KAGUYA (SELENE)

Product Format Description

- X-ray Spectrometer (XRS) -

Version 1.0

November 1, 2009

Index

1. Introduction

1.1 Purpose

This document describes the format*2 used for the catalog and product files for the X-ray Spectrometer *1(XRS) that was board KAGUYA (SELENE). These files provided by Japan Aerospace Exploration Agency (JAXA).

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

- ✓ Project Homepage for KAGUYA
  http://www.kaguya.jaxa.jp/en/equipment/xrs_e.htm
- ✓ Image Gallery for KAGUYA
  http://wms.selene.darts.isas.jaxa.jp/selene_viewer/en/observation_mission/xrs/

*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.

1.2 The composition of this format description

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

Table 1-1 the composition of this format description

No.	INDEX	Title	Description content
1	Section 1.3	Table 1-2 XRS 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.
		Table 1-3 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.
2	Chapter X	" Product Name"	Concerning the product shown in the No1 product list, rules used for file naming, label format, data object format and catalog information file format are described.
3	Section X.1	Rules used for File naming	Concerning the product shown in No2, the rules of file nomenclature is described.
4	Section X.2	Label Format	Concerning the product shown in No2, the label format is described.
5	Section X.3	Data Object Format	Concerning the product shown in No2, the data format of the data object is described. (The extension of the data file is unique in each product. Therefore, refer to the file nomenclature in No3.)
6	Section X.4	Catalog Information File Format	Concerning the product shown in No2, the format of the catalog information file (extension: .ctg) of the product is described.
7	Chapter X+1		
		Same as above	

1.3 Data Set

The Data Set refers to a set consisting of: Product, Catalog Information, and Thumbnail Image (JPEG format), which are tar-archived. This set is referred to as the "L2 Data Set". The file extension is "SL2". However, the thumbnail image may be omitted at the by composer's judgment.

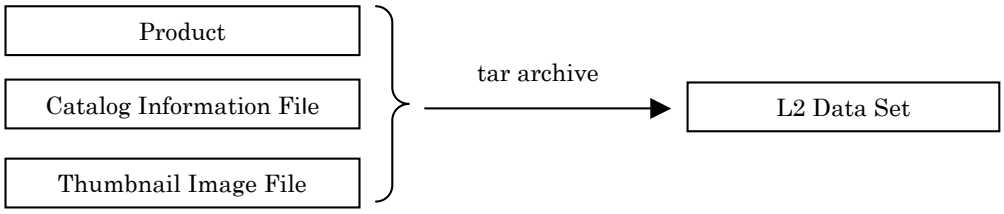

Figure 1-1 composition of the L2 Data Set

1.3.1 Product

For product composition, two possible options are available. Product Composition – Attached consists of label information and data information in a single data file. Product Composition – detached consists of separate files for the label file and data file.

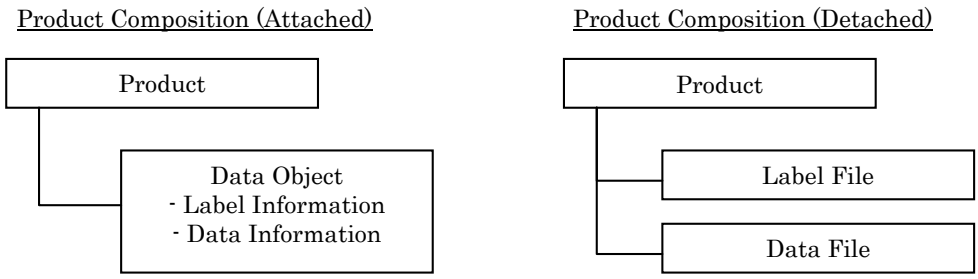

Figure 1-2 Product Composition : Attached and Detached

(1) Label File (Data Object (Label Information)

The Label File (Label Information) is storing as text format the information that identifies the Data File (Data Information).

(2) Data File (Data Object (Data Information))

The data File (Data Object (Data Information)) of the product are classified into the following four data types.

a) IMAGE : image data
An IMAGE is a two-dimensional array of values, all of the same type, each of which is referred to as a sample. IMAGE are normally processed with special display tools to produce a visual representation of the samples by assigning brightness levels or display colors to the values. An IMAGE consists of a series of lines, each containing the same number of samples.
*Refer to the PDS Standard Reference V3.8 Appendix A.20 "IMAGE".

b) TABLE : tabular form data
TABLEs are a natural storage format for collections of data from many instruments. The TABLE is a uniform collection of rows containing ASCII or binary values stored in columns.
*Refer to the PDS Standard Reference V3.8 Appendix A.29 "TABLE".

c) SERIES : time series data
The SERIES is a sub-class of the TABLE. It is used for storing a sequence of measurements organized in a specific way. The sampling parameter keywords in the SERIES represent the variation between the ROWS of data.
*Refer to the PDS Standard Reference V3.8 Appendix A.24 "SERIES"

d) TEXT : text data
The TEXT describes a file which contains plain text.
*Refer to the PDS Standard Reference V3.8 Appendix A.30 "TEXT".

1.3.2 Catalog Information File

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

1.3.3 Thumbnail Image File

Thumbnail Image File is the reduced image of the data object, and is the JPEG format image. However, the thumbnail image may be omitted at the by composer's judgment.

1.4 XRS Products

The list of XRS products, which this document describes, is shown in Table 1-2. In addition, the description for each product is shown in Table 1-3.

Table 1-2 XRS Products List

Level*1	Product Name	Product ID	Data Type	Product Format*2
Not calibrated	XRS Image Data	XRS_IMG_data	IMAGE	D
Not calibrated	XRS Event Data	XRS_EVT_data	SERIES	D
Not calibrated	XRS Histogram Data	XRS_HST_data	SERIES	D

*1 : Data obtained by equipments is not clear as it is, therefore various processings and correction treatment are necessary by the ground system. According to the difference in the process of processing and correction treatment, they can be classified to the standard processing and higher-level processing. The higher-level processing refers to the standard processing data to which various processing and correction treatment are conducted according to the research purpose et cetra.

*2 Product Format : A - Attached, D - Detached

Table 1-3 Product Description

Product Name	Descriptions
XRS Image Data	CCD image dump data, mostly 16-binned, compressed to one data per day.
XRS Event Data	XRS observation data as event data for XRFA and SOLC, as histgram for SOLB, in HDF(H5) format.
XRS Histogram Data	XRS observation data as histogram for XRFA, SOLC, and SOLB, in HDF(H5) format.

2. XRS Image Data

2.1 Rules used for File naming

The nomenclature used for Label, Data Object and Catalog Information File the XRS product files are described below. In addition, the file names are case-independent.

XRS_IMG_dataZ_YYYYMMDD.ext

- Z : Version by CCD (X = 0, 1, 2, …, D, E, F)
- YYYYMMDD : Observation Date
- ext : File Extension
  - ✓ lbl : Label File
  - ✓ zip : Data Object File
  - ✓ ctg : Catalog Information File
  - ✓ jpg : Thumbnail JPEG Image File
  - ✓ sl2 : L2 Data Set (tar archive)

<Example of Name : XRS Image Data >

XRS_IMG_data0_20090501.zip

(Data in the zip file : 20090501T113526-Ccd0.fits)

2.2 Label Format

The Label format for the IMAGE object used for the XRS Image Data product is shown in Table 2-1. The Label for the IMAGE object includes: Standard Item, Image Data Object Format Description Part and IMAGE_MAP_PROJECTION Object Description Part.

In Table 2-1with the exception of the Values expressed as “STATIC”, the numerical values and the character strings corresponding to the type of the product etc., are set.

Table 2-1 Label Format

No	Items	Elements	Types	Values
Standard Item				
1	PDS version number	PDS_VERSION_ID = %s	char	PDS3 [STATIC]
2	Record format of the file	RECORD_TYPE = %s	char	UNDEFINED [STATIC]
3	Byte count of the file record	RECORD_BYTES = %d	int	128 [STATIC]
4	Count of the file record	FILE_RECORDS = %d	int	XXXXX
5	File name	FILE_NAME = %s	char	See Section 2.1 “Rules used for File naming”.
6	Name of the mission	MISSION_NAME = %s	char	SELENE [STATIC]
7	Name of the spacecraft	SPACECRAFT_NAME = %s	char	SELENE-M[STATIC]
8	Name of the instrument	INSTRUMENT_NAME = %s	char	XRS [STATIC]
9	Product ID	PRODUCT_NAME = %s	char	XRS_IMG_data [STATIC]
10	Product version number	PRODUCT_VERSION_ID = %s	char	Ver. X.X
11	Target name	TARGET_NAME = %s	char	MOON [STATIC]
12	Comment	COMMENT_TEXT = "%s"	char	
13	Image of CCD0	CCD_ID = %d	int	X
14	Count of image file	IMAGE_NUMBERS = %d	int	XX
15	Starting position of the image object	^IMAGE = %s	char	File name
Image Data Object Format Description Part(/* IMAGE */)				
		OBJECT = IMAGE		
15	Band storage type	BAND_STORAGE_TYPE = %s	char	SAMPLE_INTERLEAVED *Refer to the PDS Standard Reference V3.5 Appendix A.19 “IMAGE”.
16	Number of bands	BANDS = %d	int	1
17	Maximum of the data	DERIVED_MAXIMUM = %d	int	4095
18	Minimum of the data	DERIVED_MINIMUM = %d	int	0
19	Compression class and encoding type	ENCODING_TYPE = %s	char	N/A [STATIC]
20	Horizontal pixel count of image	LINE_SAMPLES = %d	int	1040
21	Vertical pixel count of image	LINES = %d	int	65

22	Pixel bit length	SAMPLE_BITS = %d	int	128
23	Pixel type	SAMPLE_TYPE = %s	char	MSB_UNSIGNED_INTEGER[STATIC] * Refer to the PDS Standard Reference V3.5 Appendix C.2 for further information about "MSB_UNSIGNED_INTEGER".
24	Stretched Flag	STRETCHED_FLAG = %s	char	FALS E[STATIC]
25	Offset	OFFSET = %f	float	N/A
26	Scaling factor	SCALING_FACTOR = %f	float	N/A
27	Alternative value outside assumption	INVALID_CONSTANT = %s	char	4095
28	Alternative value of missing value	MISSING_CONSTANT = %s	char	0
29	Data Type	INTERCHANGE_FORMAT = %s	char	FITS
30	Number of lines of data	ROWS = %s	int	1040
31	Number of columns of data	COLUMNS = %s	int	65
32	Byte count of suffix record	ROW_BYTES = %s	int	128
33	Start date and time of observation	START_TIME = %s	char	YYYY-MM-DDThh:mm:ss
34	End date and time of observation	STOP_TIME = %s	char	YYYY-MM-DDThh:mm:ss
35	Description	NOTE = "%d"	char	"File name of each image such as 20090501T113526-Ccd0.fits means the time the image taken in second."
		END_OBJECT = IMAGE		
END statement				
		END		

<Example of Label : XRS Image Data >

```
PDS_VERSION_ID        = PDS3
RECORD_TYPE           = UNDEFINED
RECORD_BYTES          = 128
FILE_RECORDS          = 2307482
MISSION_NAME          = SELENE
SPACECRAFT_NAME       = SELENE-M
INSTRUMENT_NAME       = XRS
PRODUCT_NAME          = XRS_IMG_data
TARGET_NAME           = UNDEFINED
COMMENT_TEXT          ="CCD images taken by XRS for diagnostic purpose."
CCD_ID                = 0
IMAGE_NUMBERS         = 32

/* Each IMAGE */
OBJECT = IMAGE
  INTERCHANGE_FORMAT= FITS
  ROWS                = 1040
  COLUMNS             = 65
  ROW_BYTES           = 128
  START_TIME          = 2009-05-01T00:00:00
  STOP_TIME           = 2009-05-01T23:59:59
  NOTE = "File name of each image such as 20090501T113526-Ccd0.fits means
          the time the image taken in second."
END_OBJECT = IMAGE

END
```

2.3 Data Object Format

・Image data of FITS Format
・Pixel (FITS Image): 1040 x 65 (each image : 16 bit (Value at 12 bit is 0-4095)
・Effective pixels of CCD is 1024 x 1024. But binning in steps of 16 pixels in a vertical direction, because Effective pixels is 1024 x 64.
・4-1027 is effective pixels out of flatly 1040(0-1039).
・First 64 is effective pixels out of verticality 65 pixels. And transferring for a one-time at last.

2.4 Catalog Information File Format

The Catalog Information File Format is shown in Table 2-2.

Table 2-2 Catalog Information File Format

Item Name	Elements	Format of Value	Range of Value	Values
Name of the data file (*1)	DataFileName	AAAA….AAAA (Up to 31 digits)	alphanumeric characters	dependent on the product (See Section 2.1 "Rules used for File naming".)
Size of the data file	DataFileSize	NNNNNNNNNNNN (Up to 12 digits)	unit:<byte>	dependent on the product
File format of the data file	DataFileFormat	AAAA….AAAA (Up to 16 digits)	character strings	PDS [STATIC]
Name of the instrument	InstrumentName	AAAA….AAAA (Up to 16 digits)	character strings	XRS [STATIC]
Version number of the product	ProductVersion	AAAA….AAAA (Up to 16 digits)	character strings	1.0
Product ID	ProductID	AAAA….AAAA (Up to 30 digits)	character strings	dependent on the product (See Table 1-2 "Product_ID")
Processing level	ProcessingLevel	AAAA….AAAA (Up to 16 digits)	character strings	Standard [STATIC]
Access level	AccessLevel	N	the value of 0-4	N/A
Start time	StartDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME	dependent on the product
Stop time	EndDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME	dependent on the product

(*1) "DataFileName" is the stored file name of the product. For the detached format, this is the stored file name.

<Example of Catalog Information : XRS Image Data >

DataFileName = XRS_IMG_data0_20090501.zip
DataFileSize = 2307482
DataFileFormat = PDS
InstrumentName = XRS
ProcessingLevel = Standard
ProductID = XRS_IMG_data
ProductVersion = 1.0
AccessLevel = 3
StartDateTime = 2009-05-01T00:00:00Z
EndDateTime = 2009-05-01T23:59:59Z

3. XRS Event Data

3.1 Rules used for File naming

The nomenclature used for Label, Data Object and Catalog Information File the XRS product files are described below. In addition, the file names are case-independent.

XRS_EVT_data_YYYYMMDD.ext

- YYYYMMDD : Observation Date
- ext : File Extension
  - ✓ lbl : Label File
  - ✓ h5 : Data Object File
  - ✓ ctg : Catalog Information File
  - ✓ sl2 : L2 Data Set (tar archive)

<Example of Name : XRS Event Data >
XRS_EVT_data_20080101.h5

3.2 Label Format

The Label format for the SERIES object used for the XRS Event Data product is shown in Table 3-1. The Label for the SERIES object includes: Standard Item.

In Table 3-1 with the exception of the Values expressed as "STATIC", the numerical values and the character strings corresponding to the type of the product etc., are set.

Table 3-1 Label Format

No	Items	Elements	Types	Values
Standard Item				
1	PDS version number	PDS_VERSION_ID = %s	char	PDS3 [STATIC]
2	Record format of the file	RECORD_TYPE = %s	char	UNDEFINED [STATIC]
3	Byte count of the file record	RECORD_BYTES = %d	int	XXXX
4	Count of the file record	FILE_RECORDS = %d	int	159138480
5	Name of the mission	MISSION_NAME = %s	char	SELENE [STATIC]
6	Name of the spacecraft	SPACECRAFT_NAME = %s	char	SELENE-M[STATIC]
7	Name of the instrument	INSTRUMENT_NAME = %s	char	XRS [STATIC]
8	Product ID	PRODUCT_NAME = %s	char	XRS_EVT_data [STATIC]
9	Product version number	PRODUCT_VERSION_ID = %s	char	Ver. X.X
10	Target name	TARGET_NAME = %s	char	MOON, SUN [STATIC]
11	Comment	COMMENT_TEXT = "%s"	char	CCD event data from XRF-A and SOL-C, and PIN diode spectrum data from SOL-B
12	Starting position of the series object	^SERIES = %s	char	File name

Object Format Description Part				
		OBJECT = TIME_SERIES		
13	Data Type	INTERCHANGE_FORMAT = %s	char	H5 [STATIC]
14	Number of lines of data	ROWS = %s	int	XXX
15	Number of columns of data	COLUMNS = %s	int	XX
16	Byte count of suffix record	ROW_BYTES = %s	int	XXX
17		SAMPLING_PARAMETER_NAME = %s	char	TIME [STATIC]
18		SAMPLING_PARAMETER_UNIT = %s	char	SECOND [STATIC]
19		SAMPLING_PARAMETER_INTERVAL = %d	float	4.0
20	Start date and time of observation	START_TIME = %s	char	YYYY-MM-DDThh:mm:ss
21	End date and time of observation	STOP_TIME = %s	char	YYYY-MM-DDThh:mm:ss
		END_OBJECT = TIME_SERIES		
END statement				
		END		

<Example of Label : XRS Event Data >

```
PDS_VERSION_ID                = PDS3
RECORD_TYPE                   = UNDEFINED
RECORD_BYTES                  = ***
FILE_RECORDS                  = 159138480
MISSION_NAME                = SELENE
SPACECRAFT_NAME               = SELENE-M
INSTRUMENT_NAME             = XRS
PRODUCT_NAME              = XRS_EVT_data
TARGET_NAME                   = MOON, SUN
COMMENT_TEXT                  ="CCD event data from XRF-A and SOL-C, PIN diode
                          spectrum data from SOL-B"

/* TIME SERIES */
OBJECT =     TIME_SERIES
  INTERCHANGE_FORMAT          = H5
  ROWS                        = ***
  COLUMNS               = **
  ROW_BYTES                   = ***
  SAMPLING_PARAMETER_NAME = TIME
  SAMPLING_PARAMETER_UNIT = SECOND
  SAMPLING_PARAMETER_INTERVAL = 4.0
  START_TIME                  = 2009-06-03T00:00:00
  STOP_TIME                   = 2009-06-03T23:59:59
END_OBJECT = TIME_SERIES

END
```

3.3 Data Object Format

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3.4 Catalog Information File Format

The Catalog Information File Format is shown in Table 3-2.

Table 3-2 Catalog Information File Format

Item Name	Elements	Format of Value	Range of Value	Values
Name of the data file (*1)	DataFileName	AAAA….AAAA (Up to 31 digits)	alphanumeric characters	dependent on the product (See Section 3.1 “Rules used for File naming”.)
Size of the data file	DataFileSize	NNNNNNNNNNNN (Up to 12 digits)	unit:<byte>	dependent on the product
File format of the data file	DataFileFormat	AAAA….AAAA (Up to 16 digits)	character strings	PDS [STATIC]
Name of the thumbnail file	ThumbnailFileName	AAAA….AAAA (Up to 31 digits)	alphanumeric characters	dependent on the product (See Section 3.1 “Rules used for File naming”.)
Size of the thumbnail file	ThumbnailFileSize	NNNNNNNNNNNN (Up to 12 digits)	unit:<byte>	dependent on the product
File format of the thumbnail file	ThumbnailFileFormat	AAAA (Up to 4 digits)	JPEG Format	JPEG [STATIC]
Name of the instrument	InstrumentName	AAAA….AAAA (Up to 16 digits)	character strings	XRS [STATIC]
Version number of the product	ProductVersion	AAAA….AAAA (Up to 16 digits)	character strings	dependent on the product
Product ID	ProductID	AAAA….AAAA (Up to 30 digits)	character strings	dependent on the product (See Table 1-2 “Product_ID”)
Processing level	ProcessingLevel	AAAA….AAAA (Up to 16 digits)	character strings	dependent on the product (See Table 1-2 “Level”)
Access level	AccessLevel	N	the value of 0-4	N/A
Start time	StartDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME (second bit)	dependent on the product
Stop time	EndDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME (second bit)	dependent on the product

(*1) “DataFileName” is the stored file name of the product. For the detached format, this is the stored file name.

<Example of Catalog Information : XRS Event Data >

DataFileName = XRS_EVT_data_20090603.h5
DataFileSize = 159138480
DataFileFormat = PDS
InstrumentName = XRS
ProcessingLevel = Standard
ProductID = XRS_EVT_data
ProductVersion = 1.0
AccessLevel = 3
StartDateTime = 2009-06-03T00:00:00Z
EndDateTime = 2009-06-03T23:59:59Z

4. XRS Histogram Data

4.1 Rules used for File naming

The nomenclature used for Label, Data Object and Catalog Information File the XRS product files are described below. In addition, the file names are case-independent.

XRS_HST_data_YYYYMMDD.ext

- YYYYMMDD : Observation Date
- ext : File Extension
  - ✓ lbl : Label File
  - ✓ h5 : Data Object File
  - ✓ ctg : Catalog Information File
  - ✓ sl2 : L2 Data Set (tar archive)

<Example of Name : XRS Histogram Data>
XRS_HST_data_20080101.h5

4.2 Label Format

The Label format for the SERIES object used for the XRS Histogram Data product is shown in Table 4-1. The Label for the SERIES object includes: Standard Item.

In Table 4-1 with the exception of the Values expressed as "STATIC", the numerical values and the character strings corresponding to the type of the product etc., are set.

Table 4-1 Label Format

No	Items	Elements	Types	Values
Standard Item				
1	PDS version number	PDS_VERSION_ID = %s	char	PDS3 [STATIC]
2	Record format of the file	RECORD_TYPE = %s	char	UNDEFINED [STATIC]
3	Byte count of the file record	RECORD_BYTES = %d	int	XXXX
4	Count of the file record	FILE_RECORDS = %d	int	6082215
5	Name of the mission	MISSION_NAME = %s	char	SELENE [STATIC]
6	Name of the spacecraft	SPACECRAFT_NAME = %s	char	SELENE-M[STATIC]
7	Name of the instrument	INSTRUMENT_NAME = %s	char	XRS [STATIC]
8	Product ID	PRODUCT_NAME = %s	char	XRS_HST_data [STATIC]
9	Product version number	PRODUCT_VERSION_ID = %s	char	Ver. X.X
10	Target name	TARGET_NAME = %s	char	MOON, SUN [STATIC]
11	Comment	COMMENT_TEXT = "%s"	char	"XRS spectral data in time series derived from EVENT data. Histograms from vertical address at v:1, v:2-5, v:6-9, v:10-13, v:14-32, v:33-64, v:65 are

				separately obtained. "
12	Starting position of the series object	^SERIES = %s	char	File name
Object Format Description Part				
		OBJECT = TIME_SERIES		
13	Data Type	INTERCHANGE_FORMAT = %s	char	H5 [STATIC]
14	Number of lines of data	ROWS = %s	int	XXX
15	Number of columns of data	COLUMNS = %s	int	XX
16	Byte count of suffix record	ROW_BYTES = %s	int	XXX
17		SAMPLING_PARAMETER_NAME = %s	char	TIME [STATIC]
18		SAMPLING_PARAMETER_UNIT = %s	char	SECOND [STATIC]
19		SAMPLING_PARAMETER_INTERVAL = %d	float	30
20	Start date and time of observation	START_TIME = %s	char	YYYY-MM-DDThh:mm:ss
21	End date and time of observation	STOP_TIME = %s	char	YYYY-MM-DDThh:mm:ss
		END_OBJECT = TIME_SERIES		
END statement				
		END		

<Example of Label : XRS Histogram Data >

```
PDS_VERSION_ID                  = PDS3
RECORD_TYPE                     = UNDEFINED
RECORD_BYTES                    = ***
FILE_RECORDS                    = 6082215
MISSION_NAME                = SELENE
SPACECRAFT_NAME                 = SELENE-M
INSTRUMENT_NAME               = XRS
PRODUCT_NAME                = XRS_EVT_data
TARGET_NAME                     = MOON, SUN
COMMENT_TEXT                    ="XRS spectral data in time series derived from
                              EVENT data. Histograms from vertical address at
                              v:1, v:2-5, v:6-9, v:10-13, v:14-32, v:33-64, v:65
                              are separately obtained. "

/* TIME SERIES */

OBJECT =     TIME_SERIES
  INTERCHANGE_FORMAT          = H5
  ROWS                        = ***
  COLUMNS                 = **
  ROW_BYTES                   = ***
  SAMPLING_PARAMETER_NAME = TIME
  SAMPLING_PARAMETER_UNIT = SECOND
  SAMPLING_PARAMETER_INTERVAL = 30
  START_TIME                  = 2009-06-03T00:00:00
  STOP_TIME                   = 2009-06-03T23:59:59
END_OBJECT = TIME_SERIES

END
```

4.3 Data Object Format

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4.4 Catalog Information File Format

The Catalog Information File Format is shown in Table 4-2.

Table 4-2 Catalog Information File Format

Item Name	Elements	Format of Value	Range of Value	Values
Name of the data file (*1)	DataFileName	AAAA….AAAA (Up to 31 digits)	alphanumeric characters	dependent on the product (See Section 4.1 "Rules used for File naming")
Size of the data file	DataFileSize	NNNNNNNNNNNN (Up to 12 digits)	unit:<byte>	dependent on the product
File format of the data file	DataFileFormat	AAAA….AAAA (Up to 16 digits)	character strings	PDS [STATIC]
Name of the thumbnail file	ThumbnailFileName	AAAA….AAAA (Up to 31 digits)	alphanumeric characters	dependent on the product (See Section 4.1 "Rules used for File naming")
Size of the thumbnail file	ThumbnailFileSize	NNNNNNNNNNNN (Up to 12 digits)	unit:<byte>	dependent on the product
File format of the thumbnail file	ThumbnailFileFormat	AAAA (Up to 4 digits)	JPEG Format	JPEG [STATIC]
Name of the instrument	InstrumentName	AAAA….AAAA (Up to 16 digits)	character strings	XRS [STATIC]
Version number of the product	ProductVersion	AAAA….AAAA (Up to 16 digits)	character strings	dependent on the product
Product ID	ProductID	AAAA….AAAA (Up to 30 digits)	character strings	dependent on the product (See Table 1-2 "Product_ID")
Processing level	ProcessingLevel	AAAA….AAAA (Up to 16 digits)	character strings	dependent on the product (See Table 1-2 "Level")
Access level	AccessLevel	N	the value of 0-4	N/A
Start time	StartDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME	dependent on the product
Stop time	EndDateTime	yyyy- mm- ddT hh: mm: ss.ssssssZ	DATE & TIME	dependent on the product

(*1) "DataFileName" is the stored file name of the product. For the detached format, this is the stored file name.

<Example of Catalog Information : XRS Histogram Data >

DataFileName = XRS_HST_data_20090603.h5
DataFileSize = 6082215
DataFileFormat = PDS
InstrumentName = XRS
ProcessingLevel = Standard
ProductID = XRS_HST_data
ProductVersion = 1.0
AccessLevel = 3
StartDateTime = 2009-06-03T00:00:00Z
EndDateTime = 2009-06-03T23:59:59Z