

Magnetic Tape Data Format for All

INJUN 1 (61-015B) Experiments

The following documentation includes a description of the data format of the INJUN 1 experiment data merged with orbital data as provided by the University of Iowa and a sample BCD dump of several records from one of the magnetic tapes in the data set. Note that the change in date from December 31, 1961, to January 1, 1962, occurred during the change from satellite orbit revolution number 2569 to 2570. The description contains (1) a diagram of the character stream and designation of the information fields (names immediately below the corresponding character positions filled in with X in the character stream) contained in that stream for the 204-character logical record used in this magnetic tape format, (2) a listing giving a short description of each of the information fields, (3) a table (appendix I) giving the code for "PARA" and "PARB" in the magnetic tape format. Using this table and the information field called "ID" in the magnetic tape format, one may determine what type of information is contained in the information fields "PARA" and "PARB" in the tape format, i.e., high or low calibration mode for the spacecraft magnetometer, the battery voltage V3, the tuning fork temperature, the spacecraft skin temperature, or the encoder temperature, the CdS total energy detector temperature ($\theta = 180$ deg), and (4) a sample BCD dump of a few records from one of the magnetic tapes in the INJUN 1 master file. The format was written for an IBM 7094 computer and is divided into 6 characters per computer word. See the NSSDC Information Packet - data set automated section for further information.

The first logical record of the first physical record of the BCD dump is blocked off by information field for the convenience of the reader. There are 10 logical records per physical record.

<u>FIELD NAME</u>	<u>DESCRIPTION</u>	<u>ORIENTATION¹</u>	<u>UNITS²</u>
BB	Bad bit indicator		
ST	Station number		
EN	Epoch number		
HITIME	High order clock		
LTIME	Low order clock		
REV	Revolution number ⁵		
CDSSUM	CDS total energy A	$\Theta=180^\circ$	CTS/ACC period (16/64 sec)
CDS2	Cadmium sulfide B	$\Theta=180^\circ$	CTS/ACC period (15/64 sec)
CDS3	Cadmium sulfide C	$\Theta=180^\circ$	CTS/ACC period (12/64 sec)
CDSB8	CDS magnetic broom	$\Theta=180^\circ$	CTS/ACC period (9/64 sec)
CDS OPMON	CDS optical monitor	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
CDST90	CDS total energy	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
CDSB90	CDS magnetic broom	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
213 GM	213 Geiger tube ⁴	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
SPEC A	Magnetic spectrometer A ³	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
SPEC B	Magnetic spectrometer B ³	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)

¹The orientation angle is such that $\Theta=0^\circ$ looks down along the magnetic-field line in the Northern Hemisphere.

²The accumulation interval for each detector is in parentheses.

³This detector is prescaled by 2^2 .

⁴This detector is prescaled by 2^3 .

⁵Spacecraft orbit revolution number.

<u>FIELD NAME</u>	<u>DESCRIPTION</u>	<u>ORIENTATION¹</u>	<u>UNITS²</u>
SPEC C	Magnetic spectrometer C	$\Theta=90^\circ$	CTS/ACC period (61/64 sec)
PNA	Solid state A	$\Theta=180^\circ$	CTS/ACC period (61/64 sec)
PNB	Solid state B	$\Theta=180^\circ$	CTS/ACC period (62/64 sec)
PNC	Solid state C	$\Theta=90^\circ$	CTS/ACC period (60/64 sec)
PND	Solid state D	$\Theta=90^\circ$	CTS/ACC period (62/64 sec)
PHOT	Photometer	$\Theta=0^\circ$	CTS/ACC period (61/64 sec)
MAG	Magnetometer A		CTS/ACC period
ID	Identifier for PARA and PARB		
PARA PARB	See Appendix I		
LONG	Longitude		Degrees
LAT	Latitude ⁵		Degrees
ALT	Altitude ⁶		Kilometers
B	Field strength ⁷		Gauss
L	McIlwain L parameter ⁷		Earth radii
I	McIlwain I parameter ⁷		Earth radii
B/Bo	Ratio		

¹The orientation angle is such that $\Theta=0^\circ$ looks down along the magnetic-field line in the Northern Hemisphere.

²The accumulation interval for each detector is in parentheses.

⁵Not known whether geocentric or geodetic latitude (NSSDC 2/71).

⁶Not known how defined (NSSDC 2/71).

⁷Model used not known (NSSDC 2/71).

<u>FIELD NAME</u>	<u>DESCRIPTION</u>	<u>ORIENTATION</u> ¹	<u>UNITS</u> ²
MO	Month		
UD	Day ⁸		
UH	Hour ⁸		
UM	Minute ⁸		
US	Second ⁸		
LD	Local day ⁹		
LH	Local hour ⁹		
LM	Local minute ⁹		
KP	3-Hour kp Index		
KP SUM	Daily sum of kp 3-Hour Indices		

¹The orientation angle is such that $\Theta=0^\circ$ looks down along the magnetic-field line in the Northern Hemisphere.

²The accumulation interval for each detector is in parentheses.

⁸Not known when time was measured within a given telemetry frame.

⁹Not known whether this time corresponds to tracking station local time or not.

APPENDIX I

ID	0	1	2	3
PARA	LOW CALIBRATE	1	2	3
PARB	HIGH CALIBRATE	4	5	6

1. V3 VOLTAGE
2. TUNING FORK TEMPERATURE
3. SKIN TEMPERATURE
4. ENCODER TEMPERATURE
5. CDS TOTAL ENERGY ($\theta=180^\circ$)
6. PHOTOMETER TEMPERATURE

CALIBRATIONS

COUNTS

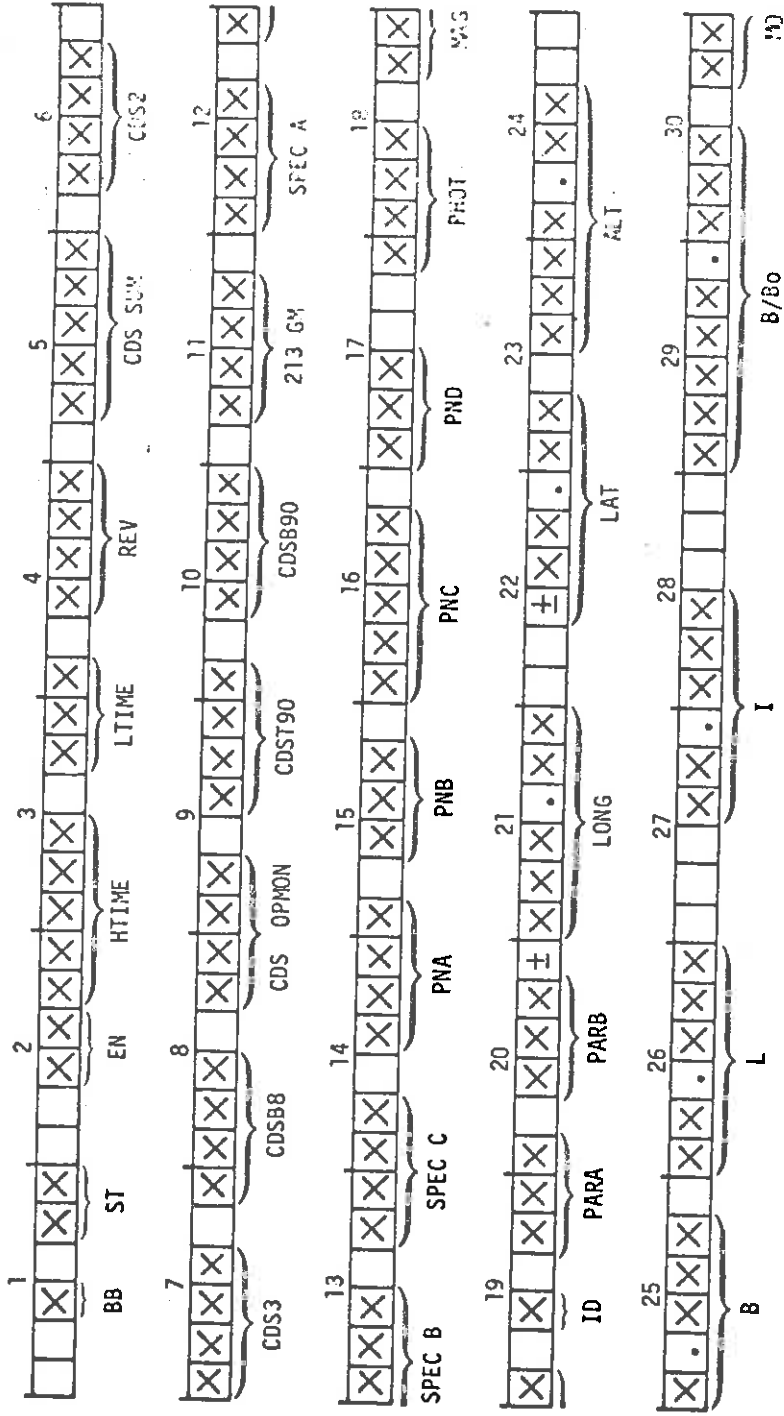
LOW 113
HIGH 215

INPUT VOLTAGE

0.00 VOLTS
1.56 VOLTS

Dec. 31, 1961 → Jan. 1, 1962

Orbit rev. 2569-2570



UD UHUMUS LDLHLM KP KPSUM WORD 1-20 IS THE FORMAT OF INJUN 1 BASIC DATA FILE

FILE NAME: INJUN 1 B&L MERGE PROGRAM NAME: INJUN 1 B&L MERGE PROGRAMMER: KATING

DATE: _____ RECORD LENGTH: 34 WORDS MODE: BCD CODE: BCD DEENSITY: 556
BLOCK=10, TYPE 1

