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

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

- Terrain Camera (TC)
- Multi band Imager (MI)
- · Spectral Profiler (SP)

*1 : Refer to the following "Project Homepage of KAGUYA" and "Image Gallery of KAGUYA" used for the LISM mission.

- Project Homepage for KAGUYA <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 Format*1
		TC_Morning_MAP	TC_Morning_MAP	MAP	А
		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
MS		SP_Level2C	SP_Level2C	TBD	А
TIG		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
[+]	Standard	Orientation of spacecraft	СК	СК	D
PICI		Spacecraft clock coefficients	SCLK	SCLK	D
S	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 quali TC_w_Level2A data: Map projection type of DTM and TC ortho is Simple Cylindrical for I Stereo for latitude of > 60°. Each pixel of TC ortho has radiance value.					
1	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.		
	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.		
LISN	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	P_Level2B1 A SP_Level2B1 product is made of multiple SP_Level 2A product is made of mu			
	SP_Level2B2	SP_Level2B2	A SP_Level2B2 product is extracted from a SP_Level2B1 product based on a TC/MI level 2 product acquired at the same time as SP. A browse image of TC/MI level 2A product used 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.
TISM	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.
	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
	Orientation of spacecraft	СК	SPICE karnel containing orientation of satellite relative to a specified reference frame
PICE	Spacecraft clock coefficients	SCLK	SPICE karnel containing spacecraft Clock Coefficients - Used for SCLK <> ET time conversions
SI	Long period spacecraft clock coefficients	LONG_SCLK	SPICE kernel containing spacecraft Clock Coefficients, converted from original SCLK for long time coverage. - Used for SCLK <> ET time conversions
	RISE Spacecraft trajectory	RISE_SPK	SPICE kernel containing ephemeris of Main Orbiter using the estimated lunar gravity model

:Map product

	Product Name	Product ID		Reference		
			Composition of the Data Set		Page.2 Page.3	Section 2.1 Figure 2.1-1
		TC_Morning_MA P TC_Evening_MA P	Rules used for File naming		Page.4	List 2.1-1
			Catalog Information File		Page.5 Page.6	Section 2.1.1 List 2.1-24
			Thumbnail File		Page.7	Section 2.1.2 List 2.1-5
	TC_Morning_MAP TC_Evening_MAP		PDS Product File		Page.8 Page.9 Page.10 Page.11,12 Page.13 Page.14	Section 2.1.3 Figure 2.1-2 Figure 2.1-3 Section 2.1.3 (1) List 2.1-6 Section 2.1.3 (2) List 2.1-7 Section 2.1.3 (3) List 2.1-8
			Low Resolution Data File		Page.15	Section 2.1.4 List 2.1-9
		MI-VIS_Level2B 2 MI-NIR_Level2B 2	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_Level2B2 MI-NIR_Level2B2		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
'SIM			Thumbnail File		Page.24	Section 2.2.2
I			PDS Label		Page.25 Page 26 27	Section 2.2.3 List 2.2-11
			PDS Product File		Page.28 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	Composition of the Data Set		Page.40 Page.41	Section 2.3 Figure 2.3-1
ILISM			Rules used for File naming	Appendix-1 LISM RGC Product Format Description -	Page.42	List 2.3-1
			Catalog Information File		Page.44 Page.45 Page.46	Section 2.3.1 List 2.3-3 List 2.3-4
	SP_Level2B1		PDS Product File		Page.48 Page.50 Page.51~55 Page.56 Page.57~60 Page.61	Section 2.3.3 Figure 2.3-3 Figure 2.3-4 Section 2.3.3 (1) List 2.3-6 Section 2.3.3 (2) List 2.3-7 Section 2.3.3 (3) List 2.3-8
			Composition of the Data Set		Page.40 Page.41	Section 2.3 Figure 2.3-2
			Rules used for File naming		Page.43	List 2.3-2
			Catalog Information File		Page.44 Page.45 Page.46	Section 2.3.1 List 2.3-3 List 2.3-4
	SP_Level2B2	SP_Level2B2	Thumbnail File		Page.47 Appendix1	Section 2.3.2 List 2.3-5
	SP_Level2C SP_Level2D	SP_Level2C SP_Level2D	PDS Product File		Page.48 Page.50 Page.51~55 Page.56 Page.57~60 Page.61	Section 2.3.3 Figure 2.3-3 Figure 2.3-4 Section 2.3.3 (1) List 2.3-6 Section 2.3.3 (2) List 2.3-7 Section 2.3.3 (3) List 2.3-8
	Others	Others	Original Resolution JPEG Image File *1		Page.62	Section 2.3.4 List 2.3-9
	:Map product					

^{*1 : &}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.10 Page.11~14 Page.15,16 Page.17~20 Page.21	Section 2.1.4 Fig 2.1-4 Fig 2.1-5 Section 2.1.4 (1) Table 2.1-7 Table 2.1-8 Table 2.1.9 Section 2.1.4 (2) Table 2.1-10
		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 LISM DTM / Ortho Product Format Description -	Page.23	Table 2.2-1
M	DTM_MAP_S		Catalog Information File		Page.24 Page.24,25 Page.25	Section 2.2.1 Table 2.2-2 Table 2.2-3 Table 2.2-4
LIS			Thumbnail File		Page.26	Section 2.2.2 Table 2.2-5
	DTM_MSC	DTM_MSC	PDS Product File		Page.27 Page.27 Page.28~30 Page.31	Section 2.2.3 Fig 2.2-3 Fig 2.2-4 Section 2.2.3 (1) Table 2.2-6 Section 2.2.3 (2) Table 2.2-7
			Low Resolution Data File		Page.31	Section 2.2.4 Fig 2.2-5
	TCOrtho MAP	TCOrtho MAP	Composition of the Data Set		Page.32	Section 2.3 Fig 2.3-1 Fig 2.3-2
			Rules used for File naming		Page.33	Table 2.3-1
	TCOrtho_MAP_S	TCOrtho_MAP_S	Catalog Information File		Page.34 Page.34,35 Page.35	Section 2.3.1 Table 2.3-2 Table 2.3-3 Table 2.3-4
			Thumbnail File		Page.36	Section 2.3.2 Table 2.3-5
	TCOrtho_MSC	TCOrtho_MSC	PDS Product File		Page.37 Page.37 Page.38~40 Page.41	Section 2.3.3 Fig 2.3-3 Fig 2.3-4 Section 2.3.3 (1) Table 2.3-6 Section 2.3.3(2) Table 2.3-7
			Low Resolution Data File		Page.41	Section 2.3.4

:Map product

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

	Product Name	Product ID		Reference		
	Spacecraft clock coefficients	SCLK	Composition of the Data Set		Page.1	Capter 2 Figure 2-1 Table 2-1
PICE	(Long period spacecraft clock coefficients) Spacecraft trajectory) (LUNG_SCLK) SPK (RISE_SPK)	Rules used for File naming	SPICE Kernel Format Description	Page.2 Page.3	Table 2-2,3 Table 2-4
S	(RISE Spacecraft trajectory)		Catalog Information File		Page.4	Section 2.1 Table 2-5
	Orientation of spacecraft	СК	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

Contents

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data set	2
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MI catalog information file	21
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MI PDS label	25
MI PDS product file	28
MI low resolution data file	39
)	40
SP catalog information file	44
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SP PDS product file	48
SP original resolution JPEG image file	62
	eneral rpose Reference books data set TC catalog information file TC thumbnail file TC PDS product file TC low resolution data file MI catalog information file MI thumbnail file MI PDS label MI PDS label MI PDS product file MI PDS product file SP catalog information file SP thumbnail file SP thumbnail file SP pDS product file SP original resolution JPEG image file

Appendix1 "Rotation/reverse of the thumbnail image"

Appendix2 "Details of the invalid pixel"

Appendix3 "Details of SP Ancillary Information"

Change 2	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) ¹Documentation of LISM level 2A product file format₁ (RCX-05007)
- (4) ^TFunctions for creating LISM SP level 2 product₁ (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 _: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-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 than divided mosaic)	4	Extension .img:RGC PDS product file(non-gzip compression) .jpg:thumbnail file .ctg:catalog information file .sl2:RGC data set
	Total	30:other th	an non-MAP divided mosaic

List 2.1-1	File	nomenclature	rule	of TC	C (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	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)	TC_Morning_MAP TC_Evening_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	AAAAAAAA (up to 4000-	Refer to the list 2.1-11
Free keyword	FreeKeyword		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	SceneMax imumDN	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"	AAAAAA	All source L2A data file names used for creating this PDS product.When the number of CommentInfo is over 4000, the value is shortened into "%s"
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name

2.1.2 TC thumbnail file

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

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

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

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

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 identification				
	·Area specifying object position				
	Pointer to all objects				
	Product	•File attribu	te		
	information	e.g. file nan	ne, creating date, update date		
		Product attr	ribute		
		e.g. softwar	e 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			
		\cdot Variation by each instrument			
		e.g. observation parameters,			
		status			
	\cdot Description are	ea 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	umber of vertical and horizontal pixels of the scene, bit			
	length				
\cdot Geometric data objec	t(altitude: for MAI	P)			
Binary two dimensio	nal array data				
•Image data object					
Binary two dimensional array data					

Figure 2.1-3 Format of TC RGC PDS product file

(1)PDS label

The details of PDS label of TC RGC PDS product file are shown in the list of List 2.1-6. And on the case that the set value of PDS label is numeric value, if it does not fulfill maximum digit number, it is left-aligned by zero suppression in the absence of mentioning of particular reference.

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

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

Region Prerequisite items for PDS header	Item name PDS version identification File record type	Description format PDS_VERSION_ID = "%s" RECORD_TYPE = "%s"	PDS version identification File record type (prerequisite for L2DB registration)	value "PDS3" "UNDEF INED"
	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_ID = "%s"	Product identification (uniquely decidable file name, not involving extension)	***(no extension)
	Data file format identification	DATA_FORMAT = "%s"	Data file format identification (prerequisite for L2DB registration)	"PDS"
Area specifying object position	starting position of geometric data (altitude)	ALMAGE - %d AVTES	Starting position of geometric data (altitude)(in Byte) This keyword may be omitted. Starting position of imposition biost(in Dita)	
Product information File attribute	otarting position of image object Software name	SOFTWARE NAME - "%e"	Software name used for creating PDS product	"RGC TC ML"
	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 attribute	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", "21bergen
	Droduot version		ine name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"Uthers"
	identification	REGISTERED PRODUCT - "%s"	rioudct version registered for L2DB (prerequisite for L2DB registration)	"Y" or "N"
	product in L2DB	TETETENED_FRODUCT = 785	registration, regardless of success and failure of recistration 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	<pre>SPICE_METAKERNEL_FILE_NAME = ("%s", "%s")</pre>	SPICE metakernel file names used for creating PDS product. This keyword may be omitted.	
Scene Common to each instrument attribute	Mission name	MISSION_NAME = "%s"	Mission name	"SELENE"
	Spacecraft name Data set identification	SPACECRAFT NAME = "%s" DATA_SET_ID = "%s"	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	
	Observation target name Observation mode	OBSERVATION_MODE_ID = "%S"	Observation target name of this strip Observation mode identification	"NORMAL":normal
	Gentrication			"NORMAL&SUPPORT":normal
	Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description.	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	
Description area of geometric data (altitude) abject format	Sensor description 2	SENSOR_DESCRIPTION2 = "%s"	exposure mode, Bit number of AD converter) Alternative sensor description This keyword may be omitted	
usson prion area or geometric uata (artitude) object format	Thinnig start pixel position	BINNING_START_PIXEL_POSITION =	Start pixel position for thinnig in this scene	(1,1)
	Thinnig interval Number of lines	BINNING_INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this	
	Number of line's samples	LINE_SAMPLES = %d	scene. Number of pixels along the horizontal axis of this	
	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"
Description area of image data object formet				
uescription area or image data object format	Number of bands Band storage type	BANDS = %d BAND STORAGE TYPE - "%e"	Number of bands	1 "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.	
	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], "REFLECTANCE" [
	Unit	UNIT = "%s"	Unit of sample value	ND] "ND", "W/m**2/micron/sr".
	Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value	"ND"
	Offset	OFFSET = %8.5e	Into physical quantity (first order coefficient) Conversion coefficient used for converting DN value	
	Minimum for statistical	MIN_FOR_STATISTICAL_EVALUATION	Minimum DN value of output range for statistical	
	Maximum for statistical	MAX FOR STATISTICAL EVALUATION	scaled and offset.	
	image evaluation, D2	= (%d,%d,)	evaluation of image quality, indicated as pixel value scaled and offset	
	Maximum DN	SCENE_MAXIMUM_DN = (%d,%d,)	In this scene, maximum DN value in the target group excluded the following:	When the number of samples for image quality
			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	assessment is 0, the value is set -1.
	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: a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in the L2A process system c.pixel of element number disregarded from image evaluation and	When the number of samples for image quality assessment is 0, the value is set -1.
	Average DN	SCENE_AVERAGE_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, 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	When the number of samples for image quality assessment is 0, the value is set -1.
	Standard doviation DV		d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2 In this component deviation DN value is the	When the number of
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	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, mode DN value in the target group paceuded the following:	Samples for image quality assessment is 0, the value is set -1.
			<pre>lexcluded 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</pre>	samples for image quality assessment is 0, the value is set -1.

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

Region	Item name	Description format	Item explanation	value
Description area of image data object format	Shadowed area minimum D5	SHADOWED_AREA_MINIMUM = (%d,%d,)	Minimum DN value of output range for shadow discrimination, indicated as integral value scaled and	
	Shadowed area maximum D6	SHADOWED_AREA_MAXIMUM = (%d,%d,	Uniset. Maximum DN value of output range for shadow discrimination, indicated as integral value excled 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,)	point). In this scene, pixel percentage whose DN value is between threshold D5 and threshold D6:	samples for image quality assessment is 0, the
			a.dummy pixel filled onboard a.dummy pixel filled onboard b.dummy pixel filled on the friburg of accounting the	value is set -1.
			the L2A process system c.pixel of element number disregarded from image	
	Invalid type	INVALID_TYPE = ("%s", "%s",)	evaluation Invalid pixel type	
			Registered in L2DB : three types of "saturation", "negative value after calibration" and "others" Not remistered in L2DB: L2DB: the of the calibration	
	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"	
	Value provided sincle and		Not registered in L2DB : list of all calibrated and corrected error	
	value provided pixels out of bounds pixels before resampling	UUI_UF_IMAGE_BOUNDS_VALUE = %d	value provided to the pixel originally not existing before resampling	
	Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,)	Numer of pixel originally not existing before resampling	
	Stretched flag	STRETCHED_FLAG = %s	Flag to indicate whether a data has been streched to be easily viewable for external output.	"FALSE"
Description area of map projection	Map projection type	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = "%s"	Map projection type	
	Coordinate system type Coordinate system name	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Fixed coordinate system of celestial body Original point is mass center of celestial body, Lotitude is positive in a contract the state of the second	"BODY-FIXED ROTATING" "PLANETOCENTIC"
	A axis radius	A AXIS RADIUS = %R 1f ~km>	iatriude is positive in northhemisphere and longitude is positive in east longitude. Lunar radius in a axis	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
	Positive longitude	<pre>SEGUND_STANDARD_PARALLEL = %f <deg> POSITIVE_LONGITUDE DIRECTION =</deg></pre>	planet and the cone of the projection. Positive direction of longitude	projection is LCC "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 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	"N/A"
	Reference longitude	REFERENCE_LONGITUDE =	map_projection_type. the zero longitude in a rotated spherical coordinate	"N/A"
	Line first pixel	%12.8f <deg> LINE_FIRST_PIXEL = %d LINE_LAST_PIXEL = %d</deg>	system that was used in a given map projection_type. Line number of upper end of this scene Line number of lower end of this scene	1
	Sample first 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_PROJECTION_ROTATION = %f	Rotation angle to map projection coordinate system of this scene	0.0
	Map resolution Map scale Maximum latitude	MAP_KESOLUTION = %f MAP_SCALE = %f <km pixel=""> MAXIMUM LATITUDE = %11 8f<deg></deg></km>	map resolution <plxel deg=""> Map scale <km pixel=""> Center latitude of northernmost pixel.</km></plxel>	
	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 = %12.8f<deg></deg></deg>	Center longitude of westernmost pixels.	
	The line offset value from the map projection origin	LINE_PROJECTION_OFFSET = %f <pixel></pixel>	The vertical offset value from the map projection origin (line and sample 1,1)[pixel].	
	The sample offset value from the map projection	SAMPLE_PROJECTION_OFFSET =	The horizontal offset value from the map projection origin (line and sample 1,1)[pixel].	
Description area of process parameter	Dark current correction	OBJECT = TMAGE_MAP_PROJECTION OBJECT = PROCESSING_PARAMETERS DARK FILE NAME -	Dark current correction coefficient file name ("N/A"	
	coefficient file name Flat field correction	(<u>{"%s", "%s"}, {</u> "%s", "%s"},) FLAT_FILE_NAME =	when not corrected). This keyword may be omitted. Flat field correction coefficient file name ("N/A"	
	coefficient file name Coefficient file name of	(<u>{</u> "%s","%s"}, <u>{</u> "%s","%s"}) EFFIC_FILE_NAME =	when not corrected). This keyword may be omitted. Coefficient file name of temperature dependency	
	temperature dependency correction of transmittance	({"%S","%S"},{"%S","%S"},)	correction of transmittance efficiency ("N/A" when not corrected). This keyword may be omitted.	
	File name of non-linearity correction coefficient	NONLIN_FILE_NAME = ({"%S","%S"},{"%S" "%S"})	File name of non-linearity correction coefficient ("N/A" when not corrected). This keyword may be	
	Radiance conversion	RAD_CNV_COEF =	omitted. Radiance conversion coefficient:indicate all value	
	coefficient	((%f,%f,%f,),(%f,%f,%f,), 	every band [W/m2/micron/sr] ("N/A" when not converted). This keyword may be omitted.	
	coefficient	<pre>KEF_CNV_COEF = (%f,%f,%f,***) </pre>	radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted)	
	Photometric standard geometry	STANDARD_GEOMETRY = (%.1f,%.1f,%.1f)	Standard values of incidence angle, and emission angle and phase angle for photometric correction.	(30.0, 0.0, 30.0)
	Photometric correction identification	PHOTO_CORR_ID = "%s"	Photometric correction formula type	"USGS", "BROWN",
	Photometric correction	PHOTO_CORR_COEF =	Coefficient of photometric correction formula ("N/A" when not corrected)	"LISM ORIGINAL", "N/A"
	Resampling method	((%e,%e,%e,***),(%e,%e,%e,***), ***) RESAMPLING METHOD = {"%e" "%e"	Interpolation method of resampling	"Nearest Neighbor"
		}		"Bi-Linear", "Cubic Convolution"
	Geometric data matching original TC-Ortho data	TCO_MOSAIC_FILE_NAME = ("%s","%s",)	Source TC ortho data file name used for providing geometric data. This keyword may be omitted.	***.img
	Geometric data matching original DTM data mosaic	DTM_MOSAIC_FILE_NAME =	Source DTM data file name used for providing geometric data. This keyword may be omitted.	***.dtm
	file name Overlap selection	OVERLAP_SELECTION_ID = "%s"	Method for processing overlap.	
	identification Matching mosaic on creating man	MATCHING_MOSAIC = "%s"	Matching method	N/A, CORRELATION1
	map			CORRELATION2, SSDA1,SSDA2,
	Dead pixel discrimination	L2A_DEAD_PIXEL_THRESHOLD =	Maximum pixel value to judge as dead pixel on L2A	SSDA3, SSDA4
	threshold L2A saturation threshold	(%d, %d,) L2A_SATURATION_THRESHOLD =	image Minimum threshold value to judge as saturation on L2A	
	Dark current corrected	(%d, %d,) DARK_VALID_MINIMUM =	Image Minimum threshold to discriminate its validity as if	
	valla minimum threshold	(%d,%d,)	It is negative value after dark current correction. It's indicated as physical quantity (real value). ("N/A" when not corrected)	
	Radiance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD =	Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity	
	Reflectance conversion	REF_SATURATION_THRESHOLD =	(real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectence. It is indicated as	
	Saturation threshold	1%⊺ <nu></nu>	physical quantity (real value). ("N/A" when not converted)	
		END_OBJECT = PROCESSING_PARAMETERS END		

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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			
Altitude	km	Distance from lunar radius sphere			
_					

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

L2A data compressed / not compressed	Swath	Observation pattern	L2A valid pixels	Number of geometric data points in a line when being thinned
Compressed	Full	Monoscopic /	4096	586
		stereoscopic		
	Nominal	Monoscopic /	3496	500
		stereoscopic		
	Half	Monoscopic /	1744	250
		stereoscopic		
Not	Full	Monoscopic	3208	459
compressed		Stereoscopic	1600	229
	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 bi	narv two dimensional	arrav data on ima	ge data object
	5		5 J

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

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

Number of bits	16
Туре	Integral number
Byte order	big endian

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

2.1.4 TC low resolution data file

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

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

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

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
	MI-VIS 5 bands cubed	
L2B2, L2C2, MAP	MI-NIR 4 bands cubed Without being tar-gzig	
	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
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
1	Total	29:L2B, L2C	

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

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

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	Product ID	AAAAAAAA (up to 30-digit)	MI-VIS_Level282, MI-NIR_Level282 MI_Level282 MI_VIS_Level202, MI-NIR_Level202 MI-VIS_Level203, MI-NIR_Level203 MI-VIS_Level203, MI-NIR_Level204 MI_Level203 MI_Level204 MI_VIS_Level205, MI-NIR_Level205 MI_L
Product version	ProductVersion	AAAAAAAA (up to 16-digit)	nn:L2DB registered version
Access level	AccessLeve1	N	Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all users (opening to the public)
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.ssssszZ	(same contents as "start time (UT) "of PDS label)
End date and time of data	EndDateTime	yyyy-mm-ddT hh:mm:ss.ssssszZ	(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 LocationFlag	NNNNNNNNNN (up to 10-digit) A	Scene number Direction of spacecraft orbit at the start time of this scene A : ascending D : descending N : involving north pole S : involving south pole W : involving both poles
Upper left latitude of this scene	UpperLeftLatitude	SNN.NNNNN	[-90, 90]
Upper left longitude of this scene	UpperLeftLongitude	NNN. NNNNNN	[0, 360)
Upper right latitude of this scene	UpperRightLatitude	SNN. NNNNNN	[-90, 90]
Upper right longitude of this scene	UpperRightLongitude	NNN. NNNNNN	[0, 360)
Lower left latitude of this scene	LowerLeftLatitude	SNN.NNNNN	[-90, 90]
Lower left longitude of this scene	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of this scene	LowerRightLatitude	SNN.NNNNN	[-90, 90]
Lower right longitude of this scene	LowerRightLongitude	NNN . NNNNNN	[0, 360)
Center latitude of this scene	SceneCenterLatitude	SNN.NNNNN	[-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	Туре	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	SNNN.NNN	Phase angle of the scene center[degree]
Solar azimuth angle of the	SolarAzimuthAngle	Real value	SNNN.NNN	Solar azimuth angle of the scene center[degree]
scene center				• • • •
Approximate spacecraft altitude	SpacecraftAltitude	Real value	SNNN.NNN	Spacecraft altitude of the first line("distance
				between spacecraft and lunar gravitational center"
				minus average lunar radius)
Focal plane temperature	FocalPlaneTemperature	Real value	SNNN.NN	Focal plane temperature of the first line
Number of saturated pixels	SaturatedPixels	Integral value	NNNNNNN	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
0	-			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		NNNNNN	Image evaluation: scene mode of pixels in this
		Integral value		scene
Shadowed area percentage	ShadowedAreaPercentage	Integral value	NNN	Shadowed area percentage of pixels

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	
Product creation time	ProductCreationTime=%s	AAA(20 characters)	Product creation time	
Source L2A data file name	SourceLevel2AFileName="%s"	AAAAAA	All source L2A data file names used for	
			creating this PDS product.	E
Mission phase name	MissionPhaseName="%s"	AAAAAA	Mission phase name	
Exposure mode identification	ExposureModeID = "%s"	AAAA	Exposure mode identification	
Upper left daytime flag of the	UpperLeftDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the first column	
start line			and the first line	
Upper right daytime flag of	UpperRightDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the last column	
the start line			and the first line	1
Lower left daytime flag of the	LowerLeftDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the first column	
stop line			and the last line	1
Lower right daytime flag of	LowerRightDaytimeFlag="%s"	AAAA	Daytime flag of the pixel on the last column	
the stop line			and the last line	1
Roll cant	RollCant="%s"		YES: roll cant	
			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	NNNNNNNNN (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 file (MI 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 2.2-9 Details of comment information in catalog information file (MI MAP)

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	SourceLeve12AFileName="%s"	ΑΑΑΑΑΑ	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))

Prereguisite items for PDS	Region header	Item name PDS version identification	Description format PDS_VERSION_ID = "%s"	Item explanation PDS version identification	value "PDS3"
		File record type File name(L2DB regulation)	RECORD TYPE = "%s" FILE_NAME = "%s"	File record type(prerequisite for L2DB registration) File name(prerequisite for L2DB)(uniquely decidable	"UNDEFINED" ***.tgz、***.igz
		Product identification (PDS	PRODUCT_ID = "%s"	file name, involving extension. File name(unique decidable file name, not involving	***(no extension)
		practice) Data file format	DATA_FORMAT = "%s"	extension) Data file format identification(prerequisite for L2DB	"PDS"
Area specifying object pos	ition	identification Archive file name	^ARCHIVE FILE = "%s"	registration) File name TGZ or GZIP-compressed	***.tgz、***.igz
		Archive type	OBJECT = ARCHIVE_FILE ARCHIVE_TYPE = "%s"	Archive type	"GZIP", "TAR_GZIP"
		Archive file name Archive file size	FILE_NAME = "%s" FILE_SIZE = %d <bytes></bytes>	Archive file name Archive file size	***.tgz、 ***.igz
		Number of archived files Name 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 =	Total file size of archived file	
			%d <bytes> END OBJECT = ARCHIVE FILE</bytes>		
Product 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 attribute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types(prerequisite for L2DB registration) The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"LISM" "MI-VIS_Leve12B2", "MI-NIR_Leve12B2", "MI_Leve12B2", "MI-VIS_Leve12C2", "MI-NIR_Leve12C2", "MI_Leve12C2",
		Product version	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB (prerequisite for	"0thers" "00 " ~ " 99 "
		Whether to be registered	REGISTERED_PRODUCT = "%s"	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	***. i mg
		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 instrume	ent 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 registration)	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared" When 9 bands are cubed: "Multiband Imager"
		Instrument identification	INSTRUMENT ID = "%s" MISSION PHASE NAME = "%s"	Instrument identification Mission phase name	"MI-VIS", "MI-NIR", "MI" (e.g.Nominal/Option)
		Revolution number Strip sequence number	REVOLUTION_NUMBER = %d STRIP_SEQUENCE_NUMBER = %d	Revolution number in which included this scene Strip sequence number while in revolution	
		<u>Scene sequence number</u> Upper left daytime flag of	SCENE SEQUENCE NUMBER = %d UPPER_LEFT_DAYTIME_FLAG =	Scene sequence number while in strip Daytime flag of the pixel on the first column and the	Day:illuminated
		the first line Upper right daytime flag of	"%s" UPPER_RIGHT_DAYTIME_FLAG =	first line by the system geometric data Daytime flag of the pixel on the last column and the	Night:not illuminated Day:illuminated
		the first line Lower left daytime flag of	"%s" LOWER_LEFT_DAYTIME_FLAG =	first line by the system geometric data Daytime flag of the pixel on the first column and the	Night:not illuminated Day:illuminated
		the last line Lower right daytime flag of	"%s" 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 support image mosaic in TC MAP/MSC
		Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g.TC:scan mode, TC1/2relative mounting angle, element number of used detector, focal length, F value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode, explanation of compression mode, explanation of exposure mode, Bit number of AD converter)	
		<u>Sensor description 2</u> Sensor status	<pre>SENSOR DESCRIPTION2 = "%s" DETECTOR_STATUS = {"TC1:%s","TC2:%s","MV:%s","M N:%s","SP:%s"}</pre>	Alternative sensor description ON/OFF of five respective power supplies(TC1,TC2,MI- VIS,MI-NIR,SP) on the scene center	"ON", "OFF"
		Exposure mode identification Exposure duration of the line	EXPOSURE MODE ID = "%s" LINE_EXPOSURE_DURATION =	Exposure mode identification Exposure duration of the line. Default value uniquely	"LONG", "MIDDLE", "SHORT" "6.5" : LONG
			%10.6f <msec></msec>	decidable to the respective exposure mode.	"3.25":MIDDLE "1.625":SHORT
		Spacecraft clock start count	<pre>SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec></pre>	Observation time of the first line of this scene (TI)	
		Spacecraft clock stop count	<pre>SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec></pre>	Observation time of the last line of this scene (TI)	
		Corrected spacecraft clock	CORRECTED_SC_CLOCK_START_COUN T = %17.6f <sec></sec>	Corrected observation time of the first line of this scene (TL)	
		Corrected spacecraft clock	CORRECTED_SC_CLOCK_STOP_COUNT = %17.6f <sec></sec>	Corrected observation time of the last line of this scene (TI)	
		Start time (UT)	START_TIME = %s	Observation time of the first line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
		Stop time (UT)	STOP_TIME = %s	Observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssz"
		Corrected start time (UT)	CORRECTED_START_TIME = %s	Corrected observation time of the first line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssz"
		Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	Corrected observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssz"
		Sampling interval in the line	LINE_SAMPLING_INTERVAL =	Designed value of sampling interval	
		Corrected sampling interval Upper left latitude of this	CORRECTED_SAMPLING_INTERVAL = %10.6f <msec> UPPER_LEFT_LATITUDE = %10.6f</msec>	Corrected sampling interval with dividing the 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	<deg></deg>	by the system geometric data. Center latitude of the pixel on the first column and the first line snn.nnnnn Longitude of pixel on upper left corper of this scene	(0,00000, 360,00000)
		scene		by the system geometric data. Center longitude of the pixel on the first column and the first line nnn.nnnnn	
		opper right latitude of this scene	<pre>cdeg></pre>	Latitude of pixel on upper right corner of this scene by the system geometric data. Center latitude of the pixel on the last column and the first line snn.nnnnn	[-90.000000, 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	[U.000000, 360.000000)
		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)
		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 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, L2C	2 detached (cubed))

	Region	Item name	Description format	Item explanation	value
Product information Sc	cene attributeCommon 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.	A : ascending D : descending N : involving north pole S : involving south pole W : involving both poles
		Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant observation latitude of the scene center by the system geometric	YES: roll cant NO:nadir looking
			%10.6f <dea></dea>	data	[-30.00000, 30.000000]
		Scene center longitude	SCENE_CENTER_LONGITUDE = %10.6f <deq></deq>	Longitude of the scene center by the system geometric	[0.000000, 360.000000)
		Incidence angle of the scene	INCIDENCE_ANGLE = %7.3f <deg></deg>	Incidence angle of the scene center by the system	[0.000, 180.000)
		Emission angle of the scene	EMISSION_ANGLE = %7.3f <deg></deg>	Emission angle of the scene center by the system	[0.000, 180.000)
		Phase angle of the scene	PHASE_ANGLE = %7.3f <deg></deg>	Phase angle of the scene center by the system	[0.000, 180.000)
		Solar azimuth angle of the	SOLAR_AZIMUTH_ANGLE = %7.3f	Solar azimuth angle of the scene center by the system	[0.000, 360.000)
		Scene center	<pre><deg> MOON_SUN_DISTANCE = %d <km></km></deg></pre>	<u>deometric data</u>	
		Focal plane temperature	FOCAL_PLANE_TEMPERATURE = %6.2f <deac></deac>	Focal plane temperature of the first line	
		Telescope temperature	TELESCOPE_TEMPERATURE = %6.2f	Telescope temperature of the first line	
		Satellite moving direction	SATELLITE_MOVING_DIRECTION =	Moving direction of satellite	+1 : lead of +x plane -1 : lead of -x plane
		First sampled line position	FIRST_SAMPLED_LINE_POSITION =		"UPPERMOST
		First detector element	FIRST_DETECTOR_ELEMENT_POSITI	Direction of the first detector element (the direction in this scene: LET)	"LEFT"
		Radius of lunar shape (a	A_AXIS_RADIUS = %.3f <km></km>	Lunar radius in a axis. nnnn.nnn (indicate down to	
		Radius of lunar shape (b	B_AXIS_RADIUS = %.3f <km></km>	Lunar radius in b axis. nnnn.nnn (indicate down to	
		Radius of lunar shape (c	C_AXIS_RADIUS = %.3f <km></km>	Lunar radius in c axis. nnnn.nnn (indicate down to	
		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")	Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1" "MN2" "MN3" "MN4"
		Center filter wavelength	CENTER_FILTER_WAVELENGTH =	Center wavelength of the filter(nominal value)	ראזוא , באוח ,
		Bandwidth	BANDWIDTH = (%.1f,%.1f,%.1f)	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	<pre>SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km></pre>	Spacecraft ground speed of the first line	
			I END		

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	ns for PDS header	
	Version identific	ation	
	\cdot Area specifying o	bject position	
	Pointer to all obj	ects	
	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 o	object format
	(latitude longitud	e: L2C, altitude: M	IAP)
	e.g. thinning in	terval of geometri	c data, number of data points in
	vertical and horiz	ontal direction, bit	length
	\cdot Description area	of image data obje	ct format
	e.g. number of ve	ertical and horizon	tal pixels of the scene, bit length
\cdot Geometric data ol	bject(latitude: L2C)		
Binary two dimer	nsional array data		
\cdot Geometric data ol	oject(longitude: L2C	:)	
Binary two dimer	nsional array data		
\cdot Geometric data ol	oject(altitude: MAP))	
Binary two dimer	nsional array data		
\cdot Image data object	-		
Binary two dimer	nsional array data		
- When 5 bands	of MI-VIS are cubed	l: recorded in BSQ	format in order of 1,2,3,4,5 band
- When 4 bands	of MI-NIR are cube	d: recorded in BSQ	format in order of 1,2,3,4 band
- When total 9 ba	ands of MI are cube	d: recorded in BSQ	format in order of 1,2,3,4,5
on MI-VIS bar	nds, and 1,2,3,4 on M	AI-NIR bands.	

Figure 2.2-4 Format of MI RGC PDS product file

(1)PDS label

The details of PDS label of MI RGC PDS product file are shown in the list of List 2.2-12~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)

rerequisite items for P	Region DS header		Item name PDS version identification	PDS_VERSION_ID = "%s"	Item explanation PDS version identification File record two (recordicits for 120P registration)	value "PDS3"
			File name (L2DB regulation)	FILE_NAME = "%s"	File name, involving extension(.img)	***. img
			Product identification (PDS practice)	PRODUCT_ID = "%s"	Product identification (uniquely decidable file name, not involving extension)	***(no extension)
rea encolfuing object a	onition		Data file format identification	DATA_FORMAT = "%s"	Data file format identification (prerequisite for L2DB registration) Starting position of image object(in Bute)	"PDS"
reduct 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	"L2B"
			Identification Product creation time	PRODUCT_CREATION_TIME = %s	registration) Product creation time(UTC) Product creation time(UTC)	YYYY-MM-DDThh:mm:ssZ
	Product attri	bute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCES_ID = "%s"	Data producer identification PDS product set types (prerequisite for L2DB	"LISM" "MI-VIS Level 282".
					registration) The name in product list should be used. As of data	"MI-NIR_Level2B2", "MI_Level2B2",
			Product version	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	"Y" or "N"
			Source data file name	LEVEL2A_FILE_NAME ={"%s", "%s",	registration in L2DB. Source data file names used for creating this PDS	***.img
			SPICE metakernel file name	"%s"} SPICE_METAKERNEL_FILE_NAME = "%s"	product SPICE metakernel file names used for creating PDS	
	Scene	Common to each instrument	Mission name	MISSION_NAME = "%s"	product Mission name	"SELENE"
	artificato		<u>Spacecraft name</u> Data set identification	SPACECRAFT NAME = "%s" DATA SET ID = "%s"	Spacecraft name Data set identification in which included this scene.	"SELENE-M"
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB registration)	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared"
			Instrument identification	INSTRUMENT ID = "%s" MISSION PHASE NAME = "%s"	Instrument identification Mission phase name	When 9 bands are cubed : "Multiband Imager" "MI-VIS", "MI-NIR", "MI" (e.g. Nominal/Option)
			Revolution number Strip sequence number	REVOLUTION NUMBER = %d STRIP SEQUENCE NUMBER = %d	Revolution number in which included this scene Strip sequence number while in revolution	
			Scene sequence number Upper left daytime flag of	SCENE_SEQUENCE_NUMBER = %d UPPER_LEFT_DAYTIME_FLAG = "%s"	Scene sequence number while in strip Daytime flag of the pixel on the first column and the	Day: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_LEFT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the first column and the last line by the system geometric data	Day:illuminated Night:not illuminated
			Lower right daytime flag of the last line	LOWER_RIGHT_DAYTIME_FLAG = "%s"	Daytime flag of the pixel on the last column and the last line by the system geometric data	Day:illuminated Night:not illuminated
			Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation mode identification	"NORMAL": normal "SUPPORT": support
						"NORMAL&SUPPORT":normal and support image mosaic in TC MAP/MSC
			Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g.TC:scan mode, TC1/2relative mounting angle,	
					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)	
			Sensor description 2 Sensor status	DETECTOR_STATUS = {"TC1:%s","TC2:%s" "MV:%e" "MN:%e"	ON/OFF of five respective power supplies(TC1,TC2,MI- VIS.MI-NIR.SP) on the scene center	"ON", "OFF"
			Exposure mode	"SP:%s"} EXPOSURE MODE ID = "%s"	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 "4.626" : SHOPT
			Spacecraft clock start	SPACECRAFT_CLOCK_START_COUNT = \$15.4f <sec></sec>	Observation time of the first line of this scene (TI)	"1.625":SHURI
			Spacecraft clock stop count (TI)	SPACECRAFT_CLOCK_STOP_COUNT = %15.4f <sec></sec>	Observation time of the last line of this scene (TI)	
			Corrected spacecraft clock start count (TI)	CORRECTED_SC_CLOCK_START_COUNT = %17.6f <sec></sec>	Corrected observation time of the first line of this scene (T1)	
			stop count (TI) Start time (UT)	START_TIME = %s	scene (TI) Observation time of the first line of this scene (UT)	"vvvv-mm-ddThh:mm:ss.ssssz"
			Stop time (UT)	STOP_TIME = %s	(six decimal places) Observation time of the last line of this scene (UT)	"yyyy-mm-ddThh:mm:ss.ssssz"
			Corrected start time (UT)	CORRECTED_START_TIME = %s	(six decimal places) Corrected observation time of the first line of this scene (IT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
			Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	Corrected observation time of the last line of this scene (UT) (six decimal places)	"yyyy-mm-ddThh:mm:ss.sssssZ"
			Sampling interval in the Corrected sampling interval	LINE SAMPLING INTERVAL = %10.6f CORRECTED_SAMPLING_INTERVAL =	Designed value of sampling interval Corrected sampling interval with dividing the	
			Upper left latitude of this	%10.6f <msec></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	[00100000, 00100000]
			Upper left longitude of	UPPER_LEFT_LONGITUDE= %10.6f <deg></deg>	snn.nnnnnn 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>	Ann. Annann 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	[0.000000, 360.000000)
					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 nivel on the first column and the last line sno pronon	[-90.000000, 90.000000]
			Lower left longitude of	LOWER LEFT LONGITUDE= %10.6f <dea></dea>	Longitude of pixel on lower 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 last line nnn.nnnnn	
			Lower right latitude of	LOWER_RIGHT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower right corner of this scene	[-90.000000, 90.000000]
			this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line snn.nnnnn	
			Lower right longitude of 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	[0.000000, 360.000000)
					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
					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	
					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	
					W:Between the two, 90 degrees and 270 degrees are both included.	
			Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant	YES: roll cant
			Scene center latitude	SCENE_CENTER_LATITUDE = %10.6f <deg></deg>	Latitude of the scene center by the system geometric data	[-90.000000, 90.000000]
			Scene center longitude	SCENE_CENTER_LONGITUDE = %10.6f	Longitude of the scene center by the system geometric data	[0.000000, 360.000000)
			scene center Emission angle of the scene	EMISSION_ANGLE = %7.3f <deg></deg>	decometric data (lunar spherical approximation) Emission angle of the scene center by the system	[0.000, 180.000]
			center Phase angle of the scene	PHASE_ANGLE = %7.3f <deg></deg>	deometric data (lunar spherical approximation) Phase angle of the scene center by the system	[0.000, 180.000)
			Solar azimuth angle of the	SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg>	Solar azimuth angle of the scene center by the system ecometric data	[0.000, 360.000)
			Focal plane temperature Telescope temperature	FOCAL PLANE TEMPERATURE = %6.2f TELESCOPE TEMPERATURE = %6.2f	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	FIRST_DETECTOR_ELEMENT_POSITION = "%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)	
			acown to m) Radius of lunar shape (b axis)	B_AXIS_RADIUS = %.3f <km></km>	Lunar radius in b axis. nnnn.nnn (indicate down to	
			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 the defect of the second	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")	white) at launching of the process. Names of MI filters	"MV1", "MV2", "MV3". "MV4". "MV5"
		.,	Center filter wavelength	CENTER_FILTER_WAVELENGTH =	Center wavelength of the filter(nominal value)	"MN1", "MN2", "MN3", "MN4"
			Bandwidth Base band of MI	<pre>(</pre>	Band width(full-width at half-maximum, nominal value) Base band identification of MI	"MV1", "MV2", "MV3", "MV4", "MV5"
			Approximate spacecraft	SPACECRAFT_ALTITUDE = %8.3f <km></km>	Spacecraft altitude of the first line("distance	"MN1", "MN2", "MN3", "MN4"
			altitude		between spacecraft and lunar gravitational center" minus average lunar radius) Spacecraft around coord of the first line	
	1		spaceorarit ground speed	<pre>ckm/secs</pre>	opuoorant ground apeed of the first fine	

Pegion	I tom nomo	Description format	I tom explanation	value
Description area of image data object format		OBJECT = IMAGE		Value
	Number of nominal rines	NOW INAL_LINE_NUMBER = %d	overlap lines)	
	lines	NOW INAL_OVERLAP_LINE_NUMBER =	Number of nominal overlap lines in this scene	
	back data	OVERLAP_LINE_NUMBER = %d	If number of line is less than the number of nominal	
	Number of bands	BANDS = %d	Number of bands	4,5,9
	Number of lines of an image	LINES = %d	Number of pixels along the vertical axis of this	BAND SEQUENTIAL
	Number of line's samples of	LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this	
	an image		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	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]
	Uni t	UNIT = "%s"	Unit of sample value	"ND", "W/m**2/micron/sr"
	Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value into physical quantity (first order coefficient)	
	Offset	OFFSET = %8.5e	Conversion coefficient used for converting DN value into physical quantity (constant term)	
	Minimum for statistical image evaluation, D1	MIN_FOR_STATISTICAL_EVALUATION = (%d,%d,)	Minimum DN value of output range for statistical evaluation of image quality, indicated as pixel value	
	Maximum for statistical	MAX_FOR_STATISTICAL_EVALUATION	<u>scaled and offset.</u> 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
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Minimum DN	<pre>SCENE_MINIMUM_DN = (%d,%d,)</pre>	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 on board b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,	In this scene, average DN value in the target group excluded the following:	When the number of samples for image guality 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	
			d.pixel whose DN value is less than threshold D1	
	Standard deviation DN	<pre>SCENE_STDEV_DN = (%.1f,%.1f,)</pre>	In this scene, standard deviation DN value in the target group excluded the following:	When the number of samples for image
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system	
			evaluation	
			d.pixel whose DN value is less than threshold D1	
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	In this scene, mode DN value in the target group	When the number of samples for image
			a.dummy pixel filled onboard	-1.
			the L2A process system	
			evaluation	
			d.pixel whose DN value is less than threshold D1	
	Shadowed area minimum D5	SHADOWED_AREA_MINIMUM = (%d,%d,	Minimum DN value of output range for shadow	
	Shadowad area maximum D6	SHADOWED AREA MAXIMUM - (%d %d	offset.	
)	discrimination, indicated as integral value scaled and	
	Shadowed area percentage	SHADOWED_AREA_PERCENTAGE =	Shadowed area percentage(round down after the decimal	When the number of samples for image
	between bo and bo	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	is between threshold D5 and threshold D6:	-1.
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	
			the L2A process system	
			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		before resampling	
	Number of pixels out of bounds pixels before	OUT_OF_IMAGE_BOUNDS_PIXELS = (%d,%d,)	Numer of pixel originally not existing before resampling	
Description area of process parameter		END OBJECT = IMAGE OBJECT = PROCESSING_PARAMETERS		
	Dark current correction coefficient file name	DARK_FILE_NAME = {"%s", "%s"}	Dark current correction coefficient file name ("N/A" when not corrected)	
	Frame transfer correction formula coefficient file	<pre>FT_FILE_NAME = "%s"</pre>	Frame transfer correction formula coefficient file name ("N/A" when not corrected)	
	Flat field correction coefficient file name	FLAT_FILE_NAME = {"%s", "%s"}	Flat field correction coefficient file name ("N/A" when not corrected)	
	Coefficient file name of temperature dependency	EFFIC_FILE_NAME = {"%s", "%s"}	Coefficient file name of temperature dependency correction of transmittance efficiency ("N/A" when not	
	correction of transmittance efficiency			
	File name of non-linearity correction coefficient	NONLIN_FILE_NAME = {"%s", "%s"}	File name of non-linearity correction coefficient ("N/A" when not corrected)	
	coefficient	RAD_CNV_COEF = (%f,%f,%f,) <w m**2="" micron="" sr=""></w>	Radiance conversion coefficient:indicate all value every band [W/m2/micron/sr] ("N/A" when not converted)	
	nesampring method	<pre>regammeding_Method = {"%S","%S",}</pre>	interpolation method of resampling	"Bi-Linear", "Gubio Convolution"
	Dead pixel discrimination	L2A_DEAD_PIXEL_THRESHOLD = (%d,	Maximum pixel value to judge as dead pixel on L2A	
	L2A saturation threshold	L2A_SATURATION_THRESHOLD = (%d,	Minimum threshold value to judge as saturation on L2A image	
	Dark current corrected	DARK_VALID_MINIMUM = (%d,%d,)	Minimum threshold to discriminate its validity as if	
	varia minimum tirresnola		It's indicated as physical quantity (real value).	
	Frame transfer corrected	FT_VALID_MINIMUM = %d	Minimum threshold to discriminate its validity if it	
	Radiance conversion		Indicate physical quantity (real value). ("N/A" when Minimum threshold to discriminate to be addinged	
	saturation threshold	%f	conversion saturation. Indicate physical quantity	
		END OBJECT = PROCESSING PARAMETERS	Licai value). (IV/A WIEILINGE CONVERTED)	¹

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

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

te items for PDS h	Region header		PDS version identification File record type	Description format PDS VERSION ID = "%s" RECORD TYPE = "%s" CULF NOTE: = "%s"	Item explanation PDS version identification File record type (prerequisite for L2DB registration) File record type (prerequisite for L2DD) (unimuch desidable	value "PD\$3" "UNDEFINED" ***
			Product identification (PDS	FILE_NAME = "%s" PRODUCT_ID = "%s"	File name (prerequisite for L2DB)(uniquely decidable file name, involving extension(.img) Product identification (uniquely decidable file name,	***(no extension)
			practice) Data file format identification	DATA_FORMAT = "%s"	not involving extension) Data file format identification(prerequisite for L2DB registration)	"PDS"
fying object posit	tion		Starting position of geometric data (latitude) Starting position of	^GEOMETRIC_DATA_LATITUDE = %d <bytes> ^GEOMETRIC_DATA_LONGITUDE = %d</bytes>	Starting position of geometric data (latitude)(in Byte) Starting position of geometric data (longitude)(in	
			geometric data (longitude) Starting position of image object	<bytes> ^IMAGE = %d <bytes></bytes></bytes>	Byte) Starting position of image object(in Byte)	
ormation File	e 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 "L2C"
			identification Product creation time Program start time	PRODUCT CREATION TIME = %s PROGRAM START TIME = %s	registration) Product creation time(UTC) Program start time (UTC)	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
Proc	duct attrib	ute	Producer identification Product set identification	PRODUCER_ID = "%s" PRODUCT_SET_ID = "%s"	Data producer identification PDS product set types(prerequisite for L2DB conjutation)	"LISM" "MI-VIS_Level2C2", "MI_NIR_Level2C2"
					The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"MI_Level2C2", "MI_Level2C2", "Others"
			Product version identification Whether to be registered	PRODUCT_VERSION_ID = "%s" REGISTERED PRODUCT = "%s"	Product version registered for L2DB (prerequisite for L2DB registration) It's be set whether it was created as product for	"00 " ~ " 99 " "Y" or "N"
			product in L2DB		registration, regardless of success and failure of registration in L2DB.	*** ima
			Source data file name	"%s"} LEVEL2B_FILE_NAME = {"%s", "%s",	source data file names used for creating this PDS Source data file names used for creating this PDS	***. img
			SPICE metakernel file name	"%s"} SPICE_METAKERNEL_FILE_NAME = "%s"	product SPICE metakernel file names used for creating PDS product	
Scer attr	ne C ribute	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 registration)	MIV: "Multiband Imager Visible"
			Instrument identification	INSTRUMENT_ID = "%s"	Instrument identification	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"	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	LOWER_RIGHT_DAYTIME_FLAG = "%s"	last line by the system geometric data Daytime flag of the pixel on the last column and the	Night: not illuminated Day: illuminated
			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			"SUMPORT":support "NORMAL&SUPPORT":normal and support image mosaic in TC MAP/MSC
			Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description. (e.g.TC:scan mode, TC1/2relative mounting angle, element number of used detector, focal length F	
					value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode, explanation of compression	
			Sensor description 2	SENSOR DESCRIPTION2 = "%s"	explanation of compression mode, explanation of exposure mode. Bit number of AD converter) Alternative sensor description	ROME ROPER
			sensor status	UEIECTOR_STATUS = {"TC1:%s","TC2:%s","MV:%s","MN:%s", "SP:%s"}	UN/UFF of five respective power supplies(TC1,TC2,MI- VIS,MI-NIR,SP) on the scene center	"UN", "OFF"
			Exposure mode Exposure duration of the line	EXPOSURE MODE ID = "%s" LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Exposure mode identification Exposure duration of the line. Default value uniquely decidable to the respective exposure mode.	"LONG", "MIDDLE", "SHORT" "6.5" : LONG "3.25": MIDDLE
			Spacecraft clock start	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)	SPACECRAFT_CLOCK_STOP_COUNT =	Observation time of the last line of this scene (TI)	
			start count (TI) Corrected spacecraft clock	S17.6f <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) Corrected start time (UT)	STOP_TIME = %s	Observation time of the last line of this scene (UT) (six decimal places) Corrected observation time of the first line of this	"yyyy-mm-ddThh:mm:ss.ssssssZ" "yyyy-mm-ddThh:mm:ss.ssssssZ"
			Corrected stop time (UT)	CORRECTED_STOP_TIME = %s	scene (UT) (six decimal places) Corrected observation time of the last line of this	"yyyy-mm-ddThh:mm:ss.sssssz"
			Sampling interval in the Corrected sampling interval	LINE_SAMPLING_INTERVAL = %10.6f CORRECTED_SAMPLING_INTERVAL =	Designed value of sampling interval Corrected sampling interval with dividing the	
			Upper left latitude of this	%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	[0.000000, 360.000000)
			Upper right latitude of	UPPER_RIGHT_LATITUDE= %10.6f <deg></deg>	nnn.nnnnn Latitude of pixel on upper right corner of this scene	[-90.000000, 90.000000]
			this scene		by the system geometric data. Center latitude of the 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 leat column and the first line and anone	[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 pixel on the first column and the last line pop gongon	[0.000000, 360.000000)
			Lower right latitude of	LOWER_RIGHT_LATITUDE= %10.6f <deg></deg>	Latitude of pixel on lower right corner of this scene	[-90.000000, 90.000000]
			this scene		by the system geometric data. Center latitude of the pixel on the last column and the last line snn.nnnnn	
			Lower right longitude of 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 on person	[0.000000, 360.000000)
			Location flag	LOCATION_FLAG = "%s"	Information of spacecraft location	A : ascending
					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
					current center, between the ascending node and the current satellite position, and zero degree as passing through the ascending node) at the both observation	π : 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 fo	
					degree, 90 degrees])and do not exceed half of the rotation period.	
					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. W:Between the two, 90 degrees and 270 degrees are both included.	
			Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant	YES:roll cant NO:nadir looking
			Scene center latitude	SCENE_CENTER_LATITUDE = %10.6f <dep> SCENE_CENTER_LONGITUDE = %10.6f</dep>	Latitude of the scene center by the system geometric data Longitude of the scene center by the system geometric	[-90.000000, 90.000000] [0.000000, 360.000000)
			Incidence angle of the	<deq> INCIDENCE_ANGLE = %7.3f <deg></deg></deq>	data Incidence angle of the scene center by the system geometric data (lucar scherical	[0.000, 180.000)
			Emission angle of the scene center	EMISSION_ANGLE = %7.3f <deg></deg>	Emission angle of the scene center by the system <u>decemetric data (lunar spherical approximation)</u>	[0.000, 180.000)
			rnase angle of the scene center Solar azimuth angle of the	rHASE_ANGLE = %7.3f <deg> SOLAR_AZIMUTH_ANGLE = %7.3f <deg></deg></deg>	Phase angle of the scene center by the system <u>deometric data</u> Solar azimuth angle of the scene center by the system	[0.000, 360.000)
			scene center Distance between moon and Focal plane temperature	MOON_SUN_DISTANCE = %d <km> FOCAL_PLANE_TEMPERATURE_= %6.2f</km>	geometric 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
			First sampled line position First detector element	FIRST_SAMPLED_LINE_POSITION = "%s" FIRST_DETECTOR_ELEMENT_POSITION =	Direction of the first detector element (the direction	"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) 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 (metemot number) dealt	MI-VIS:1~962/(in 962 elements)
			(=element number)),(%d,%d,),)	as disregarded for image evaluation, as it has proved not to be available because of its defect (black or white) at launching of the account	MI-NIR:1~320/(in 320 elements)
		ariaton by each instrument	Filter name	FILTER_NAME = ("%s","%s","%s")	Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "MN1", "MN2", "MN3", "MN4"
			Bandwidth	<pre>vervier_riller_waveLeNGIH = (%.1f.%.1f.%.1f) <nm> BANDWIDTH = (%.1f.%.1f, %.1f) <nm> </nm></nm></pre>	Band width(full-width at half-maximum, nominal value)	
			Base band of MI Approximate spacecraft	BASE_BAND = "%s" SPACECRAFT_ALTITUDE = %8.3f <km></km>	Base band identification of MI Spacecraft altitude of the first line("distance	"NV1", "NV2", "NV3", "NV4", "NV5" "NN1", "NN2", "NN3", "NN4"
			altitude		between spacecraft and lunar gravitational center" minus average lunar radius) Spacecraft ground encod of the first line	
			-puocorant ground speed	<km sec=""></km>		

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

Region Description area of geometric data (latitude) object format	Item name	Description format OBJECT = GEOMETRIC DATA LATITUDE	Item explanation	value
prise and a goometrie oute (retride) object format	Thinnig start pixel	BINNING_START_PIXEL_POSITION =	Start pixel position for thinnig in this scene	(1,1)
	Thinnig interval	BINNING INTERVAL = %d	Thinnig interval Number of pixels along the vertical axis of this	
	Number of lineters		scene(direction of along track)	
	Number of line's samples	LINE_SAMPLES = %d	scene (direction of cross track · value detached dummy	
	Sample type	SAMPLE TYPE = "%s"	Sample type	"IEEE REAL"
	Sample bits Unit	SAMPLE_BITS = %d UNIT = "%s"	sample bit length Unit of sample value	"deg"
		ENU_OBJECT = GEOMETRIC_DATA_LATITUDE		
escription 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	(%d,%d) BINNING_INTERVAL = %d	Thinnig interval	
	Number of lines	LINES = %d	Number of pixels along the vertical axis of this scene(direction of along track)	
	Number of line's samples	LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this scene(direction of cross track value detached dummy	
	Sample type	SAMPLE TYPE = "%s"	elements filled onboard) Sample type	"IEEE REAL"
	Sample bits	SAMPLE BITS = %d	Sample bit length	64 "deg"
	ont	END_OBJECT =		deg
scription area of image data object format	Number of nominal lines	OBJECT = IMAGE	Number of nominal lines in this scene(not including	
	Number of nominal everlap		overlap lines)	
	lines	%d	Number of real overlap lines (heek post of date)	
	back data	OVERDAF_LINE_NOMBER = NU	If number of line is less than the number of nominal	
	Number of bands	BANDS = %d	Number of bands	
	Number of lines of an image	LINES = %d	Number of pixels along the vertical axis of this	BAND SEQUENTIAL
	Number of line's samples of	LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this	
	an Image		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]
	lloit	UNIT - "#o"	Unit of complexities	**************************************
	Scaling factor	SCALING_FACTOR = %8.5e	Conversion coefficient used for converting DN value	, π/m=2/micron/sr", "NU"
	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 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	
	Minimum DN	SCENE MINIMUM DN = (%A %A)	e nixel whose DN value is response than threshold D2 In this scene, minimum DN value in the target around	When the number of samples for image
	and a second	00cmc_m101mom_DN = (%0,%0,)	excluded the following: a dummy nixel filled opposed	quality assessment is 0, the value is set
			b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
	-		d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	In this scene, average DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system c.pixel of element number disregarded from image	
			evaluation and	
			d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2	
	Standard deviation DN	SCENE_STDEV_DN = (%.1f,%.1f,)	In this scene, standard deviation DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.
			the L2A process system	
			evaluation	
			d.pixel whose DN value is less than threshold D1	
	Mode DN in this scene	SCENE_MODE_DN = (%d,%d,)	In this scene, mode DN value in the target group	When the number of samples for image
			a.dummy pixel filled onboard	-1.
			the L2A process system	
			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 offset.	
	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	SHADOWED AREA PERCENTAGE -	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 128 process system	
			c.pixel of element number disregarded from image	
	Invalid ture		evaluation	
	nivariu type	INVALID_ITME = ("%S", "%S",)	Registered in L2DB : three types of "saturation",	
			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		before resampling	
	Number of pixels out of	OUT_OF_IMAGE_BOUNDS_PIXELS =	Numer of pixel originally not existing before	
cription area of process persent-	Dounus pixeis before	END OBJECT = IMAGE	rresempt mg	
inputor area or process parameter	Reflectance conversion	REF_CNV_COEF =	Coefficient for converting into reflectance (solar	
	coefficient	(%r,%r,%r,***)<1/(W/m**2/micron/sr)	radiance)[1/(W/m2/micron/sr)] ("N/A" when not converted)	
	Photometric standard geometry	STANDARD_GEOMETRY = (%.1f,%.1f,%.1f)	Standard values of incidence angle, and emission angle and phase angle for photometric correction.	(30.0, 0.0, 30.0)
	Photometric correction identification	PHOTO_CORR_ID = "%s"	Photometric correction formula type	"USGS", "BROWN",
	Photometric correction	PHOTO_CORR_COEF =	Coefficient of photometric correction formula ("N/A"	"LISM ORIGINAL", "N/A"
	coefficient Dead pixel discrimination	((%e,%e,%e,),(%e,%e,%e,),) L2A DEAD PIXEL THRESHOLD = ("4	when not corrected) Maximum pixel value to judge as dead pixel on 124	
	threshold	(%d,)	image	
	LZA saturation threshold	<pre>LZA_SATURATION_IHRESHOLD = (%d, %d,)</pre>	immum threshold value to judge as saturation on L2A	
	vark current corrected valid minimum threshold	UARK_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	
	Radiance conversion saturation threshold Reflectance conversion	RADIANCE_SATURATION_THRESHOLD = %f	Minimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation	
	Radiance conversion saturation threshold Reflectance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD = %f REF_SATURATION_THRESHOLD = %f <nd></nd>	Winimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Minimum threshold to discriminate to be saturation after converting reflectance. It's indicated as hysical quantity (real value) ("N/A" when not	
	Radiance conversion saturation threshold Reflectance conversion saturation threshold	RADIANCE_SATURATION_THRESHOLD = %f REF_SATURATION_THRESHOLD = %f <nd></nd>	Winimum threshold to discriminate to be radiance conversion saturation. Indicate physical quantity (real value). ("N/A" when not converted) Winimum threshold to discriminate to be saturation after converting reflectance. It's indicated as physical quantity (real value). ("N/A" when not converted)	

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

Region Prerequisite items for PDS header		Item name PDS version identification	Description format PDS_VERSION_ID = "%s"	Item explanation PDS version identification	value "PDS3"		
			File record type File name(L2DB regulation)	RECORD TYPE = "%s" FILE_NAME = "%s"	File record type (prerequisite for L2DB registration) File name (prerequisite for L2DB)(uniquely decidable	"UNDEFINED" ****.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 registration)	"PDS"	
Area specifying object p	position		Starting position of	^GEOMETRIC_DATA_ALTITUDE = %d	Tregistration) Starting position of geometric data (altitude)(in Bute) This keyword may be omitted		с
			Starting position of image object	^IMAGE = %d <bytes></bytes>	Starting position of image object(in Byte)		1.
Product information	File attribut	te	Software name Software version	SOFTWARE_NAME = "%s" SOFTWARE_VERSION = "%s"	Software name used for creating PDS product Software version used for creating PDS product	"RGC TC MI" n.n.n	
			Process version identification	PROCESS_VERSION_ID = "%s"	Process version identification (prerequisite for L2DB registration)	"MAP", "MSC"	
	Droduct ottri	ibuto	Product creation time Program start time	PRODUCT_CREATION_TIME = %s PROGRAM_START_TIME = %s	Product creation time(UTC) Program start time (UTC) Data scaluper identification	YYYY-MM-DDThh:mm:ss2 YYYY-MM-DDThh:mm:ss2	
	FIOUUCI attri	ibute	Product set identification	PRODUCT_SET_ID = "%s"	PDS product set types (prerequisite for L2DB	"MI_MAP", "MI_VIS_MAP"	
					The name in product list should be used. As of data not registered in L2DB, it's be described "Others".	"MI-NIR_MAP", "Others"	
			Product version identification	PRODUCT_VERSION_ID = "%s"	Product version registered for L2DB(prerequisite for L2DB registration)	"00 " ~ " 99 "	
			Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of	"Y" or "N"	
			Source data file name(L2A)	LEVEL2A_FILE_NAME = ({"%s",	registration in L2DB. Source data file names used for creating this PDS	***.img	11
			SPICE metakernel file name	<u>"%s"}.{"%s", "%s"})</u> SPICE_METAKERNEL_FILE_NAME =	SPICE metakernel file names used for creating PDS		В
	Scene	Common to each instrument	Mission name	("%s" "%s") MISSION_NAME = "%s"	product. This keyword may be omitted. Mission name	"SELENE"	С
	attribute		Spacecraft name	SPACECRAFT NAME = "%s"	Spacecraft name	"SELENE-M"	
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB	MIV:"Multiband Imager Visible" MIN:"Multiband Imager Near Infrared"	
			Instrument identification	INSTRUMENT ID = "%s"	Instrument identification	When 9 bands are cubed: "Multiband Imager" "MI-VIS", "MI-NIR", "MI"	
			Observation target name Observation mode	TARGET_NAME = "%s" OBSERVATION MODE ID = "%s"	Observation target name of this strip Observation mode identification	"MOON" (default) "NORMAL": normal	
			identification			"SUPPORT":support "NORMAL&SUPPORT":normal and support image	
			Sensor description	SENSOR_DESCRIPTION = "%s"	Sensor description.	mosaic in TC MAP/MSC	
					(e.g.TC:scan mode, TC1/2relative mounting angle, element number of used detector, focal length, F		
					value, IFOV, field of view angle, range of wavelengths, aperture, explanation of swath mode,		
			Sensor description 0		explanation of compression mode, explanation of exposure mode. Bit number of AD converter)		
		Variaton by each instrument	Filter name	FILTER_NAME = ("%s","%s","%s")	Names of MI filters	"MV1", "MV2", "MV3", "MV4", "MV5" "NN1" "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"	С
Description area of geom	metric data (a	ltitude) object format		OBJECT = GEOMETRIC DATA ALTITUDE	This keyword may be omitted.	"MN1". "MN2". "MN3". "MN4"	
			Thinnig start pixel position	BINNING_START_PIXEL_POSITION = (%d,%d)	Start pixel position for thinnig in this scene	(1,1)	
			<u>Thinnig interval</u> Number of lines	BINNING INTERVAL = %d LINES = %d	Thinnig interval Number of pixels along the vertical axis of this		
			Number of line's samples	LINE_SAMPLES = %d	scene. Number of pixels along the horizontal axis of this		
			Sample type Sample bits	SAMPLE_TYPE = "%s"	Sample type	"IEEE_REAL"	
			Unit	UNIT = "%s" FND_OBJECT =	Unit of sample value	"km"	с
Description area of imag	ge data object	format	Number of bands	OBJECT = IMAGE BANDS = %d	Number of bands	4,5,9	
			Band storage type Number of lines of an image	BAND_STORAGE_TYPE = "%s" LINES = %d	<u>Storage type of bands</u> 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"	С
			<u>Sample bits</u> Image value type	SAMPLE_BITS = %2d IMAGE_VALUE_TYPE = "%s"	Sample bit length Image value type	16 "DN"[ND], "RADIANCE"[W/m2/micron/sr], "REFLE	
			Unit Seeling factor	UNIT = "%s"	Unit of sample value	CTANCE"[ND] "ND", "W/m**2/micron/sr", "ND"	I.
				0EESET - %8.5e	into physical quantity (first order coefficient)		
			Minimum for statistical	MIN FOR STATISTICAL EVALUATION	into physical quantity (constant term)		
			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 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		
					evaluation		
					d.pixel whose DN value is less than threshold D1		
			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	-1.	
					the L2A process system c.pixel of element number disregarded from image		
					evaluation and		
			A		d.pixel whose DN value is less than threshold D1 e.pixel whose DN value is greater than threshold D2		
			Average DN	SCENE_AVERAGE_DN = (%.1f,%.1f,)	In this scene, average DN value in the target group excluded the following:	When the number of samples for image quality assessment is 0, the value is set	
					a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	-1.	
					c.pixel of element number disregarded from image		
					and antical whose DN value is less than threshold D1		
			Standard deviation DN	SCENE_STDEV_DN = (%.1f.%.1f)	e. <u>nixel</u> whose DN value is creater 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	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		
			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		

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

Region Description area of image data object format	Item name Shadowed area minimum D5	Description format SHADOWED AREA MINIMIM = (%d %d	Item explanation Minimum DN value of output range for shadow	value
	Shadowod aroa maximum D6)	discrimination, indicated as integral value scaled and	
)	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 point). In this scene, pixel percentage whose DN value	When the number of samples for image quality assessment is 0, the value is set
			is between threshold D5 and threshold D6: a.dummy pixel filled onboard	-1.
			a.dummy pixel filled onboard b.dummy pixel filled on the failure of restoration in	
			the L2A process system	
	Invalid type	INVALID TYPE - ("%e" "%e")	evaluation	
		1107ED_111E = (%3 , %3 ,)	Registered in L2DB : three types of "saturation",	
			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	
	of bounds pixels before	UT_UT_INIAL_DUNDO_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	
	Coordinate system type Coordinate system name	COORDINATE_SYSTEM_TYPE = "%s" COORDINATE_SYSTEM_NAME = "%s"	Fixed coordinate system of celestial body Original point is mass center of celestial body.	"BODY-FIXED ROTATING" "PLANETOCENTIC"
			latitude is positive in northhemisphere and longitude	
	A axis radius	A_AXIS_RADIUS = %8.1f <km></km>	Lunar radius in a axis	1737.4 <km></km>
	Caxis radius	C_AXIS_RADIUS = %8.11 <km> C_AXIS_RADIUS = %8.1f <km></km></km>	Lunar radius in c axis	1737.4 <km> 1737.4 <km></km></km>
	rirst standard parallel	<pre>FIRST_STANDARD_PARALLEL = %f <deg></deg></pre>	and the cone of the projection.	N/A except that map projection is LCC
	Second standard parallel	SECOND_STANDARD_PARALLEL = %f <deg></deg>	the intersection lines between the sphere of the planet and the cone of the projection.	"N/A"except that map projection is LCC
	Positive longitude direction	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"EAST"
	Center latitude	CENTER_LATITUDE = %11.8f <deg></deg>	Latitude being original point of coordinate system in map projection	
	Center longitude	CENTER_LONGITUDE = %12.8f <deg></deg>	Longitude being original point of coordinate system in map projection	
	Reference latitude	REFERENCE_LATITUDE =	the new zero latitude in a rotated spherical	"N/A"
	Reference longitude	REFERENCE_LONGITUDE =	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	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>	
	<u>Map scale</u> 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></deg>	The vertical offset value from the man projection	
	the map projection origin	%f <pixel> SAMPLE_PROJECTION_OFESET -</pixel>	origin (line and sample 1.1) [pixel].	
	from the map projection	%f <pixel></pixel>	origin (line and sample 1.1)[pixel].	
Description area of process parameter	Dark ourrant correction	OBJECT = PROCESSING_PARAMETERS	Dark ourrest correction coefficient file nome ("N/A"	
	coefficient file name	ET ELLE NAME _ { %5 , %5 }	when not corrected). This keyword may be omitted.	
	formula coefficient file	FI_FILE_NAME = "%S"	name ("N/A" when not corrected). This keyword may be	
	name Flat field correction	FLAT_FILE_NAME = {"%s", "%s"}	omitted. Flat field correction coefficient file name ("N/A"	
	coefficient file name Coefficient file name of	EFFIC_FILE_NAME = {"%s", "%s"}	when not corrected). This keyword may be omitted. Coefficient file name of temperature dependency	
	temperature dependency correction of transmittance		correction of transmittance efficiency ("N/A" when not corrected). This keyword may be omitted.	
	efficiency File name of non-linearity	NONLIN FILE NAME = { "%e" "%e" }	File name of non-linearity correction coefficient	
	correction coefficient		("N/A" when not corrected). This keyword may be omitted.	
	Radiance conversion	RAD_CNV_COEF =	Radiance conversion coefficient:indicate all value	
	CONTRICIENT	(%),%T,%T,***) <w m**2="" micron="" sr=""></w>	every band [w/mz/micron/sr] ("N/A" when not converted) . This keyword may be omitted.	
	Reflectance conversion coefficient	<pre>REF_CNV_COEF = (%f,%f,%f,)<1/(W/m**2/micron/sr)</pre>	CONTICIENT for converting into reflectance (solar radiance)[1/(W/m2/micron/sr)] ("N/A" when not	
	Photometric standard	> STANDARD_GEOMETRY =	converted) Standard values of incidence angle, and emission angle	(30.0, 0.0, 30.0)
	geometry Photometric correction	(%.1f,%.1f,%.1f) PHOTO_CORR_ID = "%s"	and phase angle for photometric correction. Photometric correction formula type	"USGS",
	identification			"BROWN", "LISM ORIGINAL". "N/A"
	Photometric correction coefficient	PHOTO_CORR_COEF = ((%e,%e,%e,),(%e,%e,),)	Coefficient of photometric correction formula ("N/A" when not corrected)	
	Resampling method	RESAMPLING_METHOD = { "%s", "%s",	Interpolation method of resampling	"Nearest Neighbor", "Bi-Linear".
	Geometric data matetica		Source TC on the data file para used for any idia	"Cubic Convolution"
	original TC-Ortho data	IUU_WUOAIU_FILE_NAME = "%S"	geometric data. This keyword may be omitted.	. my
	Geometric data matching	DTM_MOSAIC_FILE_NAME = "%s"	Source DTM data file name used for providing geometric	***.dtm
	file name		uata. Inis keyword may be omitted.	
	identification	UVERLAP_SELECTION_ID = "%s"	metrica for processing overlap.	
	matching mosaic on creating	MAICHING_MOSAIC = "%s"	Matching method	N/A, CURRELATION1, CORRELATION2, SSDA1, SSDA2, SSDA3, SSDA4
	Dead pixel discrimination threshold	LZA_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	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 reflectance. It's indicated as	
			converted)	
		END		

(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	de 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

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

(3)Image data object

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

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

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

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

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

Number of bits	16	
Туре	Integral number	
Byte order	big endian	

Sensor	Level/ geometric correction option	Number of pixels in a line
MIVIS	L2B2, L2C2	962
WII- V 13	MAP	Different by image
MI NID	L2B2, L2C2	320
1 V11 -1 NIK	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.



No	Starting	Length	Set volue
10.	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 _:fixation
4	8	2	Registered version in L2DB or individualized data set ID nn:2-digit number(registered version in L2DB) number and alphabet of big or small letters (individualized data set ID)
5	10	1	Underscore _:fixation
6	11	5	Lunar revolution number nnnnn:5-digit number
7	16	1	Underscore ;fixation
8	17	1	Rev. number involving in product 1~9. Z (Z represents 10 and above)
9	18	1	Determination of day and night $A \sim F_{\gamma} 2 \sim 9_{\gamma} Z$ $A:night \rightarrow day \rightarrow night$ B:day only $C:night \rightarrow day$ $D:day \rightarrow night$ E:night only F:failure to determine day/night in all lines $2 \sim 9_{\gamma} Z:number of days(Z represents 10 and above)$
10	19	1	Lightning of calibration lamp N, B, R, W N:non-lightning B:lightning of both radiance lamp and wavelength lamp R:lightning of only radiance lamp W:lightning of only wavelength lamp
11	20	1	Number of L2A scene on high resolution mode 0~9, Z (Z represents 10 and above)
12	21	5	Longitude of the point of lowest latitude in dayside Ennnn:E shows east longitude E00000~E35999 (two decimal places, but omit decimal point) NIGHT_ (when all lines are in nightside)
13	26	1	With or without roll cant operation N, R N:without roll cant R:with roll cant
14	27	4	Extension .spc:RGC PDS product file .ctg:catalog information file .sl2:RGC data set
	10101	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
			nn:2 digit number(registered version in L2DB)
			number and alphabet of hig or small letters
			(individualized data set ID)
5	10(0)	1	Underscore
5	10(3)	1	fixation
6	11(10)	5	Lunar revolution number
Ŭ	11(10)	Ŭ	nnnn:5-digit number
7	16(15)	1	Underscore
	10(10)	-	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	
	Total	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.

	14		
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 ^{*1)}	ThumbnailFileName	AAAAAAAA (up to 31-digit)	Thumbnail file name (after L2B2)
Thumbnail file size ^{*1)}	ThumbnailFileSize	NNNNNNNNNNN (up to 12-digit)	Thumbnail file size (after L2B2)
Thumbnail file format ^{*1)}	ThumbnailFileFormat	AAAA (up to 4-digit)	JPEG:fixation (after L2B2)
Instrument name	InstrumentName	AAAAAAAA (up to 16-digit)	LISM:fixation
Processing level	ProcessingLevel	AAAAAAAA (up to 16-digit)	L2B1:L2B L2B2:L2B L2C :L2C L2D :L2D Others:Others
Product identification	ProductID	AAAAAAAA (up to 30-digit)	SP_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	AccessLevel	Ν	Setting any value among following: 0:prohibition of overwriting 1:access permission given to the only core members in the instrument group 2:access permission given to the members in the instrument group 3:accdess permission given to the members in both the instrument group and the SELENE mission 4:access permission given to all
Start date and time of data	StartDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	Start date and time of this scene (same contents as "start time (UT)"of PDS label)
End date and time of data	EndDateTime	yyyy-mm-ddT hh:mm:ss.sssssZ	Stop date and time of this scene (same contents as "stop time (UT)" of PDS label)
Lunar revolution number	RevoNumber	NNNNNNNNN (up to 10-digit)	Lunar revolution number provided by LISM
Strip number	StripNumber	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	UpperRightLatitude	SNN NNNNNN	[-90, 90]
Upper right longitude of the scene	UpperRightLongitude	NNN . NNNNNN	[0, 360)
Lower left latitude of the scene	LowerLeftLatitude	SNN . NNNNNN	[-90, 90]
Lower left longitude of the scene	LowerLeftLongitude	NNN . NNNNNN	[0, 360)
Lower right latitude of the scene	LowerRightLatitude	SNN . NNNNNN	[-90, 90]
Lower right longitude of the scene	LowerKightLongitude	NNN . NNNNNN	[U, 360)
FIEE KEYWUIU	FIGENEYWORD		Neiei lu lie fist 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.

	Bond	Number of	Number of	File size	Format
Detector	Band	horizontal	vertical		
	number	pixels	pixels		
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

PDS label	Prerequisite items for PDS header					
	Version identification					
	·Area specifying object position					
	Pointer to all objects					
	Product information	\cdot File attribute				
		e.g. file name	, creating date, update date			
		Product attribute				
		e.g. software	e name used for creating product,			
		producer ident	producer identification, 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			
			\cdot Variation by each instrument			
			e.g. observation parameters, status			
	\cdot Description area of an	cillary and supp	olementary data object format			
	Provision of format for	or describing ancillary and supplementary data				
	object	object				
	\cdot Description area of sp	spectrum data object format(central wavelength)				
	size, bit length					
	\cdot Description area of sp	pectrum data object format(raw data spectrum)				
	\cdot Description area of sp	ectrum data obj	ect format(dark current corrected			
	value spectrum)					
	\cdot Description area of sp	ectrum data obj	ect format(radiance value spectrum)			
	•Description area of sp value spectrum)	ectrum data obj	ect format((diffusion)reflectance			
	• Description area of sp	ectrum data obj	ect format(ancillary and			
	supplementary data s	pectrum)				
	\cdot Description area of sp	ectrum data obj	ect format(high level process			
	result)					
\cdot Ancillary and s	supplementary data obje	ct				
Information p	er lines, ex. space craft o	clock count and	temperature			
\cdot Spectrum data	ata object (central wavelength)					
e.g. size, bit ler	t length					
•Spectrum data	ata object(raw data spectrum)					
•Spectrum data	object format(dark curre	ent corrected va	lue spectrum)			
•Spectrum data	data object(radiance value spectrum)					
•Spectrum data	object(diffusion)reflecta	nce value spectr				
•Spectrum data	Spectrum data object(ancillary and supplementary data spectrum)					
	object(ancillary and sup	plementary dat	a spectrum)			

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	
Prerequisite items for	PDS header		File record type	RECORD_TYPE = "%s"	File record type (prerequisite for L2DB)	"UNDEF I NED"
			File name (L2DB regulation)	FILE_NAME = "%s"	File name (prerequisite for L2DB)(uniquely decidable file name, involving extension(.img)	***.spc
		Product Identification (PDS practice)		identification, not involving extension)	"" (no extension)	
Area specifying object position			Starting position of ancillary and	DATA_FURMAT = "%S" ^ANCILLARY_AND_SUPPLEMENT_DATA = %d <bytes></bytes>	Starting position of ancillary and supplementary	"PDS"
		Starting position of SP spectrum center	^SP_SPECTRUM_WAV = %d <bytes></bytes>	Starting position of SP spectrum center wavelength		
			Starting position of SP spectrum raw	^SP_SPECTRUM_RAW = %d <bytes></bytes>	Starting position of SP spectrum raw data	
			Starting position of SP spectrum dark current estimate value object	^SP_SPECTRUM_DAR = %d <bytes></bytes>	Starting position of SP spectrum dark current estimate value object(in Byte)	
			Starting position of SP spectrum radiance value object	^SP_SPECTRUM_RAD = %d <bytes></bytes>	Starting position of SP spectrum radiance value object(in Byte)	
			Starting position of SP spectrum reflectance value object	^SP_SPECTRUM_REF = %d <bytes></bytes>	Starting position of SP spectrum reflectance value object(in Byte)	
			Starting position of SP spectrum QA Starting position of L2D result array	^SP_SPECTRUM_QA = %d <bytes> ^L2D_RESULT_ARRAY = %d <bytes></bytes></bytes>	Starting position of SP spectrum QA object(in Starting position of L2D result array(in Byte)	
Product information	File attribute		Software name	SOFTWARE_NAME = "%s"	Software name used for creating PDS product	"RGC_SP"
			Software version Process version identification	SOFTWARE_VERSION = "%s" PROCESS_VERSION_ID = "%s"	Software version used for creating PDS product Process version identification (prerequisite for	n.n.n "L2B","L2C","L2D"
			Product creation time Program start time	PRODUCT_CREATION_TIME = %s PROGRAM START TIME = %s	Product creation time Program start time	YYYY-MM-DDThh:mm:ssZ YYYY-MM-DDThh:mm:ssZ
	Product att	ribute	Producer identification	PRODUCER_ID = "%s" PRODUCT SET ID - "%s"	Data producer identification	"LISM"
					The name in product list should be used. As of data not registered in L2DB, it's be described	"SP_Level2C", "SP_Level2D", "Others"
			Product version identification	PRODUCT_VERSION_ID= "%s"	Product version registered in L2DB(prerequisite for L2DB)	"01 " ~ " 99 "
			Whether to be registered product in L2DB	REGISTERED_PRODUCT = "%s"	It's be set whether it was created as product for registration, regardless of success and failure of	"Y" or "N"
			Source data file name	LEVEL2B1_FILE_NAME = "%s"	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	
			SPICE metakernel file name	SPICE_METAKERNEL_FILE_NAME = "%s"	SPICE metakernel file names used for creating L1A	
	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	"SELENE -M"
			Instrument name	INSTRUMENT_NAME = "%s"	Instrument name(full name) (prerequisite for L2DB)	"Spectral Profiler"
			Mission phase name	MISSION_PHASE_NAME = "%s"	Mission phase name	(e.g. Nominal/Option)
			Strip sequence pumber	KEVULUIIUN_NUMBER = %d	Revolution number of this scene's starting position Strip sequence number while in revolution	L2DI:Value of SP else:value of TC/MI 1281:value of SP
			Scene sequence number	SCENE SEQUENCE NUMBER = %d	Scene sequence number while in strip	else:value of TC/MI L2B1:value of SP
			Revolution • strip • scene number	REV STRIP SCENE = {(%d,%d,%d),(%d,%d,%d),}	Number of revolution, strip, and scene including	LSe: value of TC/MI L2B2, L2C, L2D: "N/A"
			Observation target name	TARGET_NAME = "%s"	this scene Observation target name of this strip	"MOON" (default)
			Observation mode identification	OBSERVATION_MODE_ID = "%s"	Observation mode identification (observation/dark/calibration and resolition)	Obsevation:"OBS","DARK","LAMP" Resolution:"NORMAL","HIGH","BOTH"
			Sensor description	SENSOR_DESCRIPTION = "%s"	e.g. OBS-NORMAL Sensor specification is set with character string	
			Sensor description 2 Exposure mode identification	SENSOR_DESCRIPTION2 = "%s" EXPOSURE MODE ID = "%s"	Alternative sensor description Exposure mode identification	"LONG"."SHORT"
			Short mode exposure duration	SHORT_EXPOSURE_DURATION = %.3f <msec></msec>	Exposure duration on short mode	
			Calibration mode identification	CALIBRATION MODE_ID = "%s" (44)	Calibration mode identification	
			Spacecraft clock start count (II) Spacecraft clock stop count (II)	SPACECRAFI_LOUCK_STARI_COUNT = %.4T <sec> SPACECRAFT_CLOCK_STOP_COUNT = %.4T <sec></sec></sec>	Spacecraft clock start count on this scene (TI) Spacecraft clock stop count on this scene (TI)	
			Observation start time (UT) Observation stop time (UT)	START_TIME = %s STOP_TIME = %s	Observation start time on this scene (UT) Observation stop time on this scene (UT)	yyyy-mm-ddThh:mm:ss.sssssZ yyyy-mm-ddThh:mm:ss.sssszZ
			Upper left latitude of this scene	UPPER_LEFT_LATITUDE = %.6f <deg></deg>	Latitude of pixel on upper left corner of this scene (=latitude of pixel on upper right corner of	[-90.000000, 90.000000]
					this scene) Latitude of the pixel center on the first line	
			Upper left longitude of this scene	UPPER_LEFT_LONGITUDE= %.6f <deg></deg>	snn.nnnnn Longitude of pixel on upper left corner of this	[0.000000, 360.000000)
					of this scene)	
			Upper right latitude of this scene	UPPER RIGHT LATITUDE= %.6f <deq></deq>	nnn.nnnnn Latitude of pixel on upper right corner of this	[-90,00000, 90,00000]
					<pre>scene (=latitude of pixel on upper left corner of this scene)</pre>	
			Upper right longitude of this scene	UPPER_RIGHT_LONGITUDE= %.6f <deg></deg>	Latitude of the pixel center on the first line Longitude of pixel on upper right corner of this	[0.000000, 360.000000)
					scene (=longitude of pixel on upper left corner of this scene)	
			Lower left latitude of this scope	LOWED LEET LATITUDE & 6f adop	Longitude of the pixel center on the first line	[
				LOWER_LEFT_LATTIONE= %.01 (degs	scene (=latitude of pixel on upper right corner of this scene)	[-50.000000, 50.000000]
					Latitude of the pixel center on the last line	
			Lower left longitude of this scene	LOWER_LEFT_LONGITUDE= %.6f <deg></deg>	Longitude of pixel on lower left corner of this scene (=longitude of pixel on upper right corner	[0.000000, 360.000000)
					of this scene) Longitude of the pixel center on the last line	
			Lower right latitude of this scene	LOWER_RIGHT_LATITUDE= %.6f <deg></deg>	nnn.nnnnnn Latitude of pixel on lower right corner of this	[-90.000000, 90.000000]
					this scene)	
			Lower right longitude of this scene	LOWER_RIGHT_LONGITUDE= %.6f <deg></deg>	Longitude of pixel on lower right corner of this scene (= ongitude of pixel on upper left corner of	[0.000000, 360.000000)
					this scene) Longitude of the pixel center on the last line	
			Location flag	LOCATION_FLAG = "%s"	nnn.nnnnn Information of spacecraft location	L2B1:value of SP
						else:value of TC/MI A : ascending
						D:descending N:involving north pole
						S: Involving south pole W: involving both poles
						It is determined on the basis of the
						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.
						and 90 degrees is not.
						degrees are both included.
			Roll cant	ROLL_CANT = "%s"	Discrimination of nadir looking or roll cant	YES: roll cant
			Distance between moon and sun	MOON_SUN_DISTANCE = %d <km></km>	Distance between moon and sun	NV: NAGIT LOOKING
			NIR1 focal plane temperature	NI FOCAL PLANE_IEMPERATURE = %6.2f <degc></degc>	vis rocal plane temperature at observation on the first line	
			NIR2 focal plane temperature	N2 FOCAL PLANE TEMPERATURE = %6.21 <0000>	first line NIR2 focal plane temperature at observation on the	
			Satellite moving direction	SATELLITE_MOVING_DIRECTION = "%s"	first line Moving direction of satellite	L2B1:value of SP
			<u> </u>			else:value of TC/MI "+1" : lead of +x plane
			Radius of lunar shape (a axis)	A_AXIS_RADIUS = %.3f <km></km>	Lunar radius in a axis. nnnn.nnn (indicate down	"-1" : lead of -x plane
			Radius of lunar shape (b axis)	B_AXIS_RADIUS = %.3f <km></km>	Lumeter order) Lunar radius in baxis.nnnn.nnn (indicate down	
			Radius of lunar shape (c axis)	C_AXIS_RADIUS = %.3f <km></km>	Lunar radius in c axis. nnnn.nnn (indicate down to meter order)	

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

Region		Item name	Description format	Item explanation	value	
Product information	Scene attribute	Variaton by each instrument	Approximate spacecraft altitude	SPACECRAFT_ALTITUDE = %.3f <km></km>	Spacecraft altitude of the first line("distance between spacecraft and lunar gravitational center"	
			Spacecraft ground speed	SPACECRAFT GROUND SPEED = %.3f <km sec=""></km>	Spacecraft ground speed of the first line	
			VIS band number	VIS_BAND_NUMBER = %d	VIS band number	84
			VIS spectral coverage	VIS_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of	
			VIS band width	VIS RAND WIDTH = %.1f <nm></nm>	VIS(nominal value) 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 = (%.11,%.11) <nm></nm>	NIR1(nominal value)	
			NIR1 band width	N1_BAND_WIDTH = %.1f <nm></nm>	Band width of NIR1(full-width at half-maximum,	
			NIR2 band number	N2 BAND NUMBER = %d	nominal value) NIR2 band number	112
			NIR2 spectral coverage	N2_SPECTRAL_COVERAGE = (%.1f,%.1f) <nm></nm>	Shortest wavelengths and longest wavelengths of	
			NLDO bood width		NIR2(nominal value)	
			NTR2 band width	NZ_BAND_WIDTH = %.11 <1100>	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	Imager information	IMAGER = "%s"	Band identification of TC/MI image acquired at the	L2B1: "N/A"
		acquired at the same time of SP	Data set name of TC/MI image acquired at	TM DATA SET NAME = "%s"	same time of SP observation Data set name of TC/ML image acquired at the same	else:"TC1","TC2","MV2","MN3" L2B1:"N/A"
		observation	the same time of SP observation		time of SP observation	else:***.sl2
			Corrected start time of TC/MI image	TM_CORRECTED_START_TIME = %s	Corrected start time (UT) (six decimal places)	L2B1: "N/A"
			Corrected stop time of TC/MI image	TM_CORRECTED_STOP_TIME = %s	Corrected stop time(UT) (six decimal places)	L2B1: "N/A"
			acquired at the same time of SP	TH CORRECTED SAMPLING INTERVAL - % 6f -mcoos	Corrected compling interval with dividing the	1 201 - "N/A"
			image acquired at the same time of SP	IM_CORRECTED_SAMPLING_INTERVAL = %.01 <iiisec></iiisec>	corrected sampling interval with dividing the corrected interval time between first line and	LZDI. N/A
			observation		last line of strip into the number of lines.	
			Number of lines of TC/MI image acquired at the same time of SP observation	TM_LINES = %d	Number of pixels along the vertical axis of this scene(direction of along track)	L2B1: "N/A"
			Number of line's samples of TC/MI image	TM_LINE_SAMPLES = %d	Number of pixels along the horizontal axis of this	L2B1: "N/A"
			acquired at the same time of SP	TM EIRST DIVEL NUMBER - %d	scene(direction of cross track)	1 2B1 : "N/A"
			acquired at the same time of SP observation	TM_FINGT_FIXEL_NUMBER = %d	First detector element number(defined value)	L2D1. N/A
			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.nnnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
			Upper right latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_RIGHT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the last column and the first line snn.nnnnnn	L2B1:"N/A" else:[-90.000000, 90.000000]
			Upper right longitude on the scene of TC/MI image acquired at the same time of SP observation	TM_UPPER_RIGHT_LONGITUDE = %.6f <deg></deg>	Longitude of the pixel center on the last column and the first line nnn.nnnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
			Lower left latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_LOWER_LEFT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the first column and the last line snn.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.nnnnnn	L2B1:"N/A" else:[0.000000, 360.000000)
			Lower right latitude on the scene of TC/MI image acquired at the same time of SP observation	TM_LOWER_RIGHT_LATITUDE = %.6f <deg></deg>	Latitude of the pixel center on the last column and the last line snn.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.nnnnnn	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 image acquired at the same time of SP	TM_DEAD_PIXEL_PERCENTAGE = %d	Percentage of dead pixels (omit decimal fractions)	L2B1: "N/A"
			Saturated pixel percentage, whose value is between D5 and D6, of TC/MI image acquired at the same time of SP	TM_SHADOWED_AREA_PIXEL_PERCENTAGE = %d	Percentage of shadowed area pixels(omit decimal fractions)	L2B1: "N/A"
			High resolution observation point number	HIGH_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"
					TC/MI image acquired at the same time of SP	
			Lower margin observation point number	LOWER_MARGIN_POINT_NUM = %d	Observation points number longly cut off below	L2B1, L2C, L2D: "N/A"
			Calibration lamp information	CAL_LAMP_INFO =	Type of calibration lamp, set of the time to light	"RAD","WAV"
			Matching accuracy information	{("%S",%S,%S),("%S",%S,%S),} MATCHING ACCURACY INFO= "%s"	on and off. Setting "1" if the following conditions are	YYYY-MM-DDThh:mm:ss.ssssssZ
					fulfilled, or "O" 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 a consol to the cotting value is loss	L2C, L2D :"nnnn"(n is 0 or 1) #Setting reasons if the matching result is not applicable.
					than or equal to the setting value is less than or equal to threshold. 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)

	Region	Item name	Description format	Item explanation	value
Description area of			OBJECT = ANCILLARY_AND_SUPPLEMENT_DATA		
ancillary and	Common to ancillary and	format	INTERCHANGE_FORMAT = %s		"BINARY"
supplementary data	supplementary data object	Number of rows	ROWS = %d	Number of rows in this scene	
object format		Number of columns	COLUMNS = %d	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"		
			UNIT = "sec"		
			START BYTE = 1		
			BYTES = 8		
			END_OBJECT = COLUMN		
		VIS focal plane temperature	OBJECT = COLUMN	Recording format of VIS focal plane temperature	
			NAME = "VIS_FOCAL_PLANE_TEMPERATURE"		
			UNIT = "deaC"		
			START_BYTE = 9		
			BYTES = 4		
			END_OBJECT = COLUMN		
		NIR1 focal plane temperature	OBJECT = COLUMN	Recording format of NIR1 focal plane temperature	
			NAME = "NIR1_FOCAL_PLANE_TEMPERATURE"		
			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"		
			UNIT - "K"		
			START BYTE = 17		
			BYTES = 4		
	1		END_OBJECT = COLUMN		
	1	Spectrometer temperature 1	OBJECT = COLUMN	Recording format of spectrometer temperature 1	
	1	1	NAME = "SPECTROMETER_TEMPERATURE_1"		
			UNIT = "deaC"		
			START_BYTE = 21		
			BYTES = 4		
	1		END_OBJECT = COLUMN		
		Spectrometer temperature 2	OBJECT = COLUMN	Recording format of spectrometer temperature 2	
			NAME = "SPECTROMETER_TEMPERATURE_2"		
			UNIA_ITEC = TEEE_REAL" UNIT = "deaC"		
			START_BYTE = 25		
	1	1	BYTES = 4		
			END_OBJECT = COLUMN		
		Spectrometer temperature 3	OBJECT = COLUMN	Recording format of spectrometer temperature 3	
			NAME = "SPECTROMETER_TEMPERATURE_3"		
			DATA_TYPE =" TEEE_REAL"		
			START BYTE = 29		
			BYTES = 4		
			END_OBJECT = COLUMN		
		Spectrometer temperature 4	OBJECT = COLUMN	Recording format of spectrometer temperature 4	
			NAME = "SPECTROMETER_TEMPERATURE_4"		
			DATA_TYPE ="IEEE_REAL"		
			UNIT = "degC"		
			$START_BTTE = 33$ BYTES = 4		
			END OBJECT = COLUMN		
		Halogen bulb radiance	OBJECT = COLUMN	Recording format of halogen bulb radiance	
			NAME = "HALOGEN_BULB_RADIANCE"		
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
			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"		
			UNII = VV START RVTE - 41		
			BYTES = 4		
			END OBJECT = $COLUMN$		
		Halogen bulb voltage 2	OBJECT = COLUMN	Recording format of halogen bulb voltage 2	
			NAME = "HALOGEN_BULB_VOLTAGE2"	· · · · · ·	
			DATA_TYPE = "IEEE_REAL"		
	1	1	START BYTE = 45		
			BYTES = 4		
	1		END_OBJECT = COLUMN		
		Halogen bulb temperature 1	OBJECT = COLUMN	Recording format of halogen bulb temperature 1	
	1		NAME = "HALOGEN_BULB_TEMPERATURE1"		
			DATA_TYPE = "IEEE_REAL"		
			START BYTE - 49		
	1	1	BYTES = 4		
			END_OBJECT = COLUMN		
		Halogen bulb temperature 2	OBJECT = COLUMN	Recording format of halogen bulb temperature 2	
	1	1	NAME = "HALOGEN_BULB_TEMPERATURE2"		
			DATA_TYPE = "IEEE_REAL"		
	1	1	START RVTE - 52		
			BYTES = 4		
			END_OBJECT = COLUMN		
	1	Spacecraft altitude	OBJECT = COLUMN	Recording format of spacecraft altitude	
			NAME = "SPACECRAFT_ALTITUDE"		
	1	1	DATA_TYPE = "IEEE_REAL"		
			UNII = "KM" START RYTE - 57		
			BYTES = 4		
			END_OBJECT = COLUMN		
		Spacecraft ground speed	OBJECT = COLUMN	Recording format of spacecraft ground speed	
			NAME = "SPACECRAFT_GROUND_SPEED"		
			DATA_TYPE = "IEEE_REAL"		
	1	1	UNIT = "km/sec"		
			$START_BYTE = 61$		
	1	1	BTIES = 4 END OBJECT - COLUMN		
		Sub-spacecraft latitude	OBJECT = COLUMN	Recording format of sub-spacecraft latitude	
	1	ous-spaceorait ratitude	NAME = "SUB SPACECRAFT LATITUDF"	soording romat of sub-spacecraft latitude	
			DATA_TYPE = "IEEE_REAL"		
	1	1	UNIT = "deg"		
			START_BYTE = 65		
			BYTES = 8		
		Sub appagareft level to the	END_OBJECT = COLUMN	Percending formet of sub-second to the	
		Sub-spacecraft longitude	UBJECT = CULUMN NAME - "SUB_SDACECDAET LONGITUDE"	Recording format of sub-spacecraft longitude	
			DATA TYPE = "IFFE REAL"		
			UNIT = "deg"		
	1	1	START_BYTE = 73		
			BYTES = 8	1	
	1		$END_OBJECT = COLUMN$	1	1

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

	Region	Item name	Description format	Item explanation	value
Description area of	Line information	SP observation point latitude	OBJECT = COLUMN	Recording format of SP observation point latitude	
ancillary			NAME = "CENTER_LATITUDE"		
and supplementary			DATA_TYPE = "IEEE_REAL"		
data object format			UNIT = "deg"		
			START_BYTE = 81		
			END OBJECT = COLUMN		
		SP observation point longitude	OBJECT = COLUMN	Recording format of SP observation point longitude	
			NAME = "CENTER_LONG ITUDE"		
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "deg"		
			START_BYTE = 89		
			END OR JECT - COLUMN		
		Geometric condition of sensor	OBJECT = COLUMN	Recording format of geometric condition of sensor	
		observation (emission angle)	NAME = "EMISSION ANGLE"	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"	observation (azimuth angle)	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "deg"		
			START_BYTE = 101		
			BYTES = 4		
		Geometric condition of solar		Recording format of geometric condition of solar	
		radiation(incidence angle)	NAME - "INCIDENCE ANGLE"	radiation(incidence angle)	
		radiation (mordence angre)	DATA TYPE = "IEEE REAL"	radiation(inclusios angle)	
			UNIT = "deg"		
			START_BYTE = 105		
			BYTES = 4		
			END_OBJECT = COLUMN		
		rediation(azimuth angle)	UBJECI = COLUMN NAME - "SOLAD AZIMUTH ANOLE"	recording format of geometric condition of solar	
		radiation(aziniutii angre)	DATA TYPE = "IEEE REAL"	rastation(azimuti angre)	
			UNIT = "dea"		
			START_BYTE = 109		
	1		BYTES = 4		
			END_OBJECT = COLUMN		
		Phase angle	OBJECT = COLUMN	Recording format of phase angle	
			NAME = "PHASE_ANGLE"		
			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"	specifying SP temperature	
			DATA_TYPE = "IEEE_REAL"		
			UNII = "deg"		
			$START_DTTE = TT7$ BYTES = 4		
			END OBJECT = COLUMN		
		SP peltier hot side temperature	OBJECT = COLUMN	Recording format of SP peltier hot side	
		F	NAME = "SP_PELTIER_HOT_TEMPERATURE"	temperature	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "degC"		
			START_BYTE = 121		
			BYTES = 4 END OR FECT - COLUMN		
		SP2 radiator temperature		Perording format of SP2 radiator temperature	
		SP2 radiator temperature	NAME - "SP N2 RADIATOR TEMPERATURE"	Recording format of SP2 radiator temperature	
			DATA TYPE = "IEEE REAL"		
			UNIT = "degC"		
			START_BYTE = 125		
			BYTES = 4		
		T (0D)	END_OBJECT = COLUMN		
		Temperature of SP calibration	OBJECT = COLUMN	Recording format of temperature of SP calibration	
		optics(VIS)	NAME = SP_CAL_VIS_IEMPERATURE	optics(VIS)	
			UNIT - "deaC"		
			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"	optics(NIR)	
	1		UNIT - "deeC"		
			START BYTE = 133		
			BYTES = 4		
	1		END_OBJECT = COLUMN		
		Temperature of the point specifying DPU	OBJECT = COLUMN	Recording format of temperature of the point	
	1	temperature	NAME = "DPU_TEMPERATURE"	specifying DPU temperature	
	1		DATA_TYPE = "IEEE_REAL"		
			UNII = "degC"		
	1		BYTES = 4		
			END OBJECT = COLUMN		
		SP power voltage plus 5V	OBJECT = COLUMN	Recording format of SP power voltage plus 5V	
		or ponor terrage proc er	NAME = "SP POWER P5V"	need ang termat er er poner tertage prae er	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
	1		START_BYTE = 141		
			BY1ES = 4 END OBJECT = COLUMN		
		SP power voltage minus 15V	OBJECT = COLUMN	Recording format of SP power voltage minus 151	
1	1	o, ponor fortago minus 104	NAME = "SP POWER M15V"	intervention of power voltage minus 15V	
			DATA_TYPE = "IEEE_REAL"		
			UNIT = "V"		
1	1		START_BYTE = 145		
			BYTES = 4		
	1	SP power veltere alva 45V	OR LECT - COLUMN	Percending format of CD party united a list for	
1	1	or power voltage plus 15V	NAME = "SP POWER P15V"	Neconaling rommat of or power voltage plus 15V	
			DATA_TYPE = "IEEE REAL"		
			UNIT = "V"		
1	1		START_BYTE = 149		
			BYTES = 4		
	1	On Like and Long	END_OBJECT = COLUMN	Description (see to the billion of t	
		calibration mode identification	UBJECT = COLUMN	Recording format of calibration mode	
			DATA TYPE - "MSR INTEGER"	Tuona TTUa LIUN	
	1		UNIT = "N/A"		
	1		START_BYTE = 153		
			BYTES = 1		
			END_OBJECT = COLUMN	Describer (secol of OB	
		SP peltier UN/OFF	UBJECT = COLUMN	Recording format of SP peltier ON/OFF	
			DATA TYPE - "MSR INTEGER"		
			UNIT = "N/A"		
	1		START_BYTE = 154		
			BYTES = 1		
1	1		END_OBJECT = COLUMN		

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

	Region	Item name	Description format	Item explanation	value
Description area of ancillary and supplementary data object format	Line information	TC/MI status	OBJECT = COLUMN NAME = "TC_MI_STATUS" DATA_TYPE = "IMSB_INTEGER" UNIT = "N/A" START_BYTE = 155 BYTES = 1	Recording format of TC/MI status	
		Clock count error flag	END_OBJECT = COLUMN OBJECT = COLUMN NAWE = "CLOCK_COUNT_ERR_FLAG" DATA_TYPE = "MSB_INTEGER" UN IT = "N/A" START_BYTE = 156 BYTES = 1 END_OBJECT = COLUMN	Recording format of clock count error flag	
		Spatial resolution flag	OBJECT = COLUMN OBJECT = COLUMN NAME = "SPATIAL_RESOLUTION_FLAG" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "NAM" START_BYTE = 157 BYTES = 1 END 0BIECT = COLUMN	Observation mode A(65): exposure duration S, resolution N B(66): exposure duration L, resolution N C(67): exposure duration S, resolution H D(68): exposure duration L, resolution H	A, B, C, D
		Geometric information recalculation flag	OBJECT = COLUMN OBJECT = COLUMN NAME = "GEOMETRIC_INFO_RECAL_FLAG" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 158 BYTES = 1 END 0BIECT = COLUMN	A(65): Without recalculating (taking over from L2A) B(66): Update by the newest kernel file C(67): Update by the matching result with TC/MI image acquired at the same time of SP observation	A , B , C
		Position of observation point on the support image (LINE)	DBJECT = COLUMN NAME = "SUPPORT_IMAGE_LINE_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 159 BYTES = 2 or 0 END OBJECT = COLUMN		L2B1,L2B2:BYTES=0 L2C, L2D :BYTES=2
		Position of observation point on the support image (COLUMN)	OBJECT = COLUMN NAME = "SUPPORT_IMAGE_COLUMN_POSITION" DATA_TYPE = "MSB_UNSIGNED_INTEGER" UNIT = "N/A" START_BYTE = 161 BYTES = 2 or 0 END OBJECT = COLUMN		L2B1,L2B2:START_BYTE=159 L2C, L2D :START_BYTE=161 L2B1,L2B2:BYTES=0 L2C, L2D :BYTES=2
		Position of observation point on the 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 = "HUMBNAIL_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			END_OBJECT = ANCILLARY_AND_SUPPLEMENT_DATA		
ofimage data object	Center wavelength	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 LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" UNIT = "%s" SCALING_FACTOR = %f OFFSET = %f END_OBJECT	Number of pixels along the vertical axis of this scene(direction of along track) Number of pixels along the horizontal axis of this scene(direction of cross track) Sample type Sample bit length Image value type Sample unit Conversion coefficient Offset value	1 296 "MSB_UNSIGNED_INTEGER" 16 "WAVELENGTH" "nm"
	Raw data 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_RAW LINES = %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_UNSIGNED_INTEGER" 16 "RAW_DN" "ND"
	Dark current corrected value spectrum	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 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 "MSB_UNSIGNED_INTEGER" 16 "DARK" "ND"
	Radiance value 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	CBJECT = SP_SPECTRUM_RAD LINES = %d LINE_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_UNSIGNED_INTEGER" 16 "RADIANCE" "W/m"*2/micron/sr"
	(Diffusion) reflectance value spectrum	Number of lines of this scene Number of line's samples of this scene Sample bits Image value type Scaling factor Offset	OBJECT = SP_SPECTRUM_REF 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 "MSB_UNSIGNED_INTEGER" 16 "REFLECTANCE" "ND"
	Ancillary and supplementary data 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.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 bit length Image value type Sample unit Conversion coefficient Offset value	296 "MSB_UNSIGNED_INTEGER" 16 "OUALITY" "N/A"
	High level process result	Number of lines of this scene Number of line's samples of this scene Sample bits Image value type Unit Scaling factor Offset	OBJECT = L2D_RESULT_ARRAY LINES = %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	L2B1,L2B2,L2C: LINES = 0 LINE_SAMPLES = 0 SAMPLE_TYPE = "N/A" SAMPLE_TYPE = N/A" UNIT = "N/A" SCALING_FACTOR = "N/A" UDIT = "N/A" L2D: LINES = n LINE_SAMPLES = 128 SAMPLE_TYPE = "IEEE_REAL" SAMPLE_BITS = 32 IMAGE 'ALUE_TYPE = "SURFACE_VARIABLES" UNIT = "N/A" SCALING_FACTOR = "N/A" OFFSET = "N/A"
	•		END	1	

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.

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

List 2.3-7(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			С	specifying SP temperature after
temperature				converting engineering value
SP peltier hot side	Real number	4	degrees	SP peltier hot side temperature
temperature			С	after converting engineering value
SPN2 radiator	Real number	4	degrees	SP2 radiator temperature after
temperature			С	converting engineering value

List 2.3-7(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)

		Moving of the spa	lirection cecraft = +1	Moving direction of the spacecraft = -1 (with your opened)	
		original	thumbnail	(with yav original	thumbnail
Ascending (A)	R	H reverse	R up/down	R	
D	N	and ri	ght/left		
Descending (D)	R	R	R	Я	R
	s	without rotati	on and reverse	reverse r	ight/left
Involving (a) pole(s) (N/S/W)	R	R	R	Я	R
	R	В	В	В	Я
	R	R	ス	Б	ת
	R	R	R	Я	ſ
		without rotati	on and reverse	reverse r	ight/left

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 A2-1².

 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.	
		The pixel value became minus.	DARK_MINUS	-21011	The pixel value became minus in dark current correction.	
MINUS	-21000		MV_FT_MINUS	-21021	The pixel value became minus in MI-VIS frame transfer correction.	
			PHASE_MINUS	-21081	The pixel value became minus in photometric correction.	
		RESAMPLE_MINUS	-21101	The pixel value became minus in its resampling process.		
		The pixel had been L2A dummy pixel, or the detector element of the pixel had been defect element.	DUMMY	-22001	The pixel had been L2A dummy pixel.	
DOMMIT_DEFECT	-22000		DEFECT	-22002	The detector element of the pixel had been defect element.	
0THER -23000		DEAD	-23001	The pixel had been L2A dead pixel.		
			MV_FT_INCREASE_ERROR	-23021	The pixel value increased in MI- VIS frame transfer correction.	
	00000	Error other than listed above	MV_FT_FAILURE	-23022	MI-VIS frame transfer correction failed.	
	-23000	-23000 happened.	PHASE_GEO_ERROR	-23081	Photometric correction failed because of invalid geometric data.	
			PHASE_USGS_ZERO_DIVIDE	-23082	A division by zero happened in USGS photometric correction.	
			RESAMPLE_ERROR	-23101	Resampling failed.	

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	 VIS-NIR1 gap correction factor = Ration between VIS and NIR1 radiance at same wavelength before gap correction 00 => The factor is between 0.9 and 1.0. 01 => The factor is between 1.0 and 1.1. 10 => The factor is between 1.1 and 1.2. 11 => The factor is less than 0.9 or larger than 1.2.
10-11	NIR1-NIR2 gap correction factor	NIR1-NIR2 gap correction factor = Ration between NIR1 and NIR2 radiance at adjacent wavelength before gap correction 00 => The factor is less than 0.9. 01 => The factor is between 0.9 and 1.0. 10 => The factor is between 1.0 and 1.1. 11 => The factor is larger than 1.1.
12	Not used	
13	Not used	
14	Anomalous behavior of NIR1 longer end pixel s	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_	999999N550E2700SC.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	-	30		

2.1.1 Catalog Information File

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

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

Format:

Keyword = String Value

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

Format:

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

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

Table 2.1-2 Items of the Catalog Information The (DTM-TC Of tho)				
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		

T-11.010 Terms of	the Ceteles	T f	E:1. (
Table $2.1-2$ items of	the Catalog	mormation	г пе (DIM - IC	Ortho)

End Date and Time	EndDateTime	yyyy-mm-ddT hh:mm:ss.ssssssZ	
Revolution Number	RevoNumber	NNNNNNNNNN (Max. 10 digits)	
Scene Number	SceneNumber	NNNNNNNNNN (Max. 10 digits)	
Strip Number	StripNumber	NNNNNNNNN (Max. 10 digits)	
Location Flag	LocationFlag	А	"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.

	I I I I I I I I I I I I I I I I I I I		
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 Common Items	
	Object Position Specification	
	Product File Attributes	
	Information	Product Attributes
	0100 0	

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 +	
		Product ID	PRODUCT ID = "%s"	Unique ID given to every product	
		Data file format ID	DATA FORMAT = "%s"	Data file format ID	"PDS" fixed
Object position specification					
			OBJECT = ARCHIVE_FILE		
		File name	FILE_NAME = "%s"	File name of the tar object	
		Archive type	ARCHIVE_TYPE ="%s"	How archived	"TAR" fixed
		Compression type	ENCODING_TYPE = "%s"	How compressed	"GZIP" fixed
		Number of archived files	ARCHIVE_FILES =%d	Total number of files contained in the tar object	3 fixed
		Archive files	ARCHIVE_FILE_NAME = {"%s", "%s", "%s"}	Names of the files contained in the tar object	
		File size after extraction	REQUIRED_STORAGE_BYTES = %d	Total file size after extracting tar object syte>	
			END_OBJECT = ARCHIVE_FILE		
Product information	File attributes				
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic, and TC ortho mosaic "MAP": DTM map, and TC ortho map
	Product attributes				
		Product set ID	PRODUCT_SET_ID = "%s"	Product set ID	'DTM.TCOrtho': DTM/TC ortho 'DTM, MAP': DTM map 'TCOrtho, MAP': TC ortho map 'DTM, TCOrtho, SS: DTM/TC ortho (special product) 'DTM, MAP_S': DTM map (special product) 'DTM, MAP_S': TC ortho map (special product) 'DTM, MSC: DTM mosaic (special product) 'TCOrtho, MSC': TC ortho mosaic (special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"

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

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

(1) PDS Label

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

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

Category		Name	Description form	Explanation	value
PDS label common items		PDS vorsion ID	PDS VERSION ID = "%s"	PDS vorsion 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 +	
		D 1 . ID		extension)	
		Data file format	DATA FORMAT = "%s"	Data file format ID	"PDS" fixed
		ID			
Object position specification		Head monthly of	ATMAGE - \$102 -DUMBA	Head workford of the income dataset	
		image object	INAGE = «IUG «BIIES»	Head position of the image object	
Product information	File				
	attributes	Coffmans nome	SOFTWARE NAME - "\$c"	Software nome that areated the DTM	TPD
		Sortware name		PDS product	160
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM	"n.n.n" (TBD)
		Decession g level	DROCESS VERSION TD - "\$e"	PDS product	"I 2D", DTM/TC on the DTM
		FIOCESSING level	riochoo_viikozok_zo = vo	Processing level 1D	mosaic, and TC ortho mosaic
					"MAP": DTM map, and TC ortho
		Product creation	PRODUCT_CREATION_TIME = %s	Product creation time	Map YYYY-MM-DDTHH:MM:SSZ
		time			
	Product				
	attributes	Producer ID	PRODUCER_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	PRODUCT_SET_ID = "%s"	Product set ID	"DTM_TCOrtho": DTM/TC ortho
					"TCOrtho_MAP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrthe_MAP_S": TC ortho map
					<pre>(special product) "DTM_MSC": DTM mosaic (special product) "TCOrtho_MSC": TC ortho mosaic (special product)</pre>
		Product version	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
		Base L2A data	BASE_LEVEL2A_FILE_NAME = "%s"	L2A data file name of the base image	
		file name	י אין אראיא איזיק גרייאין קיאנאסטיקטע איזיק אראנקטיקטעט גע געניין א איזיקטעטעט איזיק גרייא איזיקעעטעטעטעטעטעטע	used for DTM creating	
		Reference L2A data file name	REFERENCE_LEVELZA_FILE_NAME = {"%S","%S",}	LZA 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	
		name (SPK) SPICE korpol file	SPICE PCK FILE NAME = {"%s"}	for DTM / ortho product creating	
		name (PcK)		for DTM / ortho product creating	
		SPICE kernel file	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)		DTM / ortho product creating	
		SPICE kernel file name (SCLK)	SPICE_SCLK_FILE_NAME = {"%8","%8",}	All SPICE kernel (SCLK) names used for DTM/ortho product creating	
		SPICE kernel file	SPICE_LSK_FILE_NAME = {"%s","%s",}	All SPICE kernel (LSK) names used	
	Scono	name (LSK)		for DTM / ortho product creating	
	attributes				
		Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Data set ID	DATA_SET_ID = "%s"	This data set ID	TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of the Instrument name	"Terrain_Camera"
		Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	"TC"
		latitude	orran_mari_maritobb = vio.or vdcg,	corner pixel of the image that contains	-50 10 50
		Linnen laft	HODER LEFT LONGITUDE - \$10 6f cdeco	dummy pixels	0 to 260
		longitude	orran_mari_bondrrobb = vro.or vdcg,	upper-left corner pixel of the image that	010300
		-	HODED DIGHT INTERDE = 810.65 where	contains dummy pixels	00 · 00
		latitude	UPPER_AIGHT_DAILINDS = %10.01 <uegy< td=""><td>Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels</td><td>-30 to 30</td></uegy<>	Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels	-30 to 30
		Upper right longitude	UPPER_RIGHT_LONGTIODE = 410.01 <degs< td=""><td>Longitude at the center of the upper-right corner pixel of the image that contains dummy pixels</td><td>0 to 360</td></degs<>	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 = %10.61 <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	0 to 360
		Lower right	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-right	-90 to 90
		atitude	TOWER DIGHT TOMOTTING - \$10 CE -3-	dummy pixels	0.4- 000
		Lower right longitude	DOWER_RIGHI_DUNGLIUDE = %10.6I <deg></deg>	Longitude at the center of the lower-right corner pixel of the image that contains dummy pixels	U to 360
		Image center	IMAGE_CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the center pixel of the	-90 to 90
		Image center	IMAGE_CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the center pixel of the	0 to 360
		longitude		image	
		Location flag	TOCATION FIRE = .48.	Spacecraft location information	"A: Ascending "D: Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
		Distance between the Moon and the Sun	MOON_SUN_DISTANCE = %d <km></km>	Distance between the Moon and the Sun	
	Map				
	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	COORDINATE_SYSTEM_TYPE = "%s"	Type of the coordinate system	"BODY-FIXED ROTATING" fixed
		Coordinate	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
		system name	a avic papille - 90 2f elm-	A such as data of the St	1707 4 1/34 1-6 1-
		B axis radius	B_AXIS_RADIUS = %8.3f <km></km>	B axis radius of the Moon	1737.4 <km> default</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"	-90 to 90 for "Lambert Conformal" projection
				projection.	"N/A" for other map projection
		Second standard parallel	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel Used for "Lambert Conformal"	-90 to 90 for "Lambert Conformal" projection
				nucleation	"NI/A" for other man projection
		Positivo longitudo	POSITIVE LONGITUDE DIPECTION - "%c"	Positive direction of longitude	"FAST" fixed

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

í	Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given	-90 to 90
	Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Longitude at the origin in a given	0 to 360
	Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero latitude in a rotated spherical coordinate system that was used in a	"N/A" fixed
	Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	given MAP_PROJECTION_TYPE Zero longitude in a rotated spherical coordinate system that was used in a	"N/A" fixed
	First line number	LINE_FIRST_PIXEL = %d	Line number of the upper end pixel of	1 fixed
	Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of	
	First sample	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of	1 fixed
	number Last sample	SAMPLE_LAST_PIXEL = %d	Sample number of the right end pixel of	
	number Map orientation	MAP_PROJECTION_ROTATION = %f <deg></deg>	the image Clockwise rotation of the line and	0.0 fixed
	angle		sample coordinates with respect to the map projection origin	
	Map resolution	MAP_RESOLUTION = %f <pre>resolution = %f <pre>resol</pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	Total number of pixels in a box area of 1-degree latitude x 1-degree longitude for Simple Cylindrical Projection	"N/A" is given when MAP_PROJECTION_TYPE is not "Simple Cylindrical".
	Map scale	MAF_SCALE - VI (KU/DIAEI)	Actual distance, in km, between two points at the origin in a given	
	Maximum	MAXIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the	-90 to 90
	Minimum	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the southermost pixel in 4 corner pixels	-90 to 90
	Easternmost	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the	0 to 360
	Westernmost	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the	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 "Lorie Sum"
Duos		END_OBJECT = IMAGE_MAP_PROJECTION		
parameter description				
	Parameter set	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing narameter set	TBD
	name	END OBJECT = PROCESSING PARAMETERS	Autor of the processing parameter see	100
Image	-			
mormation	Pondo	OBJECT = IMAGE BANDS = \$d	Total number of bands in this image	1 fixed
	Band storage	BAND_STORAGE_TYPE = "%s"	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" (TC ortho)
	Sample bits	SAMPLE_BITS = %d	Total number of bits used to store one data sample value	8 or 16
	Meaning of pixel value	IMAGE_VALUE_TYPE = "%s"	Meaning of the value of the pixel	"DN", "RADIANCE", "REFLECTANCE" or
	Sample bit mask	SAMPLE_BIT_MASK = %s	Active bits in a sample	2#11111111#: 8 bits
	Offset	OFFSET = %f	Offset value used in the DN for physical	2#111111111111111#: 16 bits
			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	"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
	Monimum	May TMIIM - 8d	the invalid pixels	pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
	Maximum	MALINUM - VI	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 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 TC ortho is set to 1
Qualter		END_OBJECT = IMAGE		10 Jet 10 -1.
information		OPTECT - ONLITTY INFO		
	Quality flag file	^QA_FILENAME = "%s"	Name of quality flag file	
	Good pixel	QA_PERCENT_GOOD_PIXEL = %f	Percentage of good pixels in all the	Total number of
	percentage		D1M pixels	QA_PERCEN1_GOOD_PIXEL, QA_PERCENT_DUMMY_PIXEL and QA_PERCENT_BAD_PIXEL is 100.0

	Dummy pixel	QA_PERCENT_DUMMY_PIXEL = %f	Percentage of dummy pixels in all the DTM pixels	
	Bad pixel	QA_PERCENT_BAD_PIXEL = %f	Percentage of bad pixels in all the DTM pixels	
	Interpolated pixel	QA_PERCENT_INTERPOLATED_PIXEL = %f	Percentage of interpolated pixels in all the DTM pixels	
	Shadow pixel	QA_PERCENT_SHADOW_PIXEL = %f	Percentage of shadowed pixels in all the DTM pixels	
	Correlation threshold of bad	BAD_PIXEL_THRESHOLD_CORRELATION = %f	Threshold of image correlation between stereo images to extract the bad pixel	
	pixel Slope threshold of	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	from the DTM Slope angle threshold to extract the bad	
	bad pixel	END_OBJECT = QUALITY_INFO	pixel from the DTM	
Base L2A source data				
information		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	"MORNING" or "EVENING"
	condition L0 file name		File names of all the L0 data used for	
	Spacecraft time	SC_TIME_CORRECTION_FILE_NAME = {*%s",*%s",}	creating L2A File names of all the spacecraft time	
	correction file name		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	<pre>HK_MISSION_FILE_NAME = {"%s","%s",}</pre>	File names of all the mission instrument HK files used for creating	
	SPICE kernel	SPICE_SPK_FILE_NAME = {"%s","%s",}	L2A 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	SPICE_IK_FILE_NAME = { "%s", "%s", }	(Pck) files used for creating L2A File names of all the SPICE kernel (IK)	
	(IK) file name SPICE kernel (CK) file name	SPICE_CK_FILE_NAME = { "%s", "%s", }	File names of all the SPICE kernel (CK)	
	SPICE kernel (SCLK) file name	<pre>SPICE_SCLK_FILE_NAME = { "%s", "%s", }</pre>	File names of all the SPICE kernel (SCI K) files used for creating 124	
	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 124	
	Scene definition file name	SCENE_DEFINITION_FILE_NAME = "%s"	File name of the scene definition file used for creating L2A	
	Threshold file name	THRESHOLD_FILE_NAME = "%s"	Threshold file name	
	Conversion table file name	CONVERSION_TABLE_FILE_NAME = "%s"	Engineering value translated for table file	
	Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain Camera 1" or "Terrain Camera 2"
	Instrument ID Revolution	INSTRUMENT_ID = "%s" REVOLUTION_NUMBER = %d	Instrument ID Revolution number	"TC1" or "TC2"
	number Strip sequence	STRIP_SEQUENCE_NUMBER = %d	Strip number in the revolution	
	number Scene sequence	SCENE_SEQUENCE_NUMBER = %d	Scene number in the strip	
	number Mission phase	MISSION_PHASE_NAME = "%g"	Mission phase name	"Nominal", "Option", etc.
	name Upper left	UPPER_LEFT_DAYTIME_FLAG = "%s"	Sunshine condition at the upper left	"Day" or "Night"
	daytime flag Upper right daytime flag	UPPER_RIGHT_DATTIME_FLAG = "%s"	pixel and the upper right pixel of the image	"Day" or "Night"
	daytime flag Lower right daytime flag	LOWER_RIGHT_DAYTIME_FLAG = "%s"	pixel and the lower right pixel of the image	Day of Fight
	Target name Observation	TARGET_NAME = "%s" OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode ID	"MOON" default "NORMAL" or "SUPPORT"
	mode ID Sensor	SENSOR_DESCRIPTION = "%s"	Sensor specifications	
	Description Sensor	SENSOR_DESCRIPTION2 = "%s"	Spare sensor information	
	Description2 Detector status	DETECTOR_STATUS =	ON/OFF of each of 5 powers (TC1, TC2,	
		{"TC1:#s","TC2:#s","MV:#s","MN:#s","SP:#s"}	MI-VIS, MI-NIR, SP) in this scene center	
	Exposure mode ID	EAFOSURE_MODE_ID = -48-	Exposure mode ID	"LONG", "MIDDLE", "SHORI"
	start count (TI)	SDACECPART CLOCK STOP COUNT - \$15.45 ceecs	(TI)	
	stop count (TI)	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.sssssz
	Stop time (UT) Corrected start	STOP_TIME = %s CORRECTED_START_TIME = %s	Imaging time at the last line (UT) Corrected imaging time at the 1st line	YYYY-MM-DDTHH:MM:SS.sssssz YYYY-MM-DDTHH:MM:SS.sssssz
	time (UT) Corrected stop	CORRECTED_STOP_TIME = %s	(UT) Corrected imaging time at the last line	YYYY-MM-DDTHH:MM:SS.sssssZ
	Location flag	LOCATION_FLAG = "%s"	(U1) Spacecraft location information	"A": Ascending
				D: Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
	Roll cant	ROLL_CANT = "%s"	Distinction whether nadir-view observation or roll-cant observation	"YES": roll-cant observation "NO": nadir-view observation
	Incidence angle Emission angle	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></deg>	Phase angle at the scene center Solar azimuth angle at the scene center	
	Solar azimuth	SOLAR_ALMOIN_AUGUE = \$7.51 Steep		
÷	Solar azimuth angle Focal plane	FOCAL_PLANE_TEMPERATURE = %f.2f <degc></degc>	Detector temperature at the 1st line	
	Solar azimuth angle Focal plane temperature Telescope	FOCAL_PLANE_TEMPERATURE = \$6.2f <degc> TELESCOPE_TEMPERATURE = \$6.2f <degc></degc></degc>	Detector temperature at the 1st line Telescope temperature at the 1st line	
	Solar azimuth angle Focal plane temperature Telescope temperature Line exposure	FOCAL_PLANE_TEMPERATURE = %6.2f <degc> TELESCOPE_TEMPERATURE = %6.2f <degc> LINE_EXPOSURE_DURATION = %10.6f <mbec></mbec></degc></degc>	Detector temperature at the 1st line Telescope temperature at the 1st line Line exposure duration	
	Solar azimuth angle Focal plane temperature Telescope temperature Line exposure duration Line sampling intonvit	FOCAL_PLANE_TEMPERATURE = \$6.2f <degc> TELESCOPE_TEMPERATURE = \$6.2f <degc> LINE_EXPOSURE_DURATION = \$10.6f <msec> LINE_SAMPLING_INTERVAL = \$10.6f <msec></msec></msec></degc></degc>	Detector temperature at the 1st line Telescope temperature at the 1st line Line exposure duration Designed value of sampling interval	
	Solar azimuth angle Focal plane Focal plane temperature temperature time exposure duration Line sampling interval Corrected complexity	<pre>SOURC_ALINOIR_MANUE = V.J. (Meg) FOCAL_FLANE_TEMPERATURE = %6.2f <degc> TELESCOPE_TEMPERATURE = %6.2f <degc> LINE_EXPOSURE_DURATION = %10.6f <mmec> LINE_SAMPLING_INTERVAL = %10.6f <mmec> CORRECTED_SAMPLING_INTERVAL = %10.6f <mmec></mmec></mmec></mmec></degc></degc></pre>	Detector temperature at the 1st line Telescope temperature at the 1st line Line exposure duration Designed value of sampling interval Sampling interval corrected by dividing the non-tend interval terms have been been been been been been been be	
	Solar azimuth angle Focal plane temperature Telescope temperature duration Line sampling interval Corrected sampling interval Satellite moving	SUDAC_RLING R_UNDER = V.S. Ung_/ POCAL_FLANE_TEMPERATURE = %6.2f <degc> TELESCOPE_TEMPERATURE = %6.2f <degc> LINE_EXPOSURE_DURATION = %10.6f <msec> LINE_SAMPLING_INTERVAL = %10.6f <msec> CORRECTED_SAMPLING_INTERVAL = %10.6f <msec> SATELLITE_NOVING_DIRECTION = *%s*</msec></msec></msec></degc></degc>	Detector temperature at the 1st line Telescope temperature at the 1st line Line exposure duration Designed value of sampling interval Sampling interval corrected by dividing the corrected interval time between first line and last line of strip into the number of lines Satellite moving divertion	*+1': kad of +x plane

Qtable ID			"-1": lead of -x plane
Huffman table ID	Q_TABLE_ID = "%s" HUFFMAN TABLE ID = "%e"	Qtable ID Huffman table ID	
Data compression	DATA COMPRESSION PERCENT MEAN = %5.1f	Huttman table ID Mean compression percentage in the	
percentage mean		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	SWATH_MODE_ID = "%s"	Name of the swath mode	"NOMINAL", "FULL" or "HALF"
First pixel number	FIRST_PIXEL_NUMBER = %d	Detector number of the first sample pixel	
Last pixel number	LAST_PIXEL_NUMBER = %d	Detector number of the last sample pixel	
Spacecraft altitude	SPACECRAFT_ALTITUDE = %8.3t <km></km>	Spacecraft altitude from the Moon radius at the 1st line	
Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %6.31 <km sec=""></km>	Spacecraft ground speed at the 1st line	
TC1 telescope temperature	TC1_TELESCOPE_TEMPERATURE = %6.21 <degc></degc>	TC1 telescope temperature at the 1st line	
1C2 telescope temperature	DUI TEMPERATURE = %6.2f <dog()< td=""><td>TC2 telescope temperature at the 1st line</td><td></td></dog()<>	TC2 telescope temperature at the 1st line	
TM temperature	TM TEMPERATURE = %6.2f <degc></degc>	TM temperature at the 1st line	1
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
compression percentage	WANTARY FARE ANALONE - &	data object	
Nominal line number	NUMINAL_LINE_NUMBER = %d	Nominal number of lines in this image	
Nominal sample number	NUMINAL_SAMPLE_NUMBER = %d	Nominal number of samples in a line	
Unfilled line number	UNFILLED_LINE_NUMBER = %G	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	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 nivels	
Sample type	SAMPLE_TYPE = "%s"	Data storage representation of sample value	"N/A": compression data "MSB_UNSIGNED_INTEGER": non-compression data
Sample bits			non-compression data
oumple bits	SAMPLE_BITS = %2d	Stored number of bits in a sample	12: compression data 16: non-compression data
Minimum DN for statistical	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d	Stored number of bits in a sample Minimum DN for statistical evaluation	12: compression data 16: non-compression data
Minimum DN for statistical evaluation Maximum DN for statistical	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation	12: compression data 16: non-compression data
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image	12: compression data 16: non-compression data When the population of the image
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image	12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene minimum DN Scene standard	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_INN = %d SCENE_MINIMUM_INN = %d SCENE_AVERAGE_INN = %6.1f	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image	12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard Scene standard Scene standard	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMEM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image	12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Sturration threshold	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MVERAGE_DN = %d.1f SCENE_AVERAGE_DN = %d.1f SCENE_MODE_DN = %d SATURATION_THRESHOLD = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation daximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_AVERAGE_DN = %6.1f SCENE_MODE_DN = %d SATURATION_THRESHOLD = %d SATURATED_PIXELS = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection Total number of saturated pixels	12: compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MUNIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixel detection Total number of saturated pixels Image coordinates of saturated pixels	12: compression data 16: non-compression data 16: non-compression data when the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the top and the image is a to 7NA*
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MODE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_PERCENTAGE = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image 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	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pixels is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene standard average DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels Saturated pixels Dead pixel Dead pixel Dead pixel	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MAXIMUM_DN = %d SCENE_MAXEAGE_DN = %6.1f SCENE_AVERAGE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_THRESHOLD = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image 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	12: compression data 16: non-compression data 16: non-compression data 16: non-compression data 17: non-compression data 18: non-compression data 19: non-compression da
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixel Dead pixels	SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MODE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXELS = %d	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixels Threshold DN for saturated pixels Image coordinates of saturated pixels Percentage of saturated pixels Threshold DN for dead pixel detection Total number of dead pixel detection Total number of dead pixels	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pixels is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene maximum DN Scene maximum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels	<pre>SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MURAGE_DN = %6.1f SCENE_MODE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXELS = %d SATURATED_PIXELS = %d SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXELS = %d DEAD_PIXEL_POSITION = ((%d,%d), (%d,%d),)</pre>	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image 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 Threshold DN for dead pixel Image coordinates of dead pixels Image coordinates of dead pixels	12: compression data 16: non-compression data 16: non-compression data 16: non-compression data when the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
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Minimum DN for statistical evaluation Maximum DN for statistical evaluation Scene at andard average DN Scene standard average DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation DN Saturated pixels Saturated pixels Saturated pixel parcentage Dead pixels Dead apixels Dead apix	<pre>SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MINIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MODE_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_FOSITION = ((%d,%d), (%d,%d),) DEAD_PIXEL_PERCENTAGE = %d SHADOWED_AREA_MINIMUM = %d SHADOWED_AREA_MAXIMUM = %d</pre>	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image 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 Threshold DN for dead pixel detection Total number of saturated pixels Threshold DN for dead pixels Threshold DN for dead pixels Image coordinates of dead pixels Percentage of dead pixels Minimum DN for shadowed pixel Maximum DN for shadowed pixel detection	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
Minimum DN for statistical evaluation version of the statistical evaluation serve maximum Serve maximum Serve standard average DN Scene standard average DN Scene standard deviation DN Scene standard Deal pixel Dead pixels Dead pixels Dead area minimum Shadowed area maximum Shadowed area	<pre>SAMPLE_BITS = %2d MIN_FOR_STATISTICAL_EVALUATION = %d MAX_FOR_STATISTICAL_EVALUATION = %d SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_MODE_EN = %d.1f SCENE_MODE_EN = %d SATURATED_PIXEL_POSITION = ((%d, %d), (%d, %d),) SATURATED_PIXEL_POSITION = ((%d, %d), (%d, %d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_DIXEL_PERCENTAGE = %d DEAD_PIXEL_POSITION = ((%d, %d), (%d, %d),) DEAD_PIXEL_POSITION = %d SHADOWED_AREA_MAXIMUM = %d SHADOWED_AREA_MAXIMUM = %d SHADOWED_AREA_PERCENTAGE = %d WND CAREXT = 1MACE</pre>	Stored number of bits in a sample Minimum DN for statistical evaluation Maximum DN for statistical evaluation Maximum DN in this image Minimum DN in this image Average DN in this image Standard deviation DN in this image Mode DN in this image Threshold DN for saturated pixels Image coordinates of saturated pixels Percentage of saturated pixels Threshold DN for dead pixel Experiment of the saturated pixels Percentage of dead pixels Image coordinates of dead pixels Percentage of dead pixels Minimum DN for shadowed pixel Maximum DN for shadowed pixel detection Maximum DN for shadowed pixel	12: compression data 16: non-compression data 16: non-compression data When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1.
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category PDS label common itoms		item name	description form	Explanation	Vaide
. Do laber continon 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		Hoad position of ime-	^IMAGE = %10d <bytes></bytes>	Hoad position of the image chiest	
		object		Tread position of the image object	
Product information	File				
	attributes	Software name	SOFTWARE_NAME = "%s"	Software name that created the DTM	TBD
				PDS product	
		Software version	SOFTWARE_VERSION = "%s"	Ssoftware version that created the DTM	"n.n.n" (TBD)
		Processing level	PROCESS VERSION ID = "%8"	PDS product Processing level ID	"L3D": DTM/TC ortho_DTM mosaic
					and TC ortho mosaic
					"MAP": DTM map and TC ortho map
		Product creation time	PRODUCT_CREATION_TIME = %s	Product creation time	YYYY-MM-DDTHH:MM:SSZ
	Product				
	attributes	Producer ID	PRODUCER ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	PRODUCT_SET_ID = "%s"	Product set ID	"DTM_TCOrtho": DTM/TC ortho
					"DTM_MAP": DTM map
					"DTM TCOrtho S": DTM/TC ortho
					(special product)
					"DTM_MAP_S": DTM map (special
					"TCOrtho MAP S": TC ortho map
					(special product)
					"DTM_MSC": DTM mosaic (special
					"TCOrtho_MSC": TC ortho mosaic
					(special product)
	Score	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	attributes				
		Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
	1	Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE-M" fixed
		Data set ID Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	Terrain Camera"
		Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	"TC"
		Upper left latitude	UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at center of the upper-left corner	-90 to 90
				pixel of the image that contains dummy pixele	
		Upper left longitude	UPPER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at center of the upper-left	0 to 360
				corner pixel of the image that contains	
		Unner night lotitude	HERE FIGHT LATITUDE - \$10 6f cdeca	dummy pixels	00 to 00
		Opper right latitude	orran_atom_antrioba - viotor (acg,	corner pixel of the image that contains	-50 10 50
				dummy pixels	
		Upper right longitude	UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-right corner pixel of the image that contains	0 to 360
				dummy pixels	
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-left	-90 to 90
				corner pixel of the image that contains	
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-left	0 to 360
		0		corner pixel of the image that contains	
		Lower right latitude	LOWER RIGHT LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-right	-90 to 90
		Lower right intitude		corner pixel of the image that contains	001000
		Lances of the last step de	LOWER RIGHT LONGITURE - \$10 66 cdocs	dummy pixels	0.5- 000
		Lower right longitude	LOWER_RIGHT_LONGITODE = 410.81 (deg)	corner pixel of the image that contains	0 to 360
				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 longitude	LOCATION FLAG = "%s"	Longitude at the center pixel of the image Spacecraft location information	U to 360 "A": Ascending
		Location mag		Spaceriae beachin mornacion	"D": Descending
					"N": When containing the imaging
					ascending to the descending
					"S": When containing the imaging
					time which changes from the
		Distance between the	MOON_SUN_DISTANCE = %d <km></km>	Distance between the Moon and the Sun	descending to the astending
		moon and the sun			
	Map				
	information				
			OBJECT = IMAGE_MAP_PROJECTION		
		Map projection	MAP_PROJECTION_TYPE = "%s"	Name of the map projection	"Simple Cylindrical", "Stereographic"
					"Lambert Conformal" or
		Constituents in its	COODITNITE OVOTEM TVDP - "0*	There all the second second	"Transverse Mercator"
	1	Coordinate system type	COORDINATE_SISTEM_TIPE = "48" COORDINATE_SYSTEM_NAME = "%s"	Type or the coordinate system	"PLANETOCENTRIC" fixed
		name		- an name of the coordinate system	- La construction and a second
	1	A axis radius	A_AXIS_RADIUS = %8.3f <km></km>	A axis radius of the Moon	1737.4 <km> default</km>
		B axis radius	D_MAIS_KADIUS = %8.31 <km> C AXIS RADIUS = %8.3f <km></km></km>	B axis radius of the Moon	1737.4 <km> default 1737.4 cKM> default</km>
		First standard parallel	FIRST_STANDARD_PARALLEL = %10.6f <deg></deg>	First standard parallel	-90 to 90 for "Lambert Conformal"
				Used for "Lambert Conformal" projection.	projection
		Second etandowd	SECOND STANDARD PARALLEL = \$10 6f <degs< th=""><th>Second standard narallol</th><th>"N/A" for other map projection -90 to 90 for "Lambort Conformal"</th></degs<>	Second standard narallol	"N/A" for other map projection -90 to 90 for "Lambort Conformal"
		parallel		Used for "Lambert Conformal" projection.	projection
		D 10			"N/A" for other map projection
		Positive longitude direction	PUSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"EAST" fixed
		Center latitude	CENTER_LATITUDE = %10.6f <deg></deg>	Latitude at the origin in a given	-90 to 90
		Contra logation 1	CENTER IONCOMPTER = $\$10.65$ -2	MAP_PROJECTION_TYPE	0.4- 900
		Center longitude	CENTER_HONGITUDE = \$10.61 <deg></deg>	Longitude at the origin in a given MAP PROJECTION TYPE	U to 360
		Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	Zero latitude in a rotated spherical	"N/A" fixed
				coordinate system that was used in a	
		Reference longitude	REFERENCE_LONGITUDE = %10.6f <deq></deq>	Zero longitude in a rotated suberical	"N/A" fixed
				coordinate system that was used in a	
		Einst line number	LINE EIDST DIVEL - \$d	given MAP_PROJECTION_TYPE	1 Streed
		r irst line number	DINE_FIRST_FIRED = 40	Line number of the upper end pixel of the image	1 rixed
		Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the	1
			CIMPLE ETDOR DIVEL - &	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	
		Manual 1.11		the image	0.0.51
		Map orientation angle	mar_PROJECTION_ROTATION = %1 <deg></deg>	Clockwise rotation of the line and sample	0.0 fixed
				projection origin	
1		Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	Total number of pixels in a box area of	"N/A" is given when
				1-degree latitude x 1-degree longitude for	MAP PROJECTION TYPE is not

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

1	1		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 nixel in 4 corner nixels	-90 to 90
	Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the southernmost pixel in 4 corner pixels	-90 to 90
	Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the easternmost pixel in 4 corner pixels	0 to 360
	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%s"	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
		END_OBJECT = IMAGE_MAP_PROJECTION		
Processing parameter description				
	Parameter set name	OBJECT = PROCESSING_PARAMETERS PARAMETER SET NAME = "%s"	Name of processing parameter set	TBD
	T di dine del set fidine	END_OBJECT = PROCESSING_PARAMETERS	Hune of processing parameter set	100
Image information				
		OBJECT = IMAGE		
	Bands	BANDS = %d	Total number of bands in this image	1 fixed
	Band storage type	BAND_SIORAGE_HIPE = "48"	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	LINES = %d	Total number of lines in this image	
	Sample type	SAMPLE_TYPE = "%s"	Image data type	"MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC
	Sample bits	SAMPLE_BITS = %d	Total number of bits used to store one	ortho) 8 or 16
	Sample bit mask	SAMPLE_BIT_MASK = %s	data sample value Active bits in a sample	2#11111111#: 8 bits
		END OBJECT - IMAGE		2#11111111111111111#: 16 bits
Quality		and_onotice = trade		
information		OBJECT - OUNLITY 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#0000010#, "SATURATED PIXEL"), (2#00010000#, "SAD PIXEL"), (2#01010000#, "BAD PIXEL"), (2#1000000#, "INTERPOLATED PIXEL"))
	Good pixel percentage	Va_ferteni_GOU_firen = vi	pixels	Ine total number of QA_PERCENT_GOOD_PIXEL, QA_PERCENT_DUMMY_PIXEL and QA_PERCENT_BAD_PIXEL is 100.0
	Dummy pixel percentage	QA_PERCENT_DUMMY_PIXEL = %f	Percentage of dummy pixels in all the DTM pixels	
	Bad pixel percentage	QA_PERCENT_BAD_PIXEL = %f	Percentage of bad pixels in all the DTM pixels	
	Interpolated pixel percentage	QA_PERCENT_INTERPOLATED_PIXEL = %f	Percentage of interpolated pixels in all the DTM pixels	
	Shadow pixel percentage	QA_PERCENT_SHADOW_PIXEL = %f	Percentage of shadowed pixels in all the DTM pixels	
	Correlation threshold of bad pixel	BAD_PIXEL_THRESHOLD_CORRELATION = %f	Threshold of image correlation between stereo images to extract the bad pixel from the DTM	
	Slope threshold of bad pixel	BAD_PIXEL_THRESHOLD_SLOPE = %f <deg></deg>	Slope angle threshold to extract the bad pixel from the DTM	
1		END		

Category		Item	Description form	Explanation	Value
PDS label common items		PDS vorsion ID	PDS VERSION ID = "%8"	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 +	
		B 1 . ID		extension)	
		Product ID Data file format	DATA FORMAT = "%e"	Unique ID given to every product	"PDS" fixed
		ID		Data me formar 1D	1 bb mad
Object position specification					
		Head position of image object	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File				
	attributes		COTTAINS AND - IN-I		2000
		Software name	SOFTWARE_MARE = +5	DTM PDS product	IBD
		Software version	SOFTWARE_VERSION = "%s"	Version of software that created the	"n.n.n" (TBD)
			DRATIA IMPATAN TR - I&-I	DTM PDS product	
		Processing level	PROCESS_VERSION_ID = '48'	Processing level ID	and TC ortho mosaic
					"MAP": DTM map and TC ortho
		Product creation	PRODUCT CREATION TIME = %s	Product creation time	map VVVV MM DDTUU-MM-SS7
		time		rioduce creation time	TTTT-MWPDDTTTT.MW.332
	Product				
	attributes	Producer ID	PRODUCER ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	PRODUCT_SET_ID = "%s"	Product set ID	"DTM_TCOrtho": DTM/TC ortho
					"TCOrtho_MAP": TC ortho map "DTM_TCOrtho_S": DTM/TC ortho (special product) "DTM_MAP_S": DTM map (special product) "TCOrtho_MAP_S": TC ortho map (special product) "DTM_MSC": DTM mosaic (special
					"TCOrtho_MSC": TC ortho mosaic
					(special product)
		Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" ~ "99"
		Base L2A data file	BASE_LEVEL2A_FILE_NAME = "%s"	L2A data file name of the base image	
		name Reference 104	REFERENCE LEVEL 2A FILE NAME - / So" "So" "	used for creating DTM	
		data file name	NELENERGE_DEVELOR_FILE_WAVE = { '85', '65',}	images were used for creating DTM	
		SPICE kernel file	SPICE_SPK_FILE_NAME = {"%s","%s",}	All SPICE kernel (SPK) names used	
		name (SPK) SPICE kernel file	SPICE_PCK_FILE_NAME = { "%s". "%s"}	All SPICE kernel (Pck) names were	
		name (PcK)		used for creating DTM / ortho product	
		SPICE kernel file	SPICE_IK_FILE_NAME = {"%s","%s",}	All SPICE kernel (IK) names used for	
		SPICE kernel file	SPICE_CK_FILE_NAME = {"%s","%s",}	All SPICE kernel (CK) names used	
		name (CK)		for creating DTM / ortho product	
		SPICE kernel file name (SCLK)	SPICE_SCLK_FILE_NAME = {"%s","%s",}	All SPICE kernel (SCLK) names used for creating DTM / ortho product	
		SPICE kernel file	SPICE_LSK_FILE_NAME = {"%s","%s",}	All SPICE kernel (LSK) names used	
	Scono	name (LSK)		for creating DTM / ortho product	
attributes					
		Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Data set ID	DATA SET ID = "%s"	Spacecraft name This data set ID	TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of instrument	"Terrain_Camera"
		Instrument name Instrument ID	INSTRUMENT_NAME = "%s" INSTRUMENT_ID = "%s" UNDER A DET & ADDRESS & 10 CF address	Full name of instrument Instrument ID	"Terrain_Camera" "TC"
		Instrument name Instrument ID Upper left latitude	INSTRUMENT_NAME = "%s" INSTRUMENT_ID = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains	"Terrain_Camera" "TC" -90 to 90
		Instrument name Instrument ID Upper left latitude	INSTRUMENT_UAME = %s^* UNSTRUMENT_UD = %s^* UPPER_LEFT_LATITUDE = %10.6f <deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels	"Terrain_Camera" "TC" -90 to 90
		Instrument name Instrument ID Upper left latitude Upper left longitude	INSTRUMENT_LD = %8=" UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image	"Terrain_Camera" "TC" -90 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper left longitude	INSTRUMENT_DID = %8° INSTRUMENT_DID = %8° UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LONSITUDE = %10.6f <deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels	"Terrain_Camera" "TC" -90 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper left longitude Upper right latitude	INSTRUMENT_LD = *%s* UPFER_LEFT_LATITUDE = %10.6f <deg> UPFER_LEFT_LONGITUDE = %10.6f <deg> UPFER_LEFT_LONGITUDE = %10.6f <deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels	"Terrain, Camera" "TC" -90 to 90 0 to 360 -90 to 90
		Instrument name Upper left latitude Upper left latitude Upper right latitude Upper right longitude	INSTRUMENT_LD = *%a* UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Langitude at the center of the upper-right corner pixel of the image that cortains dummy nixel.	"Terrain Camera" "TC" -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper left longitude Upper right latitude Upper right Longitude Lower left latitude	INSTRUMENT_NAME = %8° INSTRUMENT_LD = *80° UPPER_LEFT_LANDITUDE = \$10.6f <deg> UPPER_RIGHT_LATITUDE = \$10.6f <deg> UPPER_RIGHT_LONGITUDE = \$10.6f <deg> LOWER_LEFT_LATITUDE = \$10.6f <deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels Longitude at the center of the imper-right corner pixel of the image that contains dummy pixels Latitude at the center of the image that contains dummy pixels	"Terrain_Camera" "TC" -90 to 90 0 to 360 -90 to 90 0 to 360 .90 to 360 .90 to 360
		Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Upper right longitude Lower left latitude	INSTRUMENT_DID = %8° INSTRUMENT_DID = %8° UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-light corner pixel of the image that cortains the center of the lower-left dummy pixels the image that contains dummy pixels	Terrain Camera" TCC -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper right latitude Upper right longitude Lower left latitude	INSTRUMENT_LD = %8° UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image to contains dummy pixels Langitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the corner pixel of the image Latitude at the center of the base-left Latitude at the center of the base-left Latitude at the center of the lower-left Latitude at the center of the lower-left Longitude at the center of the lower-left Longitude at the center of the lower-left	"Terrain Camera" "TC" -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper right latitude right Upper right longitude left Lower left latitude	INSTRUMENT_LD = %10* UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-right corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image Latitude at the center of the base-left Latitude at the center of the base-left Latitude at the center of the base-left Longitude at the center of the lower-left corner pixel of the image	"Terrain Camera" "TC" -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper right latitude right latitude longitude Lower left latitude Lower right Lower right	INSTRUMENT_LD = *%s" UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-light corner pixel of the image that contains dummy pixels Latitude at the center of the bwer-left corner pixel of the image that contains dummy pixels Longitude at the center of the bwer-left corner pixel of the image that contains dummy pixels Longitude at the center of the image that contains dummy pixels Longitude at the center of the image that contains dummy pixels	Terrain Camera' "TC" -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude right	INSTRUMENT_LD = %10: INSTRUMENT_LD = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Lafitude at the center of the upper-ight corner pixel of the image that cortains dummy pixels Lafitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image Latitude at the center of the upper-light corner pixel of the image Latitude at the center of the lower-left correr pixel of the image lower left correr pixel of the image	Terrain Camera" TCC -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude	INSTRUMENT_LD = %10" INSTRUMENT_LD = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-left of the image that contains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the lower-left corner pixel of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper right latitude right Upper right latitude left longitude left longitude right latitude right latitude right	INSTRUMENT_LD = *%s" UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-left corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-left corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that corner pixel of the image	Terrain Camera" "TC" -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -30 to 90 0 to 360 -30 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper right latitude Upper right latitude Lower left latitude Lower left latitude Lower right longitude right longitude center	INSTRUMENT_LD = %%s" INSTRUMENT_LD = %s" UPPER_LEFT_LANTITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LANTITUDE = %10.6f <deg> LOWER_LEFT_LANTITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LANTITUDE = %10.6f <deg> LOWER_RIGHT_LANTITUDE = %10.6f <deg> IOWER_RIGHT_LANTITUDE = %10.6f <deg> IOWER_RIGHT_LONGITUDE = %10.6f <deg> IOWER_RIGHT_LANTITUDE = %10.6f <deg> IOWER_RIGHT_R</deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image to contains dummy pixels Langitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-right correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-right correr pixel of the image that cortains be image that contains dummy pixels be image that contains dummy pixels the center of the baser-left cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-right correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-right correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-right correr pixel of the image that cortains dummy pixels	Terrain Camera' TCC -90 to 90 0 to 360 -90 to 90 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude Lower right latitude Lower right latitude	INSTRUMENT_LD = %10' UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_RIGHT_RIGHT_RIGHT_RIGHT_RIGHT_RIGHT RIGHT = %10.6f <deg> LOWER_RIGHT_RIG</deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the upper-left of the image that corner pixel of the image that corner pixel of the image that that cortains dummy pixels Latitude at the center of the lower-left corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image that cortains dummy pixels Latitude at the center of the lower-right corner pixel of the image	Terrain Camera" TCC -90 to 90 0 to 360 -90 to 90
		Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude right latitude right latitude center latitude center latitude center	INSTRUMENT_LD = %10' UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LONER_LEFT_LONGITUDE = %10.6f <deg> LONER_LEFT_LONGITUDE = %10.6f <deg> LONER_LEFT_LONGITUDE = %10.6f <deg> LONER_RIGHT_LONGITUDE = %10.6f <deg> LONER_RIGHT_LONGITUDE = %10.6f <deg> LONER_RIGHT_LONGITUDE = %10.6f <deg> IMAGE_CENTER_LATITUDE = %10.6f <deg> IMAGE_CENTER_LATITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the lower-right corner pixel of the image that contains dummy pixels Latitude at the center of the lower-right corner pixel of the image that contains dummy pixels Latitude at the center of the lower-right corner pixel of the image that contains dummy pixels Latitude at the center pixel of the image	Terrain Camera' TCC -90 to 90 0 to 360
		Instrument name Instrument ID Upper left latitude Upper er fight latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude right longitude center latitude Image center latitude Lower center latitude	INSTRUMENT_ID = %%s" UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOGG LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Langitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Langitude at the center of the lower-left correr pixel of the image that contains dummy pixels Latitude at the center of the lower-left correr pixel of the image that contains dummy pixels Longitude at the center of the lower-right correr pixel of the image that contains dummy pixels Longitude at the center of the lower-right correr pixel of the image that contains dummy pixels Longitude at the center pixel of the image Spacecraft location information	"Terrain Camera" "TC" -90 to 90 0 to 360 "A": Ascending "N: When containing the imaging time which chedses from the ascending to the descending to the descending the imaging time which chedges from the ascending the imaging time when chedges from the ascending the imaging time which chedges from the ascending the imaging time time which chedges from the ascending the imaging time time which chedges from the ascending the imaging time time which chedges from the ascending the imaging time time which chedges from the ascending the imaging time time which chedges from the ascending the imaging time time which chedges from the ascendi
		Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude Lower right latitude Lower right latitude Lower center latitude Lower center latitude Lower left latitude Lower latitude Lower left latitude Lower left latitude Lower left latitude	INSTRUBENT_NAME = *%s" INSTRUBENT_ID = *%s" UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> MOR_SUN_DISTANCE = %d <km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-right corner pixel of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center pixel of the image Longitude at the center pixel of the image Longitude at the center pixel of the image Longitude at the center pixel of the image Distance between the Moon and the Sun	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 -90 to
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	Map projection information	Instrument name Instrument ID Upper left latitude Upper right latitude Upper right latitude Lower left latitude Lower left latitude Lower right latitude right longitude right longitude center latitude Lower right longitude center latitude Lower latitude Lower right longitude Lower latitude Lower latitude Lower right longitude Location flag Distance between the Moon and the Sun Coordinate system type Coordinate system name A axis radius	INSTRUMENT_ID = %%*' UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOCONTON_FLAG = *%* MOON_SUN_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = *%* COORDINATE_SYSTEM_TYPE = *%* A_AXIS_RADIUS = %8.3f <km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Langitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Latitude at the center of the upper-light correr pixel of the image that contains dummy pixels Langitude at the center of the lower-left correr pixel of the image that contains dummy pixels Latitude at the center of the lower-left correr pixel of the image that contains dummy pixels Latitude at the center of the lower-right correr pixel of the image that contains dummy pixels 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 A axis radius of the Moon	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 *A": Ascending "D: Descending "N: When containing the imaging time which changes from the ascerning to the descending "S: When containing the imaging time which changes from the descending to the descending. "Simple Cylindrical", "Stereographic", "Lambert Conformal" or "Transverse Mercator" "BODY-FIXED ROTATING" fixed "PLANETOCENTRIC" fixed 1737.4 -KMS-default
	Map projection information	Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower left latitude Lower right latitude right longitude right longitude center latitude Lower right longitude center latitude Location flag Distance between the Moon and the Sun Map projection Coordinate system Type Coordinate system Type Coordinate system Type A axis radius	INSTRUMENT_ID = *%s" INSTRUMENT_ID = *%s" UPPER_LEFT_LONSITUDE = %10.6f <deg> UPPER_LEFT_LONSITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOCENTER_LATITUDE = %10.6f <deg> LOCATION_FLAG = *%s* MOON_SUN_DISTANCE = %d <km> MOON_SUN_DISTANCE = %d <km> AUXIS_RADUS = %s.3f <km> A_XMIS_RADUS = %s.3f <km> A_XMIS_RADUS = %s.3f <km> AXIS_RADUS = %s.3f <km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-light correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-light correr pixel of the image that cortains dummy pixels Longitude at the center pixel of the image Spacecraft location information Distance between the Moon and the Sun Type of the coordinate system Full name of the moon B casis radius of the Moon	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 -90 to 90 0 to 360 -90 to 90 -90 to 360 -90 to 90 -90 to 90
	Map projection information	Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Lower right latitude Lower left latitude Lower right latitude Lower right latitude Lower right latitude Lower right latitude Lower right latitude Lower right latitude Lower right latitude Lower right latitude Location flag Distance between the Moon and the Sun Map projection Coordinate system type Coordinate system type Coordinate system type Coordinate system type Cost stratus	INSTRUMENT_ID = %%* UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_LEFT_LONGITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> IMAGE_CENTER_LATITUDE = %10.6f <deg> IMAGE_CENTER_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> IMAGE_CENTER_LATITUDE = %10.6f <deg> CONTON_FLAG = *%* MOON_SUN_DISTANCE = %d <km> MOON_SUN_DISTANCE = %d <km> RATES_RATUS = %3* COORDINATE_SYSTEM_TYPE = *%* COORDINATE_SYSTEM_TYPE = *%* A_AXIS_RADIUS = %3.5f <km> B_AXIS_RADIUS = %3.5f <km> C_AXIS_RADIUS = %3.5f <km> C_AXIS_RADUS = %3.5f <km> C_AXIS_RADUS = %3.5f <km> C_AXIS_RADUS = %3.</km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center pixel of the image Spacecroft location information Distance between the Moon and the Sun Map projection Type of the coordinate system Full name of the cordinate system Full name of the cordinate system First standard nor-allel	Terrain Camera" TC TC -90 to 90 0 to 360 *X'. Ascending *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 ascending to the ascending "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 "S: When containing the imaging time which changes from the descending to the ascending T3: 4:Whe default T374 4:KMs default T374 4:KMs default T374 4:KMs default
	Map projection information	Instrument name Instrument ID Upper left latitude Upper eft latitude Upper right latitude Lower left hatitude Lower left latitude Lower right latitude efft longitude right Lower right Inage center latitude Inage center latitude Distance between the Moon and the Sun Distance between the Moon and the Sun Aaxis radius B akis radius B akis radius B akis radius	INSTRUMENT_INAME = *%s" INSTRUMENT_INAME = %s" UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOCATION_FLAG = *%s* MOON_SUM_DISTANCE = %d <km> COORDINATE_SYSTEM_TYPE = *%s* COORDINATE_SYSTEM_NAME = *%s* A_AXIS_RADIUS = %8.3f <km> R_AXIS_RADIUS = %8.3f <km> CAXIS_RADIUS = %8.3f <km> FIRST_STANDARD_PARALLEL = %10.6f <deg></deg></km></km></km></km></km></km></km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Langitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the upper-left corner pixel of the image that contains dummy pixels Latitude at the center of the lower-left corner pixel of the image that contains dummy pixels Latitude at the center of the lower-left corner pixel of the image that contains dummy pixels Longitude at the center of the lower-left corner pixel of the image that contains dummy pixels Longitude at the center of the lower-left corner pixel of the image that contains dummy pixels Longitude at the center pixel of the image 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 E axis radius of the Moon E axis radius of the Moon	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 0 to 360 -30 to 90 -30 to 90 0 to 360 -30 to 90 -30 to 90 -30 to 90 -30 to 90 -30 to 90 -30 to 90 -30 to 360 -30 to 360 -30 to 360 -31 -32 -35 -35 -35 -35 -35 -35 -35 -35
	Map projection information	Instrument name Instrument ID Upper left latitude Upper eft latitude Upper right latitude Lower left latitude Lower left latitude Lower left latitude Lower right latitude right longitude right longitude center longitude center latitude Lower right longitude center longitude Location flag Distance between the Moon and the Sun Map projection Coordinate system name A axis radius B axis radius First standard parallel	INSTRUMENT_ID = %%*' UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> INAGE_CENTER_LATITUDE = %10.6f <deg> INAGE_CENTER_LATITUDE = %10.6f <deg> CONTION_FLAG = %%* CONTION_FLAG = %%* COORDINATE_SYSTEM_TYPE = %%* CALIS_RADUS = %3.f <km> FIRST_STANDARD_FARALLEL = %10.6f <deg> SECOND_STANDARD_FARALLEL = %10.6f <deg></deg></deg></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Longitude at the center of the lower-left correr pixel of the image that cortains dummy pixels 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 condinate system Full name of the Moon First standard parallel Used of r Lambert Conformal' projection.	Terrain Camera" TC -90 to 90 0 to 360 -90 to 90 0 to 360 -30 to 90 0 to 360 -30 to 90 -30 to 90 0 to 360 -30 to 90 -30 to 4 descending -30 to 4 descending -31 to 4 descending -32 When containing the imaging time which changes from the descending to the ascending -32 When containing the imaging -33 When containing the imaging -35 When containing the imaging -37 When containing the imaging -38 When containing the imaging -39 When containing the imaging -37 When containing the imaging -37 When containing the imaging -37 When containing the imaging -38 When containing the imaging
	Map projection information	Instrument name Instrument ID Upper left latitude Upper left latitude Upper right latitude Lower left latitude Lower left latitude Lower left latitude Lower right latitude right latitude center Inage	INSTRUMENT_ID = %%" INSTRUMENT_ID = %%" UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_LEFT_LATITUDE = %10.6f <deg> UPPER_RIGHT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_LEFT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LATITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> LOWER_RIGHT_LONGITUDE = %10.6f <deg> IMAGE_CENTER_LONGITUDE = %10.6f <deg> LOCATION_FLAG = *%s* MOON_SUN_DISTANCE = %d <km> MOON_SUN_DISTANCE = %d <km> COORDINATE_SYSTEM_TYPE = *%s* COORDINATE_SYSTEM_TYPE = *%s* COORDINATE_SYSTEM_TYPE = *%s* A_AXIS_RADIUS = %8.3f <km> R_AXIS_RADIUS = %8.3f <km> RASS_STANDARD_PARALLEL = %10.6f <deg></deg></km></km></km></km></km></km></km></km></km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Longitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-light correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower-left correr pixel of the image that cortains dummy pixels Latitude at the center of the lower left cortains dummy pixels Latitude at the center of the lower left cortains dummy pixels 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 A axis radius of the Moon First standard parallel Used for "Lambert Conformal" Second standard parallel	Terrain Camera" TC -90 to 90 0 to 360 0 to 360 0 to 360 0 to 360 0 to 360 -90 to 90 0 to 360 -90 to 90 -90 to 90 -90 -90 to 90 -90 ta 90 -90 to 90 -90 ta 90 -90
	Map projection information	Instrument name Instrument ID Upper left latitude Upper eft latitude Upper right latitude Lower left hatitude Lower left latitude Lower right latitude efft longitude right Lower right longitude right Lower right Image center latitude Image center latitude Lower right Distance between the Moon and the Sun Distance between the Moon and the Sun Aaxis radius B akis radius B akis radius B akis radius B second standard parallel Destitue besture ¹	INSTRUMENT_NAME = *%s" INSTRUMENT_LID = *%s" UPPER_LEFT_LONSITUDE = \$10.6f <deg> UPPER_LEFT_LONSITUDE = \$10.6f <deg> UPPER_RIGHT_LONSITUDE = \$10.6f <deg> LOWER_LEFT_LATITUDE = \$10.6f <deg> LOWER_LEFT_LATITUDE = \$10.6f <deg> LOWER_LEFT_LONSITUDE = \$10.6f <deg> LOWER_RIGHT_LATITUDE = \$10.6f <deg> LOCATION_FLAG = *%s* MOON_SUM_DISTANCE = %d <km> OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = *%s* COORDINATE_SYSTEM_NAME = *%s* A_AXIS_RADIUS = %8.3f <km> R_AXIS_RADIUS = %8.3f <km> CAXIS_MADIUS = %8.3f <km> CAXIS_MADIUS = %8.3f <km> FINST_STANDARD_PARALLEL = \$10.6f <deg> BOSITUE LOWINTEDE DIENCTION = *%s*</deg></km></km></km></km></km></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg></deg>	Full name of instrument Instrument ID Latitude at the center of the upper-left correr pixel of the image that contains dummy pixels Langitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the upper-left correr pixel of the image that cortains dummy pixels Latitude at the center of the bower-left correr pixel of the lower-left correr pixel of the correr correr pixel of the lower-left correr pixel o	Terrain Camera" TC TC -90 to 90 0 to 360 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 -90 to 90 0 to 360 *A": Ascending "D: Descending *D: Descending *D: Descending *D: Descending *D: Descending *D: Descending *D: Descending *D: Use on taking 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 *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 *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 *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 *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 *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 *S: When containing the imaging time which changes from the descending to the ascending to

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

1	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 coordinate system that was used in a	"N/A" fixed
	First line number	LINE_FIRST_PIXEL = %d	given MAP_PROJECTION_TYPE Line number of the upper end pixel of	1 fixed
	Last line number	LINE_LAST_PIXEL = %d	the image Line number of the lower end pixel of	
	First sample	SAMPLE_FIRST_PIXEL = %d	the image Sample number of the left end pixel of	1 fixed
	number Last sample	SAMPLE_LAST_PIXEL = %d	the image Sample number of the right end pixel	
	number Map orientation angle	MAP_PROJECTION_ROTATION = %f <deg></deg>	of the image 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 scale	MAP_SCALE = %f <km pixel=""></km>	I-degree latitude x I-degree longitude for Simple Cylindrical Projection Actual distance, in km, between two	"Simple Cylindrical."
		NAVIMIN LANTITUDE - \$10 (f. des.	MAP_PROJECTION_TYPE	00 - 00
	latitude	MAXIMUM_LATITUDE = \$10.01 \degy	northernmost pixel in 4 corner pixels	-90 to 90
	Minimum latitude	EACTERNMONT LONGTTIDE = \$10.61 degs	southernmost pixel in 4 corner pixels	-90 t8 90
	Lasternmost longitude	EASTERNMOST_LONGTIDE = \$10.61 <degs< td=""><td>Longitude at the center of the easternmost pixel in 4 corner pixels</td><td>0 to 360</td></degs<>	Longitude at the center of the easternmost pixel in 4 corner pixels	0 to 360
	longitude	WESTERNWOST_LONGTIDDE = 410.01 (deg)	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	offset	LINE_PROJECTION_OFFSET = 41	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %I	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of this image	"No succes No fails out"
	Resampling method	END ORTECT = IMAGE MAD PROJECTION	Image resampling method	"Nearest Neighbor", "Bi-linear", "Cubic Convolution" or "Logical Sum"
Processing parameter description				
	Parameter set	OBJECT = PROCESSING_PARAMETERS PARAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
	name Dark file name	DARK_FILE_NAME = "%s"	Dark current correction coefficient file	
	Flat file name	FLAT_FILE_NAME = "%s"	name Flat field correction coefficient file	
	Effic file name	EFFIC_FILE_NAME = "%s"	name Coefficient file name of temperature	
			dependency correction of transmittance efficiency	
	Non-linearity file name	NONLIN_FILE_NAME = "%s"	File name of non-linearity correction coefficient	
	Radiance conversion coefficient	RAD_CNV_COEF = %f	Radiance conversion coefficient [W/m2/micron/sr]	
		END_OBJECT = PROCESSING_PARAMETERS		
Image				
Image information		OBJECT = IMAGE		
Image information	Bands Band storage type	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s"	Total number of bands in this image Storage sequence of lines, samples, and	1 fixed "BAND_SEQUENTIAL" fixed
Image information	Bands Band storage type Band name	OBJECT = IMAGE BAND5 = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s*	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 "BAND_SEQUENTIAL" fixed "N/A" fixed
Image information	Bands Band storage type Band name Lines	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LIMES = %d	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
Image information	Bands Band storage type Band name Lines Line samples Sample type	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = *%s*	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in a line Image data type	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or
Image information	Bands Band storage type Band name Lines Line samples Sample type	ORIECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d SAMPLE_TYPE = *%s*	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	I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho)
information	Bands Band storage type Band name Lines Line samples Sample type Sample bits	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d SAMFLE_TYPE = *%s* SAMFLE_BITS = %d	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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16
Image information	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value	OBJECT = IMAGE BAND = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES_SAMPLES = %d SAMPLE_STYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s"	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of pibels 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", or
Image information	Bands Band storage type Band name Lines Lines Samples Sample bits Meaning of pixel value Sample bits	OBJECT = IMAGE BAND = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Total number of hands in this image Storags 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 uses in this image Total number of uses in this image Total number of uses 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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "REFLECTANCE", or "ELEVATION" 2#11111111: 8 bits
Image information	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES_SAMPLES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s"	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 Total number of bits used to store one data sample value Active bits in a sample Active bits in a sample Offset value used in the DN for physical quantity conversion	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFUECTANCE", or "ELEVATION" 2#111111111111111111111111111111111111
Image information	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES_SAMPLES = %d LINE_SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	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 Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map:	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFUECTANCE", or "ELEVATION" 2#111111111#: 8 bits 2#11111111#: 16 bits
Image information	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset	OBJECT = IMAGE BAND = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d LINES_SAMFLES = %d SAMFLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMFLE_BIT_MASK = %s OFFSET = %f	Total number of hands in this image Storags sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DM for DTM map: Eventor DNSGNOK, FACTOR-OFFSET Urit is 'meters' from the Moon radius	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 2#1111111111111118: 8 bits 2#111111111111111111111111111111111111
Image information	Bands Band storage type Band name Lines Line samples Sample bype Sample bits Meaning of pixel value Sample bit mask Offset	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d INAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data. Total number of new number of pixels in a line 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 NLNG_FACTOR+OFFSET Unit is 'meters' from the Moon radius. To erbo and TC ortho map (Loc)_COV = SW=OFF):	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE", or "ELEVATION" 2#111111111111111111111111111111111111
Image	Bands Band storage type Band name Lines Line samples Sample bype Sample bits Meaning of pixel value Sample bit mask Offset	ORJECT = IMAGE BANDS = %d BAND_STORAGE_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	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data. Total number of ines in this image. Total number of pixels in a line. Image data type Total annelse of pixels in a line. Image data type Total annelse of pixels in a line. 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: CNUS_FACTOR+OFFSET Unit is 'meters' from the Moon radius. Total: COV DATA DTOR map (EQU SOFF): Total: Software	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "RADIANCE", or "ELEVATION" 2#111111111111111111111111111111111111
Image	Bands Band storage type Band name Lines Sample sype Sample bits Meaning of pixel value Sample bit mask Offset	ORJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES_SAMPLES = %d SAMPLE_TYPE = *%s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-band or multi-band data Total number of pixels in a line Total number of pixels in a line Image data type 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 DIM and DTM map: Elevation Elevation To The ond TC ortho map (REF_CNV_SW="OFF): mon the Moon FACTOR sofFFSET Unit is "wm20" mset" DN*SCALING_FACTOR-SOFFSET Unit is "wm20" mset" DN*SCALING_FACTOR-SOFFSET Unit is "wm20" mset" DN*SCALING_FACTOR-SOFFSET Unit is "wm20" mset" DN*SCALING_FACTOR-SOFFSET DN*SCALING_FACTOR-SOFFSET DN*SCALING_FACTOR-SOFFSET DN*SCALING_FACTOR_SOFFSET DN*SCALING_FACTOR_SOFFSET DN*SCALING_FACTOR_SOFFSET DN*SCALING_FACTOR_SOFFSET	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "RADIANCE". "REFLECTANCE". "REFLECTANCE". #EVATION" 2#11111111111111#: 81 bits 2#111111111111111#: 16 bits
Image	Bands Band storage type Band name Lines Lines samples Sample bits Meaning of pixel value Sample bit mask Offset	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES_SAMPLES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BITS = %d OFFSET = %f SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation Elevation To ertho and TC ortho map (REF_CNV_SW="OFFSET") To ertho and TC ortho map (REF_CNV_SW="OFFSET") To ertho map (REF_CNV_SW="OFFSET") DNSCALING_FACTOR-OFFSET" DNSCALING_FACTOR-OFFSET" DNSCALING_FACTOR-OFFSET" DN for briting DN for briting DN for box (REF_CNV_SW="OFF)") Cortho and TC ortho map (REF_CNV_SW="OFFSET") DN for briting	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "REFLECTANCE". or "ELEVATION" or "ELEVATION"
Image	Bands Band storage type Band name Lines Sample bits Sample bits Meaning of pixel value Sample bit mask Offset	ORJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d LINES SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_PACTOR = %f STRETCHED_FLAG = *%s*	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Total number of pixels in a line Image data type 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 DIM and DTM map: Elevation Elevation To tho and TC ortho map (REF_CNV_SW=COFF): Radiums(C, FACTOR+OFFSET Unit is "wm20' may" (REF_CNV_SW=CNF): Reflectivity DN SCALING, FACTOR+OFFSET Unit is "wm20' may" To rib and IC ortho map (REF_CNV_SW=CNF): Reflectivity DN SCALING, FACTOR+OFFSET Unit is "%" Gain used in the DN for physical quantity conversion	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" or "ELE
Image	Bands Band storage type Band name Lines Lines amples Sample bits Meaning of pixel value Sample bit mask Offset Offset	ORJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* ILIMES = %d LIMES = %d LIME_SAMPLES = %d SAMPLE_DITS = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = *%s* VALUE_TIMENEN = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-hand or multi-band data Total number of pixels in this image. Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation Elevation To tho and TC ortho map (REF_CNV_SW="OFFSET" Unit is "meters" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW="OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET" UNICLING_FACTOR+OFFSET Unit is "%" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" or "ELEVATION" or "ELEVATION" 2#111111111111111#: 8 bits 2#11111111111111#: 8 bits
Image	Bands Band storage type Band name Lines Sample sype Sample bits Meaning of pixel value Sample bit mask Offset Offset	ORJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d LINES SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = *%s* VALUE_FLAG = *%s*	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-band or multi-band data Total number of pixels in this image Total number of pixels in a line Trada number of pixels in a line Total number of pixels in a line Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation To erron bang (REF_CNV_SW="OFFSET" Unit is "meters" from the Moon radius. T cortho map (REF_CNV_SW="OFFSET" Unit is "wm20 may" (ReF_CNS-GNFSET" Unit is "wm20 may" (ReF_CNS-GNFSET" Unit is "wm20 may" (ReF_CNS-GNFSET") T cortho map (REF_CNV_SW="OFFSET") Unit is "wm20 may" (ReF_CNS-GNFSET") Unit is "wm20 may (REF_CNS-GNFSET") Unit is "wm20 may (REF_CNS-GNFSET") Unit is "wm20 may (REF_CNS-GNFSET")	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" 2#11111111111111#: 8 bits 2#111111111111#: 8 bits 2#111111111111#: 8 bits
Image	Bands Band storage type Band name Lines Lines Lines Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy	ORJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES SAMPLES = %d SAMPLE_BITS = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = *%s* VALUE_MININGM = %d DURNY = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-hand or multi-band data Total number of pixels in this image. Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation Elevation To tho and TC ortho map (REF_CNV_SW=COFF): Radiane, NC, FACTOR+OFFSET Unit is "wm20 may" (NG-FACTOR+OFFSET Unit is "%" Gain used in the DN for physical quantity conversion. Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" 2#111111111111111111111111111111111111
Image	Bands Band storage type Band name Lines Lines Lines Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES SAMPLES = %d SAMPLE_DITS = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = *%s* VALUE_MAININGM = %d UNALE_MAINTEN = %d LOW_REFE_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-band or multi-band data Total number of pixels in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DIM and DTM map: Elevation Elevation To tho and TC ortho map (REF_CNV_SW=COFF): and NN exeCoFFSET Unit is "wm20 in wis" Torto and TC ortho map (REF_CNV_SW=COFF): addition map (REF_CNV_SW=COFF): To ortho map (REF_CNV_SW=COFF): This "wm20 in wis" To ortho map (REF_CNV_SW=COFF): This "wm20 in wis" Torto and Into DN for physical quantity conversion Whether a data object has been stretched to make it easy to see stretched to m	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" 2#111111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#111111111111#: 8 bits 2#111111111111#: 8 bits 2#111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 16 bits
Image	Bands Band storage type Band name Lines Lines amples Sample bits Meaning of pixel value Sample bit mask Offset Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR)	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* ILIMES = %d LIMES = %d LIME_SAMPLES = %d SAMPLE_BITS = %d SAMPLE_DITS = %d SAMPLE_BITS = %d SAMPLE_BIT_MASK = %s SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = *%s* VALID_MINIMUM = %d VALID_MAXIMUM = %d LOW_ENET_SATURATION = %d LOW_INTE_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spertral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Trada number of pixels in a line Inage data type Total number of pixels in a line Inage data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DI'M and DTM map: Elevation Elevation To rotho and TC ortho map (REF_CNV_SW="OFF): To this map (REF_CNV_SW="OFF): DNSCALING_FACTOR+OFFSET Unit is "meters" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW="OFF): DNSCALING_FACTOR+OFFSET Unit is "%" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see stretched to	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" or "ELEVATION" or "ELEVATION" 2#111111111111111#: 8 bits 2#1111111111111#: 8 bits 2#1111111111111#: 8 bits 2#11111111111111#: 16 bits
Image	Bands Band storage type Band name Lines Lines Lines Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (INSTR) High saturation	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* ILINES = %d LINES = %d LINES SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = *%s* VALID_MININGUM = %d DURMY = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion D'M and DTM map: Elevation Elevation To ertho and TC ortho map (REF_CNV_SW="OFF:ET Unit is "meters" from the Moon radius. To ertho and TC ortho map (REF_CNV_SW="OFF:ET Unit is "%") Gain used in the DN for physical quantity conversion DNSCALING FACTOR+OFFSET Unit is "%" Gain used in the DN for physical gain used in the DN for physical gain used in the SN for physical gain type and in the DN for physical gain type and in the N for physical gain type and in the SN for physical gain type and in the side of the data object. Indicates the dummy (blank) pixel of the image Indicates the minimum saturation pixel after radiometric correction pixel after radiometric correction	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" or "ELEVATION" or "ELEVATION" 2#111111111111111111111111111111111111
Image	Bands Band storage type Band name Lines Lines Lines Line samples 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)	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_MANE = *%s* LINES = %d LINES = %d LINES_SAMPLES = %d SAMPLE_DITS = %d INAGE_VALUE_TYPE = *%s* SAMPLE_BITS = %d SAMPLE_BITS = %d OFFSET = %d SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = *%s* VALID_MINIMUM = %d UVALID_MAXIMUM = %d LOW_REPE_SATURATION = %d LOW_INSTE_SATURATION = %d HIGH_IERFE_SATURATION = %d HIGH_IERFE_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion D'M and DTM map: Elevation Elevation To ration and Cortho map (REF_CNV_SW=COFF): Refigue ALING FACTOR+OFFSET Unit is "meters" from the Moon radius. To ortho and RC ortho map (REF_CNV_SW=COFF): D'N'SCALING FACTOR+OFFSET Unit is "W" Gain used in the DN for physical quantity conversion. Whether a data object has been stretched to make it easy to see stretched to make it easy to see stretched to make it easy to see stretched to make the as like of the adata Object Indicates the minimum saturation pixel after radiometric correction Indicates the mainimum saturation pixel after radiometric correction	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE". or "ELEVATION" or "ELEVATION" or "ELEVATION" or "ELEVATION" or "FLISE" fixed "FALSE" fixed
Image information	Bands Band storage type Band name Lines Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) High saturation (RSTR) High saturation (RSTR)	OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* ILINES = %d LINES = %d ILINE_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = *%s* VALID_MINIMUM = %d UVALID_MINIMUM = %d DURMY = %d LOW_DEPR_SATURATION = %d HIGH_REFR_SATURATION = %d HIGH_REFR_SATURATION = %d HIGH_RISTE_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-hand or multi-band data Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of pixels in a line Image data type Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion D'M and D'M map: Elevation Elevation To ortho and TC ortho map (REF_CNV_SW='OFF): Radiance RefE_CNV_SW='OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is "Wand" unis"; To ortho and TC ortho map (REF_CNV_SW='OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is "Wand" unis"; Carl used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see stretched to make it easy to see stretched to make it easy to see Manum value that is valid for a data object Indicates the minimum saturation	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". or "REFLECTANCE". or "ELEVATION" or "ELEVATION" or "ELEVATION" "RADIANCE". or "FLEVATION" "RADIANCE". or "TC ortho or "C or the distance". or "FALSE" fixed "-9899: DTM 0: TC ortho 1 fixed 1 fixed 1 fixed 32767 fixed 32767 fixed
Image information	Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR) High saturation (INSTR) High saturation	ORJECT = IMAGE BAND = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES_SAMPLES = %d INME_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DURMY = %d LOW_ERPR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	Total number of hands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of 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 D'M and D'M map: Eventon: D'N Scall, NG, FACTOR-OFFSET Unit is "meters" from the Moon radius. TO ortho map (REF_CNV_SW=OFF): Radiance D'N Scall, NG, FACTOR-OFFSET Unit is "wim2/ in wise" D'N Scall, NG, FACTOR-OFFSET Unit is "wim2/ in wise" Carlo map (REF_CNV_SW=ON7): Reflectivity Reflectivity D'N SCALLNG, FACTOR-OFFSET Unit is "wim2/ in wise" Gain used in the DN for physical quantity conversion dipient to take it easy to see Minimum value that is valid for a data object Indicates the minimum saturation pixel al instrument measurement Indicates the minimum saturation pixel al instrument measurement Indicates the maximum saturation pixel al instrument measurement Indicates the maximum saturation pixel al instrument measurement Minimum value in this image except the invalid pixels	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN" "RADIANCE", or "ELEVATION" 2#1111111111111 # 8 bits 2#1111111111111 # 16 bits 2#1111111111111 # 16 bits 2#111111111111 # 16 bits 2#111111111111 # 16 bits 2#1111111111111 # 16 bits 2#111111111111 # 16 bits 2#1111111111111111 # 16 bits 2#11111111111111 # 16 bits 2#1111111111111111 # 16 bits 2#11111111111111 # 17 bits 2#1111111111111 # 16 bits 2#11111111111111 # 17 bits 2#11111111111111 # 17 bits 0 2#111111111111111 # 17 bits 0 1 fixed 1 fixed 1 fixed 32767 fixed
Image	Bands Band storage type Band name Lines Lines Sample bits Meaning of pixel value Sample bit mask Offset Stretched flag Valid minimum Valid maximum Low saturation (REPR) Low saturation (REPR) High saturation (RSTR)	DRIECT = IMAGE BAND = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES_SAMPLES = %d SAMPLE_DITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BITS = %d OFFSET = %f SAMPLE_BIT_MASK = %s OFFSET = %f STRETCHED_FLAG = "%s" VALUD_MINIMEM = %d UALID_MINIMEM = %d LOW_REFR_SATURATION = %d HIGH_REFR_SATURATION = %d HIGH_REFR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d HIGH_INSTR_SATURATION = %d	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. 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 Elevation To ortho map: (CeV, SW-GCH) RGEF_CNV_SW-OFF): Rediance Rdiance TO ortho map (REF_CNV_SW="OFF): Reflectivity DN*SCALING_FACTOR-OFFSET Unit is "wim2/ may" DN*SCALING_FACTOR-OFFSET Unit is "wim2/ may" DN*SCALING_FACTOR-OFFSET Unit is "wim2/ may" DN*SCALING_FACTOR-OFFSET Unit is "wim2/ mays" DN*SCALING_FACTOR-OFFSET Unit is "wim2/ mays" DN*SCALING_FACTOR-OFFSET Unit is "wim2/ mays" DN*SCALING_FACTOR-OFFSET Unit is sail for a data object Maximum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "RADIANCE", "FEFLECTANCE", or "REFLECTANCE", "RADIANCE", "ILL NUTLE & Bits 2#11111111111 # S bits 2#1111111111 # S bits 2#1111111111 # S bits 2#111111111 # S bits 2#11111111 # S bits 2#11111111 # S bits 2#1111111 # S bits 2#1111111111 # S bits 2#11111111111 # S bits 2#1111111111 # S bits 2#111111111 # S bits 2#1111111 # S bits 2#1111111111 # S bits 2#1111111111 # S bits 2#10 # Cortho 1 Tortho 32706 fixed 32767 fixed 32767 fixed When the total number of valid pixels is 0. I. When the total number of valid pixels is 0. I. When the total number of valid pixels i

	Standard deviation	STDEV = %f	Standard deviation in this image except the invalid pixels	ortho is set to -1. When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC
	Mode pixel	MODE_PIXEL = %d	Mode in this image except the invalid pixels	ortho is set to -1. When the total number of valid pixels is 0, the value of DTM is set to -9999 and the value of the TC ortho is set to -1.
Base L2A		END_OBJECT = IMAGE		
source data information				
	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	ILLUMINATION_CONDITION = "%s"	Execution count of the LZA product Illumination condition	"MORNING" or "EVENING"
	condition L0 file name	LEVEL0_FILE_NAME = { "%s", "%s",}	File names of all the L0 data used for	
	Successful time	SC TIME CODDECTION FILE NAME = {=\$c= }	creating L2A	
	correction file		correction files used for creating L2A	
	Orbit data file	ORBIT_DATA_FILE_NAME = { *&s*, *&s*,}	File names of all the orbit data files used for creating I 2A	
	Attitude data file	ATTITUDE_DATA_FILE_NAME = {"%s","%s",}	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		instrument HK files used for creating	
	SPICE kernel	SPICE_SPK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel	
	SPICE kernel	SPICE_PCK_FILE_NAME = {"%s","%s",}	(SPK) files used for creating LZA 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	CDTCP OV ETTP NAME = {=%c= =%c= }	files used for creating L2A	
	(CK) file name		(CK) files used for creating L2A	
	SPICE kernel (SCLK) file name	SPICE_SCLK_FILE_NAME = {"%s","%s",}	File names of all the SPICE kernel (SCLK) files used for creating L2A	
	SPICE kernel (LSK) file name	SPICE_LSK_FILE_NAME = { *%s", *%s", }	File names of all the SPICE kernel (LSK) files used for L2A creating	
	Scene definition	SCENE_DEFINITION_FILE_NAME = "%s"	File name of the scene definition file	
	Threshold file	THRESHOLD_FILE_NAME = "%s"	Threshold file name	
	name Conversion table	CONVERSION_TABLE_FILE_NAME = "%s"	Engineering value translated for table	
	file name Instrument name	INSTRUMENT NAME = "%s"	file Full name of the instrument	"Terrain Camera 1" or "Terrain
	Instrument name			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	SOFNE SECTIENCE NUMBER - Sd	Come number in the stain	
	number		Scele lumber in the surp	
	Mission phase name	MISSION_PHASE_NAME = "%8"	Mission phase name	"Nominal", "Option", etc.
	Upper left daytime flag Upper right daytime flag	UPPER_LEFT_DAYTIME_FLAG = "%s" UPPER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the upper left pixel and the upper right pixel of the image	"Day" or "Night"
	Lower left daytime flag Lower right daytime flag	LOWER_LEFT_DAYTIME_FLAG = "%s" LOWER_RIGHT_DAYTIME_FLAG = "%s"	Sunshine condition at the lower left pixel and the lower right pixel of the image	"Day" or "Night"
	Observation mode	OBSERVATION_MODE_ID = "%s"	Observation target name of this strip Observation mode ID	"NORMAL" or "SUPPORT"
	ID Sensor	SENSOR_DESCRIPTION = "%s"	Sensor specifications	
	Description Sensor	SENSOR_DESCRIPTION2 = "%s"	Spare sensor information	
	Description2 Detector status	DETECTOR_STATUS =	ON/OFF of each of 5 power (TC1, TC2,	
		{"TC1:%s","TC2:%s","MV:%s","MN:%s","SP:%s"}	MI-VIS, MI-NIR, SP) in this scene center	
	Exposure mode ID Spacecraft clock	EXPOSURE_MODE_ID = "%s" SPACECRAFT_CLOCK_START_COUNT = %15.4f <sec></sec>	Exposure mode ID Spacecraft clock count at the 1st line	"LONG", "MIDDLE", "SHORT"
	start count (TI)	CDACECEDART CLOCK CTOD COINT - \$15 AF COOD	(TI)	
	stop count (TI)		(TI)	
	spacecraft clock	CORRECIED_SC_CLOCK_START_COUNT = %17.61 <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)		last line (TI)	
	Start time (UT)	START_TIME = %s STOP TIME = %s	Imaging time at the 1st line (UT)	YYYY-MM-DDTHH:MM:SS.ssssszZ YYYY-MM-DDTHH-MM-SS ansor-7
	Corrected start	CORRECTED_START_TIME = %s	Corrected imaging time at the 1st line	YYYY-MM-DDTHH:MM:SS.sssssZ
	Corrected stop	CORRECTED_STOP_TIME = %s	(U1) Corrected imaging time at the last line	YYYY-MM-DDTHH:MM:SS.ssssszZ
	time (UT) Location flag	LOCATION_FLAG = "%s"	(UT) Spacecraft location information	"A": Ascending
	ð			"D": Descending "N": When containing the imaging time which changes from the ascending to the descending "S": When containing the imaging time which changes from the descending to the ascending
	Roll cant	ROLL_CANT = "%s"	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></deg>	Phase angle at the scene center	
	Solar azimuth angle	SULAR_AZIMUTH_ANGLE = %/.31 <deg></deg>	Solar azimuth angle at the scene center	
	Focal plane temperature	FOCAL_PLANE_TEMPERATURE = %6.2f <degc></degc>	Detector temperature at the 1st line	
	Telescope	TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	Telescope temperature at the 1st line	
	Line exposure	LINE_EXPOSURE_DURATION = %10.6f <msec></msec>	Line exposure duration	
	Line sampling	LINE_SAMPLING_INTERVAL = %10.6f <msec></msec>	Designed value of sampling interval	
	interval Corrected	CORRECTED_SAMPLING_INTERVAL = %10.6f <msec></msec>	Sampling interval corrected by	
	sampling interval	SATELLITE MOVING DIDECTION - *\$~*	dividing the corrected interval time between the first line and the last line of the strip into the number of lines Direction of corrections	". 1". had of store
	direction	O TRADET D = 10-1	Direction of satenite travel	"-1": lead of -x plane
	Qtable ID Huffman table ID	V_:ABLE_ID = "%S" HUFFMAN_TABLE_ID = "%S"	Qtable ID Huffman table ID	
	Data compression percentage mean	DATA_COMPRESSION_PERCENT_MEAN = %5.1f	Mean of compression percentage in the scene	

	evaluation Scene maximum DN Scene minimum DN Scene minimum DN Scene standard deviation DN Scene mode DN Saturated pixels Saturated pixels Saturated pixel position Saturated pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Madowed area minimum Shadowed area maximum Shadowed area	SCENE_MAXIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_EN = %d SATURATED_FIXELS = %d SATURATED_FIXELS = %d SATURATED_FIXEL_PERCENTAGE = %d DEAD_FIXEL_THRESHOLD = %d DEAD_FIXEL_THRESHOLD = %d DEAD_FIXEL_FOSITION = ((%d,%d), (%d,%d),) DEAD_FIXEL_FOSITION = ((%d,%d), (%d,%d),) DEAD_FIXEL_FERCENTAGE = %d SHADOWED_AREA_MINIMUM = %d SHADOWED_AREA_MAXIMUM = %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 Threshold DN for dead pixels Threshold DN for dead pixels Image coordinates of dead pixels Percentage of shadowed pixel detection Percentage of shadowed pixels	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Construction Shadowed area minimum Shadowed area	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_PIXELS = %d DEAD_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_PERCENTAGE = %d SHADOWED_AREA_MAXIMUM = %d SHADOWED_AREA_MAXIMUM = %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 Threshold DN for dead pixels Threshold DN for 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 detection Maximum DN for shadowed pixel detection	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pixel is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Shadowed area minimum	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) DEAD_PIXEL_FOSITION = ((%d,%d), (%d,%d),) DEAD_PIXEL_FOSITION = %d SHADOWED_AREA_MINIMUM = %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 Threshold DN for dead pixels Image coordinates of dead pixels Image coordinates of dead pixels Percentage of	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pikel is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Saturated pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Dead pixels Shadowed area	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 DEAD_PIXEL_FIRESHOLD = %d DEAD_PIXEL_FERCENTAGE = %d SHADOWED_AREA_MINIMEM = %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 Threshold DN for dead pixels Inreshold DN for dead pixels Image coordinates of dead pixels Image coordinates of dead pixels Percentage of dead pixels Percentage of dead pixels	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Scaturation threshold Saturated pixels Saturated pixels Saturated pixels Dead 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 DEAD_PIXEL_FIRESHOLD = %d DEAD_PIXEL_POSITION = ((%d,%d), (%d,%d),) DEAD_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 Threshold DN for dead pixel total number of dead pixels Image coordinates of dead pixels Image coordinates of dead pixels Image coordinates of dead pixels Image coordinates of dead pixels	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold 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_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_POSITION = %d DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_SS = %d DEAD_PIXEL_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 Percentage of saturated pixels Threshold DN for dead pixel detection Total number of dead pixels Image conditates of dead vixels	When the population of the image evaluation is 0 value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Scaturation threshold Saturated pixels Saturated pixels Saturated pixel percentage 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 DEAD_PIXEL_THRESHOLD = %d DEAD_PIXEL_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 Total number of saturated pixels Image coordinates of saturated pixels Percentage of saturated pixels Threshold DN for dead pixels Threshold DN for dead pixels	When the population of the image evaluation is 0 value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pixel is 0, value is set to 'NA." When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN Saturation threshold Saturated pixels Saturated pixels Dead nixel	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_PIXEL_D = %d SATURATED_PIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_PIXEL_PERCENTAGE = %d DEAD_PIXEL_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 Total number of saturated pixels Image coordinates of saturated pixels Percentage of saturated pixels Threshold DN for dead nisel detection	When the population of the image evaluation is 0 value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold Saturated pixel Saturated pixel	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_STDEV_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_DN = %d SATURATED_FIXELS = %d SATURATED_FIXEL_POSITION = ((%d,%d), (%d,%d),) SATURATED_FIXEL_POSITION = %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	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the total number of saturated pixel is 0, value is set to 'NA." When the population of the image
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene standard deviation DN Scene mode DN Saturation threshold 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_PIXELS = %d SATURATED_PIXEL 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	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Saturation threshold 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_FIXESHOLD = %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	When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image evaluation is 0, value is set to 1. When the population of the image
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN Scene mode DN	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_LN = %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 nivel	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1.
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard deviation DN Scene mode DN	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.1f SCENE_STDEV_DN = %6.1f SCENE_MODE_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	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
	evaluation Scene maximum DN Scene minimum DN Scene standard average DN Scene standard	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_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	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
	evaluation Scene maximum DN Scene minimum DN Scene standard	SCENE_MAXIMUM_DN = %d SCENE_MINIMUM_DN = %d SCENE_AVERAGE_DN = %6.15	Maximum DN in this image Minimum DN in this image Average DN in this image	When the population of the image evaluation is 0, value is set to -1. When the population of the image evaluation is 0, value is set to -1. When the population of the image
	evaluation Scene maximum DN Scene minimum	SCENE_MAXIMUM_DN = %d SCENE MINIMUM DN = %d	Maximum DN in this image	When the population of the image evaluation is 0, value is set to -1. When the population of the image
	evaluation Scene maximum	SCENE MAXIMUM DN = %d	Maximum DN in this image	When the population of the image
	statistical			
	evaluation Maximum DN for statistical	MAX_FOR_STATISTICAL_EVALUATION = %d	Maximum DN for statistical evaluation	
	Minimum DN for statistical	MIN_FOR_STATISTICAL_EVALUATION = %d	Minimum DN for statistical evaluation	10. non-compression data
	Sample bits	SAMPLE_BITS = %2d	Stored number of bits in a sample	12: compression data 14: non-compression data
	Sample type	SAMPLE_TYPE = "%s"	Data storage representation of sample value	"N/A": compression data "MSB_UNSIGNED_INTEGER":
	Line samples	LINE_SAMPLES = %4d	Total number of pixels in a line of this image, including the number of dummy pixels	
	number Lines	LINES = %d	Total number of lines in this image	
	number Overlapped line	OVERLAP_LINE_NUMBER = %d	Actual number of overlapped lines	
	Nominal overlapped line	NOMINAL_OVERLAP_LINE_NUMBER = %d	Nominal number of overlapped lines	
	Unfilled line number	UNFILLED_LINE_NUMBER = %d	Total number of lines with exceptional dummy samples due to insufficient	
	Nominal sample number	NOMINAL_SAMPLE_NUMBER = %d	Nominal number of samples in a line	
	Nominal line number	NOMINAL_LINE_NUMBER = %d	Nominal number of lines in this image	
	compression		data object	
	Encoding type	ENCODING COMPRESSION PEPPERT = \$5 1f	Compression norcentary of the image	"N/A": non-compression
	Encoding tree	OBJECT = IMAGE ENCODING TYPE = "%s"	Data anending tang	"DCT". DCT compression
	TM radiator temperature	TM_RADIATOR_TEMPERATURE = %6.2f <degc></degc>	TM radiator temperature at the 1st line	
	DPU temperature	DPU_TEMPERATURE = %6.2f <degc> TM TEMPERATURE = %6.2f <degc></degc></degc>	DPU temperature at the 1st line	
	TC2 telescope temperature	TC2_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC2 telescope temperature at the 1st line	
	TC1 telescope temperature	TC1_TELESCOPE_TEMPERATURE = %6.2f <degc></degc>	TC1 telescope temperature at the 1st line	
	Spacecraft ground speed	SPACECRAFT_GROUND_SPEED = %6.3f <km sec=""></km>	Spacecraft ground speed at the 1st line	
	Spacecraft altitude	SPACECRAFT_ALTITUDE = %8.3f <km></km>	Spacecraft altitude from the Moon radius at the 1st line	
	Last pixel number	LAST_PIXEL_NUMBER = %d	Detector number of the last sample pixel	
	First pixel number	FIRST_PIXEL_NUMBER = %d	Detector number of the first sample pixel	,
	pixels Swath mode ID	SWATH_MODE_ID = "%s"	compression Name of the swath mode	"NOMINAL", "FULL" or "HALF"
	position Constant dummy	CONSTANT_DUMMY_PIXELS = %d	Total number of dummy pixels for the	
	minimum Defect pixel	DEFECT_PIXEL_POSITION = (%d,%d,)	Detector number of the defect pixels	
	Data compression percentage	DATA_COMPRESSION_PERCENT_MIN = %5.1f	Minimum of compression percentage in the scene	
	Data compression percentage	DATA_COMPRESSION_PERCENT_MAX = %5.11	Maximum of compression percentage in the scene	

(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
				00000001: detector deficit
				00000010: saturated
				00000100: not used
				00001000: not used
				00010000: shadow
				00100000: DTM error
				01000000: dummy
				10000000: interpolated
TC Ortho	16	unsigned short	big endian	
		integer		

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 (DIM 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	NNNNNNNNNNNN (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	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 (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.NNNNN	<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	vvvv-mm-ddThh:mm:ssZ	

2.2.2 Thumbnail

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

	I I I I I I I I I I I I I I I I I I I		
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	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 for in	Explanation	Value
PDS label common items		BDS remains ID	DDS VERSION TD - "\$e"	PDS reaction ID	"DDC 2" Gued
		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	
Object position specification		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	
		object			
Product information	File			l	
	attributes	Software name	SOFTWARE_NAME = "%s"	Ssoftware name that created the DTM PDS	TBD
		Boreware maine		product	100
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM	"n.n.n" (TBD)
		Decessing level	PROCESS VERSION ID - "\$e"	PDS product	"I 2D": DTM/TC on the DTM massie
		i rocessnig iever		1 locessing level its	and TC ortho mosaic
					"MAP": DTM map and TC ortho
		Product creation time	PRODUCT CREATION TIME = %s	Product creation time	map VVVV MM DDTHIJ-MM-SS7
	Product	Troduct creation time		1 roduct creation time	TTTT-MW-DDTTTT.MW.33E
	attributes			-	-
		Producer ID	PRODUCER_ID = "%s"	Data producer ID	"LISM" fixed
		Product set ID	FRODUCI_SEI_ID = %5	Product set ID	"DTM_ICOTING : DTM/IC OTING "DTM_MAP": DTM_man
					"TCOrtho_MAP": TC ortho map
					"DTM_TCOrtho_S": DTM/TC ortho
					"DTM MAP S": DTM map (special
					product)
					"TCOrtho_MAP_S": TC ortho map
					"DTM MSC": DTM mosaic (special
					product)
	1	1		1	"1COrtho_MSC": TC ortho mosaic (special product)
	1	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	Scene				
	attributes	Mission name	MISSION NAME = "%s"	Mission name	"SELENE" fixed
	1	Spacecraft name	SPACECRAFT_NAME = "%s"	Spacecraft name	"SELENE fixed
		Data set ID	DATA_SET_ID = "%s"	This data set ID	TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain_Camera"
		Instrument ID	INSTRUMENT_ID = "%s"	Instrument ID	"TC"
		Upper left latitude	OPPER_DEFI_DATITODE = %10.81 <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	0 to 360
				dummy pixels	
		Upper right latitude	UPPER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the upper-right	-90 to 90
				corner pixel of the image that contains	
		Unner right longitude	UPPER RIGHT LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the upper-right	0 to 360
		opper right iongitude		corner pixel of the image that contains	010000
		I	LOWER LEFT LATTTIDE - \$10 6f adams	dummy pixels	00.4-00
		Lower left latitude	LOWER_DEFI_DATITODE = \$10.81 <deg></deg>	Latitude at the center of the lower-left corner pixel of the image that contains	-90 to 90
				dummy pixels	
		Lower left longitude	LOWER_LEFT_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the lower-left	0 to 360
				dummy pixels	
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the lower-right	-90 to 90
				corner pixel of the image that contains	
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deq></deq>	Longitude at the center of the lower-right	0 to 360
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		corner pixel of the image that contains	
		T	TMACE OPARTED INTITUDE - \$10 66 cdocs	dummy pixels	00.4-00
		Image center latitude	IMAGE CENTER LONGITUDE = %10.6f <deg></deg>	Latitude at the center pixel of the image	-90 to 90
	Map				
	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_TYPE = "%s"	Type of the coordinate system	"BODY-FIXED ROTATING" fixed
		Coordinate system	COORDINATE_SYSTEM_NAME = "%s"	Full name of the coordinate system	"PLANETOCENTRIC" fixed
		A axis radius	A_AXIS_RADIUS = %8.3f <km></km>	A axis radius of the Moon	1737.4 <km> default</km>
		B axis radius	B_AXIS_RADIUS = %8.3f <km></km>	B axis radius of the Moon	1737.4 <km> default</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
				case for Lambert contormat projection.	"N/A" for other map projection
	1	Second standard	SECOND_STANDARD_PARALLEL = %10.6f <deg></deg>	Second standard parallel	-90 to 90 for "Lambert Conformal"
		parallel		Used for "Lambert Conformal" projection.	"N/A" for other man projection
		Positive longitude	POSITIVE_LONGITUDE_DIRECTION = "%s"	Positive direction of longitude	"EAST" fixed
		direction	CONTROL LATITIDE $=$ \$10.65 \rightarrow	Tational of the state of	00 to 00
	1	Center latitude	CENTER_LATITUDE = %10.01 <deg></deg>	Lacitude at the origin in a given MAP_PROJECTION_TVPF	-90 to 90
		Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the origin in a given	0 to 360
		Defense 1 at	DEPENDENCE INTUTNE - \$10 CC 1	MAP_PROJECTION_TYPE	INT/AE Correla
		Reference latitude	REFERENCE_LATITUDE = %10.61 <deg></deg>	Zero latitude in a rotated spherical coordinate system that was used in a given	"N/A" fixed
				MAP_PROJECTION_TYPE	
	1	Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	Zero longitude in a rotated spherical	"N/A" fixed
				coordinate system that was used in a given MAP_PROJECTION_TYPE	
		First line number	LINE_FIRST_PIXEL = %d	Line number of the upper end pixel of the	1 fixed
		Last line number	LINE LACT DIVEL - \$d	image	
		Last line number	STATE THE LETTER - 201	image	
	1	First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the	1 fixed
		Last sample number	SAMPLE LAST PIXEL = \$4	image Sample number of the wight and wight faile	
		Last sample number	STATE DESIGNATION - 40	sample number of the right end pixel of the image	
	1	Map orientation angle	MAP_PROJECTION_ROTATION = %f <deg></deg>	Clockwise rotation of the line and sample	0.0 fixed
				coordinates with respect to the map	
		Map resolution	MAP_RESOLUTION = %f <pixel deg=""></pixel>	Total number of pixels in a box area of	"N/A" is given when
				1-degree latitude x 1-degree longitude for	MAP_PROJECTION_TYPE is not
	1	Man scale	MAP SCALE = %f /pivels	Simple Cylindrical Projection	"Simple Cylindrical".
		map scale		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
	1	Minimum latitude	MINIMUM_LATITUDE = %10.6f <deg></deg>	Latitude at the center of the southernmost	-90 to 90
				pixel in 4 corner pixels	
	1	Easternmost longitude	EASTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the easternmost	0 to 360

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

	Westernmest longitude	WESTERNMOST LONGITUDE = \$10.6f <deg></deg>	pixel in 4 corner pixels	0 to 360
	Vesterninost longitude	I INF DEGIECTION OFFET - %f	pixel in 4 corner pixels	0 10 300
	Line projection onset		the center of the upper-left corner pixel of	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at	
			the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%8"	Name of image resampling method	"Nearest Neighbor", "Bi-linear", "Gubic Grand International Internation
		FND OBJECT - TMACE MAD DROJECTION		"Logical Sum"
Processing		END_DBUECT = THAGE_HAF_FRODECTTON		
description		OR TEAT - DRATECTING DADAMETERS		
	Parameter set name	DATAMETER_SET_NAME = "%s"	Name of the processing parameter set	TBD
	Geometric correction method in the	HORIZONTAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the horizontal direction	"NON": no correction "PARALLEL": parallel shift
	horizontal direction			"AFFINE": affine transformation "HELMERT": helmert
				transformation "PSEUDO-AFFINE": pseudo-affine
	Geometric correction	VERTICAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the	"NON": no correction
	method in the vertical direction		vertical direction	"OFFSE1": offset correction "TREND": trend correction
	Mosaic priority	MUSAIC_PRIORITI = (-48-,41)	Values to decide the order of mosaicking	"NON": file designation order
				outside
				"W-E": from west to east
				"N-S": from north to south "S-N": from south to north
				DATE_NEW": new observation date order
				quality order
				of the difference between the sun
				elevation and the 2nd value "SUN_AZIMUTH": small order of
				the difference between the sun azimuth and the 2nd value
				SUN_PHASE_ANGLE": small order of the difference between the
				sun phase angle and the 2nd value 2nd value
				Value of the sun elevation, azimuth, or phase angle
				"N/A" is given to the 2nd value when the 1st value is not
				"SUN_ELEVATION", "SUN_AZIMUTH" or "SUN_DIASE_ANCLE"
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the	SUN_FHASE_ANGLE .
		END OF TECT - DEOCECCING DADAMETERS	boundary between images of the mosaicking	
Image				
mormation		OBJECT = IMAGE		
	D 1	DANDO - 24		10.1
	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
	Bands Band storage type Band name	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s"	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 "BAND_SEQUENTIAL" fixed "N/A" fixed
	Band storage type Band name Lines	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d	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 Line samples Sample type	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES_SAMPLES = %d SAMPLE_TYPE = *%s*	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
	Bands Band storage type Band name Lines Line samples Sample type	BANDS = %d BAND_STORAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES = %d SAMPLES = %d SAMPLE_TYPE = *%s*	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)
	Bands Band storage type Band name Lines Line samples Sample type Sample bits	BANDS = %d BAND_STORKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = "%s" SAMPLE_BITS = %d	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	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16
	Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value	BANDS = %d BAND_STORKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = %s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s"	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", or "RADIANCE", or
	Band storage type Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask	BANDS = %d BAND_STORKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of 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" "REPLECTANCE" or "ELEVATION" 2411111111: 8 bits
	Bands storage type Band storage type Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STARKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d LINE_SAMPLE_TYPE = %s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	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 Active bits in a sample Offset value used in the DN for physical	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "RADIANCE", "REFLECTANCE" or "ELEVATION" 24111111111111111111111111111111111111
	Band storage type Band storage type Band name Lines samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion	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" 24111111111111111111111111111111111111
	Band storage type Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = %ss" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 onversion DTM and DTM map: Elevation and the part of t	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" is bits
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d LINES = %d SAMPLE_TYPE = %ss" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is 'meter' from the Moon radius.	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d LINE_SAMPLE_TYPE = %s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation D'M and DTM map: Elevation D'M simeter 'from the Moon radius. 'to (EE', CNV, SW='OFF'):	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" is bits
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_TYPE = %ss" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation D'M and DTM map: Elevation D'M and DTM map: Elevation D'M and DTM map: Elevation D'M SecALING, FACTOR+OFFSET Unit is 'meet' from the Moon radius. 't ortho and NCMSW-OFF': Rediance DN'SCALING, FACTOR+OFFSET Unit is 'meet' from the Moon radius.	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" is bits
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d LINE_SAMPLE_TYPE = %s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	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 DN-SCALING_FACTOR-OFFSET Unit is 'inster' from the Moon radius. 'to 'EF'_CNV_SW='OFF'>: Rediance DN*SCALING_FACTOR-OFFSET Unit is 'map' may'' Rediance DN*SCALING_FACTOR-OFFSET Unit is 'map' µma'' Toto raho map (REF_CNV_SW='ON'): Reflexitive	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" is bits
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	BANDS = %d BAND_STORAKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d SAMPLE_TYPE = %ss" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 set 'from the Moon radius. 'To the conversion set of the the converse DN-SCALING_FACTOR+OFFSET Unit is 'may' in the conversion DN-SCALING_FACTOR+OFFSET Unit is 'may' in the converse DN-SCALING_FACTOR+OFFSET Unit is 'may' in the converse of the converse DN-SCALING_FACTOR+OFFSET Unit is 'may' in the converse of	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EE
	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" LINES = %d LINES = %d LINE_SAMPLE_TYPE = %s" SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DM and DTM map: Elevation DN SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. "Rediarre" Roll and W-OFF): Radiarre" Toto and REF_CNV_SW="ON"): Reflexitive DN*SCALING_FACTOR+OFFSET Unit is "mem2(units"): To ontho map (REF_CNV_SW="ON"): Reflexitive Totho map (REF_CNV_SW="ON"): Reflexitive Gain used in the DN for physkal quantity conversion	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EE
	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s"	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 DM and DTM map: Elevation Tota in the three' from the Moon radius. To the and TC ortho map (madium g/w = OFF): Rediaring /w= OFF): Rediar	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EE
	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_NAME = "%s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALUE_MINIMUM = %d	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 DM and DTM map: Elevation DN'SCALING_FACTOR+OFFSET Unit is 'may (um of TC ortho map (may (um of TC ortho map (Reflactive)_W= OFF): Rediared (UM of C ortho map (Reflactive)_W= OFF): Rediared (UM of C ortho map (REF_CNV_SW='ON'): Reflectively To cortho map (REF_CNV_SW='ON'): Reflectively Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make if easy to see Minimum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho 8 or 16 "DN", "RADIANCE", "REFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" or "EEFLECTANCE" "RADIANCE", "RADI
	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	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = "%a" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a OFFSET = %f STRETCHED_FLAG = "%a" VALUD_MINIMUM = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DNTSCALING_FACTOR+OFFSET Unit is 'mset' from the Moon radius. TC ortho and TC ortho map (Refigure)_W='OFF'): Reflective JNTSCALING_FACTOR+OFFSET Unit is 'ms' TC ortho map (REF_CNV_SW='ON'): Reflective DNTSCALING_FACTOR+OFFSET Unit is 'ms' Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make if easy to see Minimum value that is valid for a data object	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho 8 or 16 "DN", "RADIANCE", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#1111111111111#: 8 bits 2#111111111#: 8 bits 2#111111111#: 8 bits 2#111111111#: 8 bits
	Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = "%a" LINES = %d LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BIT_WASK = %a OFFSET = %f STRETCHED_FLAG = "%a" VALID_MAXIMUM = %d DUMMY = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of pixels in a line Image data type Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TC ortho and TC ortho map (RBC_ON_SW="OFF"): Reflectively_SW="OFF"): Reflectively_SW="OFF"): Reflectively_SW="OFF"): Gain used in the DN for physical quantity conversion DN*SCALING_FACTOR+OFFSET Unit is "wo" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make if easy to see Minimum value that is valid for a data object Value that indicates the dummy (blank) pixel of the image	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho 8 or 16 "DN", "RADIANCE", "RADIANCE", "REFLECTANCE" or "ELEVATION" end 2#111111111111 is 8 bits 2#1111111111111 is 16 bits 2#1111111111111 is 16 bits 2#11111111111111 is 16 bits 2#11111111111111 is 16 bits 2#111111111111111 is 16 bits 2#111111111111111 is 16 bits 2#111111111111111 is 16 bits 2#11111111111111 is 16 bits 2#11111111111111 is 16 bits 2#11111111111111 is 16 bits 2#1111111111111111 is 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 Valid maximum Dummy Minimum	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = "%a" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a OFFSET = %f STRETCHED_FLAG = %%a" VALUD_MAXIMUM = %d DUMMY = %d MINIMUM = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of pixels in a line Image data type Total number of lines in this image Total number of lines in this image Total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TC ortho and TC ortho map (RET_COV_SW=*OFF): TC ortho map (REF_COV_SW=*ON'): Reflectively_SW=*OFF): TC ortho map (REF_COV_SW=*ON'): Reflectively_SW=*OFF): Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make it easy to see Minimum value that is valid for a data object Value that indicates the dummy (blank) pixel SN	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho 8 or 16 "DN", "RADIANCE", "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#11111111111#: 8 bits 2#111111111#: 8 bits 2#11111111#: 8 bits 2#11111111#: 16 bits "FALSE" fixed -9989: DTM 2: TC ortho 32766 fixed -9989: DTM 0: TC ortho When the total number of valid
	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 Minimum	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = "%a" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALUD_MINIMUM = %d DURMY = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): TC ortho map (REF_CNV_SW='ON'): Refer (NV_SW='OFF): TC ortho map (REF_CNV_SW='OFF): TC ortho map (REF_CNV_SW='ON'): Refer (NV_SW='OFF): TC ortho map (REF_SW='OFF): TC ortho map (REF_SW='OFF): TC ortho map (REF_SW='OFF): TC or	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" RADIANCE". "REFLECTANCE" or "ELEVATION"
	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 Minimum Maximum	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = %%a" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALUD_MAXIMUM = %d DURMY = %d MAXIMUM = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each total number of lines in this image Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Restore Unit Simo? Unit Convertion REF_CNV_SW='OFF): Restore Unit Simo? Unit Simo? TC ortho map (REF_CNV_SW='ON): Reflective Simo? Gain used in the DN for physical quantity conversion Oto make it as yo 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	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111111111111111111111111111
	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 Minimum Maximum	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALUD_MINIMUM = %d DUSNY = %d MINIMUM = %d MAXIMUM = %d	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 DIM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TG entho and TC ortho map (REF_CNV_SW='OFF): Redinne: Unit Sime? Journe (SW='ON'): Reflective SW='OFF): Reflective SW='OFF): Reflective SW='OFF): Gain used in the DN for physical quantity conversion Unit Sime? In the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective SW='OFF): Gain used in the DN for physical quantity conversion Offset base 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	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" RADIANCE". "REFLECTANCE" or "ELEVATION" PADIANCE". "ELEVATION" PADIANCE". "FALSE" fixed "FALSE" fixed "FALSE" fixed "FALSE" fixed "FALSE" fixed "FALSE" fixed "Second to the solution of the second to the solution of the solution of the solution of the second to the secon
	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 Minimum Maximum Average	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = %s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALUD_MINIMUM = %d DUSNY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 DIM and DTM map: Elevation DN*SCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Redinne: Unit Simo? JW='OFF): Redinne: Unit Simo? JW='OFF): TC ortho map (REF_CNV_SW='ON'): Reflective SW='OFF): Gain used in the DN for physical quantity conversion Other a data object has been stretched to make it easy to see Minimum value that is valid for a data object Wakimum value in this image except the invalid pixels Maximum value in this image except the invalid pixels	1 fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "REFLECTANCE" or "ELEVATION" 2#111111111111111111111111111111111111
	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 Minimum Maximum Average	BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINE_SAMPLE_S = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALDE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MAXIMUM = %d DURMY = %d MINIMUM = %d AVERAGE = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 DIM and DTM map: Elevation DN'SCALING_FACTOR-OFFSET Unit is "meet" from the Moon radius. To errbn and TC ortho map (REF_CNV_SW='OFF): Radiance DN'SCALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-OFFSET Unit STALING_FACTOR-	1 fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE", "REFLECTANCE" or "ELEVATION" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE" ?#EFLECTANCE ?#ITITITITIE & Bits ?#TO ortho
	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 Minimum Average Standard deviation	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = "%a" LINES = %d LINES_SAMPLE_S = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d DUBMY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each 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 DIM and DTM map: Elevation DIM and DTM map: Elevation Total and the dimension of the maps (REF_CNV_SW='OFF): Radiance DN'SCALING_FACTOR+OFFSET Unit is 'map (REF_CNV_SW='ON'): REF_CNV_SW='OFF): Rodiance DN'SCALING_FACTOR+OFFSET Unit is 'map (REF_CNV_SW='ON'): Reflame DN'SCALING_FACTOR+OFFSET Unit is 'map (blank) pixel in this image except the invalid pixels Maximum value in this image except the invalid pixels	1 fixed "BAND_SEQUENTIAL" fixed "AND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" or "ELEVATION" or "ELEVATION" 2#111111111111111111111111111111111111
	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 Minimum Average Standard deviation	BANDS = %d BAND_STORAGE_TYPE = "%a" BAND_NAME = %a" LINES = %d LINES_SAMPLE_S = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%a" SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALUE_MINIMUM = %d VALUE_MAXIMUM = %d DUBMY = %d MINIMUM = %d AVERAGE = %f	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 DIM and DTM map: Elevation Elevation Tortho and TC ortho map (REF_CNV_SW="OFF): Radiance DN*SCALING_FACTOR+OFFSET Unit is "map (REF_CNV_SW="ON"): Offset value used in the DN for physical quantity conversion Whether a data object has been stretched to make in easy to see Minimum value that is valid for a data object Wairnum value in this image except the invalid pixels Maximum value in this image except the invalid pixels Maximum value in this image except the invalid pixels	1 fixed "BAND_SEQUENTIAL" fixed "AND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSICNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" or "ELEVATION" or "ELEVATION" 2#111111111111111111111111111111111111
	Band storage type Band storage type Band name Lines Lines Sample solution Sample bits Meaning of pixel value Sample bit mask Offset Stanple bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum Average Standard deviation Mode pixel	BANDS = 4d BAND_STARKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OPFSET = %f SCALING_FACTOR = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d DUMMY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f STDEV = %f	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 DIM and DTM map: Elevation Elevation DivisCALING_FACTOR+OFFSET Unit is "meet" from the Moon radius. To orthe and TC orthor map (REF_CNV_SW="ON7): Reflectivity TO orthor map (REF_CNV_SW="ON7): Reflectivity DivisCALING_FACTOR+OFFSET Unit is "win2"µ mser Conteasen the DN for physical quantity conversion Wither a data diptch has been stretched 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 Maverage value in this image except the invalid pixels <td>I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" "REPLECTANCE" or "ELEVATION" "RADIANCE". "FALSE" fixed "Source of the source of the sourc</td>	I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" "REPLECTANCE" or "ELEVATION" "RADIANCE". "FALSE" fixed "Source of the source of the sourc
	Band storage type Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Stample bit mask Offset Stretched flag Valid minimum Valid maximum Dummy Minimum Maximum Average Standard deviation Mode pixel	BANDS = %d BAND_STARKE_TYPE = "%s" BAND_STARKE_TYPE = "%s" BAND_NAME = %d LINES = %d LINES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s" OPFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = %%s" VALUD_MINIMUM = %d DUGMY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f STDEV = %f	Total number of bands in this image Storage sequence of lines, samples, and bands in this image Spectral range(s) associated with each band in single-band or multi-band data Total number of lines in this image Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Active bits in a sample Offset value used in the DN for physkal 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 Total number do the DN for physkal quantity onsersion DN*SCALING_FACTOR-OFFSET Unit is 'meter' from the Moon radius. TC ortho and (REF_CNV_SW='OFF): Radiance Total to be the bits valid for a data object. DN*SCALING_FACTOR-OFFSET Unit is "with?" pactores of the dummy (blank) pixel of the image Minimum value that is valid for a data object. Maximum value in this image except the invalid pixels Minimum value in this image except the invalid pixels Maximum	I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" 2*IIIIIIIIII # 8 bits 2#IIIIIIIII # 8 bits 2#IIIIIIIII # 8 bits 2#IIIIIIII # 8 bits 2#IIIIIIII # 8 bits 2#IIIIIIII # 8 bits 2#IIIIIIII # 8 bits 2#IIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Quality	Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Standard fag Valid minimum Valid maximum Dummy Minimum Average Standard deviation Mode pixel	BANDS = 4d BAND_STARKE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OPFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALUE_MINIMUM = %d DURMY = %d MINIMUM = %d MAXIMUM = %d AVERAGE = %f STDEV = %f MODE_PIXEL = %d END_OBJECT = 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 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 physkal quantity conversion DTM and DTM map: Elevation C Crib on and C Corbor PSET Unit is 'meter' from the Moon radius. TC ortho and C Corbor PSET Unit is 'meter' from the Moon radius. TC ortho and C Corbor PSET Unit is 'wm2/LING_FACTOR-OFFSET Unit is 'wm2/LING_FACTOR-OFFSET Unit is 'wm2/LING_FACTOR-OFFSET Unit is 'wm2/LING_FACTOR-OFFSET Unit is 'wm2/Ling in size Cortho map (REF_CNV_SW='ON'): Reflective Minimum value that is valid for a data object Value that indicates the dummy (blank) pixel that indicates the dummy (blank) pixel that indicates the dummy (blank)	I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN". "RADIANCE". "REFLECTANCE" or "ELEVATION" 2*IIIIIIIII # 8 bits 2#IIIIIIII # 8 bits 2#IIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIII # 7 bits 2#IIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIIII # 7 bits 2#IIIIIIIII # 7 bits 40 + 0 DTM # set

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

(2) Image Data Object

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

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

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
~	10	0	
/	12	3	Opper left latitude
			590 to 1990
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 (IC 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	NNNNNNNNNNNN (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	N	0: Read Only 1: LISM core members only 2: LISM members only 3: SELENE members only 4: All members	
Upper Left Latitude	UpperLeftLatitude	SNN.NNNNN	<degree></degree>	

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

Upper Left Longitude	UpperLeftLongitude NNN.NNNNN <		<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.

	I I I I I I I I I I I I I I I I I I I		
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.

Category		Item	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 +	
		Product ID	PRODUCT_ID = "%s"	Unique ID given to every product	
Object position specification		Data file format ID	DATA_FORMAT = "%s"	Data file format ID	"PDS" fixed
Object position specification		Head position of image	^IMAGE = %10d <bytes></bytes>	Head position of the image object	
Product information	File	object			
	attributes	S-0	COPTWARE NAME - 140	Colomba and that we to take DTM DDC	TDD
		Sortware name	oor mada_anali = vo	product	160
		Software version	SOFTWARE_VERSION = "%s"	Software version that created the DTM PDS product	"n.n.n" (TBD)
		Processing level	PROCESS_VERSION_ID = "%s"	Processing level ID	"L3D": DTM/TC ortho, DTM mosaic
					"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 set ID	[•] DTM_TCortho ⁵ : DTM/TC ortho [•] DTM_MAP ⁵ : DTM map [•] TCOrtho_MAP ⁵ : TC ortho map [•] DTM_TCOrtho ₅ . ⁵ : DTM map (special product) [•] TDTM_MAP_S ⁵ : DTM map (special product) [•] TCOrtho_MAP_S ⁵ : TC ortho map (special product) [•] DTM_MASC ⁵ : DTM mosaic (special product) [•] TDM_MASC ⁵ : TC ortho mosaic
	_	Product version ID	PRODUCT_VERSION_ID = "%s"	Product version ID	"01" to "99"
	Scene attributes				
		Mission name	MISSION_NAME = "%s"	Mission name	"SELENE" fixed
		Spacecraft name Data set ID	DATA_SET_ID = "%8"	Spacecraft name This data set ID	"SELENE-M" fixed TBD
		Instrument name	INSTRUMENT_NAME = "%s"	Full name of the instrument	"Terrain_Camera"
		Instrument ID Upper left latitude	<pre>unsikument_iD = "%s" UPPER_LEFT_LATITUDE = %10.6f <deg></deg></pre>	Instrument ID Latitude at the center of the upper-left	-1C" -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	0 to 360
		Lower left latitude	LOWER_LEFT_LATITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Latitude at the center of the lower-left	-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	0 to 360
		Lower right latitude	LOWER_RIGHT_LATITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Latitude at the center of the lower-right	-90 to 90
		Lower right longitude	LOWER_RIGHT_LONGITUDE = %10.6f <deg></deg>	corner pixel of the image that contains dummy pixels Longitude at the center of the lower-right	0 to 360
				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
	Map projection information	indge eenter longtedde		England actic center pixer of the mage	
		Map projection	OBJECT = IMAGE_MAP_PROJECTION MAP_PROJECTION_TYPE = *%s*	Map projection	"Simple Cylindrical", "Stereographic", "Lambert Conformal" or
		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></km>	C axis radius of the Moon	1737.4 <km> default</km>
		First standard parallel	FIRST_STANDARD_PARALLEL = %10.61 <deg></deg>	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	-90 to 90
		Center longitude	CENTER_LONGITUDE = %10.6f <deg></deg>	Longitude at the origin in a given	0 to 360
		Reference latitude	REFERENCE_LATITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero latitude in a rotated spherical coordinate system that was used in a given	"N/A" fixed
		Reference longitude	REFERENCE_LONGITUDE = %10.6f <deg></deg>	MAP_PROJECTION_TYPE Zero longitude in a rotated spherical coordinate system that was used in a given	"N/A" fixed
		First line number	LINE_FIRST_PIXEL = %d	MAP_PROJECTION_TYPE Line number of the upper end pixel of the image	1 fixed
		Last line number	LINE_LAST_PIXEL = %d	Line number of the lower end pixel of the image	
		First sample number	SAMPLE_FIRST_PIXEL = %d	Sample number of the left end pixel of the	1 fixed
		Last sample number	SAMPLE_LAST_PIXEL = %d	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	"Simple Cylindrical".
		Maximum latitude	MAXIMUM_LATITUDE = %10.6f <deq></deq>	MAP_PROJECTION_TYPE	-90 to 90
		Maximum idtituue		pixel in 4 corner pixels	001000
		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

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

	Westernmost longitude	WESTERNMOST_LONGITUDE = %10.6f <deg></deg>	Longitude at the center of the westernmost pixel in 4 corner pixels	0 to 360
	Line projection offset	LINE_PROJECTION_OFFSET = %f	Map projection coordinates, in pixels, at the center of the upper-left corner pixel of	
	Sample projection offset	SAMPLE_PROJECTION_OFFSET = %f	this image Map projection coordinates, in pixels, at	
			the center of the upper-left corner pixel of this image	
	Resampling method	RESAMPLING_METHOD = "%s"	Image resampling method	"Nearest Neighbor", "Bi-linear", "Gchia Guerra lation" an
		END ORIGOT - THACE MAD DROTECTION		"Cubic Convolution" or "Logical Sum"
Processing		END_OBDECT = THAGE_PAP_FRODECTION		
description		OBJECT = PROCESSING PARAMETERS		
	Parameter set name Radiance conversion	PARAMETER_SET_NAME = "%s" REF_CNV_SW = "%s"	Name of the processing parameter set	TBD "OFF" or "ON"
	switch Reflectance conversion	REF CNV COEF = %f	correction and the reflectivity conversion Reflectance conversion coefficient	"N/A" is given when RFF CNV SW
	coefficient Standardized geometry	STANDARD_GEOMETRY = (%f,%f,%f)	Incidence angle, emission angle, and phase	is "OFF". "N/A" is given when REF_CNV_SW
	condition for photometric correction		angle	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
	Photometric correction	PHOTO_CORR_COEF = (%f,%f,%f,)	Photometric correction coefficients	is "OFF". "N/A" is given when REF_CNV_SW
	Geometric correction	HORIZONTAL_TRANSFORM_METHOD = "%s"	Method of geometric correction in the	"NON": no correction
	method in the horizontal direction		horizontal direction	PARALLEL": parallel shuft "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
				CENTER: from centre to outdown from east to west "ENTER: from oest to west "N.S: from west to east "N.S: from west to east "N.S: from worth 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_PHASE, ANGLE: small order of the difference between the sum that the 2nd value "SUN_PHASE, ANGLE: small order of the difference between the sum phase angle and the 2nd value "NA" is given as the 2nd value
				"SUN_AZIMUTH" or
	Smoothing width	SMOOTHING_WIDTH = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image	Smoothing width	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS	Smoothing width, in pixels, for the boundary between images of the mosaicking	'SUN_AZIMUTH' or 'SUN_PHASE_ANGLE'.
Image information	Smoothing width	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d	Smoothing width, in pixels, for the boundary between images of the mosaicking	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image information	Smoothing width Bands Band storage type	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%s*	Smoothing width, in pixels, for the boundary between images of the mosaicking Total number of bands in this image Storage sequence of lines, samples, and bands in this image	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". 1 fixed "BAND_SEQUENTIAL" fixed
Image information	Smoothing width Bands Band storage type Band name	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BANDS = %d BAND_STORAGE_TYPE = *%s* EAND_NAME = *%s*	Smoothing width, in pixels, for the 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	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed
Image information	Smoothing width Bands Band storage type Band name Lines Line samples	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = "%s" BAND_NAME = "%s" LINES = %d LINES = %d	Smoothing width, in pixels, for the 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	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STROAGE_TYPE = *%s* BAND_NAME = *%s* LINES = %d LINES_SAMELES = %d SAMELE_TYPE = *%s*	Smoothing width, in pixels, for the 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-hand or multi-band data Total number of lines in this image Total number of pixels in a line Image data type	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER"
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORES = %d BAND_STORE_TYPE = "%g" BAND_NAME = "%g" LINES = %d LINES_SAMFLES = %d SAMFLE_TYPE = "%g" SAMFLE_BITS = %d	Smoothing width, in pixels, for the 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.	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". "I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC or hb) 8 or 16
Image information	Smoothing width Bands Band storage type Band name Lines Lines Line samples Sample type Sample bits Meaning of pixel value	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%a* BAND_STORAGE_TYPE = *%a* EAND_NAME = *%a* LINES_SMORES = %d SIMPLE_BITS = %d IMAGE_VALUE_TYPE = *%a*	Smoothing width, in pixels, for the 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 is night 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	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 DN", "RADIANCE", or "REFLECTANCE" or "REFLECTANCE" or
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%a* BAND_STORAGE_TYPE = *%a* BAND_NAME = *%a* LINES_SMORES = %d SIMPLE_BITS = %d SIMPLE_BITS = %d IMAGE_VALUE_TYPE = *%a* SIMPLE_BIT_MAGE %a	Smoothing width, in pixels, for the 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 is night 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	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "N/A" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE EAND_STORAGE_TYPE = "%g" EAND_STORAGE_TYPE = "%g" LINES = %d LINES = %d LINES = %d SAMFLE_BITS = %d IMAGE_VALUE_TYPE = "%g" SAMFLE_BITS = %d SAMFLE_BIT_MASK = %g OFFSET = %f	Smoothing width, in pixels, for the 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 bixs 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 quantily conversion	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or "REFLECTANCE" or
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE EAND_STORAGE_TYPE = "%s" EAND_STORAGE_TYPE = "%s" EAND_NAME = "%s" LINES = %d LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f	Smoothing width, in pixels, for the boundary between images of the mesaicking 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 CREF_CNC_SW="OFF": Rediance Total number of the Moon radius. TG orthe and TG ortho map (REF_CNC_SW="OFF"): Rediance DN*SCALING_ACTOR+OFFSET Unit is "wm2µ mse" To ortho map (REF_CNC_SW="ON"): BN*SCALING_FACTOR+OFFSET Unit is "wm2µ mse" To ortho map (REF_CNC_SW="ON"): BN*SCALING_FACTOR+OFFSET Unit is "ws".	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE", or "REFLECTANCE" or "ELEVATIONCE" or "ELEVATIONCE" or "ELEVATIONCE" or
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor	SMOOTHING_WIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE DANDS = %d EARD_STORAGE_TYPE = "%s" EARD_NOME = "%s" LINES = %d LINE_SAMPLES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s" SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f	Smoothing width, in pixels, for the boundary between images of the messackking 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 DTM map: Elevation DTM and DTM map: Elevation Catho and TC ortho map (REF_CNV_SW='ORF): Rediance Used Station (Sectore): Scallance USCALING_FACTOR+OFFSET USCALING_FACTOR+OF	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag	SMOUTHING_MIUTH = %d END_OBJECT = FROCESSING_PARAMETERS ODJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = *%a* BAND_STORAGE_TYPE = *%a* EAND_NAME = *%a* LINES_SMORES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%a* SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = *%a*	Smoothing width, in pixek, for the 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 is nityle-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DI'M and DTM map: Elevation DN*SCALING_FACTOR-OFFSET Unit is "wm2µ m/sr" TC ortho map (REF_CNV_SW='ON'): Referitivity = DN*SCALING_FACTOR+OFFSET Unit is "wm2µ m/sr" TC ortho map (REF_CNV_SW='ON'): Reference = DN*SCALING_FACTOR+OFFSET Unit is "wm2µ m/sr" DN*SCALING_FACTOR+OFFSET Unit is "wm2µ m/sr" DN*SCALING_FACTOR+OFFSET Un	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". I fixed "BAND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE". or "REFLECTANCE" or "ELEVATIONCE" or "ELEVATIONCE". or "ELEVATIONCE". or "ELEVATIONCE". or "ELEVATIONCE". or "ELEVATIONCE". or "FALSE" fixed
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum	SMOOTHING_MIDTH = %d END_OBJECT = IMAGE DANEGT = IMAGE DANEGS = %d DANEGS = %d DANEGS = %d DANE_STARGE_TYPE = "%s" DANE_STARGE_TYPE = "%s" LINES = %d LINES = %d LINES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d OFFSET = %f SAMPLE_BIT_MASK = %s OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%s" VALID_MINIMUM = %d	Smoothing width, in pixels, for the boundary between images of the messacking 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 D'M and D'M map: Elevation D'M setter (Forn the Moon radius, TC ortho and FC ortho map (REF_CNV_SW='OFF): Rediance DN*SCALING_FACTOR-OFFSET Unit Is "%C Gain used in the DN for physical quantity conversion D'M setter (FON_SW='ON'): Reflectively Cortho map (REF_CNV_SW='ON'): Reflectively Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make if usey to see Minimum value that is valid for a data object	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE"
Image information	Smoothing width Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS ORIECT = IMAGE BANES = %d BANES = %d LINES = %d LINES = %d LINES = %d SAMPLE_SINF = %s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = "%s* SAMPLE_BITS = %d SAMPLE_BITS = %s* VALUE_FACTOR = %f STRETCHED_FLAG = %s* VALUE_MINIMUM = %d VALUE_MAXIMENT = %d	Smoothing width, in pixels, for the boundary between images of the messacking 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 DM scalLING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and (C ertho mag) (REF_ON_SW-OFF): Rediance DN*SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "met/" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "%" Gain used in the DN for physical quantity conversion Whether a data object has been stretched to make if usey to see Minimum value that is valid for a data object	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image information	Smoothing width Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS ORIECT = IMAGE BANES = %d BANES = %d BANE_STORAGE_TYPE = "%a" BANE_SAMPLES = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %a" SAMPLE_BITS = %d SAMPLE_BIT_MASK = %a OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = "%a" VALID_MINIMUM = %d DUMMY = %d	Smoothing width, in pixels, for the boundary between images of the messacking 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 quarity onversion DIM and DTM map: Evation DIM SCALING, FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and (REF_CNV_SW="ON"): Rediance COFFS: Rediance DN*SCALING, FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho map (REF_CNV_SW="ON"): Reflectivity Conto map (REF_CNV_SW="ON"): Reflectivity Cain used in the DN for physical quantity conversion DN*SCALING, FACTOR-OFFSET Unit is "%" Cain used in the DN for physical quantity conversion Whether a data object has been stretched to make it asy to see Minimum value that is valid for a data object Value that indicates the dummy (blank) pixel of the image.	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". 1 fixed 1 fixed "BAND_SEQUENTIAL" fixed "MSB_INTEGER" (DTM) or "MSB_UNSIGNED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE". "REFLECTANCE" or "ELEVATION" or 241111111118 bits 24111111111111111111111111111111111111
Image information	Smoothing width Band storage type Band name Lines Line samples Sample type Sample bits Meaning of pixel value Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (REPR)	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BANDS_STORAGE_TYPE = %%s' BAND_STORAGE_TYPE = %%s' LINES = %d SAMPLE_SITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %s' SAMPLE_BITS = %s' SAMPLE_BIT_JAASK = %s' OFFSET = %f SCALING_FACTOR = %f STRETCHED_FLAG = %s' VALID_MINIMUM = %d DUMMY = %d LOW_REPR_SATURATION = %d	Smoothing width, in pixels, for the boundary between images of the messacking 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 physkal quantity conversion DTM and DTM map: Elevation DTM start Corton map (REF_CNV_SW='OFF): Radiance DN*SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Radiance DN*SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective Conto map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is "meter" for the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective M	*SUN_AZIMUTH* or *SUN_PHASE_ANGLE*. 1 fixed 1 fixed *BAND_SEQUENTIAL* fixed *N/A* fixed *MSB_INTEGER* (DTM) or *MSB_UNSIGNED_INTEGER* (IC ortho) 8 or 16 TON*, "RADIANCE", or *REFLECTANCE* or *REFLEC
Image information	Smoothing width Bands Band storage type Band name Lines Lines Lines Sample type Sample bits Meaning of pixel value Sample bits Sample bits Sample bit mask Offset Scaling factor Stretched flag Valid minimum Valid maximum Dummy Low saturation (INSTR)	SMOUTHING_MILTH = %d IND_OBJECT = IMAGE BANDS = %d BAND_STURAGE_TYPE = *%s* BAND_STURAGE_TYPE = *%s* BAND_STURAGE_TYPE = *%s* LINES_SMULES = %d SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d UNAGE_VALUE_TYPE = *%s* SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%s* VALUE_FIT_MAGE = %f VALUE_FIT_MAGE = %f UNAGE_VALUE_FIT_ST VALUE_FIT_ST VALUE_FIT_SATURATION = %d LOW_INSTR_SATURATION = %d	Smoothing width, in pixels, for the 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 is nitige-band or multi-band data Total number of lines in this image Total number of pixels in a line Image data type Total number of pixels in a line Image data type Total number of bits used to store one data sample value Meaning of the value of the pixel Active bits in a sample Offset value used in the DN for physical quantity conversion DTM and DTM map: Elevation DN'SCALING_FACTOR-OFFSET Unit's 'mate' 'rom the Moon radius. "GREF_CNV_SW='OFF'): Reflaree = DN'SCALING_FACTOR-OFFSET Unit's 'mate' for the Moon radius. TC ortho may GREF_CNV_SW='ON'): Reflercivity = DN'SCALING_FACTOR-OFFSET Unit's ''mate' has been stretched to make it easy to see Minimum value that is valid for a data object. Value that indicates the minimum saturation pixel adrong histrument	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE".
Image information	Smoothing width 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) High saturation (REPR)	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS OBJECT = IMAGE BAND_STORAGE_TYPE = %%* BAND_STORAGE_TYPE = %%* BAND_STORAGE_TYPE = %%* SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BIT_JAASK = %s OFFSET = %f STRETCHED_FLAG = %%s* VALID_MINIMUM = %d LOW_REPR_SATURATION = %d HIGH_REPR_SATURATION = %d	Smoothing width, in pixels, for the boundary between images of the mesackling Total number of bands in this image Storage sequence of lines, samples, and hands 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 physkal quantity conversion DTM and DTM map: Elevation DTM steer 'from the Moon radius. TC ortho and TC ortho map (REF_CNV_SW='OFF): Radiance DN*SCALING_FACTOR-OFFSET Unit is 'meter' from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is 'meter' from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective DN*SCALING_FACTOR-OFFSET Unit is 'meter' from the Moon radius. TC ortho map (REF_CNV_SW='ON'): Reflective ZON'SCALING_FACTOR-OFFSET Unit is 'meter' for a data object has been stretched to make it easy to see Minimum value that is valid for a data object Value that indicates the minimum saturation pixel during instrument measurement pixel after radometric Value that indicates the maximum saturation pixel during instrument measurement pixel after radometric Value that indicates the maximum saturation pixel during instrument measurement pixel after radometric Value that indicates the maximum	"SUN_AZIMUTH" or "SUN_PHASE_ANGLE". or "SUN_PHASE_ANGLE". or "AND_SEQUENTIAL" fixed "NA" fixed "MSB_INTEGER" (DTM) or "MSB_UNEGED_INTEGER" (TC ortho) 8 or 16 "DN", "RADIANCE". or "REFLECTANCE" or "ELEVATIONCE" or "ELEVATIONCE" or "ELEVATIONCE" or "ELEVATIONCE" or "FALSE" fixed "FALSE" fixed "Settimution of the sets 2#11111111#: 8 bits 2#11111111#: 16 bits 2#11111111#: 16 bits 2#11111111#: 16 bits 2#11111111#: 16 bits 32766 fixed 1 fixed 1 fixed
Image information	Smoothing width Bands Band storage type Band name Lines Line samples Sample bits Meaning of pixel value Sample bits Meaning of pixel value Sample bits Sample bit mask Offset Stretched flag Valid maximum Dummy Low saturation (REPR) High saturation (REPR) High saturation (INSTR)	SMOOTHING_MIDTH = %d END_OBJECT = PROCESSING_PARAMETERS ODJECT = IMAGE BANDS = %d BAND_STORAGE_TYPE = %%** BAND_STORAGE_TYPE = %%** BAND_STORAGE_TYPE = %%** SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%** SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d SAMPLE_BITS = %d UNAGE_VALUE_TYPE = *%** SAMPLE_BITS = %d IMAGE_VALUE_TYPE = *%** VALUE_MINIMUM = %d LOW_INSTR_SATURATION = %d HIGH_REFR_SATURATION = %d	Smoothing width, in pixels, for the boundary between images of the mesaicking Total number of hands in this image Storage sequence of lanes, samples, and bands in this image Spectral range(s) associated with each band in single-hand 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: Elevation DN*SCALING_FACTOR+OFFSET Unit is 'meter' from the Moon radius. TC ortho ang (REF_CNV_SW='ON'): Rediance C FACTOR+OFFSET Unit is 'meter' from the Moon radius. TC ortho ang (REF_CNV_SW='ON'): Rediance Gain used in the DN for physical quantity conversion Whether a data object has been stretched to minimum value that is valid for a data object Value that indicates the minimum saturation pixel after radiometric correction Value that indicates the minimum saturation pixel during instrument Value that indicates the maximum saturation pixel during instrument value that indicates the maximum saturation pixel during instrument	"SUN_AZIMUTH" or "SUN_AZIMUTH" or "SUN_PHASE_ANGLE".

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

 Table 2-2
 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)
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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	ĎDHHMM
			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 < fixed > SPK : SPK < fixed ></fixed>	
Instrument Name	InstrumentName	AAAAAAAA (16 digits)	SPICE : fixed	
Processing Level	ProcessingLevel	AAAAAAAA (16 digits)	Normal < fixed >	
Product ID	ProductID	AAAAAAAA (30 digits)	dependent on the product	
Product Version	ProductVersion	AAAAAAAA (16 digits)	dependent on the product	
Access Level	AccessLevel	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.

r		Vormond	Format of Dragat Value	Content of Preset Value
		DDC		"DDC0" ("
PDS label common items		PDS version ID	PDS_VERSION_ID = "%s"	"PDS3" <tixed></tixed>
		File record type	RECORD_TYPE = "%s"	ck : "UNDIEFIND" <default> spk : "UNDIEFIND" <default></default></default>
		File name	FILE_NAME = "%s"	SPICE Kernel file name sclk : *.tsc ck : *.bsp spk : *.bc
			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
	D 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"
Kernel Object Format Description Part			OBJECT = SPICE_KERNEL	
		Format	INTERCHANGE_FORMAT = %s	sclk : "ASCII" <default> ck,spk : "BINARY" <default></default></default>
		Kernel type	KERNEL_TYPE = %s	<pre>sclk : "CLOCK_COEFFICIENTS"</pre>
		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	
1		1	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.
CK	Binary	The attitude information of SELENE is stored.

2.3.1 Reference Document

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