# KAGUYA (SELENE) Product Format Description

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

Version 1.3

February 16, 2010

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.67-68</appendix-1>	
		Appendix3 "Details of SP Ancillary Information" addition.	

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Appendix-1 : LISM RGC Product Format Description

# Appendix-2 : LISM DTM / Ortho Product Format Description

Appendix-3 : SPICE Kernel Format Description

#### 1. Introduction

#### 1.1 Purpose

This document describes the format<sup>\*2</sup> used for the catalog and product files for the Lunar Imager/Spectrometer <sup>\*1</sup>(LISM) that was board KAGUYA (SELENE), the format used for the SPICE kernel<sup>\*3</sup>. 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 <u>http://www.kaguya.jaxa.jp/en/equipment/tc\_e.htm</u>
- Image Gallery for KAGUYA

   TC:

   http://wms.selene.jaxa.jp/selene\_viewer/en/observation\_mission/tc/

   MI:

   http://wms.selene.jaxa.jp/selene\_viewer/en/observation\_mission/mi/

   SP:

   http://wms.selene.jaxa.jp/selene\_viewer/en/observation\_mission/mi/
- \*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).

#### 1.2The 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	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.		
	Chaptar 2	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. 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.

	Level	Product Name	Product ID	Data Type	Product	
		TC_Morning_MAP	TC_Morning_MAP	MAP	Format*1 A	
		TC_Evening_MAP	TC_Evening_MAP	MAP	А	
		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	А	
		SP_Level2B2	SP_Level2B2	TBD	А	
W		SP_Level2C	SP_Level2C	TBD	А	
TISM		SP_Level2D	SP_Level2D	TBD	А	
	Higher Level	TCOrtho_MAP	TCOrtho_MAP	MAP	٨	
			DTM_MAP	DTM_MAP	MAP	А
		MI_MAP	MI_MAP	MAP	А	
		DTM_TCOrtho_S	DTM_TCOrtho_S	IMAGE	А	
		TCOrtho_MAP_S	TCOrtho_MAP_S	MAP	А	
		DTM_MAP_S	DTM_MAP_S	MAP	А	
		TCOrtho_MSC	TCOrtho_MSC	IMAGE	А	
		DTM_MSC	DTM_MSC	IMAGE	А	
		Others	Others	Depends on	the products	
		Spacecraft trajectory	SPK	SPK	D	
ш	Standard	Orientation of spacecraft	СК	СК	D	
SPICE		Spacecraft clock coefficients	SCLK	SCLK	D	
01	Higher	Long period spacecraft clock coefficients	LONG_SCLK	SCLK	D	
	Level	RISE Spacecraft trajectory	RISE_SPK	SPK	D	

Table 2-1 LISM/SPICE Products Lists

: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 $< 60^{\circ}$ and Polar Stereo for latitude of $> 60^{\circ}$ . 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.
ſ	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_Level2C,SP_Level2D,MI_MAP
	Spacecraft trajectory	SPK	SPICE karnel containing satellite ephemerides
1	Orientation of spacecraft	СК	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
SF	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
	·Man product		

:Map product

	Product Name	Product ID		Reference		
			Composition of the Data Set		Page.2 Page.3	Section 2.1 Figure 2.1-1
			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	TC_Morning_MA P TC_Evening_MA P	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
	MI-VIS_Level2B2		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
		MI-VIS_Level2B 2 MI-NIR_Level2B 2	Catalog Information File	Appendix-1 LISM RGC Product Format Description -	Page.21 Page.22	Section 2.2.1 List2.2-4 List 2.2-5,6
ISIM			Thumbnail File		Page.24	Section 2.2.2 List 2.2-10
Π	MI-NIR_Level2B2		PDS Label		Page.25 Page.26,27	Section 2.2.3 List 2.2-11
			PDS Product File		Page.29 Page.29 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) List 2.2-16
			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.21 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
			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

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

: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
	SP_Level2B1	SP_Level2B1	Composition of the Data Set		Page.40 Page.41	Section 2.3 Figure 2.3-1
			Rules used for File naming	Appendix-1 LISM RGC Product Format Description -	Page.42	List 2.3-1
LISM			Catalog Information File		Page.44 Page.45 Page.46	Section 2.3.1 List 2.3-3 List 2.3-4
			PDS Product File		Page.48 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	F	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.48 Page.50 Page.51~55 Page.56 Page.57~60 Page.61	Section 2.3.3 (2)
			Original Resolution JPEG		Page.62	Section 2.3.4
	Others	Others	Image File *1	l		List 2.3-9

<sup>\*1 : &</sup>quot;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.11~14 Page.15,16 Page.21	Table 2.1-8
		DTM_MAP DTM_MAP_S	Composition of the Data Set		Page.22	Section 2.2 Fig 2.2-1 Fig 2.2-2
	DTM_MAP		Rules used for File naming	Appendix-2 Pa Pa LISM DTM / Ortho Product Format Description - Pa Pa Pa Pa Pa	Page.23	Table 2.2-1
М	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)
			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
L			Low Resolution Data File		Page.41	Section 2.3.4
	:Map product					

: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) CK	Rules used for File naming	Appendix-3 SPICE Kernel	Page.2 Page.3	Table 2-2,3 Table 2-4
S	× 1 5 5/		Catalog Information File	Format Description	Page.4	Section 2.1 Table 2-5
			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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Appendix1 "Rotation/reverse of the thumbnail image"

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Appendix3 "Details of SP Ancillary Information"

Change	Log
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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) <sup>1</sup>Documentation of LISM level 2A product file format<sub>1</sub> (RCX-05007)
- (4) <sup>T</sup>Functions for creating LISM SP level 2 product<sub>1</sub> (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

- $\cdot$ 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.

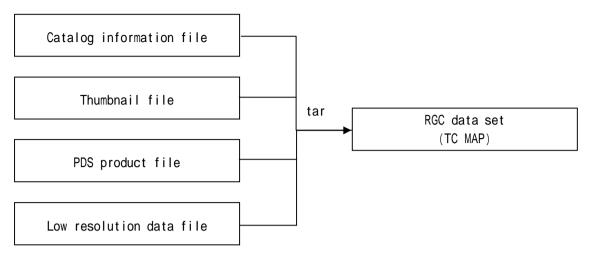


Figure 2.1-1 Composition of TC RGC data set (MAP data set)

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
			EVE:evening 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
0	10	1	:fixation
7	11	1	Discrimination of north or south hemisphere on north edge in
'	11	1	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,
- 10	10		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)
11	15	~	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
11	than divided	Т	.img:RGC PDS product file(non-gzip compression)
	mosaic)		.jpg:thumbnail file
	/		.ctg:catalog information file
			.sl2:RGC data set
	Total	30:other tl	nan non-MAP divided mosaic

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

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	NNNNNNNNNN (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	NNNNNNNNNN (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
			TC Morning MAP
Product identification	ProductID	AAAAAAAA (up to 30-digit)	TC Evening MAP
		(+p + + + + + + + + + + + + + + + + + +	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)
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	CommentInfo	AAAAAAAA (up to 4000-	Refer to the list 2.1-11
Free keyword	FreeKeyword	1	Refer to the list 2.1-10

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

#### 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	NNNNNN	Image evaluation: maximum value of pixels in this 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 scene	SceneStdevDN	Real value	SNNN.NNN	Image evaluation: standard deviation value of pixels in this scene
Mode DN in this scene	SceneModeDN	Integral value	NNNNNN	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

в

#### 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	SourceLevel2AFileName="%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"		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

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

List 2.1-5 Specifications of thumbnail file

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.

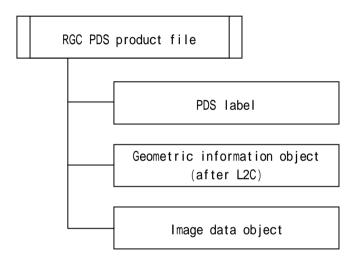


Figure 2.1-2 Composition of TC RGC PDS product file

PDS label	Prerequisite items for PDS header						
	Version identifi	ication					
	• Area specifying	object position	n				
	Pointer to all ol	ojects					
	Product	•File attribute					
	information	e.g. file name, creating date, update date					
		Product att	ribute				
		e.g. software name used for creating product,					
		producer id	entification, source data file name				
		Scene	$\cdot$ 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				
	$\cdot$ Description are	a of geometric	data object format				
	(altitude: for N	/IAP)					
	e.g. thinning in	terval of geom	etric data, number of data points				
	in vertical and	horizontal dire	ection, bit length				
	$\cdot$ Description are	a of image dat	a object format				
	e.g. number of v	f vertical and horizontal pixels of the scene, bit					
	length						
$\cdot$ Geometric data objec	t(altitude: for MA	P)					
Binary two dimension	nal array data						
$\cdot$ 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)

			•	) Details of PDS label (	IC MAP)	
Prerequisite items for I	Region PDS header		Item name PDS version identification		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 registration) File name (prerequisite for L2DB) (uniquely decidable	"UNDEF INED" ***.img
			Product identification (PDS	PRODUCT_ID = "%s"	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"
rea specifying object p	position		identification Starting position of	^GEOMETRIC_DATA_ALTITUDE = %d	registration) Starting position of geometric data (altitude)(in	
			<u>geometric data (altitude)</u> Starting position of image	<bytes> ^IMAGE = %d <bytes></bytes></bytes>	Byte) This keyword may be omitted. Starting position of image object(in Byte)	
roduct information	File attribut	e	object Software name	SOFTWARE_NAME = "%s"	Software name used for creating PDS product	"RGC_TC_MI"
			Software version Process version	SOFTWARE_VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software version used for creating PDS product Process version identification (prerequisite for L2DB	n.n.n "MAP","MSC
			identification Product creation time	PRODUCT_CREATION_TIME = %s	registration) Product creation time(UTC)	YYYY-MM-DDThh:mm:ssZ
	Product attri	bute	Program start time Producer identification	PROGRAM_START_TIME = %s PRODUCER_ID = "%s"	Program start time (UTC) Data producer identification	YYYY-MM-DDThh:mm:ssZ "LISM"
			Product set identification	PRODUCT_SET_ID = "%s"	PDS product set types (prerequisite for L2DB registration)	"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	"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
			. ,	<u>"%s"}.{"%s".</u> "%s"}) SPICE_METAKERNEL_FILE_NAME =	product. This keyword may be omitted. SPICE metakernel file names used for creating PDS	
	-			("%s","%s",)	product. This keyword may be omitted.	
	Scene attribute	Common to each instrument	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE"
			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)	"Terrain Camera"
			Instrument identification	INSTRUMENT_ID = "%s"	Instrument identification	"TC"
			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 image mosaic in TC MAP/MSC
	1		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	
	1		Sensor description 2	SENSOR_DESCRIPTION2 = "%s"	explanation of compression mode, explanation of exposure mode. Bit number of AD converter) Alternative sensor description	
scription area of geor	metric data (al	titude) 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	(1,1)
			position Thinnig interval	BINNING_INTERVAL = %d	Thinnig interval	(1,1)
			Number of lines	LINES = %d	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	
			Sample type	SAMPLE_TYPE = "%s"	scene. Sample type	"IEEE_REAL"
			Sample bits Unit	SAMPLE_BITS = %d UNIT = "%s"	Sample bit length Unit of sample value	32 "km"
				END_OBJECT = GEOMETRIC_DATA_ALTITUDE		
cription area of imag	ge data object	format	Number of bands	OBJECT = IMAGE BANDS = %d	Number of bands	1 "BAND SEQUENTIAL"
			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_TYPE = "%s"	scene. Sample type	"MSB_INTEGER"
			Sample bits Image value type	SAMPLE_BITS = %2d IMAGE_VALUE_TYPE = "%s"	Sample bit length Image value type	16 "DN"[ND],"RADIANCE"[W/m2/
						micron/sr], "REFLECTANCE"[ ND]
			Uni t	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	
			Minimum for statistical	MIN_FOR_STATISTICAL_EVALUATION	into physical quantity (constant term) Minimum DN value of output range for statistical	
			image evaluation, D1	= (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset.	
			Maximum for statistical image evaluation, D2	MAX_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Maximum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
			Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	scaled and offset. In this scene, maximum DN value in the target group	When the number of
					excluded the following: a.dummy pixel filled onboard	samples for image quality assessment is 0, the
					b.dummy pixel filled on the failure of restoration in the L2A process system	value is set -1.
					c.pixel of element number disregarded from image evaluation	
					and d.pixel whose DN value is less than threshold D1	
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	e.pixel whose DN value is greater than threshold D2 In this scene, minimum DN value in the target group	When the number of
					excluded the following: a.dummy pixel filled onboard	samples for image quality assessment is 0, the
					b.dummy pixel filled on the failure of restoration in the L2A process system	value is set -1.
					c.pixel of element number disregarded from image evaluation	
					and d.pixel whose DN value is less than threshold D1	
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,	e.pixel whose DN value is deast than threshold D2 In this scene, average DN value in the target group	When the number of
				)	excluded the following: a.dumw pixel filled onboard	samples for image quality assessment is 0, the
					b.dummy pixel filled on the failure of restoration in the L2A process system	value is set -1.
					c.pixel of element number disregarded from image evaluation	
					and d.pixel whose DN value is less than threshold D1	
			Standard deviation DN	SCENE STDEV DN = (%.1f.%.1f	d.p.ixel whose DN value is less than threshold D1 e.p.ixel whose DN value is greater than threshold D2 In this scene, standard deviation DN value in the	When the number of
			Stanuaru uevration DN	JULINE_DIDEV_DIN = (%.11,%.11,	target group excluded the following:	samples for image quality
					a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	assessment is 0, the value is set –1.
					the L2A process system c.pixel of element number disregarded from image	
					evaluation	
					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	When the number of
			Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)		
			Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	excluded the following: a.dummy pixel filled onboard	samples for image quality assessment is 0, the
			Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system	samples for image quality
			Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	samples for image quality assessment is 0, the

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

Region	Item name	Description format	Item explanation	value
escription area of image data object format	Shadowed area minimum D5		Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and	Varue
	Shadowed area maximum D6	SHADOWED_AREA_MAXIMUM = (%d,%d, )	offset. Maximum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area percentage	SHADOWED_AREA_PERCENTAGE =	offset. Shadowed area percentage(round down after the decimal	When the number of
	between D5 and D6	(%d,%d,)	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	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 corrected error	
	Invalid value	INVALID_VALUE = (%d, %d,)	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 corrected error	
	Value provided pixels out of bounds pixels before resampling		Value provided to the pixel originally not existing before resampling	
	Number of pixels out of bounds pixels before Stretched flag	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) STRETCHED_FLAG = %s END OBJECT = IMAGE	Numer of pixel originally not existing before resampling Flag to indicate whether a data has been streched to be easily viewable for external output.	"FALSE"
cription area of map projection	Map projection type	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Map projection type	
	Coordinate system type Coordinate system name A axis radius	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.1f <km></km>	Fixed coordinate system of celestial body Original point is mass center of celestial body, latitude is positive in northhemisphere and longitude is positive in east longitude. Lunar radius in a axis	"BODY-FIXED ROTATING" "PLANETOCENTIC" 1737.4 <km></km>
	B axis radius C axis radius	B_AXIS_RADIUS = %8.1f <km> C_AXIS_RADIUS = %8.1f <km></km></km>	Lunar radius in b axis Lunar radius in c axis	1737.4 <km> 1737.4 <km></km></km>
	First standard parallel	FIRST_STANDARD_PARALLEL = %f <deg></deg>	the point of tangency between the sphere of the planet and the cone of the projection.	"N/A"except that map projection is LCC
	Second standard parallel Positive longitude direction	SECOND_STANDARD_PARALLEL = %f <deg> POSITIVE_LONGITUDE_DIRECTION = "%s"</deg>	the intersection lines between the sphere of the planet and the cone of the projection. Positive direction of longitude	"N/A"except that map projection is LCC "EAST"
	Center latitude	CENTER_LATITUDE = %11.8f <deg></deg>	Latitude being original point of coordinate system in map projection	
	Center longitude		Longitude being original point of coordinate system in map projection	
	Reference latitude	REFERENCE_LATITUDE = %11.8f <deg></deg>	the new zero latitude in a rotated spherical coordinate system that was used in a given man projection type.	"N/A"
	Reference longitude	REFERENCE_LONGITUDE = %12.8f <deg></deg>	<pre>map_projection_type. the zero longitude in a rotated spherical coordinate system that was used in a given map_projection_type.</pre>	"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	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d	Sample number of left end of this scene Sample number of right end of this scene	1
	Map projection rotation Map resolution	MAP_PROJECTION_ROTATION = %f MAP_RESOLUTION = %f	Rotation angle to map projection coordinate system of this scene Map resolution <pixel deg=""></pixel>	0.0
	Map scale Maximum latitude	MAP_SCALE = %f <km pixel=""> MAXIMUM_LATITUDE = %11.8f<deg></deg></km>	Map scale <km pixel=""> Center latitude of northernmost pixel.</km>	
	<u>Minimum latitude</u> Easternmost longitude	MINIMUM_LATITUDE = %11.8f <deg> EASTERNMOST_LONGITUDE = %12.8f<deg></deg></deg>	Center latitude of southernmost pixel. Center longitude of easternmost pixel.	
	Westernmost longitude The line offset value from	WESTERNMOST_LONGITUDE = %12.8f <deg> LINE PROJECTION OFFSET =</deg>	Center longitude of westernmost pixels. The vertical offset value from the map projection	
	the map projection origin The sample offset value	%f <pixel> SAMPLE_PROJECTION_OFFSET =</pixel>	origin (line and sample 1,1)[pixel]. The horizontal offset value from the map projection	
cription area of process parameter	from the map projection	%f <pixel> END_OBJECT = IMAGE_MAP_PROJECTION OBJECT = PROCESSING_PARAMETERS</pixel>	origin (line and sample 1,1)[pixel].	
	Dark current correction coefficient file name	DARK_FILE_NAME = ({"s", "s"}, {"s", "s"},)	Dark current correction coefficient file name ("N/A" when not corrected). This keyword may be omitted.	
	Flat field correction coefficient file name Coefficient file name of temperature dependency	FLAT_FILE_NAME = ( <u>{"%s"."%s"}.{"%s"."%s"})</u> EFFIC_FILE_NAME =	Flat field correction coefficient file name ("N/A" when not corrected). This keyword may be omitted. Coefficient file name of temperature dependency correction of transmittance efficiency ("N/A" when not	
	correction of transmittance efficiency File name of non-linearity	({"%s","%s"},{"%s","%s"},) NONLIN_FILE_NAME =	corrected). This keyword may be omitted. File name of non-linearity 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	
	coefficient Reflectance conversion	((%f,%f,%f,),(%f,%f,%f,), ) <u>~W/m**2/micron/sr&gt;</u> REF_CNV_COEF =	every band [W/m2/micron/sr] ("N/A" when not converted). This keyword may be omitted. Coefficient for converting into reflectance (solar	
	coefficient Photometric standard	(%f,%f,%f,***) <1/(W/m**2/micron/sr)> STANDARD GEOMETRY -	radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle	
	geometry Photometric correction identification	STANDARD_GEOMETRY = (%.1f.%.1f.%.1f) PHOTO_CORR_ID = "%s"	and phase angle for photometric correction. 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)	When root his table and
	Resampling method Geometric data matching	RESAMPLING_METHOD = {"%s","%s", } TCO_MOSAIC_FILE_NAME =	Interpolation method of resampling Source TC ortho data file name used for providing	"Nearest Neighbor", "Bi-Linear", "Cubic Convolution" ***.img
	original TC-Ortho data mosaic file name	("%s","%s",)	geometric data. This keyword may be omitted.	0
	Geometric data matching original DTM data mosaic file name	DTM_MOSAIC_FILE_NAME = ("%s","%s",)	Source DTM data file name used for providing geometric data. This keyword may be omitted.	***.dtm
	Overlap selection identification Matching mosaic on creating	OVERLAP_SELECTION_ID = "%s" MATCHING_MOSAIC = "%s"	Method for processing overlap. Matching method	N/A.
	map			N/A; CORRELATION1, CORRELATION2, SSDA1,SSDA2, SSDA3,SSDA4
	Dead pixel discrimination threshold L2A saturation threshold	L2A_DEAD_PIXEL_THRESHOLD = (%d, %d,)	Maximum pixel value to judge as dead pixel on L2A image Minimum threshold value to judge as saturation on L2A	
	L2A saturation threshold Dark current corrected	L2A_SATURATION_THRESHOLD = (%d, %d,) DARK_VALID_MINIMUM = (%d,%d,)	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.	
	valid minimum threshold		It's indicated as physical quantity (real value).	
	valid minimum threshold Radiance conversion		("N/A" when not corrected) Minimum threshold to discriminate to be radiance	
	valid minimum threshold	RADIANCE_SATURATION_THRESHOLD = %f_w/m**2/micron/sr> REF_SATURATION_THRESHOLD = %f <nd></nd>	("N/A" when not corrected)	

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(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						
Alti	tude	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
	Nominal	Monoscopic	3208	459
		Stereoscopic	1600	229
	Half	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 arra	y data on imag	ge data object
1	<b>J</b>			J J

Process level	Data type	Unit	Remarks column
МАР	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
not compressed			(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.

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
Туре	Integral number
Byte order	big endian

List 2.1-9 Specification of low resolution data file

#### 2.2 MI

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

·L2B0data

- •L2B2data
- L2C1data
- $\cdot$ L2C2data
- •L2C3data
- •L2C4data
- •L2C5data
- ·L3C2data
- ·L3C4data
- ·L3C4data
- $\cdot$ 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.

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

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

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.

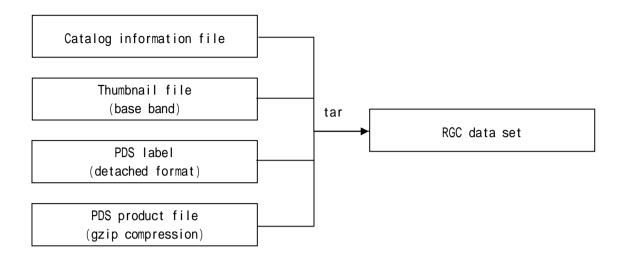


Figure 2.2-1 Composition of cubed MI RGC data set (L2B2, L2C2,)

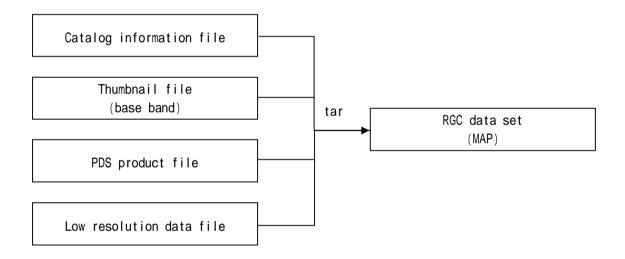


Figure 2.2-2 Composition of cubed MI RGC data set (MAP)

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

	Starting	Length	
No.	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) Total	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 than non-MAP divided mosaic

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

#### 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.

ltem 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	NNNNNNNNNNN (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	NNNNNNNNNN (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	Product ID	AAAAAAAA (up to 30-digit)	MI-VIS_Leve1282, MI-NIR_Leve1282 MI_Leve1282 MI_Leve1222, MI-NIR_Leve12C2 MI_VIS_Leve12C2, MI-NIR_Leve12C3 MI_VIS_Leve12C3, MI-NIR_Leve12C3 MI_VIS_Leve12C4, MI-NIR_Leve12C4 MI_Eve12C4 MI_VIS_Leve12C5, MI-NIR_Leve12C5 MI_Leve12C5 Others
Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn : L2DB registered version
	FIGUELVEISION	AAAAAAAA (up to to-digit)	Setting any value among following:
Access level	AccessLevel	N	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 this scene
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	(same contents as "start time (UT) "of PDS label) Stop date and time of this scene
End date and time of data	EndDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	(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	NNNNNNNNN (up to 10-digit)	Strip number
Scene number	SceneNumber	NNNNNNNNN (up to 10-digit)	Scene number
Location flag	LocationFlag	A	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)
Jpper right latitude of this scene	UpperRightLatitude	SNN.NNNNNN	[-90, 90]
Jpper right longitude of this scene	UpperRightLongitude	NNN.NNNNNN	[0, 360)
Lower left latitude of this scene	LowerLeftLatitude	SNN.NNNNNN	[-90, 90]
Lower left longitude of this scene	LowerLeftLongitude	NNN.NNNNNN	[0, 360)
ower 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	CommentInfo	AAAAAAAA (up to 4000-	Refer to the list 2.2–6
Free keyword	FreeKeyword		Refer to the list 2.2–5

List 2.2-4 Details of 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	PhaseAngle	Real value		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		Spacecraft altitude of the first line("distance
				between spacecraft and lunar gravitational center"
				minus average lunar radius)
Focal plane temperature	FocalPlaneTemperature	Real value		Focal plane temperature of the first line
Number of saturated pixels	SaturatedPixels	Integral value		Number of saturated pixels among invalid pixels
Maximum DN in this scene	SceneMax imumDN	Integral value	NNNNNN	Image evaluation: maximum value of pixels in this
		integral value		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	1	NNNNNN	Image evaluation: scene mode of pixels in this
		Integral value		scene
Shadowed area percentage	ShadowedAreaPercentage	to the sector of the	NNN	Shadowed area percentage of pixels
between D5 and D6	_	Integral value		

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

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

Item name	Keyword	Format of set value	Set content	1
Product creation time	ProductCreationTime=%s	AAA(20 characters)	Product creation time	1
Source L2A data file name	SourceLevel2AFileName="%s"	AAAAAA	All source L2A data file names used for	Í
			creating this PDS product.	
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name	1
Exposure mode identification			Exposure mode identification	1
Upper left daytime flag of the	UpperLeftDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the first column	Í.
start line			and the first line	1
Upper right daytime flag of	UpperRightDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the last column	Í.
the start line			and the first line	1
Lower left daytime flag of the	LowerLeftDaytimeFlag="%s"		Daytime flag of the pixel on the first column	Í.
stop line			and the last line	1
	LowerRightDaytimeFlag="%s"		Daytime flag of the pixel on the last column	Í.
the stop line			and the last line	1
Roll cant	RollCant="%s"		YES : roll cant	Í.
			NO:nadir looking	1
Band number of base band	BaseBand="%s"		Base band identification (for L2B2,L2C2)	

#### 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	NNNNNNNNNNN (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	NNNNNNNNNN (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	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)
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	CommentInfo	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 fil	le (MI MAP)
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Item name	Keyword	Туре	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

В

# List 2.2-9 Details of comment information in catalog information file (MI 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	SourceLeveI2AFileName="%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.

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

List 2.2-10 Specifications of thumbnail file

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 ofList 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))

	Region		Item name	Description format	Item explanation	value
rerequisite items for PD	*		PDS version identification File record type	PDS_VERSION_ID = "%s" RECORD TYPE = "%s"	PDS version identification File record type (prerequisite for L2DB registration)	"PDS3 "
			File name (L2DB regulation)	FILE_NAME = "%s"	File name (prerequisite for L2DB)(uniquely decidable file name, involving extension.	***.tgz、 ***.igz
			Product identification (PDS practice)	PRODUCT_ID = "%s"	File name(unique decidable file name, not involving extension)	***(no extension)
			Data file format identification	DATA_FORMAT = "%s"	Data file format identification (prerequisite for L2DB registration)	
a specifying object po	sition		Archive file name	ARCHIVE FILE = "%s" OBJECT = ARCHIVE FILE	File name TGZ or GZIP-compressed	***.tgz、***.igz
			Archive type Archive file name Archive file size	ARCHIVE_TYPE = "%s" FILE_NAME = "%s" FILE_SIZE = %d <bytes></bytes>	Archive type Archive file name Archive file size	"GZIP", "TAR_GZIP" ***.tgz、 ***.igz
			Number of archived files	ARCHIVED_FILES = %d ARCHIVED_FILES_NAME =	Number of archived files Name of archived files	***.img
			Required storage bytes	{"%s", "%s", "%s"} REQUIRED STORAGE BYTES =		
				%d <bytes> END OBJECT = ARCHIVE FILE</bytes>		
uct information	File attribute		<u>Software name</u> 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)	"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 attribu	te	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types(prerequisite for L2DB	"LISM" "MI-VIS_Leve12B2","MI-NIR_Leve12B2
					registration) The name in product list should be used. As of data	"MI_Leve12B2", "MI-VIS_Leve12C2","MI-NIR_Leve12C2 "MI-Leve12C2",
			Product version	PRODUCT_VERSION_ID = "%s"	not registered in L2DB, it's be described "Others". Product version registered for L2DB (prerequisite for	"MI_Level2C2", "Others" "00 "~ " 99 "
			identification Whether to be registered	REGISTERED PRODUCT = "%s"	L2DB registration) It's be set whether it was created as product for	"Y" or "N"
			product in L2DB		registration, regardless of success and failure of registration in L2DB.	
			Source data file name(L2A)	LEVEL2A_FILE_NAME ={"%s", "%s", "%s"}	Source data file names used for creating this PDS product	***.img
			Source data file name	LEVEL2B_FILE_NAME = {"%s", "%s", "%s"}	Source data file names used for creating this PDS product (for L2C2)	***.img
			SPICE metakernel file name	<pre>SPICE_METAKERNEL_FILE_NAME =     "%s"</pre>	SPICE metakernel file names used for creating PDS product	
	Scene attribute	Common to each instrument	Mission name Spacecraft name	MISSION_NAME = "%s" SPACECRAFT_NAME = "%s"	Mission name Spacecraft name	"SELENE" "SELENE-M"
			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	MIV:"Multiband Imager Visible"
					registration)	MIN:"Multiband Imager Near Infrar When 9 bands are cubed:"Multiban
			Instrument identification	INSTRUMENT_ID = "%s"	Instrument identification	Imager" "MI-VIS", "MI-NIR", "MI"
			Mission phase name Revolution number Strip cognopce 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 UPPER_LEFT_DAYTIME_FLAG =	Strip sequence number while in revolution Scene sequence number while in strip Davtime flag of the pixel on the first column and the	Day:illuminated
			Upper left daytime flag of the first line Upper right daytime flag of	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG =	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	UPPER_RIGHT_DAYTIME_FLAG = "%s" LOWER LEFT DAYTIME FLAG =	first line by the system geometric data Davtime flag of the pixel on the first column and the	Night:not illuminated Day:illuminated
			the last line Lower right daytime flag of	LOWER_RIGHT_DAYTIME_FLAG =	last line by the system geometric data Daytime flag of the pixel on the last column and the	Night : not illuminated Day : illuminated
			the last line Observation target name	"%s" 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
						"NORMAL&SUPPORT":normal and supporting 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)	
			<u>Sensor description 2</u> 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	<pre>LINE_EXPOSURE_DURATION =</pre>	Exposure mode identification Exposure duration of the line. Default value uniquely	
				%10.6f <msec></msec>	decidable to the respective exposure mode.	"3.25":MIDDLE "1.625":SHORT
			Spacecraft clock start count (TI)	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Observation time of the first line of this scene (TI)	
			Spacecraft clock stop count (T1) Corrected spacecraft clock	%15.4f <sec></sec>	Observation time of the last line of this scene (TI) 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)	
			stop count (TI) Start time (UT)	START_TIME = %s	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	<u>scene (UT) (six decimal places)</u> Corrected observation time of the last line of this	"yyyy-mm-ddThh:mm:ss.sssssz"
			Sampling interval in the line		scene (UT) (six decimal places) Designed value of sampling interval	
			Corrected sampling interval	<pre>%10.6f <msec> CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec></msec></pre>	Corrected sampling interval with dividing the corrected interval time between first line and last	
			Upper left latitude of this scene	UPPER_LEFT_LATITUDE = %10.6f	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	[-90.000000, 90.000000]
			Upper left longitude of this scene	UPPER_LEFT_LONGITUDE= %10.6f <deg></deg>	snn.nnnnn 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 nn.nnnn	[0.000000, 360.000000)
			Upper right latitude of this scene	UPPER_RIGHT_LATITUDE= %10.6f <deg></deg>		[-90.000000, 90.000000]
			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 pixel on the last column and the first line nnn.nnnnn	[0.000000, 360.000000)
			Lower left latitude of this scene	LOWER_LEFT_LATITUDE= %10.6f <deg></deg>	by the system geometric data. Center latitude of the pixel on the first column and the last line snn.nnnnn	[-90.000000, 90.000000]
			Lower left longitude of this scene	<deg></deg>	Longitude of pixel on lower left corner of this scene by the system geometric data. Center longitude of the pixel on the first column and the last line nnn.nnnnn	,
			Lower right latitude of this 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	[-90.000000, 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 (cube	List 2.2-11(2/2	) Details of PDS label	(MI L2B2, L2C2	detached (cubed)
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	Region		Item name	Description format	I tem explanation	value
Product information	Scene attribute	Common to each instrument	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, 270 degrees and 270 degrees are both included.	
			Roll cant Scene center latitude	ROLL_CANT = "%s" SCENE_CENTER_LATITUDE =	Discrimination of nadir looking or roll cant observation Latitude of the scene center by the system geometric	YES: roll cant NO:nadir looking [-90.000000, 90.000000]
			Scene center longitude	%10.6f <deq> SCENE_CENTER_LONGITUDE =</deq>	data Longitude of the scene center by the system geometric	[0.000000, 360.000000)
			Incidence angle of the scene	%10.6f <deg> INCIDENCE_ANGLE = %7.3f <deg></deg></deg>	data Incidence angle of the scene center by the system	[0.000, 180.000)
			center Emission angle of the scene	EMISSION_ANGLE = %7.3f <deg></deg>	deometric data (lunar spherical approximation) Emission angle of the scene center by the system accounting data (lunar spherical approximation)	[0.000, 180.000)
			center Phase angle of the scene center	PHASE_ANGLE = %7.3f <deg></deg>	<u>geometric data (lunar spherical approximation)</u> 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	Solar azimuth angle of the scene center by the system decometric data	[0.000, 360.000)
			Distance between moon and sun Focal plane temperature Telescope temperature	MOON_SUN_DISTANCE = %d <km> FOCAL_PLANE_TEMPERATURE = %6.2f <degc> TELESCOPE_TEMPERATURE = %6.2f</degc></km>	Distance between moon and sun (for L2C2) Focal plane temperature of the first line Telescope temperature of the first line	
			Satellite moving direction	<deqc> SATELLITE_MOVING_DIRECTION =</deqc>	Moving direction of satellite	+1 : lead of +x plane
			First sampled line position	"%s" FIRST_SAMPLED_LINE_POSITION =		-1 : lead of -x plane "UPPERMOST
			First detector element	"%s" FIRST_DETECTOR_ELEMENT_POSITI ON = "%s"	Direction of the first detector element (the direction in this scene:LEFT )	"LEFT"
			Radius of lunar shape (a axis) nnnn.nnn (indicate	A_AXIS_RADIUS = %.3f <km></km>	Lunar radius in a axis. nnnn.nnn (indicate down to 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 not to be available because of its defect (black or white) at launching of the process.	MI-VIS:1~962/(in 962 elements) MI-NIR:1~320/(in 320 elements)
		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	BANDWIDTH = (%.1f,%.1f,%.1f) <nm></nm>	Band width(full-width at half-maximum, nominal value)	
			Base band of MI	BASE_BAND = "%s"	Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
			Approximate spacecraft altitude	<pre>SPACECRAFT_ALTITUDE = %8.3f <km></km></pre>	Spacecraft altitude of the first line("distance between spacecraft and lunar gravitational center" minus average lunar radius)	
			Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km>	Spacecraft ground speed of the first line	
				END		1

## 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.

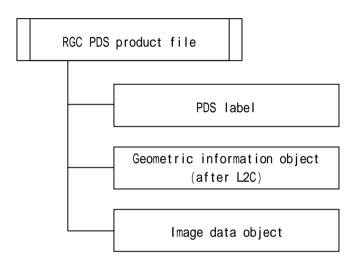


Figure 2.2-3 Composition of Mi RGC PDS product file

PDS label	•Prerequisite item	s for PDS header				
	Version identific					
	•Area specifying o					
	Pointer to all obj					
	Product	$\cdot$ File attribute				
	information	e.g. file name, ci	reating date, update date			
		$\cdot$ Product attribut	e			
		e.g. software r	name used for creating product,			
		producer identifie	cation, source data file name			
		Scene attribute	$\cdot$ Common to each instrument			
			e.g. start time of the scene,			
			stop time of the scene,			
			observation mode name			
			$\cdot$ Variation by each instrument			
			e.g. observation parameters,			
	status					
	$\cdot$ Description area of geometric data object format					
	C C	e: L2C, altitude: M				
	0 0	0	c data, number of data points in			
		ontal direction, bit	—			
	_	of image data obje				
	-	ertical and horizon	tal pixels of the scene, bit length			
•Geometric data of						
Binary two dimen	0	*/				
	oject(longitude: L2C	<i>(</i> )				
Binary two dimen	Ŭ.	<u></u>				
	oject(altitude: MAP)	)				
· · · · ·	sional array data					
Image data object						
5	isional array data	t recorded in BSO	format in order of 1,2,3,4,5 band			
		-	format in order of 1,2,3,4 band			
		-	format in order of 1,2,3,4,5			
	and $1, 2, 3, 4$ on M	-	, ior mat in oraci or 1,2,0,7,0			
	103, and 1,6,0,4 011					

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 2.2-12~List 2.2-14

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)

	Region	Item_name	Description format	Item explanation	value
Prerequisite items for P		PDS version identification File record type File name (L2DB regulation)	PDS_VERSION_ID = "%s" RECORD TYPE = "%s"	PDS version identification File record type (prerequisite for L2DB registration) File name (prerequisite for L2DB)(uniquely decidable	"PDS3" "UNDEFINED" ***.img
		Product identification (PDS		file name, involving extension(.img) Product identification (uniquely decidable file name,	***(no extension)
		practice) Data file format identification	DATA_FORMAT = "%s"	not involving extension) Data file format identification (prerequisite for L2DB registration)	"PDS"
Area specifying object p		Starting position of image object	^IMAGE = %d <bytes></bytes>	Starting position of image object(in Byte)	
Product information	File attribute	Software name Software version Process version	SOFTWARE NAME = "%s" SOFTWARE VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software name used for creating PDS product Software version used for creating PDS product Process version identification (prerequisite for L2DB	"RGC TC MI" n.n.n "L2B"
		identification Product creation time	PRODUCT_CREATION_TIME = %s	registration) Product creation time(UTC)	YYYY-MM-DDThh:mm:ssZ
	Product attribute	Program start time Producer identification Product set identification	PROGRAM_START_TIME = %s PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Program start time (UTC) Data producer identification PDS product set types(prerequisite for L2DB	YYYY-MM-DDThh:mm:ssZ "LISM" "MI-VIS_Level2B2",
				registration) The name in product list should be used. As of data	"MI-NIR_Level2B2", "MI_Level2B2",
		Product version identification	PRODUCT_VERSION_ID = "%s"	not registered in L2DB, it's be described "Others". Product version registered for L2DB (prerequisite for L2DB registration)	"Others" "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	LEVEL2A_FILE_NAME ={"%s", "%s", "%s"}	Source data file names used for creating this PDS product	***. img
	Scene 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 "
	attribute	Spacecraft name	SPACECRAFT NAME = "%s"	Spacecraft name	"SELENE -M"
		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 registration)	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared"
		Instrument identification	INSTRUMENT ID = "%s" MISSION_PHASE_NAME = "%s"	Instrument identification Mission phase name	When 9 bands are cubed : "Multiband Imager" "MI-VIS", "MI-NIR", "MI" (c.g. Nominal/Option)
		Mission phase name 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	, s.g. nominal/ Uption)
		Scene sequence number Upper left daytime flag of the first line	SCENE SEQUENCE NUMBER = %d UPPER_LEFT_DAYTIME_FLAG = "%s"	Scene sequence number while in strip Daytime flag of the pixel on the first column and the first line by the system geometric data	Day:illuminated Night:not illuminated
		Upper right daytime flag of the first line	UPPER_RIGHT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the last column and the first line by the system geometric data	Day:illuminated Night:not illuminated
		Lower left daytime flag of the last line Lower right daytime flag of	LOWER_LEFT_DAYTIME_FLAG = "%s" LOWER_RIGHT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the first column and the last 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 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 "NORMAL&SUPPORT":normal and support image
		Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g. TC:scap.modeTC1/2relative_mounting_apple	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	
				wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of exposure mode. Bit number of AD converter)	
		<u>Sensor description 2</u> Sensor status	SENSOR DESCRIPTION2 = "%s" DETECTOR_STATUS =	Alternative sensor description ON/OFF of five respective power supplies(TC1,TC2,MI-	"ON", "OFF"
		Exposure mode	{"TC1:%s <sup>"</sup> ,"TC2:%s","MV:%s","MN:%s", "SP:%s"} EXPOSURE MODE ID = "%s"	VIS,MI-NIR,SP) on the scene center Exposure mode identification	"LONG", "MIDDLE", "SHORT"
		Exposure duration of the line	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Exposure duration of the line. Default value uniquely decidable to the respective exposure mode.	"6.5" : LONG "3.25":MIDDLE
		Spacecraft clock start count (TI)	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Observation time of the first line of this scene (TI)	"1.625":SHORT
		Spacecraft clock stop count (TI) Corrected spacecraft clock	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec> CORRECTED_SC_CLOCK_START_COUNT =</sec>	Observation time of the last line of this scene (TI) 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) (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 stop time (UT)	CORRECTED_START_TIME = %s CORRECTED_STOP_TIME = %s	Corrected observation time of the first line of this scene (UT) (six decimal places) Corrected observation time of the last line of this	"yyyy-mm-ddThh:mm:ss.sssszZ" "yyyy-mm-ddThh:mm:ss.sssszZ"
		Sampling interval in the	LINE SAMPLING INTERVAL = %10.6f	scene (UT) (six decimal places) Designed value of sampling interval	
			CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec>	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	[-90.000000, 90.000000]
		Upper left longitude of	UPPER_LEFT_LONGITUDE= %10.6f <deg></deg>	snn.nnnnn Longitude of pixel on upper left corner of this scene	[0.000000, 360.000000)
		this scene		by the system geometric data. Center longitude of the pixel on the first column and the first line	,
		Upper right latitude of this scene	UPPER_RIGHT_LATITUDE= %10.6f <deg></deg>	nnn.nnnnn Latitude of pixel on upper right corner of this scene by the system geometric data. Center latitude of the	[-90.000000, 90.000000]
				pixel on the last column and the first line snn.nnnnn	
		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 pixel on the last column and the first line nnn.nnnnn	[0.000000, 360.000000)
		Lower left latitude of this	LOWER_LEFT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower left corner of this scene	[-90.000000, 90.000000]
		scene		by the system geometric data. Center latitude of the pixel on the first column and the last line snn.nnnnn	
		Lower left longitude of this scene	LOWER_LEFT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on lower 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 last line nnn.nnnnn	
		Lower right latitude of this scene	LOWER_RIGHT_LATITUDE= %10.6f <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	[-90.000000, 90.000000]
		Lower right longitude of	LOWER_RIGHT_LONGITUDE= %10.6f <decs< td=""><td>Longitude of pixel on lower right corner of this scene</td><td>[0.000000, 360.000000)</td></decs<>	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 Explanation on criteria for determining	A : ascending D : descending
				It is determined on the basis of the satellite argument of latitude, (which shall be the angle toward	N: involving north pole S: involving south pole
				lunar center, between the ascending node and the current satellite position, and zero degree as passing through the ascending node) at the both observation	W: involving both poles
				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.	
		Della esti	DALL ANT ""	W:Between the two, 90 degrees and 270 degrees are both included.	
		Roll cant Scene center latitude	ROLL_CANT = "%s" SCENE_CENTER_LATITUDE = %10.6f	Discrimination of nadir looking or roll cant observation Latitude of the scene center by the system geometric	YES: roll cant NO:nadir looking [-90.000000, 90.000000]
		Scene center longitude	<pre><dep> SCENE_CENTER_LONGITUDE = %10.6f sdep</dep></pre>	data Longitude of the scene center by the system geometric	[0.000000, 360.000000)
		Incidence angle of the scene center	<deg> INCIDENCE_ANGLE = %7.3f <deg></deg></deg>	data Incidence angle of the scene center by the system geometric data (lunar spherical approximation)	[0.000, 180.000)
			EMISSION_ANGLE = %7.3f <deg> PHASE_ANGLE = %7.3f <deg></deg></deg>	Emission angle of the scene center by the system <u>geometric data (lunar spherical approximation)</u> Phase angle of the scene center by the system	[0.000, 180.000) [0.000, 180.000)
		center Solar azimuth angle of the	PHASE_ANGLE = %7.3f <deg> SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg></deg>	geometric data Solar azimuth angle of the scene center by the system	[0.000, 180.000)
		scene center Focal plane temperature Telescope temperature	FOCAL_PLANE_TEMPERATURE = %6.2f TELESCOPE_TEMPERATURE = %6.2f	geometric data Focal plane temperature of the first line Telescope temperature of the first line	
		Satellite moving direction	SATELLITE_MOVING_DIRECTION = "%s"	Moving direction of satellite	+1 : lead of +x plane -1 : lead of -x plane
		First detector element position	FIRST SAMPLED LINE POSITION = "%s" FIRST_DETECTOR_ELEMENT_POSITION = "%s"	Direction of the first detector element (the direction in this scene:LEFT )	"UPPERMOST "LEFT"
		Radius of lunar shape (a axis) nnnn.nnn (indicate	A_AXIS_RADIUS = %.3f <km></km>	Lunar radius in a axis. nnnn.nnn (indicate down to meter order)	
		down to m) 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)	11.//S.1_002//in 000
		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 not to be available because of its defect (black or	MI-VIS:1~962/(in 962 elements) MI-NIR:1~320/(in 320 elements)
	Variaton by each instrumen	nt Filter name	FILTER_NAME = ("%s","%s","%s")	white) at launching of the process. Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "MV1", "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" "MV1", "MN2", "MN3", "NN4"
		Approximate spacecraft altitude	<pre>SPACECRAFT_ALTITUDE = %8.3f <km></km></pre>	Spacecraft altitude of the first line("distance between spacecraft and lunar gravitational center"	
		Spacecraft ground speed	<pre>SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km></pre>	minus average lunar radius) Spacecraft ground speed of the first line	
				•	

	List 2.2-12	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 lines Number of overlap lines of	NOMINAL_OVERLAP_LINE_NUMBER = %d OVERLAP_LINE_NUMBER = %d	Number of nominal overlap lines in this scene Number of real overlap lines (back part of data)	
	back data	OVERLAP_LINE_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)	
	Number of line's samples of an image	LINE_SAMPLES = %d	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	SAMPLE_TYPE = "%s" SAMPLE_BITS = %2d	onboard) Sample type Sample bit length	"MSB_INTEGER"
	Image value type	IMAGE_VALUE_TYPE = "%s"	Image value type	"DN"[ND], "RADIANCE"[W/m2/micron/sr], "REFLE CTANCE"[ND]
	Unit	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 Minimum for statistical	OFFSET = %8.5e MIN FOR STATISTICAL EVALUATION	Conversion coefficient used for converting DN value into physical quantity (constant term)	
	image evaluation, D1	= (%d,%d,)	Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value scaled and offset.	
	Maximum for statistical image evaluation, D2	MAX_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Maximum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
	Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	scaled and offset. In this scene, maximum DN value in the target group	When the number of samples for image
			excluded the following: a.dummy pixel filled onboard	quality assessment is 0, the value is set -1.
			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	
	Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	In this scene, minimum 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 the 120 presence quarter	-1.
			the L2A process system c.pixel of element number disregarded from image evaluation	
			evaluation and d.pixel whose DN value is less than threshold D1	
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,	e pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group	When the number of samples for image
		)	excluded the following: a.dummy pixel filled onboard	quality assessment is 0, the value is set -1.
			b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image	
			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	
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	e. pixel whose DN value is greater than threshold D2 In this scene, mode DN value in the target group	When the number of samples for image
		, ,	excluded the following: a.dummy pixel filled onboard	quality assessment is 0, the value is set -1.
			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	
	Shadowed area minimum D5	<pre>SHADOWED_AREA_MINIMUM = (%d,%d, )</pre>	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	
	Shadowed area percentage	SHADOWED_AREA_PERCENTAGE =	discrimination, indicated as integral value scaled and offset. Shadowed area percentage(round down after the decimal	When the number of samples for image
	between D5 and D6	(%d,%d,)	point). In this scene, pixel percentage whose DN value is between threshold D5 and threshold D6:	quality assessment is 0, the value is set
			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 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"	
	Invalid pixels	INVALID_PIXELS = ((%d,%d,	Not registered in L2DB: list of all calibrated and corrected error Invalid pixels	
		),(%d,%d,),)	Registered in L2DB : three types of "saturation", "negative value after calibration" and "others"	
			Not registered in L2DB: list of all calibrated and corrected error	
	Value provided pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_VALUE = %d	Value provided to the pixel originally not existing before resampling	
	resampling Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,)	Numer of pixel originally not existing before resampling	
escription area of process parameter		(%d,%d,) 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 Coefficient file name of	FLAT_FILE_NAME = {"%s", "%s"} EFFIC FILE NAME = {"%s", "%s"}	Flat field correction coefficient file name ("N/A" when not corrected) Coefficient file name of temperature dependency	
	temperature dependency correction of transmittance		corrected)	
	efficiency File name of non-linearity		File name of non-linearity correction coefficient	
	correction coefficient Radiance conversion	RAD_CNV_COEF =	("N/A" when not corrected) Radiance conversion coefficient:indicate all value	
	<u>coefficient</u> Resampling method		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	"BI-Linear", "Cubic Convolution"
	threshold L2A saturation threshold	%d)	image Minimum threshold value to judge as saturation on L2A	
	Dark current corrected	%d,) DARK_VALID_MINIMUM = (%d,%d,)	image Minimum threshold to discriminate its validity as if	
	valid minimum threshold		it is negative value after dark current correction. It's indicated as physical quantity (real value).	
	Frame transfer corrected valid minimum threshold	FT_VALID_MINIMUM = %d	("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction.	
	Radiance conversion	RADIANCE_SATURATION_THRESHOLD =	Indicate physical quantity (real value). ("N/A" when Minimum threshold to discriminate to be radiance	
	saturation threshold	%f	conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted)	
		END OBJECT = PROCESSING PARAMETERS		

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

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

	Region	I tem name	Description format	Item explanation	value	
equisite items for	PDS header	PDS version identification File record type File name(L2DB regulation)	RECORD TYPE = "%s"	File name (prerequisite for L2DB) (uniquely decidable	"PDS3" "UNDEF I NED" *** . img	
		Product identification (PDS practice)		file name, involving extension(.img) Product identification (uniquely decidable file name, not involving extension)	***(no extension)	
specifying object	position	Data file format identification Starting position of	DATA_FORMAT = "%s" ^GEOMETRIC_DATA_LATITUDE = %d	Data file format identification (prerequisite for L2DB registration) Starting position of geometric data (latitude)(in	"PDS"	
		geometric data (latitude) Starting position of geometric data (longitude)	<bytes> ^GEOMETRIC_DATA_LONGITUDE = %d <bytes></bytes></bytes>	Byte) Starting position of geometric data (longitude)(in Byte)		
t information	File attribute	Starting position of image object Software name	<pre>^IMAGE = %d <bytes> SOFTWARE NAME = "%s"</bytes></pre>	Starting position of image object(in Byte) 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 "L2C"	
	Product attribute	Product creation time Program start time Producer identification	PRODUCT CREATION TIME = %s PROGRAM START TIME = %s PRODUCER_ID = "%s"	Product creation time(UTC) Program start time (UTC) Data producer identification	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ "LISM"	
		Product set identification	PRODUCT_SET_ID = "%s"	PDS product set types(prerequisite for L2DB registration) The name in product list should be used. As of data	"MI-VIS_Level2C2", "MI-NIR_Level2C2", "MI_Level2C2",	
		Product version identification	PRODUCT_VERSION_ID = "%s"	not registered in L2DB, it's be described "Others". Product version registered for L2DB (prerequisite for L2DB registration)	"Others" "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", "%s"} LEVEL2B_FILE_NAME = {"%s", "%s",	Source data file names used for creating this PDS product	***.img	в
		Source data file name SPICE metakernel file name	LEVEL2D_FILE_NAME = {"%S , %S , "%S"} SPICE_METAKERNEL_FILE_NAME = "%S"	Source data file names used for creating this PDS product SPICE metakernel file names used for creating PDS	***. img	
	Scene Common to each instrumen attribute		MISSION_NAME = "%s"	product Mission name	"SELENE"	
		Spacecraft name Data set identification Instrument name	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" MIV:"Multiband Imager Visible"	
		Instrument identification	INSTRUMENT ID = "%s"	registration) Instrument identification	MIN:"Multiband Imager Near Infrared" When 9 bands are cubed:"Multiband Imager" "MI-VIS","MI-NIR"	
		Mission phase name Revolution number Strip sequence number	MISSION PHASE NAME = "%s" REVOLUTION NUMBER = %d STRIP SEQUENCE NUMBER = %d	Mission phase name Revolution number in which included this scene Strip sequence number while in revolution	(e.g.Nominal/Option)	
		Scene sequence number Upper left daytime flag of the first line	SCENE SEQUENCE NUMBER = %d UPPER_LEFT_DAYTIME_FLAG = "%s"	Scene sequence number while in strip Daytime flag of the pixel on the first column and the first line by the system geometric data	Day:illuminated Night:not illuminated	
		Upper right daytime flag of the first line Lower left daytime flag of	UPPER_RIGHT_DAYTIME_FLAG = "%s" LOWER_LEFT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the last column and the first line by the system geometric data Daytime flag of the pixel on the first column and the	Day:illuminated Night:not illuminated Day:illuminated	
		the last line Lower right daytime flag of the last line		last line by the system geometric data Daytime flag of the pixel on the last column and the last line by the system geometric data	Night:not illuminated Day:illuminated Night:not illuminated	
		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	1
		Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description.	"NORMAL&SUPPORT":normal and support image mosaic in TC MAP/MSC	
				(e.g.TC:sam mode, TC1/2relative mounting angle, (e.g.TC:sam 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		
		Sensor description 2 Sensor status	SENSOR_DESCRIPTION2 = "%s" DETECTOR_STATUS =	exposure mode. Bit number of AD converter) Alternative sensor description ON/OFF of five respective power supplies(TC1,TC2,MI-	"ON", "OFF"	1
		Exposure mode	{"TC1:%s","TC2:%s","MV:%s","MN:%s", "SP:%s"} EXPOSURE MODE ID = "%s"	VIS,MI-NIR,SP) on the scene center Exposure mode identification	"LONG", "MIDDLE", "SHORT"	
		Exposure duration of the line	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Exposure duration of the line. Default value uniquely decidable to the respective exposure mode.	"6.5" : LONG "3.25" : MIDDLE "1.625" : SHORT	
		Spacecraft clock start count (TL) 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 start count (TL)	%15.4f <sec> CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec></sec>	Corrected observation time of the first line of this scene (TI)		
		Corrected spacecraft clock stop count (TL) Start time (UT)	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec> START_TIME = %s</sec>	Corrected observation time of the last line of this 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) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssz"	
		Corrected start time (UT) Corrected stop time (UT)	CORRECTED_START_TIME = %s CORRECTED_STOP_TIME = %s	Corrected observation time of the first line of this scene (UT) (six decimal places) Corrected observation time of the last line of this	"yyyy-mm-ddThh:mm:ss.sssssZ" "yyyy-mm-ddThh:mm:ss.sssssZ"	
		Sampling interval in the Corrected sampling interval	LINE SAMPLING INTERVAL = %10.6f CORRECTED_SAMPLING_INTERVAL =	scene (UT) (six decimal places) Designed value of sampling interval Corrected sampling interval with dividing the		
			%10.6f <msec> UPPER_LEFT_LATITUDE = %10.6f <deg></deg></msec>	corrected interval time between first line and last line of strip into the number of lines. Latitude of pixel on upper left corner of this scene	[-90.000000, 90.000000]	
		scene		by the system geometric data. Center latitude of the pixel on the first column and the first line snn.nnnnn		
		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	[0.000000, 360.000000)	
		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]	
		Upper right longitude of	UPPER_RIGHT_LONGITUDE= %10.6f <degs< td=""><td>pixel on the last column and the first line snn.nnnnn Longitude of pixel on upper right corner of this scene</td><td>[0.000000, 360.000000)</td><td></td></degs<>	pixel on the last column and the first line snn.nnnnn Longitude of pixel on upper right corner of this scene	[0.000000, 360.000000)	
		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	[-90.000000, 90.000000]	
		Lower left longitude of this scene	LOWER_LEFT_LONGITUDE= %10.6f <deg></deg>	Longitude of pixel on lower left corner of this scene by the system geometric data. Center longitude of the pixel on the first column and the last line nnn.nnnnn	[0.000000, 360.000000)	1
		Lower right latitude of this scene	LOWER_RIGHT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower right corner of this scene by the system geometric data. Center latitude of the	[-90.000000, 90.000000]	
		Lower right longitude of	I OWER RIGHT I ONCITUDE- \$10.61 adors	pixel on the last column and the last line snn.nnnnn Longitude of pixel on lower right corner of this scene	(0,00000, 360,00000)	
		this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line nnn.nnnnn	[0.00000, 300.00000)	
		Location flag	LOCATION_FLAG = "Ks"	Information of spaceraft location Explanation on riteria 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.	A : ascending D: descending N: involving north pole S: involving south pole W: involving both poles	
		Roll cant	ROLL_CANT = "%s"	S:Between the two, 270 degrees is included and 90 degrees is not. "Between the two, 90 degrees and 270 degrees are both included. Discrimination of nadir looking or roll cant observation	YES:roll cant NO:nadir looking	c
		Scene center latitude Scene center longitude Incidence angle of the	SCENE_CENTER_LATITUDE = %10.6f <deg> SCENE_CENTER_LONGITUDE = %10.6f <deg> INCIDENCE_ANGLE = %7.3f <deg></deg></deg></deg>	Latitude of the scene center by the system geometric data	NU 1801 100KING [-90.000000, 90.000000] [0.000000, 360.000000) [0.000, 180.000)	
		scene center Emission angle of the scene center	- •	geometric data (lunar spherical approximation) permetric data (lunar spherical approximation) permetric data (lunar spherical approximation)	[0.000, 180.000)	
		Phase angle of the scene center Solar azimuth angle of the	PHASE_ANGLE = %7.3f <deg> SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg></deg>	Phase angle of the scene center by the system geometric data Solar azimuth angle of the scene center by the system	[0.000, 180.000) [0.000, 360.000)	1
		Scale center Distance between moon and Focal plane temperature	MOON SUN DISTANCE = %d <km> FOCAL PLANE TEMPERATURE = %6.2f</km>	deometric data 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 detector element position Radius of lunar shape (a axis) nnnn.nnn (indicate	FIRST SAMPLED LINE POSITION = "%s" FIRST_DETECTOR_ELEMENT_POSITION = "%s" A_AXIS_RADIUS = %.3f <km></km>	Direction of the first detector element (the direction in this scene:LEFT) Lunar radius in a axis. nnnn.nnn (indicate down to meeter order)	"UPPERMOST	
		down to m) Radius of lunar shape (b axis)	B_AXIS_RADIUS = %.3f <km></km>	Lunar radius in b axis. nnnn.nnn (indicate down to meter order)		1
		Radius of lunar shape (c axis) Defect pixel position	C_AXIS_RADIUS = %.3f <km> DEFECT_PIXEL_POSITION = ((%d,%d,</km>	Lunar radius in c axis. nnnn.nnn (indicate down to meter order) The position of defect element (=element number) dealt	MI-VIS:1~962/(in 962 elements)	-
		(=element number)	),(%d,%d,),)	not to be available because of its defect (black or white) at launching of the process.	MI-NIR:1~320/(in 320 elements)	
	Variaton by each instru	ment Filter name Center filter wavelength	FILTER_NAME = ("%s","%s","%s") CENTER_FILTER_WAVELENGTH =	Names of MI filters Center wavelength of the filter(nominal value)	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"	-
		Bandwidth Base band of MI	(%.1f.%.1f.%.1f) <nm> BANDWIDTH = (%.1f.%.1f.%.1f) <nm> BASE_BAND = "%s"</nm></nm>	Band width(full-width at half-maximum, nominal value) Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5"	1
		Approximate spacecraft altitude	SPACECRAFT_ALTITUDE = %8.3f <km></km>	Spacecraft altitude of the first line("distance between spacecraft and unar gravitational center"	"MN1", "MN2", "MN3", "MN4"	1
			SPACECRAFT_GROUND_SPEED = %6.3f	minus average lunar radius) Spacecraft ground speed of the first line		4

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

Baning	· · · · · · · · · · · · · · · · · · ·	Description format	· · ·	value
Region scription area of geometric data (latitude) object format	Item name Thinnig start pixel	OBJECT = GEOMETRIC_DATA_LATITUDE	Item explanation Start pixel position for thinnig in this scene	(1,1) value
	position Thinnig interval	(%d,%d) BINNING INTERVAL = %d	Thinnig interval	
	Number of lines	LINES = %d LINE SAMPLES = %d	Number of pixels along the vertical axis of this scene(direction of along track)	
	Number of line's samples	_	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" 64 "dea"
	Unit	UNIT = "%s" END_OBJECT = GEOMETRIC DATA LATITUDE	Unit of sample value	"deg"
scription area of geometric data (longitude) object format	Thinnig start pixel	OBJECT = GEOMETRIC_DATA_LONGITUDE BINNING_START_PIXEL_POSITION =	Start pixel position for thinnig in this scene	(1,1)
	position Thinnig interval Number of lines	(%d,%d) BINNING_INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this	
	Number of line's samples	LINES = %d	<u>scene(direction of along track)</u> Number of pixels along the horizontal axis of this	
	Comple tree	SAMPLE_TYPE = "%s"	scene(direction of cross track · value detached dummy elements filled onboard)	"IEEE_REAL"
	Sample type Sample bits Unit	SAMPLE_ITTE = %S SAMPLE_BITS = %d UNIT = "%s"	Sample type Sample bit length Unit of sample value	64 "deg"
		END_OBJECT = GEOMETRIC_DATA_LONGITUDE		
scription area of image data object format	Number of nominal lines	OBJECT = IMAGE NOMINAL_LINE_NUMBER = %d	Number of nominal lines in this scene(not including overlap lines)	
	Number of nominal overlap lines	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 Band storage type	BANDS = %d BAND STORAGE TYPE = "%s"	lines in this scene, it's described 0. 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)	
	Number of line's samples of an image	LINE_SAMPLES = %d	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 onboard)	
	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],"REFLE CTANCE"[ND]
	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	0FFSET = %8.5e	into physical quantity (first order coefficient) Conversion coefficient used for converting DN value	
	Minimum for statistical	MIN_FOR_STATISTICAL_EVALUATION	into physical quantity (constant term) Minimum DN value of output range for statistical	
	image evaluation, D1 Maximum for statistical	= (%d,%d,) MAX_FOR_STATISTICAL_EVALUATION	evaluation of image quality, indicated as pixel value 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:	When the number of samples for image quality assessment is 0, the value is set -1.
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system	- 1.
			c.pixel of element number disregarded from image evaluation	
			and d.pixel whose DN value is less than threshold D1	
	Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	e.pixel whose DN value is greater than threshold D2 In this scene, minimum 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	
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,	e pixel whose DN value is greater than threshold D2 In this scene, average DN value in the target group	When the number of samples for image
		)	excluded the following: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	quality assessment is 0, the value is set -1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
	Standard deviation DN	SCENE STDEV DN = (% 1f % 1f	d.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	When the number of samples for image
			target group excluded the following: a.dummy pixel filled onboard	When the number of samples for image quality assessment is 0, the value is set -1.
			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	
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	In this scene, mode 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 the L2A process system	-1.
			c.pixel of element number disregarded from image evaluation	
			and d.pixel whose DN value is less than threshold D1	
	Shadowed area minimum D5	SHADOWED_AREA_MINIMUM = (%d,%d,	e.pixel whose DN value is greater than threshold D2 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	
		)	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:	When the number of samples for image quality assessment is 0, the value is set -1.
			is between threshold D5 and threshold D6: a.dummy pixel filled onboard a.dummy pixel filled onboard	- 1.
			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",)	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,	corrected error Invalid pixels	
		),(%d,%d,),)	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 Number of pixels out of	OUT_OF_IMAGE_BOUNDS_PIXELS =	before resampling Numer of pixel originally not existing before	
	Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,) END OBJECT = IMAGE	Numer of pixel originally not existing before resampling	
cription area of process parameter	Reflectance conversion	OBJECT = PROCESSING_PARAMETERS REF_CNV_COEF =	Coefficient for converting into reflectance (solar	
	coefficient Photometric standard	(%f,%f,%f,*··)<1/(W/m**2/micron/sr) > STANDARD_GEOMETRY =	radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted) Standard values of incidence angle, and emission angle	
	geometry Photometric correction	STANDARD_GEOMETRY = (%.1f,%.1f,%.1f) PHOTO_CORR_ID = "%s"	Standard values of incidence angle, and emission angle and phase angle for photometric correction. Photometric correction formula type	"USGS",
	identification			"BROWN", "LISM ORIGINAL", "N/A"
	Photometric correction coefficient Dead pixel discrimination	PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,%e,),) L2A DEAD PIXEL THRESHOLD = (%d,	Coefficient of photometric correction formula ("N/A" when not corrected) Maximum pixel value to judge as dead pixel on L2A	
	Dead pixel discrimination threshold L2A saturation threshold	%d,)	Maximum pixel value to judge as dead pixel on L2A 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	,	it is negative value after dark current correction. It's indicated as physical quantity (real value).	
	Frame transfer corrected valid minimum threshold	FT_VALID_MINIMUM = %d	("N/A" when not corrected) Minimum threshold to discriminate its validity if it is negative value after frame transfer correction.	
		1	Indicate physical quantity (real value). ("N/A" when	
			not converted)	
	Radiance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD = % f	Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity	
	Radiance conversion	RADIANCE_SATURATION_THRESHOLD = %f REF_SATURATION_THRESHOLD = %f <nd></nd>	Minimum threshold to discriminate to be radiance	

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

erequisite items for P				Description format	Itom explanation	yaluo.
	E		Item name PDS version identification File record type	Description format PDS VERSION ID = "%s" RECORD TYPE = "%s"	Item explanation PDS version identification File record type (prerequisite for L2DB registration)	value "PDS3" "UNDEF I NED"
		File name (L2DB regulation)	FILE_NAME = "%s"	File name(prerequisite for L2DB)(uniquely decidable file name, involving extension(.img)	***.img	
			Product identification (PDS practice)		Product identification (uniquely decidable file name, not involving extension)	***(no extension)
, chooi fuing chiect n	ocition		Data file format identification Starting position of	DATA_FORMAT = "%s"	Data file format identification (prerequisite for L2DB registration)	"PDS"
a specifying object p	JUST (TON		Starting position of <u>geometric data (altitude)</u> Starting position of image	^GEOMETRIC_DATA_ALTITUDE = %d <bytes> ^IMAGE = %d <bytes></bytes></bytes>	Starting position of geometric data (altitude)(in Byte). This keyword may be omitted. Starting position of image object(in Byte)	
uct information	File attribut	e	object Software name	SOFTWARE NAME = "%s"	Software name used for creating PDS product	"RGC TC MI"
			Software version Process version	SOFTWARE_VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software version used for creating PDS product Process version identification(prerequisite for L2DB	n.n.n "MAP","MSC"
			identification Product creation time	PRODUCT_CREATION_TIME = %s	registration) Product creation time(UTC)	YYYY-MM-DDThh:mm:ssZ
	Product attri	bute	Program start time Producer identification	PROGRAM START TIME = %s PRODUCER ID = "%s"	Program start time (UTC) Data producer identification DPS preduct act twope (presentiate for LODE	YYYY-MM-DDThh:mm:ssZ "LISM"
			Product set identification	PRODUCT_SET_ID = "%s"	PDS product set types(prerequisite for L2DB registration) The name in product list should be used. As of data	"MI_MAP", "MI-VIS_MAP", "MI-NIR_MAP",
			Product version	PRODUCT_VERSION_ID = "%s"	not registered in L2DB, it's be described "Others". Product version registered for L2DB (prerequisite for	"Others" "00 "~ " 99 "
			identification Whether to be registered	REGISTERED_PRODUCT = "%s"	L2DB registration) It's be set whether it was created as product for	"Y" or "N"
			product in L2DB		registration, regardless of success and failure of registration in L2DB.	
			Source data file name(L2A)	LEVEL2A_FILE_NAME = ({"%s", "%s"}.{"%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 attribute	Common to each instrument	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE"
			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" When A bands are subat "Multiband Imager"
			Instrument identification Observation target name	INSTRUMENT ID = "%s" TARGET NAME = "%s"	Instrument identification Observation target name of this strip	When 9 bands are cubed : "Multiband Imager" "MI-VIS", "MI-NIR", "MI" "MOON" (default)
			Observation target name Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode identification	"NORMAL" : norma I "SUPPORT" : support
			Sector			"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	
		Variator by each in the	Sensor description 2	SENSOR DESCRIPTION2 = "%s"	exposure mode. Bit number of AD converter) Alternative sensor description	
		Variaton by each instrument	Filter name Center filter wavelength	FILTER_NAME = ("%s","%s","%s") CENTER_FILTER_WAVELENGTH =	Names of MI filters Center wavelength of the filter(nominal value)	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
			Bandwidth	CENTER_FILTER_WAVELENGTH = (%.1f.%.1f,%.1f) <nm> BANDWIDTH = (%.1f.%.1f,%.1f) <nm></nm></nm>	Band width(full-width at half-maximum, nominal value)	
			Base band of MI	BASE_BAND = "%s"	Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
ption area of geom	netric data (a	titude) 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	(1,1)
			position Thinnig interval	(%d,%d) BINNING INTERVAL = %d	Thinnig interval	
			Number of lines	LINES = %d	Number of pixels along the vertical axis of this scene.	
			Number of line's samples 	LINE_SAMPLES = %d SAMPLE TYPE = "%s"	Number of pixels along the horizontal axis of this scene. Sample type	"IEEE REAL"
			Sample type Sample bits Unit	SAMPLE_IYPE = "%S" SAMPLE_BITS = %d UNIT = "%s"	Sample type Sample bit length Unit of sample value	32 "km"
iption area of imag	ge data obiect	format		END OBJECT = OBJECT = IMAGE		
			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.	
			Number of line's samples of an image	LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this scene.	"NOR INTEGED"
			Sample type Sample bits	SAMPLE TYPE = "%s" SAMPLE BITS = %2d IMAGE_VALUE_TYPE = "%s"	Sample type Sample bit length	"MSB_INTEGER" 16 "DN"[ND]_"RADIANCE"[W/m2/microp/sr]_"REELE
			Image value type  Unit	IMAGE_VALUE_IYPE = "%s" UNIT = "%s"	Image value type Unit of sample value	"DN"[ND],"RADIANCE"[W/m2/micron/sr],"REFLE CTANCE"[ND] "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	
			Maximum for statistical	MAX_FOR_STATISTICAL_EVALUATION	<u>scaled and offset.</u> Maximum DN value of output range for statistical	
			image evaluation, D2 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 newslow for the second
				SCENE_MAXIMUM_DN = (%d,%d,)	In this scene, maximum 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 value is set -1.
					b.dummy pixel filled on the failure of restoration in the L2A process system	
					c.pixel of element number disregarded from image	
				1	evaluation	1
					and d.pixel whose DN value is less than threshold D1	
			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	When the number of samples for image
			Minimum DN	SCENE_MINIMUM_DN = (%d,%d,)	and d.pixel whose DN value is less than threshold D1 <u>e.pixel whose DN value is greater than threshold D2</u> In this scene, minimum 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 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 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	quality assessment is 0, the value is set
			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	quality assessment is 0, the value is set
			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 d.pixel whose DN value is less than threshold D1	quality assessment is 0, the value is set
			Minimum DN Average 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 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:	quality assessment is 0, the value is set
					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 on the failure of restoration in	quality assessment is Ö, the value is set -1. When the number of samples for image
					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 set -1. When the number of samples for image quality assessment is 0, the value is set
					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	quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set
			Äverage 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 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 D2 In this scene, average DN value 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 greater than threshold D2	quality assessment is 0, the value is set -1. When the number of 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 In this scene, minimum 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.gixel 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 on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and d.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 <u>e.pixel whose DN value is creater than threshold D2</u> In this scene, standard deviation DN value in the target group excluded the following:	quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set
			Äverage 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 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, 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 D2 In this scene, stand deviation DN value in the target group excluded the following: a.dummy pixel filled on the failure of restoration for the target group excluded the following: a.dummy pixel filled on the failure of restoration for the target group excluded the following: a.dummy pixel filled on the failure of restoration in the target group excluded the following: a.dummy pixel filled on the failure of restoration in the target group excluded the following: a.dummy pixel filled on the failure of restoration in	quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image
			Äverage 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 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 D2 In this scene, average DN value for frestoration 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.nixel whose DN value is negater 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	quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set
			Äverage 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 less 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 stilled 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 f.niks come, 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 d.pixel whose DN value is neater 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 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 set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set
			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 f.gixel 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 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 n this scene, severage 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 n 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 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	<pre>quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1.</pre>
			Äverage 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 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 D2 In this scene, average DN value for form image evaluation and d.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 D2 expixel of element number disregarded from image evaluation and d.pixel whose DN value is less than threshold D1 form 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 set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set
			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 greater 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.nixel whose DN value is less than threshold D1 n this scene, saverage 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.nixel whose DN value is less than threshold D2 in this scene, standra 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 D2 in this scene, stander 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	<pre>quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set</pre>
			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 greater 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 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, 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 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 f.mixel 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	<pre>quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set -1. When the number of samples for image quality assessment is 0, the value is set</pre>

## 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		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
		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	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	
	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	UUI_UF_IWAGE_BUUNDS_VALUE = %d	before resampling	
	Number of pixels out of	OUT_OF_IMAGE_BOUNDS_PIXELS =	Numer of pixel originally not existing before	
	<u>bounds pixels before</u> Stretched flag	(%d,%d,) STRETCHED_FLAG = %s	resampling Flag to indicate whether a data has been streched to	"FALSE"
		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	
	<u>Coordinate system type</u> 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.	4707.4
	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>
	<u>C axis radius</u> 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	<deg> SECOND_STANDARD_PARALLEL = %f</deg>	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>	coordinate system 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>	system that was used in a given map projection type. Line number of upper end of this scene	1
	Line last pixel Sample first pixel	LINE_LAST_PIXEL = %d SAMPLE_FIRST_PIXEL = %d	Line number of lower end of this scene Sample number of left end of this scene	1
	Sample last pixel Map projection rotation	SAMPLE LAST PIXEL = %d MAP_PROJECTION_ROTATION = %f	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>	
	Map scale Maximum latitude	<pre>MAP_SCALE = %f <km pixel=""> MAXIMUM_LATITUDE = %11.8f<deg></deg></km></pre>	Map scale <km pixel=""> Center latitude of northernmost pixel.</km>	
	Minimum latitude Easternmost longitude	MINIMUM_LATITUDE = %11.8f <deg> EASTERNMOST_LONGITUDE =</deg>	Center latitude of southernmost pixel. Center longitude of easternmost pixel.	
	Westernmost longitude	%12.8f <deg> WESTERNMOST_LONGITUDE =</deg>	Center longitude of westernmost pixel.	
	The line offset value from	%12.8f <deg> LINE_PROJECTION_OFFSET =</deg>	The vertical offset value from the map projection	
	the map projection origin The sample offset value	%f <pixel> SAMPLE_PROJECTION_OFFSET =</pixel>	origin (line and sample 1.1)[pixel]. The horizontal offset value from the map projection	
	from the map projection	%f <pixel> END OBJECT = IMAGE MAP PROJECTION</pixel>	origin (line and sample 1,1)[pixel].	
Description area of process parameter	Dark current correction	OBJECT = PROCESSING_PARAMETERS DARK_FILE_NAME = {"%s", "%s"}	Dark current correction coefficient file name ("N/A"	
	coefficient file name Frame transfer correction	FT_FILE_NAME = "%s"	when not corrected). This keyword may be omitted. Frame transfer correction formula coefficient file	
	formula coefficient file name		name ("N/A" when not corrected). This keyword may be omitted.	
	Flat field correction coefficient file name	<pre>FLAT_FILE_NAME = {"%s", "%s"}</pre>	Flat field correction coefficient file name ("N/A" when not corrected). This keyword may be omitted.	
	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). This keyword may be omitted.	
	File name of non-linearity correction coefficient	NONLIN_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 =	Radiance conversion coefficient:indicate all value	
	coefficient	RAD_CNV_COEF = (%f,%f,%f,*f,) <w m**2="" micron="" sr=""></w>	every band [W/m2/micron/sr] ("N/A" when not converted)	
	Reflectance conversion coefficient	$REF_CNV_COEF =$	. This keyword may be omitted. Coefficient for converting into reflectance (solar radiance)[1/(W/mcroncer)] ("W/A" when not	
		(%f,%f,%f,*··)<1/(W/m**2/micron/sr) >	radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted)	
	Photometric standard geometry Photometric correction	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", "LISN OBLCINAL", "N/A"
	Photometric correction	PHOTO_CORR_COEF =	Coefficient of photometric correction formula ("N/A"	"LISM ORIGINAL", "N/A"
	coefficient Resampling method	((%e,%e,%e,),(%e,%e,%e,),) RESAMPLING_METHOD = {"%s","%s",	when not corrected) Interpolation method of resampling	"Nearest Neighbor", "Bilinger"
	Occurrent of the last	}	Devices TO as the local distance of the	"Bi-Linear", "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 file name		data. This keyword may be omitted.	
	Overlap selection identification	OVERLAP_SELECTION_ID = "%s"	Method for processing overlap.	
	Matching mosaic on creating map		Matching method	N/A, CORRELATION1, CORRELATION2, SSDA1, SSDA2, SSDA3, SSDA4
	Dead pixel discrimination threshold	L2A_DEAD_PIXEL_THRESHOLD = (%d, %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)	
	Frame transfer corrected valid minimum threshold	FT_VALID_MINIMUM = %d	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)	
	Radiance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD = %f	Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity	
	Reflectance conversion	REF_SATURATION THRESHOLD = %f	(real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation	
	saturation threshold	<nd></nd>	after converting refiectance. It's indicated as physical quantity (real value). ("N/A" when not	
		END OBJECT = PROCESSING PARAMETERS	converted)	

(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	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

Sensor	Level/	With or without	Number of geometric
Sensor	geometric correction option	thinning	data points in a line
	LaCa		121
MI-VIS	LZCZ	L2C2 with 121 without 962	
	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 opti		Number of pixels in a line
MI-VIS	L2B2, L2C2	962
1011-015	MAP	Different by image
MI-NIR	L2B2, L2C2	320
IVII-INIK	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.

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

List 2.2-17 Specifications of low resolution data file

2.3 SP

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

L2B1 data
L2B2 data

- $\cdot$ 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
- $\boldsymbol{\cdot} \text{Thumbnail file}$
- · PDS product file
- $\cdot Original resolution JPEG image file$

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.

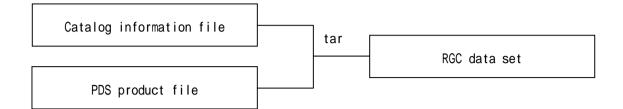
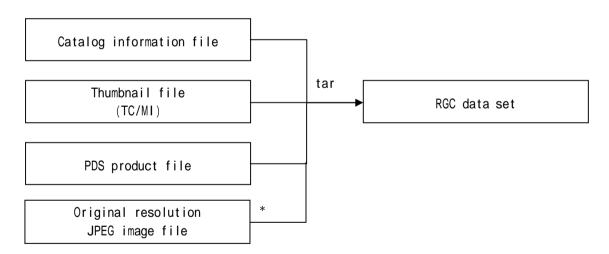
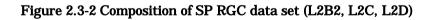


Figure 2.3-1 Composition of SP RGC data set (L2B1)



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



	Starting	Length	
No.	position	(byte)	Set value
1	1	3	Sensor type
			SP:fixation
2	4	3	Process level / geometric correction option
	~		2B1:fixation
3	7	1	Underscore
4	0	9	_: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
Ũ	10	-	: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
			A~F, 2~9, Z
			A:night→day→night
			B:day only Conjugate a day
			C:night→day D:day→night
			E:night only
			F:failure to determine day/night in all lines
			2~9, Z:number of days(Z represents 10 and above )
10	19	1	Lightning of calibration lamp
			Ň, B, R, W
			N:non-lightning
			B:lightning of both radiance lamp and wavelength lamp
			R:lightning of only radiance lamp
11	00	1	W:lightning of only wavelength lamp
11	20	1	Number of L2A scene on high resolution mode
12	21	5	0~9, Z (Z represents 10 and above)
12	~ I	J	Longitude of the point of lowest latitude in dayside Ennnnn: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
	0.7	.   .	R:with roll cant
14	27	4	Extension
			.spc:RGC PDS product file
			.ctg:catalog information file .sl2:RGC data set
	Total	30	.514.1140 Uala Sel
	TULAI	30	

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(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	)

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

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.

Item name	Keyword	Format of set value	Set contents
Data file name	DataFileName	AAAAAAAA	RGC PDS product name
		(up to 31-digit) NNNNNNNNNNN	
Data file size	DataFileSize	(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 <sup>*1)</sup>	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name (after L2B2)
Thumbnail file size <sup>*1)</sup>	ThumbnailFileSize	NNNNNNNNNNN (up to 12-digit)	Thumbnail file size (after L2B2)
Thumbnail file format <sup>*1)</sup>	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_Level2B1:L2B1 SP_Level2B2:L2B2 SP_Level2C :L2C SP_Level2D :L2D Others: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
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.ssssszZ	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	NNNNNNNNNN (up to 10-digit)	Lunar revolution number provided by LISM
Strip number	StripNumber	NNNNNNNNN (up to 10-digit)	Strip number
Scene number	SceneNumber	NNNNNNNNN (up to 10-digit)	Scene number
Location flag	LocationFlag	A	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 SNN . NNNNNN	[-90. 90]
Lower left longitude of the scene	LowerLeftLongitude	NNN . NNNNNN	[0, 360]
Lower right latitude of the scene	LowerRightLatitude	SNN . NNNNNN	[-90, 90]
Lower right longitude of the scene	LowerRightLongitude	NNN . NNNNNN	[0, 360)
Free keyword	FreeKeyword		Refer to the list 2.3–3

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

\*1)Data of thumbnail file is not output in L2B1

Item name	Keyword	Туре	Format of set value	Set contents
Observation mode	ObservationMode	Character string	AAAA (up to 4-digit)	OBS :observation DARK:dark LAMP:calibration
Resolution	Resolution	Character string	AA···AA (up to 6-digit)	NORMAL:normal HIGH :high spatial resolution
Rollcant	RollCant	Character string	AAA (up to 3-digit)	YES/NO

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

#### 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.

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

List 2.3-5 Specifications of thumbnail file

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.

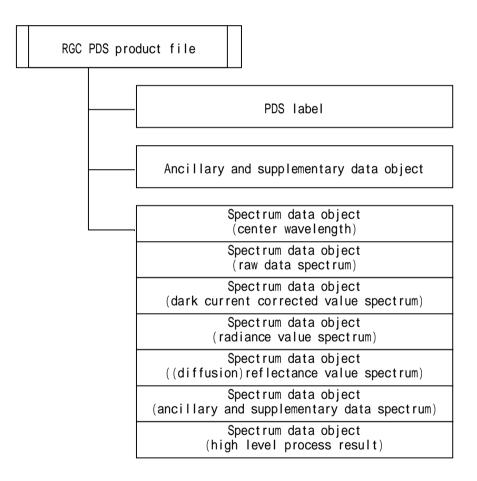


Figure 2.3-3 Composition of SP RGC PDS product file

DDCLLL	D					
PDS label	Prerequisite items for PDS header					
	Version identification         • Area specifying object position					
		t position				
	Pointer to all objects	. File attribute				
	Product information · File attribute					
	e.g. file name, creating date, update date • Product attribute					
		U	e name used for creating product,			
		Scene	tification, source data file name •Common to each instrument			
		attribute				
		attribute	e.g. start time of the scene, stop time of the scene			
			observation mode name			
			• Variation by each instrument			
	Description area of a	e.g. observation parameters, status plementary data object format				
	•	0 11	cillary and supplementary data			
	object	and a scribing and	linary and supplementary data			
	• 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(law data spectrum)     Orescription area of spectrum data object format(dark current corrected					
	value spectrum)					
	• Description area of spectrum data object format(radiance value spectrum)					
	Description area of spectrum data object format((diffusion)reflectance					
	value spectrum)					
	• Description area of spectrum data object format(ancillary and					
	supplementary data spectrum)					
		-	ject format(high level process			
	result)					
• Ancillary and	supplementary data obje	ect				
Information p	per lines, ex. space craft	clock count and	temperature			
•Spectrum data	ı object (central wavelen	gth)				
e.g. size, bit le	ngth					
•Spectrum data	ı object(raw data spectru	ım)				
$\cdot$ Spectrum data	ı object format(dark curr	ent corrected va	lue spectrum)			
•Spectrum data	object(radiance value s	pectrum)				
•Spectrum data	object(diffusion)reflecta	nce value spect	rum)			
•Spectrum data	object(ancillary and sup	pplementary dat	a spectrum)			
•Spectrum data	ı object(high level proces	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)

Region         Item name         Description format         Item explanation         Value           rerequisite items for PSS header         PDS version identification         PDS ve	B2".
File name (L208 regulation)         File_UAME = "%s"         File name (prorequisite for L208)(uniquely extension). (and the calculate in the name. (more extension). (and the calculate in the name. (more extension). (and the calculate in the name. (more extension).)           Trea specifying object position         Data file format identification         DATA_FORMT = "%s"         Product identification (niquely decidate product """" (no extension).)           Trea specifying object position         Data file format identification. POS product identification. Out involving extension).         Product identification. Out involving extension).         Product identification. Out involving extension).           Treat specifying object position         Starting position of anci lary and supplementary.         Starting position of SP spectrum center and extension.         Product identification. Proc Product identification. Of programmentary.           Starting position of SP spectrum center adata object.         Starting position of SP spectrum dark.         Starting position of SP spectrum dark.         Starting position of SP spectrum dark.         Product identification.           Starting position of SP spectrum dark.         Product identification.           Starting position of SP spectrum dark.         SP_SPECTRUM_RRA = "Mathematication	B2", ",
Product identification (PDS practice)         PRODUCT_ID = "%s"         decidable file fame: involving extension/inal         ""(no extension)           Trea specifying object position         Data file format identification         DATA FORMAT = "%s"         identification on and involving extension)         ""(no extension)           Trea specifying object position         Starting position of anciliary and supplementary         Data file format identification, not involving extension)         "POS"           Starting position of SP spectrum center         SP_SPECTRUM_NAV = %d -SPTES>         Starting position of SP spectrum center wavelength           Starting position of SP spectrum raw         SP_SPECTRUM_NAV = %d -SPTES>         Starting position of SP spectrum center wavelength           Starting position of SP spectrum raw         SP_SPECTRUM_NAV = %d -SPTES>         Starting position of SP spectrum raw for SP_SPECTRUM_NAV = %d -SPTES>           Starting position of SP spectrum raw         SP_SPECTRUM_NAV = %d -SPTES>         Starting position of SP spectrum raw for SP_SPECTRUM_NAV = %d -SPTES>           Starting position of SP spectrum raw         SP_SPECTRUM_RAV = %d -SPTES>         Starting position of SP spectrum raw for SP_SPECTRUM_RAV = %d -SPTES>           Starting position of SP spectrum raw         SP_SPECTRUM_RAV = %d -SPTES>         Starting position of SP spectrum raw for center wavel engls           Starting position of SP spectrum raw         SP_SPECTRUM_RAV = %d -SPTES>         Starting position of SP spectrum raw for SP_SPE	B2", ",
Product identification (PS practice)         PRODUCT_IO = "%s"         Product identification (uniquely decidable product "**(no extension)           rea specifying object position         Data file format identification         OATA_FORMT = "%s"         Data file format identification (prerequisite for 'PS'           rea specifying object position         Starting position of an Starting position of Spectrum center wavelength         Starting position of Spectrum center wavelength         Starting position of Spectrum center wavelength           Starting position of Spectrum canter         Sp_SPECTRUM_RAW = %d -BYTES>         Starting position of Spectrum center wavelength           Starting position of Spectrum canter         Sp_SPECTRUM_RAW = %d -BYTES>         Starting position of Spectrum canter wavelength           Starting position of Spectrum canter         Sp_SPECTRUM_RAW = %d -BYTES>         Starting position of Spectrum dark current estimate value object           Starting position of Sp spectrum canter         Sp_SPECTRUM_RAW = %d -BYTES>         Starting position of Sp spectrum rent estimate value object           Starting position of Sp spectrum canter wavelength         Sp_SPECTRUM_RAW = %d -BYTES>         Starting position of SP spectrum rent estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Starting position of SP spectrum RAW estimate value cancel in Sta	B2", ",
Data file format identification         DATA_FROMA = %s*         Data file format identification (perequisite for 'POS'           reas specifying object position         Starting position of spition spitio	B2", ",
Subclementary data         Starting position of SP spectrum center         Addata object (in Byte)           Starting position of SP spectrum center         ASP_SPECTRUM_IRAV = %d -BYTES>         Starting position of SP spectrum raw data           Starting position of SP spectrum         ASP_SPECTRUM_IRAV = %d -BYTES>         Starting position of SP spectrum raw data           Starting position of SP spectrum         ASP_SPECTRUM_RAW = %d -BYTES>         Starting position of SP spectrum raw data           Starting position of SP spectrum         ASP_SPECTRUM_RAR = %d -BYTES>         Starting position of SP spectrum radiance value           Starting position of SP spectrum         ASP_SPECTRUM_RAR = %d -BYTES>         Starting position of SP spectrum radiance value           Starting position of SP spectrum         ASP_SPECTRUM_ARE = %d -BYTES>         Starting position of SP spectrum radiance value           Starting position of SP spectrum         ASP_SPECTRUM_OA = %d -BYTES>         Starting position of SP spectrum radiance value           Starting position of SP spectrum         ASP_SPECTRUM_OA = %d -BYTES>         Starting position of SP spectrum radiance value           Starting position of SP spectrum         ASP_SPECTRUM_ARE = %s''         Software variang POS product in           roduct information         File         Software varian         Software variang POS product         n.n.n           Starting position of SP spectrum radiance value         Software varion identification	B2", ",
File         Software version	B2", ",
Starting position of SP spectrum raw data object         Sp_SPECTRUM_PAR = %d_dPTES>         Starting position of SP spectrum raw data object(in Byte)           Starting position of SP spectrum dark current estimate value object         Sp_SPECTRUM_PAR = %d_dPTES>         Starting position of SP spectrum raw data object(in Byte)           Starting position of SP spectrum         Sp_SPECTRUM_PAR = %d_dPTES>         Starting position of SP spectrum rawing and object(in Byte)           Starting position of SP spectrum         Sp_SPECTRUM_PAR = %d_dPTES>         Starting position of SP spectrum reflectance value object(in Byte)           Starting position of SP spectrum         Sp_SPECTRUM_PAR = %d_dPTES>         Starting position of SP spectrum reflectance value object(in Byte)           reduct information         File         Software name         Software name         Software name           Software version         Software name         Software name         Software name         Software name           Product attribute         Product creation time         PRODUCE_CREATION_TIME = %s         Product creation (precapuiste for Product creation time         Product reation (precapuiste for Product set identification         PRODUCE_CREATION_TIME = %s         Product creation time         YYY-MM-ODThin:mm:ssZ           Product attribute         Product set identification         PRODUCE_CREATION_TIME = %s"         Potact creating host if is nowid be used. As of the name in product version identification         'PS_PECREALS_CREATIO	B2", ",
Starting position of SP spectrum dark         SP_SPECTRUM_DAR = %d -dPTES>         Starting position of SP spectrum estimate value object (in BVte)         Starting position of SP spectrum exitinate value object (in BVte)           Starting position of SP spectrum         ASP_SPECTRUM_RAD = %d -dPTES>         Starting position of SP spectrum reflectance value object (in BVte)         Starting position of SP spectrum reflectance value object (in BVte)           Starting position of SP spectrum         ASP_SPECTRUM_RAF = %d -dPTES>         Starting position of SP spectrum reflectance value object (in BVte)           Starting position of SP spectrum         ASP_SPECTRUM_RAF = %d -dPTES>         Starting position of SP spectrum QA object (in Starting position of L2D result array (L2D, RESULT_ARRAY = %d -dPTES>           roduct information         File         Software name         Software VERSION = %s*         Software version used for creating PDS product         *ReC_SP*           Process version identification         PROCESS_VERSION.ID = %s*         Process version identification (prerequisite for "L2B", "L2C", "L2D"         *VYV-IMU-DDTh:mm:ssZ           Product attribute         Producer identification         PROCESS_VERSION.ID = %s*         Program start time         YYV-IMU-DTh:mm:ssZ           Product attribute         Producer identification         PROCESS_VERSION_ID = %s*         Program start time         YYV-IMU-DTh:mm:ssZ           Product attribute         Producer identification         PROCESS_VERSION_ID = %s*	B2", ",
Starting position of SP spectrum         ASP_SPECTRUM_RAD = %d -dYTES>         Starting position of SP spectrum radiance value object           radiance value object         ASP_SPECTRUM_REF = %d -dYTES>         Starting position of SP spectrum 0A         ASP_SPECTRUM_REF = %d -dYTES>         Starting position of SP spectrum 0A object(in           roduct information         File         Starting position of L2D result array         AL2_RESULT_ARRAY = %d -dYTES>         Starting position of L2D result array (In Byte)           roduct information         File         Software name         Software name         Software name         RSC_SP*           Software version         SOFTWARE_VERSION = "%s*         Software version identification         Process version identification (Process VERSION_ID = "%s*         Product reation time         Prover version*           Product attribute         Producer identification         PRODUCT_CREATION_TIME = %s         Program start time         YYYY-MU-DOTThinm:ss2           Product set identification         PRODUCT_VERSION_ID = "%s*         Data producer identification (Process version registered in L2DB) (Preveilste for L2DB)         "SP Level2E", "SP Level2	B2", ",
Starting position of SP spectrum APS_PSECTRUM_REF = %d dBYTES>         Starting position of SP spectrum QA object(in starting position of SP spectrum QA object(in Starting position of L2D result array AL2D_RESULT_ARRAY = %d dBYTES>         Starting position of SP spectrum QA object(in starting position of L2D result array (in SYte)           rroduct information         File         attribute         Software name         SoFTWARE_NARRY = %d dBYTES>         Starting position of SP spectrum QA object(in starting position of L2D result array (in Syte)           rroduct information         File         attribute         Software name         SoFTWARE_NAWE = "%s"         Software name used for creating POS product         n.n.n           Process version identification         PRODECS_VERSION_ID = "%s"         Process version used for creating POS product         n.n.n           Product attribute         Product creation time         PRODUCT_CREATION_TIME = %s         Product creation (prerequisite for "L2B", "L2C", "L2D"           Product attribute         Producer identification         PRODUCT_CREATION_TIME = %s         Product set types (prerequisite for L2DB)         "SP_Level2B1", SP_Level2B1", "SP_Level2B1", "SP_Lev	B2", ",
Interflectance value object         object(in. Byte)           Starting position of Spectrum QA         ASP_SPECTRUM_QA = %d <bytes>         Starting position of L2D result array(in Byte)           roduct information         File         Software name         Software name used for creating PDS product         "R6C_SP"           Software version         Software version         Software version         Software version identification (preequisite for "L2D", "L2D', "L2D', "L2D', "L2D', "L2D', "L2D',</bytes>	B2", ",
Starting position of L2D result array         AL2D_RESULT_ARRAY = %d <bytes>         Starting position of L2D result array(in Byte)           roduct information         File         Software name         SOFTWARE_NAME = "%s"         Software name used for creating PDS product         "RGC_SP"           Software version         Software name         SOFTWARE_VERSION = "%s"         Software version used for creating PDS product         n.n.n           Process version identification         PROCESS_VERSION_ID = "%s"         Product creation (perequisite for "L2B", "L2C", "L2D"           Product creation time         PRODUCT_CREATION_TIME = %s         Product reation time         YYY'-MM-DDThh:mm:ssZ           Product attribute         Product identification         PROCESS_VERSION_ID = "%s"         Data producer identification         "LISM"           Product attribute         Product set identification         PRODUCT_VERSION_ID = "%s"         Data producer identification 12DB, it's be described         "SP_Level21", "SP_Level2", "SP_Level</bytes>	B2", ",
attribute       Software version       SoFTWARE_VERSION = "%s"       Software version used for creating DS product n.n.n.         Process version identification       PROCESS_VERSION_ID = "%s"       Process version identification (prerequisite for "L28", "L20", "L20"         Product creation time       PROVUCT_CREATION_TIME = %s       Product creation time       YYYY-MM-DDThh:mm:ssZ         Product attribute       Produce ridentification       PRODUCT_NETTIME = %s       Program start time       YYY'MM-DDThh:mm:ssZ         Product attribute       Produce ridentification       PRODUCT_SET_ID = "%s"       Data producer identification       "SP_Level28", "S	B2", ",
Software version       SOFTWARE_VERSION = "%s"       Software version used for creating PDS product n.n.n.         Process version identification       PROCESS_VERSION_ID = "%s"       Product creation (prerequisite for "L2B", "L2C", "L2D", "L2D"	B2", ",
Product creation time       PRODUCT_CREATION_TIME = %s       Product creation time       YYYY-MM-DDThh:mm:ssZ         Product attribute       Producer identification       PROGRAM_START_TIME = %s       Program start time       YYYY-MM-DDThh:mm:ssZ         Product attribute       Producer identification       PRODUCET_DE "%s"       Data producer identification       "LISM"         Product attribute       Product is identification       PRODUCT_SET_ID = "%s"       Data producer identification       "SP_Level281", "SP_Level22", "SP_Level22	B2", ",
Product attribute       Producer identification       PRODUCER_ID = "%s"       Data producer identification       "LISM"         Product set identification       PRODUCT_SET_ID = "%s"       PDS product set types (prerequisite for L2DB)       "SP_Level28", "SP_Level22", "SP_	B2", ",
Product set identification       PRODUCT_SET_ID = "%s"       PDS product set types (prerequisite for L2DB)       "SP_Level281", "SP_Level2         Product version identification       PRODUCT_VERSION_ID= "%s"       Product version registered in L2DB, it's be described       "Others"         Product version identification       PRODUCT_VERSION_ID= "%s"       Product version registered in L2DB (prerequisite "01" ~ "99"         Whether to be registered product in L2DB       REGISTERED_PRODUCT = "%s"       It's be set whether it was created as product for "V" or "N"         Source data file name       LEVEL2B1_FILE_NAME = "%s"       All source data file names used for creating this L2B1: "N/A"         Source data file name       SOURCE_FILE_NAME = (*%s", "%s", "%s")       All source data file names used for creating this L2B1: "N/A"	B2", ",
data not registered in L2DB. it's be described     "Others"       Product version identification     PRODUCT_VERSION_ID= "%s"     Product version registered in L2DB (prerequisite     "Othrs"       Whether to be registered product in L2DB     REGISTERED_PRODUCT = "%s"     It's be set whether it was created as product for "Y" or "N"       Source data file name     LEVEL2B1_FILE_NAME = "%s"     All source data file names used for creating this     L2B1:"N/A"       Source data file name     SOURCE_FILE_NAME = "%s", "%s", "%s", "%s"     All source data file names used for creating this     L2B1:"N/A"	",
Product version identification       PRODUCT_VERSION_ID= "%s"       Product version registered in L2DB (prerequisite "01 " ~ "99 "         Whether to be registered product in L2DB       REGISTERED_PRODUCT = "%s"       It's be set whether it was created as product for "Y" or "N"         Source data file name       LEVEL2B1_FILE_NAME = "%s"       All source data file names used for creating this L2B1:"N/A"         Source data file name       SOURCE_FILE_NAME = ("%s", "%s", "%s")       All source data file names used for creating this L2B1:"N/A"	
Whether to be registered product in L2DB       REGISTERED_PRODUCT = "%s"       It's be set whether it was created as product for "Y" or "N" registration.regardless of success and failure of registration in L2DB.         Source data file name       LEVEL2B1_FILE_NAME = "%s"       All source data file names used for creating this L2B1:"N/A"         Source data file name       SOURCE_FILE_NAME = "%s", "%s", "%s"       All source data file names used for creating this L2B1:"N/A"	
redistration in L2DB.           Source data file name         LEVEL2B1_FILE_NAME = "%s"           All source data file name         SOURCE_FILE_NAME = ("%s", "%s", "%s", "%s")           All source data file name         SOURCE_FILE_NAME = {"%s", "%s", "%s", "%s"}           All source data file name         SOURCE_FILE_NAME = {"%s", "%s", "%s", "%s"}	
PDS product:***.spc           Source data file name         SOURCE_FILE_NAME = {"%s", "%s", "%s", "%s"}         All source data file names used for creating this PDS product:***.spc	
Source data file name SOURCE_FILE_NAME = {"%s", "%s", "%s"} All source data file names used for creating this PDS product:***.spc	
SPICE metakernel file name SPICE_METAKERNEL_FILE_NAME = "%s" SPICE metakernel file names used for creating L1A	
PDS product           Scene         Common to each         Mission name         MISSION_NAME = "%s"         Mission name         "SELENE"	
attribute instrument	
Data set identification DATA_SET_ID = "%s" Data set identification in which included this	
Instrument name         INSTRUMENT_NAME = "%s"         Instrument name(full name) (prerequisite for L2DB) "Spectral Profiler"           Instrument identification         INSTRUMENT_ID = "%s"         Instrument identification         "SP"	
Mission phase name MISSION_PHASE_NAME = "%s" Mission phase name (e.g. Nominal/Option)	
Revolution number REVOLUTION_NUMBER = %d Revolution number of this scene's starting L2B1:value of SP position else:value of TC/MI	
Strip sequence number STRIP_SEQUENCE_NUMBER = %d Strip sequence number while in revolution L281:value of SP else:value of TC/MI	
Scene sequence number SCENE_SEQUENCE_NUMBER = %d Scene sequence number while in strip L2B1:value of SP else:value of TC/MI	
Revolution strip scene number REV_STRIP_SCENE = {(%d,%d,%d),(%d,%d),***} Number of revolution, strip, and scene including L2B2,L2C,L2D:*N/A*	
Ithis scene           Observation target name         TARGET_NAME = "%s"         Observation target name of this strip         "MOON" (default )	
Observation mode identification OBSERVATION_MODE_ID = "%s" Observation mode identification Observation."OBS","DARK", (observation/dark/calibration and resolution) Resolution:"NORMAL","HIC	
e.g. OBS-NORMAL	
Sensor description         SENSOR_DESCRIPTION = "%s"         Sensor specification is set with character string           Sensor description 2         SENSOR_DESCRIPTION2 = "%s"         Alternative sensor description	
Exposure mode identification EXPOSURE_MODE_ID = "%s" Exposure mode identification "LONG", "SHORT"	
Short mode exposure duration         SHORT_EXPOSURE_DURATION = %.3f <msec>         Exposure duration on short mode           Long mode exposure duration         LONG_EXPOSURE_DURATION = %.3f <msec>         Exposure duration on long mode</msec></msec>	
Calibration mode identification CALIBRATION_MODE_LD = "%s" Calibration mode identification	
Spacecraft clock start count (TI)         SPACECRAFT_CLOCK_START_COUNT = %.4f <sec>         Spacecraft clock start count on this scene (TI)           Spacecraft clock stop count (TI)         SPACECRAFT_CLOCK_STOP_COUNT = %.4f <sec>         Spacecraft clock stop count on this scene (TI)</sec></sec>	
Observation start time (UT) START_TIME = %s Observation start time on this scene (UT) yyyy-mm-ddThh:mm:ss.sss	
Observation stop time (UT)     STOP_TIME = %s     Observation stop time on this scene (UT)     yyyy-mm-ddThh:mm:ss.sss       Upper left latitude of this scene     UPPER_LEFT_LATITUDE = %.6f <deg>     Latitude of pixel on upper left corner of this     [-90.000000, 90.000000]</deg>	ssZ
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> Longitude of pixel on upper left corner of this [0.000000, 360.000000)</deg>	
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> Latitude of pixel on upper right corner of this [-90.000000, 90.000000]</deg>	
scene (=latitude of pixel on upper left corner of this scene)	
Latitude of the pixel center on the first line Upper right longitude of this scene UPPER_RIGHT_LONGITUDE= %.6f <deg> Longitude of pixel on upper right corner of this [0.000000, 360.000000]</deg>	
scene (=longitude of pixel on upper left corner of this scene)	
Longitude of the pixel center on the first line	
Lower left latitude of this scene LOWER_LEFT_LATITUDE= %.6f <deg> Latitude of pixel on lower left corner of this [-90.000000, 90.000000]</deg>	
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> Longitude of pixel on lower left corner of this [0.000000, 360.000000] scene (=longitude of pixel on upper right corner</deg>	
of this scene)	
Longitude of the pixel center on the last line	
Lower right latitude of this scene LOWER_RIGHT_LATITUDE= %.6f <deg> Latitude of pixel on lower right corner of this [-90.000000, 90.000000] scene (=latitude of pixel on upper left corner of</deg>	_
this scene) Latitude of the pixel center on the last line	
Lower right longitude of this scene LOWER_RIGHT_LONGITUDE= %.6f <deg> Longitude of pixel on lower right corner of this [0.000000, 360.000000] scene (= longitude of pixel on upper left corner of</deg>	
this scene)	
this scene) Longitude of the pixel center on the last line non.nonnon	
Location flag     LOCATION_FLAG = "%s"     Information of spacecraft location     L2B1:value of SP else:value of TC/MI	
Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L2B1:value of SP	
Location flag Lo	
Location flag Lo	e s
Location flag Lo	e s for determining basis of the
Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L2B1:value of SP else:value of TC/MI A : ascending D : descending : descending D : descending D : descending D : descending D : de	e s for determining basis of the titude,(which
Location flag Lo	e s for determining basis of the titude,(which d lunar center, de and the curren
Location flag Lo	e s for determining basis of the titude,(which d lunar center, de and the curren zero degree as nding node) at th
Location flag Lo	e s for determining basis of the titude.(which d lunar center, de and the curren zero degree as nding node) at th f the first line scene.
Location flag Lo	e S for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270
Location flag Lo	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (-270 degrees])and do otation period.
Location flag Lo	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees) and do otation period. ding side ((90 nd do not exceed
Location flag Lo	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 o degrees]) and do o tation period. ding side ((90 nd do not exceed iod.
Location flag Lo	e S for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees))and do otation period. ding side ((90 nd do not exceed iod. grees is included
Location flag Lo	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees) and do otation period. ding side (190 nd do not exceed iod. grees is included
Location flag Lo	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TC/MI A : assending D : descending D :	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Example in this scene)       Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else-value of SP else-value of TOM A A according D : descending D : descend	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1:value of SP else:value of TC/MI A: ascending D: descending D: descending W: involving south point S: involving southopoint S: involving south point S: involving south poin	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Init is scene)       Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       L281:value of SP else:value of TO/NI         Location flag       Location flag       Location flag       Location flag       Location flag         Location flag       Location flag       Location flag       Location flag       Location flag         Location flag       Location flag       Location flag       Location flag       Location flag     <	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Intersection         Intersection         Distribution         Distribution<	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1 value of SP desivation of Spacecraft location         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1 value of SP desivation of Spacecraft location         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1 value of SP desivation of Spacecraft location         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1 value of SP desivation of the pixel science location         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB1 value of SP desivation of the pixel science location         Location flag       LOCATION_FLAG = "%s"       Information of spacecraft location       LB2 value of SP science location         Location flag       LOCATION_FLAG = "%s"       Information of nadir location       LB2 value of SP science location per hold core science location         Location flag       LOCATION_FLAG = "%s"       Discrimination of nadir locating or roll cant science location per hold degrees is not science location per hold degrees is not science location per hold degrees is not science location of science location of hold degrees is not science location per hold degrees i	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
kind is scene) <sup>1</sup> Location flag       Locatiff       Locatiff	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees]) and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270
bit is scene)       Location flag       Location flag<	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees])and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270 d.
Roll cant       RoLL_CANT = "%s"       Discrimination of agree start in the description of agrees and agrees in the description of agrees and agrees in the description of agrees and agrees in the description of agrees are both included.         Roll cant       ROLL_CANT = "%s"       Discrimination of agrees are both included.       Discrimination of agrees are both included.         Roll cant       ROLL_CANT = "%s"       Discrimination of agrees are both included.       VS : roll view of Roll cant         NIX focal plane temperature       NIX SUM_DISTANCE = 16.27 degC>       NIX focal plane temperature       NIX roll view of Roll cant         NIX focal plane temperature       NIX SUM_DISTANCE = 16.27 degC>       NIX focal plane temperature       NIX roll view of Roll cant         NIX focal plane temperature       NIX SUM_DISTANCE = 16.27 degC>       NIX focal plane temperature       NIX roll view of Roll cant         NIX focal plane temperature       NIX SUM_DISTANCE = 16.27 degC>       NIX focal plane temperature       NIX roll view of Roll cant         NIX focal plane temperature       NIX PROAL_PLANE_TEMPERATURE = 16.27 degC>       NIX focal plane temperature       NIX roll view of Roll cant         NIX focal plane temperature       NIX PROAL_PLANE_TEMPERATURE = 16.27 degC>       NIX focal plane temperature at observation on the first line         NIX focal plane temperature       NIX PROAL_PLANE_TEMPERATURE = 16.27 degC>       NIX focal plane temperature at observation on the first line       NIX rol	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees])and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270 d.
It is scene)         User in scene)         User in scene)         User in scene)           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         LOCATION_FLAG = "se"         Information of spacecraft location         22 trails of 5P           Location flag         Location flag         Location of spacecraft location         20 trails of 5P           Location flag         Location of trails of spacecraft location         20 trails of 5P           Location flag         Location of trails of spacecraft location         20 trails of the spacecraft location           Location flag         Location of trails of spacecraft location         20 trails of 5P           Location trails do the loat location         Loc	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees])and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270 d.
It is some)         Using intervalue         Second in the	e s for determining basis of the titude, (which d lunar center, de and the curren zero degree as nding node) at th f the first line scene. ing side (>270 degrees])and do otation period. ding side (190 nd do not exceed iod. grees is included grees and 270 d.

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

	Region		I tem name	Description format	I tem explanation	value
Product information	Scene attribute	Variaton by each instrument	Approximate spacecraft altitude	<pre>SPACECRAFT_ALTITUDE = %.3f <km></km></pre>	Spacecraft altitude of the first line("distance between spacecraft and lunar gravitational center"	
			Spacecraft ground speed	<pre>SPACECRAFT_GROUND_SPEED = %.3f <km sec=""></km></pre>	minus average lunar radius) 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	
					VIS(nominal value)	
			VIS band width	VIS_BAND_WIDTH = %.1f <nm></nm>	Band width of VIS(full-width at half-maximum, nominal value)	
			NIR1 band number	N1_BAND_NUMBER = %d	NIR1 band number	100
			NIR1 spectral coverage	N1_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of	
			NIR1 band width	N1_BAND_WIDTH = %.1f <nm></nm>	NIR1(nominal value) 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,	
					nominal value)	
			Process parameter file name	PROCESS_PARAMETER_FILE_NAME = "%s"	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	TH CORRECTED START TIME - MO	time of SP observation	else:***.sl2 L2B1:"N/A"
			corrected start time of TC/MI image acquired at the same time of SP	TM_CORRECTED_START_TIME = %s	Corrected start time (UT) (six decimal places)	LZDT: N/A
			Corrected stop time of TC/MI image acquired at the same time of SP	TM_CORRECTED_STOP_TIME = %s	Corrected stop time(UT) (six decimal places)	L2B1: "N/A"
			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 observation		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	L2B1: "N/A"
			at the same time of SP observation		scene(direction of along track)	
			Number of line's samples of TC/MI image acquired at the same time of SP	TM_LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this scene(direction of cross track)	L2B1: "N/A"
			First pixel number of TC/MI image	TM_FIRST_PIXEL_NUMBER = %d	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.nnnnn	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.nnnnn	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.nnnnn	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.nnnnn	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.nnnnn	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.nnnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
			Lower right longitude on the scene of TC/MI image acquired at the same time of SP observation	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)
			Saturated pixel percentage, whose value is more than or equal to D3, of TC/MI image acquired at the same time of SP	TM_SATURATED_PIXEL_PERCENTAGE = %d	Percentage of saturated pixels(omit decimal fractions)	L2B1: "N/A"
			Saturated pixel percentage, whose value is less than or equal to D4, of TC/MI	TM_DEAD_PIXEL_PERCENTAGE = %d	Percentage of dead pixels (omit decimal fractions)	L2B1: "N/A"
			image acquired at the same time of SP	TM_SHADOWED_AREA_PIXEL_PERCENTAGE = %d	Decomptons of abodewed even when the Court dectors	1 2D1 - "N/A"
			Saturated pixel percentage, whose value is between D5 and D6, of TC/MI image	IM_STADUTED_AKEA_PIXEL_PERCENTAGE = %d	Percentage of shadowed area pixels(omit decimal fractions)	L2B1: "N/A"
			acquired at the same time of SP High resolution observation point number	HIGH SP POINT NUM = %d		1
			Normal resolution observation point	NORMAL_SP_POINT_NUM = %d		
			Upper margin observation point number	UPPER_MARGIN_POINT_NUM = %d	Observation points number longly cut off above	L2B1,L2C,L2D:"N/A"
			Lower margin observation point number	LOWER_MARGIN_POINT_NUM = %d	TC/MI image acquired at the same time of SP Observation points number longly cut off below	L2B1,L2C,L2D:"N/A"
			Calibration lamp information	CAL_LAMP_INFO =	TC/MI image acquired at the same time of SP Type of calibration lamp, set of the time to light	
			Matching accuracy information	{("%s",%s,%s),('%s",%s,%s),} MATCHING_ACCURACY_INFO= "%s"	on and off. 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.	not applicable.
					4: Number of peaks having correlation coefficient being more than or equal to setting value is less than or equal to threshold.	

# 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
cillary and	Common to ancillary and	format	INTERCHANGE_FORMAT = %s		"BINARY"
pplementary data ject 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	Recording format of clock count of spacecraft(T1)	
			NAME = "SPACECRAFT_CLOCK_COUNT" DATA TYPE = "IEEE REAL"		
			UNIT = "sec"		
			START_BYTE = 1 BYTES = 8		
			END_OBJECT = COLUMN		
		VIS focal plane temperature	OBJECT = COLUMN NAME ="VIS_FOCAL_PLANE_TEMPERATURE"	Recording format of VIS focal plane temperature	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC" START_BYTE = 9		
			BYTES = 4		
		NIR1 focal plane temperature	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of NIR1 focal plane temperature	
			NAME = "NIR1_FOCAL_PLANE_TEMPERATURE"		
			DATA_TYPE = "IEEE_REAL" UNIT = "degC"		
			START_BYTE = 13		
			BYTES = 4 END_OBJECT = COLUMN		
		NIR2 focal plane temperature	OBJECT = COLUMN	Recording format of NIR2 focal plane temperature	
			NAME = "NIR2_FOCAL_PLANE_TEMPERATURE" DATA_TYPE = "IEEE_REAL"		
			UNIT = "K"		
			START_BYTE = 17 BYTES = 4		
			END_OBJECT = COLUMN		
		Spectrometer temperature 1	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_1"	Recording format of spectrometer temperature 1	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC" START_BYTE = 21		
			BYTES = 4		
		Spectrometer temperature 2	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of spectrometer temperature 2	
			NAME = "SPECTROMETER_TEMPERATURE_2"		
			DATA_TYPE = "IEEE_REAL" UNIT = "degC"		
			START_BYTE = 25		
			BYTES = 4 END_OBJECT = COLUMN		
		Spectrometer temperature 3	OBJECT = COLUMN	Recording format of spectrometer temperature 3	
			NAME = "SPECTROMETER_TEMPERATURE_3" DATA_TYPE =" IEEE_REAL"		
			UNIT = "degC"		
			START_BYTE = 29 BYTES = 4		
			END_OBJECT = COLUMN		
		Spectrometer temperature 4	OBJECT = COLUMN NAME = "SPECTROMETER_TEMPERATURE_4"	Recording format of spectrometer temperature 4	
			DATA_TYPE ="IEEE_REAL"		
			UNIT = "degC" START_BYTE = 33		
			BYTES = 4		
		Halogen bulb radiance	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of halogen bulb radiance	
		harogen burb radiance	NAME = "HALOGEN_BULB_RADIANCE"	Recording format of narogen burb radiance	
			DATA_TYPE = "IEEE_REAL" UNIT = "V"		
			START_BYTE = 37		
			BYTES = 4 END_OBJECT = COLUMN		
		Halogen bulb voltage 1	OBJECT = COLUMN	Recording format of halogen bulb voltage 1	
			NAME = "HALOGEN_BULB_VOLTAGE1" DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
			START_BYTE = 41 BYTES = 4		
			END_OBJECT = COLUMN		
		Halogen bulb voltage 2	OBJECT = COLUMN NAME = "HALOGEN_BULB_VOLTAGE2"	Recording format of halogen bulb voltage 2	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "V" START BYTE = 45		
			BYTES = 4		
		Halogen bulb temperature 1	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of halogen bulb temperature 1	
			NAME = "HALOGEN_BULB_TEMPERATURE1"	according format of natogen burb temperature 1	
			DATA_TYPE = "IEEE_REAL" UNIT = "degC"		
			START_BYTE = 49		
			BYTES = 4 END_OBJECT = COLUMN		
		Halogen bulb temperature 2	OBJECT = COLUMN	Recording format of halogen bulb temperature 2	
			NAME = "HALOGEN_BULB_TEMPERATURE2" DATA_TYPE = "IEEE_REAL"	1	
			UNIT = "degC"		
			START_BYTE = 53 BYTES = 4		
		-	END_OBJECT = COLUMN		
		Spacecraft altitude	OBJECT = COLUMN NAME = "SPACECRAFT_ALTITUDE"	Recording format of spacecraft altitude	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "km" START_BYTE = 57		
			BYTES = 4		
		Spacecraft ground speed	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of spacecraft ground speed	
			NAME = "SPACECRAFT_GROUND_SPEED"	ground open	
			DATA_TYPE = "IEEE_REAL" UNIT = "km/sec"		
			START_BYTE = 61		
			BYTES = 4 END_OBJECT = COLUMN		
		Sub-spacecraft latitude	OBJECT = COLUMN	Recording format of sub-spacecraft latitude	
			NAME = "SUB_SPACECRAFT_LATITUDE" DATA_TYPE = "IEEE_REAL"		
			UNIT = "deg"		
			START_BYTE = 65		
			BYTES = 8 END_OBJECT = COLUMN		
		Sub-spacecraft longitude	OBJECT = COLUMN	Recording format of sub-spacecraft longitude	
			NAME = "SUB_SPACECRAFT_LONGITUDE" DATA_TYPE = "IEEE_REAL"		
			UNIT = "deg"		
			START_BYTE = 73 BYTES = 8		
	1		$END_OBJECT = COLUMN$		1

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

Description area of	Region	Item name SP observation point latitude	Description format OBJECT = COLUMN	Item explanation Recording format of SP observation point latitude	value
ancillary	Line information	SP observation point latitude	NAME = "CENTER_LATITUDE"	Recording format of SP observation point latitude	
and supplementary data object format			DATA_TYPE = "IEEE_REAL" UNIT = "deg"		
ata object format			START_BYTE = 81		
			BYTES = 8 END OBJECT = COLUMN		
		SP observation point longitude	OBJECT = COLUMN	Recording format of SP observation point longitude	
			NAME = "CENTER_LONGITUDE" DATA_TYPE = "IEEE_REAL"		
			UNIT = "deg"		
			START_BYTE = 89 BYTES = 8		
			END_OBJECT = COLUMN		
		Geometric condition of sensor observation(emission angle)	OBJECT = COLUMN NAME = "EMISSION_ANGLE"	Recording format of geometric condition of sensor observation(emission angle)	
			DATA_TYPE = "IEEE_REAL" UNIT = "deg"		
			START_BYTE = 97		
			BYTES = 4 END_OBJECT = COLUMN		
		Geometric condition of sensor	OBJECT = COLUMN	Recording format of geometric condition of sensor	
		observation(azimuth angle)	NAME = "SPACECRAFT_AZIMUTH" DATA_TYPE = "IEEE_REAL"	observation(azimuth angle)	
			UNIT = "deg"		
			START_BYTE = 101 BYTES = 4		
		Connetria condition of color	END_OBJECT = COLUMN	Recording format of geometric condition of solar	
		Geometric condition of solar radiation(incidence angle)	OBJECT = COLUMN NAME = "INCIDENCE_ANGLE"	radiation(incidence angle)	
			DATA_TYPE = "IEEE_REAL" UNIT = "deg"		
			START_BYTE = 105		
			BYTES = 4 END OBJECT = COLUMN		
		Geometric condition of solar	OBJECT = COLUMN	Recording format of geometric condition of solar	
		radiation(azimuth angle)	NAME = "SOLAR_AZIMUTH_ANGLE" DATA_TYPE = "IEEE_REAL"	radiation(azimuth angle)	
			UNIT = "deg"		
			START_BYTE = 109 BYTES = 4		
		Phase angle	END_OBJECT = COLUMN	Percending format of chase angle	
		Phase angle	OBJECT = COLUMN NAME = "PHASE_ANGLE"	Recording format of phase angle	
			DATA_TYPE = "IEEE_REAL" UNIT = "deg"		
			START_BYTE = 113		
			BYTES = 4 END_OBJECT = COLUMN		
		Temperature of the point specifying SP	OBJECT = COLUMN	Recording format of temperature of the point	
		temperature	NAME = "SP_TEMPERATURE" DATA_TYPE = "IEEE_REAL"	specifying SP temperature	
			UNIT = "deg"		
			START_BYTE = 117 BYTES = 4		
			END_OBJECT = COLUMN		
		SP peltier hot side temperature	OBJECT = COLUMN NAME = "SP_PELTIER_HOT_TEMPERATURE"	Recording format of SP peltier hot side temperature	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC" START_BYTE = 121		
			BYTES = 4 END_OBJECT = COLUMN		
		SP2 radiator temperature	OBJECT = COLUMN	Recording format of SP2 radiator temperature	
			NAME = "SP_N2_RADIATOR_TEMPERATURE" DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC"		
			START_BYTE = 125 BYTES = 4		
			END_OBJECT = COLUMN	Depending formation of the states	
		Temperature of SP calibration optics(VIS)	OBJECT = COLUMN NAME = "SP_CAL_VIS_TEMPERATURE"	Recording format of temperature of SP calibration optics(VIS)	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC" START_BYTE = 129		
			BYTES = 4 END_OBJECT = COLUMN		
		Temperature of SP calibration	OBJECT = COLUMN	Recording format of temperature of SP calibration	
		optics(NIR)	NAME = "SP_CAL_NIR_TEMPERATURE" DATA TYPE = "IEEE REAL"	optics(NIR)	
			UNIT = "degC"		
			START_BYTE = 133 BYTES = 4		
		Terrenela	END_OBJECT = COLUMN	Percenting formet	
		Temperature of the point specifying DPU temperature	OBJECT = COLUMN NAME = "DPU_TEMPERATURE"	Recording format of temperature of the point specifying DPU temperature	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC" START_BYTE = 137		
			BYTES = 4 END_OBJECT = COLUMN		
		SP power voltage plus 5V	OBJECT = COLUMN	Recording format of SP power voltage plus 5V	
			NAME = "SP_POWER_P5V" DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
			START_BYTE = 141 BYTES = 4		
		00	END_OBJECT = COLUMN	Decention (const. ( 20	
		SP power voltage minus 15V	OBJECT = COLUMN NAME = "SP_POWER_M15V"	Recording format of SP power voltage minus 15V	
			DATA_TYPE = "IEEE_REAL" UNIT = "V"		
			START_BYTE = 145		
			BYTES = 4 END_OBJECT = COLUMN		
		SP power voltage plus 15V	OBJECT = COLUMN	Recording format of SP power voltage plus 15V	
			NAME = "SP_POWER_P15V" DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
			START_BYTE = 149 BYTES = 4		
			END_OBJECT = COLUMN	Depending formet of a library	
		Calibration mode identification	OBJECT = COLUMN NAME = "CALIBRATION"	Recording format of calibration mode identification	
			DATA_TYPE = "MSB_INTEGER"		
			UNIT = "N/A" START_BYTE = 153		
			BYTES = 1		
		SP peltier ON/OFF	END_OBJECT = COLUMN OBJECT = COLUMN	Recording format of SP peltier ON/OFF	
			NAME = "SP_PELTIER" DATA_TYPE = "MSB_INTEGER"		
			UN IT = "N/A"		
			START_BYTE = 154 BYTES = 1		

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

			ist 2.3-6(5/5) Details of PDS		
	Region Line information	Item name TC/MI status	Description format OBJECT = COLUMN NAME = "TC_ML_STATUS" DATA_TYPE = "MSB_INTEGER" UNIT = "N/A" START_BYTE = 155	Item explanation Recording format of TC/MI status	value
		Clock count error flag	BYTES = 1 END_OBJECT = COLUMN OBJECT = COLUMN NAME = "CLOCK_COUNT_ERR_FLAG" DATA_TYPE = "MSB_INTEGER" UNIT = "NA"	Recording format of clock count error flag	
		Spatial resolution flag	START_BYTE = 156 BYTES = 1 END_OBJECT = COLUMN OBJECT = COLUMN NAME = "SPATIAL_RESOLUTION_FLAG"	Observation mode A(65): exposure duration S, resolution N	A, B, C, D
		Geometric information recalculation flag	DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 157 BYTES = 1 END_OBJECT = COLUMN OBJECT = COLUMN	B(66): exposure duration L, resolution N C(67): exposure duration S, resolution H D(68): exposure duration L, resolution H	A,B,C
			NAME = "GEOMETRIC_INFO_RECAL_FLAG" DATA_TYPE = "NSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 158 BYTES = 1 END_0BJECT = 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	
		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_0BJECT = 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 thumbnail image (LINE)	OBJECT = COLUMN NAME = "THUMBNAIL_LINE_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 163 BYTES = 2 or 0 END_0BJECT = 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 thumbnail 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 L2E1,L2B2:SYTES=0 L2C,L2D :BYTES=2
Description area ofimage data object	4		END_OBJECT = ANCILLARY_AND_SUPPLEMENT_DATA		
		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_WAV LINES = %d 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 bit length Image value type Sample unit Conversion coefficient Offset value	1 296 "MSB_UNSIGNED_INTEGER" 16 "WAVELENGTH" "nm"
		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_RAW LINES = %d SAMPLES = %d SAMPLE_TYPE = "%s" 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 bit length Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "RAW_DN" "ND"
		Number of lines of this scene Number of line's samples of this scene Sample bits Image value type Unit Scaling factor Offset	OBJECT = SP_SPECTRUM_DAR LINE_S= %d SAMPLES = %d 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_UNSI GNED_ I NTEGER" 16 "DARK" "ND"
		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	CBJECT = SP_SPECTRUM_RAD LINES = %d 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 "MGB_UNSIGNED_INTEGER" 16 "RADIANCE" "W/m**2/micron/sr"
		Number of lines of this scene Number of line's samples of this scene Sample type Sample bits Image value type Scaling factor Offset	OBJECT = SP_SPECTRUM_REF LINES = %d SAMPLE_TYPE = %%" SAMPLE_TYPE = %%" UNIT = %%" 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 unit Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "REFLECTANCE" "ND"
	spectrum	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 SAMPLE_TYPE = %s" SAMPLE_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 "QUALITY" "N/A"
	result	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 = L2D_RESULT_ARRAY LINES = %d SAMPLES = %d SAMPLE_TYPE = %%s" SAMPLE_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	SAMPLE_BITS = 0 IMAGE_VALUE_TYPE= "N/A" UNIT = "N/A" SCALINC_FACTOR = "N/A" OFFSET = "N/A" LINE_SAMPLES = 128 SAMPLE_BITS = 32 IMAGE_VALUE_TYPE = "IEEE_REAL" SAMPLE_BITS = 32 IMAGE_VALUE_TYPE= "SURFACE_VARIABLES" UNIT = "N/A"
			END		UNII = "N/A" SCALING_FACTOR = "N/A" OFFSET = "N/A"

в

## (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.

Clock count of spacecraftReal number8sClock count of spacecraftVIS focal plane temperatureReal number4degreesVIS focal plane temperature after converting engineering valueNIR1 focal plane temperatureReal number4degreesNIR1 focal plane temperature after converting engineering valueNIR2 focal plane temperatureReal number4KNIR2 focal plane temperature after converting engineering valueNIR2 focal plane temperatureReal number4KNIR2 focal plane temperature after converting engineering valueSpectrometer temperature 1Real number4degrees CSpectrometer temperature 2Spectrometer temperature 2Real number4degrees CSpectrometer temperature 3Spectrometer temperature 3Real number4degrees CSpectrometer temperature 4Halogen bulb radianceReal number4degrees CSpectrometer temperature 4Halogen bulb voltageReal number4VHalogen bulb voltage 1 after converting engineering valueHalogen bulb voltage 2Real number4VHalogen bulb voltage 2 after converting engineering valueHalogen bulb temperature 1Real number4degrees CHalogen bulb voltage 2 after converting engineering valueHalogen bulb temperature 1Real number4degrees CHalogen bulb voltage 2 after converting engineering valueHalogen bulb temperature 1Real number <th>_</th> <th>_</th> <th>_</th> <th></th> <th></th>	_	_	_		
spacecraftImage: constraint of the space	Item name	Туре	Byte	Unit	Item explanation
VIS focal plane temperatureReal number4degrees CVIS focal plane temperature after converting engineering valueNIR1 focal plane temperatureReal number4degreesNIR1 focal plane temperature after converting engineering valueNIR2 focal plane temperatureReal number4KNIR2 focal plane temperature after converting engineering valueNIR2 focal plane temperatureReal number4KNIR2 focal plane temperature after converting engineering valueSpectrometer temperature 1Real number4degreesSpectrometer temperature 2Spectrometer temperature 2Real number4degreesSpectrometer temperature 3Spectrometer temperature 3Real number4degreesSpectrometer temperature 4Spectrometer temperature 4Real number4degreesSpectrometer temperature 4Halogen bulb radianceReal number4VHalogen bulb radianceHalogen bulb voltage 2Real number4VHalogen bulb voltage 1 after converting engineering valueHalogen bulb voltage 2Real number4VHalogen bulb voltage 2 after converting engineering valueHalogen bulb voltage 2Real number4degreesHalogen bulb voltage 2 after converting engineering valueHalogen bulb 4Real number4degreesHalogen bulb voltage 2 after converting engineering valueHalogen bulb 4Real number4degreesHalogen bulb temperature 1 a	Clock count of	Real number	8	s	Clock count of spacecraft
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Spacecraft altitude         Real number         4         km         Distance between spacecraft and	-				
	Spacecraft altitude	Real number	4	km	
	-				moon
Spacecraft ground Real number 4 km/s Spacecraft ground speed	Spacecraft ground	Real number	4	km/s	Spacecraft ground speed
speed					
Sub-spacecraft Real number 8 degree Sub-spacecraft latitude	*	Real number	8	degree	Sub-spacecraft latitude
latitude between -90 and 90	•			Ĵ	-

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

Item name	Туре	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			C	specifying SP temperature after
temperature				converting engineering value
SP peltier hot side	Real number	4	degrees	SP peltier hot side temperature
temperature			C	after converting engineering value
SPN2 radiator	Real number	4	degrees	SP2 radiator temperature after
temperature			C	converting engineering value

List 2.3-7(2/4) 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(3/4) 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)		

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

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.

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

List 2.3-8 Specifications of SP spectrum data object

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

On VIS 1~ 84, pixels of 1~ 84

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.

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

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

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)

			lirection	_	lirection
			of the spacecraft = +1 (without yaw around)		cecraft = -1 w around)
		original	thumbnail	original	thumbnail
Ascending (A)	R	Я	<b>R</b>	В	R
	s 7 N		ght/left	reverse	up/down
Descending (D)	R	R	on and reverse	R	<b>R</b>
Involving	s Z			Teverse 1	Ignit/Tert
(a) pole(s) (N/S/W)	R	R	R	Я	R
	R	В	Я	К	В
	R	Ŋ	ス	Г	ス
	R	without rotati	on and reverse		·ight/left
		"Ithout Iotati		10,0136 1	18110/ 1010

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

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. Appendix2 "Details of the invalid pixel"

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 A2-1<sup>2</sup>.

 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.)

 0UT\_OF\_IMAGE\_BOUNDS\_VALUE
 -30000
 The pixel originally not existing before its resampling process

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

Brief description			Detail description		
INVALID_TYPE	INVALID_VALUE	Meaning of 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.
			DARK_MINUS	-21011	The pixel value became minus in dark current correction.
MINUS	-21000	The pixel value became minus.	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.
DOMMIT_DELECT	-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.
		ecco Error other than listed above	MV_FT_INCREASE_ERROR	-23021	The pixel value increased in MI- VIS frame transfer correction.
	22000		MV_FT_FAILURE	-23022	MI-VIS frame transfer correction failed.
OTHER	-23000	happened.	PHASE_GEO_ERROR	-23081	Photometric correction failed because of invalid geometric data.
			PHASE_USGS_ZER0_DIVIDE	-23082	A division by zero happened in USGS photometric correction.
			RESAMPLE_ERROR	-23101	Resampling failed.

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

\* 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. Appendix3 "Details of SP Ancillary Information"

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

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	<ul> <li>VIS-NIR1 gap correction factor = Ration between VIS and NIR1 radiance at same wavelength before gap correction</li> <li>00 =&gt; The factor is between 0.9 and 1.0.</li> <li>01 =&gt; The factor is between 1.0 and 1.1.</li> <li>10 =&gt; The factor is between 1.1 and 1.2.</li> <li>11 =&gt; The factor is less than 0.9 or larger than 1.2.</li> </ul>
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 pixel <del>s</del>	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

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

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
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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)
- $\cdot$  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.

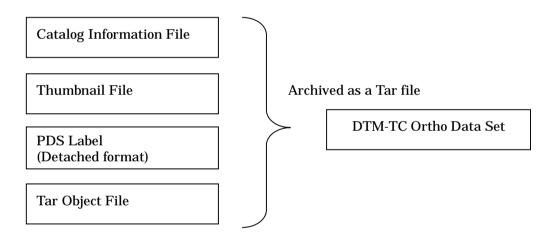


Fig. 2.1-1 Configuration of the DTM-Ortho Data Set

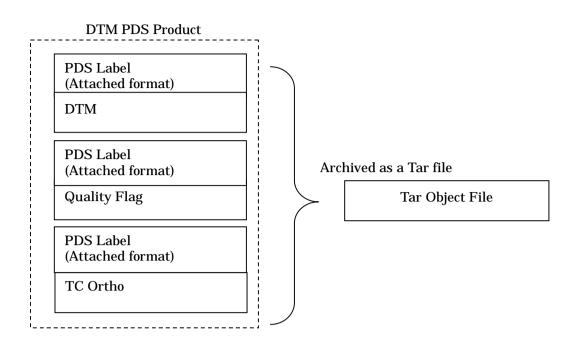


Fig. 2.1-2 Configuration of the Tar Object

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)

		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	~ 1	30	aya. Yuunty i ng
IULAI	-	50	

#### 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	NNNNNNNNNNN ( 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	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 )	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	Ν	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.ssssssZ		

Table 2.1.2 Items of the Catalog	Information File	(DTM TC Ortho)
Table 2.1-2 Items of the Catalog	information File	(DIM-ICORNO)

End Date and		<i>yyyy-mm-dd</i> T	
Time	EndDateTime	hh:mm:ss.sssssz	
Revolution		NNNNNNNN	
Number	RevoNumber	(Max. 10 digits)	
		NNNNNNNN	
Scene Number	SceneNumber	(Max. 10 digits)	
		NNNNNNNN	
Strip Number	StripNumber	(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)

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

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.

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

Table 2.1-5 Specifications for the Thumbnail Files

#### 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 Com	PDS Label Common Items		
	<b>Object Position S</b>	Object Position Specification		
	Product	File Attributes		
	Information Product Attributes			
E:		an af the DDC Label for use with LODD		

Fig. 2.1-3 Configuration of the PDS Label for use with 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	3 fixed
			_	object	
		Archive files	ARCHIVE_FILE_NAME = {"%s", "%s", "%s"}	Names of the files contained in the tar	
				object	
		File size after	REQUIRED_STORAGE_BYTES = %d	Total file size after extracting tar object	
		extraction		 byte>	
			END_OBJECT = ARCHIVE_FILE		
Product information	File				
	attributes				
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DT
					mosaic, and TC ortho mosaic
					"MAP": DTM map, and TC or
					map
	Product				
	attributes				
		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 or
					(special product)
					"DTM_MAP_S": DTM map (spe
					product)
					"TCOrtho_MAP_S": TC ortho n
					(special product)
		1			"DTM_MSC": DTM mosaic (spec
	1	1			product)
	1	1			"TCOrtho_MSC": TC ortho mos
	1				(special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	1	1	END		

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

#### 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.

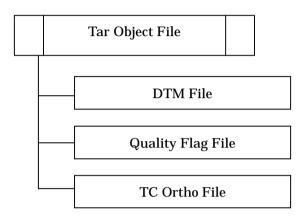


Fig. 2.1-4 Configuration of the Tar Object

PDS Label	PDS Label Comn	non Items
	<b>Object Position S</b>	pecification
	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.

Category PDS label common items		Name	Description form	Explanation	value
		rvame	Description form	Explanation	value
		PDS version ID	PDS_VERSION_ID = "%s"	PDS version ID	"PDS3" fixed
		File record type File name	RECORD_TYPE = "%s" FILE_NAME = "%s"	File record type File name of this product (product ID +	"UNDEFINED" fixed
				extension)	
1		Product ID Data file format	PRODUCT_ID = "%s" DATA_FORMAT = "%s"	Unique ID given to every product Data file format ID	"PDS" fixed
		ID			
Object position specification	_	Head position of	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
	-	image object		F	
Product information	File attributes				
		Software name	SOFTWARE_NAME = "%s"	Software name that created the DTM	TBD
		Software version	SOFTWARE_VERSION = "%s"	PDS product Software version that created the DTM	"n.n.n" (TBD)
			PROCESS_VERSION_ID = "%s"	PDS product	
		Processing level	PROCESS_VERSION_ID = .48.	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic, and TC ortho mosaic "MAP": DTM map, and TC ortho map
		Product creation	PRODUCT_CREATION_TIME = %s	Product creation time	YYYY-MM-DDTHH:MM:SSZ
	Product	time			
	attributes				
		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
		Trouger set TD			'DTM_MAP': DTM map 'TCOrthe MP': TC orthe map 'DTM, TCOrthe MP': TC orthe map 'DTM, TCOrthe MP': TC orthe map (special product) 'DTM_MAP_S': DTM map (special product) 'TCOrthe_MAP_S': TC orthe map (special product) 'DTM_MSC': DTM mosaic (special product) 'TCOrthe_MSC': TC orthe mosaic (special product)
		Product version	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
		ID Base L2A data	BASE_LEVEL2A_FILE_NAME = "%s"		
		file name		L2A data file name of the base image used for DTM creating	
		Reference L2A data file name	REFERENCE_LEVEL2A_FILE_NAME = {"%s","%s",}	L2A data file names of all reference images used for DTM creating	
		SPICE kernel file	SPICE_SPK_FILE_NAME = {"%s","%s",}	All SPICE kernel (SPK) names used	ł
		name (SPK) SPICE kernel file	SPICE_PCK_FILE_NAME = {"%s","%s",}	for DTM/ortho product creating All SPICE kernel (Pck) names used	
		name (PcK)		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	SPICE_CK_FILE_NAME = { "%s", "%s", }	All SPICE kernel (CK) names used for	
		name (CK) SPICE kernel file	SPICE_SCLK_FILE_NAME = {"%s","%s",}	DTM / ortho product creating All SPICE kernel (SCLK) names used	ł
		name (SCLK)		for DTM / ortho product creating	
		SPICE kernel file name (LSK)	SPICE_LSK_FILE_NAME = {"%s","%s",}	All SPICE kernel (LSK) names used for DTM / ortho product creating	
	Scene	anne (astr)		is star one product dealing	
	attributes	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE-M" fixed
		Data set ID Instrument name	DATA_SET_ID = "%s" INSTRUMENT_NAME = "%s"	This data set ID Full name of the Instrument name	TBD "Terrain_Camera"
		Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	"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	-90 to 90
				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	0 to 360
		-	HODED DIGHT INTERIOR - \$10 CF alar	contains dummy pixels	
		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
		-	TOMED DIGHT INTTING _ \$10.65 -3	dummy pixels	00 to 00
		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	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the	0 to 360
		longitude		lower-right corner pixel of the image that contains dummy pixels	
		Image center latitude	IMAGE_CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the center pixel of the image	-90 to 90
		Image center	IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the center pixel of the	0 to 360
		longitude Location flag	LOCATION_FLAG = "%s"	image 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	and a second sec
	Map projection information				
		Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical",
		map projection		Name of the map projection	"Stereographic", "Lambert Conformal" or "Transverse Mercator"
		Coordinate	COORDINATE_SYSTEM_TYPE = "%s"	Type of the coordinate system	"BODY-FIXED ROTATING" fixed
		system type Coordinate	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
				-	
		system name			1737.4 <km> default</km>
		system name 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	
		system name A axis radius 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 1737.4 <km> default</km></km>
		system name A axis radius B axis radius C axis radius First standard	B_AXIS_RADIUS = %8.3f <km></km>	B axis radius of the Moon C axis radius of the Moon First standard parallel	1737.4 <km> default 1737.4 <km> default -90 to 90 for "Lambert Conformal"</km></km>
		system name A axis radius 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 "N/A" for other map projection</km></km>
		system name A axis radius B axis radius C axis radius First standard parallel Second standard	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 First standard parallel Used for "Lambert Conformal" projection. Second standard parallel Used for "Lambert Conformal"	1737.4 <km> default 1737.4 <km> default -90 to 90 for "Lambert Conformal" projection "N/A" for other map projection -90 to 90 for "Lambert Conformal" projection</km></km>
		system name A axis radius 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 "N/A" for other map projection</km></km>

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

	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	"N/A" fixed
	Reference	REFERENCE_LONGITUDE = %10.6f <deg></deg>	given MAP_PROJECTION_TYPE Zero longitude in a rotated spherical	"N/A" fixed
	longitude	·	coordinate system that was used in a given MAP_PROJECTION_TYPE	IVA IAG
	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	0.0 fixed
	Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	map projection origin Total number of pixels in a box area of	"N/A" is given when
	Map resolution	····· _·······························	1-degree latitude x 1-degree longitude for Simple Cylindrical Projection	MAP_PROJECTION_TYPE is not "Simple Cylindrical".
	Map scale	MAP_SCALE = %f <km pixel=""></km>	Actual distance, in km, between two	Simple Cymianea .
	Maximum	MAXIMUM_LATITUDE = %10.6f <deg></deg>	points at the origin in a given MAP_PROJECTION_TYPE Latitude at the center of the	-90 to 90
	latitude Minimum	MINIMUM_LATITUDE = %10.6f <deg></deg>	northernmost pixel in 4 corner pixels	-90 to 90
	latitude		southernmost pixel in 4 corner pixels	
	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 western-most 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	
	Sample projection	SAMPLE_PROJECTION_OFFSET = %f	of this image Map projection coordinates, in pixels, at	
	offset	RESAMPLING_METHOD = "%s"	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"
Processing		END_OBJECT = IMAGE_MAP_PROJECTION		
parameter description				
	Parameter set	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
	name	END_OBJECT = PROCESSING_PARAMETERS		
Image information	-			
	Bands	OBJECT = IMAGE BANDS = %d	Total number of bonds in this image	1 fixed
	Band storage	BAND_STORAGE_TYPE = "%s"	Total number of bands in this image Storage sequence of lines, samples, and bands in this image	"BAND_SEQUENTIAL" fixed
	type Band name	BAND_NAME = "%s"	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 "ELEVATION"
	Sample bit mask	SAMPLE_BIT_MASK = %s	Active bits in a sample	2#11111111#: 8 bits 2#111111111111111111#: 16 bits
	Offset	OFFSET = %f	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 "w/m2/µm/sr"	
			TC ortho map (REF_CNV_SW="ON"): Reflectivity =	
			DN*SCALING_FACTOR+OFFSET	
	Scaling factor	SCALING_FACTOR = %f	Unit is "%" Gain used in the DN for physical	
	Stretched flag	STRETCHED_FLAG = "%s"	quantity conversion Whether a data object has been attentioned to make it even to see	"FALSE" fixed
	Valid minimum	VALID_MINIMUM = %d	stretched to make it easy to see Minimum value that is valid for a data	-9989: DTM
	Valid maximum	VALID_MAXIMUM = %d	object Maximum value that is valid for a data	2: TC ortho 32766 fixed
	Dummy	DUMMY = %d	object Indicates the dummy (blank) pixel of	-9999: DTM
	Minimum	MINIMUM = %d	the image Minimum value in this image except	0: TC ortho 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
	Maximum	MAXIMUM = %d	Maximum value in this image except	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
	Average	AVERAGE = %f	Average value in this image except the	ortho is set to -1. When the total number of valid
			invalid pixels	pixels is 0, the value of DTM is set to -9999 and the value of the TC
	Standard	STDEV = %f	Standard deviation in this image except	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 TC ortho
	deviation			is set to -1.
	deviation Mode pixel	MODE_PIXEL = %d	Mode in this image except the invalid	When the total number of valid
		MODE_PIXEL = %d	Mode in this image except the invalid pixels	pixels is 0, the value of DTM is set to -9999 and the value of TC ortho
		MODE_PIXEL = %d END_OBJECT = IMAGE		pixels is 0, the value of DTM is set
Quality		END_OBJECT = IMAGE		pixels is 0, the value of DTM is set to -9999 and the value of TC ortho
Quality information	Mode pixel		pixels	pixels is 0, the value of DTM is set to -9999 and the value of TC ortho
Quality information	Mode pixel Quality flag file name	END_OBJECT = IMAGE OBJECT = QUALITY_INFO ^QA_FILENAME = *%s*	pixels	pixels is 0, the value of DTM is set to -9999 and the value of TC ortho
Quality information	Mode pixel Quality flag file name	END_OBJECT = IMAGE OBJECT = QUALITY_INFO	pixels	pixels is 0, the value of DTM is set to -9999 and the value of TC ortho is set to -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	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	from the DTM	
	Slope threshold of bad pixel		Slope angle threshold to extract the bad pixel from the DTM	
L2A		END_OBJECT = QUALITY_INFO		
e data nation		OBJECT = SOURCE_L2A_DATA_INFO		
	L2A file name L2A creation time	FILE_NAME = %s" PRODUCT_CREATION_TIME = %s	File name of the L2A product L2A product data creation time	YYYY-MM-DDTHH:MM:SSZ
	Execution count Illumination	EXECUTION_COUNT = %d ILLUMINATION_CONDITION = "%s"	Execution count of the L2A product Illumination condition	"MORNING" or "EVENING"
	condition L0 file name	LEVEL0_FILE_NAME = {"\$s","\$s",}	File names of all the L0 data used for	MORNING OF EVENING
	Spacecraft time	<u>SC_TIME_CORRECTION_FILE_NAME = {*\$s",*\$s",}</u>	creating L2A File names of all the spacecraft time	
	correction file		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 name	ATTITUDE_DATA_FILE_NAME = { "%s", "%s",}	File names of all the attitude data files used for creating L2A	
	Revolution number file name	REVOLUTION_NUMBER_FILE_NAME = {"%s","%s",}	File names of all the revolution number files used for creating L2A	
	HK mission file name	HK_MISSION_FILE_NAME = {"%s","%s",}	File names of all the mission instrument HK files used for creating	
	SPICE kernel (SPK) file name	<pre>SPICE_SPK_FILE_NAME = {"%s","%s",}</pre>	L2A File names of all the SPICE kernel (SPK) files used for creating L2A	
	SPICE kernel (Pck) file name	<pre>SPICE_PCK_FILE_NAME = {"%s","%s",}</pre>	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	<pre>SPICE_LSK_FILE_NAME = {"%s","%s",}</pre>	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 "Terra 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	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the upper left	"Day" or "Night"
	daytime flag Upper right daytime flag	OPPER_RIGHI_DATIIME_FLAG = -48-	pixel and the upper right pixel of the image	
	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	<ul> <li>ON/OFF of each of 5 powers (TC1, TC2,</li> </ul>	
	Detector status	{"TCl:%s","TC2:%s","MV:%s","MN:%s","SP:%s"}	MI-VIS, MI-NIR, SP) in this scene center	
	Exposure mode ID	EXPOSURE_MODE_ID = "%s"	Exposure mode ID	"LONG", "MIDDLE", "SHORT"
	Spacecraft clock start count (TI)	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Spacecraft clock count at the 1st line (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	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	Corrected spacecraft clock count at the 1st line (TI)	
	start count (TI) Corrected	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec></sec>	Corrected spacecraft clock count at the	
	spacecraft clock stop count (TI)	START_TIME = %s	last line (İI)	WWW MM DDTHUS 9 / 22
	Start time (UT) Stop time (UT)	STOP_TIME = %s	Imaging time at the 1st line (UT) Imaging time at the last line (UT)	YYYY-MM-DDTHH:MM:SS.ssss YYYY-MM-DDTHH:MM:SS.ssss
	Corrected start time (UT)	CORRECTED_START_TIME = %s CORRECTED_STOP_TIME = %s	Corrected imaging time at the 1st line (UT)	YYYY-MM-DDTHH:MM:SS.ssss
	Corrected stop time (UT) Location flag	CORRECTED_STOP_TIME = %8 LOCATION_FLAG = "%s"	Corrected imaging time at the last line (UT) Spacecraft location information	YYYY-MM-DDTHH:MM:SS.ssss "A": Ascending
	Location flag	TOCHITOW_FING = -48.	Spacecraft location information	A: Ascending "D": Descending "N": When containing the imag time which changes from ascending to the descending "S": When containing the imag time which changes from 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	INCIDENCE_ANGLE = %7.3f <deg> EMISSION_ANGLE = %7.3f <deg></deg></deg>	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 = %1.31 <deg></deg>	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	
	Line exposure duration Line sampling	LINE_EAPOSURE_DURATION = %10.61 <msec></msec>	Designed value of sampling interval	
	interval Corrected	CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec>	Sampling interval corrected by dividing	
	corrected sampling interval		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

direction		1	"-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	
percentage mean		Mean compression percentage in the scene	
Data compression percentage maximum	DATA_COMPRESSION_PERCENT_MAX = %5.1f	Maximum compression percentage in the scene	
Data compression percentage	DATA_COMPRESSION_PERCENT_MIN = %5.1f	Minimum compression percentage in the scene	
minimum 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 First pixel	SWATH_MODE_ID = "%s" FIRST_PIXEL_NUMBER = %d	Name of the swath mode Detector number of the first sample	"NOMINAL", "FULL" or "HALF"
number Last pixel	LAST_PIXEL_NUMBER = %d	pixel Detector number of the last sample	
number Spacecraft	SPACECRAFT_ALTITUDE = %8.3f <km></km>	pixel Spacecraft altitude from the Moon	
altitude Spacecraft	SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km>	radius at the 1st line Spacecraft ground speed at the 1st line	
ground speed TC1 telescope	TC1_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC1 telescope temperature at the 1st	
temperature TC2 telescope	TC2_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	line TC2 telescope temperature at the 1st	
temperature DPU temperature	DPU_TEMPERATURE = %6.2f <degc></degc>	line DPU temperature at the 1st line	
TM temperature	TM_TEMPERATURE = %6.2f <degc></degc>	TM temperature at the 1st line	
TM radiator temperature	TM_RADIATOR_TEMPERATURE = %6.2f <degc> OBJECT = IMAGE</degc>	TM radiator temperature at the 1st line	
Encoding type	OBJECT = IMAGE 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	Terr - non compression
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 = "%s"	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	
	MAX_FOR_STATISTICAL_EVALUATION = %d	Maximum DN for statistical evaluation	
Maximum DN for statistical evaluation		Maximum Divior Statistical Condition	
statistical evaluation Scene maximum	SCENE_MAXIMUM_DN = %d	Maximum DN in this image	When the population of the im- evaluation is 0, value is set to -1
statistical evaluation	SCENE_MAXIMIM_DN = %d SCENE_MINIMIM_DN = %d		evaluation is 0, value is set to -1. When the population of the im
statistical evaluation DN Scene minimum DN Scene standard average DN	SCENE_MAXIMIM_DN = %d SCENE_MINIMIM_DN = %d SCENE_AVERAGE_DN = %6.1f	Maximum DN in this image Minimum DN in this image Average DN in this image	evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1.
statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN	SCENE_MAXIMIM_DN = %d SCENE_MINIMIM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f	Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image	evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1.
statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN	SCENE_MAXIMIM_DN = %d SCENE_MINIMIM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %d	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	evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1.
statistical evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Scene standard	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATION_THRESHOLD = %d	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	evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the is evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_FIXELS = %d	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	evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1. When the population of the im evaluation of 0, value is set to -1. When the population of the im evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels	SCENE_MAXIMUM_EN = %d SCENE_MINIMUM_EN = %d SCENE_AVERAGE_EN = %6.1f SCENE_STDEV_EN = %6.1f SCENE_MODE_EN = %d SATURATED_FIXELS = %d SATURATED_FIXEL_POSITION = ((%d,%d),(%d,%d),)	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	evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the total number of satura pixels is 0, value is set to "NA"
statistical evaluation DN Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation Saturated pixels Saturated pixels Saturated pixels Saturated pixels	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ((%d,%d),(%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d	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         Percentage of saturated pixels	evaluation is 0, value is set to -1. When the population of the ima- evaluation is 0, value is set to -1. When the population of the ima- evaluation is 0, value is set to -1. When the population of the ima- evaluation is 0, value is set to -1. When the population of the ima- evaluation is 0, value is set to -1. When the population of the ima- evaluation is 0, value is set to -1. When the total number of saturat pixels is 0, value is set to ~NA*
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels	SCENE_MAXIMEM_DN = %d SCENE_MINIMEM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_FIXELS = %d SATURATED_FIXEL_POSITION = ((%d,%d),(%d,%d),) SATURATED_FIXEL_PERCENTAGE = %d DEAD_FIXEL_THRESHOLD = %d	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel detection	evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- preds is 0, value is set to -1. When the total number of satura- pixels is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ((%d,%d),(%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel detection         Total number of saturated pixels         Image coordinates of saturated pixels         Threshold DN for dead pixel detection         Total number of dead pixels	evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- preds is 0, value is set to -1. When the total number of satura- pixels is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Dead pixels	SCENE_MAXIMUM_EN = %d SCENE_MINIMUM_EN = %d SCENE_AVERAGE_EN = %6.1f SCENE_STDEV_EN = %6.1f SCENE_STDEV_EN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ((%d,%d),(%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXELS = %d	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel detection	evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1. When the total number of satura pixels is 0, value is set to -1. When the total number of satura pixels is 0, value is set to -1. When the total number of satura pixels is 0, value is set to -1. When the total number of satura pixels is 0, value is set to -1. When the population of the im- evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels	SCENE_MAXIMEM_EN = %d SCENE_MINIMEM_EN = %d SCENE_AVERAGE_EN = %6.1f SCENE_STDEV_EN = %d.1f SCENE_MODE_EN = %d SATURATED_FIXELS = %d SATURATED_FIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_FIXEL_PERCENTAGE = %d DEAD_FIXEL_TERESHOLD = %d DEAD_FIXEL_FOSITION = ( (%d,%d), (%d,%d),)	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel detection         Total number of saturated pixels         Image coordinates of saturated pixels         Threshold DN for dead pixel detection         Total number of dead pixels         Image coordinates of dead pixels	evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the set a number of satura pixels is 0, value is set to -1. When the set to 'NA' When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard Average DN Scene standard deviation DN Scene mode DN Scene mode DN Sturation Saturated pixels Saturated pixels Dead	<pre>SCENE_MAXIMEM_DN = %d SCENE_MINIMEM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_S = %d DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_PERCENTAGE = %d</pre>	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 threshold DN for saturated pixels Image coordinates of saturated pixels Percentage of saturated pixels Threshold DN for dead pixels Threshold DN for dead pixels Image coordinates of dead pixels Percentage of dead pixels Percentage of dead pixels Percentage of dead pixels Minimum DN for shadowed pixel Maximum DN for shadowed pixel	evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the set a number of satura pixels is 0, value is set to -1. When the set to 'NA' When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Sturation Saturated pixel Saturated pixel position Saturated pixel percentage Dead pixel Dead pixel Dead pixel Dead pixel Stadowed area minimum Shadowed area	<pre>SCENE_MAXIMEM_DN = %d SCENE_MINIMEM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %d.1f SCENE_MODE_DN = %d SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_PERCENTAGE = %d SHADOWED_AREA_MINIMUM = %d</pre>	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel         Percentage of saturated pixels         Image coordinates of dead pixels         Threshold DN for dead pixel         Percentage of dead pixels         Image coordinates of dead pixels         Image coordinates of dead pixels         Percentage of dead pixels         Image coordinates of dead pixels         Percentage of dead pixels         Minimum DN for shadowed pixel	evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturated pixels Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Stadowed area Shadowed area maximum	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %d.1f SCENE_STDEV_DN = %d SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = %d DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_PIXEL_POSITION = %d SHADOWED_AREA_MINIMUM = %d SHADOWED_AREA_MINIMUM = %d SHADOWED_AREA_PERCENTAGE = %d END_OBJECT = IMAGE	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel         Percentage of saturated pixels         Image coordinates of dead pixels         Threshold DN for dead pixel         Percentage of dead pixels         Image coordinates of dead pixels         Image coordinates of dead pixels         Minimum DN for shadowed pixel         Maximum DN for shadowed pixel	When the population of the ima evaluation is 0, value is set to -1. When the population of the ima evaluation is 0, value is set to -1. When the population of the ima evaluation is 0, value is set to -1. When the population of the ima evaluation is 0, value is set to -1. When the total number of saturat pixels is 0, value is set to -NA <sup>*</sup> When the population of the ima evaluation is 0, value is set to -1. When the total number of saturat pixels is 0, value is set to -1. When the total number of saturat pixels is 0, value is set to -1.
statistical evaluation DN Scene maximum DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Sturation Saturated pixel Saturated pixel position Saturated pixel percentage Dead pixel Dead pixel Dead pixel Dead pixel Stadowed area minimum Shadowed area	SCENE_MAXIMUM_EN = %d SCENE_MINIMUM_EN = %d SCENE_AVERAGE_EN = %6.1f SCENE_STDEV_EN = %6.1f SCENE_STDEV_EN = %d.1f SCENE_MODE_EN = %d SATURATED_FIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_FIXEL_POSITION = ( (%d,%d), (%d,%d),) SATURATED_FIXEL_PERCENTAGE = %d DEAD_FIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_FIXEL_POSITION = ( (%d,%d), (%d,%d),) DEAD_FIXEL_PERCENTAGE = %d SHADOWED_AREA_MAXIMUM = %d SHADOWED_AREA_PERCENTAGE = %d	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 pixels         Image coordinates of saturated pixels         Percentage of saturated pixels         Threshold DN for dead pixel         Percentage of saturated pixels         Image coordinates of dead pixels         Threshold DN for dead pixel         Percentage of dead pixels         Image coordinates of dead pixels         Image coordinates of dead pixels         Minimum DN for shadowed pixel         Maximum DN for shadowed pixel	evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the total number of satural pixels is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1. When the population of the ims evaluation is 0, value is set to -1.

PDS label common items		item name	description form	Explanation	Value
moor common items					
		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 +	CINDEPINED INEd
		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	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
		Head position of image object	1900 - Vide (Dillo)	Head position of the image object	
Product information	File attributes	· · · · · · · · · · · · · · · · · · ·		1	
		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)
			PROCESS_VERSION_ID = "%s"	PDS product	
		Processing level	FROCESS_VERSION_ID = %5	Processing level ID	"L3D": DTM/TC ortho, DTM mos and TC ortho mosaic "MAP": DTM map and TC ort
		Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	map YYYY-MM-DDTHH:MM:SSZ
	Product				
	attributes	Producer ID	PRODUCER_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	FRODUCT_SET_ID = "\$s"	Product set ID	<sup>1</sup> DTM, TCOrtho: DTMTC ortho DTM, MAP: TDTM map "TCOrtho, MAP: TC ortho map "DTM, TCOrtho, S: DTM/TC or (special product) "DTM, MAP, S': DTM map (spee product) "TCOrtho, MAP, S': TC ortho n (special product) "DTM, MSC: DTM mosaic (spee product) "TCOrtho, MSC: TC ortho mos (special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	Scene attributes				
	accipates	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	INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Instrument ID Latitude at center of the upper-left corner	"TC" -90 to 90
		Upper left latitude		pixel of the image that contains dummy pixels	
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at 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 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_LATITUDE = %10.6f <deg> IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg></deg>	Latitude at the center pixel of the image	-90 to 90 0 to 360
		Image center longitude Location flag	LOCATION_FLAG = "%s"	Longitude at the center pixel of the image Spacecraft location information	Ar: Ascending "Dr: Descending "Nr: When containing the imag time which changes from ascending to the descending "S: When containing the imag time which changes from 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	moon and the sun			
	mormation		OBJECT = IMAGE_MAP_PROJECTION		
	mormation	Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or
	mormation	Map projection Coordinate system type Coordinate system		Name of the map projection Type of the coordinate system Full name of the coordinate system	"Stereographic", "Lambert Conformal" or "Transverse Mercator"
		Coordinate system type Coordinate system name	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Type of the coordinate system Full name of the coordinate system	"Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixe "PLANETOCENTRIC" fixed
	mormaton	Coordinate system type Coordinate system	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km></km></km>	Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon	"Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed 1737.4 <km> default 1737.4 <km> default</km></km>
		Coordinate system type Coordinate system name A axis radius	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km></km>	Type of the coordinate system Full name of the coordinate system A axis radius of the Moon	"Steriographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixe "PLANETOCENTRIC" fixed 1737.4 <km> default 1737.4 <km> default 1737.4 <km> default 0.0 to 90 for "Lambert Conform</km></km></km>
		Coordinate system type Coordinate system name A axis radius B axis radius C axis radius C axis radius First standard parallel Second standard	MAP_FROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km></km></km></km>	Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon C axis radius of the Moon First standard parallel	"Steroographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "I737.4 -KMA default I737.4 -KMA default I737.4 -KMA default I737.4 -KMA default I737.4 -KMA default I737.6 - Tambert Conform projection -90 to 90 for "Lambert Conform projection
		Coordinate system type           Coordinate system name           A axis radius           B axis radius           Caxis radius           First standard parallel           Second         standard parallel           Positive         longitude	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_MXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel	"Steroographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixe "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed 1737.4 - KMS default 1737.4 - KMS default 1737.4 - KMS default 1737.4 - KMS default 1737.4 - KMS default 1737.6 - To reach the second second second second second plant second se
		Coordinate system type           Coordinate system name           A axis radius           B axis radius           C axis radius           First standard parallel           Second         standard	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg></deg></deg></km></km></km>	Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon C axis radius of the Moon C axis radius of the Moon First standard parallel Used for "Lambert Conformal" projection. Second standard parallel Used for "Lambert Conformal" projection. Positive direction of longitude Latitude at the origin in a given	"Steriographic", "Lambett Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" faxe "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 - KM> default 1737.4 - KM> default 0.90 to 90 for "Lambett Conform projection "N/A" for other map projection
		Coordinate         system type           Coordinate         system name           A axis radius         E           B axis radius         Caxis radius           C axis radius         E           First standard parallel         Second           Second         standard           Positive         longitude           direction         Center latitude	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.5f <km> E_AXIS_RADIUS = %8.5f <km> C_AXIS_RADIUS = %8.5f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> POSITIVE_LONGITUDE_DIRECTION = "%s" CENTER_LATITUDE = %10.6f <deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP_PROJECTION_TYPE	"Steriographic", "Lambert Conformal" or "Transverse Mercator" "PODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 - KM> default 1737.4 - KM> default -90 to 90 for "Lambert Conform projection "NA4" for other map projection "EAST" fixed -90 to 90
		Coordinate system type           Coordinate system name           A axis radius           B axis radius           C axis radius           First standard parallel           Second         standard           positive         longitude           Center latitude           Center longitude	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.5f <km> B_AXIS_RADIUS = %8.5f <km> C_AXIS_RADIUS = %8.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP_PROJECTION_TYPE           Longitude at the origin in a given           MAP_PROJECTION_TYPE           Longitude at the origin in a given	"Steriographic", "Lambett Conformal" or "Transverse Mercator" "PODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 - KM> default 1737.4 - KM> default -90 to 90 for "Lambert Conform projection "NA4" for other map projection "EAST" fixed -90 to 90 0 to 360
		Coordinate system type Coordinate system system name A axis radius C axis radius C axis radius C axis radius First standard parallel Second standard parallel Second standard parallel Positive longitude direction Center latitude Center longitude	MAP_PROJECTION_TYPE = *%s* COORDINATE_SYSTEM_TYPE = *%s* COORDINATE_SYSTEM_NAME = *%s* A_MIIS_RADIUS = %8.3f <km> B_MIIS_RADIUS = %8.3f <km> C_MIIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <kdeg> SECOND_STANDARD_PARALLEL = %10.6f <kdeg> POSITIVE_LONGITUDE_DIRECTION = *%s* CENTER_LATITUDE = %10.6f <kdeg> REFERENCE_LATITUDE = %10.6f <kdeg></kdeg></kdeg></kdeg></kdeg></km></km></km>	Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon C axis radius of the Moon C axis radius of the Moon First standard parallel Used for "Lambert Conformal" projection. Second standard parallel Used for "Lambert Conformal" projection. Positive direction of longitude Latitude at the origin in a given MAP_PROJECTION_TYPE Zero latitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE	"Steriographic", "Lambert Conformal" or "Transverse Mercator" "PODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 - KM> default 1737.4 - KM> default -90 to 90 for "Lambert Conform projection "NA4" for other map projection "EAST" fixed -90 to 90
		Coordinate system type           Coordinate system name           A axis radius           B axis radius           C axis radius           First standard parallel           Second         standard           positive         longitude           Center latitude           Center longitude	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.5f <km> B_AXIS_RADIUS = %8.5f <km> C_AXIS_RADIUS = %8.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP PROJECTION TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION. TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP respondent to a spherical coordinate system that was used in a spherical coordinate system that wasu	"Steriographic", "Lambett Conformal" or "Transverse Mercator" "PODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 - KM> default 1737.4 - KM> default -90 to 90 for "Lambert Conform projection "NA4" for other map projection "EAST" fixed -90 to 90 0 to 360
		Coordinate system type Coordinate system system name A axis radius C axis radius C axis radius C axis radius First standard parallel Second standard parallel Second standard parallel Positive longitude direction Center latitude Center longitude	MAP_PROJECTION_TYPE = *%s* COORDINATE_SYSTEM_TYPE = *%s* COORDINATE_SYSTEM_NAME = *%s* A_MIIS_RADIUS = %8.3f <km> B_MIIS_RADIUS = %8.3f <km> C_MIIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <kdeg> SECOND_STANDARD_PARALLEL = %10.6f <kdeg> POSITIVE_LONGITUDE_DIRECTION = *%s* CENTER_LATITUDE = %10.6f <kdeg> REFERENCE_LATITUDE = %10.6f <kdeg></kdeg></kdeg></kdeg></kdeg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP_PROJECTION_TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE           Line number of the upper end pixel of the origin of the upper end pixel of the origin of the upper end pixel of the system that was used in a given MAP_PROJECTION_TYPE	"Steroographic", "Lambert Conformal" or "Transwerse Mercator" "BODY-FIXED ROTATING" fixe "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed "1737.4 -KMs default 1737.4 -KMs default 1737.4 -KMs default 1737.4 -KMs default 1737.4 -KMs default 1737.4 -KMs default 1737.6 ro ther map projection "N/A" for other map projection "EAST fixed -90 to 90 0 to 300 "N/A" fixed
		Coordinate system type           Coordinate system name           A æks radius           B æks radius           C æks radius           First standærd parallel           Second           standærd parallel           Octive           Dogitive           direction           Center longitude           Reference latitude           Reference latitude           First line number	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %s.5f <km> D_AXIS_RADIUS = %s.5f <km> C_AXIS_RADIUS = %s.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LONDITUDE = %10.6f <deg> REFERENCE_LONDITUDE = %10.6f <deg> LINE_FIRST_FIXEL = %d</deg></deg></deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP PROJECTION TYPE           Longitude at the origin in a given           MAP PROJECTION TYPE           Zero latitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION TYPE           Zero latitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION TYPE           Lare longitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION TYPE           Lare longitude in a protated spherical coordinate system that was used in a given MAP PROJECTION TYPE	"Steroographic", "Lambet Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLONED ROTATING" fixed "I737.4 -KMS default 1737.4 -KMS defa
		Coordinate system type           Coordinate         system type           Coordinate         system type           A acks radius         B           Z acks radius         First standard parallel           First standard parallel         Second           Second         standard parallel           Positive         longitude           Center longitude         Reference latitude           Reference longitude         Reference latitude           First line number         Last line number	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %s.5f <km> B_AXIS_RADIUS = %s.5f <km> C_AXIS_RADIUS = %s.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LANDITUDE = %10.6f <deg> CENTER_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> LINE_FIRST_PIXEL = %d LINE_LAST_PIXEL = %d</deg></deg></deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP PRODECTION TYPE           Zoro latitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION TYPE           Zoro longitude in a rotated spherical coordinate system that was used in a given MAP PROJECTION TYPE           Line number of the upper end pixel of the linage	"Steroographic", "Lambet Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "IDOV-FIXED ROTATING" fixed IT37.4KMS default IT37.4KMS default IT37.4K
		Coordinate system type           Coordinate system name           A æks radius           B æks radius           C æks radius           First standærd parallel           Second           standærd parallel           Octive           Dogitive           direction           Center longitude           Reference latitude           Reference latitude           First line number	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %s.5f <km> D_AXIS_RADIUS = %s.5f <km> C_AXIS_RADIUS = %s.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> CENTER_LATITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LONDITUDE = %10.6f <deg> REFERENCE_LONDITUDE = %10.6f <deg> LINE_FIRST_FIXEL = %d</deg></deg></deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP_PROJECTION_TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE           Line number of the lower end pixel of the lingage           Line number of the lower end pixel of the lingage           Line number of the lower end pixel of the lingage	"Steroographic", "Lambet Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLONED ROTATING" fixed "I737.4 -KMS default 1737.4 -KMS defa
		Coordinate system type           Coordinate         system type           Coordinate         system type           A acks radius         B           Z acks radius         First standard parallel           First standard parallel         Second           Second         standard parallel           Positive         longitude           Center longitude         Reference latitude           Reference longitude         Reference latitude           First line number         Last line number	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %s.5f <km> B_AXIS_RADIUS = %s.5f <km> C_AXIS_RADIUS = %s.5f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LANDITUDE = %10.6f <deg> CENTER_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> LINE_FIRST_PIXEL = %d LINE_LAST_PIXEL = %d</deg></deg></deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           C axis radius of the Moon           C axis radius of the Moon           First standard parallel           Used for "Lambert Conformal" projection.           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP_PROJECTION_TYPE           Zero longitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE           Line number of the lower end pixel of the linage           Line number of the lower end pixel of the linage           Sample number of the lower end pixel of the linage           Sample number of the lower end pixel of the linage	"Steroographic", "Lambett Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixee "PLANETOCENTRIC" fixed 1737.4KMA default 1737.4KMA default -90 to 90 r" Lambert Conform rolection -NA for other map projection -WA for other map project
		Coordinate system type Coordinate system system name A axis radius C axis radius C axis radius First standard parallel First standard parallel Second standard parallel Positive iongitude direction Center longitude Center longitude Reference latitude Reference latitude First line number Last line number First sample number	MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.5f <km> P_AXIS_RADIUS = %8.5f <km> C_AXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg> SECOND_STANDARD_PARALLEL = %10.6f <deg> CENTER_LANDITUDE_DIRECTION = "%s" CENTER_LANDITUDE = %10.6f <deg> CENTER_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> REFERENCE_LANDITUDE = %10.6f <deg> LINE_FIRST_PIXEL = %d LINE_FIRST_PIXEL = %d</deg></deg></deg></deg></deg></deg></deg></km></km></km>	Type of the coordinate system           Full name of the coordinate system           A axis radius of the Moon           B axis radius of the Moon           C axis radius of the Moon           Second standard parallel           Used for "Lambert Conformal" projection.           Positive direction of longitude           Latitude at the origin in a given           MAP PROJECTION, TYPE           Longitude is at the origin in a given           MAP PROJECTION, TYPE           Zero longitude in a rotated spherical coordinate system that vase used in a given MAP PROJECTION, TYPE           Late number of the upper end pixel of the limage           Line number of the lower end pixel of the limage	"Steroographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixee "PLANETOCENTRIC" fixed 1737.4KMs default 1737.4KMs default -90 to 90 for "Lambert Conform projection - 'NA' for other map projection - 'NA' for other map projection - 'Staff fixed - 'N/A' fixed 1 fixed

Table 2.1-8 Items of PDS Label (Quality Flag File)

1	1	I	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	
	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		Logicul Sull
Processing parameter description				
		OBJECT = PROCESSING_PARAMETERS		
	Parameter set name	PARAMETER_SET_NAME = "%s"	Name of processing parameter set	TBD
Image		END_OBJECT = PROCESSING_PARAMETERS		
information	· · · · · · · · · · · · · · · · · · ·			
		OBJECT = IMAGE BANDS = %d		
	Bands Band storage type	BANDS = %d BAND_STORAGE_TYPE = "%s"	Total number of bands in this image Storage sequence of lines, samples, and	1 fixed "BAND_SEQUENTIAL" fixed
	Dalid storage type		bands in this image	BAND_SEQUENTIAL IMED
	Band name	BAND_NAME = "%s"	Spectral range(s) associated with each band in single-band or multi-band data	"N/A" fixed
	Lines	LINES = %d	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
	Sample type	SANFLE_IIFE - 45	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 = %s	Active bits in a sample	2#11111111#: 8 bits 2#11111111111111111#: 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#0000001#;"DEFECT PIXEL"), (2#00000010#;"SATURATED PIXEL"), (2#0000000#;"SAHADOW PIXEL"), (2#01000000#;"BAD PIXEL"), (2#01000000#;"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	
1				
	Slope threshold of bad pixel	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	Slope angle threshold to extract the bad pixel from the DTM	
		BAD_FIXEL_THRESHOLD_SLOPE = %f <deg> END_OBJECT = QUALITY_INFO END</deg>		

Category		Item	Description form	Explanation	Value
PDS label common items			Description form	Explanation	
a contraction of the second		PDS version ID	PDS_VERSION_ID = "%s"	PDS version ID	"PDS3" fixed
		File record type File name	RECORD_TYPE = "%s" FILE_NAME = "%s"	File record type File name of this product (product ID +	"UNDEFINED" fixed
			-	extension)	
		Product ID Data file format	PRODUCT_ID = "%s" DATA_FORMAT = "%s"	Unique ID given to every product Data file format ID	"PDS" fixed
		ID ID		Data me for like 1D	
Object position specification		Head position of	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
<b>B</b> 1	701	image object		p of the image object	
Product information	File attributes				
		Software name	SOFTWARE_NAME = "%s"	Name of software that created the	TBD
		Software version	SOFTWARE_VERSION = "%s"	DTM PDS product Version of software that created the	"n.n.n" (TBD)
				DTM PDS product	
		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	PRODUCT_CREATION_TIME = %s	Product creation time	map YYYY-MM-DDTHH:MM:SSZ
	Product	time			
	attributes				
		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
		TARKI Set ID			"DTM_MAP": DTM map "TCOrthe MP": TC ortho map "DTM_TCOrthe_MP": TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrthe_MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special product) "TCOrthe_MSC": TC ortho mesaic (special product)
		Product version	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" ~ "99"
		ID Base L2A data file	BASE_LEVEL2A_FILE_NAME = "%s"	L2A data file name of the base image	
		name		used for creating DTM	
		Reference L2A data file name	REFERENCE_LEVEL2A_FILE_NAME = {"%s","%s",}	L2A data file names of all reference images were used for creating DTM	
		SPICE kernel file	SPICE_SPK_FILE_NAME = {"%s","%s",}	All SPICE kernel (SPK) names used	İ
		name (SPK) SPICE kernel file	<pre>SPICE_PCK_FILE_NAME = {"%s","%s",}</pre>	for creating DTM / ortho product All SPICE kernel (Pck) names were	
		name (PcK)		used for creating DTM / ortho product	
		SPICE kernel file name (IK)	SPICE_IK_FILE_NAME = {"%s","%s",}	All SPICE kernel (IK) names used for creating DTM / ortho product	
		SPICE kernel file	SPICE_CK_FILE_NAME = {"%s","%s",}	All SPICE kernel (CK) names used	İ
		name (CK) SPICE kernel file	SPICE_SCLK_FILE_NAME = {"%s","%s",}	for creating DTM / ortho product All SPICE kernel (SCLK) names used	
		name (SCLK)		for creating DTM / ortho product	
		SPICE kernel file name (LSK)	SPICE_LSK_FILE_NAME = {"%s","%s",}	All SPICE kernel (LSK) names used for creating DTM / ortho product	
	Scene				
	attributes	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE-M" fixed
		Data set ID Instrument name	DATA_SET_ID = "%s" INSTRUMENT_NAME = "%s"	This data set ID Full name of instrument	TBD "Terrain_Camera"
		Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	"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	-90 to 90
				dummy pixels	0 - 000
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-left corner pixel of the image	0 to 360
		-	HDDER RICHT LATITIDE - \$10 65 cdocs	that contains dummy pixels	00.400
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the upper-right corner pixel of the image	-90 to 90
			UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	that contains dummy pixels	0 to 260
		Upper right longitude	OFFER_RIGHT_DONGTIODE = %10.01 (deg)	Longitude at the center of the upper-right corner pixel of the image	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	that contains dummy pixels	00 to 00
		Lower left latitude		Latitude at the center of the lower-left corner pixel of the image that contains	-90 to 90
		Lower left	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	dummy pixels Longitude at the center of the	0 to 360
		longitude		lower-left corner pixel of the image	0.0000
		Lower right	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	that contains dummy pixels Latitude at the center of the	-90 to 90
		latitude		lower-right corner pixel of the image	
		Lower right	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	that contains dummy pixels	0 to 360
				Longitude at the center of the	
		longitude		lower-right corner pixel of the image	0.0000
1		Image center	IMAGE_CENTER_LATITUDE = %10.6f <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	-90 to 90
		Image center latitude		lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image	-90 to 90
		Image center latitude Image center longitude	<pre>IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg></pre>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image	-90 to 90 0 to 360
		Image center latitude Image center longitude Location flag		lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the	-90 to 90
		Image center latitude Image center longitude Location flag Distance between	<pre>IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg></pre>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 380 "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
		Image center latitude Image center longitude Location flag	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = *%s*</deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 380 "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
	Map projection	Image center latitude Image center longitude Location flag Distance between the Moon and the	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = *%s*</deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 380 "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
	Map projection information	Image center latitude Image center longitude Location flag Distance between the Moon and the	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = *%s* MOON_SUN_DISTANCE = %d <km></km></deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 380 "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
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = *%s*</deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 300 "A": Ascending "D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": Which changes from the descending to the ascending
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION</km></deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 300 "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 "Simple Cylindrical", "Stareographic",
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"</km></deg>	lower-right corner pixel of the image that contains dummy pixels       Latitude at the center pixel of the image       Longitude at the center pixel of the image       Spacecraft location information	-90 to 90 0 to 300 "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 "Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator"
	projection	Image         center           Intude         Image         center           Image         center         center           longitude         Location flag         image           Distance         between         the Moon and the Sun           Map projection         Goordinate system         image	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION</km></deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Spacecraft location information	-90 to 90 0 to 380 "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 "Simple Cylindrical". "Stareographic".
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"</km></deg>	lower-right corner pixel of the image that contains dummy pixels       Latitude at the center pixel of the image       Longitude at the center pixel of the image       Spacecraft location information	-90 to 90 0 to 300 "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 "Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator"
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system name	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAD_FROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s"</km></deg>	lower-right corner pixel of the image that contains dummy pixels         Latitude at the center pixel of the image         Longitude at the center pixel of the image         Spacecraft location information         Distance between the Moon and the Sun         Map projection         Type of the coordinate system         Full name of the coordinate system	-90 to 90 0 to 300 "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 "Simple Cylindrical", "Ster orgaphic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AAIS_RADIUS = %8.3f <km> B_AMIS_RADIUS = %8.3f <km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels is Latitude at the center pixel of the image Spacecraft location information Distance between the Moon and the Sun Map projection Type of the coordinate system Full name of the coordinate system A axis radius of the Moon	-90 to 90 0 to 300 "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 "Simple Cylindrical", "Steroographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATINC" fixed "PLANETOCENTRIC" fixed 1732.4 <km> default</km>
	projection	Image center Intude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system name A axis radius B axis radius	IMAGE_CENTER_LONGITUDE = %10.6f <deg> ILOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km></km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image Dongitude at the center pixel of the image Spacecraft location information Distance between the Moon and the Sun Map projection Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon	-90 to 90 0 to 380 "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 "Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed 1737.4 <km> default 1737.4 <km> default</km></km>
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system name A axis radius	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AAIS_RADIUS = %8.3f <km> B_AMIS_RADIUS = %8.3f <km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels. Latitude at the center pixel of the image Dongitude at the center pixel of the image Spacecraft location information Distance between the Moon and the Sun Map projection Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon E casis radius of the Moon First standard parallel Used for "Lambert Conformal"	-90 to 90 0 to 380 "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 "Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed 1737.4 -KM- default 1737.4 -KM- default -90 to 99 for "Lambert Conformal" projection
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system Type Type Type Coordinate system Type Type Type Type Type Type Type Type	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AAIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AMIS_RADIUS = %8.3f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels         Latitude at the center pixel of the image         Longitude at the center pixel of the image         Spacecraft location information         Distance between the Moon and the Sun         Distance between the Moon and the Sun         Map projection         Type of the coordinate system         Full name of the coordinate system         A axis radius of the Moon         Casts radius of the Moon         First standard parallel         Used for "Lambert Conformal"	-90 to 90 0 to 300 "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 "Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATINC" fixed "PLANETOCENTRIC" fixed 1737.4 - KM> default 1737.4 - KM> defaul
	projection	Image center latitude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system Type Type Type Type Type Coordinate Type Type Type Type Type Type Type Typ	IMAGE_CENTER_LONGITUDE = %10.6f <deg> ILOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AXIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AXIS_RADIUS = %8.3f <km></km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels is Latitude at the center pixel of the image Dongitude at the center pixel of the image Distance between the Moon and the Sun Distance between the Moon and the Sun Map projection Type of the coordinate system Full name of the coordinate system A axis radius of the Moon B axis radius of the Moon C axis radius of the Moon C axis radius of the Moon First stadues of the Moon C costs radius of the Moon Second standard parallet Used for "Lambert Conformal"	-90 to 90 0 to 90 0 to 300 "A: Ascending "D: Descending "N: When containing the imaging time which changes from the ascending to the ascending "S: When containing the imaging time which changes from the descending to the ascending "Starcegraphic" "Starcegraphic" "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed "PLANETOCENTRIC" fixed 1737.4 -KM- default 174.4 -KM- default 174.4 -KM- default 1757.4 -KM- default 1757.4 -K
	projection	Image center Intude Image center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system name A axis radius B axis radius C axis radius First standard parallel	IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = "%s" MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s" COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s" A_AAIS_RADIUS = %8.3f <km> B_AXIS_RADIUS = %8.3f <km> C_AMIS_RADIUS = %8.3f <km> PIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km></km></km></km></deg>	lower-right corner pixel of the image that contains dummy pixels         Latitude at the center pixel of the image         Longitude at the center pixel of the image         Spacecraft location information         Distance between the Moon and the Sun         Map projection         Type of the coordinate system         Full name of the Moon         B axis radius of the Moon         C axis radius of the Moon         First standard parallel         Used for "Lambert Conformal" projection	-90 to 90 0 to 380 "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 "S: When containing the imaging time which changes from the descending to the ascending "Simple Cylindrical", "Stereographic", "Jambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed 1737.4 <km> default 1737.4 <km> default 1737.4 <km> default 1737.4 <km> default -90 to 90 for "Lambert Conformal" projection "N/A' for other map projections</km></km></km></km>

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

	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	"N/A" fixed
			coordinate system that was used in a given MAP_PROJECTION_TYPE	
	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 <pixel deg=""></pixel>	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	MAP_SCALE = %f <km pixel=""></km>	Actual distance, in km, between two points at the origin in a given MAP_PROJECTION_TYPE	
	Maximum	MAXIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the northernmost pixel in 4 corner pixels	-90 to 90
	latitude Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the	-90 to 90
	Easternmost	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	southernmost pixel in 4 corner pixels Longitude at the center of the	0 to 360
	longitude Westernmost	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	easternmost pixel in 4 corner pixels Longitude at the center of the	0 to 360
	longitude Line projection offset	LINE_PROJECTION_OFFSET = %f	westernmost pixel in 4 corner pixels Map projection coordinates, in pixels, at the center of the upper-left corner	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	pixel of this image Map projection coordinates, in pixels, at the center of the upper-left corner	
	Resampling	RESAMPLING_METHOD = "%s"	pixel of this image Image resampling method	"Nearest Neighbor", "Bi linear"
	method			"Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing parameter description		END_OBJECT = IMAGE_MAP_PROJECTION		
	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	
	Effic file name	EFFIC_FILE_NAME = "%s"	name Coefficient file name of temperature dependency correction of	
	Non-linearity file	NONLIN_FILE_NAME = "%s"	File name of non-linearity correction	
	name Radiance	RAD_CNV_COEF = %f	coefficient Radiance conversion coefficient	
	conversion	END_OBJECT = PROCESSING_PARAMETERS	[W/m2/micron/sr]	
Image				
Image information	Bands	OBJECT = IMAGE BANDS = %d	Total number of bands in this image	1 fixed
	Bands Band storage type		Total number of bands in this image Storage sequence of lines, samples, and bands in this image	1 fixed "BAND_SEQUENTIAL" fixed
		BANDS = %d	Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each	
	Band storage type Band name Lines	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d	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	"BAND_SEQUENTIAL" fixed
	Band storage type Band name	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s"	Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or
	Band storage type Band name Lines Line samples Sample type	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d	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	"BAND_SEQUENTIAL" fixed "N/A" fixed
	Band storage type Band name Lines Line samples Sample type Sample bits	BANDS = %d BAND_STORMES_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIMES SAMPLES = %d SAMPLE_TYPE = "%s"	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	*BAND_SEQUENTIAL* fixed *N/A* fixed *MSB_INTEGER* (DTM) or *MSB_UNSIGNED_INTEGER* (TC ortho)
	Band storage type Band name Lines Line samples Sample type	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = *%s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s*	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 jukes in a line Image data type Total number of bits used to store one	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho 8 or 16
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 bipels 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	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = *%s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s*	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 jubels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (IC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 241111111.* 8 bits
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 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:	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 pixels in a line Image data type Meaning of the value of the pixel Meaning of the value of the pixel Offset value used in the DN for physical quantity conversion DI'M and D'IM map: Elevation = DN'SCALING FACTOR+OFFSET	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 pixels in a line Meaning of the value of the pixel Meaning of the value of the pixel Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation = DN*SCALINC_FACTOR+OFFSET Unit is "meters" from the Moon radius.	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 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 DIM map: Elevation = DN*SCALING_FACTOR+OFFSET Unit is "meters" from the Moon	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 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_SM=COFF): Radiance = OFFSET	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 bites 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 Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation radius: Rediarce = DN*SCALING_FACTOR+OFFSET Unit is 'meters' from the Moon radiuse = DN*SCALING_FACTOR+OFFSET Unit is 'wm2' m/sr' TC ortho map (REF_CNV_SW='ON'): Reflectivity =	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits mask Offset	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	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 bites in this image Total number of bites line 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 IDM and DTM map: Elevation radius: CALING_FACTOR+OFFSET Unit is 'meters' from the Moon radius (EF_CNV_SW='OFF'): Reflaree = DN'SCALING_FACTOR+OFFSET Unit is 'wm2' µrws' TC ortho map (REF_CNV_SW='ON'): Reflectivity DN'SCALING_FACTOR+OFFSET Unit is 'wm2' µrws'	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" or
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LIMES = %d LIMES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f	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 bites in this image Total number of bites line 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 Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation Total number of bits used to store one data set of the total of the total DN*SCALING, FACTOR+OFFSET Unit is 'meters' from the Moon rate of the and TC or tho map (GEF_CNV_SW='OFF'): Radiance DN*SCALING, FACTOR+OFFSET Unit is 'wm2/ urws' TC ortho map (REF_CNV_SW='ONY) = DN*SCALING, FACTOR+OFFSET Unit is 'wm2/ urws' TC and used in the DN for physical quantity conversion	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_UNTECER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#1111111111111116: 16 bits 2#111111111111116: 16 bits
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits mask Offset	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIMES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s" SAMPLE_BIT_MASK = %s OFFSET = %f	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 Meaning of the value of the store one data sample value Meaning of the value of the pixel Offset value used in the DN for physical quantity conversion DI'M and DTM map: Elevation DI'M and DTM map: Elevation TC ortho and TC ortho map (REF_CNV_SW=CAF)= DN'SCALING_FACTOR+OFFSET Unit is 'wm621 µm'sr' TC ortho map (REF_CNS_SW='ON'): Reflectivity TC ortho map (REF_CNS_SW='ON'): Reflectivity Cain used in the DN for physical	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" or "ELEVATION" 8 bits
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIMES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s"	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 bites in this image Total number of bites 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 Total numer of bits used to store one radius, and TC or tho map (REF_CNV_SW=OFF): Reflares = DN*SCALING_FACTOR+OFFSET Unit is "wm2/µ wirs" TC ortho map (REF_CNV_SW='OFF): Reflares = DN*SCALING_FACTOR+OFFSET Unit is "wm2/µ wirs" TC ortho map (REF_CNV_SW='OFF): Reflectivity Gain used in the DN for physical quantity conversion	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#11111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_STORAGE_TYPE = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s" SAMPLE_BIT_MASK = %s" SAMPLE_BIT_MASK = %s" VALUE_FACTOR = %f STRETCHED_FLAG = "%s" VALUE_FACTOR = %d	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 and the sequence of the sequence of the sequence 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: Evention = 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 "were's provided provided DN*SCALING, FACTOR-OFFSET Unit is "were's provided provided Comparison of the the the second to the second provided provided provided Galan 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 Indicates the dummy (blank) pixel of	"BAND_SEQUENTIAL" fixed "N/A" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNECER" (DTM) or "MSB_UNECER" (DTM) or "IS (UNSIGNED_INTEGER" (TC ortho) 2#11111111 (S bits) 2#111111111 (S bits) 2#1111111111 (S bits) 2#1111111111 (S bits) "FALSE" fixed -9988: DTM 2: TG ortho 3:266 fixed -9999: DTM
	Band storage type Band name Lines Line samples Sample bits Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation	BANDS = %d BAND_STORE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAS = "%s" VALUE_NININEM = %d VALUE_MININEM = %d	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 data sympe 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: Evention 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 "wine?" TC ortho and RC orthor physical quantity conversion DN*SCALING, FACTOR-OFFSET Unit is "wine?" Color and REF_CNV_SW='OFF): Radiance DN*SCALING, FACTOR-OFFSET Unit is "wine?" Calm 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 Indicates the dummy (blank) pixel of the image Indicates the minimum saturation	"BAND_SEQUENTIAL" fixed "NIA" fixed "NIA" fixed "MSB_INTECER" (DTM0 or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "TON", "RADIANCE", or "ELEVATION" 2#11111111111111#: 8 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits "FALSE" fixed "FALSE" fixed
	Band storage type Band name Lines Line samples Sample bits Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Low saturation	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_DITS = %d SAMPLE_DITS = %d INAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = %f VALUD_FACTOR = %f VALUD_MINIMUM = %d UNAUL_MINIMUM = %d DUMMY = %d	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 data sympe 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: Evention = 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 "wine'p miss" TC ortho and RC orthor physical quantity conversion DN*SCALING_FACTOR+OFFSET Unit is "wine'p miss" TC ortho and RC orthor band (REF_CNV_SW='OFF): Radiance = DN*SCALING_FACTOR+OFFSET Unit is "wine'p miss" TC orthor and read to abject has been stretched to make it easy to see Minimum value that is valid for a data object Indicates the dummy (blank) pixel of the image Indicates the minimum saturation Indicates the minimum saturation Indicates the minimum saturation	"BAND_SEQUENTIAL" fixed "N/A" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFELECTANCE", or "ELEVATION" 2#1111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#11111111111#: 2 bits 2#11111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111111#:  2 bits 2#1111111111111#: 2 bits 2#1111111111111#: 2 bits 2#111111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111111#: 2 bits 2#11111111111#: 2 bits 2#111111111#: 2#1111111#: 2#11111#: 2#111111#: 2#1111#: 2#1111#: 2#1111#: 2#111#: 2#1111#: 2#1111#: 2#
	Band storage type Band name Lines Line samples Sample bits Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (INSTR) High saturation	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAKE = *%s* LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d INAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = *%s* VALUD_MAINEMN = %d DUMMY = %d LOW_REPR_SATURATION = %d	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 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: Evention = 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 "wine's miss" TC ortho and RC orthor- SCALING, FACTOR-OFFSET Unit is "wine's miss" TC ortho and RC orthors = DN*SCALING, FACTOR-OFFSET Unit is "wine's miss" TC ortho and RC orthors of the solution and the solution of	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_UNTECER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "ELEVATION" 2#11111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits "TALSE" fixed -9989: DTM 2: TC ortho 1 fixed
	Band storage type Band name Lines Line samples Sample bits Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Low saturation (REPR) High saturation (REPR)	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIMES SAMPLES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DUMMY = %d LOW_REPR_SATURATION = %d	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 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: Evention = 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 "wine?" meters" TC ortho and RC orthor physical quantity conversion DN*SCALING_FACTOR-OFFSET Unit is "wine?" meters DN*SCALING_FACTOR-OFFSET Unit is "wine?" meters DN*SCALING_FACTOR-O	"BAND_SEQUENTIAL" fixed "N/A" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "TON", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 2#1111111111111#: 8 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits "FALSE" fixed "FALSE" fixed "RefLectance", or "C or tho 1 fixed 1 fixed
	Band storage type Band name Lines Line samples 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)	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DUMMY = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	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 and the sequence of the sequence of the sequence 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: Evention = 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 "wind" µ mise" TC ortho map (REF_CNV_SW='OFF): Radiance in the DN for physical quantity conversion DN*SCALING_FACTOR-OFFSET Unit is "wind" µ mise" TC ortho map (REF_CNV_SW='ONF): Reflectivity = DN*SCALING_FACTOR-OFFSET Unit is "wind" µ mise" TC ortho map (REF_CNV_SW='ONF): Reflectivity = DN*SCALING_FACTOR-OFFSET Unit is "wind" µ mise" TC ortho map (REF_CNV_SW='ONF): TO index the the is valid for a data object Indicates the dummy (blank) pixel of the image Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction	"BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_UNECEER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 2#111111111111111111111111111111111111
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Low saturation (REPR) High saturation (INSTR) High saturation (INSTR)	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIME_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DUMEY = %d LOW_REPR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	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 bites in this image Total number of bites in a thin Image data type Total number of bites 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 TC orths and proceeding of the pixel DN'SCALING, FACTOR+OFFSET Unit is 'meters' from the Moon radius. TC orths and (C orths map Rediares = DN'SCALING, FACTOR+OFFSET Unit is 'meters' from the Moon radius. TC orths and (REF, CNV_SW='ON'): Reflectivity was' TC orths map (REF, CNV_SW='ON'): Reflectivity on was' TC orths map (REF, CNV_SW='ON'): Reflectivity on was' TC orths and pixet has been stretched to make it easy to see Minimum value that is valid for a data object Indicates the minimum saturation pixel after radiometric correction Indicates the maximum saturation pixel after radiometric correction	"BAND_SEQUENTIAL" fixed "NIA" fixed "NIA" fixed "MSB_INTECER" (DTM0 or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "TON", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 2#11111111111111#: 16 bits 2#1111111111111#: 16 bits "FALSE" fixed "FALSE" fixed "Index statement of the statem
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) Low saturation (REPR) High saturation (INSTR) High saturation (INSTR)	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LIMES = %d LIME_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DUMEY = %d LOW_REPR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	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 and the sequence of the sequence of the sequence 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: Evention = 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 "wind" µ mise" TC ortho map (REF_CNV_SW='OFF): Radiance in the DN for physical quantity conversion DN*SCALING_FACTOR-OFFSET Unit is "wind" µ mise" TC ortho map (REF_CNV_SW='ONF): Reflectivity = DN*SCALING_FACTOR-OFFSET Unit is "wind" µ mise" TC ortho map (REF_CNV_SW='OFF): In the sequence of the sequence of the sequence Minitude on the ND for physical quantity conversion object has been Writchen to take it easy to see Minitude that is valid for a data object Indicates the dummy (blank) pixel of the image Indicates the minimum saturation pixel after radiometric correction Indicates the minimum saturation pixel after radiometric correction	"BAND_SEQUENTIAL" fixed         "N/A" fixed         "MSB_INTEGER" (DTM) or         "MSB_INTEGER" (DTM) or         "MSB_INTEGER" (DTM) or         "MSB_UNENCINED_INTEGER"         (TC ortho)         8 or 16         "DN". "RADIANCE".         "REFLECTANCE". or         "ELEVATION"         2#111111111111111111111111111111111111

	Standard deviation	STDEV = %f	Standard deviation in this image except the invalid pixels	When the total number of val pixels is 0, the value of DTM is s to -9999 and the value of the T ortho is set to -1.
	Mode pixel	MODE_PIXEL = %d	Mode in this image except the invalid pixels	When the total number of val pixels is 0, the value of DTM is s to -9999 and the value of the T ortho is set to -1.
L2A data ation		END_OBJECT = IMAGE		
	L2A file name	OBJECT = SOURCE_L2A_DATA_INFO FILE NAME = "%s"	File name of theL2A product	
	L2A creation time	PRODUCT_CREATION_TIME = %s	L2A product data creation time	YYYY-MM-DDTHH:MM:SSZ
	Execution count Illumination	EXECUTION_COUNT = %d ILLUMINATION_CONDITION = "%s"	Execution count of the L2A product Illumination condition	"MORNING" or "EVENING"
	condition L0 file name		File names of all the L0 data used for	
		SC_TIME_CORRECTION_FILE_NAME = { *\$s*,*\$s*,}	creating L2A	
	Spacecraft time correction file	SC_IIME_CORRECTION_FILE_NAME - { %5 , %5 ,}	File names of all the spacecraft time correction files used for creating L2A	
	name Orbit data file	ORBIT_DATA_FILE_NAME = { "%s", "%s", }	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 file name HK mission file	HK_MISSION_FILE_NAME = { *%s*, *%s*,}	number files used for creating L2A File names of all the mission	
	name	inc)::::::::::::::::::::::::::::::::::::	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	SPICE_SCLK_FILE_NAME = { *%s*, *%s*, }	(CK) files used for creating L2A	
	SPICE kernel (SCLK) file name		File names of all the SPICE kernel (SCLK) files used for creating L2A	
	SPICE kernel (LSK) file name	<pre>SPICE_LSK_FILE_NAME = {"%s","%s",}</pre>	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	
ľ	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 "Terra
ŀ	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	
ľ	Scene sequence number	SCENE_SEQUENCE_NUMBER = %d	Scene number in the strip	
	Mission phase	MISSION_PHASE_NAME = "%s"	Mission phase name	"Nominal", "Option", etc.
	name 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_DESCRIPTION = "%s"		NORMAL OF SOFTORT
	Sensor Description		Sensor specifications	
	Sensor Description2	SENSOR_DESCRIPTION2 = "%s"	Spare sensor information	
	Detector status	DETECTOR_STATUS {"TC1:%s","TC2:%s","MV:%s","MN:%s","SP:%s"}	<ul> <li>ON/OFF of each of 5 power (TC1, TC2, MI-VIS, MI-NIR, SP) in this scene</li> </ul>	
	Exposure mode ID	EXPOSURE_MODE_ID = "%s"	center Exposure mode ID	"LONG", "MIDDLE", "SHORT"
ľ	Spacecraft clock start count (TI)	SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Spacecraft clock count at the 1st line (TI)	
	Spacecraft clock	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec>	Spacecraft clock count at the last line	
	stop count (TI) Corrected	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	(TI) Corrected spacecraft clock count at the	
	spacecraft clock start count (TI)		1st line (TI)	
	Corrected spacecraft clock	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec></sec>	Corrected spacecraft clock count at the last line (TI)	
	stop count (TI) Start time (UT)	START_TIME = %s	Imaging time at the 1st line (UT)	YYYY-MM-DDTHH:MM:SS.ssss
	Stop time (UT)	TOP_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.ssss YYYY-MM-DDTHH:MM:SS.ssss
	time (UT)		(UT)	
	Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	Corrected imaging time at the last line (UT)	YYYY-MM-DDTHH:MM:SS.ssss
	Location flag	LOCATION_FLAG = "%s"	Spacecraft location information	*A: Ascending "D: Descending "N: When containing the imag time which changes from ascending to the descending "S". When containing the imag time which changes from descending to the ascending
	Roll cant	ROLL_CANT = "%s"	Selection of nadir-view observation or roll-cant observation	"YES": roll-cant observation "NO": nadir-view observation
	Incidence angle Emission angle	INCIDENCE_ANGLE = %7.3f <deg> EMISSION_ANGLE = %7.3f <deg></deg></deg>	Incidence angle at the scene center Emission angle at the scene center	
	Phase angle	PHASE_ANGLE = %7.3f <deg> SOLAR AZIMUTH ANGLE = %7.3f <deg></deg></deg>	Phase angle at the scene center	
	angle		Solar azimuth angle at the scene center	
	Focal plane temperature	FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc>	Detector temperature at the 1st line	
	Telescope temperature	TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	Telescope temperature at the 1st line	
	Line exposure duration	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Line exposure duration	
	Line sampling interval	LINE_SAMPLING_INTERVAL = %10.6f <msec></msec>	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 struk just the number of lines	
	Satellite moving	SATELLITE_MOVING_DIRECTION = "%s"	of the strip into the number of lines Direction of satellite travel	"+1": lead of +x plane
	direction Otable ID	Q_TABLE_ID = "%s"	Qtable ID	"-1": lead of -x plane
			Huffman table ID	

1 1	Data compression	DATA_COMPRESSION_PERCENT_MAX = %5.1f	Maximum of compression percentage	I
	percentage maximum		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 First nixel	SWATH_MODE_ID = "%s" FIRST_PIXEL_NUMBER = %d	Name of the swath mode	"NOMINAL", "FULL" or "HALF"
	First pixel number	FIRST_FIRED_NORBER = WG	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></degc>	TM temperature at the 1st line	
	TM radiator temperature	TM_RADIATOR_TEMPERATURE = %6.2f <degc></degc>	TM radiator temperature at the 1st line	
	Encoding type	OBJECT = IMAGE ENCODING_TYPE = "%s"	Data encoding type	"DCT": DCT compression
	Encoding	ENCODING_COMPRESSION_PERCENT = %5.1f	Compression percentage of the image	"N/A": non-compression
	Encoding compression percentage	LACODING_COMPRESSION_FERCENI = 63.11	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 = "%s"	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 evaluation is 0, value is set to -1.
	Saturation threshold	SATURATION_THRESHOLD = %d	Threshold DN for saturated pixel detection	
	Saturated pixels	SATURATED_PIXELS = %d	Total number of saturated pixels	When the population of the image evaluation is 0, value is set to -1.
	Saturated pixel position	SATURATED_PIXEL_POSITION = ( (%d,%d), (%d,%d),)	Image coordinates of saturated pixels	When the total number of saturated pixel is 0, value is set to "N/A."
	Saturated pixel percentage	SATURATED_PIXEL_PERCENTAGE = %d	Percentage of saturated pixels	When the population of the image evaluation is 0, value is set to -1.
	Dead pixel threshold	DEAD_PIXEL_THRESHOLD = %d	Threshold DN for dead pixel detection	
	Dead pixels	DEAD_PIXELS = %d	Total number of dead pixels	When the population of the image evaluation is 0, value is set to -1.
	Dead pixel position	<pre>DEAD_PIXEL_POSITION = ( (%d,%d), (%d,%d),)</pre>	Image coordinates of dead pixels	
	Dead pixel percentage	DEAD_PIXEL_PERCENTAGE = %d	Percentage of dead pixels	When the population of the image evaluation is 0, value is set to -1.
	Shadowed area minimum	SHADOWED_AREA_MINIMUM = %d	Minimum DN for shadowed pixel detection	
	Shadowed area maximum	SHADOWED_AREA_MAXIMUM = %d	Maximum DN for shadowed pixel detection	
	Shadowed area percentage	SHADOWED_AREA_PERCENTAGE = %d	Percentage of shadowed pixels	When the population of the image evaluation is 0, value is set to -1.
		END_OBJECT = IMAGE		A.
<u> </u>		END_OBJECT = SOURCE_L2A_DATA_INFO		
		END	l	

# (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.

Image File	Bit	Format	Endian	Value
	Length			
DTM	16	signed short integer	big endian	
Quality Flag	8	unsigned char	-	Bitflag
				0000001: 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		

Table 2.1-10 Format of the Image Data Object

#### 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.

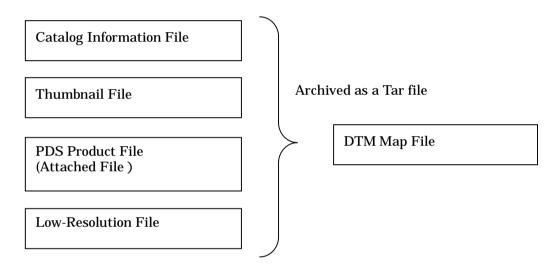


Fig. 2.2-1 Configuration of the DTM Map File

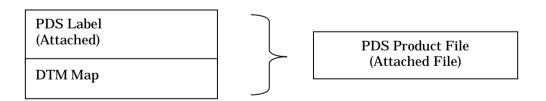


Fig. 2.2-2 Configuration of the PDS Product File of the DTM Map

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.

			(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	

Table 2.2-1 File-Naming Rules for DTM Map File

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	NNNNNNNNNN (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	Ν	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>		

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

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	yyyy-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.

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

Table 2.2-5 Specifications for the Thumbnail Files

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.

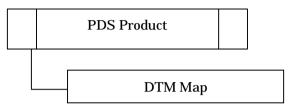


Fig. 2.2-3 Configuration of the DTM Map PDS Product File

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.

Category		Item	Description form	Explanation	Value
PDS label common items					
		PDS version ID	PDS_VERSION_ID = "%s" RECORD_TYPE = "%s"	PDS version ID	"PDS3" fixed "UNDEFINED" fixed
		File record type File name	FILE_NAME = "%s"	File record type File name of this product (product ID +	"UNDEFINED" fixed
		Product ID	PRODUCT_ID = "%s"	extension)	
		Data file format ID	DATA_FORMAT = "%s"	Unique ID given to every product Data file format ID	"PDS" fixed
Object position specification					
		Head position of image object	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File				
	attributes	Software name	SOFTWARE_NAME = "%s"	Ssoftware name that created the DTM PDS	TBD
			CONTRACTOR - I&-I	product	
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM PDS product	"n.n.n" (TBD)
		Processing level	<pre>PROCESS_VERSION_ID = "%s"</pre>	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"	Data producer ID	"LISM" fixed
		Product set ID	PRODUCT_SET_ID = "%s" PRODUCT_VERSION_ID = "%s"	Product set ID Product version ID	<sup>1</sup> DTM, TCOrths <sup>1</sup> : DTM/TC ortho 'DTM, MAP': DTM map 'TCOrtho, MAP': TC ortho map 'TCOrtho, SS': DTM/TC ortho (special product) 'DTM, MAP, SS': DTM map (special product) 'TCOrtho, MAP, SS': TC ortho map (special product) 'DTM, MSC': DTM mosaic (special product) 'TCOrtho, MSC': TC ortho mosaic (special product) 'DTO', 10°9'
	Scene	Product version ID	FRODUCT_VERSION_ID = %B	Product version ID	01 to 99
	attributes	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE-M" fixed
	1	Data set ID	DATA_SET_ID = "%s" INSTRUMENT NAME = "%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	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	image center longitude	Intel_childrenter = vie.or (deg)	Longitude at the center pixer of the image	0 10 300
	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	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
1	1	name		-	
	1	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</km></km>
		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 map projection
		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
	1	Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given	-90 to 90
	1	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	"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
	1	Th 11	LINE_FIRST_PIXEL = %d	MAP_PROJECTION_TYPE Line number of the upper end pixel of the image	1 fixed
		First line number		intige	
		Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the image	
		Last line number First sample number	SAMPLE_FIRST_PIXEL = %d	Line number of the lower end pixel of the image Sample number of the left end pixel of the image	1 fixed
		Last line number First sample number Last sample number	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image	
		Last line number First sample number Last sample number Map orientation angle	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_FROJECTION_ROTATION = %f <deg></deg>	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image Clockwise rotation of the line and sample coordinates with respect to the map projection origin	0.0 fixed
		Last line number First sample number Last sample number Map orientation angle Map resolution	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_PROJECTION_ROTATION = %f <deg> MAP_RESOLUTION = %f <pixel deg=""></pixel></deg>	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image Clockwise rotation of the line and sample 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 Simple Cylindrical Projection	0.0 fixed
		Last line number First sample number Last sample number Map orientation angle Map resolution Map scale	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_RROJECTION_ROTATION = %f <deg> MAP_RESOLUTION = %f <pixel deg=""> MAP_SCALE = %f <km pixel=""></km></pixel></deg>	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image Clockwise rotation of the line and sample coordinates with respect to the map projection origin Total number origin Total number origin a box area of 1-degree latitude x 1-degree longitude for Simple Cylindrical Projection Actual distance, in km, between two points at the origin in a given MAP_PROJECTION_TYPE	0.0 fixed "N/A" is given when MAP_PROJECTION_TYPE is not "Simple Cylindrical".
		Last line number First sample number Last sample number Map orientation angle Map resolution	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_REJECTION_ROTATION = %f <deg> MAP_RESOLUTION = %f <pixel deg=""> MAP_SCALE = %f <km pixel=""> MAXIMUM_LATITUDE = %10.6f <deg></deg></km></pixel></deg>	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image Clockwise rotation of the line and sample 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 Simple Cylindrical Projection Actual distance, in km, between two points at the origin in a given	0.0 fixed "N/A" is given when MAP_PROJECTION_TYPE is not
		Last line number First sample number Last sample number Map orientation angle Map resolution Map scale	SAMPLE_FIRST_PIXEL = %d SAMPLE_LAST_PIXEL = %d MAP_RROJECTION_ROTATION = %f <deg> MAP_RESOLUTION = %f <pixel deg=""> MAP_SCALE = %f <km pixel=""></km></pixel></deg>	Line number of the lower end pixel of the image Sample number of the left end pixel of the image Sample number of the right end pixel of the image Clockwise rotation of the line and sample 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 Simple Cylindrical Projection Actual distance, in km, between two points at the origin in a given MAP_PROJECTION_TYPE Latitude at the center of the northermonst	0.0 fixed "N/A" is given when MAP_PROJECTION_TYPE is not "Simple Cylindrical".

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

	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	pixel in 4 corner pixels 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	
		RESAMPLING_METHOD = "%s"	the center of the upper-left corner pixel of this image	
	Resampling method	KESAMPLING_MEINUD = -48.	Name of image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing		END_OBJECT = IMAGE_MAP_PROJECTION		
parameter description				
	Parameter set name	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
	Geometric correction method in the horizontal direction	HORIZONTAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the horizontal direction	"NON": no correction "PARALLEL": parallel shift "AFFINE": affine transformation "HELMERT": helm transformation "PSEUDO-AFFINE": pseudo-aff transformation
	Geometric correction method in the vertical direction	VERTICAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the vertical direction	"NON": no correction "OFFSET": offset correction "TREND": trend correction
	Mosaic priority	MOSAIC_PRIORITY = (*\$#*,\$f)	Values to decide the order of mossikking	Ist value "NON", file designation order "CENTER": from center outside TEW": from west to east "N-S": from north to south "S-N": from south to north "S-N": from south to south "S-N": All the S-N - S-N
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	"SUN_PHASE_ANGLE".
Image information		END_OBJECT = PROCESSING_PARAMETERS		
intor macion	Bands	OBJECT = IMAGE BANDS = %d	Total number of builds to this to an	1 fixed
	Band storage type	BAND_STORAGE_TYPE = "%s"	Total number of bands in this image Storage sequence of lines, samples, and bands in this image	"BAND_SEQUENTIAL" fixed
	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	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"
		SAMPLE_BITS = %d	Total number of bits used to store one data	(TC ortho) 8 or 16
	Sample bits	SAMPLE_BIIS = %d		0.01.10
	Sample bits Meaning of pixel value	IMAGE_VALUE_TYPE = "%s"	sample value Meaning of the value of the pixel	"DN", "RADIANO
	Meaning of pixel value	IMAGE_VALUE_TYPE = "%s"	sample value Meaning of the value of the pixel	"DN", "RADIANO "REFLECTANCE" "ELEVATION"
			sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical	"DN", "RADIANO "REFLECTANCE"
	Meaning of pixel value Sample bit mask	IMAGE_VALUE_TYPE = *\$s* SAMPLE_BIT_MASK = \$s	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 "inter" from the Moonradius. TREF CNV_SW="OFF"): Radiance DN*SCALING_FACTOR-OFFSET Unit is "wm2µ m/sa" TC ortho map (REF_CNV_SW="ON"): Reflectivity DN*SCALING_FACTOR+OFFSET DN*SCALING_FACTOR+OFFSET DN*SCALING_FACTOR+OFFSET DN*SCALING_FACTOR+OFFSET DN*SCALING_FACTOR+OFFSET DN*SCALING_FACTOR+OFFSET	"DN", "RADIANO "REFLECTANCE" "ELEVATION" 2#1111111#: 8 bits
	Meaning of pixel value Sample bit mask	IMAGE_VALUE_TYPE = *\$s* SAMPLE_BIT_MASK = \$s	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*ScALINGE*FCTOR+OFFSET That and TC ortho may form radius. TC for the may fCF CVR+OFFSET Unit is "wm2 µ m/sr" Reflectivity Reflectivity Cafn used in the DN for physical quantity	"DN", "RADIANO "REFLECTANCE" "ELEVATION" 2#11111111#: 8 bits
	Meaning of pixel value Sample bit mask Offset	IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	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 'mater' from the Monoradius. TREF_CNV_SW*OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is 'w(m2) µm/se' Conversion DN*SCALING_FACTOR+OFFSET Unit is '%(m2) µm/se' Cain used in the DN for physical quantity conversion Whether a data object has been stretched	"DN", "RADIANO "REFLECTANCE" "ELEVATION" 2#1111111#: 8 bits
	Meaning of pixel value Sample bit mask Offset Scaling factor	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f	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*SCAINE*F from the Monradius. This is meter from the Monradius. REFE_CNV_SW*TOFF): Rediance DN*SCAING_FACTOR+OFFSET Unit is "wm2µ m/sa" Conversion DN*SCAING_FACTOR+OFFSET Unit is "wm2µ m/sa" 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	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#11111111:8 B hts 2#1111111111:11 111111:11:10 bits 2#111111111111111:11:10 bits 7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.
	Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s'	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*SCALINE*FACTOR+OFFSET Unit is 'meter' from the Moonradius. TREFC EVN_SW*OFF'): Rediance DN*SCALING_FACTOR+OFFSET Unit is 'w(m2) µm/sr' Cont map (REF_CNV_SW='OK'): Reflectivity 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	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#1111111#: 8 bits 2#11111111#: 16 bits "FALSE" fixed
	Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s' VALUD_MINIMUM = %d	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 'mater' from the Moonradius. TC GTC artho map RET_NTC or tho map RET_NTC or tho map RET_UNIC SALING_FACTOR+OFFSET Unit is 'wm2 µ m/sa' Can used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Mnirmum value that is valid for a data object Value that indicates the dummy (blank)	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#11111111:8 B bits 2#11111111111111111:16 bits "FALSE" fixed -9889: DTM 2: TC ortho
	Meaning of pixel value Sample bit mask Offset Staling factor Stretched flag Valid minimum Valid maximum	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s' VALUE_MINIMUM = %d VALUE_MAXIMEM = %d	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*SCALINC_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF'): Radiance = = DN*SCALINC_FACTOR+OFFSET Unit is "win2' µm'xy' TC ortho map (REF_CNV_SW='ON'): Reflectivity = DN*SCALINC_FACTOR+OFFSET Unit is "%" Cain used in the DN for physical quantity conversion Whsther a data object has been stretched to make it easy to save Minimum value that is valid for a data object	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#11111111#: 8 bits 2#11111111#: 8 bits 2#11111111111111#: 16 bits 2#11111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111#: 16 bits 2#11111111#: 16 bits 2#11111111#: 16 bits 2#11111111#: 16 bits 2#1111111#: 16 bits 2#111111#: 16 bits 2#111111#: 16 bits 2#111111#: 16 bits 2#111111#: 16 bits 2#11111#: 16 bits 2#11111#: 16 bits 2#11111#: 16 bits 2#1111#: 16 bits 2#111#: 16 bits 2#111#: 16 bits 2#111#: 16 bits 2#111#: 16 bits 2#111#: 16 bits 2#111#: 16 bits 2#11#: 16 b
	Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s' VALUE_MINIMUM = %d VALUE_MAXIMUM = %d DUBMY = %d	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 Moonradius. TC Grin wad 'C or tho map REFRAUN=OFFSET UNIT is "wm?up mms? Continue of in the DN for physical quantity conversion UNit is "%" Cain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Mnimum value that is valid for a data object Value that indicates the dummy (blank) pixel of the image Mnimum value that in this image except the	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#11111111: 8 bits 2#111111111: 11 11111: 16 bits 2#111111111111111: 16 bits 2#1111111111: 16 bits 2#111111111: 16 bits 2#111111111: 16 bits 2#111111111: 16 bits 2#111111111: 16 bits 2#11111111: 16 bits 2#11111111: 16 bits 2#111111111: 16 bits 2#111111111: 16 bits 2#1111111111: 16 bits 2#111111111111111111: 16 bits 2#1111111111: 16 bits 2#1111111111: 16 bits 2#111111111: 16 bits 2#111111111: 16 bits 2#1111111111: 16 bits 2#1111111111111111111111: 16 bits 2#11111111111111111111111111: 16 bits 2#11111111111111111111111111111: 16 bits 2#1111111111111111111111111: 16 bits 2#111111111111111111111111111111111: 16 bits 2#111111111111111111111111111111111111
	Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s' VALUE_MINIMUM = %d VALUE_MAXIMUM = %d DUMMY = %d	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 Moonradius. TC orthw and 'TC or tho map Rediatione DN*SCALING_FACTOR+OFFSET Unit is 'wm?UPAPOFFY: Redictivity a mise' Unit is 'wm?UPAPOFFY: 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 Value that indicates the dummy (blank) pixel of the image Minimum value in this image except the invalid pixels	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 2#11111111: 8 bits 2#111111111: 8 bits 2#1111111111111111: 16 bits 2#1111111111111111: 16 bits 2#11111111111111111: 16 bits 2#111111111111111: 16 bits 2#111111111111111: 16 bits 2#111111111111111: 16 bits 2#111111111111111: 16 bits 2#111111111111111: 16 bits 2#111111111111111: 16 bits 2#1111111111111111: 16 bits 2#111111111111111: 16 bits 2#1111111111111111: 16 bits 2#11111111111111111: 16 bits 2#11111111111111111: 16 bits 2#11111111111111111: 16 bits 2#111111111111111111: 16 bits 2#111111111111111111: 16 bits 2#111111111111111111111: 16 bits 2#111111111111111111111111: 16 bits 2#111111111111111111111111: 16 bits 2#1111111111111111111111111: 16 bits 2#111111111111111111111111111: 16 bits 2#111111111111111111111111111111: 16 bits 2#11111111111111111111111111111: 16 bits 2#111111111111111111111111111111111111
	Meaning of pixel value Sample bit mask Offset Stating factor Stretched flag Valid minimum Valid maximum Dummy Minimum Average Standard deviation	IMAGE_VALUE_TYPE = '%s' SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s' VALUD_MINIMUM = %d VALUD_MAXIMUM = %d DUMMY = %d MINIMUM = %d MINIMUM = %d AVERAGE = %f	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 in the Moon radius.           To ortho and TC ortho map (REF_CNV_SW=OFF):           Reference           Reference           Unit is "wm2µ µm's"           TC ortho map (REF_CNV_SW="ON"):           Reflectivity           Reflectivity           Call noce of in the DN for physical quantity conversion           DN*SCALING_FACTOR+OFFSET           Unit is "wm2 pi m's"           Cafn 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 dummy (blank) pixel of the image           Maximum value 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           Standard deviation in this image except the invalid pixels	"DN". "RADIANG "REFLECTANCE" "ELEVATION" 24111111111:8 bits 24111111111:8 bits 24111111111111111111:1 bits 24111111111111111111:1 bits 24111111111111111111111:1 bits 241111111111111111111:1 bits 24111111111111111111:1 bits 2411111111111111111:1 bits 241111111111111111:1 bits 241111111111111111:1 bits 241111111111111111:1 bits 2411111111111111111:1 bits 2411111111111111111:1 bits 241111111111111111111:1 bits 241111111111111111111:1 bits 24111111111111111111:1 bits 24111111111111111111111:1 bits 24111111111111111111111:1 bits 2411111111111111111111111:1 bits 24111111111111111111111111111111111111
	Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum Average	IMAGE_VALUE_TYPE = '%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = '%s" VALID_MINIMIM = %d VALID_MAXIMIM = %d MINIMIM = %d MINIMIM = %d AVERAGE = %f	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 or tho map (REF_CNV_SW='OFF): DN*SCALING_FACTOR+OFFSET Unit is 'wm2/µ m/se' TC ortho map (REF_CNV_SW='ON'): Reflectivity Cain used in the DN for physical quantity conversion DN*SCALING_FACTOR+OFFSET Unit is 'w' Cain used in the DN for physical quantity conversion Whether a data object has been stretched biject Maximum value that is valid for a data object Value that indicates the dummy (blank) pixel of the image Maximum value in this image except the invalid pixels Average value in this image except the invalid pixels	"DN". "RADIANC "REFLECTANCE" "ELEVATION" 2#11111111#: 8 bits 2#111111111#: 8 bits 2#111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits 2#1111111111111#: 16 bits 2#111111111111#: 16 bits 2#111111111111#: 16 bits 2#11111111111#: 16 bits 2#111111111#: 16 bits 2#111111111#: 16 bits 2#111111111#: 16 bits 2#111111111#: 16 bits 16 bits 9898 and the value of DTM s 9998 and the value of DTM s 9999 and the value of DTM s 9999 and the value of DTM s 9999 and the value of DTM s 9999 and the value of DTM s 500 bits is 0, the value of TM s 9999 and the value of DTM s 0 - 9999 and the value of DTM s 0 - 9999 and the value of DTM s 0 - 9999 and the value of DTM s 10 - 9999 and

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.

Tuble and i Specifications for the image bata object					
Image File	Bit	Format	Endian	Value	
	Length				
DTM Map	16	signed short integer	big endian		

Table 2.2-7 Specifications for the Image Data Object

### 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.

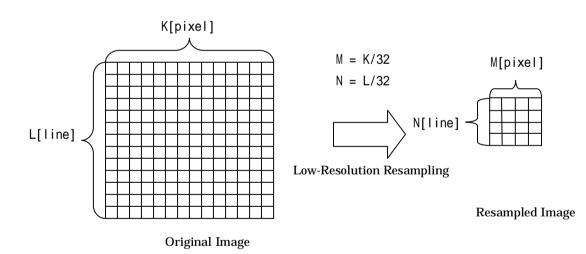


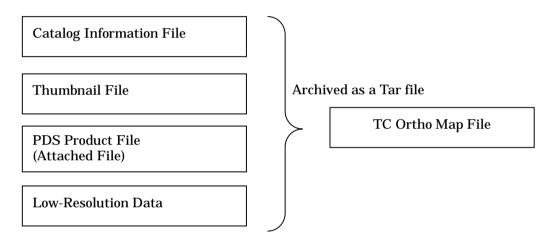
Fig. 2.2-5 Outline of Low-Resolution File Generation

### 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
- $\cdot$  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

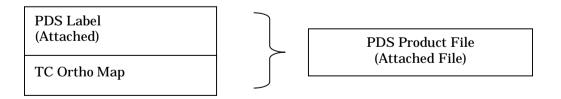


Fig. 2.3-2 Configuration of the PDS Product File of the TC Ortho Map

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.

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	

Table 2.3-1 File-Naming Rules for TC Ortho Map File (Exp. TCO\_MAP\_01\_N45E150N30E270SC.img)

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	NNNNNNNNNNN (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	NNNNNNNNNNNN (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 (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	Ν	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>	

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

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 2.3-4)
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	yyyy-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.

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

Table 2.3-5 Specifications for the Thumbnail Files

### 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.

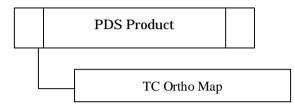


Fig. 2.3-3 Configuration of the TC Ortho Map PDS Product File

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.

Cotommu		Item	Items of PDS Label (For		Velue
Category PDS label common items			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 +	
		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 PDS	TBD
		Software version	SOFTWARE_VERSION = "%s"	product Software 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				
	attributes	Producer ID	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID		Product set ID	<sup>•</sup> DTM_TCortho <sup>•</sup> : DTM/TC ortho <sup>•</sup> DTM_MAP <sup>•</sup> : DTM map <sup>•</sup> TCOrtho_MAP <sup>•</sup> : TC ortho map <sup>•</sup> DTM_TCortho_S <sup>*</sup> : DTM/TC ortho <sup>(special</sup> product) <sup>•</sup> DTM_MAP_S <sup>*</sup> : DTM map (special product) <sup>•</sup> TCOrtho_MAP_S <sup>*</sup> : TC ortho map <sup>(special</sup> product) <sup>•</sup> DTM_MSC <sup>*</sup> : DTM mosaic (special product) <sup>•</sup> TCOrtho_MSC <sup>*</sup> : TC ortho mosaic (special product)
	Scene	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	attributes	Mission name	MISSION NAME = "%s"	Mission name	"SELENE" fixed
		Mission name Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE" fixed "SELENE-M" fixed
		Data set ID Instrument name	DATA_SET_ID = "%s" INSTRUMENT_NAME = "%s"	This data set ID Full name of the instrument	TBD "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 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	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 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	-90 to 90
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	corner pixel of the image that contains 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
		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		OBJECT = IMAGE_MAP_PROJECTION		
		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</km></km>
		C axis radius	C_AXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deq></deq></km>	C axis radius of the Moon	1737.4 <km> default</km>
		First standard parallel		First standard parallel Used for "Lambert Conformal" projection.	-90 to 90 for "Lambert Conformal" projection "N/A" for other map projections
		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 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	CENTER_LONGITUDE = %10.6f <deg> REFERENCE_LATITUDE = %10.6f <deg></deg></deg>	Longitude at the origin in a given MAP_PROJECTION_TYPE	0 to 360
		Reference latitude	REFERENCE_LATITUDE = %10.6f <deq></deq>	Zero latitude in a rotated spherical coordinate system that was used in a given MAP_PROJECTION_TYPE Zero longitude in a rotated spherical	"N/A" fixed "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	
		First line number Last line number	LINE_FIRST_PIXEL = %d LINE_LAST_PIXEL = %d	Line number of the upper end pixel of the image Line number of the lower end pixel of the	1 fixed
		First sample number	SAMPLE_FIRST_PIXEL = %d	image 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	
		Map orientation angle	MAP_PROJECTION_ROTATION = %f <deg></deg>	the 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>	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 MAD PROFECTION TYPE	"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
l			-	pixel in 4 corner pixels	

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

l I	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	pixel in 4 corner pixels 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	
	Resampling method	RESAMPLING_METHOD = "%s"	this image Image resampling method	"Nearest Neighbor",
	Resampling method		mage resampting method	"Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing parameter description		END_OBJECT = IMAGE_MAP_PROJECTION		
description	Description of the second	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the second second second second	TDD
	Parameter set name Radiance conversion	REF_CNV_SW = "%8"	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 condition for photometric correction	STANDARD_GEOMETRY = (%f,%f,%f)	Incidence angle, emission angle, and phase angle	is "OFF". "N/A" is given when REF_CNV_SW is "OFF".
	Photometric correction method	PHOTO_CORR_ID = "%s"	ID of the photometric correction method	"USGS" or "BROWN" "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 direction	HORIZONTAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the horizontal direction	"NON": no correction "PARALLEL": parallel shift "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 1st value "NON": file designation order
				"CENTER": from center to outside TEW": from west to east "N-S": 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, ELEVATION": small order of the difference between the sun phase angle and the 2nd value 20UN PH teS2 NNGLE". small order of the difference between "SUN, ELEVATION": 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 as the 2nd value when the 1st value is not "SUN, PLAVATION" . "SUN, AZIMUTH" or "SUN, AZIMUTH" or "SUN, AZIMUTH" or
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	SUN_FRASE_ANGLE .
Image	Smoothing width	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS	boundary between images of the	JUN_FRASE_ANGLE .
Image information		END_OBJECT = PROCESSING_PARAMETERS	boundary between images of the mosaicking	
	Smoothing width Bands Band storage type	END_OBJECT = PROCESSING_PARAMETERS	boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and	I fixed
	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	1 fixed
	Bands Band storage type Band name	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%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 dat	1 fixed "BAND_SEQUENTIAL" fixed
	Bands Band storage type Band name Lines Line samples	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 Total number of lines in this image	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed
	Bands Band storage type Band name Lines	END_OBJECT = PROCESSING_PARAMETERS ORJECT = IMAGE BANDS = %d BAND_STURKGE_TYPE = "%s" BAND_STURKGE_TYPE = "%s" LINES = %d LINES = %d 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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER"
	Bands Band storage type Band name Lines Line samples	END_OBJECT = PROCESSING_PARAMETERS ORJECT = IMAGE BANDS = %d BAND_STURKGE_TYPE = "%s" BAND_STURKGE_TYPE = "%s" LINES = %d LINES = %d 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 pixels in a line Image data type Total number of bixes to store one data	I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or
	Bands Band storage type Band name Lines Line samples Sample type	END_OBJECT = FROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STACKAG_TTPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d LINE_SAMFLES = %d SAMFLE_TTPE = "%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 Total number of lines in this image Total number of pixels in a line Image data type	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE".
	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_STORAGE_TYPE = "%s" BAND_LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%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 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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" or
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %ss" LINES = %d LINES = %d LINES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%s" 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 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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or
	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_STORAGE_TYPE = "%s" BAND_LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%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 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	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" or "ELEVATION"
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %ss" LINES = %d LINES = %d LINES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%s" 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 Storage negative sequence of lines, samples, and bands in this image Total number of pixels in a line Total number of pixels in a line 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 TGM map (REF_CNV_SW='OKPF): Reflectivity Tc ortho map (REF_CNV_SW='OKP): Reflectivity DN*SCALING_FACTOR+OFFSET Unit is 'wm2j µm/sr' Tc ortho map (REF_CNV_SW='OKP): Reflectivity DN*SCALING_FACTOR+OFFSET DN*SCALI	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2411111114: 8 bits
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %ss" LINES = %d LINES = %d LINES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d	boundary between images of the mosaicking Total number of bands in this image 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 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 TG mon paper (REF_CNV_SW='OKPTSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OKPTSET Unit is "wm21 µm/se" Cont used in the DN for physical quantity DN*SCALING_FACTOR+OFFSET Unit is "wm21 µm/se" Can used in the DN for physical quantity	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2411111114: 8 bits
	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = "%g" BAND_STORAGE_TYPE = "%g" BAND_NAME = "%g" LINES = %d LINES_SAMPLE_S = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d OFFSET = %f	boundary between images of the mosaicking Total number of bands in this image 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 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 TG mo map (REF_CNV_SW='OKPTSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OKPTSET Unit is "wm21 µm/se" DN*SCALING_FACTOR+OFFSET Unit is "wm21 µm/se" Caln used in the DN for physical quantity conversion Whetler a data object has been stretched	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2411111114: 8 bits
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = "%a" BAND_STORAGE_TYPE = "%a" BAND_MAME = %a" LINES = %d LINES_SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BITS = %d OFFSET = %f SCALING_FACTOR = %f	boundary between images of the mosaicking Total number of bands in this image 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 Total number of pixels 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 DTM map: Reliance GEF_CNV_SW='OFF'): Reliance Reliance BN*SCALING_FACTOR+OFFSET Unit is "%" Contension	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNSIGNED_INTECER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "LEVATION" 24111111111111111111111111111111111111
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = "%g" BAND_STORAGE_TYPE = "%g" BAND_NAME = %g " LINES = %d LINES = %d LINES_SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%g"	boundary between images of the mosaicking Total number of bands in this image 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 Total number of pixels in a line Image data type Total number of bixes in this image Total number of bixes in this image Total number of bixes in a line Image data type Total number of bixes 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: Refer CNV_SW='OKT'): Refer CNV_SW='OKT'): Refer CNV_SW='OKT': To ortho map (REF_CNV_SW='OKT'): Refer CNV_SW='OKT'): Refer CNV_SW='OKT': Contension Conversion Whether a data object has been stretched to make it eavy to see Minimum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTECER" (DTM) or "MSB_UNSIGNED_INTECER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "REFLECTANCE" or "RE
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Staling factor Stretched flag Valid minimum Valid maximum	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = "%g" BAND_STORAGE_TYPE = "%g" BAND_NAME = %g " LINES = %d LINES = %d LINES_SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%g" VALUE_MINIMUM = %d	boundary between images of the mosaicking Total number of bands in this image 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 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 map: Reflectivity Reflectivity Reflectivity Reflectivity Reflectivity Conversion Conversion Conversion DTM ScaLING_FACTOR+OFFSET Unit is "%" Cather of the DN for physical quantity conversion Whether a data object has been stretched to make it eavy to see Minimum value that is valid for a data object	I fixed     TAND_SEQUENTIAL* fixed     "NA" fixed     "NSB_INTEGER* (DTM) or     "MSB_UNSIGNED_INTEGER*     (TC ortha)     8 or 16     "DN", "RADIANCE",     "FEFLECTANCE" or     "EFLECTANCE" or     "LETENTIAL" & Bits     2#1111111111 # 8 Bits     2#111111111 # 8 Bits     "FALSE" fixed     "FALSE" fixed    9980: DTM     2: TC ortho
	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Staling factor Stretched flag Valid minimum	END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = "%g" BAND_STORAGE_TYPE = "%g" BAND_MAME = %g" LINES = %d LINES_SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d OFFSET = %f SCALING_PACTOR = %f STRETCHED_FLAG = "%g" VALUE_MINIMUM = %d VALUE_MAXIMUM = %d	boundary between images of the mosaicking Total number of bands in this image 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 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 SUM-OFFSET Unit is "smet" from the Moon radius. TC ortho and TC ortho map Rediame SUW-OFF): Reflectivity Reflectivity SUM-OFFSET Unit is "s%" 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 Value that indicates the dummy (blank) pixel of the image Value Conversion Value that indicates the minimum Saturation pixel after radiometric	I fixed     TAND_SEQUENTIAL* fixed     "NA" fixed     "NISB_INTEGER* (DTM) or     "MSB_UNSIGNED_INTEGER*     (TC ortha)     8 or 16     "DN", "RADIANCE",     "REFLECTANCE"     or     ZHININI # 8 bits     ##IIIIIIIII# 8 bits     ##IIIIIIIII# 8 bits     ##IIIIIIIII# 8 bits
	Bands Band storage type Band name Lines Line samples 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 BAND_STORAGE_TYPE = "%g" BAND_STORAGE_TYPE = "%g" BAND_NAME = %g = LINES = %d LINES_SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%g" SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%g" SAMPLE_BIT_MASK = %g OFFSET = %f SCALING_PACTOR = %f STRETCHED_FLAG = "%g" VALUD_MINIMUM = %d UNAGE_VALUE_YE = %d	boundary between images of the mosaicking Total number of bands in this image 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 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 physkal quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DTM and TOTM pape (REF_CNV_SW=OFF): Radiance Contant Corthon apa (REF_CNV_SW=OFF): Radiance DN*SCALINC_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho map (REF_CNV_SW=OV): Reflectivity DN*SCALINC_FACTOR+OFFSET Unit is "meter" adata object New that indicates the dummy (blank) pixel of the image Value that indicates the minimum saturation pixel during instrument	I fixed     TAND_SEQUENTIAL* fixed     "NA" fixed     "NSB_INTEGER* (DTM) or     "MSB_UNSIGNED_INTEGER*     (TC orthe)     8 or 16     "DN", "RADIANCE",     "REFLECTANCE" or     ELEVATION"     24111111111111111111111111111111111
	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset State of the sample	END_OBJECT = PROCESSING_PARAMETERS         ORIECT = IMAGE         BAND_STORAGE "TPE = "%s"         BAND_NAME = %s"         LINES = %d         LINES = %d         LINE_SAMPLES = %d         SAMPLE_BITS = %d         NAMELE_TYPE = "%s"         SAMPLE_BITS = %d         OFFSET = %d         SAMPLE_BITS = %d         SAMPLE_BITS = %d         OFFSET = %f         SCALING_FACTOR = %f         STRETCHED_FLAG = '%s"         VALID_MINIMEM = %d         VALID_MAXINEM = %d         DURMY = %d         LOW_REPE_SATURATION = %d	boundary between images of the mosaicking Total number of bands in this image 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 pixels in a line Image data type Total number of bixes 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*SCALINC_FACTOR+OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (Ref Levation ESUM-OFF): Reflectivity SUM-OFF): Reflectivity Conversion DN*SCALINC_FACTOR+OFFSET Unit is "%" C ontho map (REF_CNV_SW='ON"): Reflectivity 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 Value that indicates the minimum	1 fixed         "BAND_SEQUENTIAL" fixed         "N/A" fixed         "MSB_INTEGER" (DTM) or         "MSB_UNSCIND_INTEGER" (TC ortho)         8 or 16         "DN", "RADIANCE", "REFLECTANCE" or         "ELEVATION"         2#111111111111111111111111111111111111

			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.

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

Table 2.3-7 Specifications for the Image Data Object

### 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.

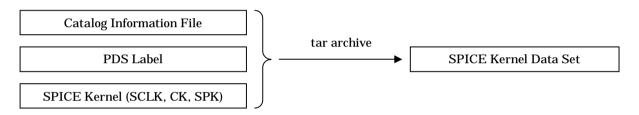


Figure 2-1 composition of the SPICE Kernel Data Set

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	СК

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

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

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

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		

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	

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

# 2.1 Catalog Information File

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

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	NNNNNNNNNNN (12 digits)	SPICE Kernel file size <byte></byte>	
Data File Format	DataFileFormat	AAAAAAAA (16 digits)	SCLK         :         SCLK <fixed>           CK         :         CK &lt; fixed &gt;           SPK         :         SPK &lt; fixed &gt;</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	Ν	N/A	
Start Date Time	StartDateTime	yyyy-mm-ddT hh:mm:ss.ssssssZ	Start Date and Time of the SPICE Kernel stored data	
End Date Time	EndDateTime	yyyy-mm-ddT hh:mm:ss.ssssssZ	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.

		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
	<b>D</b> 1 .	Mission name	MISSION_NAME = "%s"	"SELENE" <default></default>
	Product	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></default></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	

Table 2-6 PDS Label of SPICE Kernel Data Set

## 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 2-7Item 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.	
СК	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)