIC = "%s"	Matching method	N/A,CORRELATION1,CORRELATION2, SSDA1,SSDA2,SSDA3,SSDA4
	Dead pixel discrimination threshold	%d,)	Maximum pixel value to judge as dead pixel on L2A image	
	L2A saturation threshold	L2A_SATURATION_THRESHOLD = (%d, %d,)	Minimum threshold value to judge as saturation on L2A image	
	Dark current corrected valid minimum threshold	DARK_VALID_MINIMUM = (%d,%d,)	Minimum threshold to discriminate its validity as if it is negative value after dark current correction.	
			It's indicated as physical quantity (real value). ("N/A" when not corrected)	
	Carra transfer accepted	FT_VALID_MINIMUM = %d	Minimum threshold to discriminate its validity if it is negative value after frame transfer correction.	
	Frame transfer corrected valid minimum threshold			
			Indicate physical quantity (real value). ("N/A" when not converted)	
	valid minimum threshold Radiance conversion	RADIANCE_SATURATION_THRESHOLD = %f	not converted) Minimum threshold to discriminate to be radiance	
	valid minimum threshold Radiance conversion saturation threshold	% f	not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("M/A" when not converted)	
	valid minimum threshold Radiance conversion	% f	not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("M/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as	
	valid minimum threshold Radiance conversion saturation threshold Reflectance conversion	%f REF_SATURATION_THRESHOLD = %f	not converted) Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation	

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(2)Geometric data object

MI geometric data object is the one given to after L2C product, and L2C2 is latitude and longitude data, and on MAP is altitude data object. These geometric data are format of binary two dimensional array data.

Geometric data of L2C2 is recorded after being thinned if all absolute values of the image latitude are not greater than 89 degree. Thinning interval is 8 pixels in Mi-VIS and 4 pixels in MI-NIR (default value, separately set as needed). When the number of horizontal or vertical pixels of the image is not "multiples of thinning interval plus 1", they are maximum size of "multiples of thinning interval plus 1" in the image.

The specifications of geometric data object are shown in the List 2.2-15.

List 2.2-15 Specifications of binary two dimensional array data on geometric data object

Data type	Unit	Definition	
Latitude	deg	-90~90	
Longitude	deg	East longitude 0~360	
Altitude	km	Distance from lunar radius sphere	

Level	Number of bits	Туре	Byte order	
L2C	64	Real number	big endian	
MAP	32	Real number	big endian	

C	Level/	With or without	Number of geometric	
Sensor	geometric correction option	thinning	data points in a line	
	L2C2	with	121	
MI-VIS	LZCZ	without	962	
I	MAP	without	Different by image	
	1.000	with	80	
MI-NIR	L2C2	without	320	
	MAP	without	Different by image	

(3)Image data object

Image data object of MI is the format of binary two dimensional array data. On MI RGC PDS product files, there is one image data object per one file regardless of with or without being cubed. On the case of cubed data set, the same number of image data as cubed bands are recorded in one image data object in BSQ format. On whether to be cubed by level/geometric correction options, refer to the List 2.2-1

The specifications of MI image data object are shown in the List 2.2-16.

List 2.2-16 Specifications of binary two dimensional array data on image data object

Process level	Data type	Unit	Remarks column
L2B	Radiance*	W/m²/µm/sr	Integral value of image data is the
L2C, MAP,	Reflectance *	ND	value scaled and offset.

^{*} In processing to create parameters for data calibration, there are the cases of difference in data type

Number of bits	16
Туре	Integral number
Byte order	big endian

Sensor	Level/ geometric correction option	Number of pixels in a line
MI VIS	L2B2, L2C2	962
MI-VIS	MAP	Different by image
MI NIID	L2B2, L2C2	320
MI-NIR	MAP	Different by image

2.2.5 MI low resolution data file

Low resolution data file is the image file in binary two dimensional array data format created for MAP data set, not having the header, and is created by thinning image data object of all bands of MAP PDS product file.

Because this data file is the one used for the internal process of L2DB system, even if you send the request of getting data to L2DB system and obtain RGC data set, it is not included in L2DB product obtained.

The specifications of low resolution data file are shown in the List 2.2-17.

List 2.2-17 Specifications of low resolution data file

Data type	Reflectance [ND]: Integral value of pixel number is the value scaled			
	and offset. (Pixel value of image data object of PDS product file is			
	used as is.)			
Resolution	128 [pixel/deg]			
Area of image data	Same as MAP PDS product file image data object			
Number of bits	16			
Туре	Integral number			
Byte order	big endian			

2.3 SP

RGC data set of SP is broken into the following 4 process levels.

- ·L2B1 data
- ·L2B2 data
- ·L2C data
- ·L2D data

RGC data set of SP is created by tar-archiving the following files. Depending on a parameter value, there are the cases that the original resolution JPEG image file is not included in the RGC data set of SP.

- ·Catalog information file
- ·Thumbnail file
- ·PDS product file
- ·Original resolution JPEG image file

Among above, the thumbnail file and the original resolution JPEG image file are not SP own data, but they are JPEG files generated from L2A data set of TC or MI acquired at the same time of SP observation, and is attached after L2B2.

In the Figure 2.3-1, the composition of SP L2B1 RGC data is shown and in the Figure 2.3-2, the one of SP L2B2, L2C and L2D RGC data set is shown.

On aforesaid each file, the file nomenclature rule is described in the List 2.3-1, List 2.3-2 and the details of each file are described below.

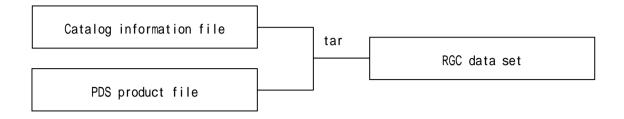
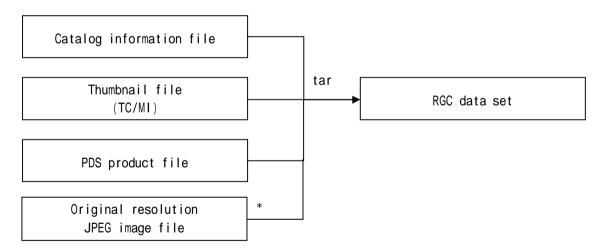


Figure 2.3-1 Composition of SP RGC data set (L2B1)



* There are some cases the original resolution JPEG image file is not included in the RGC data set of SP.

Figure 2.3-2 Composition of SP RGC data set (L2B2, L2C, L2D)

List 2.3-1 File nomenclature rule of SP (L2B1)

No.	Starting position	Length (byte)	Set value
1	1	3	Sensor type SP:fixation
2	4	3	Process level / geometric correction option 2B1:fixation
3	7	1	Underscore _:fixation
4	8	2	Registered version in L2DB or individualized data set ID nn:2-digit number(registered version in L2DB) number and alphabet of big or small letters (individualized data set ID)
5	10	1	Underscore _:fixation
6	11	5	Lunar revolution number nnnnn:5-digit number
7	16	1	Underscore _:fixation
8	17	1	Rev. number involving in product 1~9, Z (Z represents 10 and above)
9	18	1	Determination of day and night
10	19	1	Lightning of calibration lamp N, B, R, W N:non-lightning B:lightning of both radiance lamp and wavelength lamp R:lightning of only radiance lamp W:lightning of only wavelength lamp
11	20	1	Number of L2A scene on high resolution mode 0~9, Z (Z represents 10 and above)
12	21	5	Longitude of the point of lowest latitude in dayside Ennnn:E shows east longitude E00000~E35999 (two decimal places, but omit decimal point) NIGHT_ (when all lines are in nightside)
13	26	1	With or without roll cant operation N, R N:without roll cant R:with roll cant
14	27	4	Extension .spc:RGC PDS product file .ctg:catalog information file .sl2:RGC data set
	Total	30	

List 2.3-2 File nomenclature rule of SP (L2B2, L2C, L2D)

No.	Starting position	Length(byte)	Set value
1	1	3	Sensor type SP_:fixation
2	4	3(2)	Process level / geometric correction option 2B2:2B2(level 2B2) 2C :2C (level 2C) 2D :2D (level 2D)
3	7(6)	1	Underscore _:fixation
4	8(7)	2	Registered version in L2DB or individualized data set ID nn:2-digit number(registered version in L2DB) number and alphabet of big or small letters (individualized data set ID)
5	10(9)	1	Underscore :fixation
6	11(10)	5	Lunar revolution number nnnnn:5-digit number
7	16(15)	1	Underscore :fixation
8	17(16)	1	Discrimination of north or south hemisphere on latitude of the data column center N:North hemisphere S:South hemisphere
9	18(17)	3	Latitude of the data column center(deg) nnn:3-digit number, round the second decimal place to one decimal place, but omit the decimal point nnn=000 ~900
10	21(20)	1	Underscore _:fixation
11	22(21)	5	Longitude of the data column center(deg) Ennnn:E shows east longitude nnnn:4-digit number, round the second decimal place to one decimal place, but omit the decimal point nnnn=0000~3600
12	27(26)	4	Extension .spc:RGC PDS product file .jpg:thumbnail file(after L2B2) .ctg:catalog information file .sl2:RGC data set
	Total	30:L2B2 29:L2C, L2I)

The numbers out of () in the columns of "Starting Position" and "Length(byte)" are the case of L2B2, and the numbers in () are the cases of L2C and L2D.

The original resolution JPEG image file is named according to the file nomenclature rule of the thumbnail file. But "P" is added before extension.

2.3.1 SP catalog information file

Catalog information file is the information file attached to explain the general of RGC PDS product and is used to search for product from L2DB subsystem.

The details of items in the catalog information file are shown in the list of List 2.3-3.In theList 2.3-4, the details of free keyword items are shown.

And on each item of catalog information, value is basis of zero suppression in the absence of mentioning of particular reference.

List 2.3-3 Details of items in SP catalog information file

Item name	Keyword	Format of set value	Set contents
Data file name	DataFileName	AAAAAAAA (up to 31-digit)	RGC PDS product name
Data file size	DataFileSize	NNNNNNNNNNNNNNNN (up to 12-digit)	RGC PDS product file size
Data file format	DataFileFormat	AAAAAAAA (up to 16-digit)	RGC PDS product file format
Thumbnail file name ^{*1)}	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name (after L2B2)
Thumbnail file size*1)	ThumbnailFileSize	NNNNNNNNNNN (up to 12-digit)	Thumbnail file size (after L2B2)
Thumbnail file format ^{*1)}	ThumbnailFileFormat	AAAA (up to 4-digit)	JPEG:fixation (after L2B2)
Instrument name	InstrumentName	AAAAAAAA (up to 16-digit)	LISM:fixation
Processing level	ProcessingLevel	AAAAAAAA (up to 16-digit)	L2B1:L2B L2B2:L2B L2C:L2C L2D:L2D Others:Others
Product identification	ProductID	AAAAAAAA (up to 30-digit)	SP_Leve12B1:L2B1 SP_Leve12B2:L2B2 SP_Leve12C :L2C SP_Leve12D :L2D Others:Others
Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn:L2DB registered version
Access level	AccessLevel	N	Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	Start date and time of this scene (same contents as "start time (UT)"of PDS label)
End date and time of data	EndDateTime	yyyy-mm-ddT hh:mm:ss.ssssszZ	Stop date and time of this scene (same contents as "stop time (UT)" of PDS label)
Lunar revolution number	RevoNumber	NNNNNNNNNN (up to 10-digit)	Lunar revolution number provided by LISM
Strip number	StripNumber	NNNNNNNNNN (up to 10-digit)	Strip number
Scene number	SceneNumber	NNNNNNNNNN (up to 10-digit)	Scene number
Location flag	LocationFlag	А	Direction of the spacecraft orbit at the start time of this scene A:ascending D:descending N:involving north pole S:involving south pole W:involving both poles
Upper left latitude of the scene	UpperLeftLatitude	SNN.NNNNNN	[-90, 90]
Upper left longitude of the scene	UpperLeftLongitude	NNN . NNNNNN	[0, 360)
Upper right latitude of the scene Upper right longitude of the scene	UpperRightLatitude UpperRightLongitude	SNN . NNNNNN NNN . NNNNNN	[-90, 90] [0, 360)
Lower left latitude of the scene	LowerLeftLatitude	SNN . NNNNNN	[-90, 90]
Lower left longitude of the scene	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of the scene Lower right longitude of the scene	LowerRightLatitude LowerRightLongitude	SNN . NNNNNN NNN . NNNNNN	[-90, 90] [0, 360)
Free keyword	FreeKeyword	I ALATA * (ALATAIALAIA)	Refer to the list 2.3-3

 $^{^*1)}$ Data of thumbnail file is not output in L2B1

List 2.3-4 Details of free keyword items in SP catalog information file

LIDU WIG	Document of the control	Word Remis in ST editing information the			
Item name	Keyword	Type	Format of set value	Set contents	
Observation mode	ObservationMode	Character string	AAAA (un to 4-digit)	OBS : observation DARK : dark LAMP : calibration	
Resolution	Resolution	Character string	$\Delta \Delta \bullet \bullet \bullet \Delta \Delta$	NORMAL: normal HIGH: high spatial resolution	
Rollcant	RollCant	Character string	AAA (up to 3-digit)	YES/NO	

2.3.2 SP thumbnail file

Thumbnail file of SP data set is not SP own data, but is attached as a JPEG file made from L2A data set of TC or MI acquired at the same time of SP observation to show the location on the moon observed by SP. Before that, the image in the L2A data set of TC or MI is made dark current and flat field correction (only for MI), cut the compression dummies off, and scaled to 512 pixels or less. Although SP data are constantly arranged top-to-bottom in time series, there are any cases they don't coincide with the direction of the thumbnail file. On the details, refer to Appendix1.

Thumbnail file is the reduced image of image data object included in L2A data set, and is the JPEG format image. And on the details of JPEG, refer to the reference books (2).

The specifications of thumbnail are described in the List 2.3-5.

List 2.3-5 Specifications of thumbnail file

Dand	Number of	Number of	File size	Format	
Detector	Band number	horizontal	vertical		
	number	pixels	pixels		
TC	N/A				
MI-VIS	2	512 or less	512 or less	100kb or less	8bitJPEG
MI-NIR	3				

When the size of image data object is smaller than the aforesaid size, the size of thumbnail file is the same as one of the image data object.

The band number is a default value.

2.3.3 SP PDS product file

RGC PDS product file of SP is the PDS file in attached format, and is composed of PDS label segment (header segment), ancillary and supplementary data object and spectrum data object.

PDS label is recorded in text format and ancillary and supplementary data object and image data object are recorded in binary format.

The composition of SP RGC PDS product file is shown in the Figure 2.3-3 and the format of SP RGC PDS product file is shown in the Figure 2.3-4.

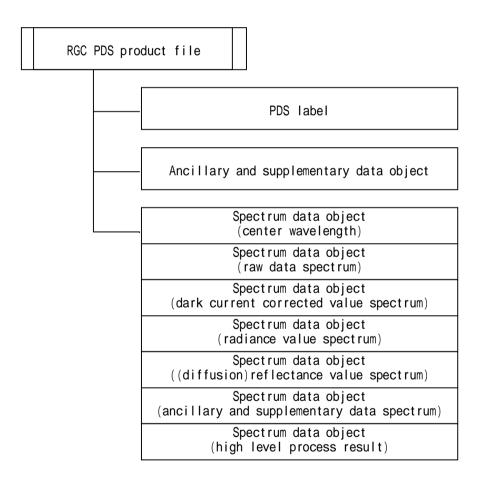


Figure 2.3-3 Composition of SP RGC PDS product file

PDS label	·Prerequisite items for PDS header					
	Version identification					
	·Area specifying object position					
	Pointer to all objects					
	Product information	·File attribute				
		e.g. file name, creating date, update date				
		· Product attribute				
		e.g. software name used for creating product,				
		producer identification, source data file name				
		Scene	·Common to each instrument			
		attribute	e.g. start time of the scene,			
			stop time of the scene			
			observation mode name			
			·Variation by each instrument			
			e.g. observation parameters, status			
	·Description area of an	ncillary and supp	olementary data object format			
	Provision of format fo	r describing and	illary and supplementary data			
	object					
	·Description area of sp	Description area of spectrum data object format(central wavelength)				
	size, bit length • Description area of spectrum data object format(raw data spectrum)					
	·Description area of spectrum data object format(dark current corrected					
	value spectrum)					
	·Description area of spectrum data object format(radiance value spectrum)					
	Description area of sp value spectrum)	escription area of spectrum data object format((diffusion)reflectance				
	_	ectrum data obi	ect format(ancillary and			
	supplementary data s	· ·	cet formationary and			
			ect format(high level process			
	result)	ectrum data obj	eet format(ingir iever process			
·Ancillary and s	supplementary data obje	ct				
· ·	er lines, ex. space craft of		temperature			
	object (central waveleng		-			
e.g. size, bit ler	ngth					
·Spectrum data	nta object(raw data spectrum)					
·Spectrum data	object format(dark curr	ent corrected va	lue spectrum)			
·Spectrum data	object(radiance value sp	pectrum)				
-	object(diffusion)reflecta		rum)			
-	a object(ancillary and supplementary data spectrum)					
·Spectrum data	object(high level process	s result)				

Figure 2.3-4 Format of SP RGC PDS product file

(1)PDS label

The details of PDS label of SP RGC PDS product file are shown in the list of List 2.3-6.

And on the case that the set value of PDS label is numeric value, if it does not fulfill maximum digit number, it is left-aligned by zero suppression in the absence of mentioning of particular reference.

List 2.3-6(1/5) Details of PDS label (SP)

			List			
Prerequisite items for	Region r PDS header		Item name PDS version identification	Description format PDS_VERSION_ID = "%s"	Item explanation PDS version identification	value "PDS3"
.,			File record type File name (L2DB regulation)	RECORD_TYPE = "%s" FILE NAME = "%s"	File record type (prerequisite for L2DB) File name (prerequisite for L2DB)(uniquely	"UNDEFINED" ***.spc
			Product identification (PDS practice)	PRODUCT_ID = "%s"	decidable file name, involving extension(.img) Product identification (uniquely decidable product	***(no extension)
			Data file format identification	DATA_FORMAT = "%s"	identification, not involving extension) Data file format identification (prerequisite for	"PDS"
Area specifying object	t position		Starting position of ancillary and supplementary data	^ANCILLARY_AND_SUPPLEMENT_DATA = %d <bytes></bytes>	Starting position of ancillary and supplementary data object(in Byte)	
			Starting position of SP spectrum center wavelength object	^SP_SPECTRUM_WAV = %d <bytes></bytes>	Starting position of SP spectrum center wavelength object(in Byte)	
			Starting position of SP spectrum raw data object	^SP_SPECTRUM_RAW = %d <bytes></bytes>	Starting position of SP spectrum raw data object(in Byte)	
			Starting position of SP spectrum dark current estimate value object	^SP_SPECTRUM_DAR = %d <bytes></bytes>	Starting position of SP spectrum dark current estimate value object(in Byte)	
			Starting position of SP spectrum radiance value object	ASP_SPECTRUM_RAD = %d <bytes></bytes>	Starting position of SP spectrum radiance value object(in Byte)	
			Starting position of SP spectrum reflectance value object	ASP_SPECTRUM_REF = %d <bytes></bytes>	Starting position of SP spectrum reflectance value object(in Byte)	
	Text		Starting position of SP spectrum QA Starting position of L2D result array	ASP_SPECTRUM_QA = %d <bytes> AL2D_RESULT_ARRAY = %d <bytes></bytes></bytes>	Starting position of SP spectrum QA object(in Starting position of L2D result array(in Byte)	2000 000
roduct information	File attribute		Software name	SOFTWARE_NAME = "%s"	Software name used for creating PDS product	"RGC_SP"
			Software version Process version identification	SOFTWARE_VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software version used for creating PDS product Process version identification (prerequisite for	n.n.n "L2B" , "L2C" , "L2D"
			Product creation time Program start time	PRODUCT_CREATION_TIME = %s PROGRAM_START_TIME = %s	Product creation time Program start time	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product at	ribute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT SET ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB)	"LISM" "SP_Level2R1" "SP_Level2R2"
			Trodet Set Tachtiff Satisfi	. No.5551_521_15 =	The name in product list should be used. As of data not registered in L2DB, it's be described	"SP_Level2B1","SP_Level2B2", "SP_Level2C","SP_Level2D", "Others"
			Product version identification	PRODUCT_VERSION_ID= "%s"	Product version registered in L2DB (prerequisite for L2DB)	"01 " ~ " 99 "
			Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of	"Y" or "N"
			Source data file name	LEVEL2B1_FILE_NAME = "%s"	registration in L2DB. All source data file names used for creating this	L2B1: "N/A"
			Source data file name	SOURCE_FILE_NAME = { "%s", "%s", "%s"}	PDS product:***.spc All source data file names used for creating this	
			SPICE metakernel file name	SPICE_METAKERNEL_FILE_NAME = "%s"	PDS product:***.spc SPICE metakernel file names used for creating L1A PDS product	
	Scene attribute	Common to each	Mission name	MISSION_NAME = "%s"	PDS product Mission name	"SELENE"
		c.r umditt	Spacecraft name Data set identification	SPACECRAFT_NAME = "%s" DATA_SET_ID = "%s"	Spacecraft name Data set identification in which included this	"SELENE-M"
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB)	
			Instrument identification Mission phase name	INSTRUMENT_ID = "%s" MISSION_PHASE_NAME = "%s"	Instrument identification Mission phase name	"SP" (e.g. Nominal/Option)
			Revolution number	REVOLUTION_NUMBER = %d	Revolution number of this scene's starting position	L2B1:value of SP else:value of TC/MI
			Strip sequence number	STRIP_SEQUENCE_NUMBER = %d	Strip sequence number while in revolution	L2B1:value of SP else:value of TC/MI
			Scene sequence number	SCENE_SEQUENCE_NUMBER = %d REV_STRIP_SCENE = /(%d %d %d) (%d %d %d))	Scene sequence number while in strip	L2B1:value of SP else:value of TC/MI
			Revolution · strip · scene number Observation target name	REV_STRIP_SCENE = {(%d,%d,%d),(%d,%d,%d),} TARGET_NAME = "%s"	Number of revolution, strip, and scene including this scene Observation target name of this strip	L2B2,L2C,L2D: "N/A" "MOON" (default)
			Observation target name Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode identification (observation/dark/calibration and resolition)	"MCON" (default) Obsevation: "OBS", "DARK", "LAMP" Resolution: "NORMAL", "HIGH", "BOTH"
			Sensor description	SENSOR DESCRIPTION = "%s"	(observation/dark/calibration and resolition) e.g. OBS-NORMAL Sensor specification is set with character string	NOSSTATION. NORMAL , HIGH , BUIT
			Sensor description 2	SENSOR_DESCRIPTION2 = "%s"	Alternative sensor description	HI ONOR HOUSET!
			Exposure mode identification Short mode exposure duration	EXPOSURE_MODE_ID = "%s" SHORT_EXPOSURE_DURATION = %.3f <msec></msec>	Exposure mode identification Exposure duration on short mode	"LONG", "SHORT"
			Long mode exposure duration Calibration mode identification	LONG_EXPOSURE_DURATION = %.3f <msec> CALIBRATION_MODE_ID = "%s"</msec>	Exposure duration on long mode Calibration mode identification	
			Spacecraft clock start count (TI) Spacecraft clock stop count (TI)	SPACECRAFT_CLOCK_START_COUNT = %.4f <sec> SPACECRAFT_CLOCK_STOP_COUNT = %.4f <sec></sec></sec>	Spacecraft clock start count on this scene (TI) Spacecraft clock stop count on this scene (TI)	
			Observation start time (UT) Observation stop time (UT)	START_TIME = %s STOP_TIME = %s	Observation start time on this scene (UT)	yyyy-mm-ddThh:mm:ss.ssssssZ yyyy-mm-ddThh:mm:ss.ssssssZ
			Upper left latitude of this scene	UPPER_LEFT_LATITUDE = %.6f <deg></deg>	Observation stop time on this scene (UT) Latitude of pixel on upper left corner of this	[-90.000000, 90.000000]
					scene (=latitude of pixel on upper right corner of this scene) Latitude of the pixel center on the first line	
			Upper left longitude of this scene	UPPER_LEFT_LONGITUDE= %.6f <deg></deg>	snn.nnnnn Longitude of pixel on upper left corner of this	[0.00000, 360.00000)
			orpor fore longitude of this scene		scene (=longitude of pixel on upper right corner of this scene)	[
					Longitude of the pixel center on the first line	
			Upper right latitude of this scene	UPPER_RIGHT_LATITUDE= %.6f <deg></deg>	Latitude of pixel on upper right corner of this scene (=latitude of pixel on upper left corner of	[-90.000000, 90.000000]
			Harris alaki i da a a a a a a a a a a a a a a a a a	Upper Plant Level Time	this scene) Latitude of the pixel center on the first line	To 000000 CT 000000
			Upper right longitude of this scene	UPPER_RIGHT_LONGITUDE= %.6f <deg></deg>	Longitude of pixel on upper right corner of this scene (=longitude of pixel on upper left corner of	[0.000000, 360.000000)
					this scene) Longitude of the pixel center on the first line	
			Lower left latitude of this scene	LOWER_LEFT_LATITUDE= %.6f <deg></deg>	Latitude of pixel on lower left corner of this scene (=latitude of pixel on upper right corner of	[-90.000000, 90.000000]
					this scene) Latitude of pixel on upper right corner of this scene) Latitude of the pixel center on the last line	
			Lower left longitude of this scene	LOWER_LEFT_LONGITUDE= %.6f <deg></deg>	snn.nnnnn Longitude of pixel on lower left corner of this	[0.000000, 360.000000)
					scene (=longitude of pixel on upper right corner of this scene)	,
					Longitude of the pixel center on the last line	
			Lower right latitude of this scene	LOWER_RIGHT_LATITUDE= %.6f <deg></deg>	Latitude of pixel on lower right corner of this scene (=latitude of pixel on upper left corner of	[-90.000000, 90.000000]
	1	ı	1	İ		
			Laure alaha taratura dari	LOWED DIOUT LOVOITURE	this scene) Latitude of the pixel center on the last line	In 000000 per 000000
			Lower right longitude of this scene	LOWER_RIGHT_LONGITUDE= %.6f <deg></deg>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of	[0.00000, 360.00000)
			Lower right longitude of this scene	LOWER_RIGHT_LONGITUDE= %.6f <deg></deg>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line	[0.000000, 360.000000)
			Lower right longitude of this scene	LOWER_RIGHT_LONGITUDE= %.6f <deg> LOCATION_FLAG = "%s"</deg>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene)	L2B1:value of SP
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A:ascending D:descending N:involving north pole S:involving south pole W:involving both pole Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending S: involving north pole S: involving south pole W: involving both pole Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar centre, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene.
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending S: involving north pole S: involving south pole W: involving south pole Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and de
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending S: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees])and d not exceed half of the rotation period. D:Both are in the descending side (90
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending S: involving north pole S: involving south pole S: involving south pole Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and don't exceed half of the rotation period. D:Both are in the descending side (90 degrees, 270 degrees]) and do not exceen half of the rotation period.
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP el se:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the our; satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and d not exceed half of the rotation period. D:Both are in the descending side ((90 degrees, 270 degrees)] and do not excee half of the rotation period. N:Between the two, 90 degrees is includ and 270 degrees is not under the scene.
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A: Both are in the ascending side (>270 degrees of 0 degrees) 90 degrees) pand d not exceed half of the rotation period. D:Both are in the descending side (90 Gegrees, 270 degrees) and do not excee half of the rotation period. N:Between the two, 90 degrees is includ and 270 degrees is not. S:Between the two, 270 degrees is includ and 90 degrees is not.
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending N: involving south pole W: involving south pole Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A: Both are in the ascending side (>270 degrees or [0 degrees, 90 degrees)] and do not exceed half of the rotation period. D: Both are in the descending side (90 degrees, 270 degrees) and do not excee half of the rotation period. N:Between the two, 30 degrees is includ and 270 degrees is not. S:Between the two, 270 degrees is includ and 270 degrees is includ and 270 degrees is included and 270 degrees is incl
				-	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of nadir looking or roll cant	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and d not exceed half of the rotation period. D:Both are in the descending side (90 degrees, 270 degreess]) and do not excee half of the rotation period. N:Between the two, 90 degrees is includ and 270 degrees is not. W:Between the two, 90 degrees and 270 degrees are both included.
			Location flag Roll cant Distance between moon and sun	LOCATION_FLAG = "%s" ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending N: involving north pole W: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A: Both are in the ascending side (>270 degrees of O degrees) and do not excee half of the rotation period. D: Both are in the descending side (igo degrees, 270 degrees) and do not excee half of the rotation period. N: Between the two, 90 degrees is includ and 270 degrees is not. S: Between the two, 90 degrees is inclu and 90 degrees is not. W: Between the two, 90 degrees and 270 degrees are both included.
			Roll cant Distance between moon and sun VIS focal plane temperature	ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km> VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene [= longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending D: descending N: involving north pole S: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceen half of the rotation period. D:Both are in the descending side (90 degrees, 270 degreess) and do not exceen half of the rotation period. N:Between the two, 90 degrees is including 270 degrees is not. W:Between the two, 270 degrees and 270 degrees are both included. YES: roll cant
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature	ROLL_CANT = "%s" ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km> VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></degc></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nno.nonnnn Information of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line NIRT focal plane temperature at observation on the first line	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending D: descending N: involving north pole S: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at both observation times of the first lin and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceen half of the rotation period. D:Both are in the descending side (90 degrees, 270 degreess) and do not exceen half of the rotation period. N:Between the two, 90 degrees is including 270 degrees is not. W:Between the two, 270 degrees and 270 degrees are both included. YES: roll cant
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature	ROLL_CANT = "%s" ROLL_CANT = "%s" VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N2_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></degc></degc>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line NIRT focal plane temperature at observation on the	L2B1:value of SP el se:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole W: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curr satellite position, and zero degree as passing through the ascending node) at the south observation times of the first lim and the last line of the scene. A: Both are in the ascending side (>270 degrees or [0 degree, 90 degrees)] and do not exceed half of the rotation period. D: Both are in the descending side (0) degrees, 270 degrees]) and do not exceen half of the rotation period. N: Between the two, 90 degrees is included and 270 degrees is not. W: Between the two, 90 degrees and 270 degrees are both included. YES: roll cant NO: nadir looking
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature	ROLL_CANT = "%s" ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km> VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></degc></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line NIR2 focal plane temperature at observation on the first line NIR2 focal plane temperature at observation on the first line	L2B1:value of SP else:value of TC/MI A: ascending D: descending N: involving north pole S: involving south pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curre satellite position, and zero degree as passing through the ascending node) at iboth observation times of the first line and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceed half of the rotation period. D:Both are in the descending side ((90 degrees, 270 degrees) and do not exceed half of the rotation period. N:Between the two, 90 degrees is include and 270 degrees is not. W:Between the two, 270 degrees and 270 degrees are both included. YES: roll cant NO: nadir looking
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature	ROLL_CANT = "%s" ROLL_CANT = "%s" VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N2_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></degc></degc>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of spacecraft location Discrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line NIR7 focal plane temperature at observation on the first line Moving direction of satellite Lunar radius in a axis. nnnn.nnn (indicate down	L2B1:value of SP else:value of TC/MI A: ascending D: descending D: descending D: descending S: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the cure satellite position, and zero degree as passing through the ascending node) at the both observation times of the first lie and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceed half of the rotation period. D:Both are in the descending side (190 degrees, 270 degrees]) and do not exceed half of the rotation period. N:Between the two, 90 degrees is include and 270 degrees is not. W:Between the two, 270 degrees is include and 270 degrees is not. W:Between the two, 90 degrees and 270 degrees are both included. YES: roll cant NO: nadir looking
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature Satellite moving direction	ROLL_CANT = "%s" ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km> VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N2_FOCAL_PLANE_TEMPERATURE = %6.2f <k> SATELLITE_MOVING_DIRECTION = "%s"</k></degc></degc></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on lower right corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Discrimination of spacecraft location Distrimination of nadir looking or roll cant observation Distance between moon and sun VIS focal plane temperature at observation on the first line NIR1 focal plane temperature at observation on the first line Moving direction of satellite Lunar radius in a axis. nnnn.nnn (indicate down to meter order) Lunar radius in a axis. nnnn.nnn (indicate down to meter order)	L2B1:value of SP else:value of TC/MI A: ascanding D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curre satellite position, and zero degree as passing through the ascending node) at t both observation times of the first line and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceed half of the rotation period. D:Both are in the descending side ((90 degrees, 270 degrees) and do not exceed half of the rotation period. N:Between the two, 90 degrees is include and 270 degrees is not. S:Between the two, 270 degrees and 270 degrees are both included. YES: roll cant NO: nadir looking
			Roll cant Distance between moon and sun VIS focal plane temperature NIR1 focal plane temperature Satellite moving direction Radius of lunar shape (a axis)	ROLL_CANT = "%s" ROLL_CANT = "%s" MOON_SUN_DISTANCE = %d <km> VIS_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N1_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N2_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N3_FOCAL_PLANE_TEMPERATURE = %6.2f <degc> N4_FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></degc></km>	Latitude of the pixel center on the last line Longitude of pixel on lower right corner of this scene (=longitude of pixel on upper left corner of this scene) Longitude of the pixel center on the last line nnn.nnnnn Information of spacecraft location Distance between moon and sun VIS focal plane temperature at observation on the first line NNR2 focal plane temperature at observation on the first line Moving direction of satellite Lunar radius in a axis. nnnn.nnn (indicate down to meter order)	L2B1:value of SP else:value of TC/MI A: ascanding D: descending N: involving north pole S: involving south pole W: involving both poles Explanation on criteria for determining It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward lunar center, between the ascending node and the curre satellite position, and zero degree as passing through the ascending node) at t both observation times of the first line and the last line of the scene. A:Both are in the ascending side (>270 degrees or [0 degree, 90 degrees]) and do not exceed half of the rotation period. D:Both are in the descending side ((90 degrees, 270 degrees) and do not exceed half of the rotation period. N:Between the two, 90 degrees is include and 270 degrees is not. S:Between the two, 270 degrees and 270 degrees are both included. YES: roll cant NO: nadir looking

List 2.3-6(2/5) Details of PDS label (SP)

dual lafa	Region	Dr	I tem name	Description format	Item explanation	value
oduct information	Scene attribute	Variaton by each instrument	Approximate spacecraft altitude	SPACECRAFT_ALTITUDE = %.3f <km></km>	Spacecraft altitude of the first line("distance between spacecraft and lunar gravitational center" minus average lunar radius)	
			Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %.3f <km sec=""></km>	Spacecraft ground speed of the first line	
			VIS band number	VIS BAND NUMBER = %d	VIS band number	84
			VIS spectral coverage	VIS_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of	04
			VIS band width	VIS_BAND_WIDTH = %.1f <nm></nm>	VIS(nominal value) Band width of VIS(full-width at half-maximum,	
			NIR1 band number	N1_BAND_NUMBER = %d	nominal value) NIR1 band number	100
			NIR1 spectral coverage	N1_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of NIR1(nominal value)	
			NIR1 band width	N1_BAND_WIDTH = %.1f <nm></nm>	Band width of NIR1(full-width at half-maximum, nominal value)	
			NIR2 band number	N2_BAND_NUMBER = %d	NIR2 band number	112
			NIR2 spectral coverage	N2_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of	
			NIR2 band width	N2_BAND_WIDTH = %.1f <nm></nm>	NIR2(nominal value) Band width of NIR2(full-width at half-maximum,	
			Process parameter file name	PROCESS_PARAMETER_FILE_NAME = "%s"	nominal value) Parameter file name used for each process version	
			Longitude of daytime equator crossing	DAYTIME_EQUATOR_CROSSING_LON = %s	Longitude of the point with minimum latitude on dayside: 6.2f <deg> If only nightside: "NIGHT"</deg>	L2B2,L2C,L2D:"N/A"
		TC/MI image acquired at the	Imager information	IMAGER = "%s"	Band identification of TC/MI image acquired at the same time of SP observation	L2B1: "N/A" else: "TC1", "TC2", "MV2", "MN3"
		same time of SP	Data set name of TC/MI image acquired at	TM_DATA_SET_NAME = "%s"	Data set name of TC/MI image acquired at the same	L2B1: "N/A"
		observation	the same time of SP observation Corrected start time of TC/MI image	TM_CORRECTED_START_TIME = %s	time of SP observation Corrected start time (UT) (six decimal places)	else:***.sl2 L2B1:"N/A"
			acquired at the same time of SP Corrected stop time of TC/MI image	TM_CORRECTED_STOP_TIME = %s	Corrected stop time(UT) (six decimal places)	L2B1: "N/A"
			acquired at the same time of SP Corrected sampling interval of TC/MI	TM CORRECTED SAMPLING INTERVAL = %.6f <msec></msec>	Corrected sampling interval with dividing the	L2B1: "N/A"
			image acquired at the same time of SP	10011.20125_3.11 2116_11121.11.2 = 101 40005	corrected interval time between first line and last line of strip into the number of lines.	
			Number of lines of TC/MI image acquired	TM_LINES = %d	Number of pixels along the vertical axis of this scene(direction of along track)	L2B1: "N/A"
				TM_LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this	L2B1: "N/A"
			acquired at the same time of SP First pixel number of TC/MI image	TM_FIRST_PIXEL_NUMBER = %d	scene(direction of cross track) First detector element number(defined value)	L2B1: "N/A"
			acquired at the same time of SP observation		,	
			Last pixel number of TC/MI image acquired at the same time of SP observation	TM_LAST_PIXEL_NUMBER = %d	Last detector element number(defined value)	L2B1: "N/A"
			Upper left latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_LEFT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the first column and the first line snn.nnnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
			Upper left longitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_LEFT_LONGITUDE = %.6f <deg></deg>	Longitude of the pixel center on the first column and the first line nnn.nnnnnn	L2B1: "N/A" else: [0.000000, 360.000000)
			Upper right latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_RIGHT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the last column and the first line snn.nnnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
			Upper right longitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_RIGHT_LONGITUDE = %.6f <deg></deg>	Longitude of the pixel center on the last column and the first line nnn.nnnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
			Lower left latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_LOWER_LEFT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the first column and the last line snn.nnnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
			Lower left longitude on the scene of TC/MI image acquired at the same time of SP observation	TM_LOWER_LEFT_LONGITUDE = %.6f <deg></deg>	Longitude of the pixel center on the first column and the last line nnn.nnnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
			Lower right latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_LOWER_RIGHT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the last column and the last line snn.nnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
				TM_LOWER_RIGHT_LONGITUDE = %.6f <deg></deg>	Longitude of the pixel center on the last column and the last line nnn.nnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
				TM_SATURATED_PIXEL_PERCENTAGE = %d	Percentage of saturated pixels (omit decimal fractions)	L2B1: "N/A"
				TM_DEAD_PIXEL_PERCENTAGE = %d	Percentage of dead pixels (omit decimal fractions)	L2B1: "N/A"
			Saturated pixel percentage, whose value is between D5 and D6, of TC/MI image acquired at the same time of SP	TM_SHADOWED_AREA_PIXEL_PERCENTAGE = %d	Percentage of shadowed area pixels (omit decimal fractions)	L2B1: "N/A"
			High resolution observation point number			
			Normal resolution observation point	NORMAL_SP_POINT_NUM = %d	Observation points number length out off shows	1 2R4 12C 12D-"M/A"
			Upper margin observation point number	UPPER_MARGIN_POINT_NUM = %d	Observation points number longly cut off above TC/MI image acquired at the same time of SP	L2B1,L2C,L2D: "N/A"
			,	LOWER_MARGIN_POINT_NUM = %d	Observation points number longly cut off below TC/MI image acquired at the same time of SP	L2B1,L2C,L2D:"N/A"
			Calibration lamp information	CAL_LAMP_INFO = {("%s",%s,%s),}	Type of calibration lamp, set of the time to light on and off.	"RAD","WAV" YYYY-MM-DDThh:mm:ss.sssssZ
			Matching accuracy information	MATCHING_ACCURACY_INFO= "%s"	Setting "1" if the following conditions are fulfilled, or "0" if not, starting from the left. 1: Maximum of correlation coefficient is more than or equal to threshold. 2: Average of correlation coefficient is less than or equal to threshold. 3: Percentage of correlation coefficient being more than or equal to the setting value is less than or equal to threshold. 4: Number of peaks having correlation coefficient	L2B1,L2B2:"N/A" L2C, L2D :"nnnn"(n is 0 or 1) #Setting reasons if the matching res not applicable.
					being more than or equal to setting value is less	

List 2.3-6(3/5) Details of PDS label (SP)

Description area of	Region	Item name	Description format OBJECT = ANCILLARY AND SUPPLEMENT DATA	Item explanation	value
ancillary and supplementary data	Common to ancillary and	format	INTERCHANGE_FORMAT = %s		"BINARY"
object format	supplementary data object	Number of rows Number of columns	ROWS = %d COLUMNS = %d	Number of rows in this scene Number of columns in the list	43
		Row bytes	ROW_BYTES = %d	Bytes in a row	bef L2B2:158, aft L2C:166
	Line information	Clock count of spacecraft(TI)	OBJECT = COLUMN NAME = "SPACECRAFT_CLOCK_COUNT" DATA_TYPE = "IEEE_REAL" UNIT = "sec" START_BYTE = 1 BYTES = 8 END_OBJECT = COLUMN	Recording format of clock count of spacecraft(T1)	
		VIS focal plane temperature	OBJECT = COLLUMN OBJECT = COLLUMN NAME ="VIS_FOCAL_PLANE_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 9 BYTES = 4 END OBJECT = COLLUMN	Recording format of VIS focal plane temperature	
		NIR1 focal plane temperature	OBJECT = COLUMN NAME = "NIR1_FOCAL_PLANE_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 13 BYTES = 4 END_OBJECT = COLUMN	Recording format of NIR1 focal plane temperature	
		NIR2 focal plane temperature	OBJECT = COLUMN NAME = "NIR2_FOCAL_PLANE_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "K" START_BYTE = 17 BYTES = 4 END_OBJECT = COLUMN	Recording format of NIR2 focal plane temperature	
		Spectrometer temperature 1	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_1" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 21 BYTES = 4 END OBJECT = COLUMN	Recording format of spectrometer temperature 1	
		Spectrometer temperature 2	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_2" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 25 BYTES = 4 END_OBJECT = COLUMN	Recording format of spectrometer temperature 2	
		Spectrometer temperature 3	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_3" DATA_TYPE =" IEEE_REAL" UNIT = "degC" START_BYTE = 29 BYTES = 4 END_OBJECT = COLUMN	Recording format of spectrometer temperature 3	
		Spectrometer temperature 4	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_4" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 33 BYTES = 4 END_OBJECT = COLUMN	Recording format of spectrometer temperature 4	
		Halogen bulb radiance	OBJECT = COLUMN NAME = "HALOGEN_BULB_RADIANCE" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 37 BYTES = 4 END_OBJECT = COLUMN	Recording format of halogen bulb radiance	
		Halogen bulb voltage 1	OBJECT = COLUMN NAME = "HALOGEN_BULB_VOLTAGE1" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 41 BYTES = 4 END_OBJECT = COLUMN	Recording format of halogen bulb voltage 1	
		Halogen bulb voltage 2	OBJECT = COLUMN NAME = "HALOGEN_BULB_VOLTAGE2" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 45 BYTES = 4 END_OBJECT = COLUMN	Recording format of halogen bulb voltage 2	
		Halogen bulb temperature 1	OBJECT = COLUMN NAME = "HALLOGEN_BULB_TEMPERATURE1" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 49 BYTES = 4 END_OBJECT = COLUMN	Recording format of halogen bulb temperature 1	
		Halogen bulb temperature 2	OBJECT = COLUMN NAME = "HALOGEN_BULB_TEMPERATURE2" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 53 BYTES = 4 END_DBJECT = COLUMN	Recording format of halogen bulb temperature 2	
		Spacecraft altitude	OBJECT = COLUMN NAME = "SPACECRAFT_ALTITUDE" DATA_TYPE = "IEEE_REAL" UNIT = "km" START_BYTE = 57 BYTES = 4 END_OBJECT = COLUMN	Recording format of spacecraft altitude	
		Spacecraft ground speed	OBJECT = COLUMN NAME = "SPACECRAFT_GROUND_SPEED" DATA_TYPE = "IEEE_REAL" UNIT = "km/sec" START_BYTE = 61 BYTES = 4 END_OBJECT = COLUMN	Recording format of spacecraft ground speed	
		Sub-spacecraft latitude	OBJECT = COLUMN NAME = "SUB_SPACECRAFT_LATITUDE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 65 BYTES = 8 END_OBJECT = COLUMN	Recording format of sub-spacecraft latitude	
		Sub-spacecraft longitude	OBJECT = COLUMN NAME = "SUB_SPACECRAFT_LONGITUDE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 73 BYTES = 8 END_OBJECT = COLUMN	Recording format of sub-spacecraft longitude	

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List 2.3-6(4/5) Details of PDS label (SP)

	Region	Item name	Description format	Item explanation	value	
Description area of ancillary and supplementary data object format	Line information	SP observation point latitude	OBJECT = COLUMN NAME = "CENTER LATITUDE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 81 BYTES = 8 END_OBJECT = COLUMN	Recording format of SP observation point latitude		
		SP observation point longitude	OBJECT = OLUMN OBJECT = COLUMN NAME = "CENTER LONGITUDE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 89 BYTES = 8 END OBJECT = COLUMN	Recording format of SP observation point longitude		
		Geometric condition of sensor observation(emission angle)	OBJECT = COLUMN NAME = "EMISSION_ANGLE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 97 BYTES = 4 END_OBJECT = COLUMN	Recording format of geometric condition of sensor observation(emission angle)		
		Geometric condition of sensor observation(azimuth angle)	OBJECT = COLUMN NAME = "SPACECRAFT_AZIMUTH" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 101 BYTES = 4 END_OBJECT = COLUMN	Recording format of geometric condition of sensor observation(azimuth angle)		
		Geometric condition of solar radiation(incidence angle)	OBJECT = COLUMN NAME = "INCIDENCE_ANGLE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 105 BYTES = 4 END_OBJECT = COLUMN	Recording format of geometric condition of solar radiation(incidence angle)		
		Geometric condition of solar radiation(azimuth angle)	OBJECT = COLUMN NAME = "SOLAR_AZIMUTH_ANGLE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 109 BYTES = 4 END_OBJECT = COLUMN	Recording format of geometric condition of solar radiation(azimuth angle)		
		Phase angle	OBJECT = COLUMN NAME = "PHASE_ANGLE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 113 BYTES = 4 END_OBJECT = COLUMN	Recording format of phase angle		
		Temperature of the point specifying SP temperature	OBJECT = COLUMN OBJECT = COLUMN NAME = "SP_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "deg" START_BYTE = 117 BYTES = 4 END_OBJECT = COLUMN	Recording format of temperature of the point specifying SP temperature		
		SP peltier hot side temperature	OBJECT = COLUMN NAME = "SP_PELTIER_HOT_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 121 BYTES = 4	Recording format of SP peltier hot side temperature		
		SP2 radiator temperature	END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SP_N2_RADIATOR_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 125 BYTES = 4 END_OBJECT = COLUMN	Recording format of SP2 radiator temperature		
		Temperature of SP calibration optics(VIS)	OBJECT = COLUMN NAME = "SP_CAL_VIS_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 129 BYTES = 4 END_OBJECT = COLUMN	Recording format of temperature of SP calibration optics(VIS)		
		Temperature of SP calibration optics(NIR)	OBJECT = COLUMN NAME = "SP_CAL_NIR_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 133 BYTES = 4 END_OBJECT = COLUMN	Recording format of temperature of SP calibration optics(NIR)		
		Temperature of the point specifying DPU temperature	OBJECT = COLUMN NAME = "DPU_TEMPERATURE" DATA_TYPE = "IEEE_REAL" UNIT = "degC" START_BYTE = 137 BYTES = 4 END_OBJECT = COLUMN	Recording format of temperature of the point specifying DPU temperature		
		SP power voltage plus 5V	OBJECT = COLUMN NAME = "SP_POWER_PSV" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 141 BYTES = 4 END_OBJECT = COLUMN	Recording format of SP power voltage plus 5V		
		SP power voltage minus 15V	OBJECT = COLUMN NAME = "SP_POWER_M15V" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 145 BYTES = 4 END_OBJECT = COLUMN	Recording format of SP power voltage minus 15V		
		SP power voltage plus 15V	OBJECT = COLUMN OBJECT = COLUMN NAME = "SP_POWER_P15V" DATA_TYPE = "IEEE_REAL" UNIT = "V" START_BYTE = 149 BYTES = 4 END_OBJECT = COLUMN	Recording format of SP power voltage plus 15V		
			Calibration mode identification	OBJECT = COLUMN OBJECT = COLUMN NAME = "CALIBRATION" DATA_TYPE = "MSB_INTEGER" UNIT = "N/A" START_BYTE = 153 BYTES = 1 END_OBJECT = COLUMN	Recording format of calibration mode identification	
		SP peltier ON/OFF	OBJECT = COLUMN OBJECT = COLUMN NAME = "SP_PELTIER" DATA_TYPE = "MSB_INTEGER" UNIT = "N/A" START_BYTE = 154 BYTES = 1 END_OBJECT = COLUMN	Recording format of SP peltier ON/OFF		

List 2.3-6(5/5) Details of PDS label (SP)

Region	Item name	Description format	Item explanation	value
	TC/MI status	OBJECT = COLUMN NAME = "TC_MI_STATUS" DATA_TYPE = "MSB_INTEGER" UNIT = "N/A" START_BYTE = 155 BYTES = 1 END OBJECT = COLUMN	Recording format of TC/MI status	
<u>c</u>	Clock count error flag	OBJECT = COLUMN NAME = "CLOCK_COUNT_ERR_FLAG" DATA_TYPE = "MSB_INTEGER" UNIT = "N/A" START_BYTE = 156 BYTES = 1 END_OBJECT = COLUMN	Recording format of clock count error flag	
	Spatial resolution flag	OBJECT = COLUMN NAME = "SPATIAL_RESOLUTION_FLAG" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 157 BYTES = 1 END_OBJECT = COLUMN	Observation mode A(65): exposure duration S, resolution N B(66): exposure duration L, resolution N C(67): exposure duration S, resolution H D(68): exposure duration L, resolution H	A , B , C , D
	Geometric information recalculation flag	OBJECT = COLUMN NAME = "GEOMETRIC_INFO_RECAL_FLAG" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 158 BYTES = 1 END_OBJECT = COLUMN	A(65): Without recalculating (taking over from L2A) B(66): Update by the newest kernel file C(67): Update by the matching result with TC/MI image acquired at the same time of SP observation	A , B , C
	Position of observation point on the support image (LINE)	OBJECT = COLUMN NAME = "SUPPORT_IMAGE_LINE_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 159 BYTES = 2 or 0 END OBJECT = COLUMN		L2B1,L2B2:BYTES=0 L2C, L2D:BYTES=2
	Position of observation point on the support image (COLUMN)	OBJECT = COLUMN NAME = "SUPPORT_IMAGE_COLUMN_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 161 BYTES = 2 or 0 END_OBJECT = COLUMN		L2B1,L2B2:START_BYTE=159 L2C, L2D :START_BYTE=161 L2B1,L2B2:BYTES=0 L2C, L2D :BYTES=2
	Position of observation point on the humbnail image (LINE)	OBJECT = COLUMN NAME = "THUMBNAIL_LINE_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 163 BYTES = 2 or 0 END_OBJECT = COLUMN		L2B1,L2B2:START_BYTE=159 L2C, L2D:START_BYTE=163 L2B1,L2B2:BYTES=0 L2C, L2D:BYTES=2
	Position of observation point on the humbnail image (COLUMN)	OBJECT = COLUMN NAME = "THUMBNAIL_COLUMN_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 165 BYTES = 2 or 0 END_OBJECT = COLUMN		L2B1,L2B2:START_BYTE=159 L2C, L2D:START_BYTE=165 L2B1,L2B2:BYTES=0 L2C, L2D:BYTES=2
Description area		END_OBJECT = ANCILLARY_AND_SUPPLEMENT_DATA		
N S S I I U U U	Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Jnit Scaling factor	OBJECT = SP_SPECTRUM_WIAV LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	1 296 "MSB_UNSIGNED_INTEGER" 16 "WAVELENGTH" "nm"
N S S	Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Jinit Scaling factor Offset	OBJECT = SP_SPECTRUM_RAW LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "RAW_DN" "ND"
N S S S I U U U U U U U U U U U U U U U U	Number of lines of this scene Number of line's samples of this scene sample type sample bits mage value type Julit scaling factor	OBJECT = SP_SPECTRUM_DAR LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "DARK" "ND"
S S I U U S	Number of lines of this scene Number of line's samples of this scene sample type sample bits Image value type Init scaling factor	OBJECT = SP_SPECTRUM_RAD LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "RADIANCE" "W/m""2/micron/sr"
N S S S I S C C	Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Scaling factor Iffset	OBJECT = SP_SPECTRUM_REF LINES = %d LINE, SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample uit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "REFLECTANCE" "ND"
spectrum N S S I U U S C	Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Unit Scaling factor Offset	OBJECT = SP_SPECTRUM_QA LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	16 "QUALITY" "N/A"
result S S I U	Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Unit Scaling factor	OBJECT = L2D_RESULT_ARRAY LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	L2B1,L2B2,L2C: LINES = 0 LINE_SAMPLES = 0 SAMPLE_TYPE = "N/A" SAMPLE_BITS = 0 IMAGE_VALUE_TYPE= "N/A" UNIT = "N/A" SCALINE_RACTOR = "N/A" OFFSET = "N/A" L2D: LINES = n LINE_SAMPLES = 128 SAMPLE_TYPE = "IEEE_REAL" SAMPLE_TYPE = "IEEE_REAL" SAMPLE_TYPE = "IEEE_REAL" SAMPLE_TYPE = "SURFACE_VARIABLES" UNIT = "N/A"
		END		UNIT = "N/A" SCALING_PACTOR = "N/A" OFFSET = "N/A"

(2)Ancillary and supplementary data object

The details of SP ancillary and supplementary data object are shown in the list of List 2.3-7 and byte orders in the List 2.3-7 are all big endian.

List 2.3-7(1/4) Details of ancillary and supplementary data object

Item name	Type	Byte	Unit	Item explanation
Clock count of	Real number	8	S	Clock count of spacecraft
spacecraft				
VIS focal plane	Real number	4	degrees	VIS focal plane temperature after
temperature			С	converting engineering value
NIR1 focal plane	Real number	4	degrees	NIR1 focal plane temperature
temperature			С	after converting engineering value
NIR2 focal plane	Real number	4	K	NIR2 focal plane temperature
temperature				after converting engineering value
Spectrometer	Real number	4	degrees	Spectrometer temperature 1
temperature 1			С	
Spectrometer	Real number	4	degrees	Spectrometer temperature 2
temperature 2			С	
Spectrometer	Real number	4	degrees	Spectrometer temperature 3
temperature 3			С	
Spectrometer	Real number	4	degrees	Spectrometer temperature 4
temperature 4			С	
Halogen bulb	Real number	4	V	Halogen bulb radiance
radiance				
Halogen bulb voltage	Real number	4	V	Halogen bulb voltage 1 after
1				converting engineering value
Halogen bulb voltage	Real number	4	V	Halogen bulb voltage 2 after
2				converting engineering value
Halogen bulb	Real number	4	degrees	Halogen bulb temperature 1 after
temperature 1			С	converting engineering value
Halogen bulb	Real number	4	degrees	Halogen bulb temperature 2 after
temperature 2			С	converting engineering value
Spacecraft altitude	Real number	4	km	Distance between spacecraft and
				moon
Spacecraft ground	Real number	4	km/s	Spacecraft ground speed
speed				
Sub-spacecraft	Real number	8	degree	Sub-spacecraft latitude
latitude				between -90 and 90

List 2.3-7(2/4) Details of ancillary and supplementary data object $\,$

Item name	Type	Byte	Unit	Item explanation
Sub-spacecraft	Real number	8	degree	Sub-spacecraft longitude
longitude				
SP observation point	Real number	8	degree	Latitude of observation point
latitude				
SP observation point	Real number	8	degree	Longitude of observation point
longitude				
Geometric condition	Real number	4	degree	Emission angle viewed from
of sensor				observation point
observation(emission				
angle)				
Geometric condition	Real number	4	degree	Azimuth angle viewed from
of sensor				observation point
observation(azimuth				
angle)				
Geometric condition	Real number	4	degree	Incidence angle viewed from
of solar				observation point
radiation(incidence				
angle)				
Geometric condition	Real number	4	degree	Azimuth angle viewed from
of solar				observation point
radiation(azimuth				
angle)				
Phase angle	Real number	4	degree	Phase angle at the observation
				point between a vector to the sun
				and a vector to the spacecraft
Temperature of the	Real number	4	degrees	Temperature of the point
point specifying SP			С	specifying SP temperature after
temperature				converting engineering value
SP peltier hot side	Real number	4	degrees	SP peltier hot side temperature
temperature			С	after converting engineering value
SPN2 radiator	Real number	4	degrees	SP2 radiator temperature after
temperature			С	converting engineering value

List 2.3-7(3/4) Details of ancillary and supplementary data object

Item name	Туре	Byte	Unit	Item explanation
Temperature of SP	Real number	4	degrees C	Temperature of SP calibration
calibration				optics(VIS) after converting
optics(VIS)				engineering value
Temperature of SP	Real number	4	degrees C	Temperature of SP calibration
calibration				optics(NIR) after converting
optics(NIR)				engineering value
Temperature of the	Real number	4	degrees C	Temperature of the point
point specifying				specifying DPU temperature after
DPU temperature				converting engineering value
SP power voltage	Real number	4	V	SP power voltage plus 5V after
plus 5V				converting engineering value
SP power voltage	Real number	4	V	SP power voltage minus 15V after
minus 15V				converting engineering value
SP power voltage	Real number	4	V	SP power voltage plus 15V after
plus 15V				converting engineering value
Calibration mode	Integral	1	-	0:without calibration
identification	number			1:geometric calibration
				2:wavelength calibration
				3:geometric and wavelength
				calibration
SP peltier ON/OFF	Integral	1	-	0:OFF
	number			1:ON
TC/MI status	Integral	1	-	0:OFF
	number			1:TC ON
				2:MI ON
Clock count error	Integral	1	-	0: without interpolation
flag	number			1: interpolation of bit garbled
				time
Spatial resolution	Integral	1	-	A(65):exposure duration S ,
flag	number			resolution N
	without sign			B(66):exposure duration L ,
				resolution N
				C(67):exposure duration S,
				resolution H
				D(68):exposure duration L,
				resolution H

List 2.3-7(4/4) Details of ancillary and supplementary data object

Item name	Туре	Byte	Unit	Item explanation
Geometric	Integral	1	-	A(65): Without recalculation
information	number			B(66): Update by the newest kernel
recalculation flag	without sign			file
				C(67): Update by the matching
				result with TC/MI image
				acquired at the same time
				of
				SP observation
Support image line	Integral	2(0)	-	Position of observation point on
position of	number			support image of TC /MI image
observation point	without sign			acquired at the same time of SP
(LINE)				observation(along track)
Support image line	Integral	2(0)	-	Position of observation point on
position of	number			support image of TC /MI image
observation point	without sign			acquired at the same time of SP
(COLUMN)				observation(cross track)
Thumbnail line	Integral	2(0)	-	Position of observation point on
position of	number			thumbnail of TC /MI image
observation point	without sign			acquired at the same time of SP
(LINE)				observation(along track)
Thumbnail line	Integral	2(0)	-	Position of observation point on
position of	number			thumbnail of TC /MI image
observation point	without sign			acquired at the same time of SP
(COLUMN)				observation(cross track)
Total		166(158)		

The numbers in ()in the column of "Byte" are the cases of L2B1 and L2B2.

(3)Spectrum data object

The specifications of SP spectrum data object are shown in the list of List 2.3-8. And byte orders in the List 2.3-8 are all big endian.

List 2.3-8 Specifications of SP spectrum data object

Kind of spectrum data	Туре	Bit length	Number of
			valid pixels
Center wavelengths	Integral number	16	296
	without sign		
Raw data spectrum	Integral number	16	296
	without sign		
Dark current corrected	Integral number	16	296
value spectrum	without sign		
Radiance value spectrum	Integral number	16	296
	without sign		
(Diffusion) reflectance	Integral number	16	296
value spectrum	without sign		
Ancillary and	Integral number	16	296
supplementary data	without sign		
spectrum			
High level process result	Real number	32	128

Spectrum values of each band except high level process result are recorded in the following pixels.

On VIS $1\sim84$, pixels of $1\sim84$

On NIR1 1~100, pixels of 85~184

On NIR2 1~112, pixels of 296~185

On the high level process result, it records parameters of each observation point calculated by Level2D process. On the details of Leve2D process, they are described in the reference books (4).

2.3.4 SP original resolution JPEG image file

SP original resolution JPEG image file is made by saving TC or MI image acquired at the same time of SP observation as JPEG format at its original resolution. Before that, the TC or MI image is made dark current and flat field correction (only for MI), cut the compression dummies off, and scaled to 512 pixels or less. SP original resolution JPEG image file is included in SP L2B2 - L2D data set. However, depending on the parameter setting of RGC, it may not be included in them.

The direction of SP original resolution JPEG image file is same as the original TC/MI image, and is not rotated/reversed unlike in the case of SP thumbnail file,

The specifications of SP original resolution JPEG image file are described in the List 2.3-9.

List 2.3-9 Specifications of SP original resolution JPEG image file

Detector	Band number	File size	Format
TC	N/A		
MI-VIS	2	400kb or less	8bitJPEG
MI-NIR	3		

The band number is the default value.

The file size is the default value.

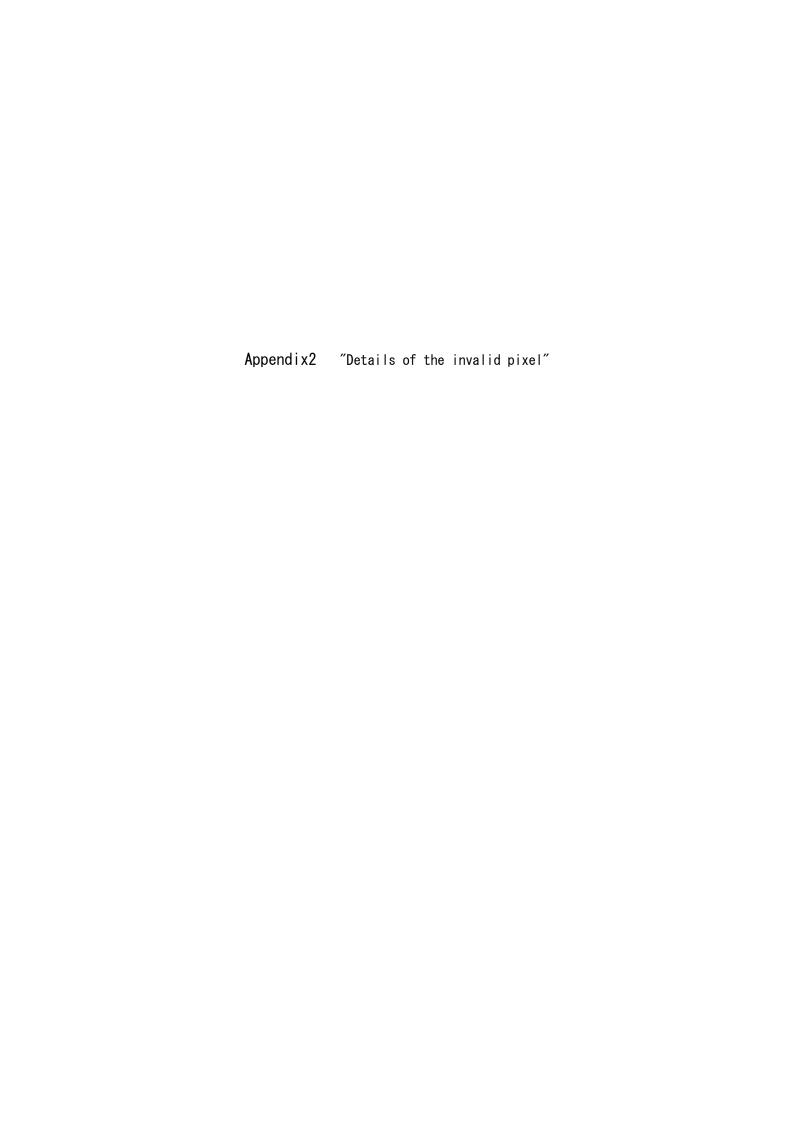
Appendix1 "Rotation/reverse of the thumbnail image"

The cases in rotating/reversing the thumbnail image against the original image obtained by observing the letter "R" on the lunar surface are shown in the following list. (The upper left edge of the image is the first line and the first element. On TC, in the case of Full in Swath)

List A1-1 Rotation/reverse of the thumbnail image against the original image

		Moving d	lirection	Moving d	lirection
		of the spac	cecraft = +1	of the spacecraft = -1	
		(without y	aw around)	(with yaw around)	
		original	thumbnail	original	thumbnail
Ascending (A)	R	В	R	R	R
	s	reverse	up/down	100110110	up/down
	N	and ri	ght/left	reverse	up/ down
Descending (D)	R	R	R	Я	R
	S	without rotati	on and reverse	reverse r	eight/left
Involving (a) pole(s) (N/S/W)	Я	R	R	Я	R
	R	В	В	R	В
	R	ス	ス	仄	ス
	R	~	\mathbf{C}	刀	~
		without rotati	on and reverse	reverse r	ight/left

The original images are arranged downward from the first line in order of its observation time, regarded their left edge as the first element, on the other hand the thumbnail images were rotated or reversed in such a way that whose north becomes up and east becomes right. But, on the images involving (a) pole(s), they should be subject to the observation direction, considering only the moving direction of the spacecraft.



In the processing of each level/option, a pixel value might reach an abnormal value, so in order to identify such a situation, an invalid pixel value is set to that pixel of the image data object. Invalid pixel values and those meanings are shown in the list A2-1².

List A2-1 PDS labels related to invalid pixel described in the area of image data object

Item name of PDS label	Invalid pixel value	Meaning of invalid pixel value
INVALID_TYPE	-20000 ~ -23101	Invalid pixel attributed to sensor, L2A data, radiometric calibration or geometric correction (The details are given in the table shown below.)
OUT_OF_IMAGE_BOUNDS_VALUE	-30000	The pixel originally not existing before its resampling process

List A2-2 Invalid pixel type described in the area of image data object (INVALID_TYPE)

Brief description				Detail desc	ription
INVALID_TYPE	INVALID_VALUE		INVALID_TYPE	INVALID_VALUE	Meaning of INVALID_VALUE
			L2A_SATURATION	-20001	The pixel value of L2A data had been saturated.
			RAD_SATURATION	-20061	The pixel value became saturated in radiance conversion.
			PHASE_SATURATION	-20081	The pixel value became saturated in photometric correction.
SATURATION	-20000	The pixel value became saturated.	REF_SATURATION	-20091	The pixel value became saturated in reflectance conversion.
			RESAMPLE_SATURATION	-20101	The pixel value became saturated in its resampling process.
			SCALING_SATURATION	-20111	The pixel value became greater than maximum value of signed short integer (32767) in the process of converting physical quantity into DN value.
		The pixel value became minus.	DARK_MINUS	-21011	The pixel value became minus in dark current correction.
MINUS	-21000		MV_FT_MINUS	-21021	The pixel value became minus in MI-VIS frame transfer correction.
			PHASE_MINUS	-21081	The pixel value became minus in photometric correction.
			RESAMPLE_MINUS	-21101	The pixel value became minus in its resampling process.
DUMMY_DEFECT	-22000	The pixel had been L2A dummy pixel, or the detector element	DUMMY	-22001	The pixel had been L2A dummy pixel.
DOMINIT_DEFECT	22000	of the pixel had been defect element.	DEFECT	-22002	The detector element of the pixel had been defect element.
			DEAD	-23001	The pixel had been L2A dead pixel.
		Error other than listed above happened.	MV_FT_INCREASE_ERROR	-23021	The pixel value increased in MI- VIS frame transfer correction.
OTHER	22000		MV_FT_FAILURE	-23022	MI-VIS frame transfer correction failed.
OTHER	-23000		PHASE_GEO_ERROR	-23081	Photometric correction failed because of invalid geometric data.
			PHASE_USGS_ZERO_DIVIDE	-23082	A division by zero happened in USGS photometric correction.
			RESAMPLE_ERROR	-23101	Resampling failed.

^{*} Description of invalid pixel type (brief description / detail description) depends on parameter setting for the product creation. Briefly described invalid pixel type means any of detail invalid pixel types listed in the same row.



Details of ancillary information, which is one of spectral data objects in a SP PDS product file are shown in Table B1-1.

Table B1-1. Details of ancillary information in a SP PDS product file

	IDIE B1-1. Details o	Details		
Bit number (From LSB to MSB)	Short description	Details		
1-3	VIS dark data condition	VIS dark data = VIS data observed with solar elevation larger than 90 degree. 000 => VIS dark data exist at both end of a L2B1 product. 001 => VIS dark data exist only at the end of a L2B1 product. 010 => VIS dark data exist only at the beginning of a L2B1 product. 011 => No VIS dark data exist in a L2B1 product. 100 => All data in a L2B1 product are VIS dark data 101 => Anomalous data		
4	Sign of S value	S value = original data - dark data 0 = S value is positive or zero, 1 = S value is negative.		
5	Saturation	Saturation thershold = 50000 (original data) 0 = No saturation occurred, 1=Saturation occurred or data may be affected by saturation.		
6-7	VIS wavelength shift	Unit of VIS wavelength shift = 6 nm (equal to VIS spectral sampling interval) 00 => VIS wavelength shift is less than 0.3. 01 => VIS wavelength shift is between 0.3 and 0.6. 10 => VIS wavelength shift is between 0.6 and 0.9. 11 => VIS wavelength shift is larger than 0.9.		
8-9	VIS-NIR1 gap correction factor	VIS-NIR1 gap correction factor = Ration between VIS and NIR1 radiance at same wavelength before gap correction 00 => The factor is between 0.9 and 1.0. 01 => The factor is between 1.0 and 1.1. 10 => The factor is between 1.1 and 1.2. 11 => The factor is less than 0.9 or larger than 1.2.		
10-11	NIR1-NIR2 gap correction factor	NIR1-NIR2 gap correction factor = Ration between NIR1 and NIR2 radiance at adjacent wavelength before gap correction 00 => The factor is less than 0.9. 01 => The factor is between 0.9 and 1.0. 10 => The factor is between 1.0 and 1.1. 11 => The factor is larger than 1.1.		
12	Not used			
13	Not used			
14	Anomalous behavior of NIR1 longer end pixels	0 => normal 1 => anomalous		
15	Anomalous behavior of VIS longer end and NIR1 shorter pixels	0 => normal 1 => anomalous		
16	Dead pixels	0 => normal 1 => dead pixel		

KAGUYA (SELENE) Product Format Description

- LISM (TC/MI/SP) /SPICE Kernel-

Appendix-2

LISM DTM / Ortho Product Format Description

Version 1.2

November 19, 2009

Change Log

Ver.	Date	Change	Remarks
1.0	09/11/1	The first edition	
1.1	09/11/6	-	
1.2	09/11/19	p.6(Table 2.1-2)	
		"Strip Division Number" of the Catalog Information File was	
		deleted.	

LISM DTM/Ortho Product File-Format Manual

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1. Outline

1.1 Purpose

This document describes the formats of the Digital Terrain Model (DTM) Data Set. These files provided by Japan Aerospace Exploration Agency (JAXA).

1.2.2 Reference Documents

- (1) Planetary Data System Standards Reference Version 3.5
- (2) SPK Required Reading (05-Sep-2002, NAIF Document No.168.10)
- (3) CK Required Reading (05-Sep-2002, NAIF Document No.174.08)
- (4) SCLK Required Reading (06-Oct-1999, NAIF Document No.222.02)
- (5) Digital compression and coding of continuous-tone still images (ISO/IEC 10918-1)

2. DTM Data Set

2.1 DTM-TC Ortho Data Set

The DTM-TC Ortho Data Set is the set of DTM and TC Ortho data generated for each scene. It is a tar archive composed of the following four files.

- · Catalog Information file
- · Tar Object file (DTM PDS Product)
- · Thumbnail file
- · PDS Label

Figure 2.1-1 outlines the configuration of the DTM-TC Ortho Data Set, and Fig. 2.1-2 outlines the configuration of the Tar Object.

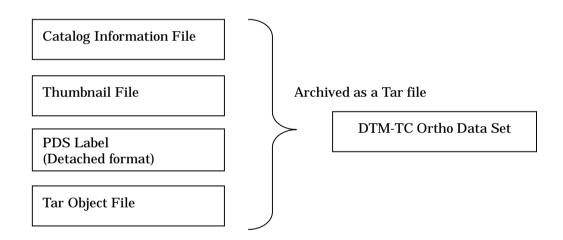


Fig. 2.1-1 Configuration of the DTM-Ortho Data Set

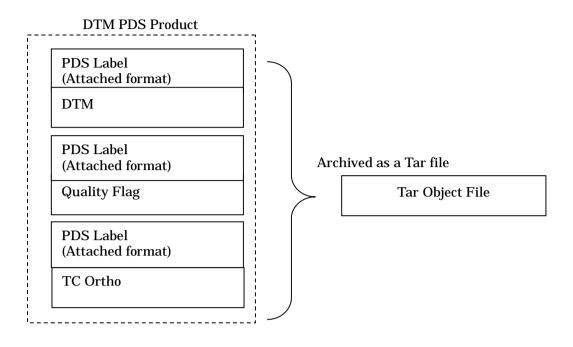


Fig. 2.1-2 Configuration of the Tar Object

Table 2.1-1 presents the file-naming rules for each of the above-mentioned files, described in detail in the following paragraphs.

Table 2.1-1 File-Naming Rules for the DTM-TC Ortho Data Set File (Exp. DTMTCO_nn_99999N550E2700SC.tgz)

			(Enp. 2 1111 00 1111 00 1111 00 22 1 00 2 0 1 82)
		Length	
Code	Start Position	(Byte)	Preset Values
			Product type
1	1	6	"DTMTCO" fixed
			Underscore
2	7	1	"_" fixed
			L2DB version
3	8	2	nn: 2 digits
			Underscore
4	10	1	"_" fixed
			Revolution number
5	11	5	nnnnn: 5 digits
			Latitude
			S900 to N900
6	16	4	Unit: more than the first decimal place
			Longitude
			E0000 to E3600
7	20	5	Unit: more than the first decimal place
			Map projection
			"SC": Simple cylindrical
8	25	2	"PS": Polar stereo
			Extensions
			.tgz: Tar Object
			.jpg: Thumbnail
			.ctg: Catalog Information
			.sl2: DTM Data Set
			.lbl: PDS Label
			.dtm: DTM
			.img: TC Ortho
9	27	4	.dqa: Quality Flag
Total	-	30	

2.1.1 Catalog Information File

The Catalog Information File is an attached Information File outlining the DTM-TC Ortho Data Set and defining the items that can be used to retrieve products from the L2DB subsystem.

Tables 2.1-2 and 2.1-3 describe the items of the Catalog Information File of the DTM-TC Ortho product. Each item is described in the following format within 1 line.

Format:

Keyword = String Value

In the "Comment" of the Catalog Information File, multiple comma-deliminated items (Table 2.1-4) are described in the following format.

Format:

CommentInfo = Keyword1 = "String Value", Keyword2 = "String Value", ...

Unless otherwise specified, the basic principle is that the numeric value of each item should be zero suppressed; the string value of each item should contain no space character, and be left-aligned.

Table 2.1-2 Items of the Catalog Information File (DTM-TC Ortho)

Item	Keyword	Format of Preset Value	Content of Preset Value
Data File Name	DataFileName	AAAAAAAA (31 digits)	DTM-TC ortho file name
Data File Size	DataFileSize	NNNNNNNNNNNNNN (Max. 12 digits)	DTM-TC ortho file size <byte></byte>
Data File Format	DataFileFormat	AAAAAAAA (Max. 16 digits)	DTM-TC ortho file format
Thumbnail File Name	ThumbnailFileName	AAAAAAAA (Max. 65 digits)	Thumbnail file name
Thumbnail File Size	ThumbnailFileSize	NNNNNNNNNNNNNN (Max. 12 digits)	Thumbnail file size <byte></byte>
Thumbnail File Format	ThumbnailFileFormat	AAAA (Max. 4 digits)	JPEG: fixed
Instrument Name	InstrumentName	AAAAAAAA (Max. 16 digits)	LISM: fixed
Processing Level	ProcessingLevel	AAAAAAAA (Max. 16 digits)	L3D: fixed
Product ID	ProductID	AAAAAAAA (Max. 30 digits)	DTM_TCOrtho, DTM_TCOrtho_S
Product Version	ProductVersion	AAAAAAAA (Max. 16 digits)	nn: L2DB version
Access Level	AccessLevel	N	0: Read only 1: LISM core members only 2: LISM members only 3: SELENE members only 4: All members
Start Date and Time	StartDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	

End Date and Time	EndDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	
Revolution Number	RevoNumber	NNNNNNNNN (Max. 10 digits)	
Scene Number	SceneNumber	NNNNNNNNNN (Max. 10 digits)	
Strip Number	StripNumber	NNNNNNNNNN (Max. 10 digits)	
Location Flag	LocationFlag	A	"A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
Upper Left Latitude	UpperLeftLatitude	SNN.NNNNNN	<degree></degree>
Upper Left Longitude	UpperLeftLongitude	NNN.NNNNNN	<degree></degree>
Upper Right Latitude	UpperRightLatitude	SNN.NNNNNN	<degree></degree>
Upper Right Longitude	UpperRightLongitude	NNN.NNNNNN	<degree></degree>
Lower Left Latitude	LowerLeftLatitude	SNN.NNNNNN	<degree></degree>
Lower Left Longitude	LowerLeftLongitude	NNN.NNNNNN	<degree></degree>
Lower Right Latitude	LowerRightLatitude	SNN.NNNNNN	<degree></degree>
Lower Right Longitude	LowerRightLongitude	NNN.NNNNNN	<degree></degree>
Scene Center Latitude	SceneCenterLatitude	SNN.NNNNNN	<degree></degree>
Scene Center Longitude	SceneCenterLongitude	NNN.NNNNNN	<degree></degree>
Comment	CommentInfo	AAAAAAAA (Max 4000 digits)	(see Table 2.1-4)
Free Keywords	FreeKeyword	-	(see Table 2.1-3)

Table 2.1-3 Free Keywords in the Catalog Information File (DTM-TC Ortho)

		0	<u> </u>
Item	Keyword	Format of Preset Value	Content of Preset Value
DTM Minimum Value	DTMMinimum	SNNNN	<m></m>
DTM Maximum Value	DTMMaximum	SNNNNN	<m></m>
DTM Mean Value	DTMAverage	SNNNNN	<m></m>
DTM Standard Deviation	DTMStdev	NNNNN	<m></m>
DTM Mode Pixel Value	DTMModePixel	SNNNNN	<m></m>
TCO Maximum Value	TCOMaximum	NNNN	
TCO Mean Value	TCOAverage	NNNN	
TCO Standard Deviation	TCOStdev	NNNN	
TCO Mode Pixel Value	TCOModePixel	NNNN	
Dummy Pixel Percentage	DTMQAPercentDummyPixel	NNN	<%>
Bad Pixel Percentage	DTMQAPercentBadPixel	NNN	<%>
Shadow Pixel Percentage	DTMQAPercentShadowPixel	NNN	<%>
Scene Center Incidence Angle	IncidenceAngle	NNN.NNN	<degree></degree>
Scene Center Emission Angle	EmissionAngle	NNN.NNN	<degree></degree>
Scene Center Phase Angle	PhaseAngle	NNN.NNN	<degree></degree>
Scene Center Solar Azimuth	SolarAzimuth	NNN.NNN	<degree></degree>
Spacecraft Altitude	SpacecraftAltitude	NNNNNN	Spacecraft altitude of the first line ("distance between spacecraft and lunar gravitational center" minus average lunar radius) <km></km>
DPU Temperature	DPUTemperature	NNNNNN	<degc></degc>

Table 2.1-4 Comments in the Catalog Information File (DTM-TC Ortho)

Item	Keyword	Format of Preset Value	Content of Preset Value
Product Creation Date	ProductCreationTime	yyyy-mm-ddThh:mm:ssZ	
Base L2A Data File Name	BaseLevel2AFileName	AAAAAAAA (Max. 31 digits)	
Mission Phase Name	MissionPhaseName	AAAAAAAA	
Qtable ID	QtableID	AAAAAAAA	
Huffman Table ID	HuffmanTableID	AAAAAAAA	

2.1.2 Thumbnail File

Thumbnails included in the DTM-TC Ortho Data Set are reduced-size TC Ortho images with JPEG compression, though the DTM-TC Ortho Data Set contains three types of image data (DTM, TC Ortho, and Quality Flag).

Refer to ISO-IEC 10918-1 for the JPEG format. Table 2.1-5 provides the specifications for the thumbnails.

Table 2.1-5 Specifications for the Thumbnail Files

Number of Pixels	Number of Lines	File Size	Format
512 or less	512 or less	100kb or less	JPEG

2.1.3 PDS Label (For L2DB)

The PDS Label for L2DB is concomitant with a Tar Object File of the DTM-TC Ortho Data Set. Figure 2.1-3 depicts the configuration of the PDS Label (for L2DB), and Table 2.1-6 details the items of the PDS Label.

PDS Label	PDS Label Common Items		
	Object Position Specification		
	Product	File Attributes	
	Information	Product Attributes	

Fig. 2.1-3 Configuration of the PDS Label for use with L2DB

Table 2.1-6 Items of the PDS Label File for L2DB

Category		Name	Description form	Explanation	Value
PDS label common items					
		PDS version ID	PDS_VERSION_ID = "%s"	PDS version ID	"PDS3" fixed
		File record type	RECORD_TYPE = "%s"	File record type	"UNDEFINED" fixed
		File name	FILE_NAME = "%s"	File name of this product (product ID + extension)	
		Product ID	PRODUCT_ID = "%s"	Unique ID given to every product	
		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
Object position specification					
			OBJECT = ARCHIVE_FILE		
		File name	FILE_NAME = "%s"	File name of the tar object	
		Archive type	ARCHIVE_TYPE ="%s"	How archived	"TAR" fixed
		Compression type	ENCODING_TYPE = "%s"	How compressed	"GZIP" fixed
		Number of archived files	ARCHIVE_FILES =%d	Total number of files contained in the tar object	3 fixed
		Archive files	ARCHIVE_FILE_NAME = {"%s", "%s", "%s"}	Names of the files contained in the tar object	
		File size after extraction	REQUIRED_STORAGE_BYTES = %d	Total file size after extracting tar object <byte></byte>	
			END_OBJECT = ARCHIVE_FILE		
Product information	File attributes				
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic, and TC ortho mosaic "MAP": DTM map, and TC ortho map
	Product attributes				
		Product set ID	FRODUCT_SET_ID = "%a"	Product set ID	"DTM, TCOrtho": DTM/TC ortho "DTM, MAP": DTM map "TCOrtho, MAP": TC ortho map "DTM, TCOrtho, S": DTM/TC ortho (special product) "DTM, MAP_S": DTM map (special product) "TCOrtho, MAP_S": TC ortho map (special product) "DTM, MSC": DTM mosaic (special product) "TCOrtho, MSC": TC ortho mosaic (special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
			END		

2.1.4 Tar Object File

The Tar Object File is composed of three DTM PDS product files (attached format).

Figure 2.1-4 illustrates the configuration of the Tar Object, and Fig. 2.1-5 presents the configuration of the DTM PDS Product.

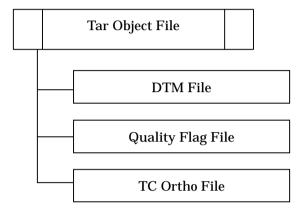


Fig. 2.1-4 Configuration of the Tar Object

PDS Label	PDS Label Common Items		
	Object Position Specification		
	Product	File Attributes	
	Information	Product Attributes	
		Scene Attributes	
		Image Map Projection	
		Processing Parameter Description	
		Image Information	
		Quality Information	
		Base L2A Source Data Information	
Image Data	DTM, TC Ortho	and Quality Flag	
Object			

Fig. 2.1-5 Structure of the DTM PDS Product File

(1) PDS Label

The PDS Label of each DTM PDS product (DTM, Quality Flag, or TC Ortho) is added as an attached file to each product file.

Tables 2.1-7 to 2.1-9 detail the items of the PDS Label.

Table 2.1-7 Items of the PDS Label (DTM File)

			2.1-7 Items of the PDS Labe	· /	
PDS label common items		Name	Description form	Explanation	value
		PDS version ID File record type	PDS_VERSION_ID = "%s" RECORD_TYPE = "%s"	PDS version ID File record type	"PDS3" fixed "UNDEFINED" fixed
		File name	FILE_NAME = "%s"	File name of this product (product ID +	CNDEP INCO
		Product ID	PRODUCT_ID = "%s"	extension) Unique ID given to every product	
		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
Object position specification		Head position of	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
P. L	770	image object	19902 - 9100 921107	rieau position of the image object	
Product information	File attributes				
		Software name	SOFTWARE_NAME = "%s"	Software name that created the DTM PDS product	TBD
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM PDS product	"n.n.n" (TBD)
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic, and TC ortho mosaic
					"MAP": DTM map, and TC ortho
		Product creation	PRODUCT_CREATION_TIME = %s	Product creation time	map YYYY-MM-DDTHH:MM:SSZ
	Product	time			
	attributes	2 1 12	PRODUCER_ID = "%s"		ET TOTAL OF T
		Producer ID Product set ID	PRODUCT_SET_ID = "%s"	Data producer ID Product set ID	"LISM" fixed "DTM_TCOrtho": DTM/TC ortho
					"DTM_MAP": DTM map "TCOrtho, MPP": TC ortho map "DTM_TCOrtho, S": DTM/TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrtho, MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special product) "DTM_MSC": DTM mosaic (special product) "TCOrtho, MSC": TC ortho mosaic (special product)
		Product version	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
1		Base L2A data	BASE_LEVEL2A_FILE_NAME = "%s"	L2A data file name of the base image	
	1	file name Reference L2A	REFERENCE_LEVEL2A_FILE_NAME = {"%s","%s",}	used for DTM creating L2A data file names of all reference	
	1	data file name SPICE kernel file	SPICE_SPK_FILE_NAME = {"%s","%s",}	images used for DTM creating All SPICE kernel (SPK) names used	
1		name (SPK) SPICE kernel file		for DTM/ortho product creating All SPICE kernel (Pck) names used	
1		name (PcK)	SPICE_PCK_FILE_NAME = {"%s","%s",}	for DTM / ortho product creating	
		SPICE kernel file name (IK)	SPICE_IK_FILE_NAME = {"%s","%s",}	All SPICE kernel (IK) names used for DTM / ortho product creating	
		SPICE kernel file name (CK)	SPICE_CK_FILE_NAME = {"%s","%s",}	All SPICE kernel (CK) names used for DTM / ortho product creating	
		SPICE kernel file	SPICE_SCLK_FILE_NAME = {"%s","%s",}	All SPICE kernel (SCLK) names used	
		name (SCLK) SPICE kernel file	SPICE_LSK_FILE_NAME = {"%s","%s",}	for DTM/ortho product creating All SPICE kernel (LSK) names used	
	Scene	name (LSK)		for DTM / ortho product creating	
	attributes	Mission name	MISSION NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name Data set ID	SPACECRAFT_NAME = "%s" DATA SET ID = "%s"	Spacecraft name This data set ID	"SELENE-M" fixed TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of the Instrument name	"Terrain_Camera"
		Instrument ID Upper left	<pre>INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg></pre>	Instrument ID Latitude at the center of the upper-left	"TC" -90 to 90
		latitude		corner pixel of the image that contains dummy pixels	
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels	0 to 360
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels	-90 to 90
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-right corner pixel of the image that contains dummy pixels	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-left corner pixel of the image that contains	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	dummy pixels Longitude at the center of the lower-left corner pixel of the image that contains	0 to 360
		Lower right	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	dummy pixels Latitude at the center of the lower-right	-90 to 90
		latitude	TOMED DICHT TOMOTHERS - \$10 CE	corner pixel of the image that contains dummy pixels	0.4000
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-right corner pixel of the image that contains dummy pixels	0 to 360
1		Image center latitude	<pre>IMAGE_CENTER_LATITUDE = %10.6f <deg></deg></pre>	Latitude at the center pixel of the image	-90 to 90
		Image center longitude	<pre>IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg></pre>	Longitude at the center pixel of the image	0 to 360
		Location flag	LOCATION_FLAG = "%s"	Spacecraft location information	"A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
		Distance between the Moon and the Sun	MOON_SUN_DISTANCE = %d <km></km>	Distance between the Moon and the Sun	
	Map projection information				
		Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or
	1	Coordinate	COORDINATE_SYSTEM_TYPE = "%s"	Type of the coordinate system	"Transverse Mercator" "BODY-FIXED ROTATING" fixed
	1	system type Coordinate	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
		system name A axis radius	A_AXIS_RADIUS = %8.3f <km></km>	A axis radius of the Moon	1737.4 <km> default</km>
	1	B axis radius	B_AXIS_RADIUS = %8.3f <km></km>	B axis radius of the Moon	1737.4 <km> default</km>
	1	C axis radius First standard	C_AXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km>	C axis radius of the Moon First standard parallel	1737.4 <km> default -90 to 90 for "Lambert Conformal"</km>
1		parallel		Used for "Lambert Conformal" projection.	projection "N/A" for other map projection
		Second standard	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel	-90 to 90 for "Lambert Conformal"
		Second standard parallel Positive longitude	SECOND_STANDARD_PARALLEL = %10.6f <deg> POSITIVE_LONGITUDE_DIRECTION = "%s"</deg>	Second standard parallel Used for "Lambert Conformal" projection. Positive direction of longitude	-90 to 90 for "Lambert Conformal" projection "N/A" for other map projection "EAST" fixed

	Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given MAP_PROJECTION_TYPE	-90 to 90
	Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the origin in a given MAP_PROJECTION_TYPE	0 to 360
	Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	Zero latitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
	Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
	First line number	LINE_FIRST_PIXEL = %d	Line number of the upper end pixel of the image	1 fixed
	Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the image	
	First sample number Last sample	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d	Sample number of the left end pixel of the image Sample number of the right end pixel of	1 fixed
	number Map orientation	MAP_PROJECTION_ROTATION = %f <deg></deg>	the image Clockwise rotation of the line and	0.0 fixed
	angle Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	sample coordinates with respect to the map projection origin Total number of pixels in a box area of	"N/A" is given when
	Map scale	MAP_SCALE = %f <km pixel=""></km>	1-degree latitude x 1-degree longitude for Simple Cylindrical Projection Actual distance, in km, between two	"N/A" is given when MAP_PROJECTION_TYPE is not "Simple Cylindrical".
			points at the origin in a given MAP_PROJECTION_TYPE	
	Maximum latitude Minimum	MAXIMUM_LATITUDE = %10.6f <deg> MINIMUM_LATITUDE = %10.6f <deg></deg></deg>	Latitude at the center of the northernmost pixel in 4 corner pixels	-90 to 90
	latitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Latitude at the center of the southernmost pixel in 4 corner pixels Longitude at the center of the	-90 to 90
	Easternmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	easternmost pixel in 4 corner pixels	0 to 360
	Westernmost longitude	LINE_PROJECTION_OFFSET = %f	Longitude at the center of the western-most pixel in 4 corner pixels	0 to 360
	Line projection offset		Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%8" END_OBJECT = IMAGE_MAP_PROJECTION	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing parameter description		OR TROP - REAGRACING DARWING		
	Parameter set name	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
Image		END_OBJECT = PROCESSING_PARAMETERS		
information		OBJECT = IMAGE		
	Bands Band storage	BANDS = %d BAND_STORAGE_TYPE = "%s"	Total number of bands in this image Storage sequence of lines, samples, and	1 fixed "BAND_SEQUENTIAL" fixed
	type Band name	BAND_NAME = "%s"	bands in this image Spectral range(s) associated with each	"N/A" fixed
	Lines	LINES = %d	band in single-band or multi-band data Total number of lines in this image	
	Line samples Sample type	LINE_SAMPLES = %d SAMPLE_TYPE = "%s"	Total number of pixels in a line Image data type	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho)
	Sample bits	SAMPLE_BITS = %d	Total number of bits used to store one data sample value	8 or 16
	Meaning of pixel value	IMAGE_VALUE_TYPE = "%s"	Meaning of the value of the pixel	"DN", "RADIANCE", "REFLECTANCE" or
	Sample bit mask	SAMPLE_BIT_MASK = %s	Active bits in a sample	"ELEVATION" 2#11111111#: 8 bits 2#111111111111111#: 16 bits
	Offset	OFFSET = %f	Offset value used in the DN for physical quantity conversion	Z#11111111111111#. 10 DRS
			DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meter" from the Moon radius TC ortho and TC ortho map (REF_CNV_SW="OFF"): Radiance DN*SCALING_FACTOR+OFFSET Unit is "wim" µ m/sr* TC ortho map (REF_CNV_SW="ON"): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "w".	
	Scaling factor	SCALING_FACTOR = %f	Gain used in the DN for physical quantity conversion	
	Stretched flag	STRETCHED_FLAG = "%s"	Whether a data object has been stretched to make it easy to see	"FALSE" fixed
	Valid minimum	VALID_MINIMUM = %d	Minimum value that is valid for a data object	-9989: DTM 2: TC ortho
	Valid maximum Dummy	VALID_MAXIMUM = %d DUMMY = %d	Maximum value that is valid for a data object Indicates the dummy (blank) pixel of	32766 fixed -9999: DTM
	Minimum	MINIMUM = %d	Indicates the dummy (blank) pixel of the image Minimum value in this image except	0: TC ortho When the total number of valid
	Maximum	MAXIMUM = %d	the invalid pixels Maximum value in this image except	pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1. When the total number of valid
			the invalid pixels	pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Average	AVERAGE = %f	Average value in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Standard deviation	STDEV = %f	Standard deviation in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of TC ortho is set to -1.
	Mode pixel	MODE_PIXEL = %d END_OBJECT = IMAGE	Mode in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of TC ortho is set to -1.
Quality information				
	Quality flag file	OBJECT = QUALITY_INFO ^QA_FILENAME = "%s"	Name of quality flag file	
	name Good pixel percentage	QA_PERCENT_GOOD_PIXEL = %f	Percentage of good pixels in all the DTM pixels	Total number of QA_PERCENT_GOOD_PIXEL, QA_PERCENT_DUMMY_PIXEL and QA_PERCENT_BAD_PIXEL is 100.0

1	Dummy pixel percentage	QA_PERCENT_DUMMY_PIXEL = %f	Percentage of dummy pixels in all the DTM pixels	
	Bad pixel percentage	QA_PERCENT_BAD_PIXEL = %f	Percentage of bad pixels in all the DTM pixels	
	Interpolated pixel percentage	QA_PERCENT_INTERPOLATED_PIXEL = %f	Percentage of interpolated pixels in all the DTM pixels	
	Shadow pixel percentage	QA_PERCENT_SHADOW_PIXEL = %f	Percentage of shadowed pixels in all the DTM pixels	
	Correlation threshold of bad	BAD_PIXEL_THRESHOLD_CORRELATION = %f	Threshold of image correlation between stereo images to extract the bad pixel	
	pixel Slope threshold of	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	from the DTM Slope angle threshold to extract the bad	
	bad pixel	END_OBJECT = QUALITY_INFO	pixel from the DTM	
Base L2A source data information				
miormation	L2A file name	OBJECT = SOURCE_L2A_DATA_INFO FILE_NAME = "%s"	File name of the L2A product	
	L2A creation time	PRODUCT_CREATION_TIME = %s EXECUTION_COUNT = %d	L2A product data creation time	YYYY-MM-DDTHH:MM:SSZ
	Execution count Illumination	ILLUMINATION_CONDITION = "%s"	Execution count of the L2A product Illumination condition	"MORNING" or "EVENING"
	condition L0 file name	LEVELO_FILE_NAME = { "%s", "%s",}	File names of all the L0 data used for	
	Spacecraft time	SC_TIME_CORRECTION_FILE_NAME = { *\s*, *\s*,}	creating L2A File names of all the spacecraft time	
	correction file name Orbit data file	ORBIT_DATA_FILE_NAME = { "%s", "%s",}	correction files used for creating L2A File names of all the orbit data files	
	name Attitude data file	ATTITUDE_DATA_FILE_NAME = {"%s","%s",}	used for creating L2A File names of all the attitude data files	
	name Revolution	REVOLUTION_NUMBER_FILE_NAME = {"%s","%s",}	used for creating L2A File names of all the revolution number	
	number file name HK mission file	HK_MISSION_FILE_NAME = { "%s", "%s",}	files used for creating L2A File names of all the mission	
	name	m_motorici_1m_max = (vs , vs ,)	instrument HK files used for creating	
	SPICE kernel (SPK) file name	SPICE_SPK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (SPK) files used for creating L2A	
	SPICE kernel (Pck) file name	SPICE_PCK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (Pck) files used for creating L2A	
	SPICE kernel (IK) file name	SPICE_IK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (IK) files used for creating L2A	
	SPICE kernel (CK) file name	SPICE_CK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (CK) files used for creating L2A	
	SPICE kernel (SCLK) file name	SPICE_SCLK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (SCLK) files used for creating L2A	
	SPICE kernel (LSK) file name	SPICE_LSK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (LSK) files used for creating L2A	
	Scene definition file name	SCENE_DEFINITION_FILE_NAME = "%s"	File name of the scene definition file used for creating L2A	
	Threshold file name	THRESHOLD_FILE_NAME = "%s"	Threshold file name	
	Conversion table file name	CONVERSION_TABLE_FILE_NAME = "%s"	Engineering value translated for table file	
	Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain Camera 1" or "Terrain Camera 2"
	Instrument ID Revolution	INSTRUMENT_ID = "%s" REVOLUTION_NUMBER = %d	Instrument ID Revolution number	"TC1" or "TC2"
	number Strip sequence	STRIP_SEQUENCE_NUMBER = %d	Strip number in the revolution	
	number Scene sequence	SCENE_SEQUENCE_NUMBER = %d	Scene number in the strip	
	number Mission phase	MISSION_PHASE_NAME = "%s"	Mission phase name	"Nominal", "Option", etc.
	name Upper left daytime flag Upper right daytime flag	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the upper left pixel and the upper right pixel of the image	"Day" or "Night"
	Lower left daytime flag Lower right daytime flag	LOWER_LEFT_DAYTIME_FLAG = "%s" LOWER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the lower left pixel and the lower right pixel of the image	"Day" or "Night"
	Target name Observation	TARGET_NAME = "%s" OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode ID	"MOON" default "NORMAL" or "SUPPORT"
	mode ID Sensor	SENSOR_DESCRIPTION = "%s"	Sensor specifications	
	Description Sensor	SENSOR_DESCRIPTION2 = "%s"	Spare sensor information	
	Description2 Detector status	DETECTOR_STATUS	ON/OFF of each of 5 powers (TC1, TC2,	
	Exposure mode	{"TC1:%s","TC2:%s","MV:%s","MN:%s","SP:%s"} EXPOSURE_MODE_ID = "%s"	MI-VIS, MI-NIR, SP) in this scene center	"LONG". "MIDDLE". "SHORT"
	ID Spacecraft clock	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Exposure mode ID Spacecraft clock count at the 1st line	LONG, MIDDLE, SHUKI
	start count (TI) Spacecraft clock	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec>	(TI) Spacecraft clock count at the 1st line (TI)	
	stop count (TI) Corrected spacecraft clock start count (TI)	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	(TI) Corrected spacecraft clock count at the 1st line (TI)	
	Corrected spacecraft clock stop count (TI)	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec></sec>	Corrected spacecraft clock count at the last line (II)	
	Start time (UT) Stop time (UT)	START_TIME = %s STOP_TIME = %s	Imaging time at the 1st line (UT) Imaging time at the last line (UT)	YYYY-MM-DDTHH:MM:SS.sssssZ YYYY-MM-DDTHH:MM:SS.sssssZ
	Corrected start time (UT)	CORRECTED_START_TIME = %s	Corrected imaging time at the 1st line (UT)	YYYY-MM-DDTHH:MM:SS.ssssssZ
	Corrected stop time (UT)	CORRECTED_STOP_TIME = %s LOCATION FLAG = "%s"	Corrected imaging time at the last line (UT)	YYYY-MM-DDTHH:MM:SS.sssssZ
	Location flag	DATION_PINC = *49*	Spacecraft location information	"A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
	Roll cant	ROLL_CANT = "%s"	Distinction whether nadir-view observation or roll-cant observation	"YES": roll-cant observation "NO": nadir-view observation
	Incidence angle Emission angle	<pre>INCIDENCE_ANGLE = \$7.3f <deg> EMISSION_ANGLE = \$7.3f <deg></deg></deg></pre>	Incidence angle at the scene center Emission angle at the scene center	
	Phase angle Solar azimuth	PHASE_ANGLE = %7.3f <deg> SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg></deg>	Phase angle at the scene center Solar azimuth angle at the scene center	
	angle Focal plane	FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc>	Detector temperature at the 1st line	
	temperature Telescope	TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	Telescope temperature at the 1st line	
	temperature Line exposure	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Line exposure duration	
	duration Line sampling	LINE_SAMPLING_INTERVAL = %10.6f <msec></msec>	Designed value of sampling interval	
	interval Corrected sampling interval	CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec>	Sampling interval corrected by dividing the corrected interval time between first line and last line of strip into the	
]	Satellite moving	SATELLITE_MOVING_DIRECTION = "%s"	number of lines Satellite moving direction	"+1": lead of +x plane

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direction Qtable ID	O_TABLE_ID = "%s"	Qtable ID	"-1": lead of -x plane
Huffman table ID	HUFFMAN_TABLE_ID = "%s"	Huffman table ID	
Data compression	DATA_COMPRESSION_PERCENT_MEAN = %5.1f	Mean compression percentage in the	
percentage mean Data compression	DATA_COMPRESSION_PERCENT_MAX = %5.1f	scene Maximum compression percentage in	
percentage maximum	DATA_COMPRESSION_FERCENI_MAX = \$3.11	the scene	
Data compression percentage minimum	DATA_COMPRESSION_PERCENT_MIN = \\$5.1f	Minimum compression percentage in the scene	
Defect pixel position	DEFECT_PIXEL_POSITION = (%d,%d,)	Detector number of the defect pixels	
Constant dummy pixels	CONSTANT_DUMMY_PIXELS = %d	Total number of dummy pixels for the compression	
Swath mode ID	SWATH_MODE_ID = "%s"	Name of the swath mode	"NOMINAL", "FULL" or "HALF"
First pixel number	FIRST_PIXEL_NUMBER = %d	Detector number of the first sample	
Last pixel number	LAST_PIXEL_NUMBER = %d	Detector number of the last sample pixel	
Spacecraft altitude	SPACECRAFT_ALTITUDE = %8.3f <km></km>	Spacecraft altitude from the Moon radius at the 1st line	
Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km>	Spacecraft ground speed at the 1st line	
TC1 telescope temperature	TCl_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC1 telescope temperature at the 1st line	
TC2 telescope temperature	TC2_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC2 telescope temperature at the 1st line	
DPU temperature	DPU_TEMPERATURE = %6.2f <degc></degc>	DPU temperature at the 1st line	
TM temperature	TM_TEMPERATURE = %6.2f <degc></degc>	TM temperature at the 1st line	
TM radiator temperature	<pre>TM_RADIATOR_TEMPERATURE = %6.2f <degc> OBJECT = IMAGE</degc></pre>	TM radiator temperature at the 1st line	
Encoding type	OBJECT = IMAGE ENCODING_TYPE = "%g"	Data encoding type	"DCT": DCT compression
Encoding compression	ENCODING_COMPRESSION_PERCENT = %5.1f	Compression percentage of the image data object	"N/A": non-compression
percentage Nominal line	NOMINAL_LINE_NUMBER = %d	Nominal number of lines in this image	
number Nominal sample	NOMINAL_SAMPLE_NUMBER = %d	Nominal number of samples in a line	
number Unfilled line	UNFILLED_LINE_NUMBER = %d	Total number of lines with exceptional	
number		dummy samples due to insufficient compression	
Nominal overlapped line number	NOMINAL_OVERLAP_LINE_NUMBER = %d	Nominal number of overlapped lines	
Overlapped line	OVERLAP_LINE_NUMBER = %d	Actual number of overlapped lines	
number	LINES = %d		
number Lines Line samples	LINES = %d LINE_SAMPLES = %4d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy	
number Lines		Total number of lines in this image Total number of pixels in a line of this	"N/A": compression data "MSB_UNSIGNED_INTEGER": non_compression_data
Lines Line samples	LINE_SAMPLES = %4d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data
number Lines Line samples Sample type Sample bits Minimum DN for statistical	LINE_SAMPLES = %4d SAMPLE_TYPE = *%s*	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value	"MSB_UNSIGNED_INTEGER": non-compression data
number Lines Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical valuation	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data
number Lines Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum	LINE_SAMPLES = %4d SAMPLE_TYPE = "%8" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data When the population of the image
number Lines Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 18: non-compression data 18: non-compression data 19: non-compression data 19: non-compression data 10: non-compression data 10: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Massian DN for statistical evaluation Some maximum DN Some maximum DN Some standard average DN Some standard deviation DN Some of DN Saturation	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Minimum DN in this image Standard deviation DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %d.1f	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 18: non-compression data 19: non-compression data When the population of the Image evaluation is 0, value is set to -1. When the population of the Image evaluation is 0, value is set to -1. When the population of the Image evaluation is 0, value is set to -1. When the population of the Image evaluation is 0, value is set to -1.
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for available of the sample statistical evaluation Scone maximum DN Scone maximum DN Scone maximum DN Scone standard average DN Scone mode DN Scone mode DN Scone mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STEEV_DN = %6.1f SCENE_STEEV_DN = %d SATURATION_THRESHOLD = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 18: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Some maximum DN for statistical evaluation Some maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturated pixel Saturated pixel position Saturated pixel position Saturated pixel	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_AVERAGE_DN = %6.1f SCENE_STEEV_DN = %d SATURATION_THRESHOLD = %d SATURATION_THRESHOLD = %d SATURATION_THRESHOLD = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection Total number of saturated pixels	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 18: non-compression data 19: n
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Some maximum DN for statistical evaluation Some maximum DN Some maximum DN Some standard average DN Some standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixel position	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_AVERAGE_DN = %6.1f SCENE_STEW_DN = %d SATURATION_THRESHOLD = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection Total number of saturated pixels Image coordinates of saturated pixels	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 16: non-compression data 16: non-compression data 18: ompression data 18: ompression data 19: ompression data 10: ompres
number Lines Line samples Line samples Sample type Sample bits Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation DN Saturated pixel Saturated pixel position Saturated pixel position Saturated pixel position Saturated pixel	LINE_SAMPLES = %4d SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %d.1f SCENE_MODE_DN = %d SATURATEO_PIXELS = %d SATURATEO_PIXELS = %d SATURATEO_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATEO_PIXEL_PERCENTAGE = %d	Total number of lines in this image Total number of pixels in a line of this image, including the number of dummy pixels Data storage representation of sample value Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection Total number of saturated pixels Image coordinates of saturated pixels	"MSB_UNSIGNED_INTEGER": non-compression data 12: compression data 18: non-compression data 19: n
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Table 2.1-8 Items of PDS Label (Quality Flag File)

		Table 2.1-8	Items of PDS Label (Qua	ality Flag File)	
PDS label common items		item name	description form	Explanation	Value
. Do label Common Rems		PDS version ID	PDS_VERSION_ID = "%s" RECORD_TYPE = "%s"	PDS version ID File record type	"PDS3" fixed
		File record type File name	FILE_NAME = "%s"	File name of this product (product ID +	"UNDEFINED" fixed
		Product ID	PRODUCT_ID = "%s"	extension) Unique ID given to every product	
Object position specification		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
		Head position of image object	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File attributes				
	attributes	Software name	SOFTWARE_NAME = "%s"	Software name that created the DTM	TBD
		Software version	SOFTWARE_VERSION = "%s"	PDS product Ssoftware version that created the DTM	"n.n.n" (TBD)
		Processing level	PROCESS_VERSION_ID = "%s"	PDS product Processing level ID	"L3D": DTM/TC ortho, DTM mosaic
				_	and TC ortho mosaic "MAP": DTM map and TC ortho
		Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	map YYYY-MM-DDTHH:MM:SSZ
	Product attributes				
		Producer ID	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID Product version ID	PRODUCT_VERSION_ID = *%a*	Product see ID	"DTM_TCOrthb": DTM/TC ortho DTM_MAP": DTM map "TCOrtho_MAP": TC ortho map "TCOrtho_MAP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrtho_MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special product) "Ol' to "99"
	Scene	Product version ID	PRODUCT_VERSION_ID = %5	Product version ID	01 to 99
	attributes	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name Data set ID	SPACECRAFT_NAME = "%s" DATA_SET_ID = "%s"	Spacecraft name This data set ID	"SELENE-M" fixed TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain_Camera"
		Instrument ID Upper left latitude	<pre>INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg></pre>	Instrument ID Latitude at center of the upper-left corner	"TC" -90 to 90
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	pixel of the image that contains dummy pixels Longitude at center of the upper-left corner pixel of the image that contains	0 to 360
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	dummy pixels Latitude at center of the upper-right corner pixel of the image that contains	-90 to 90
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	dummy pixels Longitude at the center of the upper-right corner pixel of the image that contains	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	dummy pixels Latitude at the center of the lower-left corner pixel of the image that contains dummy pixels	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-left corner pixel of the image that contains dummy pixels	0 to 360
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-right corner pixel of the image that contains dummy pixels	-90 to 90
		Lower right longitude Image center latitude	LOWER_RIGHT_LONGITUDE = \$10.6f <deg> IMAGE_CENTER_LATITUDE = \$10.6f <deg></deg></deg>	Longitude at the center of the lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image	0 to 360 -90 to 90
		Image center longitude Location flag	IMAGE_CENTER_LONGITUDE = \$10.6f <deg> LOCATION_FLAG = *%s*</deg>	Longitude at the center pixel of the image Spacecraft location information	0 to 360 "A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging
					time which changes from the descending to the ascending
	Мар	Distance between the moon and the sun	MOON_SUN_DISTANCE = %d <km></km>	Distance between the Moon and the Sun	
	projection information		OBJECT = IMAGE_MAP_PROJECTION		
		Map projection	MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator"
		Coordinate system type Coordinate system name	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Type of the coordinate system Full name of the coordinate system	"BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed
		A axis radius	A_AXIS_RADIUS = %8.3f <km> B AXIS RADIUS = %8.3f <km></km></km>	A axis radius of the Moon B axis radius of the Moon	1737.4 < KM> default
		B axis radius C axis radius First standard parallel	B_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km></km>	B axis radius of the Moon C axis radius of the Moon First standard parallel Used for "Lambert Conformal" projection.	1737.4 <km> default 1737.4 <km> default -90 to 90 for "Lambert Conformal" projection</km></km>
		Second standard parallel	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel Used for "Lambert Conformal" projection.	"N/A" for other map projection -90 to 90 for "Lambert Conformal" projection
		Positive longitude	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"N/A" for other map projection "EAST" fixed
		direction Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given	-90 to 90
		Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Longitude at the origin in a given	0 to 360
		Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero latitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
		Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
	I	First line number	LINE_FIRST_PIXEL = %d	Line number of the upper end pixel of the image	1 fixed
			LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the	
		Last line number		image	
		Last line number First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the	1 fixed
			SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d	Sample number of the left end pixel of the image Sample number of the right end pixel of	1 fixed
		First sample number		Sample number of the left end pixel of the image	1 fixed 0.0 fixed

ı	Î.	Ī	Simple Cylindrical Projection	"Simple Cylindrical".
	Map scale	MAP_SCALE = %f <km pixel=""></km>	Actual distance, in km, between two points at the origin in a given MAP PROJECTION TYPE	Simple Cymra eur .
	Maximum latitude	MAXIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the northernmost pixel in 4 corner pixels	-90 to 90
	Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the southernmost pixel in 4 corner pixels	-90 to 90
	Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the easternmost pixel in 4 corner pixels	0 to 360
	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%s"	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
		END_OBJECT = IMAGE_MAP_PROJECTION		
Processing parameter description				
		OBJECT = PROCESSING_PARAMETERS		
	Parameter set name	PARAMETER_SET_NAME = "%s" END_OBJECT = PROCESSING_PARAMETERS	Name of processing parameter set	TBD
Image information				
		OBJECT = IMAGE		
	Bands Bond storoge type	BANDS = %d BAND_STORAGE_TYPE = "%s"	Total number of bands in this image	1 fixed "BAND_SEQUENTIAL" fixed
	Band storage type	BAND_STORAGE_IIFE = %5 BAND_NAME = "%s"	Storage sequence of lines, samples, and bands in this image	
	Band name	LINES = %d	Spectral range(s) associated with each band in single-band or multi-band data	"N/A" fixed
	Lines Line samples	LINES = %d LINE_SAMPLES = %d	Total number of lines in this image Total number of pixels in a line	
	Sample type	SAMPLE_TYPE = "%s"	Image data type	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho)
	Sample bits	SAMPLE_BITS = %d	Total number of bits used to store one data sample value	8 or 16
	Sample bit mask	SAMPLE_BIT_MASK = %B	Active bits in a sample	2#11111111#: 8 bits 2#1111111111111111#: 16 bits
		END_OBJECT = IMAGE		
Quality information				
		OBJECT = QUALITY_INFO		
	Quality bit mask information	QA_BIT_MASK_INFO = {(%s,*%s*),(%s,*%s*),}	Information of bit mask of the quality flag file	((2#00000001#, "DEFECT PIXEL"), (2#00000010#, "SATURATED PIXEL"), (2#000100000#, "SHADOW PIXEL"), (2#011000000#, "BAD PIXEL"), (2#110000000#, "DUMMY PIXEL"), (2#10000000#, "INTERPOLATED PIXEL"))
	Good pixel percentage	QA_PERCENT_GOOD_PIXEL = %f	Percentage of good pixels in all the DTM pixels	The total number of QA_PERCENT_GOOD_PIXEL, QA_PERCENT_DUMMY_PIXEL and QA_PERCENT_BAD_PIXEL is 100.0
	Dummy pixel percentage	QA_PERCENT_DUMMY_PIXEL = %f	Percentage of dummy pixels in all the DTM pixels	
	Bad pixel percentage	QA_PERCENT_BAD_PIXEL = %f	Percentage of bad pixels in all the DTM pixels	
	Interpolated pixel percentage	QA_PERCENT_INTERPOLATED_PIXEL = %f	Percentage of interpolated pixels in all the DTM pixels	
	Shadow pixel percentage	QA_PERCENT_SHADOW_PIXEL = %f	Percentage of shadowed pixels in all the DTM pixels	
	Correlation threshold of bad pixel	BAD_PIXEL_THRESHOLD_CORRELATION = %f	Threshold of image correlation between stereo images to extract the bad pixel from the DTM	
	Slope threshold of bad pixel	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	Slope angle threshold to extract the bad pixel from the DTM	
1		END_OBJECT = QUALITY_INFO		-
l		END		` <u> </u>

Table 2.1-9 Items of PDS Label (TC Ortho File)

Category		Table 2	Description form	Explanation	Value
PDS label common items		PDS version ID	PDS_VERSION_ID = "%s"		
		File record type	RECORD_TYPE = "%s"	PDS version ID File record type	"PDS3" fixed "UNDEFINED" fixed
		File name	FILE_NAME = "%s"	File name of this product (product ID + extension)	
		Product ID Data file format	PRODUCT_ID = "%s" DATA_FORMAT = "%s"	Unique ID given to every product Data file format ID	"PDS" fixed
Object position specification		ID			
		Head position of image object	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File attributes	A - 3			
		Software name	SOFTWARE_NAME = "%s"	Name of software that created the DTM PDS product	TBD
		Software version	SOFTWARE_VERSION = "%s"	Version of software that created the DTM PDS product	"n.n.n" (TBD)
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic and TC ortho mosaic
					"MAP": DTM map and TC ortho map
		Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	YYYY-MM-DDTHH:MM:SSZ
	Product attributes	time			
	attributes	Producer ID	PRODUCER_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	FRODUCT_SET_ID = "%s"	Product set ID	"DTM_TCOrtho": DTM/TC ortho "DTM_MAP": DTM map "TCOrtho_MAP": TC ortho map "TCOrtho_MAP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product) "DTM_MAP_S": TC ortho map (special product) "DTM_MSC": DTM maps (special product) "TCOrtho_MSC": TC ortho mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" ~ "99"
		Base L2A data file	BASE_LEVEL2A_FILE_NAME = "%s"	L2A data file name of the base image	
		name Reference L2A	REFERENCE_LEVEL2A_FILE_NAME = { "%s", "%s",}	used for creating DTM L2A data file names of all reference	
		data file name SPICE kernel file	SPICE_SPK_FILE_NAME = { "%s", "%s",}	images were used for creating DTM All SPICE kernel (SPK) names used	
		name (SPK) SPICE kernel file	SPICE_PCK_FILE_NAME = { "%s", "%s",}	for creating DTM / ortho product All SPICE kernel (Pck) names were	
		name (PcK) SPICE kernel file	SPICE_IK_FILE_NAME = {"%s","%s",}	used for creating DTM / ortho product All SPICE kernel (IK) names used for	
		name (IK) SPICE kernel file	SPICE_CK_FILE_NAME = {"%s","%s",}	creating DTM / ortho product All SPICE kernel (CK) names used	
		name (CK) SPICE kernel file	SPICE_SCLK_FILE_NAME = {"%s","%s",}	for creating DTM / ortho product All SPICE kernel (SCLK) names used	
		name (SCLK) SPICE kernel file	SPICE_LSK_FILE_NAME = { "%s", "%s",}	for creating DTM / ortho product All SPICE kernel (LSK) names used	
	Scene	name (LSK)		for creating DTM / ortho product	
	attributes	Mission name	MISSION NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name Data set ID	SPACECRAFT_NAME = "%s" DATA_SET_ID = "%s"	Spacecraft name This data set ID	"SELENE-M" fixed TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of instrument	"Terrain_Camera"
		Instrument ID Upper left latitude	INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Instrument ID Latitude at the center of the upper-left	"TC" -90 to 90
		Upper left	UPPER_LEFT_LONGITUDE = \$10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image	0 to 360
		longitude Upper right	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	that contains dummy pixels Latitude at the center of the	-90 to 90
		latitude		upper-right corner pixel of the image that contains dummy pixels	
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-right corner pixel of the image that contains dummy pixels	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-left corner pixel of the image that contains dummy pixels	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-left corner pixel of the image	0 to 360
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	that contains dummy pixels Latitude at the center of the lower-right corner pixel of the image	-90 to 90
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	that contains dummy pixels Longitude at the center of the lower-right corner pixel of the image	0 to 360
		Image center	<pre>IMAGE_CENTER_LATITUDE = \$10.6f <deg></deg></pre>	that contains dummy pixels Latitude at the center pixel of the image	-90 to 90
		Image center longitude	<pre>IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg></pre>	Longitude at the center pixel of the image	0 to 360
		Location flag	LOCATION_FLAG = "%s"	Spacecraft location information	"A": Ascending "D": Descending "M": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
	Map projection	Distance between the Moon and the Sun	MOON_SUN_DISTANCE = %d <km></km>	Distance between the Moon and the Sun	
	projection information				
		Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = *%s*	Map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator"
		Coordinate system type	COORDINATE_SYSTEM_TYPE = "%s"	Type of the coordinate system	"BODY-FIXED ROTATING" fixed
		Coordinate system name	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
		A axis radius	A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km></km></km>	A axis radius of the Moon B axis radius of the Moon	1737.4 <km> default 1737.4 <km> default</km></km>
		B axis radius C axis radius	C_AXIS_RADIUS = %8.3f <km></km>	C axis radius of the Moon	1737.4 <km> default</km>
		First standard parallel	FIRST_STANDARD_PARALLEL = %10.6f <deg></deg>	First standard parallel Used for "Lambert Conformal"	-90 to 90 for "Lambert Conformal" projection
		Second standard parallel	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	projection. Second standard parallel Used for "Lambert Conformal"	"N/A" for other map projections -90 to 90 for "Lambert Conformal" projection
	1			projection.	"N/A" for other map projections
		Positive longitude direction	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive longitude direction	"EAST" fixed

	Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given MAP_PROJECTION_TYPE	-90 to 90
ı	Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the origin in a given MAP_PROJECTION_TYPE	0 to 360
	Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	Zero latitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
	Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"N/A" fixed
	First line number	LINE_FIRST_PIXEL = %d	Line number of the upper end pixel of the image	1 fixed
	Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the image	
	First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the image	1 fixed
	Last sample number	SAMPLE_LAST_PIXEL = %d	Sample number of the right end pixel of the image	
	Map orientation angle	MAP_PROJECTION_ROTATION = %f <deg></deg>	Clockwise rotation of the line and sample coordinates with respect to the map projection origin	0.0 fixed
	Map resolution	MAP_RESOLUTION = %f <pre></pre>	Total number of pixels in a box area of 1-degree latitude x 1-degree longitude for Simple Cylindrical Projection	"N/A" is given when MAP_PROJECTION_TYPE is not "Simple Cylindrical."
	Map scale	MAXIMUM_LATITUDE = %10.6f <deq></deq>	Actual distance, in km, between two points at the origin in a given MAP_PROJECTION_TYPE	
	Maximum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the northernmost pixel in 4 corner pixels	-90 to 90
	Minimum latitude		Latitude at the center of the southernmost pixel in 4 corner pixels	-90 to 90
	Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the easternmost pixel in 4 corner pixels	0 to 360
	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%s" END OBJECT = IMAGE_MAP_PROJECTION	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing parameter description				
	Parameter set	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
	name Dark file name	DARK_FILE_NAME = "%s"	Dark current correction coefficient file	
	Flat file name	FLAT_FILE_NAME = "%s"	name Flat field correction coefficient file name	
	Effic file name	EFFIC_FILE_NAME = "%s"	Coefficient file name of temperature dependency correction of transmittance efficiency	
	Non-linearity file	NONLIN_FILE_NAME = "%s"	File name of non-linearity correction coefficient	
	Radiance conversion coefficient	RAD_CNV_COEF = %f	Radiance conversion coefficient [W/m2/micron/sr]	
Image		END_OBJECT = PROCESSING_PARAMETERS		
information	Bands	OBJECT = IMAGE BANDS = %d	Total number of bands in this image	1 fixed
	Band storage type	BAND_STORAGE_TYPE = "%s"	Storage sequence of lines, samples, and bands in this image	"BAND_SEQUENTIAL" fixed
	Band name	BAND NAME = "\$0"		"NI/A" Street
	Band name	BAND_NAME = "%s"	Spectral range(s) associated with each band in single-band or multi-band data	"N/A" fixed
	Lines Line samples	LINES = %d LINE_SAMPLES = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line	
	Lines	LINES = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER"
	Lines Line samples	LINES = %d LINE_SAMPLES = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one	"MSB_INTEGER" (DTM) or
	Lines Line samples Sample type Sample bits Meaning of pixel	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%a"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE".
	Lines Line samples Sample type Sample bits Meaning of pixel value	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel	"MSB_INTECER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC orths) 8 or 16 "DN", "RADIANCE", "REFLECTANCE", or "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LIMES = %d LIME_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "REFLECTANCE", or
	Lines Line samples Sample type Sample bits Meaning of pixel value	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DI'M and DI'M map: Elevation Elevation EVEALING, FACTOR+OFFSET	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN*SCALING, FACTOR+OFFSET Unit is "meters" from the Moon radius. TC ortho and TC ortho map	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW_="OFF"): Radiance = DN'SCALING, FOGFT): Radiance = DN'SCALING, FOGFTSET	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 28111111111: 8 bits
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN-SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. Total to and TC ortho map (EEF_CNV_SW=*OFF): Radiance DN-SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. Total to and TC ortho map (EEF_CNV_SW=*OFF): Radiance DN-SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. Total control of the pixel on the pixel	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. TOTAL and TO or of the map (REF_CNV_SW=OFF): Radiance DN'SCALING_FACTOR+OFFSET Unit is "wim2] units' TC ortho map (REF_CNV_SW='ON'): Reflectivity Reflectivity DN'SCALING_FACTOR+OFFSET Unit is "%" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR+OFFSET Unit is "%"	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 28111111111: 8 bits
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING_FACTOR+OFFSET Unit is "imeters' from the Moon radius. TOTAL and TOTO or tho map (REF_CNV_SW=OFF): Radiance DN'SCALING_FACTOR+OFFSET Unit is "wim2] units' TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR+OFFSET Unit is "sw", and the pixel with the pixe	"MSB_INTEGER" (DIM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#111111111 8 bits 2#111111111111 8 bits
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. TOTAL TOTAL MARCH OF TOTAL MARCH	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 22111111111; 8 bits 2211111111111111; 16 bits
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. TC ortle and TC ortle map REF, CNV_SW=OFF): Reff_CNV_SW=OFF): Reff_CNV_SW=OFFSET Unit is "win? Juniss" TC ortlo map (REF_CNV_SW="ON"): Reflectivity Entry of the pixel of the pi	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "FREFIECTANCE", or "ELEVATION" 2#11111111111118: 16 bits 2#111111111111111111111111111111111111
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. TC offset and TC or of the map EEFF. CNV, SW='OFF'): Radiance DN'SCALING, FACTOR+OFFSET Unit is "wim? univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING, FACTOR+OFFSET Unit is "sw'' univs'' TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING, FACTOR+OFFSET Unit is "sw'' and univs'' Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Maximum value that is valid for a data object	"MSB_INTEGER" (DTM) or "MSB_UNSKNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" or "ELEVATION" 2#11111111111#: 16 bits "TALSE" fixed "FALSE" fixed -9889. DTM _2: TC ortho _32766 fixed
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d UNMY = %d DUMMY = %d	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. TC or the map (TC or The map EEFE CNV_SW=OFF): Reafiance DN'SCALING, FACTOR+OFFSET Unit is "wim? univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING, FACTOR+OFFSET Unit is "wim? univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING, FACTOR+OFFSET Unit is "gin" and the selectivity EN'SCALING, FACTOR+OFFSET Unit is "gin" and the selectivity Mether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Maximum value that is valid for a data object Indicates the dummy (blank) pixel of the image	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" or "ELEVATION" 2#11111111111#: 16 bits "FALSE" fixed "FALSE" fixed -9889: DTM 22:TG ortho 32766 fixed -9999: DTM 0-9769: DTM 0-9769: DTM 0-9769: DTM 0-9760: DTM 0-9769: DTM 0-9760: D
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Stample bit mask Offset Stample bit mask Valid maximum Dumny Low saturation (REPR)	LIMES = %d LIME_SAMPLES = %d SAMPLE_SITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d DUMSY = %d LOW_REPR_SATURATION = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING_FACTOR+OFFSET Unit is "meters' from the Moon radius. TOTALING_FACTOR+OFFSET Unit is "wim Zi units" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR+OFFSET Unit is "wim Zi units" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR+OFFSET Unit is "s" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Maximum value that is valid for a data object Indicates the dummy (blank) pixel of the image Indicates the minimum saturation pixel after radiometric correction	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 2#11111111111#: 16 bits "FALSE" fixed "FALSE" fixed -9989: DTM 2: TC ortho 3:766 fixed -9999: DTM 0: TC ortho 1 fixed
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Low saturation (INSTR)	LINES = %d LINE_SAMPLES = %d SAMPLE_SITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d UNALID_MAXIMUM = %d LOW_REPR_SATURATION = %d LOW_INSTR_SATURATION = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. To convert the pixel of the pixel	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 2#11111111111#: 16 bits "FALSE" fixed "FALSE" fixed -9989: DTM 2: TC ortho 3:2766 fixed 1 fixed
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Line saturation (REPR) High saturation (REPR)	LINES = %d LINES = %d LINES SAMPLES = %d' SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters' from the Moon radius. TC ortle and TC ortle map (REF, CNV_SW=OFF): REF, CNV_SW=OFF): REF, CNV_SW=OFF): REF, CNV_SW=OFFSET Unit is "win?" units "wi	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" 2#111111111118* I6 bits 2#11111111111118* I6 bits "FALSE" fixed "FALSE" fixed 29889 DTM 2 "TC ortho 1 fixed 1 fixed 1 fixed
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Sample bit mask Offset Sample bit mask Offset Low saturation (REPR) Low saturation (REPR) High saturation (REPR) High saturation (REPR)	LINES = %d LINE SAMPLES = %d SAMPLE SITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	Spectral range(s) associated with each band in single-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING, FACTOR+OFFSET Unit is "meters" from the Moon radius. To convert the same of the pixel of the	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "ELEVATION" or "ELEVATION" 2#111111111111#: 16 bits "FALSE" fixed "FALSE" fixed -9989: DTM 2. TC ortho 1 fixed 1 fixed 32767 fixed 32767 fixed
	Lines Line samples Line samples Sample type Sample type Sample bits Meaning of pixel value Sample bit mask Offset Stample bit mask Offset Stretched flag Valid minimum Valid maximum Dummny Low saturation (REPR) Low saturation (RINTR) High saturation (REPR)	LINES = %d LINES = %d LINES SAMPLES = %d' SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	Spectral range(s) associated with each band in single-hand data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN*SCALING, FACTOR+OFFSET Unit is "meters" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW*OFF): Radiance = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity = DN*SCALING, FACTOR+OFFSET Unit is "win2] univs" TC ortho map (REF_CNV_SW*ON): Reflectivity =	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#111111111 8 bits 2#11111111 8 bits 2#11111111 8 bits 2#11111111 1 1 1 6 bits "FALSE" fixed -9898: DTM 2. TC ortho 32766 fixed -9999: DTM 0. TC ortho 1 fixed 1 fixed When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the source.
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Sample bit mask Offset Sample bit mask Offset Low saturation (REPR) Low saturation (REPR) High saturation (REPR) High saturation (REPR)	LINES = %d LINE SAMPLES = %d SAMPLE SITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d VALID_MAXIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN*SCALING_FACTOR+OFFSET Unit is "meters" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW*OFF): Radiance = DN*SCALING_FACTOR+OFFSET Unit is "wim2 ju miss" TC ortho map (REF_CNV_SW*OFF): Reflectivity = DN*SCALING_FACTOR+OFFSET Unit is "wim2 ju miss" Gain used in the DN for physical quantity conversion Whether a data object has been stricthed to make it easy to see Minum value that is valid for a data object Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction Indicates the minimum maturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel at instrument measurement	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#111111111111111 8 bits 2#11111111111111 8 bits 2#111111111111111 11 11 11 11 11 11 11 11

1	Ī	1	1	ortho is set to -1.
	Standard deviation	STDEV = %f	Standard deviation in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Mode pixel	MODE_PIXEL = %d	Mode in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
Base I.2A		END_OBJECT = IMAGE		Of tho is set to -1.
Base L2A source data information		OBJECT = SOURCE L2A DATA INFO		
	L2A file name	FILE_NAME = "%s"	File name of theL2A product	
	L2A creation time Execution count	PRODUCT_CREATION_TIME = %s EXECUTION_COUNT = %d	L2A product data creation time Execution count of the L2A product	YYYY-MM-DDTHH:MM:SSZ
	Illumination condition	ILLUMINATION_CONDITION = "%s"	Illumination condition	"MORNING" or "EVENING"
	L0 file name	LEVELO_FILE_NAME = {"%s","%s",}	File names of all the L0 data used for	
	Spacecraft time correction file name	SC_TIME_CORRECTION_FILE_NAME = {*%s*,*%s*,}	reating L2A File names of all the spacecraft time correction files used for creating L2A	
	Orbit data file name	ORBIT_DATA_FILE_NAME = {"%s","%s",}	File names of all the orbit data files used for creating L2A	
	Attitude data file	ATTITUDE_DATA_FILE_NAME = {"%s","%s",}	File names of all the attitude data files used for creating L2A	
	Revolution	REVOLUTION_NUMBER_FILE_NAME = {"%s","%s",}	File names of all the revolution	
	number file name HK mission file name	HK_MISSION_FILE_NAME = { "%s", "%s",}	number files used for creating L2A File names of all the mission instrument HK files used for creating L2A	
	SPICE kernel	SPICE_SPK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel	
	(SPK) file name SPICE kernel	SPICE_PCK_FILE_NAME = {"%s","%s",}	(SPK) files used for creating L2A File names of all the SPICE kernel	
	(Pck) file name SPICE kernel (IK)	SPICE_IK_FILE_NAME = { "%s", "%s",}	(Pck) files used for creating L2A File names of all the SPICE kernel (IK)	
	file name SPICE kernel	SPICE_CK_FILE_NAME = {"%s","%s",}	files used for creating L2A File names of all the SPICE kernel	
	(CK) file name		(CK) files used for creating L2A	
	SPICE kernel (SCLK) file name	SPICE_SCLK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (SCLK) files used for creating L2A	
	SPICE kernel (LSK) file name	SPICE_LSK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (LSK) files used for L2A creating	
	Scene definition file name	SCENE_DEFINITION_FILE_NAME = "%s"	File name of the scene definition file used for creating L2A	
	Threshold file name	THRESHOLD_FILE_NAME = "%s"	Threshold file name	
	Conversion table file name	CONVERSION_TABLE_FILE_NAME = "%s"	Engineering value translated for table	
	Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain Camera 1" or "Terrain
	Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	Camera 2" "TC1" or "TC2"
	Revolution number	REVOLUTION_NUMBER = %d	Revolution number	
	Strip sequence number	STRIP_SEQUENCE_NUMBER = %d	Strip number in the revolution	
	Scene sequence number	SCENE_SEQUENCE_NUMBER = %d	Scene number in the strip	
	Mission phase	MISSION_PHASE_NAME = "%s"	Mission phase name	"Nominal", "Option", etc.
	Upper left daytime flag Upper right	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the upper left pixel and the upper right pixel of the image	"Day" or "Night"
	daytime flag Lower left daytime flag Lower right daytime flag	LOWER_LEFT_DAYTIME_FLAG = "%s" LOWER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the lower left pixel and the lower right pixel of the image	"Day" or "Night"
	Target name Observation mode	TARGET_NAME = "%s" OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode ID	"MOON" default "NORMAL" or "SUPPORT"
	ID Sensor	SENSOR_DESCRIPTION = "%s"	Sensor specifications	
	Description Sensor	SENSOR_DESCRIPTION2 = "%s"	Spare sensor information	
	Description2 Detector status	DETECTOR_STATUS :	ON/OFF of each of 5 power (TC1, TC2,	
		{"TC1:%s","TC2:%s","MV:%s","MN:%s","SP:%s"}	MI-VIS, MI-NIR, SP) in this scene center	
	Exposure mode ID Spacecraft clock	EXPOSURE_MODE_ID = "%s" SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Exposure mode ID Spacecraft clock count at the 1st line	"LONG", "MIDDLE", "SHORT"
	start count (TI)		(TI)	
	Spacecraft clock stop count (TI)	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec>	Spacecraft clock count at the last line (TI)	
	Corrected spacecraft clock start count (TI)	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	Corrected spacecraft clock count at the 1st line (TT)	
	Corrected spacecraft clock	connectab_sc_chock_SiOP_COUNT = %17.bI <8eC>	Corrected spacecraft clock count at the last line (TI)	
	Start time (UT)	START_TIME = %s	Imaging time at the 1st line (UT)	YYYY-MM-DDTHH:MM:SS.sssssZ
	Stop time (UT) Corrected start	STOP_TIME = %s CORRECTED_START_TIME = %s	Imaging time at the last line (UT) Corrected imaging time at the 1st line	YYYY-MM-DDTHH:MM:SS.sssssZ YYYY-MM-DDTHH:MM:SS.sssssZ
	time (UT) Corrected stop	CORRECTED_STOP_TIME = %s	(UT) Corrected imaging time at the last line	YYYY-MM-DDTHH:MM:SS.ssssssZ
	time (UT) Location flag	LOCATION_FLAG = "%s"	(UT) Spacecraft location information	"A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the
	Roll cant	ROLL_CANT = "%s"	Selection of nadir-view observation or	descending to the ascending "YES": roll-cant observation
	Incidence angle	INCIDENCE ANGLE = \$7.3f <deg></deg>	roll-cant observation Incidence angle at the scene center	"NO": nadir-view observation
	Emission angle	EMISSION_ANGLE = %7.3f <deg></deg>	Emission angle at the scene center	
	Phase angle Solar azimuth	PHASE_ANGLE = %7.3f <deg> SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg></deg>	Phase angle at the scene center Solar azimuth angle at the scene	
	angle Focal plane	FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc>	center Detector temperature at the 1st line	
	temperature Telescope	TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	Telescope temperature at the 1st line	
	temperature Line exposure	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Line exposure duration	
	duration	LINE_SAMPLING_INTERVAL = \$10.6f <msec></msec>		
	Line sampling interval		Designed value of sampling interval	
	Corrected sampling interval	CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec>	Sampling interval corrected by dividing the corrected interval time between the first line and the last line of the strip into the number of lines	
	Satellite moving	SATELLITE_MOVING_DIRECTION = "%s"	Direction of satellite travel	"+1": lead of +x plane "-1": lead of -x plane
	Qtable ID	Q_TABLE_ID = "%s"	Qtable ID	-1 : lead of -x plane
	Huffman table ID Data compression	HUFFMAN_TABLE_ID = "%s" DATA_COMPRESSION_PERCENT_MEAN = %5.1f	Huffman table ID Mean of compression percentage in the	
1	percentage mean		scene	İ

Data compression percentage maximum	DATA_COMPRESSION_PERCENT_MAX = %5.1f	Maximum of compression percentage in the scene	
Data compression percentage minimum	DATA_COMPRESSION_PERCENT_MIN = \\$5.1f	Minimum of compression percentage in the scene	
Defect pixel position	DEFECT_PIXEL_POSITION = (%d,%d,)	Detector number of the defect pixels	
Constant dummy pixels	CONSTANT_DUMMY_PIXELS = %d	Total number of dummy pixels for the compression	
Swath mode ID	SWATH_MODE_ID = "%s"	Name of the swath mode	"NOMINAL", "FULL" or "HALF"
First pixel number	FIRST_PIXEL_NUMBER = %d	Detector number of the first sample pixel	
Last pixel number	LAST_PIXEL_NUMBER = %d	Detector number of the last sample pixel	
Spacecraft altitude	SPACECRAFT_ALTITUDE = %8.3f <km></km>	Spacecraft altitude from the Moon radius at the 1st line	
Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km>	Spacecraft ground speed at the 1st line	
TC1 telescope temperature	TC1_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC1 telescope temperature at the 1st line	
TC2 telescope temperature	TC2_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC2 telescope temperature at the 1st line	
DPU temperature	DPU_TEMPERATURE = %6.2f <degc></degc>	DPU temperature at the 1st line	
TM temperature TM radiator	TM_TEMPERATURE = %6.2f <degc> TM_RADIATOR_TEMPERATURE = %6.2f <degc></degc></degc>	TM temperature at the 1st line TM radiator temperature at the 1st	
temperature	OBJECT = IMAGE	line	
Encoding type	ENCODING_TYPE = "%s"	Data encoding type	"DCT": DCT compression "N/A": non-compression
Encoding compression percentage	ENCODING_COMPRESSION_PERCENT = %5.1f	Compression percentage of the image data object	
Nominal line number	NOMINAL_LINE_NUMBER = %d	Nominal number of lines in this image	
Nominal sample number	NOMINAL_SAMPLE_NUMBER = %d	Nominal number of samples in a line	
Unfilled line number	UNFILLED_LINE_NUMBER = %d	Total number of lines with exceptional dummy samples due to insufficient compression	
Nominal overlapped line number	NOMINAL_OVERLAP_LINE_NUMBER = %d	Nominal number of overlapped lines	
Overlapped line number	OVERLAP_LINE_NUMBER = %d	Actual number of overlapped lines	
Lines	LINES = %d	Total number of lines in this image	
Line samples	LINE_SAMPLES = \$4d	Total number of pixels in a line of this image, including the number of dummy pixels	
Sample type	SAMPLE_TYPE = "%g"	Data storage representation of sample value	"N/A": compression data "MSB_UNSIGNED_INTEGER": non-compression data
Sample bits	SAMPLE_BITS = %2d	Stored number of bits in a sample	12: compression data 16: non-compression data
Minimum DN for statistical evaluation	MIN_FOR_STATISTICAL_EVALUATION = %d	Minimum DN for statistical evaluation	
Maximum DN for statistical evaluation	MAX_FOR_STATISTICAL_EVALUATION = %d	Maximum DN for statistical evaluation	
Scene maximum DN	SCENE_MAXIMUM_DN = %d	Maximum DN in this image	When the population of the image evaluation is 0, value is set to -1.
Scene minimum DN	SCENE_MINIMUM_DN = %d	Minimum DN in this image	When the population of the image evaluation is 0, value is set to -1.
Scene standard average DN	SCENE_AVERAGE_DN = %6.1f	Average DN in this image	When the population of the image evaluation is 0, value is set to -1.
Scene standard deviation DN	SCENE_STDEV_DN = %6.1f	Standard deviation DN in this image	When the population of the image evaluation is 0, value is set to -1.
Scene mode DN	SCENE_MODE_DN = %d	Mode DN in this image	When the population of the image
Saturation	SATURATION_THRESHOLD = %d	Threshold DN for saturated pixel	evaluation is 0, value is set to -1.
threshold Saturated pixels	SATURATED_PIXELS = %d	detection Total number of saturated pixels	When the population of the image
Saturated pixel	SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),)	Image coordinates of saturated pixels	evaluation is 0, value is set to -1. When the total number of saturated
position Saturated pixel	SATURATED_PIXEL_PERCENTAGE = %d	Percentage of saturated pixels	pixel is 0, value is set to "N/A." When the population of the image
percentage Dead pixel	DEAD_PIXEL_THRESHOLD = %d	Threshold DN for dead pixel detection	evaluation is 0, value is set to -1.
threshold Dead pixels	DEAD_PIXELS = %d	Total number of dead pixels	When the population of the image
Dead pixel	DEAD_PIXEL_POSITION = ((%d,%d), (%d,%d),)	Image coordinates of dead pixels	evaluation is 0, value is set to -1.
position Dead pixel	DEAD_PIXEL_PERCENTAGE = %d	Percentage of dead pixels	When the population of the image
percentage Shadowed area	SHADOWED_AREA_MINIMUM = %d	Minimum DN for shadowed pixel	When the population of the image evaluation is 0, value is set to -1.
minimum Shadowed area	SHADOWED AREA MAXIMUM = %d	detection Maximum DN for shadowed pixel	
maximum Shadowed area	SHADOWED_AREA_PERCENTAGE = %d	detection Percentage of shadowed pixels	When the population of the image
percentage area	SHADOWED_AKEA_FERCENIAGE = *CI END_OBJECT = IMAGE	r ercentage or snauowed pixers	evaluation is 0, value is set to -1.
-	END_OBJECT = IMAGE END_OBJECT = SOURCE_L2A_DATA_INFO		
	END		

(2) Image Data Object

The format of the Image Data Object of each image file (DTM, Quality Flag, or TC Ortho) is given in Table 2.1-10.

Table 2.1-10 Format of the Image Data Object

Image File	Bit	Format	Endian	Value
	Length			
DTM	16	signed short integer	big endian	
Quality Flag	8	unsigned char	-	Bitflag
				00000001: detector deficit
				00000010: saturated
				00000100: not used
				00001000: not used
				00010000: shadow
				00100000: DTM error
				01000000: dummy
				10000000: interpolated
TC Ortho	16	unsigned short	big endian	
		integer		

2.2 DTM Map

The DTM Map is a data set of mosaicked scene DTM data. It is a Tar archive composed of the following four files.

- · Catalog Information File
- · PDS Product File
- · Low-Resolution File
- · Thumbnail File

Figure 2.2-1 illustrates the configuration of the DTM Map File, and Fig. 2.2-2 presents the configuration of the DTM Map PDS Product File.

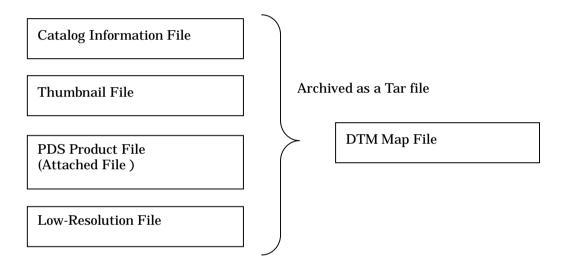


Fig. 2.2-1 Configuration of the DTM Map File

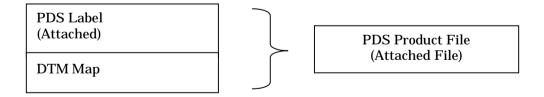


Fig. 2.2-2 Configuration of the PDS Product File of the DTM Map

Table 2.2-1 presents the file-naming rules for each of the above-mentioned files that are described in detail in the following paragraphs.

Table 2.2-1 File-Naming Rules for DTM Map File (Exp. DTM_MAP_01_N90E180S90W180SC.dtm)

Code	Start Position	Length (Bytes)	Preset Values
1	1	3	Product ID "DTM" fixed
2	4	1	Underscore "_" fixed
3	5	3	Product type "MAP" fixed
4	8	1	Underscore "_" fixed
5	9	2	L2DB version nn: 2 digits
6	11	1	Underscore "_" fixed
7	12	3	Upper left latitude S90 to N90
8	15	4	Upper left longitude E000 to E360
9	19	3	Lower right latitude S90 to N90
10	22	4	Lower right longitude E000 to E360
11	26	2	Map projection "SC": Simple cylindrical "PS": Polar stereo
12	28	4	Extensions .dtm: DTM Map PDS product .jpg: Thumbnail .ctg: Catalog Information .sl2: DTM Map dataset .low: Low-Resolution Image
Total	-	31	

2.2.1 Catalog Information File

This attached Information File outlines the DTM Map and defines the items that can be used to retrieve products from the L2DB subsystem.

Tables 2.2-2 and 2.2-3 describe the items of the Catalog Info File. Each item is described with the following format within 1 line.

Format:

Keyword = String Value

Comments are composed of multiple comma-deliminated items from Table 2.2-4 with the following format.

Format:

CommentInfo = Keyword1 = "String Value", Keyword2 = "String Value", ...

Unless otherwise specified, the basic principle is that the numeric value of each item should be zero suppressed; the string value of each item should contain no space character, and be left-aligned.

Table 2.2-2 Items of the Catalog Information File (DTM Map)

Item	Keyword	Format of Preset Value	Content of Preset Value
Data File Name	DataFileName	AAAAAAAA (MAX 31 digits)	DTM MAP PDS product file name
Data File Size	DataFileSize	NNNNNNNNNNNNNNN (MAX 12 digits)	DTM MAP PDS product file size <byte></byte>
Data File Format	DataFileFormat	AAAAAAAA (MAX 16 digits)	DTM MAP PDS product file format
Thumbnail File Name	ThumbnailFileName	AAAAAAAA (MAX 65 digits)	Thumbnail file name
Thumbnail File Size	ThumbnailFileSize	NNNNNNNNNNN (MAX 12 digits)	Thumbnail file size <byte></byte>
Thumbnail File Format	ThumbnailFileFormat	AAAA (MAX 4 digits)	JPEG: fixed
Instrument Name	InstrumentName	AAAAAAAA (MAX 16 digits)	LISM: fixed
Processing Level	ProcessingLevel	AAAAAAAA (MAX 16 digits)	MAP: fixed
Product ID	ProductID	AAAAAAAA (MAX 30 digits)	DTM_MAP, DTM_MAP_S
Product Version	ProductVersion	AAAAAAAA (MAX 16 digits)	nn: L2DB version
Access Level	AccessLevel	N	0: Read Only 1: LISM core members only 2: LISM members only 3: SELENE members only 4: All members
Upper Left Latitude	UpperLeftLatitude	SNN.NNNNNN	<degree></degree>

Upper Left Longitude	UpperLeftLongitude	NNN.NNNNNN	<degree></degree>
Upper Right Latitude	UpperRightLatitude	SNN.NNNNNN	<degree></degree>
Upper Right Longitude	UpperRightLongitude	NNN.NNNNNN	<degree></degree>
Lower Left Latitude	LowerLeftLatitude	SNN.NNNNNN	<degree></degree>
Lower Left Longitude	LowerLeftLongitude	NNN.NNNNNN	<degree></degree>
Lower Right Latitude	LowerRightLatitude	SNN.NNNNNN	<degree></degree>
Lower Right Longitude	LowerRightLongitude	NNN.NNNNNN	<degree></degree>
Scene Center Latitude	SceneCenterLatitude	SNN.NNNNNN	<degree></degree>
Scene Center Longitude	SceneCenterLongitude	NNN.NNNNNN	<degree></degree>
Comment	CommentInfo	AAAAAAAA (MAX 4000 digits)	(see Table 2.2-4)
Free Keywords	FreeKeyword	-	(see Table 2.2-3)

Table 2.2-3 Free Keywords in the Catalog Information File (DTM Map)

Item	Keyword	Format of Preset Value	Content of Preset Value
DTM Minimum Value	DTMMinimum	SNNNNN	<m></m>
DTM Maximum Value	DTMMaximum	SNNNNN	<m></m>
DTM Mean Value	DTMAverage	SNNNNN	<m></m>
DTM Standard Deviation	DTMStdev	NNNNN	<m></m>
DTM Mode Pixel Value	DTMModePixel	SNNNNN	<m></m>
Dummy Pixel Percentage	DTMQAPercentDummyPixel	NNN	<%>
Bad Pixel Percentage	DTMQAPercentBadPixel	NNN	<%>
Shadow Pixel Percentage	DTMQAPercentShadowPixel	NNN	<%>

Table 2.2-4 Comments in the Catalog Information File (DTM Map) $\,$

Item	Keyword	Format of Preset Value	Content of Preset Value
Creation Date	ProductCreationTime	vvvv-mm-ddThh:mm:ssZ	

2.2.2 Thumbnail

Thumbnail files are JPEG-compressed images of the image data included in the DTM Map. Refer to ISO/IEC 10918-1 for the JPEG format. Table 2.2-5 provides the specifications for the thumbnails.

Table 2.2-5 Specifications for the Thumbnail Files

Number of Pixels	Number of Lines	File Size	Format
512 or less	512 or less	100kb or less	JPEG

2.2.3 PDS Product

The DTM Map PDS Product is an attached PDS Product composed of the PDS Label and the Image Data Object. The PDS Label contains text data, and the Image Data Object contains binary data.

The configuration and structure of the DTM Map PDS Product File are presented in Figs. 2.2-3 and 2.2-4.

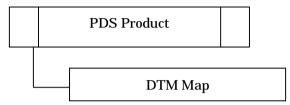


Fig. 2.2-3 Configuration of the DTM Map PDS Product File

PDS Label	PDS Label Common Items		
	Object Position Specification		
	Product	File Attributes	
	Information	Product Attributes	
		Scene Attributes	
		Image Map Projection	
		Processing Parameter Description	
		Image Information	
		Quality Information	
Image Data	DTM Map		
Object			

Fig. 2.2-4 Structure of the DTM Map PDS Product File

(1) PDS Label (For DTM Map)

This PDS Label is attached to the DTM Map Product. It is detailed in Table 2.2-6.

Table 2.2-6 Items of PDS Label (For DTM Map)

Cotogowy			b Items of PDS Laber (Fo		Value
PDS label common items		Item	Description form	Explanation	Value
		PDS version ID File record type	PDS_VERSION_ID = "%s" RECORD_TYPE = "%s"	PDS version ID File record type	"PDS3" fixed "UNDEFINED" fixed
		File name	FILE_NAME = "%s"	File name of this product (product ID +	CIVIDEF IIVED IIXEU
		Product ID	PRODUCT_ID = "%s"	extension) Unique ID given to every product	
Object position energiacetion		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
Object position specification		Head position of image	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File	object			
	attributes	Software name	SOFTWARE_NAME = "%s"	Ssoftware name that created the DTM PDS	TBD
				product	
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM PDS product	"n.n.n" (TBD)
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic
					and TC ortho mosaic "MAP": DTM map and TC ortho
		Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	map YYYY-MM-DDTHH:MM:SSZ
	Product attributes			1	
	attributes	Producer ID	PRODUCER_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	PRODUCT_SET_ID = "%s"	Product set ID	"DTM_TCOrtho": DTM/TC ortho "DTM_MAP": DTM map "TCOrtho_MAP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product)
					"DTM_MAP_S": DTM map (special product) "TCOrtho_MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special product)
	Scene	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	attributes				
		Mission name Spacecraft name	MISSION_NAME = "%s" SPACECRAFT_NAME = "%s"	Mission name Spacecraft name	"SELENE" fixed "SELENE-M" fixed
		Data set ID	DATA_SET_ID = "%s"	This data set ID	TBD
		Instrument name Instrument ID	INSTRUMENT_NAME = "%s" INSTRUMENT_ID = "%s"	Full name of the instrument Instrument ID	"Terrain_Camera" "TC"
		Upper left latitude	UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels	-90 to 90
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels	0 to 360
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels	-90 to 90
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-right corner pixel of the image that contains dummy pixels	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-left corner pixel of the image that contains dummy pixels	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-left corner pixel of the image that contains dummy pixels	0 to 360
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-right corner pixel of the image that contains dummy pixels	-90 to 90
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-right corner pixel of the image that contains dummy pixels	0 to 360
		Image center latitude Image center longitude	<pre>IMAGE_CENTER_LATITUDE = \$10.6f <deg> IMAGE_CENTER_LONGITUDE = \$10.6f <deg></deg></deg></pre>	Latitude at the center pixel of the image Longitude at the center pixel of the image	-90 to 90 0 to 360
	Map				
	projection information				
	miormation	Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or
		Coordinate system type	COORDINATE_SYSTEM_TYPE = "%s"	Type of the coordinate system	"Transverse Mercator" "BODY-FIXED ROTATING" fixed
		Coordinate system	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
		name A axis radius	A_AXIS_RADIUS = %8.3f <km></km>	A axis radius of the Moon	1737.4 <km> default</km>
		B axis radius C axis radius	B_AXIS_RADIUS = %8.3f <km> C AXIS RADIUS = %8.3f <km></km></km>	B axis radius of the Moon C axis radius of the Moon	1737.4 <km> default</km>
		C axis radius First standard parallel	C_AXIS_MADIUS = %8.31 <km> FIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km>	C axis radius of the Moon First standard parallel Used for "Lambert Conformal" projection.	1737.4 <km> default -90 to 90 for "Lambert Conformal" projection "N/A" for other map projection</km>
		Second standard parallel	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel Used for "Lambert Conformal" projection.	-90 to 90 for "Lambert Conformal" projection "N/A" for other map projection
		Positive longitude direction	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"EAST" fixed
		Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given MAP_PROJECTION_TYPE	-90 to 90
		Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the origin in a given	0 to 360
		Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero latitude in a rotated spherical coordinate system that was used in a given	"N/A" fixed
		Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero longitude in a rotated spherical coordinate system that was used in a given	"N/A" fixed
		First line number	LINE_FIRST_PIXEL = %d	MAP_PROJECTION_TYPE Line number of the upper end pixel of the image	1 fixed
		Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the image	
		First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the	1 fixed
		Last sample number	SAMPLE_LAST_PIXEL = %d	image Sample number of the right end pixel of the	
		Map orientation angle	MAP_PROJECTION_ROTATION = %f <deg></deg>	image Clockwise rotation of the line and sample coordinates with respect to the map	0.0 fixed
		Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	Total number of pixels in a box area of 1-degree latitude x 1-degree longitude for	"N/A" is given when MAP_PROJECTION_TYPE is not
		Map scale	MAP_SCALE = %f <km pixel=""></km>	Simple Cylindrical Projection Actual distance, in km, between two points at the origin in a given	"Simple Cylindrical".
		Maximum latitude	MAXIMUM_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Latitude at the center of the northernmost	-90 to 90
		Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	pixel in 4 corner pixels Latitude at the center of the southernmost	-90 to 90
		Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	pixel in 4 corner pixels Longitude at the center of the easternmost	0 to 360
	1	rasterninost iongitudė		Longitude at the center of the easternmost	0 to 300

	Mosaic priority	MOSAIC_PRIORITY = (*%a*,%f)	Values to decide the order of mosaicking	Ist value "NON" file designation order "CENTER": from center to outside "E-W": from east to west "W-E": from west to east "N-S": from morth to south "S-N": from south to north "DATE_NEW": new observation date order "DTM_QUALITY": DTM_good quality order "SUN_AELVATION": small order of the difference between the sun elevation and the 2nd value "SUN_AELWITH": small order of the difference between the sun elevation and the 2nd value "SUN_PHASE_ANGLE": small order of the difference between the sun phase angle and the 2nd value 2nd value Value of the sun elevation, azimuth, or phase angle "NA" is given to the 2nd value "NA" is given to the 2nd value "NA" is given to the 2nd value
	Constitution	CHACOTHING WITHIN = \$4		when the 1st value is not "SUN_ELEVATION", "SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	
Image information		END_OBJECT = PROCESSING_PARAMETERS		
	Bands	OBJECT = IMAGE BANDS = %d	Total number of bands in this image	1 fixed
	Band storage type	BAND_STORAGE_TYPE = "%s"	Storage sequence of lines, samples, and bands in this image	"BAND_SEQUENTIAL" fixed
	D 1	DAND NAME - 1901		UNITAR Co
	Band name	BAND_NAME = "%s" LINES = %d	Spectral range(s) associated with each band in single-band or multi-band data	"N/A" fixed
	Lines Line samples		Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line	
	Lines Line samples Sample type	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho)
	Lines Line samples Sample type Sample bits	LINES = %d LINE SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16
	Lines Line samples Sample type	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE", "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or
	Lines Line samples Sample type Sample bits Meaning of pixel value	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation =	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius.	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN-SCALING,FACTOR+OFFSET Unit is "neter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW_=OFF): Radiance = =	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN'SCALING, FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW="OFF"): Radiance = DN'SCALING, FACTOR+OFFSET Unit is "myd2 in wis" = DN'SCALING, FACTOR+OFFSET Unit STALING, FACTOR+OFFSET	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING,FACTOR-OFFSET Unit is "neter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF'): Radiance DN'SCALING,FACTOR-OFFSET Unit is "mvizel" pixel" TC ortho map (REF_CNV_SW='ON'): Reflectived R	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DTM and VTM map: Elevation (EEF_CNA_UNC_FACTOR-OFFSET Unit is 'meter' from the Moon radius. TOTE CONTON TOTE OFFSET Unit is 'myto' map (EEF_CNA_UNC_FACTOR-OFFSET Unit is 'win2 unixs' TC ortho map (REF_CNV_SW=ON'):	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	LINES = %d LINE SAMPLES = %d SAMPLE_SITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation To ortho and TC ortho map of TC ortho map of TC ortho map of TC ortho map of TC ortho map of TC ortho map (TC ortho map ("MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION"
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	LINES = %d LINE SAMPLES = %d SAMPLE_SITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d OFFSET = %f SAMPLE_BIT_MASK = %g OFFSET = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DTM and DTM map: Elevation DTM and DTM was and the pixel of the pixel DN'SCALING_FACTOR-OFFSET Unit is "wire" from the Moon radius. TO or tho map (EEF_CNV_SW="ON"): Reflectivity Reflectivity BON'SCALING_FACTOR-OFFSET Unit is "wiral" in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see	"MSB_INTEGER" (DTM) or "MSB_INSIGNED_INTEGER" (IC ortho) 8 or 16 "DN", "RADIANCE", "FELEVATION" 2#1111111111111 8 bits 2#111111111111 1111 #: 16 bits
	Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	LINES = %d LINE SAMPLES = %d SAMPLE_SITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s"	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation To Total Statistical	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (ITC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" "ELEVATION" 2#11111111111118: Bits 2#111111111111111111111111111111111111
	Lines Lines amples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	LINES = %d LINE SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHEO_FLAG = "%a" VALID_MINIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation To ortho and TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write map of TC write	"MSB_INTEGER" (DTM) or "MSB_INSIGNED_INTEGER" (IC ortho) 8 or 16 "DN", "RADIANCE", "RADIANCE", "ELEVATION" 2#1111111111111 8 bits 2#111111111111 18 its 2#1111111111111 11 16 bits "FALSE" fixed -9989: DTM 2: TC ortho 3:766 fixed -9999: DTM
	Lines Line samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum	LINES = %d LINES = %d SAMPLE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d VALID_MAXIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation To ortho and TC ortho map (TC	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111#: 16 bits 2#111111111111#: 16 bits "FALSE" fixed 9989: DTM 2: TC ortho 32766 fixed 9989: DTM 0: TC ortho When the total number of valid
	Lines Lines Lines Samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum	LINES = %d LINES = %d SAMPLES = %d* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s* SAMPLE_BIT_MASK = %s* OFFSET = %f STRETCHED_FLAG = *%s* VALID_MINIMUM = %d UNBUY = %d MINIMUM = %d MINIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN*SCALING,FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW="OFF): Radiance = DN*SCALING,FACTOR+OFFSET Unit is "winz' pi mis" TC ortho map (REF_CNV_SW="ON"): Reflectivity = DN*SCALING,FACTOR+OFFSET Unit is "winz' pi mis" TC ortho map (REF_CNV_SW="ON"): Reflectivity = ON*SCALING,FACTOR+OFFSET Unit is "winz' pi mis" TC ortho map (REF_CNV_SW="ON"): Reflectivity = ON*SCALING,FACTOR+OFFSET Unit is "winz' pi mis" Un	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111#: 16 bits 2#11111111111#: 16 bits "FALSE" fixed -9989: DTM 2: TC ortho 32766 fixed -9999: DTM 0: TC ortho When the total number of valid pixels is 0, the value of DTM sets -9999 and the value of DTM sets -9999 and the value of the TC ortho sets -1.
	Lines Lines Lines amples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT, MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MININEM = %d UNDEC = %d MINIMUM = %d MAXIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DN'SCALING, FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW="OFF): Radiance DN'SCALING, FACTOR-OFFSET Unit is "winzly miss" TC ortho and TC ortho map (REF_CNV_SW="OFF): Radiance DN'SCALING, FACTOR-OFFSET Unit is "winzly miss" TC ortho map (REF_CNV_SW="ON"): Reflectivity Reflectivity Unit is "% Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Mainimum value that is valid for a data object Maximum value that is valid for a data object Maximum value that is valid for a data object Minimum value that is valid for a data object	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 10 "TON", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#111111111111 #5 lifs 2#11111111111 #5 lifs 2#11111111111 #5 lifs 2#11111111111 #5 lifs 3#1111111111 #5 lifs 3#1111111111
	Lines Lines Samples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT, MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DN Mand DTM map: Elevation DN SCALING, FACTOR-OFFSET Unit is "neter" from the Moon radius. TC ortho and TC ortho map (REF CNV, SWL*OFF): Radiance DN SCALING, FACTOR-OFFSET Unit is "winzly miss" TC ortho and REF, CNV, SWL*OFFSET Unit is "winzly miss" TC ortho map (REF, CNV, SWL*OFFSET Unit is "winzly miss" TC ortho map (REF, CNV, SWL*OFFSET Unit is "winzly miss" TC ortho map (REF, CNV, SWL*OFFSET Unit is "winzly miss" TC ortho map (REF, CNV, SWL*OFFSET Unit is "winzly miss" Unit is "winzly miss" TC ortho may (REF, CNV, SWL*OFFSET) Unit is "winzly miss" TC ortho may (REF, CNV, SWL*OFFSET) Unit is "winzly miss" TC ortho may (REF, CNV, SWL*OFFSET) Unit is "winzly missed in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Unit is "winzly make in this image except the invalid pixels Maximum value in this image except the invalid pixels Average value in this image except the invalid pixels	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#1111111111111 #8 bits 2#111111111111 8 bits 2#1111111111 #8 bits 2#1111111111 #8 bits 2#1111111111 #8 bits "FALSE" fixed "SPALSE" fixed "FALSE" fixed "FALSE" fixed "FALSE" fixed "FOLICY
	Lines Lines Lines amples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT, MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MININEM = %d UNDEC = %d MINIMUM = %d MAXIMUM = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DTM and TTM map: Elevation TC ortho and TC ortho map; (REF_CNV_SW='OFF): DN'SCALING_FACTOR-OFFSET Unit is "wire" from the Moon radius. TC ortho and TC ortho map; (REF_CNV_SW='OFF): DN'SCALING_FACTOR-OFFSET Unit is "wire" from the Moon radius. TC ortho and TC ortho map; (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR-OFFSET Unit is "%". Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Maximum value that is valid for a data object Maximum value that is valid for a data object Maximum value that is valid for a data object Maximum value that is valid for a data object Maximum value in this image except the invalid pixels Average value in this image except the invalid pixels	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE," "REFLECTANCE" "ELEVATION" 2#1111111111118: Bits 2#1111111111118: 16 bits "FALSE" fixed "FALSE" fixed "9989: DTM 22766 fixed When the total number of valid pixels is 0, the value of DTM sets 9999 and the value of DTM sets 9999 and the value of DTM sets 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1. When the total number of valid pixels is 0, the value of DTM is set 10 sets -1.
	Lines Lines amples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum Average	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT, MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image I Total number of pixels in a line I Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation = DN'SCALING_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map; (REF_CNV_SW="OFF): Radiance = DN'SCALING_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map; (REF_CNV_SW="ON"): Reflectivity	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE," "REFLECTANCE" or "ELEVATION" 2#11111111111111 & bits 2#111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 bits 2#11111111111 & bits 2#11111111111 & bits 2#11111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#11111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#1111111111111 bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#111111111111111 & bits 2#111111
	Lines Lines amples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Average Standard deviation	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%g" VALID_MINIMUM = %d UNBOY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING.FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Radiance DN*SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make It easy to see Minimum value that is valid for a data object Unate that indicates the dummy (blank) pixel of the image Minimum value in this image except the invalid pixels Maximum value in this image except the invalid pixels Standard deviation in this image except the invalid pixels Mode in this image except the invalid pixels	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#1111111111111#: 16 bits 2#11111111111111#: 16 bits 2#11111111111111#: 17 bits 2#111111111111111 bits 2#11111111111111 bits 32766 fixed 9989: DTM 2: TC ortho 32766 fixed 9989: DTM 0: TC ortho When the total number of valid pixels is 0, the value of DTM sets 9999 and the value of the TC ortho sets 1. When the total number of valid pixels is 0, the value of DTM is set to .9999 and the value of the TC ortho is Set to .1 When the total number of valid pixels is 0, the value of DTM is set to .9999 and the value of the TC ortho is Set to .1. When the total number of valid pixels is 0, the value of DTM is set to .9999 and the value of the TC ortho is Set to .1. When the total number of valid pixels is 0, the value of DTM is set to .9999 and the value of the TC ortho is Set to .1. When the total number of valid pixels is 0, the value of DTM is set
Quality	Lines Lines amples Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Average Standard deviation	LINES = %d LINE SAMPLES = %d SAMPLE BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE BIT_MASK = %g OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%g" VALID_MINIMUM = %d VALID_MINIMUM = %d MINIMUM = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f STDEV = %f MODE_PIXEL = %d	Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING.FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Radiance DN*SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". SW=SCALING.FACTOR+OFFSET Unit is "win2" pi ms". Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make It easy to see Minimum value that is valid for a data object Unate that indicates the dummy (blank) pixel of the image Minimum value in this image except the invalid pixels Maximum value in this image except the invalid pixels Standard deviation in this image except the invalid pixels Mode in this image except the invalid pixels	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#11111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 bits 2#1111111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#11111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#1111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#1111111111111 bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#111111111111111 & bits 2#11111111111111 bits 2#11111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#1111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#11111111111111 & bits 2#111111111111111 & bits 2#111111111111111111111111111111111111

Good pixel percentage	QA_PERCENT_GOOD_PIXEL = %f	Percentage of good pixels in all the DTM pixels	total number of QA_PERCENT_GOOD_PIXEL, QA_PERCENT_DUMMY_PIXEL and QA_PERCENT_BAD_PIXEL is 100.0
Dummy pixel percentage	QA_PERCENT_DUMMY_PIXEL = %f	Percentage of dummy pixels in all the DTM pixels	
Bad pixel percentage	QA_PERCENT_BAD_PIXEL = %f	Percentage of bad pixels in all the DTM pixels	
Interpolated pixel percentage	QA_PERCENT_INTERPOLATED_PIXEL = %f	Percentage of interpolated pixels in all the DTM pixels	
Shadow pixel percentage	QA_PERCENT_SHADOW_PIXEL = %f	Percentage of shadowed pixels in all the DTM pixels	
Correlation threshold of bad pixel	BAD_PIXEL_THRESHOLD_CORRELATION = %f	Threshold of image correlation between stereo images to extract the bad pixel from the DTM	
Slope threshold of bad pixel	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	Slope angle threshold to extract the bad pixel from the DTM	
	END_OBJECT = QUALITY_INFO		
	END		

(2) Image Data Object

Format of the Image Data Object of the DTM Map PDS Product File is given in Table 2.2-7.

Image File	Bit	Format	Endian	Value
	Length			
DTM Map	16	signed short integer	big endian	

2.2.4 Low-Resolution File

The Low-Resolution File is a resampled image data object of each LISM Map Product. The Low-Resolution File for the DTM Map is resampled at 1/32 pixel (128 pixel/degree) from the original image (Fig. 2.2-5). The image is in a raw format. The extension of this image file is assigned ".low" to distinguish it from the Map product file.

This file is used for the internal process of the L2DB system. If you request a DTM Map product for the L2DB system, this file is not included in the L2DB product.

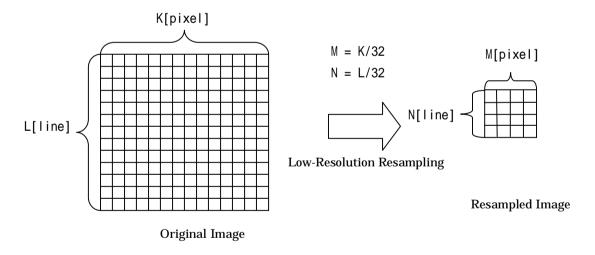


Fig. 2.2-5 Outline of Low-Resolution File Generation

2.3 TC Ortho Map

The TC Ortho Map is a dataset of the mosaicked scene TC Ortho data. It is a Tar archive composed of the following four files.

- · Catalog Information File
- · PDS Product File
- · Low-Resolution File
- · Thumbnail File

Figure 2.3-1 depicts the configuration of the TC Ortho Map File, and Fig. 2.3-2 presents the configuration of the TC Ortho Map PDS Product File.

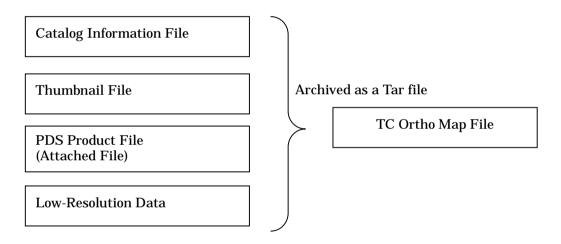


Fig. 2.3-1 Configuration of the TC Ortho Map File

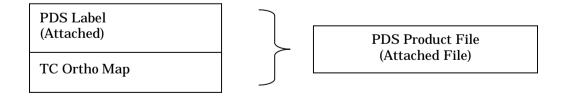


Fig. 2.3-2 Configuration of the PDS Product File of the TC Ortho Map

Table 2.3-1 presents the file-naming rules for each of the above-mentioned files, which are described in detail in the following paragraphs.

Table 2.3-1 File-Naming Rules for TC Ortho Map File
(Exp. TCO_MAP_01_N45E150N30E270SC.img)

G 1	G D	I (D :)	(Exp. 100_MM _01_1110E1001100E27050.IMg)
Code	Start Position	Length (Byte)	Preset Values
1	1	3	Product ID "TCO" fixed
2	4	1	Underscore "_" fixed
3	5	3	Product type "MAP" fixed
4	8	1	Underscore "_" fixed
5	9	2	L2DB version nn: 2 digits
6	11	1	Underscore "_" fixed
7	12	3	Upper left latitude S90 to N90
8	15	4	Upper left longitude E000 to E360
9	19	3	Lower right latitude S90 to E90
10	22	4	Lower right longitude E000 to E360
11	26	2	Map projection "SC": Simple cylindrical "PS": polar stereo
12	28	4	Extensions .img: TC Ortho Map PDS product .jpg: Thumbnail .ctg: Catalog Information .sl2: TC Ortho Map dataset .low: Low-Resolution Image
Total	-	31	

2.3.1 Catalog Information File

The Catalog Information File is an attached Information File outlining the TC Ortho Map and defining the items that can be used to retrieve products from the L2DB subsystem.

Tables 2.3-2 and 2.3-3 describe the items of the Catalog Info File. Each item is described with the following format within one line.

Format:

Keyword = String Value

Comments are composed of multiple comma-deliminated items from Table 2.3-4 with the following format.

Format:

CommentInfo = Keyword1 = "String Value", Keyword2 = "String Value", ...

Unless otherwise specified, the basic principle is that the numeric value of each item should be zero suppressed; the string value of each item should contain no space character, and be left-aligned.

Table 2.3-2 Items of the Catalog Information File (TC Ortho Map)

Item	Keyword	Format of Preset Value	Content of Preset Value
Data File Name	DataFileName	AAAAAAAA (Max 31digits)	TCOrtho MAP PDS Product Name
Data File Size	DataFileSize	NNNNNNNNNNNNNNN (Max12 digits)	TCOrtho MAP PDS Product Size <byte></byte>
Data File Format	DataFileFormat	AAAAAAAA (Max16 digits)	TCOrtho MAP PDS Product Format
Thumbnail File Name	ThumbnailFileName	AAAAAAAA (Max 65 digits)	Thumbnail file name
Thumbnail File Size	ThumbnailFileSize	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	Thumbnail file size <byte></byte>
Thumbnail File Format	ThumbnailFileFormat	AAAA (Max 4 digits)	JPEG: fixed
Instrument Name	InstrumentName	AAAAAAAA (Max 16 digits)	LISM: fixed
Processing Level	ProcessingLevel	AAAAAAAA (Max16 digits)	MAP: fixed
Product ID	ProductID	AAAAAAAA (Max 30 digits)	TCOrtho_MAP, TCOrtho_MAP_S
Product Version	ProductVersion	AAAAAAAA (Max 16 digits)	nn: L2DB version
Access Level	AccessLevel	N	0: Read Only 1: LISM core members only 2: LISM members only 3: SELENE members only 4: All members
Upper Left Latitude	UpperLeftLatitude	SNN.NNNNNN	<degree></degree>

Upper Left Longitude	UpperLeftLongitude	NNN.NNNNNN	<degree></degree>
Upper Right Latitude	UpperRightLatitude	SNN.NNNNNN	<degree></degree>
Upper Right Longitude	UpperRightLongitude	NNN.NNNNN	<degree></degree>
Lower Left Latitude	LowerLeftLatitude	SNN.NNNNNN	<degree></degree>
Lower Left Longitude	LowerLeftLongitude	NNN.NNNNNN	<degree></degree>
Lower Right Latitude	LowerRightLatitude	SNN.NNNNNN	<degree></degree>
Lower Right Longitude	LowerRightLongitude	NNN.NNNNNN	<degree></degree>
Scene Center Latitude	SceneCenterLatitude	SNN.NNNNNN	<degree></degree>
Scene Center Longitude	SceneCenterLongitude	NNN.NNNNNN	<degree></degree>
Comment	CommentInfo	AAAAAAAA (Max 4000 digits)	(see Table 2.3-4)
Free Keywords	FreeKeyword		(see Table 2.3-3)

Table 2.3-3 Free Keywords in the Catalog Information File (TC Ortho Map)

Item	Keyword	Format of Preset Value	Content of Preset Value
TCO Max Value	TCOMaximum	NNNN	
TCO Mean Value	TCOAverage	NNNN	
TCO Standard Deviation	TCOStdev	NNNN	
TCO Mode Pixel Value	TCOModePixel	NNNN	

Table 2.3-4 Comments in the Catalog Information File (TC Ortho Map)

		•	-
Item	Keyword	Format of Preset Value	Content of Preset Value
Creation Date	ProductCreationTime	vvvv-mm-ddThh:mm:ssZ	

2.3.2 Thumbnail

Thumbnail files are JPEG-compressed images of the image data that the TC Ortho Map includes. Refer to ISO/IEC 10918-1 for the JPEG format. Table 2.3-5 provides the specifications for the thumbnails.

Table 2.3-5 Specifications for the Thumbnail Files

Number of Pixels	Number of Lines	File Size	Format
512 or less	512 or less	100Kb or less	JPEG

2.3.3 PDS Product

TC Ortho Map PDS Product is an attached PDS Product composed of the PDS Label and the Image Data Object. The PDS Label contains text data, and the Image Data Object contains binary data.

The configuration and structure of the TC Ortho Map PDS Product File are presented in Figs. 2.3-3 and 2.3-4.

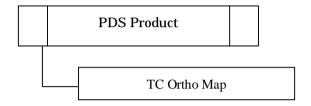


Fig. 2.3-3 Configuration of the TC Ortho Map PDS Product File

PDS Label	PDS Label Common Items		
	Object Position	Specification	
	Product	File Attributes	
	Information	Product Attributes	
		Scene Attributes	
		Image Map Projection	
		Processing Parameter Description	
		Image Information	
Image Data	TC Ortho Map		
Object			

Fig. 2.3-4 Structure of a TC Ortho Map PDS Product File

(1) PDS Label (For TC Ortho Map)

This PDS Label is attached to the TC Ortho Map PDS Product. It is detailed in Table 2.3-6.

Table 2.3-6 Items of PDS Label (For TC Ortho Map)

		Table 2.5-0	items of PDS Laber (For		Lvi
Category PDS label common items		Item	Description form	Explanation	Value
		PDS version ID File record type	PDS_VERSION_ID = "%s" RECORD TYPE = "%s"	PDS version ID File record type	"PDS3" fixed "UNDEFINED" fixed
		File name	FILE_NAME = "%s"	File name of this product (product ID +	CIVIDEF IIVED IIXEG
		Product ID	PRODUCT_ID = "%s"	extension) Unique ID given to every product	
Object position specification		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
		Head position of image object	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File	object			
	attributes	Software name	SOFTWARE_NAME = "%s"	Software name that created the DTM PDS	TBD
		Software version	SOFTWARE_VERSION = "%s"	product Software version that created the DTM	"n.n.n" (TBD)
			PROCESS_VERSION_ID = "%s"	PDS product Processing level ID	"L3D": DTM/TC ortho, DTM mosaic
		Processing level	1.000.00_1.001.01_1.01	Processing level ID	and TC ortho mosaic "MAP": DTM map and TC ortho map
	Product attributes	Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	YYYY-MM-DDTHH:MM:SSZ
		Producer ID Product set ID	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer ID Product set ID	"LISM" fixed "DTM_TCOrtho": DTM/TC ortho
					"DTM_MAP": DTM map "TCOrtho_MP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrtho_MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special)
	Scene	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	attributes	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name	SPACECRAFT_NAME = "%s" DATA_SET_ID = "%s"	Spacecraft name	"SELENE-M" fixed
		Data set ID Instrument name	INSTRUMENT_NAME = "%s"	This data set ID Full name of the instrument	TBD "Terrain_Camera"
		Instrument ID Upper left latitude	<pre>INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg></pre>	Instrument ID Latitude at the center of the upper-left	"TC" -90 to 90
		Upper left latitude Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Longitude at the center of the upper-left	-90 to 90 0 to 360
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right	-90 to 90
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Longitude at the center of the upper-right	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Latitude at the center of the lower-left corner pixel of the image that contains	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	dummy pixels Longitude at the center of the lower-left corner pixel of the image that contains	0 to 360
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	dummy pixels Latitude at the center of the lower-right corner pixel of the image that contains	-90 to 90
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	dummy pixels Longitude at the center of the lower-right corner pixel of the image that contains dummy pixels	0 to 360
	Map projection information	Image center latitude Image center longitude	IMAGE_CENTER_LATITUDE = \$10.6f <deg> IMAGE_CENTER_LONGITUDE = \$10.6f <deg></deg></deg>	Latitude at the center pixel of the image Longitude at the center pixel of the image	-90 to 90 0 to 360
		Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Map projection	"Simple Cylindrical",
					"Stereographic", "Lambert Conformal" or "Transverse Mercator"
		Coordinate system type Coordinate system name	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Type of the coordinate system Full name of the coordinate system	"BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed
		A axis radius B axis radius	A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km></km></km>	A axis radius of the Moon B axis radius of the Moon	1737.4 < KM> default 1737.4 < KM> default
		C axis radius	C_AXIS_RADIUS = %8.3f <km></km>	C axis radius of the Moon	1737.4 <km> default</km>
		First standard parallel	FIRST_STANDARD_PARALLEL = %10.6f <deg></deg>	First standard parallel Used for "Lambert Conformal" projection.	-90 to 90 for "Lambert Conformal" projection "N/A" for other man projections
		Second standard parallel	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel Used for "Lambert Conformal" projection.	"N/A" for other map projections -90 to 90 for "Lambert Conformal" projection "N/A" for other map projections
		Positive longitude direction	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"EAST" fixed
		Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given MAP_PROJECTION_TYPE	-90 to 90
		Center longitude Reference latitude	CENTER_LONGITUDE = %10.6f <deg> REFERENCE_LATITUDE = %10.6f <deg></deg></deg>	MAP_PROJECTION_TYPE Longitude at the origin in a given MAP_PROJECTION_TYPE Zero latitude in a rotated spherical	0 to 360 "N/A" fixed
		Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	coordinate system that was used in a given MAP_PROJECTION_TYPE Zero longitude in a rotated spherical	"N/A" fixed
		First line number	LINE_FIRST_PIXEL = %d	coordinate system that was used in a given MAP_PROJECTION_TYPE Line number of the upper end pixel of the	1 fixed
		Last line number	LINE_LAST_PIXEL = %d	image Line number of the lower end pixel of the	
		First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the	1 fixed
		Last sample number Map orientation angle	SAMPLE_LAST_PIXEL = %d MAP_PROJECTION_ROTATION = %f <deg></deg>	image Sample number of the right end pixel of the image Clockwise rotation of the line and sample	0.0 fixed
		Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	coordinates with respect to the map projection origin Total number of pixels in a box area of 1-degree latitude x 1-degree longitude for	"N/A" is given when MAP_PROJECTION_TYPE is not
		Map scale	MAP_SCALE = %f <km pixel=""></km>	Simple Cylindrical Projection Actual distance, in km, between two points at the origin in a given	"Simple Cylindrical".
		Maximum latitude	MAXIMUM_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Latitude at the center of the northernmost	-90 to 90
		Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	pixel in 4 corner pixels Latitude at the center of the southernmost	-90 to 90
		Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	pixel in 4 corner pixels Longitude at the center of the easternmost	0 to 360
		aastei miiost iongitude		Longitude at the center of the easternmost pixel in 4 corner pixels	5 20 300

	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	this image Map projection coordinates, in pixels, at	
			the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%s"	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or
		END_OBJECT = IMAGE_MAP_PROJECTION		"Logical Sum"
Processing parameter		mb_oboact = resource reconciton		
description		OBJECT = PROCESSING_PARAMETERS		
	Parameter set name Radiance conversion	PARAMETER_SET_NAME = "%s" REF_CNV_SW = "%s"	Name of the processing parameter set Execution flag of the photometric	TBD "OFF" or "ON"
	switch Reflectance conversion	REF_CNV_COEF = %f	correction and the reflectivity conversion Reflectance conversion coefficient	"N/A" is given when REF_CNV_SW
	coefficient Standardized geometry	STANDARD_GEOMETRY = (%f,%f,%f)	Incidence angle, emission angle, and phase	is "OFF". "N/A" is given when REF_CNV_SW
	condition for photometric correction	DUOTIO CODD TD - 19-1	angle	is "OFF". "USGS" or "BROWN"
	Photometric correction method	PHOTO_CORR_ID = "%s"	ID of the photometric correction method	"N/A" is given when REF_CNV_SW is "OFF".
	Photometric correction coefficients	PHOTO_CORR_COEF = (%f,%f,%f,)	Photometric correction coefficients	"N/A" is given when REF_CNV_SW is "OFF".
	Geometric correction method in the horizontal	HORIZONTAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the horizontal direction	"NON": no correction "PARALLEL": parallel shift
	direction			"AFFINE": affine transformation "HELMERT": helmert transformation "PSEUDO-AFFINE": pseudo-affine transformation
	Geometric correction method in the vertical	VERTICAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the vertical direction	"NON": no correction "OFFSET": offset correction
	direction Mosaic priority	MOSAIC_PRIORITY = ("%s",%f)	Values to decide the order of mosaicking	"TREND": trend correction
				Ist value "NON: file designation order "CENTER": from center to outside "E-W": from east to west "W-E": from west to east "N-S": from north to south "S-N": from south to north "DATE_NEW": new observation date order "DTM_QUALITY": DTM_good quality order "SUN_ELEVATION": small order of the difference between the sun elevation and the 2nd value "SUN_AZIMUTH": small order of the difference between the Sun azimuth and the 2nd value "SUN_PHASE_ANGLE": small order of the difference between the sun phase angle and the 2nd value "DATA value" "DATA value" "SUN_PHASE_ANGLE": small order of the difference between the sun phase angle and the 2nd value Value of the Sun elevation, azimuth, or phase angle
				"N/A" is given as the 2nd value when the 1st value is not "SUN_ELEVATION", "SUN_AZIMUTH" or
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	when the 1st value is not
Image	Smoothing width	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS	Smoothing width, in pixels, for the boundary between images of the mosaicking	when the 1st value is not "SUN_ELEVATION" , "SUN_AZIMUTH" or
Image information	Smoothing width	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE	boundary between images of the	when the 1st value is not "SUN_ELEVATION" , "SUN_AZIMUTH" or
Image information	Smoothing width Bands Bands torage type	END_OBJECT = PROCESSING_PARAMETERS	boundary between images of the	when the 1st value is not "SUN_ELEVATION" , "SUN_AZIMUTH" or
Image information	Bands	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each	when the 1st value is not SUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image information	Bands Band storage type Band name Lines	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image	when the 1st value is not "SUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed
Image information	Bands Band storage type Band name	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s"	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data	when the lst value is not "SUN_ELEVATION" , "SUN_AZMUTH" or "SUN_PHASE_ANGLE". I fixed "N/A" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_INTEGER" (DTM) or
Image information	Bands Band storage type Band name Lines Line samples Sample type	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%g" BAND_NAME = "%g" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%g"	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type	when the lst value is not "SUN_ELEVATION" . "SUN_AZMUTH" or "SUN_AZMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho)
Image information	Bands Band storage type Band name Lines Lines amples Sample type Sample bits	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_MAME = "%a" LIMES = %d LIME_SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value.	when the 1st value is not "SUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16
Image information	Bands Band storage type Band name Lines Line samples Sample type	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%g" BAND_NAME = "%g" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%g"	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data	when the 1st value is not "SUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_PHASE_ANGLE". 1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_INSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or
Image information	Bands Band storage type Band name Lines Lines Sample type Sample bits Meaning of pixel value Sample bit mask	END_OBJECT = PROCESSING_PARAMETERS OBNECT = IMAGE EANDS = %d BAND_STORAGE_TYPE = "%s" BAND_MAME = "%s" LINES = %d SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	boundary between images of the mosaicking Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample	when the lst value is not "SUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE",
Image information	Bands Band storage type Band name Lines Lines Sample type Sample bits Meaning of pixel value	END_OBJECT = PROCESSING_PARAMETERS OBNECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%8" BAND_MAME = "%8" LINES = %d SAMPLES = %d SAMPLE_TYPE = "%8" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%8"	boundary between images of the mosaicking Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel	when the 1st value is not recovered by the recovered by t
Image information	Bands Band storage type Band name Lines Lines Sample type Sample bits Meaning of pixel value Sample bit mask	END_OBJECT = PROCESSING_PARAMETERS OBNECT = IMAGE EANDS = %d BAND_STORAGE_TYPE = "%s" BAND_MAME = "%s" LINES = %d SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Image data type Image data type Meaning of the value of the pixel Active bits in a sample Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN-SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Redience DN SCALING_FACTOR-OFFSET Unit is "wm2/y mrs" TC ortho ang (REF_CNV_SW='ON'): Reflectivity = DN-SCALING_FACTOR-OFFSET Unit is "wm2/y mrs" TC ortho map (REF_CNV_SW='ON'): Reflectivity = DN-SCALING_FACTOR-OFFSET	when the 1st value is not SUN_ELEVATION" . "SUN_AZIMUTH" or SUN_PHASE_ANGLE". 1 fixed 1 fixed BAND_SEQUENTIAL fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC or th) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111: 8 bits
Image information	Bands Band storage type Band name Lines Lines Sample type Sample bits Meaning of pixel value Sample bit mask	END_OBJECT = PROCESSING_PARAMETERS OBNECT = IMAGE EANDS = %d BAND_STORAGE_TYPE = "%s" BAND_MAME = "%s" LINES = %d SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of lines in this image Total number of lines in this image Image data type Image data type Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN-SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Redience DN SCALING_FACTOR-OFFSET Unit is "wm2/y mrs" TC ortho ang (REF_CNV_SW='ON'): Reflectivity = DN-SCALING_FACTOR-OFFSET Unit is "% DN-SCALING_FACTOR-OFFSET Unit is "% Call mage (REF_CNV_SW='ON'): Reflectivity = DN-SCALING_FACTOR-OFFSET Unit is "% Call used in the DN for physkal quantity	when the list value is not recovered to the control of the control
Image information	Bands Band storage type Band name Lines Lines Samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" LINES = %d LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Image data type Image data type Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation TC ortho and TC ortho map (REF_CNV_SW=OFF): Redience DN SCALING_FACTOR-OFFSET Unit is "wm2/y mrs" TC ortho and REF_CNV_SW="ON"): Reflectivity = DN-SCALING_FACTOR-OFFSET Unit is "sm2/y mrs" Carlot map (REF_CNV_SW="ON"): Reflectivity = DN-SCALING_FACTOR-OFFSET Unit is "sg2" Calin used in the DN for physkal quantity conversion Whether a data object has been stretched	when the 1st value is not SUN_ELEVATION" . "SUN_AZIMUTH" or SUN_PHASE_ANGLE". 1 fixed 1 fixed BAND_SEQUENTIAL fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC or th) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111: 8 bits
Image information	Bands Band storage type Band name Lines Lines Samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Redinance DN SCALING_FACTOR-OFFSET DN SCALING_FACTOR-OFFSET TC ortho and REF_CNV_SW='ON'): Reflectivity DN SCALING_FACTOR-OFFSET Unit is "%c Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see	when the lst value is not SUN_ELEVATION" SUN_AZIMUTHF or SUN_AZIMUTHF or SUN_PHASE_ANGLE. 1 fixed 1
Image information	Bands Band storage type Band name Lines Lines Samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%a" LIMES = %d LIME_SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BITS = %d OFFSET = %f SAMPLE_BIT_MASK = %a OFFSET = %f	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation To ortho and TC ortho map (REF_CNV_SW=OFF): Redience DN SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and REF_CNV_SW=ON"): Reflectivity DN SCALING_FACTOR-OFFSET Unit is "%" Carlo map (REF_CNV_SW=ON"): Reflectivity SNS-SCALING_FACTOR-OFFSET Unit is "%" Cain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Maximum value that is valid for a data object Maximum value that is valid for a data	when the lst value is not rSUN_ELEVATION" . "SUN_AZIMUTH" or "SUN_AZIMUTH" or "SUN_PHASE_ANGLE". 1 fixed BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC or the) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#11111111111111 is bits 2#111111111111 is bits 2#111111111111 is bits
Image information	Bands Band storage type Band name Lines Lines Samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%a" LIMES = %d LIME_SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation DIM and DTM map: Elevation DIN SCALING, FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REP_CNV_SW="OFF"): Radiance DN*SCALING, FACTOR+OFFSET Unit is "mild" µ misr TC ortho map (REF_CNV_SW="ON"): DN*SCALING, FACTOR+OFFSET Unit is "%" Gain used in the DN for physkal quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Walue that indicates the dummy (blank) Value that indicates the dummy (blank)	when the lst value is not SUN_ELEVATION" SUN_AZIMUTHF or SUN_PHASE_ANGLE. 1 fixed
Image information	Bands Band storage type Band name Lines Lines Samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%a" LINES = %d LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d VALID_MAXIMUM = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single band or multi-band data Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation DIM and DTM map: Elevation TiC ortho and TC ortho map (REP_CNV_SW='OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is "win2) mss" TC ortho and FCRE_CNV_SW='ON'): "DN*SCALING_FACTOR+OFFSET Unit is "90" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Maximum value that is valid for a data object Walue that indicates the dummy (blank) pixel of the image Value that indicates the dummy (blank) Value that indicates the minimum	when the last value is not recovered to the control of the control
Image information	Bands Band storage type Band name Lines Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_MAME = "%a" LINES = %d LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%a" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BITS = %d OFFSET = %f STAMPLE_BIT_MASK = %a OFFSET = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d UMBGY = %d DUMBGY = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "mere" from the Moon radius. To ortho and Tc ortho map (REC_CN_SW='OPF'): Reflective: TC ortho and Tc ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "mor'ly univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "mor'ly univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow"/J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow"/J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow "J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow "J univs"/J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow "J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow "J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "sow "J univs" TC ortho map (REF_CNV_SW='ON'): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "minimum' J univs univ	when the list value is not SUN_ELEVATION" SUN_ELEVATION" SUN_AZIMUTHF or SUN_PHASE_ANGLE: 1 fixed 1
Image information	Bands Band storage type Band name Lines Lines amples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR)	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STRONGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d OFFSET = %f STANDLE_BIT_MASK = %s OFFSET = %f VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "mere" from the Moon radius. To ortho and Tc ortho map (REF_CNV_SW='OFF'): ———————————————————————————————————	when the lst value is not SUN_ELEVATION" SUN_AZIMUTHF or SUN_AZIMUTHF or SUN_PHASE_ANGLE. 1 fixed
Image information	Bands Band storage type Band name Lines Lines amples Line samples Sample type Sample pits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR)	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_MAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d MAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d OFFSET = %f STRETCHED_FLAG = "%s" VALID_MININGM = %d UVALID_MAXINGM = %d LOW_EEPR_SATURATION = %d LOW_INSTR_SATURATION = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW=*OFF): Readiance DN*SCALING_FACTOR+OFFSET Unit is "mome?) imsics" TC ortho map (REF_CNV_SW=*ONT): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "%C Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Value that indicates the minimum saturation pixel after radiometric correction Value that indicates the minimum saturation pixel during instrument measurement Value that indicates the maximum saturation pixel after radiometric correction	when the lat value is not rSUN_ELEVATION" SUN_ELEVATION" SUN_AZIMUTHF or SUN_PHASE_ANGLE: 1 fixed 1 fixed 1 fixed **NA** fixed **MSB_INTEGER** (DTM) or **MSB_INTEGER** (TC ortho) 8 or 16 **TON, "RADIANCE" **PEFIECTANCE** **PEFIECTANCE** **PEFIECTANCE** **ZEITHITHE 8 bits 2#11111111111111111111111111111111111
Image information	Bands Band storage type Band name Lines Lines amples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) High saturation (REPR)	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" END_DAMPLES = %d LINES = %d LINES_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d OFFSET = %f SCALING_FACTOR = %f STREICHED_FLAG = %%s" VALID_MINIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation Total number of bits used to store one data sample value DTM and DTM map: Elevation Total number of pixel of the pixel Unit is "meter" from the Moon radius. To corton and To croth map (REF_CNV_SW="OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is "mw"D my my" To crotho map (REF_CNV_SW="ON"): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is "wim"D my my my my my my my my my my my my my	when the list value is not rSUN_ELEVATION" SUN_AZIMUTHF or SUN_PHASE_ANGLE. I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_INSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#111111111111 & bits 2#11111111111 & bits 1 fixed "FALSE" fixed "9899. DTM 0: TC ortho 1 fixed I fixed 1 fixed

			invalid pixels	pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Maximum	MAXIMUM = %d	Maximum value in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Average	AVERAGE = %f	Average value in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Standard deviation	STDEV = %f	Standard deviation in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Mode pixel	MODE_PIXEL = %d	Mode in this image except the invalid pixels	When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
		END_OBJECT = IMAGE		
		END		

(2) Image Data Object

Format of the Image Data Object of the TC Ortho Map PDS Product File is given in Table 2.3-7.

Table 2.3-7 Specifications for the Image Data Object

Image File	Bit	Format	Endian	Value
	Length			
TC Ortho Map	16	Unsigned short	Big endian	
		integer		

2.3.4 Low-Resolution File

The Low-Resolution File is a resampled image-data object of each LISM Map Product. The Low-Resolution File for the TC Ortho Map is resampled at 1/32 pixel (128 pixel/degree) from the original image (Fig. 2.2-5). The image is in a raw format. The extension of this image file is assigned ".low" to distinguish it from the Map product file.

This file is used for internal processes of the L2DB system. If you request a TC Ortho Map product for the L2DB system, this file will not be included in the L2DB product.

KAGUYA (SELENE) Product Format Description

- LISM (TC/MI/SP) /SPICE Kernel-

Appendix-3

SPICE Kernel Format Description

Version 1.0

November 1, 2009

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1. Introduction

1.1 Purpose

This document describes the formats of the SPICE Kernel. These files provided by Japan Aerospace Exploration Agency (JAXA).

2. Data Set

The SPICE Kernel Data Set refers to the SELENE information file converted into SPICE Kernel, PDS Label in detached format and catalog information which are tar-archived. Composition of the SPICE Kernel Data Set is shown in Figure 2-1.

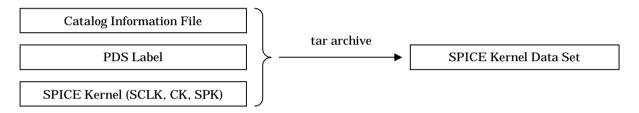


Figure 2-1 composition of the SPICE Kernel Data Set

The correspondence between the SELENE information file, the source, and the SPICE Kernel is shown in Table 2-1.

Table 2-1 Correspondence of the fount of SELENE information file and the SPICE Kernel

Generating element	generated SPICE Kernel
Spacecraft Clock Revision Data File	SCLK
Trajectory File	SPK
Attitude information File	CK

The nomenclatures used for each file the SPICE Kernel Data Set are described Table 2-2, Table 2-3 and Table 2-4.

Table 2-2 Rules used for File naming of SPICE Kernel Data Set (SCLK)

Code	Start position	Length (Byte)	Preset Value	
		<u> </u>	Satellite identification	
1	1	2	SM : fixed (SELENE-M)	
			Date and Time of Start Data	
2	3	12	YYMMDDHHMMSS	
			Underscore	
3	15	1	_ : fixed	
			Day and Time of End Data	
4	16	8	DDHHMMSS	
			Underscore	
5	24	1	_ : fixed	
			Version number	
6	25	3	nnn	
			Extensions	
			.tsc : SCLK	
			.stg : Catalog Information File	
			.lbl : PDS Label	
7	28	4	.sl2 : SPICE Kernel Data Set	
Total	-	31		

Table 2-3 Rules used for File naming of SPICE Kernel Data Set (SPK)

Code	Start position	Length (Byte)	Preset Value
1	1	2	Satellite identification SM : fixed (SELENE-M)
2	3	1	Central astral body identification E: Center of the earth M: Center of the mo0n
3	4	10	Date and Time of Start Data YYMMDDHHMM
4	14	1	Underscore _ : fixed
5	15	8	Day and Time of End Data MMDDHHMM
6	23	1	Underscore _ : fixed
7	24	3	Version number nnn
8	27	4	Extensions .tsc: SPK .stg: Catalog Information File .lbl: PDS Label .sl2: SPICE Kernel Data Set
Total	-	30	.Siz . Si TOE Netfiel Data Set

Table 2-4 Rules used for File naming of SPICE Kernel Data Set (CK)

Code	Start position	Length (Byte)	Preset Value	
			Satellite identification	
1	1	2	SM: fixed (SELENE-M)	
			Station identification	
			U1 : Usuda	
			K1 : Kagoshima	
			Gn : NGN ("n" is integer above 1.)	
2	3	2	Dn : DSN ("n" is integer above 1.)	
			Data class	
			R : Real Data	
3	5	1	M : Repro Data	
			Date and Time of Start Data	
4	6	10	YYMMDDHHMM	
			Underscore	
5	16	1	_ :: fixed	
			Day and Time of End Data	
6	17	6	DDHHMM	
			Underscore	
7	23	1	_ : fixed	
			Version number	
8	24	3	nnn	
			Extensions	
			.tsc : CK	
			.stg : Catalog Information File	
			.lbl : PDS Label	
9	27	4	.sl2 : SPICE Kernel Data Set	
Total	-	30		

2.1 Catalog Information File

The Catalog Information File Format for the SPICE Kernel Data Set is shown in Table 2-5.

Table 2-5 Catalog Information File of SPICE Kernel Data Set

Item	Keyword	Format of Preset Value	Content of Preset Value	
Data File Name	DataFileName	AAAAAAAA (31 digits)	SPICE Kernel file name	
Data File Size	DataFileSize	NNNNNNNNNNNNNNNN (12 digits)	SPICE Kernel file size <byte></byte>	
Data File Format	DataFileFormat	AAAAAAAA (16 digits)	SCLK : SCLK <fixed> CK : CK < fixed > SPK : SPK < fixed ></fixed>	
Instrument Name	InstrumentName	AAAAAAAA (16 digits)	SPICE : fixed	
Processing Level	ProcessingLevel	AAAAAAAA (16 digits)	Normal < fixed >	
Product ID	ProductID	AAAAAAAA (30 digits)	dependent on the product	
Product Version	ProductVersion	AAAAAAAA (16 digits)	dependent on the product	
Access Level	AccessLevel	N	N/A	
Start Date Time	StartDateTime	yyyy-mm-ddT hh: mm:ss.sssssZ	Start Date and Time of the SPICE Kernel stored data	
End Date Time	EndDateTime	yyyy-mm-ddT hlr.mm:ss.sssssZ	End Date and Time of the SPICE Kernel stored data	

2.2 PDS Label

The PDS Label of the SPICE Kernel Data Set is shown in Table 2-6.

Table 2-6 PDS Label of SPICE Kernel Data Set

		Keyword	Format of Preset Value	Content of Preset Value
		PDS version ID	PDS_VERSION_ID = "%s"	"PDS3" <fixed></fixed>
PDS label common items		File record type	RECORD_TYPE = "%s"	sclk : "STREAM" <default> ck : "UNDIEFIND" <default> spk : "UNDIEFIND" <default></default></default></default>
		File name	FILE_NAME = "%s"	SPICE Kernel file name sclk : *.tsc ck : *.bsp spk : *.bc
		Data file format ID	DATA_FORMAT = "%s"	"SPICE" <default></default>
		Software name	SOFTWARE_NAME = "%s"	Software name that created the SPICE PDS product
	File attributes	Product ID	PRODUCT_ID = "%s"	SPICE Kernel file name The extension is removed from the file name.
			PROCESS_VERSION_ID = "%s"	"L2A" <fixed></fixed>
		Product creation time	PRODUCT_IDCREATION_TIME = "%s"	Data creation time "YYYY-MM-DDTHH:MM:SSZ""
		Producer ID	PRODUCER_ID = "%s"	"LISM" <fixed></fixed>
		Data type	PRODUCT_TYPE = "%s"	"N/A" <default></default>
		Product name	PRODUCT_SET_ID = "%s"	sclk : "SCLK" <default> ck : "SPK" <default> spk : "CK" <default></default></default></default>
		Product version	PRODUCT_VERSION_ID = "%s"	Version of L2DB accession
Product information		Fount file name	SOURCE_FILE_NAME = "%s"	The fount data file name used for SPICE Kernel creation. sclk : Spacecraft Clock Revision Data File ck : Attitude information File spk : Trajectory File
	Product	Mission name	MISSION_NAME = "%s"	"SELENE" <default></default>
	attributes	Spacecraft name	SPACECRAFT_NAEM = "%s"	"SELENE-M" <default></default>
	attributes	Data set ID	DATA_SET_ID = "%s"	This data set ID
		Instrument name	INSTRUMENT_NAME = "%s"	"N/A" <default></default>
		Mission phase name	MISSION_PHASE_NAME = "%s"	Mission phase name
		Target name	TARGET_NAME = "%s"	"MOON" <default></default>
		Spacecraft clock start count (TI)	SPACECRAFT_CLOCK_START_COUNT = %15.4F	Spacecraft clock start count (TI) spk : N/A
		Spacecraft clock stop count (TI)	SPACECRAFT_CLOCK_STOP_COUNT=%15.4F	Spacecraft clock stop count (TI) spk: N/A
		Spacecraft clock start time (UT)	START_TIME = "%s"	Spacecraft clock start time (UT) "YYYY-MM-DDTHH:MM:SS.sssZ"
		Spacecraft clock start time (UT)	STOP_TIME = "%s"	Spacecraft clock start time (UT) "YYYY-MM-DDTHH:MM:SS.sssZ"
			OBJECT = SPICE_KERNEL	
Kernel Object Format Description Part		Format	INTERCHANGE_FORMAT = %s	sclk : "ASCII" < default> ck,spk : "BINARY" < default>
		Kernel type	KERNEL_TYPE = %s	sclk : "CLOCK_COEFFICIENTS" <default> ck : "POINTING" <default> spk : "EPHEMERIS" <default></default></default></default>
		Kernel type abbreviation	KERNEL_TYPE_ID = %s	sclk : "SCLK" <default> ck : "SPK" <default> spk : "CK" <default></default></default></default>
		Comment	DESCRIPION = %s	Comment
			END_OBJECT = SPICE_KERNEL	
			END	

2.3 SPICE Kernel

The item of SPICE Kernel of SELENE is shown in Table 2-7.

In addition, concerning the detail of SPICE Kernel, refer to the Required Reading of each Kernel of the following reference.

Table 2-7 Item of SPICE Kernel

Kernel	Stored Format	Content
SCLK	Text	Correspondence of Spacecraft clock and Ephemer is Time is stored.
SPK	Binary	The orbital information etc. of SELENE is stored.
CK	Binary	The attitude information of SELENE is stored.

2.3.1 Reference Document

- (1) SCLK Required Reading (06-Oct-1999,NAIF Document No.222.02)
- (2) SPK Required Reading (05-Sep-2002, NAIF Document No.168.10)
- (3) CK Required Reading (05-Sep-2002,NAIF Document No.174.08)