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Appendix 1

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1. PRISM Mission Telemetry Data

Figure 1-1 sows the data format of PRISM mission telemetry data.

Table 1-1 describes the contents of PRISM mission telemetry data.

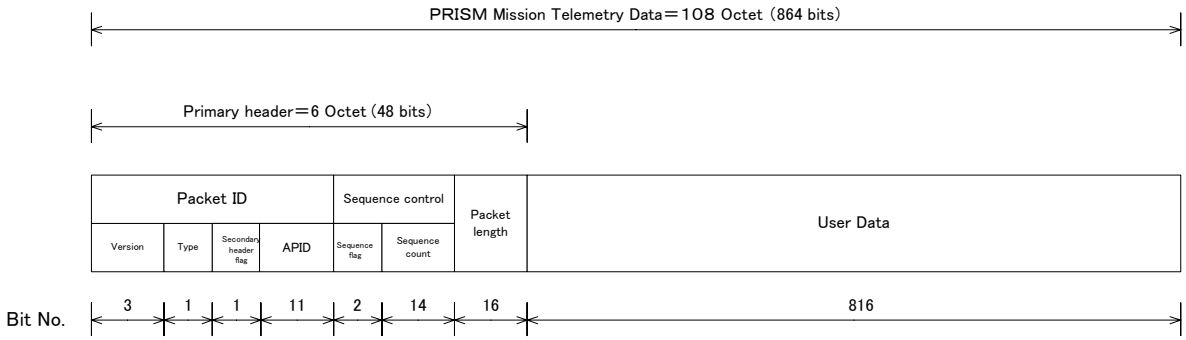


Figure 1-1 PRISM Mission Telemetry Data Format

Table 1-1 Contents of PRIMS Mission Telemetry Data

TLM No.	Telemetry Name	Abbreviation	Emergence Frequency	Number of bits	Remarks
1	Time data (Low-order 16 bits of GPS Time (GPS second), High-order 16 bits of self-counter)		1	32	
2	Thermal Control Unit Status (Error status register)		1	16	
3	Forward View Scanning Radiometer Test Signal Reference Level	FSRU E-LEVEL	1	8	
4	Nadir View Scanning Radiometer Test Signal Reference Level	NSRU E-LEVEL	1	8	
5	Backward View Scanning Radiometer Test Signal Reference Level	BSRU E-LEVEL	1	8	
6	Forward View Scanning Radiometer Optical Black	FSRU OB	1	64	(1 pixel*8CCD)/sec, Output from the 1st pixel to the 22nd pixel in order. (Note 1)
7	Nadir View Scanning Radiometer Optical Black	NSRU OB	1	64	Ditto (Note 1)
8	Backward View Scanning Radiometer Optical Black	BSRU OB	1	64	Ditto (Note 1)
9	PCD Time Data	PCD	1	48	
10	PCD AUX data	PCD	1	352	
11	Forward View Scanning Radiometer CCD Status	FSRU CCD ST	1	8	CCD status: CCD1 – CCD 8 from MSB (Note 2)
12	Nadir View Scanning Radiometer CCD Status	NSRU CCD ST	1	8	
13	Backward View Scanning Radiometer CCD Status	BSRU CCD ST	1	8	
14	Temperature for Monitor (15ch)	Temp	1	120	
15	Calibration Data (1ch)	CARIB	1	8	

Note 1: Data alignment is described as follows.

"The telemetry which specifies optical black in the 1st pixel" is in "b15 (MSB)" in the Thermal Control Unit Status, and shows optical black pixel position is in the 1st pixel or not. ("0": Not in the 1st pixel. "1": In the 1st pixel.) In case where this telemetry becomes "1" is the following flame of pixel No.2.

	EVEN	ODD	EVEN	ODD	. . .	EVEN	ODD	EVEN	ODD
Pixel No.	2	1	4	3		20	19	22	21

Note 2: CCD status telemetry and optical black status are not synchronized due to telemetry update period.

2. PCD (Payload Correction Data)

Figure 2-1 shows the data format of PCD data.

Table 2-1 describes time data and bit contents, and Table 2-2 describes AUX data format.

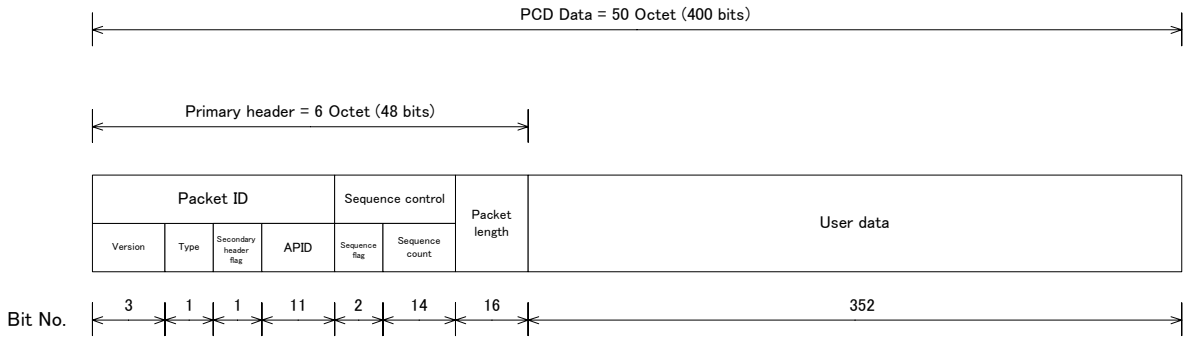


Figure 2-1 PCD Data Format

Table 2-1 Time Data Name and Bit Contents

No.	Data Name	Abbrev.	Data Bit	Data Amount	Remarks	
1	1PPS Reference Time	TT	P field	: 8 (01100101'B)	48	(Note 1)
			GPS week	: 16 (0 to 65,535 week)		
			GPS sec.	: 24 (0 to 604,799 sec.)		

(Note 1) Time definition

Absolute Navigation Time: The time when absolute navigation has been done. (Time system in GPS)

1PPS Reference Time: The time (= S/C time) of the estimated value which defines 1PPS reference plus (distributed in integer second)

(Note 2) GPS data

Since GPS week of the ALOS GPSR has exceeded the display range, the value is 1024 – 2047 (adding 1 bit to the 11^{th} bit).

Table 2-2 AUX Data Format

Word No.	Start Bit #	Bit	Data	Unit	Format	Remarks
0	0	48	CCSDS primary header	N/A	N/A	
3	0	32	GPS absolute navigation time	Milli-second	unsigned int	The time when absolute navigation has been done.
5	0	24	Absolute navigation position data -X	Meters	2C	The position of absolute navigation result: (WGS84 coordinate system)
6	8	24	Absolute navigation position data -Y	Meters	2C	
8	0	24	Absolute navigation position data -Z	Meters	2C	
9	8	24	Absolute navigation velocity data -X’	0.001m /sec	2C	The velocity of absolute Navigation result: (WGS84 coordinate system)
11	0	24	Absolute navigation velocity data -Y’	0.001m /sec	2C	
12	8	24	Absolute navigation velocity data -Z’	0.001m /sec	2C	
14	0	16	Estimated attitude angel -ϕ	0.001 degrees	2C	Attitude determination system output (standard attitude determination system or precision attitude determination system
15	0	16	Estimated attitude angel -θ	0.001 degrees	2C	
16	0	16	Estimated attitude angel -ψ	0.001 degrees	2C	
17	0	16	Velocity of the estimated attitude angle -ϕ’	0.0001 deg/sec	2C	
18	0	16	Velocity of the estimated attitude angle -θ’	0.0001 deg/sec	2C	
19	0	16	Velocity of the estimated attitude angle -ψ’	0.0001 deg/sec	2C	
20	0	32	Latitude argument	2e-5 degrees	2C	The value which has been transmitted absolute navigation position/velocity result to 6 elements of osculating orbit (pseudo TOD coordinates). Accuracy: 0.0021deg（2σ）
22	0	32	Absolute navigation status	N/A	unsigned int	The flag which shows the quality of absolute navigation result.(Note)
24	0	8	Attitude determination time data	Milli-second	unsigned int	The time when attitude determination has been done. (Inner clock time system in AOCE)
24	8	8	Attitude determination system flag	N/A	unsigned int	The flag which shows the select status of standard attitude determination system /precision attitude determination system

Unsigned int: integer with no code

2C: integer with code (two's complement format)

(Note) The content of the absolute navigation status

MSB ——LSB

31	30	・・・	9	8	7	6	5	4	3	2	1	0	
													0～1　Describe absolute navigation. （00: No navigation, 01: AG filter navigation, 10: Kalman filter navigation, not convergence, 11: Kalman filter, convergence）
													＜B2～B7: Internal status and stop flag of absolute navigation＞ B2: AG filter navigation result flag (1: NG, 0: no navigation or OK) B3: Kalman filter navigation result flag (1: NG, 0: no navigation or OK) B4: AG filter, the number of usable satellites for navigation. (1: under 4, 0: 4 and over) Kalman filter, the number of judgment which decides the mean of the absolute value of observation residual is invalid. (1: threshold >, 0: other) B5: AG filter, Predictable navigation GDOP (1: 50 >, 0: other） Kalman filter, in case where observable quantity is not available. (1: continued for 300 sec. 0: other） B6: Navigation has not been done in the 4th and 5th bit due to (1: Kalman filter, 0: AG filter B7: NA
													B8 to B13: Pseudo range of appropriate channel corresponding to ANT1 has been (1: used, 0: not used.) CH to be used (CH1 to CH6) in the order of the No. from B8 14～31: NA

3. AOCS Related Data

3.1 Attitude determination 3

Figure 3-1 shows the packet configuration of attitude determination 3 data.

Table 3-1 describes the telemetry detail of attitude determination 3.

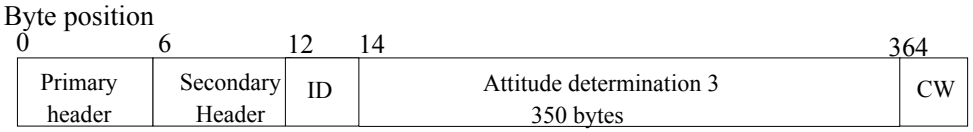


Figure 3-1 Attitude Determination 3 Data

Table 3-1 Attitude determination 3 (1/2)

No.	Type	TLM Name			TLM Abbr.	Attri-bution	Type	Orbit	Data Size	Data Format	Engineering value / Status
1	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(1/10)	M-HI EST QUATAN 1_1/10	AOCS	U-SDB	1	64	DOUBLE	- (Note)
2	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(2/10)	M-HI EST QUATAN 1_2/10	AOCS	U-SDB	1	64	DOUBLE	
3	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(3/10)	M-HI EST QUATAN 1_3/10	AOCS	U-SDB	1	64	DOUBLE	
4	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(4/10)	M-HI EST QUATAN 1_4/10	AOCS	U-SDB	1	64	DOUBLE	
5	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(5/10)	M-HI EST QUATAN 1_5/10	AOCS	U-SDB	1	64	DOUBLE	
6	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(6/10)	M-HI EST QUATAN 1_6/10	AOCS	U-SDB	1	64	DOUBLE	
7	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(7/10)	M-HI EST QUATAN 1_7/10	AOCS	U-SDB	1	64	DOUBLE	
8	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(8/10)	M-HI EST QUATAN 1_8/10	AOCS	U-SDB	1	64	DOUBLE	
9	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(9/10)	M-HI EST QUATAN 1_9/10	AOCS	U-SDB	1	64	DOUBLE	
10	MDHS	Precision attitude determination system	Estimated quaternion 1 *1	(10/10)	M-HI EST QUATAN 1_10/10	AOCS	U-SDB	1	64	DOUBLE	
11	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(1/10)	M-HI EST QUATAN 2_1/10	AOCS	U-SDB	1	64	DOUBLE	
12	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(2/10)	M-HI EST QUATAN 2_2/10	AOCS	U-SDB	1	64	DOUBLE	
13	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(3/10)	M-HI EST QUATAN 2_3/10	AOCS	U-SDB	1	64	DOUBLE	
14	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(4/10)	M-HI EST QUATAN 2_4/10	AOCS	U-SDB	1	64	DOUBLE	
15	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(5/10)	M-HI EST QUATAN 2_5/10	AOCS	U-SDB	1	64	DOUBLE	
16	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(6/10)	M-HI EST QUATAN 2_6/10	AOCS	U-SDB	1	64	DOUBLE	
17	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(7/10)	M-HI EST QUATAN 2_7/10	AOCS	U-SDB	1	64	DOUBLE	
18	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(8/10)	M-HI EST QUATAN 2_8/10	AOCS	U-SDB	1	64	DOUBLE	
19	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(9/10)	M-HI EST QUATAN 2_9/10	AOCS	U-SDB	1	64	DOUBLE	
20	MDHS	Precision attitude determination system	Estimated quaternion 2 *1	(10/10)	M-HI EST QUATAN 2_10/10	AOCS	U-SDB	1	64	DOUBLE	
21	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(1/10)	M-HI EST QUATAN 3_1/10	AOCS	U-SDB	1	64	DOUBLE	
22	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(2/10)	M-HI EST QUATAN 3_2/10	AOCS	U-SDB	1	64	DOUBLE	
23	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(3/10)	M-HI EST QUATAN 3_3/10	AOCS	U-SDB	1	64	DOUBLE	
24	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(4/10)	M-HI EST QUATAN 3_4/10	AOCS	U-SDB	1	64	DOUBLE	
25	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(5/10)	M-HI EST QUATAN 3_5/10	AOCS	U-SDB	1	64	DOUBLE	
26	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(6/10)	M-HI EST QUATAN 3_6/10	AOCS	U-SDB	1	64	DOUBLE	
27	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(7/10)	M-HI EST QUATAN 3_710	AOCS	U-SDB	1	64	DOUBLE	
28	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(8/10)	M-HI EST QUATAN 3_8/10	AOCS	U-SDB	1	64	DOUBLE	
29	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(9/10)	M-HI EST QUATAN 3_9/10	AOCS	U-SDB	1	64	DOUBLE	
30	MDHS	Precision attitude determination system	Estimated quaternion 3 *1	(10/10)	M-HI EST QUATAN 3_10/10	AOCS	U-SDB	1	64	DOUBLE	

Table 3-1 Attitude determination 3 (2/2)

No.	Type	TLM Name		TLM Abbr.	Attri-bution	Type	Orbit	Data Size	Data Format	Engineering value / Status
31	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(1/10)	M-HI EST QUATAN 4_1/10	AOCS	U-SDB	1	64	DOUBLE	- (Note)
32	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(2/10)	M-HI EST QUATAN 4_2/10	AOCS	U-SDB	1	64	DOUBLE	
33	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(3/10)	M-HI EST QUATAN 4_3/10	AOCS	U-SDB	1	64	DOUBLE	
34	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(4/10)	M-HI EST QUATAN 4_4/10	AOCS	U-SDB	1	64	DOUBLE	
35	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(5/10)	M-HI EST QUATAN 4_5/10	AOCS	U-SDB	1	64	DOUBLE	
36	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(6/10)	M-HI EST QUATAN 4_6/10	AOCS	U-SDB	1	64	DOUBLE	
37	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(7/10)	M-HI EST QUATAN 4_7/10	AOCS	U-SDB	1	64	DOUBLE	
38	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(8/10)	M-HI EST QUATAN 4_8/10	AOCS	U-SDB	1	64	DOUBLE	
39	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(9/10)	M-HI EST QUATAN 4_9/10	AOCS	U-SDB	1	64	DOUBLE	
40	MDHS	Precision attitude determination system Estimated quaternion 4 *1	(10/10)	M-HI EST QUATAN 4_10/10	AOCS	U-SDB	1	64	DOUBLE	
41	MDHS	Onboard orbit model Orbital semimajor axis		M-ONBRD OBT MDL SEMIMJR	AOCS	U-SDB	1	32	FLOAT	[m]
42	MDHS	Onboard orbit model Eccentricity		M-ONBRD OBT MDL ECC	AOCS	U-SDB	1	32	FLOAT	-
43	MDHS	Onboard orbit model Inclination		M-ONBRD OBT MDL INCLI	AOCS	U-SDB	1	32	FLOAT	[rad]
44	MDHS	Onboard orbit model ascending node right ascension		M-ONBRD OBT MDL NODE	AOCS	U-SDB	1	32	FLOAT	[rad]
45	MDHS	Onboard orbit model true anomaly		M-ONBRD OBT MDL TR ANM	AOCS	U-SDB	1	32	FLOAT	[rad]
46	MDHS	Onboard orbit model Latitude argument		M-ONBRD OBT MDL LAT	AOCS	U-SDB	1	32	FLOAT	[rad]
47	MDHS	Attitude determination time						(48)		
	MDHS	Attitude determination time index		M-ATT TIME・INDEX	AOCS	U-SDB	1	4	US	0 – 9 *2
	MDHS	Attitude determination time: GPS week second		M-ATT TIME・GPS TOW	AOCS	U-SDB	1	20	US	LSB=1.0[sec]
	MDHS	Attitude determination time: AOCE added time		M-ATT TIME・AOCE COUNTER	AOCS	U-SDB	1	24	US	LSB=2.0^{-11} [msec]

*1: 1 to 4 data of precision attitude determination system Estimated quaternion correspond to q0 to q3 of q = [q0 q1 12 13].
Estimated quaternion 1 data = q0, Estimated quaternion 2 data = q1, Estimated quaternion 3 data = q2, Estimated quaternion 4 data = q3,

*2: It is the index which shows “Attitude determination time: AOCE added time”

3.2 GPSR Data

Figure 3-2 shows the packet configuration of GPSR data.

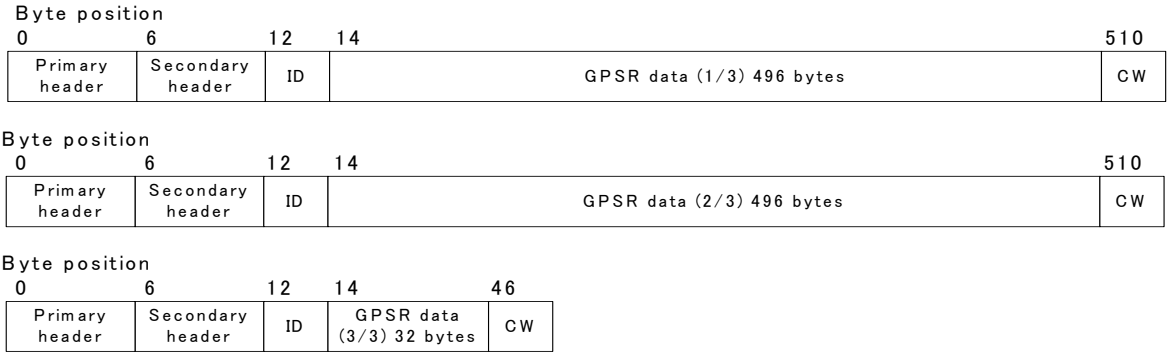


Figure 4.2.5-5 GPSR Data

Note)

"GPS reference pulse week second" and "Absolute navigation time", which are contained in the GPSR data output during 1 second, have the following relation.

GPS reference pulse week second = Absolute navigation time + 2 seconds

However, GPS reference pulse week second when absolute navigation time is 604798-second and 604799-second becomes 0 second and 1 second.

GPS reference pulse		Absolute navigation time
Week No.	Week second	
N	604798	604796
N	604799	604797
N+1	0	604798
N+1	1	604799
N+1	2	0
N+1	3	1

4. System Telemetry Data

Figure 4-1 shows the data format of system telemetry data.

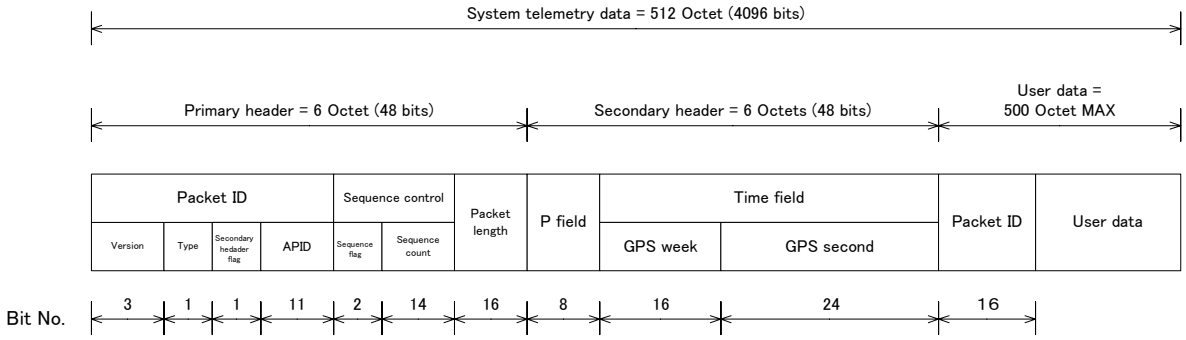


Figure 4-1 System Telemetry Data Format

Appendix 2

1. ALOS Conventional Orbit Data File
2. ALOS Precision Orbit Data File
3. ALOS Coordinates Transformation Matrix File
4 ALOS Time Difference Information File

1. ALOS Conventional Orbit Data File

Table1-1 ALOS Conventional Orbit Data File Header Record

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	ALEOCF-ZZZ ALEOCF:file type ZZZ: coordinates system type ECI: earth centered inertial coordinates ECR: earth centered rotated coordinates	10	0	
2	Blank	HEX 20	1	10	
3	Project Name	"ALOS△△"(satelite name) shifted to left	6	11	
4	Blank	HEX 20	1	17	
5	Data Creation Facility Code	"HCNT" fiexd (data creation bureau code)	4	18	
6	Blank	HEX 20	1	22	
7	Data Receiving Facility Code	**** "****" fixed (data receiving bureau code)	4	23	
8	Blank	HEX 20	1	27	
9	File Creation Date (UTC)	YYYYMMDD	8	28	
10	Blank	HEX 20	1	36	
11	File Creation Time (UTC)	hh:mm:ss	8	37	
12	Blank	HEX 20	1	45	
13	Length of Records in Data Section	"****" fixed	4	57	
14	Blank	HEX 20	1	50	
15	Number of Records in Data	"*****" fixed	5	51	
16	Blank	HEX 20	1	56	
17	Start Time of Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	57	
18	Blank	HEX 20	1	65	
19	End Timeof Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	66	
20	Blank	HEX 20	1	74	
21	File Format Version (UTC) (Modified Date)	YYYYMMDD	8	57	
22	Blank	HEX 20	1	83	
23	File Format Version (Version No.)	Vnn (nn:01 - 99)	3	84	
24	Blank	HEX 20	1	87	
25	Coordinates System Discernment	XXX ECI: earth centered inertial coordinates ECR: earth centered rotated coordinates	3	88	
26	Blank	HEX 20	1	91	
27	Predicted/Determind Discernment	XXXX ELMP: predicted data ELMD: determined date	4	92	
28	Blank	HEX 20	1	96	
29	Number of Event Data	NNNN (△△△0 - 9999) It is shifted to left, and It is not filled with zero except an effective value. (It's zero-suppressed.)	4	97	
30	Blank	HEX 20	1	101	
31	Number of Orbit Data	NNNNN "△1440" fixed shifted to right	5	102	
32	Reserved	packed with blanks	20	107	
33	Record Separator	HEX 0A	1	127	
		Total	128		

Table 1-2 ALOS Conventional Orbit Data file Data Record (Control Information)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Orbit Generation Discernment	YYYYMMDDhhmmss-NNNNN discernment of sourced SEFW in UNOCS YYYYMMDDhhmmss: registered time of SEFW NNNNN: dertermined orbit No. used in orbit generation (00001 - 99999) It is shifted to left, and It is filled with zero except an effective value.(It's not zero-suppressed.)	20	0	*1
2	Blank	HEX 20	1	20	
3	Data Interval (sec.)	NNNN "ΔΔ60" fixed (ΔΔΔ0 - 9999)	4	21	*2
4	Blank	HEX 20	1	25	
5	Number of Ascending Node Data	NNNN (ΔΔΔ0 - 9999)	4	26	*2
6	Blank	HEX 20	1	30	
7	Number of Descending Node Data	NNNN (ΔΔΔ0 - 9999)	4	31	*2
8	Blank	HEX 20	1	35	
9	Number of Maximum Latitude Point Data	NNNN (ΔΔΔ0 - 9999)	4	36	*2
10	Blank	HEX 20	1	40	
11	Number of Minimum Latitude Point Data	NNNN (ΔΔΔ0 - 9999)	4	41	*2
12	Reserved	packed with blanks	82	45	
13	Record Separator	HEX 0A	1	127	
		Total	128		

*1

1. if the sourced generated orbit has no registered date "**********-NNNNN" will be set as Orbit Generation Discernment
2. if the sourced generated orbit has no determined orbit No. "YYYYMMDDhhmmss-00000" will be set as Orbit Generation Discernment

*2 It is shifted to right

Table 1-3 ALOS Conventional Orbit Data File Data Record (Epoch)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Epoch (year, month, day) (UTC)	YYYYMMDD	8	0	
2	Blank	HEX 20	1	8	
3	Epoch (hour, minute, second)	hh:mm:ss.ttt	12	9	
4	Blank	HEX 20	1	21	
5	X Component of Satellite Position Vector at Epoch	SNNNNN.NNNNNN (Km) (-99999.999999 - △99999.999999) (△△△△△0.000000) (△△△△-1.000000) shifted to right	13	22	*1
6	Blank	HEX 20	1	35	
7	Y Component of Satellite Position Vector at Epoch	SNNNNN.NNNNNN (Km)	13	36	*1
8	Blank	HEX 20	1	49	
9	Z Component of Satellite Position Vector at Epoch	SNNNNN.NNNNNN (Km)	13	50	*1
10	Blank	HEX 20	1	63	
11	X Component of Satellite Velocity Vector at Epoch	SNN.NNNNNN (Km/sec) (-99.999999 - △99.999999) (△△0.000000) (△-1.000000) shifted to right	10	64	*1
12	Blank	HEX 20	1	74	
13	Y Component of Satellite Velocity Vector at Epoch	SNN.NNNNNN (Km/sec)	10	75	*1
14	Blank	HEX 20	1	85	
15	Z Component of Satellite Velocity Vector at Epoch	SNN.NNNNNN (Km/sec)	10	86	*1
16	Reserved	packed with blanks	31	96	
17	Record Separator	HEX 0A	1	127	
		Total	128		

*1 shifted to right

Table 1-4 ALOS Conventional Orbit Data File Data Record (Event)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Event Discernment	X U:ascending node D:descending node N:maximum latitude point S:minimum latitude point	1	0	
2	Blank	HEX 20	1	1	
3	Event Time (year, month, day) (UTC)	YYYYMMDD	8	2	
4	Blank	HEX 20	1	10	
5	Event Time (hour, minute, second) (UTC)	hh:mm:ss.ttt	12	11	
6	Blank	HEX 20	1	23	
7	X Component of Satellite Position Vector at Event Time	SNNNNN.NNNNNN (Km) (-99999.999999 - △99999.999999) (△△△△△0.000000) (△△△△-1.000000)	13	24	*1
8	Blank	HEX 20	1	37	
9	Y Component of Satellite Position Vector at Event Time	SNNNNN.NNNNNN (Km)	13	38	*1
10	Blank	HEX 20	1	51	
11	Z Component of Satellite Position Vector at Event Time	SNNNNN.NNNNNN (Km)	13	52	*1
12	Blank	HEX 20	1	65	
13	X Component of Satellite Velocity Vector at Event Time	SNN.NNNNNN (Km/sec) (-99.999999 - △99.999999) (△△0.000000) (△-1.000000)	10	66	*1
14	Blank	HEX 20	1	76	
15	Y Component of Satellite Velocity Vector at Event Time	SNN.NNNNNN (Km/sec)	10	77	*1
16	Blank	HEX 20	1	87	
17	Z Component of Satellite Velocity Vector at Event Time	SNN.NNNNNN (Km/sec)	10	88	*1
18	Reserved	packed with blanks	29	98	
19	Record Separator	HEX 0A	1	127	
		Total	128		

*1 shifted to right

Table 1-5 ALOS Conventional Orbit Data File Data Record (Orbital Data)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Time (year, month, day) (UTC)	YYYYMMDD	8	0	
2	Blank	HEX 20	1	8	
3	Time (hour, minute, second) (UTC)	hh:mm:ss.ttt	12	9	
4	Blank	HEX 20	1	21	
5	X Component of Satellite Position Vector	SNNNNN.NNNNNN (Km) (-99999.999999 - ∆99999.999999) (∆∆∆∆∆0.000000) (∆∆∆∆-1.000000)	13	22	*1
6	Blank	HEX 20	1	35	
7	Y Component of Satellite Position	SNNNNN.NNNNNN (Km)	13	36	*1
8	Blank	HEX 20	1	49	
9	Z Component of Satellite Position	SNNNNN.NNNNNN (Km)	13	50	*1
10	Blank	HEX 20	1	63	
11	X Component of Satellite Velocity Vector	SNN.NNNNNN (Km/sec) (-99.999999 - ∆99.999999) (∆∆0.000000) (∆-1.000000)	10	64	*1
12	Blank	HEX 20	1	74	
13	Y Component of Satellite Velocity Vector	SNN.NNNNNN (Km/sec)	10	75	*1
14	Blank	HEX 20	1	85	
15	Z Component of Satellite Velocity Vector	SNN.NNNNNN (Km/sec)	10	86	*1
16	Record Separator	HEX 0A	1	96	
		Total	97		

*1 shifted to right

2. ALOS Precision Orbit Data File

Table 2-1 ALOS Precision Orbit Data File Header Record

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	"ALDSEF△△△△"fixed ALDSEF:file type	10	0	
2	Blank	HEX 20	1	10	
3	Project Name	"ALOS△△" fixed	6	11	
4	Blank	HEX 20	1	17	
5	Data Creation Facility Code	"HCNT" fiexd	4	18	
6	Blank	HEX 20	1	22	
7	Data Receiving Facility Code	**** "****" fixed	4	23	
8	Blank	HEX 20	1	27	
9	File Creation Date (UTC)	YYYYMMDD	8	28	
10	Blank	HEX 20	1	36	
11	File Creation Time (UTC)	hh:mm:ss	8	37	
12	Blank	HEX 20	1	45	
13	Length of Records in Data Section	"△170" fixed	4	57	
14	Blank	HEX 20	1	50	
15	Number of Records in Data Section	NNNNN (△△△△1- 99999) It is shifted to right, and It is filled with zero except an effective value. (It's not zero-suppressed.)	5	51	
16	Blank	HEX 20	1	56	
17	Start Time of Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	57	
18	Blank	HEX 20	1	65	
19	End Time of Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	66	
20	Blank	HEX 20	1	74	
21	File Format Version (UTC) (Modified Date)	YYYYMMDD YYYY:year (0001 - 9999) MM :month (01 - 12) DD :day (01 - 31)	8	57	
22	Blank	HEX 20	1	83	
23	File Format Version (Version No.)	Vnn nn:version No. (01 - 99) (version No. is defined in cyclic)	3	84	
24	Blank	HEX 20	1	87	
25	Coordinates System Discernment	XXX ECI:earth centered inertial coordinates ECR:earth centered rotated coordinates	3	88	
26	Blank	HEX 20	1	91	
27	Predicted/Determind Discernment	XXXX ELMD fixed	4	92	
28	Reserved	packed with blanks	31	123	
29	Record Separator	HEX 0A	1	124	
		Total	125		

We denote by △ a space of 1 byte.

Table2-2 ALOS Precision Orbit Data File Data Record (Common Control Information Section) (1/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	"ALDSEF△△△△" fixed ALDSEF:file type	10	0	
2	Data Type	"SC△△△△△△△△" fixed (satellite ephemeris)	10	10	
3	Satellite Name	"ALOS△△△△△△" fixed	10	20	
4	Unused	packed with blanks	10	30	
5	Creation Date (on computer) (UTC)	YYYYMMDD△△ ex.)20000101△△	10	40	*2
6	Creation Time (on computer) (UTC)	HHMMSS.SSS△△ ex.)000000.000△△	12	50	*2
7	Stored Data Flag	NNNNNNN NO_DATA:data could not be created (*1) DISCONT: data continuity is broken by maneuver △△△△△△△:otherwise	7	62	
8	Unused	packed with blanks	100	69	
9	Carriage Return	0x0A	1	169	
		Total	170		

(*1) If "NO_DATA" is set here the data after Common Control Information (2/3) will be omitted

(*2) It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 2-2 ALOS Precision Orbit Data File Data Record (Common Control Information Section) (2/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Start Date of Data Period (UTC)	YYYYMMDD△△ ex.)20031221△△	10	0	*3
2	Start Time of Data Period (UTC)	HHMMSS.SSSSSS△△ ex.)012345.678000△△	15	10	*3
3	End Date of Data Period (UTC)	YYYYMMDD△△ ex.)20040101△△	10	25	*3
4	End Time of Data Period (UTC)	HHMMSS.SSSSSS△△ ex.)100000.000000△△	15	35	*3
5	Data Interval (second)	"000060△△△△" fixed (*2)	10	50	
6	Unused	packed with blanks	10	60	
7	Unused	packed with blanks	15	70	
8	Start Date of Period without Data (UTC)	YYYYMMDD△△ ex.)20031229△△ (*1)	10	85	*3
9	Start Time of Period without Data (UTC)	HHMMSS.SSSSSS△△ ex.)000000.000000△△ (*1)	15	95	*3
10	End Date of Period without Data (UTC)	YYYMMDD△△ ex.)20031229△△ (*1)	10	110	*3
11	End Time of Period without Data (UTC)	HHMMSS.SSSSSS△△ ex.)000000.000000△△ (*1)	15	120	*3
12	Unused	packed with blanks	34	135	
13	Carriage Return	0x0A	1	169	
		Total	170		

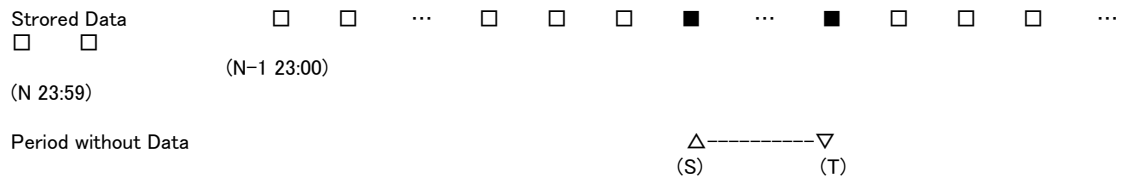
(*1) If there is no data discontinuity, this item is filled by blank.
When time is set, it does not necessarily become on the minute.
If there is data discontinuity, for the restriction of the interpolation algorithm, the data before and behind the period without data is invalid. The data which it is possible to access by the access routine provided from GUTS is valid. (The range that the access routine is unable to access is set as the period without data, so that the precision of data except this period can be guaranteed.)
The data during period without data do not be archived into ephemeris data, include boundary.

The example of the relation between the range of valid data and the period without data is shown on the next page.

Period of the ALDSEF (from: N-1 23:00, to: N 23:59)
Period without Data: from S to T
This case, the range of valid data is the following two ranges.
(1) between "N-1 23:01" and the data which is previous by two points from "S" (not include "S").
(2) from the data which is after two points from "T" (not include "T"), to the data before "N 23:58".

Example is shown below.

(ex.1: the case that start/end time of Period without Data is on the minute.)



(ex.2: the case that start/end time of Period without Data is not on the minute.)

□: a point set in ALDSEF
■: a point not set in ALDSEF
△: Period without Data (Start)
▽: Period without Data (End)
●: a point included as valid data
○: a point not included as valid

(*2) "000061△△△△" will be set in the case leap second was inserted

(*3) It is shifted to left, and It is filled with zero except an valid value. (It's not zero-suppressed.)

Table 2-2 ALOS Precision Orbit Data File Data Record (Common Control Information Section) (3/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Orbit Generation Discernment	YYYYMMDDhhmmss-NNNNN discernment of sourced SEFW in FDS YYYYMMDDhhmmss:registered time of SEFW NNNNN:dertermined orbit No. used in orbit generation (*1) (00000 - 99999) It is filled with zero except an effective value. (It's not zero-suppressed.)	20	0	
2	Unused	packed with blanks	10	20	
3	Number of TAI－UTC Data	NNN△△△△△△△ (001△△△△△△△ - 100△△△△△△△)	10	30	*2
4	Number of Orbit Ephemeris	NNNNNNNN△△ (00000001△△ - 99999999△△)	10	40	*2
5	Unused	packed with blanks	119	50	
6	Carriage Return	0x0A	1	169	
		Total	170		

(*1) determined orbit No. of orbit generator is fixed by‘00000’ (TBD)

(*2) It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 2-3 ALOS Precision Orbit Data File Data Record (Individual Control Information Section)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Coordinate System	NNNNNNNNN MO2△△△△△△△ :Mean of 2000.0 equatrial coordinate system TOD△△△△△△△ :True of date equatrial coordinate system FIX△△△△△△△ :earth centered inertial coordinates (FIX means ITRF97)	10	0	
2	Time System	"UTC△△△△△△△" fixed（UTC）	10	10	
3	Orbit Determine Institute	"JAXA△△△△△△" fixed（JAXA）	10	20	
4	Orbit Determine Facility	"GUTS△△△△△△" fixed （ALOS Precision Orbit Determination Facility）	10	30	
5	Orbit Determination Type	"GPS△△△△△△△" fixed （orbit determination by means of GPS）	10	40	
6	Input Method	"APPL△△△△△△" fixed (application)	10	50	
7	Index for Accuracy Evaluation of Determined Orbit	NNNNNNNNNN A△△△△△△△△△:at most 1m (in position) B△△△△△△△△△:at most 5m (in position) C△△△△△△△△△:at most 10m (in position) D△△△△△△△△△:at least 10m (in position) E△△△△△△△△△:at least 50m (in position) △△△△△△△△△△:unknown in the case of data missing the accuracy of arcs before and after it is set by AB△△△△△△△△ (*2)	10	60	
8	Earth Gravity Constant (m^3/s^2)	SN.NNNNNNNNNNNNNNESNN△△△△△△△△ 1PE22.15 format ex.) △3.986004415000000E+14△△△△△△△△	30	70	
9	Circle Ratio	SN.NNNNNNNNNNNNNNESNN△△△△△△△△ 1PE22.15 format ex.) △3.141592653589793E+00△△△△△△△△	30	100	
10	Creation Date of Coordinates Transformation Data File	creation date of corresponding CCMF YYYYMMDD△△	10	130	
11	Creation Time of Coordinates Transformation Data File	creation time of corresponding CCMF HHMMSS.SSS△△	12	140	
12	Unused	packed with blanks	17	152	
13	Carriage Return	0x0A	1	169	
		Total	170		

(*2) period without data is betweenness of ephemeris : accuracy index is set at 60th, 61st byte.
period without data is beginning of ephemeris : accuracy index is set at 60th, and 61st byte is blank.
period without data is end of ephemeris : accuracy index is set at 60th, and 61st byte is blank.

Table 2-4 ALOS Precision Orbit Data File Data Record (Leap Second Data Section) *3

№	Item	Atribute	Length (byte)	Record Position	Remark
1	TAI-UTC Changing Date	YYYYMMDD△△ ex.) 20000701△△ (*2)	10	0	*1
2	TAI-UTC (sec.)	NNN△△△△△△△ TAI-UTC data on changing date ex.) 033△△△△△△△	10	10	*1
3	Unused	packed with blanks	149	20	
4	Carriage Return	0x0A	1	169	
		Total	170		

(*1) It is shifted to left, and it is filled with zero except an effective value. (It's not zero-suppressed.)

(*2)"TAI-UTC Changing Time" is the date after leap second (same as the definition of IERS).

ex.) When leap second is inserted between the date “m” 00:00:00 and the date “n” 00:00:00 (m<n).

- for the TAI-UTC Data Record in the file whose data storing period is before “n-2 23:00:00 to n-1 23:59:00”, “TAI-UTC Changing Data” is “m”.
- for the TAI-UTC Data Record in the file whose data storing period is “n-1 23:00:00 to n 23:59:00”, “TAI-UTC Changing Data” is “n”.

(*3) When leap second is included, TAI-UTC Data Record is stored 2 records.
When leap second is not included, TAI-UTC Data Record is stored 1 record.

Table 2-5 ALOS Precision Orbit Data File Data Record (Orbital Ephemeris Data Section)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Date	YYYYMMDD△△ ex.) 20031229△△ (*1)	10	0	*3
2	Time	HHMMSS.SSSSSS△△ ex.) 120000.000000△△ (*1)	15	10	*3
3	X Component of Satellite Position Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km) 1PE22.15 format ex.) △1.234000000000000E+03△△ (*2)	24	25	*4
4	Y Component of Satellite Position Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km) 1PE22.15 format ex.) －1.234000000000000E+03△△ (*2)	24	49	*4
5	Z Component of Satellite Position Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km) 1PE22.15 format ex.) △1.234000000000000E+03△△ (*2)	24	73	*4
6	X Component of Satellite Velocity Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km/s) 1PE22.15 format ex.) △1.234000000000000E+03△△ (*2)	24	97	*4
7	Y Component of Satellite Velocity Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km/s) 1PE22.15 format ex.) －1.234000000000000E+03△△ (*2)	24	121	*4
8	Z Component of Satellite Velocity Vector at Epoch	SN.NNNNNNNNNNNNNNESNN△△ (km/s) 1PE22.15 format ex.) △1.234000000000000E+03△△ (*2)	24	145	*4
9	Carriage Return	0x0A	1	169	
		Total	170		

(*1) time system is set one as "Time System" in individual control information section

(*2) coordinate system is set one as "Coordinate System" in individual control information section

(*3) It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

(*4) It is shifted to left, and in the case of positive value, the first character is blank.

3. ALOS Coordinates Transformation Matrix File

Table 3-1 ALOS Coordinates Transformation Matrix File Header Record

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	"CCMF△△△△△△" fixed	10	0	
2	Blank	HEX 20	1	10	
3	Project Name	"ALOS△△" fixed	6	11	
4	Blank	HEX 20	1	17	
5	Data Creation Facility Code	"HCNT" fiexd	4	18	
6	Blank	HEX 20	1	22	
7	Data Receiving Facility Code	**** "****" fixed	4	23	
8	Blank	HEX 20	1	27	
9	File Creation Date (UTC)	YYYYMMDD	8	28	
10	Blank	HEX 20	1	36	
11	File Creation Time (UTC)	hh:mm:ss	8	37	
12	Blank	HEX 20	1	45	
13	Length of Records in Data Section	**** "****" fixed	4	46	
14	Blank	HEX 20	1	50	
15	Number of Records in Data Section	NNNNN shifted to right	5	51	*1
16	Blank	HEX 20	1	56	
17	Start Time of Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	57	
18	Blank	HEX 20	1	65	
19	End Time of Valid Data Period (UTC)	YYYYMMDD same as date set in file name	8	66	
20	Blank	HEX 20	1	74	
21	File Format Version (UTC) (Modified Date)	YYYYMMDD YYYY: year (0001 - 9999) MM: month (01 - 12) DD: day (01 - 31)	8	57	
22	Blank	HEX 20	1	83	
23	File Format Version (Version No.)	Vnn nn:version No. (01 - 99) (version No. is defined in cyclic)	3	84	
24	Reserved	packed with blanks	40	87	
25	Record Separator	HEX 0A	1	127	
		Total	128		

We denote by "△" a space of 1 byte.
*1 It is filled with zero except an effective value. (It's not zero-suppressed.)

Each record in the section put after header section are copied from file created by GUTS

Table 3-2 ALOS Coordinates Transformation Matrix File Data Record
(Common Control Information Section) (1/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	"CCMF△△△△△△" fixed	10	0	
2	Unused	packed with blanks	10	10	
3	Unused	packed with blanks	10	20	
4	Unused	packed with blanks	10	30	
5	Creation Date (on computer) (UTC)	YYYYMMDD△△ eg.) 20010101△△	10	40	*1
6	Creation Time (on computer) (UTC)	HHMMSS.SSS△△ eg.) 000100.000△△	12	50	*1
7	Carriage Return	0x0A	1	62	
		Total	63		

*1 It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 3-2 ALOS Coordinates Transformation Matrix File Data Record
(Common Control Information Section) (2/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Start Date of Data Period (UTC)	YYYYMMDD△△ eg.) 20010101△△	10	0	*1
2	Start Time of Data Period (UTC)	HHMMSS.SSSSSS△△ eg.) 000100.000000△△	15	10	*1
3	End Date of Data Period (UTC)	YYYYMMDD△△ eg.) 20010101△△	10	25	*1
4	End Time of Data Period (UTC)	HHMMSS.SSSSSS△△ eg.) 000100.000000△△	15	35	*1
5	Data Interval (second)	NNNNNN△△△△(000001△△△△ - 999999△△△△) eg.) 000123△△△△	10	50	*1
6	Carriage Return	0x0A	1	60	
		Total	61		

*1 It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 3-2 ALOS Coordinates Transformation Matrix File Data Record
(Common Control Information Section) (3/3)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Unused	packed with blanks	20	0	
2	Unused	packed with blanks	10	20	
3	Number of TAI-UTC Data	NNN△△△△△△△ (001△△△△△△△ - 100△△△△△△△) eg.) 012△△△△△△△	10	30	*1
4	Number of Transformation Matrix Data	NNNNNN△△△△ (000001△△△△ - 999999△△△△) eg.) 000123△△△△	10	40	*1
5	Carriage Return	0x0A	1	50	
		Total	51		

*1 It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 3-3 ALOS Coordinates Transformation Matrix File Data Record (Sidereal Time Data Section)

№	Item	Atribute	Length (byte)	Record Position	Remark
1	θg Standard Date (UTC)	YYYYMMDD△△	10	0	*1
2	θg Standard Time (UTC)	HHMMSS.SSSSSS△△ eg.) 000100.000000△△	15	10	*2
3	θg (deg.)	SN.NNNNNNNNNNNNNNESNN△△ 1PE22.15 format eg.) △0.123000000000000E+03△△	24	25	*2
4	θg-dot (deg./sec.)	SN.NNNNNNNNNNNNNNESNN△△ 1PE22.15 format eg.) △0.123000000000000E-03△△	24	49	*2
5	Carriage Return	0x0A	1	73	
		Total	74		

*1 It is shifted to left, and It is filled with zero except an effective value. (It's not zero-suppressed.)
In the case of positive value, the first character is blank.

*2 It is shifted to left, and in the case of positive value, the first character is blank.

Table 3-4 ALOS Coordinates Transformation Matrix File Data Record (Leap Second Data Section) *3

№	Item	Atribute	Length (byte)	Record Position	Remark
1	TAI-UTC Changing Time	YYYYMMDD△△ (*2)	10	0	*1
2	TAI-UTC (sec.)	NNN△△△△△△△ TAI-UTC data on changing date eg.) 033△△△△△△△	10	10	*1
3	Carriage Return	0x0A	1	20	
		Total	21		

(*1) It is shifted to left, and it is filled with zero except an effective value. (It's not zero-suppressed.)

(*2) "TAI-UTC Changing Time" is the date after leap second (same as the definition of IERS).

ex.) When leap second is inserted between the date “m” 00:00:00 and the date “n” 00:00:00 (m<n).

- for the TAI-UTC Data Record in the file whose data storing period is before “n-2 23:00:00 to n-1 23:59:00”, “TAI-UTC Changing Data” is “m”.
- for the TAI-UTC Data Record in the file whose data storing period is “n-1 23:00:00 to n 23:59:00”, “TAI-UTC Changing Data” is “n”.

(*3) When leap second is included, TAI-UTC Data Record is stored 2 records.
When leap second is not included, TAI-UTC Data Record is stored 1 record.

Table 3-5 ALOS Coordinates Transformation Matrix File Data Record (Matrix Data Section) (1/2)

№	Item	Attribute	Length (byte)	Record Position	Remark
1	Date (UTC)	YYYYMMDD△△ eg.) 20040101△△	10	0	*1
2	Time (UTC)	HHMMSS.SSSSSS△△ eg.) 000000.000000△△	15	10	*1
3	Carriage Return	0x0A	1	25	
		Total	26		

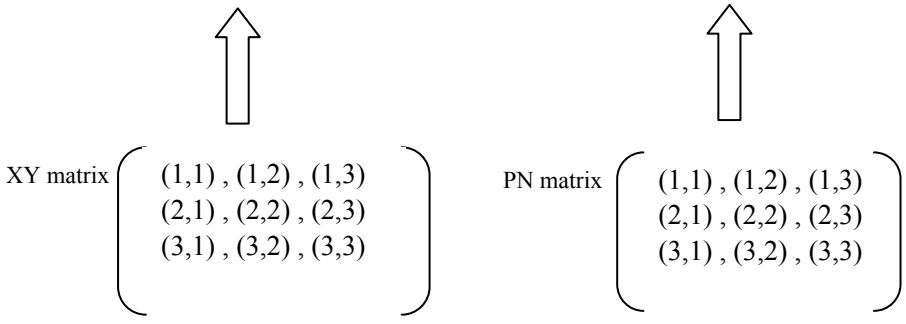
*1 It is shifted to left

Table 3-5 ALOS Coordinates Transformation Matrix File Data Record (Matrix Data Section) (2/2)

№	Item	Attribute	Length (byte)	Record Position	Remark
1	Element 1 of Matrix	△△SN.NNNNNNNNNNNNNNESNN 1PE22.15 format eg.) △△△0.123000000000000E+03	24	0	*1
2	Element 2 of Matrix	△△SN.NNNNNNNNNNNNNNESNN 1PE22.15 format eg.) △△-0.123000000000000E-03	24	24	*1
3	Element 3 of Matrix	△△SN.NNNNNNNNNNNNNNESNN 1PE22.15 format eg.) △△△0.123000000000000E+03	24	48	*1
4	Carriage Return	0x0A	1	72	
		Total	73		

Note: Six records of the above are set for each time.
Data arrangement is as shown below.

Field / record	Element 1 of Matrix	Element 2 of Matrix	Element 3 of Matrix
1	Time		
2	(1,1)-element of XY matrix	(2,1)-element of XY matrix	(3,1)-element of XY matrix
3	(1,2)-element of XY matrix	(2,2)-element of XY matrix	(3,2)-element of XY matrix
4	(1,3)-element of XY matrix	(2,3)-element of XY matrix	(3,3)-element of XY matrix
5	(1,1)-element of PN matrix	(2,1)-element of PN matrix	(3,1)-element of PN matrix
6	(1,2)-element of PN matrix	(2,2)-element of PN matrix	(3,2)-element of PN matrix
7	(1,3)-element of PN matrix	(2,3)-element of PN matrix	(3,3)-element of PN matrix



*1 It is shifted to right

4. ALOS Time Difference Information File

Table 4-1 ALOS Time Difference Information File Header Record

№	Item	Atribute	Length (byte)	Record Position	Remark
1	File Discernment	"ETMDF△△△△△" fixed	10	0	
2	Blank	HEX 20	1	10	
3	Project Name	"ALOS△△" fixed	6	11	
4	Blank	HEX 20	1	17	
5	Data Creation Facility Code	"HCNT" fiexd	4	18	
6	Blank	HEX 20	1	22	
7	Data Receiving Facility Code	**** "****" fixed	4	23	
8	Blank	HEX 20	1	27	
9	File Creation Date (UTC)	YYYYMMDD	8	28	
10	Blank	HEX 20	1	36	
11	File Creation Time (UTC)	hh:mm:ss	8	37	
12	Blank	HEX 20	1	45	
13	Length of Records in Data Section	"△118" fixed	4	46	
14	Blank	HEX 20	1	50	
15	Number of Records in Data Section	NNNNN (△△△△1 - 99999) shifted to right	5	51	*1
16	Blank	HEX 20	1	56	
17	Start Time of Valid Data Period (UTC)	YYYYMMDD start date of data valid period for the first record	8	57	
18	Blank	HEX 20	1	65	
19	End Time of Valid Data Period (UTC)	YYYYMMDD end date of data valid period for the last record	8	66	
20	Blank	HEX 20	1	74	
21	File Format Version (UTC) (Modified Date)	YYYYMMDD YYYY: year (0001 - 9999) MM: month (01 - 12) DD: day (01 - 31)	8	75	
22	Blank	HEX 20	1	83	
23	File Format Version (Version No.)	Vnn nn:version No. (01 - 99) (version No. is defined in cyclic)	3	84	
24	Reserved	packed with blanks	40	87	
25	Record Separator	HEX 0A	1	127	
		Total	128		

We denote by △ a space of 1 byte.
*1 It is filled with zero except an effective value. (It's not zero-suppressed.)

Table 4-2 ALOS Time Difference Information File Data Record

№	Item	Atribute	Length (byte)	Record Position	Remark
1	Accumlating Orbit No.	NNNNN "*****"fixed	5	0	
2	Blank	HEX 20	1	5	
3	Crossing Date Ascending Node	YYYYMMDD	8	6	
4	Blank	HEX 20	1	14	
5	Path No.	ΔΔPPP	5	15	
6	Blank	HEX 20	1	20	
7	Start Time of Valid Data Period (UTC)	YYYYMMDDΔhh:mm:ss.ttt	21	21	
8	Blank	HEX 20	1	42	
9	End Time of Valid Data Period (UTC)	YYYYMMDDΔhh:mm:ss.ttt	21	43	
10	Blank	HEX 20	1	64	
11	Satellite Clock Cycle	SN.NNNNNNNNN (-9.9999999999 - Δ9.9999999999)	13	65	
12	Blank	HEX 20	1	78	
13	Reference Satellite Time (GPS week, sec.)	NNNNΔNNNNNN (ΔΔΔ1ΔΔΔΔΔΔ1 - 9999Δ999999) shifted to righ	11	79	*1
14	Blank	HEX 20	1	90	
15	Reference Ground Time (UTC)	YYYYMMDDΔhh:mm:ss.ttt	21	91	
16	Blank	HEX 20	1	112	
17	Representative Value (sec.) < reservation field >	SNNN (-999 - ＋999) (zero-suppressed) Note: This item is information used at TACC only.	4	113	*1
18	Record Separator	HEX 0A	1	117	
		Total	118		

Note: Ground time can be calculated by means of data contained in this file as follows.

$$\text{ground time (UTC)} = P_{SC} \times (T_{SC} - T_{ref}) + T_{gref}$$

where

P_{SC} : satellite counter cycle

T_{SC} : satellite time counter (GPS week, sec.)

T_{ref} : reference satellite time (GPS week, sec.)

T_{gref} : reference ground time (UTC)

*1 It is filled with zero except an effective value. (It's not zero-suppressed.)

The calculation method about ALOS Time Difference Information is shown below.

(1)To calculate Time Difference Information, the range acquired from Telemetry Data is from the time of last caluculation to the latest. Data is sorted by each ID (Receiving Site).

(2) The regression line is calculated by method of least squares in consideration of propagation delay time. However, caluculation by GN Data does not take account of propagation time of radio wave.

(3) The calculation result is add to TMDF.

(4) Valid period of each record is as follows:

a) As for visible period, where VC62*1 data exists. It's valid during visible.

b) As for invisible period,

・start time of valid period : end time of visible period at the left of invisible period.

・end time of valid period : start time of visible period at right of invisible period.

Edge point of each period is shown in the figure below.

*1:VC for time proofreading

(5) "Representative Value" is the one that "DMS time- UTC" was rounded off in the first decimal place.

(Example) If the DMS time has been more advanced than UTC for 13 seconds, "+013".
If there is DMS time from UTC after a delay of 50 seconds, "-050".

(6) The Satellite Time is restored by the following expression.

Satellite Time (UTC) = $P_{SC} \times (T_{SC} - T_{ref}) + T_{gref}$

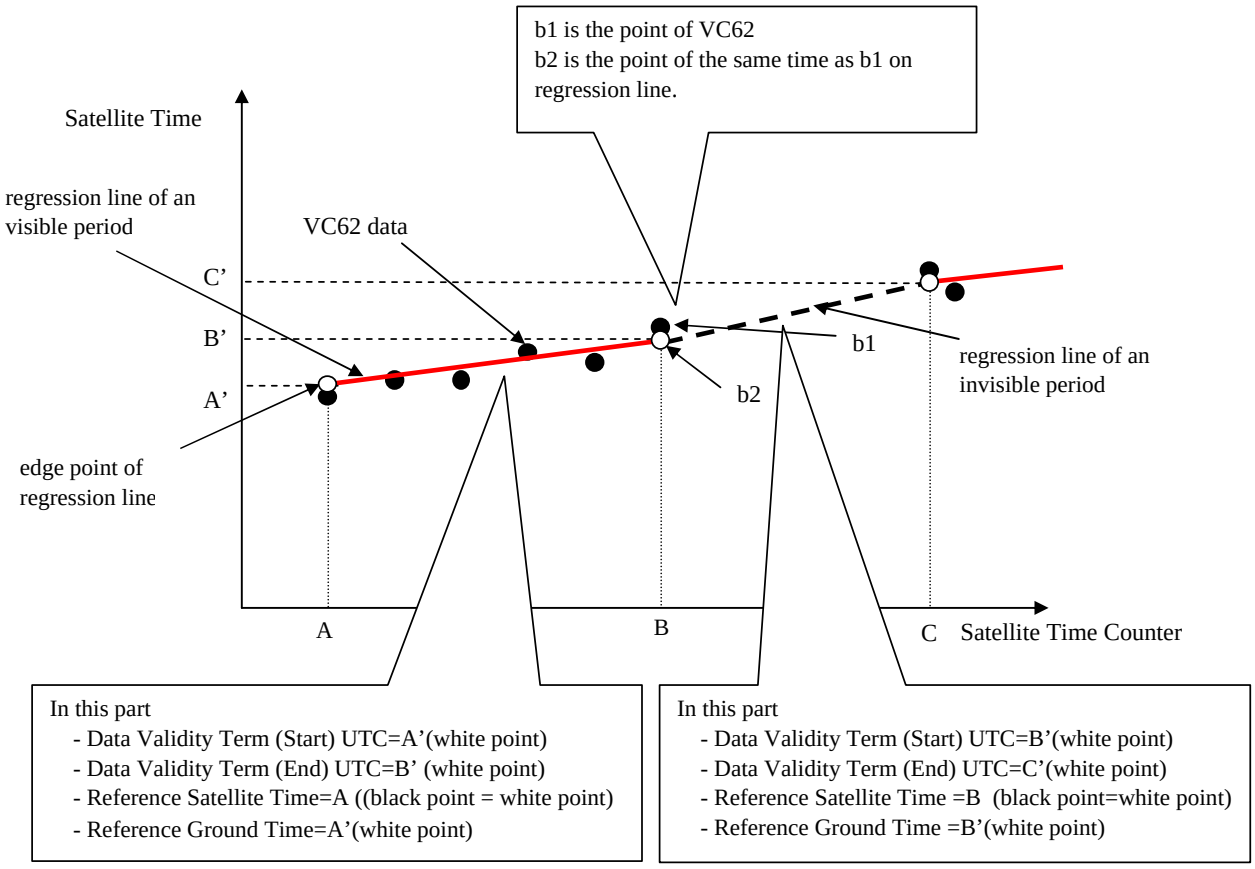
where

P_{SC} :satellite counter cycle

T_{SC} :satellite time counter (GPS week, sec.)

T_{ref} :reference satellite time (GPS week, sec.)

T_{gref}:reference ground time



Note) ○ : white point
● : black point

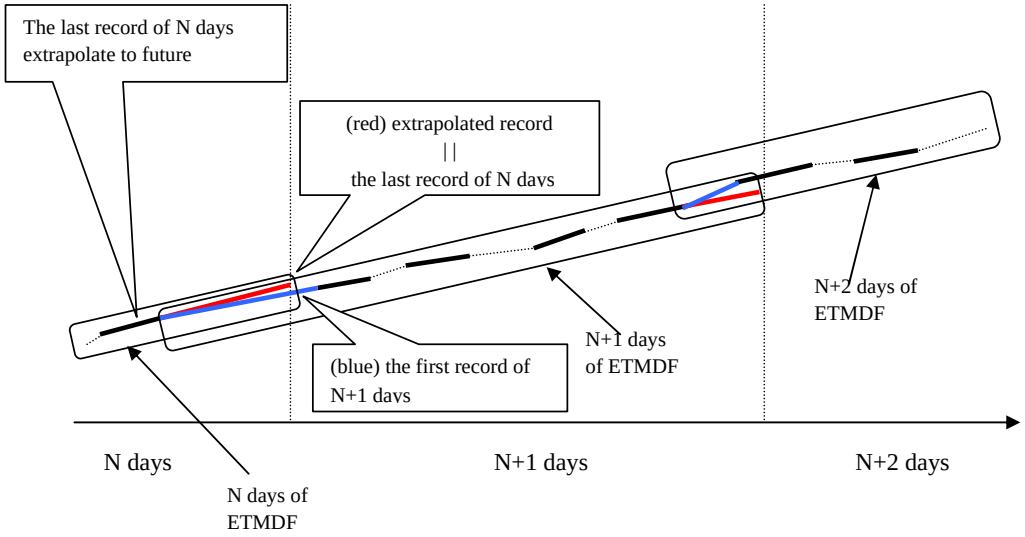
Format of ETMDF

ETMDF offered to EOC is as follows.

(1) The record for a day is extracted from TMDF.

(2) The first record is assumed to be the same one at the period as the final record of ETMDF offered at the day before.
In this case, you can change the content of information with the offer at the day before. (Refer to figure)

(3) The last record is the calculated last TMDF record in the same day. Ending time is set to "99999999 99:99:99".



TMDF

Accumulating Orbit No.	Crossing Date Ascending Node	Path No.	Start Time of Vaild Data Period(UTC	End Time of Vaild Data Period(U	Satellite Clock Cycle	Reference Satellite Tin (GPS week, sec.)		Reference Ground Time (UTC)	Representative Value
*****	20031231	123	20031231 23:50:12.345	20040101 00:12:34.567	1.0123456789	1234	123456	20031231 23:50:12.345	+123
*****	20040101	124	20040101 00:12:34.567	20040101 00:34:56.789	1.9012345678	1234	124798	20040101 00:12:34.567	+123
*****	20040101	125	20040101 00:34:56.789	20040101 02:22:22.222	1.8901234567	1234	126140	20040101 00:34:56.789	+123
*****	20040101	126	20040101 02:22:22.222	20040101 03:33:33.333	1.7890123456	1234	128985	20040101 02:22:22.222	+123
*****	20040101	127	20040101 03:33:33.333	20040101 04:44:44.444	1.6789012345	1234	129656	20040101 03:33:33.333	+123
*****	20040101	136	20040101 22:22:22.222	20040101 23:34:45.567	1.2345678901	1234	125386	20040101 22:22:22.222	+123
*****	20040102	137	20040101 23:34:45.567	20040102 00:11:11.111	1.1234567890	1234	126129	20040101 23:34:45.567	+123
*****	20040102	138	20040102 00:11:11.111	20040102 00:59:00.999	1.1111111111	1234	128315	20040102 00:11:11.111	+123

ETMDF

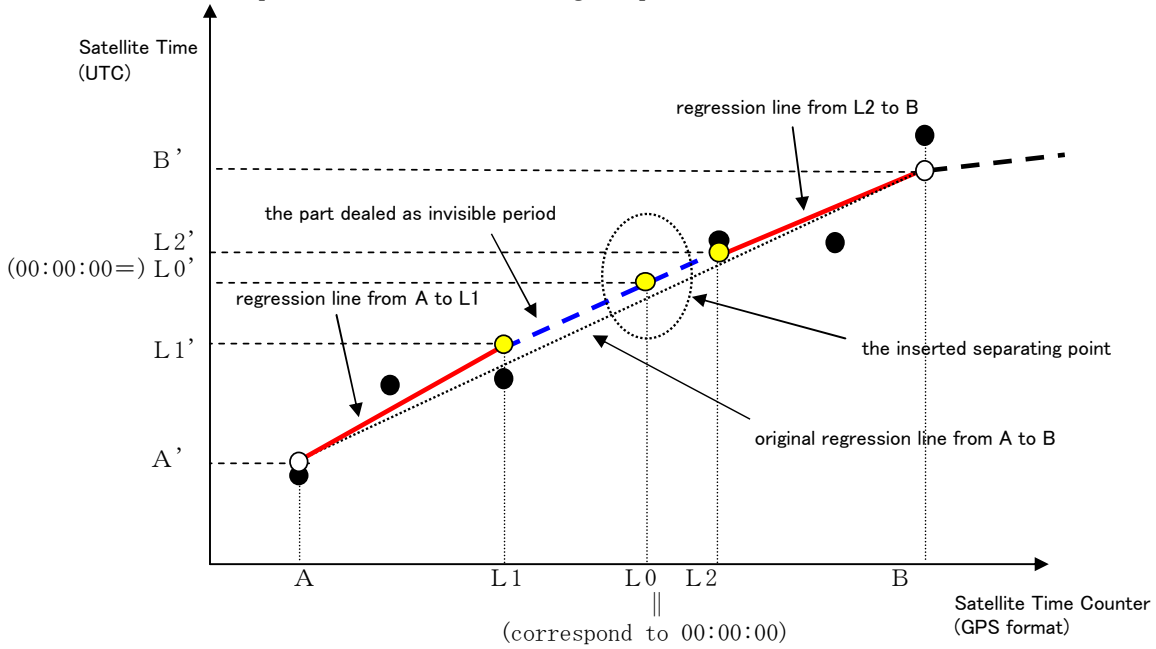
Accumulating Orbit No.	Crossing Date Ascending Node	Path No.	Start Time of Vaild Data Period(UTC)	End Time of Vaild Data Period(UTC	Satellite Clock Cycle	Reference Satellite Time (GPS week, sec.)		Reference Ground Time (UTC)	Representative Value
*****	20031231	123	20031231 23:50:12.345	99999999 99:99:99.999	1.0123456789	1234	123456	20031231 23:50:12.345	+123

*****	20031231	123	20031231 23:50:12.345	20040101 00:12:34.567	1.0123456789	1234	123456	20031231 23:50:12.345	+123
*****	20040101	124	20040101 00:12:34.567	20040101 00:34:56.789	1.9012345678	1234	124798	20040101 00:12:34.567	+123
*****	20040101	125	20040101 00:34:56.789	20040101 02:22:22.222	1.8901234567	1234	126140	20040101 00:34:56.789	+123
*****	20040101	136	20040101 22:22:22.222	99999999 99:99:99.999	1.2345678901	1234	125386	20040101 22:22:22.222	+123

*****	20040101	136	20040101 22:22:22.222	20040101 23:34:45.567	1.2345678901	1234	125386	20040101 22:22:22.222	+123
*****	20040102	137	20040101 23:34:45.567	20040102 00:11:11.111	1.1234567890	1234	126129	20040101 23:34:45.567	+123
*****	20040102	138	20040102 00:11:11.111	20040102 00:59:00.999	1.1111111111	1234	128315	20040102 00:11:11.111	+123

[In the case of straddling a leap second]

How does ETMDF be separated in the case of straddling a leap second, is shown below.



Suppose, in this figure, from (A, A') to (B, B') is visible period and inserted a leap second (L0, L0') during this period. Usually from (A, A') to (B, B') is one record. However, when a leap second is inserted, ETMDF is separated into four as follows.

(1) VC62 Telemetry before leap second is (L1, L1') and VC62 Telemetry after leap second is (L2, L2')
But VC62 Telemetry of L0' plus or minus 14 seconds is excepted.

(2) separate (A,A')-(B,B') into four as follows.

- (A, A')-(L1, L1') ------- calculate record from VC62 Telemetry during this period.
- (L1, L1')-(L0, L0') ----- calculate following (3)
- (L0, L0')-(L2, L2') ----- calculate following (3)
- (L2, L2')-(B, B') ------- calculate record from VC62 Telemetry during this period.

(3) (L1, L1')-(L0, L0')-(L2, L2') is calculated following.

a) (L1, L1')-(L2, L2') is dealed with invisible period. Calculate regression line from calculation results of (A, A')-(L1, L1') and (L2, L2')-(B, B').

b) Separate the result of a) by (L0, L0'). "Satellite Clock Cycle" (slope of regression line) of separated two records is the same.

The example is assumed to as follows.

A= (GPS)1303 week 172226second	A'= (UTC)2004/12/27 23:50:13.382
L1= (GPS)1303 week 172805second	L1'= (UTC)2004/12/27 23:59:52.435
L0= (GPS)1303 week 172814second	L0'= (UTC)2004/12/28 00:00:00.435
L2= (GPS)1303 week 172818second	L2'= (UTC)2004/12/28 00:00:04.435
B= (GPS)	B'= (UTC)2004/12/28 00:10:59.479

```
(A,A')～(L1,L1'):  *****  20041227   26 20041227 23:50:13.382 20041228 23:59:52.435  1.0000915371 1303 172226 20041227 23:50:13.382 +013
(L1,L1')～(L0,L0'):  *****  20041227   26 20041227 23:59:52.435 20041228 00:00:00.000  0.9999901378 1303 172805 20041227 23:59:52.435 +013
(L0,L0')～(L2,L2'):  *****  20041228   26 20041228 00:00:00.000 20041228 00:00:04.435  0.9999901378 1303 172814 20041228 00:00:00.435 +014
(L2,L2')～(B,B'):  *****  20041228   26 20041228 00:00:04.435 20041228 00:10:59.479  1.0000668527 1303 172818 20041228 00:00:04.435 +014
```

When (A, A')-(B, B') is invisible period, it is the same as above except that there is no (A, A')-(L1, L1') and (L2, L2')-(B, B').

[The relation between data valid period and data creation date]

The relation between data valid period and data creation date when the visible/invisible time is as follows, is shown below.

[Example]

(visible/invisible time)

visible	day D 23:00:00 - day D 23:30:00
invisible	day D 23:30:00 - day D 23:50:00
visible	day D 23:50:00 - day D+1 00:40:00
invisible	day D+1 00:40:00 - day D+1 01:00:00
visible	day D+1 01:00:00 - day D+1 01:50:00
	(omitted)

（ETMDF for day D）

	start time of data valid period	end time of data valid period
	(omitted)	
last record	day D 23:00:00	99999999 99:99:99

（ETMDF for day D+1)

	start time of data valid period	end time of data valid period
1st record	day D 23:00:00	day D 23:30:00
2nd record	day D 23:30:00	day D 23:50:00
3rd record	day D 23:50:00	day D+1 00:40:00
4th record	day D+1 00:40:00	day D+1 01:00:00
5th record	day D+1 01:00:00	day D+1 01:50:00
	(omitted)	

Appendix 3

1. ALOS Precision Attitude Determination Value
2. High-Frequency Attitude Determination Value
3. PRISM Pointing Alignment Parameter

1. ALOS Precision Attitude Determination Value

Table 1-1 ALOS Precision Attitude Determination Value Header

No.	Item	Attribute	Length (byte)	Record Position
1	File Name	File name 「ALOSPAD□□□」Fixed	10	0
2	Blank	(HEX 20)	1	10
3	Project Name	Project name 「ALOS□□」Fixed	6	11
4	Blank	(HEX 20)	1	17
5	Data Creation Facility Code	Facility code of data creation 「HDPS」Fixed	4	18
6	Blank	(HEX 20)	1	22
7	Data Receiving Facility Code	Facility code of data receiving 「HCNT」Fixed	4	23
8	Blank	(HEX 20)	1	27
9	File Creation Date (UTC)	File creation date YYYYMMDD	8	28
10	Blank	(HEX 20)	1	36
11	File Creation Time (UTC)	File creation time hh:mm:ss	8	37
12	Blank	(HEX 20)	1	45
13	Length of Records in Data Section	Record length in data section (bytes) 「□□72」Fixed	4	46
14	Blank	(HEX 20)	1	50
15	Number of Records in Data Section	The number of records in data section NNNNN right justified、not filled with zero Do not count in descriptor section	5	51
16	Blank	(HEX 20)	1	56
17	Start Time of Valid Data Period (UTC	Start time of valid data period YYYYMMDD:「********」Fixed	8	57
18	Blank	(HEX 20)	1	65
19	End Time of Valid Data Period (UTC	End time of valid data period YYYYMMDD:「********」Fixed	8	66
20	Blank	(HEX 20)	1	74
21	Modified Date of File Format (UTC)	Modified data of file format version YYYYMMDD	8	75
22	Blank	(HEX 20)	1	83
23	Version No. of File Format Version	Number of file format version Vxx (V fixed) If xx will exceed 99, it will be backed to 00.	3	84
24	Blank	(HEX 20)	1	87
25	File Fixed Data	Setting item is defined on file to file basis. Blank (HEX 20) Fixed	39	88
26	Record Separator	HEX 0A	1	127
			128	

Table 1-2 ALOS Precision Attitude Determination Value Descriptor

No.	Item	Attribute	Length (byte)	Record Position
1	Missing Flag (Note 1)	0: No missing flag 1: Missing flag	1	0
2	Used Orbit Data	0:GPSR 1: ALOS Conventional Orbit Data (Predicted) 2: ALOS Conventional Orbit Data (Determined) 3: ALOS Precision Orbit Data	1	1
3	Total Record Number	The number of records in data section NNNNN	5	2
4	Ascending Node Time (year, month, day)	Year, month, day of ascending node time YYYYMMDD	8	7
5	Ascending Node Time (hour, minute, second)	Hour, minute, second of ascending node time hh:mm:ss.ssssss	14	15
6	Start Time of Effective Data (year, month, day) (Note 2)	Year, month, day YYYYMMDD	8	29
7	Start Time of Effective Data (hour, minute, second) (Note 2)	Hour, minute, second hh:mm:ss.ssssss	14	37
8	End Time of Effective Data (year, month, day) (Note 2)	Year, month, day YYYYMMDD	8	51
9	End Time of Effective Data (hour, minute, second) (Note 2)	hour, minute, second hh:mm:ss.ssssss	14	59
10	Record Separator	HEX 0A	1	73
			74	

Note 1:
Data missing presence of the original data is described for calculating the stored value of this file.
Detailed information of each missing is described in each record.

Note 2:
The start time of effective data is the time of the first data stored in this file.
The end time is the time of the last data stored in this file.
Stored range is one orbit (from one minute before from the ascending node time to the next ascending node time).

Note 3:
Descriptor section is written in text record.

Table 1-3 ALOS Precision Attitude Determination Value Data

No.	Item	Attribute	Length (byte)	Record Position
1	Year	UTC Time Integer	2	0
2	Month	UTC Time Byte	1	2
3	Day	〃	1	3
4	Hour	〃	1	4
5	Minute	〃	1	5
6	Second	UTC Time Double Real	8	6
7	Data Effective	1: Good: Meet the specification 2: Fair: Not enough for the specification, but available 3: NG: Not available	1	14
8	Data Continuous Code	1: Start of continuous data (the head of the file and immediately after the data missing) 9: End of continuous data (the last of the file and immediately before the data missing 0: Continuous data (including the case where data effective is NG)	1	15
9	System Area	N/A	9	16
10	Quaternion q1	Binary data double-precision real data	8	25
11	Quaternion q2	Binary data double-precision real data	8	33
12	Quaternion q3	Binary data double-precision real data	8	41
13	Quaternion q4	Binary data double-precision real data	8	49
14	Drift Rate X	Binary data real number	4	57
15	Drift Rate Y	Binary data real number	4	61
16	Drift Rate Z	Binary data real number	4	65
17	Reserved	Filled with zero	2	69
18	Record Separator	HEX 0A	1	71
			72	

Note 1:
Unless otherwise specified, data is written in Byte description.

Note 2:
Corrected UTC time is stored in the time of the header section even though it is operated in DMS time system.

Note 3:
Byte order of the Data section is little-endian.

Note 4:
Even though the data effective flag is "NG", information in the record is stored.

Note 5:
If leap second occurs, 61-socond is stored.

Note 6:
The data, regarded as an error after physical significance check of telemetry has been done, is considered missing data even though telemetry exists.

2. High-Frequency Attitude Determination Value

Table 2-1 High-Frequency Attitude Determination Value Header

No.	Item	Attribute	Length (byte)	Record Position
1	Missing flag (Note 1)	0: No missing flag 1: Missing flag	1	0
2	Used Orbit Data	0:GPSR 1: ALOS Conventional Orbit Data (Predicted) 2: ALOS Conventional Orbit Data (Determined) 3: ALOS Precision Orbit Data	1	1
3	Total Record Number	The number of records in data section NNNNN	5	2
4	Ascending Node Time (year, month, day)	Year, month, day of ascending node time YYYYMMDD	8	7
5	Ascending Node Time (hour, minute, second)	Hour, minute, second of ascending node time hh:mm:ss.ssssss	14	15
6	Start Time of Effective Data (year, month, day) (Note 2)	Year, month, day YYYYMMDD	8	29
7	Start Time of Effective Data (hour, minute, second) (Note 2)	Hour, minute, second hh:mm:ss.ssssss	14	37
8	End Time of Effective Data (year, month, day) (Note 2)	Year, month, day YYYYMMDD	8	51
9	End Time of Effective Data (hour, minute, second) (Note 2)	hour, minute, second hh:mm:ss.ssssss	14	59
10	Record Separator	HEX 0A	1	73
			74	

Note 1:
Data missing presence of original data is described for calculating the stored value of this file.
Detailed information of each missing is described in each record.

Note 2:
The start time of effective data is the time of the first data stored in this file.
The end time is the time of the last data stored in this file.
Stored range is one orbit (from one minute before from the ascending node time to the next ascending node time) .

Note 3:
Descriptor section is written in text record.

Table 2-2 High-Frequency Attitude Determination Value Data

No.	Item	Attribute	Length (byte)	Record Position
1	Year	UTC Time Integer	2	0
2	Month	UTC Time Byte	1	2
3	Day	〃	1	3
4	Hour	〃	1	4
5	Minute	〃	1	5
6	Second	UTC Time Double Real	8	6
7	Data Effective	1: Good: Meet the specification 2: Fair: Not enough for the specification, but available 3: NG: Not available	1	14
8	Data Continuous Code	1: Start of continuous data (the head of the file and immediately after the data missing) 9: End of continuous data (the last of the file and immediately before the data missing 0 : Continuous data (including the case where data effective is NG)	1	15
9	System Area	N/A	9	16
10	Quaternion q1	Binary data double-precision real data	8	25
11	Quaternion q2	Binary data double-precision real data	8	33
12	Quaternion q3	Binary data double-precision real data	8	41
13	Quaternion q4	Binary data double-precision real data	8	49
14	Reserved	Filled with zero	2	57
15	Record Separator	HEX 0A	1	59
			60	

Note 1:
Unless otherwise specified, data is written in Byte description.

Note 2:
Corrected UTC time is stored in the time of the header section even though it is operated in DMS time system.

Note 3:
Byte order of the Data section is little-endian.

Note 4:
Even though the data effective flag is "NG", information in the record is stored.

Note 5:
If leap second occurs, 61-second is stored.

Note 6:
The data, regarded as an error after physical significance check of telemetry has been done, is considered missing data even though telemetry exists.

3. PRISM Pointing Alignment Parameter

Table 3-1 PRISM Pointing Alignment Parameter Header

No.	Section	Item	Keyword	Content
1	Heeder Information	File creation data	Header_ProcessDate	YYYYMMDD
2		The number of stored sets	Header_SetNumber	1～n
3		Radiometer type	Header_KindofPRISM	1: Nadir 2: Forward 3: Backward
4	Data Information	Set ID of the first set	Data_SetID_1	1
5		Start of the first set of the valid data period	Data_ValidStartDate_1	YYYYMMDD
6		End of the first set of the valid data period	Data_ValidEndDate_1	YYYYMMDD
｜		｜	｜	｜
n*3		Set ID of the nth set	Data_SetID_n	n
n*3+1		Start of the n set of the valid data period	Data_ValidStartDate_n	YYYYMMDD

Stored time information (including year, month, day description) is UTC unless otherwise specified.

Table 3-2 PRISM Pointing Alignment Parameter Set ID Information

No.	Section	Item	Keyword	Stored Value
1	Set ID Information	Head identifier	Set_ID	1～ n: The nth data set
2		Start of the valid data period	IDn_Set_ValidStartDate	YYYYMMDD
3		End of the valid data period	IDn_Set_ValidEndDate	YYYYMMDD: For the latest data, this item is not described.
4		Date of parameter calculation	IDn_Set_CalculateDate	YYYYMMDD

"n" in "IDn", which is the keyword of set ID information, source information, and pointing alignment parameter, will be the stored value of Set_ID.
Set ID Information, Source Information, and Pointing Alignment Parameter are stored repeatedly for the number of "Header_SetNumber."
Stored time information (including year, month, day description) is UTC unless otherwise specified.

Table 3-3 PRISM Pointing Alignment Parameter Source Information (1/6)

No.	Section	Item	Keyword	Stored Value
1	GCP Information	The number of used GCP observation data.	IDn_GCP_Number	1～
2		Registered Number 1	IDn_GCP_ID_1	1～
3		Observation data 1	IDn_GCP_ObservationDate_1	YYYYMMDD
｜		｜	｜	｜
4		Registered Number n	IDn_GCP_ID_n	1～
5		Observation data n	IDn_GCP_ObservationDate_n	YYYYMMDD
6	Old Pointing alignment parameter used in estimated processing	Transformation matrix of long period bias an11	IDn_Source_an11	E22.15
7		Transformation matrix of long period bias an12	IDn_Source_an12	〃
8		Transformation matrix of long period bias an13	IDn_Source_an13	〃
9		Transformation matrix of long period bias an21	IDn_Source_an21	〃
10		Transformation matrix of long period bias an22	IDn_Source_an22	〃
11		Transformation matrix of long period bias an23	IDn_Source_an23	〃
12		Transformation matrix of long period bias an31	IDn_Source_an31	〃
13		Transformation matrix of long period bias an32	IDn_Source_an32	〃
14		Transformation matrix of long period bias an33	IDn_Source_an33	〃
15		Transformation matrix of long period bias nlx	IDn_Source_nlx	〃
16		Transformation matrix of long period bias nly	IDn_Source_nly	〃
17		Transformation matrix of long period bias nlz	IDn_Source_nlz	〃
18		Variable parameter of orbit period nx0	IDn_Source_nx0	〃
19		Variable parameter of orbit period nx1	IDn_Source_nx1	〃
20		Variable parameter of orbit period nx2	IDn_Source_nx2	〃
21		Variable parameter of orbit period nx3	IDn_Source_nx3	〃
22		Variable parameter of orbit period nx4	IDn_Source_nx4	〃
23		Variable parameter of orbit period nx5	IDn_Source_nx5	〃
24		Variable parameter of orbit period nx6	IDn_Source_nx6	〃
25		Variable parameter of orbit period nx7	IDn_Source_nx7	〃
26		Variable parameter of orbit period nx8	IDn_Source_nx8	〃
27		Variable parameter of orbit period nx9	IDn_Source_nx9	〃
28		Variable parameter of orbit period nx10	IDn_Source_nx10	〃
29		Variable parameter of orbit period nx11	IDn_Source_nx11	〃
30		Variable parameter of orbit period nx12	IDn_Source_nx12	〃
31		Variable parameter of orbit period nx13	IDn_Source_nx13	〃
32		Variable parameter of orbit period nx14	IDn_Source_nx14	〃
33		Variable parameter of orbit period nx15	IDn_Source_nx15	〃
34		Variable parameter of orbit period nx16	IDn_Source_nx16	〃
35		Variable parameter of orbit period nx17	IDn_Source_nx17	〃
36		Variable parameter of orbit period nx18	IDn_Source_nx18	〃
37		Variable parameter of orbit period nx19	IDn_Source_nx19	〃
38		Variable parameter of orbit period nx20	IDn_Source_nx20	〃
39		Variable parameter of orbit period nx21	IDn_Source_nx21	〃
40		Variable parameter of orbit period nx22	IDn_Source_nx22	〃
41		Variable parameter of orbit period nx23	IDn_Source_nx23	〃
42		Variable parameter of orbit period nx24	IDn_Source_nx24	〃
43		Variable parameter of orbit period nx25	IDn_Source_nx25	〃
44		Variable parameter of orbit period nx26	IDn_Source_nx26	〃
45		Variable parameter of orbit period nx27	IDn_Source_nx27	〃
46		Variable parameter of orbit period nx28	IDn_Source_nx28	〃
47		Variable parameter of orbit period nx29	IDn_Source_nx29	〃
48		Variable parameter of orbit period nx30	IDn_Source_nx30	〃
49		Variable parameter of orbit period ny0	IDn_Source_ny0	〃
50		Variable parameter of orbit period ny1	IDn_Source_ny1	〃
51		Variable parameter of orbit period ny2	IDn_Source_ny2	〃
52		Variable parameter of orbit period ny3	IDn_Source_ny3	〃
53		Variable parameter of orbit period ny4	IDn_Source_ny4	〃
54		Variable parameter of orbit period ny5	IDn_Source_ny5	〃
55		Variable parameter of orbit period ny6	IDn_Source_ny6	〃
56		Variable parameter of orbit period ny7	IDn_Source_ny7	〃
57		Variable parameter of orbit period ny8	IDn_Source_ny8	〃
58		Variable parameter of orbit period ny9	IDn_Source_ny9	〃
59		Variable parameter of orbit period ny10	IDn_Source_ny10	〃

Table 3-3 PRISM Pointing Alignment Parameter Source Information (2/6)

No.	Section	Item	Keyword	Stored Value
60		Variable parameter of orbit period ny11	IDn_Source_ny11	〃
61		Variable parameter of orbit period ny12	IDn_Source_ny12	〃
62		Variable parameter of orbit period ny13	IDn_Source_ny13	〃
63		Variable parameter of orbit period ny14	IDn_Source_ny14	〃
64		Variable parameter of orbit period ny15	IDn_Source_ny15	〃
65		Variable parameter of orbit period ny16	IDn_Source_ny16	〃
66		Variable parameter of orbit period ny17	IDn_Source_ny17	〃
67		Variable parameter of orbit period ny18	IDn_Source_ny18	〃
68		Variable parameter of orbit period ny19	IDn_Source_ny19	〃
69		Variable parameter of orbit period ny20	IDn_Source_ny20	〃
70		Variable parameter of orbit period ny21	IDn_Source_ny21	〃
71		Variable parameter of orbit period ny22	IDn_Source_ny22	〃
72		Variable parameter of orbit period ny23	IDn_Source_ny23	〃
73		Variable parameter of orbit period ny24	IDn_Source_ny24	〃
74		Variable parameter of orbit period ny25	IDn_Source_ny25	〃
75		Variable parameter of orbit period ny26	IDn_Source_ny26	〃
76		Variable parameter of orbit period ny27	IDn_Source_ny27	〃
77		Variable parameter of orbit period ny28	IDn_Source_ny28	〃
78		Variable parameter of orbit period ny29	IDn_Source_ny29	〃
79		Variable parameter of orbit period ny30	IDn_Source_ny30	〃
80		Variable parameter of orbit period nz0	IDn_Source_nz0	〃
81		Variable parameter of orbit period nz1	IDn_Source_nz1	〃
82		Variable parameter of orbit period nz2	IDn_Source_nz2	〃
83		Variable parameter of orbit period nz3	IDn_Source_nz3	〃
84		Variable parameter of orbit period nz4	IDn_Source_nz4	〃
85		Variable parameter of orbit period nz5	IDn_Source_nz5	〃
86		Variable parameter of orbit period nz6	IDn_Source_nz6	〃
87		Variable parameter of orbit period nz7	IDn_Source_nz7	〃
88		Variable parameter of orbit period nz8	IDn_Source_nz8	〃
89		Variable parameter of orbit period nz9	IDn_Source_nz9	〃
90		Variable parameter of orbit period nz10	IDn_Source_nz10	〃
91		Variable parameter of orbit period nz11	IDn_Source_nz11	〃
92		Variable parameter of orbit period nz12	IDn_Source_nz12	〃
93		Variable parameter of orbit period nz13	IDn_Source_nz13	〃
94		Variable parameter of orbit period nz14	IDn_Source_nz14	〃
95		Variable parameter of orbit period nz15	IDn_Source_nz15	〃
96		Variable parameter of orbit period nz16	IDn_Source_nz16	〃
97		Variable parameter of orbit period nz17	IDn_Source_nz17	〃
98		Variable parameter of orbit period nz18	IDn_Source_nz18	〃
99		Variable parameter of orbit period nz19	IDn_Source_nz19	〃
100		Variable parameter of orbit period nz20	IDn_Source_nz20	〃
101		Variable parameter of orbit period nz21	IDn_Source_nz21	〃
102		Variable parameter of orbit period nz22	IDn_Source_nz22	〃
103		Variable parameter of orbit period nz23	IDn_Source_nz23	〃
104		Variable parameter of orbit period nz24	IDn_Source_nz24	〃
105		Variable parameter of orbit period nz25	IDn_Source_nz25	〃
106		Variable parameter of orbit period nz26	IDn_Source_nz26	〃
107		Variable parameter of orbit period nz27	IDn_Source_nz27	〃
108		Variable parameter of orbit period nz28	IDn_Source_nz28	〃
109		Variable parameter of orbit period nz29	IDn_Source_nz29	〃
110		Variable parameter of orbit period nz30	IDn_Source_nz30	〃

Stored time information (including year, month, day description) is UTC unless otherwise specified.

Table 3-4 PRISM Pointing Alignment Parameter Data (1/6)

No.	Section	Item	Keyword	Stored Value
1	Pointing alignment parameter	Transformation matrix of long period bias an11	IDn_an11	E22.15
2		Transformation matrix of long period bias an12	IDn_an12	〃
3		Transformation matrix of long period bias an13	IDn_an13	〃
4		Transformation matrix of long period bias an21	IDn_an21	〃
5		Transformation matrix of long period bias an22	IDn_an22	〃
6		Transformation matrix of long period bias an23	IDn_an23	〃
7		Transformation matrix of long period bias an31	IDn_an31	〃
8		Transformation matrix of long period bias an32	IDn_an32	〃
9		Transformation matrix of long period bias an33	IDn_an33	〃
10		Transformation matrix of long period bias nlx	IDn_nlx	〃
11		Transformation matrix of long period bias nly	IDn_nly	〃
12		Transformation matrix of long period bias nlz	IDn_nlz	〃
13		Variable parameter of orbit period nx0	IDn_nx0	〃
14		Variable parameter of orbit period nx1	IDn_nx1	〃
15		Variable parameter of orbit period nx2	IDn_nx2	〃
16		Variable parameter of orbit period nx3	IDn_nx3	〃
17		Variable parameter of orbit period nx4	IDn_nx4	〃
18		Variable parameter of orbit period nx5	IDn_nx5	〃
19		Variable parameter of orbit period nx6	IDn_nx6	〃
20		Variable parameter of orbit period nx7	IDn_nx7	〃
21		Variable parameter of orbit period nx8	IDn_nx8	〃
22		Variable parameter of orbit period nx9	IDn_nx9	〃
23		Variable parameter of orbit period nx10	IDn_nx10	〃
24		Variable parameter of orbit period nx11	IDn_nx11	〃
25		Variable parameter of orbit period nx12	IDn_nx12	〃
26		Variable parameter of orbit period nx13	IDn_nx13	〃
27		Variable parameter of orbit period nx14	IDn_nx14	〃
28		Variable parameter of orbit period nx15	IDn_nx15	〃
29		Variable parameter of orbit period nx16	IDn_nx16	〃
30		Variable parameter of orbit period nx17	IDn_nx17	〃
31		Variable parameter of orbit period nx18	IDn_nx18	〃
32		Variable parameter of orbit period nx19	IDn_nx19	〃
33		Variable parameter of orbit period nx20	IDn_nx20	〃
34		Variable parameter of orbit period nx21	IDn_nx21	〃
35		Variable parameter of orbit period nx22	IDn_nx22	〃
36		Variable parameter of orbit period nx23	IDn_nx23	〃
37		Variable parameter of orbit period nx24	IDn_nx24	〃
38		Variable parameter of orbit period nx25	IDn_nx25	〃
39		Variable parameter of orbit period nx26	IDn_nx26	〃
40		Variable parameter of orbit period nx27	IDn_nx27	〃
41		Variable parameter of orbit period nx28	IDn_nx28	〃
42		Variable parameter of orbit period nx29	IDn_nx29	〃
43		Variable parameter of orbit period nx30	IDn_nx30	〃
44		Variable parameter of orbit period ny0	IDn_ny0	〃
45		Variable parameter of orbit period ny1	IDn_ny1	〃
46		Variable parameter of orbit period ny2	IDn_ny2	〃
47		Variable parameter of orbit period ny3	IDn_ny3	〃
48		Variable parameter of orbit period ny4	IDn_ny4	〃
49		Variable parameter of orbit period ny5	IDn_ny5	〃
50		Variable parameter of orbit period ny6	IDn_ny6	〃
51		Variable parameter of orbit period ny7	IDn_ny7	〃
52		Variable parameter of orbit period ny8	IDn_ny8	〃
53		Variable parameter of orbit period ny9	IDn_ny9	〃

Table 3-4 PRISM Pointing Alignment Parameter Data (2/6)

No.	Section	Item	Keyword	Stored Value
54		Variable parameter of orbit period ny10	IDn_ny10	〃
55		Variable parameter of orbit period ny11	IDn_ny11	〃
56		Variable parameter of orbit period ny12	IDn_ny12	〃
57		Variable parameter of orbit period ny13	IDn_ny13	〃
58		Variable parameter of orbit period ny14	IDn_ny14	〃
59		Variable parameter of orbit period ny15	IDn_ny15	〃
60		Variable parameter of orbit period ny16	IDn_ny16	〃
61		Variable parameter of orbit period ny17	IDn_ny17	〃
62		Variable parameter of orbit period ny18	IDn_ny18	〃
63		Variable parameter of orbit period ny19	IDn_ny19	〃
64		Variable parameter of orbit period ny20	IDn_ny20	〃
65		Variable parameter of orbit period ny21	IDn_ny21	〃
66		Variable parameter of orbit period ny22	IDn_ny22	〃
67		Variable parameter of orbit period ny23	IDn_ny23	〃
68		Variable parameter of orbit period ny24	IDn_ny24	〃
69		Variable parameter of orbit period ny25	IDn_ny25	〃
70		Variable parameter of orbit period ny26	IDn_ny26	〃
71		Variable parameter of orbit period ny27	IDn_ny27	〃
72		Variable parameter of orbit period ny28	IDn_ny28	〃
73		Variable parameter of orbit period ny29	IDn_ny29	〃
74		Variable parameter of orbit period ny30	IDn_ny30	〃
75		Variable parameter of orbit period nz0	IDn_nz0	〃
76		Variable parameter of orbit period nz1	IDn_nz1	〃
77		Variable parameter of orbit period nz2	IDn_nz2	〃
78		Variable parameter of orbit period nz3	IDn_nz3	〃
79		Variable parameter of orbit period nz4	IDn_nz4	〃
80		Variable parameter of orbit period nz5	IDn_nz5	〃
81		Variable parameter of orbit period nz6	IDn_nz6	〃
82		Variable parameter of orbit period nz7	IDn_nz7	〃
83		Variable parameter of orbit period nz8	IDn_nz8	〃
84		Variable parameter of orbit period nz9	IDn_nz9	〃
85		Variable parameter of orbit period nz10	IDn_nz10	〃
86		Variable parameter of orbit period nz11	IDn_nz11	〃
87		Variable parameter of orbit period nz12	IDn_nz12	〃
88		Variable parameter of orbit period nz13	IDn_nz13	〃
89		Variable parameter of orbit period nz14	IDn_nz14	〃
90		Variable parameter of orbit period nz15	IDn_nz15	〃
91		Variable parameter of orbit period nz16	IDn_nz16	〃
92		Variable parameter of orbit period nz17	IDn_nz17	〃
93		Variable parameter of orbit period nz18	IDn_nz18	〃
94		Variable parameter of orbit period nz19	IDn_nz19	〃
95		Variable parameter of orbit period nz20	IDn_nz20	〃
96		Variable parameter of orbit period nz21	IDn_nz21	〃
97		Variable parameter of orbit period nz22	IDn_nz22	〃
98		Variable parameter of orbit period nz23	IDn_nz23	〃
99		Variable parameter of orbit period nz24	IDn_nz24	〃
100		Variable parameter of orbit period nz25	IDn_nz25	〃
101		Variable parameter of orbit period nz26	IDn_nz26	〃
102		Variable parameter of orbit period nz27	IDn_nz27	〃
103		Variable parameter of orbit period nz28	IDn_nz28	〃
104		Variable parameter of orbit period nz29	IDn_nz29	〃
105		Variable parameter of orbit period nz30	IDn_nz30	〃

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