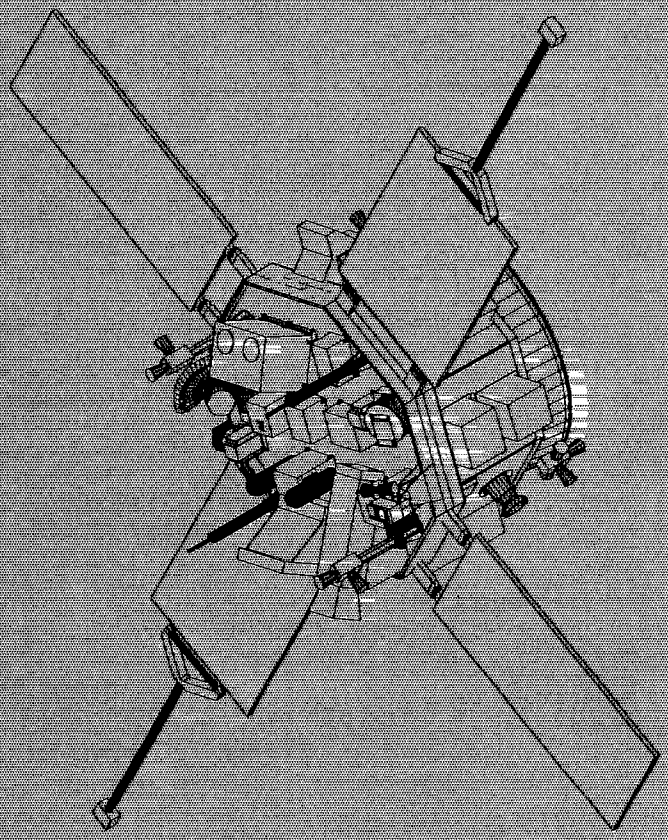


ACE Spacecraft Telemetry Frame Format Descriptions

Prepared by R. F. Conde

The Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road Laurel, MD 20723

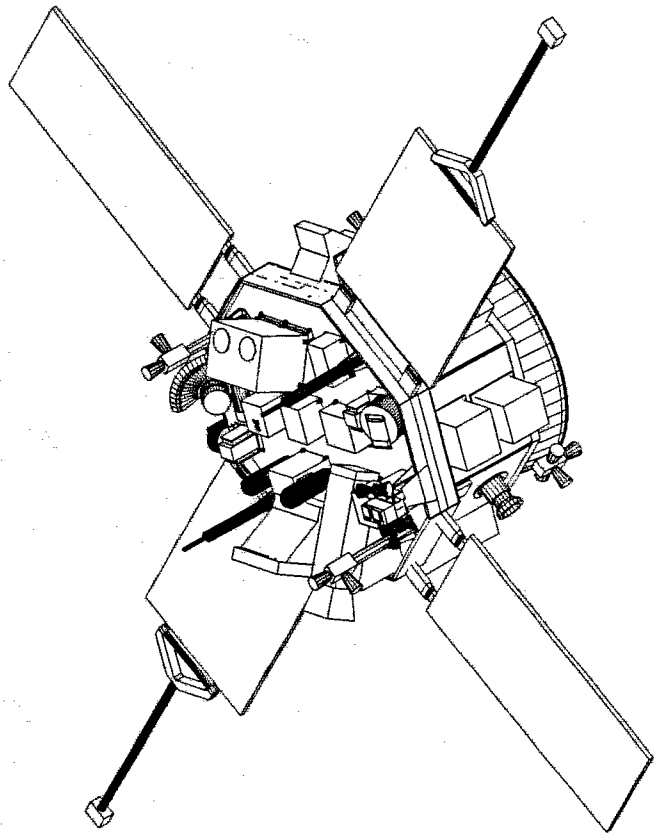
Advanced Composition Explorer Spacecraft
Telemetry Frame Format Descriptions
March 19, 1996

FSCM NO.	Size	DWG. NO.
88898	A	7345-9030

Sheet 1 of 186

Error:

SWAP XCY sun angles in LRADC fmt



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Sheet 1 of 186

Technical Content Approval

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1 Scope

This specification defines several types of telemetry data structures created by the ACE Command & Data Handling Component. These structures include the Collection Formats that indicate the order in which telemetry items are collected; the Data Collection Buffer (DCB) which is where all telemetry data items are temporarily stored in the C&DH Component when collected; and telemetry frames that are downlinked and recorded. This specification also includes a telemetry list. The telemetry list is a summary showing what telemetry parameters are present in the different downlink and record formats. It does not indicate the order of data in the formats.

This specification indicates the amount of data collected from each source. It does not attempt to define that data. For example, 144 bits are collected from each Solid State Recorder, 128 bits from each Power Subsystem Processor, and 304 bits from the Magnetometer. Those seeking the definition of those bits should consult the relevant specification for that source. The definition of telemetry frame headers and C&DH Component housekeeping telemetry can be found in 7345-9030, "ACE Spacecraft Command and Data Handling Component Specification."

2 Telemetry Channel Identification

Telemetry data is either generated by the C&DH component, or collected by the C&DH component by a general purpose or special purpose interface . Those items collected by the C&DH component with a general purpose interface are connected to a telemetry channel. Each channel has a unique channel ID that identifies the type of channel and the specific channel of that type. The following telemetry channels are supported: Serial Digital, Digital Telltale-Logic, Digital Telltale-Switch, 0-5V Single Ended Analog, 0-50mV Differential Analog, AD590 Temperature Sensor, and PT103 Temperature Sensor. The channel ID is an abbreviation of the name of the channel. The channel ID also indicates whether it originates from the Data Collection Machine on Housekeeping Data Collection Board #1 or Housekeeping Data Collection Board #2. The channel ID starts with DCM1 or DCM2 to indicate if is from the Data Collection Machine on Housekeeping Data Collection Board #1 or #2. The channels available on each Data Collection Machine are shown in table 2-1.

Channel Type	First Channel per Board	Last Channel per Board
Serial Digital	SD0	SD7
Digital Telltale - Switch	DIGTTSW0	DIGTTSW15
Digital Telltale - Logic	DIGTTLOG0	DIGTTLOG7
0 to 5V Single Ended Analog	SEA0	SEA31
0 to 50 mV Differential Analog	DIFA0	DIFA31
AD590	AD0	AD31
PT103	PT0	PT31

Telemetry Channels on Each Housekeeping Data Collection Board
Table 2-1

0 to 5V Single Ended Analog Channel #15 on Data Collection Machine #2 would have a channel ID of DCM2-SEA15. Channel IDs can be translated to specific pins on one of the Housekeeping boards. Some of the formats include spare channels that are not connected to anything yet. These channels are listed with a channel name (such as DCM1 - 0 to 5V Channel #20) instead of a telemetry name (such as C&DH A Converter Voltage). This allows additional telemetry requirements to be met without changing formats, just by assigning the additional telemetry to spare channels that are already in some of the formats.

3 Telemetry List

The telemetry list indicates the telemetry data that is in each format, but not the order of data in each format. Each telemetry item has a contact associated with it. Generally the contact is the lead engineer of the subsystem that is the source of the telemetry data item. The Telemetry List includes a history of the significant changes made to the list. The telemetry list is as follows:

ACE TELEMETRY DOWNLINK AND RECORD FORMATS

Telemetry List Description:

The telemetry list tabulates several pieces of information. It lists all the telemetry information that is collected by each C&DH component. The telemetry data is listed by interface type, from science serial digital interfaces through PT103 thermistor channels. The first column indicates the contact for the channel. The next column indicates the telemetry parameter name. Each telemetry channel is actually implemented as two separate outputs, one connected to C&DH A, and the other to C&DH B, unless that channel is described as being "not x-strapped." If the channel is described as "not x-strapped", then that telemetry channel is only connected to one C&DH component. The next column indicates the channel ID for the channel, which determines the actual C&DH component connector and pin the signal is wired to. The next column indicates the number of data collection interfaces assigned to that parameter. The remaining columns indicate the number of bits of each parameter that are present in each of the formats. Changes made to the telemetry list are listed in the beginning of the document.

Changes:

References to Mag IFB Removed
Add 0-50mV channels for heater currents ? baseline 4 for now
3/9/93 Add Baseband #1, #2 to 0-50 mV Interfaces
3/10/93 Update instrument analog telemetry, update sun sensor requirements
3/10/93 Formats reduced - Low Rate HSKP includes Sun Sensor, Accelerometer; Low Rate Dump removes accelermeter, replaces with dump data
3/10/93 Reflect deltas due to combined C&DH
3/16/93 Add ADC Formats, remove accel, sun sensor formats, remove redundant subsystem select interfaces
3/16/93 Update power system electronics name in AD590 section
3/30/93 Reduce star camera full allocation to 640 bits per major frame
4/6/93 Combined Command Component and Data Handling Component Allocations
4/12/93 Add SWIMS Cover Open Telltale, breakout SWEPAM from New DPU
4/20/93 Changed name from Baseband Component to Pre-Mod Conditioner
4/21/93 Separated SWEPAM Ion and Electron Currents
4/21/93 Went from 4 to 6 heater currents, gave them names
4/21/93 + 28V Regulated Bus Voltage renamed Main Bus Voltage
4/22/93 Increased star camera allocation in ADC formats to 1024 bits per major frame from 640 bits per major frame
4/27/93 Added Real Time Solar Wind Current
4/27/93 Changed names: PSE B Control Current to PSE B Control Converter Current
4/27/93 Changed name: Solar Wind DPU to New DPU
4/27/93 Added separate SWEPAM Ion and Electron science serial digital channels
4/30/93 Removed CLCW and C&DH housekeeping from serial digital interface count
4/30/93 Added Total Observatory Current as 0-5V Channel and Main Bus Current as 0-50mV channel
4/30/93 Delete Regulated Bus Current + Cmd Bus Current from 0-5V channel
5/7/93 Separated SWEPAM (E) and (I) Thermistor Requirements
5/10/93 Add SWICS & SWIMS 30kV Monitor, delete 4 ULEIS digital telltales, delete 3 of 4 ULEIS 0-5V channels, add 2 ULEIS 0-50 mV channels
5/10/93 Note that SIS and CRIS current include Detector Bias Current
5/11/93 Only include heater current for battery heater; add Total Observatory Current to 0-5V Channel
5/24/93 Changed RF Aux Osc On/Off to RF Aux Osc #2 On/Off under digital telltales; added on off to Transmitter #2 tlm input #1 and #2
5/24/93 Add 32 bits for C&DH status from inactive side
6/7/93 CRIS and SIS dropped to 2 AD590 channels each
6/7/93 SWEPAM(E) and SWEPAM(I) each added 2 5V analog channels

Changes:

6/7/93 Added names to EPAM 0-5V Analogs and Thermistors

6/8/93 Remove CRIS/SIS cover telltales

6/8/93 Added 2 more power switching regulator voltages (0-5V)

6/10/93 Added Spacecraft and Instrument Deck Temperatures

6/10/93 Delete extra Total Observatory Current Channel

6/10/93 Delete RTSW 0-5V Channel (0-5V)

6/10/93 Delete CRIS/SIS 0-5V Channels (4 total)

6/10/93 Remove Separation Switch TTs, Solar Panlel and Boom Deplyoment TTs from Default format, leave in some other formats

6/10/93 Add S^3 DPU AD590 Channel

6/10/93 Reduce number of programmable 8-bit telemetry channels from 2 to 1; resulted in increase in housekeeing to 176 bits per second

6/10/93 Command Link Control Word moved out of housekeeping section and into header section

6/16/93 Delete the following tlm from each transponder: aux osc on/off, tlm input #1 on/off, tlm input#2 on/off digital telltales

6/16/93 Do not cross strap the following transponder tlm: RF Ranging Channel #1 On/Off and Mod Index Hi/Lo telltales; transmitter power supply temp;

6/18/93 Add transponder auxilliary oscillator on/off telltale; do not cross-strap RF Power Amp temp; transmitter power supply temp; Transmitter RF Power Level

7/7/93 Add info to sun sensor electronics entry

7/9/93 Added an AD590 for Master Oscillator in C&DH Component

7/15/93 Main Bus Current identified as a low priority telemetry parameter

7/23/93 Name changes for several currents; indicated which currents are on Cmd Bus; no new currents added

7/23/93 Added Command Bus Voltage

7/28/93 Nomenclature Change: Cmd Bus and Main Bus now Fused Bus and Unfused Bus

7/28/93 Current Sense Resistors added to S/C Survival Heater and Instr. Survival Heater on Fused Bus

8/10/93 Corrected typos for transponder telemetry (#1,#2 to A,B; corrected coax sw state designations)

8/16/93 Change names of some of power subsytem telemetry

8/23/93 Magnetometer DPU A, DPU B, and heater currents all summed into one 50 mV channel; delete one 50 mV channel

9/2/93 Deleted High Rate Memory Dump, Re-named Standard Rate Mem Dump just Mem Dump

9/3/93 Deleted Low Rate Memory Dump Format; space will be reserved in Low Rate Default Format for Memory Dumps

9/3/93 Star Camera data deleted from Low Rate Default Format to make room for memory dump data

9/23/93 Changed Sun Pulse time tag from 38 bits to 14 bits. Only include subsecond count in time tag; second count already tagging start of frame

10/8/93 Identify Catalyst Bed sensors as thermocouples, not thermistors

Changes:

10/13/93 Power Subsystem changes - Add 4 remote relay telltales; delete PSE B Regulator Converter I, PSE Protection Converter I, Thruster Bus I, Half Battery Voltage, PSE A Control Converter Current, PSE B Control Converter I, Solar Array #1,2,3,4 I. Add Power Subsystem Primary Processor & Redundant Processor Serial Digitals, each 120 bits long, in place of 1 serial digital 168 bits long.

New AD590 Channels

- 4 Digital Power Shunt AD590's
- C&DH Component A
- C&DH Component B
- Star Camera
- Sun Sensor (-X/-Y Side)
- SWEPAM(I) Interface
- SWEPAM(E) Interface
- SWIMS Interface Temperature
- SWICS Interface Temperature
- ULEIS Interface Temperature
- EPAM Interface Temperature
- CRIS InterfaceTemperature
- SIS Interface Temperature
- SEPICA Interface Temperature

Removed from Default Format only

- 2 Power System Electronics temps, 6 solar panel & Hinge temps

4/12/94 Deleted radial and axial cat bed heater currents from default

4/13/94 Delete Main Bus Current, rename Total Observatory Current to Main Bus Current

4/13/94 Delete Instrument Survival Heater Current

4/13/94 Rename Spacecraft Temperatures 1-5 to Aft Deck Temperatures 1-5

4/13/94 Delete -Y Forward, +Y Rear Low Gain Antenna Temperatures, Antenna Dish #2 Temperature

4/14/1994 Added RTSW Format, change Default Format to Science Format, Low Rate Default to Low Rate HSKP

4/14/94 Added PMC +5V (not cross-strapped)

4/19/94 Delete Power Switching Component Side A, Side B, Ordnance Fire Side A, Side B +5V (4 channels total)

4/19/94 Delete Power Switching Side A, Side B Currents, add Power Switching Comp. Side A Current, Side B Current and Ordnance Fire Component Side A, Side B Currents (delete 2, add 4)

4/19/94 Increase amount of SWEPAM(I) serial digital data by 168 to 712 bits/sec. The addtional data is only present in the RTSW format

Changes:

4/29/94 Change thruster names
5/2/94 Add 0-5V Channel for Sepica
5/6/94 Delete 0-5V Channel for Sepica; they will have S3 DPU do instead and include in its output stream
5/6/94 The number of available serial digital channels has been reduced from 20 to 16, cutting number of spares from 5 to 1
5/13/94 Updates made to RTSW format
6/3/94 Added packet and VCDU headers to RTSW format
6/21/94 Updated channel assignments
6/21/94 Added S3 DPU Power Converter Voltage
6/24/94 Delete extra sun sensor data from low rate housekeeping format
6/24/94 Have only one phase angle sample per frame in low rate modes
6/24/1994 ADC format will include only Magmetometer, SIS, CRIS, SWEPAM(Ion), and EPAM science data
6/24/94 each ADC minor frame includes one Sun Pulse Time Tag
6/24/94 Spare channels selected and included in list and formats
7/6/94 Added DCM1 or 2 to all references to spare channels to identify board the spares are on
7/11/94 Updated propulsion subsystem telemetry names for temperatures and telltales
7/28/94 Deleted SWICS and SWIMS 0-5V analog channels (2) - turned into spare channels
7/28/94 Changed names of existing SWEPAM I and E 0-5V channels (3 each)
7/28/94 SWICS Cover Telltale deleted, S3 DPU Digital Telltale added
7/28/94 0-50mV channel added for S^3 DPU converter secondary current (DCM1-DIF30)
8/1/94 Added Phase Angle latched at Sun Pulse, in ADC, LRHSKP, LRMEM, LRBIN, LRADC formats; diagnostic information
8/22/94 Show that phase angle latched at minor frame is in RTSW format 16 times, not 1 time (format already defined correctly)
9/8/94 Changed a spare PT103 channel (DCM1 - PT23) to Analog Shunt Panel Temperature
9/21/94 Increase inactive C&DH status from 32 to 64 bits; delete 2 spare PT-103 channels (DCM1-PT29,30), 2 spare 0-5V channels (DCM1-SEA19,20)
9/29/94 Change Power Subsystem contact to P. Panneton
9/29/94 Update names for SSSDPU AD590 channels,
10/3/94 Identify Sepica Internal Temperature as Iso-Butane Tank Temperature
10/10/94 Change name of S3 DPU Digital Telltale
10/11/94 Changes to RTSW format: added CLCW, 16 samples of selectable tlm byte
10/11/94 Changed definition of minor frame header fields in formats
10/12/94 Clarified definitions of latched phase angles and sun pulses
12/15/94 Converted 2 spare 50mV channels to Power Processor Subsystem A and B currents

Changes:

12/15/94 Format change - reduced memory/bin dumps by 16 bits per minor (256 per major) frame, added in phase angle latched at sun pulse

1/5/95 Use spare AD590 channel for Terminal Board #1/Fuse Temperature

1/5/95 Use spare 50mV channel for Axial Thruster Current

1/11/95 Use 2 spare digttsw channels to add mag boom stowed telltales

1/24/95 Add C&DH A and B designations to propulsion latch valve telltales

1/26/94 Deleted 4 spare channels (DCM1 - SEA #14,15 and DCM1 - PT103 # 25,26; added phase angle latched at sun pulse to Science Format

1/26/95 Add S3DPU Power Converter Select TT to DCM1 - DIGTTSW-13; move S3DPU Interface A/B Select to DIGTTLOG-7

3/9/95 Deleted SEPICA Cover Tellale, added SIS Cover #1, #2 Telltales

4/4/95 Deleted ULEIS AE HVPS 50 mV channel

4/12/95 Changed Propellant Tank Pressure #1 and #2 to Propellant Tank Pressure A and B

4/13/95 Added SEPICA Gas Valve Telltale to DCMS-Digital Telltale-Switch Channel #15

5/5/95 Deleted SIS Cover TT #2 from DCM1-DIGTTSW15; made spare

5/5/95 Rename Propellant Tank Pressure to Propellant Pressure

5/5/95 Replaced 48 bits of spare in low rate ADC format with 6 PT103 channels: +/-Y Solar Panel & Hinge Temperatures (4 total) & +X/+Y Pnl Temp 2 & +Y/-X Pnl Temp 2

5/5/95 Renamed the following AD590 channels from to:

DCM1-AD0	PSCE Temp2	Misc Deck Temp #6
DCM1-AD1	PSDE Temp2	Misc Deck Temp #8
DCM1-AD2	+Y Digital Shunt Temp	+Y Deck Temp
DCM1-AD3	-X Digital Shunt Temp	-X Deck Temp
DCM1-AD4	-Y Digital Shunt Temp	-Y Deck Temp
DCM2-AD4	PSCE Temp1	Misc Deck Temp #5
DCM2-AD5	PSDE Temp1	Misc Deck Temp #7
DCM2-AD6	+X Digital Shunt Temp	+X Deck Temp

6/8/95 For mag boom deployed and stowed telltales, separated out telltales for C&DH A & B because one switch used for each function, with separate pole to each C&DH, so logic level is inverted to each C&DH

8/30/95 Updated names of most temperature channels to make more descriptive; used some spare temperature channels

9/11/95 Updated names of 50mV differential channels

9/12/95 Got corrected names for some 50mV differential channels

10/4/95 Added explanations about when attitude related data is sampled

11/21/95 Move S3DPU converter B temperature from DCM1-AD23 (delete this channel) to DCM2-AD30 (in place of Instrument Deck Temp #3)

11/21/95 Show DCM1-PT22 in ADC, Low Rate Housekeeping, Bin Dump, Memory Dump formats twice instead of once

Changes:

11/28/95 Re-specified the contents of the ADC format to make clearer what is the content of the major frame instead of the minor frame

12/5/95 Power Switching Component Currents (side A & B) now added together and split over 2 channels

12/5/95 Ordnance Fire Component Currents (side A & B) now added together and split over 2 channels

12/11/95 ULEIS survival heater current moved from DCM1-DIFA22 to DCM2-DIFA19

1/4/96 Changed name of DCM1-SEA0 & 3 per SWEPAM request

1/23/96 Interchange DCM1-AD30 (Instrument Deck Temp (TBD) #2) and DCM2-AD30 (S3DPU Power Converter B Temp)

2/1/96 Added Transfer Frame Failure Report to ADC, LR Hskp, LR Mem Dump, and LR Bin Dump Formats

2/13/96 Made changes in ADC, LR ADC, RTSW, Data Collection Buffer formats to better define X & Y angle Sun Sensor data and to show what minor frame they (and/or other data) were collected in

2/13/96 Added spare serial digital channel to ADC, LR Hskp, LR Bin Dump, LR Memory Dump formats in place of spare

3/15/96 Transponders delivered with thermistors instead of AD590s - make spare the AD590 channels (DCM2-AD0, DCM2-AD1), use the spare 5Vchannels (DCM1-SEA18, DCM2-SEA20). Note - the AD590 channels are no longer usable because the high side resistor for them are being used to condition the thermistors.

3/15/96 The Mag Sensor I/F PT103 channels are not needed, make spare

Format Descriptions

Science Format - Major frame contains all housekeeping; short Star Camera readout

ADC Format - reduced science; includes full sun sensor, full star camera data

C&DH Bin Dump - housekeeping (176 bits/sec) replaced with C&DH Bin Data

C&DH Memory Dump - housekeeping (176 bits/sec) replaced with C&DH memory data

Low Rate HSKP Format - Contains all housekeeping in default format + increased sun sensor data + empty slot for memory dump data

Low Rate C&DH Bin Dump - same as Low Rate Default except memory dump slot filled with C&DH Bin Data

Low Rate C&DH Memory Dump - same as Low Rate Default except memory dump slot filled with C&DH Memory Data

Low Rate ADC Format - same as low rate HSKP format except reduced housekeeping, and includes star camera data and full sun sensor data

RTSW Format - contains EPAM, SWEPAM(I), Mag data

Data Content of Major Frame

Contact	Parameter	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
	Science Serial Digital Channels - divide major frame bit allocation by 16 to get minor frame bit allocation								
J. Cloeren	CRIS Data	DCM2-SD0	1	7,424	7,424	7,424	0	0	0
J. Cloeren	SIS Data	DCM2-SD1	1	31,872	31,872	31,872	0	0	0
J. Cloeren	EPAM Data	DCM1-SD0	1	2,688	2,688	2,688	0	0	2,688
J. Cloeren	ULEIS Data	DCM1-SD1	1	16,000	0	16,000	0	0	0
J. Cloeren	SWEPAM Ion Data	DCM1-SD2	1	8,704	8,704	8,704	0	0	2,688
	Note SWEPAM Ion Data - 544 bits of 712 in Science Minor frame, other 168 of 712 in RTSW Minor frame								
J. Cloeren	SWEPAM Electron Data	DCM2-SD2	1	7,296	0	7,296	0	0	0
J. Cloeren	S^3 DPU Data	DCM1-SD3	1	25,984	0	25,984	0	0	0
J. Cloeren	Magnetometer Data	DCM2-SD3	1	4,864	4,864	4,864	0	0	768
	Bits per major frame			104,832	55,552	104,832	0	0	6,144
	Number of interfaces required		8						

Telemetry List

Data Content of Major Frame

Contact	Parameter HSKP Serial Digital Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
R. Conde	Active C&DH Component Hskp Data		0	384	6,144	0	384	384	0
R. Conde	Transfer Frame Failure Report		0	0	1,536	0	96	0	0
R. Conde	Opposite C&DH Component Hskp Data	DCM1-SD4	1	64	1,024	0	64	64	0
J. Kroutil	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5	1	112	1,792	0	112	112	0
R. Burek	Data Recorder A Hskp Data	DCM2-SD4	1	144	2,304	0	144	144	0
R. Burek	Data Recorder B Hskp Data	DCM2-SD5	1	144	2,304	0	144	144	0
P. Panneton	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6	1	128	2,048	0	128	128	0
P. Panneton	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7	1	128	2,048	0	128	128	0
L. Scheer	Star Scanner Data	DCM1-SD6	1	64	1,024	0	64	1,024	0
	4 samples in a row from same major frame when allocated 64 bits per major frame								
R. Conde	Spare Serial Digital Data	DCM1-SD7	1	0	32	0	32	0	0
	Bits per major frame			1,168	20,224	0	1,296	2,128	0
	Number of interfaces required		8						

Data Content of Major Frame

Contact	Parameter Sun Angle Processing (in C&DH)	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Hunt	Phase Angle latched in collected minor frame 0	16	16	16	16	16	16
J. Hunt	Phase Angle latched in collected minor frame 1	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 2	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 3	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 4	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 5	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 6	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 7	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 8	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 9	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 10	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 11	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 12	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 13	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 14	16	16	16	0	0	16
J. Hunt	Phase Angle latched in collected minor frame 15	16	16	16	0	0	16
	Note: Phase Angle latched in minor frame "N" is latched with Minor Frame Pulse						
R. Conde	Phase Angle latched at most recent Sun Pulse	16	256	0	16	16	16
R. Conde	Phase Angle latched at next to most recent Sun Pulse	16	0	0	16	16	16
J. Hunt	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	48	384	0	24	24	24
J. Hunt	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	0	0	0	24	24	24
	Note: subsecond count = ticks of a 684.75 Hz clock						
J. Hunt	Sun Sensor X & Y-Axis Angles - 16 bits (no ID) latched at 11 Hz rate	0	2,816	0	0	2,816	0
	Note: sun angles latched every 1/11 (90.9... ms) seconds starting at minor frame pulse						
	Bits per major frame	336	3,712	256	96	2,912	336

Data Content of Major Frame

Contact	Parameter Digital Telltale Channels - Switch Outputs	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
C. Willey	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0	1	0	16	0	1	1	0
C. Willey	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1	1	0	16	0	1	1	0
C. Willey	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2	1	0	16	0	1	1	0
C. Willey	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3	1	0	16	0	1	1	0
C. Willey	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4	1	0	16	0	1	1	0
C. Willey	+Y Mag Boom not Deployed Switch - C&DH B only	DCM1-DIGTTSW4							
C. Willey	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5	1	0	16	0	1	1	0
C. Willey	-Y Mag Boom not Deployed Switch - C&DH B only	DCM1-DIGTTSW5							
C. Willey	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6	1	0	16	0	1	1	0
C. Willey	+Y Mag Boom not Stowed Switch - C&DH B only	DCM1-DIGTTSW6							
C. Willey	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7	1	0	16	0	1	1	0
C. Willey	-Y Mag Boom not Stowed Switch - C&DH B only	DCM1-DIGTTSW7							
J.Tarr	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8	1	1	16	0	1	1	0
J.Tarr	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9	1	1	16	0	1	1	0
J.Tarr	Prime Charger Selected TT	DCM1-DIGTTSW10	1	1	16	0	1	1	0
J.Tarr	Redundant Charger Selected TT	DCM1-DIGTTSW11	1	1	16	0	1	1	0
J. Cloeren	SWIMS Cover Telltale	DCM1-DIGTTSW12	1	1	16	0	1	1	0
J. Cloeren	S3DPU Power Converter Select TT	DCM1-DIGTTSW13	1	1	16	0	1	1	0
J. Cloeren	SIS Cover Telltale	DCM1-DIGTTSW14	1	1	16	0	1	1	0
R. Conde	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15	1	1	16	0	1	1	0
M. McCullough	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0	1	1	16	0	1	1	0
M. McCullough	PS Latch Valve A1 Closed - C&DH B only	DCM2-DIGTTSW0							
M. McCullough	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1	1	1	16	0	1	1	0
M. McCullough	PS Latch Valve A2 Closed - C&DH B only	DCM2-DIGTTSW1							
M. McCullough	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2	1	1	16	0	1	1	0
M. McCullough	PS Latch Valve B1 Closed - C&DH B only	DCM2-DIGTTSW2							
M. McCullough	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3	1	1	16	0	1	1	0
M. McCullough	PS Latch Valve B2 Closed - C&DH B only	DCM2-DIGTTSW3							

Data Content of Major Frame

Contact	Parameter Digital Telltale Channels - Switch Outputs	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Colson	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4	1	1	16	0	1	1	0
J. Colson	Trpndr A antenna SW #1 to SW #2 - C&DH B only	DCM2-DIGTTSW4							
J. Colson	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5	1	1	16	0	1	1	0
J. Colson	Trpndr A antenna SW #2 to Hi Gain RHC - C&DH B only	DCM2-DIGTTSW5							
J. Colson	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6	1	1	16	0	1	1	0
J. Colson	Trpndr B antenna SW #1 to SW #2 - C&DH B only	DCM2-DIGTTSW6							
J. Colson	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7	1	1	16	0	1	1	0
J. Colson	Trpndr B antenna SW #2 to Hi gain LHC - C&DH B only	DCM2-DIGTTSW7							
R. Conde	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14	1	1	16	0	1	1	0
R. Conde	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15	1	1	16	0	1	1	0
	Bits per Major Frame			24	512	0	32	32	0
	Number of Interfaces Required		32						

Data Content of Major Frame

Contact	Parameter Digital Telltale Channels - Logic Outputs	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
M. Reinhart	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0	1	1	16	0	1	1	0
M. Reinhart	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1	1	1	16	0	1	1	0
M. Reinhart	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2	1	1	16	0	1	1	0
M. Reinhart	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3	1	1	16	0	1	1	0
M. Reinhart	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4	1	1	16	0	1	1	0
M. Reinhart	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5	1	1	16	0	1	1	0
M. Reinhart	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6	1	1	16	0	1	1	0
R. Conde	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6	1	1	16	0	1	1	0
R. Conde	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7	1	1	16	0	1	1	0
	Bits per Major Frame (round up to mult. of 8 bits)			16	256	0	16	16	0
	Number of Interfaces Required		16						

Data Content of Major Frames

Contact	Parameter Parameter 0-5V Single-ended Analog Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Cloeren	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5	1	8	128	0	8	8	0
J. Cloeren	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6	1	8	128	0	8	8	0
J. Cloeren	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7	1	8	128	0	8	8	0
J. Cloeren	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8	1	8	128	0	8	8	0
J. Cloeren	EPAM Analog A4 Input Current Monitor	DCM1-SEA9	1	8	128	0	8	8	0
J. Cloeren	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10	1	8	128	0	8	8	0
J. Cloeren	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11	1	8	128	0	8	8	0
J. Cloeren	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12	1	8	128	0	8	8	0
J. Cloeren	ULEIS LVPS Voltage	DCM1-SEA13	1	8	128	0	8	8	0
R. Burek	Solid State Recorder A DCDCOUT	DCM1-SEA16	1	8	128	0	8	8	0
R. Burek	Solid State Recorder B DCDCOUT	DCM1-SEA17	1	8	128	0	8	8	0
R. Conde	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18	1	8	128	0	8	8	0
R. Conde	C&DH A Converter Voltage	DCM2-SEA0	1	8	128	0	8	8	0
R. Conde	C&DH B Converter Voltage	DCM2-SEA1	1	8	128	0	8	8	0
W. Henderson	Main Bus Current	DCM2-SEA2	1	8	128	0	8	8	0
W. Henderson	Main Bus Voltage	DCM2-SEA3	1	8	128	0	8	8	0
P. Panneton	Battery Voltage	DCM2-SEA4	1	8	128	0	8	8	0
M. McCullough	Propellant Pressure A	DCM2-SEA5	1	8	128	0	8	8	0

Data Content of Major Frames

Contact	Parameter Parameter 0-5V Single-ended Analog Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
M. McCullough	Propellant Pressure B	DCM2-SEA6	1	8	128	0	8	8	0
M. Reinhart	Transponder A Receiver AGC	DCM2-SEA7	1	8	128	0	8	8	0
M. Reinhart	Transponder A Receiver SPE	DCM2-SEA8	1	8	128	0	8	8	0
M. Reinhart	Transponder A Receiver +5V	DCM2-SEA9	1	8	128	0	8	8	0
M. Reinhart	Transponder B Receiver AGC	DCM2-SEA10	1	8	128	0	8	8	0
M. Reinhart	Transponder B Receiver SPE	DCM2-SEA11	1	8	128	0	8	8	0
M. Reinhart	Transponder B Receiver +5V	DCM2-SEA12	1	8	128	0	8	8	0
M. Reinhart	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13	1	8	128	0	8	8	0
W. Trimble	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14	1	8	128	0	8	8	0
J. Cloeren	Magnetometer Inboard Temperature	DCM2-SEA15	1	8	128	0	8	8	0
J. Cloeren	Magnetometer Outboard Temperature	DCM2-SEA16	1	8	128	0	8	8	0
J. Cloeren	Magnetometer Inboard Heater Power Level	DCM2-SEA17	1	8	128	0	8	8	0
J. Cloeren	Magnetometer Outboard Heater Power Level	DCM2-SEA18	1	8	128	0	8	8	0
J. Cloeren	S3 DPU Power Converter Voltage	DCM2-SEA19	1	8	128	0	8	8	0
M. Reinhart	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20	1	8	128	0	8	8	0
	Number of interfaces required		38						
	Bits per major frame			304	4,864	0	304	304	0

Data Content of Major Frames

Contact	Parameter 50mV Differential Analog Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
R. Conde	C&DH Component A Current	DCM2-DIFA0	1	8	128	0	8	8	0
R. Conde	C&DH Component B Current	DCM2-DIFA1	1	8	128	0	8	8	0
J. Kroutil	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2	1	8	128	0	8	8	0
J. Kroutil	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3	1	8	128	0	8	8	0
J. Kroutil	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4	1	8	128	0	8	8	0
J. Kroutil	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5	1	8	128	0	8	8	0
R. Burek	Data Recorder A Current	DCM2-DIFA6	1	8	128	0	8	8	0
R. Burek	Data Recorder B Current	DCM2-DIFA7	1	8	128	0	8	8	0
L. Scheer	Star Scanner Current	DCM2-DIFA8	1	8	128	0	8	8	0
M. Reinhart	Transponder A Receiver Current	DCM2-DIFA9	1	8	128	0	8	8	0
W. Gray	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10	1	8	128	0	8	8	0
M. Reinhart	Transponder B Receiver Current	DCM2-DIFA11	1	8	128	0	8	8	0
W. Gray	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12	1	8	128	0	8	8	0
J. Maynard	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13	1	8	128	0	8	8	0
P. Panneton	Battery Current Charge Monitor	DCM2-DIFA14	1	8	128	0	8	8	0
P. Panneton	Battery Current Discharge Monitor	DCM2-DIFA15	1	8	128	0	8	8	0
W. Henderson	Heater-Battery A&B Current	DCM2-DIFA16	1	8	128	0	8	8	0
J. Maynard	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17	1	8	128	0	8	8	0
J. Maynard	Heater-Spacecraft Operational Current	DCM2-DIFA18	1	8	128	0	8	8	0
J. Tarr	PSE Analog Shunt Current	DCM2-DIFA19	1	8	128	0	8	8	0
L. Scheer	DSAD A Current	DCM2-DIFA20	1	8	128	0	8	8	0
L. Scheer	DSAD B Current	DCM2-DIFA21	1	8	128	0	8	8	0
M. McCullough	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0	1	0	128	0	8	8	0
M. McCullough	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1	1	0	128	0	8	8	0
M. McCullough	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2	1	0	128	0	8	8	0
M. McCullough	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3	1	0	128	0	8	8	0
M. McCullough	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4	1	0	128	0	8	8	0
M. McCullough	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5	1	0	128	0	8	8	0

Data Content of Major Frames

Contact	Parameter 50mV Differential Analog Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
M. McCullough	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6	1	0	128	0	8	8	0
M. McCullough	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7	1	0	128	0	8	8	0
M. McCullough	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8	1	0	128	0	8	8	0
M. McCullough	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9	1	0	128	0	8	8	0
M. McCullough	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10	1	0	128	0	8	8	0
M. McCullough	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11	1	0	128	0	8	8	0
M. McCullough	Heater-Prop. System Deck Primary Current	DCM1-DIFA12	1	8	128	0	8	8	0
M. McCullough	Heater-Prop. System Deck Backup Current	DCM1-DIFA13	1	8	128	0	8	8	0
M. McCullough	Pressure Transducer #1 & #2 Current	DCM1-DIFA14	1	8	128	0	8	8	0
J. Cloeren	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15	1	8	128	0	8	8	0
J. Cloeren	SIS, I/F, & Survival Heater Current	DCM1-DIFA16	1	8	128	0	8	8	0
J. Cloeren	EPAM Electronics & I/F Heater Current	DCM1-DIFA17	1	8	128	0	8	8	0
J. Cloeren	EPAM Survival/Operational Heater Current	DCM1-DIFA18	1	8	128	0	8	8	0
J. Cloeren	ULEIS & Survival Heater Current	DCM1-DIFA19	1	8	128	0	8	8	0
J. Cloeren	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20	1	8	128	0	8	8	0
J. Cloeren	DCM1 - 0-50mV Channel #21	DCM1-DIFA21	1	8	128	0	8	8	0
J. Cloeren	ULEIS Internal & I/F Heater Current	DCM1-DIFA22	1	8	128	0	8	8	0
J. Cloeren	SWEPAM Electron Current	DCM1-DIFA23	1	8	128	0	8	8	0
J. Cloeren	SWEPAM Ion Current	DCM1-DIFA24	1	8	128	0	8	8	0
J. Cloeren	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25	1	8	128	0	8	8	0
J. Cloeren	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26	1	8	128	0	8	8	0
J. Cloeren	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27	1	8	128	0	8	8	0
J. Cloeren	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28	1	8	128	0	8	8	0
J. Cloeren	S^3 DPU Current	DCM1-DIFA29	1	8	128	0	8	8	0
J. Cloeren	S^3 DPU Converter Secondary Current	DCM1-DIFA30	1	8	128	0	8	8	0
P. Panneton	Power Subsystem Processor A Current	DCM2-DIFA22	1	8	128	0	8	8	0
P. Panneton	Power Subsystem Processor B Current	DCM2-DIFA23	1	8	128	0	8	8	0
M. McCullough	Prop. System Axial Thruster Current	DCM2-DIFA24	1	8	128	0	8	8	0

Data Content of Major Frames

Contact	Parameter 50mV Differential Analog Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
R. Conde	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25	1	8	128	0	8	8	0
J. Maynard	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26	1	8	128	0	8	8	0
	Number of interfaces required		58						
	Bits per major frame			368	7,424	0	464	464	0

Data Content of Major Frames

Contact	Parameter AD590 Temperature Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
M. Reinhart	DCM2 AD590 Channel # 0 - not used	DCM2-AD0	1	8	128	0	8	8	0
M. Reinhart	DCM2 AD590 Channel # 1 - not used	DCM2-AD1	1	8	128	0	8	8	0
P. Panneton	Battery Temperature 1: Top of Center Cell	DCM2-AD2	1	8	128	0	8	8	0
P. Panneton	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3	1	8	128	0	8	8	0
J. Tarr	-Y Side Panel: Near PSDE	DCM2-AD4	1	8	128	0	8	8	0
J. Tarr	Back of +X Forward Radiator	DCM1-AD0	1	0	128	0	8	8	0
J. Tarr	-X Side Panel: Near Digital Shunt Box	DCM2-AD5	1	8	128	0	8	8	0
J. Tarr	Back of -X/-Y Forward Radiator	DCM1-AD1	1	0	128	0	8	0	0
J. Tarr	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6	1	8	128	0	8	8	0
J. Tarr	+Y Side Panel: Near Digital Shunt	DCM1-AD2	1	0	128	0	8	8	0
J. Tarr	-X Side Panel: TBD	DCM1-AD3	1	0	128	0	8	8	0
J. Tarr	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4	1	0	128	0	8	8	0
R. Conde	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7	1	8	128	0	8	8	0
R. Conde	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8	1	8	128	0	8	8	0
R. Conde	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9	1	8	128	0	8	8	0
R. Burek	Solid State Recorder A PWRTEMP	DCM2-AD10	1	8	128	0	8	8	0
R. Burek	Solid State Recorder B PWRTEMP	DCM2-AD11	1	8	128	0	8	8	0
M. McCullough	Propellant Tank A1 Temperature	DCM2-AD12	1	8	128	0	8	8	0
M. McCullough	Propellant Tank A2 Temperature	DCM2-AD13	1	8	128	0	8	8	0
M. McCullough	Propellant Tank B1 Temperature	DCM2-AD14	1	8	128	0	8	8	0
M. McCullough	Propellant Tank B2 Temperature	DCM2-AD15	1	8	128	0	8	8	0
M. McCullough	Internal Lines A Temperature	DCM2-AD16	1	8	128	0	8	8	0
M. McCullough	Internal Lines B Temperature	DCM2-AD17	1	8	128	0	8	8	0
M. McCullough	External Lines +X Temperature	DCM2-AD18	1	8	128	0	8	8	0
M. McCullough	External Lines -X Temperature	DCM2-AD19	1	8	128	0	8	8	0
J. Maynard	Star Scanner Temperature: Near Base	DCM2-AD20	1	8	128	0	8	8	0
J. Maynard	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21	1	8	128	0	8	8	0
J. Cloeren	SWIMS Internal Temperature	DCM1-AD5	1	8	128	0	8	8	0
J. Maynard	SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6	1	0	128	0	8	0	0

Data Content of Major Frames

Contact	Parameter AD590 Temperature Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Cloeren	SWICS Internal Temperature	DCM1-AD7	1	8	128	0	8	8	0
J. Maynard	SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8	1	0	128	0	8	0	0
J. Cloeren	ULEIS Telescope Temperature	DCM1-AD9	1	8	128	0	8	8	0
J. Cloeren	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10	1	8	128	0	8	8	0
J. Cloeren	ULEIS DPU Temperature (Internal)	DCM1-AD11	1	8	128	0	8	8	0
J. Maynard	ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12	1	0	128	0	8	0	0
J. Maynard	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13	1	0	128	0	8	8	0
J. Cloeren	CRIS Internal Temperature #1	DCM1-AD14	1	8	128	0	8	8	0
J. Cloeren	CRIS Internal Temperature #2	DCM1-AD15	1	8	128	0	8	8	0
J. Maynard	CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16	1	0	128	0	8	0	0
J. Cloeren	SIS Internal Temperature #1	DCM1-AD17	1	8	128	0	8	8	0
J. Cloeren	SIS Internal Temperature #2	DCM1-AD18	1	8	128	0	8	8	0
J. Maynard	SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19	1	0	128	0	8	0	0
J. Cloeren	SEPICA Iso-Butane Tank Temperature	DCM1-AD20	1	8	128	0	8	8	0
J. Maynard	SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21	1	0	128	0	8	0	0
J. Cloeren	S^3 DPU Power Supply A Temperature	DCM1-AD22	1	8	128	0	8	8	0
J. Cloeren	SWEPAM(E) Internal Temperature	DCM1-AD24	1	8	128	0	8	8	0
J. Maynard	SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25	1	0	128	0	8	0	0
J. Cloeren	SWEPAM(I) Internal Temperature	DCM1-AD26	1	8	128	0	8	8	0
J. Maynard	SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27	1	0	128	0	8	0	0
J. Maynard	Terminal Board #1/Fuse Temperature	DCM1-AD28	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temperature (TBD) #1	DCM1-AD29	1	8	128	0	8	8	0
J. Cloeren	S^3 DPU Power Supply B Temperature	DCM1-AD30	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25	1	8	128	0	8	8	0
J. Maynard	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27	1	8	128	0	8	8	0

Data Content of Major Frames

Contact	Parameter AD590 Temperature Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Maynard	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29	1	8	128	0	8	8	0
J. Maynard	Instrument Deck Temperature (TBD) #2	DCM2-AD30	1	8	128	0	8	8	0
	Number of interfaces required		61						
	Bits per major frame			376	7,808	0	488	416	0

Data Content of Major Frames

Contact	Parameter PT103 Temperature Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
P. Panneton	+X Solar Array Panel Temperature	DCM2-PT0	1	8	128	0	8	8	0
C. Willey	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1	1	8	128	0	8	8	0
P. Panneton	-X Solar Array Panel Temperature	DCM2-PT2	1	8	128	0	8	8	0
C. Willey	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3	1	8	128	0	8	8	0
P. Panneton	+Y Solar Array Panel Temperature	DCM1-PT0	1	0	128	0	8	8	0
C. Willey	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1	1	0	128	0	8	8	0
P. Panneton	-Y Solar Array Panel Temperature	DCM1-PT2	1	0	128	0	8	8	0
C. Willey	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IA Temperature	DCM1-PT4	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IR Temperature	DCM1-PT5	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IVA Temperature	DCM1-PT6	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IVR+ Temperature	DCM1-PT7	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IVR- Temperature	DCM1-PT8	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IIIR- Temperature	DCM1-PT9	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IIIR+ Temperature	DCM1-PT10	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IIIA Temperature	DCM1-PT11	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IIR Temperature	DCM1-PT12	1	0	128	0	8	8	0
M. McCullough	Thruster Valve IIA Temperature	DCM1-PT13	1	0	128	0	8	8	0
J. Maynard	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4	1	8	128	0	8	8	0
J. Maynard	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5	1	8	128	0	8	8	0
J. Maynard	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6	1	8	128	0	8	8	0
J. Maynard	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14	1	0	128	0	8	8	0
J. Maynard	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7	1	8	128	0	8	8	0
J. Maynard	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8	1	8	128	0	8	8	0
J. Maynard	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9	1	8	128	0	8	8	0
J. Maynard	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15	1	0	128	0	8	8	0
J. Maynard	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10	1	8	128	0	8	8	0
J. Maynard	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16	1	0	128	0	8	8	0
J. Maynard	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11	1	8	128	0	8	8	0

Data Content of Major Frames

Contact	Parameter PT103 Temperature Channels	Channel ID	# I/F's	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
J. Maynard	-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17	1	0	128	0	8	0	0
J. Maynard	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12	1	8	128	0	8	8	0
J. Maynard	-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18	1	0	128	0	8	0	0
J. Maynard	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13	1	8	128	0	8	8	0
J. Maynard	-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19	1	0	128	0	8	0	0
J. Maynard	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14	1	8	128	0	8	8	0
J. Maynard	-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20	1	0	128	0	8	0	0
J. Maynard	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15	1	8	128	0	8	8	0
J. Maynard	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16	1	8	128	0	8	8	0
R. Stilwell	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17	1	8	128	0	8	8	0
R. Stilwell	Antenna Dish Feed: Use Long Leads	DCM1-PT21	1	0	128	0	8	0	0
R. Stilwell	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18	1	8	128	0	8	8	0
R. Stilwell	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	1	0	256	0	16	0	0
J. Maynard	Analog Shunt Panel Temperature	DCM1-PT23	1	8	128	0	8	8	0
J. Maynard	Aft Deck Temperature (TBD) #1	DCM1-PT24	1	8	128	0	8	8	0
J. Maynard	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27	1	8	128	0	8	8	0
J. Maynard	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28	1	8	128	0	8	8	0
J. Maynard	Aft Deck Temperature: Center of Deck	DCM2-PT19	1	8	128	0	8	8	0
J. Maynard	Aft Deck Temperature: Between Transponders	DCM2-PT20	1	8	128	0	8	8	0
J. Maynard	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21	1	8	128	0	8	0	0
J. Maynard	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22	1	8	128	0	8	0	0
J. Maynard	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23	1	8	128	0	8	0	0
	Number of interfaces required		51						
	Bits per major frame			224	6,656	0	416	336	0

Data Content of Major Frames

	Science	ADC	C&DH Bin & Memory Dump	Low Rate Hskp, Bin & Memory Dump	Low Rate ADC	RTSW
Science per Major Frame	104,832	55,552	104,832	0	0	6,144
Housekeeping per Second	176	3,216	176	354.5	413	405
Housekeeping per Major Frame	2,816	51,456	2,816	5,672	6,608	6,480
Major frame spare	0	640	0	936	0	128
Headers/Fields always present						
Packet Primary Header (48 bits/minor frame)	768	768	768	48	48	48
Packet Secondary Header (32 bits/minor frame)	512	512	512	32	32	32
Minor Frame Header (16 bits per minor frame)	256	256	256	16	16	16
VC Transfer Frame Header (48 bits/minor frame)	768	768	768	48	48	48
VC Transfer Frame Sync (32 bits/minor frame)	512	512	512	32	32	32
Selectable Telemetry Byte (8 bits/sec)	128	128	128	128	128	128
Command Link Control Word (32 bits/minor frame)	512	512	512	32	32	32
Header bits per minor frame	216	216	216	336	336	336
Header bits per major frame	3,456	3,456	3,456	336	336	336
Total Major Frame content, including spare	111,104	111,104	111,104	6,944	6,944	6,944
Minor Frame Length	6,944	6,944	6,944	6,944	6,944	6,944

Spare Channels in DCM#1 included in formats

DCM1 - 0-50mV Channel #21	DCM1-DIFA21

Uncommited Spares in Data Collection Machine #1

DCM1 - 0-5V Channel #14 (not in any format)	DCM1-SEA14
DCM1 - 0-5V Channel #15 (not in any format)	DCM1-SEA15
DCM1 - 0-5V Channel #19 (not in any format)	DCM1-SEA19
DCM1 - 0-5V Channel #20 (not in any format)	DCM1-SEA20
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24
DCM1 - 0-5V Channel #25 (not in any format)	DCM1-SEA25
DCM1 - 0-5V Channel #26 (not in any format)	DCM1-SEA26
DCM1 - 0-5V Channel #27 (not in any format)	DCM1-SEA27
DCM1 - 0-5V Channel #28 (not in any format)	DCM1-SEA28
DCM1 - 0-5V Channel #29 (not in any format)	DCM1-SEA29
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30
DCM1 - PT103 Channel #25 (not in any format)	DCM1-PT25
DCM1 - PT103 Channel # 26 (not in any format)	DCM1-PT26
DCM1 - PT103 Channel # 29 (not in any format)	DCM1-PT29
DCM1 - PT103 Channel # 30 (not in any format)	DCM1-PT30

Spare Channels in DCM#2 included in formats

DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
DCM2 AD590 Channel #0 - Spare	DCM2-AD0
DCM2 AD590 Channel #1 - Spare	DCM2-AD1
DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
DCM2 - PT103 Channel # 16 - spare	DCM2-PT16

Uncommited Spares in Data Collection Machine #2

DCM2 - 0-5V Channel #21 (not in any format)	DCM2-SEA21
DCM2 - 0-5V Channel #22 (not in any format)	DCM2-SEA22
DCM2 - 0-5V Channel #23 (not in any format)	DCM2-SEA23
DCM2 - 0-5V Channel #24 (not in any format)	DCM2-SEA24
DCM2 - 0-5V Channel #25 (not in any format)	DCM2-SEA25
DCM2 - 0-5V Channel #26 (not in any format)	DCM2-SEA26
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30
DCM2 - 0-50mV Channel #27 (not in any format)	DCM2-DIF27
DCM2 - 0-50mV Channel #28 (not in any format)	DCM2-DIF28
DCM2 - 0-50mV Channel #29 (not in any format)	DCM2-DIF29
DCM2 - 0-50mV Channel #30 (not in any format)	DCM2-DIF30
DCM2 - PT103 Channel #24 (not in any format)	DCM2-PT24
DCM2 - PT103 Channel #25 (not in any format)	DCM2-PT25
DCM2 - PT103 Channel #26 (not in any format)	DCM2-PT26
DCM2 - PT103 Channel #27 (not in any format)	DCM2-PT27
DCM2 - PT103 Channel #28 (not in any format)	DCM2-PT28
DCM2 - PT103 Channel #29 (not in any format)	DCM2-PT29
DCM2 - PT103 Channel #30 (not in any format)	DCM2-PT30

4 Collection Formats

Data is collected simultaneously by a Data Collection Machine (DCM) on both Common Housekeeping boards. Each Common Housekeeping board collects a different set of telemetry; Two boards are required to accommodate the number of telemetry channels required for ACE; they are not for redundancy. The Collection format describes the order in which telemetry items are collected. The time after the minor frame pulse that each item is collected can be calculated by looking up the number of bits into the frame that the item is collected and multiplying by the time per bit (1/10956 Hertz). Each DCM collects a total of 6144 bits (768 bytes). All 768 bytes from each DCM is placed in the Data Collection Buffer. The data is collected in an order that simplifies the construction of telemetry frames. Each board can be set to one of two formats. Format 0 collects all science and housekeeping data. Format 1 collects all housekeeping data except for the serial digital channels.

4.1 Data Collection Machine 1 Formats

The two DCM1 collection formats are as follows:

Data Collection Machine #1
Format 0 - includes all telemetry items

Parameter	Channel	Length	Start
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	0
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	8
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	16

Unused Channels

DCM1 - 0-5V Channel #19 (not in any format)	DCM1-SEA19	8	24
DCM1 - 0-5V Channel #20 (not in any format)	DCM1-SEA20	8	32
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	40
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	48
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	56
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	64
DCM1 - 0-5V Channel #25 (not in any format)	DCM1-SEA25	8	72
DCM1 - 0-5V Channel #26 (not in any format)	DCM1-SEA26	8	80
DCM1 - 0-5V Channel #27 (not in any format)	DCM1-SEA27	8	88
DCM1 - 0-5V Channel #28 (not in any format)	DCM1-SEA28	8	96
DCM1 - 0-5V Channel #29 (not in any format)	DCM1-SEA29	8	104
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	8	112
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	8	120
DCM1 - PT103 Channel # 29 (not in any format)	DCM1-PT29	8	128
DCM1 - PT103 Channel # 30 (not in any format)	DCM1-PT30	8	136

Grouping for ADC, Low Rate Formats

+Y Solar Array Panel Temperature	DCM1-PT0	8	144
+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1	8	152
-Y Solar Array Panel Temperature	DCM1-PT2	8	160
-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3	8	168
+Y Side Panel: Near Digital Shunt	DCM1-AD2	8	176
-X Side Panel: TBD	DCM1-AD3	8	184
-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4	8	192
+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14	8	200
+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15	8	208
-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16	8	216
-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17	8	224
-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18	8	232
-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19	8	240
-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20	8	248
Antenna Dish Feed: Use Long Leads	DCM1-PT21	8	256
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	8	264
Back of +X Forward Radiator	DCM1-AD0	8	272
Back of -X/-Y Forward Radiator	DCM1-AD1	8	280
SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6	8	288
SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8	8	296
ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12	8	304
EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13	8	312

Parameter	Channel	Length	Start
CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16	8	320
SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19	8	328
SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21	8	336
SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25	8	344
SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27	8	352
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	8	360
-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7	1	368
+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6	1	369
-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5	1	370
+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4	1	371
-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3	1	372
-X Solar Panel Stowed Switch	DCM1-DIGTTSW2	1	373
+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1	1	374
+X Solar Panel Stowed Switch	DCM1-DIGTTSW0	1	375
Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10	8	376
Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11	8	384
Thruster Valve IA Temperature	DCM1-PT4	8	392
Thruster Valve IR Temperature	DCM1-PT5	8	400
Thruster Valve IVA Temperature	DCM1-PT6	8	408
Thruster Valve IVR+ Temperature	DCM1-PT7	8	416
Thruster Valve IVR- Temperature	DCM1-PT8	8	424
Thruster Valve IIIR- Temperature	DCM1-PT9	8	432
Thruster Valve IIIR+ Temperature	DCM1-PT10	8	440
Thruster Valve IIIA Temperature	DCM1-PT11	8	448
Thruster Valve IIR Temperature	DCM1-PT12	8	456
Thruster Valve IIA Temperature	DCM1-PT13	8	464
Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0	8	472
Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1	8	480
Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2	8	488
Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3	8	496
Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4	8	504
Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5	8	512
Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6	8	520
Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7	8	528
Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8	8	536
Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9	8	544
Grouping for Minor Frame 9 of Science Format			
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	552
SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1	8	560
SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2	8	568
SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3	8	576
SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4	8	584
SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5	8	592
EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6	8	600
EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7	8	608

Parameter	Channel	Length	Start
EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8	8	616
EPAM Analog A4 Input Current Monitor	DCM1-SEA9	8	624
EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10	8	632
EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11	8	640
EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12	8	648
ULEIS LVPS Voltage	DCM1-SEA13	8	656
CRIS Internal Temperature #1	DCM1-AD14	8	664
CRIS Internal Temperature #2	DCM1-AD15	8	672
SIS Internal Temperature #1	DCM1-AD17	8	680
SIS Internal Temperature #2	DCM1-AD18	8	688
(insert for phase angle latched @ sun pulse)		16	
DCM1 - 0-5V Channel #14 (not in any format)	DCM1-SEA14	8	696
DCM1 - 0-5V Channel #15 (not in any format)	DCM1-SEA15	8	704
Group Subtotal		160	

Grouping for Minor Frame 10 of Science Format

Solid State Recorder A DCDCOUT	DCM1-SEA16	8	712
Solid State Recorder B DCDCOUT	DCM1-SEA17	8	720
DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15	1	728
SIS Cover Telltale	DCM1-DIGTTSW14	1	729
S3DPU Power Converter Select TT	DCM1-DIGTTSW13	1	730
SWIMS Cover Telltale	DCM1-DIGTTSW12	1	731
Redundant Charger Selected TT	DCM1-DIGTTSW11	1	732
Prime Charger Selected TT	DCM1-DIGTTSW10	1	733
Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9	1	734
Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8	1	735
CRIS, I/F, & Survival Heater Current	DCM1-DIFA15	8	736
SIS, I/F, & Survival Heater Current	DCM1-DIFA16	8	744
EPAM Electronics & I/F Heater Current	DCM1-DIFA17	8	752
EPAM Survival/Operational Heater Current	DCM1-DIFA18	8	760
ULEIS & Survival Heater Current	DCM1-DIFA19	8	768
ULEIS Analog Elect. LVPS Current	DCM1-DIFA20	8	776
DCM1 - 0-50mV Channel #21	DCM1-DIFA21	8	784
ULEIS Internal & I/F Heater Current	DCM1-DIFA22	8	792
SWEPAM Electron Current	DCM1-DIFA23	8	800
SWEPAM Ion Current	DCM1-DIFA24	8	808
SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25	8	816
SWICS, I/F, and Survival Htr Current	DCM1-DIFA26	8	824
SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27	8	832
Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28	8	840
S^3 DPU Current	DCM1-DIFA29	8	848
Heater-Prop. System Deck Primary Current	DCM1-DIFA12	8	856
Heater-Prop. System Deck Backup Current	DCM1-DIFA13	8	864
Group Subtotal		160	

Grouping for Minor Frame 11 of Science Format

Parameter	Channel	Length	Start
Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5	112	872
S3 DPU Interface A/B Select	DCM1-DIGTTLOG7	1	984
Transponder B Transmitter On/Off	DCM1-DIGTTLOG6	1	985
Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5	1	986
Transponder A Transmitter On/Off	DCM1-DIGTTLOG4	1	987
Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3	1	988
Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2	1	989
Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1	1	990
Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0	1	991
Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18	8	992
OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27	8	1,000
Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28	8	1,008
S^3 DPU Converter Secondary Current	DCM1-DIFA30	8	1,016
Pressure Transducer #1 & #2 Current	DCM1-DIFA14	8	1,024
Group Subtotal		160	

Grouping for Minor Frame 12 of Science Format

SWIMS Internal Temperature	DCM1-AD5	8	1,032
SWICS Internal Temperature	DCM1-AD7	8	1,040
ULEIS Telescope Temperature	DCM1-AD9	8	1,048
ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10	8	1,056
ULEIS DPU Temperature (Internal)	DCM1-AD11	8	1,064
SEPICA Iso-Butane Tank Temperature	DCM1-AD20	8	1,072
S^3 DPU Power Supply A Temperature	DCM1-AD22	8	1,080
SWEPAM(E) Internal Temperature	DCM1-AD24	8	1,088
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,096
Star Scanner Data	DCM1-SD6	64	1,104
Terminal Board #1/Fuse Temperature	DCM1-AD28	8	1,168
Instrument Deck Temperature (TBD) #1	DCM1-AD29	8	1,176
S^3 DPU Power Supply B Temperature	DCM1-AD30	8	1,184
Group Subtotal		160	

Minor Frame 13 of Science Format will include the first 160 bits of C&DH Hskp

Bits 0 to 159 of active C&DH housekeeping data 160

Minor Frame 14 of Science Format will include the second 160 bits of C&DH Hskp

Bits 160 to 319 of active C&DH housekeeping data 160

(note - Minor Frame 15 data starts at bit 4312)

DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,192
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,200
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,208
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,216

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,224
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,232
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,240
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,248
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,256
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,264
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,272
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,280
Science Data Group			
EPAM Data	DCM1-SD0	168	1,288
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,456
ULEIS Data	DCM1-SD1	1,000	1,464
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,464
SWEPAM Ion Data	DCM1-SD2	712	2,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,184
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,192
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,200
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,208
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,216
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,224
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,232
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,240
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,248
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,256
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,264
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,272
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,280
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,288
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,296
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,304
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,312
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,320
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,328
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,336
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,344
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,352
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,360
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,368
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,376
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,384
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,392
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,400
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,408
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,416
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,424

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,432
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,440
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,448
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,456
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,464
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,480
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,488
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,496
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,504
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,512
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,520
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,528
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,536
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,544
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,552
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,560
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,568
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,576
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,584
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,592
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,600
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,608
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,616
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,624
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,632
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,640
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,648
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,656
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,664
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,672
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,680
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,688
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,696
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,704
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,712
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,720
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,728
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,736
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,744
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,752
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,760
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,768
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,776
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,784
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,792
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,800

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,808
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,816
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,824
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,832
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,840
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,848
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,856
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,864
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,872
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,880
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,888
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,896
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,904
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,912
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,920
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,928
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,936
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,944
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,952
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,960
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,968
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,976
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,984
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,992
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,000
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,008
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,016
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,024
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,032
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,040
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,048
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,056
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,064
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,072
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,080
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,088
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,096
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,112
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,120
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,128
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,136
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,144
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,152
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,160
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,168
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,176

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,184
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,192
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,200
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,208
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,216
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,224
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,232
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,240
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,248
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,256
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,264
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,272
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,280
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,288
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,296
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,304

Grouping for Minor Frame 15 of Science Format

Bits 320-383 of bits of active C&DH housekeeping data		64	
Analog Shunt Panel Temperature	DCM1-PT23	8	4,312
Aft Deck Temperature (TBD) #1	DCM1-PT24	8	4,320
Opposite C&DH Component Hskp Data	DCM1-SD4	64	4,328
(insert for phase angle latched @ sun pulse)		16	
DCM1 - PT103 Channel #25 (not in any format)	DCM1-PT25	8	4,392
DCM1 - PT103 Channel # 26 (not in any format)	DCM1-PT26	8	4,400
Group Subtotal		96	
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,408
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,416
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,424
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,432
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,440
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,448
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,456
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,464
S^3 DPU Data	DCM1-SD3	1,624	4,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,096
Spare Serial Digital Data	DCM1-SD7	32	6,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,136
Total Collected		6,144	

Data Collection Machine #1
Format 1 - Serial Digital channels (except for Power Switching/Ordnance Fire & C&DH) replaced

Parameter	Channel	Length	Start
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	0
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	8
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	16
Unused Channels			
DCM1 - 0-5V Channel #19 (not in any format)	DCM1-SEA19	8	24
DCM1 - 0-5V Channel #20 (not in any format)	DCM1-SEA20	8	32
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	40
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	48
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	56
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	64
DCM1 - 0-5V Channel #25 (not in any format)	DCM1-SEA25	8	72
DCM1 - 0-5V Channel #26 (not in any format)	DCM1-SEA26	8	80
DCM1 - 0-5V Channel #27 (not in any format)	DCM1-SEA27	8	88
DCM1 - 0-5V Channel #28 (not in any format)	DCM1-SEA28	8	96
DCM1 - 0-5V Channel #29 (not in any format)	DCM1-SEA29	8	104
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	8	112
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	8	120
DCM1 - PT103 Channel # 29 (not in any format)	DCM1-PT29	8	128
DCM1 - PT103 Channel # 30 (not in any format)	DCM1-PT30	8	136
Grouping for ADC, Low Rate Formats			
+Y Solar Array Panel Temperature	DCM1-PT0	8	144
+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1	8	152
-Y Solar Array Panel Temperature	DCM1-PT2	8	160
-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3	8	168
+Y Side Panel: Near Digital Shunt	DCM1-AD2	8	176
-X Side Panel: TBD	DCM1-AD3	8	184
-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4	8	192
+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14	8	200
+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15	8	208
-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16	8	216
-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17	8	224
-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18	8	232
-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19	8	240
-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20	8	248
Antenna Dish Feed: Use Long Leads	DCM1-PT21	8	256
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	8	264
Back of +X Forward Radiator	DCM1-AD0	8	272
Back of -X/-Y Forward Radiator	DCM1-AD1	8	280
SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6	8	288
SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8	8	296
ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12	8	304
EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13	8	312
CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16	8	320
SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19	8	328

Parameter	Channel	Length	Start
SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21	8	336
SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25	8	344
SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27	8	352
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	8	360
-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7	1	368
+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6	1	369
-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5	1	370
+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4	1	371
-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3	1	372
-X Solar Panel Stowed Switch	DCM1-DIGTTSW2	1	373
+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1	1	374
+X Solar Panel Stowed Switch	DCM1-DIGTTSW0	1	375
Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10	8	376
Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11	8	384
Thruster Valve IA Temperature	DCM1-PT4	8	392
Thruster Valve IR Temperature	DCM1-PT5	8	400
Thruster Valve IVA Temperature	DCM1-PT6	8	408
Thruster Valve IVR+ Temperature	DCM1-PT7	8	416
Thruster Valve IVR- Temperature	DCM1-PT8	8	424
Thruster Valve IIIR- Temperature	DCM1-PT9	8	432
Thruster Valve IIIR+ Temperature	DCM1-PT10	8	440
Thruster Valve IIIA Temperature	DCM1-PT11	8	448
Thruster Valve IIR Temperature	DCM1-PT12	8	456
Thruster Valve IIA Temperature	DCM1-PT13	8	464
Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0	8	472
Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1	8	480
Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2	8	488
Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3	8	496
Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4	8	504
Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5	8	512
Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6	8	520
Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7	8	528
Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8	8	536
Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9	8	544
Grouping for Minor Frame 9 of Science Format			
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	8	552
SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1	8	560
SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2	8	568
SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3	8	576
SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4	8	584
SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5	8	592
EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6	8	600
EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7	8	608
EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8	8	616
EPAM Analog A4 Input Current Monitor	DCM1-SEA9	8	624

Parameter	Channel	Length	Start
EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10	8	632
EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11	8	640
EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12	8	648
ULEIS LVPS Voltage	DCM1-SEA13	8	656
CRIS Internal Temperature #1	DCM1-AD14	8	664
CRIS Internal Temperature #2	DCM1-AD15	8	672
SIS Internal Temperature #1	DCM1-AD17	8	680
SIS Internal Temperature #2	DCM1-AD18	8	688
(insert for phase angle latched at sun pulse)			
DCM1 - 0-5V Channel #14 (not in any format)	DCM1-SEA14	8	696
DCM1 - 0-5V Channel #15 (not in any format)	DCM1-SEA15	8	704
Group Subtotal	160		

Grouping for Minor Frame 10 of Science Format

Solid State Recorder A DCDCOUT	DCM1-SEA16	8	712
Solid State Recorder B DCDCOUT	DCM1-SEA17	8	720
DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15	1	728
SIS Cover Telltale	DCM1-DIGTTSW14	1	729
S3DPU Power Converter Select TT	DCM1-DIGTTSW13	1	730
SWIMS Cover Telltale	DCM1-DIGTTSW12	1	731
Redundant Charger Selected TT	DCM1-DIGTTSW11	1	732
Prime Charger Selected TT	DCM1-DIGTTSW10	1	733
Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9	1	734
Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8	1	735
CRIS, I/F, & Survival Heater Current	DCM1-DIFA15	8	736
SIS, I/F, & Survival Heater Current	DCM1-DIFA16	8	744
EPAM Electronics & I/F Heater Current	DCM1-DIFA17	8	752
EPAM Survival/Operational Heater Current	DCM1-DIFA18	8	760
ULEIS & Survival Heater Current	DCM1-DIFA19	8	768
ULEIS Analog Elect. LVPS Current	DCM1-DIFA20	8	776
DCM1 - 0-50mV Channel #21	DCM1-DIFA21	8	784
ULEIS Internal & I/F Heater Current	DCM1-DIFA22	8	792
SWEPAM Electron Current	DCM1-DIFA23	8	800
SWEPAM Ion Current	DCM1-DIFA24	8	808
SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25	8	816
SWICS, I/F, and Survival Htr Current	DCM1-DIFA26	8	824
SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27	8	832
Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28	8	840
S^3 DPU Current	DCM1-DIFA29	8	848
Heater-Prop. System Deck Primary Current	DCM1-DIFA12	8	856
Heater-Prop. System Deck Backup Current	DCM1-DIFA13	8	864
Group Subtotal	160		

Grouping for Minor Frame 11 of Science Format

Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5	112	872
S3 DPU Interface A/B Select	DCM1-DIGTTLOG7	1	984

Parameter	Channel	Length	Start
Transponder B Transmitter On/Off	DCM1-DIGTTLOG6	1	985
Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5	1	986
Transponder A Transmitter On/Off	DCM1-DIGTTLOG4	1	987
Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3	1	988
Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2	1	989
Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1	1	990
Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0	1	991
Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18	8	992
OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27	8	1,000
Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28	8	1,008
S^3 DPU Converter Secondary Current	DCM1-DIFA30	8	1,016
Pressure Transducer #1 & #2 Current	DCM1-DIFA14	8	1,024
Group Subtotal		160	

Grouping for Minor Frame 12 of Science Format

SWIMS Internal Temperature	DCM1-AD5	8	1,032
SWICS Internal Temperature	DCM1-AD7	8	1,040
ULEIS Telescope Temperature	DCM1-AD9	8	1,048
ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10	8	1,056
ULEIS DPU Temperature (Internal)	DCM1-AD11	8	1,064
SEPICA Iso-Butane Tank Temperature	DCM1-AD20	8	1,072
S^3 DPU Power Supply A Temperature	DCM1-AD22	8	1,080
SWEPAM(E) Internal Temperature	DCM1-AD24	8	1,088
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,096
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,104
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,112
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,120
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,128
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,136
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,144
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,152
SWEPAM(I) Internal Temperature	DCM1-AD26	8	1,160
Terminal Board #1/Fuse Temperature	DCM1-AD28	8	1,168
Instrument Deck Temperature (TBD) #1	DCM1-AD29	8	1,176
S^3 DPU Power Supply B Temperature	DCM1-AD30	8	1,184
Group Subtotal		160	

Minor Frame 13 of Science Format will include the first 160 bits of C&DH Hskp

Bits 0 to 159 of active C&DH housekeeping data 160

Minor Frame 14 of Science Format will include the second 160 bits of C&DH Hskp

Bits 160 to 319 of active C&DH housekeeping data 160

(note - Minor Frame 15 data starts at bit 4312)

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,192
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,200
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,208
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,216
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,224
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,232
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,240
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,248
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,256
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,264
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,272
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	8	1,280
Science Data Group - science data replaced with analog channels			
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,288
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,296
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,304
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,312
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,320
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,328
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,336
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,344
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,352
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,360
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,368
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,376
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,384
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,392
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,400
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,408
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,416
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,424
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,432
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,440
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,448
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	8	1,456
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,464
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,472
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,480
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,488
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,496
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,504
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,512
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,520

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,528
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,536
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,544
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,552
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,560
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,568
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,576
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,584
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,592
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,600
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,608
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,616
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,624
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,632
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,640
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,648
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,656
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,664
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,672
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,680
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,688
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,696
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,704
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,712
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,720
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,728
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,736
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,744
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,752
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,760
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,768
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,776
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,784
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,792
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,800
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,808
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,816
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,824
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,832
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,840
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,848
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,856
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,864
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,872
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,880
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,888
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,896

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,904
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,912
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,920
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,928
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,936
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,944
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,952
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,960
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,968
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,976
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,984
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	1,992
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,000
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,008
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,016
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,024
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,032
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,040
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,048
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,056
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,064
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,072
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,080
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,088
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,096
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,104
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,112
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,120
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,128
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,136
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,144
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,152
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,160
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,168
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,176
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,184
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,192
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,200
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,208
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,216
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,224
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,232
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,240
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,248
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,256
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,264
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,272

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,280
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,288
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,296
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,304
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,312
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,320
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,328
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,336
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,344
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,352
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,360
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,368
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,376
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,384
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,392
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,400
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,408
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,416
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,424
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,432
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,440
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,448
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,456
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	8	2,464
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,480
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,488
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,496
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,504
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,512
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,520
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,528
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,536
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,544
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,552
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,560
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,568
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,576
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,584
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,592
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,600
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,608
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,616
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,624
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,632
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,640
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,648

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,656
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,664
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,672
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,680
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,688
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,696
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,704
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,712
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,720
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,728
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,736
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,744
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,752
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,760
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,768
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,776
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,784
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,792
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,800
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,808
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,816
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,824
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,832
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,840
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,848
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,856
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,864
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,872
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,880
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,888
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,896
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,904
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,912
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,920
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,928
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,936
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,944
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,952
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,960
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,968
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,976
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,984
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	2,992
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,000
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,008
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,016
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,024

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,032
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,040
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,048
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,056
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,064
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,072
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,080
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,088
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,096
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,112
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,120
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,128
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,136
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,144
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,152
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,160
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,168
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,176
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,184
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,192
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,200
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,208
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,216
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,224
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,232
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,240
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,248
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,256
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,264
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,272
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,280
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,288
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,296
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,304
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,312
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,320
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,328
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,336
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,344
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,352
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,360
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,368
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,376
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,384
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,392
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,400

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,408
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,416
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,424
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,432
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,440
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,448
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,456
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,464
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,480
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,488
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,496
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,504
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,512
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,520
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,528
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,536
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,544
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,552
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,560
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,568
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,576
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,584
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,592
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,600
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,608
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,616
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,624
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,632
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,640
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,648
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,656
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,664
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,672
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,680
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,688
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,696
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,704
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,712
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,720
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,728
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,736
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,744
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,752
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,760
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,768
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,776

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,784
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,792
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,800
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,808
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,816
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,824
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,832
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,840
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,848
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,856
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,864
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,872
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,880
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,888
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,896
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,904
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,912
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,920
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,928
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,936
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,944
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,952
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,960
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,968
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,976
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,984
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	3,992
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,000
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,008
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,016
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,024
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,032
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,040
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,048
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,056
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,064
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,072
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,080
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,088
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,096
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,112
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,120
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,128
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,136
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,144
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,152

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,160
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,168
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,176
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,184
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,192
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,200
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,208
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,216
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,224
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,232
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,240
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,248
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,256
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,264
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,272
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,280
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,288
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,296
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,304

Grouping for Minor Frame 15 of Science Format

Bits 320-383 of bits of active C&DH housekeeping data		64	
Analog Shunt Panel Temperature	DCM1-PT23	8	4,312
Aft Deck Temperature (TBD) #1	DCM1-PT24	8	4,320
Opposite C&DH Component Hskp Data	DCM1-SD4	64	4,328
(insert for phase angle latched at sun pulse)		16	
DCM1 - PT103 Channel #25 (not in any format)	DCM1-PT25	8	4,392
DCM1 - PT103 Channel # 26 (not in any format)	DCM1-PT26	8	4,400
Group Subtotal		96	

DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,408
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,416
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,424
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,432
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,440
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,448
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,456
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,464
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,480
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,488
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,496
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,504
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,512
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,520
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,528

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,536
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,544
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,552
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,560
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,568
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,576
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,584
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,592
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,600
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,608
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,616
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,624
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,632
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,640
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,648
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,656
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,664
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,672
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,680
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,688
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,696
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,704
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,712
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,720
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,728
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,736
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,744
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,752
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,760
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,768
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,776
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,784
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,792
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,800
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,808
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,816
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,824
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,832
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,840
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,848
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,856
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,864
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,872
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,880
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,888
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,896
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,904

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,912
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,920
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,928
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,936
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,944
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,952
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,960
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,968
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,976
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,984
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	4,992
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,000
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,008
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,016
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,024
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,032
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,040
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,048
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,056
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,064
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,072
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,080
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,088
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,096
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,112
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,120
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,128
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,136
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,144
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,152
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,160
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,168
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,176
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,184
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,192
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,200
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,208
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,216
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,224
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,232
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,240
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,248
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,256
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,264
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,272
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,280

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,288
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,296
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,304
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,312
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,320
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,328
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,336
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,344
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,352
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,360
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,368
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,376
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,384
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,392
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,400
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,408
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,416
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,424
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,432
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,440
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,448
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,456
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,464
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,472
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,480
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,488
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,496
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,504
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,512
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,520
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,528
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,536
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,544
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,552
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,560
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,568
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,576
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,584
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,592
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,600
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,608
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,616
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,624
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,632
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,640
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,648
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,656

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,664
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,672
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,680
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,688
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,696
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,704
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,712
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,720
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,728
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,736
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,744
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,752
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,760
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,768
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,776
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,784
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,792
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,800
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,808
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,816
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,824
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,832
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,840
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,848
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,856
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,864
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,872
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,880
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,888
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,896
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,904
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,912
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,920
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,928
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,936
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,944
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,952
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,960
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,968
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,976
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,984
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	5,992
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,000
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,008
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,016
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,024
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,032

Parameter	Channel	Length	Start
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,040
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,048
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,056
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,064
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,072
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,080
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,088
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,096
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,104
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,112
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,120
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,128
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	8	6,136

Total Collected 6,144

4.2 Data Collection Machine 2 Formats

The two DCM2 collection formats are as follows:

Data Collection Machine #2
Format 0 - includes all telemetry items

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	0
C&DH A Converter Voltage	DCM2-SEA0	8	8
C&DH A Converter Voltage	DCM2-SEA0	8	16
C&DH A Converter Voltage	DCM2-SEA0	8	24
C&DH A Converter Voltage	DCM2-SEA0	8	32
C&DH A Converter Voltage	DCM2-SEA0	8	40
C&DH A Converter Voltage	DCM2-SEA0	8	48
C&DH A Converter Voltage	DCM2-SEA0	8	56
C&DH A Converter Voltage	DCM2-SEA0	8	64
C&DH A Converter Voltage	DCM2-SEA0	8	72
C&DH A Converter Voltage	DCM2-SEA0	8	80
C&DH A Converter Voltage	DCM2-SEA0	8	88
C&DH A Converter Voltage	DCM2-SEA0	8	96
C&DH A Converter Voltage	DCM2-SEA0	8	104
C&DH A Converter Voltage	DCM2-SEA0	8	112
C&DH A Converter Voltage	DCM2-SEA0	8	120
C&DH A Converter Voltage	DCM2-SEA0	8	128
C&DH A Converter Voltage	DCM2-SEA0	8	136
C&DH A Converter Voltage	DCM2-SEA0	8	144
C&DH A Converter Voltage	DCM2-SEA0	8	152
C&DH A Converter Voltage	DCM2-SEA0	8	160
C&DH A Converter Voltage	DCM2-SEA0	8	168
C&DH A Converter Voltage	DCM2-SEA0	8	176
C&DH A Converter Voltage	DCM2-SEA0	8	184
C&DH A Converter Voltage	DCM2-SEA0	8	192
C&DH A Converter Voltage	DCM2-SEA0	8	200
C&DH A Converter Voltage	DCM2-SEA0	8	208
C&DH A Converter Voltage	DCM2-SEA0	8	216
C&DH A Converter Voltage	DCM2-SEA0	8	224
C&DH A Converter Voltage	DCM2-SEA0	8	232
C&DH A Converter Voltage	DCM2-SEA0	8	240
C&DH A Converter Voltage	DCM2-SEA0	8	248
C&DH A Converter Voltage	DCM2-SEA0	8	256
C&DH A Converter Voltage	DCM2-SEA0	8	264
C&DH A Converter Voltage	DCM2-SEA0	8	272
C&DH A Converter Voltage	DCM2-SEA0	8	280
C&DH A Converter Voltage	DCM2-SEA0	8	288
C&DH A Converter Voltage	DCM2-SEA0	8	296
C&DH A Converter Voltage	DCM2-SEA0	8	304
C&DH A Converter Voltage	DCM2-SEA0	8	312
C&DH A Converter Voltage	DCM2-SEA0	8	320

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	328
C&DH A Converter Voltage	DCM2-SEA0	8	336
C&DH A Converter Voltage	DCM2-SEA0	8	344
C&DH A Converter Voltage	DCM2-SEA0	8	352
C&DH A Converter Voltage	DCM2-SEA0	8	360
C&DH A Converter Voltage	DCM2-SEA0	8	368
C&DH A Converter Voltage	DCM2-SEA0	8	376
C&DH A Converter Voltage	DCM2-SEA0	8	384
C&DH A Converter Voltage	DCM2-SEA0	8	392
C&DH A Converter Voltage	DCM2-SEA0	8	400
C&DH A Converter Voltage	DCM2-SEA0	8	408
C&DH A Converter Voltage	DCM2-SEA0	8	416
C&DH A Converter Voltage	DCM2-SEA0	8	424
C&DH A Converter Voltage	DCM2-SEA0	8	432
C&DH A Converter Voltage	DCM2-SEA0	8	440
C&DH A Converter Voltage	DCM2-SEA0	8	448
C&DH A Converter Voltage	DCM2-SEA0	8	456
C&DH A Converter Voltage	DCM2-SEA0	8	464
C&DH A Converter Voltage	DCM2-SEA0	8	472
C&DH A Converter Voltage	DCM2-SEA0	8	480
C&DH A Converter Voltage	DCM2-SEA0	8	488
C&DH A Converter Voltage	DCM2-SEA0	8	496
C&DH A Converter Voltage	DCM2-SEA0	8	504
C&DH A Converter Voltage	DCM2-SEA0	8	512
C&DH A Converter Voltage	DCM2-SEA0	8	520
C&DH A Converter Voltage	DCM2-SEA0	8	528
C&DH A Converter Voltage	DCM2-SEA0	8	536
C&DH A Converter Voltage	DCM2-SEA0	8	544
C&DH A Converter Voltage	DCM2-SEA0	8	552
C&DH A Converter Voltage	DCM2-SEA0	8	560
C&DH A Converter Voltage	DCM2-SEA0	8	568
C&DH A Converter Voltage	DCM2-SEA0	8	576
C&DH A Converter Voltage	DCM2-SEA0	8	584
C&DH A Converter Voltage	DCM2-SEA0	8	592
C&DH A Converter Voltage	DCM2-SEA0	8	600
C&DH A Converter Voltage	DCM2-SEA0	8	608
C&DH A Converter Voltage	DCM2-SEA0	8	616
C&DH A Converter Voltage	DCM2-SEA0	8	624
C&DH A Converter Voltage	DCM2-SEA0	8	632
C&DH A Converter Voltage	DCM2-SEA0	8	640
C&DH A Converter Voltage	DCM2-SEA0	8	648
C&DH A Converter Voltage	DCM2-SEA0	8	656
C&DH A Converter Voltage	DCM2-SEA0	8	664
C&DH A Converter Voltage	DCM2-SEA0	8	672
C&DH A Converter Voltage	DCM2-SEA0	8	680
C&DH A Converter Voltage	DCM2-SEA0	8	688
C&DH A Converter Voltage	DCM2-SEA0	8	696

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	704
C&DH A Converter Voltage	DCM2-SEA0	8	712
C&DH A Converter Voltage	DCM2-SEA0	8	720
C&DH A Converter Voltage	DCM2-SEA0	8	728
C&DH A Converter Voltage	DCM2-SEA0	8	736
C&DH A Converter Voltage	DCM2-SEA0	8	744
C&DH A Converter Voltage	DCM2-SEA0	8	752
C&DH A Converter Voltage	DCM2-SEA0	8	760
C&DH A Converter Voltage	DCM2-SEA0	8	768
C&DH A Converter Voltage	DCM2-SEA0	8	776
C&DH A Converter Voltage	DCM2-SEA0	8	784
C&DH A Converter Voltage	DCM2-SEA0	8	792
C&DH A Converter Voltage	DCM2-SEA0	8	800
C&DH A Converter Voltage	DCM2-SEA0	8	808
C&DH A Converter Voltage	DCM2-SEA0	8	816
C&DH A Converter Voltage	DCM2-SEA0	8	824
C&DH A Converter Voltage	DCM2-SEA0	8	832
C&DH A Converter Voltage	DCM2-SEA0	8	840
C&DH A Converter Voltage	DCM2-SEA0	8	848
C&DH A Converter Voltage	DCM2-SEA0	8	856
C&DH A Converter Voltage	DCM2-SEA0	8	864
C&DH A Converter Voltage	DCM2-SEA0	8	872
C&DH A Converter Voltage	DCM2-SEA0	8	880
C&DH A Converter Voltage	DCM2-SEA0	8	888
C&DH A Converter Voltage	DCM2-SEA0	8	896
C&DH A Converter Voltage	DCM2-SEA0	8	904
C&DH A Converter Voltage	DCM2-SEA0	8	912
C&DH A Converter Voltage	DCM2-SEA0	8	920
C&DH A Converter Voltage	DCM2-SEA0	8	928
C&DH A Converter Voltage	DCM2-SEA0	8	936
C&DH A Converter Voltage	DCM2-SEA0	8	944
C&DH A Converter Voltage	DCM2-SEA0	8	952
C&DH A Converter Voltage	DCM2-SEA0	8	960
C&DH A Converter Voltage	DCM2-SEA0	8	968
C&DH A Converter Voltage	DCM2-SEA0	8	976
C&DH A Converter Voltage	DCM2-SEA0	8	984
C&DH A Converter Voltage	DCM2-SEA0	8	992
C&DH A Converter Voltage	DCM2-SEA0	8	1,000
C&DH A Converter Voltage	DCM2-SEA0	8	1,008
C&DH A Converter Voltage	DCM2-SEA0	8	1,016
C&DH A Converter Voltage	DCM2-SEA0	8	1,024
C&DH A Converter Voltage	DCM2-SEA0	8	1,032
C&DH A Converter Voltage	DCM2-SEA0	8	1,040
C&DH A Converter Voltage	DCM2-SEA0	8	1,048
C&DH A Converter Voltage	DCM2-SEA0	8	1,056
C&DH A Converter Voltage	DCM2-SEA0	8	1,064
C&DH A Converter Voltage	DCM2-SEA0	8	1,072

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	1,080
C&DH A Converter Voltage	DCM2-SEA0	8	1,088
C&DH A Converter Voltage	DCM2-SEA0	8	1,096
C&DH A Converter Voltage	DCM2-SEA0	8	1,104
C&DH A Converter Voltage	DCM2-SEA0	8	1,112
C&DH A Converter Voltage	DCM2-SEA0	8	1,120
C&DH A Converter Voltage	DCM2-SEA0	8	1,128
C&DH A Converter Voltage	DCM2-SEA0	8	1,136
C&DH A Converter Voltage	DCM2-SEA0	8	1,144
C&DH A Converter Voltage	DCM2-SEA0	8	1,152
C&DH A Converter Voltage	DCM2-SEA0	8	1,160
C&DH A Converter Voltage	DCM2-SEA0	8	1,168
C&DH A Converter Voltage	DCM2-SEA0	8	1,176
C&DH A Converter Voltage	DCM2-SEA0	8	1,184
C&DH A Converter Voltage	DCM2-SEA0	8	1,192
C&DH A Converter Voltage	DCM2-SEA0	8	1,200
C&DH A Converter Voltage	DCM2-SEA0	8	1,208
C&DH A Converter Voltage	DCM2-SEA0	8	1,216
C&DH A Converter Voltage	DCM2-SEA0	8	1,224
Magnetometer Data	DCM2-SD3	304	1,232
C&DH A Converter Voltage	DCM2-SEA0	8	1,536
C&DH A Converter Voltage	DCM2-SEA0	8	1,544
C&DH A Converter Voltage	DCM2-SEA0	8	1,552
C&DH A Converter Voltage	DCM2-SEA0	8	1,560
C&DH A Converter Voltage	DCM2-SEA0	8	1,568
C&DH A Converter Voltage	DCM2-SEA0	8	1,576
C&DH A Converter Voltage	DCM2-SEA0	8	1,584
C&DH A Converter Voltage	DCM2-SEA0	8	1,592
C&DH A Converter Voltage	DCM2-SEA0	8	1,600
C&DH A Converter Voltage	DCM2-SEA0	8	1,608
C&DH A Converter Voltage	DCM2-SEA0	8	1,616
C&DH A Converter Voltage	DCM2-SEA0	8	1,624

Unused Channels

DCM2 - 0-5V Channel #21 (not in any format)	DCM2-SEA21	8	1,632
DCM2 - 0-5V Channel #22 (not in any format)	DCM2-SEA22	8	1,640
DCM2 - 0-5V Channel #23 (not in any format)	DCM2-SEA23	8	1,648
DCM2 - 0-5V Channel #24 (not in any format)	DCM2-SEA24	8	1,656
DCM2 - 0-5V Channel #25 (not in any format)	DCM2-SEA25	8	1,664
DCM2 - 0-5V Channel #26 (not in any format)	DCM2-SEA26	8	1,672
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	1,680
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	8	1,688
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	1,696
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	1,704
DCM2 - 0-50mV Channel #27 (not in any format)	DCM2-DIF27	8	1,712
DCM2 - 0-50mV Channel #28 (not in any format)	DCM2-DIF28	8	1,720

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-50mV Channel #29 (not in any format)	DCM2-DIF29	8	1,728
DCM2 - 0-50mV Channel #30 (not in any format)	DCM2-DIF30	8	1,736
DCM2 - PT103 Channel #24 (not in any format)	DCM2-PT24	8	1,744
DCM2 - PT103 Channel #25 (not in any format)	DCM2-PT25	8	1,752
DCM2 - PT103 Channel #26 (not in any format)	DCM2-PT26	8	1,760
DCM2 - PT103 Channel #27 (not in any format)	DCM2-PT27	8	1,768
DCM2 - PT103 Channel #28 (not in any format)	DCM2-PT28	8	1,776
DCM2 - PT103 Channel #29 (not in any format)	DCM2-PT29	8	1,784
DCM2 - PT103 Channel #30 (not in any format)	DCM2-PT30	8	1,792

Grouping for Minor Frame 0 of Science Format

Propellant Tank A1 Temperature	DCM2-AD12	8	1,800
Propellant Tank A2 Temperature	DCM2-AD13	8	1,808
Propellant Tank B1 Temperature	DCM2-AD14	8	1,816
Propellant Tank B2 Temperature	DCM2-AD15	8	1,824
Internal Lines A Temperature	DCM2-AD16	8	1,832
Internal Lines B Temperature	DCM2-AD17	8	1,840
External Lines +X Temperature	DCM2-AD18	8	1,848
External Lines -X Temperature	DCM2-AD19	8	1,856
Star Scanner Temperature: Near Base	DCM2-AD20	8	1,864
Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22	8	1,872
Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23	8	1,880
Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24	8	1,888
Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25	8	1,896
Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26	8	1,904
Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27	8	1,912
Instrument Deck Temperature: Near -Y Edge	DCM2-AD28	8	1,920
Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29	8	1,928
(Insert for Sun Pulse Time Tag)		24	
Group Subtotal		136	

Grouping for Minor Frame 1 of Science Format

Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13	8	1,936
Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21	8	1,944
+X Solar Array Panel Temperature	DCM2-PT0	8	1,952
+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1	8	1,960
-X Solar Array Panel Temperature	DCM2-PT2	8	1,968
-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3	8	1,976
Magnetometer Inboard Temperature	DCM2-SEA15	8	1,984
Magnetometer Outboard Temperature	DCM2-SEA16	8	1,992
Magnetometer Inboard Heater Power Level	DCM2-SEA17	8	2,000
Magnetometer Outboard Heater Power Level	DCM2-SEA18	8	2,008
S3 DPU Power Converter Voltage	DCM2-SEA19	8	2,016
Power Subsystem Processor A Current	DCM2-DIFA22	8	2,024
Power Subsystem Processor B Current	DCM2-DIFA23	8	2,032
Prop. System Axial Thruster Current	DCM2-DIFA24	8	2,040

Parameter	Channel ID	Length	Start
DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25	8	2,048
Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26	8	2,056
Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20	8	2,064
Instrument Deck Temperature (TBD) #2	DCM2-AD30	8	2,072
DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7	1	2,080
DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6	1	2,081
DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5	1	2,082
DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4	1	2,083
DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3	1	2,084
DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2	1	2,085
DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1	1	2,086
DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0	1	2,087
SEPICA Gas Valve Telltale	DCM2-DIGTTSW15	1	2,088
DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14	1	2,089
DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13	1	2,090
DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12	1	2,091
DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11	1	2,092
DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10	1	2,093
DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9	1	2,094
DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8	1	2,095
Group Subtotal	160		

Grouping for Minor Frame 2 of Science Format

Aft Deck Temperature: Center of Deck	DCM2-PT19	8	2,096
Aft Deck Temperature: Between Transponders	DCM2-PT20	8	2,104
Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21	8	2,112
Aft Deck Temperature: +X/+Y Edge	DCM2-PT22	8	2,120
Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23	8	2,128
+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4	8	2,136
+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5	8	2,144
+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6	8	2,152
+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7	8	2,160
+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8	8	2,168
+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9	8	2,176
-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10	8	2,184
-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11	8	2,192
-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12	8	2,200
-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13	8	2,208
+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14	8	2,216
DCM2 - PT103 Channel # 15 - spare	DCM2-PT15	8	2,224
DCM2 - PT103 Channel # 16 - spare	DCM2-PT16	8	2,232
Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17	8	2,240
+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18	8	2,248
Group Subtotal	160		

Grouping for Minor Frame 3 of Science Format

Parameter	Channel ID	Length	Start
Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6	8	2,256
C&DH A Converter Voltage	DCM2-SEA0	8	2,264
C&DH B Converter Voltage	DCM2-SEA1	8	2,272
C&DH Component A Current	DCM2-DIFA0	8	2,280
C&DH Component B Current	DCM2-DIFA1	8	2,288
C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9	8	2,296
C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7	8	2,304
C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8	8	2,312
Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17	8	2,320
Heater-Spacecraft Operational Current	DCM2-DIFA18	8	2,328
Main Bus Current	DCM2-SEA2	8	2,336
Main Bus Voltage	DCM2-SEA3	8	2,344
PSE Analog Shunt Current	DCM2-DIFA19	8	2,352
Star Scanner Current	DCM2-DIFA8	8	2,360
Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2	8	2,368
Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3	8	2,376
Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4	8	2,384
Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5	8	2,392
DSAD A Current	DCM2-DIFA20	8	2,400
DSAD B Current	DCM2-DIFA21	8	2,408
Group Subtotal	160		
Grouping for Minor Frame 4 of Science Format			
Data Recorder A Hskp Data	DCM2-SD4	144	2,416
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,560
Data Recorder A Current	DCM2-DIFA6	8	2,568
Group Subtotal	160		
Grouping for Minor Frame 5 of Science Format			
Data Recorder B Hskp Data	DCM2-SD5	144	2,576
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,720
Data Recorder B Current	DCM2-DIFA7	8	2,728
Group Subtotal	160		
Grouping for Minor Frame 6 of Science Format			
Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6	128	2,736
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,864
-X Side Panel: Near Digital Shunt Box	DCM2-AD5	8	2,872
Battery Current Charge Monitor	DCM2-DIFA14	8	2,880
Battery Current Discharge Monitor	DCM2-DIFA15	8	2,888
Group Subtotal	160		
Grouping for Minor Frame 7 of Science Format			
Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7	128	2,896
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	3,024

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3	8	3,032
Heater-Battery A&B Current	DCM2-DIFA16	8	3,040
Battery Voltage	DCM2-SEA4	8	3,048
Group Subtotal		160	

Grouping for Minor Frame 8 of Science Format

Transponder A Receiver Current	DCM2-DIFA9	8	3,056
Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10	8	3,064
Transponder B Receiver Current	DCM2-DIFA11	8	3,072
Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12	8	3,080
Transponder A Receiver AGC	DCM2-SEA7	8	3,088
Transponder A Receiver SPE	DCM2-SEA8	8	3,096
Transponder A Receiver +5V	DCM2-SEA9	8	3,104
Transponder B Receiver AGC	DCM2-SEA10	8	3,112
Transponder B Receiver SPE	DCM2-SEA11	8	3,120
Transponder B Receiver +5V	DCM2-SEA12	8	3,128
DCM2 AD590 Channel # 0 - not used	DCM2-AD0	8	3,136
DCM2 AD590 Channel #1 - not used	DCM2-AD1	8	3,144
Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13	8	3,152
Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7	1	3,160
Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6	1	3,161
Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5	1	3,162
Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4	1	3,163
PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3	1	3,164
PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2	1	3,165
PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1	1	3,166
PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0	1	3,167
Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14	8	3,168
Propellant Pressure A	DCM2-SEA5	8	3,176
Propellant Pressure B	DCM2-SEA6	8	3,184
(Insert for Sun Pulse Time Tag)		24	
Group Subtotal		136	

DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,192
CRIS Data	DCM2-SD0	464	3,200
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,664
SIS Data	DCM2-SD1	1,992	3,672
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	8	5,664
SWEPAM Electron Data	DCM2-SD2	456	5,672
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,128
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,136

Total Collected 6,144

Parameter	Channel ID	Length	Start
Data Collection Machine #2			
Format 1 - Serial Digital channels replaced			
C&DH A Converter Voltage	DCM2-SEA0	8	0
C&DH A Converter Voltage	DCM2-SEA0	8	8
C&DH A Converter Voltage	DCM2-SEA0	8	16
C&DH A Converter Voltage	DCM2-SEA0	8	24
C&DH A Converter Voltage	DCM2-SEA0	8	32
C&DH A Converter Voltage	DCM2-SEA0	8	40
C&DH A Converter Voltage	DCM2-SEA0	8	48
C&DH A Converter Voltage	DCM2-SEA0	8	56
C&DH A Converter Voltage	DCM2-SEA0	8	64
C&DH A Converter Voltage	DCM2-SEA0	8	72
C&DH A Converter Voltage	DCM2-SEA0	8	80
C&DH A Converter Voltage	DCM2-SEA0	8	88
C&DH A Converter Voltage	DCM2-SEA0	8	96
C&DH A Converter Voltage	DCM2-SEA0	8	104
C&DH A Converter Voltage	DCM2-SEA0	8	112
C&DH A Converter Voltage	DCM2-SEA0	8	120
C&DH A Converter Voltage	DCM2-SEA0	8	128
C&DH A Converter Voltage	DCM2-SEA0	8	136
C&DH A Converter Voltage	DCM2-SEA0	8	144
C&DH A Converter Voltage	DCM2-SEA0	8	152
C&DH A Converter Voltage	DCM2-SEA0	8	160
C&DH A Converter Voltage	DCM2-SEA0	8	168
C&DH A Converter Voltage	DCM2-SEA0	8	176
C&DH A Converter Voltage	DCM2-SEA0	8	184
C&DH A Converter Voltage	DCM2-SEA0	8	192
C&DH A Converter Voltage	DCM2-SEA0	8	200
C&DH A Converter Voltage	DCM2-SEA0	8	208
C&DH A Converter Voltage	DCM2-SEA0	8	216
C&DH A Converter Voltage	DCM2-SEA0	8	224
C&DH A Converter Voltage	DCM2-SEA0	8	232
C&DH A Converter Voltage	DCM2-SEA0	8	240
C&DH A Converter Voltage	DCM2-SEA0	8	248
C&DH A Converter Voltage	DCM2-SEA0	8	256
C&DH A Converter Voltage	DCM2-SEA0	8	264
C&DH A Converter Voltage	DCM2-SEA0	8	272
C&DH A Converter Voltage	DCM2-SEA0	8	280
C&DH A Converter Voltage	DCM2-SEA0	8	288
C&DH A Converter Voltage	DCM2-SEA0	8	296
C&DH A Converter Voltage	DCM2-SEA0	8	304

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	312
C&DH A Converter Voltage	DCM2-SEA0	8	320
C&DH A Converter Voltage	DCM2-SEA0	8	328
C&DH A Converter Voltage	DCM2-SEA0	8	336
C&DH A Converter Voltage	DCM2-SEA0	8	344
C&DH A Converter Voltage	DCM2-SEA0	8	352
C&DH A Converter Voltage	DCM2-SEA0	8	360
C&DH A Converter Voltage	DCM2-SEA0	8	368
C&DH A Converter Voltage	DCM2-SEA0	8	376
C&DH A Converter Voltage	DCM2-SEA0	8	384
C&DH A Converter Voltage	DCM2-SEA0	8	392
C&DH A Converter Voltage	DCM2-SEA0	8	400
C&DH A Converter Voltage	DCM2-SEA0	8	408
C&DH A Converter Voltage	DCM2-SEA0	8	416
C&DH A Converter Voltage	DCM2-SEA0	8	424
C&DH A Converter Voltage	DCM2-SEA0	8	432
C&DH A Converter Voltage	DCM2-SEA0	8	440
C&DH A Converter Voltage	DCM2-SEA0	8	448
C&DH A Converter Voltage	DCM2-SEA0	8	456
C&DH A Converter Voltage	DCM2-SEA0	8	464
C&DH A Converter Voltage	DCM2-SEA0	8	472
C&DH A Converter Voltage	DCM2-SEA0	8	480
C&DH A Converter Voltage	DCM2-SEA0	8	488
C&DH A Converter Voltage	DCM2-SEA0	8	496
C&DH A Converter Voltage	DCM2-SEA0	8	504
C&DH A Converter Voltage	DCM2-SEA0	8	512
C&DH A Converter Voltage	DCM2-SEA0	8	520
C&DH A Converter Voltage	DCM2-SEA0	8	528
C&DH A Converter Voltage	DCM2-SEA0	8	536
C&DH A Converter Voltage	DCM2-SEA0	8	544
C&DH A Converter Voltage	DCM2-SEA0	8	552
C&DH A Converter Voltage	DCM2-SEA0	8	560
C&DH A Converter Voltage	DCM2-SEA0	8	568
C&DH A Converter Voltage	DCM2-SEA0	8	576
C&DH A Converter Voltage	DCM2-SEA0	8	584
C&DH A Converter Voltage	DCM2-SEA0	8	592
C&DH A Converter Voltage	DCM2-SEA0	8	600
C&DH A Converter Voltage	DCM2-SEA0	8	608
C&DH A Converter Voltage	DCM2-SEA0	8	616
C&DH A Converter Voltage	DCM2-SEA0	8	624
C&DH A Converter Voltage	DCM2-SEA0	8	632
C&DH A Converter Voltage	DCM2-SEA0	8	640
C&DH A Converter Voltage	DCM2-SEA0	8	648
C&DH A Converter Voltage	DCM2-SEA0	8	656
C&DH A Converter Voltage	DCM2-SEA0	8	664
C&DH A Converter Voltage	DCM2-SEA0	8	672
C&DH A Converter Voltage	DCM2-SEA0	8	680

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	688
C&DH A Converter Voltage	DCM2-SEA0	8	696
C&DH A Converter Voltage	DCM2-SEA0	8	704
C&DH A Converter Voltage	DCM2-SEA0	8	712
C&DH A Converter Voltage	DCM2-SEA0	8	720
C&DH A Converter Voltage	DCM2-SEA0	8	728
C&DH A Converter Voltage	DCM2-SEA0	8	736
C&DH A Converter Voltage	DCM2-SEA0	8	744
C&DH A Converter Voltage	DCM2-SEA0	8	752
C&DH A Converter Voltage	DCM2-SEA0	8	760
C&DH A Converter Voltage	DCM2-SEA0	8	768
C&DH A Converter Voltage	DCM2-SEA0	8	776
C&DH A Converter Voltage	DCM2-SEA0	8	784
C&DH A Converter Voltage	DCM2-SEA0	8	792
C&DH A Converter Voltage	DCM2-SEA0	8	800
C&DH A Converter Voltage	DCM2-SEA0	8	808
C&DH A Converter Voltage	DCM2-SEA0	8	816
C&DH A Converter Voltage	DCM2-SEA0	8	824
C&DH A Converter Voltage	DCM2-SEA0	8	832
C&DH A Converter Voltage	DCM2-SEA0	8	840
C&DH A Converter Voltage	DCM2-SEA0	8	848
C&DH A Converter Voltage	DCM2-SEA0	8	856
C&DH A Converter Voltage	DCM2-SEA0	8	864
C&DH A Converter Voltage	DCM2-SEA0	8	872
C&DH A Converter Voltage	DCM2-SEA0	8	880
C&DH A Converter Voltage	DCM2-SEA0	8	888
C&DH A Converter Voltage	DCM2-SEA0	8	896
C&DH A Converter Voltage	DCM2-SEA0	8	904
C&DH A Converter Voltage	DCM2-SEA0	8	912
C&DH A Converter Voltage	DCM2-SEA0	8	920
C&DH A Converter Voltage	DCM2-SEA0	8	928
C&DH A Converter Voltage	DCM2-SEA0	8	936
C&DH A Converter Voltage	DCM2-SEA0	8	944
C&DH A Converter Voltage	DCM2-SEA0	8	952
C&DH A Converter Voltage	DCM2-SEA0	8	960
C&DH A Converter Voltage	DCM2-SEA0	8	968
C&DH A Converter Voltage	DCM2-SEA0	8	976
C&DH A Converter Voltage	DCM2-SEA0	8	984
C&DH A Converter Voltage	DCM2-SEA0	8	992
C&DH A Converter Voltage	DCM2-SEA0	8	1,000
C&DH A Converter Voltage	DCM2-SEA0	8	1,008
C&DH A Converter Voltage	DCM2-SEA0	8	1,016
C&DH A Converter Voltage	DCM2-SEA0	8	1,024
C&DH A Converter Voltage	DCM2-SEA0	8	1,032
C&DH A Converter Voltage	DCM2-SEA0	8	1,040
C&DH A Converter Voltage	DCM2-SEA0	8	1,048
C&DH A Converter Voltage	DCM2-SEA0	8	1,056

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	1,064
C&DH A Converter Voltage	DCM2-SEA0	8	1,072
C&DH A Converter Voltage	DCM2-SEA0	8	1,080
C&DH A Converter Voltage	DCM2-SEA0	8	1,088
C&DH A Converter Voltage	DCM2-SEA0	8	1,096
C&DH A Converter Voltage	DCM2-SEA0	8	1,104
C&DH A Converter Voltage	DCM2-SEA0	8	1,112
C&DH A Converter Voltage	DCM2-SEA0	8	1,120
C&DH A Converter Voltage	DCM2-SEA0	8	1,128
C&DH A Converter Voltage	DCM2-SEA0	8	1,136
C&DH A Converter Voltage	DCM2-SEA0	8	1,144
C&DH A Converter Voltage	DCM2-SEA0	8	1,152
C&DH A Converter Voltage	DCM2-SEA0	8	1,160
C&DH A Converter Voltage	DCM2-SEA0	8	1,168
C&DH A Converter Voltage	DCM2-SEA0	8	1,176
C&DH A Converter Voltage	DCM2-SEA0	8	1,184
C&DH A Converter Voltage	DCM2-SEA0	8	1,192
C&DH A Converter Voltage	DCM2-SEA0	8	1,200
C&DH A Converter Voltage	DCM2-SEA0	8	1,208
C&DH A Converter Voltage	DCM2-SEA0	8	1,216
C&DH A Converter Voltage	DCM2-SEA0	8	1,224
C&DH A Converter Voltage	DCM2-SEA0	8	1,232
C&DH A Converter Voltage	DCM2-SEA0	8	1,240
C&DH A Converter Voltage	DCM2-SEA0	8	1,248
C&DH A Converter Voltage	DCM2-SEA0	8	1,256
C&DH A Converter Voltage	DCM2-SEA0	8	1,264
C&DH A Converter Voltage	DCM2-SEA0	8	1,272
C&DH A Converter Voltage	DCM2-SEA0	8	1,280
C&DH A Converter Voltage	DCM2-SEA0	8	1,288
C&DH A Converter Voltage	DCM2-SEA0	8	1,296
C&DH A Converter Voltage	DCM2-SEA0	8	1,304
C&DH A Converter Voltage	DCM2-SEA0	8	1,312
C&DH A Converter Voltage	DCM2-SEA0	8	1,320
C&DH A Converter Voltage	DCM2-SEA0	8	1,328
C&DH A Converter Voltage	DCM2-SEA0	8	1,336
C&DH A Converter Voltage	DCM2-SEA0	8	1,344
C&DH A Converter Voltage	DCM2-SEA0	8	1,352
C&DH A Converter Voltage	DCM2-SEA0	8	1,360
C&DH A Converter Voltage	DCM2-SEA0	8	1,368
C&DH A Converter Voltage	DCM2-SEA0	8	1,376
C&DH A Converter Voltage	DCM2-SEA0	8	1,384
C&DH A Converter Voltage	DCM2-SEA0	8	1,392
C&DH A Converter Voltage	DCM2-SEA0	8	1,400
C&DH A Converter Voltage	DCM2-SEA0	8	1,408
C&DH A Converter Voltage	DCM2-SEA0	8	1,416
C&DH A Converter Voltage	DCM2-SEA0	8	1,424
C&DH A Converter Voltage	DCM2-SEA0	8	1,432

Parameter	Channel ID	Length	Start
C&DH A Converter Voltage	DCM2-SEA0	8	1,440
C&DH A Converter Voltage	DCM2-SEA0	8	1,448
C&DH A Converter Voltage	DCM2-SEA0	8	1,456
C&DH A Converter Voltage	DCM2-SEA0	8	1,464
C&DH A Converter Voltage	DCM2-SEA0	8	1,472
C&DH A Converter Voltage	DCM2-SEA0	8	1,480
C&DH A Converter Voltage	DCM2-SEA0	8	1,488
C&DH A Converter Voltage	DCM2-SEA0	8	1,496
C&DH A Converter Voltage	DCM2-SEA0	8	1,504
C&DH A Converter Voltage	DCM2-SEA0	8	1,512
C&DH A Converter Voltage	DCM2-SEA0	8	1,520
C&DH A Converter Voltage	DCM2-SEA0	8	1,528
C&DH A Converter Voltage	DCM2-SEA0	8	1,536
C&DH A Converter Voltage	DCM2-SEA0	8	1,544
C&DH A Converter Voltage	DCM2-SEA0	8	1,552
C&DH A Converter Voltage	DCM2-SEA0	8	1,560
C&DH A Converter Voltage	DCM2-SEA0	8	1,568
C&DH A Converter Voltage	DCM2-SEA0	8	1,576
C&DH A Converter Voltage	DCM2-SEA0	8	1,584
C&DH A Converter Voltage	DCM2-SEA0	8	1,592
C&DH A Converter Voltage	DCM2-SEA0	8	1,600
C&DH A Converter Voltage	DCM2-SEA0	8	1,608
C&DH A Converter Voltage	DCM2-SEA0	8	1,616
C&DH A Converter Voltage	DCM2-SEA0	8	1,624

Unused Channels

DCM2 - 0-5V Channel #21 (not in any format)	DCM2-SEA21	8	1,632
DCM2 - 0-5V Channel #22 (not in any format)	DCM2-SEA22	8	1,640
DCM2 - 0-5V Channel #23 (not in any format)	DCM2-SEA23	8	1,648
DCM2 - 0-5V Channel #24 (not in any format)	DCM2-SEA24	8	1,656
DCM2 - 0-5V Channel #25 (not in any format)	DCM2-SEA25	8	1,664
DCM2 - 0-5V Channel #26 (not in any format)	DCM2-SEA26	8	1,672
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	1,680
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	8	1,688
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	1,696
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	1,704
DCM2 - 0-50mV Channel #27 (not in any format)	DCM2-DIF27	8	1,712
DCM2 - 0-50mV Channel #28 (not in any format)	DCM2-DIF28	8	1,720
DCM2 - 0-50mV Channel #29 (not in any format)	DCM2-DIF29	8	1,728
DCM2 - 0-50mV Channel #30 (not in any format)	DCM2-DIF30	8	1,736
DCM2 - PT103 Channel #24 (not in any format)	DCM2-PT24	8	1,744
DCM2 - PT103 Channel #25 (not in any format)	DCM2-PT25	8	1,752
DCM2 - PT103 Channel #26 (not in any format)	DCM2-PT26	8	1,760
DCM2 - PT103 Channel #27 (not in any format)	DCM2-PT27	8	1,768
DCM2 - PT103 Channel #28 (not in any format)	DCM2-PT28	8	1,776
DCM2 - PT103 Channel #29 (not in any format)	DCM2-PT29	8	1,784

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - PT103 Channel #30 (not in any format)	DCM2-PT30	8	1,792
Grouping for Minor Frame 0 of Science Format			
Propellant Tank A1 Temperature	DCM2-AD12	8	1,800
Propellant Tank A2 Temperature	DCM2-AD13	8	1,808
Propellant Tank B1 Temperature	DCM2-AD14	8	1,816
Propellant Tank B2 Temperature	DCM2-AD15	8	1,824
Internal Lines A Temperature	DCM2-AD16	8	1,832
Internal Lines B Temperature	DCM2-AD17	8	1,840
External Lines +X Temperature	DCM2-AD18	8	1,848
External Lines -X Temperature	DCM2-AD19	8	1,856
Star Scanner Temperature: Near Base	DCM2-AD20	8	1,864
Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22	8	1,872
Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23	8	1,880
Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24	8	1,888
Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25	8	1,896
Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26	8	1,904
Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27	8	1,912
Instrument Deck Temperature: Near -Y Edge	DCM2-AD28	8	1,920
Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29	8	1,928
(Insert for Sun Pulse Time Tag)		24	
Group Subtotal		136	
Grouping for Minor Frame 1 of Science Format			
Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13	8	1,936
Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21	8	1,944
+X Solar Array Panel Temperature	DCM2-PT0	8	1,952
+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1	8	1,960
-X Solar Array Panel Temperature	DCM2-PT2	8	1,968
-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3	8	1,976
Magnetometer Inboard Temperature	DCM2-SEA15	8	1,984
Magnetometer Outboard Temperature	DCM2-SEA16	8	1,992
Magnetometer Inboard Heater Power Level	DCM2-SEA17	8	2,000
Magnetometer Outboard Heater Power Level	DCM2-SEA18	8	2,008
S3 DPU Power Converter Voltage	DCM2-SEA19	8	2,016
Power Subsystem Processor A Current	DCM2-DIFA22	8	2,024
Power Subsystem Processor B Current	DCM2-DIFA23	8	2,032
Prop. System Axial Thruster Current	DCM2-DIFA24	8	2,040
DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25	8	2,048
Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26	8	2,056
Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20	8	2,064
Instrument Deck Temperature (TBD) #2	DCM2-AD30	8	2,072
DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7	1	2,080
DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6	1	2,081
DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5	1	2,082
DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4	1	2,083

Parameter	Channel ID	Length	Start
DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3	1	2,084
DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2	1	2,085
DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1	1	2,086
DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0	1	2,087
SEPICA Gas Valve Telltale	DCM2-DIGTTSW15	1	2,088
DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14	1	2,089
DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13	1	2,090
DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12	1	2,091
DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11	1	2,092
DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10	1	2,093
DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9	1	2,094
DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8	1	2,095
Group Subtotal		160	

Grouping for Minor Frame 2 of Science Format

Aft Deck Temperature: Center of Deck	DCM2-PT19	8	2,096
Aft Deck Temperature: Between Transponders	DCM2-PT20	8	2,104
Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21	8	2,112
Aft Deck Temperature: +X/+Y Edge	DCM2-PT22	8	2,120
Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23	8	2,128
+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4	8	2,136
+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5	8	2,144
+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6	8	2,152
+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7	8	2,160
+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8	8	2,168
+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9	8	2,176
-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10	8	2,184
-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11	8	2,192
-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12	8	2,200
-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13	8	2,208
+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14	8	2,216
DCM2 - PT103 Channel # 15 - spare	DCM2-PT15	8	2,224
DCM2 - PT103 Channel # 16 - spare	DCM2-PT16	8	2,232
Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17	8	2,240
+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18	8	2,248
Group Subtotal		160	

Grouping for Minor Frame 3 of Science Format

Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6	8	2,256
C&DH A Converter Voltage	DCM2-SEA0	8	2,264
C&DH B Converter Voltage	DCM2-SEA1	8	2,272
C&DH Component A Current	DCM2-DIFA0	8	2,280
C&DH Component B Current	DCM2-DIFA1	8	2,288
C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9	8	2,296
C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7	8	2,304
C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8	8	2,312

Parameter	Channel ID	Length	Start
Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17	8	2,320
Heater-Spacecraft Operational Current	DCM2-DIFA18	8	2,328
Main Bus Current	DCM2-SEA2	8	2,336
Main Bus Voltage	DCM2-SEA3	8	2,344
PSE Analog Shunt Current	DCM2-DIFA19	8	2,352
Star Scanner Current	DCM2-DIFA8	8	2,360
Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2	8	2,368
Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3	8	2,376
Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4	8	2,384
Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5	8	2,392
DSAD A Current	DCM2-DIFA20	8	2,400
DSAD B Current	DCM2-DIFA21	8	2,408
Group Subtotal	160		
Grouping for Minor Frame 4 of Science Format			
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,416
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,424
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,432
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,440
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,448
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,456
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,464
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,472
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,480
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,488
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,496
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,504
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,512
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,520
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,528
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,536
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,544
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,552
Solid State Recorder A PWRTEMP	DCM2-AD10	8	2,560
Data Recorder A Current	DCM2-DIFA6	8	2,568
Group Subtotal	160		
Grouping for Minor Frame 5 of Science Format			
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,576
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,584
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,592
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,600
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,608
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,616
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,624
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,632

Parameter	Channel ID	Length	Start
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,640
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,648
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,656
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,664
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,672
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,680
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,688
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,696
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,704
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,712
Solid State Recorder B PWRTEMP	DCM2-AD11	8	2,720
Data Recorder B Current	DCM2-DIFA7	8	2,728
Group Subtotal		160	

Grouping for Minor Frame 6 of Science Format

-Y Side Panel: Near PSDE	DCM2-AD4	8	2,736
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,744
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,752
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,760
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,768
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,776
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,784
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,792
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,800
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,808
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,816
-X Side Panel: Near Digital Shunt Box	DCM2-AD5	8	2,824
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,832
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,840
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,848
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,856
-Y Side Panel: Near PSDE	DCM2-AD4	8	2,864
-X Side Panel: Near Digital Shunt Box	DCM2-AD5	8	2,872
Battery Current Charge Monitor	DCM2-DIFA14	8	2,880
Battery Current Discharge Monitor	DCM2-DIFA15	8	2,888
Group Subtotal		160	

Grouping for Minor Frame 7 of Science Format

Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,896
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,904
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,912
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,920
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,928
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,936
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,944
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,952

Parameter	Channel ID	Length	Start
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,960
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,968
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,976
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,984
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	2,992
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	3,000
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	3,008
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	3,016
Battery Temperature 1: Top of Center Cell	DCM2-AD2	8	3,024
Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3	8	3,032
Heater-Battery A&B Current	DCM2-DIFA16	8	3,040
Battery Voltage	DCM2-SEA4	8	3,048
Group Subtotal	160		

Grouping for Minor Frame 8 of Science Format

Transponder A Receiver Current	DCM2-DIFA9	8	3,056
Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10	8	3,064
Transponder B Receiver Current	DCM2-DIFA11	8	3,072
Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12	8	3,080
Transponder A Receiver AGC	DCM2-SEA7	8	3,088
Transponder A Receiver SPE	DCM2-SEA8	8	3,096
Transponder A Receiver +5V	DCM2-SEA9	8	3,104
Transponder B Receiver AGC	DCM2-SEA10	8	3,112
Transponder B Receiver SPE	DCM2-SEA11	8	3,120
Transponder B Receiver +5V	DCM2-SEA12	8	3,128
DCM2 AD590 Channel # 0 - not used	DCM2-AD0	8	3,136
DCM2 AD590 Channel #1 - not used	DCM2-AD1	8	3,144
Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13	8	3,152
Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7	1	3,160
Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6	1	3,161
Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5	1	3,162
Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4	1	3,163
PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3	1	3,164
PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2	1	3,165
PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1	1	3,166
PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0	1	3,167
Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14	8	3,168
Propellant Pressure A	DCM2-SEA5	8	3,176
Propellant Pressure B	DCM2-SEA6	8	3,184
(Insert for Sun Pulse Time Tag)	24		
Group Subtotal	136		

DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,192
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,200
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,208
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,216

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,224
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,232
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,240
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,248
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,256
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,264
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,272
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,280
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,288
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,296
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,304
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,312
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,320
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,328
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,336
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,344
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,352
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,360
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,368
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,376
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,384
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,392
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,400
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,408
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,416
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,424
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,432
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,440
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,448
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,456
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,464
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,472
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,480
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,488
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,496
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,504
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,512
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,520
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,528
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,536
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,544
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,552
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,560
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,568
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,576
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,584
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,592

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,600
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,608
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,616
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,624
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,632
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,640
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,648
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	8	3,656
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,664
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,672
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,680
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,688
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,696
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,704
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,712
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,720
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,728
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,736
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,744
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,752
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,760
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,768
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,776
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,784
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,792
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,800
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,808
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,816
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,824
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,832
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,840
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,848
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,856
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,864
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,872
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,880
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,888
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,896
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,904
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,912
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,920
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,928
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,936
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,944
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,952
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,960
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,968

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,976
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,984
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	3,992
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,000
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,008
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,016
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,024
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,032
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,040
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,048
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,056
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,064
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,072
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,080
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,088
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,096
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,104
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,112
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,120
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,128
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,136
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,144
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,152
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,160
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,168
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,176
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,184
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,192
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,200
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,208
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,216
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,224
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,232
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,240
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,248
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,256
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,264
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,272
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,280
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,288
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,296
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,304
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,312
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,320
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,328
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,336
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,344

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,352
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,360
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,368
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,376
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,384
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,392
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,400
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,408
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,416
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,424
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,432
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,440
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,448
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,456
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,464
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,472
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,480
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,488
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,496
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,504
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,512
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,520
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,528
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,536
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,544
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,552
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,560
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,568
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,576
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,584
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,592
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,600
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,608
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,616
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,624
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,632
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,640
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,648
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,656
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,664
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,672
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,680
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,688
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,696
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,704
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,712
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,720

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,728
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,736
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,744
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,752
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,760
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,768
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,776
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,784
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,792
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,800
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,808
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,816
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,824
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,832
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,840
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,848
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,856
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,864
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,872
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,880
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,888
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,896
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,904
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,912
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,920
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,928
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,936
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,944
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,952
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,960
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,968
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,976
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,984
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	4,992
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,000
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,008
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,016
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,024
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,032
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,040
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,048
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,056
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,064
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,072
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,080
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,088
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,096

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,104
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,112
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,120
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,128
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,136
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,144
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,152
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,160
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,168
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,176
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,184
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,192
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,200
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,208
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,216
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,224
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,232
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,240
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,248
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,256
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,264
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,272
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,280
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,288
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,296
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,304
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,312
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,320
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,328
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,336
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,344
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,352
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,360
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,368
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,376
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,384
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,392
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,400
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,408
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,416
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,424
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,432
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,440
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,448
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,456
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,464
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,472

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,480
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,488
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,496
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,504
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,512
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,520
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,528
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,536
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,544
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,552
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,560
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,568
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,576
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,584
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,592
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,600
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,608
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,616
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,624
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,632
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,640
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,648
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	8	5,656
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	8	5,664
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,672
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,680
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,688
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,696
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,704
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,712
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,720
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,728
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,736
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,744
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,752
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,760
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,768
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,776
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,784
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,792
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,800
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,808
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,816
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,824
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,832
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,840
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,848

Data Collection Machine #2 Format

Parameter	Channel ID	Length	Start
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,856
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,864
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,872
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,880
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,888
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,896
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,904
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,912
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,920
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,928
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,936
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,944
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,952
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,960
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,968
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,976
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,984
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	5,992
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,000
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,008
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,016
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,024
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,032
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,040
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,048
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,056
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,064
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,072
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,080
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,088
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,096
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,104
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,112
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,120
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,128
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	8	6,136
Total Collected		6,144	

5 Data Collection Buffer

The Data Collection Buffer (DCB) is updated once per second. It includes all the data collected by the Data Collection Machines on the two Housekeeping Data Boards, items collected with specialized interfaces, some C&DH housekeeping telemetry data, and critical variables. The DCB is the source of data placed in the realtime (non-playback) telemetry frames. It also serves two other functions. The Autonomy Bin Load command includes a pointer into the DCB to select the byte that autonomy is to be performed on. Also, the selectable telemetry byte in all realtime telemetry frames is picked out of the DCB based on a pointer set by the TLM Byte Select command. The location of each item in the DCB is as follows:

Offsets into Data Collection Buffer Used for Autonomy Rules and Selectable Telemetry

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	1
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	3
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	5
Unused Channels		
DCM1 - 0-5V Channel #19 (not in any format)	DCM1-SEA19	7
DCM1 - 0-5V Channel #20 (not in any format)	DCM1-SEA20	9
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	11
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	13
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	15
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	17
DCM1 - 0-5V Channel #25 (not in any format)	DCM1-SEA25	19
DCM1 - 0-5V Channel #26 (not in any format)	DCM1-SEA26	21
DCM1 - 0-5V Channel #27 (not in any format)	DCM1-SEA27	23
DCM1 - 0-5V Channel #28 (not in any format)	DCM1-SEA28	25
DCM1 - 0-5V Channel #29 (not in any format)	DCM1-SEA29	27
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	29
DCM1 - 0-5V Channel #30 (not in any format)	DCM1-SEA30	31
DCM1 - PT103 Channel # 29 (not in any format)	DCM1-PT29	33
DCM1 - PT103 Channel # 30 (not in any format)	DCM1-PT30	35
Grouping for ADC, Low Rate Formats		
+Y Solar Array Panel Temperature	DCM1-PT0	37
+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1	39
-Y Solar Array Panel Temperature	DCM1-PT2	41
-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3	43
+Y Side Panel: Near Digital Shunt	DCM1-AD2	45
-X Side Panel: TBD	DCM1-AD3	47
-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4	49
+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14	51
+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15	53
-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16	55
-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17	57
-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18	59
-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19	61
-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20	63
Antenna Dish Feed: Use Long Leads	DCM1-PT21	65
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	67
Back of +X Forward Radiator	DCM1-AD0	69
Back of -X/-Y Forward Radiator	DCM1-AD1	71
SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6	73
SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8	75
ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12	77

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13	79
CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16	81
SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19	83
SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21	85
SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25	87
SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27	89
-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22	91
-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7	93
+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6	93
-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5	93
+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4	93
-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3	93
-X Solar Panel Stowed Switch	DCM1-DIGTTSW2	93
+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1	93
+X Solar Panel Stowed Switch	DCM1-DIGTTSW0	93
Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10	95
Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11	97
Thruster Valve IA Temperature	DCM1-PT4	99
Thruster Valve IR Temperature	DCM1-PT5	101
Thruster Valve IVA Temperature	DCM1-PT6	103
Thruster Valve IVR+ Temperature	DCM1-PT7	105
Thruster Valve IVR- Temperature	DCM1-PT8	107
Thruster Valve IIIR- Temperature	DCM1-PT9	109
Thruster Valve IIIR+ Temperature	DCM1-PT10	111
Thruster Valve IIIA Temperature	DCM1-PT11	113
Thruster Valve IIR Temperature	DCM1-PT12	115
Thruster Valve IIA Temperature	DCM1-PT13	117
Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0	119
Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1	121
Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2	123
Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3	125
Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4	127
Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5	129
Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6	131
Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7	133
Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8	135
Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9	137
Grouping for Minor Frame 9 of Science Format		
SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0	139
SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1	141
SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2	143
SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3	145
SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4	147
SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5	149

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6	151
EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7	153
EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8	155
EPAM Analog A4 Input Current Monitor	DCM1-SEA9	157
EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10	159
EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11	161
EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12	163
ULEIS LVPS Voltage	DCM1-SEA13	165
CRIS Internal Temperature #1	DCM1-AD14	167
CRIS Internal Temperature #2	DCM1-AD15	169
SIS Internal Temperature #1	DCM1-AD17	171
SIS Internal Temperature #2	DCM1-AD18	173
DCM1 - 0-5V Channel #14 (not in any format)	DCM1-SEA14	175
DCM1 - 0-5V Channel #15 (not in any format)	DCM1-SEA15	177
Grouping for Minor Frame 10 of Science Format		
Solid State Recorder A DCDCOUT	DCM1-SEA16	179
Solid State Recorder B DCDCOUT	DCM1-SEA17	181
DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15	183
SIS Cover Telltale	DCM1-DIGTTSW14	183
S3DPU Power Converter Select TT	DCM1-DIGTTSW13	183
SWIMS Cover Telltale	DCM1-DIGTTSW12	183
Redundant Charger Selected TT	DCM1-DIGTTSW11	183
Prime Charger Selected TT	DCM1-DIGTTSW10	183
Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9	183
Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8	183
CRIS, I/F, & Survival Heater Current	DCM1-DIFA15	185
SIS, I/F, & Survival Heater Current	DCM1-DIFA16	187
EPAM Electronics & I/F Heater Current	DCM1-DIFA17	189
EPAM Survival/Operational Heater Current	DCM1-DIFA18	191
ULEIS & Survival Heater Current	DCM1-DIFA19	193
ULEIS Analog Elect. LVPS Current	DCM1-DIFA20	195
DCM1 - 0-50mV Channel #21	DCM1-DIFA21	197
ULEIS Internal & I/F Heater Current	DCM1-DIFA22	199
SWEPAM Electron Current	DCM1-DIFA23	201
SWEPAM Ion Current	DCM1-DIFA24	203
SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25	205
SWICS, I/F, and Survival Htr Current	DCM1-DIFA26	207
SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27	209
Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28	211
S^3 DPU Current	DCM1-DIFA29	213
Heater-Prop. System Deck Primary Current	DCM1-DIFA12	215
Heater-Prop. System Deck Backup Current	DCM1-DIFA13	217

Grouping for Minor Frame 11 of Science Format

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5	219
S3 DPU Interface A/B Select	DCM1-DIGTTLOG7	247
Transponder B Transmitter On/Off	DCM1-DIGTTLOG6	247
Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5	247
Transponder A Transmitter On/Off	DCM1-DIGTTLOG4	247
Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3	247
Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2	247
Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1	247
Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0	247
Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18	249
OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27	251
Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28	253
S^3 DPU Converter Secondary Current	DCM1-DIFA30	255
Pressure Transducer #1 & #2 Current	DCM1-DIFA14	257
Grouping for Minor Frame 12 of Science Format		
SWIMS Internal Temperature	DCM1-AD5	259
SWICS Internal Temperature	DCM1-AD7	261
ULEIS Telescope Temperature	DCM1-AD9	263
ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10	265
ULEIS DPU Temperature (Internal)	DCM1-AD11	267
SEPICA Iso-Butane Tank Temperature	DCM1-AD20	269
S^3 DPU Power Supply A Temperature	DCM1-AD22	271
SWEPAM(E) Internal Temperature	DCM1-AD24	273
SWEPAM(I) Internal Temperature	DCM1-AD26	275
Star Scanner Data	DCM1-SD6	277
Terminal Board #1/Fuse Temperature	DCM1-AD28	293
Instrument Deck Temperature (TBD) #1	DCM1-AD29	295
S^3 DPU Power Supply B Temperature	DCM1-AD30	297
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	299
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	301
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	303
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	305
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	307
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	309
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	311
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	313
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	315
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	317
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	319
DCM1 - 0-5V Channel #23 (not in any format)	DCM1-SEA23	321
Science Data Group		
EPAM Data	DCM1-SD0	323

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
DCM1 - 0-5V Channel #21 (not in any format)	DCM1-SEA21	365
ULEIS Data	DCM1-SD1	367
DCM1 - 0-5V Channel #22 (not in any format)	DCM1-SEA22	617
SWEPAM Ion Data	DCM1-SD2	619
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	797
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	799
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	801
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	803
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	805
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	807
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	809
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	811
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	813
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	815
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	817
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	819
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	821
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	823
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	825
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	827
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	829
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	831
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	833
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	835
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	837
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	839
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	841
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	843
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	845
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	847
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	849
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	851
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	853
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	855
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	857
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	859
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	861
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	863
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	865
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	867
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	869
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	871
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	873
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	875
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	877

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	879
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	881
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	883
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	885
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	887
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	889
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	891
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	893
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	895
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	897
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	899
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	901
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	903
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	905
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	907
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	909
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	911
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	913
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	915
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	917
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	919
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	921
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	923
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	925
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	927
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	929
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	931
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	933
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	935
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	937
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	939
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	941
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	943
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	945
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	947
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	949
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	951
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	953
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	955
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	957
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	959
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	961
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	963
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	965
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	967

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	969
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	971
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	973
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	975
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	977
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	979
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	981
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	983
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	985
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	987
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	989
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	991
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	993
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	995
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	997
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	999
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,001
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,003
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,005
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,007
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,009
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,011
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,013
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,015
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,017
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,019
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,021
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,023
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,025
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,027
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,029
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,031
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,033
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,035
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,037
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,039
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,041
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,043
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,045
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,047
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,049
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,051
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,053
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,055
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,057

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,059
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,061
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,063
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,065
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,067
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,069
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,071
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,073
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,075
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,077
Analog Shunt Panel Temperature	DCM1-PT23	1,079
Aft Deck Temperature (TBD) #1	DCM1-PT24	1,081
Opposite C&DH Component Hskp Data	DCM1-SD4	1,083
DCM1 - PT103 Channel #25 (not in any format)	DCM1-PT25	1,099
DCM1 - PT103 Channel # 26 (not in any format)	DCM1-PT26	1,101
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,103
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,105
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,107
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,109
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,111
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,113
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,115
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,117
S^3 DPU Data	DCM1-SD3	1,119
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,525
Spare Serial Digital Data	DCM1-SD7	1,527
DCM1 - 0-5V Channel #24 (not in any format)	DCM1-SEA24	1,535
C&DH A Converter Voltage	DCM2-SEA0	1,537
C&DH A Converter Voltage	DCM2-SEA0	1,539
C&DH A Converter Voltage	DCM2-SEA0	1,541
C&DH A Converter Voltage	DCM2-SEA0	1,543
C&DH A Converter Voltage	DCM2-SEA0	1,545
C&DH A Converter Voltage	DCM2-SEA0	1,547
C&DH A Converter Voltage	DCM2-SEA0	1,549
C&DH A Converter Voltage	DCM2-SEA0	1,551
C&DH A Converter Voltage	DCM2-SEA0	1,553
C&DH A Converter Voltage	DCM2-SEA0	1,555
C&DH A Converter Voltage	DCM2-SEA0	1,557
C&DH A Converter Voltage	DCM2-SEA0	1,559
C&DH A Converter Voltage	DCM2-SEA0	1,561
C&DH A Converter Voltage	DCM2-SEA0	1,563
C&DH A Converter Voltage	DCM2-SEA0	1,565

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
C&DH A Converter Voltage	DCM2-SEA0	1,567
C&DH A Converter Voltage	DCM2-SEA0	1,569
C&DH A Converter Voltage	DCM2-SEA0	1,571
C&DH A Converter Voltage	DCM2-SEA0	1,573
C&DH A Converter Voltage	DCM2-SEA0	1,575
C&DH A Converter Voltage	DCM2-SEA0	1,577
C&DH A Converter Voltage	DCM2-SEA0	1,579
C&DH A Converter Voltage	DCM2-SEA0	1,581
C&DH A Converter Voltage	DCM2-SEA0	1,583
C&DH A Converter Voltage	DCM2-SEA0	1,585
C&DH A Converter Voltage	DCM2-SEA0	1,587
C&DH A Converter Voltage	DCM2-SEA0	1,589
C&DH A Converter Voltage	DCM2-SEA0	1,591
C&DH A Converter Voltage	DCM2-SEA0	1,593
C&DH A Converter Voltage	DCM2-SEA0	1,595
C&DH A Converter Voltage	DCM2-SEA0	1,597
C&DH A Converter Voltage	DCM2-SEA0	1,599
C&DH A Converter Voltage	DCM2-SEA0	1,601
C&DH A Converter Voltage	DCM2-SEA0	1,603
C&DH A Converter Voltage	DCM2-SEA0	1,605
C&DH A Converter Voltage	DCM2-SEA0	1,607
C&DH A Converter Voltage	DCM2-SEA0	1,609
C&DH A Converter Voltage	DCM2-SEA0	1,611
C&DH A Converter Voltage	DCM2-SEA0	1,613
C&DH A Converter Voltage	DCM2-SEA0	1,615
C&DH A Converter Voltage	DCM2-SEA0	1,617
C&DH A Converter Voltage	DCM2-SEA0	1,619
C&DH A Converter Voltage	DCM2-SEA0	1,621
C&DH A Converter Voltage	DCM2-SEA0	1,623
C&DH A Converter Voltage	DCM2-SEA0	1,625
C&DH A Converter Voltage	DCM2-SEA0	1,627
C&DH A Converter Voltage	DCM2-SEA0	1,629
C&DH A Converter Voltage	DCM2-SEA0	1,631
C&DH A Converter Voltage	DCM2-SEA0	1,633
C&DH A Converter Voltage	DCM2-SEA0	1,635
C&DH A Converter Voltage	DCM2-SEA0	1,637
C&DH A Converter Voltage	DCM2-SEA0	1,639
C&DH A Converter Voltage	DCM2-SEA0	1,641
C&DH A Converter Voltage	DCM2-SEA0	1,643
C&DH A Converter Voltage	DCM2-SEA0	1,645
C&DH A Converter Voltage	DCM2-SEA0	1,647
C&DH A Converter Voltage	DCM2-SEA0	1,649
C&DH A Converter Voltage	DCM2-SEA0	1,651
C&DH A Converter Voltage	DCM2-SEA0	1,653
C&DH A Converter Voltage	DCM2-SEA0	1,655

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
C&DH A Converter Voltage	DCM2-SEA0	1,657
C&DH A Converter Voltage	DCM2-SEA0	1,659
C&DH A Converter Voltage	DCM2-SEA0	1,661
C&DH A Converter Voltage	DCM2-SEA0	1,663
C&DH A Converter Voltage	DCM2-SEA0	1,665
C&DH A Converter Voltage	DCM2-SEA0	1,667
C&DH A Converter Voltage	DCM2-SEA0	1,669
C&DH A Converter Voltage	DCM2-SEA0	1,671
C&DH A Converter Voltage	DCM2-SEA0	1,673
C&DH A Converter Voltage	DCM2-SEA0	1,675
C&DH A Converter Voltage	DCM2-SEA0	1,677
C&DH A Converter Voltage	DCM2-SEA0	1,679
C&DH A Converter Voltage	DCM2-SEA0	1,681
C&DH A Converter Voltage	DCM2-SEA0	1,683
C&DH A Converter Voltage	DCM2-SEA0	1,685
C&DH A Converter Voltage	DCM2-SEA0	1,687
C&DH A Converter Voltage	DCM2-SEA0	1,689
C&DH A Converter Voltage	DCM2-SEA0	1,691
C&DH A Converter Voltage	DCM2-SEA0	1,693
C&DH A Converter Voltage	DCM2-SEA0	1,695
C&DH A Converter Voltage	DCM2-SEA0	1,697
C&DH A Converter Voltage	DCM2-SEA0	1,699
C&DH A Converter Voltage	DCM2-SEA0	1,701
C&DH A Converter Voltage	DCM2-SEA0	1,703
C&DH A Converter Voltage	DCM2-SEA0	1,705
C&DH A Converter Voltage	DCM2-SEA0	1,707
C&DH A Converter Voltage	DCM2-SEA0	1,709
C&DH A Converter Voltage	DCM2-SEA0	1,711
C&DH A Converter Voltage	DCM2-SEA0	1,713
C&DH A Converter Voltage	DCM2-SEA0	1,715
C&DH A Converter Voltage	DCM2-SEA0	1,717
C&DH A Converter Voltage	DCM2-SEA0	1,719
C&DH A Converter Voltage	DCM2-SEA0	1,721
C&DH A Converter Voltage	DCM2-SEA0	1,723
C&DH A Converter Voltage	DCM2-SEA0	1,725
C&DH A Converter Voltage	DCM2-SEA0	1,727
C&DH A Converter Voltage	DCM2-SEA0	1,729
C&DH A Converter Voltage	DCM2-SEA0	1,731
C&DH A Converter Voltage	DCM2-SEA0	1,733
C&DH A Converter Voltage	DCM2-SEA0	1,735
C&DH A Converter Voltage	DCM2-SEA0	1,737
C&DH A Converter Voltage	DCM2-SEA0	1,739
C&DH A Converter Voltage	DCM2-SEA0	1,741
C&DH A Converter Voltage	DCM2-SEA0	1,743
C&DH A Converter Voltage	DCM2-SEA0	1,745

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
C&DH A Converter Voltage	DCM2-SEA0	1,747
C&DH A Converter Voltage	DCM2-SEA0	1,749
C&DH A Converter Voltage	DCM2-SEA0	1,751
C&DH A Converter Voltage	DCM2-SEA0	1,753
C&DH A Converter Voltage	DCM2-SEA0	1,755
C&DH A Converter Voltage	DCM2-SEA0	1,757
C&DH A Converter Voltage	DCM2-SEA0	1,759
C&DH A Converter Voltage	DCM2-SEA0	1,761
C&DH A Converter Voltage	DCM2-SEA0	1,763
C&DH A Converter Voltage	DCM2-SEA0	1,765
C&DH A Converter Voltage	DCM2-SEA0	1,767
C&DH A Converter Voltage	DCM2-SEA0	1,769
C&DH A Converter Voltage	DCM2-SEA0	1,771
C&DH A Converter Voltage	DCM2-SEA0	1,773
C&DH A Converter Voltage	DCM2-SEA0	1,775
C&DH A Converter Voltage	DCM2-SEA0	1,777
C&DH A Converter Voltage	DCM2-SEA0	1,779
C&DH A Converter Voltage	DCM2-SEA0	1,781
C&DH A Converter Voltage	DCM2-SEA0	1,783
C&DH A Converter Voltage	DCM2-SEA0	1,785
C&DH A Converter Voltage	DCM2-SEA0	1,787
C&DH A Converter Voltage	DCM2-SEA0	1,789
C&DH A Converter Voltage	DCM2-SEA0	1,791
C&DH A Converter Voltage	DCM2-SEA0	1,793
C&DH A Converter Voltage	DCM2-SEA0	1,795
C&DH A Converter Voltage	DCM2-SEA0	1,797
C&DH A Converter Voltage	DCM2-SEA0	1,799
C&DH A Converter Voltage	DCM2-SEA0	1,801
C&DH A Converter Voltage	DCM2-SEA0	1,803
C&DH A Converter Voltage	DCM2-SEA0	1,805
C&DH A Converter Voltage	DCM2-SEA0	1,807
C&DH A Converter Voltage	DCM2-SEA0	1,809
C&DH A Converter Voltage	DCM2-SEA0	1,811
C&DH A Converter Voltage	DCM2-SEA0	1,813
C&DH A Converter Voltage	DCM2-SEA0	1,815
C&DH A Converter Voltage	DCM2-SEA0	1,817
C&DH A Converter Voltage	DCM2-SEA0	1,819
C&DH A Converter Voltage	DCM2-SEA0	1,821
C&DH A Converter Voltage	DCM2-SEA0	1,823
C&DH A Converter Voltage	DCM2-SEA0	1,825
C&DH A Converter Voltage	DCM2-SEA0	1,827
C&DH A Converter Voltage	DCM2-SEA0	1,829
C&DH A Converter Voltage	DCM2-SEA0	1,831
C&DH A Converter Voltage	DCM2-SEA0	1,833
C&DH A Converter Voltage	DCM2-SEA0	1,835

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
C&DH A Converter Voltage	DCM2-SEA0	1,837
C&DH A Converter Voltage	DCM2-SEA0	1,839
C&DH A Converter Voltage	DCM2-SEA0	1,841
C&DH A Converter Voltage	DCM2-SEA0	1,843
Magnetometer Data	DCM2-SD3	1,845
C&DH A Converter Voltage	DCM2-SEA0	1,921
C&DH A Converter Voltage	DCM2-SEA0	1,923
C&DH A Converter Voltage	DCM2-SEA0	1,925
C&DH A Converter Voltage	DCM2-SEA0	1,927
C&DH A Converter Voltage	DCM2-SEA0	1,929
C&DH A Converter Voltage	DCM2-SEA0	1,931
C&DH A Converter Voltage	DCM2-SEA0	1,933
C&DH A Converter Voltage	DCM2-SEA0	1,935
C&DH A Converter Voltage	DCM2-SEA0	1,937
C&DH A Converter Voltage	DCM2-SEA0	1,939
C&DH A Converter Voltage	DCM2-SEA0	1,941
C&DH A Converter Voltage	DCM2-SEA0	1,943
Unused Channels		
DCM2 - 0-5V Channel #21 (not in any format)	DCM2-SEA21	1,945
DCM2 - 0-5V Channel #22 (not in any format)	DCM2-SEA22	1,947
DCM2 - 0-5V Channel #23 (not in any format)	DCM2-SEA23	1,949
DCM2 - 0-5V Channel #24 (not in any format)	DCM2-SEA24	1,951
DCM2 - 0-5V Channel #25 (not in any format)	DCM2-SEA25	1,953
DCM2 - 0-5V Channel #26 (not in any format)	DCM2-SEA26	1,955
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	1,957
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	1,959
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	1,961
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	1,963
DCM2 - 0-50mV Channel #27 (not in any format)	DCM2-DIF27	1,965
DCM2 - 0-50mV Channel #28 (not in any format)	DCM2-DIF28	1,967
DCM2 - 0-50mV Channel #29 (not in any format)	DCM2-DIF29	1,969
DCM2 - 0-50mV Channel #30 (not in any format)	DCM2-DIF30	1,971
DCM2 - PT103 Channel #24 (not in any format)	DCM2-PT24	1,973
DCM2 - PT103 Channel #25 (not in any format)	DCM2-PT25	1,975
DCM2 - PT103 Channel #26 (not in any format)	DCM2-PT26	1,977
DCM2 - PT103 Channel #27 (not in any format)	DCM2-PT27	1,979
DCM2 - PT103 Channel #28 (not in any format)	DCM2-PT28	1,981
DCM2 - PT103 Channel #29 (not in any format)	DCM2-PT29	1,983
DCM2 - PT103 Channel #30 (not in any format)	DCM2-PT30	1,985
Grouping for Minor Frame 0 of Science Format		
Propellant Tank A1 Temperature	DCM2-AD12	1,987
Propellant Tank A2 Temperature	DCM2-AD13	1,989
Propellant Tank B1 Temperature	DCM2-AD14	1,991

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Propellant Tank B2 Temperature	DCM2-AD15	1,993
Internal Lines A Temperature	DCM2-AD16	1,995
Internal Lines B Temperature	DCM2-AD17	1,997
External Lines +X Temperature	DCM2-AD18	1,999
External Lines -X Temperature	DCM2-AD19	2,001
Star Scanner Temperature: Near Base	DCM2-AD20	2,003
Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22	2,005
Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23	2,007
Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24	2,009
Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25	2,011
Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26	2,013
Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27	2,015
Instrument Deck Temperature: Near -Y Edge	DCM2-AD28	2,017
Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29	2,019
Grouping for Minor Frame 1 of Science Format		
Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13	2,021
Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21	2,023
+X Solar Array Panel Temperature	DCM2-PT0	2,025
+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1	2,027
-X Solar Array Panel Temperature	DCM2-PT2	2,029
-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3	2,031
Magnetometer Inboard Temperature	DCM2-SEA15	2,033
Magnetometer Outboard Temperature	DCM2-SEA16	2,035
Magnetometer Inboard Heater Power Level	DCM2-SEA17	2,037
Magnetometer Outboard Heater Power Level	DCM2-SEA18	2,039
S3 DPU Power Converter Voltage	DCM2-SEA19	2,041
Power Subsystem Processor A Current	DCM2-DIFA22	2,043
Power Subsystem Processor B Current	DCM2-DIFA23	2,045
Prop. System Axial Thruster Current	DCM2-DIFA24	2,047
DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25	2,049
Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26	2,051
Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20	2,053
Instrument Deck Temperature (TBD) #2	DCM2-AD30	2,055
DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7	2,057
DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6	2,057
DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5	2,057
DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4	2,057
DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3	2,057
DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2	2,057
DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1	2,057
DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0	2,057
SEPICA Gas Valve Telltale	DCM2-DIGTTSW15	2,059
DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14	2,059
DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13	2,059

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12	2,059
DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11	2,059
DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10	2,059
DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9	2,059
DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8	2,059
Grouping for Minor Frame 2 of Science Format		
Aft Deck Temperature: Center of Deck	DCM2-PT19	2,061
Aft Deck Temperature: Between Transponders	DCM2-PT20	2,063
Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21	2,065
Aft Deck Temperature: +X/+Y Edge	DCM2-PT22	2,067
Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23	2,069
+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4	2,071
+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5	2,073
+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6	2,075
+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7	2,077
+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8	2,079
+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9	2,081
-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10	2,083
-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11	2,085
-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12	2,087
-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13	2,089
+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14	2,091
DCM2 - PT103 Channel # 15 - spare	DCM2-PT15	2,093
DCM2 - PT103 Channel # 16 - spare	DCM2-PT16	2,095
Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17	2,097
+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18	2,099
Grouping for Minor Frame 3 of Science Format		
Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6	2,101
C&DH A Converter Voltage	DCM2-SEA0	2,103
C&DH B Converter Voltage	DCM2-SEA1	2,105
C&DH Component A Current	DCM2-DIFA0	2,107
C&DH Component B Current	DCM2-DIFA1	2,109
C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9	2,111
C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7	2,113
C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8	2,115
Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17	2,117
Heater-Spacecraft Operational Current	DCM2-DIFA18	2,119
Main Bus Current	DCM2-SEA2	2,121
Main Bus Voltage	DCM2-SEA3	2,123
PSE Analog Shunt Current	DCM2-DIFA19	2,125
Star Scanner Current	DCM2-DIFA8	2,127
Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2	2,129
Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3	2,131

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4	2,133
Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5	2,135
DSAD A Current	DCM2-DIFA20	2,137
DSAD B Current	DCM2-DIFA21	2,139
Grouping for Minor Frame 4 of Science Format		
Data Recorder A Hskp Data	DCM2-SD4	2,141
Solid State Recorder A PWRTEMP	DCM2-AD10	2,177
Data Recorder A Current	DCM2-DIFA6	2,179
Grouping for Minor Frame 5 of Science Format		
Data Recorder B Hskp Data	DCM2-SD5	2,181
Solid State Recorder B PWRTEMP	DCM2-AD11	2,217
Data Recorder B Current	DCM2-DIFA7	2,219
Grouping for Minor Frame 6 of Science Format		
Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6	2,221
-Y Side Panel: Near PSDE	DCM2-AD4	2,253
-X Side Panel: Near Digital Shunt Box	DCM2-AD5	2,255
Battery Current Charge Monitor	DCM2-DIFA14	2,257
Battery Current Discharge Monitor	DCM2-DIFA15	2,259
Grouping for Minor Frame 7 of Science Format		
Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7	2,261
Battery Temperature 1: Top of Center Cell	DCM2-AD2	2,293
Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3	2,295
Heater-Battery A&B Current	DCM2-DIFA16	2,297
Battery Voltage	DCM2-SEA4	2,299
Grouping for Minor Frame 8 of Science Format		
Transponder A Receiver Current	DCM2-DIFA9	2,301
Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10	2,303
Transponder B Receiver Current	DCM2-DIFA11	2,305
Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12	2,307
Transponder A Receiver AGC	DCM2-SEA7	2,309
Transponder A Receiver SPE	DCM2-SEA8	2,311
Transponder A Receiver +5V	DCM2-SEA9	2,313
Transponder B Receiver AGC	DCM2-SEA10	2,315
Transponder B Receiver SPE	DCM2-SEA11	2,317
Transponder B Receiver +5V	DCM2-SEA12	2,319
DCM2 AD590 Channel # 0 - not used	DCM2-AD0	2,321
DCM2 AD590 Channel #1 - not used	DCM2-AD1	2,323
Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13	2,325
Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7	2,327
Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6	2,327

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5	2,327
Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4	2,327
PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3	2,327
PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2	2,327
PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1	2,327
PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0	2,327
Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14	2,329
Propellant Pressure A	DCM2-SEA5	2,331
Propellant Pressure B	DCM2-SEA6	2,333
DCM2 - 0-5V Channel #30 (not in any format)	DCM2-SEA30	2,335
CRIS Data	DCM2-SD0	2,337
DCM2 - 0-5V Channel #29 (not in any format)	DCM2-SEA29	2,453
SIS Data	DCM2-SD1	2,455
DCM2 - 0-5V Channel #28 (not in any format)	DCM2-SEA28	2,953
SWEPAM Electron Data	DCM2-SD2	2,955
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	3,069
DCM2 - 0-5V Channel #27 (not in any format)	DCM2-SEA27	3,071
Most Recent Sun Pulse Time - Most Significant Byte		3,073
Most Recent Sun Pulse Time - Least Significant Byte		3,075
Most Recent Sun Pulse Latched DSAD Y axis		3,077
Most Recent Sun Pulse Latched Phase Angle - Most Significant Byte		3,079
Most Recent Sun Pulse Latched Phase Angle - Least Significant Byte		3,081
Previous Sun Pulse Time - Most Significant Byte		3,083
Previous Sun Pulse Time - Least Significant Byte		3,085
Previous Sun Pulse Latched DSAD Y axis		3,087
Previous Sun Pulse Latched Phase Angle - Most Significant Byte		3,089
Previous Sun Pulse Latched Phase Angle - Least Significant Byte		3,091
Minor Frame Latched Phase Angle - Most Significant Byte		3,093
Minor Frame Latched Phase Angle - Least Significant Byte		3,095
11 Hz Latched Sun Angle - Y axis, Sample 1		3,097
11 Hz Latched Sun Angle - X axis, Sample 1		3,099
11 Hz Latched Sun Angle - Y axis, Sample 2		3,101
11 Hz Latched Sun Angle - X axis, Sample 2		3,103
11 Hz Latched Sun Angle - Y axis, Sample 3		3,105
11 Hz Latched Sun Angle - X axis, Sample 3		3,107
11 Hz Latched Sun Angle - Y axis, Sample 4		3,109
11 Hz Latched Sun Angle - X axis, Sample 4		3,111
11 Hz Latched Sun Angle - Y axis, Sample 5		3,113
11 Hz Latched Sun Angle - X axis, Sample 5		3,115

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
11 Hz Latched Sun Angle - Y axis, Sample 6		3,117
11 Hz Latched Sun Angle - X axis, Sample 6		3,119
11 Hz Latched Sun Angle - Y axis, Sample 7		3,121
11 Hz Latched Sun Angle - X axis, Sample 7		3,123
11 Hz Latched Sun Angle - Y axis, Sample 8		3,125
11 Hz Latched Sun Angle - X axis, Sample 8		3,127
11 Hz Latched Sun Angle - Y axis, Sample 9		3,129
11 Hz Latched Sun Angle - X axis, Sample 9		3,131
11 Hz Latched Sun Angle - Y axis, Sample 10		3,133
11 Hz Latched Sun Angle - X axis, Sample 10		3,135
11 Hz Latched Sun Angle - Y axis, Sample 11		3,137
11 Hz Latched Sun Angle - X axis, Sample 11		3,139
Current C & DH Housekeeping Data, Byte 0 (Header Byte 0)		3,141
Current C & DH Housekeeping Data, Byte 1 (Header Byte 1)		3,143
Current C & DH Housekeeping Data, Byte 2 (Header Byte 2)		3,145
Current C & DH Housekeeping Data, Byte 3 (Header Byte 3)		3,147
Current C & DH Housekeeping Data, Byte 4 (Header Byte 4)		3,149
Current C & DH Housekeeping Data, Byte 5		3,151
Current C & DH Housekeeping Data, Byte 6		3,153
Current C & DH Housekeeping Data, Byte 7		3,155
Current C & DH Housekeeping Data, Byte 8		3,157
Current C & DH Housekeeping Data, Byte 9		3,159
Current C & DH Housekeeping Data, Byte 10		3,161
Current C & DH Housekeeping Data, Byte 11		3,163
Current C & DH Housekeeping Data, Byte 12		3,165
Current C & DH Housekeeping Data, Byte 13		3,167
Current C & DH Housekeeping Data, Byte 14		3,169
Current C & DH Housekeeping Data, Byte 15		3,171
Current C & DH Housekeeping Data, Byte 16		3,173
Current C & DH Housekeeping Data, Byte 17		3,175
Current C & DH Housekeeping Data, Byte 18		3,177
Current C & DH Housekeeping Data, Byte 19		3,179
Current C & DH Housekeeping Data, Byte 20		3,181
Current C & DH Housekeeping Data, Byte 21		3,183
Current C & DH Housekeeping Data, Byte 22		3,185
Current C & DH Housekeeping Data, Byte 23		3,187
Current C & DH Housekeeping Data, Byte 24		3,189
Current C & DH Housekeeping Data, Byte 25		3,191
Current C & DH Housekeeping Data, Byte 26		3,193
Current C & DH Housekeeping Data, Byte 27		3,195
Current C & DH Housekeeping Data, Byte 28		3,197
Current C & DH Housekeeping Data, Byte 29		3,199
Current C & DH Housekeeping Data, Byte 30		3,201
Current C & DH Housekeeping Data, Byte 31		3,203

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Current C & DH Housekeeping Data, Byte 32		3,205
Current C & DH Housekeeping Data, Byte 33		3,207
Current C & DH Housekeeping Data, Byte 34		3,209
Current C & DH Housekeeping Data, Byte 35		3,211
Current C & DH Housekeeping Data, Byte 36		3,213
Current C & DH Housekeeping Data, Byte 37		3,215
Current C & DH Housekeeping Data, Byte 38		3,217
Current C & DH Housekeeping Data, Byte 39		3,219
Current C & DH Housekeeping Data, Byte 40		3,221
Current C & DH Housekeeping Data, Byte 41		3,223
Current C & DH Housekeeping Data, Byte 42		3,225
Current C & DH Housekeeping Data, Byte 43		3,227
Current C & DH Housekeeping Data, Byte 44		3,229
Current C & DH Housekeeping Data, Byte 45		3,231
Current C & DH Housekeeping Data, Byte 46		3,233
Current C & DH Housekeeping Data, Byte 47		3,235
Last Command Executed, Byte 1		3,236
Last Command Executed, Byte 2		3,237
Last Command Executed, Byte 3		3,238
Last Command Executed, Byte 4		3,239
Total Command Count, Most Significant Byte		3,240
Total Command Count, Least Significant Byte		3,241
Real Time Command Count, Most Significant Byte		3,242
Real Time Command Count, Least Significant Byte		3,243
Time Tagged Command Count, Most Significant Byte		3,244
Time Tagged Command Count, Least Significant Byte		3,245
Thruster Execute Command Count, MS Byte		3,246
Thruster Execute Command Count, LS Byte		3,247
Autonomy Command Count, MS Byte (not available in telemetry)		3,248
Autonomy Command Count, LS Byte		3,249
Thruster Abort Command Count, MS Byte (not available in telemetry)		3,250
Thruster Abort Command Count, LS Byte		3,251
Separation Command Count, MS Byte (not available in telemetry)		3,252
Separation Command Count, LS Byte		3,253
LVS/Shutdown Command Count, MS Byte (not available in telemetry)		3,254
LVS/Shutdown Command Count, LS Byte		3,255
RF Watchdog Command Count, MS Byte (not available in telemetry)		3,256
RF Watchdog Command Count, LS Byte		3,257
Link Command Count, MS Byte (not available in telemetry)		3,258

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Link Command Count, LS Byte		3,259
Total Failed Command Count, MS Byte (not available in telemetry)		3,260
Total Failed Command Count, LS Byte		3,261
Command Check Failed Command Count - bits 4-7		3,263
Command Check Failure Type - bits 2-3		3,263
Command Check Failure Page Number - bits 0-1		3,263
Command Check Failure Address, MS Byte		3,264
Command Check Failure Address, LS Byte		3,265
Command Check Failure Command, Byte 1		3,266
Command Check Failure Command, Byte 2		3,267
Command Check Failure Command, Byte 3		3,268
Command Check Failure Command, Byte 4		3,269
Command Execute Failed Command Count - bits 4-7		3,271
Command Execute Failure Type - bits 2-3		3,271
Command Execute Failure Page Number - bits 0-1		3,271
Command Execute Failure Address, MS Byte		3,272
Command Execute Failure Address, LS Byte		3,273
Command Execute Failure Command, Byte 1		3,274
Command Execute Failure Command, Byte 2		3,275
Command Execute Failure Command, Byte 3		3,276
Command Execute Failure Command, Byte 4		3,277
Sun Pulse Interrupt Count, MS Byte (not available in telemetry)		3,278
Sun Pulse Interrupt Count, LS Byte		3,279
Top Deck Timer Interrupt Count, MS Byte (not available in tlm)		3,280
Top Deck Timer Interrupt Count, LS Byte		3,281
Bottom Deck Timer Interrupt Count, MS Byte (not available in tlm)		3,282
Bottom Deck Timer Interrupt Count		3,283
EDAC Error Page - bits 6-7		3,285
EDAC Error Syndrome - bits 0-5		3,285
EDAC Single Bit Error Flag - Bit 7		3,286
EDAC Error Address Bits 9-15 - Bits 0-6		3,286
EDAC Error Address Bits 1-8 - Bits 0-7		3,287
Next Frame Sequence Number		3,289
Data Collection Format - bit 6		3,290
Data Collection Enable/Disable - bit 5		3,290
Convolutional Encode Enable/Disable - bit 4		3,290
Downlink Format - bits 0-3		3,290
Recorder Playback Select - bits 6-7		3,291

PARAMETER	CHANNEL	Offset for autonomy/ selectable telemetry
Record Format - bits 0-3		3,291
Mission Elapsed Time, byte 4 (MS byte)		3,292
Mission Elapsed Time, byte 3		3,293
Mission Elapsed Time, byte 2		3,294
Mission Elapsed Time, byte 1 (LS byte)		3,295
RF Watchdog Count, byte 4 (MS byte)		3,296
RF Watchdog Count, byte 3		3,297
RF Watchdog Count, byte 2		3,298
RF Watchdog Count, byte 1 (LS byte)		3,299
RF Watchdog Terminal Count, byte 4 (MS byte)		3,300
RF Watchdog Terminal Count, byte 3		3,301
RF Watchdog Terminal Count, byte 2		3,302
RF Watchdog Terminal Count, byte 1 (LS byte)		3,303
RF Watchdog Bin Select Flag		3,305

6 Realtime Downlink and Record Formats

6.1 Format Overview

The ACE C&DH subsystem can be commanded to select one of 9 formats for realtime downlinking and one of 5 formats for recording. The formats are a combination of a fixed length, Time Division Multiplexed (TDM) structure with CCSDS type Virtual Channel Transfer Frame and Packet headers. All frames contain 6944 bits. All frames consist of a single Virtual Channel Transfer Frame containing a single packet. Each packet contains a fixed length, 6752 bit long data field. The beginning of the data field always contains a minor frame header. The header defines which frame format is present. Two types of formats are available: those that run at 6944 bits/sec, and those that run at 434 bits per second (also called Low Rate Formats). The Science, Attitude Determination and Control (ADC), C&DH Bin Dump, and C&DH Memory Dump formats are the 6944 bit/sec formats and contain 16 minor frames in each 16-second long major frame. The Low Rate Housekeeping, Low Rate C&DH Bin Dump, Low Rate C&DH Memory Dump, Low Rate ADC, and Real Time Solar Wind (RTSW) are the Low Rate Formats and contain one minor frame in a 16-second long major frame. The 434 bits/sec formats are normally selected only if the spacecraft RF link can not support the higher bit rate formats. All formats are shown prior to the Reed Solomon code words being attached and the I=4 interleaving being performed. Table 6.1-1 summarizes the formats.

6.2 Realtime Downlink Formats

Both the 6944 bit/sec and 434 bits/sec formats can be selected for downlinking. Downlink frames have a virtual channel ID of 1.

6.3 Record Formats

Only the formats the run at 6944 bits/sec can be selected for recording. Record formats utilize the CCSDS specified sync word for embedded data streams ($352EF853_{hex}$) and have a virtual channel ID of 4.

Format	Description
Science	6552 bits science, 176 bits housekeeping data, at 6944 bits/sec; housekeeping data repeats every 16 seconds
C&DH Bin Dump	Same as science except housekeeping data replaced with C&DH bin dump data
C&DH Memory Dump	Same as science except housekeeping data replaced with C&DH memory dump data
ADC	Includes complete ADC data and HSKP data every second, reduced science, at 6944 bits/sec
Low Rate Housekeeping	Includes full housekeeping and partial ADC data, repeats every 16 seconds
Low Rate Bin Dump	Same as Low Rate Housekeeping, except an additional 2816 bits of C&DH bin dump data added
Low Rate C&DH Memory Dump	Same as Low Rate Housekeeping, except an additional 2816 bits of C&DH memory dump data added
Low Rate ADC	Includes complete ADC data, slightly reduced housekeeping data
RTSW	includes RTSW science data from Mag, EPAM, SWEPAM(Ion)

Downlink/Record Formats
Table 6.1-1

6.4 Science Format

The format includes all science data. Housekeeping data is subcommutated over a major frame , so that repeats on a major frame basis (every 16 seconds), so the housekeeping data that appears in each minor frame in a major frame is different. Only a subset of the Star Scanner data is included - each major frame includes data from one star, with the four brightest stars outputed over 4 successive major frames.

Science Format
Minor Frame 0

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format
Minor Frame 1

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 1	C&DH
200	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
208	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
216	8	+X Solar Array Panel Temperature	DCM2-PT0
224	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
232	8	-X Solar Array Panel Temperature	DCM2-PT2
240	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
248	8	Magnetometer Inboard Temperature	DCM2-SEA15
256	8	Magnetometer Outboard Temperature	DCM2-SEA16
264	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
272	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
280	8	S3 DPU Power Converter Voltage	DCM2-SEA19
288	8	Power Subsystem Processor A Current	DCM2-DIFA22
296	8	Power Subsystem Processor B Current	DCM2-DIFA23
304	8	Prop. System Axial Thruster Current	DCM2-DIFA24
312	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
320	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
328	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
336	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
344	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
345	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
346	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
347	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
348	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
349	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
350	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
351	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
352	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
353	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
354	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
355	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
356	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
357	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10

Science Format

Minor Frame 1

Location	Length	Parameter	Source
358	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
359	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format
Minor Frame 2

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 2	C&DH
200	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
208	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
216	8	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21
224	8	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22
232	8	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23
240	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
248	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
256	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
264	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
272	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
280	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
288	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
296	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
304	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
312	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
320	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
328	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
336	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
344	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17
352	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format
Minor Frame 3

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 3	C&DH
200	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
208	8	C&DH A Converter Voltage	DCM2-SEA0
216	8	C&DH B Converter Voltage	DCM2-SEA1
224	8	C&DH Component A Current	DCM2-DIFA0
232	8	C&DH Component B Current	DCM2-DIFA1
240	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9
248	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
256	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
264	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA1
272	8	Heater-Spacecraft Operational Current	DCM2-DIFA1
280	8	Main Bus Current	DCM2-SEA2
288	8	Main Bus Voltage	DCM2-SEA3
296	8	PSE Analog Shunt Current	DCM2-DIFA1
304	8	Star Scanner Current	DCM2-DIFA8
312	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
320	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
328	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
336	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
344	8	DSAD A Current	DCM2-DIFA2
352	8	DSAD B Current	DCM2-DIFA2
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format
Minor Frame 4

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 4	C&DH
200	144	Data Recorder A Hskp Data	DCM2-SD4
344	8	Solid State Recorder A PWRTEMP	DCM2-AD10
352	8	Data Recorder A Current	DCM2-DIFA6
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 5

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 5	C&DH
200	144	Data Recorder B Hskp Data	DCM2-SD5
344	8	Solid State Recorder B PWRTEMP	DCM2-AD11
352	8	Data Recorder B Current	DCM2-DIFA7
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 6

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 6	C&DH
200	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
328	8	-Y Side Panel: Near PSDE	DCM2-AD4
336	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
344	8	Battery Current Charge Monitor	DCM2-DIFA
352	8	Battery Current Discharge Monitor	DCM2-DIFA
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 7

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 7	C&DH
200	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
328	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
336	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
344	8	Heater-Battery A&B Current	DCM2-DIFA
352	8	Battery Voltage	DCM2-SEA4
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 8

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 8	C&DH
200	8	Transponder A Receiver Current	DCM2-DIFA9
208	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
216	8	Transponder B Receiver Current	DCM2-DIFA11
224	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
232	8	Transponder A Receiver AGC	DCM2-SEA7
240	8	Transponder A Receiver SPE	DCM2-SEA8
248	8	Transponder A Receiver +5V	DCM2-SEA9
256	8	Transponder B Receiver AGC	DCM2-SEA10
264	8	Transponder B Receiver SPE	DCM2-SEA11
272	8	Transponder B Receiver +5V	DCM2-SEA12
280	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
288	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
296	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
304	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
305	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
306	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5
307	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
308	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
309	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
310	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
311	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
312	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14
320	8	Propellant Pressure A	DCM2-SEA5
328	8	Propellant Pressure B	DCM2-SEA6
336	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2

Science Format

Minor Frame 8

Location	Length	Parameter	Source
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 9

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 9	C&DH
200	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
208	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
216	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
224	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
232	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
240	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
248	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
256	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
264	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
272	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
280	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA1
288	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA1
296	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA1
304	8	ULEIS LVPS Voltage	DCM1-SEA1
312	8	CRIS Internal Temperature #1	DCM1-AD14
320	8	CRIS Internal Temperature #2	DCM1-AD15
328	8	SIS Internal Temperature #1	DCM1-AD17
336	8	SIS Internal Temperature #2	DCM1-AD18
344	16	Phase angle latched with Sun Pulse TT in minor frame 0	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 10

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 10	C&DH
200	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
208	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
216	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
217	1	SIS Cover Telltale	DCM1-DIGTTSW14
218	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
219	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
220	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
221	1	Prime Charger Selected TT	DCM1-DIGTTSW10
222	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
223	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
224	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
232	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
240	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17
248	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
256	8	ULEIS & Survival Heater Current	DCM1-DIFA19
264	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
272	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
280	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
288	8	SWEPAM Electron Current	DCM1-DIFA23
296	8	SWEPAM Ion Current	DCM1-DIFA24
304	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25
312	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
320	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
328	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
336	8	S^3 DPU Current	DCM1-DIFA29
344	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
352	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1

Science Format

Minor Frame 10

Location	Length	Parameter	Source
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 11

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 11	C&DH
200	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
319	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
318	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
317	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
316	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
315	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
314	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
313	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
312	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
320	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
328	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
336	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
344	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
352	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 12

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 12	C&DH
200	8	SWIMS Internal Temperature	DCM1-AD5
208	8	SWICS Internal Temperature	DCM1-AD7
216	8	ULEIS Telescope Temperature	DCM1-AD9
224	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
232	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
240	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
248	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
256	8	SWEPAM(E) Internal Temperature	DCM1-AD24
264	8	SWEPAM(I) Internal Temperature	DCM1-AD26
272	64	Star Scanner Data	DCM1-SD6
336	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
344	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
352	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 13

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 13	C&DH
200	160	Bits 0 to 159 of active C&DH housekeeping data	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 14

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 14	C&DH
200	160	Bits 160 to 319 of active C&DH housekeeping data	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

Science Format

Minor Frame 15

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID - Side	C&DH
165	1	Sun Sensor ID - Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 15	C&DH
200	64	Bits 320-383 of bits of active C&DH housekeeping data	C&DH
264	8	Analog Shunt Panel Temperature	DCM1-PT23
272	8	Aft Deck Temperature (TBD) #1	DCM1-PT24
280	64	Opposite C&DH Component Hskp Data	DCM1-SD4
344	16	Phase angle latched with Sun Pulse TT in minor frame 8	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

6.5 C&DH Bin Dump Format

The format includes all science data; housekeeping data, with the exception of the selectable telemetry byte and phase angle, is replaced with bin dump data from the C&DH component. The bins that get dumped are specified by the C&DH Bin Dump command. One major frame contains one block bin or up to 15 autonomy or time tag bins. Each major frame starts with a new block bin or set of autonomy or timetagged bins. Minor frame zero contains information on which bin is being dumped. The rest of the minor frames contain bin or fill data only and are otherwise identical, so one listing is shown for minor frames 2 through 15.

C&DH Bin Dump Format

Minor Frame 0

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame 0	
200	8	Mode (=2 for Bin Dumps)	C&DH
208	8	Bin Type	C&DH
216	16	Bin Number	C&DH
232	16	Number of dump bytes in the major frame	C&DH
248	112	zero	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

C&DH Bin Dump Format

Minor Frames 1-15

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle Latched at Minor Frame Pulse	C&DH
200	160	Bin Data	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

6.6 C&DH Memory Dump Format

The format includes all science data; housekeeping data, with the exception of the selectable telemetry byte, is replaced with memory dump data from the C&DH component. The memory data that gets dumped is specified by the C&DH Memory Dump command. Minor frame zero includes information on which area of memory is being dumped as well as memory data. Minor frames 1 through 15 are identical.

C&DH Memory Dump Format

Minor Frame 0

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle Latched at Minor Frame Pulse	C&DH
200	8	Mode (=1 for Memory Dumps)	C&DH
208	8	Page Number	C&DH
216	16	Starting Address	C&DH
232	16	Number of Dump bytes in the major frame	C&DH
248	112	Memory Data	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

C&DH Memory Dump Format

Minor Frames 1- 15

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle Latched at Minor Frame Pulse	C&DH
200	160	Memory Data	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	456	SWEPAM Electron Data	DCM2-SD2
4,288	1,000	ULEIS Data	DCM1-SD1
5,288	1,624	S^3 DPU Data	DCM1-SD3
6,912	32	Command Link Control Word	C&DH
6,944			

6.7 Attitude Determination and Control Format

The format includes reduced science (CRIS, SIS, EPAM, SWEPAM (Ion), Magnetometer only), 11 Hz sampling of the sun sensor, and all Star Scanner data. All housekeeping data is repeated every minor frame (every second), instead of one per major frame (every 16 seconds) as in the Science format. Only one minor frame is shown below because all minor frames contain the same science and housekeeping information.

ADC Minor Frame Format

Minor Frames 0 through 15 contain the same housekeeping and science data

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte	C&DH
184	16	Phase Angle latched in collected minor frame	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
360	304	Magnetometer Data	DCM2-SD3
664	168	EPAM Data	DCM1-SD0
832	464	CRIS Data	DCM2-SD0
1,296	1,992	SIS Data	DCM2-SD1
3,288	544	SWEPAM Ion Data	DCM1-SD2
3,832	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
3,840	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
3,848	8	+X Solar Array Panel Temperature	DCM2-PT0
3,856	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
3,864	8	-X Solar Array Panel Temperature	DCM2-PT2
3,872	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
3,880	8	Magnetometer Inboard Temperature	DCM2-SEA15

Location	Length	Parameter	Source
3,888	8	Magnetometer Outboard Temperature	DCM2-SEA16
3,896	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
3,904	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
3,912	8	S3 DPU Power Converter Voltage	DCM2-SEA19
3,920	8	Power Subsystem Processor A Current	DCM2-DIFA22
3,928	8	Power Subsystem Processor B Current	DCM2-DIFA23
3,936	8	Prop. System Axial Thruster Current	DCM2-DIFA24
3,944	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
3,952	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
3,960	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
3,968	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
3,976	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
3,977	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
3,978	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
3,979	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
3,980	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
3,981	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
3,982	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
3,983	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
3,984	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
3,985	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
3,986	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
3,987	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
3,988	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
3,989	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
3,990	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
3,991	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
3,992	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
4,000	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
4,008	8	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21
4,016	8	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22
4,024	8	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23
4,032	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
4,040	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
4,048	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
4,056	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
4,064	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
4,072	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
4,080	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
4,088	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
4,096	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
4,104	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
4,112	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
4,120	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
4,128	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
4,136	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17

Location	Length	Parameter	Source
4,144	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
4,152	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
4,160	8	C&DH A Converter Voltage	DCM2-SEA0
4,168	8	C&DH B Converter Voltage	DCM2-SEA1
4,176	8	C&DH Component A Current	DCM2-DIFA0
4,184	8	C&DH Component B Current	DCM2-DIFA1
4,192	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9
4,200	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
4,208	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
4,216	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17
4,224	8	Heater-Spacecraft Operational Current	DCM2-DIFA18
4,232	8	Main Bus Current	DCM2-SEA2
4,240	8	Main Bus Voltage	DCM2-SEA3
4,248	8	PSE Analog Shunt Current	DCM2-DIFA19
4,256	8	Star Scanner Current	DCM2-DIFA8
4,264	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
4,272	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
4,280	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
4,288	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
4,296	8	DSAD A Current	DCM2-DIFA20
4,304	8	DSAD B Current	DCM2-DIFA21
4,312	144	Data Recorder A Hskp Data	DCM2-SD4
4,456	8	Solid State Recorder A PWRTEMP	DCM2-AD10
4,464	8	Data Recorder A Current	DCM2-DIFA6
4,472	144	Data Recorder B Hskp Data	DCM2-SD5
4,616	8	Solid State Recorder B PWRTEMP	DCM2-AD11
4,624	8	Data Recorder B Current	DCM2-DIFA7
4,632	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
4,760	8	-Y Side Panel: Near PSDE	DCM2-AD4
4,768	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
4,776	8	Battery Current Charge Monitor	DCM2-DIFA14
4,784	8	Battery Current Discharge Monitor	DCM2-DIFA15
4,792	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
4,920	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
4,928	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
4,936	8	Heater-Battery A&B Current	DCM2-DIFA16
4,944	8	Battery Voltage	DCM2-SEA4
4,952	8	Transponder A Receiver Current	DCM2-DIFA9
4,960	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
4,968	8	Transponder B Receiver Current	DCM2-DIFA11
4,976	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
4,984	8	Transponder A Receiver AGC	DCM2-SEA7
4,992	8	Transponder A Receiver SPE	DCM2-SEA8
5,000	8	Transponder A Receiver +5V	DCM2-SEA9
5,008	8	Transponder B Receiver AGC	DCM2-SEA10
5,016	8	Transponder B Receiver SPE	DCM2-SEA11

Location	Length	Parameter	Source
5,024	8	Transponder B Receiver +5V	DCM2-SEA12
5,032	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
5,040	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
5,048	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
5,056	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
5,057	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
5,058	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5
5,059	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
5,060	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
5,061	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
5,062	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
5,063	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
5,064	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14
5,072	8	Propellant Pressure A	DCM2-SEA5
5,080	8	Propellant Pressure B	DCM2-SEA6
5,088	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
5,096	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
5,104	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
5,112	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
5,120	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
5,128	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
5,136	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
5,144	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
5,152	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
5,160	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
5,168	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10
5,176	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11
5,184	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12
5,192	8	ULEIS LVPS Voltage	DCM1-SEA13
5,200	8	CRIS Internal Temperature #1	DCM1-AD14
5,208	8	CRIS Internal Temperature #2	DCM1-AD15
5,216	8	SIS Internal Temperature #1	DCM1-AD17
5,224	8	SIS Internal Temperature #2	DCM1-AD18
5,232	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
5,240	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
5,248	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
5,249	1	SIS Cover Telltale	DCM1-DIGTTSW14
5,250	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
5,251	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
5,252	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
5,253	1	Prime Charger Selected TT	DCM1-DIGTTSW10
5,254	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
5,255	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
5,256	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
5,264	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
5,272	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17

Location	Length	Parameter	Source
5,280	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
5,288	8	ULEIS & Survival Heater Current	DCM1-DIFA19
5,296	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
5,304	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
5,312	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
5,320	8	SWEPAM Electron Current	DCM1-DIFA23
5,328	8	SWEPAM Ion Current	DCM1-DIFA24
5,336	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25
5,344	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
5,352	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
5,360	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
5,368	8	S^3 DPU Current	DCM1-DIFA29
5,376	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
5,384	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13
5,392	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
5,504	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
5,505	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
5,506	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
5,507	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
5,508	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
5,509	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
5,510	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
5,511	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
5,512	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
5,520	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
5,528	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
5,536	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
5,544	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
5,552	8	SWIMS Internal Temperature	DCM1-AD5
5,560	8	SWICS Internal Temperature	DCM1-AD7
5,568	8	ULEIS Telescope Temperature	DCM1-AD9
5,576	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
5,584	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
5,592	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
5,600	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
5,608	8	SWEPAM(E) Internal Temperature	DCM1-AD24
5,616	8	SWEPAM(I) Internal Temperature	DCM1-AD26
5,624	64	Star Scanner Data	DCM1-SD6
5,688	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
5,696	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
5,704	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
5,712	160	Bits 0 to 159 of active C&DH housekeeping data	C&DH
5,872	160	Bits 160 to 319 of active C&DH housekeeping data	C&DH
6,032	64	Bits 320-383 of bits of active C&DH housekeeping data	C&DH
6,096	8	Analog Shunt Panel Temperature	DCM1-PT23
6,104	8	Aft Deck Temperature (TBD) #1	DCM1-PT24

Location	Length	Parameter	Source
6,112	64	Opposite C&DH Component Hskp Data	DCM1-SD4
6,176	8	+Y Solar Array Panel Temperature	DCM1-PT0
6,184	8	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1
6,192	8	-Y Solar Array Panel Temperature	DCM1-PT2
6,200	8	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3
6,208	8	+Y Side Panel: Near Digital Shunt	DCM1-AD2
6,216	8	-X Side Panel: TBD	DCM1-AD3
6,224	8	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4
6,232	8	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14
6,240	8	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15
6,248	8	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16
6,256	8	-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17
6,264	8	-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18
6,272	8	-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19
6,280	8	-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20
6,288	8	Antenna Dish Feed: Use Long Leads	DCM1-PT21
6,296	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
6,304	8	Back of +X Forward Radiator	DCM1-AD0
6,312	8	Back of -X/-Y Forward Radiator	DCM1-AD1
6,320	8	SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6
6,328	8	SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8
6,336	8	ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12
6,344	8	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13
6,352	8	CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16
6,360	8	SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19
6,368	8	SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21
6,376	8	SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25
6,384	8	SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27
6,392	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
6,400	1	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7
6,401	1	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6
6,402	1	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5
6,403	1	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4
6,404	1	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3
6,405	1	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2
6,406	1	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1
6,407	1	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0
6,408	8	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10
6,416	8	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11
6,424	8	Thruster Valve IA Temperature	DCM1-PT4
6,432	8	Thruster Valve IR Temperature	DCM1-PT5
6,440	8	Thruster Valve IVA Temperature	DCM1-PT6
6,448	8	Thruster Valve IVR+ Temperature	DCM1-PT7
6,456	8	Thruster Valve IVR- Temperature	DCM1-PT8
6,464	8	Thruster Valve IIIR- Temperature	DCM1-PT9
6,472	8	Thruster Valve IIIR+ Temperature	DCM1-PT10

Location	Length	Parameter	Source
6,480	8	Thruster Valve IIIA Temperature	DCM1-PT11
6,488	8	Thruster Valve IIR Temperature	DCM1-PT12
6,496	8	Thruster Valve IIA Temperature	DCM1-PT13
6,504	8	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0
6,512	8	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1
6,520	8	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2
6,528	8	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3
6,536	8	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4
6,544	8	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5
6,552	8	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6
6,560	8	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7
6,568	8	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8
6,576	8	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9
6,584	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,600	8	11 Hz Latched Sun Angle - Y axis, Sample 1	C&DH/Sun Sensor
6,608	8	11 Hz Latched Sun Angle - X axis, Sample 1	C&DH/Sun Sensor
6,616	8	11 Hz Latched Sun Angle - Y axis, Sample 2	C&DH/Sun Sensor
6,624	8	11 Hz Latched Sun Angle - X axis, Sample 2	C&DH/Sun Sensor
6,632	8	11 Hz Latched Sun Angle - Y axis, Sample 3	C&DH/Sun Sensor
6,640	8	11 Hz Latched Sun Angle - X axis, Sample 3	C&DH/Sun Sensor
6,648	8	11 Hz Latched Sun Angle - Y axis, Sample 4	C&DH/Sun Sensor
6,656	8	11 Hz Latched Sun Angle - X axis, Sample 4	C&DH/Sun Sensor
6,664	8	11 Hz Latched Sun Angle - Y axis, Sample 5	C&DH/Sun Sensor
6,672	8	11 Hz Latched Sun Angle - X axis, Sample 5	C&DH/Sun Sensor
6,680	8	11 Hz Latched Sun Angle - Y axis, Sample 6	C&DH/Sun Sensor
6,688	8	11 Hz Latched Sun Angle - X axis, Sample 6	C&DH/Sun Sensor
6,696	8	11 Hz Latched Sun Angle - Y axis, Sample 7	C&DH/Sun Sensor
6,704	8	11 Hz Latched Sun Angle - X axis, Sample 7	C&DH/Sun Sensor
6,712	8	11 Hz Latched Sun Angle - Y axis, Sample 8	C&DH/Sun Sensor
6,720	8	11 Hz Latched Sun Angle - X axis, Sample 8	C&DH/Sun Sensor
6,728	8	11 Hz Latched Sun Angle - Y axis, Sample 9	C&DH/Sun Sensor
6,736	8	11 Hz Latched Sun Angle - X axis, Sample 9	C&DH/Sun Sensor
6,744	8	11 Hz Latched Sun Angle - Y axis, Sample 10	C&DH/Sun Sensor
6,752	8	11 Hz Latched Sun Angle - X axis, Sample 10	C&DH/Sun Sensor
6,760	8	11 Hz Latched Sun Angle - Y axis, Sample 11	C&DH/Sun Sensor
6,768	8	11 Hz Latched Sun Angle - X axis, Sample 11	C&DH/Sun Sensor
6,776	96	Transfer Frame Failure Report	C&DH
6,872	32	Spare Serial Digital Channel	DCM1-SD7
6,904	8	Spare	
6,912	32	Command Link Control Word	C&DH
6,944			

6.8 Low Rate Housekeeping

Like all the other low rate formats, one major frame (16 seconds and 6944 bits long) contains one minor frame, and runs at a rate of 434 bits per second. All housekeeping data is included and repeats once per major frame. The slot that contains dump data in the Low Rate Bin Dump and Low Rate Memory Dump formats is empty; aside from the contents of that slot, and the format ID, the Low Rate Housekeeping, Low Rate C&DH Bin Dump, and Low Rate C&DH Memory Dump formats are identical.

Low Rate Housekeeping Format
Major Frame

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte Second 0	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
344	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
352	8	+X Solar Array Panel Temperature	DCM2-PT0
360	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
368	8	-X Solar Array Panel Temperature	DCM2-PT2
376	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
384	8	Magnetometer Inboard Temperature	DCM2-SEA15
392	8	Magnetometer Outboard Temperature	DCM2-SEA16
400	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
408	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
416	8	S3 DPU Power Converter Voltage	DCM2-SEA19
424	8	Power Subsystem Processor A Current	DCM2-DIFA22
432	8	Power Subsystem Processor B Current	DCM2-DIFA23
440	8	Prop. System Axial Thruster Current	DCM2-DIFA24

Low Rate Housekeeping Format

Location	Length	Parameter	Source
448	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
456	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
464	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
472	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
480	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
481	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
482	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
483	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
484	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
485	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
486	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
487	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
488	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
489	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
490	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
491	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
492	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
493	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
494	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
495	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
496	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
504	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
512	8	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21
520	8	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22
528	8	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23
536	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
544	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
552	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
560	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
568	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
576	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
584	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
592	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
600	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
608	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
616	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
624	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
632	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
640	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17
648	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
656	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
664	8	C&DH A Converter Voltage	DCM2-SEA0
672	8	C&DH B Converter Voltage	DCM2-SEA1
680	8	C&DH Component A Current	DCM2-DIFA0
688	8	C&DH Component B Current	DCM2-DIFA1
696	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9

Low Rate Housekeeping Format

Location	Length	Parameter	Source
704	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
712	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
720	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17
728	8	Heater-Spacecraft Operational Current	DCM2-DIFA18
736	8	Main Bus Current	DCM2-SEA2
744	8	Main Bus Voltage	DCM2-SEA3
752	8	PSE Analog Shunt Current	DCM2-DIFA19
760	8	Star Scanner Current	DCM2-DIFA8
768	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
776	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
784	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
792	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
800	8	DSAD A Current	DCM2-DIFA20
808	8	DSAD B Current	DCM2-DIFA21
816	144	Data Recorder A Hskp Data	DCM2-SD4
960	8	Solid State Recorder A PWRTEMP	DCM2-AD10
968	8	Data Recorder A Current	DCM2-DIFA6
976	144	Data Recorder B Hskp Data	DCM2-SD5
1,120	8	Solid State Recorder B PWRTEMP	DCM2-AD11
1,128	8	Data Recorder B Current	DCM2-DIFA7
1,136	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
1,264	8	-Y Side Panel: Near PSDE	DCM2-AD4
1,272	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
1,280	8	Battery Current Charge Monitor	DCM2-DIFA14
1,288	8	Battery Current Discharge Monitor	DCM2-DIFA15
1,296	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
1,424	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
1,432	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
1,440	8	Heater-Battery A&B Current	DCM2-DIFA16
1,448	8	Battery Voltage	DCM2-SEA4
1,456	8	Transponder A Receiver Current	DCM2-DIFA9
1,464	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
1,472	8	Transponder B Receiver Current	DCM2-DIFA11
1,480	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
1,488	8	Transponder A Receiver AGC	DCM2-SEA7
1,496	8	Transponder A Receiver SPE	DCM2-SEA8
1,504	8	Transponder A Receiver +5V	DCM2-SEA9
1,512	8	Transponder B Receiver AGC	DCM2-SEA10
1,520	8	Transponder B Receiver SPE	DCM2-SEA11
1,528	8	Transponder B Receiver +5V	DCM2-SEA12
1,536	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
1,544	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
1,552	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
1,560	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
1,561	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
1,562	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5

Low Rate Housekeeping Format

Location	Length	Parameter	Source
1,563	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
1,564	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
1,565	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
1,566	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
1,567	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
1,568	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14
1,576	8	Propellant Pressure A	DCM2-SEA5
1,584	8	Propellant Pressure B	DCM2-SEA6
1,592	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
1,600	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
1,608	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
1,616	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
1,624	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
1,632	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
1,640	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
1,648	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
1,656	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
1,664	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
1,672	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10
1,680	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11
1,688	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12
1,696	8	ULEIS LVPS Voltage	DCM1-SEA13
1,704	8	CRIS Internal Temperature #1	DCM1-AD14
1,712	8	CRIS Internal Temperature #2	DCM1-AD15
1,720	8	SIS Internal Temperature #1	DCM1-AD17
1,728	8	SIS Internal Temperature #2	DCM1-AD18
1,736	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
1,744	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
1,752	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
1,753	1	SIS Cover Telltale	DCM1-DIGTTSW14
1,754	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
1,755	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
1,756	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
1,757	1	Prime Charger Selected TT	DCM1-DIGTTSW10
1,758	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
1,759	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
1,760	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
1,768	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
1,776	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17
1,784	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
1,792	8	ULEIS & Survival Heater Current	DCM1-DIFA19
1,800	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
1,808	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
1,816	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
1,824	8	SWEPAM Electron Current	DCM1-DIFA23
1,832	8	SWEPAM Ion Current	DCM1-DIFA24

Low Rate Housekeeping Format

Location	Length	Parameter	Source
1,840	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25
1,848	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
1,856	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
1,864	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
1,872	8	S^3 DPU Current	DCM1-DIFA29
1,880	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
1,888	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13
1,896	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
2,008	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
2,009	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
2,010	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
2,011	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
2,012	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
2,013	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
2,014	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
2,015	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
2,016	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
2,024	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
2,032	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
2,040	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
2,048	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
2,056	8	SWIMS Internal Temperature	DCM1-AD5
2,064	8	SWICS Internal Temperature	DCM1-AD7
2,072	8	ULEIS Telescope Temperature	DCM1-AD9
2,080	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
2,088	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
2,096	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
2,104	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
2,112	8	SWEPAM(E) Internal Temperature	DCM1-AD24
2,120	8	SWEPAM(I) Internal Temperature	DCM1-AD26
2,128	64	Last Star Scanner Data	DCM1-SD6
2,192	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
2,200	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
2,208	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
2,216	384	C&DH Housekeeping	C&DH
2,600	8	Analog Shunt Panel Temperature	DCM1-PT23
2,608	8	Aft Deck Temperature (TBD) #1	DCM1-PT24
2,616	64	Opposite C&DH Component Hskp Data	DCM1-SD4
2,680	8	+Y Solar Array Panel Temperature	DCM1-PT0
2,688	8	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1
2,696	8	-Y Solar Array Panel Temperature	DCM1-PT2
2,704	8	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3
2,712	8	+Y Side Panel: Near Digital Shunt	DCM1-AD2
2,720	8	-X Side Panel: TBD	DCM1-AD3
2,728	8	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4
2,736	8	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14

Low Rate Housekeeping Format

Location	Length	Parameter	Source
2,744	8	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15
2,752	8	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16
2,760	8	-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17
2,768	8	-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18
2,776	8	-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19
2,784	8	-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20
2,792	8	Antenna Dish Feed: Use Long Leads	DCM1-PT21
2,800	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,808	8	Back of +X Forward Radiator	DCM1-AD0
2,816	8	Back of -X/-Y Forward Radiator	DCM1-AD1
2,824	8	SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6
2,832	8	SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8
2,840	8	ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12
2,848	8	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13
2,856	8	CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16
2,864	8	SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19
2,872	8	SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21
2,880	8	SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25
2,888	8	SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27
2,896	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,904	1	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7
2,905	1	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6
2,906	1	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5
2,907	1	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4
2,908	1	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3
2,909	1	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2
2,910	1	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1
2,911	1	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0
2,912	8	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10
2,920	8	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11
2,928	8	Thruster Valve IA Temperature	DCM1-PT4
2,936	8	Thruster Valve IR Temperature	DCM1-PT5
2,944	8	Thruster Valve IVA Temperature	DCM1-PT6
2,952	8	Thruster Valve IVR+ Temperature	DCM1-PT7
2,960	8	Thruster Valve IVR- Temperature	DCM1-PT8
2,968	8	Thruster Valve IIIR- Temperature	DCM1-PT9
2,976	8	Thruster Valve IIIR+ Temperature	DCM1-PT10
2,984	8	Thruster Valve IIIA Temperature	DCM1-PT11
2,992	8	Thruster Valve IIR Temperature	DCM1-PT12
3,000	8	Thruster Valve IIA Temperature	DCM1-PT13
3,008	8	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0
3,016	8	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1
3,024	8	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2
3,032	8	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3
3,040	8	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4
3,048	8	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5

Low Rate Housekeeping Format

Location	Length	Parameter	Source
3,056	8	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6
3,064	8	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7
3,072	8	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8
3,080	8	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9
3,088	2,560	Unused - occupied by C&DH Bin and Memory Dump data in low rate dump formats	
5,648	936	Spare	
6,584	32	Spare Serial Digital Data	
6,616	96	Transfer Frame Failure Report	
6,712	8	Selectable Telemetry Byte Second 1	C&DH
6,720	8	Selectable Telemetry Byte Second 2	C&DH
6,728	8	Selectable Telemetry Byte Second 3	C&DH
6,736	8	Selectable Telemetry Byte Second 4	C&DH
6,744	8	Selectable Telemetry Byte Second 5	C&DH
6,752	8	Selectable Telemetry Byte Second 6	C&DH
6,760	8	Selectable Telemetry Byte Second 7	C&DH
6,768	8	Selectable Telemetry Byte Second 8	C&DH
6,776	8	Selectable Telemetry Byte Second 9	C&DH
6,784	8	Selectable Telemetry Byte Second 10	C&DH
6,792	8	Selectable Telemetry Byte Second 11	C&DH
6,800	8	Selectable Telemetry Byte Second 12	C&DH
6,808	8	Selectable Telemetry Byte Second 13	C&DH
6,816	8	Selectable Telemetry Byte Second 14	C&DH
6,824	8	Selectable Telemetry Byte Second 15	C&DH
6,832	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,856	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,872	24	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,896	16	Phase Angle latched at next to most recent Sun Pulse	C&DH
6,912	32	Command Link Control Word	C&DH
6,944			

6.9 Low Rate Bin Dump

Like all the other low rate formats, one major frame (16 seconds and 6944 bits long) contains one minor frame, and runs at a rate of 434 bits per second. All housekeeping data is included and repeats once per major frame. The slot that is empty in the Low Rate Housekeeping Format, and contains memory dump data in the Low Rate Memory Dump Format, contains C&DH bin dump data. Aside from the contents of that slot, and the format ID, the Low Rate Housekeeping, Low Rate C&DH Bin Dump, and Low Rate C&DH Memory Dump formats are identical.

Low Rate C&DH Bin Dump Format

Major Frame

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Word Second 0	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
344	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
352	8	+X Solar Array Panel Temperature	DCM2-PT0
360	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
368	8	-X Solar Array Panel Temperature	DCM2-PT2
376	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
384	8	Magnetometer Inboard Temperature	DCM2-SEA15
392	8	Magnetometer Outboard Temperature	DCM2-SEA16
400	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
408	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
416	8	S3 DPU Power Converter Voltage	DCM2-SEA19
424	8	Power Subsystem Processor A Current	DCM2-DIFA22

Low Rate C&DH Bin Dump Format

Location	Length	Parameter	Source
432	8	Power Subsystem Processor B Current	DCM2-DIFA23
440	8	Prop. System Axial Thruster Current	DCM2-DIFA24
448	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
456	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
464	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
472	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
480	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
481	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
482	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
483	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
484	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
485	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
486	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
487	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
488	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
489	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
490	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
491	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
492	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
493	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
494	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
495	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
496	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
504	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
512	8	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21
520	8	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22
528	8	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23
536	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
544	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
552	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
560	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
568	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
576	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
584	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
592	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
600	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
608	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
616	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
624	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
632	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
640	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17
648	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
656	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
664	8	C&DH A Converter Voltage	DCM2-SEA0
672	8	C&DH B Converter Voltage	DCM2-SEA1
680	8	C&DH Component A Current	DCM2-DIFA0
688	8	C&DH Component B Current	DCM2-DIFA1

Low Rate C&DH Bin Dump Format

Location	Length	Parameter	Source
696	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9
704	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
712	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
720	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17
728	8	Heater-Spacecraft Operational Current	DCM2-DIFA18
736	8	Main Bus Current	DCM2-SEA2
744	8	Main Bus Voltage	DCM2-SEA3
752	8	PSE Analog Shunt Current	DCM2-DIFA19
760	8	Star Scanner Current	DCM2-DIFA8
768	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
776	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
784	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
792	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
800	8	DSAD A Current	DCM2-DIFA20
808	8	DSAD B Current	DCM2-DIFA21
816	144	Data Recorder A Hskp Data	DCM2-SD4
960	8	Solid State Recorder A PWRTEMP	DCM2-AD10
968	8	Data Recorder A Current	DCM2-DIFA6
976	144	Data Recorder B Hskp Data	DCM2-SD5
1,120	8	Solid State Recorder B PWRTEMP	DCM2-AD11
1,128	8	Data Recorder B Current	DCM2-DIFA7
1,136	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
1,264	8	-Y Side Panel: Near PSDE	DCM2-AD4
1,272	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
1,280	8	Battery Current Charge Monitor	DCM2-DIFA14
1,288	8	Battery Current Discharge Monitor	DCM2-DIFA15
1,296	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
1,424	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
1,432	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
1,440	8	Heater-Battery A&B Current	DCM2-DIFA16
1,448	8	Battery Voltage	DCM2-SEA4
1,456	8	Transponder A Receiver Current	DCM2-DIFA9
1,464	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
1,472	8	Transponder B Receiver Current	DCM2-DIFA11
1,480	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
1,488	8	Transponder A Receiver AGC	DCM2-SEA7
1,496	8	Transponder A Receiver SPE	DCM2-SEA8
1,504	8	Transponder A Receiver +5V	DCM2-SEA9
1,512	8	Transponder B Receiver AGC	DCM2-SEA10
1,520	8	Transponder B Receiver SPE	DCM2-SEA11
1,528	8	Transponder B Receiver +5V	DCM2-SEA12
1,536	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
1,544	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
1,552	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
1,560	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
1,561	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
1,562	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5

Location	Length	Parameter	Source
1,563	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
1,564	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
1,565	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
1,566	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
1,567	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
1,568	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14
1,576	8	Propellant Pressure A	DCM2-SEA5
1,584	8	Propellant Pressure B	DCM2-SEA6
1,592	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
1,600	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
1,608	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
1,616	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
1,624	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
1,632	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
1,640	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
1,648	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
1,656	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
1,664	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
1,672	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10
1,680	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11
1,688	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12
1,696	8	ULEIS LVPS Voltage	DCM1-SEA13
1,704	8	CRIS Internal Temperature #1	DCM1-AD14
1,712	8	CRIS Internal Temperature #2	DCM1-AD15
1,720	8	SIS Internal Temperature #1	DCM1-AD17
1,728	8	SIS Internal Temperature #2	DCM1-AD18
1,736	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
1,744	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
1,752	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
1,753	1	SIS Cover Telltale	DCM1-DIGTTSW14
1,754	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
1,755	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
1,756	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
1,757	1	Prime Charger Selected TT	DCM1-DIGTTSW10
1,758	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
1,759	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
1,760	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
1,768	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
1,776	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17
1,784	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
1,792	8	ULEIS & Survival Heater Current	DCM1-DIFA19
1,800	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
1,808	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
1,816	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
1,824	8	SWEPAM Electron Current	DCM1-DIFA23
1,832	8	SWEPAM Ion Current	DCM1-DIFA24
1,840	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25

Low Rate C&DH Bin Dump Format

Location	Length	Parameter	Source
1,848	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
1,856	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
1,864	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
1,872	8	S^3 DPU Current	DCM1-DIFA29
1,880	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
1,888	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13
1,896	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
2,008	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
2,009	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
2,010	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
2,011	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
2,012	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
2,013	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
2,014	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
2,015	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
2,016	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
2,024	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
2,032	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
2,040	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
2,048	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
2,056	8	SWIMS Internal Temperature	DCM1-AD5
2,064	8	SWICS Internal Temperature	DCM1-AD7
2,072	8	ULEIS Telescope Temperature	DCM1-AD9
2,080	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
2,088	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
2,096	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
2,104	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
2,112	8	SWEPAM(E) Internal Temperature	DCM1-AD24
2,120	8	SWEPAM(I) Internal Temperature	DCM1-AD26
2,128	64	Last Star Scanner Data	DCM1-SD6
2,192	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
2,200	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
2,208	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
2,216	384	C&DH Housekeeping	C&DH
2,600	8	Analog Shunt Panel Temperature	DCM1-PT23
2,608	8	Aft Deck Temperature (TBD) #1	DCM1-PT24
2,616	64	Opposite C&DH Component Hskp Data	DCM1-SD4
2,680	8	+Y Solar Array Panel Temperature	DCM1-PT0
2,688	8	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1
2,696	8	-Y Solar Array Panel Temperature	DCM1-PT2
2,704	8	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3
2,712	8	+Y Side Panel: Near Digital Shunt	DCM1-AD2
2,720	8	-X Side Panel: TBD	DCM1-AD3
2,728	8	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4
2,736	8	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14
2,744	8	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15
2,752	8	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16

Low Rate C&DH Bin Dump Format

Location	Length	Parameter	Source
2,760	8	-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17
2,768	8	-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18
2,776	8	-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19
2,784	8	-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20
2,792	8	Antenna Dish Feed: Use Long Leads	DCM1-PT21
2,800	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,808	8	Back of +X Forward Radiator	DCM1-AD0
2,816	8	Back of -X/-Y Forward Radiator	DCM1-AD1
2,824	8	SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6
2,832	8	SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8
2,840	8	ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12
2,848	8	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13
2,856	8	CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16
2,864	8	SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19
2,872	8	SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21
2,880	8	SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25
2,888	8	SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27
2,896	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,904	1	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7
2,905	1	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6
2,906	1	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5
2,907	1	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4
2,908	1	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3
2,909	1	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2
2,910	1	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1
2,911	1	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0
2,912	8	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10
2,920	8	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11
2,928	8	Thruster Valve IA Temperature	DCM1-PT4
2,936	8	Thruster Valve IR Temperature	DCM1-PT5
2,944	8	Thruster Valve IVA Temperature	DCM1-PT6
2,952	8	Thruster Valve IVR+ Temperature	DCM1-PT7
2,960	8	Thruster Valve IVR- Temperature	DCM1-PT8
2,968	8	Thruster Valve IIIR- Temperature	DCM1-PT9
2,976	8	Thruster Valve IIIR+ Temperature	DCM1-PT10
2,984	8	Thruster Valve IIIA Temperature	DCM1-PT11
2,992	8	Thruster Valve IIR Temperature	DCM1-PT12
3,000	8	Thruster Valve IIA Temperature	DCM1-PT13
3,008	8	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0
3,016	8	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1
3,024	8	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2
3,032	8	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3
3,040	8	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4
3,048	8	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5
3,056	8	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6
3,064	8	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7
3,072	8	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8

Low Rate C&DH Bin Dump Format

Location	Length	Parameter	Source
3,080	8	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9
3,088	8	Mode (=2 for Bin Dumps)	C&DH
3,096	8	Bin Type	C&DH
3,104	16	Bin Number	C&DH
3,120	16	Number of dump bytes in the major frame	C&DH
3,136	112	zero	C&DH
3,248	2,400	Bin Data	C&DH
5,648	936	Spare	C&DH
6,584	32	Spare Serial Digital Data	DCM1-SD7
6,616	96	Transfer Frame Failure Report	C&DH
6,712	8	Selectable Telemetry Word Second 1	C&DH
6,720	8	Selectable Telemetry Word Second 2	C&DH
6,728	8	Selectable Telemetry Word Second 3	C&DH
6,736	8	Selectable Telemetry Word Second 4	C&DH
6,744	8	Selectable Telemetry Word Second 5	C&DH
6,752	8	Selectable Telemetry Word Second 6	C&DH
6,760	8	Selectable Telemetry Word Second 7	C&DH
6,768	8	Selectable Telemetry Word Second 8	C&DH
6,776	8	Selectable Telemetry Word Second 9	C&DH
6,784	8	Selectable Telemetry Word Second 10	C&DH
6,792	8	Selectable Telemetry Word Second 11	C&DH
6,800	8	Selectable Telemetry Word Second 12	C&DH
6,808	8	Selectable Telemetry Word Second 13	C&DH
6,816	8	Selectable Telemetry Word Second 14	C&DH
6,824	8	Selectable Telemetry Word Second 15	C&DH
6,832	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,856	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,872	24	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,896	16	Phase Angle latched at next to most recent Sun Pulse	C&DH
6,912	32	Command Link Control Word	C&DH
6,944			

6.10 Low Rate Memory Dump

Like all the other low rate formats, one major frame (16 seconds and 6944 bits long) contains one minor frame, and runs at a rate of 434 bits per second. All housekeeping data is included and repeats once per major frame. The slot that is empty in the Low Rate Housekeeping Format, and contains bin dump data in the Low Rate Bin Dump Format, contains C&DH memory dump data. Aside from the contents of that slot, and the format ID, the Low Rate Housekeeping, Low Rate C&DH Bin Dump, and Low Rate C&DH Memory Dump formats are identical.

Low Rate C&DH Memory Dump Format

Major Frame

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Word Second 0	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
344	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
352	8	+X Solar Array Panel Temperature	DCM2-PT0
360	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
368	8	-X Solar Array Panel Temperature	DCM2-PT2
376	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
384	8	Magnetometer Inboard Temperature	DCM2-SEA15
392	8	Magnetometer Outboard Temperature	DCM2-SEA16
400	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
408	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
416	8	S3 DPU Power Converter Voltage	DCM2-SEA19
424	8	Power Subsystem Processor A Current	DCM2-DIFA22
432	8	Power Subsystem Processor B Current	DCM2-DIFA23
440	8	Prop. System Axial Thruster Current	DCM2-DIFA24

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
448	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25
456	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
464	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
472	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
480	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
481	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
482	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
483	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
484	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
485	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
486	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
487	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
488	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
489	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
490	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
491	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
492	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
493	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
494	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
495	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
496	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
504	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
512	8	Aft Deck Temperature: Near +X Low Gain Ant Base	DCM2-PT21
520	8	Aft Deck Temperature: +X/+Y Edge	DCM2-PT22
528	8	Aft Deck Temp: +Y/-X Edge, Near Low Gain Ant Base	DCM2-PT23
536	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
544	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
552	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
560	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
568	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
576	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
584	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
592	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
600	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
608	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
616	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
624	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
632	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
640	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17
648	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
656	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
664	8	C&DH A Converter Voltage	DCM2-SEA0
672	8	C&DH B Converter Voltage	DCM2-SEA1
680	8	C&DH Component A Current	DCM2-DIFA0
688	8	C&DH Component B Current	DCM2-DIFA1
696	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
704	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
712	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
720	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17
728	8	Heater-Spacecraft Operational Current	DCM2-DIFA18
736	8	Main Bus Current	DCM2-SEA2
744	8	Main Bus Voltage	DCM2-SEA3
752	8	PSE Analog Shunt Current	DCM2-DIFA19
760	8	Star Scanner Current	DCM2-DIFA8
768	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
776	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
784	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
792	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
800	8	DSAD A Current	DCM2-DIFA20
808	8	DSAD B Current	DCM2-DIFA21
816	144	Data Recorder A Hskp Data	DCM2-SD4
960	8	Solid State Recorder A PWRTEMP	DCM2-AD10
968	8	Data Recorder A Current	DCM2-DIFA6
976	144	Data Recorder B Hskp Data	DCM2-SD5
1,120	8	Solid State Recorder B PWRTEMP	DCM2-AD11
1,128	8	Data Recorder B Current	DCM2-DIFA7
1,136	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
1,264	8	-Y Side Panel: Near PSDE	DCM2-AD4
1,272	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
1,280	8	Battery Current Charge Monitor	DCM2-DIFA14
1,288	8	Battery Current Discharge Monitor	DCM2-DIFA15
1,296	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
1,424	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
1,432	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
1,440	8	Heater-Battery A&B Current	DCM2-DIFA16
1,448	8	Battery Voltage	DCM2-SEA4
1,456	8	Transponder A Receiver Current	DCM2-DIFA9
1,464	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
1,472	8	Transponder B Receiver Current	DCM2-DIFA11
1,480	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
1,488	8	Transponder A Receiver AGC	DCM2-SEA7
1,496	8	Transponder A Receiver SPE	DCM2-SEA8
1,504	8	Transponder A Receiver +5V	DCM2-SEA9
1,512	8	Transponder B Receiver AGC	DCM2-SEA10
1,520	8	Transponder B Receiver SPE	DCM2-SEA11
1,528	8	Transponder B Receiver +5V	DCM2-SEA12
1,536	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
1,544	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
1,552	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
1,560	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
1,561	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
1,562	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
1,563	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
1,564	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
1,565	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
1,566	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
1,567	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
1,568	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14
1,576	8	Propellant Pressure A	DCM2-SEA5
1,584	8	Propellant Pressure B	DCM2-SEA6
1,592	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
1,600	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
1,608	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
1,616	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
1,624	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
1,632	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
1,640	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
1,648	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
1,656	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
1,664	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
1,672	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10
1,680	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11
1,688	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12
1,696	8	ULEIS LVPS Voltage	DCM1-SEA13
1,704	8	CRIS Internal Temperature #1	DCM1-AD14
1,712	8	CRIS Internal Temperature #2	DCM1-AD15
1,720	8	SIS Internal Temperature #1	DCM1-AD17
1,728	8	SIS Internal Temperature #2	DCM1-AD18
1,736	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
1,744	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
1,752	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
1,753	1	SIS Cover Telltale	DCM1-DIGTTSW14
1,754	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
1,755	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
1,756	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
1,757	1	Prime Charger Selected TT	DCM1-DIGTTSW10
1,758	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
1,759	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
1,760	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
1,768	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
1,776	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17
1,784	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
1,792	8	ULEIS & Survival Heater Current	DCM1-DIFA19
1,800	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
1,808	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
1,816	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
1,824	8	SWEPAM Electron Current	DCM1-DIFA23
1,832	8	SWEPAM Ion Current	DCM1-DIFA24

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
1,840	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25
1,848	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
1,856	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
1,864	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
1,872	8	S^3 DPU Current	DCM1-DIFA29
1,880	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
1,888	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13
1,896	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
2,008	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
2,009	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
2,010	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
2,011	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
2,012	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
2,013	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
2,014	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
2,015	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
2,016	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
2,024	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
2,032	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
2,040	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
2,048	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
2,056	8	SWIMS Internal Temperature	DCM1-AD5
2,064	8	SWICS Internal Temperature	DCM1-AD7
2,072	8	ULEIS Telescope Temperature	DCM1-AD9
2,080	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
2,088	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
2,096	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
2,104	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
2,112	8	SWEPAM(E) Internal Temperature	DCM1-AD24
2,120	8	SWEPAM(I) Internal Temperature	DCM1-AD26
2,128	64	Last Star Scanner Data	DCM1-SD6
2,192	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
2,200	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
2,208	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
2,216	384	C&DH Housekeeping	C&DH
2,600	8	Analog Shunt Panel Temperature	DCM1-PT23
2,608	8	Aft Deck Temperature (TBD) #1	DCM1-PT24
2,616	64	Opposite C&DH Component Hskp Data	DCM1-SD4
2,680	8	+Y Solar Array Panel Temperature	DCM1-PT0
2,688	8	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1
2,696	8	-Y Solar Array Panel Temperature	DCM1-PT2
2,704	8	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3
2,712	8	+Y Side Panel: Near Digital Shunt	DCM1-AD2
2,720	8	-X Side Panel: TBD	DCM1-AD3
2,728	8	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4
2,736	8	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
2,744	8	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15
2,752	8	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16
2,760	8	-X/-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT17
2,768	8	-Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT18
2,776	8	-Y/+X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT19
2,784	8	-Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM1-PT20
2,792	8	Antenna Dish Feed: Use Long Leads	DCM1-PT21
2,800	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,808	8	Back of +X Forward Radiator	DCM1-AD0
2,816	8	Back of -X/-Y Forward Radiator	DCM1-AD1
2,824	8	SWIMS Interface Temp: +Z End Near Mounting Foot	DCM1-AD6
2,832	8	SWICS I/F Temp: By Mtg Foot Towards SWEPAM-E	DCM1-AD8
2,840	8	ULEIS Interface Temp: Under Back End of Instrument	DCM1-AD12
2,848	8	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13
2,856	8	CRIS I\F Temp: Side Close to -X Panel, Near -Z End	DCM1-AD16
2,864	8	SIS I/F Temp: Back of Box Near Underside of SIS	DCM1-AD19
2,872	8	SEPICA I/F Temp: Under Basepl, Near Cntr of Deck	DCM1-AD21
2,880	8	SWEPAM(E) Interface Temp: On Deck by Instrument	DCM1-AD25
2,888	8	SWEPAM(I) Interface Temp: On Deck, -X/-Y Edge	DCM1-AD27
2,896	8	-Y Rear Low Gain Ant: Pylon Below Ant, Long Leads	DCM1-PT22
2,904	1	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7
2,905	1	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6
2,906	1	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5
2,907	1	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4
2,908	1	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3
2,909	1	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2
2,910	1	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1
2,911	1	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0
2,912	8	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10
2,920	8	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11
2,928	8	Thruster Valve IA Temperature	DCM1-PT4
2,936	8	Thruster Valve IR Temperature	DCM1-PT5
2,944	8	Thruster Valve IVA Temperature	DCM1-PT6
2,952	8	Thruster Valve IVR+ Temperature	DCM1-PT7
2,960	8	Thruster Valve IVR- Temperature	DCM1-PT8
2,968	8	Thruster Valve IIIR- Temperature	DCM1-PT9
2,976	8	Thruster Valve IIIR+ Temperature	DCM1-PT10
2,984	8	Thruster Valve IIIA Temperature	DCM1-PT11
2,992	8	Thruster Valve IIR Temperature	DCM1-PT12
3,000	8	Thruster Valve IIA Temperature	DCM1-PT13
3,008	8	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0
3,016	8	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1
3,024	8	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2
3,032	8	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3
3,040	8	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4
3,048	8	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5

Low Rate C&DH Memory Dump Format

Location	Length	Parameter	Source
3,056	8	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6
3,064	8	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7
3,072	8	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8
3,080	8	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9
3,088	8	Mode (=1 for Memory Dumps)	C&DH
3,096	8	Page Number	C&DH
3,104	16	Starting Address	C&DH
3,120	16	Number of Dump bytes in the major frame	C&DH
3,136	2,512	Memory Data	C&DH
5,648	936	Spare	C&DH
6,584	32	Spare Serial Digital Data	DCM1-SD7
6,616	96	Transfer Frame Failure Report	C&DH
6,712	8	Selectable Telemetry Word Second 1	C&DH
6,720	8	Selectable Telemetry Word Second 2	C&DH
6,728	8	Selectable Telemetry Word Second 3	C&DH
6,736	8	Selectable Telemetry Word Second 4	C&DH
6,744	8	Selectable Telemetry Word Second 5	C&DH
6,752	8	Selectable Telemetry Word Second 6	C&DH
6,760	8	Selectable Telemetry Word Second 7	C&DH
6,768	8	Selectable Telemetry Word Second 8	C&DH
6,776	8	Selectable Telemetry Word Second 9	C&DH
6,784	8	Selectable Telemetry Word Second 10	C&DH
6,792	8	Selectable Telemetry Word Second 11	C&DH
6,800	8	Selectable Telemetry Word Second 12	C&DH
6,808	8	Selectable Telemetry Word Second 13	C&DH
6,816	8	Selectable Telemetry Word Second 14	C&DH
6,824	8	Selectable Telemetry Word Second 15	C&DH
6,832	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,856	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,872	24	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6.896	16	Phase Angle latched at next to most recent Sun Pulse	C&DH
6,912	32	Command Link Control Word	C&DH
6,944			

6.11 Low Rate ADC Format

Like all the other low rate formats, one major frame (16 seconds and 6944 bits long) contains one minor frame, and runs at a rate of 434 bits per second. The format includes 11 Hz sampling of the Sun Sensor and all Star Scanner data. Most housekeeping data is included (except for some AD590 and PT103 temperature channels), and is present once per major frame.

Low Rate ADC Format
Major Frame

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte Minor Frame 0	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	8	Propellant Tank A1 Temperature	DCM2-AD12
208	8	Propellant Tank A2 Temperature	DCM2-AD13
216	8	Propellant Tank B1 Temperature	DCM2-AD14
224	8	Propellant Tank B2 Temperature	DCM2-AD15
232	8	Internal Lines A Temperature	DCM2-AD16
240	8	Internal Lines B Temperature	DCM2-AD17
248	8	External Lines +X Temperature	DCM2-AD18
256	8	External Lines -X Temperature	DCM2-AD19
264	8	Star Scanner Temperature: Near Base	DCM2-AD20
272	8	Instrument Deck Temp: Near Center by SEPICA I/F	DCM2-AD22
280	8	Instrument Deck Temp: Near ULEIS Elec Box	DCM2-AD23
288	8	Instrument Deck Temp: Near EPAM I/F and -X Edge	DCM2-AD24
296	8	Instrument Deck Temp: Near +Y/-X Edge	DCM2-AD25
304	8	Instr Deck Temp: Near +X/+Y Edge, By SWICS I/F	DCM2-AD26
312	8	Instrument Deck Temp: Near MFI, S3DPU, & SIS I/F	DCM2-AD27
320	8	Instrument Deck Temperature: Near -Y Edge	DCM2-AD28
328	8	Instrument Deck Temp: Near +X Edge, By Pylon	DCM2-AD29
336	8	Heater-S/C Specific Xpdr & Shunt I/F Current	DCM2-DIFA13
344	8	Sun Sensor (-X/-Y) Temp: Side of Brack, Near Sensor	DCM2-AD21
352	8	+X Solar Array Panel Temperature	DCM2-PT0
360	8	+X Solar Array Panel Hinge Temp: Near -Y	DCM2-PT1
368	8	-X Solar Array Panel Temperature	DCM2-PT2
376	8	-X Solar Array Panel Hinge Temp: Near +Y	DCM2-PT3
384	8	Magnetometer Inboard Temperature	DCM2-SEA15
392	8	Magnetometer Outboard Temperature	DCM2-SEA16
400	8	Magnetometer Inboard Heater Power Level	DCM2-SEA17
408	8	Magnetometer Outboard Heater Power Level	DCM2-SEA18
416	8	S3 DPU Power Converter Voltage	DCM2-SEA19
424	8	Power Subsystem Processor A Current	DCM2-DIFA22
432	8	Power Subsystem Processor B Current	DCM2-DIFA23
440	8	Prop. System Axial Thruster Current	DCM2-DIFA24
448	8	DCM2 - 0-50mV Channel #25 (pre-wired for 2A on TB)	DCM2-DIFA25

Low Rate ADC Format

Location	Length	Parameter	Source
456	8	Heater-S/C Surv. Panel Htr Current	DCM2-DIFA26
464	8	Transmitter Power Converter Temp (not x-strapped)	DCM2-SEA20
472	8	Instrument Deck Temperature (TBD) #2	DCM2-AD30
480	1	DCM2 - Digital Telltale-Logic Channel #7	DCM2-DIGTTLOG7
481	1	DCM2 - Digital Telltale-Logic Channel #6	DCM2-DIGTTLOG6
482	1	DCM2 - Digital Telltale-Logic Channel #5	DCM2-DIGTTLOG5
483	1	DCM2 - Digital Telltale-Logic Channel #4	DCM2-DIGTTLOG4
484	1	DCM2 - Digital Telltale-Logic Channel #3	DCM2-DIGTTLOG3
485	1	DCM2 - Digital Telltale-Logic Channel #2	DCM2-DIGTTLOG2
486	1	DCM2 - Digital Telltale-Logic Channel #1	DCM2-DIGTTLOG1
487	1	DCM2 - Digital Telltale-Logic Channel #0	DCM2-DIGTTLOG0
488	1	SEPICA Gas Valve Telltale	DCM2-DIGTTSW15
489	1	DCM2 - Digital Telltale-Switch Channel #14	DCM2-DIGTTSW14
490	1	DCM2 - Digital Telltale-Switch Channel #13	DCM2-DIGTTSW13
491	1	DCM2 - Digital Telltale-Switch Channel #12	DCM2-DIGTTSW12
492	1	DCM2 - Digital Telltale-Switch Channel #11	DCM2-DIGTTSW11
493	1	DCM2 - Digital Telltale-Switch Channel #10	DCM2-DIGTTSW10
494	1	DCM2 - Digital Telltale-Switch Channel #9	DCM2-DIGTTSW9
495	1	DCM2 - Digital Telltale-Switch Channel #8	DCM2-DIGTTSW8
496	8	Aft Deck Temperature: Center of Deck	DCM2-PT19
504	8	Aft Deck Temperature: Between Transponders	DCM2-PT20
512	8	+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT4
520	8	+X Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT5
528	8	+X/+Y Side Panel Temp #1: Bot, Left of Umbilical	DCM2-PT6
536	8	+Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT7
544	8	+Y Side Panel Temp #2: ~1.5" from Top Center	DCM2-PT8
552	8	+Y/-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT9
560	8	-X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT10
568	8	-X/-Y Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT11
576	8	-Y Side Panel Temp #1: Near Bottom Center	DCM2-PT12
584	8	-Y/+X Side Panel Temp #1: ~1.5" from Bottom Center	DCM2-PT13
592	8	+Y Boom Temp: 1 m from Mag Sensor, Use Long Leads	DCM2-PT14
600	8	DCM2 - PT103 Channel # 15 - spare	DCM2-PT15
608	8	DCM2 - PT103 Channel # 16 - spare	DCM2-PT16
616	8	Antenna Dish Temperature: Located Near ~R/2	DCM2-PT17
624	8	+Y Fwd Low Gain Ant: Pylon Below Ant, Long Leads	DCM2-PT18
632	8	Center of +X Side Panel: Betw Battery and Term Bds	DCM2-AD6
640	8	C&DH A Converter Voltage	DCM2-SEA0
648	8	C&DH B Converter Voltage	DCM2-SEA1
656	8	C&DH Component A Current	DCM2-DIFA0
664	8	C&DH Component B Current	DCM2-DIFA1
672	8	C&DH Component Oscillator Temp (not x-strapped)	DCM2-AD9
680	8	C&DH Component A Temp: Outside of Box, Near Base	DCM2-AD7
688	8	C&DH Component B Temp: Outside of Box, Near Base	DCM2-AD8
696	8	Heater-Spacecraft Aft and Forward Survival Current	DCM2-DIFA17
704	8	Heater-Spacecraft Operational Current	DCM2-DIFA18
712	8	Main Bus Current	DCM2-SEA2

Low Rate ADC Format

Location	Length	Parameter	Source
720	8	Main Bus Voltage	DCM2-SEA3
728	8	PSE Analog Shunt Current	DCM2-DIFA19
736	8	Star Scanner Current	DCM2-DIFA8
744	8	Power Sw Comp. Partial Side A + Side B Current #1	DCM2-DIFA2
752	8	Power Sw Comp. Partial Side A + Side B Current #2	DCM2-DIFA3
760	8	Ordnance Fire Comp. Side A + Side B Current #1	DCM2-DIFA4
768	8	Ordnance Fire Comp. Side A + Side B Current #2	DCM2-DIFA5
776	8	DSAD A Current	DCM2-DIFA20
784	8	DSAD B Current	DCM2-DIFA21
792	144	Data Recorder A Hskp Data	DCM2-SD4
936	8	Solid State Recorder A PWRTEMP	DCM2-AD10
944	8	Data Recorder A Current	DCM2-DIFA6
952	144	Data Recorder B Hskp Data	DCM2-SD5
1,096	8	Solid State Recorder B PWRTEMP	DCM2-AD11
1,104	8	Data Recorder B Current	DCM2-DIFA7
1,112	128	Power Subsystem Primary Proc. Data- 2x Major	DCM2-SD6
1,240	8	-Y Side Panel: Near PSDE	DCM2-AD4
1,248	8	-X Side Panel: Near Digital Shunt Box	DCM2-AD5
1,256	8	Battery Current Charge Monitor	DCM2-DIFA14
1,264	8	Battery Current Discharge Monitor	DCM2-DIFA15
1,272	128	Power Subsystem Redundant Proc. Data- 2x Major	DCM2-SD7
1,400	8	Battery Temperature 1: Top of Center Cell	DCM2-AD2
1,408	8	Battery Temperature 2: Top of Cell at +Z End	DCM2-AD3
1,416	8	Heater-Battery A&B Current	DCM2-DIFA16
1,424	8	Battery Voltage	DCM2-SEA4
1,432	8	Transponder A Receiver Current	DCM2-DIFA9
1,440	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
1,448	8	Transponder B Receiver Current	DCM2-DIFA11
1,456	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
1,464	8	Transponder A Receiver AGC	DCM2-SEA7
1,472	8	Transponder A Receiver SPE	DCM2-SEA8
1,480	8	Transponder A Receiver +5V	DCM2-SEA9
1,488	8	Transponder B Receiver AGC	DCM2-SEA10
1,496	8	Transponder B Receiver SPE	DCM2-SEA11
1,504	8	Transponder B Receiver +5V	DCM2-SEA12
1,512	8	DCM2 AD590 Channel # 0 - not used	DCM2-AD0
1,520	8	DCM2 AD590 Channel #1 - not used	DCM2-AD1
1,528	8	Transponder Transmitter RF power level (not x-strapped)	DCM2-SEA13
1,536	1	Trpndr B antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW7
1,537	1	Trpndr B antenna SW #1 to -Z Axis - C&DH A only	DCM2-DIGTTSW6
1,538	1	Trnpdr A antenna SW #2 to +Z - C&DH A only	DCM2-DIGTTSW5
1,539	1	Trpndr A antenna SW #1 to-Z Axis - C&DH A only	DCM2-DIGTTSW4
1,540	1	PS Latch Valve B2 Open - C&DH A only	DCM2-DIGTTSW3
1,541	1	PS Latch Valve B1 Open - C&DH A only	DCM2-DIGTTSW2
1,542	1	PS Latch Valve A2 Open - C&DH A only	DCM2-DIGTTSW1
1,543	1	PS Latch Valve A1 Open - C&DH A only	DCM2-DIGTTSW0
1,544	8	Pre-Mod Conditioner +5V (not x-strapped)	DCM2-SEA14

Low Rate ADC Format

Location	Length	Parameter	Source
1,552	8	Propellant Pressure A	DCM2-SEA5
1,560	8	Propellant Pressure B	DCM2-SEA6
1,568	8	SWEPAM(E) +8V PSMON - Subcom over 8 major frames	DCM1-SEA0
1,576	8	SWEPAM(E) HVMON1 - Subcom over 8 major frames	DCM1-SEA1
1,584	8	SWEPAM(E) HVMON2 - Subcom over 8 major frames	DCM1-SEA2
1,592	8	SWEPAM(I) +8V PSMON - Subcom over 8 major frames	DCM1-SEA3
1,600	8	SWEPAM(I) HVMON1 - Subcom over 8 major frames	DCM1-SEA4
1,608	8	SWEPAM(I) HVMON2 - Subcom over 8 major frames	DCM1-SEA5
1,616	8	EPAM Analog A1 Int/Ext Cal Readout	DCM1-SEA6
1,624	8	EPAM Analog A2, Subcom over 8 major frames	DCM1-SEA7
1,632	8	EPAM Analog A3, Subcom over 8 major frames	DCM1-SEA8
1,640	8	EPAM Analog A4 Input Current Monitor	DCM1-SEA9
1,648	8	EPAM LAN 1 Electronics Temperature - Thermistor	DCM1-SEA10
1,656	8	EPAM LAN 2A Electronics Temperature - Thermistor	DCM1-SEA11
1,664	8	EPAM LAN 2B Sensor Temperature - Thermistor	DCM1-SEA12
1,672	8	ULEIS LVPS Voltage	DCM1-SEA13
1,680	8	CRIS Internal Temperature #1	DCM1-AD14
1,688	8	CRIS Internal Temperature #2	DCM1-AD15
1,696	8	SIS Internal Temperature #1	DCM1-AD17
1,704	8	SIS Internal Temperature #2	DCM1-AD18
1,712	8	Solid State Recorder A DCDCOUT	DCM1-SEA16
1,720	8	Solid State Recorder B DCDCOUT	DCM1-SEA17
1,728	1	DCM1 - Digital Telltale-Switch Channel #15	DCM1-DIGTTSW15
1,729	1	SIS Cover Telltale	DCM1-DIGTTSW14
1,730	1	S3DPU Power Converter Select TT	DCM1-DIGTTSW13
1,731	1	SWIMS Cover Telltale	DCM1-DIGTTSW12
1,732	1	Redundant Charger Selected TT	DCM1-DIGTTSW11
1,733	1	Prime Charger Selected TT	DCM1-DIGTTSW10
1,734	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
1,735	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
1,736	8	CRIS, I/F, & Survival Heater Current	DCM1-DIFA15
1,744	8	SIS, I/F, & Survival Heater Current	DCM1-DIFA16
1,752	8	EPAM Electronics & I/F Heater Current	DCM1-DIFA17
1,760	8	EPAM Survival/Operational Heater Current	DCM1-DIFA18
1,768	8	ULEIS & Survival Heater Current	DCM1-DIFA19
1,776	8	ULEIS Analog Elect. LVPS Current	DCM1-DIFA20
1,784	8	DCM1 - 0-50mV Channel #21	DCM1-DIFA21
1,792	8	ULEIS Internal & I/F Heater Current	DCM1-DIFA22
1,800	8	SWEPAM Electron Current	DCM1-DIFA23
1,808	8	SWEPAM Ion Current	DCM1-DIFA24
1,816	8	SWIMS, I/F, & Survival Htr Current	DCM1-DIFA25
1,824	8	SWICS, I/F, and Survival Htr Current	DCM1-DIFA26
1,832	8	SEPICA, I/F, & Survival Htr Current	DCM1-DIFA27
1,840	8	Magnetometer Electronics and Survival Heater Current	DCM1-DIFA28
1,848	8	S^3 DPU Current	DCM1-DIFA29
1,856	8	Heater-Prop. System Deck Primary Current	DCM1-DIFA12
1,864	8	Heater-Prop. System Deck Backup Current	DCM1-DIFA13

Low Rate ADC Format

Location	Length	Parameter	Source
1,872	112	Power Switching, Ordnance Fire Relay Telltales	DCM1-SD5
1,984	1	S3 DPU Interface A/B Select	DCM1-DIGTTLOG7
1,985	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
1,986	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
1,987	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
1,988	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
1,989	1	Transponder Aux Osc On/Off (not x-strapped)	DCM1-DIGTTLOG2
1,990	1	Transponder Transmitter Mod Index Hi/Lo (not x-strapped)	DCM1-DIGTTLOG1
1,991	1	Transponder Ranging Channel On/Off (not x-strapped)	DCM1-DIGTTLOG0
1,992	8	Transmitter Power Amplifier Temp (not x-strapped)	DCM1-SEA18
2,000	8	OAF Temperature: +X Octant, Near PAF Interface	DCM1-PT27
2,008	8	Aft Deck Temperature: Between Ant Foot and SLAM	DCM1-PT28
2,016	8	S^3 DPU Converter Secondary Current	DCM1-DIFA30
2,024	8	Pressure Transducer #1 & #2 Current	DCM1-DIFA14
2,032	8	SWIMS Internal Temperature	DCM1-AD5
2,040	8	SWICS Internal Temperature	DCM1-AD7
2,048	8	ULEIS Telescope Temperature	DCM1-AD9
2,056	8	ULEIS Analog Electronics Temperature (Internal)	DCM1-AD10
2,064	8	ULEIS DPU Temperature (Internal)	DCM1-AD11
2,072	8	SEPICA Iso-Butane Tank Temperature	DCM1-AD20
2,080	8	S^3 DPU Power Supply A Temperature	DCM1-AD22
2,088	8	SWEPAM(E) Internal Temperature	DCM1-AD24
2,096	8	SWEPAM(I) Internal Temperature	DCM1-AD26
2,104	64	Star Scanner Data Minor Frame 15	DCM1-SD6
2,168	8	Terminal Board #1/Fuse Temperature	DCM1-AD28
2,176	8	Instrument Deck Temperature (TBD) #1	DCM1-AD29
2,184	8	S^3 DPU Power Supply B Temperature	DCM1-AD30
2,192	160	Bits 0 to 159 of active C&DH housekeeping data	C&DH
2,352	160	Bits 160 to 319 of active C&DH housekeeping data	C&DH
2,512	64	Bits 320-383 of bits of active C&DH housekeeping data	C&DH
2,576	8	Analog Shunt Panel Temperature	DCM1-PT23
2,584	8	Aft Deck Temperature (TBD) #1	DCM1-PT24
2,592	64	Opposite C&DH Component Hskp Data	DCM1-SD4
2,656	8	+Y Solar Array Panel Temperature	DCM1-PT0
2,664	8	+Y Solar Array Panel Hinge Temp: Near +X	DCM1-PT1
2,672	8	-Y Solar Array Panel Temperature	DCM1-PT2
2,680	8	-Y Solar Array Panel Hinge Temp: Near -X	DCM1-PT3
2,688	8	+Y Side Panel: Near Digital Shunt	DCM1-AD2
2,696	8	-X Side Panel: TBD	DCM1-AD3
2,704	8	-Y Side Panel: Between Digital Shunt and PSCE	DCM1-AD4
2,712	8	+X/+Y Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT14
2,720	8	+Y/-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT15
2,728	8	-X Side Panel Temp #2: ~1.5" from Top Center	DCM1-PT16
2,736	8	Back of +X Forward Radiator	DCM1-AD0
2,744	8	EPAM Interface Temp: On E-Box Mtg Surf Near Foot	DCM1-AD13
2,752	1	-Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW7
2,753	1	+Y Mag Boom Stowed Switch - C&DH A only	DCM1-DIGTTSW6

Location	Length	Parameter	Source
2,754	1	-Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW5
2,755	1	+Y Mag Boom Deployed Switch - C&DH A only	DCM1-DIGTTSW4
2,756	1	-Y Solar Panel Stowed Switch	DCM1-DIGTTSW3
2,757	1	-X Solar Panel Stowed Switch	DCM1-DIGTTSW2
2,758	1	+Y Solar Panel Stowed Switch	DCM1-DIGTTSW1
2,759	1	+X Solar Panel Stowed Switch	DCM1-DIGTTSW0
2,760	8	Heater-Prop. System Axial Cat Bed Current	DCM1-DIFA10
2,768	8	Heater-Prop. System Radial Cat Bed Current	DCM1-DIFA11
2,776	8	Thruster Valve IA Temperature	DCM1-PT4
2,784	8	Thruster Valve IR Temperature	DCM1-PT5
2,792	8	Thruster Valve IVA Temperature	DCM1-PT6
2,800	8	Thruster Valve IVR+ Temperature	DCM1-PT7
2,808	8	Thruster Valve IVR- Temperature	DCM1-PT8
2,816	8	Thruster Valve IIIR- Temperature	DCM1-PT9
2,824	8	Thruster Valve IIIR+ Temperature	DCM1-PT10
2,832	8	Thruster Valve IIIA Temperature	DCM1-PT11
2,840	8	Thruster Valve IIR Temperature	DCM1-PT12
2,848	8	Thruster Valve IIA Temperature	DCM1-PT13
2,856	8	Thruster IA Thermocouple C&DH A Only	DCM1-DIFA0
2,864	8	Thruster IR Thermocouple C&DH A Only	DCM1-DIFA1
2,872	8	Thruster IVA Thermocouple C&DH A Only	DCM1-DIFA2
2,880	8	Thruster IVR+ Thermocouple C&DH A Only	DCM1-DIFA3
2,888	8	Thruster IVR- Thermocouple C&DH A Only	DCM1-DIFA4
2,896	8	Thruster IIIR- Thermocouple C&DH A Only	DCM1-DIFA5
2,904	8	Thruster IIIR+ Thermocouple C&DH A Only	DCM1-DIFA6
2,912	8	Thruster IIIA Thermocouple C&DH A Only	DCM1-DIFA7
2,920	8	Thruster IIR Thermocouple C&DH A Only	DCM1-DIFA8
2,928	8	Thruster IIA Thermocouple C&DH A Only	DCM1-DIFA9
2,936	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 0	C&DH/Sun Sensor
2,944	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 0	C&DH/Sun Sensor
2,952	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 0	C&DH/Sun Sensor
2,960	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 0	C&DH/Sun Sensor
2,968	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 0	C&DH/Sun Sensor
2,976	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 0	C&DH/Sun Sensor
2,984	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 0	C&DH/Sun Sensor
2,992	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 0	C&DH/Sun Sensor
3,000	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 0	C&DH/Sun Sensor
3,008	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 0	C&DH/Sun Sensor
3,016	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 0	C&DH/Sun Sensor
3,024	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 0	C&DH/Sun Sensor
3,032	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 0	C&DH/Sun Sensor
3,040	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 0	C&DH/Sun Sensor
3,048	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 0	C&DH/Sun Sensor
3,056	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 0	C&DH/Sun Sensor
3,064	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 0	C&DH/Sun Sensor
3,072	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 0	C&DH/Sun Sensor
3,080	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 0	C&DH/Sun Sensor

Low Rate ADC Format

Location	Length	Parameter	Source
3,088	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 0	C&DH/Sun Sensor
3,096	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 0	C&DH/Sun Sensor
3,104	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 0	C&DH/Sun Sensor
3,112	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 1	C&DH/Sun Sensor
3,120	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 1	C&DH/Sun Sensor
3,128	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 1	C&DH/Sun Sensor
3,136	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 1	C&DH/Sun Sensor
3,144	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 1	C&DH/Sun Sensor
3,152	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 1	C&DH/Sun Sensor
3,160	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 1	C&DH/Sun Sensor
3,168	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 1	C&DH/Sun Sensor
3,176	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 1	C&DH/Sun Sensor
3,184	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 1	C&DH/Sun Sensor
3,192	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 1	C&DH/Sun Sensor
3,200	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 1	C&DH/Sun Sensor
3,208	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 1	C&DH/Sun Sensor
3,216	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 1	C&DH/Sun Sensor
3,224	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 1	C&DH/Sun Sensor
3,232	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 1	C&DH/Sun Sensor
3,240	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 1	C&DH/Sun Sensor
3,248	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 1	C&DH/Sun Sensor
3,256	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 1	C&DH/Sun Sensor
3,264	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 1	C&DH/Sun Sensor
3,272	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 1	C&DH/Sun Sensor
3,280	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 1	C&DH/Sun Sensor
3,288	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 2	C&DH/Sun Sensor
3,296	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 2	C&DH/Sun Sensor
3,304	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 2	C&DH/Sun Sensor
3,312	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 2	C&DH/Sun Sensor
3,320	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 2	C&DH/Sun Sensor
3,328	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 2	C&DH/Sun Sensor
3,336	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 2	C&DH/Sun Sensor
3,344	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 2	C&DH/Sun Sensor
3,352	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 2	C&DH/Sun Sensor
3,360	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 2	C&DH/Sun Sensor
3,368	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 2	C&DH/Sun Sensor
3,376	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 2	C&DH/Sun Sensor
3,384	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 2	C&DH/Sun Sensor
3,392	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 2	C&DH/Sun Sensor
3,400	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 2	C&DH/Sun Sensor
3,408	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 2	C&DH/Sun Sensor
3,416	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 2	C&DH/Sun Sensor
3,424	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 2	C&DH/Sun Sensor
3,432	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 2	C&DH/Sun Sensor
3,440	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 2	C&DH/Sun Sensor
3,448	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 2	C&DH/Sun Sensor
3,456	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 2	C&DH/Sun Sensor

Low Rate ADC Format

Location	Length	Parameter	Source
3,464	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 3	C&DH/Sun Sensor
3,472	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 3	C&DH/Sun Sensor
3,480	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 3	C&DH/Sun Sensor
3,488	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 3	C&DH/Sun Sensor
3,496	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 3	C&DH/Sun Sensor
3,504	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 3	C&DH/Sun Sensor
3,512	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 3	C&DH/Sun Sensor
3,520	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 3	C&DH/Sun Sensor
3,528	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 3	C&DH/Sun Sensor
3,536	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 3	C&DH/Sun Sensor
3,544	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 3	C&DH/Sun Sensor
3,552	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 3	C&DH/Sun Sensor
3,560	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 3	C&DH/Sun Sensor
3,568	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 3	C&DH/Sun Sensor
3,576	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 3	C&DH/Sun Sensor
3,584	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 3	C&DH/Sun Sensor
3,592	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 3	C&DH/Sun Sensor
3,600	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 3	C&DH/Sun Sensor
3,608	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 3	C&DH/Sun Sensor
3,616	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 3	C&DH/Sun Sensor
3,624	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 3	C&DH/Sun Sensor
3,632	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 3	C&DH/Sun Sensor
3,640	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 4	C&DH/Sun Sensor
3,648	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 4	C&DH/Sun Sensor
3,656	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 4	C&DH/Sun Sensor
3,664	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 4	C&DH/Sun Sensor
3,672	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 4	C&DH/Sun Sensor
3,680	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 4	C&DH/Sun Sensor
3,688	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 4	C&DH/Sun Sensor
3,696	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 4	C&DH/Sun Sensor
3,704	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 4	C&DH/Sun Sensor
3,712	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 4	C&DH/Sun Sensor
3,720	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 4	C&DH/Sun Sensor
3,728	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 4	C&DH/Sun Sensor
3,736	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 4	C&DH/Sun Sensor
3,744	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 4	C&DH/Sun Sensor
3,752	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 4	C&DH/Sun Sensor
3,760	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 4	C&DH/Sun Sensor
3,768	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 4	C&DH/Sun Sensor
3,776	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 4	C&DH/Sun Sensor
3,784	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 4	C&DH/Sun Sensor
3,792	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 4	C&DH/Sun Sensor
3,800	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 4	C&DH/Sun Sensor
3,808	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 4	C&DH/Sun Sensor
3,816	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 5	C&DH/Sun Sensor
3,824	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 5	C&DH/Sun Sensor
3,832	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 5	C&DH/Sun Sensor

Location	Length	Parameter	Source
3,840	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 5	C&DH/Sun Sensor
3,848	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 5	C&DH/Sun Sensor
3,856	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 5	C&DH/Sun Sensor
3,864	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 5	C&DH/Sun Sensor
3,872	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 5	C&DH/Sun Sensor
3,880	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 5	C&DH/Sun Sensor
3,888	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 5	C&DH/Sun Sensor
3,896	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 5	C&DH/Sun Sensor
3,904	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 5	C&DH/Sun Sensor
3,912	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 5	C&DH/Sun Sensor
3,920	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 5	C&DH/Sun Sensor
3,928	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 5	C&DH/Sun Sensor
3,936	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 5	C&DH/Sun Sensor
3,944	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 5	C&DH/Sun Sensor
3,952	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 5	C&DH/Sun Sensor
3,960	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 5	C&DH/Sun Sensor
3,968	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 5	C&DH/Sun Sensor
3,976	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 5	C&DH/Sun Sensor
3,984	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 5	C&DH/Sun Sensor
3,992	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 6	C&DH/Sun Sensor
4,000	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 6	C&DH/Sun Sensor
4,008	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 6	C&DH/Sun Sensor
4,016	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 6	C&DH/Sun Sensor
4,024	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 6	C&DH/Sun Sensor
4,032	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 6	C&DH/Sun Sensor
4,040	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 6	C&DH/Sun Sensor
4,048	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 6	C&DH/Sun Sensor
4,056	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 6	C&DH/Sun Sensor
4,064	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 6	C&DH/Sun Sensor
4,072	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 6	C&DH/Sun Sensor
4,080	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 6	C&DH/Sun Sensor
4,088	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 6	C&DH/Sun Sensor
4,096	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 6	C&DH/Sun Sensor
4,104	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 6	C&DH/Sun Sensor
4,112	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 6	C&DH/Sun Sensor
4,120	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 6	C&DH/Sun Sensor
4,128	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 6	C&DH/Sun Sensor
4,136	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 6	C&DH/Sun Sensor
4,144	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 6	C&DH/Sun Sensor
4,152	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 6	C&DH/Sun Sensor
4,160	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 6	C&DH/Sun Sensor
4,168	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 7	C&DH/Sun Sensor
4,176	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 7	C&DH/Sun Sensor
4,184	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 7	C&DH/Sun Sensor
4,192	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 7	C&DH/Sun Sensor
4,200	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 7	C&DH/Sun Sensor
4,208	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 7	C&DH Sun Sensor

Location	Length	Parameter	Source
4,216	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 7	C&DH/Sun Sensor
4,224	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 7	C&DH/Sun Sensor
4,232	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 7	C&DH/Sun Sensor
4,240	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 7	C&DH/Sun Sensor
4,248	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 7	C&DH/Sun Sensor
4,256	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 7	C&DH/Sun Sensor
4,264	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 7	C&DH/Sun Sensor
4,272	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 7	C&DH/Sun Sensor
4,280	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 7	C&DH/Sun Sensor
4,288	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 7	C&DH/Sun Sensor
4,296	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 7	C&DH/Sun Sensor
4,304	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 7	C&DH/Sun Sensor
4,312	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 7	C&DH/Sun Sensor
4,320	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 7	C&DH/Sun Sensor
4,328	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 7	C&DH/Sun Sensor
4,336	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 7	C&DH/Sun Sensor
4,344	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 8	C&DH/Sun Sensor
4,352	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 8	C&DH/Sun Sensor
4,360	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 8	C&DH/Sun Sensor
4,368	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 8	C&DH/Sun Sensor
4,376	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 8	C&DH/Sun Sensor
4,384	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 8	C&DH/Sun Sensor
4,392	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 8	C&DH/Sun Sensor
4,400	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 8	C&DH/Sun Sensor
4,408	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 8	C&DH/Sun Sensor
4,416	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 8	C&DH/Sun Sensor
4,424	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 8	C&DH/Sun Sensor
4,432	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 8	C&DH/Sun Sensor
4,440	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 8	C&DH/Sun Sensor
4,448	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 8	C&DH/Sun Sensor
4,456	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 8	C&DH/Sun Sensor
4,464	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 8	C&DH/Sun Sensor
4,472	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 8	C&DH/Sun Sensor
4,480	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 8	C&DH/Sun Sensor
4,488	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 8	C&DH/Sun Sensor
4,496	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 8	C&DH/Sun Sensor
4,504	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 8	C&DH/Sun Sensor
4,512	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 8	C&DH/Sun Sensor
4,520	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 9	C&DH/Sun Sensor
4,528	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 9	C&DH/Sun Sensor
4,536	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 9	C&DH/Sun Sensor
4,544	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 9	C&DH/Sun Sensor
4,552	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 9	C&DH/Sun Sensor
4,560	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 9	C&DH/Sun Sensor
4,568	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 9	C&DH/Sun Sensor
4,576	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 9	C&DH/Sun Sensor
4,584	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 9	C&DH/Sun Sensor

Low Rate ADC Format

Location	Length	Parameter	Source
4,592	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 9	C&DH/Sun Sensor
4,600	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 9	C&DH/Sun Sensor
4,608	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 9	C&DH/Sun Sensor
4,616	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 9	C&DH/Sun Sensor
4,624	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 9	C&DH/Sun Sensor
4,632	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 9	C&DH/Sun Sensor
4,640	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 9	C&DH/Sun Sensor
4,648	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 9	C&DH/Sun Sensor
4,656	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 9	C&DH/Sun Sensor
4,664	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 9	C&DH/Sun Sensor
4,672	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 9	C&DH/Sun Sensor
4,680	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 9	C&DH/Sun Sensor
4,688	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 9	C&DH/Sun Sensor
4,696	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 10	C&DH/Sun Sensor
4,704	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 10	C&DH/Sun Sensor
4,712	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 10	C&DH/Sun Sensor
4,720	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 10	C&DH/Sun Sensor
4,728	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 10	C&DH/Sun Sensor
4,736	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 10	C&DH/Sun Sensor
4,744	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 10	C&DH/Sun Sensor
4,752	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 10	C&DH/Sun Sensor
4,760	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 10	C&DH/Sun Sensor
4,768	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 10	C&DH/Sun Sensor
4,776	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 10	C&DH/Sun Sensor
4,784	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 10	C&DH/Sun Sensor
4,792	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 10	C&DH/Sun Sensor
4,800	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 10	C&DH/Sun Sensor
4,808	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 10	C&DH/Sun Sensor
4,816	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 10	C&DH/Sun Sensor
4,824	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 10	C&DH/Sun Sensor
4,832	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 10	C&DH/Sun Sensor
4,840	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 10	C&DH/Sun Sensor
4,848	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 10	C&DH/Sun Sensor
4,856	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 10	C&DH/Sun Sensor
4,864	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 10	C&DH/Sun Sensor
4,872	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 11	C&DH/Sun Sensor
4,880	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 11	C&DH/Sun Sensor
4,888	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 11	C&DH/Sun Sensor
4,896	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 11	C&DH/Sun Sensor
4,904	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 11	C&DH/Sun Sensor
4,912	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 11	C&DH/Sun Sensor
4,920	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 11	C&DH/Sun Sensor
4,928	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 11	C&DH/Sun Sensor
4,936	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 11	C&DH/Sun Sensor
4,944	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 11	C&DH/Sun Sensor
4,952	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 11	C&DH/Sun Sensor
4,960	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 11	C&DH/Sun Sensor

Low Rate ADC Format

Location	Length	Parameter	Source
4,968	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 11	C&DH/Sun Sensor
4,976	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 11	C&DH/Sun Sensor
4,984	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 11	C&DH/Sun Sensor
4,992	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 11	C&DH/Sun Sensor
5,000	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 11	C&DH/Sun Sensor
5,008	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 11	C&DH/Sun Sensor
5,016	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 11	C&DH/Sun Sensor
5,024	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 11	C&DH/Sun Sensor
5,032	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 11	C&DH/Sun Sensor
5,040	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 11	C&DH/Sun Sensor
5,048	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 12	C&DH/Sun Sensor
5,056	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 12	C&DH/Sun Sensor
5,064	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 12	C&DH/Sun Sensor
5,072	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 12	C&DH/Sun Sensor
5,080	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 12	C&DH/Sun Sensor
5,088	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 12	C&DH/Sun Sensor
5,096	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 12	C&DH/Sun Sensor
5,104	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 12	C&DH/Sun Sensor
5,112	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 12	C&DH/Sun Sensor
5,120	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 12	C&DH/Sun Sensor
5,128	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 12	C&DH/Sun Sensor
5,136	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 12	C&DH/Sun Sensor
5,144	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 12	C&DH/Sun Sensor
5,152	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 12	C&DH/Sun Sensor
5,160	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 12	C&DH/Sun Sensor
5,168	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 12	C&DH/Sun Sensor
5,176	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 12	C&DH/Sun Sensor
5,184	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 12	C&DH/Sun Sensor
5,192	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 12	C&DH/Sun Sensor
5,200	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 12	C&DH/Sun Sensor
5,208	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 12	C&DH/Sun Sensor
5,216	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 12	C&DH/Sun Sensor
5,224	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 13	C&DH/Sun Sensor
5,232	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 13	C&DH/Sun Sensor
5,240	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 13	C&DH/Sun Sensor
5,248	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 13	C&DH/Sun Sensor
5,256	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 13	C&DH/Sun Sensor
5,264	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 13	C&DH/Sun Sensor
5,272	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 13	C&DH/Sun Sensor
5,280	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 13	C&DH/Sun Sensor
5,288	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 13	C&DH/Sun Sensor
5,296	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 13	C&DH/Sun Sensor
5,304	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 13	C&DH/Sun Sensor
5,312	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 13	C&DH/Sun Sensor
5,320	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 13	C&DH/Sun Sensor
5,328	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 13	C&DH/Sun Sensor
5,336	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 13	C&DH/Sun Sensor

Location	Length	Parameter	Source
5,344	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 13	C&DH/Sun Sensor
5,352	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 13	C&DH/Sun Sensor
5,360	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 13	C&DH/Sun Sensor
5,368	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 13	C&DH/Sun Sensor
5,376	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 13	C&DH/Sun Sensor
5,384	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 13	C&DH/Sun Sensor
5,392	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 13	C&DH/Sun Sensor
5,400	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 14	C&DH/Sun Sensor
5,408	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 14	C&DH/Sun Sensor
5,416	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 14	C&DH/Sun Sensor
5,424	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 14	C&DH/Sun Sensor
5,432	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 14	C&DH/Sun Sensor
5,440	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 14	C&DH/Sun Sensor
5,448	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 14	C&DH/Sun Sensor
5,456	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 14	C&DH/Sun Sensor
5,464	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 14	C&DH/Sun Sensor
5,472	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 14	C&DH/Sun Sensor
5,480	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 14	C&DH/Sun Sensor
5,488	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 14	C&DH/Sun Sensor
5,496	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 14	C&DH/Sun Sensor
5,504	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 14	C&DH/Sun Sensor
5,512	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 14	C&DH/Sun Sensor
5,520	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 14	C&DH/Sun Sensor
5,528	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 14	C&DH/Sun Sensor
5,536	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 14	C&DH/Sun Sensor
5,544	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 14	C&DH/Sun Sensor
5,552	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 14	C&DH/Sun Sensor
5,560	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 14	C&DH/Sun Sensor
5,568	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 14	C&DH/Sun Sensor
5,576	8	11 Hz Latched Sun Angle - X axis, sample 1, minor frame 15	C&DH/Sun Sensor
5,584	8	11 Hz Latched Sun Angle - Y axis, sample 1, minor frame 15	C&DH/Sun Sensor
5,592	8	11 Hz Latched Sun Angle - X axis, sample 2, minor frame 15	C&DH/Sun Sensor
5,600	8	11 Hz Latched Sun Angle - Y axis, sample 2, minor frame 15	C&DH/Sun Sensor
5,608	8	11 Hz Latched Sun Angle - X axis, sample 3, minor frame 15	C&DH/Sun Sensor
5,616	8	11 Hz Latched Sun Angle - Y axis, sample 3, minor frame 15	C&DH/Sun Sensor
5,624	8	11 Hz Latched Sun Angle - X axis, sample 4, minor frame 15	C&DH/Sun Sensor
5,632	8	11 Hz Latched Sun Angle - Y axis, sample 4, minor frame 15	C&DH/Sun Sensor
5,640	8	11 Hz Latched Sun Angle - X axis, sample 5, minor frame 15	C&DH/Sun Sensor
5,648	8	11 Hz Latched Sun Angle - Y axis, sample 5, minor frame 15	C&DH/Sun Sensor
5,656	8	11 Hz Latched Sun Angle - X axis, sample 6, minor frame 15	C&DH/Sun Sensor
5,664	8	11 Hz Latched Sun Angle - Y axis, sample 6, minor frame 15	C&DH/Sun Sensor
5,672	8	11 Hz Latched Sun Angle - X axis, sample 7, minor frame 15	C&DH/Sun Sensor
5,680	8	11 Hz Latched Sun Angle - Y axis, sample 7, minor frame 15	C&DH/Sun Sensor
5,688	8	11 Hz Latched Sun Angle - X axis, sample 8, minor frame 15	C&DH/Sun Sensor
5,696	8	11 Hz Latched Sun Angle - Y axis, sample 8, minor frame 15	C&DH/Sun Sensor
5,704	8	11 Hz Latched Sun Angle - X axis, sample 9, minor frame 15	C&DH/Sun Sensor
5,712	8	11 Hz Latched Sun Angle - Y axis, sample 9, minor frame 15	C&DH/Sun Sensor

Low Rate ADC Format

Location	Length	Parameter	Source
5,720	8	11 Hz Latched Sun Angle - X axis, sample 10, minor frame 15	C&DH/Sun Sensor
5,728	8	11 Hz Latched Sun Angle - Y axis, sample 10, minor frame 15	C&DH/Sun Sensor
5,736	8	11 Hz Latched Sun Angle - X axis, sample 11, minor frame 15	C&DH/Sun Sensor
5,744	8	11 Hz Latched Sun Angle - Y axis, sample 11, minor frame 15	C&DH/Sun Sensor
5,752	64	Star Scanner Data Minor Frame 0	DCM1-SD6
5,816	64	Star Scanner Data Minor Frame 1	DCM1-SD6
5,880	64	Star Scanner Data Minor Frame 2	DCM1-SD6
5,944	64	Star Scanner Data Minor Frame 3	DCM1-SD6
6,008	64	Star Scanner Data Minor Frame 4	DCM1-SD6
6,072	64	Star Scanner Data Minor Frame 5	DCM1-SD6
6,136	64	Star Scanner Data Minor Frame 6	DCM1-SD6
6,200	64	Star Scanner Data Minor Frame 7	DCM1-SD6
6,264	64	Star Scanner Data Minor Frame 8	DCM1-SD6
6,328	64	Star Scanner Data Minor Frame 9	DCM1-SD6
6,392	64	Star Scanner Data Minor Frame 10	DCM1-SD6
6,456	64	Star Scanner Data Minor Frame 11	DCM1-SD6
6,520	64	Star Scanner Data Minor Frame 12	DCM1-SD6
6,584	64	Star Scanner Data Minor Frame 13	DCM1-SD6
6,648	64	Star Scanner Data Minor Frame 14	DCM1-SD6
6,712	8	Selectable Telemetry Byte Minor Frame 1	C&DH
6,720	8	Selectable Telemetry Byte Minor Frame 2	C&DH
6,728	8	Selectable Telemetry Byte Minor Frame 3	C&DH
6,736	8	Selectable Telemetry Byte Minor Frame 4	C&DH
6,744	8	Selectable Telemetry Byte Minor Frame 5	C&DH
6,752	8	Selectable Telemetry Byte Minor Frame 6	C&DH
6,760	8	Selectable Telemetry Byte Minor Frame 7	C&DH
6,768	8	Selectable Telemetry Byte Minor Frame 8	C&DH
6,776	8	Selectable Telemetry Byte Minor Frame 9	C&DH
6,784	8	Selectable Telemetry Byte Minor Frame 10	C&DH
6,792	8	Selectable Telemetry Byte Minor Frame 11	C&DH
6,800	8	Selectable Telemetry Byte Minor Frame 12	C&DH
6,808	8	Selectable Telemetry Byte Minor Frame 13	C&DH
6,816	8	Selectable Telemetry Byte Minor Frame 14	C&DH
6,824	8	Selectable Telemetry Byte Minor Frame 15	C&DH
6,832	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,856	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,872	24	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,896	16	Phase Angle latched at next to most recent Sun Pulse	C&DH
6,912	32	Command Link Control Word	C&DH
6,944			

6.12 Real Time Solar Wind Format

Like all the other low rate formats, one major frame (16 seconds and 6944 bits long) contains one minor frame, and runs at a rate of 434 bits per second. The format includes all EPAM science data, SWEPAM (Ion) data that is created explicitly for the RTSW format only, and limited Magnetometer data .

RTSW Format

Major Frame

Location	Length	Parameter	Source
0	32	Sync Word	C&DH
32	48	Virtual Channel Header	C&DH
80	48	Packet Header	C&DH
128	32	Packet Secondary Header	C&DH
160	4	Format ID	C&DH
164	1	Sun Sensor ID-Side	C&DH
165	1	Sun Senor ID-Top	C&DH
166	2	C&DH ID	C&DH
168	1	Collection Format	C&DH
169	3	Major Frame Count	C&DH
172	4	Minor Frame Count	C&DH
176	8	Selectable Telemetry Byte Minor Frame 0	C&DH
184	16	Phase Angle latched in collected minor frame 0	C&DH
200	168	EPAM Data Minor Frame 0	DCM1-SD0
368	168	SWEPAM Ion Data Minor Frame 0	DCM1-SD2
536	40	Magnetometer Vector Minor Frame 0	DCM2-SD3
576	8	Magnetometer Status Byte Minor Frame 0	DCM2-SD3
584	16	Phase Angle latched in collected minor frame 1	C&DH
600	168	EPAM Data Minor Frame 1	DCM1-SD0
768	168	SWEPAM Ion Data Minor Frame 1	DCM1-SD2
936	40	Magnetometer Vector Minor Frame 1	DCM2-SD3
976	8	Magnetometer Status Byte Minor Frame 1	DCM2-SD3
984	16	Phase Angle latched in collected minor frame 2	C&DH
1,000	168	EPAM Data Minor Frame 2	DCM1-SD0
1,168	168	SWEPAM Ion Data Minor Frame 2	DCM1-SD2
1,336	40	Magnetometer Vector Minor Frame 2	DCM2-SD3
1,376	8	Magnetometer Status Byte Minor Frame 2	DCM2-SD3
1,384	16	Phase Angle latched in collected minor frame 3	C&DH
1,400	168	EPAM Data Minor Frame 3	DCM1-SD0
1,568	168	SWEPAM Ion Data Minor Frame 3	DCM1-SD2
1,736	40	Magnetometer Vector Minor Frame 3	DCM2-SD3
1,776	8	Magnetometer Status Byte Minor Frame 3	DCM2-SD3
1,784	16	Phase Angle latched in collected minor frame 4	C&DH
1,800	168	EPAM Data Minor Frame 4	DCM1-SD0
1,968	168	SWEPAM Ion Data Minor Frame 4	DCM1-SD2
2,136	40	Magnetometer Vector Minor Frame 4	DCM2-SD3
2,176	8	Magnetometer Status Byte Minor Frame 4	DCM2-SD3
2,184	16	Phase Angle latched in collected minor frame 5	C&DH
2,200	168	EPAM Data Minor Frame 5	DCM1-SD0
2,368	168	SWEPAM Ion Second 5	DCM1-SD2
2,536	40	Magnetometer Vector Second 5	DCM2-SD3
2,576	8	Magnetometer Status Byte Second 5	DCM2-SD3
2,584	16	Phase Angle latched in collected minor frame 6	C&DH
2,600	168	EPAM Data Minor Frame 6	DCM1-SD0

Realtime Solar Wind Format

Location	Length	Parameter	Source
2,768	168	SWEPAM Ion Second 6	DCM1-SD2
2,936	40	Magnetometer Vector Second 6	DCM2-SD3
2,976	8	Magnetometer Status Byte Second 6	DCM2-SD3
2,984	16	Phase Angle latched in collected minor frame 7	C&DH
3,000	168	EPAM Data Minor Frame 7	DCM1-SD0
3,168	168	SWEPAM Ion Second 7	DCM1-SD2
3,336	40	Magnetometer Vector Second 7	DCM2-SD3
3,376	8	Magnetometer Status Byte Second 7	DCM2-SD3
3,384	16	Phase Angle latched in collected minor frame 8	C&DH
3,400	168	EPAM Data Minor Frame 8	DCM1-SD0
3,568	168	SWEPAM Ion Second 8	DCM1-SD2
3,736	40	Magnetometer Vector Second 8	DCM2-SD3
3,776	8	Magnetometer Status Byte Second 8	DCM2-SD3
3,784	16	Phase Angle latched in collected minor frame 9	C&DH
3,800	168	EPAM Data Minor Frame 9	DCM1-SD0
3,968	168	SWEPAM Ion Second 9	DCM1-SD2
4,136	40	Magnetometer Vector Second 9	DCM2-SD3
4,176	8	Magnetometer Status Byte Second 9	DCM2-SD3
4,184	16	Phase Angle latched in collected minor frame 10	C&DH
4,200	168	EPAM Data Minor Frame 10	DCM1-SD0
4,368	168	SWEPAM Ion Second 10	DCM1-SD2
4,536	40	Magnetometer Vector Second 10	DCM2-SD3
4,576	8	Magnetometer Status Byte Second 10	DCM2-SD3
4,584	16	Phase Angle latched in collected minor frame 11	C&DH
4,600	168	EPAM Data Second 11	DCM1-SD0
4,768	168	SWEPAM Ion Second 11	DCM1-SD2
4,936	40	Magnetometer Vector Second 11	DCM2-SD3
4,976	8	Magnetometer Status Byte Second 11	DCM2-SD3
4,984	16	Phase Angle latched in collected minor frame 12	C&DH
5,000	168	EPAM Data Second 12	DCM1-SD0
5,168	168	SWEPAM Ion Second 12	DCM1-SD2
5,336	40	Magnetometer Vector Second 12	DCM2-SD3
5,376	8	Magnetometer Status Byte Second 12	DCM2-SD3
5,384	16	Phase Angle latched in collected minor frame 13	C&DH
5,400	168	EPAM Data Second 13	DCM1-SD0
5,568	168	SWEPAM Ion Second 13	DCM1-SD2
5,736	40	Magnetometer Vector Second 13	DCM2-SD3
5,776	8	Magnetometer Status Byte Second 13	DCM2-SD3
5,784	16	Phase Angle latched in collected minor frame 14	C&DH
5,800	168	EPAM Data Second 14	DCM1-SD0
5,968	168	SWEPAM Ion Second 14	DCM1-SD2
6,136	40	Magnetometer Vector Second 14	DCM2-SD3
6,176	8	Magnetometer Status Byte Second 14	DCM2-SD3
6,184	16	Phase Angle latched in collected minor frame 15	C&DH
6,200	168	EPAM Data Second 15	DCM1-SD0
6,368	168	SWEPAM Ion Second 15	DCM1-SD2

Realtime Solar Wind Format

Location	Length	Parameter	Source
6,536	40	Magnetometer Vector Second 15	DCM2-SD3
6,576	8	Magnetometer Status Byte Second 15	DCM2-SD3
6,584	1	Autonomy Fire Bit from CLCW	C&DH
6,585	1	Command Reject Bit from CLCW	C&DH
6,586	30	Active C&DH Housekeeping Header Telltales	C&DH
6,616	32	32 non-CLCW bits from Inactive C&DH Housekeeping Data	C&DH
6,648	8	Main Bus Current	DCM2-SEA2
6,656	8	Main Bus Voltage	DCM2-SEA3
6,664	8	Battery Voltage	DCM2-SEA4
6,672	8	Propellant Pressure A	DCM2-SEA5
6,680	8	Propellant Pressure B	DCM2-SEA6
6,688	8	Pre-Mod Conditioner & Transmitter A Current	DCM2-DIFA10
6,696	8	Pre-Mod Conditioner & Transmitter B Current	DCM2-DIFA12
6,704	1	Redundant Shunt Electronics Selected TT	DCM1-DIGTTSW9
6,705	1	Prime Shunt Electronics Selected TT	DCM1-DIGTTSW8
6,706	1	Transponder B Transmitter On/Off	DCM1-DIGTTLOG6
6,707	1	Transponder B Receiver In-lock/Out-lock	DCM1-DIGTTLOG5
6,708	1	Transponder A Transmitter On/Off	DCM1-DIGTTLOG4
6,709	1	Transponder A Receiver In-lock/Out-Lock	DCM1-DIGTTLOG3
6,710	1	Autonomy Fire bit from CLCW of opposite C&DH component	C&DH
6,711	1	LVS bit from CLCW of opposite C&DH component	C&DH
6,712	8	Selectable Telemetry Byte Minor Frame 1	C&DH
6,720	8	Selectable Telemetry Byte Minor Frame 2	C&DH
6,728	8	Selectable Telemetry Byte Minor Frame 3	C&DH
6,736	8	Selectable Telemetry Byte Minor Frame 4	C&DH
6,744	8	Selectable Telemetry Byte Minor Frame 5	C&DH
6,752	8	Selectable Telemetry Byte Minor Frame 6	C&DH
6,760	8	Selectable Telemetry Byte Minor Frame 7	C&DH
6,768	8	Selectable Telemetry Byte Minor Frame 8	C&DH
6,776	8	Selectable Telemetry Byte Minor Frame 9	C&DH
6,784	8	Selectable Telemetry Byte Minor Frame 10	C&DH
6,792	8	Selectable Telemetry Byte Minor Frame 11	C&DH
6,800	8	Selectable Telemetry Byte Minor Frame 12	C&DH
6,808	8	Selectable Telemetry Byte Minor Frame 13	C&DH
6,816	8	Selectable Telemetry Byte Minor Frame 14	C&DH
6,824	8	Selectable Telemetry Byte Minor Frame 15	C&DH
6,832	24	Last SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,856	16	Phase Angle latched at most recent Sun Pulse	C&DH
6,872	24	Last-1 SP TT = 4 Mnr Frame bits, 10 subsec count bits, 2 ID bits, 8 Y-angle bits	C&DH
6,896	16	Phase Angle latched at next to most recent Sun Pulse	C&DH
6,912	32	Command Link Control Word	C&DH
6,944			